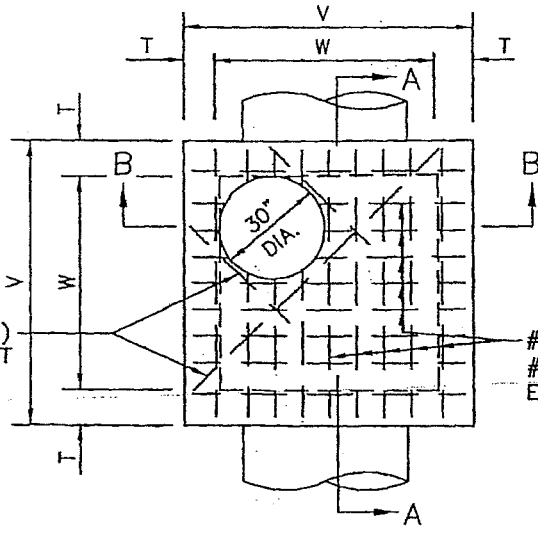


3-#4 BARS (4' & 5' M.H.)
OR #5 BARS (6' M.H.) AT
OPENING AS SHOWN.

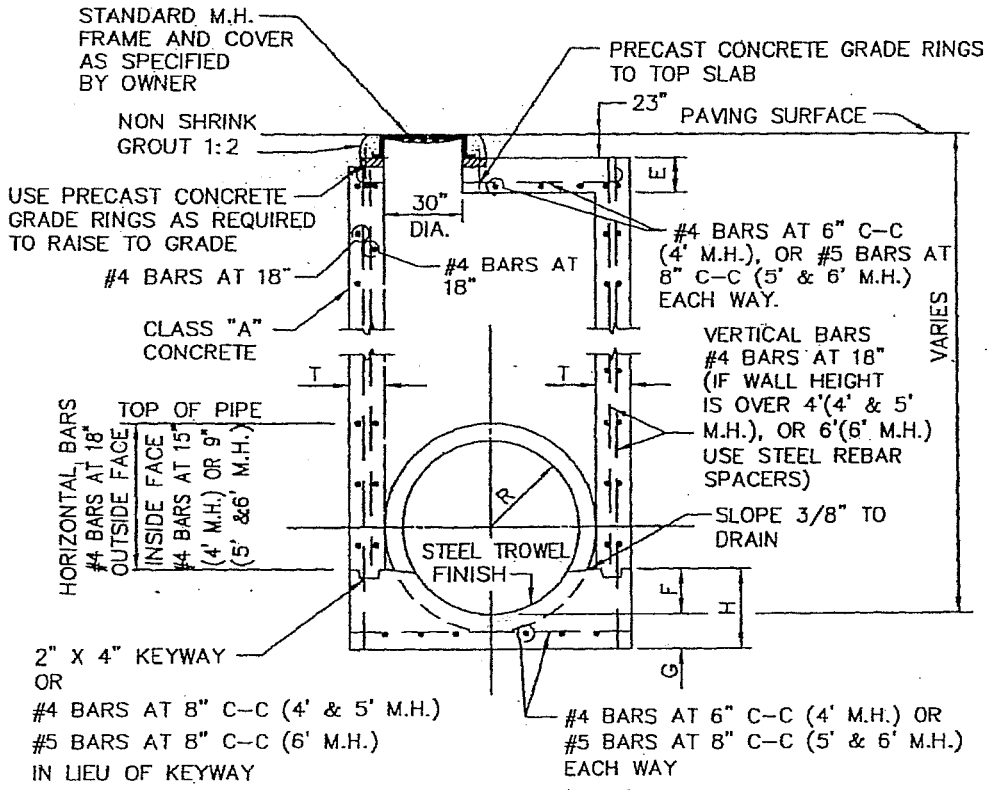
#4 BARS AT 6" C-C (4' M.H.) OR
#5 BARS AT 8" C-C (5' & 6' M.H.)
EACH WAY. HOOK EACH END



PLAN
N.T.S.

M.H. SIZE(W)	V	T	E	F	G	H
4'	5'-4"	8"	6"	9"	6"	1'-3"
5'	6'-4"	8"	6"	12"	8"	1'-8"
6'	7'-6"	9"	9"	16"	10"	2'-2"

TABLE OF DIMENSIONS
N.T.S.



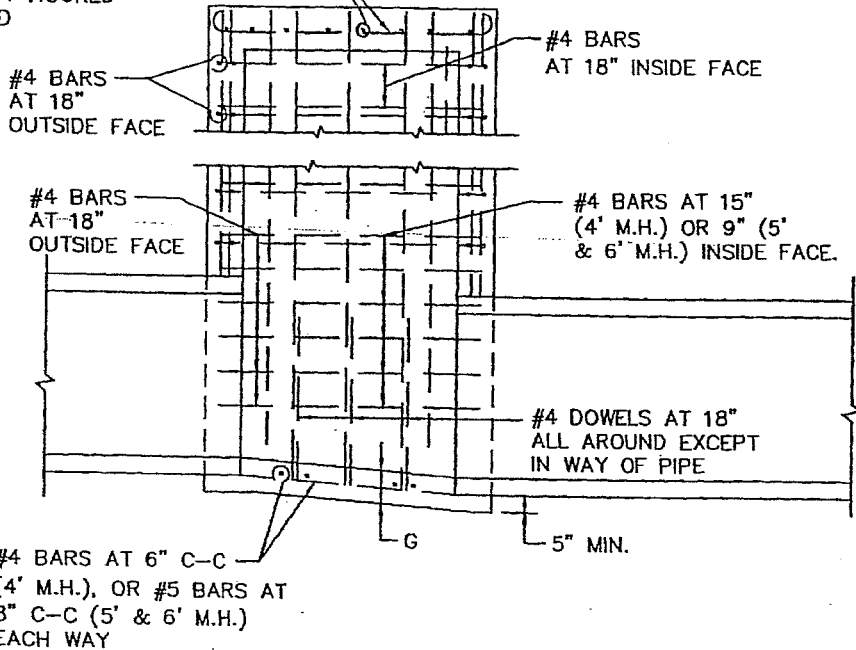
SECTION B-B
N.T.S.

STORM WATER MANHOLE
4', 5', OR 6' SQUARE

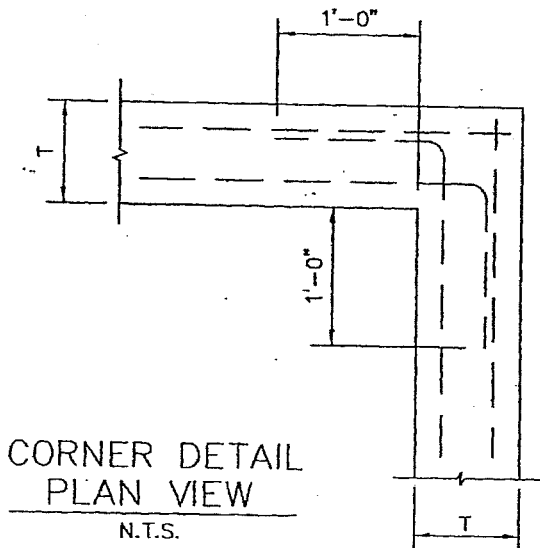


STANDARD SPECIFICATION REFERENCE	
502.1	
DATE	STANDARD DRAWING NO.
OCT. '04	6010A

#4 BARS AT 6" C-C (4' M.H.), OR
 #5 BARS AT 8" C-C (5' & 6' M.H.)
 EACH WAY HOOKED
 EACH END



SECTION A-A
 N.T.S.



NOTES:

1. SLOPE INVERT OF MANHOLE AS INDICATED ON PLAN-PROFILE SHEET.
2. LAYERS OF REINFORCING STEEL NEAREST THE INTERIOR AND EXTERIOR SURFACE SHALL HAVE A COVER OF 2" TO THE CENTER OF BARS, UNLESS OTHERWISE NOTED.
3. CONCRETE SHALL BE CLASS "A".

STORM WATER MANHOLE
 4', 5', OR 6' SQUARE

North Central Texas Council of Governments



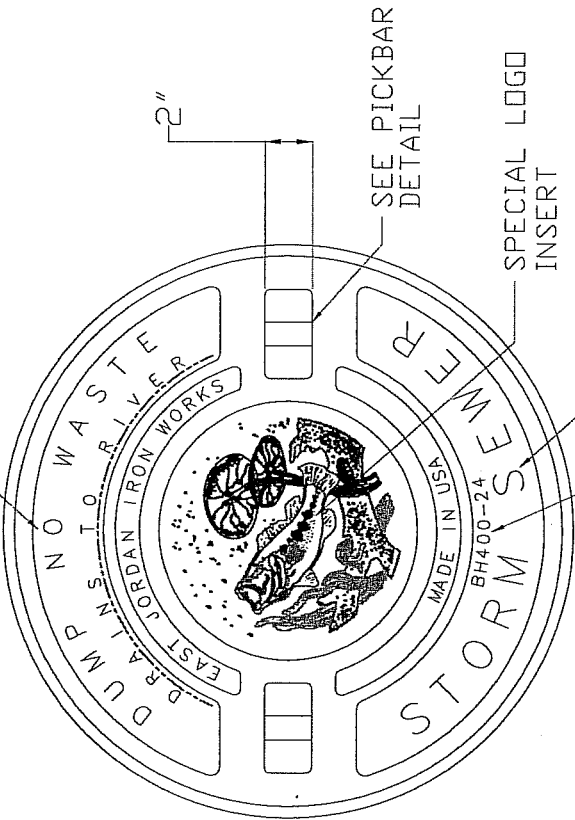
STANDARD SPECIFICATION REFERENCE

502.1

DATE
 OCT. '04

STANDARD DRAWING NO.
 6010B

3/4" RAISED LETTERING
(RECESSED FLUSH)

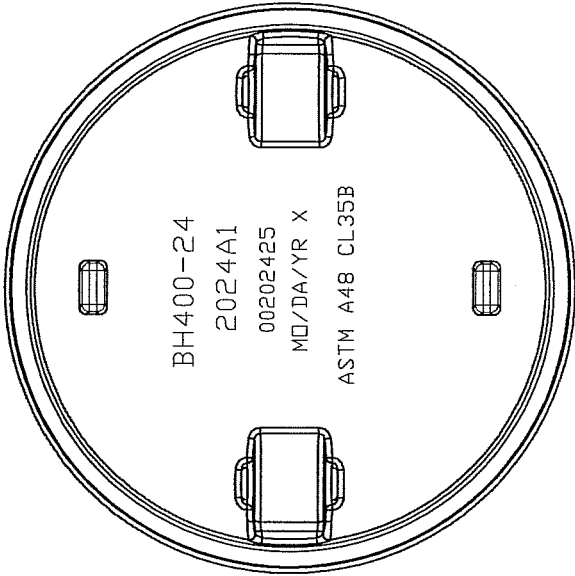


SEE PICKBAR
DETAIL

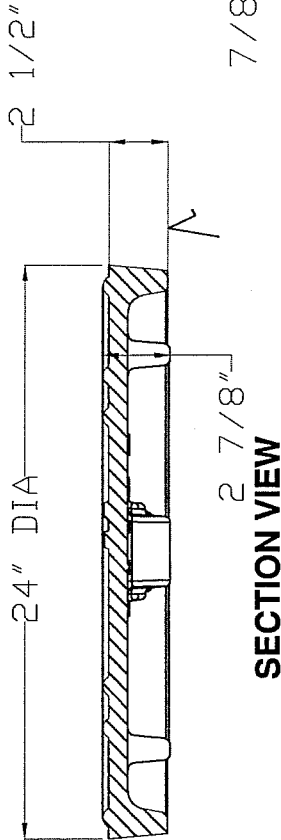
SPECIAL LOGO
INSERT

1 1/4" RAISED LETTERING
(RECESSED FLUSH)

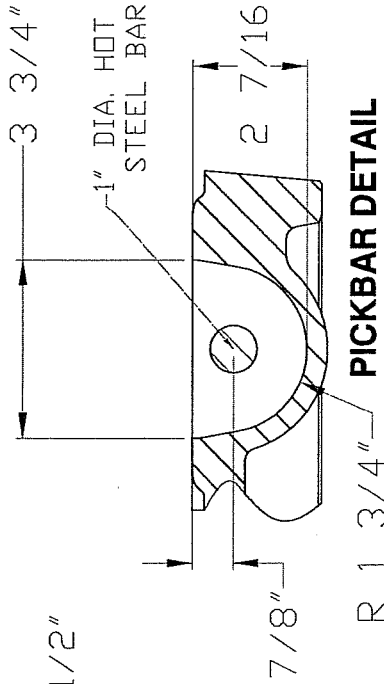
1/2" RAISED LETTERING
(RECESSED FLUSH)



BOTTOM VIEW



SECTION VIEW



PICKBAR DETAIL

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STORMWATER MANHOLE

RING AND COVER

NCTDQG STANDARD SPECIFICATION REFERENCE

508

DATE

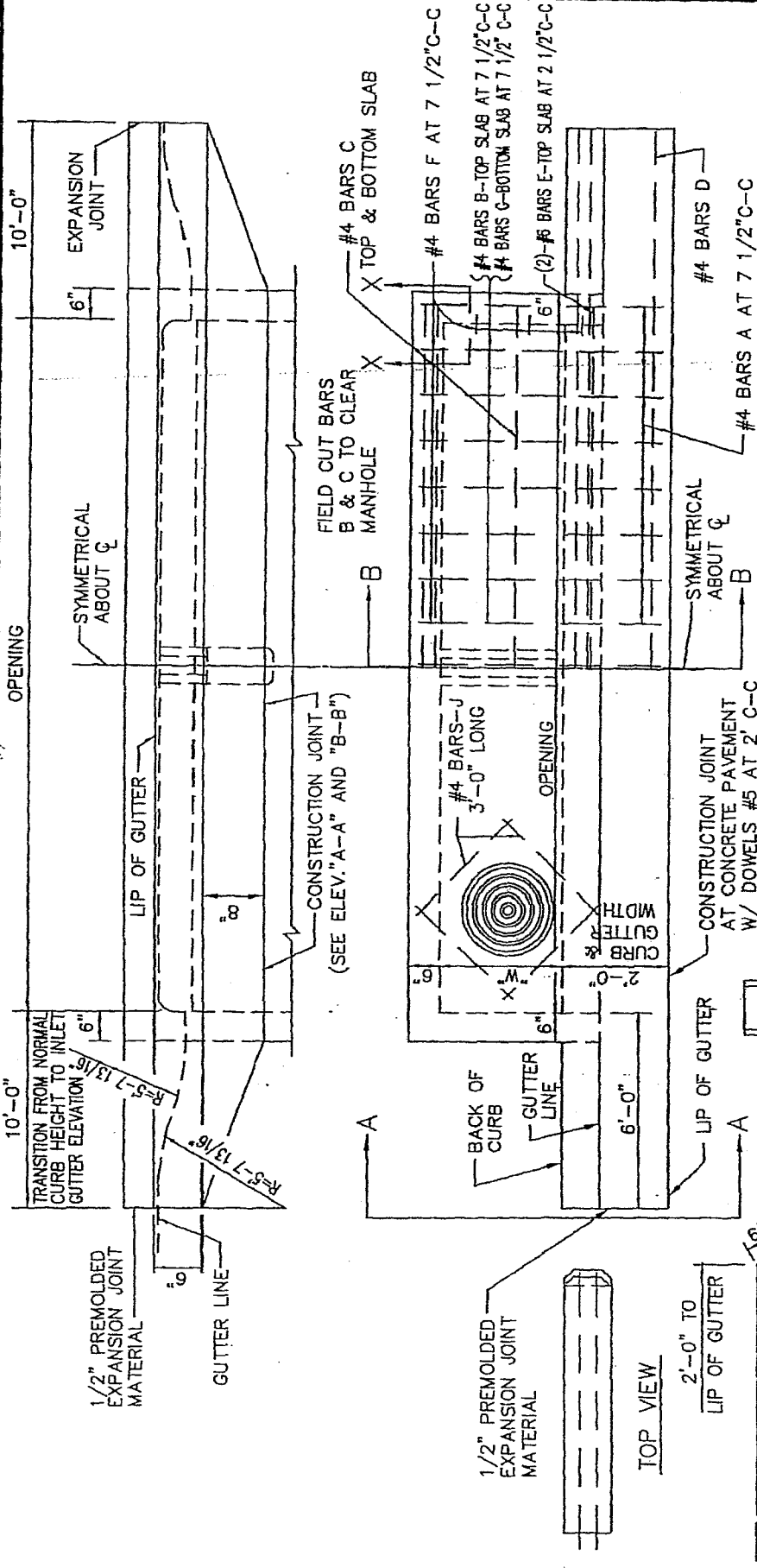
02/03/09

STANDARD DRAWING NO.

6011M*

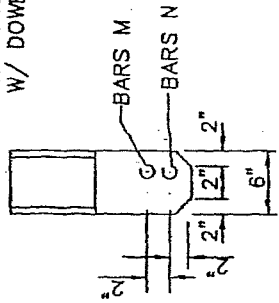
EJW EAST JORDAN IRON WORKS EST. 1989 800-626-4653 www.ejw.com MADE IN USA	
PRODUCT NUMBER	00202425
CATALOG NUMBER	2024 A1
COVER	
LOAD RATING	HEAVY DUTY
COATING	DIPPED
ESTIMATED WEIGHT	COVER: 147 LBS
MATERIAL SPECIFICATION	COVER - GRAY IRON ASTM A48 CL35B
OPEN AREA	N/A
DESIGNATES MACHINE SURFACE	
DRAWN TLC	DATE 08/08/03
LAST REVISED DEW	DATE 02/27/08
REFERENCE INFORMATION	00202450.LD 00202425.IC 00202425.LD

STANDARD DRAWING NO.
6011M*

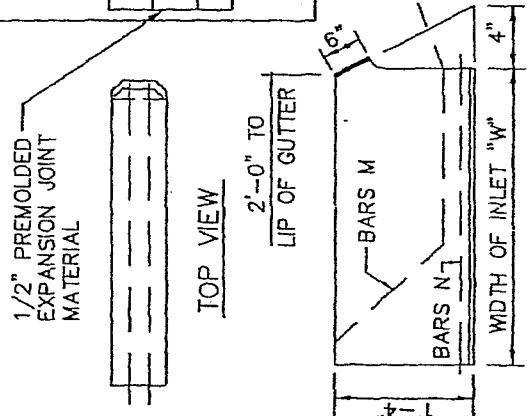


PLAN
N.T.S.


- NOTES:
1. LOCATION OF MANHOLE OPENING TO BE AT OUTFALL END, UNLESS OTHERWISE DIRECTED BY THE OWNER.
 2. INLETS OVER 10' IN WIDTH SHALL HAVE A MANHOLE OPENING AT EACH END.

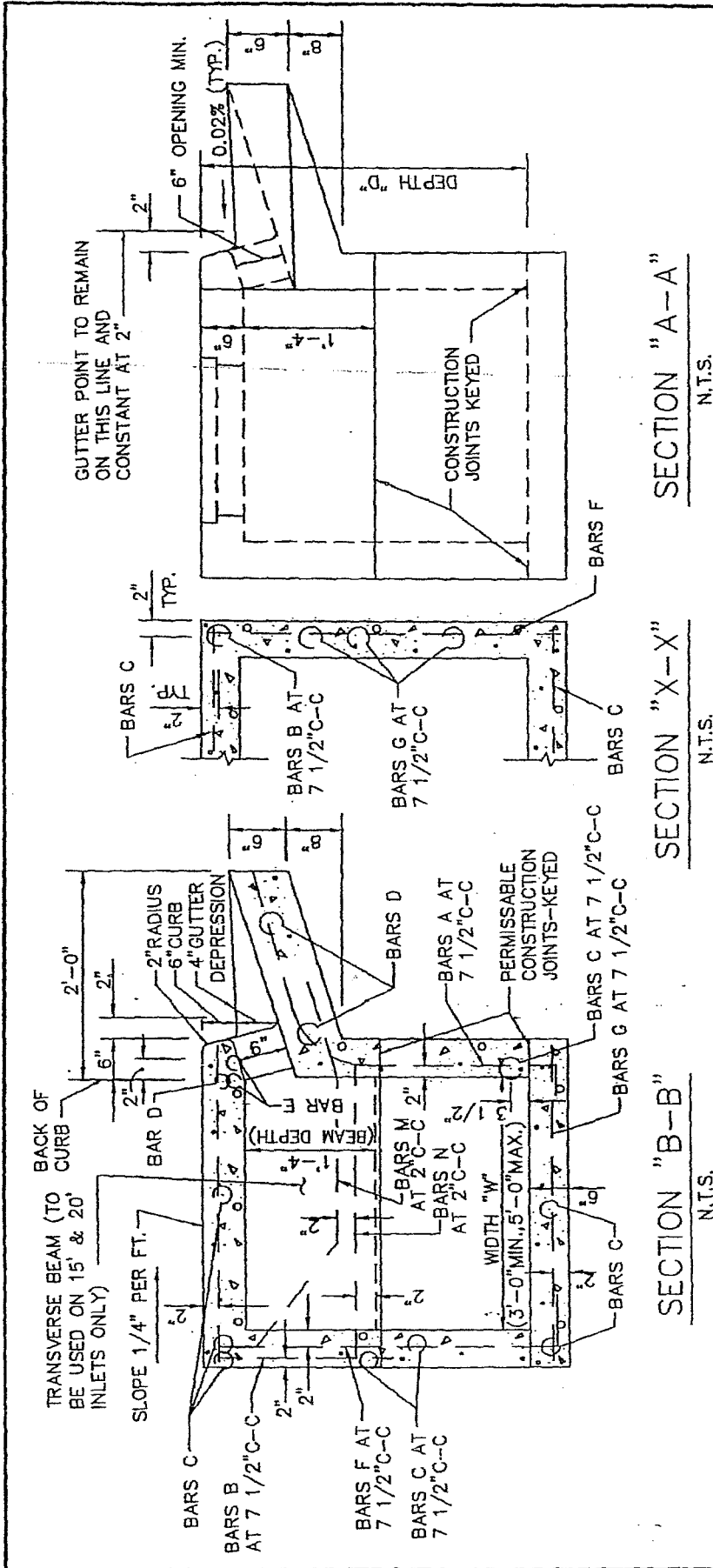


END VIEW



SIDE SECTION
TRANSVERSE BEAM DETAIL
(FOR USE WITH 15' & 20' INLETS)
N.T.S.

	STANDARD SPECIFICATION REFERENCE	702
	DATE	OCT. '04
STANDARD DRAWING NO.		6020A
CURB INLET		
5', 10', 15' OR 20' OPENING		
STANDARD DRAWING NO.		6020A



GENERAL NOTES:

1. ALL CONCRETE SHALL BE CLASS "A" CONCRETE.
2. REINFORCING BARS SHALL BE STANDARD GRADE STEEL, DEFORMED REINFORCING BARS OF A DIAMETER AND LENGTH AS SHOWN.
3. CHAMFER ALL EXPOSED CORNERS 3/4" EXCEPT WHERE OTHERWISE NOTED.
4. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
5. FIELD CUT AND BEND BARS AS NECESSARY TO ACCOMMODATE STORM SEWER PIPE.
6. RING AND COVER SHALL BE APPROVED BY THE OWNER AND INSTALLED BY THE CONTRACTOR.

STANDARD DRAWING NO.
6020B

CURB INLET
CROSS SECTION & INLET THROAT

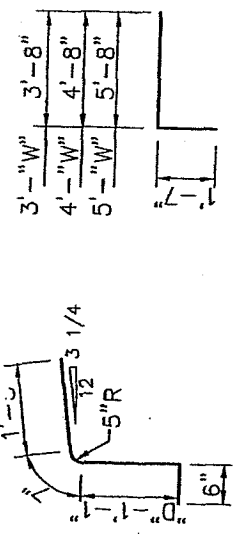


North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE
702
DATE
OCT. '04
STANDARD DRAWING NO.
6020B

SECTION "A-A"
N.T.S.

SECTION "X-X"
N.T.S.

SECTION "B-B"
N.T.S.



#4 BARS A
N.T.S.

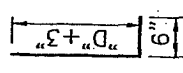
#4 BARS B
N.T.S.

BARS C LGTH. OPEN. + 0'-8"
BARS D LGTH. OPEN. + 11'-8"



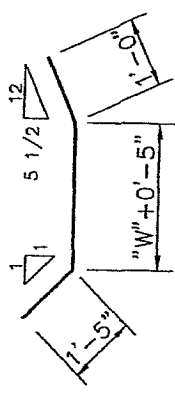
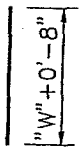
#4 BARS C & D
N.T.S.

#4 BARS E
N.T.S.



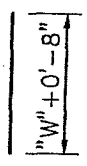
#4 BARS F
N.T.S.

#4 BARS G
N.T.S.



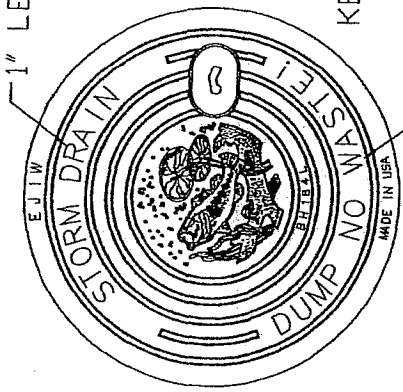
#4 BARS J
N.T.S.

#3 BARS M
N.T.S.



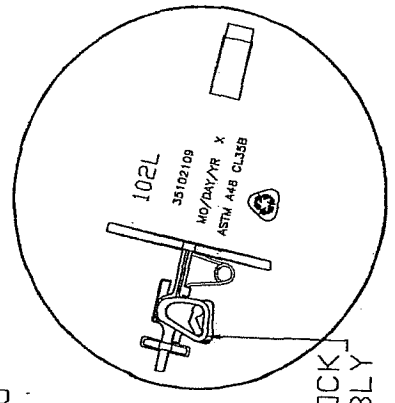
#5 BARS N
N.T.S.

1" LETTERING

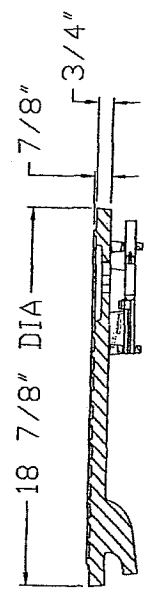


KEYED LOCK ASSEMBLY

1" LETTERING



BOTTOM VIEW



COVER SECTION

EJW EAST JORDAN IRON WORKS, INC. 800-626-4653 WWW.EJW.COM MADE IN USA	
PRODUCT NUMBER	35102209
CATALOG NUMBER	102 LOCK
LOCK COVER ASSEMBLY	
LOAD RATING	LIGHT DUTY
COATING	DIPPED
ESTIMATED WEIGHT	COVER: 60 LBS 27kg
MATERIAL SPECIFICATION	COVER - GRAY IRON ASTM A48 CL35B
OPEN AREA	N/A
DESIGNATES MACHINED SURFACE	
DRAWN DATE	10/16/06
LAST REVISION DATE	07/13/07
REFERENCE INFORMATION	35102110

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M - CITY OF MELISSA REVISION



NCTCOG STANDARD SPECIFICATION REFERENCE

702

DATE 02/03/09
STANDARD DRAWING NO. 6020CM*


CURB INLET
REBAR & M.H. FRAME & COVER

STANDARD DRAWING NO. *

BILL OF REINFORCING STEEL

DEPTH "D"	ALL WIDTHS AND LENGTHS		OPENING LENGTH "L" = 5ft						OPENING LENGTH "L" = 10ft						OPENING LENGTH "L" = 15ft						OPENING LENGTH "L" = 20ft											
			Widths "W"		Widths "W"		Widths "W"		Widths "W"		Widths "W"		Widths "W"		Widths "W"		Widths "W"		Widths "W"		Widths "W"		Widths "W"		Widths "W"		Widths "W"					
	BAR	BAR	3ft	4ft	5ft	BAR	BAR	3ft	4ft	5ft	BAR	BAR	3ft	4ft	5ft	BAR	BAR	3ft	4ft	5ft	BAR	BAR	3ft	4ft	5ft	BAR	BAR	3ft	4ft	5ft		
3'-6"	C	D	E	J	F	F	A	B	G	F	F	A	B	G	F	F	A	B	G	M	N	F	F	A	B	G	M	N				
3'-9"	17	3	2	4	20	24	28	10	10	20	28	32	36	18	18	28	36	40	44	26	26	36	2	2	44	48	52	34	44	2	2	
4'-0"	18	"	"	"	"	"	"	"	20	"	"	"	"	"	28	"	"	"	"	"	"	"	"	"	"	"	"	44	"	"	"	"
4'-3"	19	"	"	"	"	"	"	"	24	"	"	"	"	"	32	"	"	"	"	"	"	"	"	"	"	"	"	48	"	"	"	"
4'-6"	20	"	"	"	"	"	"	"	26	"	"	"	"	"	34	"	"	"	"	"	"	"	"	"	"	"	"	48	"	"	"	"
4'-9"	21	"	"	"	"	"	"	"	26	"	"	"	"	"	34	"	"	"	"	"	"	"	"	"	"	"	"	50	"	"	"	"
5'-0"	21	"	"	"	"	"	"	"	26	"	"	"	"	"	34	"	"	"	"	"	"	"	"	"	"	"	"	50	"	"	"	"
5'-3"	23	"	"	"	"	"	"	"	28	"	"	"	"	"	36	"	"	"	"	"	"	"	"	"	"	"	"	50	"	"	"	"
5'-6"	23	"	"	"	"	"	"	"	28	"	"	"	"	"	36	"	"	"	"	"	"	"	"	"	"	"	"	52	"	"	"	"
5'-9"	25	"	"	"	"	"	"	"	30	"	"	"	"	"	38	"	"	"	"	"	"	"	"	"	"	"	"	52	"	"	"	"
6'-0"	25	"	"	"	"	"	"	"	30	"	"	"	"	"	38	"	"	"	"	"	"	"	"	"	"	"	"	54	"	"	"	"
6'-3"	26	"	"	"	"	"	"	"	30	"	"	"	"	"	38	"	"	"	"	"	"	"	"	"	"	"	"	54	"	"	"	"
6'-6"	27	"	"	"	"	"	"	"	32	"	"	"	"	"	40	"	"	"	"	"	"	"	"	"	"	"	"	56	"	"	"	"
6'-9"	27	"	"	"	"	"	"	"	32	"	"	"	"	"	40	"	"	"	"	"	"	"	"	"	"	"	"	56	"	"	"	"
7'-0"	29	"	"	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	"	"	"	"	"	"	"	58	"	"	"	"
7'-3"	29	"	"	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	"	"	"	"	"	"	"	58	"	"	"	"
7'-6"	30	"	"	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	"	"	"	"	"	"	"	58	"	"	"	"
7'-9"	31	"	"	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	"	"	"	"	"	"	"	60	"	"	"	"
8'-0"	31	"	"	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	"	"	"	"	"	"	"	60	"	"	"	"
8'-3"	32	"	"	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	"	"	"	"	"	"	"	60	"	"	"	"
8'-6"	33	"	"	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	"	"	"	"	"	"	"	62	"	"	"	"
8'-9"	34	"	"	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	"	"	"	"	"	"	"	62	"	"	"	"
9'-0"	35	"	"	"	"	"	"	"	40	"	"	"	"	"	48	"	"	"	"	"	"	"	"	"	"	"	"	64	"	"	"	"
9'-3"	36	"	"	"	"	"	"	"	40	"	"	"	"	"	48	"	"	"	"	"	"	"	"	"	"	"	"	64	"	"	"	"
9'-6"	37	"	"	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	"	"	"	"	"	"	"	66	"	"	"	"
10'-0"	38	"	"	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	"	"	"	"	"	"	"	66	"	"	"	"

NOTE:
 FOR CONVENIENCE, DEPTHS OF INLETS SHOWN IN ABOVE TABLES ARE IN INCREMENTS OF 3 INCHES BUT ANY DEPTHS OTHER THAN THOSE SHOWN ABOVE MAY BE USED WHEREVER DEEMED NECESSARY. QUANTITIES FOR OTHER DEPTHS FALLING WITHIN THE LIMITS OF THE TABLE MAY BE FOUND BY INTERPOLATION.

STANDARD DRAWING NO. 6020D		North Central Texas Council of Governments		STANDARD SPECIFICATION REFERENCE 702	
STANDARD DRAWING NO. 6020D				DATE OCT. '04	
STANDARD DRAWING NO. 6020D		CURB INLET		STANDARD DRAWING NO. 6020D	
STANDARD DRAWING NO. 6020D		BILL OF REINFORCING STEEL		STANDARD DRAWING NO. 6020D	

SUMMARY OF QUANTITIES FOR CURB INLETS

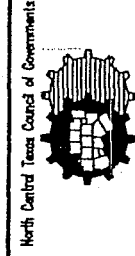
DEPTH "D"	SUMMARY OF QUANTITIES FOR CURB INLETS																				
	5'-0" OPENING				15'-0" OPENING				20'-0" OPENING												
	WIDTH 3'-0"	CONC C.Y.	STEEL LBS.	WIDTH 4'-0"	CONC C.Y.	STEEL LBS.	WIDTH 5'-0"	CONC C.Y.	STEEL LBS.	WIDTH 3'-0"	CONC C.Y.	STEEL LBS.	WIDTH 4'-0"	CONC C.Y.	STEEL LBS.	WIDTH 5'-0"	CONC C.Y.	STEEL LBS.			
3'-6"	2.62	306	332	3.28	373	412	479	4.64	521	5.20	564	6.40	721	7.10	775	7.20	846	8.11	909	9.03	976
3'-9"	2.70	309	341	3.39	373	4.25	494	4.78	536	5.34	579	6.58	741	7.30	796	7.42	874	8.34	937	9.27	1010
4'-0"	2.78	328	364	3.49	399	4.38	518	4.92	565	5.49	610	6.77	776	7.49	835	7.64	909	8.58	976	9.51	1046
4'-3"	2.87	334	370	3.59	406	4.51	526	5.06	573	5.64	619	6.22	729	7.69	847	7.87	922	8.81	990	9.75	1061
4'-6"	2.95	356	394	3.69	431	4.64	558	5.20	607	5.79	656	7.14	830	7.88	891	8.09	973	9.04	1043	9.99	1115
4'-9"	3.03	361	410	3.79	438	4.77	566	5.34	616	5.94	665	7.32	841	8.07	903	8.31	986	9.27	1056	10.23	1129
5'-0"	3.12	367	416	3.90	445	4.90	574	5.47	624	6.09	674	7.51	853	8.27	915	8.53	999	9.50	1070	10.47	1144
5'-3"	3.20	383	424	4.00	465	5.03	600	5.61	652	6.23	704	7.69	890	8.46	955	8.76	1044	9.73	1118	10.71	1194
5'-6"	3.28	389	430	4.10	472	5.16	608	5.75	661	6.38	713	7.11	837	7.88	866	8.98	1057	9.97	1131	10.95	1208
5'-9"	3.37	405	451	4.20	495	5.29	635	5.89	690	6.53	744	7.28	874	8.07	940	8.85	1007	9.20	1102	10.20	1178
6'-0"	3.45	415	460	4.30	504	5.42	646	6.03	702	6.68	757	7.45	888	8.25	954	9.05	1022	9.42	1119	10.43	1196
6'-3"	3.53	425	470	4.41	515	5.55	661	6.17	718	6.83	773	7.63	908	8.44	975	9.24	1044	9.64	1147	10.66	1223
6'-6"	3.62	437	486	4.51	532	5.68	681	6.31	739	6.97	797	7.81	935	8.62	1005	9.43	1057	9.87	1178	10.89	1258
6'-9"	3.70	441	490	4.61	537	5.81	688	6.45	747	7.12	806	7.98	945	8.81	1015	9.63	1066	10.09	1191	11.12	1272
7'-0"	3.78	460	510	4.71	560	5.94	716	6.59	777	7.27	837	8.16	981	8.99	1053	9.82	1126	10.31	1237	11.35	1319
7'-3"	3.86	465	516	4.81	567	6.07	724	6.72	785	7.42	846	8.33	992	9.18	1065	10.02	1138	10.53	1249	11.59	1333
7'-6"	3.95	477	529	4.91	570	6.20	742	6.86	804	7.57	866	8.51	1016	9.36	1089	10.21	1163	10.75	1290	11.82	1365
7'-9"	4.03	491	544	5.02	597	6.33	762	7.00	826	7.71	890	8.67	1040	9.55	1116	10.41	1193	10.98	1313	12.05	1399
8'-0"	4.12	496	550	5.12	604	6.46	770	7.14	834	7.86	899	8.86	1051	9.73	1129	10.60	1205	11.20	1325	12.28	1412
8'-3"	4.20	504	559	5.22	613	6.59	784	7.28	849	8.01	915	9.04	1069	9.92	1149	10.80	1228	11.42	1353	12.51	1440
8'-6"	4.28	519	576	5.32	632	6.71	804	7.42	871	8.16	938	9.21	1107	10.10	1176	10.99	1257	11.64	1385	12.74	1474
8'-9"	4.37	528	586	5.42	643	6.84	819	7.56	886	8.31	954	9.39	1119	10.29	1199	11.18	1280	11.87	1410	12.97	1500
9'-0"	4.45	545	605	5.53	664	6.97	842	7.70	912	8.46	982	9.56	1148	10.47	1231	11.38	1313	12.09	1447	13.21	1539
9'-3"	4.53	554	614	5.63	674	7.10	858	7.84	929	8.60	999	9.74	1169	10.66	1252	11.57	1335	12.31	1474	13.44	1563
9'-6"	4.62	568	630	5.73	692	7.23	878	7.97	950	8.75	1022	9.92	1195	10.84	1280	11.77	1365	12.53	1505	13.67	1600
10'-0"	4.78	582	645	5.93	708	7.49	900	8.11	974	9.05	1048	10.27	1227	11.21	1312	12.16	1399	12.98	1546	14.13	1642

NOTE.

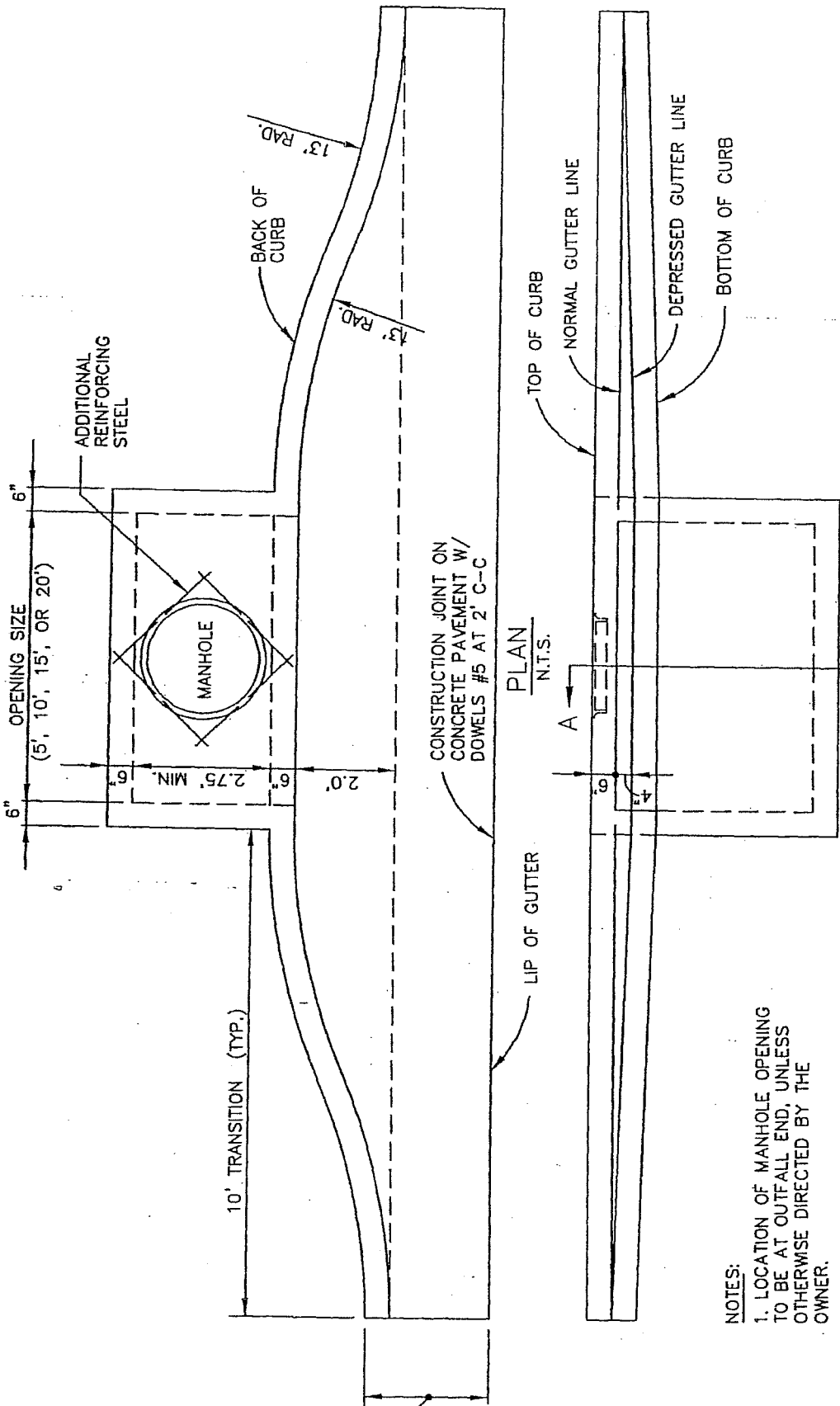
FOR CONVENIENCE, DEPTHS OF INLETS SHOWN IN ABOVE TABLES ARE IN INCREMENTS OF 3 INCHES BUT ANY DEPTHS OTHER THAN THOSE SHOWN ABOVE MAY BE USED WHEREVER DEEMED NECESSARY. QUANTITIES FOR OTHER DEPTHS FALLING WITHIN THE LIMITS OF THE TABLE MAY BE FOUND BY INTERPOLATION.

STANDARD DRAWING NO.
6020E

CURB INLET
SUMMARY OF QUANTITIES



STANDARD SPECIFICATION REFERENCE
702
DATE
OCT. '04
STANDARD DRAWING NO.
6020E



CONSTRUCTION JOINT ON
CONCRETE PAVEMENT W/
DOWELS #5 AT 2' C-C

PLAN
N.T.S.

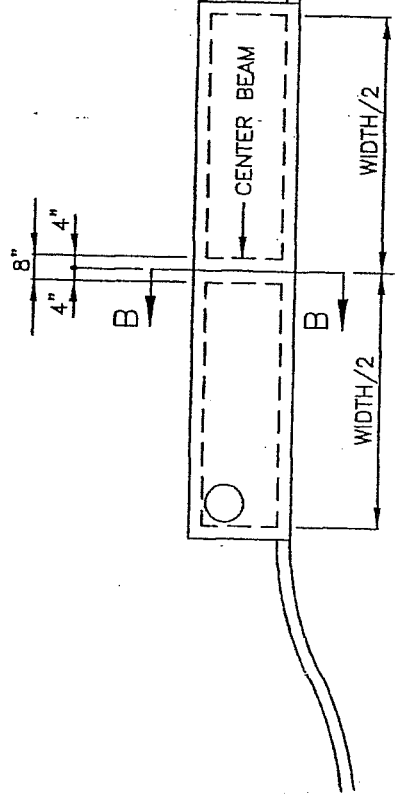
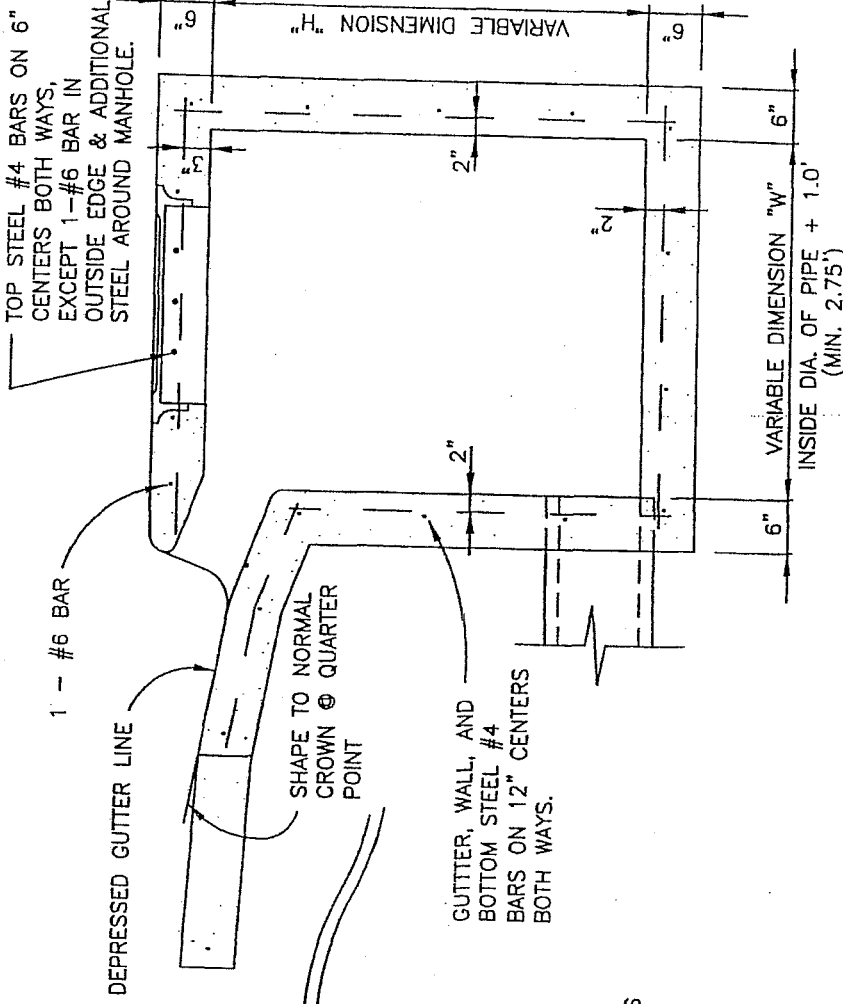
ELEVATION
N.T.S.

- NOTES:
1. LOCATION OF MANHOLE OPENING TO BE AT OUTFALL END, UNLESS OTHERWISE DIRECTED BY THE OWNER.
 2. IF INLET OPENING IS OVER 10' WIDTH, THEN THERE SHALL BE A MANHOLE OPENING AT EACH END OF INLET.

STANDARD SPECIFICATION REFERENCE	702
DATE	OCT. '04
STANDARD DRAWING NO.	6030A



CURB INLET RECESSED
5', 10', 15' OR 20' OPENING



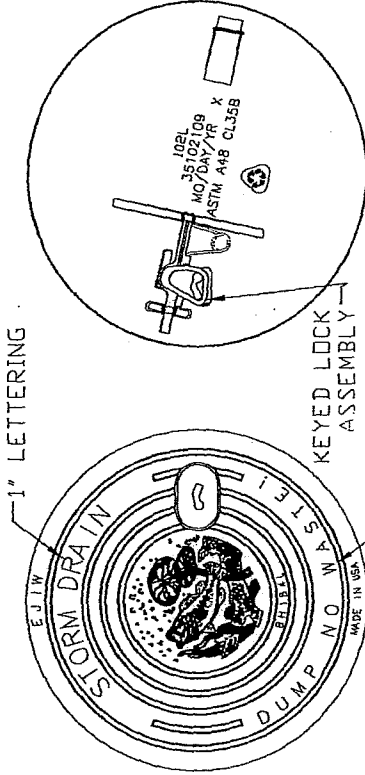
CENTER BEAM FOR 15' AND 20' INLETS
N.T.S.

STANDARD SPECIFICATION REFERENCE	702
DATE	OCT. '04
STANDARD DRAWING NO.	6030B

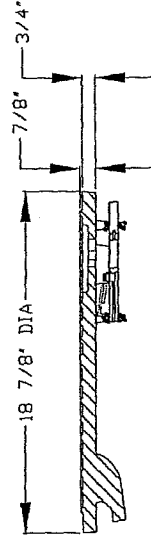
North Central Texas Council of Governments

CURB INLET RECESSED
CROSS SECTION & CENTER BEAM

EJW EAST JORDAN IRON WORKS EST. 1953 800-626-4653 WWW.EJW.COM MADE IN USA	
PRODUCT NUMBER	35102209
CATALOG NUMBER	102 LOCK
LOCK COVER ASSEMBLY	
LOAD RATING	LIGHT DUTY
COATING	DIPPED
ESTIMATED WEIGHT	COVER: 60 LBS 27kg
MATERIAL SPECIFICATION	COVER - GRAY IRON ASTM A48 CL35B
OPEN AREA	N/A
DESIGNATES MACHINED SURFACE	
DRAWN DATE	10/16/06
LAST REVISED DATE	07/13/07
REFERENCE INFORMATION	35102110

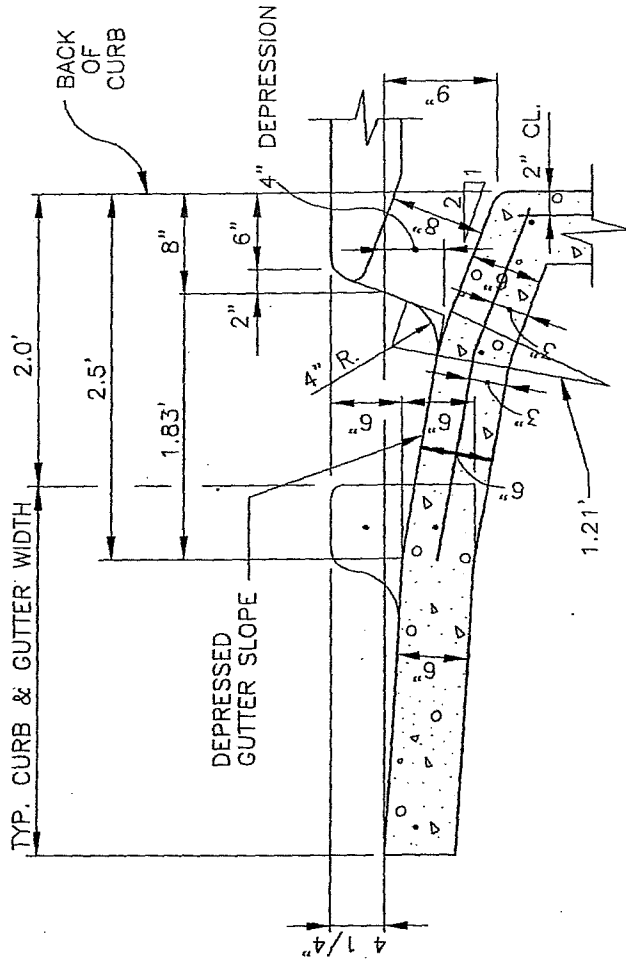


BOTTOM VIEW



COVER SECTION

MANHOLE FRAME & COVER
N.T.S.



INLET THROAT
N.T.S.

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BY - CITY OF MELISSA, TEXAS



CURB INLET RECESSED
INLET THROAT & M.H. FRAME & COVER

STANDARD SPECIFICATION REFERENCE	702
DATE	02/03/09
STANDARD DRAWING NO.	6030CM*

STANDARD DRAWING NO. 6030CM*

GENERAL NOTES:

1. IN GENERAL, REINFORCING STEEL SHALL BE #4 BARS ON 12" CENTERS BOTH WAYS FOR GUTTER, BOTTOM SLAB ENDS, FRONT AND BACK WALLS, AND #4 BARS ON 6" CENTERS BOTH WAYS FOR TOP SLAB. AN ADDITIONAL #6 BAR SHALL BE PLACED IN THE FRONT EDGE OF THE TOP SLAB IN THE INLETS AND ADDITIONAL REINFORCING STEEL SHALL BE PLACED AROUND MANHOLES AS SHOWN.
2. ALL REINFORCING STEEL SHALL BE GRADE 60.
3. ALL CONCRETE SHALL BE CLASS "A". ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
4. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 2" TO THE CENTERS OF THE BARS.
5. 10'-0" OF EXISTING CURB AND GUTTER UPSTREAM AND 10'-0" OF EXISTING CURB AND GUTTER DOWNSTREAM SHALL BE REMOVED AND REPOURED INTEGRALLY WITH EACH INLET.
6. ALL BACK FILLING SHALL BE PERFORMED BY MECHANICAL TAMPING TO 90% STANDARD PROCTOR DENSITY.

CURB INLET RECESSED

GENERAL NOTES

North Central Texas Council of Governments

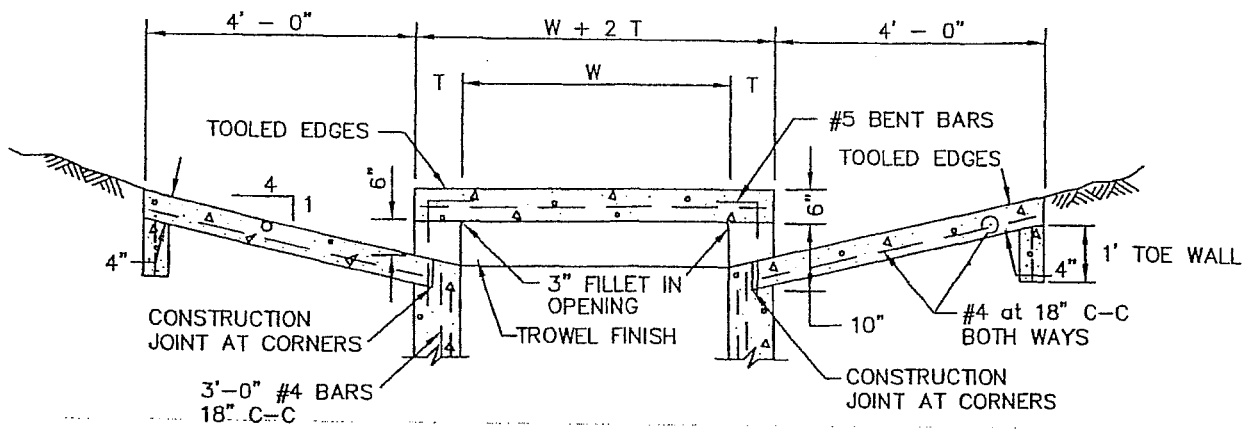


STANDARD SPECIFICATION REFERENCE
702

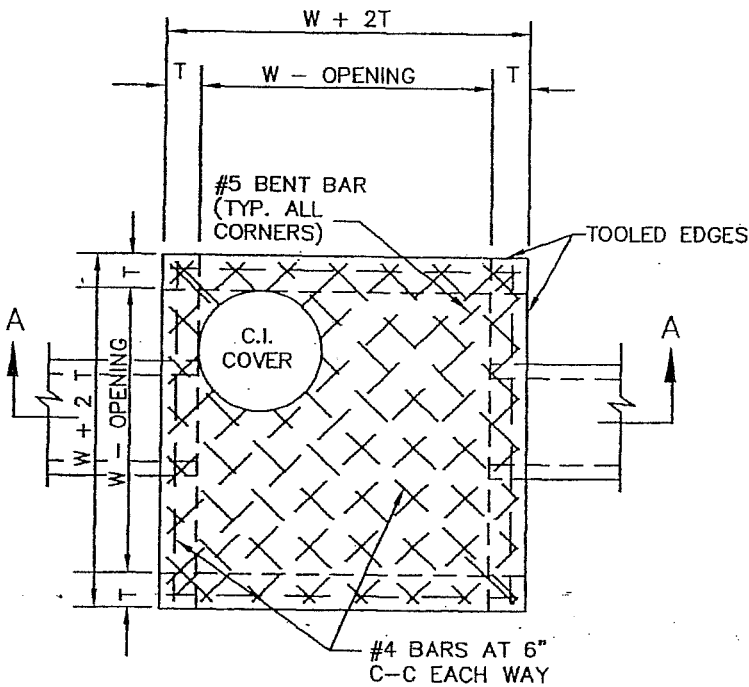
DATE
OCT. '04

STANDARD DRAWING NO.
6030D

STANDARD DRAWING NO.
6030D



SECTION "A-A"
N.T.S.



PLAN OF TOP SLAB
N.T.S.

INLET SIZE	T	W
2' SQUARE	7"	2'-0"
4' SQUARE	7"	4'-0"
5' SQUARE	8"	5'-0"
6' SQUARE	9"	6'-0"

NOTES:

1. MATERIAL AND WORKMANSHIP SHALL CONFORM WITH THE REQUIREMENTS OF NCTCOG STANDARD SPECIFICATIONS FOR STANDARD CONCRETE MANHOLES. MINIMUM CLASS "A" CONCRETE.
2. LAYERS OF REINFORCING STEEL NEAREST THE INTERIOR AND EXTERIOR SURFACES SHALL HAVE A COVER OF 2" TO THE CENTER OF BARS, UNLESS OTHERWISE NOTED.
3. FOR DETAILS OF REINFORCING OF LOWER PORTIONS OF INLET SEE APPROPRIATE SQUARE MANHOLE DETAILS.
4. DEPTH OF DROP INLET FROM FINISHED GRADE TO FLOW LINE OF INLET IS VARIABLE. APPROXIMATE DEPTH WILL BE SHOWN ON PLANS AT LOCATION OF INLET.
5. ALL STANDARD DROP INLETS SHALL HAVE ONE OPENING ON EACH SIDE UNLESS OTHERWISE SHOWN ON PLANS.
6. DECK MAY BE REINFORCED SAME AS 4' SQUARE MANHOLE.

DROP INLET

2', 4', 5' OR 6' SQUARE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

702

DATE

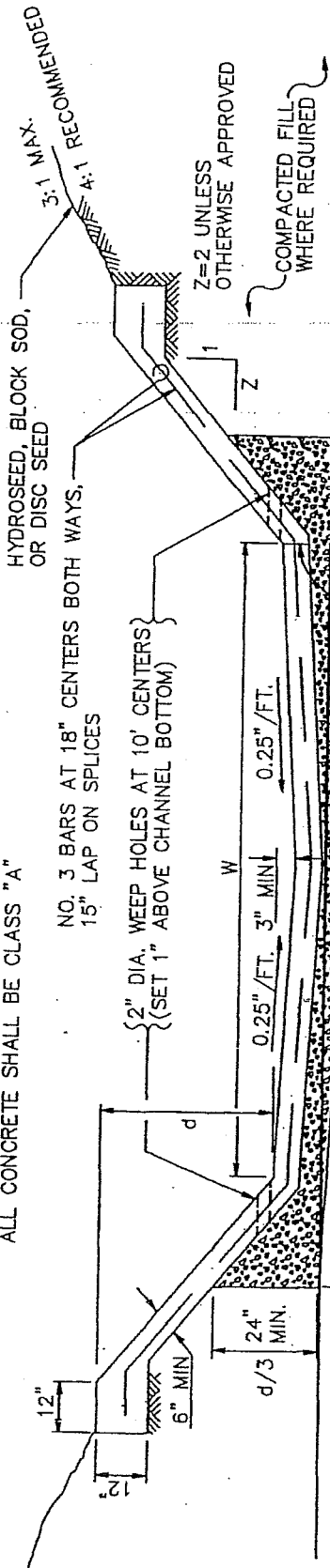
OCT. '04

STANDARD DRAWING NO.

6040

FILL AREAS SHALL BE COMPACTED TO 95% STD. PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT PRIOR TO CHANNEL EXCAVATION.

ALL CONCRETE SHALL BE CLASS "A"



HYDROSEED, BLOCK SOD, OR DISC SEED
 3:1 MAX.
 4:1 RECOMMENDED

Z=2 UNLESS OTHERWISE APPROVED

COMPACTED FILL WHERE REQUIRED

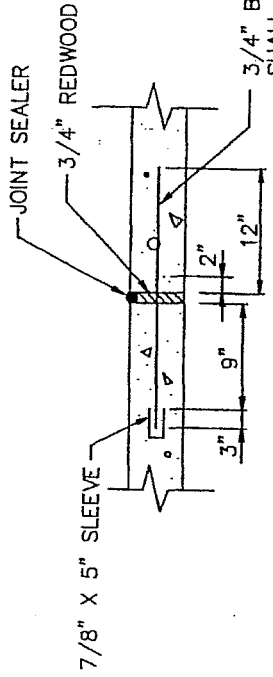
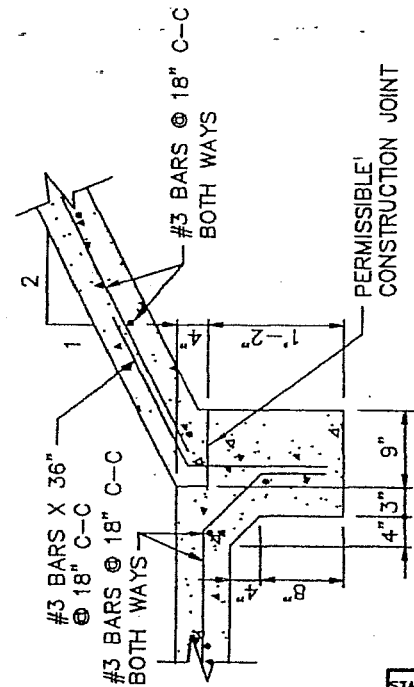
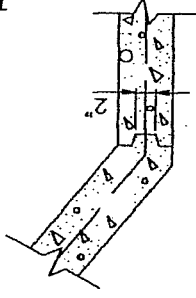
6" MIN. WASHED ROCK WITH CONTINUOUS FILTER FABRIC, UNLESS FABRIC SPECIFICALLY DELETED BY THE OWNER.

NOTE:
 WASHED ROCK SHALL BE GAP GRADED 1 1/2".

CONSTRUCTION JOINT WHERE PERMITTED

REINFORCED CONCRETE CHANNEL SECTION
 N.T.S.

CONSTRUCTION JOINT
 N.T.S.



3/4" BARS @ 21" C-C SHALL SERVE AS DOWELS. DOWELS SHALL BE ASPHALT COATED 12" ON FREE END.

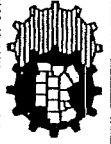
TRANSVERSE EXPANSION JOINT

SPACE 100' C-C AND USE AT ENDS OF CURVES - P.C. AND P.T. N.T.S.

ALTERNATE CONSTRUCTION JOINT
 N.T.S.

FULL CHANNEL LINING CONCRETE REINFORCED

North Central Texas Council of Governments

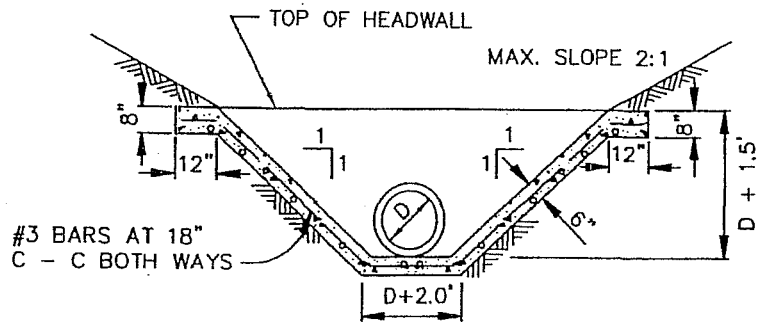


STANDARD SPECIFICATION REFERENCE
 803.3

DATE
 OCT. '04

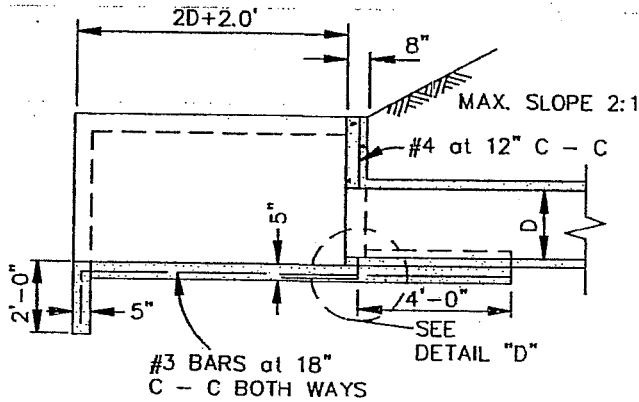
STANDARD DRAWING NO.
 6050

STANDARD DRAWING NO.
 6050



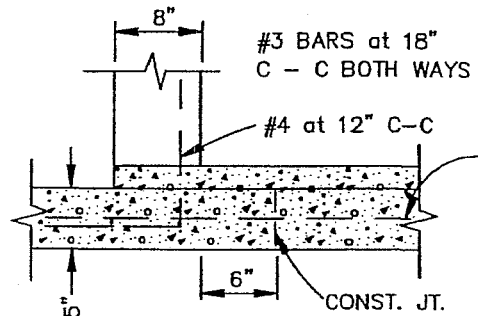
SECTION "B-B"

N.T.S.



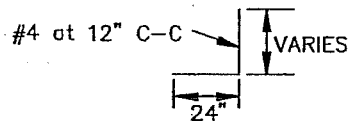
SECTION "A-A"

N.T.S.



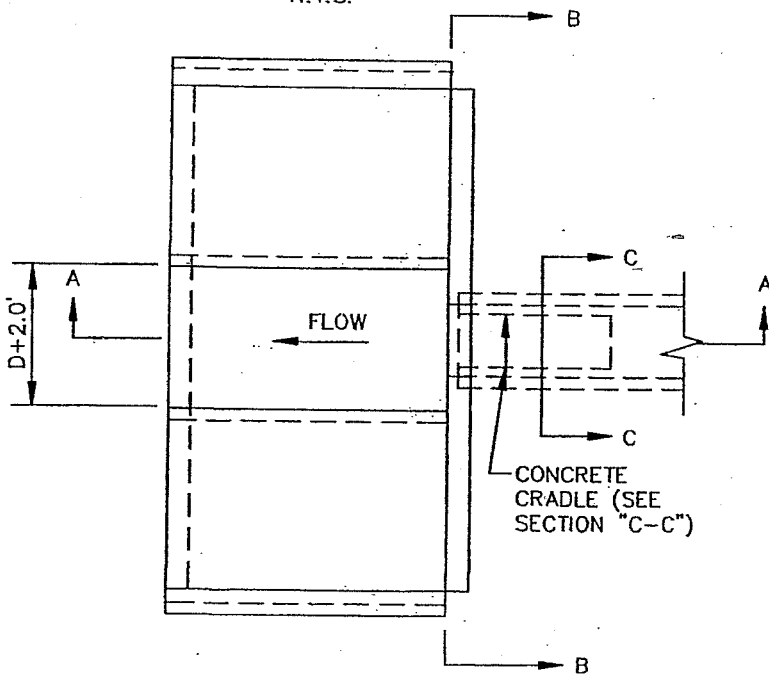
DETAIL "D"

N.T.S.



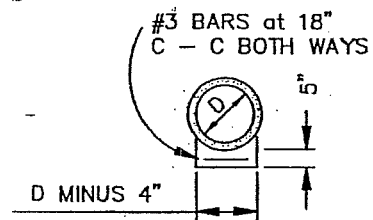
BAR DETAIL

N.T.S.



PLAN

N.T.S.



SECTION "C-C"

N.T.S.

NOTE:

CONCRETE SHALL BE CLASS "A"

CONCRETE APRON
VERTICAL HEADWALL

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

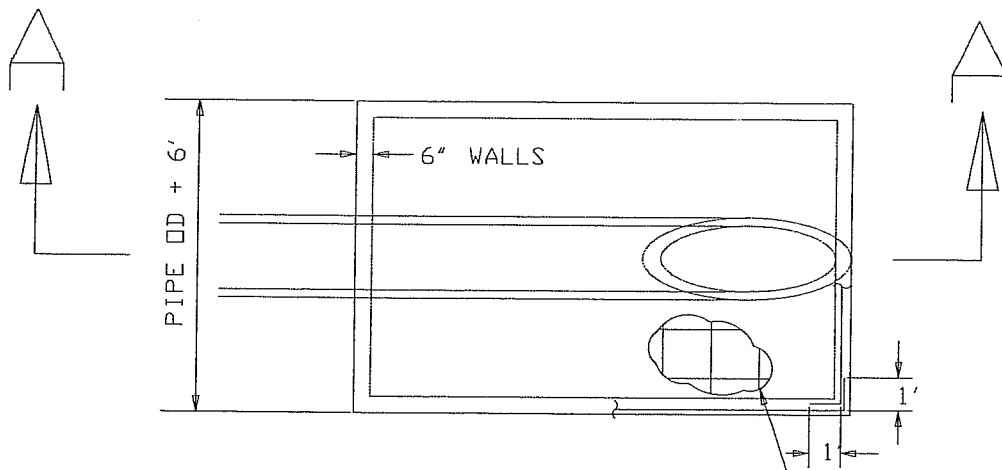
803.3

DATE

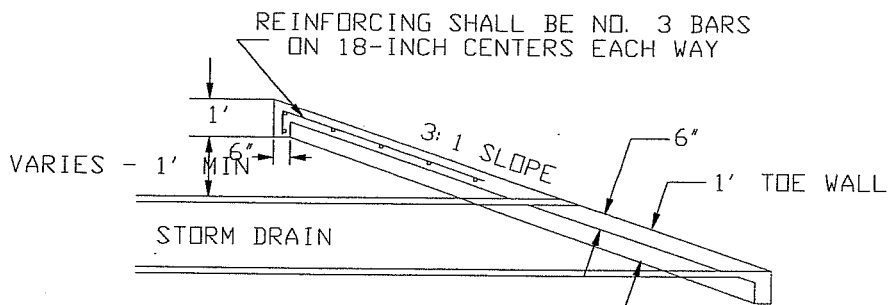
OCT. '04

STANDARD DRAWING NO.

6060



REINFORCING SHALL BE NO. 3 BARS
ON 18-INCH CENTERS EACH WAY



SECTION A-A

NOTE:

CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.

M* - CITY OF MELISSA REVISION

NCTCOG STANDARD SPECIFICATION REFERENCE

SLOPED END HEADWALL

CITY OF MELISSA, TEXAS

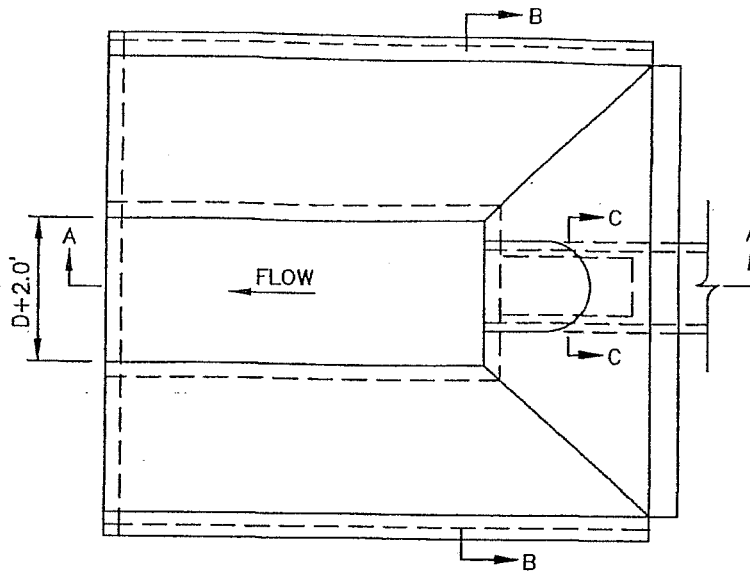


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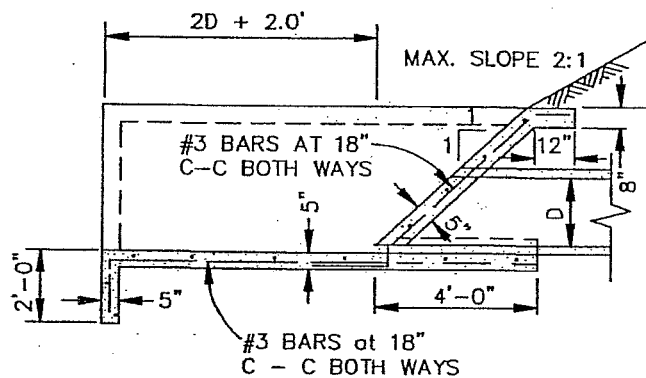
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STANDARD DRAWING NO.

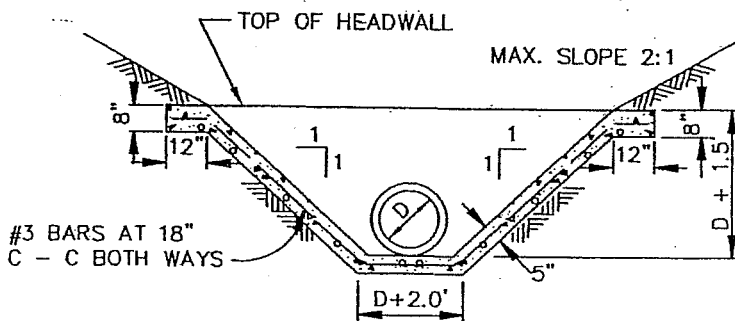
6070AM*



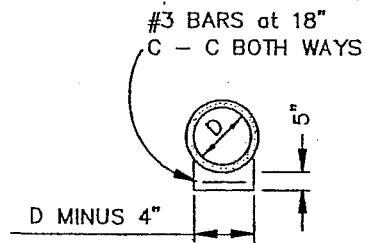
PLAN
N.T.S.



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.



SECTION C-C
N.T.S.

NOTE:
CONCRETE SHALL BE CLASS "A".

CONCRETE APRON
SLOPING HEADWALL

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

803.3

DATE
OCT. '04

STANDARD DRAWING NO.
6070

1. MANHOLE SPACING FOR TRUNK LINES IS AS FOLLOWS:
 - 400' MAX. SPACING FOR UP TO 8" DIAMETER PIPE.
 - 500' MAX. SPACING FOR PIPE 10" THROUGH 15" IN DIAMETER.
 - 800' MAX. SPACING FOR PIPE 16" THROUGH 30" IN DIAMETER.
 - 1000' MAX. SPACING FOR PIPE 31" THROUGH 48" IN DIAMETER.
 - 2000' MAX. SPACING FOR PIPE 54" AND LARGER.
 - AT ALL LOCATIONS WHERE DIAMETER OF PIPE CHANGES.
 - AT ALL LOCATIONS WHERE HORIZONTAL AND VERTICAL ALIGNMENT CHANGES.
 - AT THE ENDS OF ALL MAINS LONGER THAN 400'.
 - AT LATERAL CONNECTIONS 6" AND LARGER.
2. THE MAXIMUM ALLOWABLE MANHOLE SPACING IN SUBDIVISIONS IS 400'. MAXIMUM ALLOWABLE MANHOLE SPACING FOR SEWER LINES WITH HORIZONTAL CURVATURE SHALL BE 300 FEET. A MANHOLE SHALL BE LOCATED AT THE PC AND PT OF THE CURVE.
3. ALL MANHOLES SHALL HAVE A 30" OPENNING.
4. THERE SHALL BE A MINIMUM OF 0.10 FEET IN FLOW LINE DROP AT EACH MANHOLE.
5. WHERE SEWER LINES ENTER THE MANHOLE HIGHER THAN 24 INCHES, ABOVE THE MANHOLE INVERT, THE INVERT SHALL BE FILLED TO PREVENT SOLIDS DEPOSITION.
6. A DROP PIPE SHALL BE PROVIDED FOR A SEWER ENTERING A MANHOLE MORE THAN 18 INCHES ABOVE THE INVERT. IF THE DROP PIPE IS INSIDE THE MANHOLE, A MINIMUM OF 48 INCHES OF CLEAR SPACE SHALL BE MAINTAINED AND THE DROP SHALL BE PERMANENTLY AFFIXED TO THE WALL OF THE MANHOLE.
7. MANHOLES 10 FEET DEEP SHALL BE A MINIMUM OF 60-INCH DIAMETER, AT THE FLOW LINE AND ECCENTRIC WITH ONE VERTICAL WALL.
8. WHEN ECCENTRIC CONES ARE SPECIFIED, THE VERTICAL WALL SHALL BE ALIGNED WITH THE OUTGOING (DOWNSTREAM) PIPE.
9. PIPE MATERIAL SHALL BE AS FOLLOWS:
 - FOR PIPE 6" THROUGH 15" DIAM. USE SDR-35 PVC (LESS THAN 10' DEEP).
 - FOR PIPE 6" THROUGH 15" DIAM. USE SDR-26 PVC. (MORE THAN 10' DEEP).
 - FOR PIPE 16" DIAM. AND LARGER USE ASTM F679.
10. THE INTERIOR OF ALL WASTEWATER MANHOLES SHALL BE COATED WITH AN APPROVED CORROSION-RESISTANT EPOXY COATING SUCH AS RAVEN 405, OR AN APPROVED EQUAL, NUMBER AND THICKNESS OF COATINGS AS RECOMMENDED BY THE MANUFACTURER.
11. ALL TESTING SHALL CONFORM TO THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION PUBLISHED BY THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG).
12. ALL WASTEWATER LINES SIX (6) INCHES OR LARGER SHALL BE AIR, AND MANDREL TESTED, UPON COMPLETION OF FRANCHISE UTILITIES. TELEVISION INSPECTION SHALL ALSO BE REQUIRED.
13. ALL FORCE MAINS SHALL BE HYDROSTATICALLY TESTED.
14. ALL WASTEWATER MANHOLES SHALL BE VACUUM TESTED.
15. SEWER LINES 12 INCHES AND LARGER WILL REQUIRE AN AS-BUILT SURVEY FOR COMPARISON TO THE DESIGN. THE TOLERANCES ALLOWED ARE AS FOLLOWS:
 - FLOW LINE: ± 0.10 FROM THE DESIGN
 - PERCENT SLOPE: $\pm 1\%$ OF THE DESIGN SLOPE
 - MINIMUM ALLOWABLE SLOPES: AS DEFINED BY TCEQ.
16. THE CITY ENGINEER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS IN ADVANCE OF CONSTRUCTION OF ANY AND ALL PUBLIC IMPROVEMENTS.

M* - CITY OF MELISSA REVISION

GENERAL CONSTRUCTION WASTEWATER NOTES



NCTCOG STANDARD SPECIFICATION REFERENCE

DIVISION 500

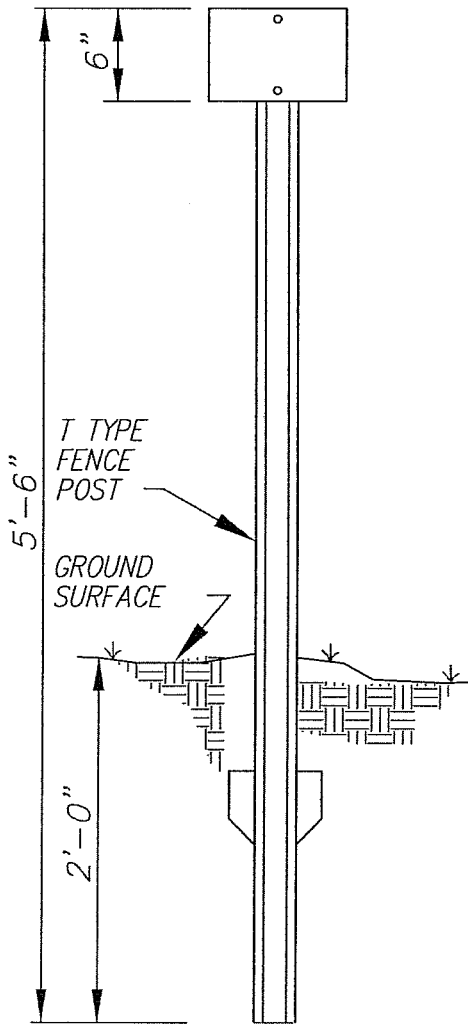
DATE

11/13/08

STANDARD DRAWING NO.

5001M*

CITY OF MELISSA, TEXAS



○
CITY OF MELISSA
SANITARY SEWER
MANHOLE
○

NOTES:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL THE STEEL POST AND MOUNT THE SIGN ON THE POST.
2. THE SIGN SHALL HAVE BLACK LETTERING ON AN ORANGE BACKGROUND.
3. POST SIGNS SHALL BE MOUNTED WITH TWO 1/4" MACHINE BOLTS, LOCK WASHERS AND HEX NUTS.
4. SIGNS SHALL BE PLACED AT BOTH SIDES OF HIGHWAYS, ROADS OR RAILROAD CROSSINGS WHICH EVER THE CASE MAY BE.



TELEVISION REPORT ON SANITARY SEWERS

A. DIGITAL VIDEO DISC (DVD) FORMAT IN COLOR WITH DATA VIEW (ACCURATE FOOTAGE DISPLAYED ON VIDEO). VHS SHALL BE USED IF DVD FORMAT CANNOT BE ACCOMODATED.

B. ALL PERTINENT DATA RECORDED IN AUDIO ON THE MEDIA TO INCLUDE:

1. SUBDIVISION NAME AND PHASE NUMBER.
2. MANHOLE NUMBERS (THESE NUMBERS MUST MATCH MANHOLE NUMBERS ON "AS BUILT" DRAWINGS).
3. DATE
4. SIZE AND MATERIAL OF PIPE.
5. SERVICE CONNECTIONS LOCATIONS RIGHT OR LEFT
6. ALL DISTANCES BETWEEN MANHOLES.
7. LOCATIONS OF SUSPECTED AND OBVIOUS PIPE DEFICIENCIES (i.e. BAD JOINTS, BREAKS OR LEAKS, ETC).

C. PVC PIPE SHALL HAVE A DEFLECTION TEST USING A 5% (GO NO GO) TEST MANDREL OF APPROPRIATE SIZE WHICH SHALL BE VISIBLE ON VIDEO AT ALL TIMES.

D. THE CONTRACTOR WILL ALSO PROVIDE A WRITTEN TELEVISION REPORT (INDICATING MANHOLE NUMBERS) THAT WILL ACCOMPANY THE VIDEO RECORDING. THIS WRITTEN REPORT MUST INCLUDE:

1. MANHOLE NUMBERS (THESE NUMBERS MUST MATCH MANHOLE NUMBERS ON "AS BUILT" DRAWINGS).
2. SERVICE CONNECTION LOCATIONS RIGHT OR LEFT.
3. REFERENCE TO SERVICE CONNECTION LOCATIONS OUT OF MANHOLES.
4. LOCATIONS OF SUSPECTED AND OBVIOUS DEFICIENCIES (i.e. BAD JOINTS, BREAKS, OR LEAKS, ETC).
5. DEPTH OF EACH MANHOLE.
6. ACTUAL MEASURED DISTANCE (ON GROUND) BETWEEN MANHOLES.

E. ALL VISUAL AND TELEVISION INSPECTIONS SHALL BE COMPLETED AND APPROVED BY THE CITY INSPECTOR FROM THE CITY OF MELISSA ENGINEERING DEPARTMENT PRIOR TO PLACING OF ANY PAVEMENT. AN INSPECTOR FROM THE MELISSA ENGINEERING DEPARTMENT MUST WITNESS THE RECORDING. THE ENGINEERING DEPARTMENT SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE FOR SCHEDULING. TELEVISION RECORDINGS MUST CLEARLY SHOW DETAILS OF STRUCTURAL DEFECTS, MISALIGNMENTS AND INFILTRATION. ALL KNOWN OR INDICATED BREAKS SHALL BE REPAIRED BY THE CONTRACTOR, REGARDLESS OF THE TEST ALLOWANCES. FAULTY SECTIONS OF SEWER LINES OR MANHOLES REJECTED BY THE ENGINEER SHALL BE REMOVED AND RELAYED BY THE CONTRACTOR. SUNKEN MANHOLES WILL NOT BE ACCEPTED. ALL MANHOLE INVERTS MUST BE COMPLETED PRIOR TO VIDEO RECORDING.

M* - CITY OF MELISSA REVISION

TELEVISION REPORT SPECIFICATION



NCTCOG STANDARD SPECIFICATION REFERENCE

507.5

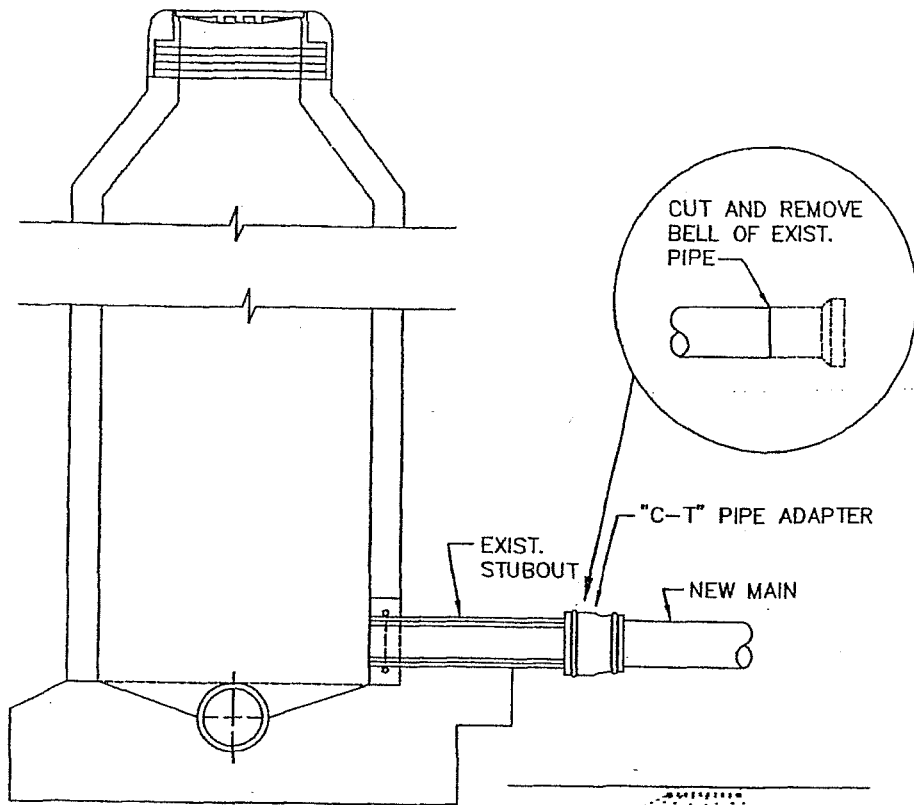
CITY OF MELISSA TEXAS

DATE

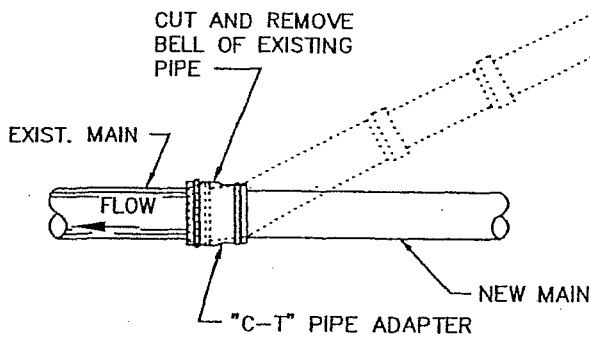
STANDARD DRAWING NO.

11/17/08

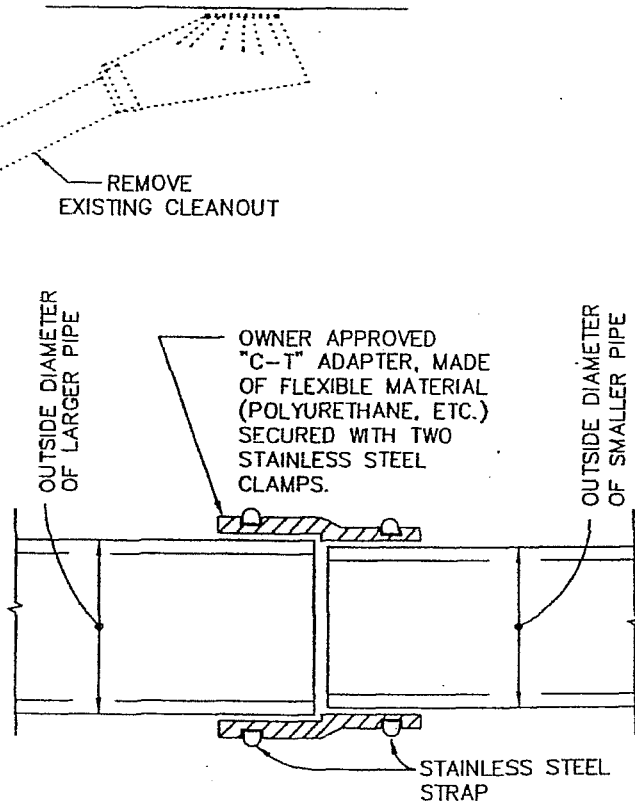
5007A



AT STUBOUT
N.T.S.



AT CLEANOUT
N.T.S.



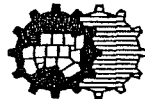
"C-T" PIPE ADAPTER
N.T.S.

NOTE:
THIS DETAIL FOR USE ONLY WHEN NEW MAIN WILL NOT MATE WITH EXISTING MAIN JOINT DUE TO DIFFERENT DIMENSIONS OR MATERIALS AND A MANHOLE IS NOT REQUIRED.

WASTEWATER MAIN TIE-IN

AT CLEANOUT OR M.H. STUBOUT

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

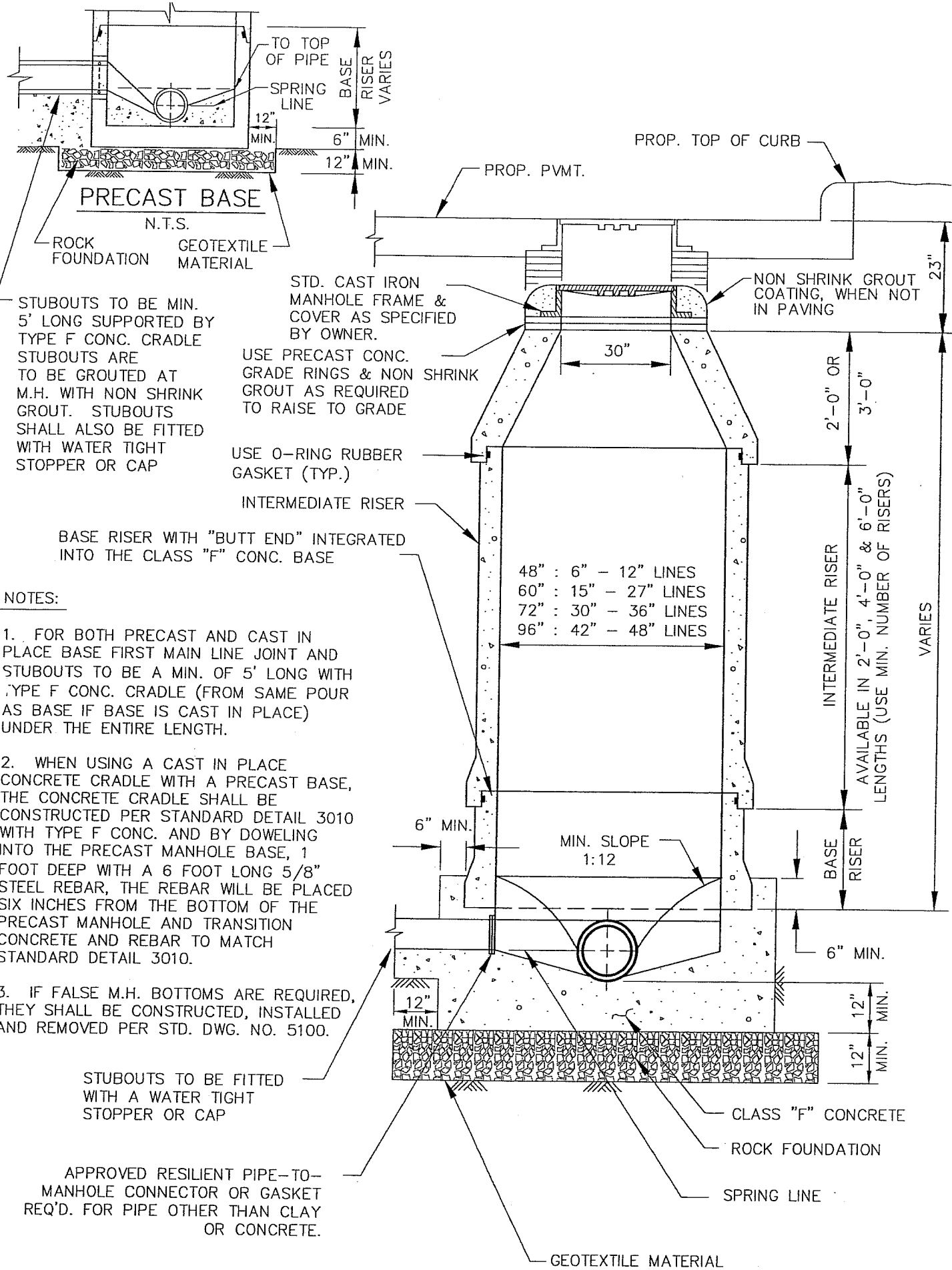
502.10

DATE

OCT. '04

STANDARD DRAWING NO.

5010



STUBOUTS TO BE MIN. 5' LONG SUPPORTED BY TYPE F CONC. CRADLE STUBOUTS ARE TO BE GROUTED AT M.H. WITH NON SHRINK GROUT. STUBOUTS SHALL ALSO BE FITTED WITH WATER TIGHT STOPPER OR CAP

STD. CAST IRON MANHOLE FRAME & COVER AS SPECIFIED BY OWNER.
USE PRECAST CONC. GRADE RINGS & NON SHRINK GROUT TO RAISE TO GRADE

USE O-RING RUBBER GASKET (TYP.)
INTERMEDIATE RISER

BASE RISER WITH "BUTT END" INTEGRATED INTO THE CLASS "F" CONC. BASE

NOTES:

1. FOR BOTH PRECAST AND CAST IN PLACE BASE FIRST MAIN LINE JOINT AND STUBOUTS TO BE A MIN. OF 5' LONG WITH TYPE F CONC. CRADLE (FROM SAME POUR AS BASE IF BASE IS CAST IN PLACE) UNDER THE ENTIRE LENGTH.
2. WHEN USING A CAST IN PLACE CONCRETE CRADLE WITH A PRECAST BASE, THE CONCRETE CRADLE SHALL BE CONSTRUCTED PER STANDARD DETAIL 3010 WITH TYPE F CONC. AND BY DOWELING INTO THE PRECAST MANHOLE BASE, 1 FOOT DEEP WITH A 6 FOOT LONG 5/8" STEEL REBAR, THE REBAR WILL BE PLACED SIX INCHES FROM THE BOTTOM OF THE PRECAST MANHOLE AND TRANSITION CONCRETE AND REBAR TO MATCH STANDARD DETAIL 3010.
3. IF FALSE M.H. BOTTOMS ARE REQUIRED, THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED PER STD. DWG. NO. 5100.

STUBOUTS TO BE FITTED WITH A WATER TIGHT STOPPER OR CAP

APPROVED RESILIENT PIPE-TO-MANHOLE CONNECTOR OR GASKET REQ'D. FOR PIPE OTHER THAN CLAY OR CONCRETE.

M* - CITY OF MELISSA REVISION

WASTEWATER MANHOLE

PRECAST



NCTCOG STANDARD SPECIFICATION REFERENCE

502.1

DATE 11/13/08 STANDARD DRAWING NO. 5020M*

ADJUSTABLE FRAME

← ROOF OPTIONS →
N.T.S.

FRAME CAST IN CONC.

1/2" NON SHRINK
GROUT COATING

STD. M.H. FRAME & COVER
AS SPECIFIED BY OWNER

STD. M.H. FRAME & COVER
AS SPECIFIED BY OWNER

24"
OR
36"

30"

30"

USE PRECAST CONCRETE
GRADE RINGS & NON
SHRINK GROUT AS
REQUIRED TO RAISE
TO GRADE.
(MIN. 4 COURSES)

FOR 5' & 6' DIA. M.H.'S
SEE TRANSITION DETAIL

VARIES

6" MIN.

8" MIN.

12"
MIN.

12"
MIN.

48" : 6"-12" LINES
60" : 15"-27" LINES
72" : 30"-36" LINES

CLASS "F" CONCRETE
MONOLITHIC POUR

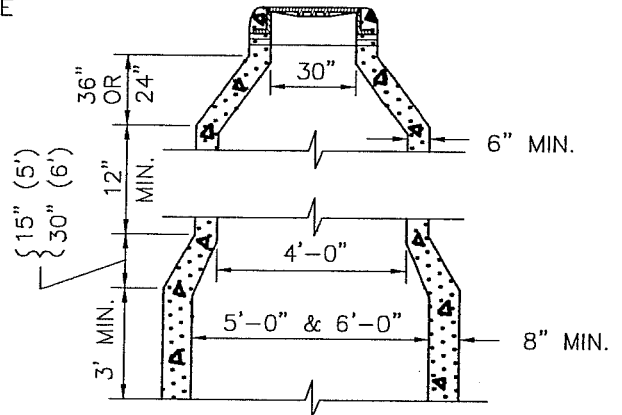
GEOTEXTILE
MATERIAL

ROCK FOUNDATION
MATERIAL

NOTES

1. WHERE M.H.'S ARE IN "PROPOSED" PAVING, FRAME & COVER SHALL BE SET 23" BELOW THE PROPOSED PAVEMENT GRADE.
2. IF FALSE M.H. BOTTOMS ARE REQUIRED THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED. PER STD. DWG. NO. 5100.

FIRST MAIN LINE JOINT TO BE A MIN. OF 5' LONG WITH CONC. CRADLE (FROM SAME POUR AS BASE) UNDER ENTIRE LENGTH.

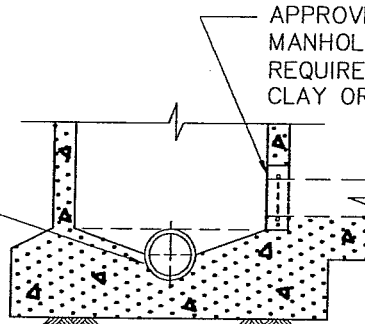


TRANSITION DETAIL FOR
5' & 6' DIA. M.H.'S

N.T.S.

APPROVED RESILIENT PIPE-TO-MANHOLE CONNECTOR OR GASKET REQUIRED FOR PIPE OTHER THAN CLAY OR CONCRETE.

STUBOUT TO BE FITTED WITH WATERTIGHT STOPPER OR CAP
STUBOUTS TO BE A MIN. OF 5' LONG WITH CONC. CRADLE (FROM SAME POUR) UNDER ENTIRE LENGTH



STUBOUT CONNECTION

N.T.S.

WASTEWATER MANHOLE

CAST-IN-PLACE



M* - CITY OF MELISSA REVISION

NCTCOG STANDARD SPECIFICATION REFERENCE

502.1

DATE

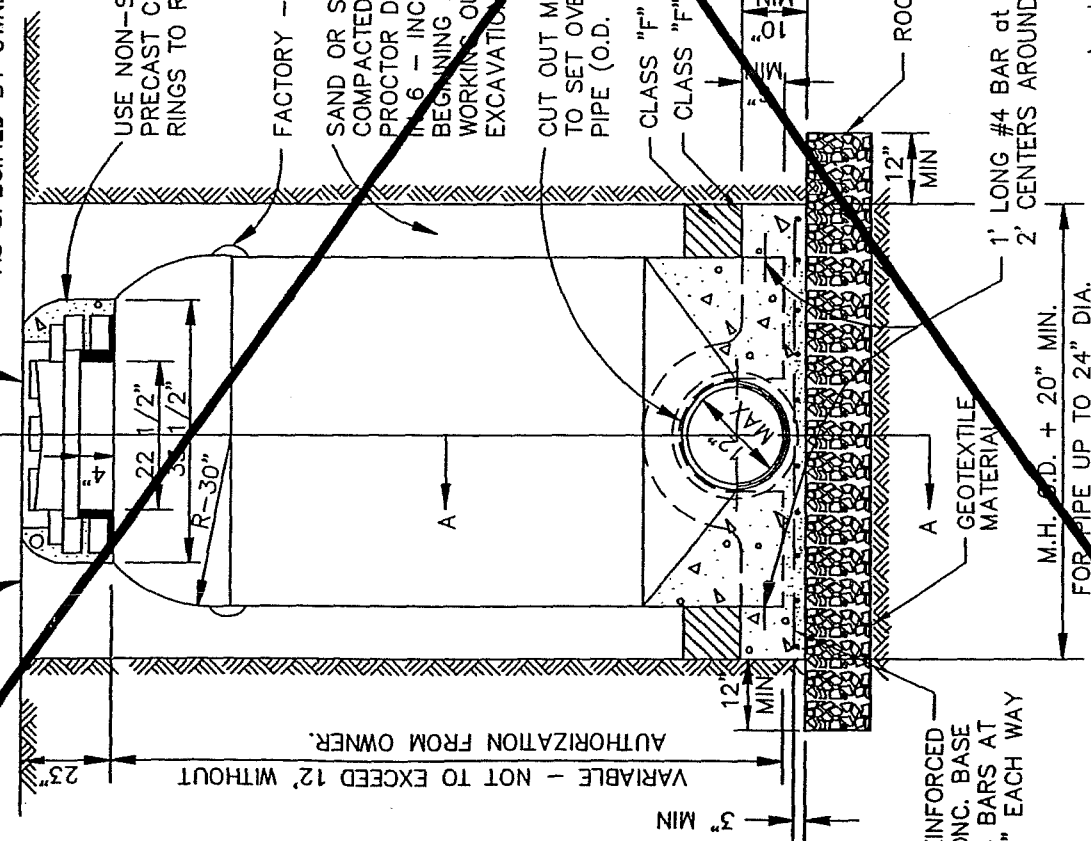
11/17/08

STANDARD DRAWING NO.

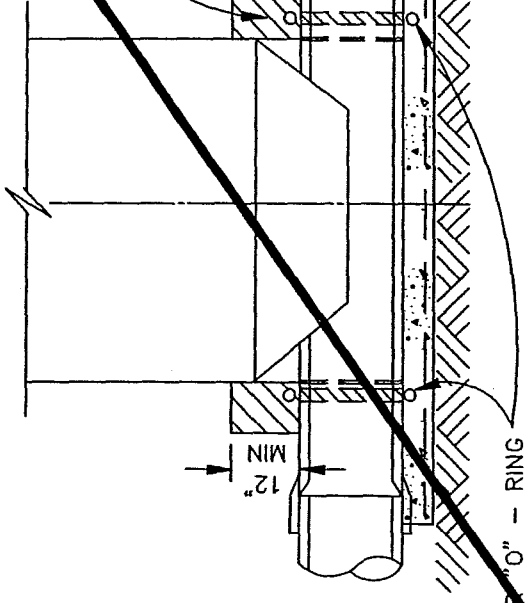
50201*

STANDARD CAST-IRON
M.H. FRAME & COVER
AS SPECIFIED BY OWNER.

FINISHED GRADE



CLASS "F"
CONCRETE CONTINUOUS
POUR W/ BASE



SECTION A-A
N.T.S.

FIRST MAIN LINE JOINT TO BE A MIN. OF
OF 5' LONG WITH CONG. CRADLE (FROM
SAME POUR AS BASE) UNDER THE
ENTIRE LENGTH

NOTES:

1. CONCRETE BASE TO BE POURED IN - PLACE IN TRENCH.
2. M.H. CUT-OUT TO BE MADE AT TIME OF INSTALLATION.
3. M.H. TO BE INSTALLED BY INSERTING INTO WET CONCRETE BASE.
4. FUTURE CONNECTIONS. IF A SEALANT BETWEEN PIPE & M.H. IS NEEDED, USE APPROVED SILICONE SEALANT.

NOT ALLOWED

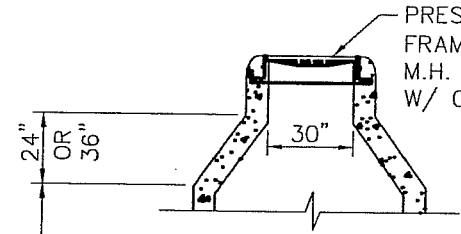
WASTEWATER MANHOLE

FIBERGLASS



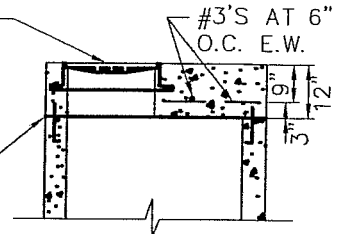
CONCRETE CONE ← ROOF OPTIONS → REINFORCED CONCRETE SLAB

N.T.S.



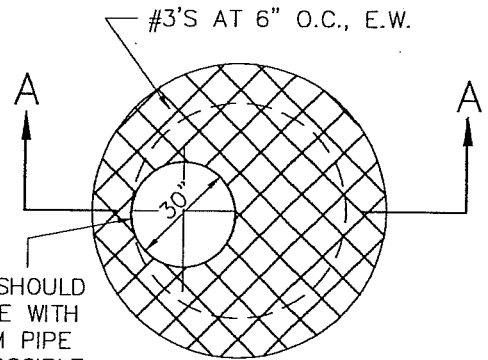
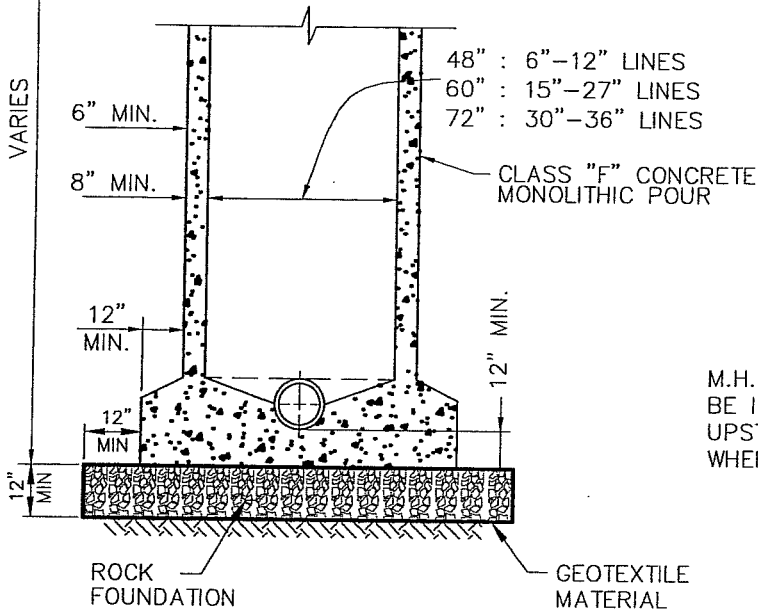
FOR 5' & 6' DIA. M.H.'S
SEE TRANSITION DETAIL

CONSTRUCTION JOINT WITH
KEY WAY WATERSTOP, AND
#3'S AT 12" O.C. EXTENDING
9" INTO WALL (NOT REQ'D
FOR CONTINUOUS POUR)



SECTION A - A

N.T.S.

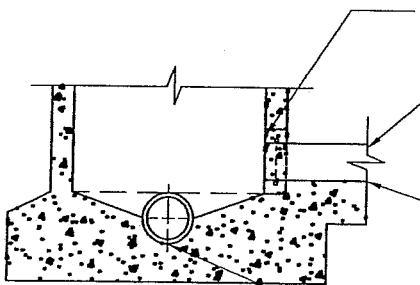


M.H. LID SHOULD
BE IN LINE WITH
UPSTREAM PIPE
WHERE POSSIBLE

ROOF STEEL LAYOUT

N.T.S.

APPROVED RESILIENT PIPE-TO-
MANHOLE CONNECTOR OR GASKET
REQUIRED FOR PIPE OTHER THAN
CLAY OR CONCRETE.



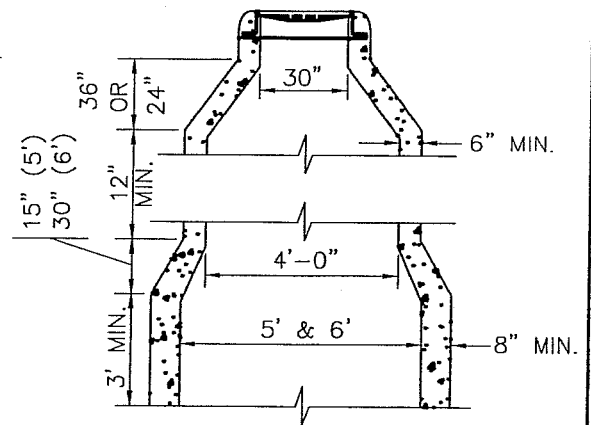
STUBOUT CONNECTION

N.T.S.

STUBOUT TO BE FITTED
WITH WATER TIGHT
STOPPER OR CAP

STUBOUTS TO BE A MIN.
OF 5' LONG WITH CONC.
CRADLE (FROM SAME
POUR AS BASE) UNDER
ENTIRE LENGTH.

FIRST MAIN LINE JOINT
TO BE A MIN. OF 6' LONG
WITH CONC. CRADLE (FROM
SAME POUR AS BASE) UNDER
UNDER THE ENTIRE LENGTH.



TRANSITION DETAIL FOR
5' & 6' DIA. M.H.'S

N.T.S.

M* - CITY OF MELISSA REVISION

WASTEWATER MANHOLE

PRESSURE-TYPE



NCTCOG STANDARD SPECIFICATION REFERENCE

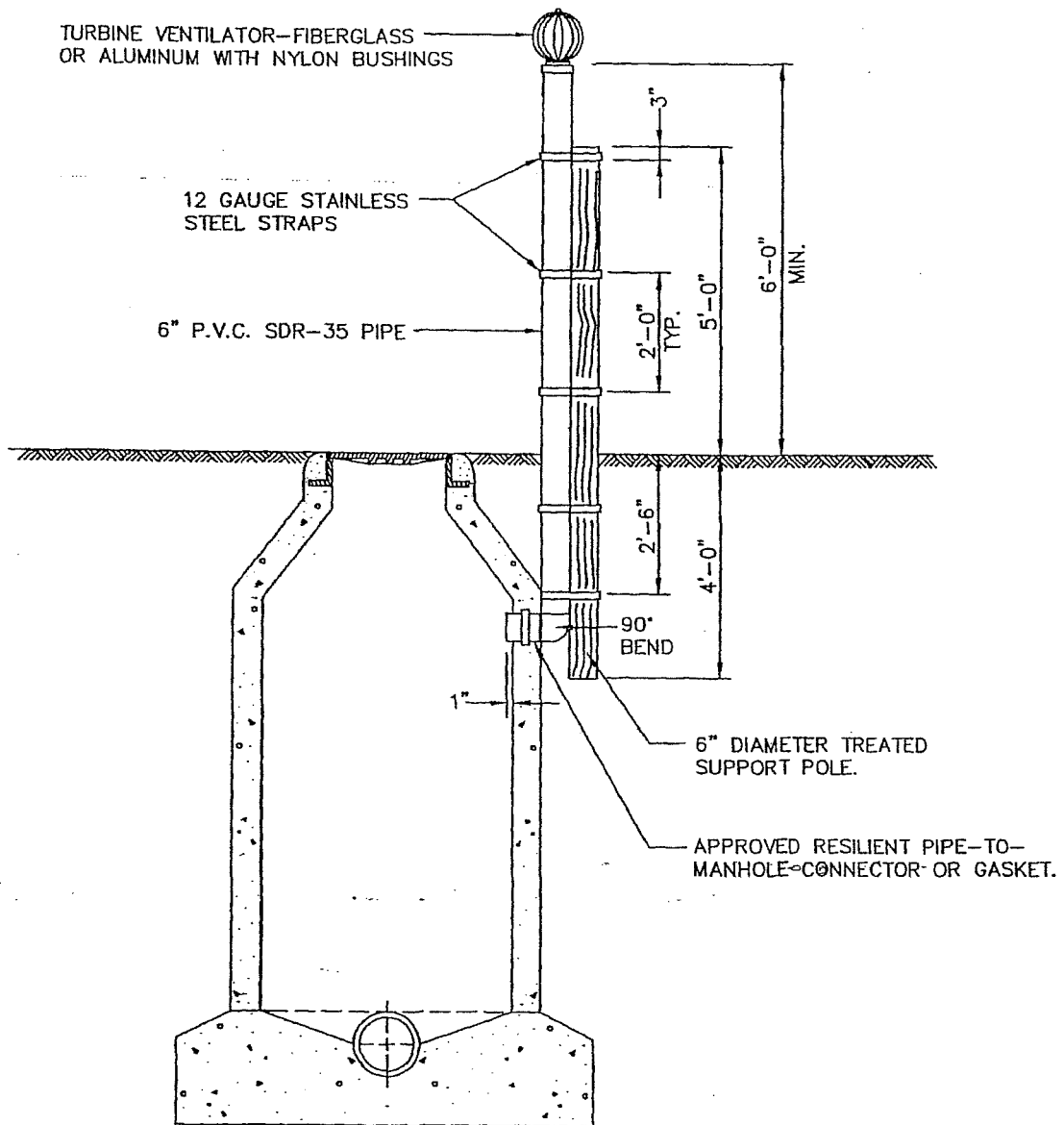
502.1

DATE

11/13/08

STANDARD DRAWING NO.

5050M*



WASTEWATER MANHOLE

VENTED

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

502.1

DATE

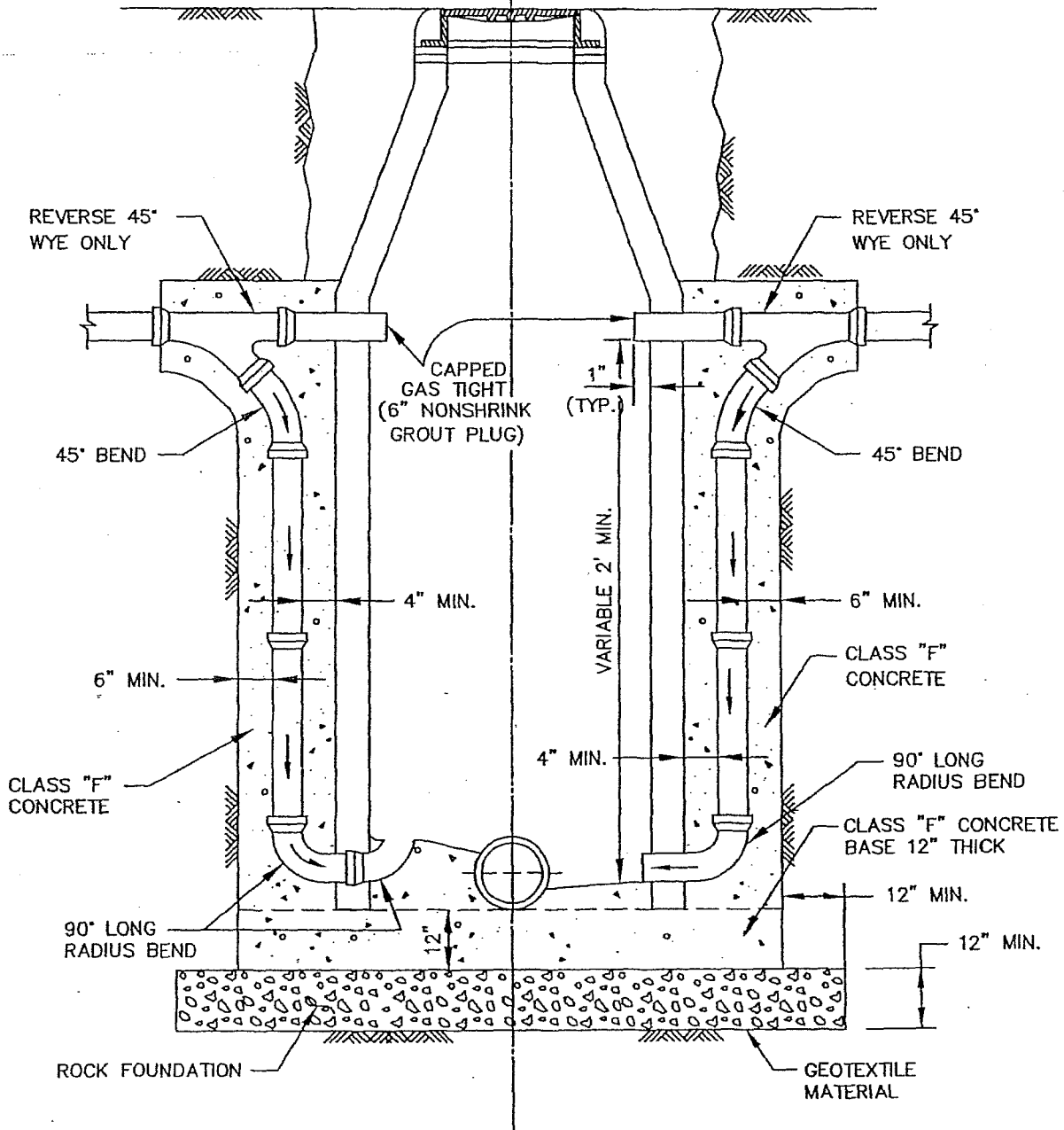
OCT. '04

STANDARD DRAWING NO.

5060

GAS SEALED
DROP CONNECTION
N.T.S.

STANDARD
DROP CONNECTION
N.T.S.



WASTEWATER MANHOLE
OUTSIDE DROP CONNECTIONS

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

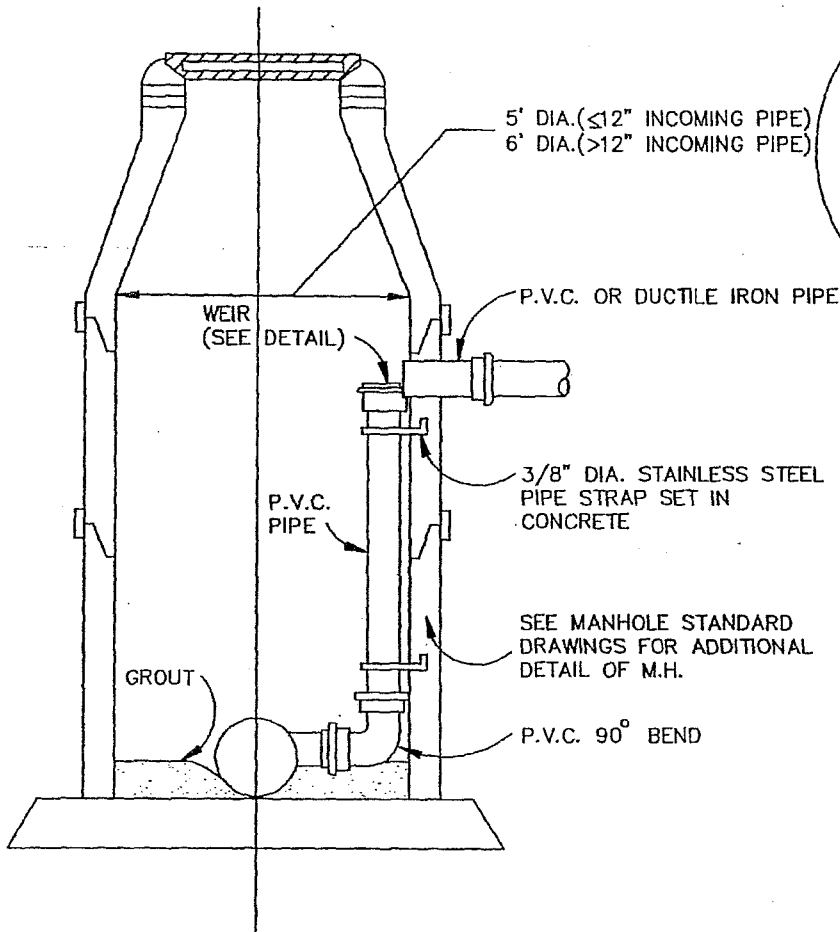
502.1

DATE

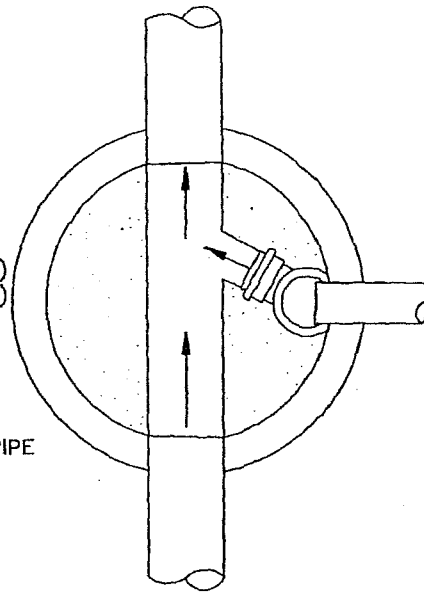
OCT. '04

STANDARD DRAWING NO.

5070

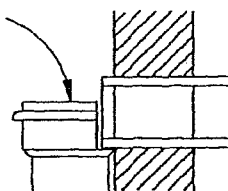


ELEVATION
N.T.S.



PLAN
N.T.S.

REMOVE PORTION OF DROP PIPE TO CONNECT AS SHOWN



WEIR DETAIL
N.T.S.

NOTE:

FLOW LINE OF SURCHARGE LINE NORMALLY PLACED AT TOP OF EXISTING WASTEWATER LINE UNLESS NOTED OTHERWISE ON PLANS.

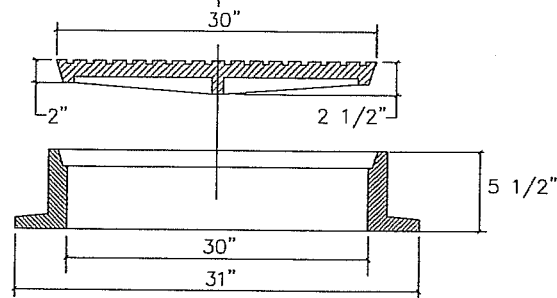
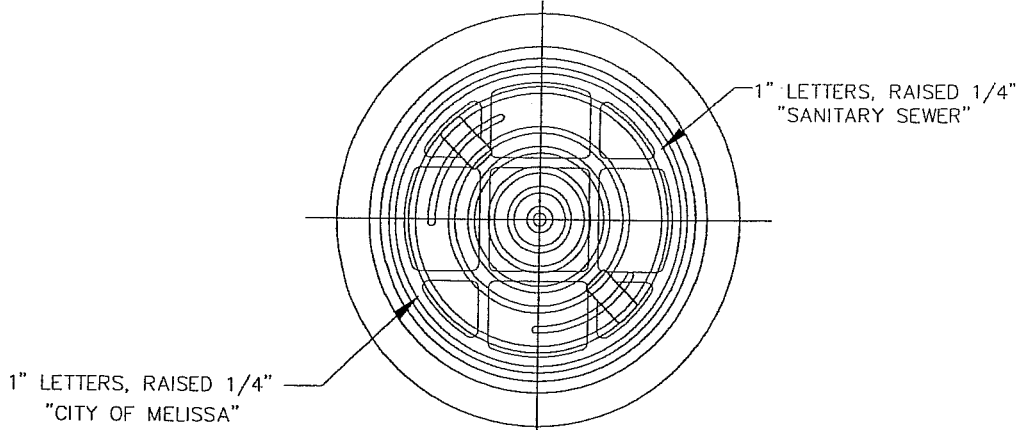
WASTEWATER MANHOLE
INSIDE DROP CONNECTION

North Central Texas Council of Governments

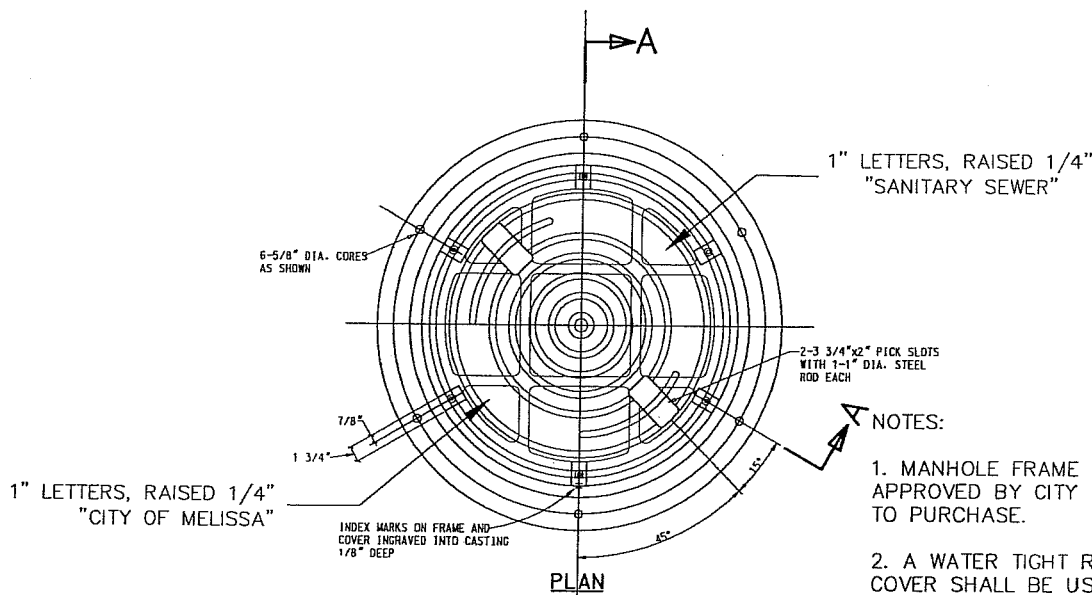


STANDARD SPECIFICATION REFERENCE
502.1

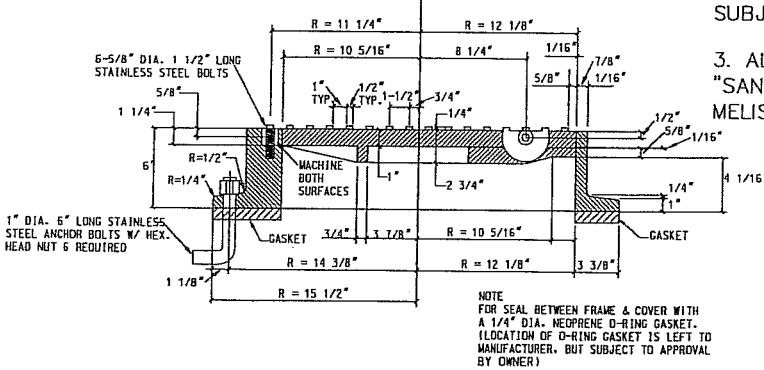
DATE	STANDARD DRAWING NO.
OCT. '04	5080



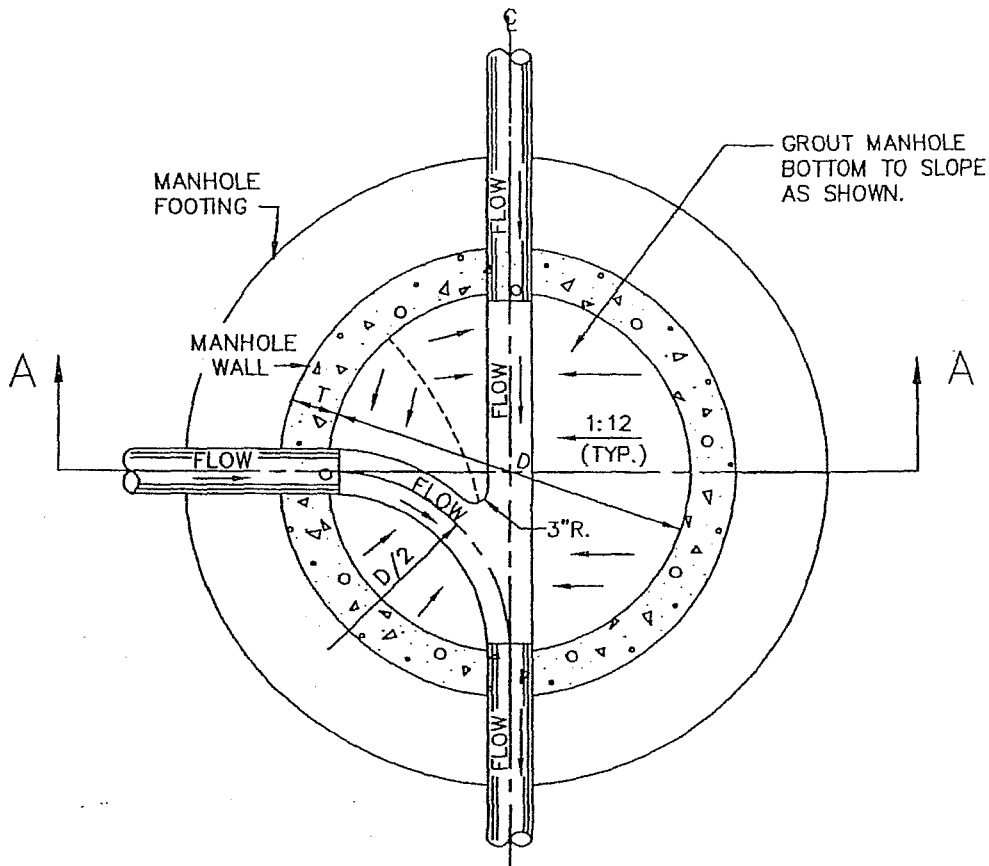
MANHOLE RING AND COVER
WITH LOCKING DEVICE AND PICK SLOTS



- NOTES:**
1. MANHOLE FRAME AND COVER TO BE APPROVED BY CITY OF MELISSA PRIOR TO PURCHASE.
 2. A WATER TIGHT RING AND SEALED COVER SHALL BE USED IN AREAS SUBJECT TO WATER INTRUSION.
 3. ALL MANHOLE COVER SHALL HAVE "SANITARY SEWER" AND "CITY OF MELISSA" STAMPED.



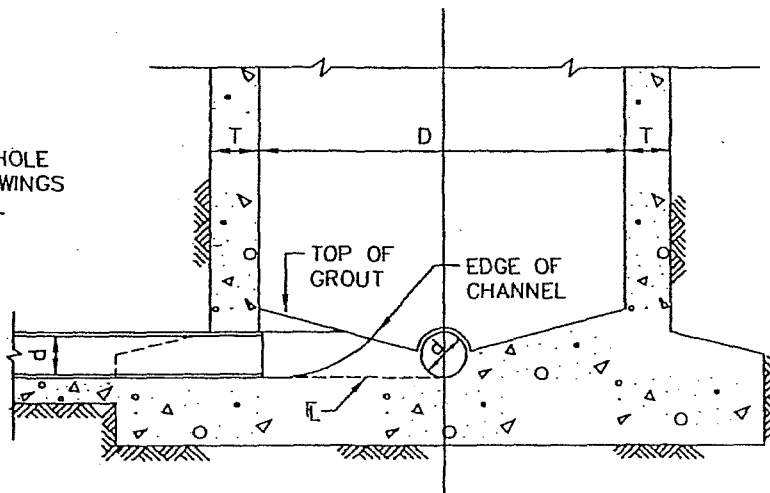
SECTION A-A
PRESSURE TYPE MANHOLE FRAME AND COVER



PLAN
N.T.S.

T = WALL THICKNESS
D = MANHOLE DIAMETER
d = PIPE DIAMETER

NOTE:
REFER TO MANHOLE
STANDARD DRAWINGS
FOR ADDITIONAL
DETAIL OF M.H.



SECTION A-A
N.T.S.

WASTEWATER MANHOLE
LINE INTERSECTION

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

502.1

DATE

OCT. '04

STANDARD DRAWING NO.

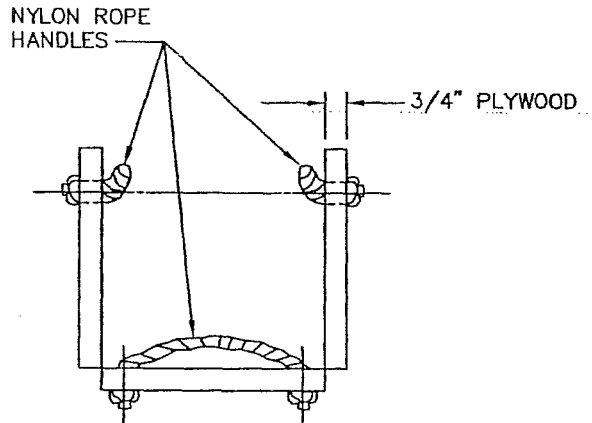
5090

INSTALLATION

FALSE MANHOLE BOTTOM SHALL BE FURNISHED AND INSTALLED IN ALL MANHOLES CONSTRUCTED IN ADVANCE OF PAVING. THESE FALSE MANHOLE BOTTOMS WILL BE INSTALLED AT A TIME DIRECTED BY THE ENGINEER BUT WILL USUALLY BE AFTER ALL WORK IS COMPLETED ON THE WASTEWATER SYSTEM INCLUDING THE AIR TEST, BUT PRIOR TO THE FINAL INSPECTION.

REMOVAL

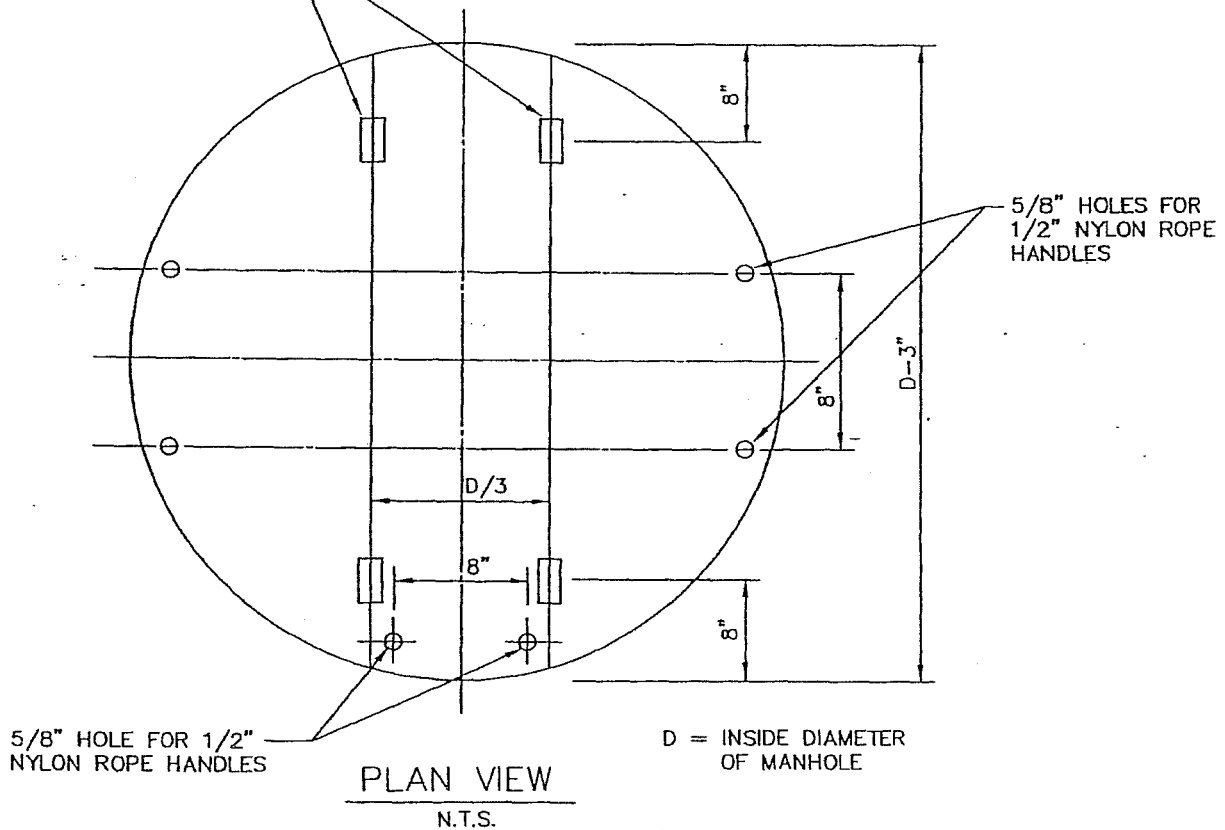
FALSE MANHOLE BOTTOM SHALL BE REMOVED AFTER THE FINAL APPURTENANCE ADJUSTMENT INSPECTION. THE PAVING CONTRACTOR AND OWNER'S REPRESENTATIVE WILL COORDINATE THE REMOVAL OF THE FALSE MANHOLE BOTTOMS.



INSTALLATION AND REMOVAL POSITION

N.T.S.

METAL STRAP HINGES
(MIN. 3" LONG) W/BOLTS



5/8" HOLE FOR 1/2" NYLON ROPE HANDLES

5/8" HOLES FOR 1/2" NYLON ROPE HANDLES

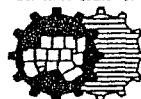
D = INSIDE DIAMETER OF MANHOLE

PLAN VIEW

N.T.S.

WASTEWATER MANHOLE
FALSE BOTTOM

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

502.1

DATE

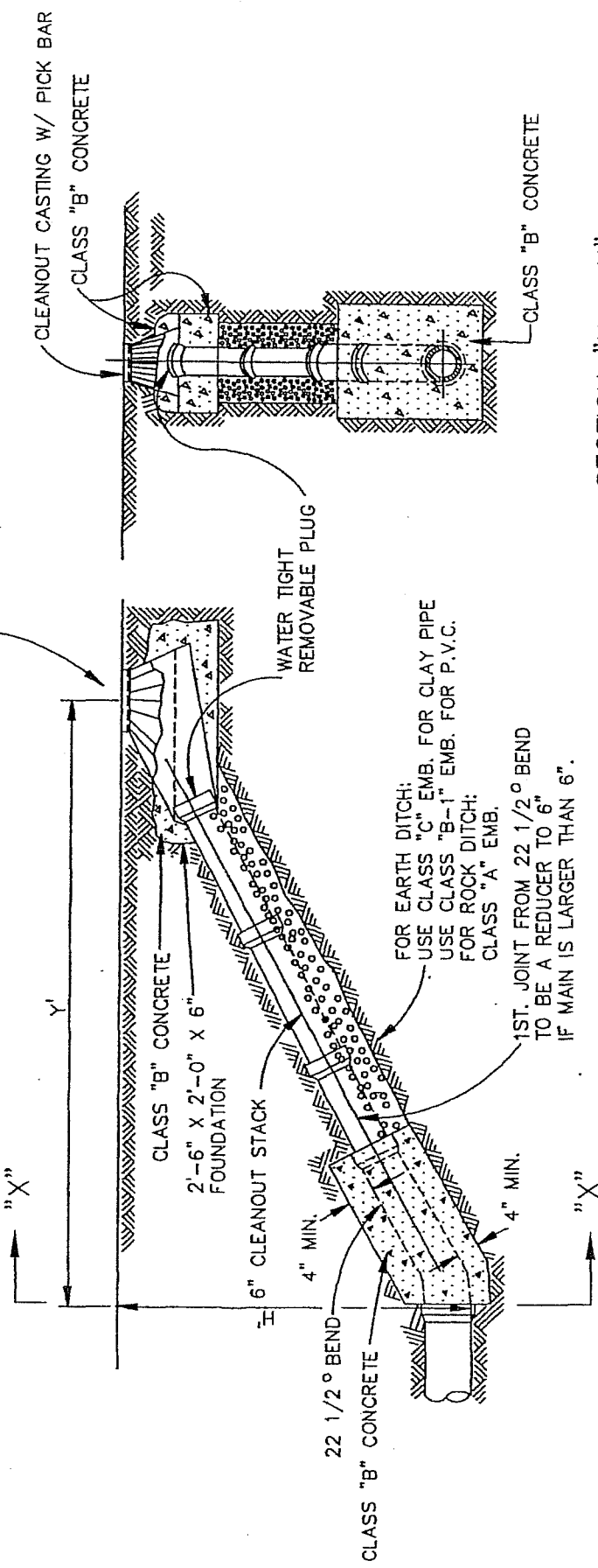
OCT. '04

STANDARD DRAWING NO.

5100

H'	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	H'
Y'	10	12	14	17	19	22	24	27	29	31	34	36	39	41	43	46	48	Y'

CLEANOUT CASTING OPENING TO BE INSTALLED CENTERED OVER THE CENTERLINE OF THE CLEANOUT STACK EXTENDED TO GROUND LEVEL.

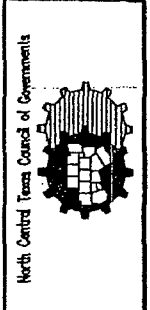


PROFILE VIEW
N.T.S.

SECTION "X - X"
N.T.S.

- NOTES:**
- IF CLEANOUT IS PLACED IN ADVANCE OF PAVEMENT PLACE SAND AROUND CLEANOUT CASTING IN LIEU OF CLASS "B" CONCRETE.
 - IF CLEANOUT IS OUTSIDE OF PAVEMENT, CENTER CASTING IN 15"x15" CLASS "A" CONCRETE PAD "4" THICK.

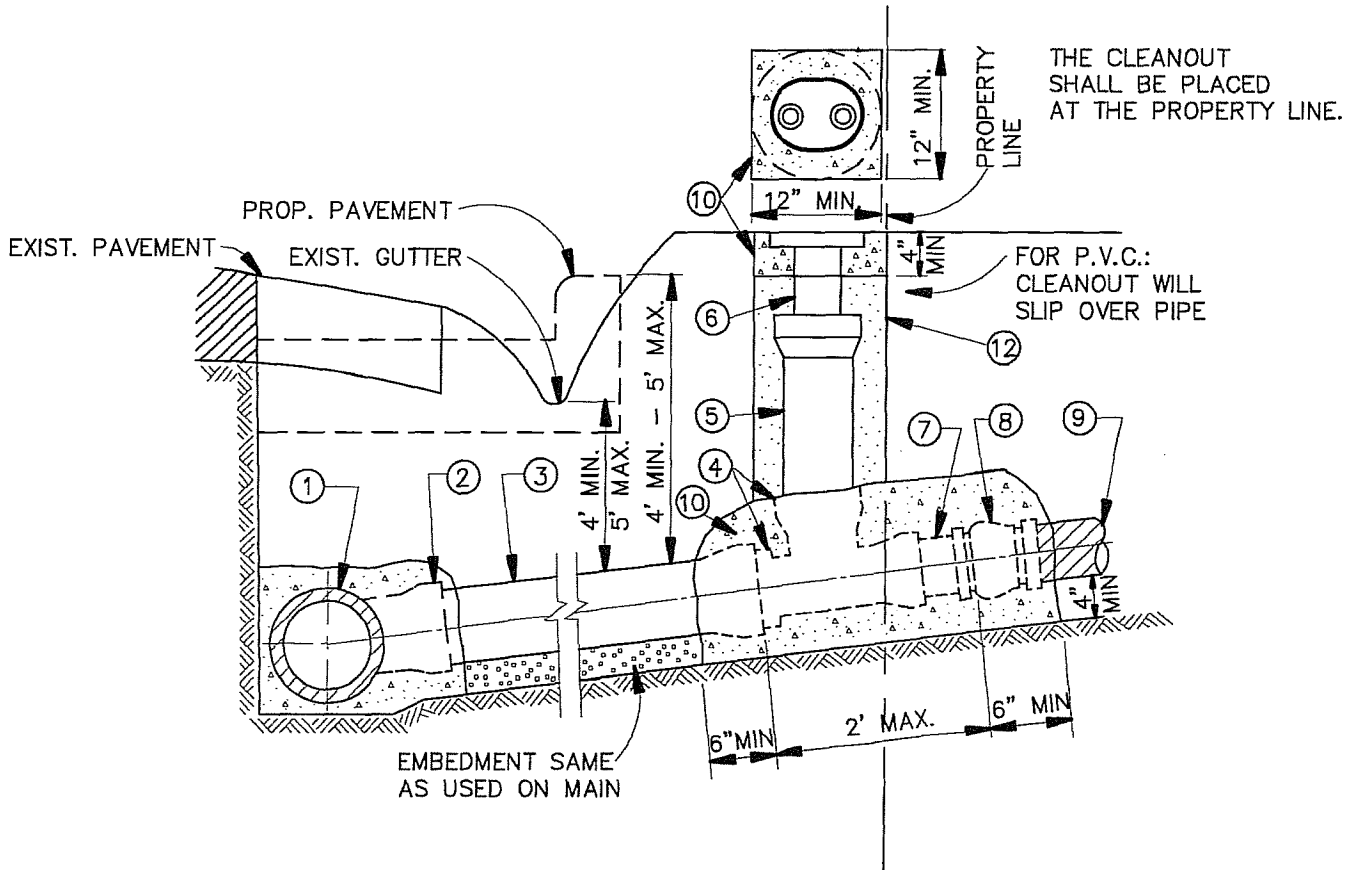
STANDARD SPECIFICATION REFERENCE	502.2
DATE	OCT. '04
STANDARD DRAWING NO.	5110



WASTEWATER MAIN
CLEANOUT

KEY:

- | | |
|---------------------------------------|---|
| ① WASTEWATER MAIN | ⑦ 4" WASTEWATER PIPE (LENGTH VARIES) |
| ② 6" WYE | ⑧ ADAPTOR |
| ③ 6" WASTEWATER LAT. (LENGTH VARIES) | ⑨ BUILDING SEWER LAT. |
| ④ SWEEPING TYPE TEE | ⑩ CLASS "B" CONCRETE |
| ⑤ 4" STACK (LENGTH VARIES) | ⑪ 6" X 4" REDUCER |
| ⑥ 4" WASTEWATER LAT. CLEANOUT CASTING | ⑫ COMPACTED AS SPECIFIED, OR INUNDATED SAND |



NOTES:

- CLEANOUT CASTING TO BE FURNISHED AND PLACED PER SPECIAL CONDITIONS. IN VEHICLE TRAFFIC AREAS AND FOR COMMERCIAL MAINLINE LATERALS, WASTEWATER CLEANOUT SHALL BE OF CAST IRON.
- SLOPE OF LATERAL TO BE 1% MIN., 2% MAX. UNLESS INSTRUCTED OTHERWISE BY OWNER.
- THE WASTEWATER LATERAL SHALL BE CONNECTED TO BUILDING LATERAL AND CONSTRUCTED IN SUCH MANNER AS TO CLEAR EXISTING UTILITIES AND PROPOSED FACILITIES SUCH AS STORM SEWER MAINS, PAVING, SIDEWALKS, RETAINING WALLS, ETC. VERTICAL BENDS (22.5° MAX.) MAY BE USED IF APPROVED BY OWNER.
- THE MAINLINE LATERAL CONNECTION TO THE PRIVATE BUILDING LATERAL SHALL BE AS CLOSE TO THE PROPERTY LINE AS POSSIBLE.
- INSTALL 4" STOPPER OR CAP AT PROPERTY LINE IF BUILDING LATERAL DOES NOT EXIST.
- SUBSTITUTE 4" FOR 6" FITTINGS IF PLANS OR SPEC. COND. CALL FOR 4" LATERALS.
- TYPICAL CLEANOUT STACK & CASTING SHALL BE PLACED AT THE PROPERTY LINE.

M* - CITY OF MELISSA REVISION

WASTEWATER LATERALS

WITH & WITHOUT CLEANOUT



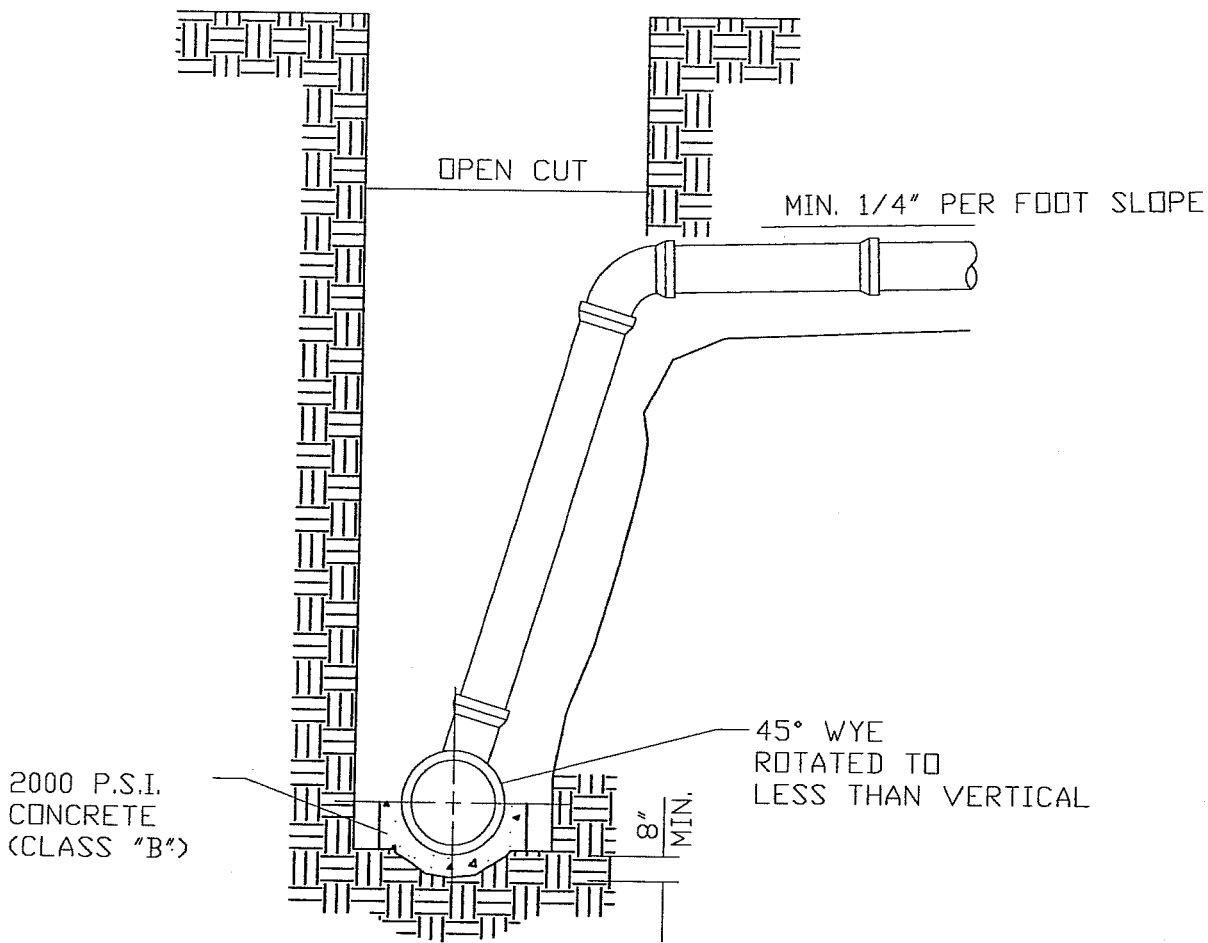
NCTCOG STANDARD SPECIFICATION REFERENCE

DIVISION 500

DATE

STANDARD DRAWING NO.

06/16/00 510011*



STACKED DEEP CUT

STACKED DEEP CUT LATERALS SHALL NOT BE INSTALLED WITHOUT VERIFICATION OF FLOW LINE ELEVATIONS FOR EACH LOT AND WRITTEN APPROVAL FROM THE ENGINEER.

STACKED DEEP CUT LATERALS

CITY OF MELISSA, TEXAS



M* - CITY OF MELISSA REVISION

NCTCOG STANDARD SPECIFICATION REFERENCE

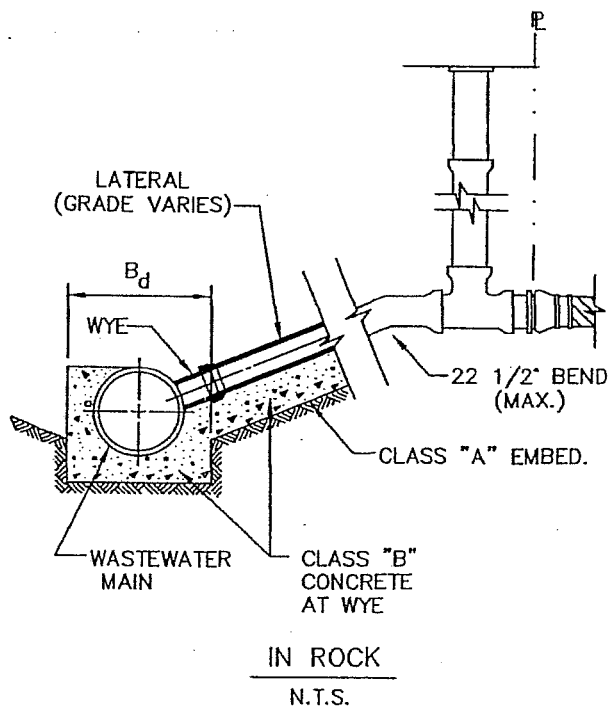
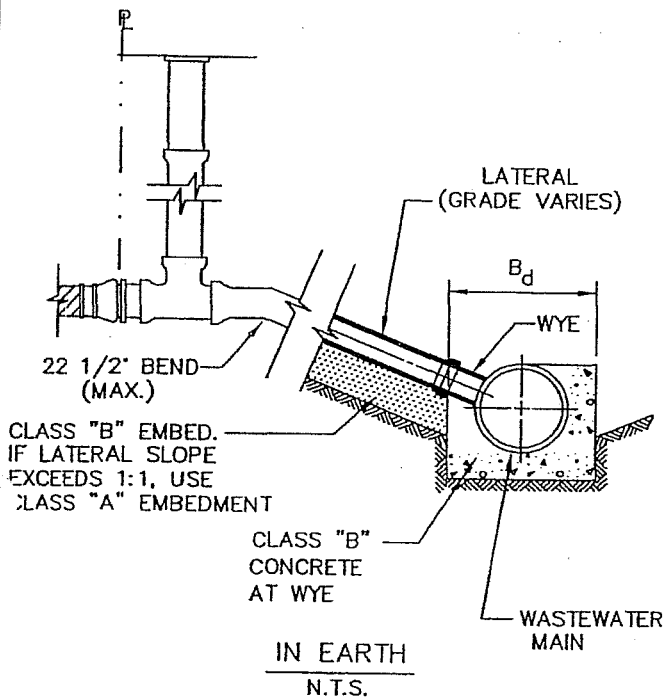
DIVISION 500

DATE

11/17/22

STANDARD DRAWING NO.

5104111



TRENCH WITH SLOPING SIDES

N.T.S.

NOTES:

1. WYE SHALL BE SUPPORTED AS SHOWN FOR WYE CONNECTION SUPPORT.
2. LATERALS ARE TO CLEAR ALL EXISTING UTILITIES. 1 1/4" OR 22 1/2" BEND, ONLY, MAY BE REQUIRED.

WASTEWATER LATERAL CONNECTIONS

IN EARTH & IN ROCK

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

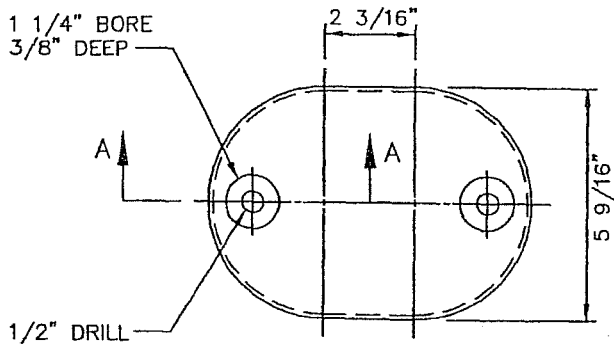
502.10

DATE

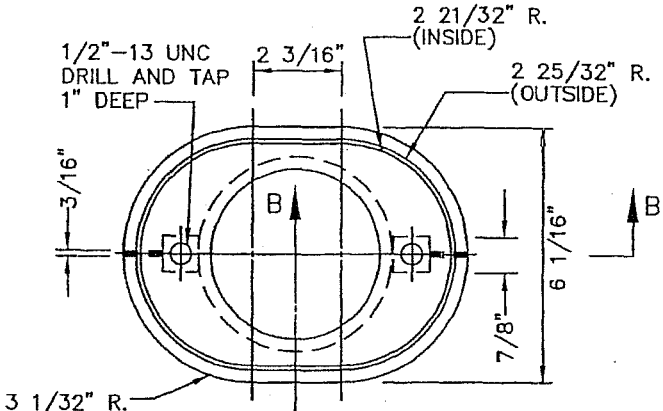
OCT. '04

STANDARD DRAWING NO.

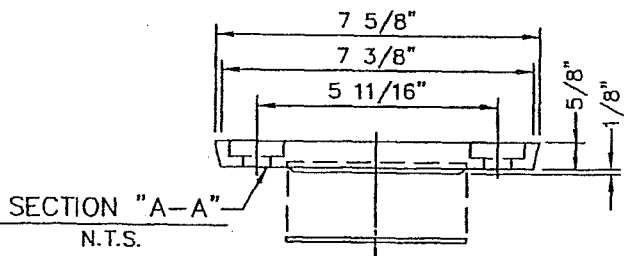
5130



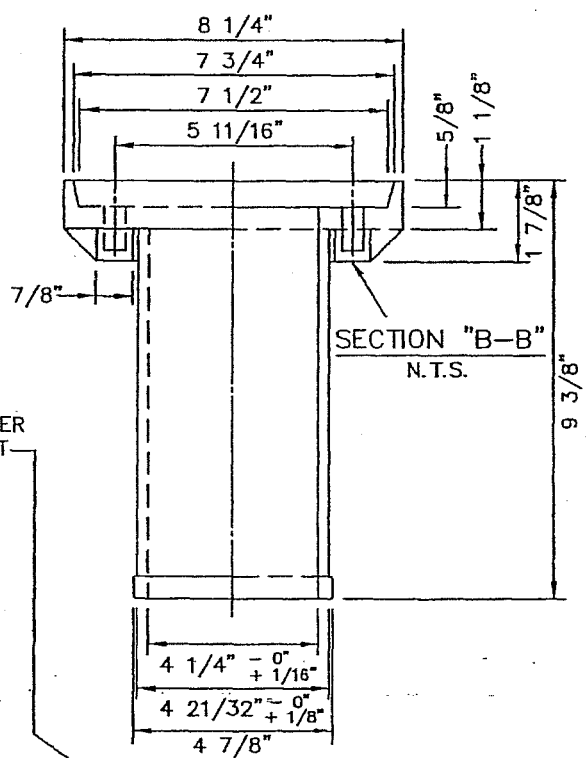
COVER
N.T.S.



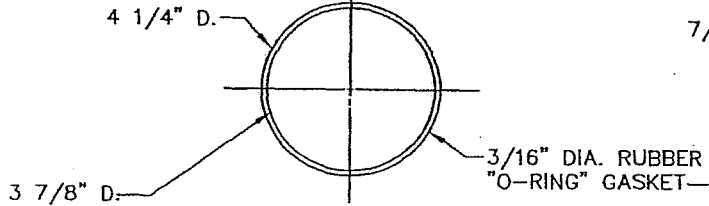
CLEANOUT FRAME TOP
N.T.S.



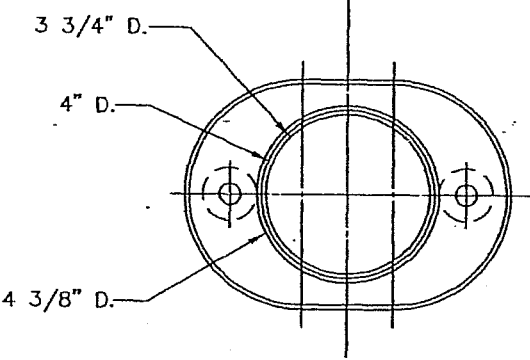
SECTION "A-A"
N.T.S.



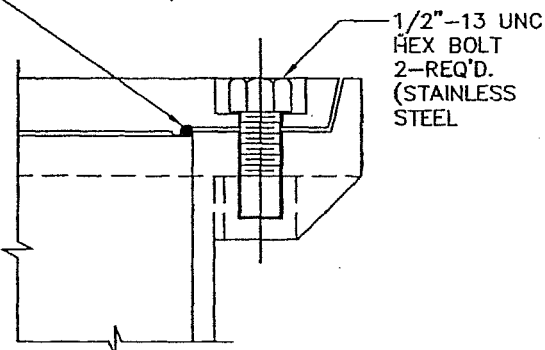
SECTION "B-B"
N.T.S.



3/16" DIA. RUBBER
"O-RING" GASKET



CLEANOUT FRAME BOTTOM
N.T.S.



ASSEMBLY VIEW
N.T.S.

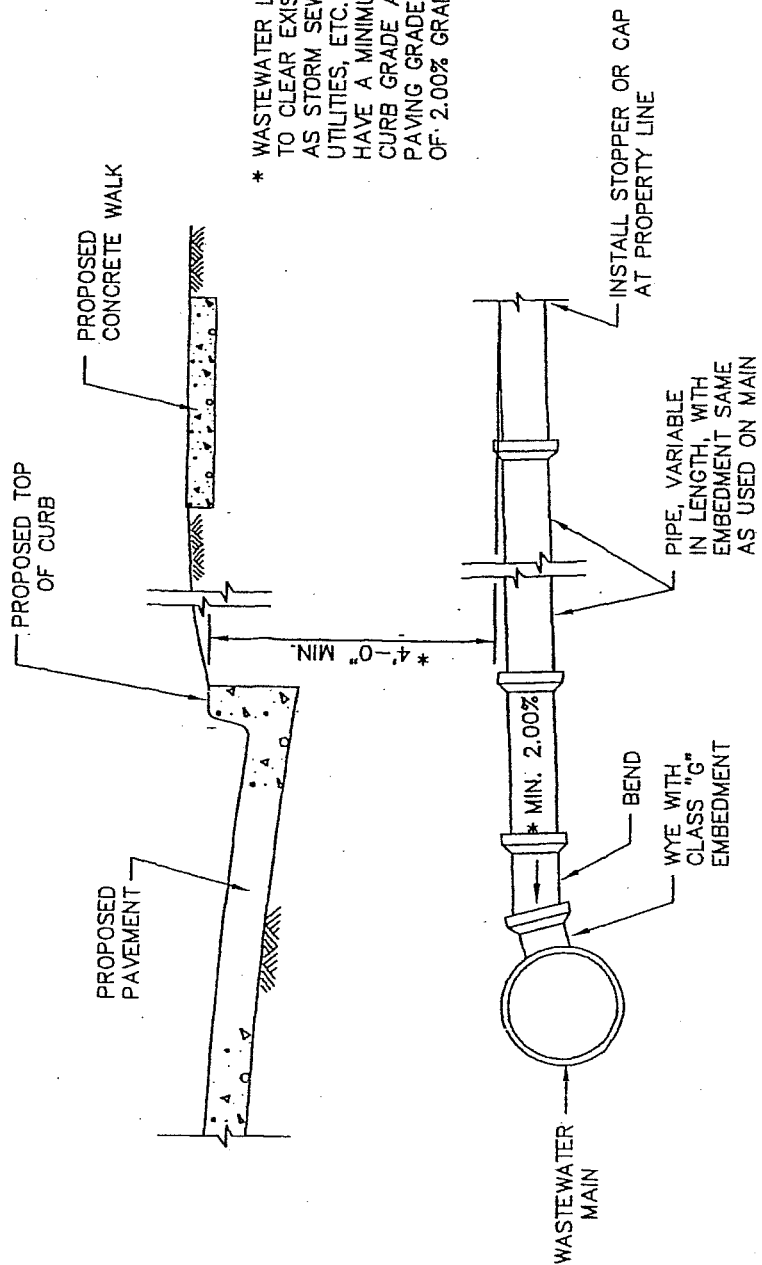
NOTES:

1. THE WORDS "WASTEWATER LATERAL CLEANOUT" SHALL BE CAST INTO TOP OF COVER.
2. MATERIALS TO BE CAST IRON, P.V.C. OR ABS PLASTIC.

**WASTEWATER LATERAL
CLEANOUT FRAME & COVER**



North Central Texas Council of Governments		STANDARD SPECIFICATION REFERENCE	
		502.10	
DATE	STANDARD DRAWING NO.		
OCT. '04	5140		



* WASTEWATER LATERALS ARE TO BE CONSTRUCTED TO CLEAR EXISTING AND PROPOSED FACILITIES, SUCH AS STORM SEWER MAINS, RETAINING WALLS, OTHER UTILITIES, ETC. THE WASTEWATER LATERAL SHALL HAVE A MINIMUM COVER OF 4'-0" BELOW THE PROPOSED CURB GRADE AT THE PROPERTY LINE, DETERMINED FROM PAVING GRADE, OR AS REQUIRED TO MAINTAIN A MINIMUM OF 2.00% GRADE, OR AS DIRECTED BY THE OWNER.

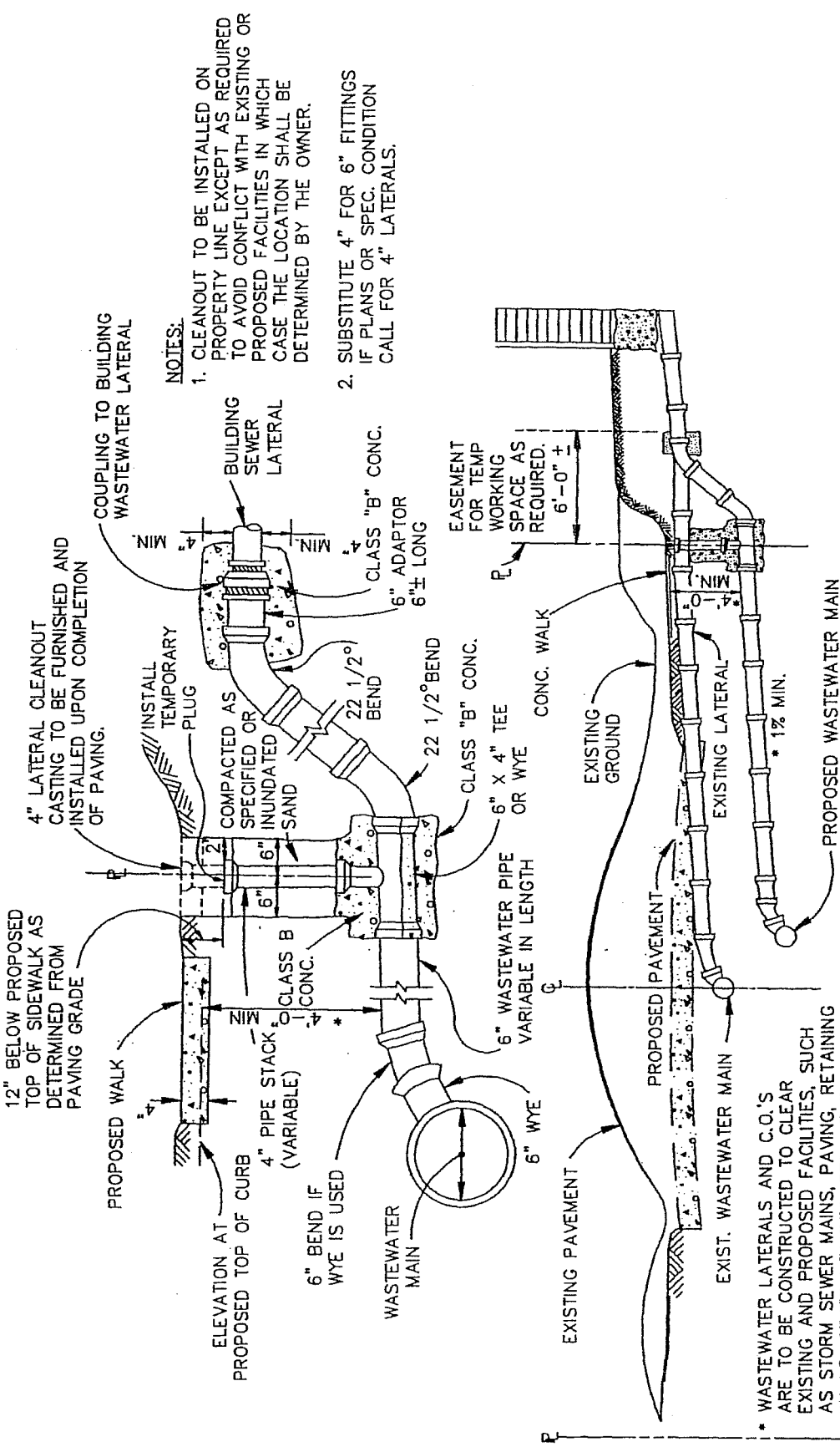
WASTEWATER LATERAL STUBOUT
 (FOR FUTURE CONNECTION, 4" OR 6" AS SPECIFIED)
 N.T.S.

STANDARD SPECIFICATION REFERENCE	502.10
DATE	OCT. '04
STANDARD DRAWING NO.	5150

North Central Texas Council of Governments



**WASTEWATER LATERAL STUBOUT
 IN ADVANCE OF PAVING**



NOTES:

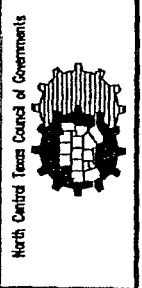
1. CLEANOUT TO BE INSTALLED ON PROPERTY LINE EXCEPT AS REQUIRED TO AVOID CONFLICT WITH EXISTING OR PROPOSED FACILITIES IN WHICH CASE THE LOCATION SHALL BE DETERMINED BY THE OWNER.
2. SUBSTITUTE 4" FOR 6" FITTINGS IF PLANS OR SPEC. CONDITION CALL FOR 4" LATERALS.

WASTEWATER LATERAL REPLACEMENT

N.T.S.

* WASTEWATER LATERALS AND C.O.'S ARE TO BE CONSTRUCTED TO CLEAR EXISTING AND PROPOSED FACILITIES, SUCH AS STORM SEWER MAINS, PAVING, RETAINING WALLS, OTHER UTILITIES, ETC. THE WASTEWATER LATERAL SHALL HAVE A MIN. COVER OF 4' BELOW THE PROPOSED CURB GRADE AT THE PROPERTY LINE, OR AS REQUIRED TO MAINTAIN A MINIMUM OF 1.00% GRADE, OR AS DIRECTED BY THE OWNER.

STANDARD SPECIFICATION REFERENCE	502.10
DATE	OCT. '04
STANDARD DRAWING NO	5160



WASTEWATER LATERAL REPLACEMENT
IN ADVANCE OF PAVING

OUT OF PAVEMENT | IN PAVEMENT
 N.T.S. | N.T.S.

EX. MH. FRAME & COVER
 TO BE REMOVED &
 REPLACED W/ TOP SOIL
 OR SOLID SOD

EX. M.H. FRAME & COVER
 TO BE REMOVED. PAVING
 TO BE REPAIRED AS PER
 STD. SPEC. ITEM 6.5.

EXISTING PAVEMENT

SAND AND/OR GRAVEL
 COMPACTED TO 90 %
 (95% IN PAVEMENT) OF
 THE MAXIMUM STANDARD
 PROCTOR DRY DENSITY
 AS PER STD. SPEC. ITEM
 6.2.9.(b)(2)

PLUG WITH CLASS
 "B" CONCRETE

EX. WASTEWATER MAIN

TO BE PLUGGED
 PRIOR TO POURING
 CLASS "B" CONCRETE.

CLASS "B" CONC.
 TO A POINT ABOVE
 TOP OF PIPE.

EX. WASTEWATER MAIN

EXISTING CONC.
 BASE

TO BE PLUGGED
 PRIOR TO POURING
 CLASS "B" CONCRETE

ABANDONMENT OF MANHOLE
 IN OR OUT OF PAVEMENT

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

504

DATE

OCT. '04

STANDARD DRAWING NO.

5170

1. GATE VALVES AND BUTTERFLY VALVES SHALL NOT BE OVER 1000 FT APART FOR LINES 12" AND LARGER.
2. GATE VALVES SIXTEEN (16) INCHES AND LARGER SHALL BE PLACED IN A VAULT.
3. MINIMUM COVER FOR WATER LINES:
 - 4" thru 12" - 4 FT COVER (5 FT UNIMPROVED)
 - 14" THRU 18" - 5 FT COVER (6 FT UNIMPROVED)
 - 20" AND LARGER - 6 FT COVER (7 FT UNIMPROVED)
4. THE MINIMUM WATER MAIN SIZE SHALL BE 8" IN RESIDENTIAL (LARGER LINE SIZE MAY BE REQUIRED BY THE COMPREHENSIVE PLAN, WATER MASTER PLAN, OR TO MEET FIRE PROTECTION NEEDS AS DETERMINED BY THE CITY ENGINEER.
5. THERE SHALL BE A MINIMUM OF A FIFTEEN (15) FOOT EASEMENT FOR WATER LINES.
6. THE MINIMUM RESIDENTIAL WATER SERVICE LINE SHALL BE ONE INCH (1") COPPER, AND SHALL BE INSTALLED BEHIND BACK OF CURB IN PARKWAY AWAY FROM DRIVEWAYS.
7. DEAD END MAINS SHALL NOT EXCEED SIX HUNDRED FEET (600'). PROVISIONS SHALL BE PROVIDED FOR FLUSHING DEAD END MAINS WITH A FIRE HYDRANT PLACED NEAR THE TERMINAL END OF THE LINE.
8. TRACER TAPE SHALL BE INSTALLED ALONG THE TOP CENTERLINE OF ALL NON-METALLIC WATER PIPES A MINIMUM OF ONE INCH (1") ABOVE TOP OF PIPE. THE TAPE IS TO CONSIST OF A METAL STRIP COATED WITH A CORROSION RESISTANT SUBSTANCE. THE TAPE MUST BE DETECTABLE BY A METAL DETECTION DEVICE TO A MINIMUM DEPTH OF 4 FT. THE TAPE SHALL BE AT LEAST 2" WIDE.
9. A MAXIMUM OF 6 FEET BURY IS ALLOWED FOR FIRE HYDRANTS.
10. REDUCED SIZE DETECTOR VALVES WILL NOT BE ALLOWED.
11. ONLY MUELLER SUPER CENTURION 250 FIRE HYDRANT WITH SAFETY FLANGE WILL BE ALLOWED.
12. ALL FIRE HYDRANT LEADS SHALL CONTAIN A GATE VALVE.
13. FIRE HYDRANT MARKERS SHALL CONSIST OF A 4" BY 4" BLUE REFLECTOR PAVEMENT MARKER INSTALLED OPPOSITE EACH FIRE HYDRANT ON ALL STREETS' CENTER LINE.
14. MINIMUM 6" WATER LINES SHALL BE PROVIDED UP TO 25 FT OF FIRE HYDRANTS; OTHERWISE 8" OR LARGER MUST BE USED.
15. ALL WATER LINES SHALL MEET THE REQUIREMENTS OF AWWA AND NCTCOG UNDER THE FOLLOWING SPECIFICATIONS:
 - 8" THRU 12" : C900 DR 18 - PVC
 - 14" AND LARGER : AWWA C301 & C303 - REINFORCED CONCRETE CYLINDER PIPE
 - : AWWA C905 - PVC - DR 18 (14"-24"), DR 21 (30"), DR 25 (36"), DR 32.5 (42" AND LARGER)
 - : AWWA C151 - DUCTILE IRON PIPE - THICKNESS CLASS 50
16. ALL FEEDER MAINS SHALL BE LOOPED AND ALL OTHER WATER LINES IN EXCESS OF 800' IN LENGTH SHALL BE LOOPED.
17. ALL WATER LINE FITTINGS SHALL BE DUCTILE IRON PER AWWA C110 OR AWWA C153 WITH CORROSION RESISTANT BOLTS/NUTS PER ASTM A325.
18. ALL GATE VALVES SHALL BE RESILIENT-SEATED GATE VALVES PER AWWA C509 AND NCTCOG 502.6.2 AND SHALL INCLUDE VALVE BOXES. VALVES SHALL BE FURNISHED WITH EXTENSIONS TO 1' BELOW GRADE AT LOCATIONS WHERE THE VALVE OPERATING NUT IS MORE THAN 3' BELOW GRADE.
19. ALL VALVES, FIRE HYDRANTS, AND FITTINGS SHALL BE INSTALLED WITH ADEQUATE THRUST BLOCKING OR MECHANICAL JOINT RESTRAINT IN ACCORDANCE WITH THE CITY OF MELISSA STANDARD CONSTRUCTION DETAILS. POLYETHYLENE WRAPPING SHALL PRECEDE BLOCKING OR RESTRAINT. ALL JOINT RESTRAINTS SHALL BE MEGALUG, OR APPROVED EQUIVALENT.
20. THE CITY ENGINEER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE INSTALLATION OF ANY AND ALL WATER IMPROVEMENTS.

M* - CITY OF MELISSA REVISION

NCTCOG STANDARD SPECIFICATION REFERENCE

DIVISION 500

DATE

STANDARD DRAWING NO.

GENERAL CONSTRUCTION WATER NOTES

CITY OF MELISSA, TEXAS



WATER PIPELINE TESTING AND DISINFECTION

PART 1 – GENERAL

1.1 WORK OF THIS SECTION

- A. THE WORK OF THIS SECTION INCLUDES FLUSHING AND TESTING OF ALL PRESSURE PIPELINES AND APPURTENANT PIPING FOR POTABLE WATER AND DISINFECTION OF ALL PIPELINES AND APPURTENANT PIPING FOR POTABLE WATER, COMPLETE, INCLUDING PROVIDING TEST WATER AND ALL DISPOSAL THEREOF.

1.2 STANDARD SPECIFICATIONS

- B. EXCEPT AS OTHERWISE INDICATED IN THIS SECTION OF THE SPECIFICATIONS, THE CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION TOGETHER WITH ANY LATEST STATE OF TEXAS, TEXAS COMMISSION ON ENVIRONMENTAL QUALITY REQUIREMENTS.

1.3 SPECIFICATIONS AND STANDARDS

- A. EXCEPT AS OTHERWISE INDICATED, THE CURRENT EDITIONS OF THE FOLLOWING APPLY TO THE WORK OF THIS SECTION:
 - 1. ANSI/AWWA B300 – HYPOCHLORITES
 - 2. ANSI/AWWA B301 – LIQUID CHLORINE
 - 3. ANSI/AWWA C651 – DISINFECTING WATER MAINS
 - 4. APHA, AWWA, AND WEF – STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER

1.4 TESTING SCHEDULE

- A. THE FOLLOWING SHALL BE SUBMITTED:
 - 1. A TESTING SCHEDULE, INCLUDING PROPOSED PLANS FOR WATER CONVEYANCE, CONTROL, AND DISINFECTION SHALL BE SUBMITTED IN WRITING FOR APPROVAL A MINIMUM OF 48 HOURS BEFORE TESTING IS TO START. THE SUBMITTAL SHALL ALSO INCLUDE THE CONTRACTOR'S PLAN FOR THE RELEASE OF WATER FROM PIPELINES AFTER TESTING AND DISINFECTION HAS BEEN COMPLETED.

PART 2 – PRODUCTS

2.1 MATERIALS REQUIREMENTS

- A. ALL TEST EQUIPMENT, CHEMICALS FOR CHLORINATION, TEMPORARY VALVES, TEMPORARY BLOW-OFFS, BULKHEADS, BACKFLOW DEVICES, OR OTHER WATER CONTROL EQUIPMENT AND MATERIALS SHALL BE DETERMINED AND FURNISHED BY THE CONTRACTOR. NO MATERIALS SHALL BE USED WHICH WOULD BE INJURIOUS TO THE PIPELINE OR ITS FUTURE FUNCTION.
- B. CHLORINE FOR DISINFECTION SHALL BE IN THE FORM OF LIQUID CHLORINE, SODIUM HYPOCHLORITE SOLUTION, OR CALCIUM HYPOCHLORITE GRANULES OR TABLETS.
- C. LIQUID CHLORINE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ANSI/AWWA B301. LIQUID CHLORINE SHALL BE USED ONLY:
 - 1. IN COMBINATION WITH APPROPRIATE GAS FLOW CHLORINATORS AND EJECTORS;
 - 2. UNDER THE DIRECT SUPERVISION OF AN EXPERIENCED TECHNICIAN;
 - 3. WHEN APPROPRIATE SAFETY PRACTICES ARE OBSERVED.
- D. SODIUM HYPOCHLORITE AND CALCIUM HYPOCHLORITE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ANSI/AWWA B300.

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WATER PIPELINE TESTING AND DISINFECTION



NCTCOG STANDARD SPECIFICATION REFERENCE

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CITY OF MELISSA, TEXAS

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11/13/08

STANDARD DRAWING NO.

4002AM*

WATER PIPELINE TESTING AND DISINFECTION

PART 3 – EXECUTION

3.1 GENERAL

- A. UNLESS OTHERWISE INDICATED, POTABLE WATER FOR TESTING AND DISINFECTING WATER PIPELINES WILL BE FURNISHED BY THE CONTRACTOR. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS INCLUDING BUT NOT LIMITED TO APPROVED BACKFLOW DEVICES AND ALSO MAKE ALL NECESSARY ARRANGEMENTS FOR CONVEYING THE WATER TO THE POINTS OF USE.
- B. ALL PRESSURE PIPELINES SHALL BE TESTED. DISINFECTION SHALL BE ACCOMPLISHED BY CHLORINATION. ALL CHLORINATING AND TESTING OPERATIONS SHALL BE PERFORMED IN THE PRESENCE OF THE CITY'S AUTHORIZED REPRESENTATIVE.
- C. DISINFECTION OPERATIONS SHALL BE SCHEDULED BY THE CONTRACTOR AS LATE AS POSSIBLE DURING CONTRACT TIME PERIOD SO AS TO ASSURE THE MAXIMUM DEGREE OF STERILITY OF THE FACILITIES AT THE TIME THE WORK IS ACCEPTED BY THE OWNER.

3.2 HYDROSTATIC TESTING OF PIPELINES

- A. PRIOR TO HYDROSTATIC TESTING, ALL PIPELINES SHALL BE FLUSHED OR BLOWN OUT AS APPROPRIATE. THE CONTRACTOR SHALL TEST ALL PIPELINES EITHER IN SECTIONS OR AS A UNIT. NO SECTION OF THE PIPELINE SHALL BE TESTED UNTIL ALL FIELD-PLACED CONCRETE OR MORTAR HAS ATTAINED AN AGE OF 14 DAYS. THE TEST SHALL BE MADE BY CLOSING VALVES WHEN AVAILABLE, OR BY PLACING TEMPORARY BULKHEADS IN THE PIPE AND FILLING THE LINE SLOWLY WITH WATER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASCERTAINING THAT ALL TEST BULKHEADS ARE SUITABLY RESTRAINED TO RESIST THE THRUST OF THE TEST PRESSURE WITHOUT DAMAGE TO, OR MOVEMENT OF, THE ADJACENT PIPE. ANY UNHARNESSED SLEEVE-TYPE COUPLINGS, EXPANSION JOINTS, OR OTHER SLIDING JOINTS SHALL BE RESTRAINED OR SUITABLY ANCHORED PRIOR TO TEST, TO AVOID MOVEMENT AND DAMAGE TO PIPING AND EQUIPMENT. THE CONTRACTOR SHALL PROVIDE SUFFICIENT TEMPORARY AIR TRAPPINGS IN THE PIPELINES TO ALLOW FOR EVACUATION OF ALL ENTRAPPED AIR IN EACH PIPE SEGMENT TO BE TESTED. AFTER COMPLETION OF THE TESTS, SUCH TAPS SHALL BE PERMANENTLY PLUGGED. CARE SHALL BE TAKEN TO SEE THAT ALL AIR VENTS ARE OPEN DURING FILLING.
- B. THE PIPELINE SHALL BE FILLED AT A RATE WHICH WILL NOT CAUSE ANY SURGES OR EXCEED THE RATE AT WHICH THE AIR CAN BE RELEASED THROUGH THE AIR VALVES AT A REASONABLE VELOCITY AND ALL THE AIR WITHIN THE PIPELINE SHALL BE PROPERLY PURGED. AFTER THE PIPELINE OR SECTION THEREOF HAS BEEN FILLED, IT SHALL BE ALLOWED TO STAND UNDER A SLIGHT PRESSURE FOR AT LEAST 24 HOURS TO ALLOW THE CONCRETE OR MORTAR LINING, AS APPLICABLE, TO ABSORB WATER AND TO ALLOW THE ESCAPE OF AIR FROM ANY AIR POCKETS. DURING THIS PERIOD, BULKHEADS, VALVES, AND CONNECTIONS SHALL BE EXAMINED FOR LEAKS. IF LEAKS ARE FOUND, CORRECTIVE MEASURES SATISFACTORY TO THE CITY SHALL BE TAKEN.
- C. HYDROSTATIC TEST. BEFORE BEING ACCEPTED, ALL GRAY IRON, DUCTILE IRON, PLASTIC AND ASBESTOS-CEMENT PIPE LINES CONSTRUCTED SHALL BE TESTED WITH A HYDRAULIC TEST PRESSURE OF NOT LESS THAN 150 PSI (134.3 KPA), MAINTAINED OVER A PERIOD OF NOT LESS THAN 4 HOURS UNLESS OTHERWISE SPECIFIED BY THE OWNER. CONCRETE PRESSURE PIPE SHALL BE TESTED WITH A HYDRAULIC TEST PRESSURE OF 120 PERCENT OF THE DESIGN PRESSURE. STEEL PRESSURE PIPE SHALL BE TESTED WITH A HYDRAULIC TEST PRESSURE NOT TO EXCEED 150 PERCENT AND NOT LESS THAN 120 PERCENT OF THE DESIGN WORKING PRESSURE. THE RATE OF LEAKAGE OF ALL PIPE TESTED SHALL NOT EXCEED 11.65 GALLONS PER INCH OF NOMINAL DIAMETER OF PIPE PER MILE (0.01 CU. M. PER CM. OF NOMINAL DIAMETER PER KM.) OVER A 24 HOUR PERIOD. WATER LINES OF MATERIALS IN COMBINATION SHALL BE TESTED FOR THE TYPE OF PIPE (MATERIAL) WITH THE LEAST STRINGENT HYDRAULIC TEST PRESSURE MAINTAINED OVER A PERIOD OF NOT LESS THAN 4 HOURS.

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WATER PIPELINE TESTING AND DISINFECTION



NCTCOG STANDARD SPECIFICATION REFERENCE

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CITY OF MELISSA, TEXAS

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STANDARD DRAWING NO.

4002RM*

WATER PIPELINE TESTING AND DISINFECTION

- D. THE MAXIMUM ALLOWABLE LEAKAGE FOR DISTRIBUTION AND TRANSMISSION PIPELINES SHALL BE PER NCTCOG 6.7.3 (f). THE ALLOWABLE LEAKAGE FOR 4 HOURS SHALL BE DETERMINED AS FOLLOWS:

$$\text{ALLOWABLE LEAKAGE (GALS.) FOR 4 HOURS} = (S D sP \times 4) / 133,200$$

WHERE:

S = LENGTH OF PIPE, FT.

D = DIAMETER OF PIPE, IN.

P = 150 PSI

HEIGHT CORRECTION = 0.43 PSI/FT.

VALVE LEAKAGE ALLOWABLE = 0.0078 GAL./HOUR/IN. OF NOMINAL VALVE SIZE

TEST - GRAY IRON, DUCTILE IRON, PLASTIC, AND AC AT 150 PSI

- CONCRETE 120% OF DESIGN PRESSURE

- STEEL 120% MIN. TO 150% MAX. DESIGN WORKING PRESSURE

STEEL PIPE WITH WELDED JOINTS SHALL HAVE NO LEAKAGE.

IN THE CASE OF PIPELINES THAT FAIL TO PASS THE PRESCRIBED LEAKAGE TEST, THE CONTRACTOR SHALL DETERMINE THE CAUSE OF THE LEAKAGE, SHALL TAKE CORRECTIVE MEASURE NECESSARY TO REPAIR THE LEAKS, AND SHALL AGAIN TEST PIPELINES.

3.3 DISINFECTING PIPELINES

- A. GENERAL: ALL POTABLE PIPELINES EXCEPT THOSE APPURTENANT TO HYDRAULIC STRUCTURES SHALL BE DISINFECTED IN ACCORDANCE WITH THE REQUIREMENTS OF ANSI/AWWA C651 USING THE CONTINUOUS-FEED METHOD AS MODIFIED HEREIN. PRELIMINARY AND FINAL FLUSHING SHALL BE DONE AT THE ENDS OF MAINS, WHICH HAVE BEEN HYDROSTATICALLY TESTED.
- B. CHLORINATION: A CHLORINE-WATER MIXTURE SHALL BE UNIFORMLY INTRODUCED INTO THE PIPELINE BY MEANS OF A SOLUTION-FEED CHLORINATING DEVICE. THE CHLORINE SOLUTION SHALL BE INTRODUCED AT ONE END OF THE PIPELINE THROUGH A TAP IN SUCH A MANNER THAT AS THE PIPELINE IS FILLED WITH WATER, THE DOSAGE APPLIED TO THE WATER ENTERING THE PIPE SHALL BE APPROXIMATELY 50 MG/L. CARE SHALL BE TAKEN TO PREVENT THE STRONG CHLORINE SOLUTION IN THE LINE BEING DISINFECTED FROM FLOWING BACK INTO THE LINE SUPPLYING THE WATER.
- C. CHLORINE RESIDUAL TEST: THE CONTRACTOR SHALL MAKE 24-HOUR CHLORINE RESIDUAL TESTS. THE CONTRACTOR SHALL NOTIFY THE OWNER OF THE CHLORINE TEST RESULT. CHLORINATED WATER SHALL BE RETAINED IN THE PIPELINE FOR AT LEAST 24 HOURS. AFTER THE CHLORINE-TREATED WATER HAS BEEN RETAINED FOR THE REQUIRED TIME, THE FREE CHLORINE RESIDUAL AT THE PIPELINE EXTREMITIES AND AT OTHER REPRESENTATIVE POINTS SHALL BE AT LEAST 25 MG/L.
- D. REPETITION OF TEST: THE DISINFECTION TESTING PROCEDURE SHALL BE REPEATED IF THE INITIAL TESTS FAIL TO PRODUCE SATISFACTORY RESULTS. TWO CONSECUTIVE SATISFACTORY TEST RESULTS SHALL BE REQUIRED AFTER ANY UNSATISFACTORY TEST. THE TABLET METHOD SHALL NOT BE USED FOR REPEATED DISINFECTION.
- E. CHLORINATING VALVES: DURING THE PROCESS OF CHLORINATING THE PIPELINES, ALL VALVES AND OTHER APPURTENANCES SHALL BE OPERATED WHILE THE PIPELINE IS FILLED WITH THE HEAVILY-CHLORINATED WATER.
- F. FINAL FLUSHING: FINAL FLUSHING SHALL BE DONE BY THE CONTRACTOR AFTER HE HAS ACHIEVED A SATISFACTORY CHLORINE RESIDUAL TEST. AFTER THE APPLICABLE RETENTION PERIOD, THE HEAVILY CHLORINATED WATER SHALL BE FLUSHED FROM THE PIPELINE UNTIL CHLORINE MEASUREMENTS SHOW THAT THE CONCENTRATION IN THE WATER LEAVING THE PIPELINE IS NO HIGHER THAN THAT GENERALLY PREVAILING IN THE SYSTEM OR IS ACCEPTABLE FOR THE INTENDED USE. IF THERE IS ANY QUESTION THAT THE CHLORINATED DISCHARGE WILL CAUSE DAMAGE TO THE ENVIRONMENT, A REDUCING AGENT SHALL BE APPLIED TO THE WATER TO NEUTRALIZE THOROUGHLY THE CHLORINE RESIDUAL REMAINING IN THE WATER AT NO ADDITIONAL COST.

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WATER PIPELINE TESTING AND DISINFECTION



NCTCOG STANDARD SPECIFICATION REFERENCE

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CITY OF MELISSA, TEXAS

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11/13/08

4002CM*

WATER PIPELINE TESTING AND DISINFECTION

- G. DISINFECTION OF CONNECTIONS: PIPE AND APPURTENANCES USED TO CONNECT THE NEWLY INSTALLED WATER MAIN SHALL ALSO BE DISINFECTED IN ACCORDANCE WITH AWWA C651.
- H. NEUTRALIZATION OF CHLORINATED WATER: NEUTRALIZING AND DISPOSING OF CHLORINATED WATER SHALL BE IN ACCORDANCE WITH APPENDIX "B" OF AWWA STANDARD C651.

3.4 BACTERIOLOGICAL TESTING OF DISINFECTED PIPELINES

- A. THE CONTRACTOR SHALL COLLECT A MINIMUM OF 2 SETS OF SAMPLES AT LEAST 24 HOURS APART AFTER COMPLETION OF FINAL FLUSHING AS INDICATED ABOVE. SAMPLES WILL BE TAKEN AT LOCATIONS INDICATED IN ANSI/AWWA C651 AND WILL BE TESTED FOR COLIFORM ORGANISMS AND HETESOTROPHIC PLATE COUNT ACCORDING TO THE LATEST EDITION OF THE STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER. LABORATORY COSTS OF TESTING WILL BE THE CONTRACTOR'S RESPONSIBILITY.
- B. SATISFACTORY BACTERIOLOGICAL RESULTS WILL BE
 - a) ABSENCE OF TOTAL AND FECAL COLIFORM AND,
 - b) A HETEROTROPHIC PLATE COUNT LESS THAN 500 CFU.
- C. IF DISINFECTION FAILS TO PRODUCE SATISFACTORY BACTERIOLOGICAL COUNTS, THE PIPE SHALL BE REFLUSHED AND WILL BE RESAMPLED AND RETESTED. IF COUNTS FROM ANALYSIS OF THE SECOND SAMPLES EXCEED THE CRITERIA IN STANDARD METHODS, THE PIPE SHALL BE RE-DISINFECTED AND WILL BE RESAMPLED AND RETESTED UNTIL SATISFACTORY RESULTS ARE OBTAINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPEAT BACTERIOLOGICAL TESTING COSTS.

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WATER PIPELINE TESTING AND DISINFECTION



NCTCOG STANDARD SPECIFICATION REFERENCE

506

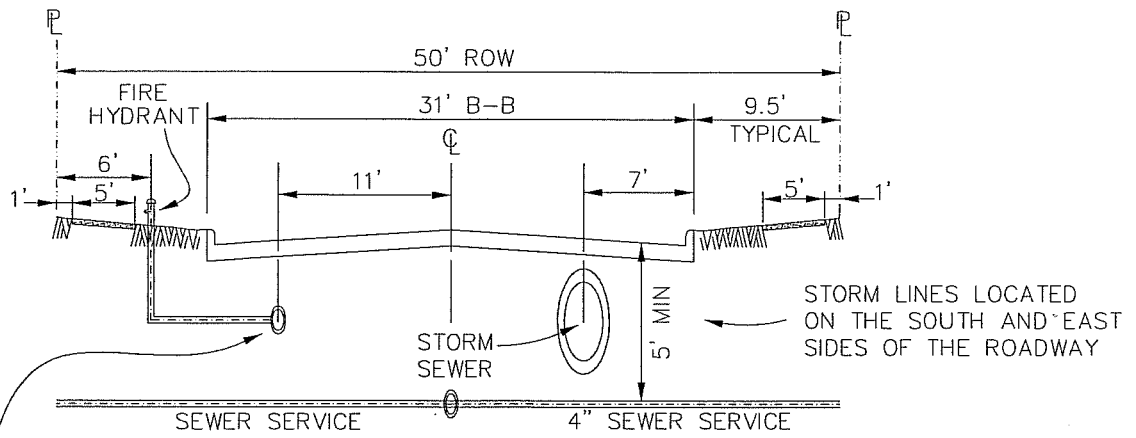
CITY OF MELISSA, TEXAS

DATE

11/13/08

STANDARD DRAWING NO.

4002DM*



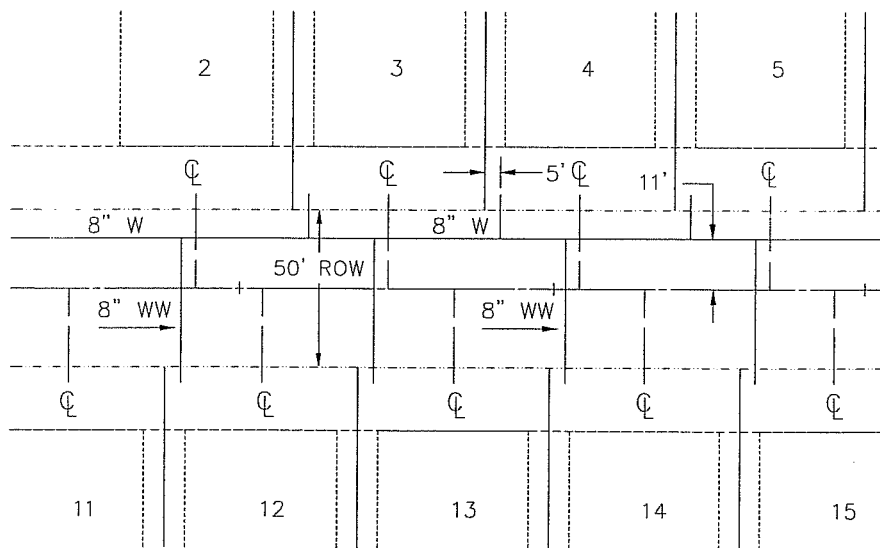
TYPICAL UTILITY LOCATION

NTS

FIRE HYDRANTS TO BE LOCATED AT PCCR'S OR LOT LINES UNLESS NOTED OTHERWISE

WATER MAINS LOCATED ON THE NORTH & WEST SIDES OF THE ROADWAY WITH 4' MIN COVER OR AS NOTED IN THE GENERAL CONSTRUCTION WATER NOTES.

NOTE: SANITARY SEWER SERVICE TO BE LOCATED AT CENTER OF LOT & WATER SERVICE TO BE LOCATED 5' OFF PROPERTY LINE UPSTREAM OF SANITARY SEWER SERVICE. NEITHER WATER OR WASTEWATER SERVICES SHALL BE PLACED IN DRIVEWAYS



TYPICAL SERVICE LOCATION

NTS

M* - CITY OF MELISSA REVISION

STANDARD WATER & WASTEWATER LOCATIONS



NCTCOG STANDARD SPECIFICATION REFERENCE

N/A

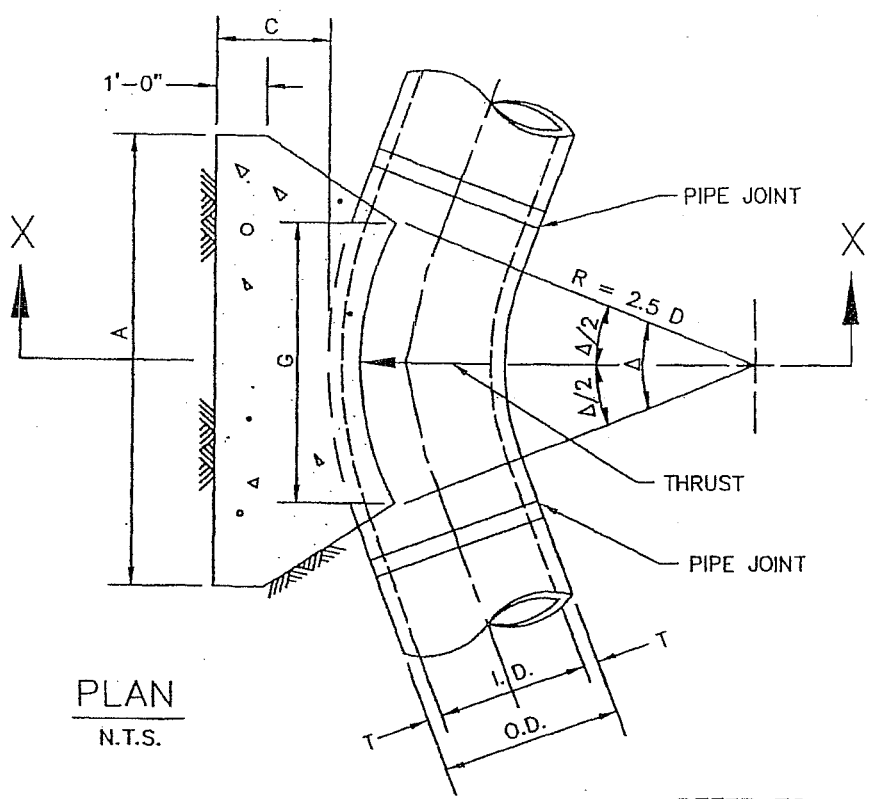
CITY OF MELISSA, TEXAS

DATE

4/23/04

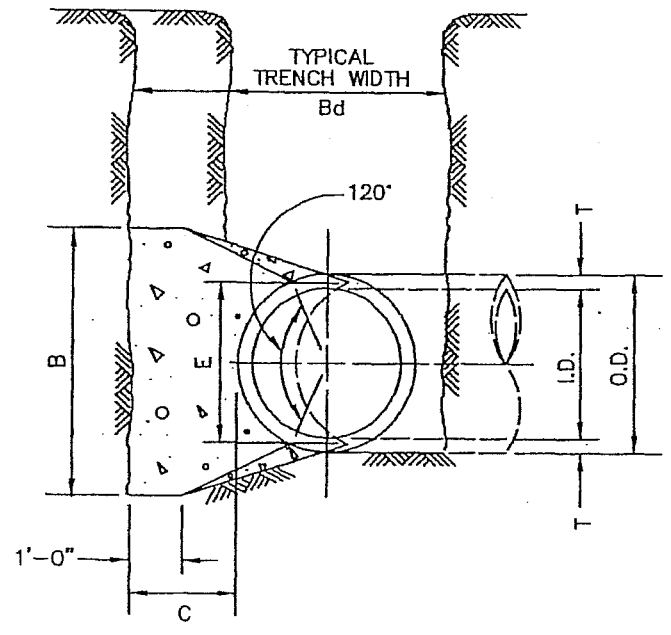
STANDARD DRAWING NO.

4005M*



PLAN
N.T.S.

REFER TO
STD. DWG. No. 4040
FOR GENERAL NOTES.



SECTION X-X
N.T.S.

HORIZONTAL THRUST BLOCK
AT PIPE BEND



North Central Texas Council of Governments		STANDARD SPECIFICATION REFERENCE	
		502.4	
		DATE	STANDARD DRAWING NO.
		OCT. '04	4010A

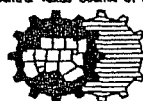
I.D. (IN.)	T (IN.)	$\Delta = 11.25'$ C (FT.)	$\Delta = 22.50'$ C (FT.)	E (FT.)
4,6,8	0.4	1.5	1.5	0.9
10,12	0.5	1.5	1.5	1.2
16,18	0.6	1.5	1.5	1.6
20	0.7	1.5	1.5	1.8
24	0.9	1.5	1.5	2.1
30	2.9	1.5	1.9	2.6
36	4.5	1.5	2.3	3.3
42	5.0	1.8	2.6	3.8
48	5.5	2.0	3.0	4.3
54	6.0	2.3	3.4	4.8
60	6.5	2.5	3.8	5.3
66	6.8	2.8	4.1	5.7
72	7.5	3.0	4.5	6.3
78	7.5	3.3	4.9	6.7
84	8.0	3.5	5.3	7.2
90	8.5	3.8	5.6	7.7
96	9.0	4.0	6.0	8.2

I.D. (IN.)	$\Delta = 11.25'$									I.D. (IN.)	$\Delta = 22.50'$								
	G (FT.)	THRUST (TONS)	EARTH			ROCK			G (FT.)		THRUST (TONS)	EARTH			ROCK				
			A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)				A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)		
4,6,8	0.4	1.0	1.0	1.5	0.1	1.0	1.0	0.1	4,6,8	0.8	2.0	1.5	1.5	0.1	1.0	1.0	0.1		
10,12	0.6	2.2	1.5	1.5	0.1	1.0	1.5	0.1	10,12	1.1	4.4	2.0	2.5	0.3	1.5	1.5	0.1		
16,18	0.8	5.0	2.0	2.5	0.3	1.5	2.0	0.2	16,18	1.6	9.9	3.0	3.5	0.6	2.0	2.5	0.3		
20	0.9	6.2	2.0	3.5	0.4	1.5	3.0	0.3	20	1.8	12.3	3.5	3.5	0.7	2.0	3.0	0.4		
24	1.1	8.9	3.0	3.5	0.5	1.5	3.0	0.3	24	2.2	17.7	4.0	4.5	1.0	3.0	3.5	0.5		
30	1.4	10.4	3.0	3.5	0.6	2.0	3.5	0.4	30	2.7	20.7	5.0	4.5	1.5	3.0	4.0	0.8		
36	1.7	15.0	3.5	4.5	0.9	2.0	4.0	0.5	36	3.3	29.8	5.5	5.5	2.3	4.0	4.0	1.3		
42	1.9	20.4	4.5	5.0	1.5	2.5	5.0	0.8	42	3.8	40.5	7.0	6.0	3.9	4.5	5.0	2.1		
48	2.2	26.6	4.5	6.0	2.0	2.5	6.0	1.1	48	4.4	52.9	8.0	7.0	5.7	4.5	6.0	2.8		
54	2.5	33.7	6.0	6.0	3.0	3.0	6.0	1.4	54	4.9	67.0	9.0	8.0	8.0	6.0	6.0	4.1		
60	2.7	41.6	6.0	7.0	3.8	3.0	7.0	1.8	60	5.5	82.7	9.5	9.0	10.6	6.0	7.0	5.3		
66	3.0	50.3	6.5	8.0	5.1	3.5	8.0	2.7	66	6.0	100.1	10.5	10.0	14.1	6.5	8.0	7.2		
72	3.3	59.9	7.5	8.0	6.3	4.0	8.0	3.3	72	6.6	119.1	11.0	11.0	17.6	7.5	8.0	9.1		
78	3.6	70.2	8.0	9.0	8.1	4.0	9.0	3.9	78	7.1	139.8	12.0	12.0	22.5	8.0	9.0	11.7		
84	3.8	81.5	8.5	10.0	10.3	4.5	10.0	5.3	84	7.6	162.1	13.0	12.5	27.2	8.5	10.0	14.8		
90	4.1	93.5	9.5	10.0	12.2	5.0	10.0	6.3	90	8.2	186.1	14.0	13.5	33.7	9.5	10.0	17.7		
96	4.4	106.4	10.0	11.0	15.0	5.0	11.0	7.4	96	8.7	211.7	15.0	14.5	41.2	10.0	11.0	21.8		

TABLES OF DIMENSIONS AND QUANTITIES

HORIZONTAL THRUST BLOCK
AT PIPE BEND

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

502.4

DATE

OCT. '04

STANDARD DRAWING NO.

4010B

$\Delta = 30^\circ$									$\Delta = 45^\circ$								
I.D. (IN.)	G (FT.)	THRUST (TONS)	EARTH			ROCK			I.D. (IN.)	G (FT.)	THRUST (TONS)	EARTH			ROCK		
			A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)				A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)
4,6,8	1.0	2.6	2.0	1.5	0.2	1.0	1.5	0.1	4,6,8	1.5	3.9	2.0	2.0	0.2	1.5	1.5	0.1
10,12	1.5	5.9	2.5	2.5	0.3	2.0	1.5	0.2	10,12	2.2	8.7	3.5	2.5	0.5	2.0	2.5	0.3
16,18	2.2	13.2	3.5	4.0	0.8	2.5	3.0	0.4	16,18	3.2	19.5	4.5	4.5	1.2	3.0	3.5	0.6
20	2.4	16.3	4.5	4.0	1.0	3.0	3.0	0.5	20	3.6	24.1	5.5	4.5	1.5	3.5	3.5	0.7
24	2.9	23.4	6.0	4.0	1.4	3.5	3.5	0.7	24	4.3	34.6	8.0	4.5	2.3	4.5	4.0	1.1
30	3.6	27.5	6.5	5.0	1.9	3.5	4.0	0.9	30	5.4	40.6	8.5	5.0	3.2	5.5	4.0	1.6
36	4.4	39.5	7.0	6.0	3.4	4.5	4.5	1.6	36	6.5	58.5	10.0	6.0	5.3	6.5	4.5	2.6
42	5.1	53.8	8.0	7.0	5.1	5.5	5.0	2.5	42	7.5	79.6	11.5	7.0	8.1	8.0	5.0	4.2
48	5.8	70.3	9.0	8.0	7.4	6.0	6.0	3.7	48	8.6	104.0	13.0	8.0	11.9	9.0	6.0	6.3
54	6.5	89.0	10.0	9.0	10.3	7.0	6.5	5.3	54	9.7	131.5	15.0	9.0	17.1	10.5	6.5	8.9
60	7.3	110.0	11.0	10.0	13.9	7.5	7.5	7.3	60	10.7	162.4	16.5	10.0	23.1	11.0	7.5	12.0
66	8.0	132.9	12.5	11.0	18.9	8.5	8.0	9.6	66	11.8	196.5	18.0	11.0	30.1	12.0	8.5	16.2
72	8.7	158.2	13.5	12.0	24.0	9.0	9.0	12.3	72	12.9	233.9	19.5	12.0	38.6	14.0	8.5	20.7
78	9.4	185.6	14.5	13.0	30.0	10.0	9.5	15.6	78	13.9	274.5	21.5	13.0	49.8	14.5	9.5	25.9
84	10.1	215.3	15.5	14.0	37.1	10.5	10.5	19.5	84	15.0	318.4	23.0	14.0	61.2	15.5	10.5	32.6
90	10.9	247.1	16.5	15.0	45.0	11.5	11.0	23.9	90	16.1	365.5	24.5	15.0	74.5	17.5	10.5	39.6
96	11.6	281.2	18.0	16.0	55.5	12.5	11.5	28.9	96	17.1	415.6	26.0	16.0	89.5	18.5	11.5	48.5

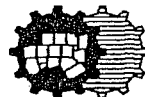
$\Delta = 67.50^\circ$									$\Delta = 90^\circ$								
I.D. (IN.)	G (FT.)	THRUST (TONS)	EARTH			ROCK			I.D. (IN.)	G (FT.)	THRUST (TONS)	EARTH			ROCK		
			A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)				A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)
4,6,8	2.1	5.6	3.0	2.0	0.3	2.0	1.5	0.2	4,6,8	2.7	7.1	5.0	1.5	0.4	2.0	2.0	0.2
10,12	3.1	12.6	5.5	2.5	0.8	3.5	2.0	0.4	10,12	4.0	16.0	6.5	2.5	1.0	3.5	2.5	0.5
16,18	4.7	28.3	7.5	4.0	1.9	5.5	3.0	0.9	16,18	6.0	36.0	9.0	4.0	2.4	4.5	4.0	1.0
20	5.2	34.9	9.0	4.0	2.3	5.5	3.5	1.2	20	6.6	44.4	10.0	4.5	3.1	6.0	4.0	1.5
24	6.2	50.3	11.5	4.5	3.5	6.5	4.0	1.6	24	7.9	64.0	14.5	4.5	5.0	8.0	4.0	2.1
30	7.8	58.9	12.0	5.0	4.8	7.5	4.0	2.2	30	9.9	75.0	15.0	5.0	6.7	10.0	4.0	3.3
36	9.4	84.9	14.5	6.0	8.2	9.5	4.5	3.8	36	11.9	108.0	18.0	6.0	11.4	12.0	4.5	5.3
42	10.9	115.5	17.0	7.0	12.8	11.0	5.5	6.3	42	13.9	147.0	21.0	7.0	17.8	14.0	5.5	8.7
48	12.5	150.9	19.0	8.0	18.4	13.0	6.0	9.2	48	15.9	192.0	24.0	8.0	26.2	16.0	6.0	12.4
54	14.0	191.0	21.5	9.0	26.0	15.0	6.5	12.9	54	17.9	243.0	27.0	9.0	36.9	18.0	7.0	18.1
60	15.6	235.8	24.0	10.0	35.6	16.0	7.5	17.6	60	19.9	299.8	30.0	10.0	50.3	20.0	7.5	24.0
66	17.1	285.3	26.0	11.0	46.0	18.0	8.0	23.0	66	21.8	362.8	33.0	11.0	66.2	22.0	8.5	32.5
72	18.7	339.5	28.5	12.0	57.8	19.0	9.0	28.4	72	23.8	431.8	36.0	12.0	85.6	24.0	9.0	41.0
78	20.2	398.5	31.0	13.0	75.7	21.0	9.5	37.4	78	25.7	506.7	39.0	13.0	108.2	26.0	10.0	53.2
84	21.8	462.1	33.5	14.0	94.7	22.0	10.5	46.5	84	27.7	587.7	42.0	14.0	134.4	28.0	10.5	64.8
90	23.3	530.5	35.5	15.0	114.4	24.5	11.0	58.2	90	29.0	674.6	45.0	15.0	164.9	30.0	11.5	81.2
96	24.9	603.6	38.0	16.0	138.9	25.5	12.0	70.0	96	31.6	767.5	48.0	16.0	199.0	32.0	12.0	95.1

TABLES OF DIMENSIONS AND QUANTITIES

HORIZONTAL THRUST BLOCK

AT PIPE BEND

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

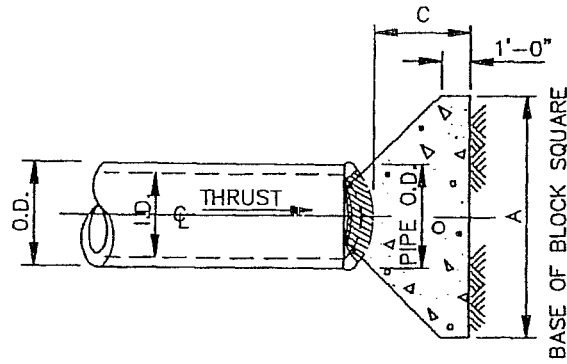
502.4

DATE

OCT. '04

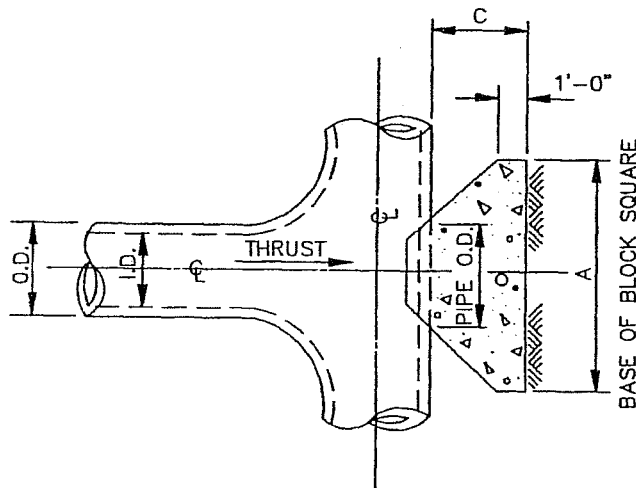
STANDARD DRAWING NO.

4010C



PLAN OF PLUG THRUST BLOCK

N.T.S.



REFER TO
STD. DWG. No. 4040
FOR GENERAL NOTES.

PLAN OF TEE THRUST BLOCK

N.T.S.

I.D. (IN.)	THRUST (TONS)	C (FT.)	EARTH		ROCK	
			A (FT.)	VOL. (C.Y.)	A (FT.)	VOL. (C.Y.)
4,6,8	5.1	1.5	2.5	0.3	2.0	0.2
10,12	11.3	1.5	3.5	0.6	2.5	0.3
16,18	25.5	2.0	5.5	1.6	4.0	0.9
20	31.5	2.0	6.0	1.9	4.0	0.9
24	45.2	2.5	7.0	3.1	5.0	1.7
30	53.0	3.0	7.5	4.1	5.5	2.4
36	76.3	4.0	9.0	7.3	6.5	4.2
42	104.0	4.5	10.5	11.0	7.5	6.2
48	136.0	5.0	12.0	15.6	8.5	8.7
54	172.0	5.5	13.5	21.4	9.5	11.9
60	212.0	6.0	15.0	28.4	10.5	15.7
66	257.0	6.5	16.5	36.8	11.5	20.5
72	305.0	7.5	17.5	47.2	12.5	27.2
78	358.0	8.0	19.0	58.9	13.5	33.7
84	416.0	8.5	20.5	72.3	14.5	41.2
90	477.0	9.0	22.0	87.7	15.5	49.7
96	543.0	9.5	23.5	104.8	16.5	61.0

HORIZONTAL THRUST BLOCK
AT TEES AND PLUGS

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

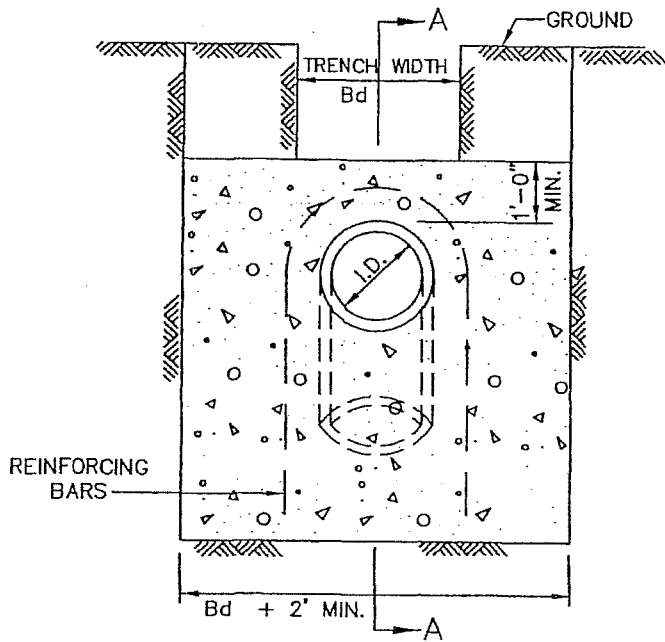
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DATE

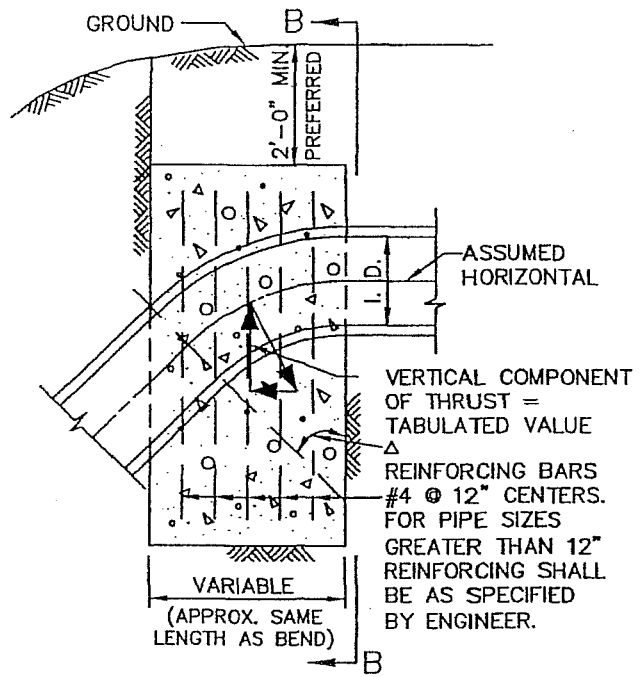
OCT. '04

STANDARD DRAWING NO.

4020



ELEVATION "B-B"
N.T.S.



SECTION "A-A"
N.T.S.

REFER TO
STD. DWG. No. 4040
FOR GENERAL NOTES.

Δ →	11.25'		22.50'		30'		45'		67.50'		90'		← Δ
I.D. (IN.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	I.D. (IN.)
4,6,8	1.0	0.5	2.0	1.0	2.5	1.3	3.6	1.8	4.6	2.3	5.0	2.5	4,6,8
10,12	2.2	1.1	4.3	2.2	5.7	2.8	8.0	4.0	10.5	5.2	11.3	5.7	10,12
16,18	5.0	2.5	9.7	4.9	12.7	6.4	18.0	9.0	23.5	11.8	25.5	12.7	16,18
20	6.1	3.1	12.0	6.0	15.7	7.9	22.2	11.1	29.2	14.5	31.4	15.7	20
24	8.2	4.4	17.3	8.7	22.6	11.3	32.0	16.0	41.8	20.9	45.2	22.6	24
30	10.5	5.2	20.3	10.1	26.5	13.3	37.5	18.8	49.0	24.5	53.1	26.5	30
36	14.9	7.5	29.2	14.6	38.2	19.1	54.0	27.0	70.5	35.3	76.4	38.2	36
42	20.3	10.1	39.8	19.9	52.0	26.0	73.5	36.7	96.0	48.0	104.0	52.0	42
48	26.5	13.2	51.9	26.0	67.9	33.9	96.0	48.0	126.0	62.7	136.0	67.9	48
54	33.5	16.8	65.7	32.9	85.9	42.9	122.0	60.7	159.0	79.4	172.0	85.9	54
60	41.4	20.7	81.2	40.6	106.0	53.0	150.0	75.0	196.0	98.0	212.0	106.0	60
66	50.1	25.0	98.2	49.1	128.0	64.2	182.0	90.7	237.0	119.0	257.0	128.0	66
72	59.6	29.8	117.0	58.4	153.0	76.3	216.0	108.0	282.0	141.0	305.0	153.0	72
78	69.9	35.0	137.0	68.6	179.0	90.0	254.0	127.0	331.0	166.0	358.0	179.0	78
84	81.1	40.5	159.0	79.5	208.0	104.0	294.0	147.0	384.0	192.0	416.0	208.0	84
90	93.1	46.5	183.0	91.3	239.0	119.0	337.0	169.0	441.0	221.0	477.0	239.0	90
96	106.0	53.0	208.0	104.0	272.0	136.0	384.0	192.0	502.0	251.0	543.0	272.0	96

VERTICAL THRUST BLOCK
AT PIPE BEND

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

502.4

DATE

OCT. '04

STANDARD DRAWING NO.

4030

GENERAL NOTES FOR ALL THRUST BLOCKS:

1. CONCRETE FOR BLOCKING SHALL BE CLASS "B".
2. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 PSI FOR DUCTILE IRON, P.V.C., AND 150 PSI FOR CONCRETE PIPE.
3. VOLUMES OF THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE (CLASS "B") IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THE THRUST ON THE VERTICAL BEND.
4. WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.
5. POUR CONCRETE FOR BLOCK AGAINST UNDISTURBED EARTH.
6. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.
7. THE SOIL BEARING PRESSURES ARE BASED ON 1000 LBS./S.F. IN SOIL AND 2000 LBS./S.F. IN ROCK.
8. USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE AND BEND, TEE, OR PLUG TO PREVENT THE CONCRETE FROM STICKING TO IT.
9. CONCRETE SHALL NOT EXTEND BEYOND JOINTS.

THRUST BLOCK

GENERAL NOTES

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

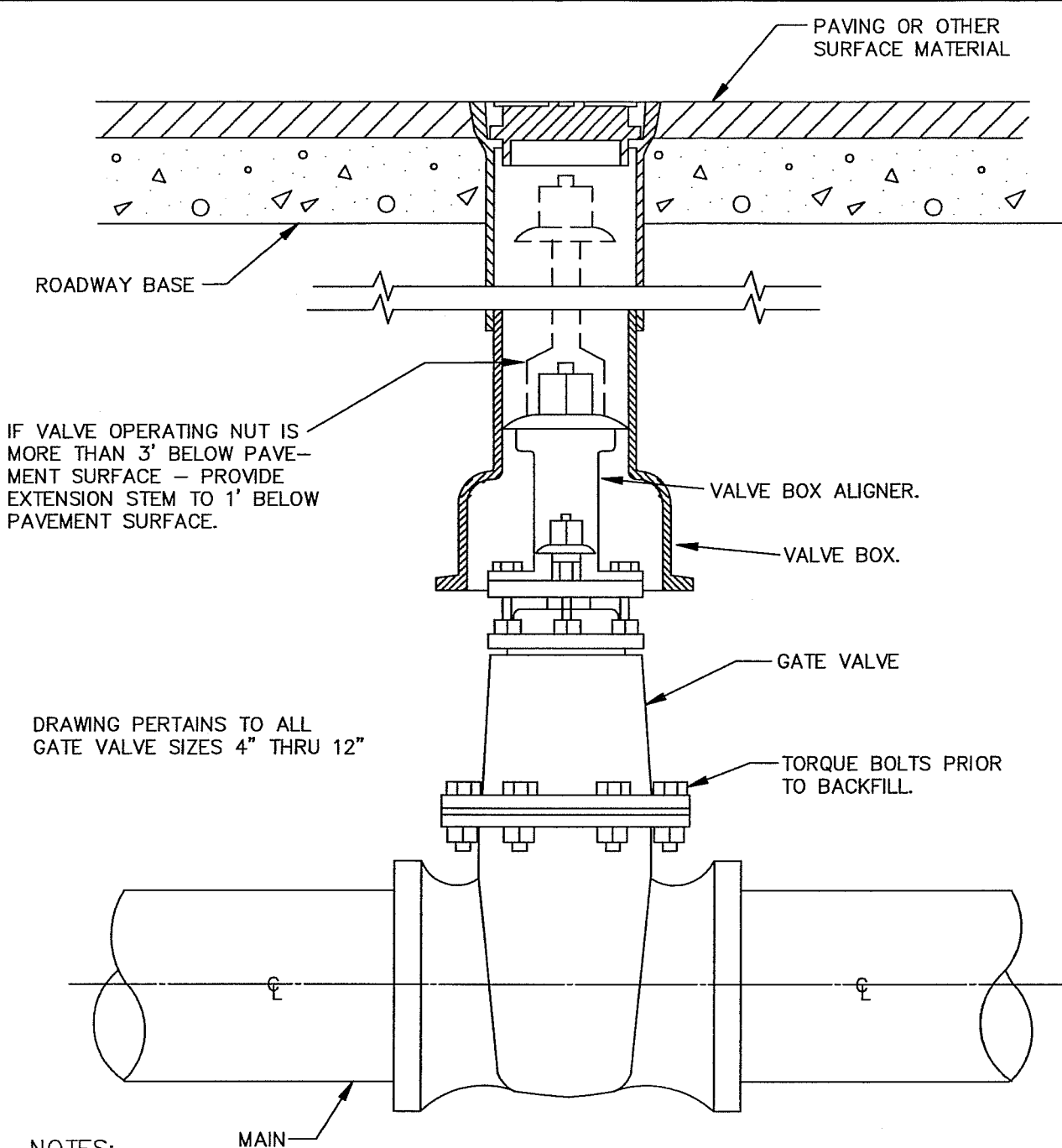
502.4

DATE

OCT. '04

STANDARD DRAWING NO.

4040



DRAWING PERTAINS TO ALL GATE VALVE SIZES 4" THRU 12"

NOTES:

1. IN UNPAVED AREAS, INSTALL 2'x2'x6" CONCRETE VALVE PAD FLUSH WITH THE TOP OF VALVE BOX. REINFORCE WITH #3 BARS ON 6" CENTERS BOTH WAYS.
2. ALL VALVES SHALL BE MARKED ON THE CURB WITH A SAWED "V" AND A BLUE VALVE MARKER CENTERED ON THE "V".
3. ALL VALVE BOX COVERS SHALL BE PAINTED BLUE.
4. ALL VALVES WILL BE CONSTRUCTED WITH GATE BOX ALIGNER USA BLUE BOOK MODEL NUMBER 75181

GATE VALVE BOX AND EXTENSION STEM
N.T.S.

M* - CITY OF MELISSA REVISION

GATE VALVE 4" TO 12"

BOX & EXTENSION STEM

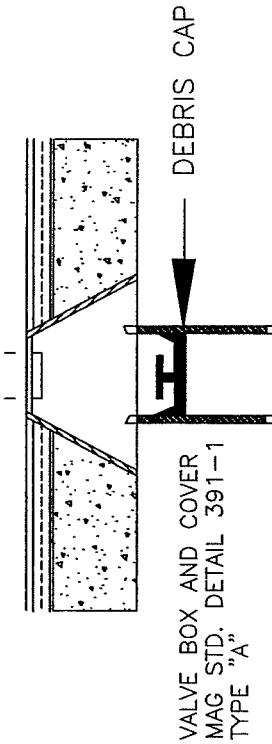


NCTCOG STANDARD SPECIFICATION REFERENCE
502.6

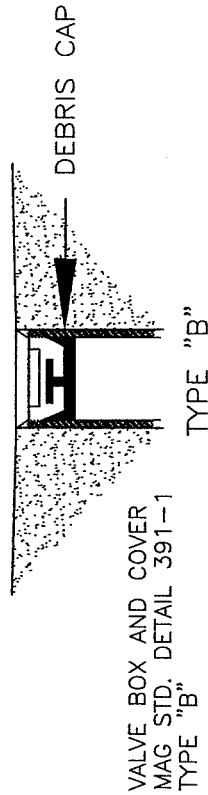
DATE 11/13/08 STANDARD DRAWING NO. 4050M*

NOTES

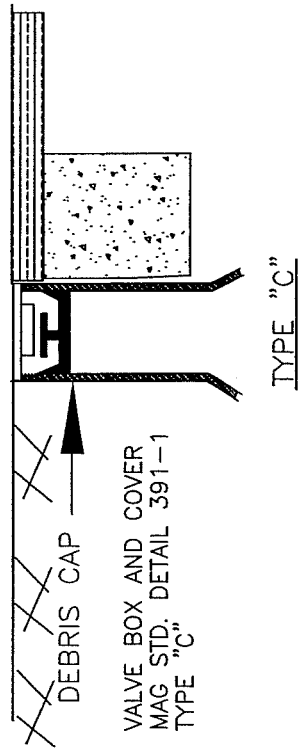
1. THE DEBRIS CAP SHALL BE DESIGNED AND INSTALLED TO PREVENT DEBRIS SUCH AS DIRT, DUST, SAND ETC., FROM PASSING AROUND THE CAP AND DOWN INTO THE VALVE HOUSING. THE CAP SHALL BE HELD IN PLACE BY A MECHANISM WHICH WILL NOT DAMAGE THE VALVE HOUSING. ONCE INSTALLED THE CAP MUST WITHSTAND, WITHOUT SLIPPAGE, A MINIMUM VERTICAL FORCE OF 50 POUNDS, AT A LOADING RATE OF 1.0 IN./MINUTE.
2. THE CAP SHALL BE MANUFACTURED OF CORROSIVE RESISTANT MATERIALS.
3. DEBRIS CAP SHALL BE INSTALLED AS CLOSE UNDER THE CAST IRON COVER WITHOUT INTERFERING WITH COVER OPERATION.
4. THE CAP SHALL BE CAPABLE OF SECURELY HOLDING A STANDARD LOCATING COIL, "SCOTCH MARK" 4 DISK MARKER BY 3M OR EQUAL.
5. THE CAP SHALL BE CONSTRUCTED TO ALLOW THE DEVICE TO BE SECURED BY A LOCK. THE LOCK (PAD, BARREL, ETC.) SHALL BE SUPPLIED BY THE AGENCY.
6. THE HANDLE AND/OR BODY OF THE CAP SHALL BE INTEGRALLY COLORED IF REQUIRED BY THE AGENCY. IF REQUIRED THE COLOR SHALL CONFORM TO THE ONE CALL LOCATING SERVICE (BLUE STAKE) COLORS (ARS 40-360.21)
7. THE CAP SHALL BE INSTALLED IN ALL VALVE HOUSINGS AS REQUIRED BY THE CONTRACT DOCUMENTS OR BY THE AGENCY'S POLICIES.
8. THE DEBRIS CAP SHALL BE MANUFACTURED BY SW SERVICES, INC., PHOENIX, ARIZONA OR EQUAL.



TYPE "A"



TYPE "B"



DEBRIS CAP

CITY OF MELISSA

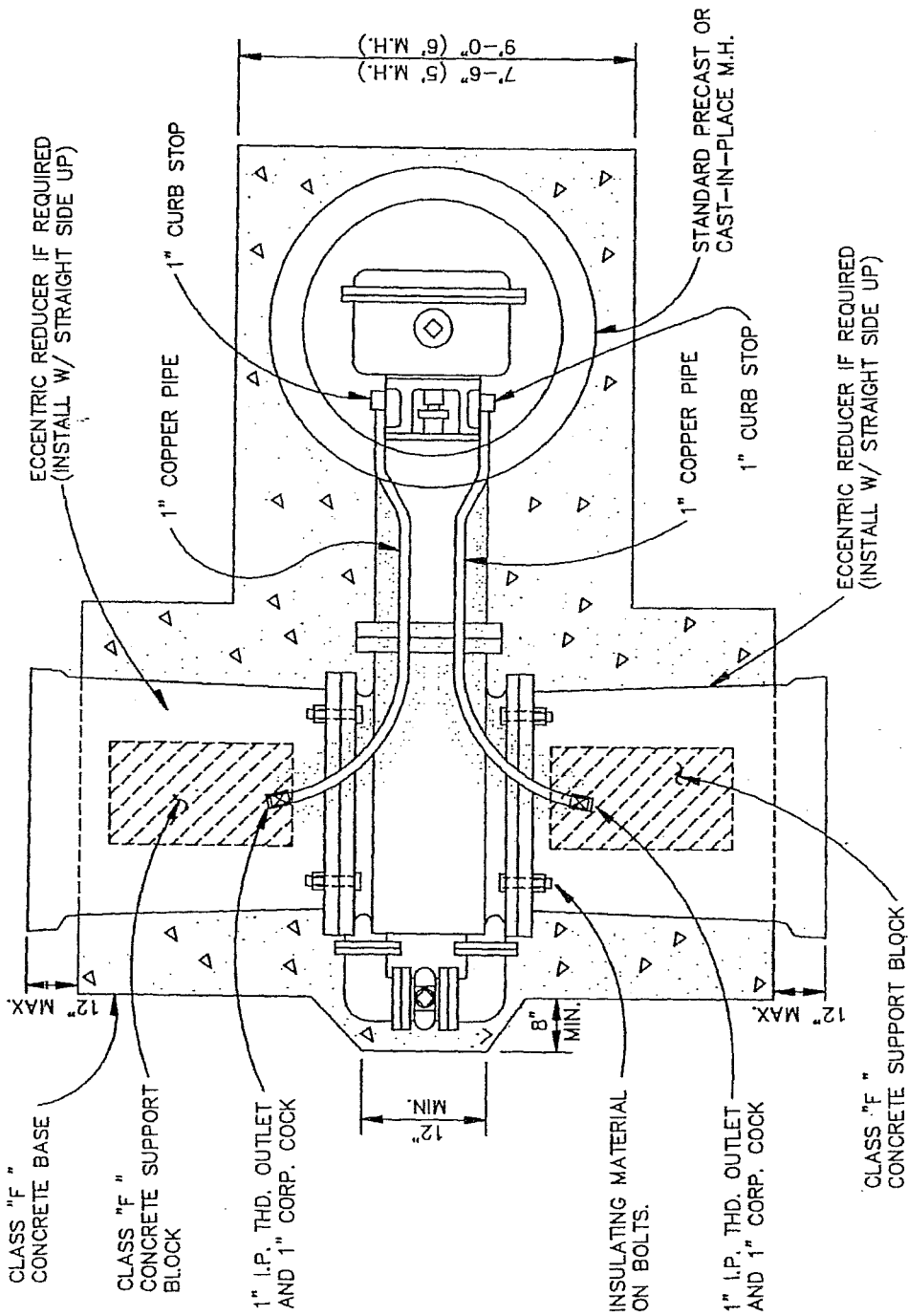
STANDARD SPECIFICATION REFERENCE

DATE

NOV. '04

STANDARD DRAWING NO.

4051M*



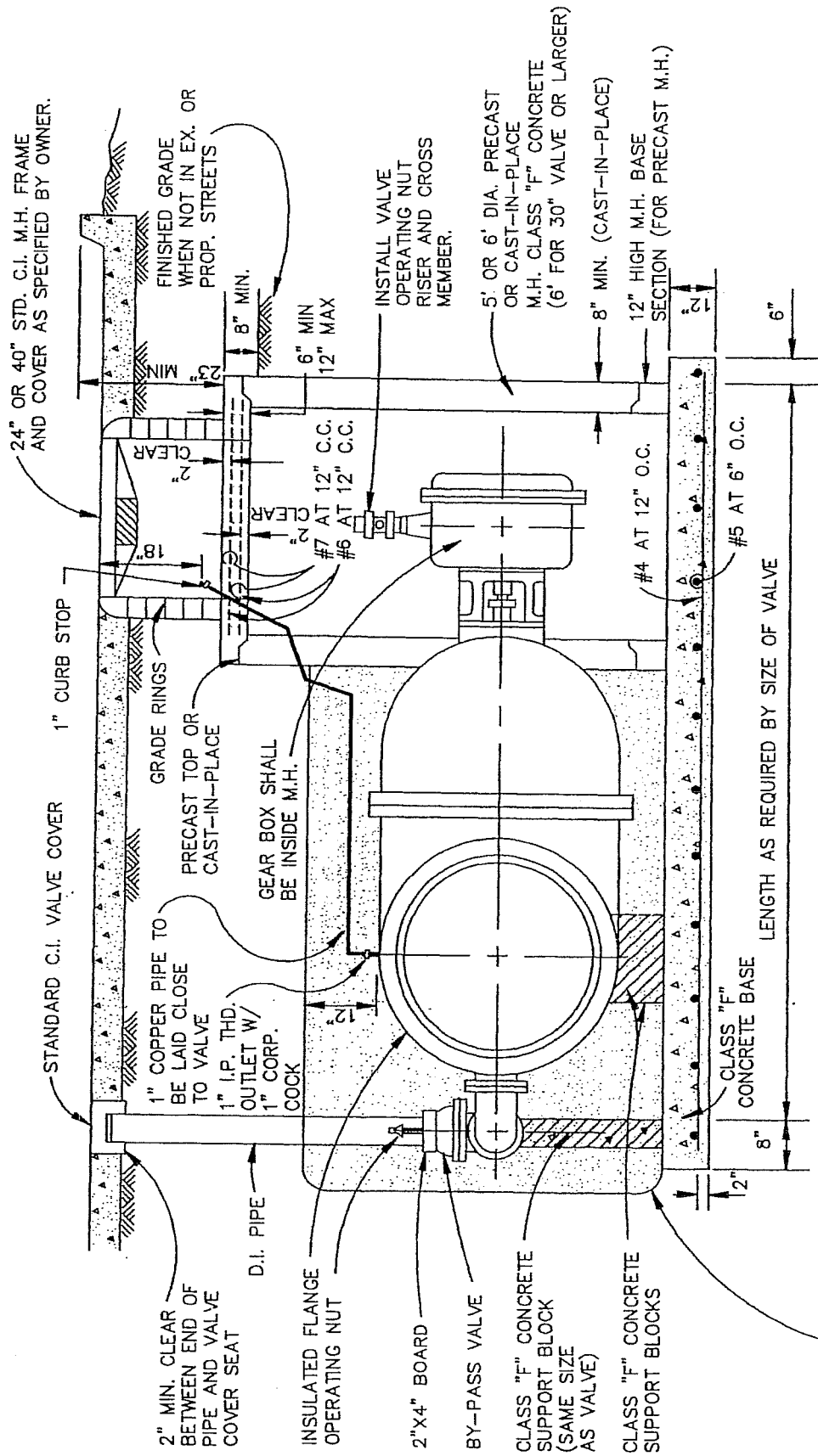
PLAN
N.T.S.

STANDARD SPECIFICATION REFERENCE	702.4
DATE	OCT. '04
STANDARD DRAWING NO.	4060A



VAULT CONSTRUCTION
HORIZONTAL GATE VALVE \cong 16"

STANDARD DRAWING NO.
4060A



BACKFILL 12" AROUND VALVE BODY W/
 PORTLAND CEMENT STABILIZED SAND
 2 SACKS PER CUBIC YARD.

PROFILE
 N.T.S.

STANDARD SPECIFICATION REFERENCE
 702.4

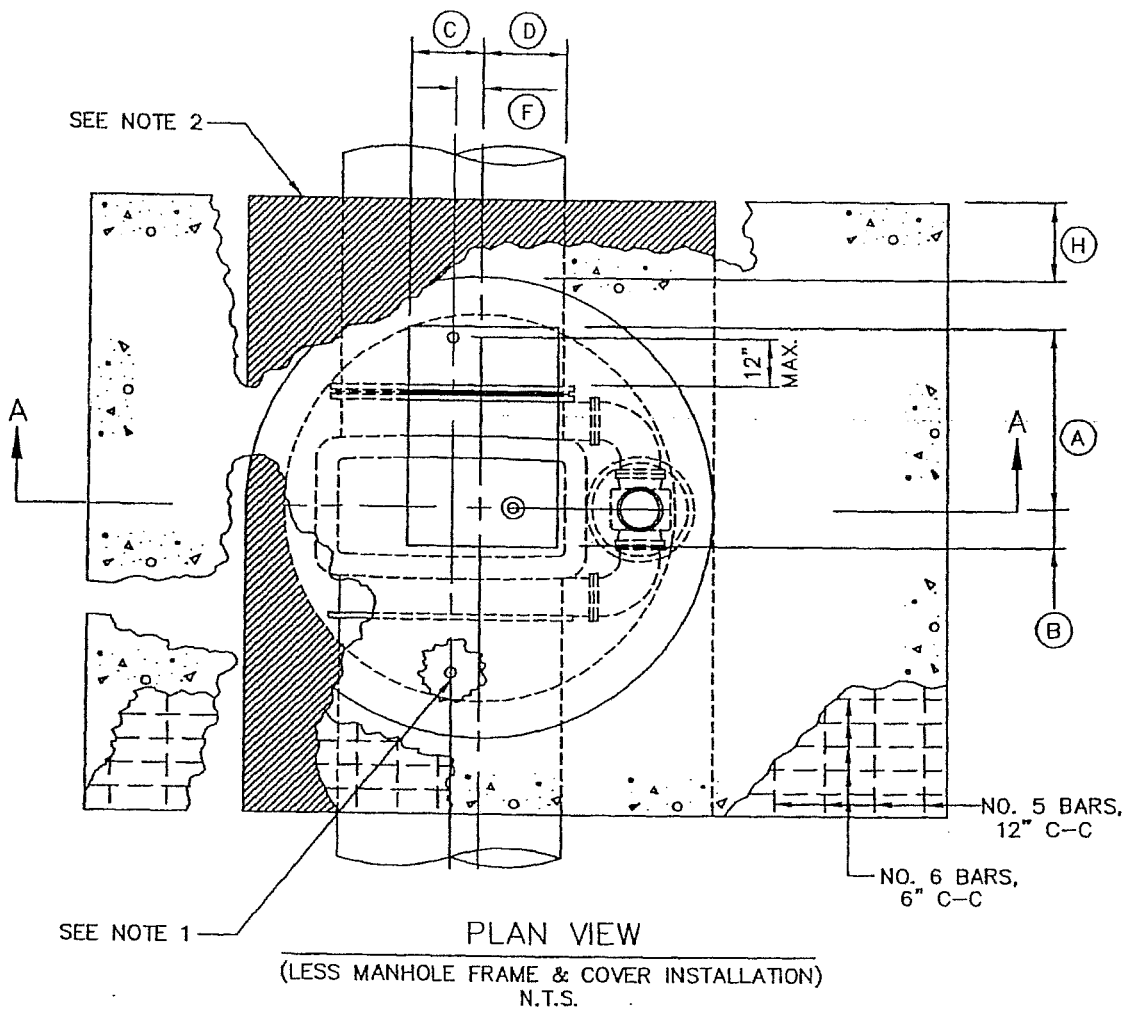
DATE
 OCT. '04

STANDARD DRAWING NO.
 4060B



VAULT CONSTRUCTION
 HORIZONTAL GATE VALVE ≥ 16"

STANDARD DRAWING NO.
 4060B



GATE VALVE SIZE	DIMENSION TABLE											
	A	B	C	D	E	F	G	H	J	K	L	M
16"	20"	20"	12"	12"	44 1/2"	1"	48"	12"	10"	24"	12"	16"
18"	20"	20"	12"	12"	51 3/8"	2"	48"	12"	12"	24"	12"	18"
20"	22"	18"	12"	12"	56 5/8"	1"	54"	12"	12"	24"	16"	20"
24"	26"	14"	12"	12"	64 3/8"	1"	60"	18"	14"	30"	18"	24"
30"	28"	12"	12"	12"	80 5/8"	3"	66"	18"	18"	30"	20"	30"
36"	32"	8"	12"	12"	90 1/16"	4"	72"	18"	18"	36"	24"	36"
42"	34"	6"	15"	9"	107 3/4"	5"	78"	24"	20"	36"	30"	42"
48"	36"	4"	14"	10"	121 5/8"	4"	90"	24"	26"	42"	36"	48"
54"	36"	4"	9"	15"	142 1/2"	3"	102"	24"	32"	46"	40"	54"

NOTES:

1. PROVIDE CORPORATION AND CURB STOPS A MAXIMUM OF 12" FROM EACH END OF GATE VALVE, AS SHOWN. CORPORATION AND CURB STOP SIZES SHALL BE 1" FOR 16", 20", AND 24" NOMINAL PIPE DIAMETERS; 2" FOR 30" AND LARGER DIAMETERS. 2" TAPS SHALL BE MADE AS A 2" FLANGED OUTLET WITH INSULATED ADAPTOR KIT. COPPER RISERS SHALL BE PROVIDED BETWEEN THE CORPORATION AND CURB STOPS. CURB STOPS SHALL BE INSTALLED AT AN ELEVATION 12" ABOVE THE TOP SURFACE OF VAULT BOTTOM SLAB.
2. POLYURETHANE CUSHION PAD.

VAULT CONSTRUCTION

VERTICAL GATE VALVE $\geq 16"$

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

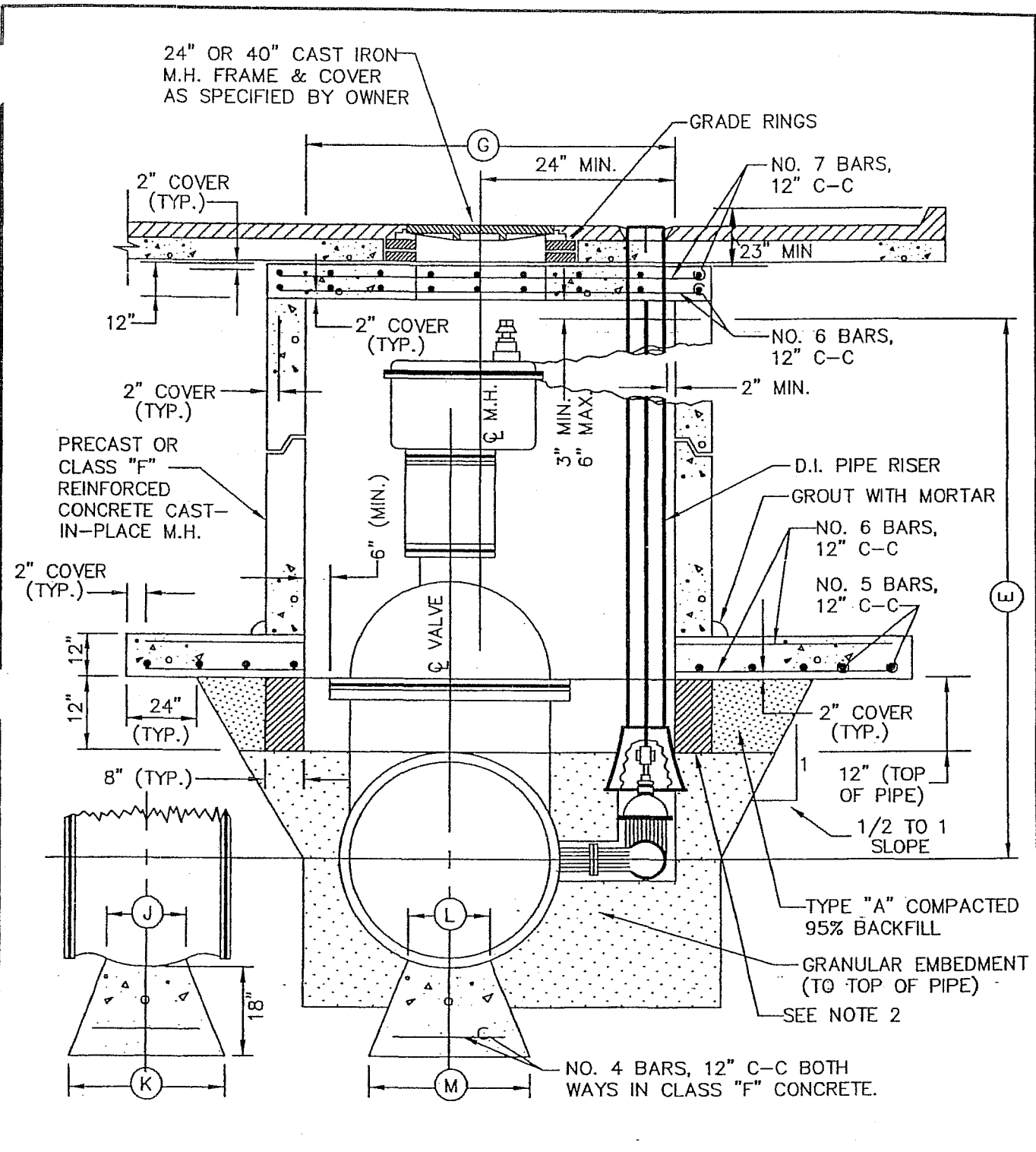
702.4

DATE

OCT. '04


STANDARD DRAWING NO.

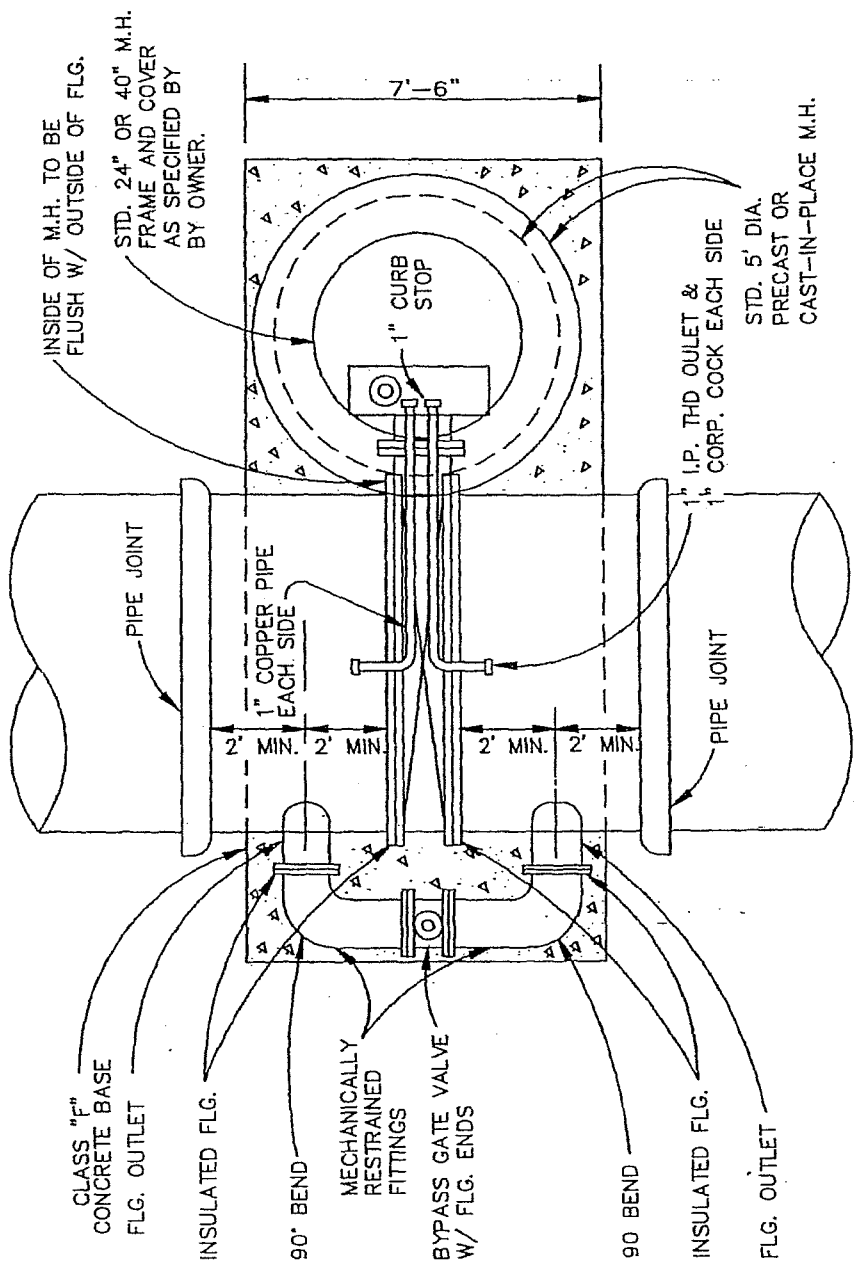
4070A



SECTION "A-A"

REFER TO STD. DWG. 4070A FOR DIMENSION TABLE AND GENERAL NOTES.

<p>VAULT CONSTRUCTION</p>	<p>North Central Texas Council of Governments</p>	<p>STANDARD SPECIFICATION REFERENCE 702.4</p>	
<p>VERTICAL GATE VALVE $\geq 16"$</p>		<p>DATE OCT. '04</p>	<p>STANDARD DRAWING NO. 4070B</p>



PLAN
N.T.S.

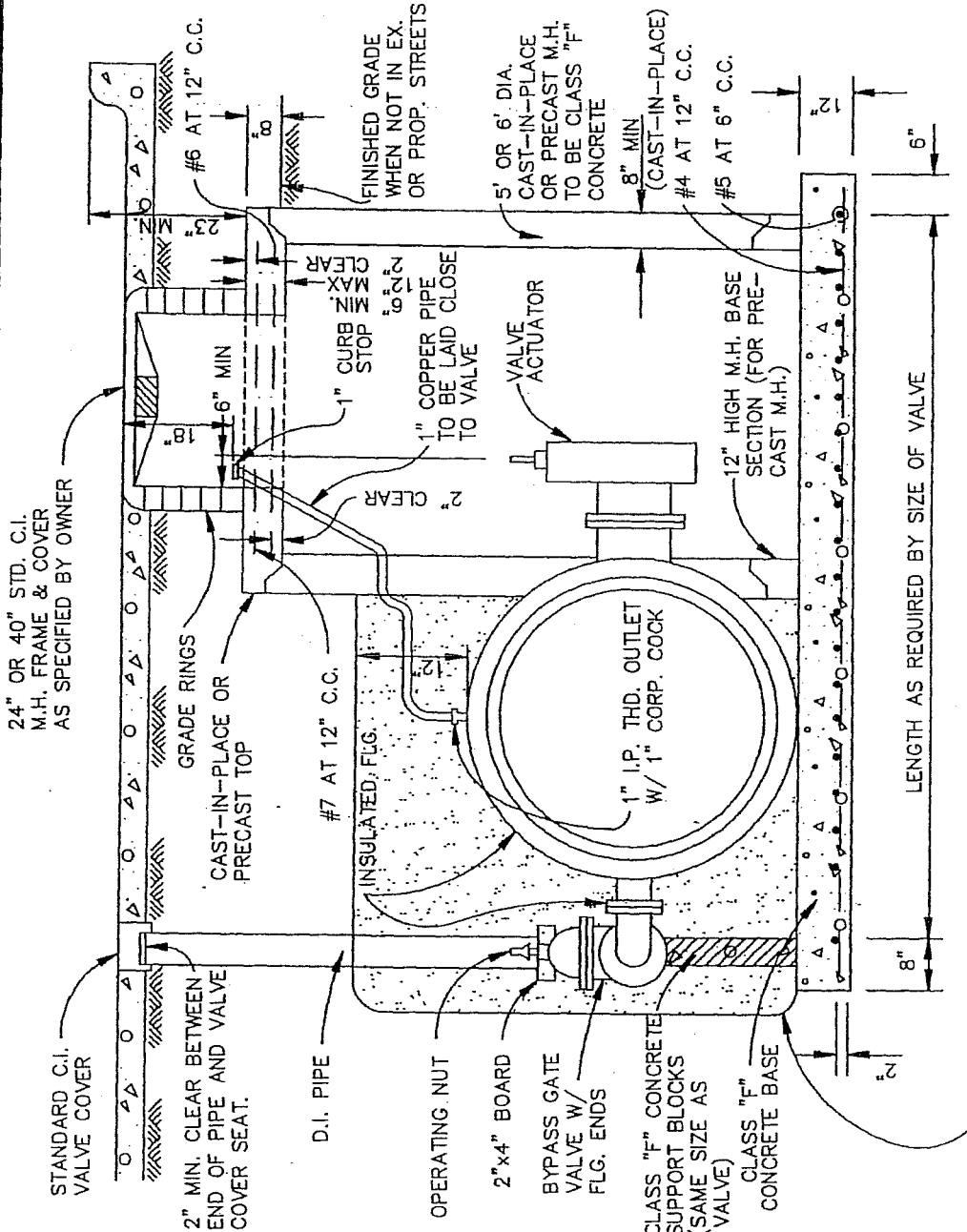
STANDARD SPECIFICATION REFERENCE	702.4
DATE	OCT. '04
STANDARD DRAWING NO.	4080A



VAULT CONSTRUCTION
BUTTERFLY VALVE \cong 48"

STANDARD DRAWING NO.
4080A

24" OR 40" STD. C.I. M.H. FRAME & COVER AS SPECIFIED BY OWNER



PROFILE
N.T.S.

BACKFILL 12" AROUND VALVE BODY W/ PORTLAND CEMENT STABILIZED SAND 2 SACKS PER CUBIC YARD.

STANDARD SPECIFICATION REFERENCE
702.4

DATE
OCT. '04

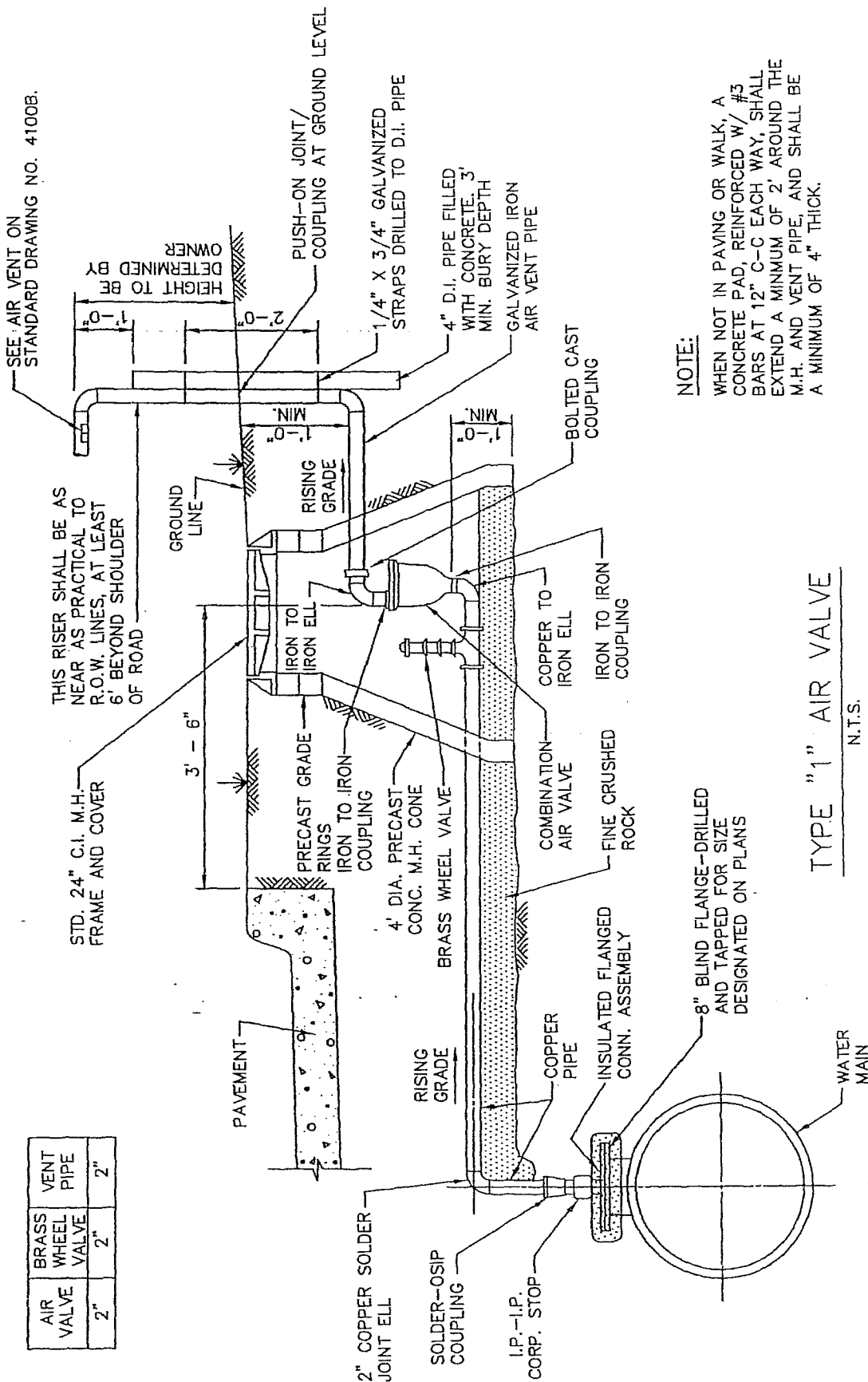
STANDARD DRAWING NO.
4080B



VAULT CONSTRUCTION
BUTTERFLY VALVE \cong 48"

STANDARD DRAWING NO.
4080B

AIR VALVE	2"
BRASS WHEEL VALVE	2"
VENT PIPE	2"



NOTE:

WHEN NOT IN PAVING OR WALK, A CONCRETE PAD, REINFORCED W/ #3 BARS AT 12" C-C EACH WAY, SHALL EXTEND A MINIMUM OF 2' AROUND THE M.H. AND VENT PIPE, AND SHALL BE A MINIMUM OF 4" THICK.

TYPE "1" AIR VALVE
N.T.S.

STANDARD DRAWING NO.
4090

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE
502.6

DATE
OCT. '04

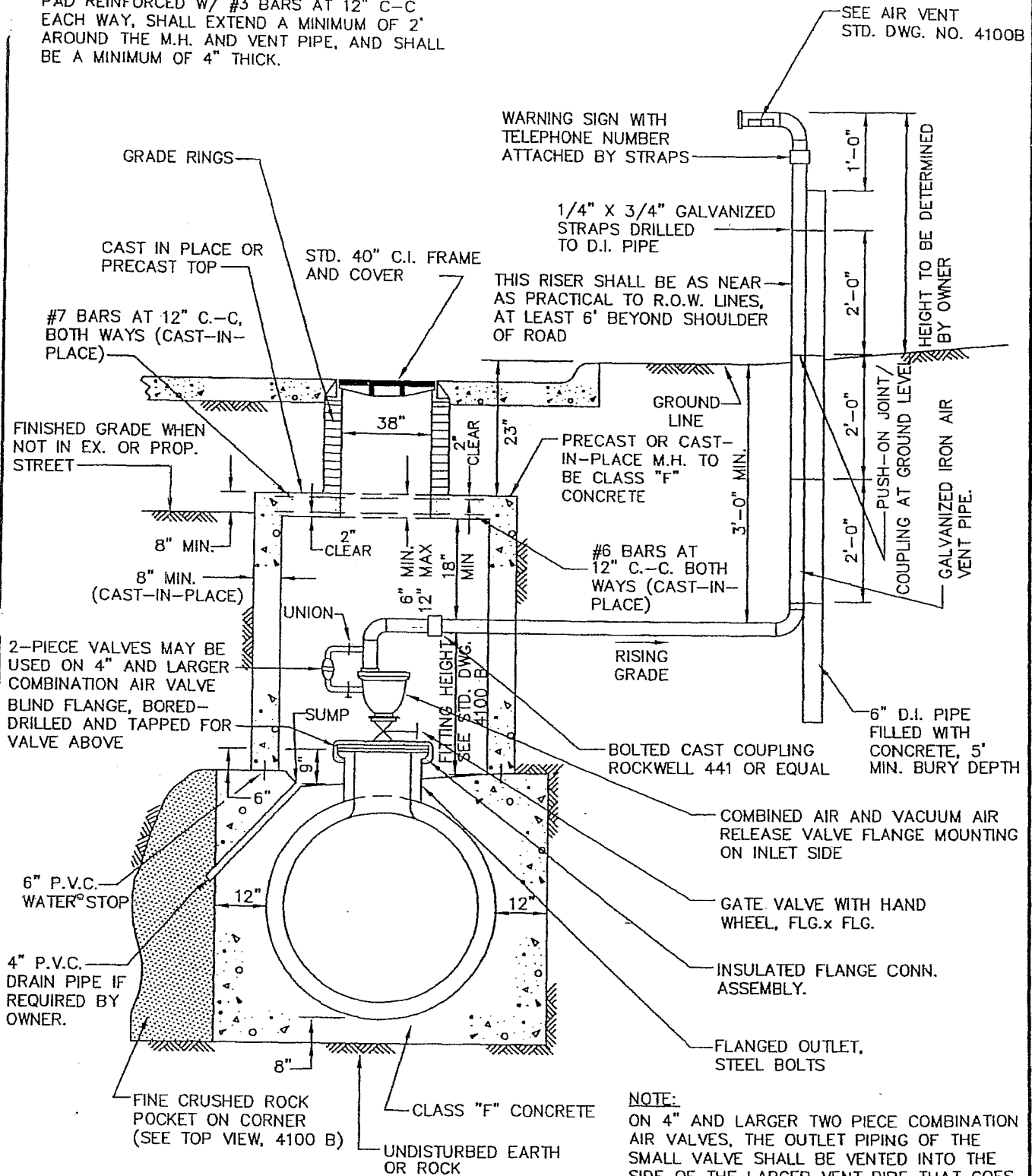
COMBINATION AIR VACUUM VALVE

TYPE "1"

STANDARD DRAWING NO.
4090


NOTE:

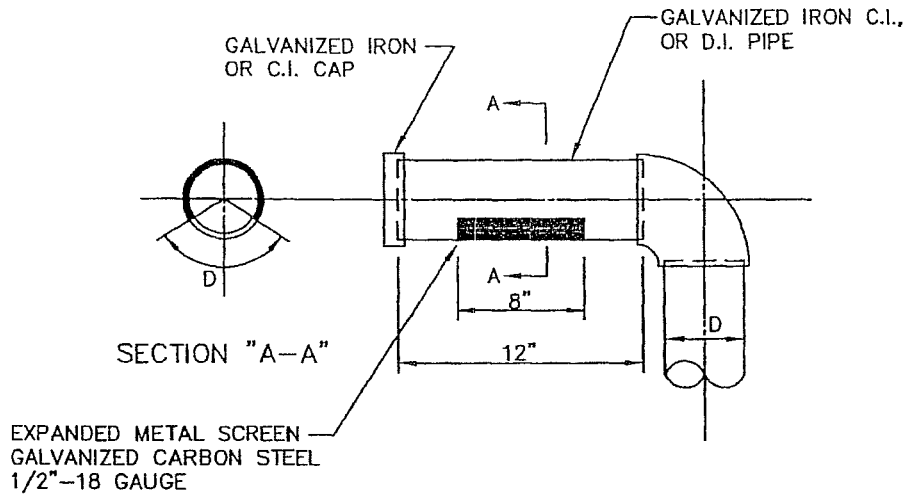
WHEN NOT IN PAVING OR WALK, A CONCRETE PAD REINFORCED W/ #3 BARS AT 12" C-C EACH WAY, SHALL EXTEND A MINIMUM OF 2' AROUND THE M.H. AND VENT PIPE, AND SHALL BE A MINIMUM OF 4" THICK.



NOTE:
ON 4" AND LARGER TWO PIECE COMBINATION AIR VALVES, THE OUTLET PIPING OF THE SMALL VALVE SHALL BE VENTED INTO THE SIDE OF THE LARGER VENT PIPE THAT GOES ABOVE GROUND.

TYPE "2" AIR VALVE
N.T.S.

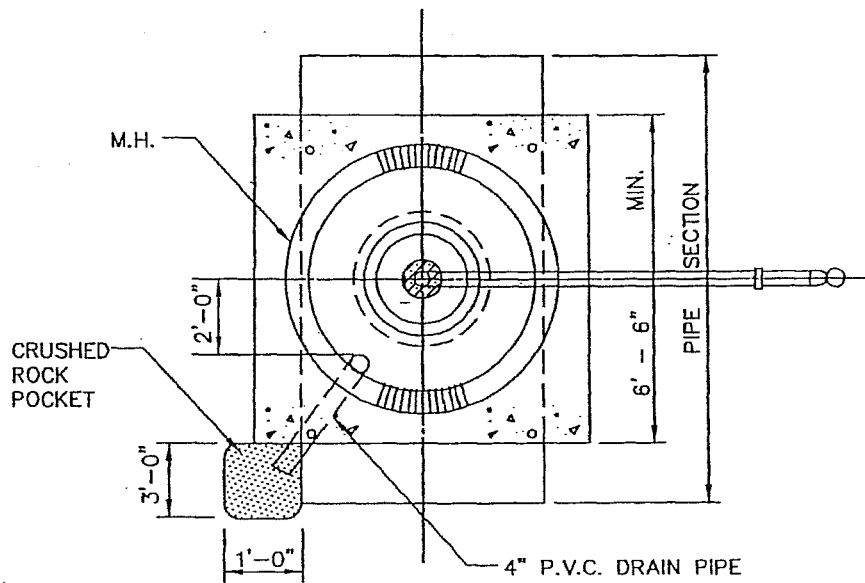
COMBINATION AIR VACUUM VALVE TYPE "2"	North Central Texas Council of Governments 	STANDARD SPECIFICATION REFERENCE 502.6
	DATE OCT. '04	STANDARD DRAWING NO. 4100A



AIR VENT

N.T.S.

AIR VALVE	GATE VALVE	FLG. OUTLET	MIN. FITTING HEIGHT	VENT PIPE D	M.H. DIA.
2"	2"	8"	26"	2"	5'
3"	3"	18"	31"	3"	5'
4"	4"	18"	38"	4"	5'
6"	6"	18"	46"	6"	5'
8"	8"	18"	53"	8"	6'
10"	10"	20"	62"	10"	6'
12"	12"	24"	72"	12"	6'



PLAN VIEW

N.T.S.

AIR RELEASE VALVE
TYPE "2"

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

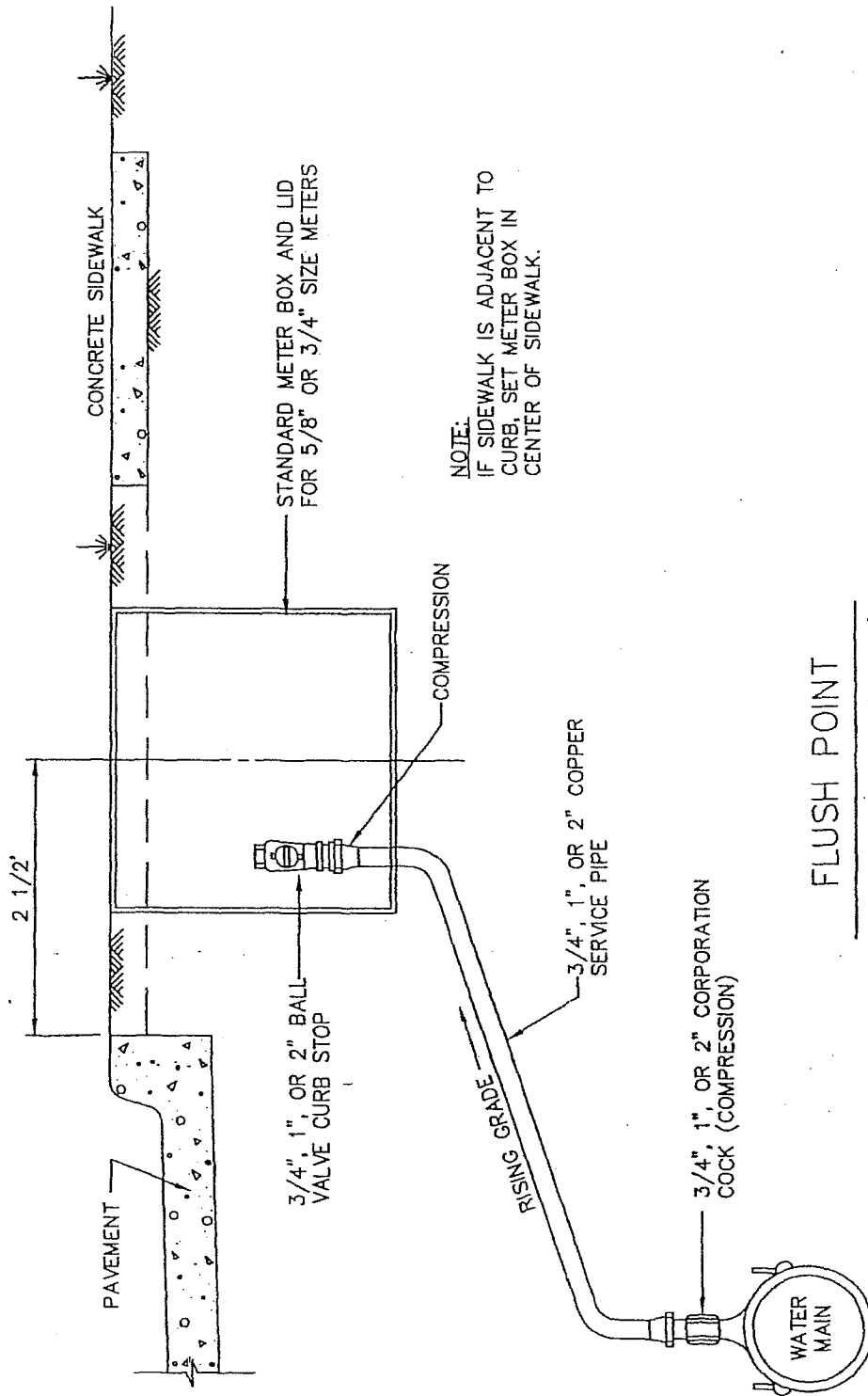
502.6

DATE

OCT. '04

STANDARD DRAWING NO.

4100B



NOTE:
IF SIDEWALK IS ADJACENT TO CURB, SET METER BOX IN CENTER OF SIDEWALK.

FLUSH POINT

(SIZE DESIGNATED ON PLANS)
N.T.S.

STANDARD SPECIFICATION REFERENCE	502.10
DATE	OCT. '04
STANDARD DRAWING NO.	4110



FLUSH POINT INSTALLATION

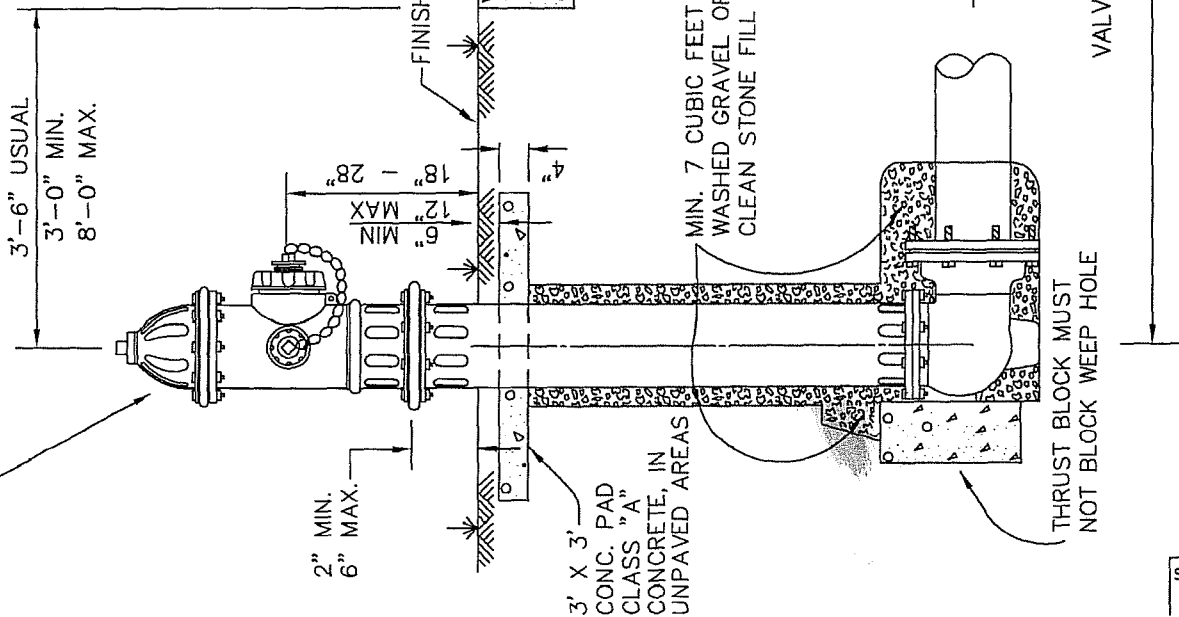
TYPE "1"

STANDARD DRAWING NO.
4110

MUELLER SUPER CENTURION 250 FIRE HYDRANT WITH SAFETY FLANGE

WATER MAIN SIZE	COLOR
6"	red
8"	blue
10"	green
12"	yellow
14" or larger	silver

* FIRE HYDRANTS SHALL BE ORDERED FROM MUELLER IN FACTORY RED ENAMEL FINISH. TOP AND SIDE CAPS WILL BE FIELD PAINTED WITH TWO COATS OF TNEMEC HI-BUILD SAFETY PAINT IN ACCORDANCE TO WATER MAIN SIZE AS LISTED ABOVE.



6" nom. at 25' MAX otherwise 8" PVC

STANDARD DRAWING NO. 4120M*

NOTES:

- IN GENERAL, ALL FIRE HYDRANTS SHALL CONFORM TO AWWA STANDARD SPECIFICATIONS FOR FIRE HYDRANTS FOR ORDINARY WATER WORKS SERVICE, C-502. FIRE HYDRANTS SHALL HAVE A 5 1/4" MIN. VALVE OPENING AND A BARREL APPROXIMATELY 7" INSIDE DIAMETER. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE.
- ALL JOINTS SHALL BE MECHANICAL JOINTS.
- TYPICAL VALVE: ACTUAL VALVE LOCATION WILL DEPEND ON LOCATION OF WATER MAIN.
- F.H. NO CLOSER THAN 18" TO EXISTING OR PROPOSED SIDEWALKS. (USUAL)
- STANDARD BURY DEPTH 5' FEET WITH 6' MAXIMUM.
- SET FIRE HYDRANT ON THE LOT LINE EXTENDED WHEN POSSIBLE.
- F.H. SHALL BE LOCATED MINIMUM 1 FT. OUTSIDE OF THE AREA BETWEEN THE P.C.'S OF THE CORNER TURNING RADII AT INTERSECTIONS. (SEE PLAN VIEW)



M* - CITY OF MELISSA REVISION

NCTCOG STANDARD SPECIFICATION REFERENCE

502.3

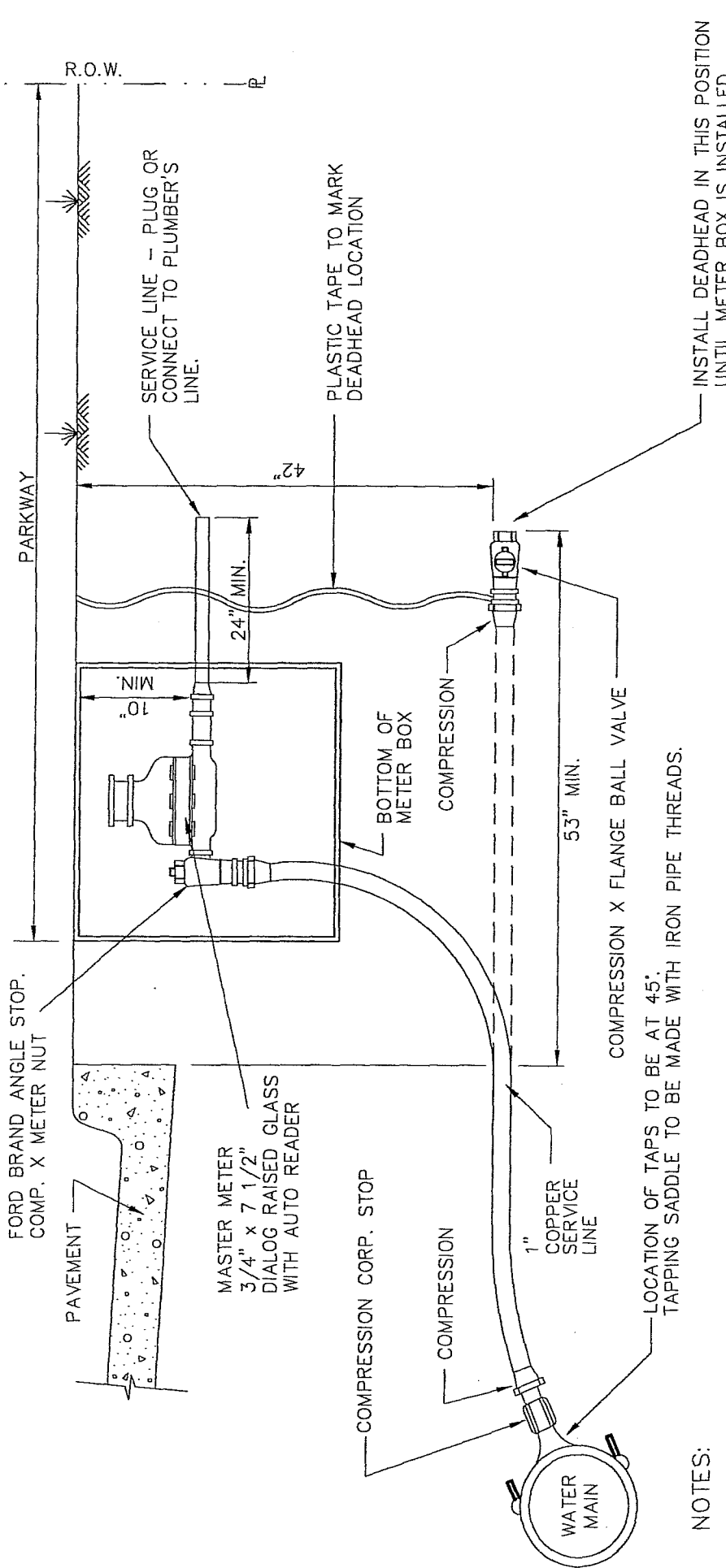
DATE

07/07/09

STANDARD DRAWING NO.

4120M*

FIRE HYDRANT INSTALLATION



NOTES:

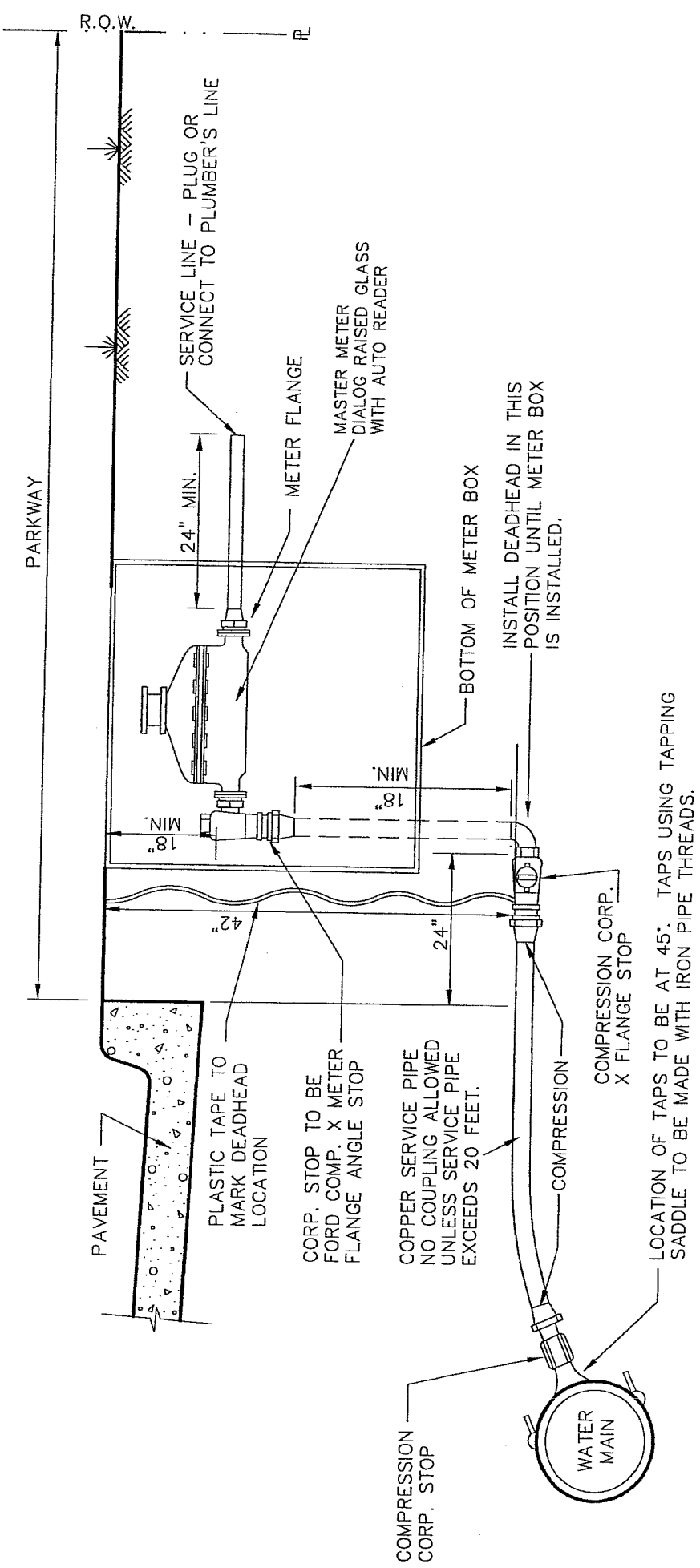
1. METER LOCATION TO BE AT PROPERTY LINES.
2. METER SHALL NOT BE LOCATED WITHIN SIDEWALKS OR DRIVEWAYS.
3. THE METER AND AUTOMATIC METER READER SHALL BE PROVIDED AND INSTALLED BY THE CITY OF MELISSA AT DEVELOPER'S EXPENSE.
4. METER BOXES SHALL BE CORRUGATED METAL FOR AREAS OF TRAFFIC AND PLASTIC FOR NON TRAFFIC AREAS.



WATER SERVICE INSTALLATION

1" LINE

M* - CITY OF MELISSA REVISION	
NCTCOG STANDARD SPECIFICATION REFERENCE	DIVISION 500
DATE	11/13/08
STANDARD DRAWING NO.	4130M*



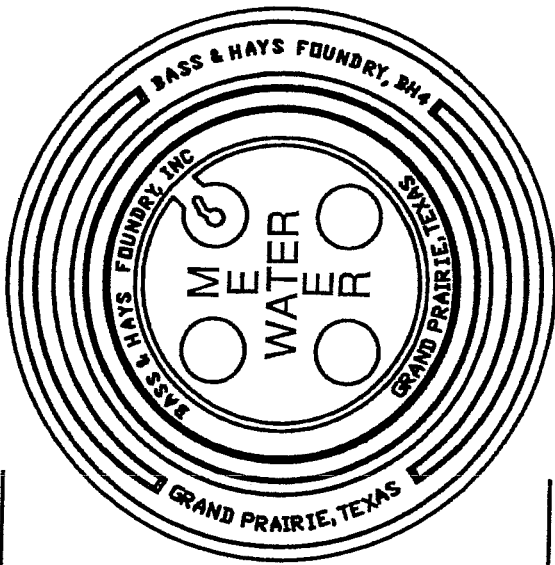
NOTES:

1. METER LOCATION TO BE AT PROPERTY LINES.
2. METER SHALL NOT BE LOCATED WITH IN SIDEWALKS OR DRIVEWAYS.
3. THE METER AND AUTOMATIC METER READER SHALL BE PROVIDED AND INSTALLED BY THE CITY OF MELISSA AT DEVELOPER'S EXPENSE.
4. METER BOXES SHALL BE CORRUGATED METAL FOR AREAS OF TRAFFIC AND PLASTIC FOR NON TRAFFIC AREAS.

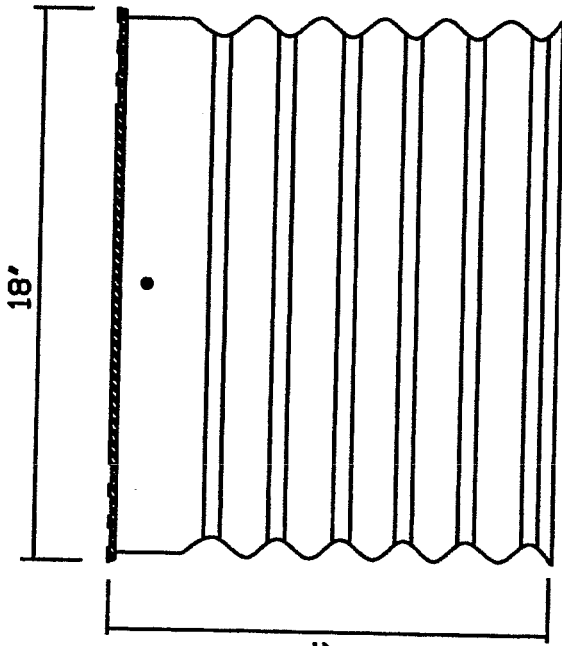
M. - CITY OF MELISSA REVISION
 NCTCOG STANDARD SPECIFICATION REFERENCE
DIVISION 500
 DATE 11/13/08
 STANDARD DRAWING NO. 4140M*



WATER SERVICE INSTALLATION
1 1/2" OR 2" LINE



18"



Height

34 SERIES GALVANIZED METER BOXES WITH 18" DIA. CORRUGATED CANS

PART NO.	SLOT	HEIGHT	WEIGHT
34A		14"	40 LBS
34A1S	1	14"	40 LBS
34B		18"	43 LBS
34B1S	1	18"	43 LBS
34B2S	2	18"	43 LBS
34C		24"	47 LBS
34C1S		24"	47 LBS
34D		30"	51 LBS
34E		36"	56 LBS
34F		42"	62 LBS
34G		48"	70 LBS
34I		60"	95 LBS

FOR METERS 1 1/2"-2", A RECTANGLE PLASTIC REINFORCED METER BOX MEASURING 16" x 22" x 12" IS TO BE USED IN NON TRAFFIC AREAS.

FOR METERS LARGER THAN 2", A VAULT IS TO BE USED.

FOR STANDARD 3/4" METERS, A RECTANGLE PLASTIC REINFORCED BOX MEASURING 12" x 16" x 12" IS TO BE USED IN NON TRAFFIC AREAS.



WATER METER BOX DETAIL

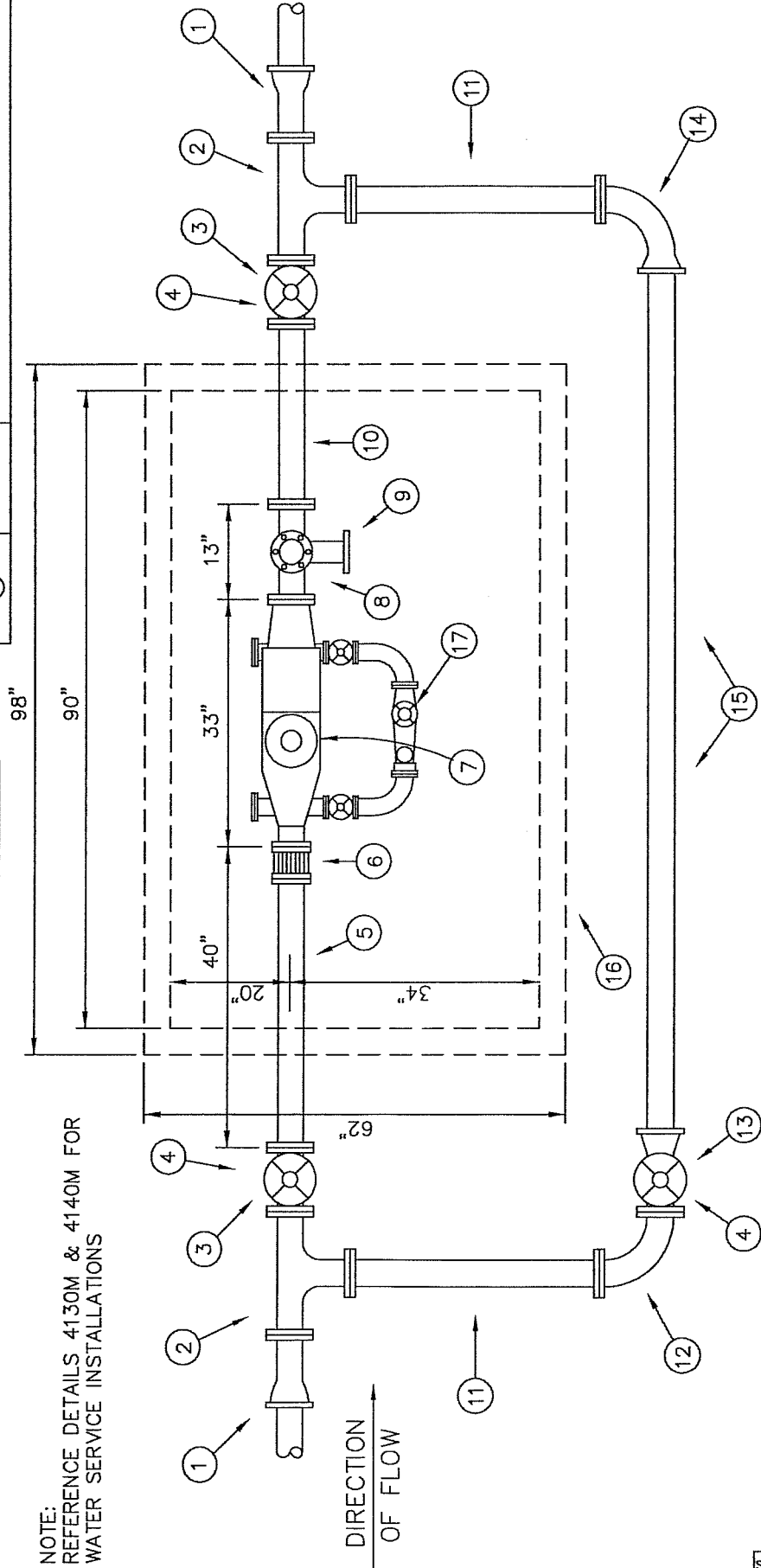
M* - CITY OF MELISSA REVISION	
INTCOG STANDARD SPECIFICATION REFERENCE	502
DATE	11/13/08
STANDARD DRAWING NO.	4141M*

MATERIALS LIST

PART NO.	QUANTITY	DESCRIPTION
1	2 EA.	4" X 12" D.I. NIPPLE M.J. X F.
2	2 EA.	4" X 4" D.I. TEE F. X F.
3	2 EA.	4" GATE VALVE F. X F.
4	3 EA.	VALVE STACK RISER COVER & LID
5	1 EA.	4" X 40" D.I. NIPPLE F. X SLEEVE
6	1 EA.	4" FLANGED COUPLING ADAPTER
7	1 EA.	4" MASTER METER WITH RAISED GLASS
8	1 EA.	4" X 4" D.I. TEE F. X F. (TEST POINT)
9	1 EA.	4" BLIND FLG.

MATERIALS LIST

PART NO.	QUANTITY	DESCRIPTION
10	1 EA.	4" X 24" D.I. NIPPLE F. X F.
11	2 EA.	4" X 36" D.I. NIPPLE F. X F.
12	1 EA.	4" D.I. 90° BEND F. X F.
13	1 EA.	4" GATE VALVE F. X M.J.
14	1 EA.	4" D.I. 90° BEND M.J. X F.
15	1 EA.	4" D.I. PIPE, CLASS 52, APPROX. 10'
16	1 EA.	PRECAST METER VAULT
17	1 EA.	VAULT FLOOR (NOT SHOWN)
18	1 EA.	ACCESS HATCH (NOT SHOWN)
19	1 EA.	BY-PASS METER



NOTE:
REFERENCE DETAILS 4130M & 4140M FOR
WATER SERVICE INSTALLATIONS

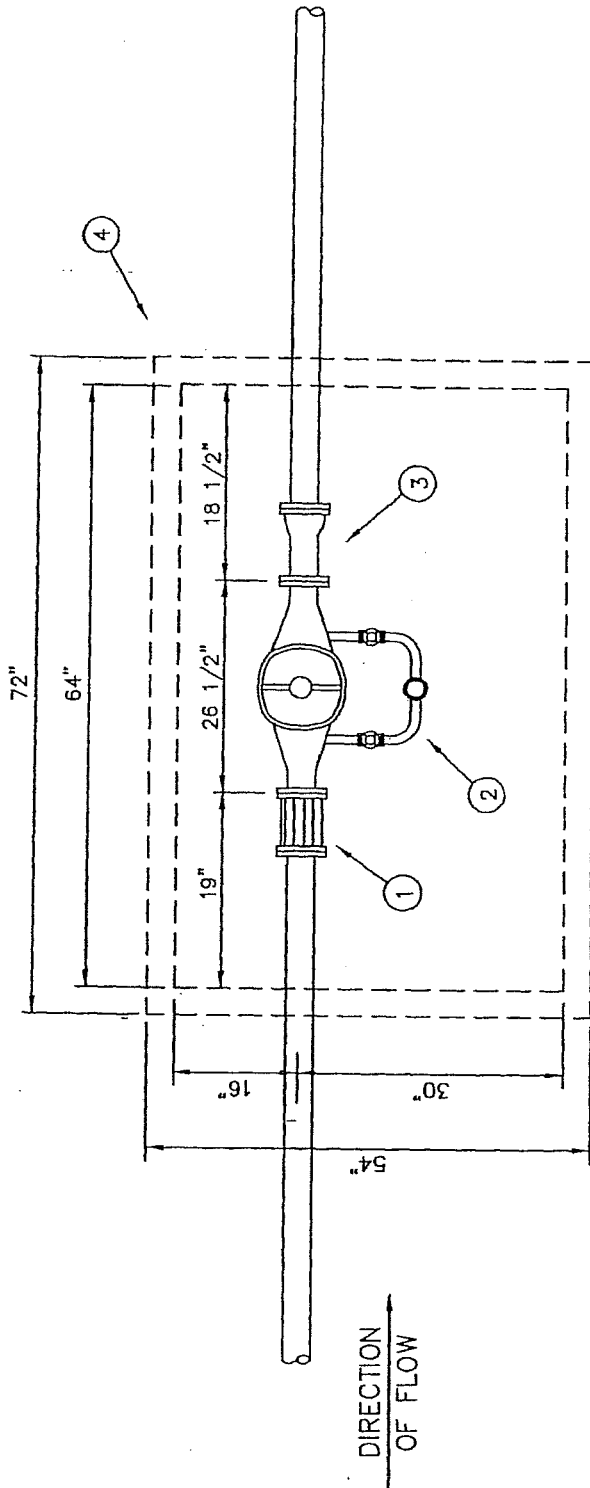
STANDARD DRAWING NO.
4150M*

4" COMBINED SERVICE
WITH 4" METER



M* - CITY OF MELISSIA REVISION
NCTCOG STANDARD SPECIFICATION REFERENCE
DIVISION 500
DATE 11/13/08
STANDARD DRAWING NO. 4150M*

MATERIALS LIST	
PART NO.	DESCRIPTION
①	1 EA. 8" FLANGED COUPLING METER ADAPTER
②	1 EA. 8" DETECTOR CHECK VALVE WITH 5/8" BY-PASS METER
③	1 EA. 8" X 12" D.I. NIPPLE M.J. X F.
④	1 EA. PRECAST METER VAULT 1 EA. VAULT FLOOR (NOT SHOWN) 1 EA. 36" X 48" ACCESS HATCH (NOT SHOWN)

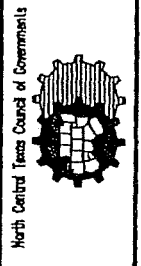


8" DETECTOR CHECK
SERVICE WITH 8" METER

STANDARD SPECIFICATION REFERENCE
502.10

DATE
OCT. '04

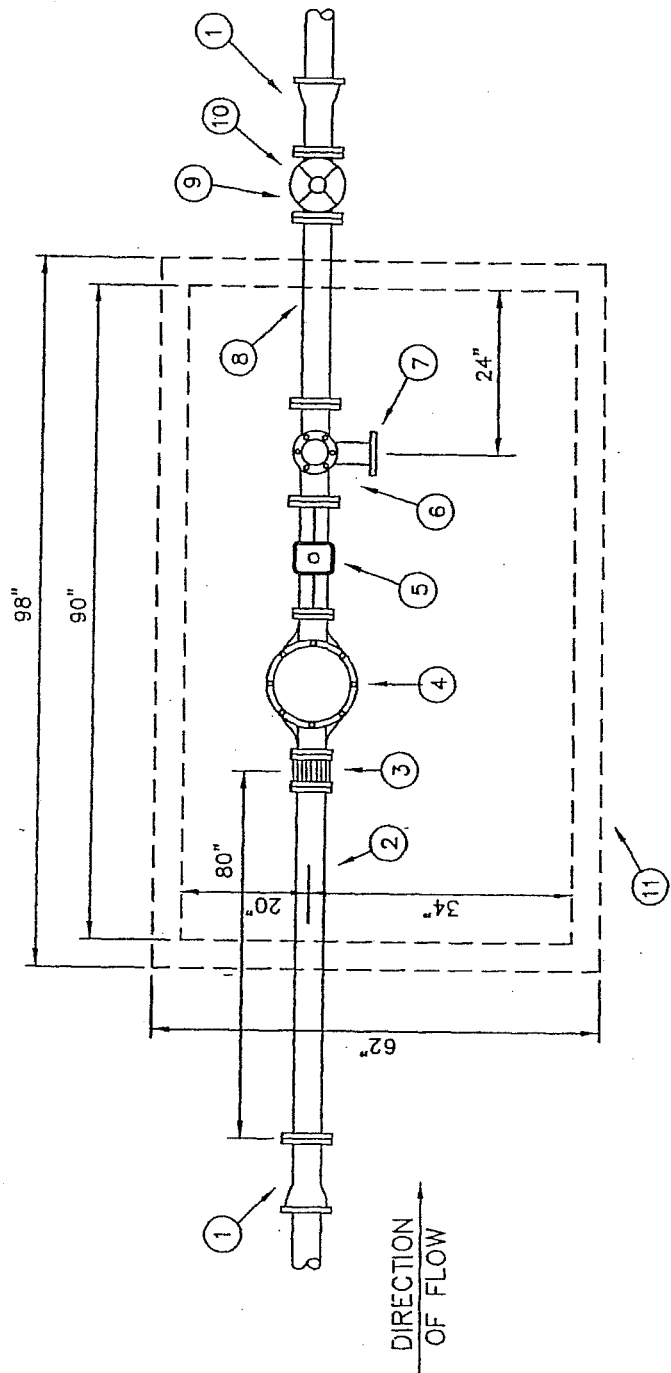
STANDARD DRAWING NO.
4160



STANDARD DRAWING NO.
4160

MATERIALS LIST	
PART NO.	DESCRIPTION
①	2 EA. 8" X 12" D.I. NIPPLE M.J. X F.
②	1 EA. 8" X 36" D.I. NIPPLE F. X SLEEVE
③	1 EA. 8" FLANGED COUPLING ADAPTER
④	8" U.L. APPROVED (FOR TURBINE)
⑤	8" TURBINE METER
⑥	8" X 4" D.I. TEE F. X F. (TEST PT)
⑦	8" BLIND FLG F. X F.

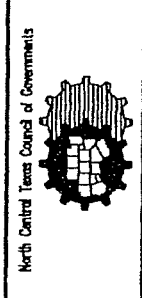
MATERIALS LIST	
PART NO.	DESCRIPTION
⑧	1 EA. 8" X 24" D.I. NIPPLE F X F.
⑨	1 EA. 8" GATE VALVE F. X F.
⑩	VALVE STACK RISER COVER & LID
⑪	PRECAST METER VAULT VAULT FLOOR (NOT SHOWN) ACCESS HATCH (NOT SHOWN)



STANDARD SPECIFICATION REFERENCE
502.10

DATE
OCT. '04

STANDARD DRAWING NO.
4170



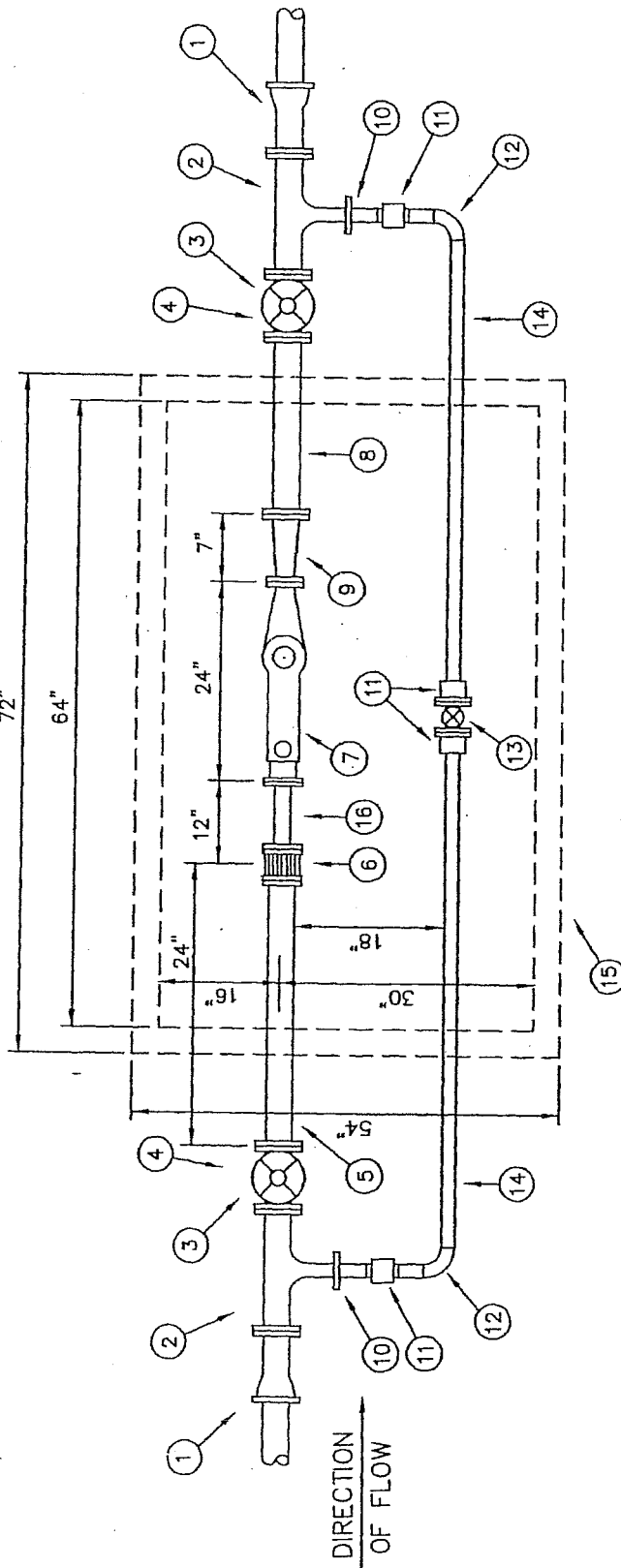
8" FIRE LINE STANDPIPE
SERVICE WITH 8" METER

STANDARD DRAWING NO.
4170

MATERIALS LIST	
PART NO.	DESCRIPTION
①	4" X 12" D.I. NIPPLE M.J. X F.
②	4" X 2" D.I. TEE F. X F.
③	4" GATE VALVE F. X F.
④	VALVE STACK RISER COVER & LID
⑤	4" X 24" D.I. NIPPLE F. X SLEEVE
⑥	4" X 3" FLANGED RED. COUPLING ADAPTER
⑦	3" METER AS SPECIFIED (TYPE C.T. SHOWN)
⑧	4" X 18" D.I. NIPPLE F. X F.
⑨	4" X 3" D.I. REDUCER F. X F.

72"

MATERIALS LIST	
PART NO.	DESCRIPTION
⑩	2" COMPANION FLANGE
⑪	2" SOL. X OSIP UNION
⑫	2" SOL. 90° ELL.
⑬	1" BALL VALVE
⑭	2" COPPER PIPE, APPROX. 5'
⑮	PRECAST METER VAULT VAULT FLOOR (NOT SHOWN) ACCESS HATCH (NOT SHOWN)
⑯	3"x12" D.I. NIPPLE F. X SLEEVE



STANDARD SPECIFICATION REFERENCE
502.10

North Central Texas Council of Governments

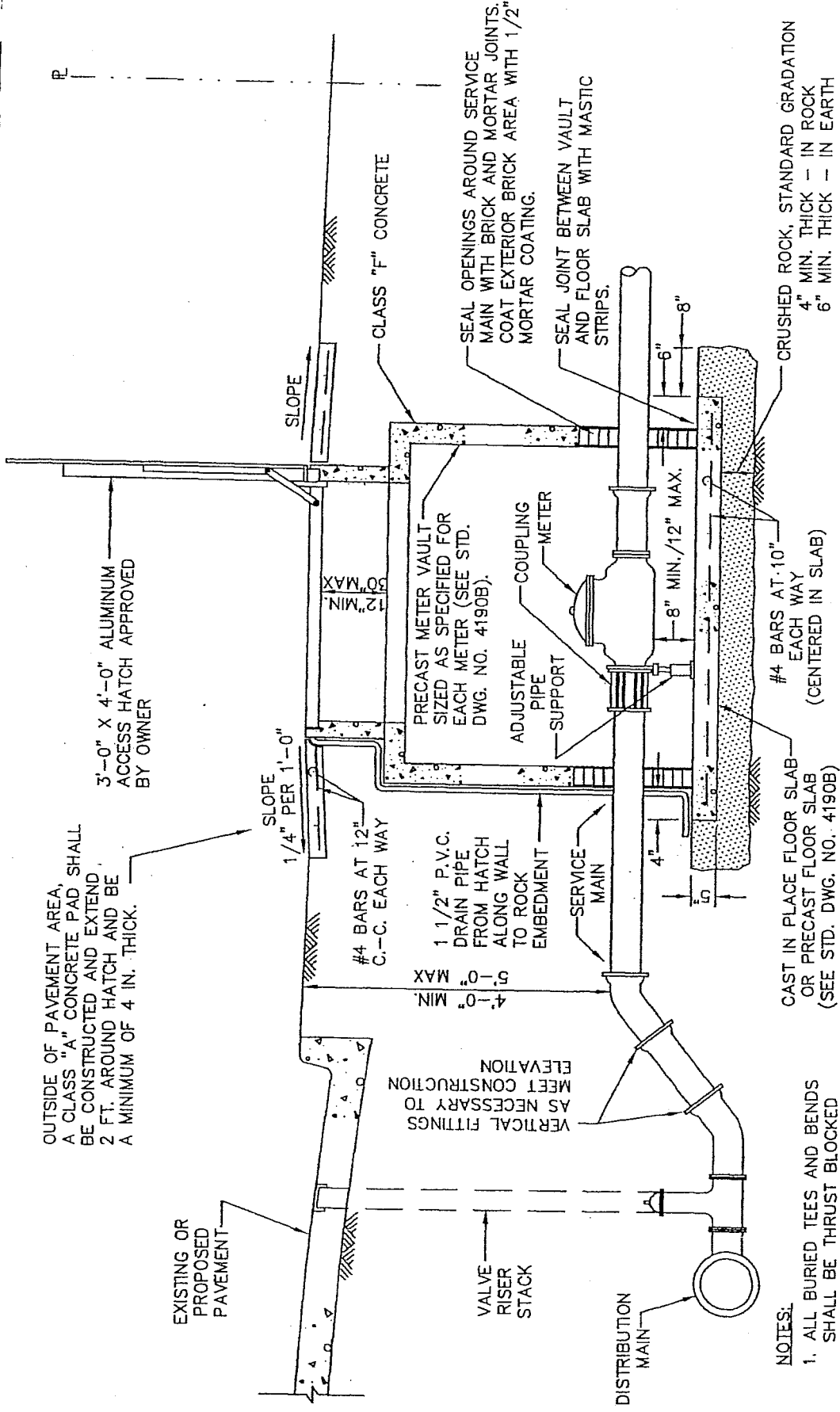


DATE
OCT. '04

STANDARD DRAWING NO.
4180

4" DOMESTIC SERVICE
WITH 3" METER

STANDARD DRAWING NO.
4180



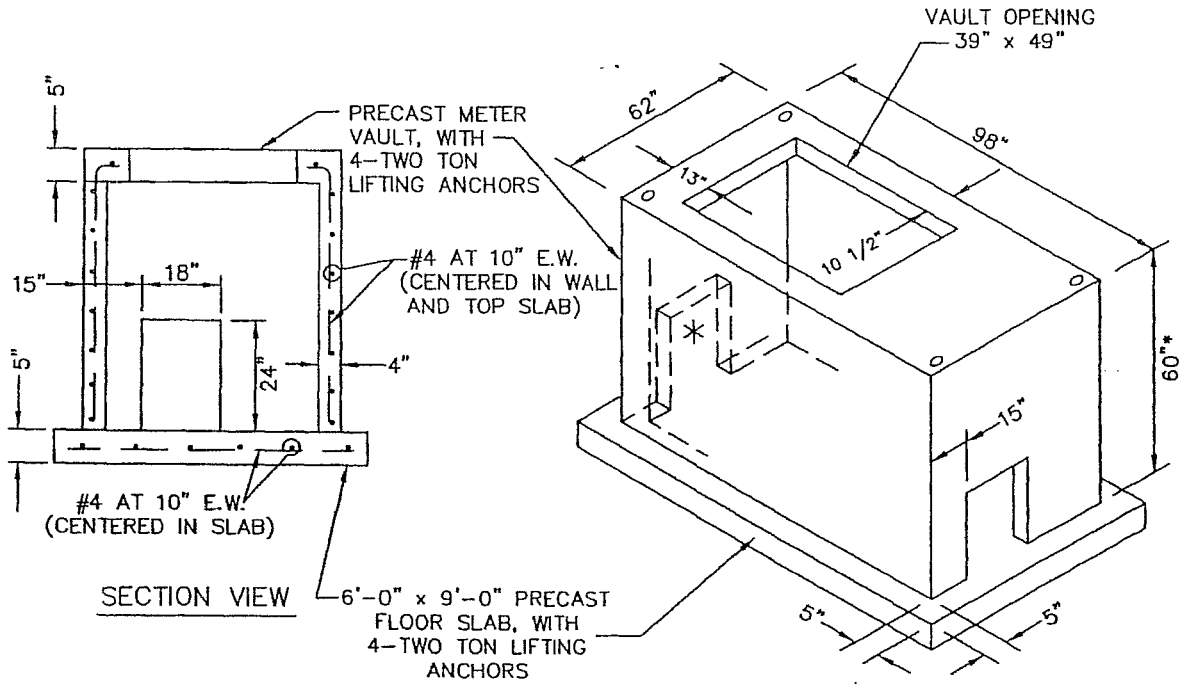
ELEVATION VIEW
(D.C. METER SHOWN) N.T.S.

- NOTES:
1. ALL BURIED TEES AND BENDS SHALL BE THRUST BLOCKED PER STANDARD DRAWINGS 4010-4040.
 2. BY-PASS LINE MAY BE INSTALLED ON LEFT SIDE OF METER VAULT TO FACILITATE LIMITED WORKING AREA CONDITIONS BY PERMISSION OF OWNER.
 3. ALL BURIED D.I. PIPE AND C.I. FITTINGS SHALL BE POLY-WRAPPED AS SPECIFIED FOR THE ADJACENT DISTRIBUTION MAIN.

STANDARD SPECIFICATION REFERENCE	702.4
DATE	OCT. '04
STANDARD DRAWING NO.	4190A

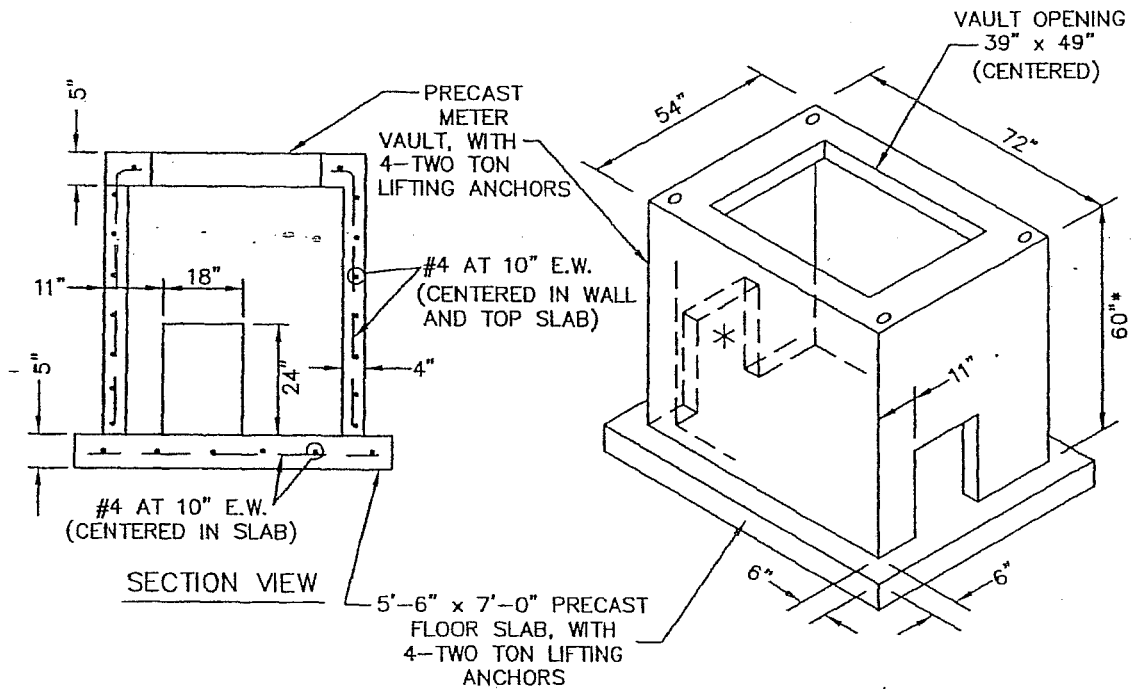


LARGE SERVICE METER
VAULT INSTALLATION



F.M. METER VAULT

N.T.S.



D.C. METER VAULT

N.T.S.

LARGE SERVICE METER

PRECAST VAULT

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

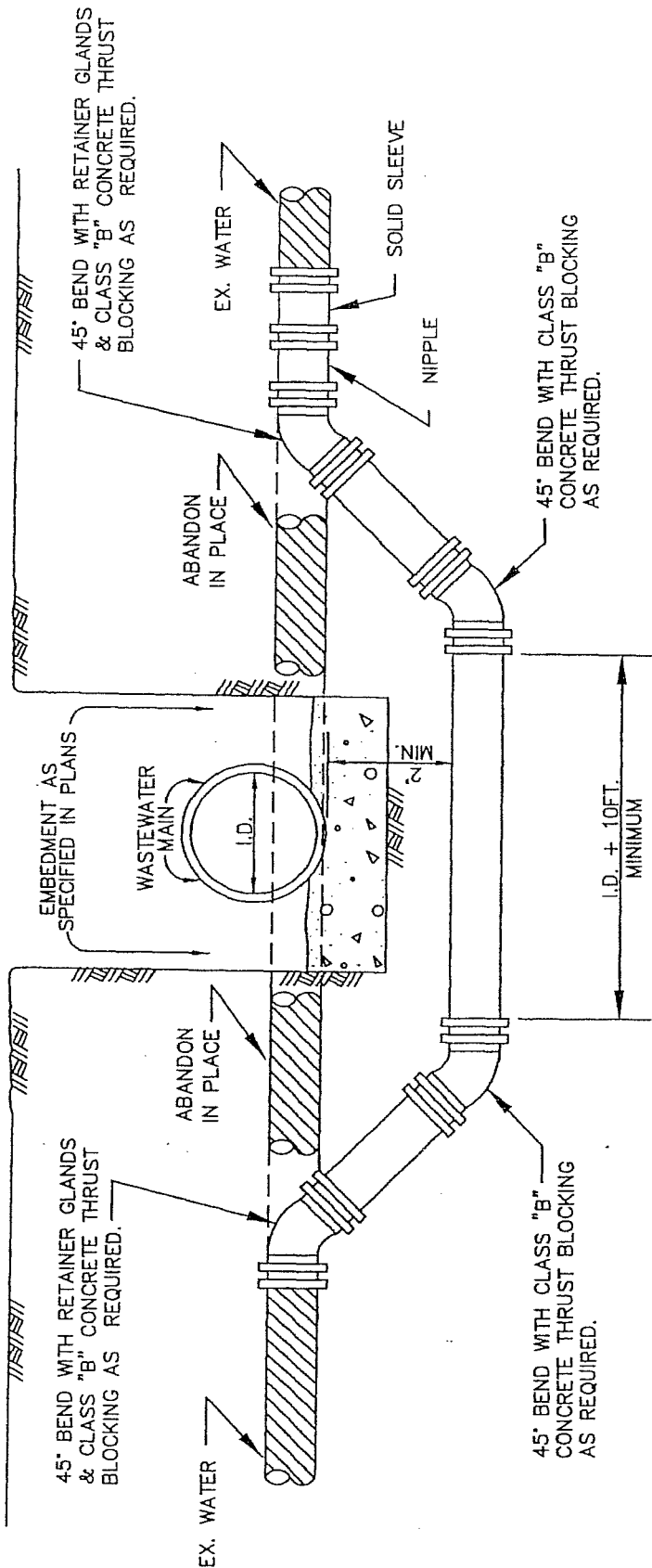
702.4

DATE

OCT. '04

STANDARD DRAWING NO.

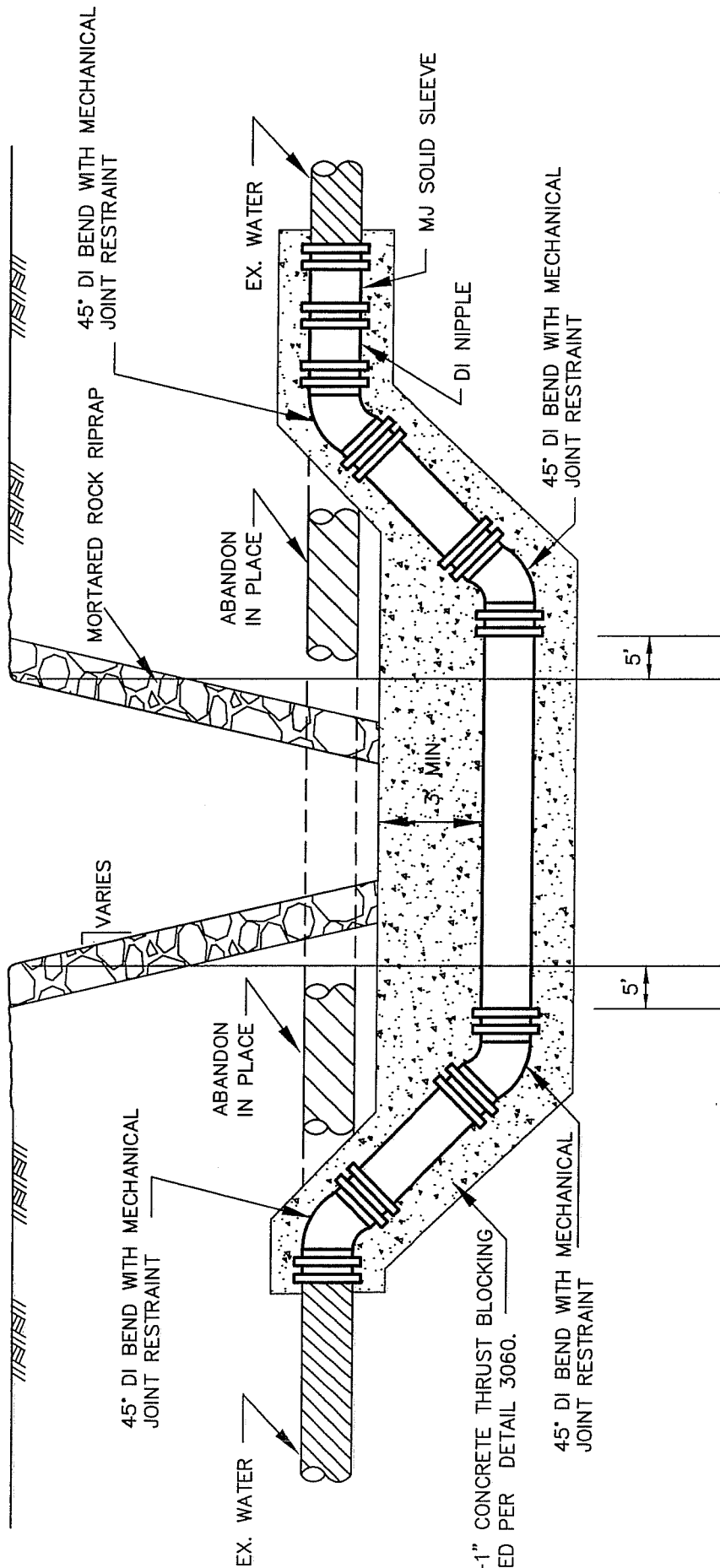
4190B



STANDARD SPECIFICATION REFERENCE	506.6
DATE	OCT. '04
STANDARD DRAWING NO	4200



WATER MAIN LOWERING
BELOW WASTEWATER MAIN



CLASS "G-1" CONCRETE THRUST BLOCKING AS REQUIRED PER DETAIL 3060.

M* - CITY OF MELISSA REVISION
 STANDARD SPECIFICATION REFERENCE
 506.6
 DATE 08/26/09
 STANDARD DRAWING NO. 4201M*

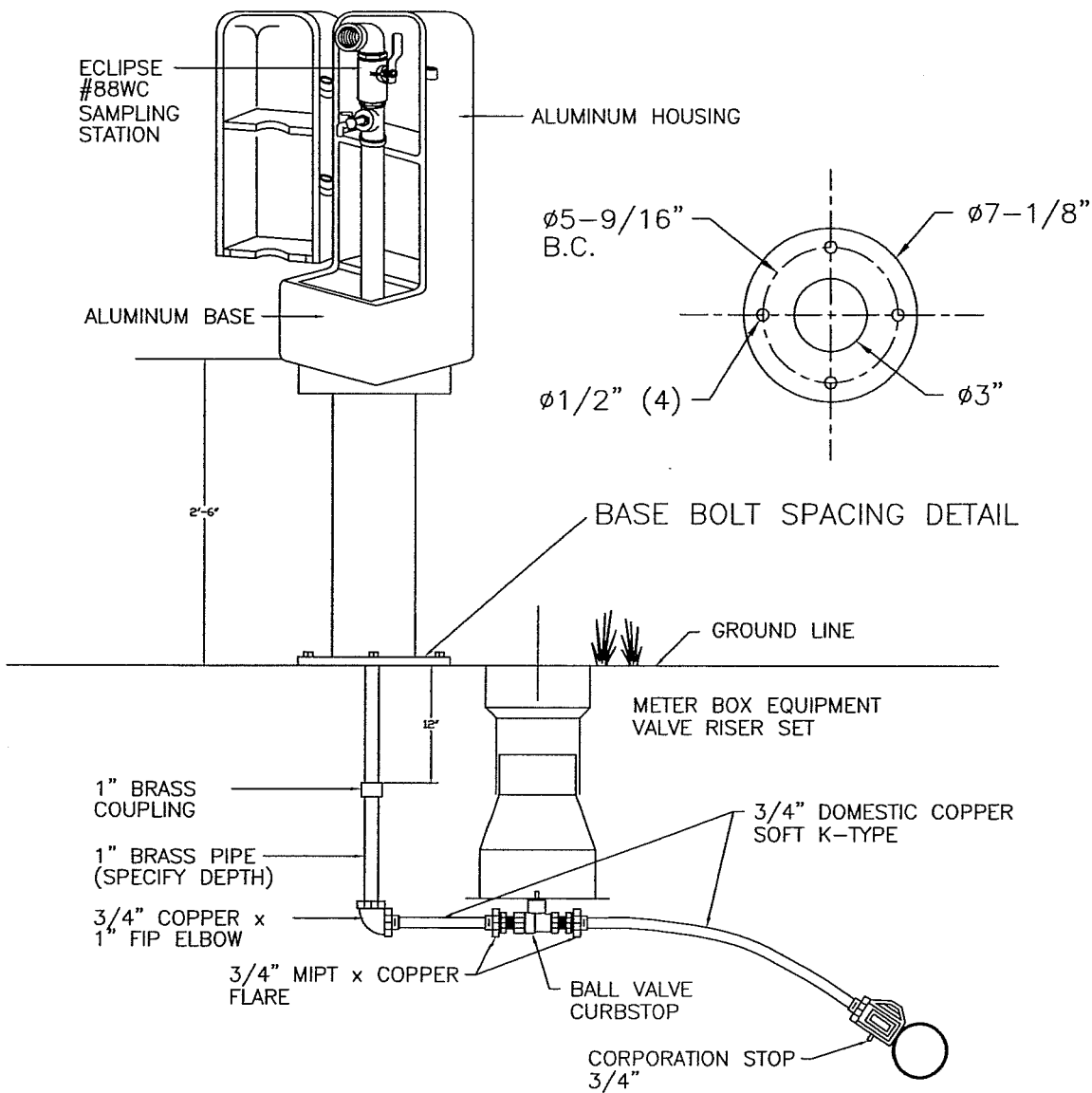


WATER MAIN LOWERING AT CREEK CROSSING

CITY OF MELISSA

STANDARD DRAWING NO. 4201M*

ECLIPSE NO. 88WC SAMPLING STATION ON PEDESTAL



Sampling Stations shall be 3' bury, with a 1" MIP inlet, and a 1" FIP discharge. A 1/4" bent-nose sampling bibb shall be located before the discharge. All stations shall be enclosed in a lockable, nonremovable, aluminum-cast housing with the City of Melissa Logo. Housing shall be on a 2'-6" pedestal with a 7-1/8" mounting flange. When opened, the station shall require no key for operation, and the water will flow in an all brass waterway. All working parts will be of brass and serviceable from above ground with no digging. A 1" ball valve will control the water flow, and be located before (or after) the sampling bibb.

M* - CITY OF MELISSA REVISION

NCTCOG STANDARD SPECIFICATION REFERENCE

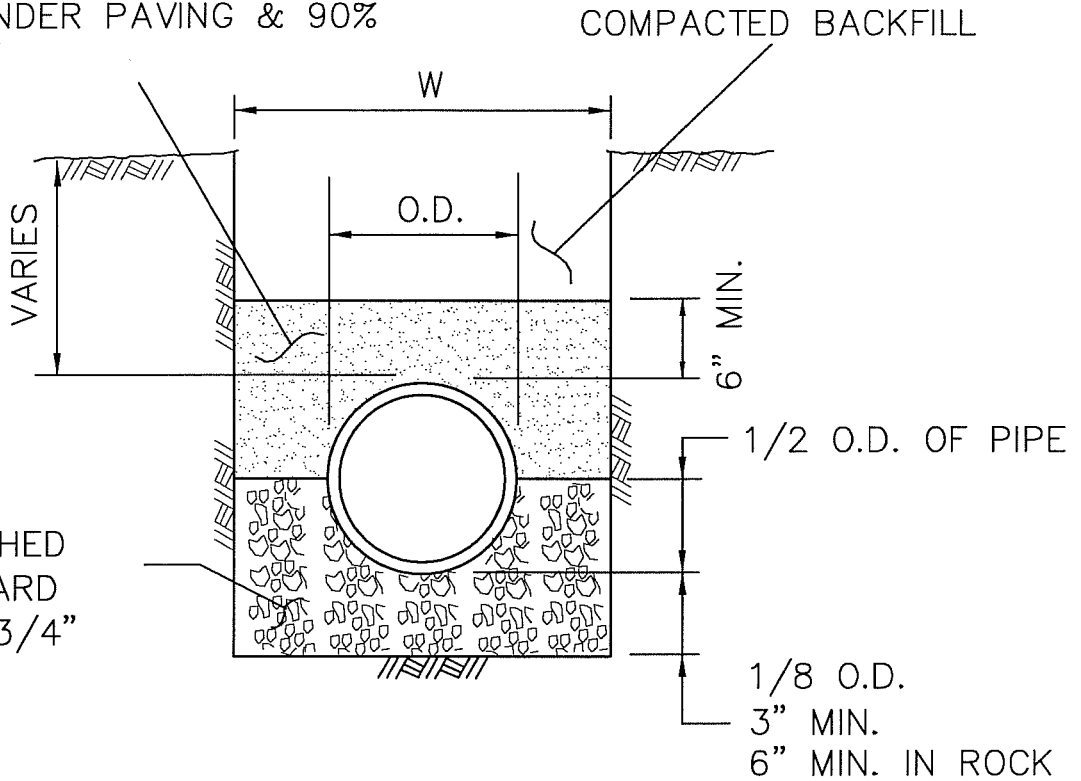
SAMPLING STATION

CITY OF MELISSA



DATE	STANDARD DRAWING NO.
NOV 04	4210M*

TYPE "B" BACKFILL PER NCTCOG
 504.2.3.3 (4TH ed.) COMPACTED
 TO 95% STANDARD PROCTOR
 DENSITY UNDER PAVING & 90%
 ELSEWHERE



GRADE 4 CRUSHED
 STONE (STANDARD
 GRADATION - 3/4"
 NOM.)

NOTES:

1. THE DEPTH OF TRENCH BELOW PIPE ARE AS FOLLOWS:
 3" MIN. FOR 27" PIPE & SMALLER
 4" MIN. FOR 30" TO 60" PIPE
 6" MIN. FOR 66" PIPE & LARGER
2. O.D. = OUTSIDE DIAMETER OF PIPE.
3. W = TRENCH WIDTH = O.D. PLUS 24" FOR PIPE GREATER THAN 24" AND O.D. PLUS 16" FOR PIPE 24" AND SMALLER.

M* - CITY OF MELISSA REVISION

STORM SEWER PIPE BEDDING DETAIL



NCTCOG STANDARD SPECIFICATION REFERENCE

504

CITY OF MELISSA

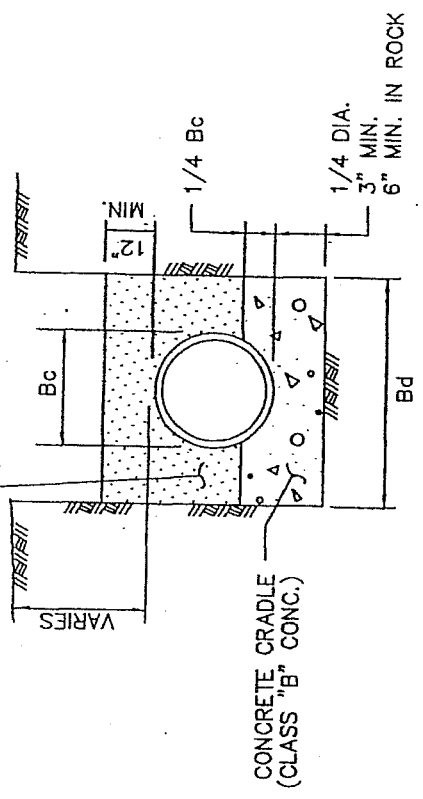
DATE

STANDARD DRAWING NO.

02/02/10

3010AM*

SELECT OR GRANULAR
MATERIAL COMPACTED
TO 90% OF STD. PROCTOR
DENSITY.

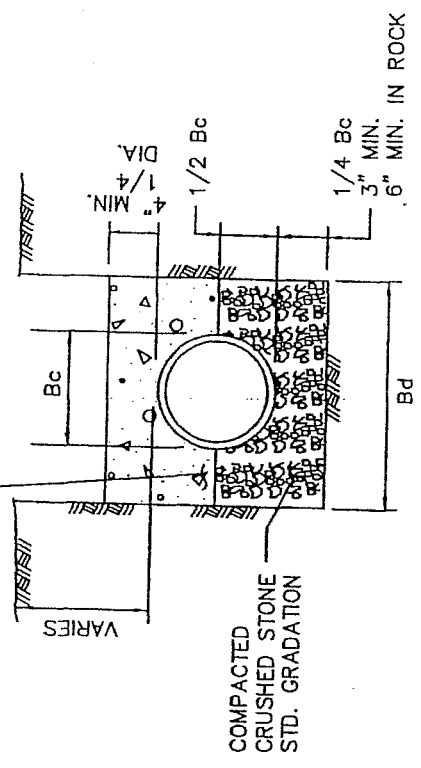


CLASS "A"

CLASS "B" CONCRETE CRADLE
PLAIN CONC. LF 2.8
REINF. CONC. LF 3.4 P=0.4%

N.T.S.

CLASS "B" PLAIN
OR REINFORCED
CONCRETE.



CLASS "A-1"

CLASS "B" CONCRETE CAP
PLAIN CONC. LF 2.8
REINF. CONC. LF 3.4 P=0.4%
REINF. CONC. LF 4.8 P=1.0%

N.T.S.

NOTES:

1. LF. = LOAD FACTOR TO BE USED TO DETERMINE 3 EDGE BEARING BASED ON TYPE OF EMBEDMENT.
2. FREE-FALL OF CONCRETE NOT TO EXCEED 5 FT. MAXIMUM.
3. P = Rho FOR STEEL %
4. Bc = OUTSIDE DIAMETER OF PIPE
5. Bd = TRENCH WIDTH

EMBEDMENT

CLASS "A" & "A-1"

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE
504.5

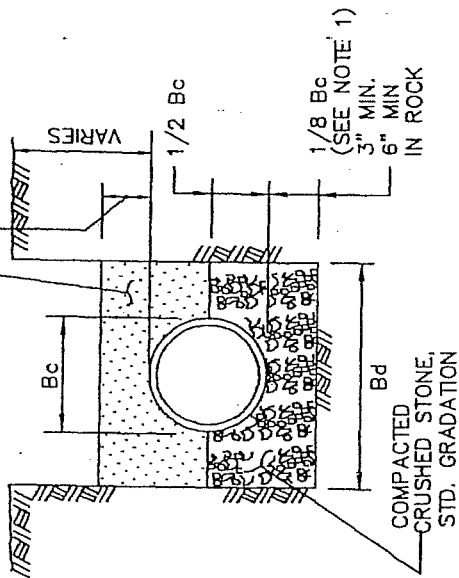
DATE
OCT. '04

STANDARD DRAWING NO
3010

SELECT OR GRANULAR MATERIAL COMPACTED TO 90% OF STD. PROCTOR DENSITY

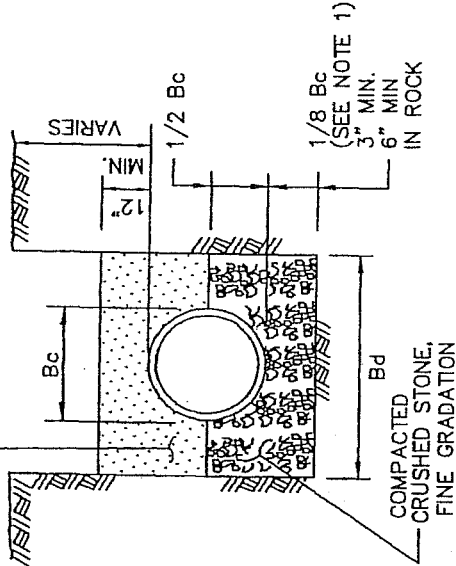
AS SHOWN ON PLANS

GRANULAR MATERIAL COMPACTED TO 90% OF STD. PROCTOR DENSITY



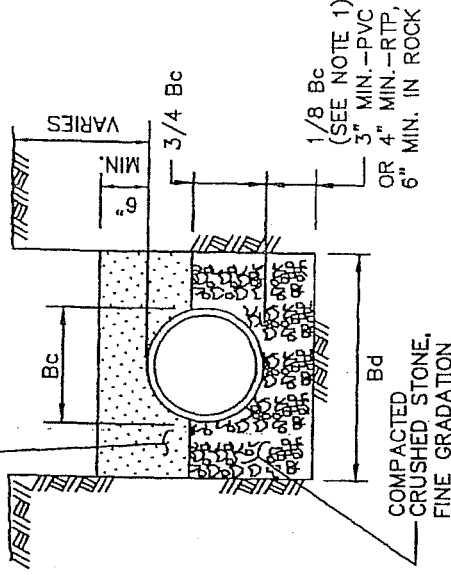
CLASS "B"

N.T.S.



CLASS "B+"

N.T.S.



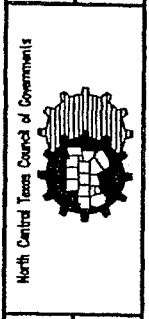
CLASS "B-1"

N.T.S.

NOTES:

1. FOR MAINS 42" DIAMETER AND LARGER LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bc = OUTSIDE DIAMETER OF PIPE
3. Bd = TRENCH WIDTH

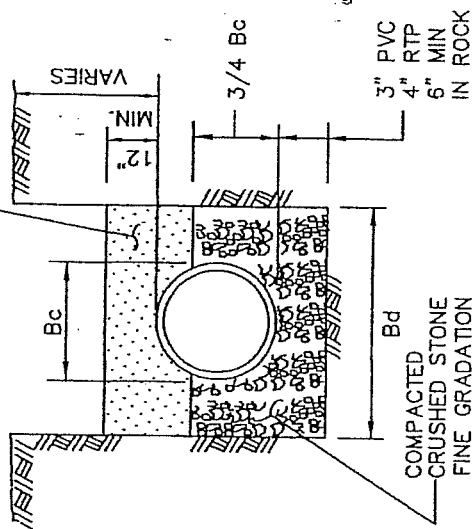
STANDARD SPECIFICATION REFERENCE	504.5
DATE	OCT. '04
STANDARD DRAWING NO.	3020



EMBEDMENT

CLASS "B", "B+", & "B-1"

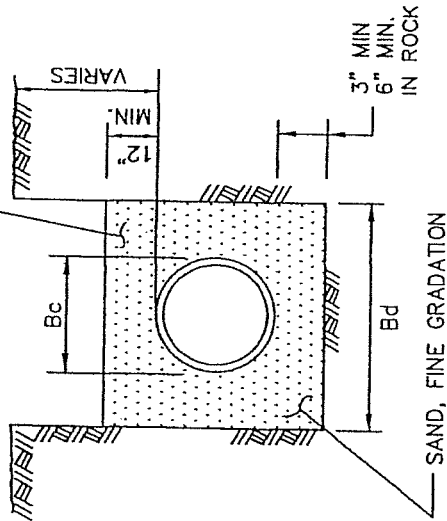
COMPACTED SELECT OR GRANULAR MATERIAL COMPACTED TO 90% OF STD. PROCTOR DENSITY



CLASS "B-2"

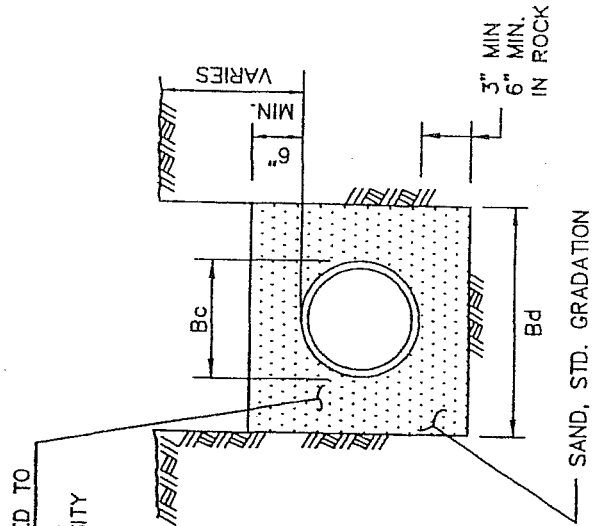
N.T.S.

SAND COMPACTED TO 90% OF STD. PROCTOR DENSITY



CLASS "B-3"

N.T.S.



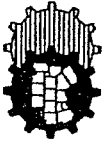
CLASS "B-4"

N.T.S.

NOTES:

1. Bc = OUTSIDE DIAMETER OF PIPE
2. Bd = TRENCH WIDTH

North Central Texas Council of Governments



EMBEDMENT

CLASS "B-2", "B-3", & "B-4"

STANDARD SPECIFICATION REFERENCE
504.5

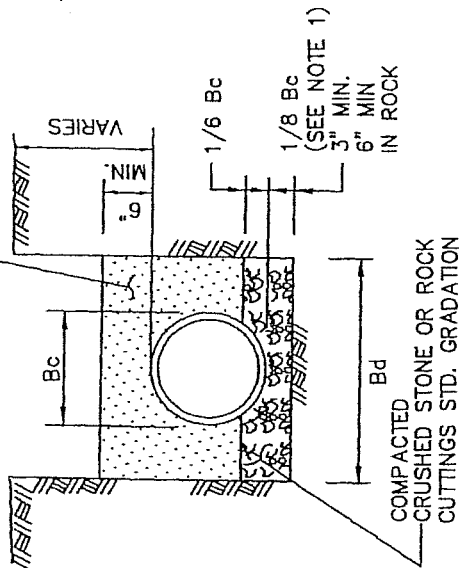
DATE
OCT. '04

STANDARD DRAWING NO.
3030

STANDARD DRAWING NO.
3030

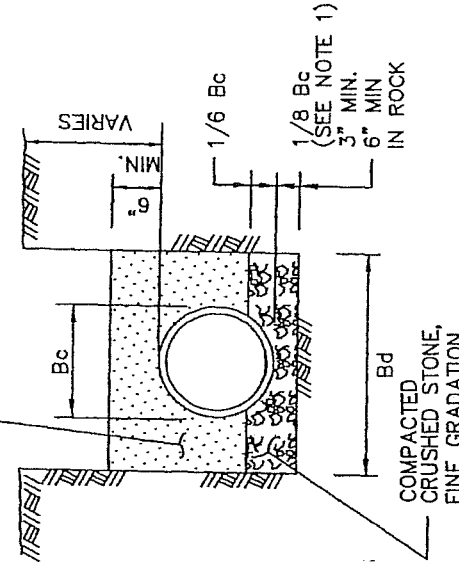
SELECT OR GRANULAR MATERIAL
COMPACTED TO 90% STD.
PROCTOR DENSITY

GRANULAR MATERIAL COMPACTED TO
90% OF STD. PROCTOR DENSITY



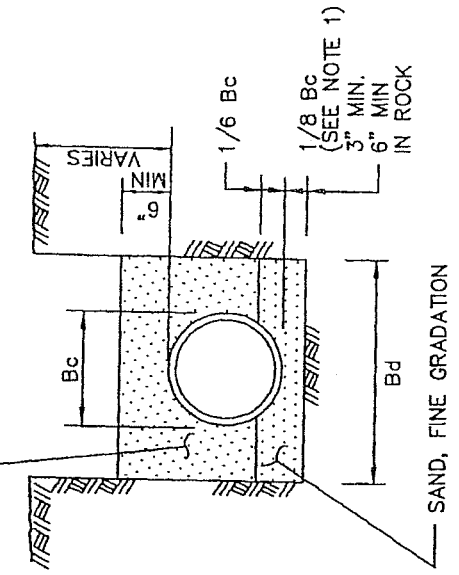
CLASS "C"

N.T.S.



CLASS "C+"

N.T.S.



CLASS "C-1"

N.T.S.

NOTES:

1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bc = OUTSIDE DIAMETER OF PIPE
3. Bd = TRENCH WIDTH

North Central Texas Council of Governments



EMBEDMENT

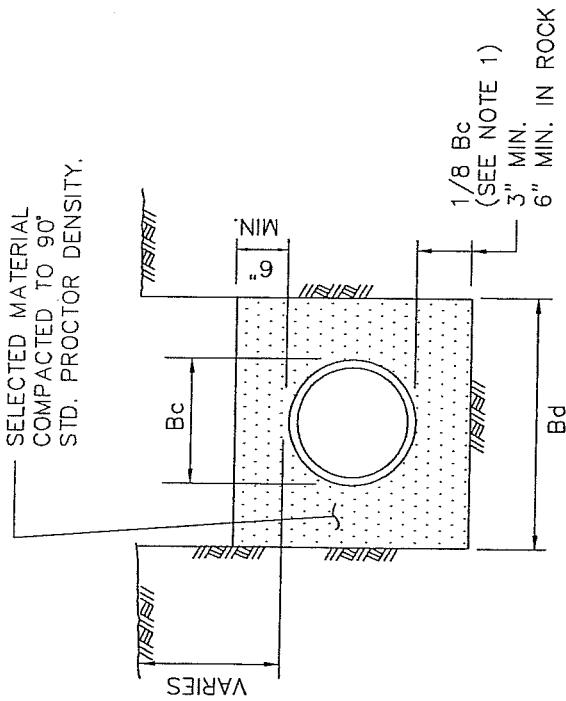
CLASS "C", "C+", & "C-1"

STANDARD SPECIFICATION REFERENCE
504.5

DATE
OCT. '04

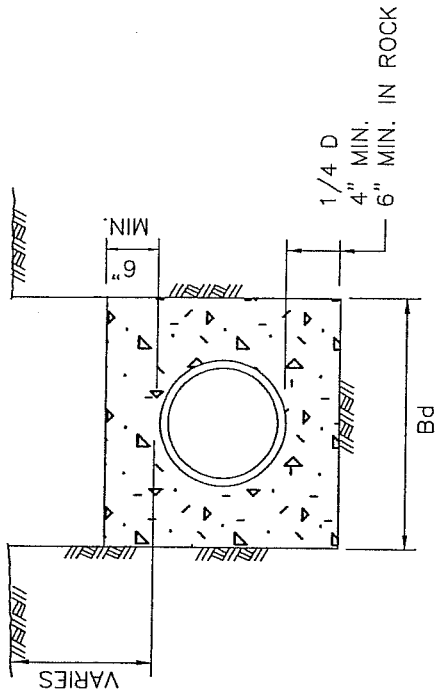
STANDARD DRAWING NO.
3040

STANDARD DRAWING NO.
3040



CLASS "D+"

N.T.S.



CLASS "G"

N.T.S.

NOTES:

1. FOR MAINS 42" DIAMETER AND LARGER, $\frac{1}{8}$ Bc SHALL BE TAKEN AS 6".
2. Bc=OUTSIDE DIAMETER OF PIPE.
3. Bd=TRENCH DEPTH.
4. D=INSIDE DIAMETER OF PIPE.

EMBEDMENT
CLASS "D+" & "G"

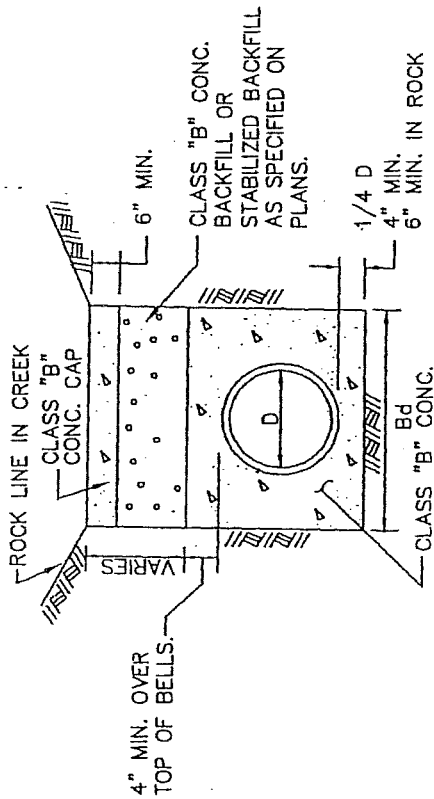
North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE
504.5

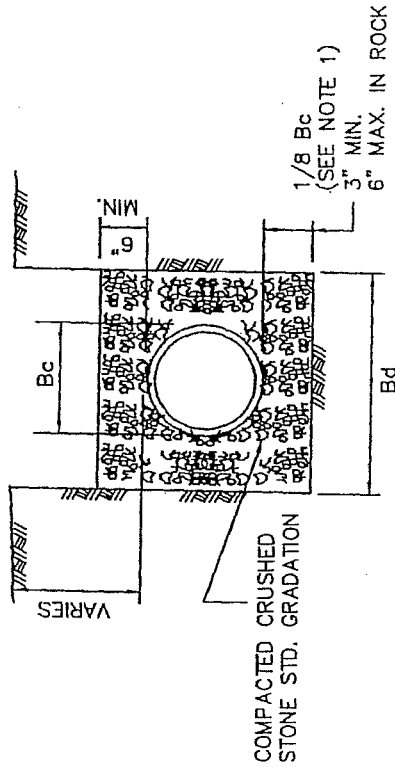
DATE
OCT. '04

STANDARD DRAWING NO.
3050



CLASS "G-1"

(FOR ROCK DITCHES IN CREEKS)
N.T.S.



CLASS "H"

N.T.S.

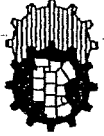
NOTES:

1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bd = TRENCH WIDTH
3. Bc = OUTSIDE DIAMETER OF PIPE
4. D = INSIDE DIAMETER OF PIPE

STANDARD DRAWING NO.
3060

EMBEDMENT
CLASS "G-1" & "H"

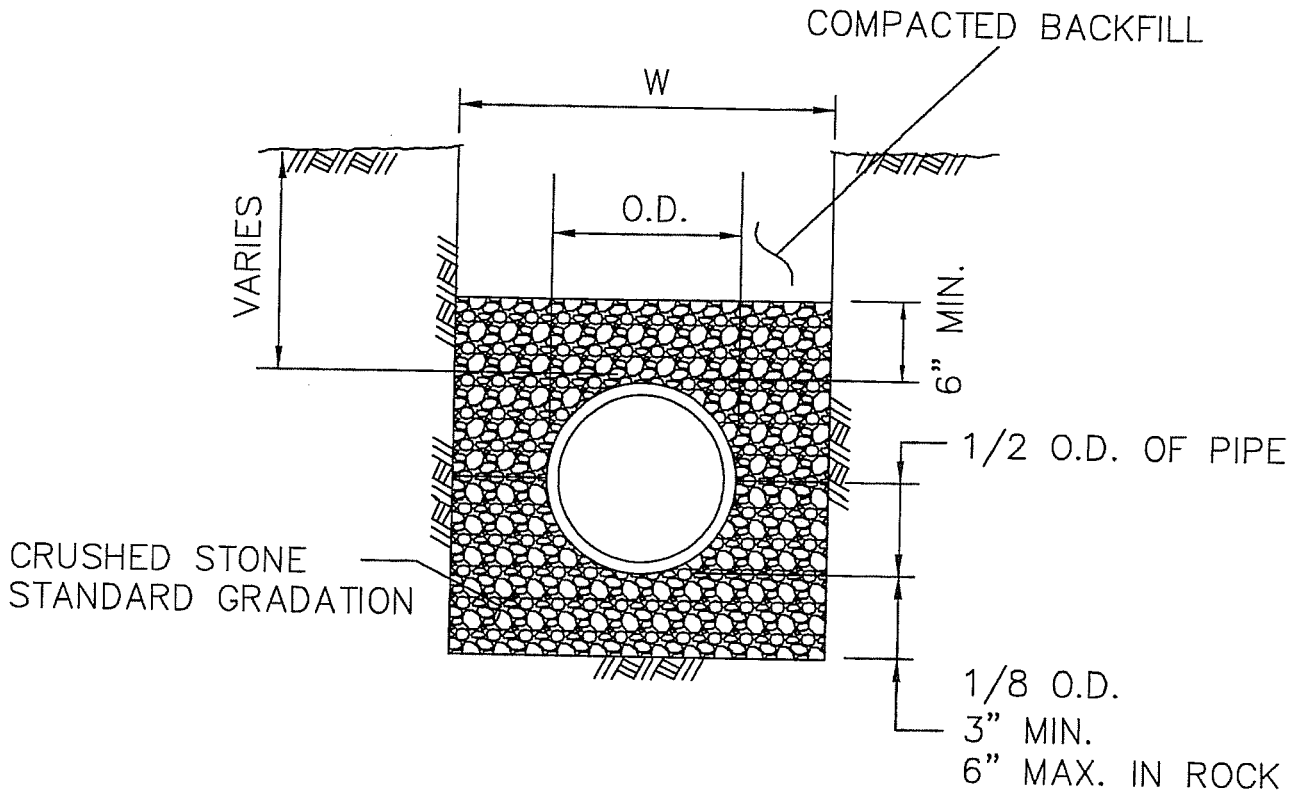
North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE
504.5

DATE
OCT. 04

STANDARD DRAWING NO.
3060



NOTES:

1. CLASS H EMBEDMENT ACCEPTABLE FOR STANDARD P.V.C. SEWER INSTALLATION. STANDARD P.V.C., R.C.C.P., AND DUCTILE IRON WATER LINE INSTALLATION.

2. O.D. = OUTSIDE DIAMETER OF PIPE.

3. W = TRENCH WIDTH.

WIDTH OF TRENCH SHALL BE 24 INCHES PLUS O.D. FOR PIPE GREATER THAN 24 INCHES IN DIAMETER AND O.D. PLUS SIXTEEN INCHES FOR PIPE LESS THAN OR EQUAL TO 24 INCHES I.D.

M* - CITY OF MELISSA REVISION

CLASS H EMBEDMENT
CITY OF MELISSA



NCTCOG STANDARD SPECIFICATION REFERENCE

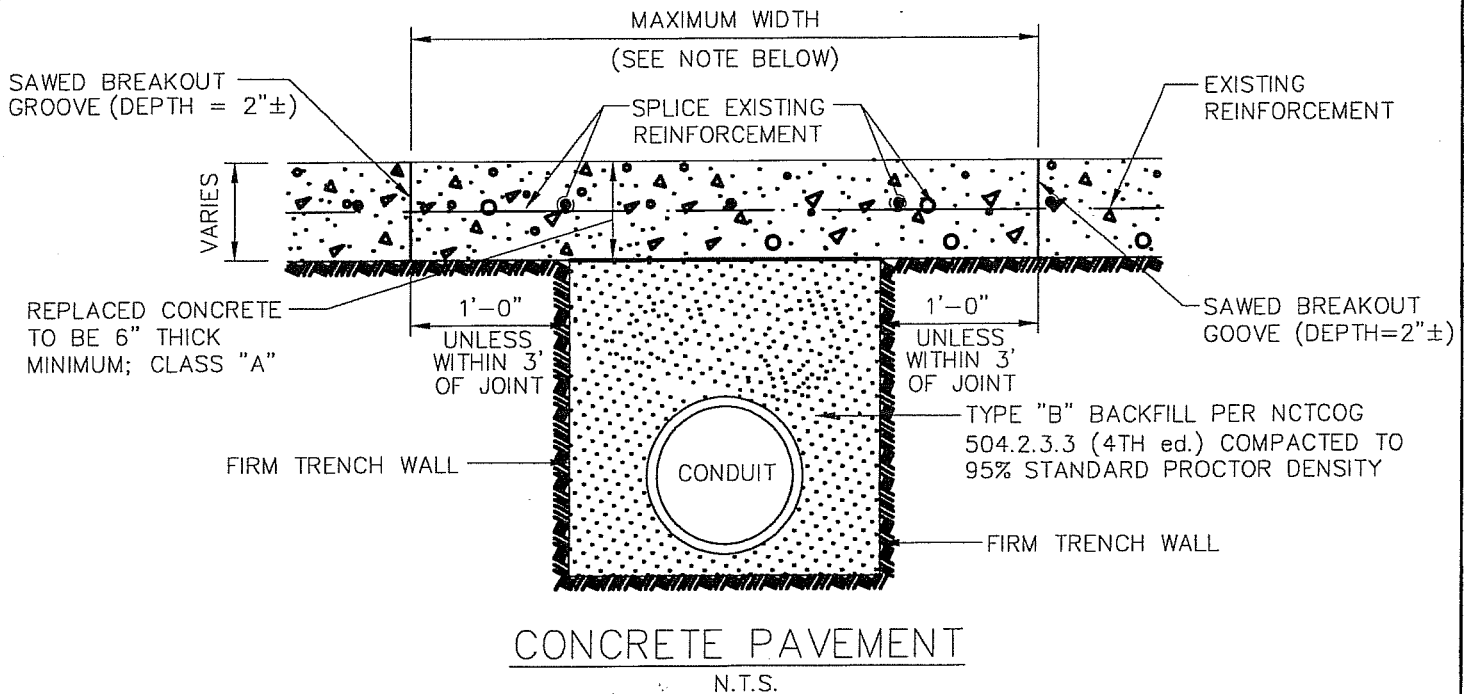
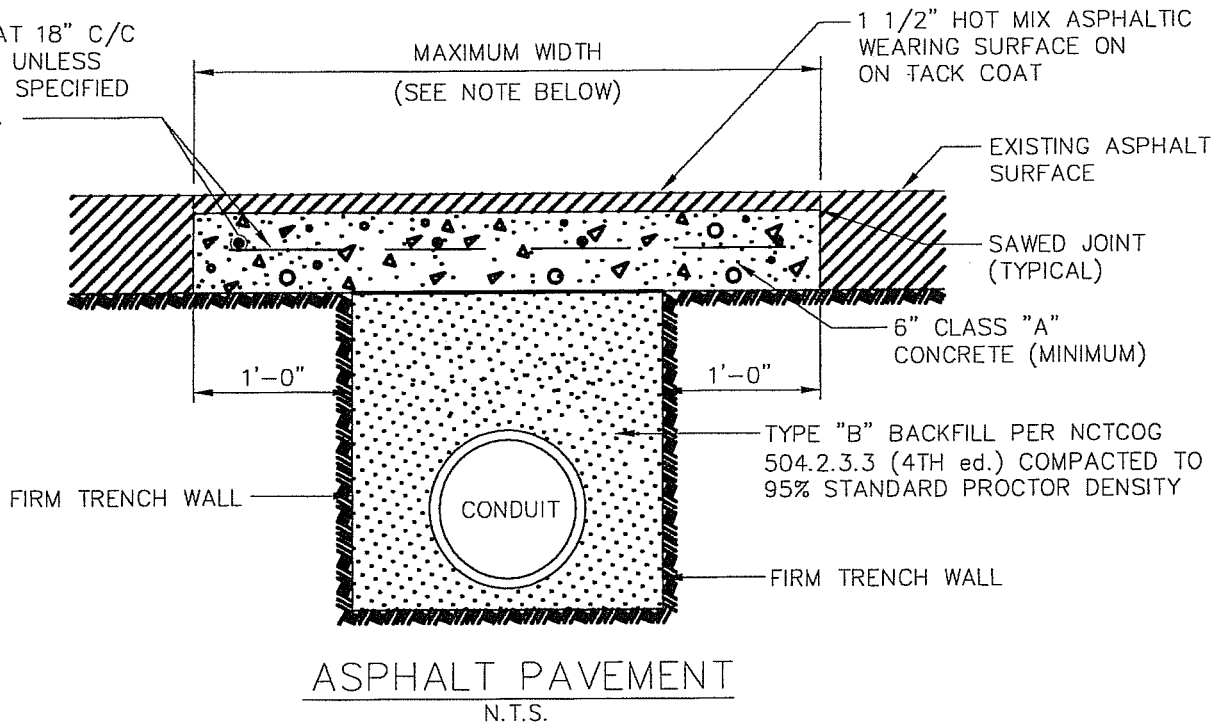
504

DATE

STANDARD DRAWING NO.

07/20/00 3001

#3 BARS AT 18" C/C EACH WAY UNLESS OTHERWISE SPECIFIED BY OWNER.



NOTES:

1. PAYMENT TO THE CONTRACTOR FOR REPLACEMENT OF PAVEMENT AND/OR DRIVEWAYS WILL BE BASED ON ACTUAL MEASUREMENTS UP TO A MAXIMUM WIDTH EQUAL TO THE SPECIFIED MAXIMUM TRENCH WIDTH PLUS 2 FEET. ANY EXISTING PAVEMENT DAMAGED OR REMOVED IN EXCESS OF THE MAXIMUM LIMITS SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
2. WHEN REMOVING CONCRETE PAVEMENT THE CONTRACTOR SHALL ENDEAVOR TO LIMIT DAMAGE TO EXISTING REINFORCEMENT SO IT MAY BE EMPLOYED IN THE REPLACEMENT OPERATION. IF ORIGINAL REINFORCEMENT IS CUT OR BROKEN, REPLACEMENT BARS OF THE SAME SIZE SHALL BE INSTALLED BY DRILLING AND DOWELLING AS DIRECTED BY THE OWNER.

M* - CITY OF MELISSA REVISION

PAVEMENT CUTS REMOVAL & REPLACEMENT



STANDARD SPECIFICATION REFERENCE

402 & 403

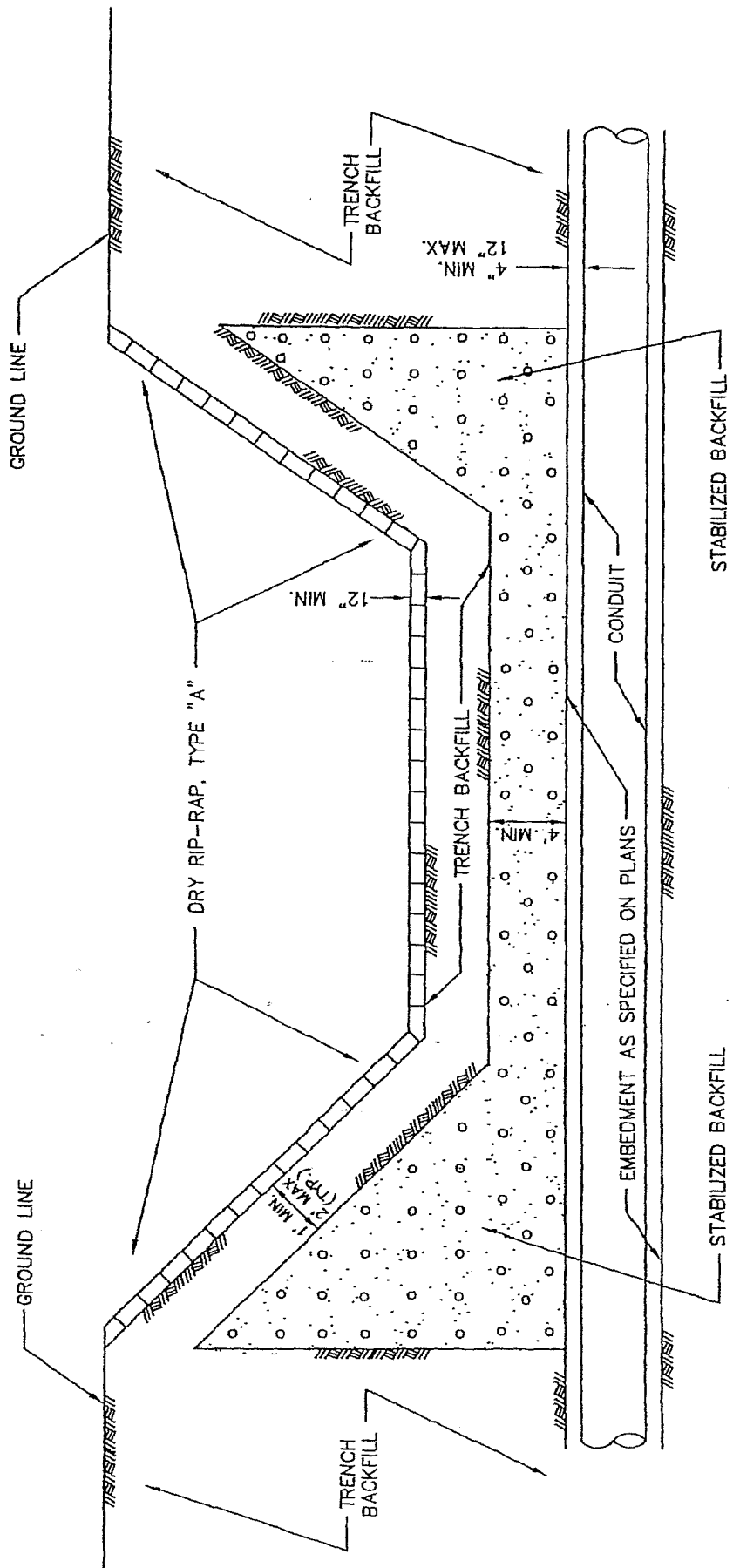
CITY OF MELISSA

DATE

STANDARD DRAWING NO.

03/01/10

3070M*



STANDARD SPECIFICATION REFERENCE
504; 803

DATE
OCT. '04

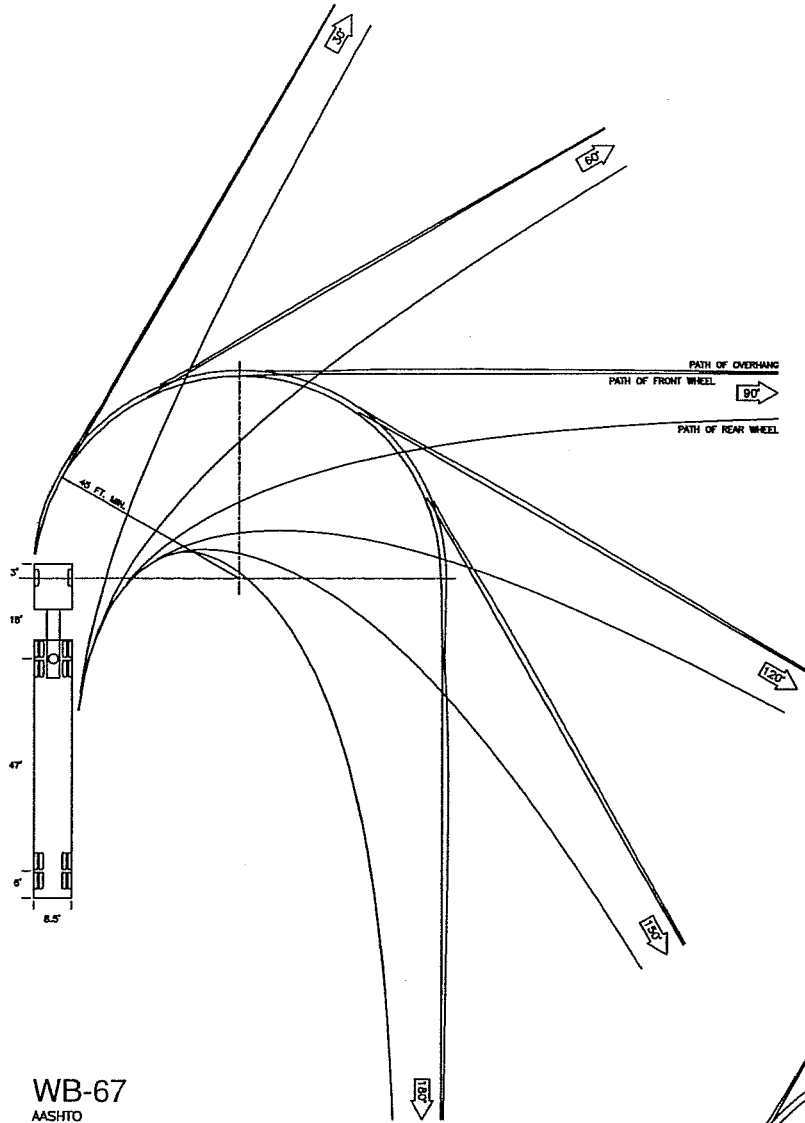
STANDARD DRAWING NO.
3080

North Central Texas Council of Governments

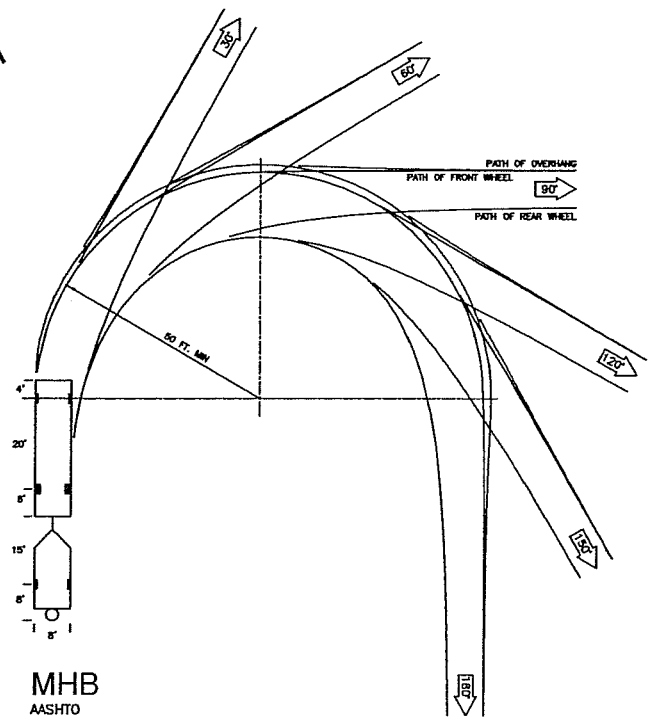


INFILTRATION PROTECTION
CONDUIT UNDER CHANNEL

STANDARD DRAWING NO.
3080



WB-67
AASHTO



MHB
AASHTO

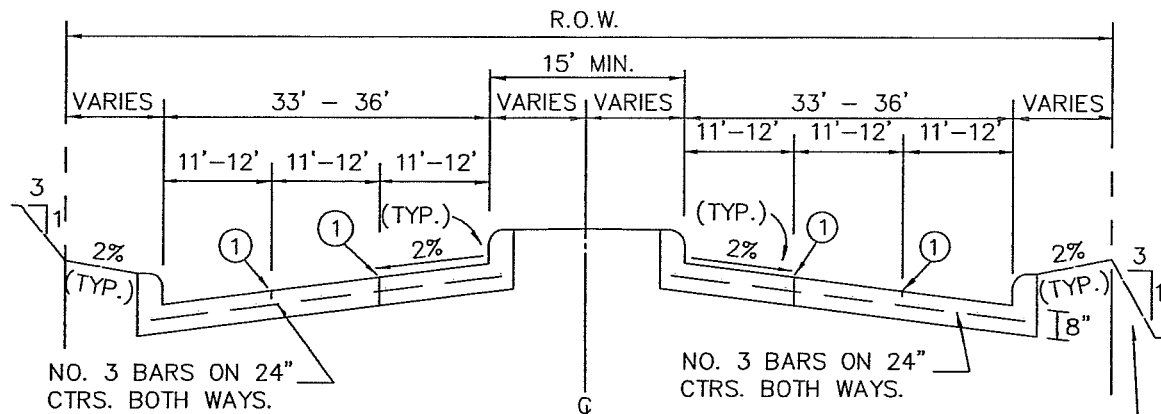
M* - CITY OF MELISSA REVISION

CURB RETURN TEMPLATES
CITY OF MELISSA



NCTCOG STANDARD SPECIFICATION REFERENCE

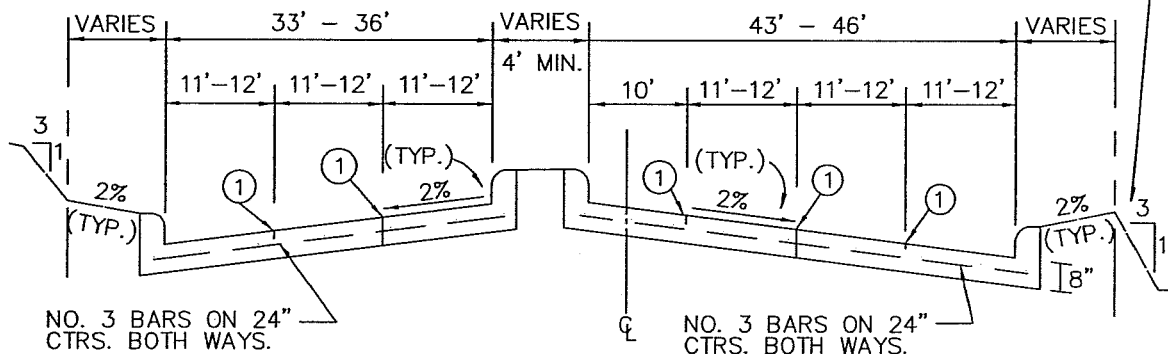
DATE	STANDARD DRAWING NO.
AUG. 04	2005M*



REGULAR SECTION

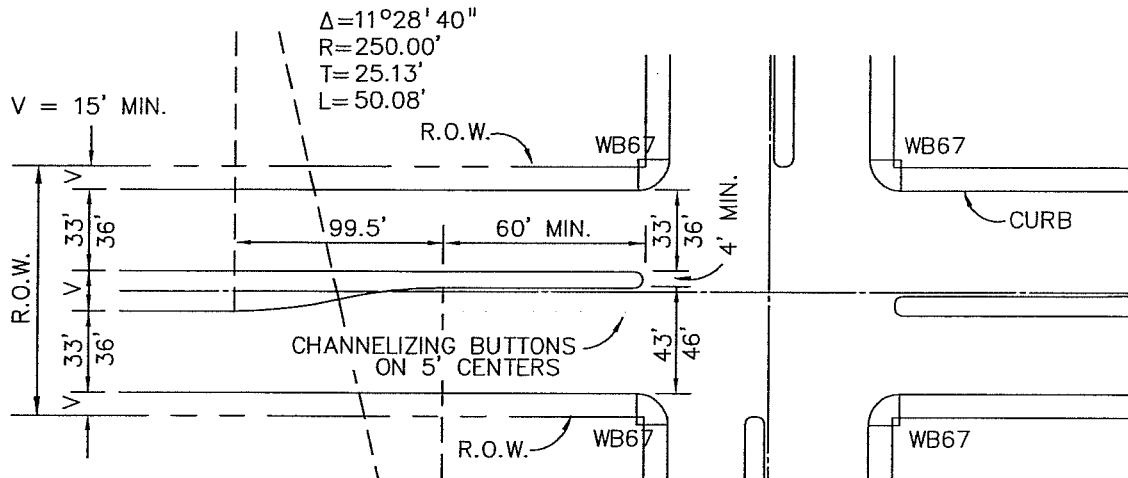
N.T.S.

(FILL SECTIONS ONLY. ALTERNATE REVERSE SLOPE ACCEPTABLE. NOT TO EXCEED 3:1)



LEFT TURN SECTION

N.T.S.



NOTES:

1. MIN. PAVEMENT DEPTH AND STRENGTH SHALL BE 8" - CLASS "C", OR AS SPECIFIED BY OWNER.
2. MIN. CURB HEIGHT AND WIDTH SHALL BE 6", OR AS SPECIFIED BY OWNER.
3. ALTERNATE REINFORCEMENT SHALL BE #4 BARS ON 30" CENTERS BOTH WAYS.

PLAN
N.T.S.

① SAWED LONGITUDINAL CONTRACTION JOINT OR CONSTRUCTION JOINT.

M* - CITY OF MELISSA REVISION

REINFORCED CONCRETE PAVEMENT
SIX-LANE DIVIDED THOROUGHFARE



STANDARD SPECIFICATION REFERENCE

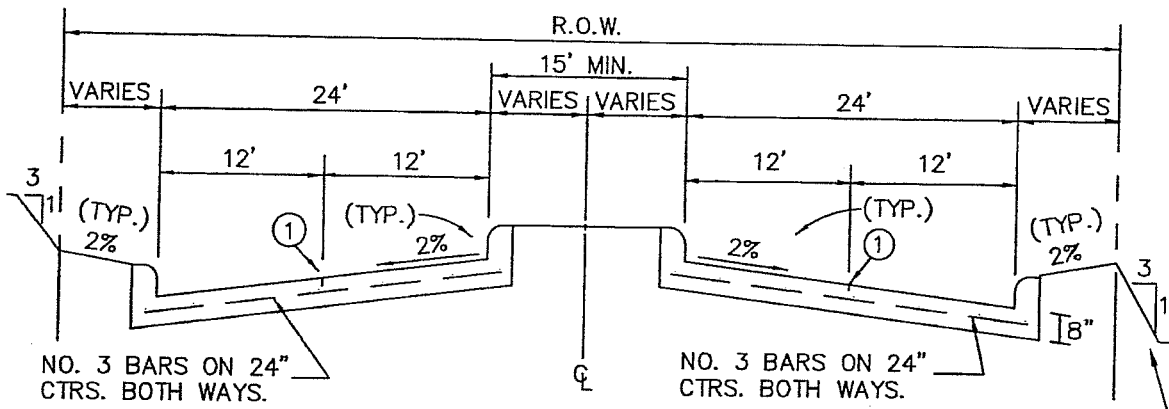
303

DATE

11/13/08

STANDARD DRAWING NO.

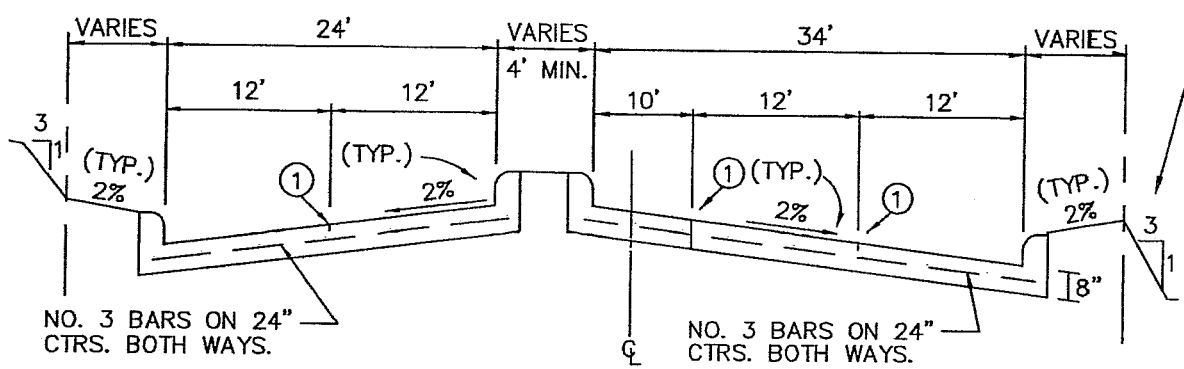
2010M*



REGULAR SECTION

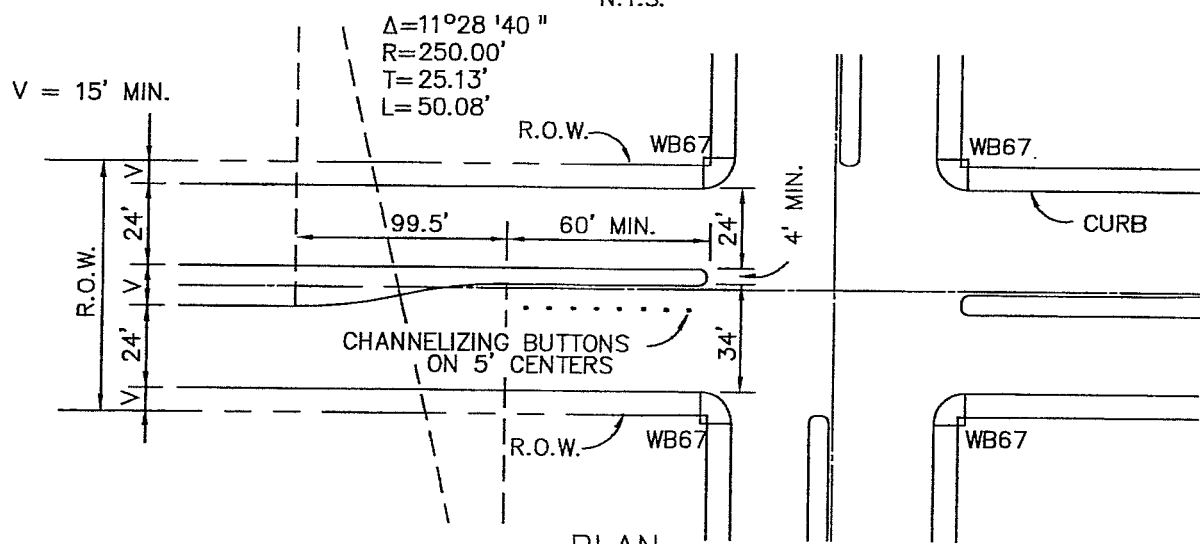
N.T.S.

(FILL SECTIONS ONLY. ALTERNATE REVERSE SLOPE ACCEPTABLE. NOT TO EXCEED 3:1.)



LEFT TURN SECTION

N.T.S.



PLAN
N.T.S.

NOTES:

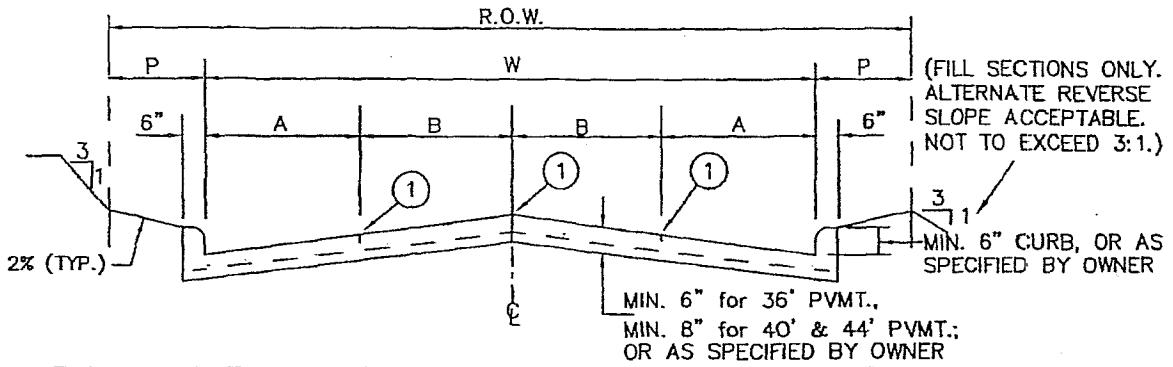
1. MIN. PAVEMENT DEPTH AND STRENGTH SHALL BE 8" - CLASS "C", OR AS SPECIFIED BY OWNER.
 2. MIN. CURB HEIGHT AND WIDTH SHALL BE 6", OR AS SPECIFIED BY OWNER.
- ALTERNATE REINFORCEMENT SHALL BE #4 BARS ON 30" CENTERS BOTH WAYS.

① SAWED LONGITUDINAL CONTRACTION JOINT OR CONSTRUCTION JOINT.

M* - CITY OF MELISSA REVISION



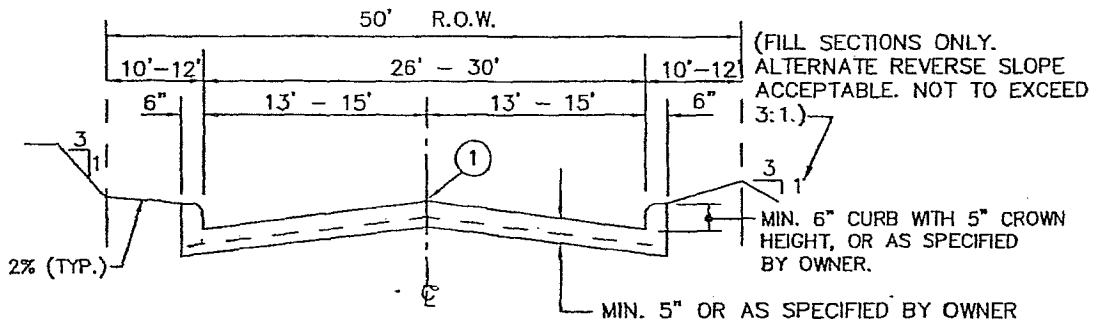
STANDARD SPECIFICATION REFERENCE	
303	
DATE	STANDARD DRAWING NO.
11/13/08	2020M*



STREET WIDTH(W)	A	B	R.O.W. WIDTH	P	CROWN HEIGHT
36'	8'	10'	VARIES	VARIES	6"
40'	8' OR 10'	10' OR 12'	VARIES	VARIES	6"
44'	11'	11'	VARIES	VARIES	8"

FOUR TRAVEL LANES OR
TWO TRAVEL LANES & TWO PARKING LANES

N.T.S.



ONE TRAVEL LANE & TWO PARKING LANES

N.T.S.

① INDICATES SAWED LONGITUDINAL CONTRACTION OR CONSTRUCTION JOINT.

NOTES :

1. ALL REINFORCEMENT SHALL BE #3 BARS ON 24" CENTERS BOTH WAYS, EXCEPT WHERE NOTED.
2. ALTERNATE REINFORCEMENT SHALL BE #4 BARS ON 30" CENTERS BOTH WAYS.
3. PAVEMENT STRENGTH SHALL CONFORM TO CLASS "C" OR "PC" CONCRETE, OR AS SPECIFIED BY THE OWNER.

REINFORCED CONCRETE PAVEMENT

2- & 4-LANE UNDIVIDED THOROUGHFARE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

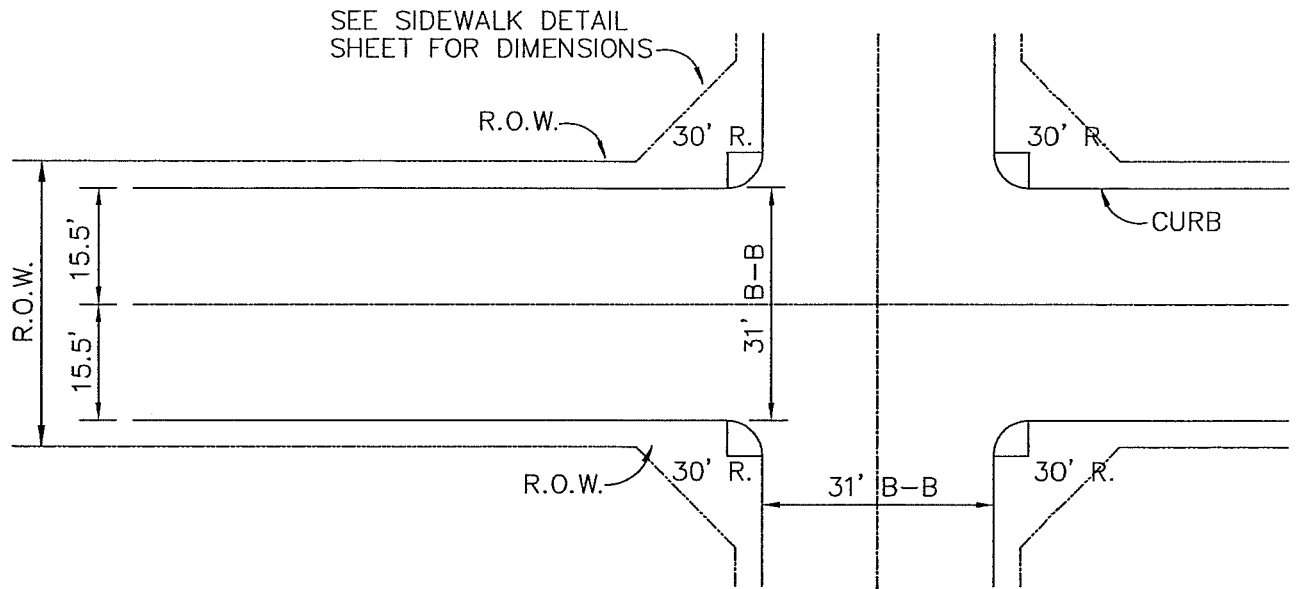
303

DATE

OCT. '04

STANDARD DRAWING NO.

2030



RESIDENTIAL TO RESIDENTIAL
N.T.S.

TYPE OF INTERSECTION	TEMPLATE OR RADIUS
RESIDENTIAL TO RESIDENTIAL -	30'
RESIDENTIAL TO COLLECTOR -	MHB
RESIDENTIAL TO THOROUGHFARE -	WB67
RESIDENTIAL TO ARTERIAL -	NOT ALLOWED
COLLECTOR TO THOROUGHFARE -	WB67
COLLECTOR TO ARTERIAL -	WB67
THOROUGHFARE TO ARTERIAL -	WB67

M* - CITY OF MELISSA REVISION

REINFORCED CONCRETE PAVEMENT

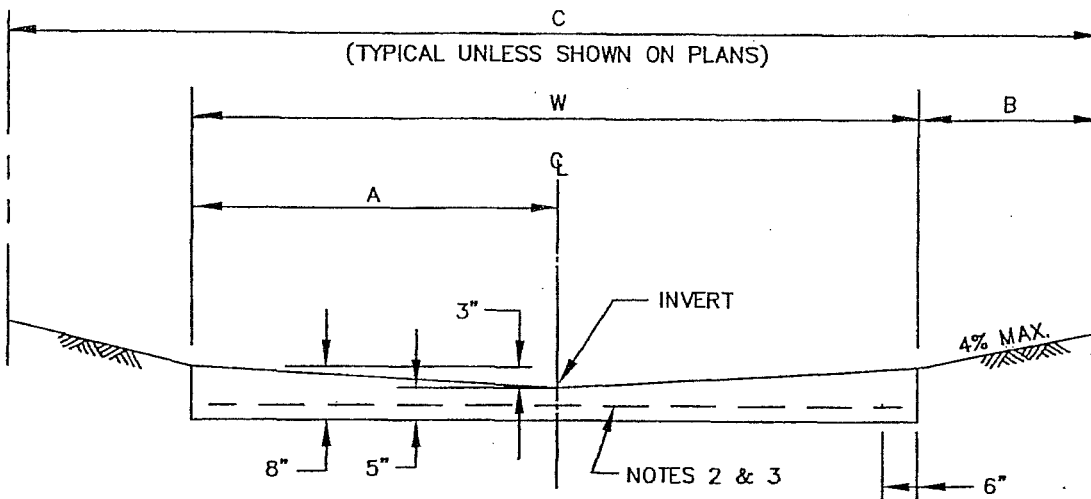


NCTCOG STANDARD SPECIFICATION REFERENCE

INTERSECTION ROW AND CURB RETURN DETAILS

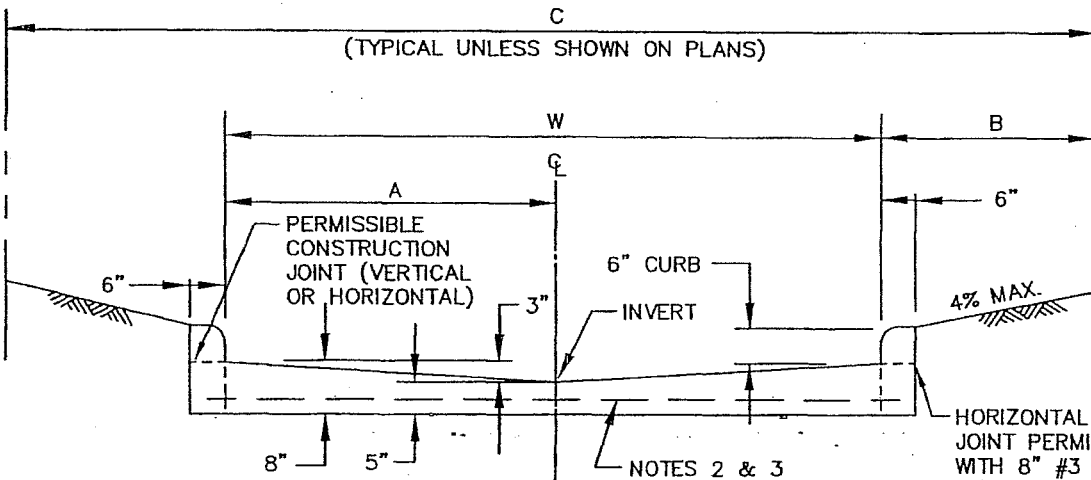
DATE
AUG. 04 2035M*

STANDARD DRAWING NO.
2035M*



ALLEY SECTION WITHOUT CURB

N.T.S.



ALLEY SECTION WITH CURB

N.T.S.

HORIZONTAL CONSTRUCTION JOINT PERMISSIBLE WITH 8" #3 DOWELS 12" C-C AND LONGITUDINAL #3 BAR IN CURB.

NOTES:

1. PROVIDE SAWED TRANSVERSE CONTRACTION JOINTS NOT MORE THAN 20' C-C.
2. REINFORCED WITH NO. 3 BARS AT 24" C-C BOTH WAYS.
3. ALTERNATE REINFORCEMENT - NO. 4 BARS AT 30" C-C BOTH WAYS.
4. EXPANSION JOINTS TO BE PLACED AT ALL INTERSECTIONS AND NOT TO EXCEED 600' BETWEEN JOINTS.
5. CONCRETE SHALL BE CLASS "C" OR "PC", OR AS SPECIFIED BY OWNER.

ALLEY WIDTH (W)	A	B	R.O.W. WIDTH (C)
10'	5'	2'-6"	15'
12'	6'	2'-6"	17'
16'	8'	2'-6"	21'
20'	10'	2'-6"	25'

REINFORCED CONCRETE PAVEMENT

ALLEYS

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

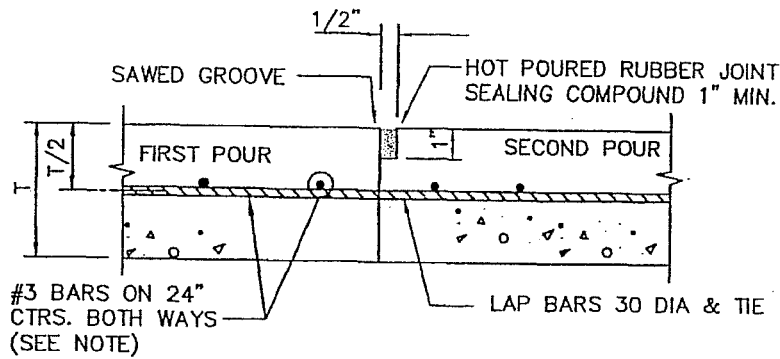
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DATE

OCT. '04

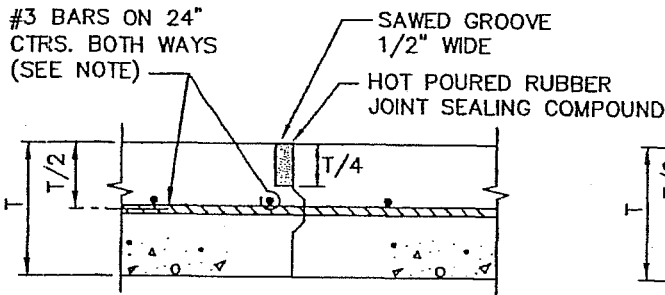
STANDARD DRAWING NO.

2040



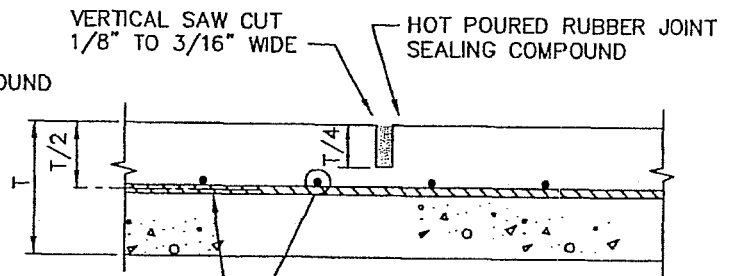
CONSTRUCTION JOINT

N.T.S.



KEYWAY JOINT

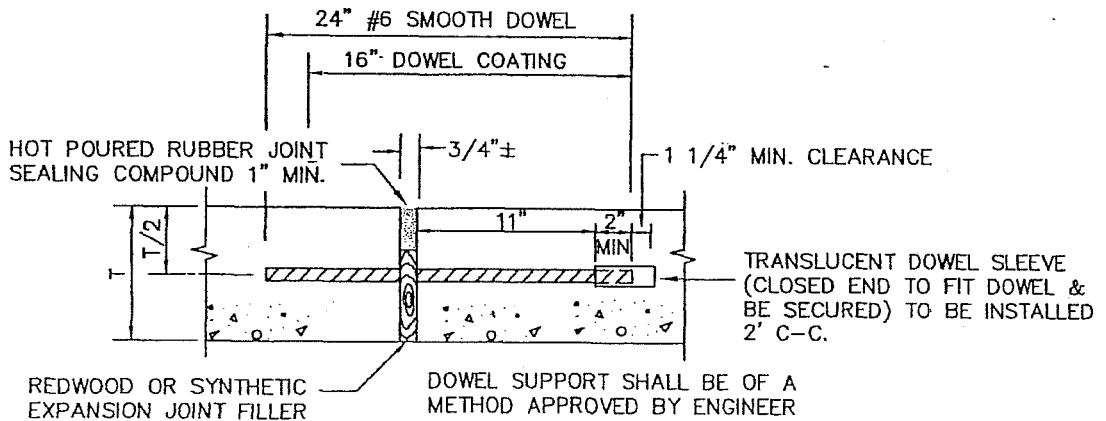
(FOR PAVEMENT THICKNESS > 6")
N.T.S.



SAWED CONTRACTION JOINT

N.T.S.

NOTE:
ALTERNATE REINFORCEMENT
#4 BARS ON 30" CTRS.
BOTH WAYS.



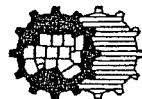
EXPANSION JOINT

(SPACED 600 FT. MAXIMUM; LOCATE AT
STRUCTURES AND AT INTERSECTION P.C.'S & P.T.'S)
N.T.S.

REINFORCED CONCRETE PAVEMENT

JOINTS

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

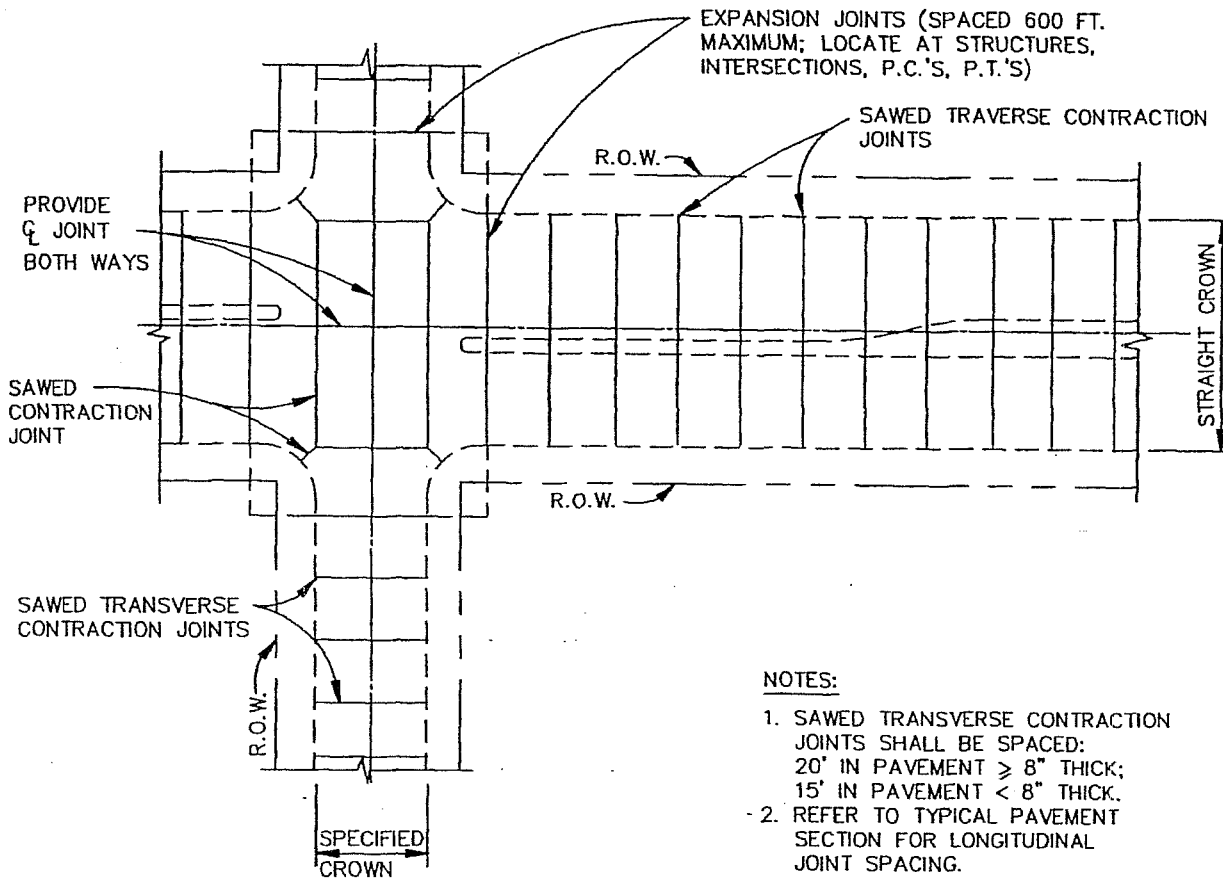
303.5.4.

DATE

OCT. '04

STANDARD DRAWING NO.

2050



NOTES:

1. SAWED TRAVERSE CONTRACTION JOINTS SHALL BE SPACED:
20' IN PAVEMENT \geq 8" THICK;
15' IN PAVEMENT < 8" THICK.
2. REFER TO TYPICAL PAVEMENT SECTION FOR LONGITUDINAL JOINT SPACING.

SPACING DIAGRAM FOR TRANSVERSE JOINTS

N.T.S.

REINFORCED CONCRETE PAVEMENT
TRANSVERSE JOINT SPACING

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

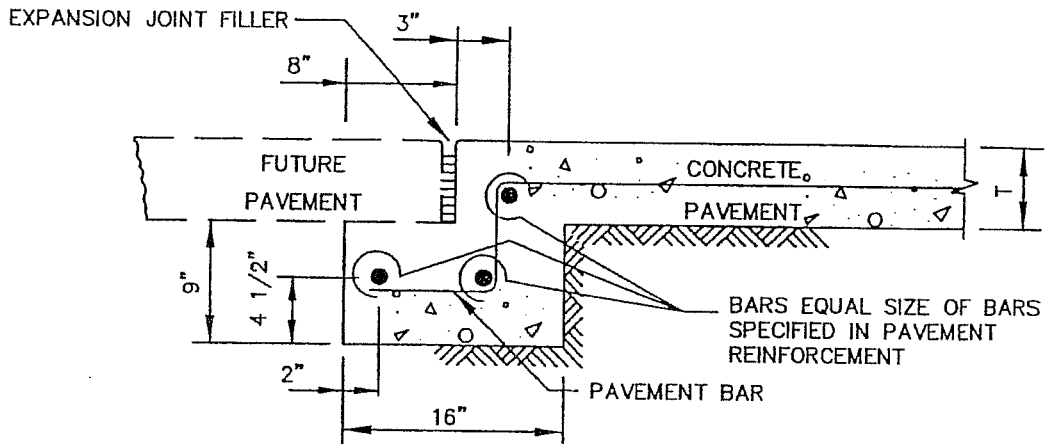
303.5.4.

DATE

OCT. '04

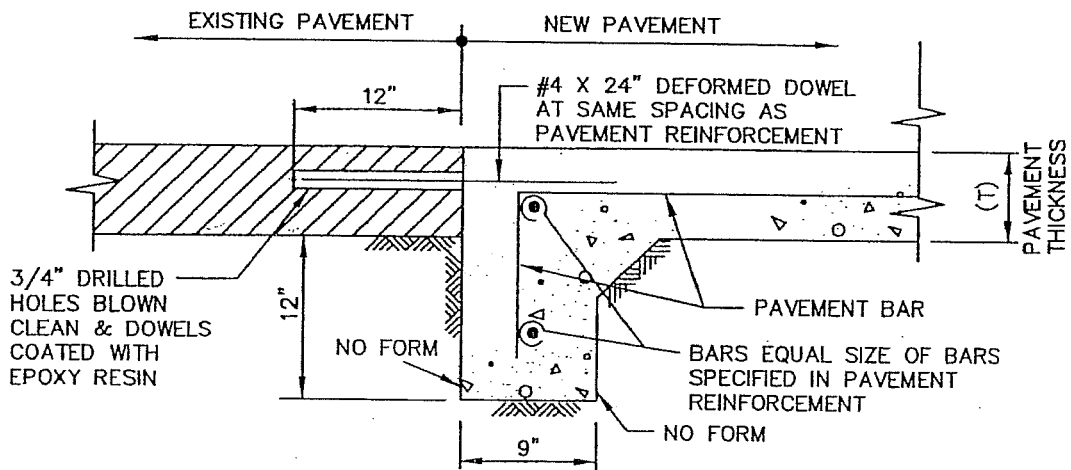
STANDARD DRAWING NO.

2060



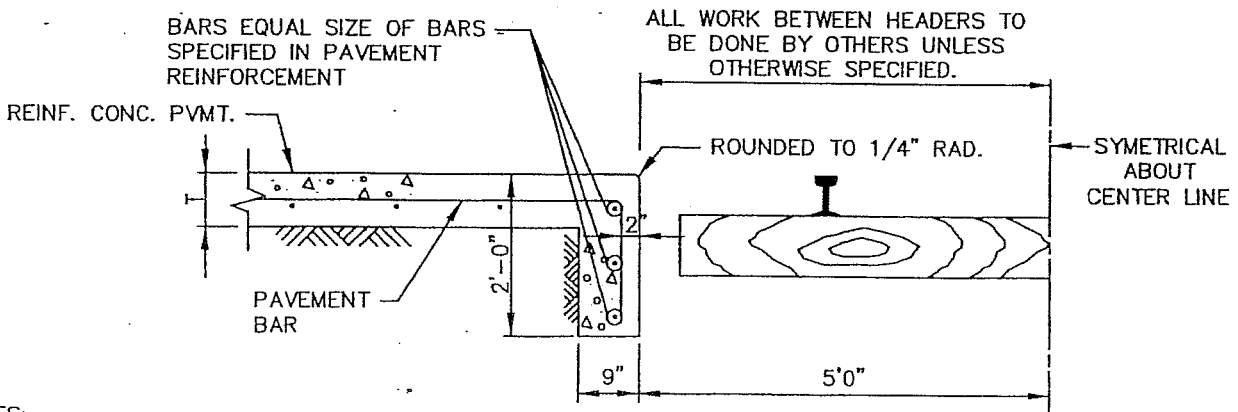
STREET HEADER FOR FUTURE PAVEMENT

N.T.S.



STREET HEADER AT EXISTING PAVEMENT

N.T.S.



STREET HEADER AT RAILROAD

N.T.S.

NOTES:

1. PAVEMENT BARS TO BE BENT DOWN INTO HEADER.

2. HEADER AND PAVEMENT TO BE MONOLITHIC.

REINFORCED CONCRETE PAVEMENT
STREET HEADERS

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

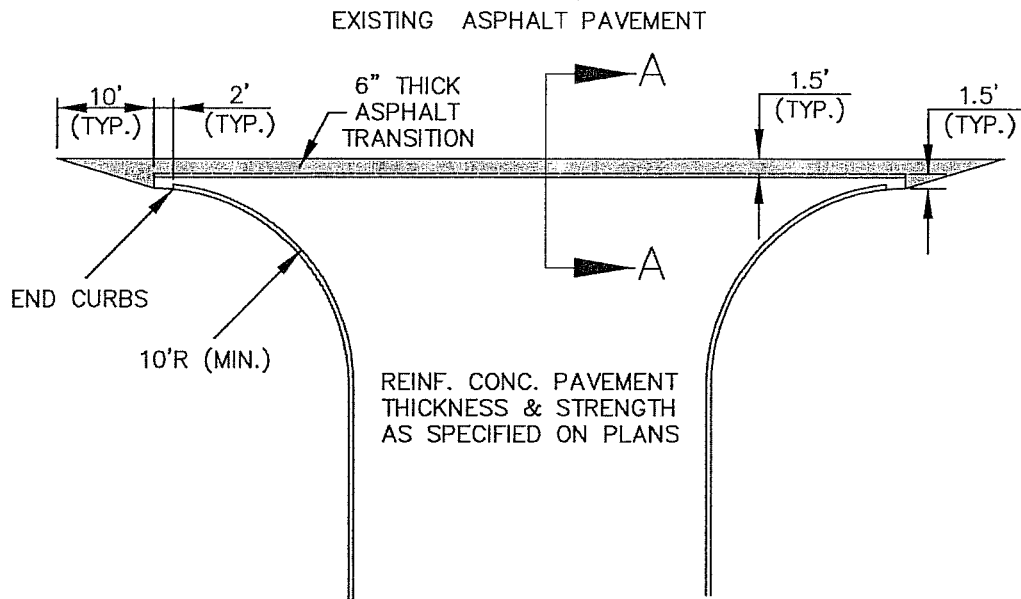
305.4

DATE

OCT. '04

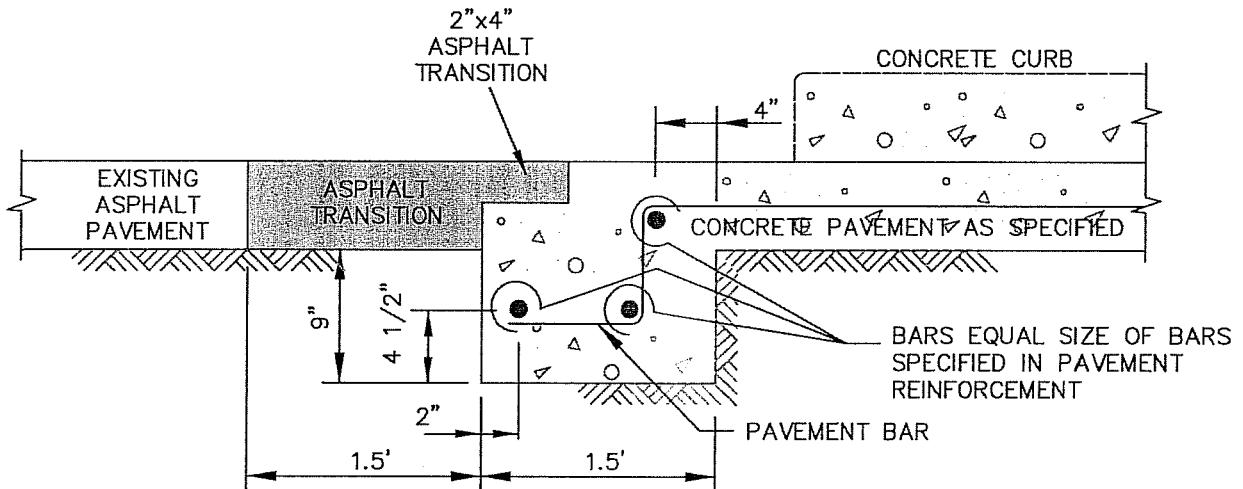
STANDARD DRAWING NO.

2070



CONCRETE TO ASPHALT CONNECTION

N.T.S.



SECTION A-A

N.T.S.

CONCRETE TO ASPHALT
PAVEMENT CONNECTION



STANDARD SPECIFICATION REFERENCE

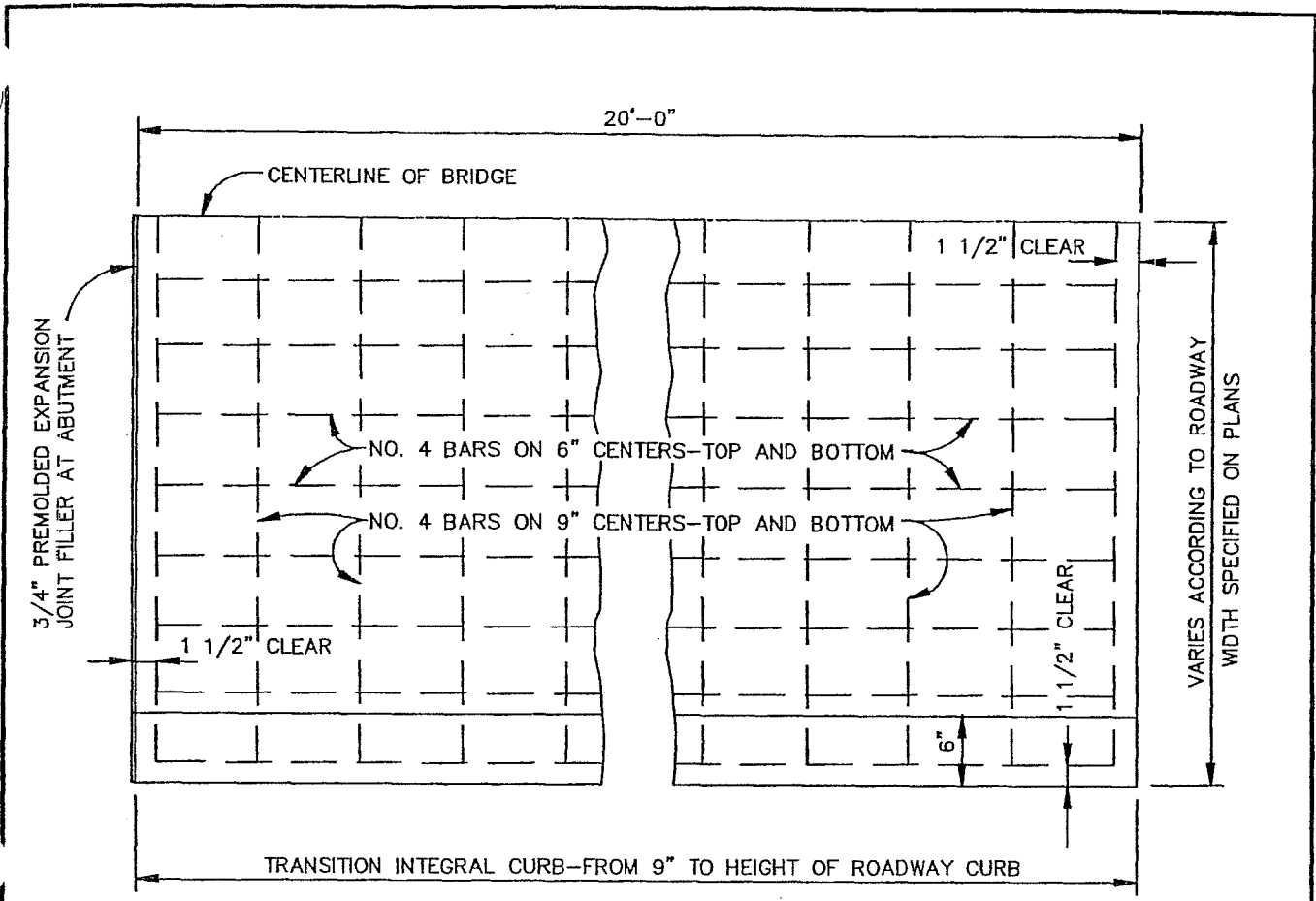
305.4

DATE

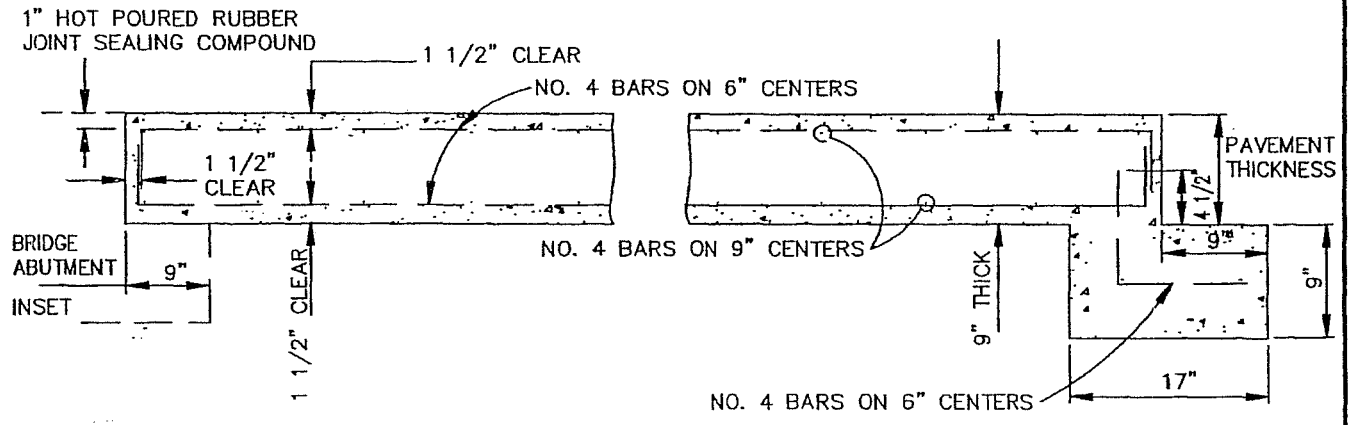
11/13/08

STANDARD DRAWING NO.

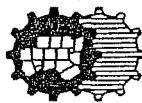
2070AM*

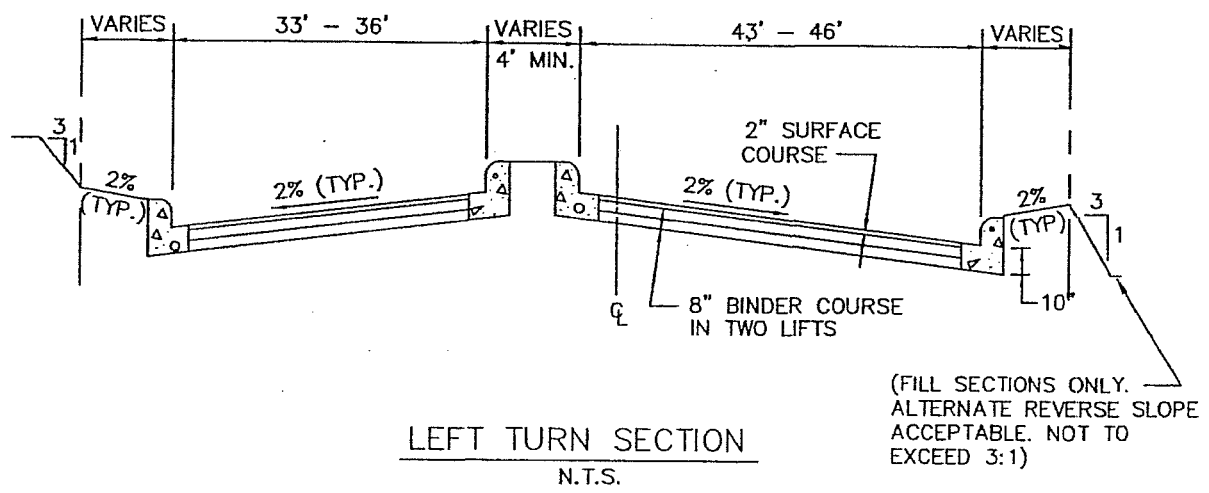
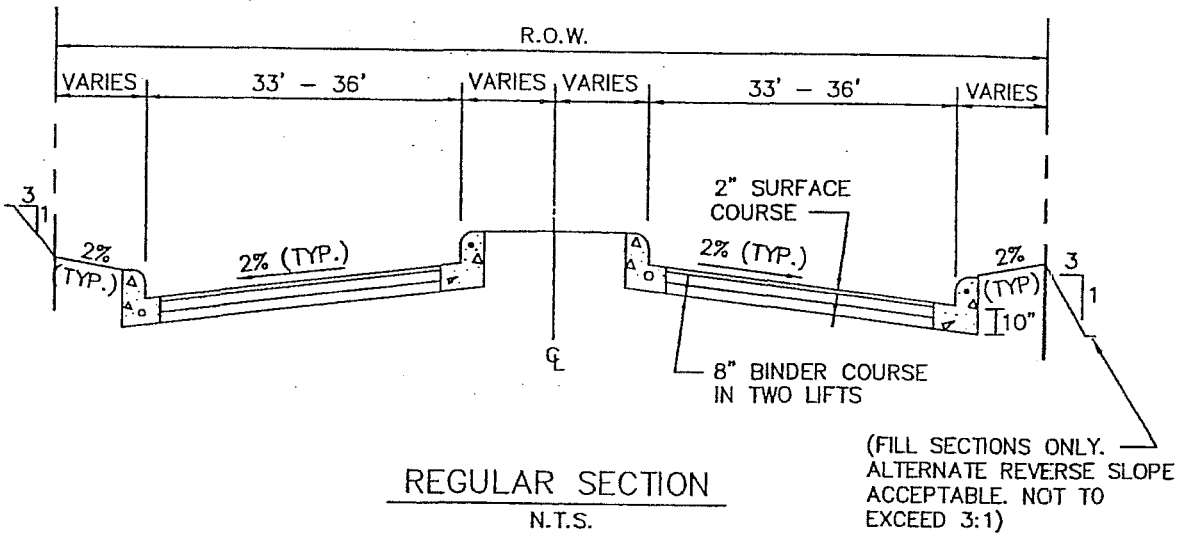


PLAN
N.T.S.



SECTION
N.T.S.

REINFORCED CONCRETE PAVEMENT BRIDGE APPROACH SLAB	North Central Texas Council of Governments 	STANDARD SPECIFICATION REFERENCE 303	
		DATE OCT. '04	STANDARD DRAWING NO. 2080



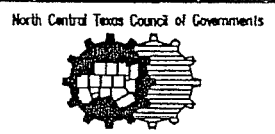
MIN. PAVEMENT DEPTH = 10" $\left\{ \begin{array}{l} 2" \text{ HMA SURFACE COURSE} \\ 8" \text{ HMA BINDER COURSE} \end{array} \right.$

(SEE STANDARD DRAWING NO. 2010 FOR PLAN VIEW)

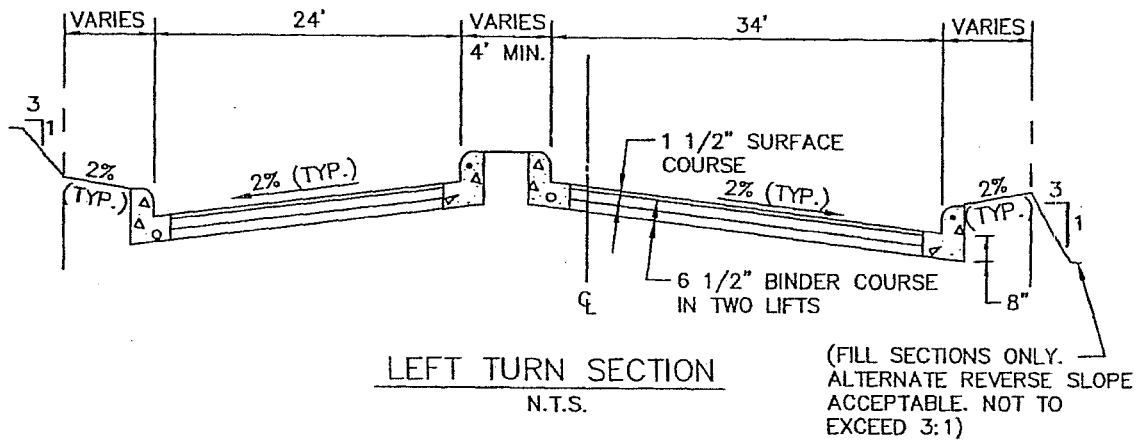
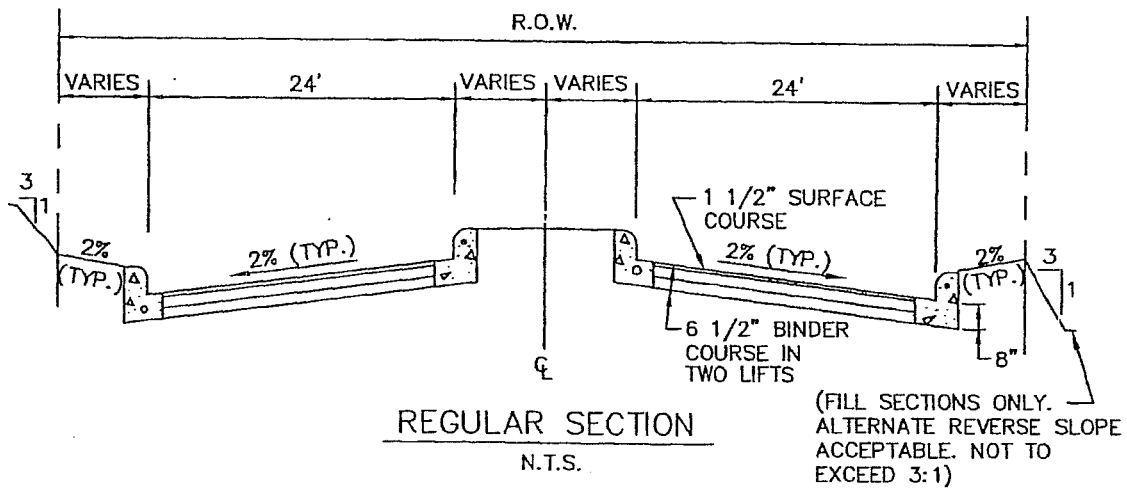
NOTES:

1. A SOIL INVESTIGATION FOR SUBGRADE DESIGN SHALL BE CONDUCTED BY THE ENGINEER AND THIS DESIGN SHALL BE APPROVED BY THE OWNER PRIOR TO CONSTRUCTION.
2. WHERE FULL-DEPTH ASPHALT PAVEMENTS ARE BEING CONSIDERED FOR USE, THE ASPHALT PAVEMENT THICKNESS SHALL BE BASED UPON NECESSARY SUBGRADE ANALYSES AND PAVEMENT THICKNESS DESIGN DETERMINATIONS AS APPROVED BY THE OWNER.
3. MIN. CURB HEIGHT AND WIDTH SHALL BE 6", OR AS SPECIFIED BY OWNER.
4. TACK COAT BETWEEN COURSES AS REQUIRED.

HOT MIX ASPHALT PAVEMENT
SIX-LANE DIVIDED THOROUGHFARE



STANDARD SPECIFICATION REFERENCE	
302	
DATE	STANDARD DRAWING NO.
OCT. '04	2090



MIN. PAVEMENT DEPTH = 8" { 1 1/2" HMA SURFACE COURSE
 { 2-3 1/4" HMA BINDER COURSES

(SEE STANDARD DRAWING NO. 2020 FOR PLAN VIEW)

NOTES:

1. A SOIL INVESTIGATION FOR SUBGRADE DESIGN SHALL BE CONDUCTED BY THE ENGINEER AND THIS DESIGN SHALL BE APPROVED BY THE OWNER PRIOR TO CONSTRUCTION.
2. WHERE FULL-DEPTH ASPHALT PAVEMENTS ARE BEING CONSIDERED FOR USE, THE ASPHALT PAVEMENT THICKNESS SHALL BE BASED UPON NECESSARY SUBGRADE ANALYSES AND PAVEMENT THICKNESS DESIGN DETERMINATIONS AS APPROVED BY THE OWNER.
3. MIN. CURB HEIGHT AND WIDTH SHALL BE 6", OR AS SPECIFIED BY OWNER.
4. TACK COAT BETWEEN COURSES AS REQUIRED.

HOT MIX ASPHALT PAVEMENT
FOUR-LANE DIVIDED THOROUGHFARE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

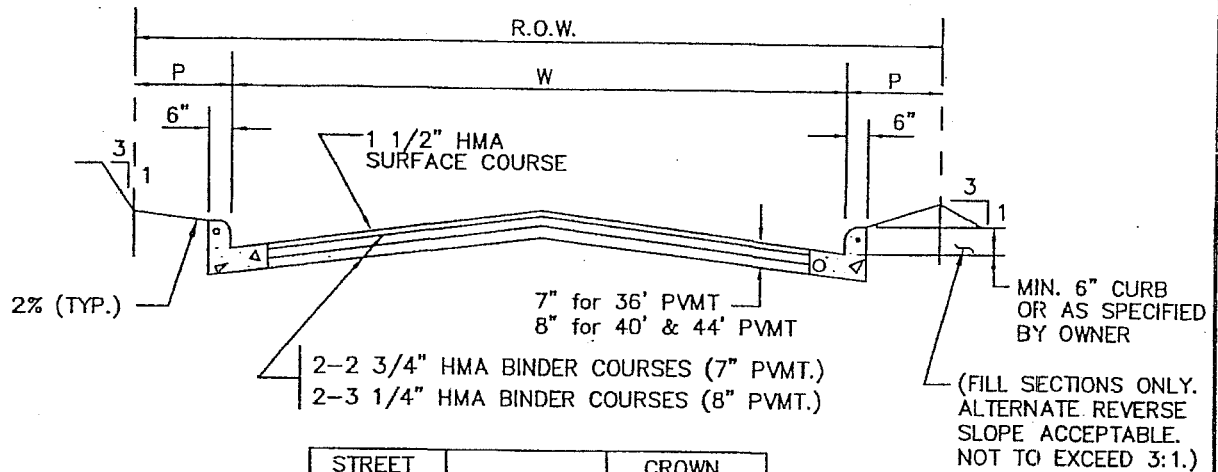
302

DATE

OCT. '04

STANDARD DRAWING NO.

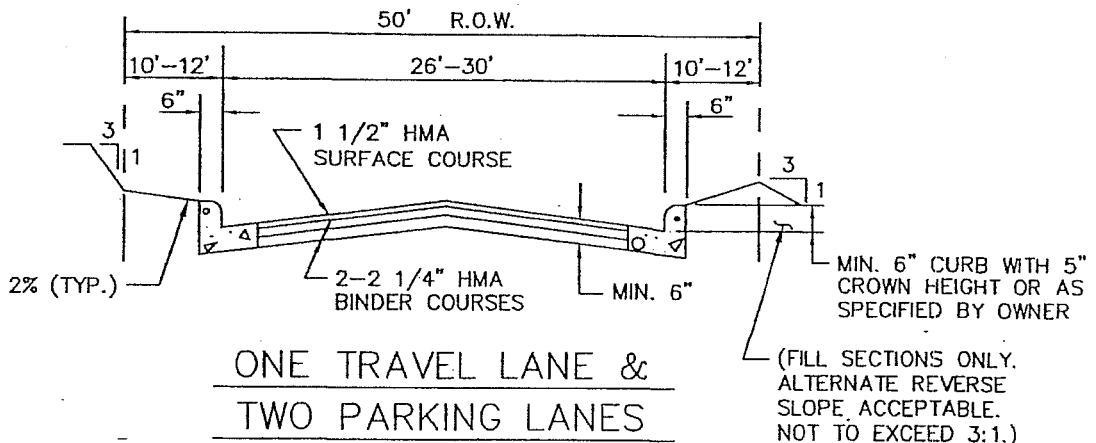
2100



STREET WIDTH(W)	P	CROWN HEIGHT
36'	VARIABLE	6"
40'	VARIABLE	6"
44'	VARIABLE	8"

FOUR TRAVEL LANES OR
TWO TRAVEL LANES &
TWO PARKING LANES

N.T.S.



ONE TRAVEL LANE &
TWO PARKING LANES

N.T.S.

NOTES:

1. A SOIL INVESTIGATION FOR SUBGRADE DESIGN SHALL BE CONDUCTED BY THE ENGINEER THIS DESIGN SHALL BE APPROVED BY THE OWNER PRIOR TO CONSTRUCTION.
2. WHERE FULL-DEPTH ASPHALT PAVEMENTS ARE BEING CONSIDERED FOR USE, THE ASPHALT PAVEMENT THICKNESS SHALL BE BASED UPON NECESSARY SUBGRADE ANALYSES AND PAVEMENT THICKNESS DESIGN DETERMINATIONS AS APPROVED BY THE OWNER. THICKNESSES SHOWN ARE TYPICAL.
3. TACK COAT BETWEEN COURSES AS REQUIRED.

HOT MIX ASPHALT PAVEMENT

2- & 4-LANE UNDIVIDED THOROUGHFARE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

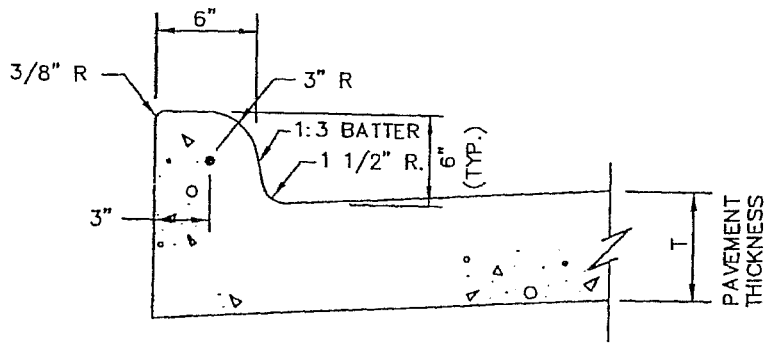
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DATE

OCT. '04

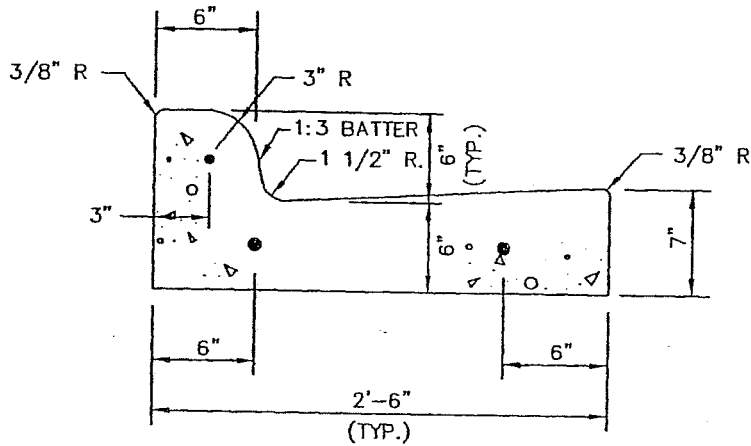
STANDARD DRAWING NO.

2110



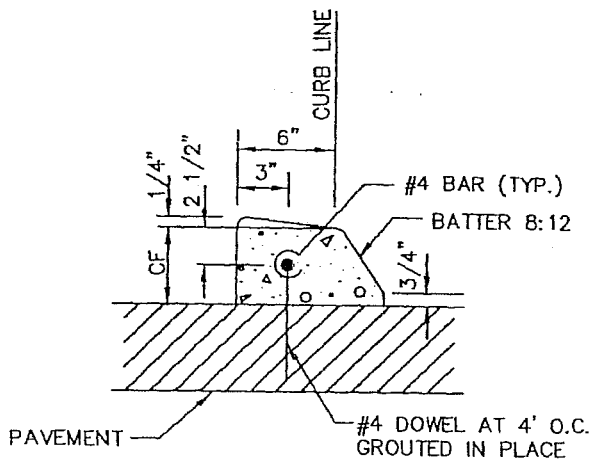
INTEGRAL CURB & GUTTER

N.T.S.



SEPARATE CURB & GUTTER

N.T.S.



DOWELED CURB

N.T.S.

NOTES:

1. REINFORCEMENT SHALL BE NO. 4 BARS, UNLESS OTHERWISE SPECIFIED.
2. CONCRETE SHALL BE CLASS "C" OR "PC".
3. "CF" IS 6" UNLESS OTHERWISE SPECIFIED.
4. ALL CURBS ARE CONSTRUCTED OF PORTLAND CEMENT CONCRETE UNLESS OTHERWISE SHOWN.
5. GRADE SHALL BE MEASURED AT BACK OF CURB.

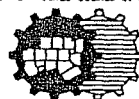
CONCRETE CURB & GUTTER

North Central Texas Council of Governments

STANDARD SPECIFICATION REFERENCE

305.1

INTEGRAL, SEPARATE, & DOWELED

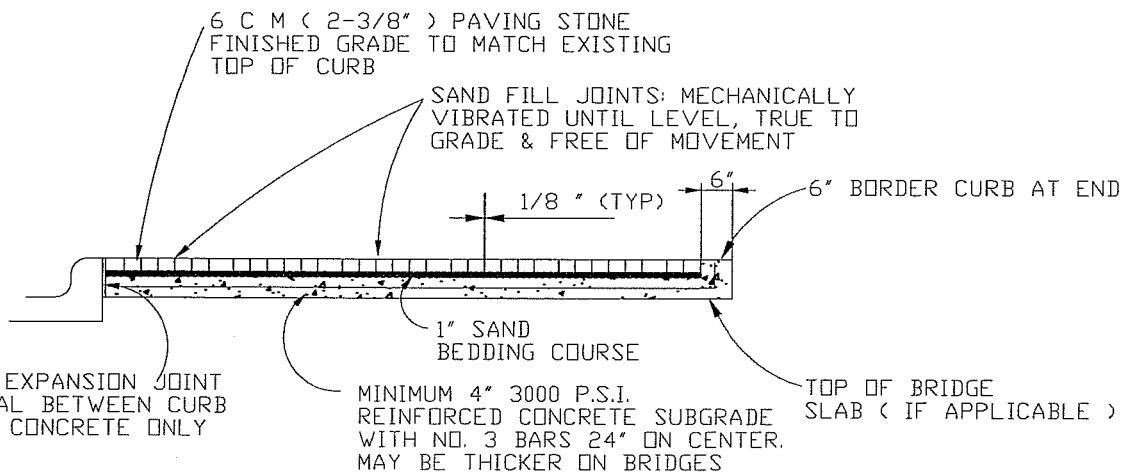
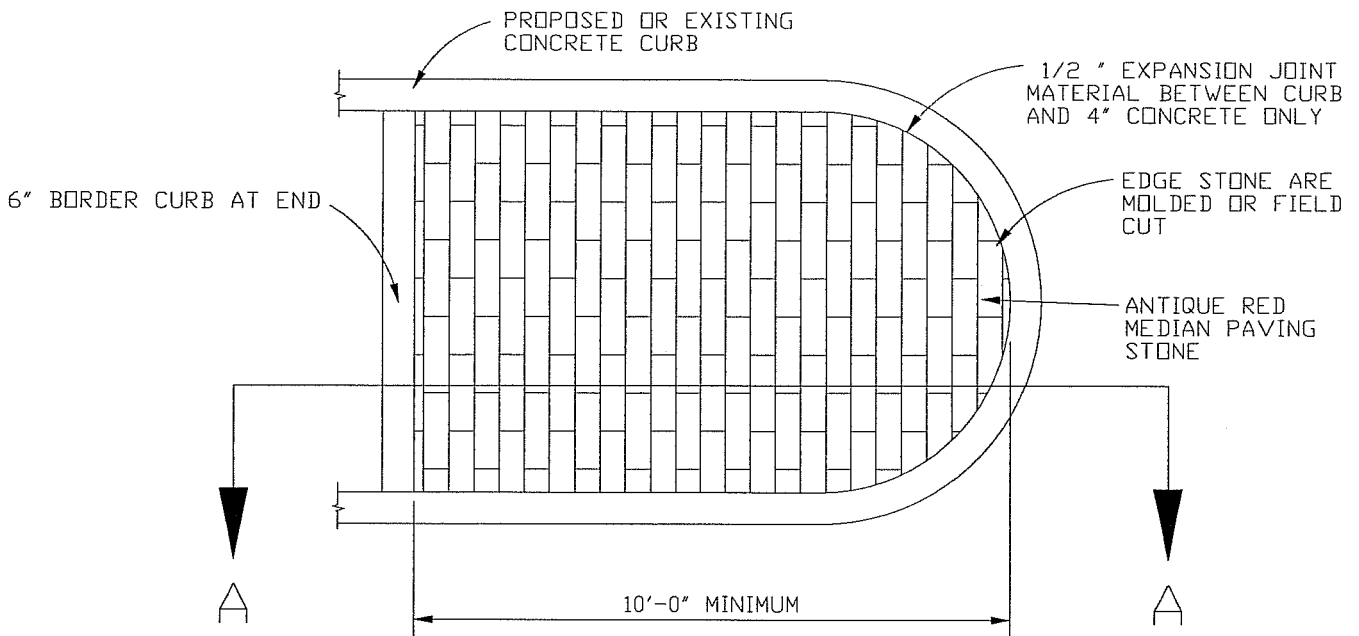


DATE

STANDARD DRAWING NO.

OCT. '04

2120



SECTION A-A

NOTES:

1. MEDIAN PAVING SHALL EXTEND TO A POINT WHERE MEDIAN IS 6' WIDE, IF MEDIAN IS 6' WIDE, OR LESS PAVING SHALL EXTEND 15' FROM NOSE.
2. FOR MEDIANS WIDER THAN 6', PAVING SHALL EXTEND 10' FROM NOSE.
3. ALL DISTANCES ARE MINIMUM.
4. PAVING STONE SHALL BE INTERLOCKING CONCRETE.

M* - CITY OF MELISSA REVISION

MEDIAN ISLAND STONE PAVING
CITY OF MELISSA, TEXAS



NCTCOG STANDARD SPECIFICATION REFERENCE

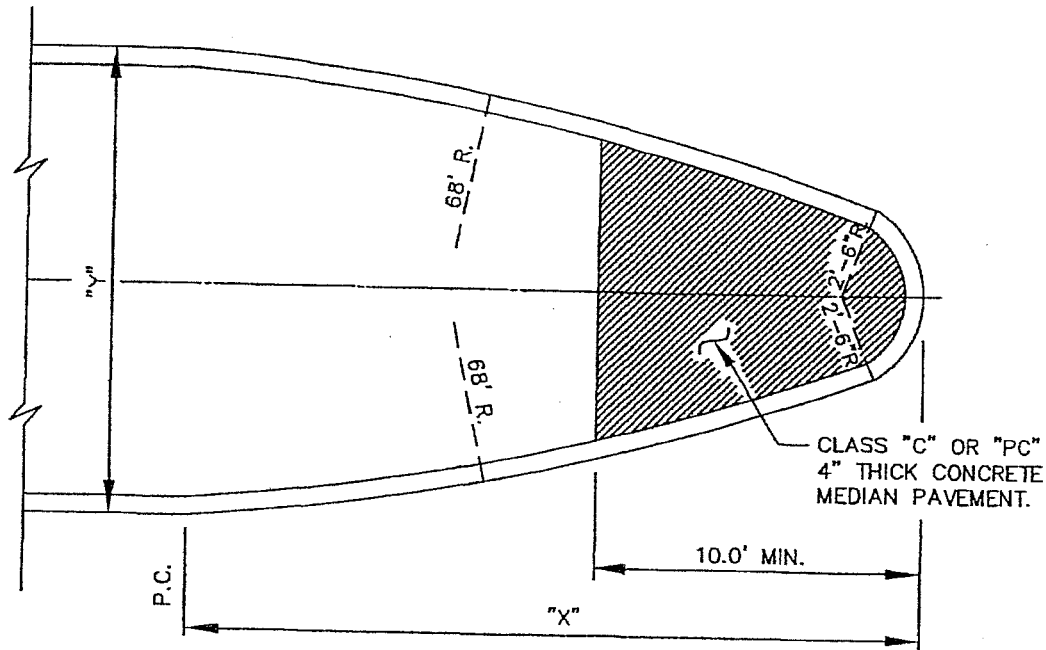
305.3

DATE

11/13/08

STANDARD DRAWING NO.

2130AM*



DIMENSIONS OF MEDIAN NOSE

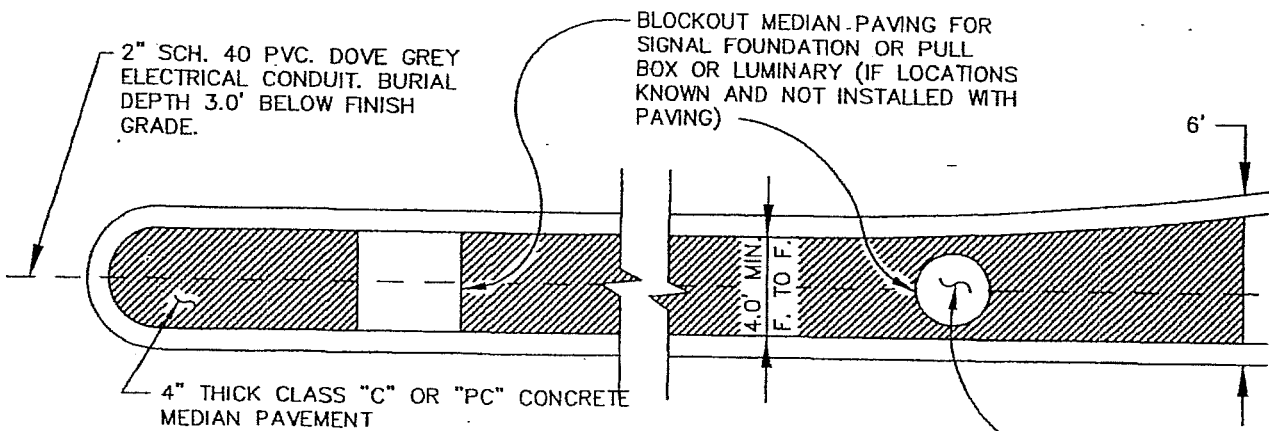
Y = 15'	X = 27.6'
Y = 16'	X = 28.8'
Y = 17'	X = 29.9'
Y = 18'	X = 30.9'

CONCRETE NOSE FOR MEDIAN ISLAND

N.T.S.

NOTE:

MEDIAN PAVING SHALL EXTEND TO POINT WHERE MEDIAN IS 6' WIDE. IF MEDIAN IS 6' WIDE, PAVING SHALL EXTEND 15' FROM NOSE. FOR MEDIANS WIDER THAN 6' PAVING SHALL EXTEND 10' FROM NOSE. ALL DISTANCES ARE MINIMUM.

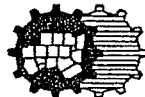


LEFT TURN LANE MEDIAN PAVEMENT

N.T.S.

MEDIAN ISLAND PAVEMENT
NOSE & LEFT TURN LANE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

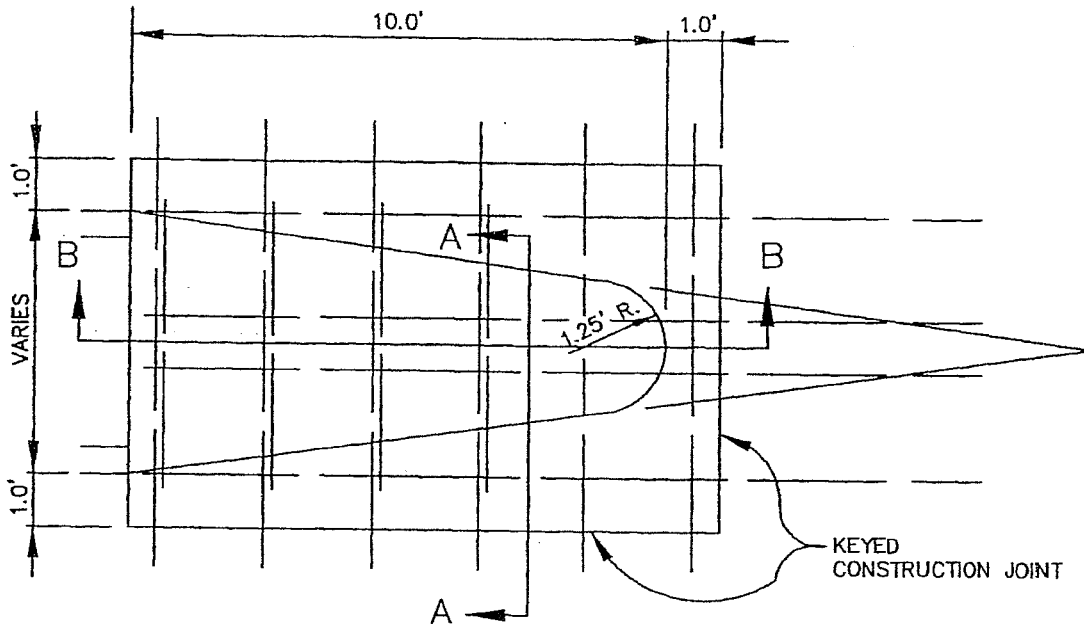
305.3

DATE

OCT. '04

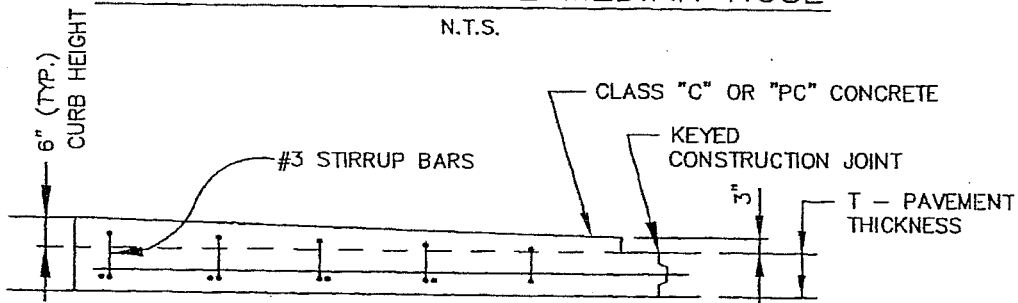
STANDARD DRAWING NO.

2130



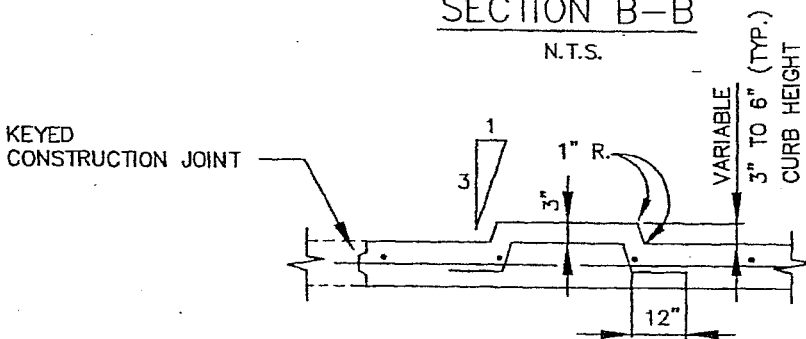
MONOLITHIC CONCRETE MEDIAN NOSE

N.T.S.



SECTION B-B

N.T.S.



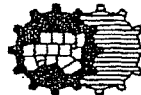
SECTION A-A

N.T.S.

NOTE:
REINFORCEMENT BARS SHALL
MATCH THOSE IN PAVEMENT.

MEDIAN ISLAND PAVEMENT
MONOLITHIC CONCRETE NOSE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

305.3

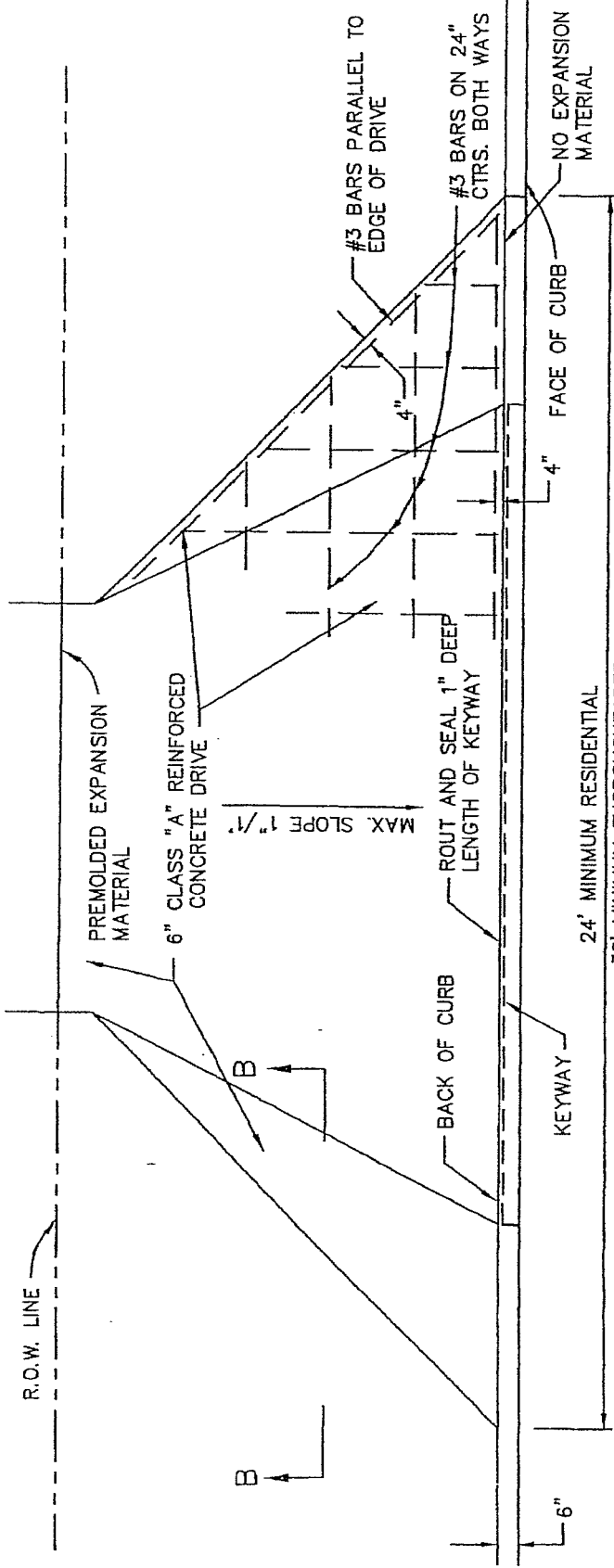
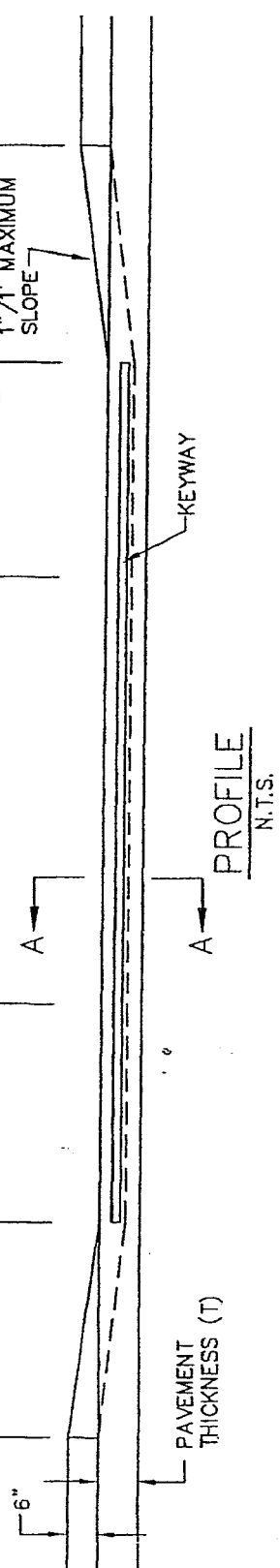
DATE

OCT. '04

STANDARD DRAWING NO.

2140

5' MIN. TRANSITION 5' THOROUGHFARES 5' MIN. TRANSITION
 2' RESIDENTIAL 2' RESIDENTIAL 1" / 1' MAXIMUM SLOPE



30' MINIMUM THOROUGHFARES
 32' MINIMUM ALLEY TURNOUTS

PLAN
 N.T.S.

SEE NOTES, STANDARD DRAWING NO. 2150B.

DRIVEWAY APPROACH
 FLARED RETURN TYPE

STANDARD SPECIFICATION REFERENCE
 305.2
 DATE
 OCT. '04
 STANDARD DRAWING NO.
 2150A



STANDARD DRAWING NO.
 2150A

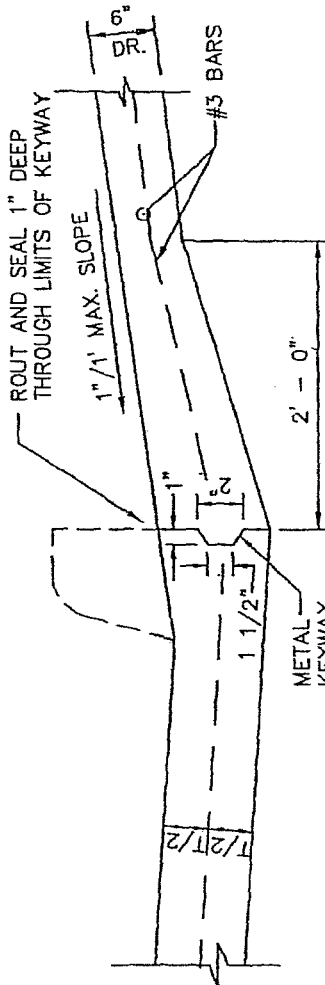
6" CLASS "A" P.S.I. REINF.
CONC. DRIVE



SECTION "B-B"
N.T.S.

NOTES:

1. OFFSETS IN DRIVES TO MATCH PROPOSED WALKS SHALL BE BUILT MONOLITHIC WITH THE DRIVE.
2. PAVEMENT JOINTS SHALL NOT EXTEND THROUGH DRIVE.
3. KEYWAY LIMITS SHALL COINCIDE WITH LIMITS OF 1" CURB.
4. REINFORCING STEEL SHALL NOT EXTEND THROUGH KEYWAY. DRIVE SHALL NOT BE TIED TO PAVEMENT.
5. MAXIMUM SLOPE ON DRIVE IN ANY DIRECTION SHOULD BE 1"/1', WITH EXCEPTION OF 1/4"/1' THROUGH ANY SIDEWALK PASSTHROUGH TO RESPECT PRINCIPLES OF BARRIER FREE CONSTRUCTION.
6. LENGTH OF TRANSITION FOR CURB AT EACH SIDE OF DRIVE MAY VARY DUE TO STREET GRADES AND REQUIREMENT TO HOLD MAXIMUM SLOPE OF 1"/1'.
7. SIDEWALKS SHALL BE AS DIRECTED BY OWNER AND SHALL MEET REQUIREMENTS OF A.D.A.
8. EXTEND TRANSVERSE PAVEMENT SAWED JOINTS TO R.O.W.



SECTION "A - A"
N.T.S.

STANDARD SPECIFICATION REFERENCE
305.2

DATE
OCT. '04

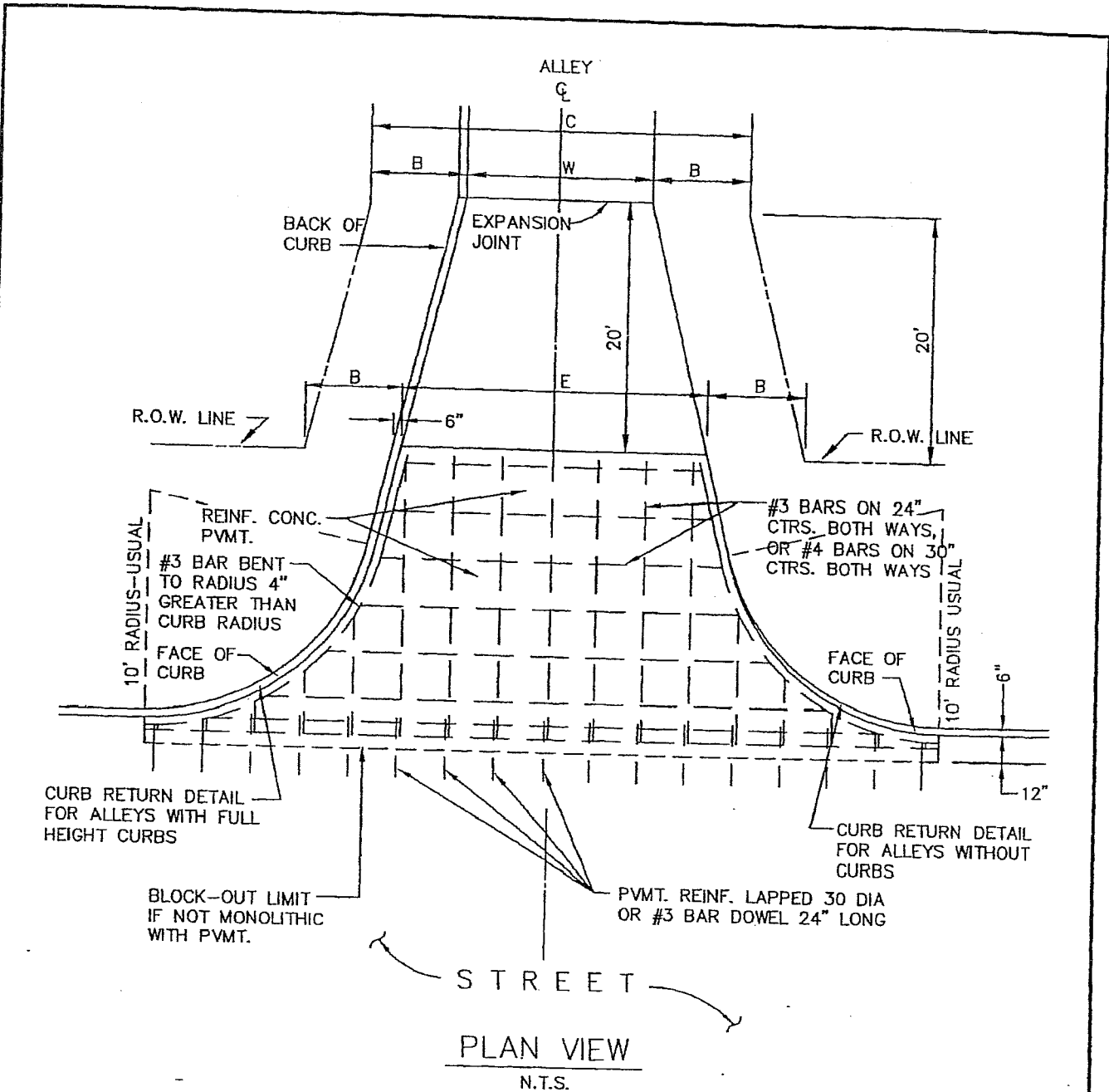
STANDARD DRAWING NO.
2150B

North Central Texas Council of Governments



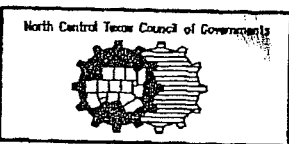
DRIVEWAY APPROACH
FLARED RETURN TYPE

STANDARD DRAWING NO.
2150B



ALLEY WIDTH (W)	R.O.W. WIDTH (C)	B	E
10'	15'	2' - 6"	12'
12'	17'	2' - 6"	14'
16'	21'	2' - 6"	18'
20'	25'	2' - 6"	22'

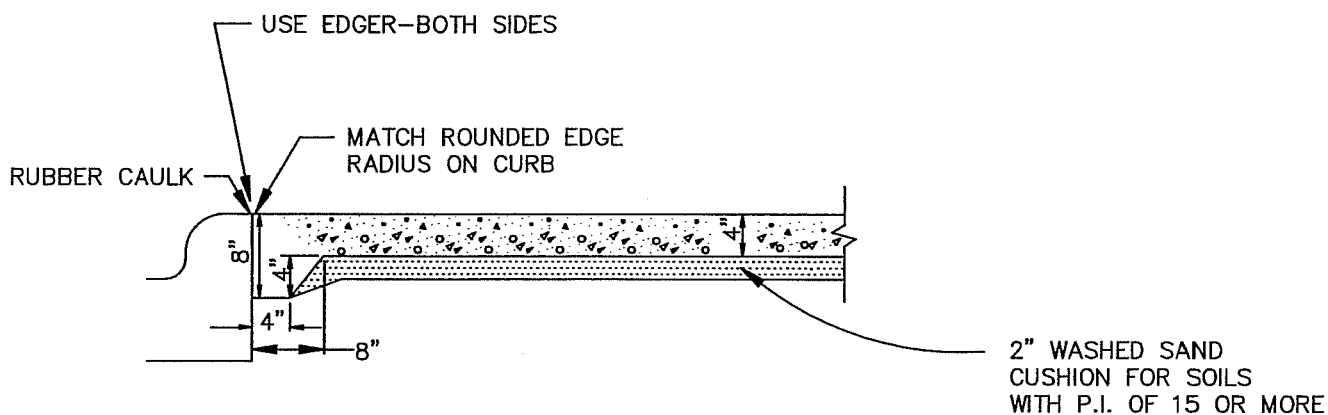
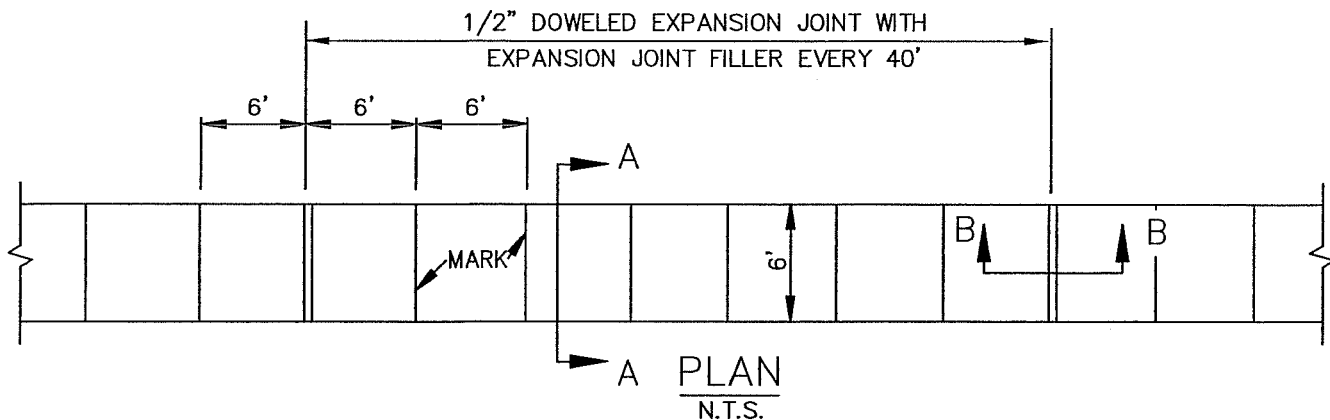
ALLEY APPROACH
RADIUS RETURN TYPE



STANDARD SPECIFICATION REFERENCE
305.2

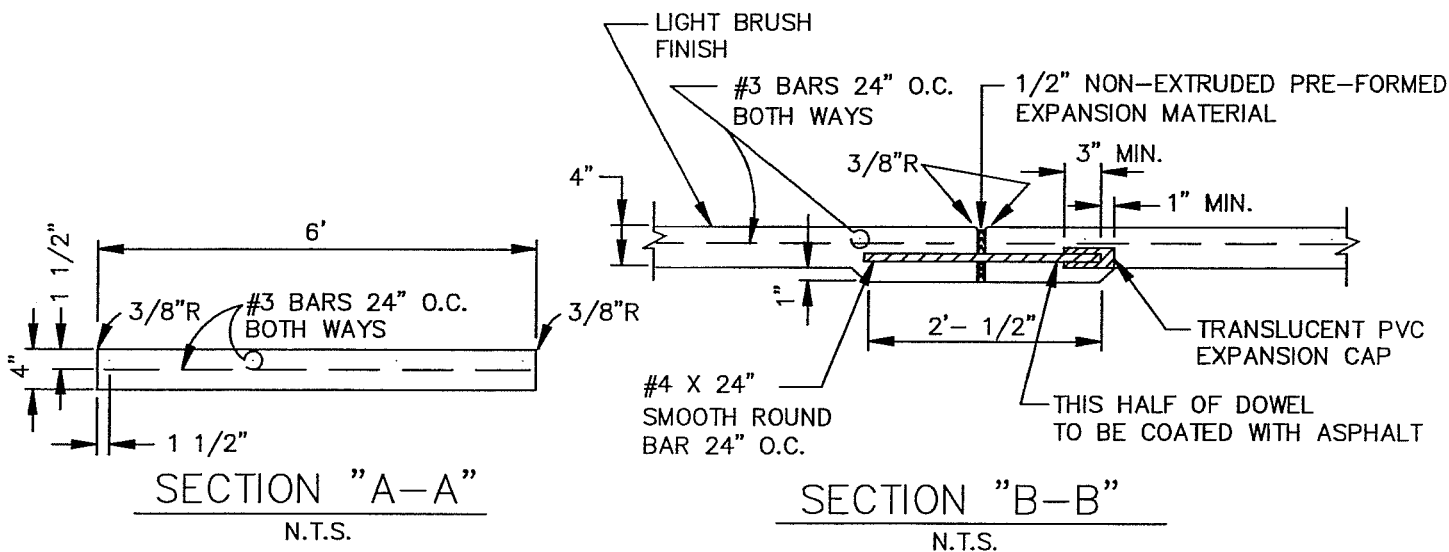
DATE
OCT. '04

STANDARD DRAWING NO.
2160



JOINT LUG DETAIL FOR MEDIAN PAVEMENT OR SIDEWALK ADJACENT TO CURB

N.T.S.



NOTE:

1. REFER TO STANDARD SPECIFICATION ITEM 8.3. FOR ALTERNATE REINFORCEMENT.
2. CROSS SLOPE OF SIDEWALK SHALL BE $\pm 1/4"$ PER FT. MIN. TO $\pm 3/8"$ PER FT. MAX.
3. 5'-0" SIDEWALK FOR RESIDENTIAL STREETS AND 6'-0" SIDEWALK FOR COLLECTOR AND THOROUGHFARE STREETS.
4. SIDEWALK SHALL BE CLASS "A" CONCRETE UNLESS OTHERWISE SPECIFIED BY OWNER.
5. ALL HONEYCOMB IN BACK OF CURB TO BE TROWEL-PLASTERED BEFORE POURING SIDEWALK.
6. LUG MAY BE FORMED BY SHAPING SUBGRADE TO APPROXIMATE DIMENSIONS SHOWN.

REINFORCED CONCRETE SIDEWALKS

JOINTS AND SPACING



STANDARD SPECIFICATION REFERENCE

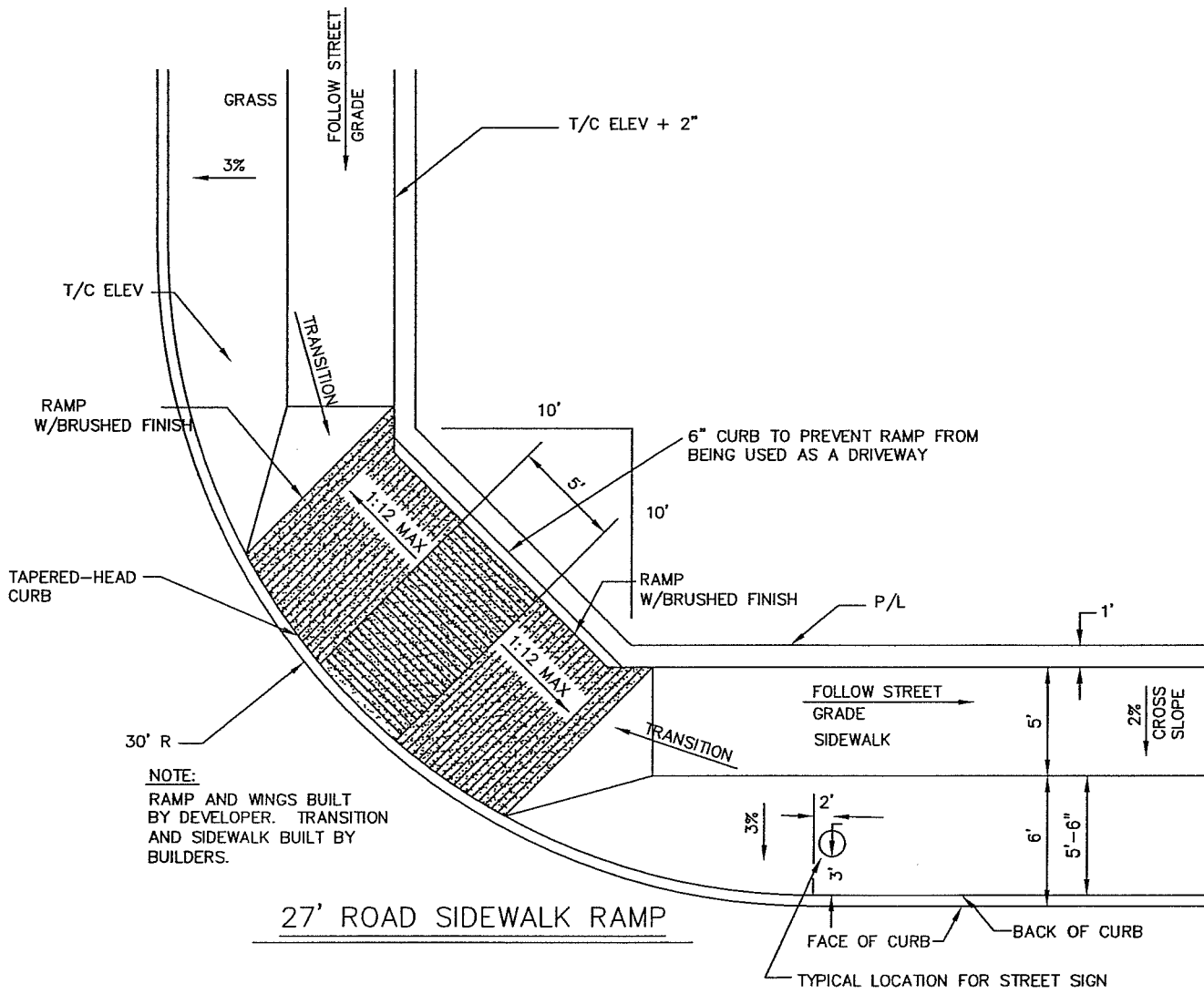
305.2

DATE

11/13/08

STANDARD DRAWING NO.

2170M



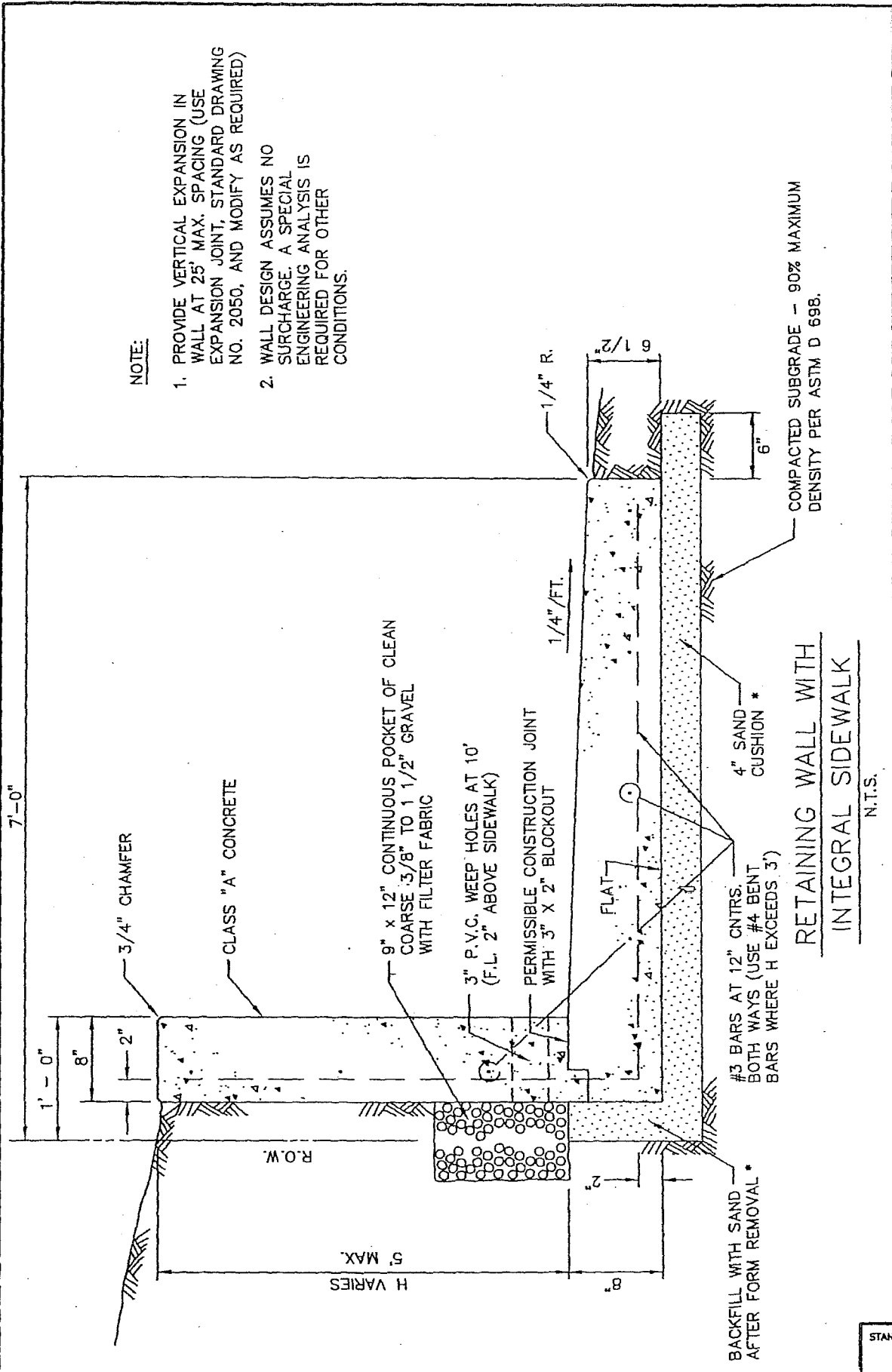
M* - CITY OF MELISSA REVISION

SIDEWALK DETAILS FOR 27' ROAD

NCTCOG STANDARD SPECIFICATION REFERENCE

CITY OF MELISSA

DATE	STANDARD DRAWING NO.
AUG 04	2175M*



NOTE:

1. PROVIDE VERTICAL EXPANSION IN WALL AT 25' MAX. SPACING (USE EXPANSION JOINT, STANDARD DRAWING NO. 2050, AND MODIFY AS REQUIRED)
2. WALL DESIGN ASSUMES NO SURCHARGE. A SPECIAL ENGINEERING ANALYSIS IS REQUIRED FOR OTHER CONDITIONS.

COMPACTED SUBGRADE - 90% MAXIMUM DENSITY PER ASTM D 698.

RETAINING WALL WITH INTEGRAL SIDEWALK

N.T.S.

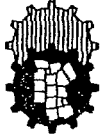
* WHEN SPECIFIED ON PLANS

STANDARD DRAWING NO. 2180

REINFORCED CONCRETE RETAINING WALL

INTEGRAL WITH SIDEWALK

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE 802.2

DATE OCT. '04

STANDARD DRAWING NO. 2180

GENERAL NOTES:

1. REINFORCED CONCRETE PAVEMENT:
 - A. ALL CURBS SHALL BE PLACED INTEGRAL WITH PAVEMENT UNLESS OTHERWISE APPROVED BY THE OWNER.
 - B. CURBS SHALL MEET THE SAME COMPRESSIVE STRENGTH AS SPECIFIED FOR THE PAVEMENT.
 - C. BAR LAPS SHALL BE 30 DIAMETERS.
 - D. REINFORCING BARS SHALL BE SUPPORTED BY CHAIRS OR OTHER DEVICES APPROVED BY THE OWNER.

2. SUBGRADE: (UNLESS OTHERWISE SPECIFIED BY OWNER)
 - A. SUBGRADE UNDER ALL PAVEMENTS SHALL BE STABILIZED TO A MINIMUM DEPTH OF 6" WITH HYDRATED LIME OR CEMENT WHEN THE P.I. OF THE INPLACE MATERIAL IS GREATER THAN 15. LABORATORY TESTS MUST BE PERFORMED TO DETERMINE THE AMOUNT OF LIME OR CEMENT REQUIRED TO LOWER THE P.I. TO 15 OR BELOW. SATURATION P.I. ($PH \geq 12.4$) WILL BE THE LIMIT WHEN A SOIL'S P.I. CANNOT BE BROUGHT TO 15 OR LOWER.

 - B. WHERE THE INPLACE MATERIAL HAS A P.I. OF LESS THAN 15, THE SUBGRADE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6" AND RECOMPACTED.

3. IF THE ROADWAY IS A DESIGNATED BIKE ROUTE OR BIKE USAGE IS ANTICIPATED, REFER TO NCTCOG'S REGIONAL BICYCLE AND PEDESTRIAN FACILITIES DESIGN MANUAL FOR DESIGN GUIDANCE.

PAVEMENT SYSTEMS

GENERAL NOTES

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

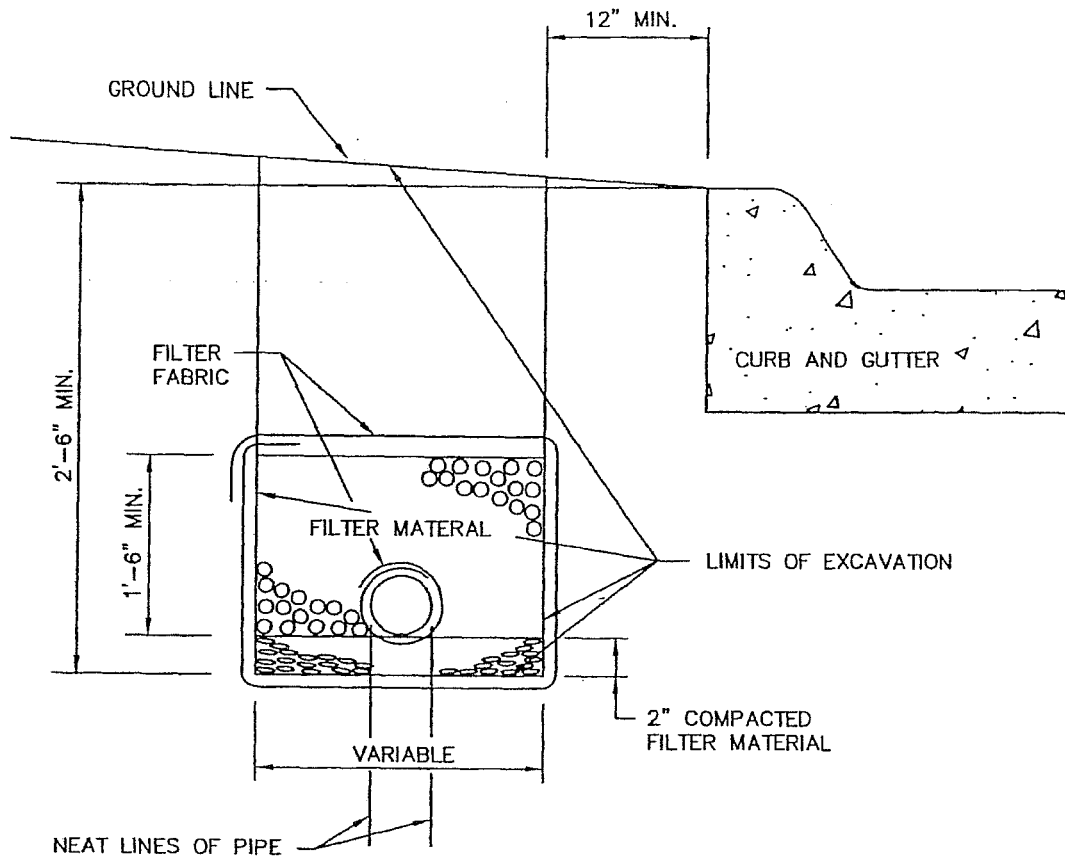
302,303

DATE

OCT. '04

STANDARD DRAWING NO.

2190



SECTION
N.T.S.

LIMITS OF EXCAVATION

DEPTH OF TRENCH (FT.)	DIST. IN FT. OUTSIDE NEAT LINES OF PIPE SUBDRAIN
0 TO 6	1.00
6 TO 10	1.50
10 TO 15	2.00
OVER 15	2.50

FILTER MATERIAL SPECIFICATIONS

SIEVE SIZE	PERCENTAGE RETAINED ON SIEVE	
	TYPE A	TYPE B
1 1/2	---	0 - 10
3/4	0 - 10	20 - 40
3/8	15 - 35	---
NO. 4	35 - 55	40 - 60

TYPES OF PIPE ACCEPTABLE FOR USE AS SUBDRAIN

1. PERFORATED CORRUGATED METAL PIPE.
2. PERFORATED PVC PIPE.
3. PERFORATED POLYETHYLENE PIPE.

MATERIAL FINER THAN NO. 4 SIEVE

4	---
20	35 - 65
50	75 - 100

SUBDRAINS

PAVEMENT SUBGRADE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

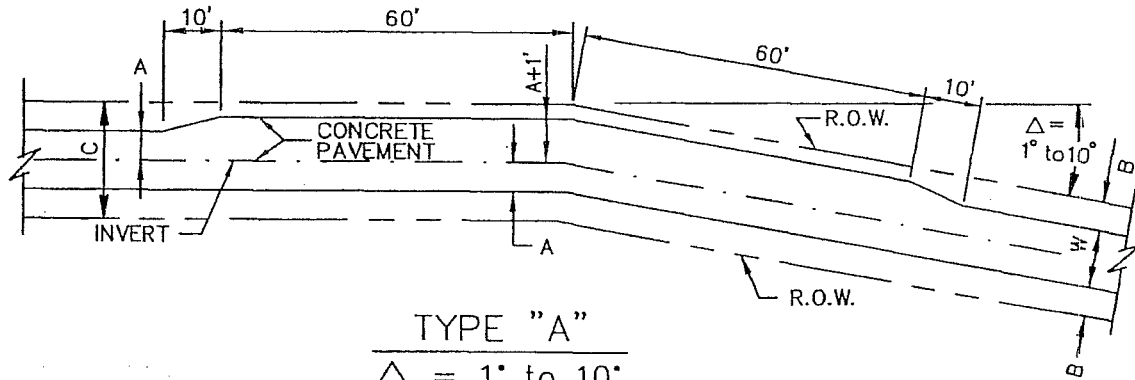
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DATE

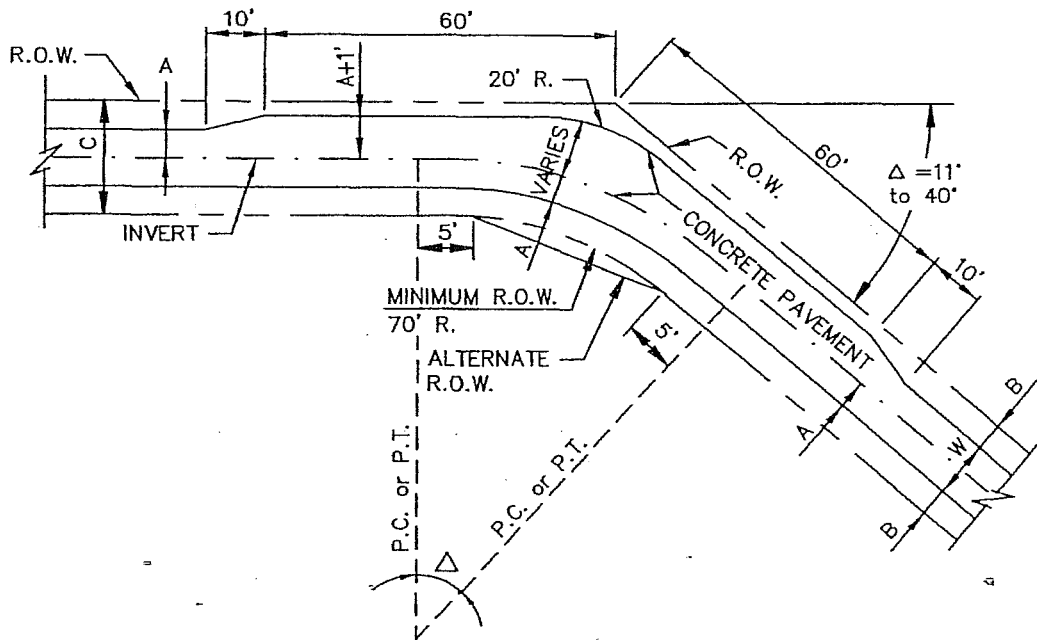
OCT. '04

STANDARD DRAWING NO.

2200



TYPE "A"
 $\Delta = 1^\circ \text{ to } 10^\circ$
 N.T.S.



TYPE "B"
 $\Delta = 11^\circ \text{ to } 40^\circ$
 N.T.S.

NOTES:

1. DIMENSIONS W, C, A, AND B SHALL BE SPECIFIED ON THE PLANS IN ACCORDANCE WITH STD. DWG. NO. 2040.

ALLEY GEOMETRICS

TYPE "A" & TYPE "B"

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

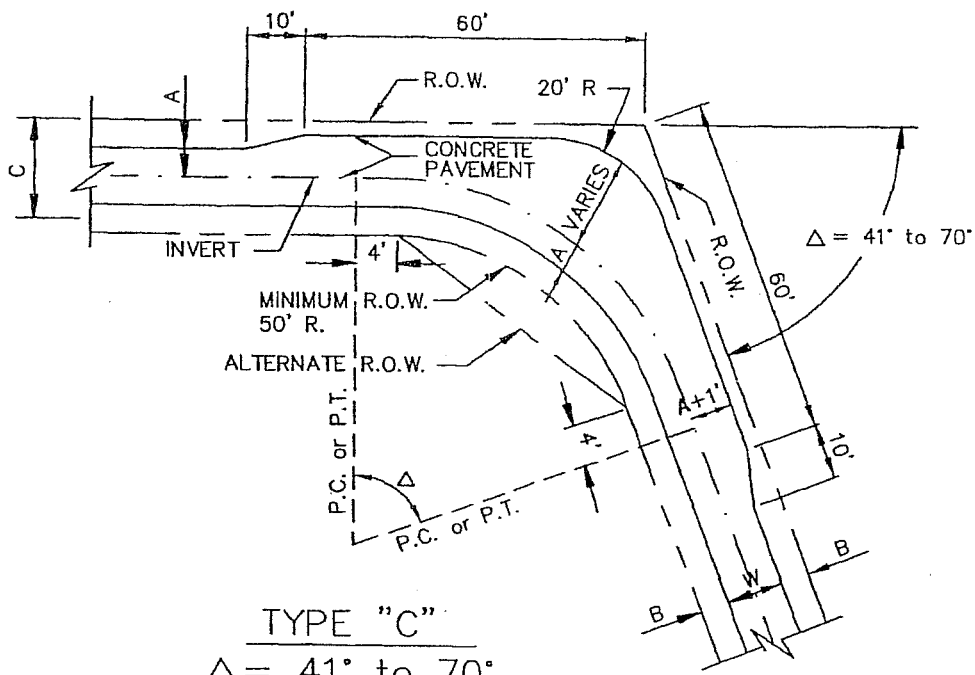
303.5

DATE

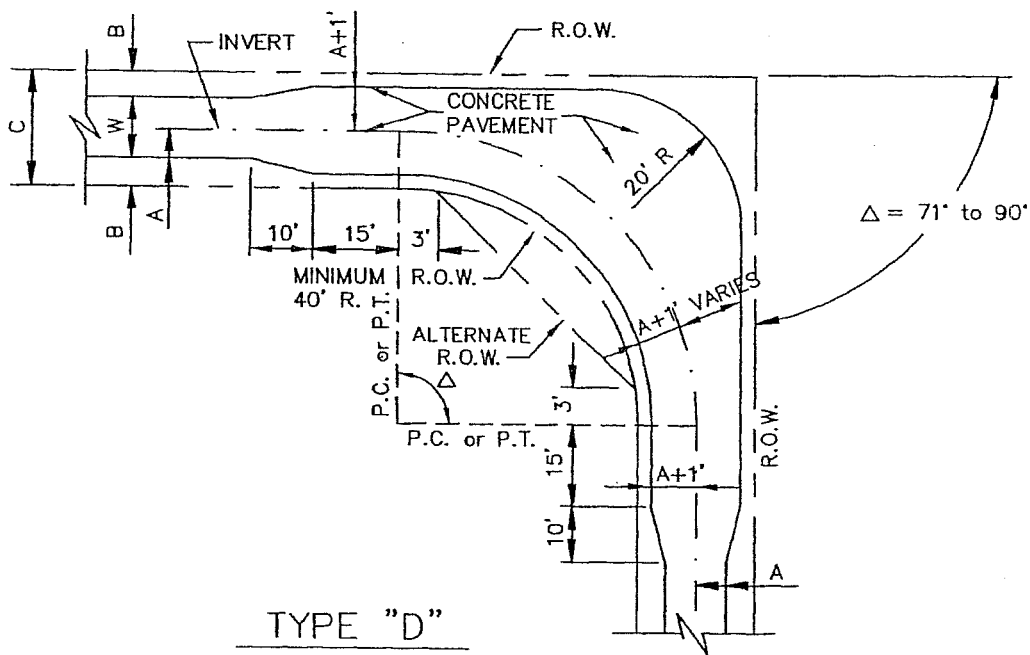
OCT. '04

STANDARD DRAWING NO.

2210



TYPE "C"
 $\Delta = 41^\circ \text{ to } 70^\circ$
 N.T.S.



TYPE "D"
 $\Delta = 71^\circ \text{ to } 90^\circ$
 N.T.S.

NOTES:

1. DIMENSIONS W, C, A, AND B SHALL BE SPECIFIED ON THE PLANS IN ACCORDANCE WITH STD. DWG. NO. 2040.

ALLEY GEOMETRICS

TYPE "C" & TYPE "D"

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

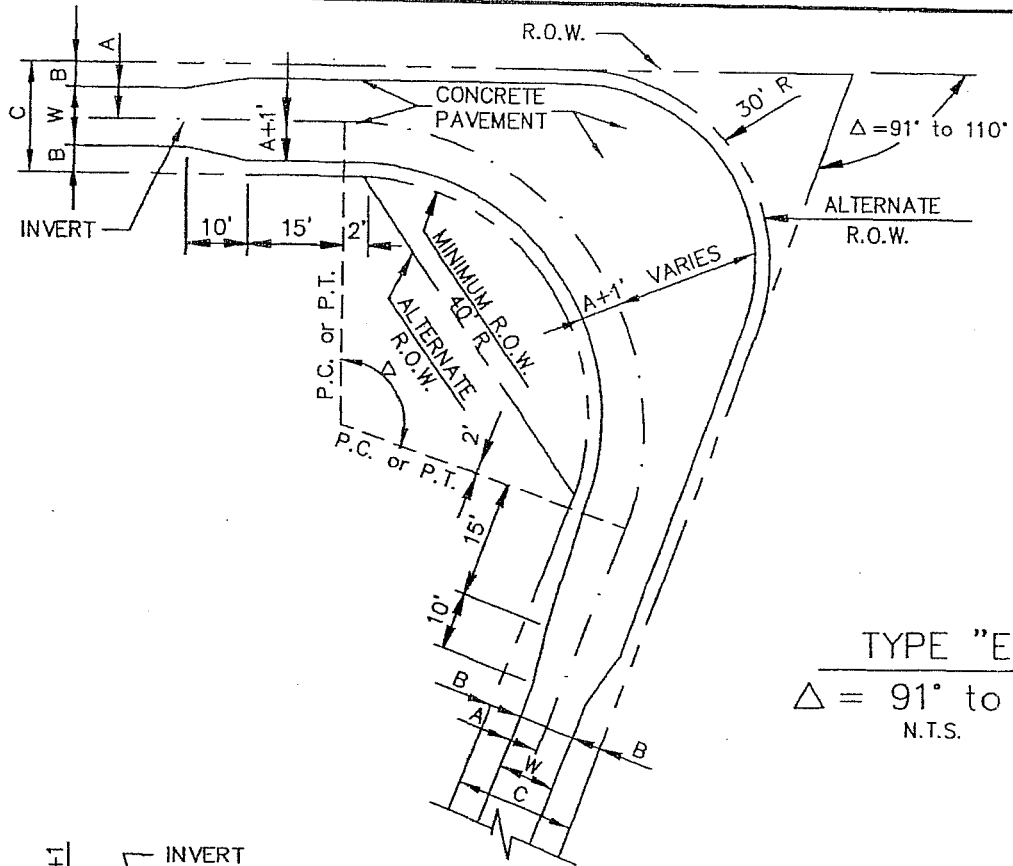
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DATE

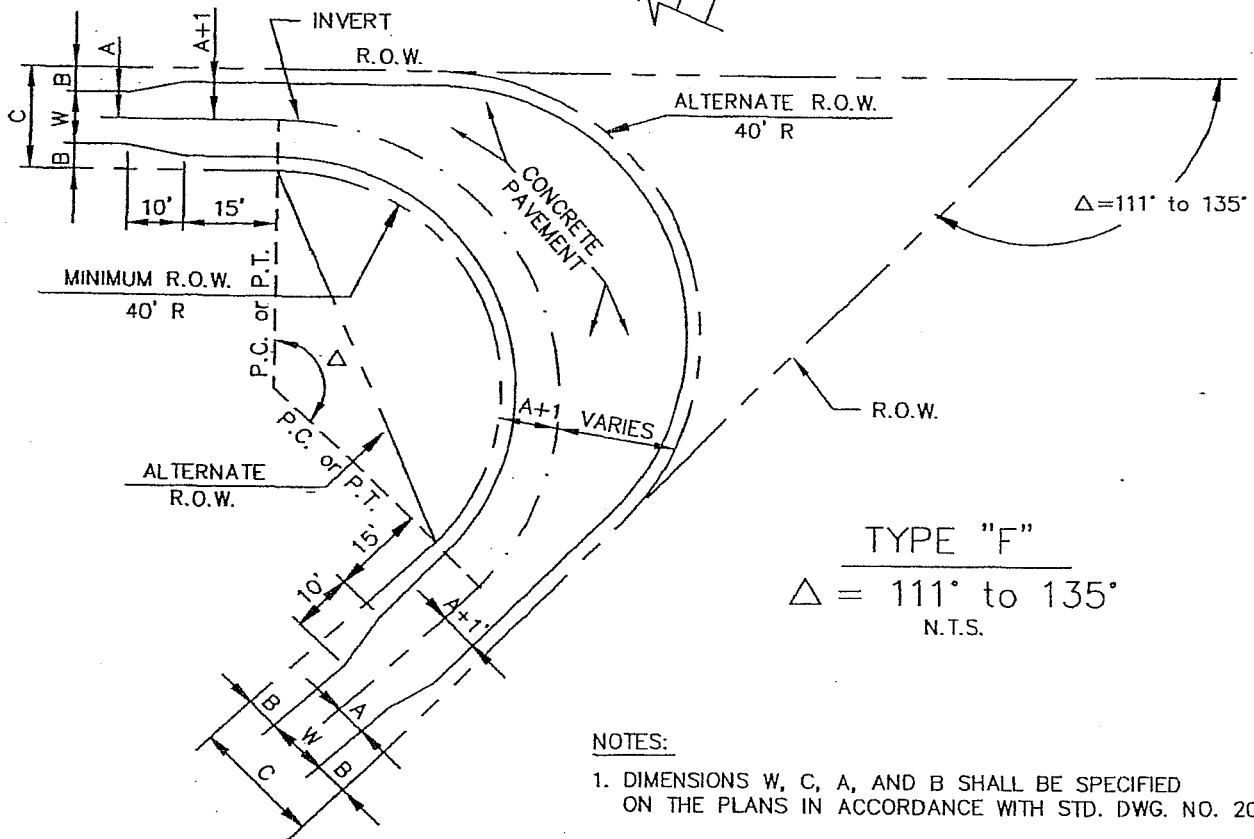
OCT. '04

STANDARD DRAWING NO.

2220



TYPE "E"
 $\Delta = 91^\circ \text{ to } 110^\circ$
 N.T.S.



TYPE "F"
 $\Delta = 111^\circ \text{ to } 135^\circ$
 N.T.S.

NOTES:

1. DIMENSIONS W, C, A, AND B SHALL BE SPECIFIED ON THE PLANS IN ACCORDANCE WITH STD. DWG. NO. 2040.

ALLEY GEOMETRICS

TYPE "E" & TYPE "F"

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

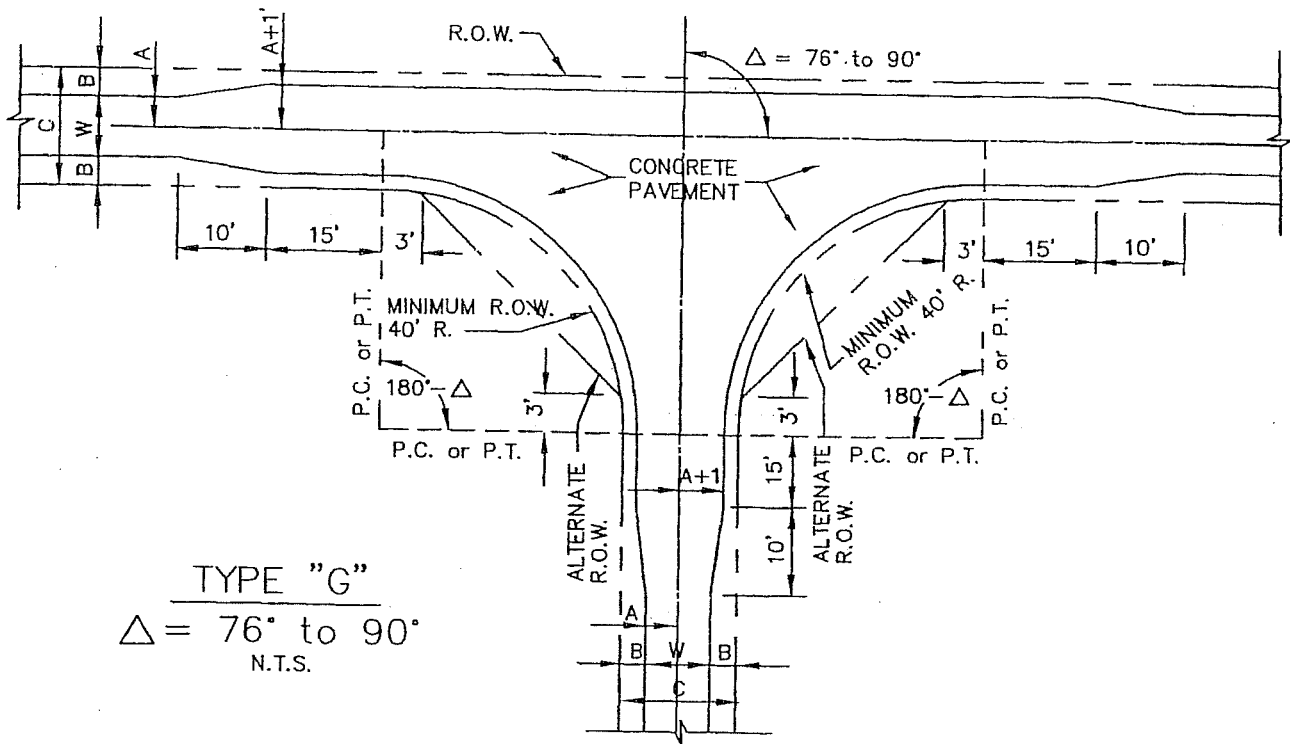
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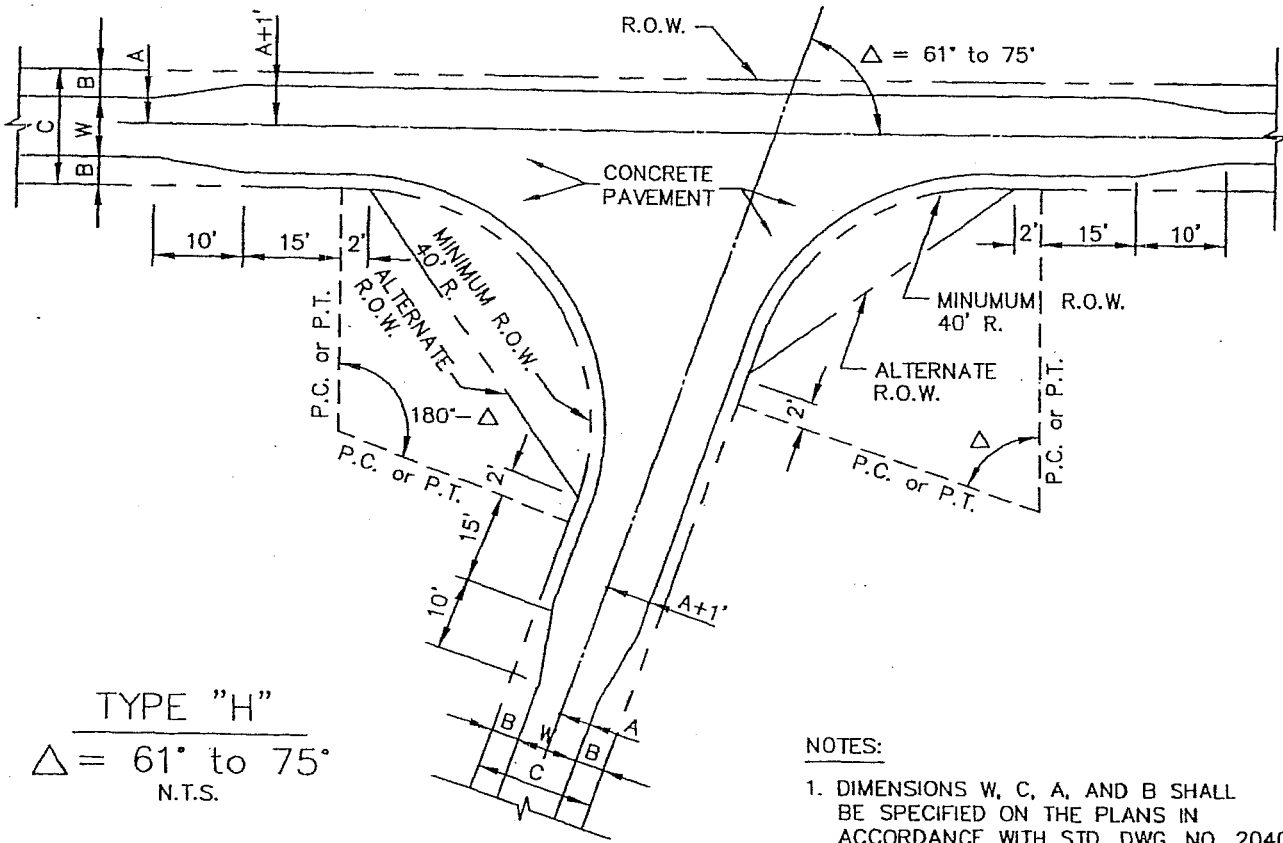
OCT. '04

STANDARD DRAWING NO.

2230



TYPE "G"
 $\Delta = 76^\circ \text{ to } 90^\circ$
 N.T.S.



TYPE "H"
 $\Delta = 61^\circ \text{ to } 75^\circ$
 N.T.S.

NOTES:

1. DIMENSIONS W, C, A, AND B SHALL BE SPECIFIED ON THE PLANS IN ACCORDANCE WITH STD. DWG. NO. 2040.

ALLEY GEOMETRICS

TYPE "G" & TYPE "H"

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

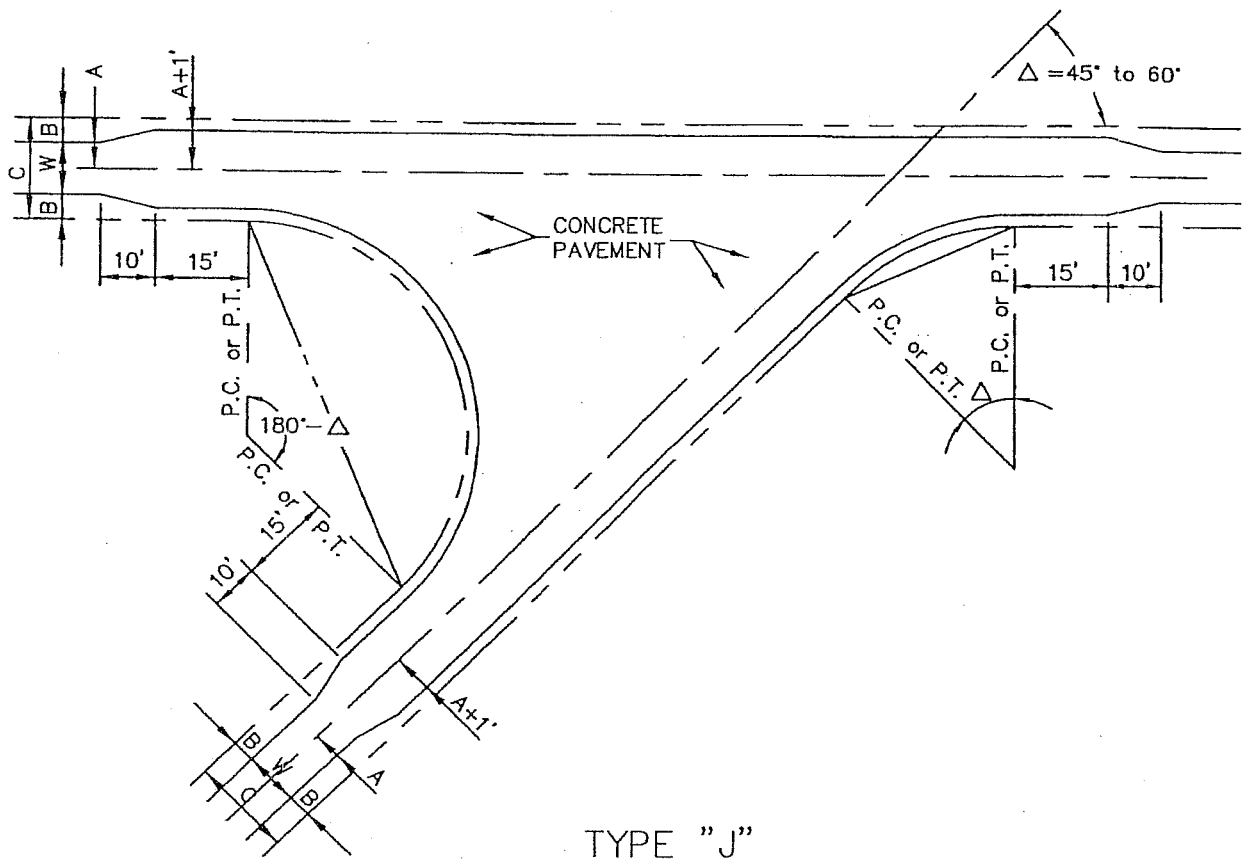
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DATE

OCT. '04

STANDARD DRAWING NO.


2240

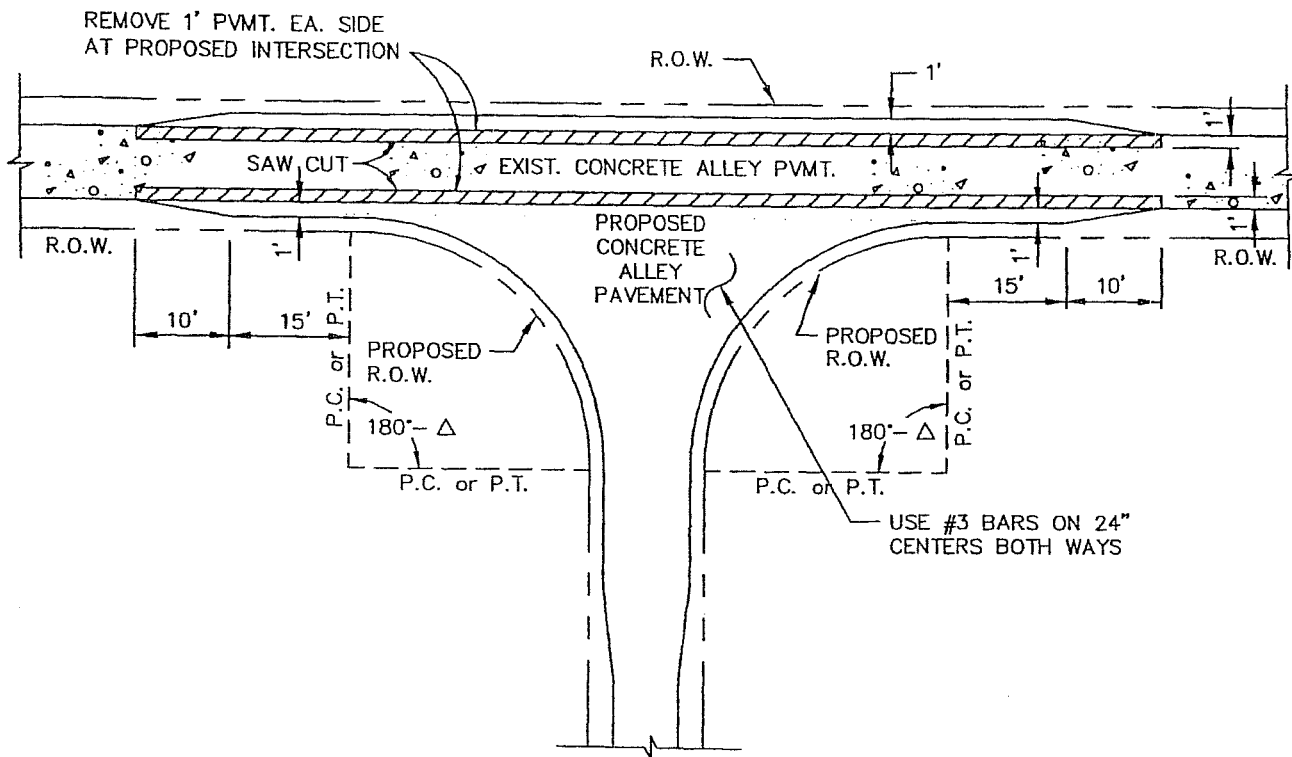


TYPE "J"
 $\Delta = 45^\circ$ to 60°
 N.T.S.

NOTES:

1. DIMENSIONS W, C, A, AND B SHALL BE SPECIFIED ON THE PLANS IN ACCORDANCE WITH STD. DWG. NO. 2040.

ALLEY GEOMETRICS	North Central Texas Council of Governments		STANDARD SPECIFICATION REFERENCE	
			303.5	
TYPE "J"			DATE	STANDARD DRAWING NO.
		OCT. '04	2250	



INTERSECTION OF PROPOSED ALLEY
WITH EXISTING ALLEY PAVEMENT

N.T.S.

NOTE:

GEOMETRICS OF PROPOSED ALLEY SHALL BE SHOWN ON THE PLANS IN ACCORDANCE WITH TYPE "G", "H", OR "J".

ALLEY INTERSECTION

PROPOSED TO EXISTING

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

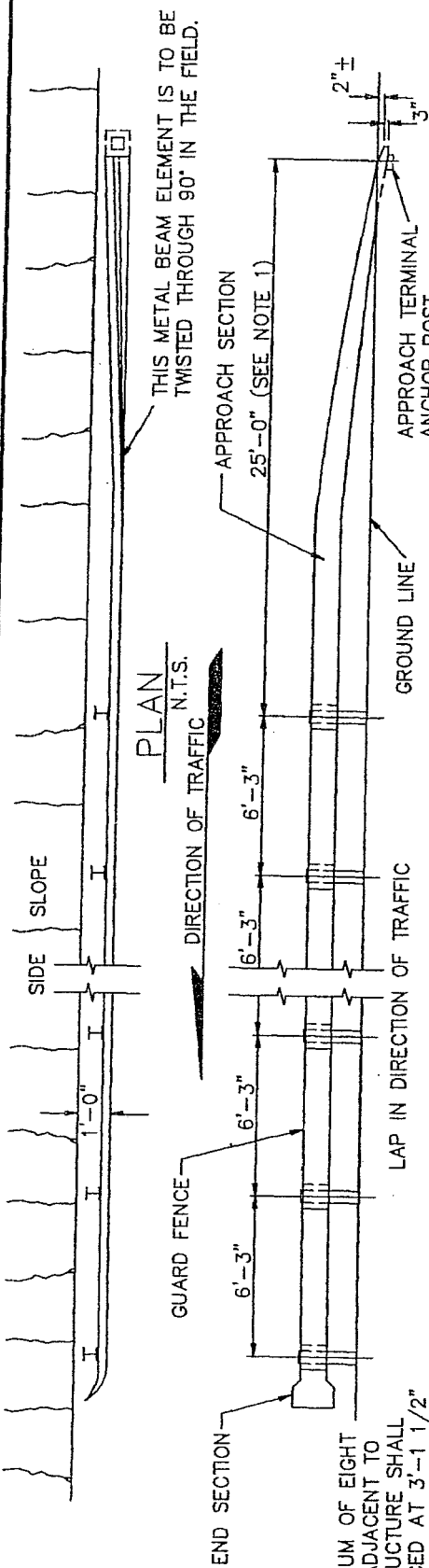
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DATE

OCT. '04

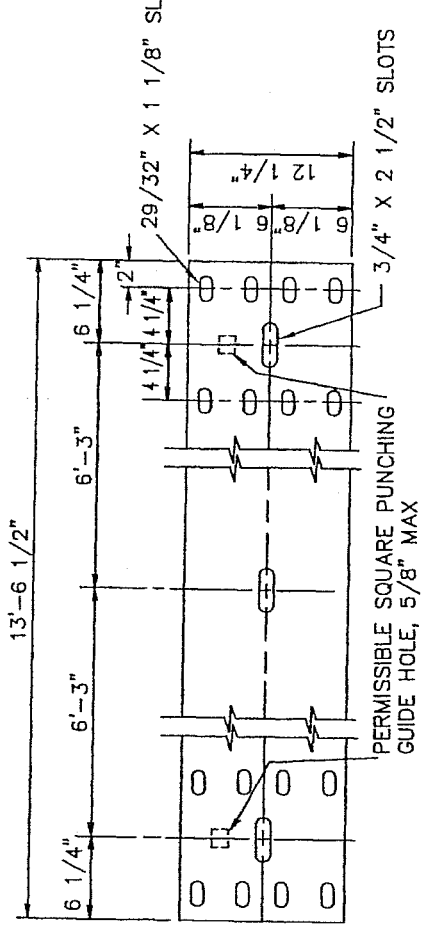
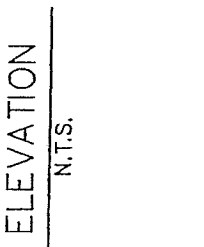
STANDARD DRAWING NO.

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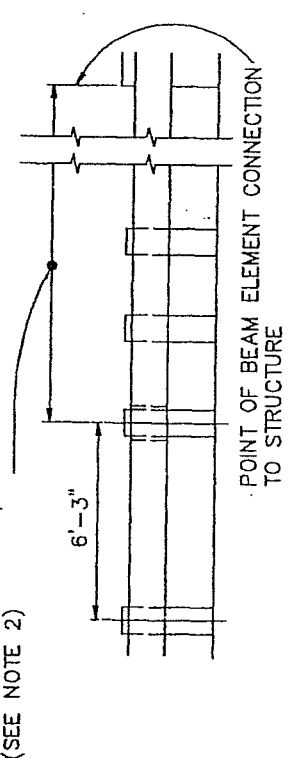
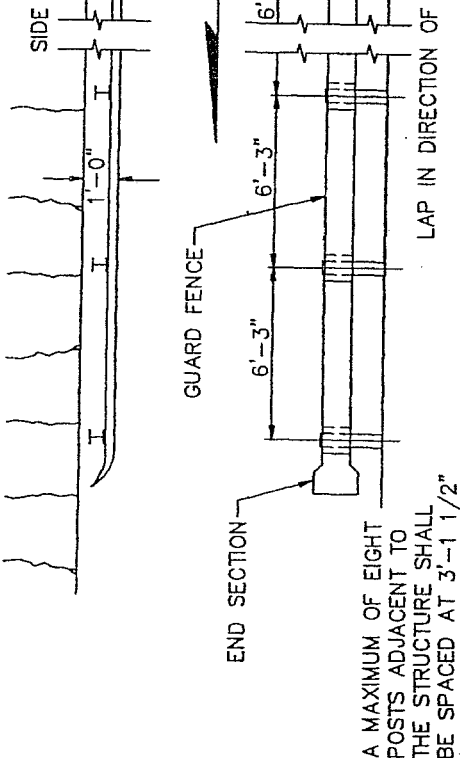


NOTES:

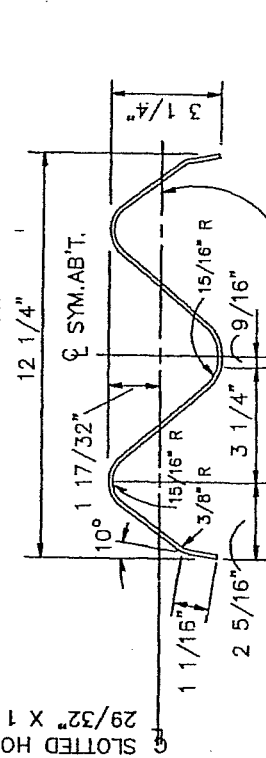
1. THIS DIMENSION MEASURED TO CENTER OF SPLICE WHEN SPECIAL END SHOE IS USED.
2. VARIATIONS IN POST SPACING AND/OR THE USE OF SPACER BLOCKS OR SHIMS, MAY BE REQUIRED BY THE ENGINEER, IN ORDER TO ACCOMMODATE THE REQUIRED BEAM ELEMENT CONNECTION TO STRUCTURES.



ELEVATION OF NOMINAL 12 1/2 FOOT METAL BEAM ELEMENT N.T.S.



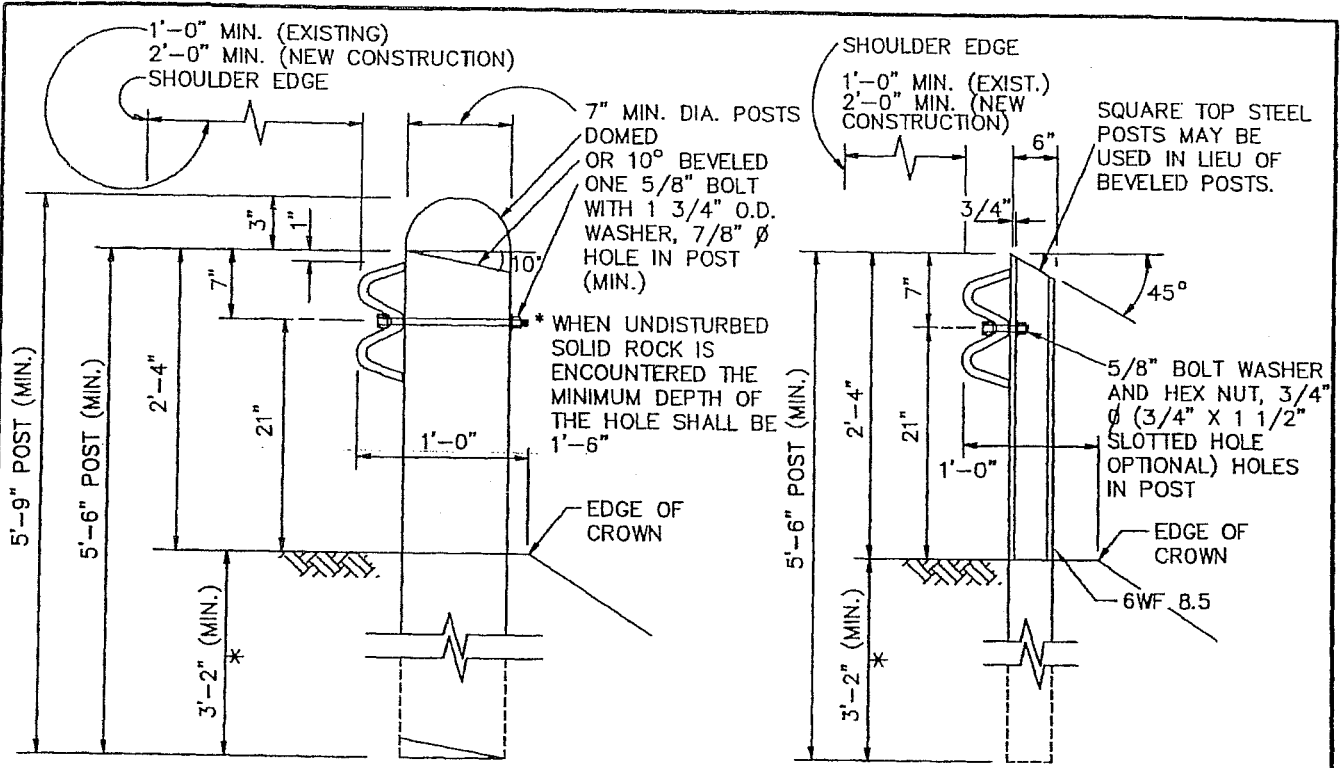
POST TREATMENT AT STRUCTURES N.T.S.



SECTION THRU METAL BEAM ELEMENT N.T.S.

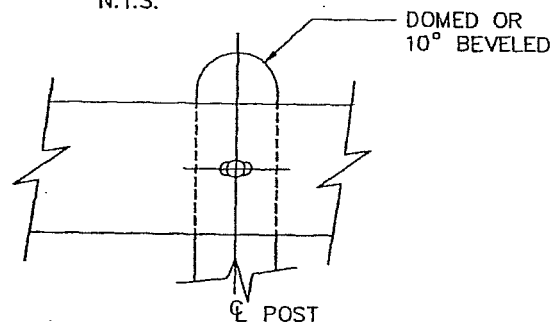
North Central Texas Council of Governments 	STANDARD SPECIFICATION REFERENCE	801.2
	DATE	OCT. '04
STANDARD DRAWING NO.		2270A
METAL BEAM GUARD FENCE ROADSIDE PLACEMENT & BEAM ELEMENTS		

STANDARD DRAWING NO. 2270A

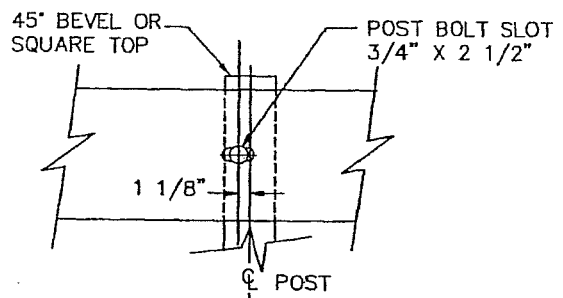


WOOD LINE POST
N.T.S.

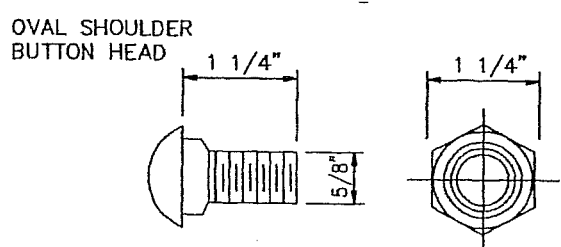
STEEL LINE POST
N.T.S.



WOOD POST CONNECTION
WOOD POST MAY BE DOMED OR BEVELED.
N.T.S.

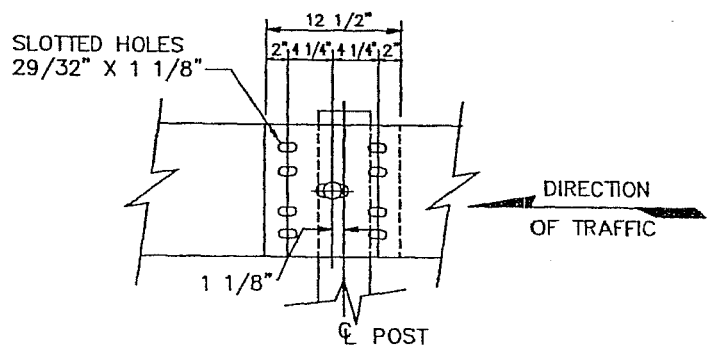


STEEL POST CONNECTION
N.T.S.



ANCHOR OR SPLICE BOLT 5/8" NUT
POST BOLT: SIMILAR EXCEPT LENGTH.

(7/8" HEX BOLTS REQUIRED FOR SPECIAL END SHOE) N.T.S.



BEAM ELEMENT SPLICE
N.T.S.

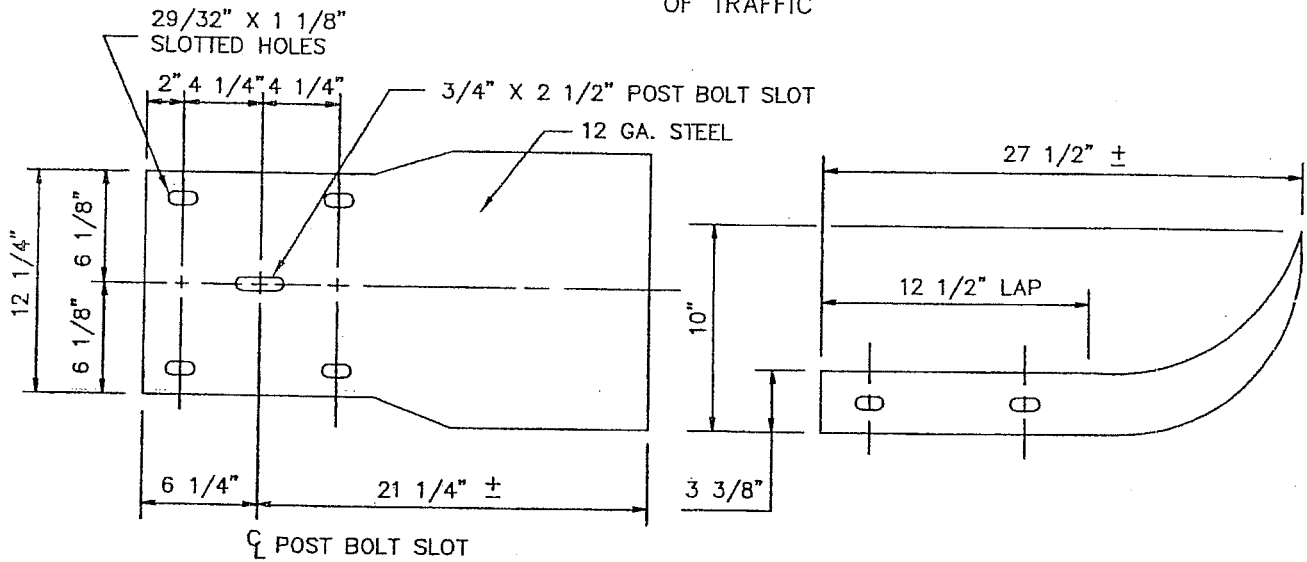
**METAL BEAM GUARD FENCE
LINE POST & CONNECTIONS**



STANDARD SPECIFICATION REFERENCE
801.2
DATE: OCT. '04
STANDARD DRAWING NO.: 2270B

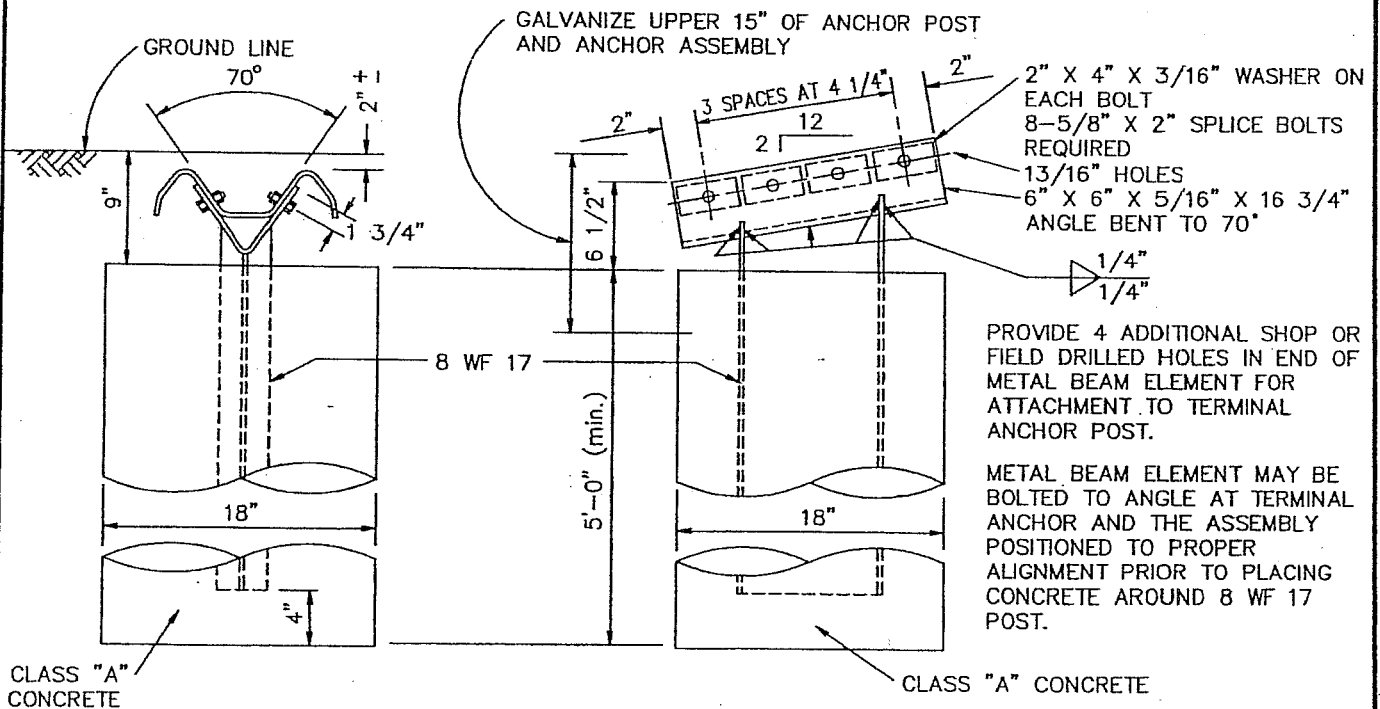
DIRECTION

OF TRAFFIC



END SECTION - AWAY FROM DIRECTION OF TRAFFIC

N.T.S.



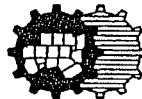
TERMINAL ANGLE ANCHOR POST

N.T.S.

METAL BEAM GUARD FENCE

END SECTION & ANGLE ANCHOR POST

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

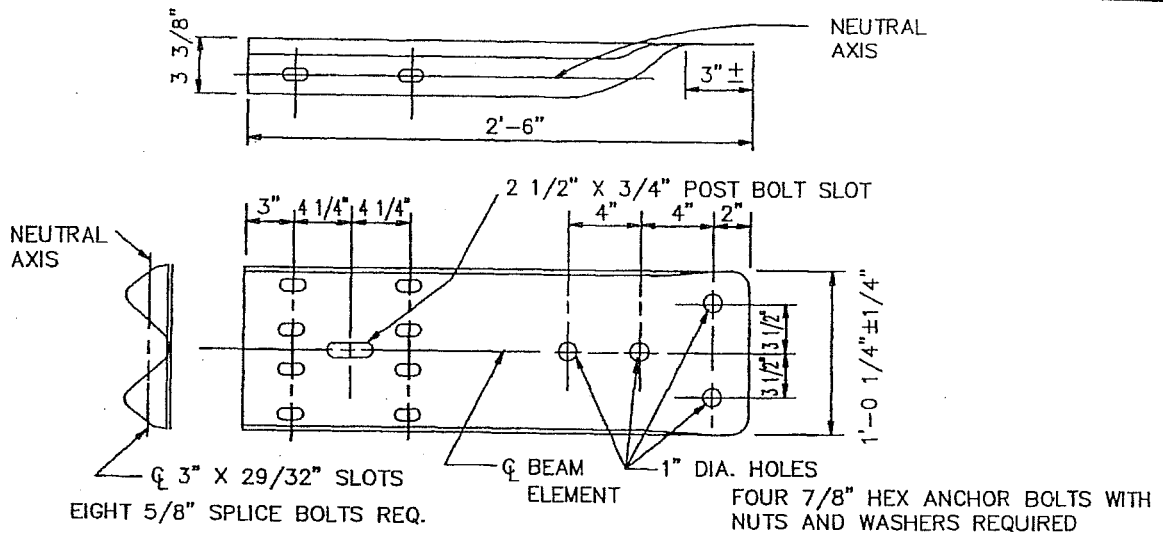
801.2

DATE

OCT. '04

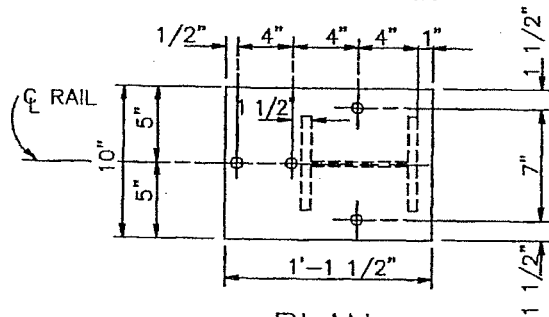
STANDARD DRAWING NO.

2270C



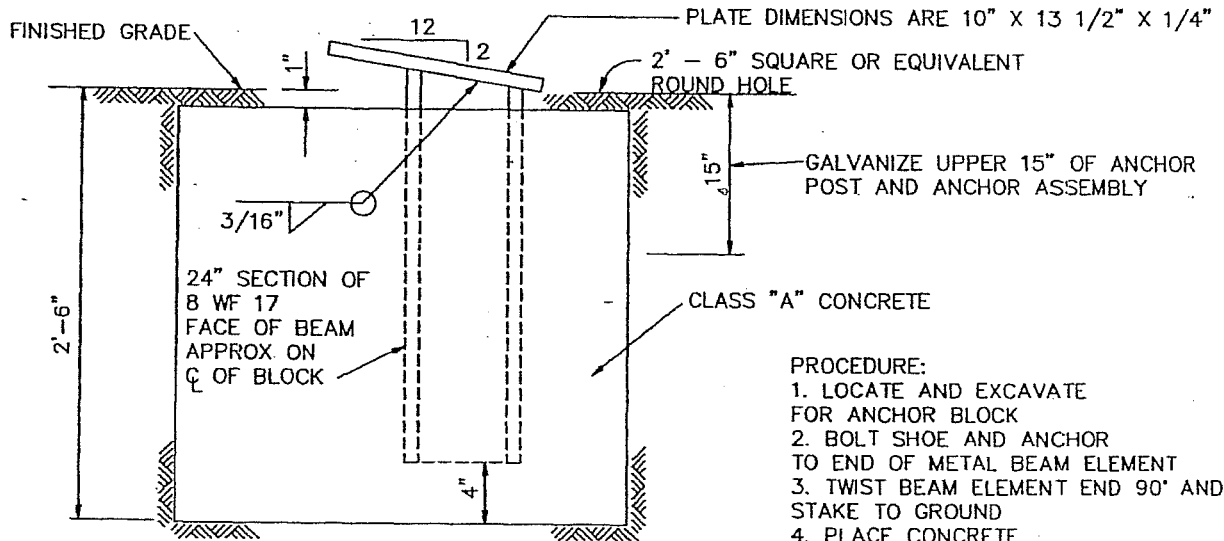
SPECIAL END SHOE

N.T.S.



PLAN

N.T.S.



ELEVATION

N.T.S.

SPECIAL END SHOE ANCHOR POST

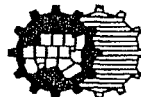
METAL BEAM GUARD FENCE

North Central Texas Council of Governments

STANDARD SPECIFICATION REFERENCE

801.2

SPECIAL END SHOE & ANCHOR POST



DATE

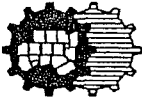
STANDARD DRAWING NO.

OCT. '04

2270D

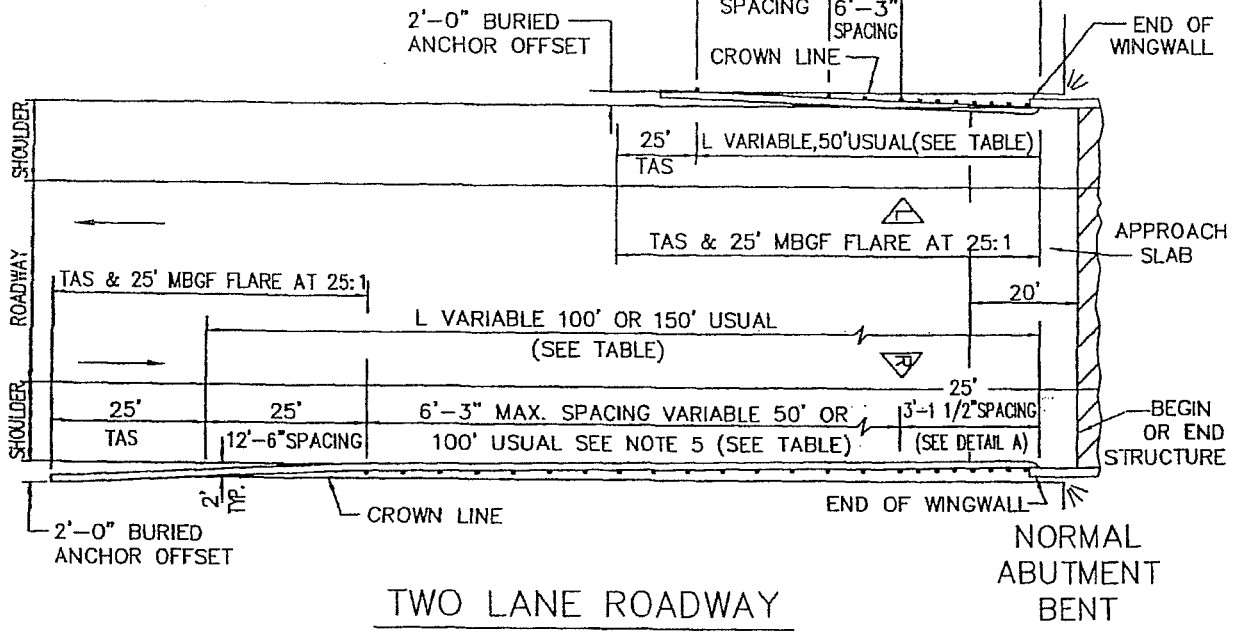
METAL BEAM GUARD FENCE
GENERAL NOTES

1. EXCEPT WHERE USED AT STRUCTURES THAT ARE NARROWER THAN CROWN WIDTH OR WHERE OTHERWISE INDICATED ON PLANS, THE FACE OF THE GUARD FENCE SHALL BE LOCATED A MINIMUM OF ONE FOOT FROM THE SHOULDER EDGE ON EXISTING ROADWAYS AND A MINIMUM OF TWO FEET FROM THE SHOULDER EDGE ON NEW CONSTRUCTION. THE EXACT POSITION SHALL BE AS SHOWN ELSEWHERE ON THE PLANS OR AS DIRECTED BY THE ENGINEER. BEAM ELEMENTS SHALL BE TRANSITIONED TO A SMOOTH CONNECTION WITH OTHER STRUCTURES OR BEAM ELEMENTS AS SHOWN ELSEWHERE ON PLANS.
2. AT THE OPTION OF THE CONTRACTOR THE METAL BEAM ELEMENTS FOR THE GUARD FENCE MAY BE FURNISHED IN EITHER 12 1/2 OR 25 FOOT NOMINAL LENGTHS. BEAM ELEMENTS SHALL BE FURNISHED WITH POST BOLT SLOTS FOR 5/8" DIAMETER BOLT CONNECTIONS TO POSTS.
3. BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.
4. THE TOP OF THE TERMINAL ANCHOR POST ASSEMBLY AND ALL STEEL FITTINGS THEREON SHALL BE GALVANIZED AS SHOWN.
5. WHERE ROCK IS ENCOUNTERED OR WHERE SHOWN ON THE PLANS, THE DIAMETER OF THE HOLES AND THE MATERIAL FOR BACKFILLING SHALL BE AS DIRECTED BY THE ENGINEER. TIMBER POSTS SHALL NOT BE SET IN CONCRETE.
6. THE TERMINAL ANCHOR POST SHALL BE SET IN CLASS "A" CONCRETE. CONCRETE SHALL BE SUBSIDIARY TO THE BID ITEM "METAL BEAM GUARD FENCE."
7. TIMBER POSTS MAY BE BEVELED AT APPROXIMATELY 10 DEGREES ON THE TOP OR BOTH ENDS WITH HIGH SIDE OF TOP OF POST PLACED TOWARD THE ROADWAY OR THEY MAY BE DOMED.
8. AN ANCHOR OTHER THAN TO A TERMINAL ANCHOR POST SHALL CONSIST OF A CONNECTION SIMILAR TO THE BEAM ELEMENT SPLICE OR SIMILAR TO THE SPECIAL END SHOE.
9. SPECIAL FABRICATION WILL BE REQUIRED IN INSTALLATIONS HAVING A CURVATURE OF LESS THAN 150' RADIUS.
10. WOOD POSTS MUST BE TREATED IN MANNER APPROVED BY THE ENGINEER.
11. THE SPECIAL END SHOE ANCHOR MAY BE USED WITH THE 18" X 5'-0" CONCRETE FOOTING OR THE ANGLE ANCHOR MAY BE USED WITH THE 2'-6" SQUARE OR EQUIVALENT CONCRETE FOOTING.
12. ALL METAL ELEMENTS WILL BE 12 GAUGE STEEL UNLESS STATED OTHERWISE ON PLANS.

METAL BEAM GUARD FENCE	North Central Texas Council of Governments 	STANDARD SPECIFICATION REFERENCE 801.2
GENERAL NOTES		DATE OCT. '04
		STANDARD DRAWING NO. 2270E

NOTE:
REFER TO STD. DWG. No. 2280 B FOR DETAILS AND NOTES.

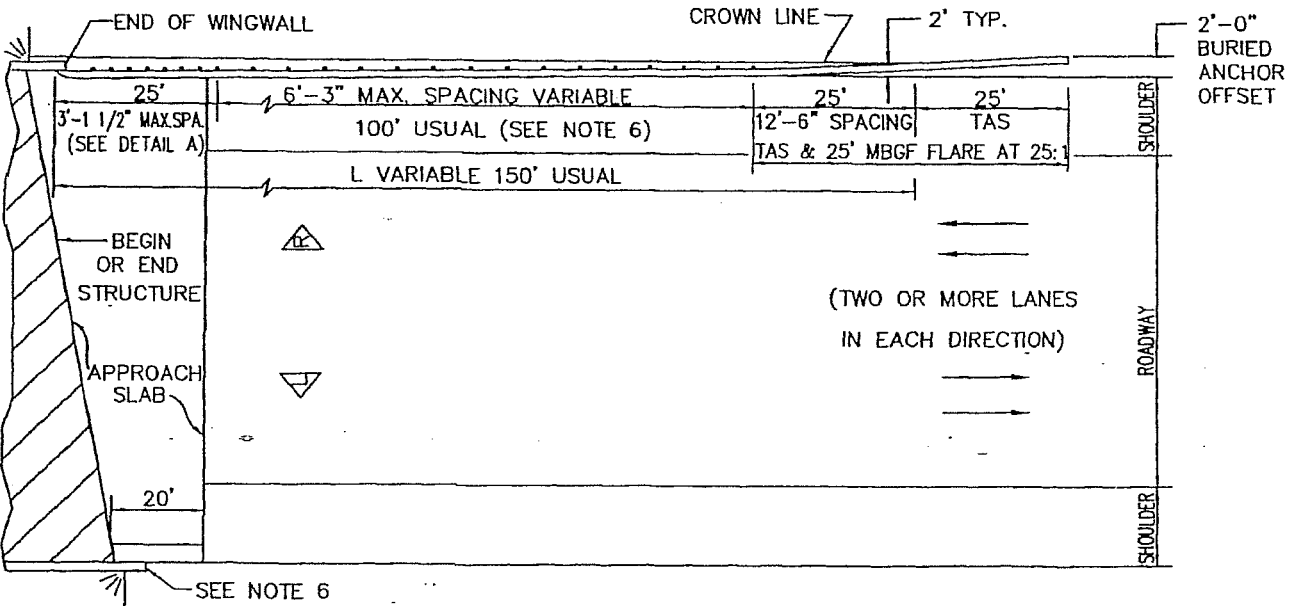
25' USUAL SEE NOTE 5 (SEE TABLE)	25' (3'-1 1/2" MAX. SPACING) SEE DETAIL A
12'-6" SPACING	12'-6" SPACING
6'-3" SPACING	



TWO LANE ROADWAY

N.T.S.

TAS: TERMINAL ANCHOR SECTION



MULTILANE UNDIVIDED ROADWAY

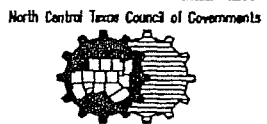
N.T.S.

SKewed ABUTMENT BENT

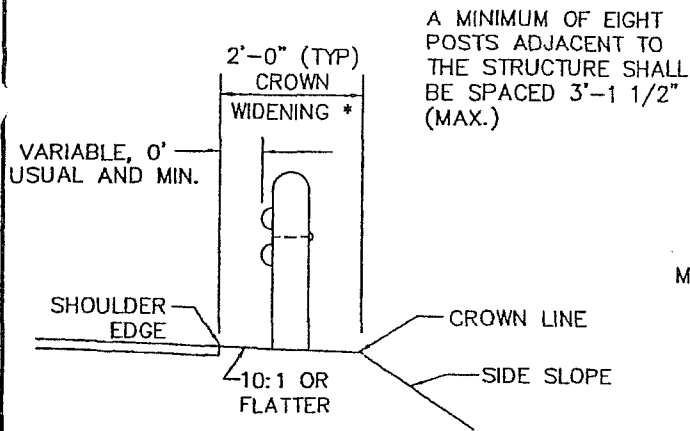
CROWN WIDTH BRIDGE

(SEE NOTE 7 FOR RESTRICTIVE WIDTH BRIDGE)

METAL BEAM GUARD FENCE
TWO-WAY TRAFFIC BRIDGE END

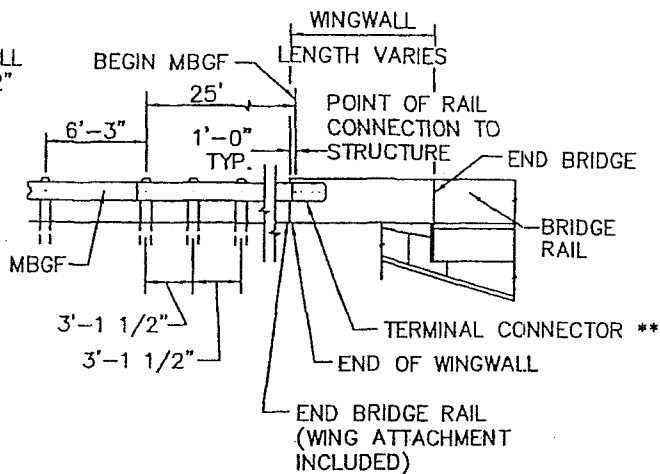


STANDARD SPECIFICATION REFERENCE 801.2	
DATE OCT. '04	STANDARD DRAWING NO. 2280A



TYPICAL CROSS SECTION
N.T.S.

* APPLIES TO CONSTRUCTION ON NEW ALIGNMENT OR WHERE EXISTING ROADWAY CROSS SECTION IS TO BE WIDENED TO INCREASE ROADWAY WIDTH. DOES NOT APPLY TO REHABILITATION WORK WHERE EXISTING ROADWAY CROWN WIDTH IS TO BE RETAINED.



POST TREATMENT AT STRUCTURES
DETAIL A
N.T.S.

** TYPICAL CONNECTION—SEE BRIDGE RAIL OR OTHER PLAN SHEETS FOR DETAILS OF MBGR TO BRIDGE RAIL CONNECTION.

LENGTH \odot OF NEED, L, FT.

TWO LANE HIGHWAYS				MULTILANE UNDIVIDED HWYS.	
750 or less ADT		more than 750 ADT		all ADT's	
\triangleleft side	\triangleleft side	\triangleleft side	\triangleleft side	\triangleleft side	\triangleleft side
50 \odot	100	50 \odot	150	0	150

\odot LENGTHS ARE FOR TYPICAL CROSS SECTIONAL & PLACEMENT CONDITIONS. FOR UNUSUAL CONDITIONS, A CUSTOM DESIGN SHOULD BE DEVELOPED.

\triangleleft INDICATES LEFT SIDE OF TRAFFIC APPROACHING BRIDGE.

\triangleleft INDICATES RIGHT SIDE OF TRAFFIC APPROACHING BRIDGE.

DESIGN NOTES:

1. THE T.A.S. AND TYPICALLY ADJACENT 25' MBGF SHOULD BE FLARED FROM THE SHOULDER EDGE AT 25:1 TO PROVIDE A 2' USUAL OFFSET TO BURIED ANCHOR.
2. WHERE LENGTH (L) OF MBGF IS 50 FEET, POST SPACING SHALL BE AS DETAILED HEREON (SEE PLAN LAYOUT FOR TWO LANE (RURAL) HIGHWAY), LEFT SIDE OF TRAFFIC APPROACHING BRIDGE. WHERE LENGTH (L) OF MBGF IS 75 FEET OR MORE, POST SPACING SHALL BE 3'-1 1/2" FOR THE 25' SECTION ADJACENT TO THE BRIDGE, 12'-6" FOR THE 25' SECTION ADJACENT TO THE T.A.S. AND 6'-3" FOR THE REMAINING INTERVENING LENGTH.
3. THE SLOPE BETWEEN THE CROWN LINE AND OUTSIDE EDGE OF SHOULDER SHOULD BE 10:1 OR FLATTER. THE CROWN SHOULD BE WIDENED TO ACCOMMODATE MBGF. TYPICALLY THE CROWN LINE SHOULD BE 2 FEET FROM THE OUTSIDE SHOULDER EDGE (SEE TYPICAL CROSS SECTION).
4. FOR RESTRICTIVE WIDTH BRIDGES, A 25 FOOT TANGENT SECTION OF MBGF SHOULD CONNECT TO THE WINGWALL. THE ADJOINING MBGF THAT LIES WITHIN THE ROADWAY (LANE & SHOULDER AREAS) CROWN SHOULD BE FLARED AT THE RATE OF 25:1 (LONGITUDINAL:LATERAL). LENGTH SHOULD BE GOVERNED BY TABULATED VALUES OR THE LENGTH NECESSARY TO LOCATE THE BURIED ANCHOR AT A 2-FOOT OFFSET FROM SHOULDER EDGE, WHICHEVER IS GREATER.
5. AVERAGE DAILY TRAFFIC (ADT) IS FOR THE CURRENT YEAR. WHERE SIGNIFICANT TRAFFIC VOLUME GROWTH IS ANTICIPATED ON LOW VOLUME (0-750 ADT) HIGHWAYS, USE LENGTHS SHOWN FOR HIGHER VOLUME CATEGORY.
6. PROVIDE MINIMUM 50 FT. MBGF PLUS T.A.S. FOR FOUR LANE UNDIVIDED HIGHWAYS. FOR FOUR LANE HIGHWAYS WITH A FLUSH MEDIAN OR FOR HIGHWAYS WITH SIX OR MORE LANES, MBGF IS NOT A REQUIRED BRIDGE END TREATMENT. HOWEVER, OTHER NEARBY HAZARDS MAY WARRANT SHIELDING WITH MBGF.

GENERAL NOTES:

1. FOR METAL BEAM GUARD FENCE DETAILS AND METHOD OF TERMINATION, SEE STD. DWGS. No. 2270A - 2270E.
2. VARIATIONS IN POST SPACINGS AND/OR THE USE OF SPACER BLOCKS OR SHIMS MAY BE REQUIRED BY THE ENGINEER IN ORDER TO ACCOMMODATE THE REQUIRED BEAM ELEMENT CONNECTION TO STRUCTURES.
3. QUANTITIES OF METAL BEAM GUARD FENCE (MBGF) AT INDIVIDUAL BRIDGE ENDS ARE SHOWN ELSEWHERE IN THE PLANS.

METAL BEAM GUARD FENCE
TWO-WAY TRAFFIC BRIDGE END

North Central Texas Council of Governments

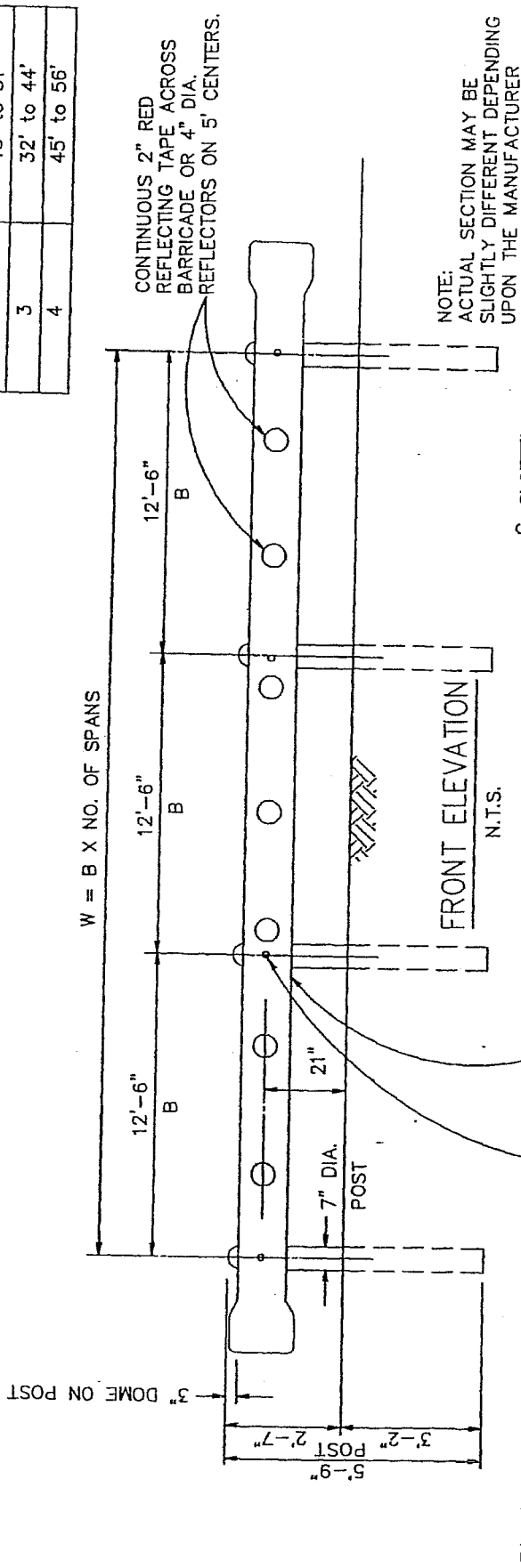


STANDARD SPECIFICATION REFERENCE
801.2

DATE
OCT. '04

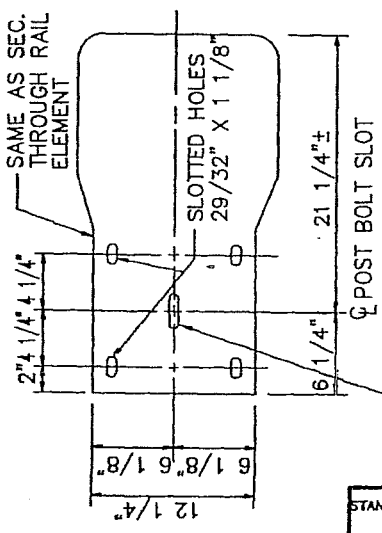
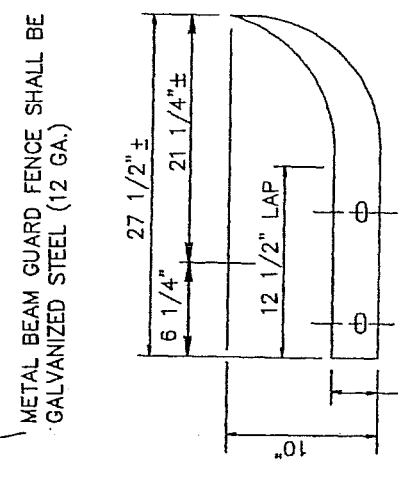
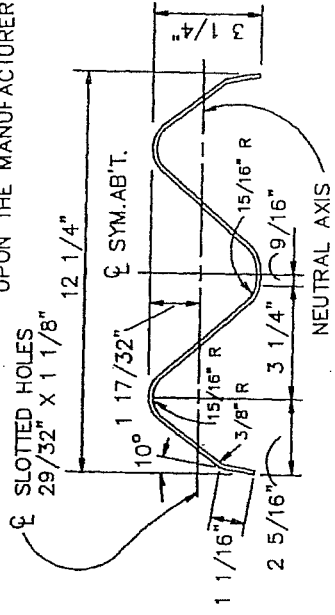
STANDARD DRAWING NO.
2280B

NO. OF SPANS	ROADWAY SECTION WIDTH
2	18' to 31'
3	32' to 44'
4	45' to 56'



CONTINUOUS 2" RED REFLECTING TAPE ACROSS BARRICADE OR 4" DIA. REFLECTORS ON 5' CENTERS.

NOTE: ACTUAL SECTION MAY BE SLIGHTLY DIFFERENT DEPENDING UPON THE MANUFACTURER




FASTEN TO POST WITH ONE 5/8" BOLT WITH 1 3/4" O.D. WASHER BEHIND POST, 7/8" Ø HOLE IN POST.

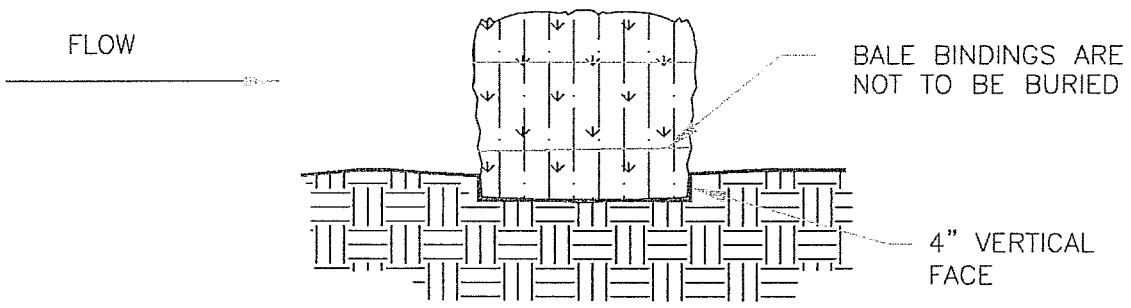
SAME AS SEC. THROUGH RAIL ELEMENT

SLOTTED HOLES 29/32" X 1 1/8"

SECTION THRU RAIL ELEMENT

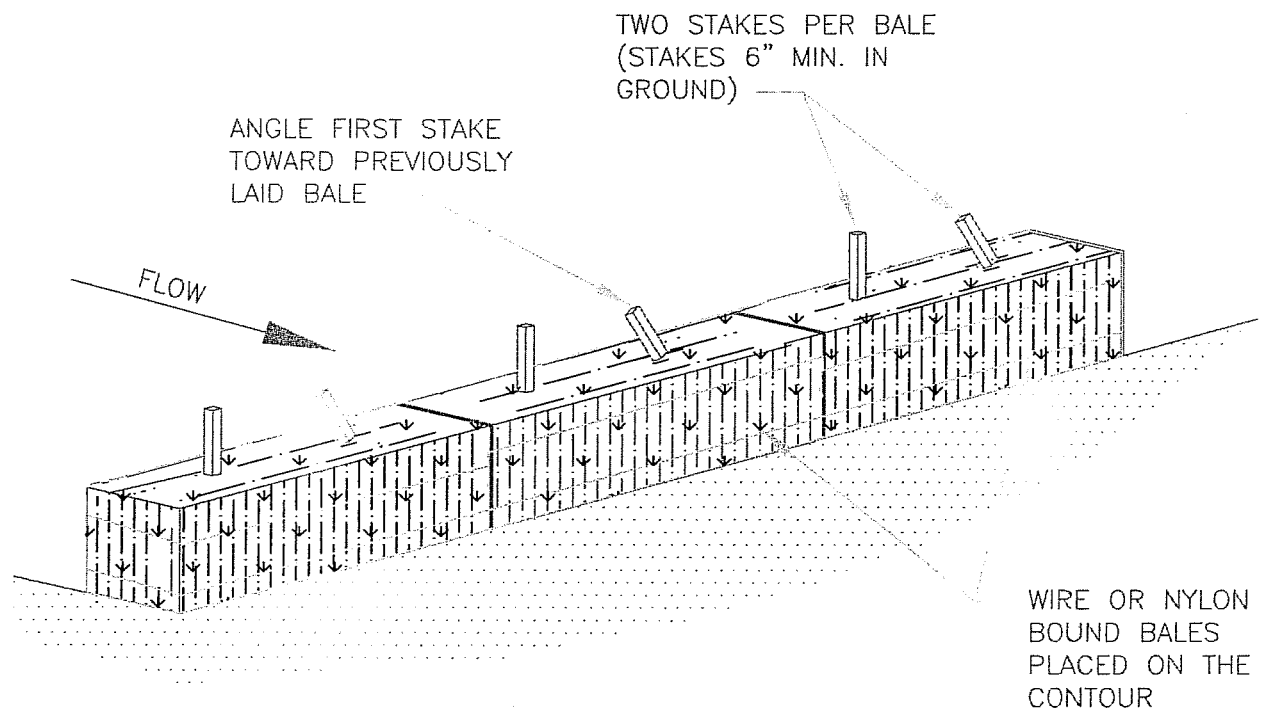
N.T.S.

 <p>North Central Texas Council of Governments</p>	STANDARD SPECIFICATION REFERENCE	801.2
	DATE	OCT. '04
<p>METAL BEAM BARRICADE</p> <p>END OF ROAD</p>		STANDARD DRAWING NO.
<p>TERMINAL SECTION</p> <p>N.T.S.</p>		2290



EMBEDDING DETAIL

N.T.S.



ANCHORING DETAIL

N.T.S.

M* - CITY OF MELISSA REVISION

STRAW BALE DIKE

CITY OF MELISSA



NCTCOG STANDARD SPECIFICATION REFERENCE

201

DATE

11/13/08

STANDARD DRAWING NO.

1010AM*

STRAW BALE DIKE GENERAL NOTES:

1. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF FOUR INCHES.
2. BALES SHALL BE SECURELY ANCHORED IN PLACE BY 2" X 2" WOOD STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.
3. INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2" RAINFALL EVENT. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
4. WHEN SILT REACHES A DEPTH OF 6 INCHES, IT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.
5. AFTER THE DISTURBED AREAS OF THE SITE ARE COMPLETELY STABILIZED, THE BALES SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED SPOIL DISPOSAL SITE.

M* - CITY OF MELISSA REVISION

STRAW BALE DIKE

CITY OF MELISSA



NCTCOG STANDARD SPECIFICATION REFERENCE

201

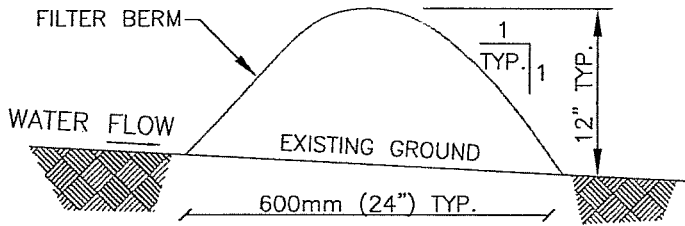
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11/13/08

STANDARD DRAWING NO.

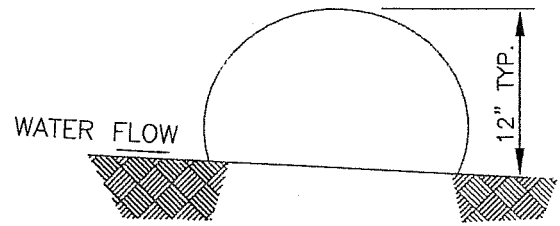
1010RM*

BERM OPTION:

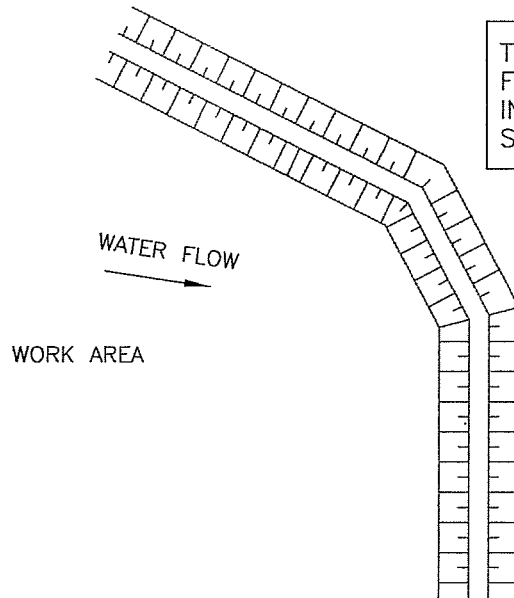


SOCK OPTION:

FILTER SOCK, SIZED TO SUIT CONDITIONS.
12" TO 18" (300mm TO 450mm) TYPICAL.



FILTER COMPOST MATERIAL
AS PER SPECIFICATIONS.



TYPICAL BERM FOR MINIMAL GRADES SHOWN.
FOR STEEPER GRADES, I.E. 2:1 SLOPES
INCREASE BERM SIZE AS DETERMINED ON
SITE BY ENGINEER.

NOTES:

1. ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS.
2. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTER BERM IN A FUNCTIONAL CONDITION AT ALL TIMES AND IT SHALL BE ROUTINELY INSPECTED.
3. WHERE THE BERM REQUIRES REPAIR, IT WILL BE ROUTINELY REPAIRED.
4. THE CONTRACTOR SHALL REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE BERM WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE BERM, OR AS DIRECTED BY THE ENGINEER.
5. THE COMPOST FILTER BERM WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

M* - CITY OF MELISSA REVISION

EROSION CONTROL BERM

CITY OF MELISSA



NCTCOG STANDARD SPECIFICATION REFERENCE

201

DATE

11/17/08

STANDARD DRAWING NO.

1020AM*

SILT FENCE GENERAL NOTES:

1. POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH SUPPORT POST OR TO WIRE BACKING, WHICH IN TURN IS ATTACHED TO THE FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
5. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN FINAL STABILIZATION IS ACHIEVED OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

SILT FENCE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

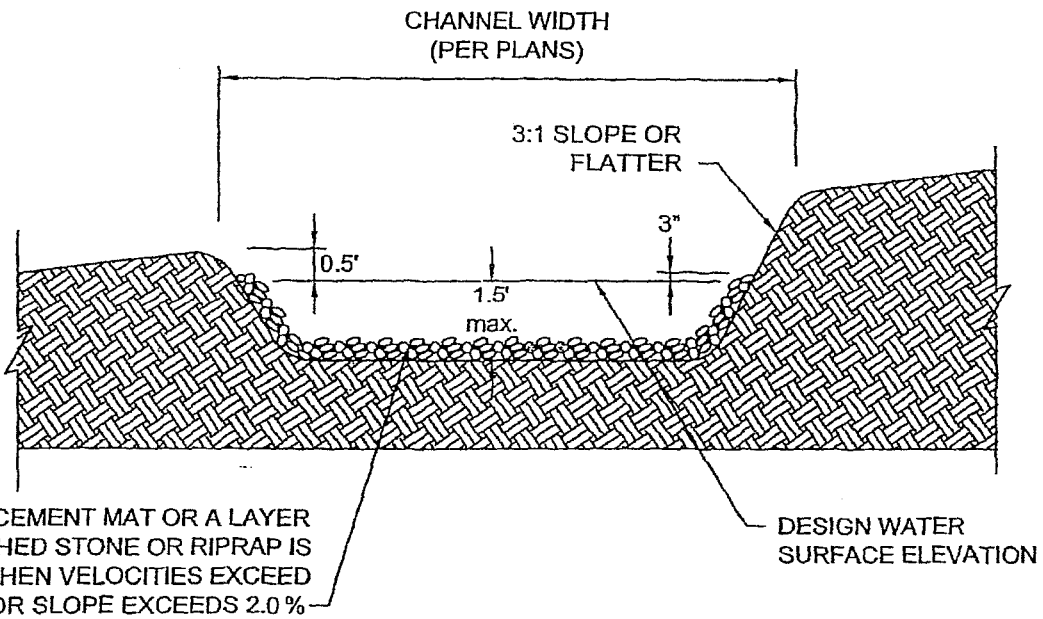
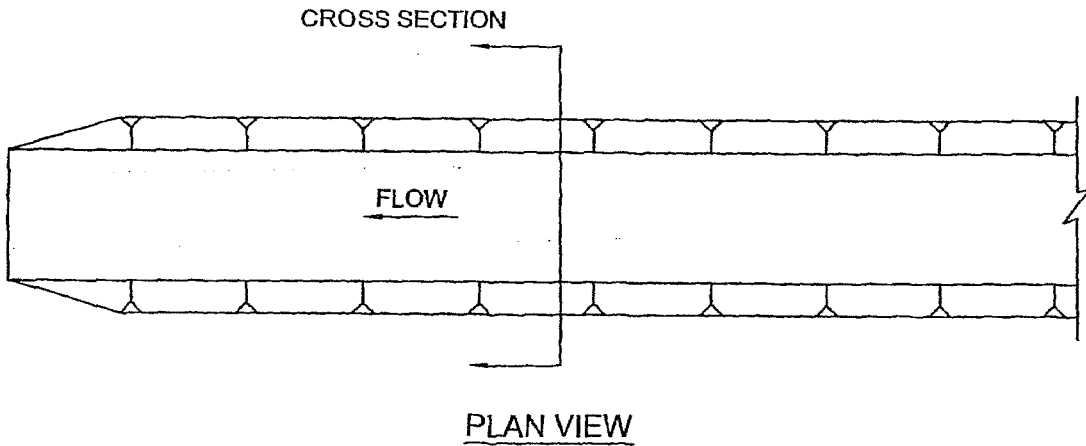
201.5

DATE

OCT. '04

STANDARD DRAWING NO.

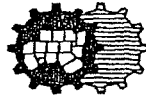
1020B



CROSS SECTION

INTERCEPTOR SWALE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

201.6

DATE

STANDARD DRAWING NO.

OCT. '04

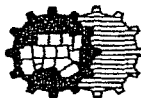
1030A

INTERCEPTOR SWALE GENERAL NOTES:

1. ALL TREES, BRUSH, STUMPS, OBSTUCTIONS AND OTHER MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
2. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS-SECTION AS REQUIRED TO MEET CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
3. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE DISPOSED OF IN AN APPROVED SPOILS SITE SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
4. DIVERTED RUNOFF FROM A DISTURBED OR EXPOSED UPLAND AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
5. THE ON-SITE LOCATION MAY NEED TO BE ADJUSTED TO MEET FIELD CONDITIONS IN ORDER TO UTILIZE THE MOST SUITABLE OUTLET.
6. FOR GRADES LESS THAN 2 PERCENT AND VELOCITIES LESS THAN 6 FEET PER SECOND, THE MINIMUM REQUIRED CHANNEL STABILIZATION SHALL BE GRASS, EROSION CONTROL MATS OR MULCHING. FOR GRADES IN EXCESS OF 2 PERCENT OR VELOCITIES EXCEEDING 6 FEET PER SECOND, STABILIZATION IS REQUIRED IN THE FORM OF TURF REINFORCEMENT MATS (OR A LAYER OF CRUSHED STONE OR RIP-RAP WITH APPROPRIATE SIZE, GRADATION, AND THICKNESS AS SPECIFIED IN THE SWPPP).
7. MINIMUM COMPACTION FOR THE SWALE SHALL BE 90 PERCENT STANDARD PROCTOR.
8. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP.

INTERCEPTOR SWALE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

201.6

DATE

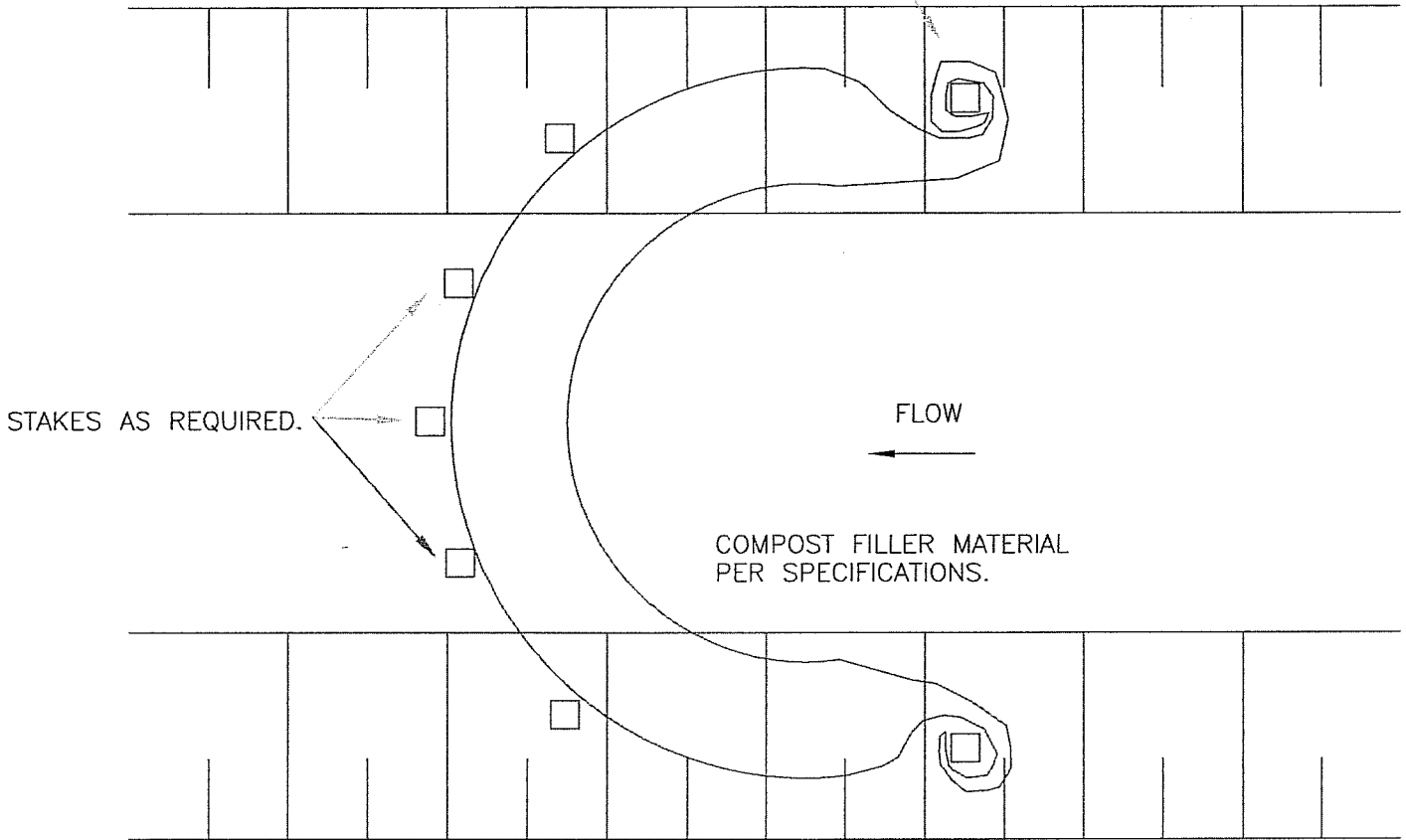
OCT. '04

STANDARD DRAWING NO.

1030B

FLITER SOCK SIZING TO SUIT CONDITIONS,
(8" TO 18" TYPICAL)

EXCESS SOCK MATERIAL
TO BE DRAWN IN AND
TIED OFF TO STAKE AT



NOTES:

1. ALL MATERIAL TO MEET CITY OF MELISSA SPECIFICATIONS.
2. COMPOST MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE CITY ENGINEER.

M* - CITY OF MELISSA REVISION

DITCH PROTECTION
CITY OF MELISSA



NCTCOG STANDARD SPECIFICATION REFERENCE

201

DATE

11/13/08

STANDARD DRAWING NO.

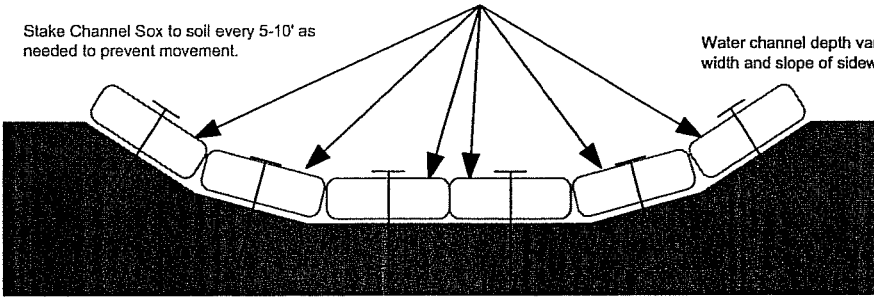
1040M*

12" Channel Sox

Channel Sox Placed in Existing Channel

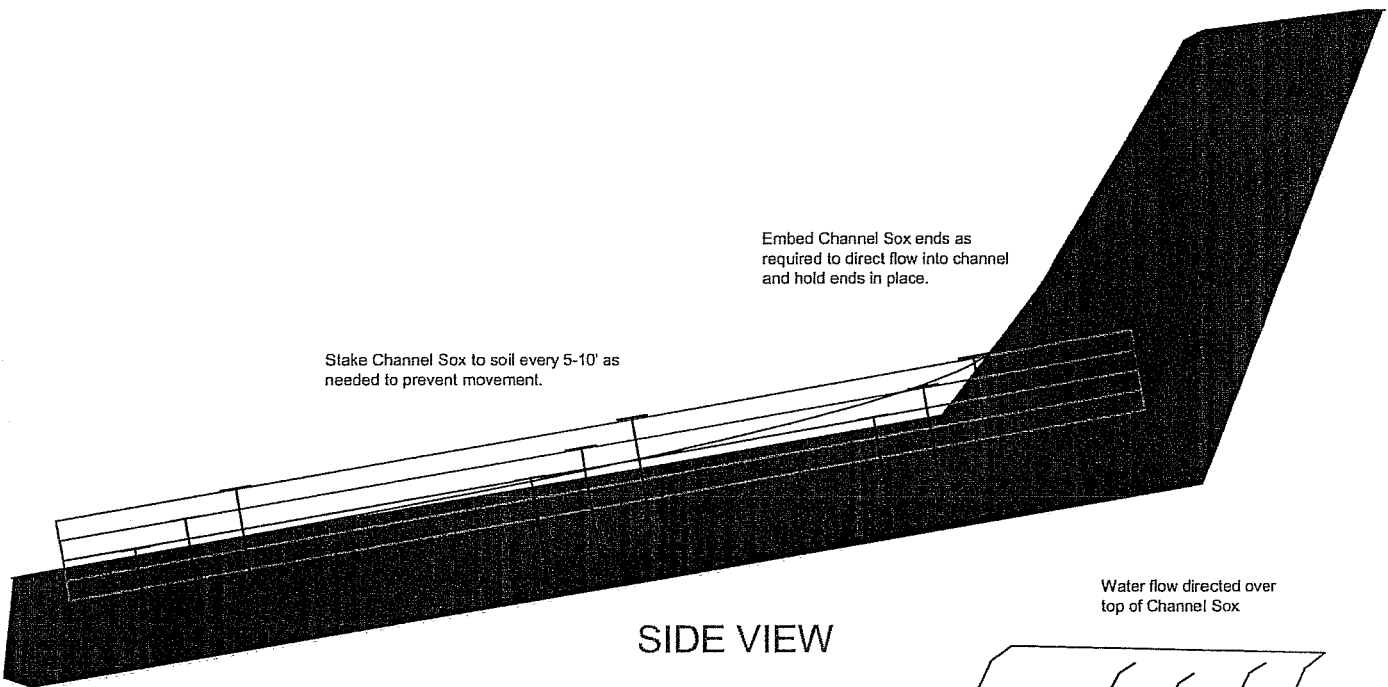
Stake Channel Sox to soil every 5-10' as needed to prevent movement.

Water channel depth varies with channel width and slope of sidewalls,



Use sufficient Channel Sox to completely line area of water flow

END VIEW



Embed Channel Sox ends as required to direct flow into channel and hold ends in place.

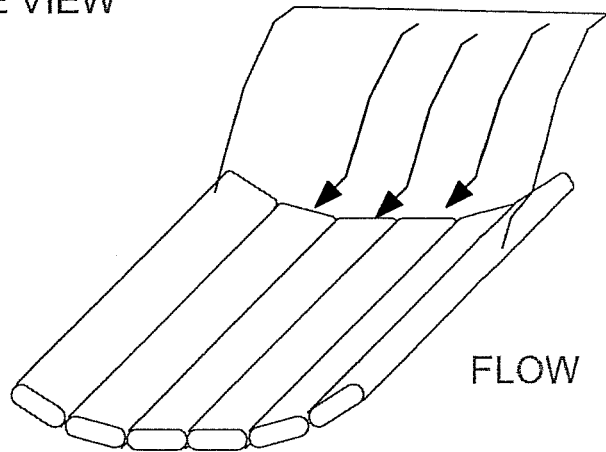
Stake Channel Sox to soil every 5-10' as needed to prevent movement.

Water flow directed over top of Channel Sox

SIDE VIEW

NOTES:

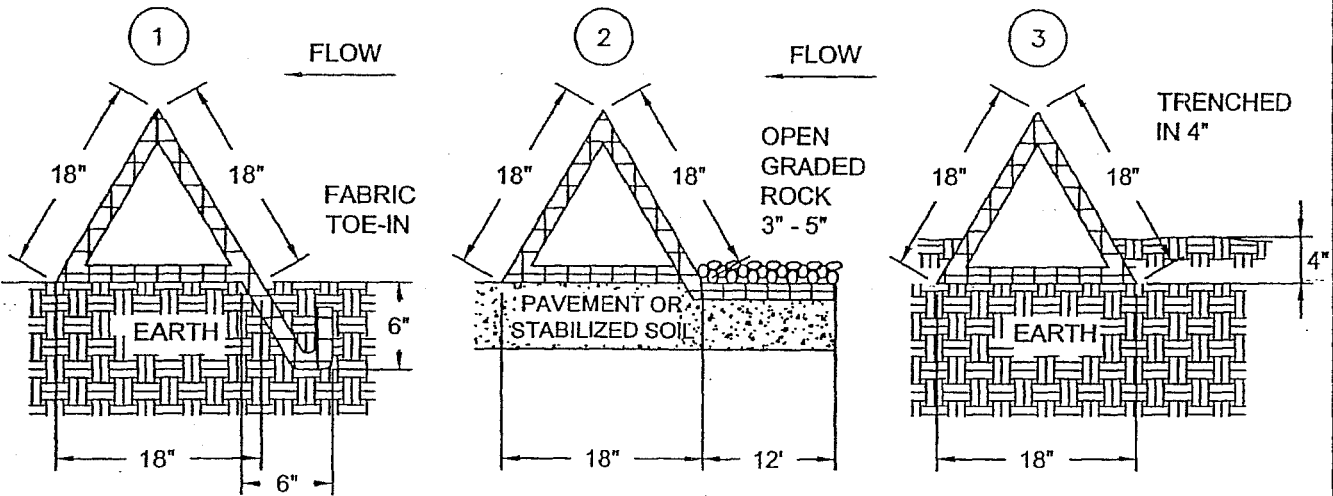
1. All material to meet City of Melissa specifications.
2. The contractor shall maintain the compost Filler Sox in functional condition at all times and it shall be routinely inspected.



FLOW

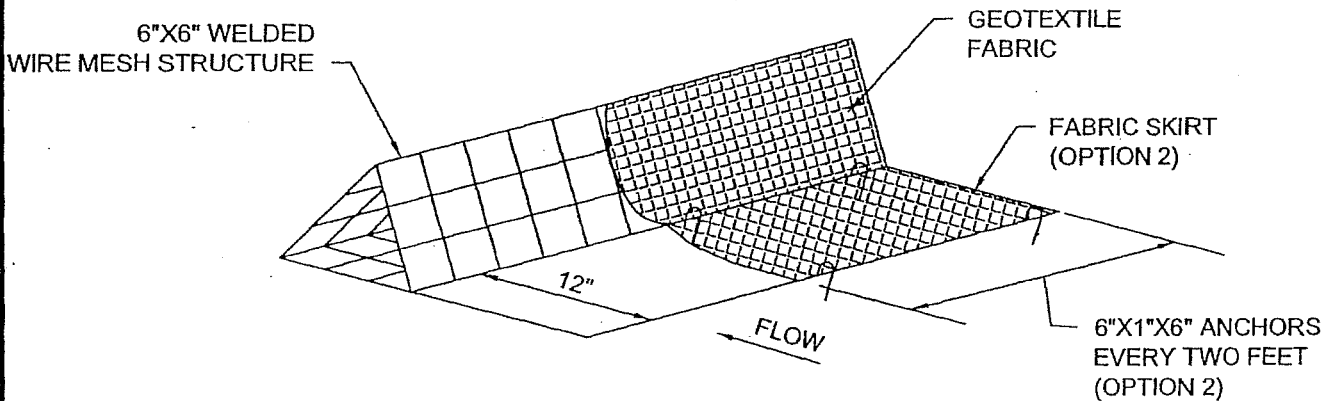
M* - CITY OF MELISSA REVISION





CROSS SECTION OF INSTALLATION OPTIONS

1. TOE-IN 6" MIN.
2. FABRIC SKIRT WEIGHTED WITH ROCK
3. TRENCHED IN 4"



ISOMETRIC PLAN VIEW

TRIANGULAR SEDIMENT FILTER DIKE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

201.8

DATE

OCT. '04

STANDARD DRAWING NO.

1050A

TRIANGULAR SEDIMENT FILTER DIKE GENERAL NOTES:

1. DIKES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT DIKE.
2. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE, AND FABRIC SHALL BE OVERLAPPED A MINIMUM OF 12".
3. THE SKIRT SHALL BE WEIGHTED WITH A CONTINUOUS LAYER OF TYPE 'A' RIP RAP, OR TOED-IN 6" WITH MECHANICALLY COMPACTED MATERIAL. OTHERWISE, THE ENTIRE STRUCTURE SHALL BE TRENCHED TO A DEPTH OF 4 INCHES.
4. DIKES AND SKIRT SHALL BE SECURELY ANCHORED IN PLACE USING 6-INCH WIRE STAPLES ON 2-FOOT CENTERS ON BOTH EDGES AND SKIRTS.
5. FILTER MATERIAL SHALL BE LAPPED OVER ENDS 6" TO COVER DIKE TO DIKE JOINTS. JOINTS SHALL BE FASTENED WITH GALVANIZED SHOAT RINGS.
6. THE DIKE STRUCTURE SHALL BE 6 GA. 6" X 6" WIRE MESH, 18" ON A SIDE.
7. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
8. THE FILTER DIKE SHALL BE REMOVED WHEN FINAL STABILIZATION IS ACHIEVED OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED.
9. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES APPROXIMATELY 6-INCHES IN DEPTH. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

TRIANGULAR SEDIMENT FILTER DIKE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

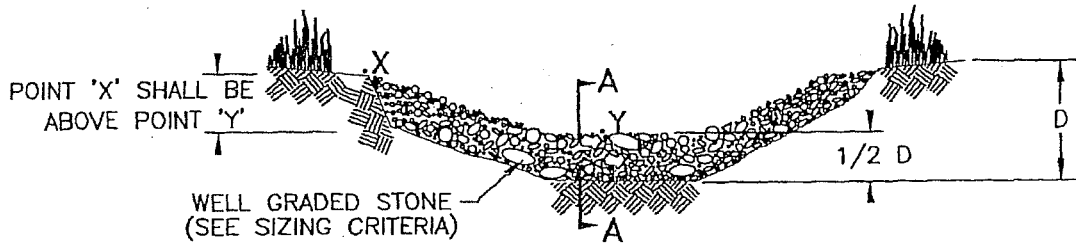
201.8

DATE

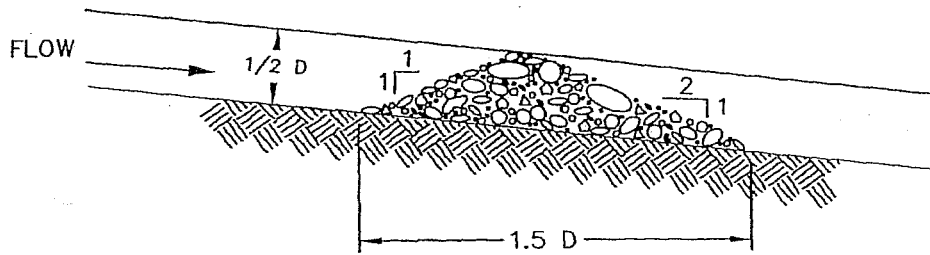
OCT. '04

STANDARD DRAWING NO.

1050B

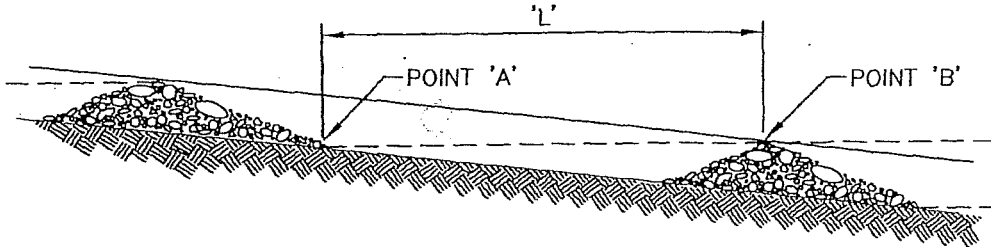


VIEW LOOKING UPSTREAM



SECTION A - A

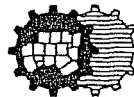
'L' = THE DISTANCE SUCH THAT POINTS 'A' AND 'B' ARE OF EQUAL ELEVATION.



SPACING BETWEEN CHECK DAMS

ROCK CHECK DAM

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

201.9

DATE

OCT. '04

STANDARD DRAWING NO.

1060A

ROCK CHECK DAM GENERAL NOTES:

1. STONE SHALL BE WELL GRADED WITH SIZE RANGE FROM 1½ TO 3½ INCHES IN DIAMETER DEPENDING ON EXPECTED FLOWS.
2. THE CHECK DAM SHALL BE INSPECTED AS SPECIFIED IN THE SWPPP AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
3. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE CHECK DAM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.
4. WHEN THE SITE HAS ACHIEVED FINAL STABILIZATION OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED, THE CHECK DAM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

ROCK CHECK DAM

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

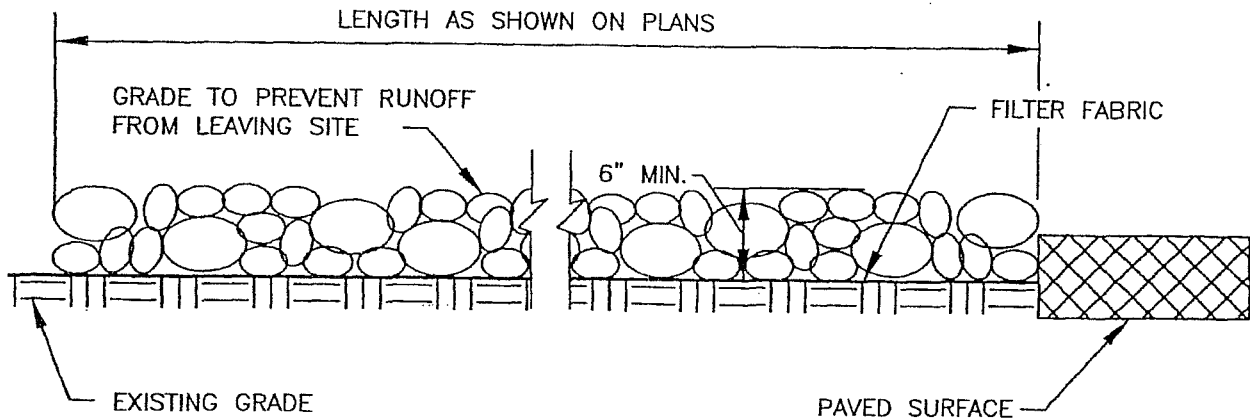
201.9

DATE

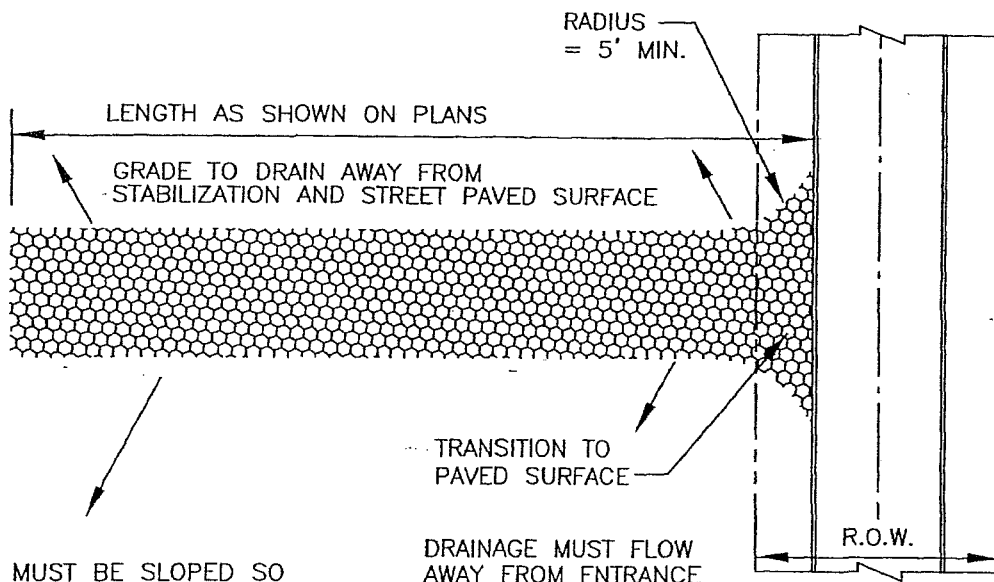
OCT. '04

STANDARD DRAWING NO.

1060B



PROFILE VIEW
N.T.S.



ENTRANCE MUST BE SLOPED SO THAT STORM WATER IS NOT ALLOWED TO LEAVE THE SITE AND ENTER ROADWAYS.

PLAN VIEW
N.T.S.

STABILIZED CONSTRUCTION
ENTRANCE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

201.10

DATE

OCT. '04

STANDARD DRAWING NO.

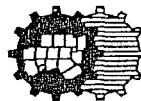
1070A

STABILIZED CONSTRUCTION ENTRANCE GENERAL NOTES:

1. STONE SHALL BE 3 TO 5 INCH DIAMETER COARSE AGGREGATE.
2. LENGTH SHALL BE AS SPECIFIED IN THE SWPPP.
3. THE THICKNESS SHALL NOT BE LESS THAN 12 INCHES.
4. THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
7. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
8. PREVENT SHORTCUTTING OF THE FULL LENGTH OF THE CONSTRUCTION ENTRANCE BY INSTALLING BARRIERS AS NECESSARY.
9. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP.

STABILIZED CONSTRUCTION
ENTRANCE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

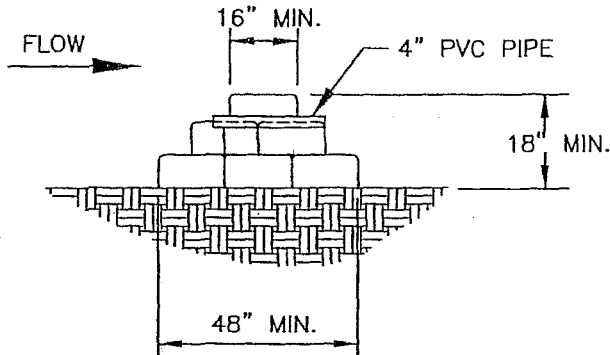
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DATE

OCT. '04

STANDARD DRAWING NO.

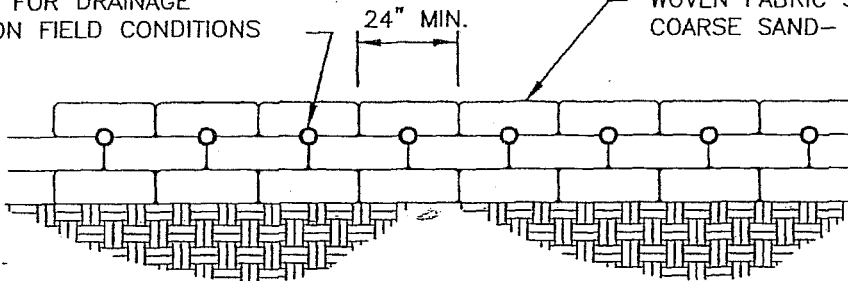
1070B



CROSS SECTION

N.T.S.

4" PVC PIPE FOR DRAINAGE
DEPENDING ON FIELD CONDITIONS



WOVEN FABRIC SANDBAG FILLED W/
COARSE SAND- MIN. WEIGHT 40 LBS.

PROFILE VIEW

N.T.S.

NOTE: SAND BAG
CHECK DAM
CONSTRUCTION AND
PLACEMENT SHALL BE
IN ACCORDANCE WITH
THE SPACING,
CROSS-SECTION, AND
PROFILE VIEWS OF THE
ROCK CHECK DAM IN
DRAWING 1060A.

SAND BAG CHECK DAM

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

201.10

DATE

OCT. '04

STANDARD DRAWING NO.

1080A

SAND BAG CHECK DAM GENERAL NOTES:

1. WHEN A SANDBAG IS FILLED WITH MATERIAL, THE OPEN END OF THE SANDBAG SHOULD BE STAPLED OR TIED WITH NYLON OR POLY CORD.
2. SANDBAGS SHOULD BE STACKED IN AT LEAST THREE ROWS ABUTTING EACH OTHER, AND IN STAGGERED ARRANGEMENT.
3. THE BASE OF THE CHECK DAM SHOULD HAVE AT LEAST 3 SANDBAGS. THESE CAN BE REDUCED TO 2 AND 1 BAG IN THE SECOND AND THIRD ROWS RESPECTIVELY.
4. FOR EACH ADDITIONAL 6" OF HEIGHT, AN ADDITIONAL SANDBAG MUST BE ADDED TO EACH ROW WIDTH.
5. THE SANDBAG CHECK DAM SHALL BE INSPECTED AS SPECIFIED IN THE SWPPP AND SHALL BE RESHAPED OR REPLACED AS NEEDED. REPAIRS SHALL BE MADE FOR WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
6. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE CHECK DAM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CREATE A SILTATION PROBLEM.
7. WHEN THE SITE HAS ACHIEVED FINAL STABILIZATION OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED, THE CHECK DAM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

SAND BAG CHECK DAM

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

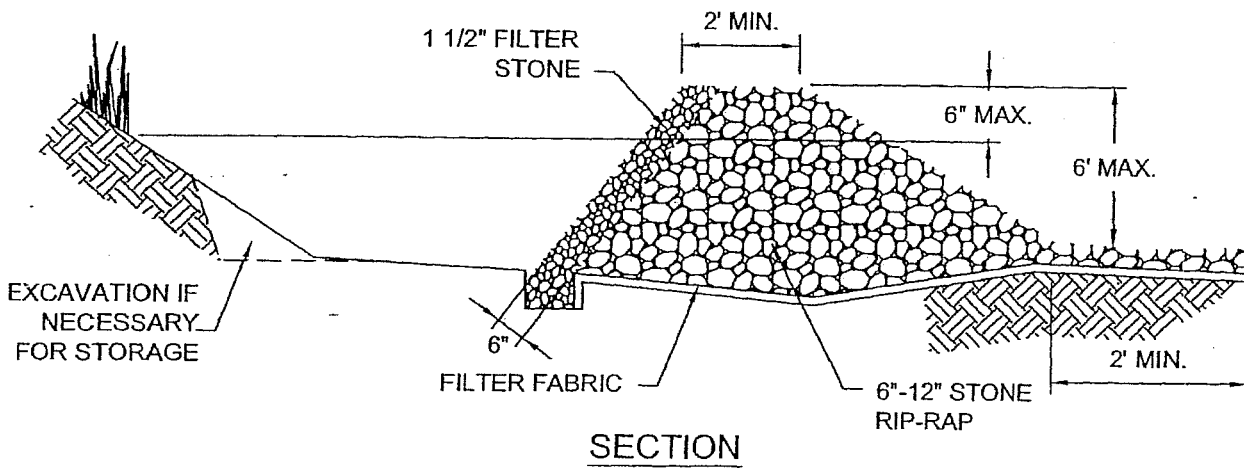
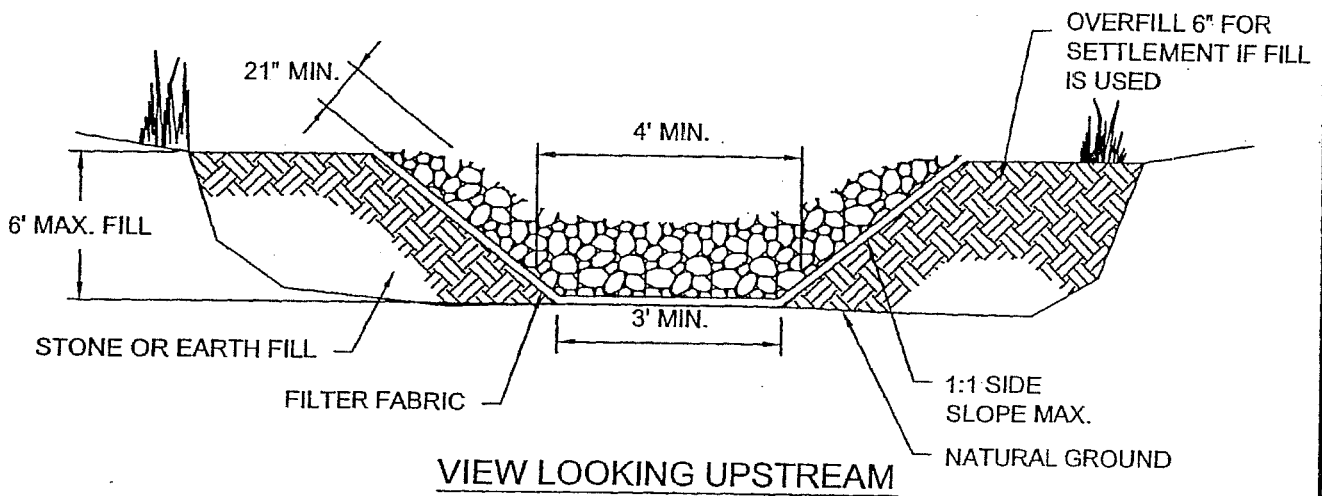
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DATE

OCT. '04

STANDARD DRAWING NO.

1080B



STONE OUTLET
SEDIMENT TRAP

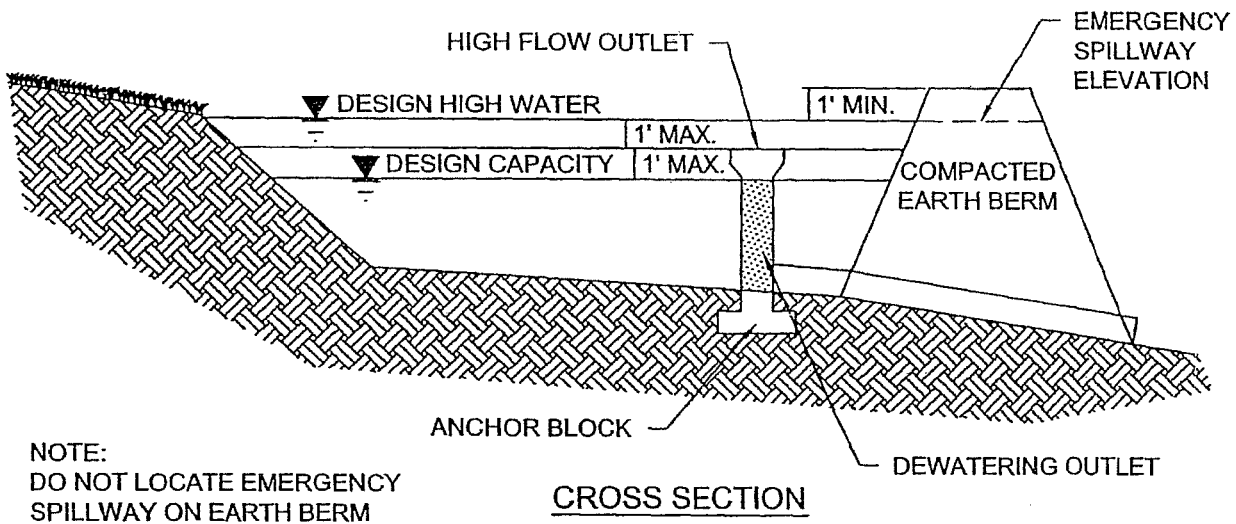
North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE
201.12

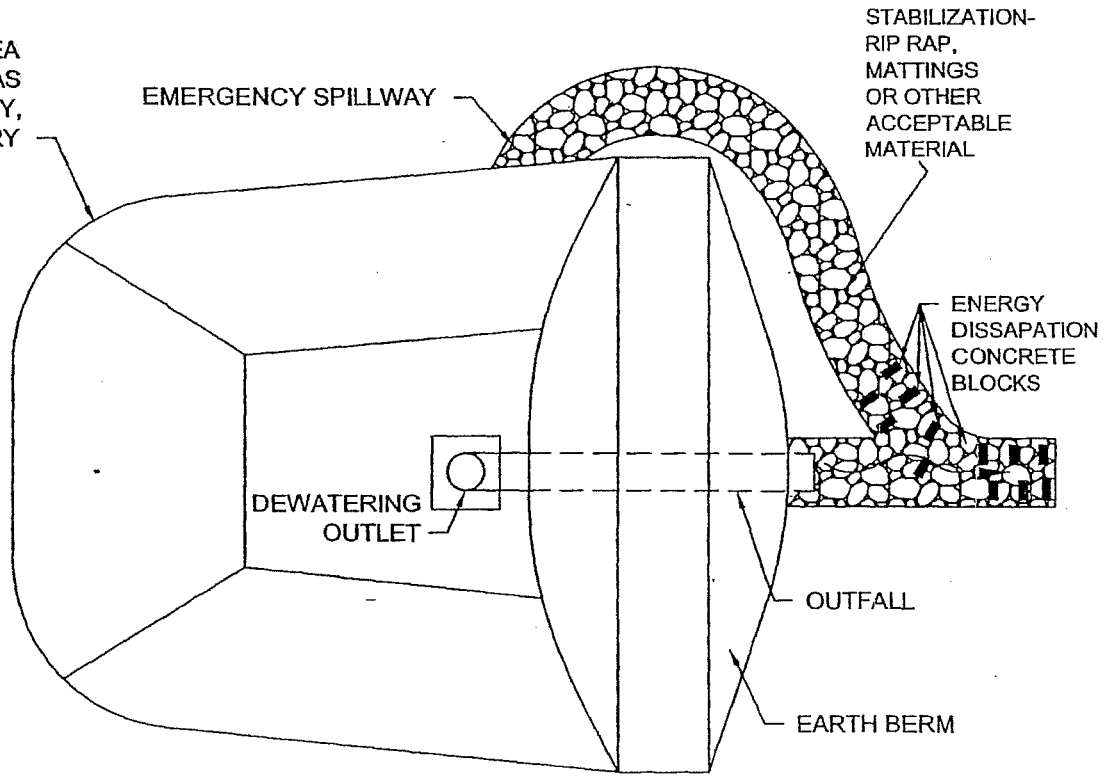
DATE
OCT. '04

STANDARD DRAWING NO.
1090



CROSS SECTION

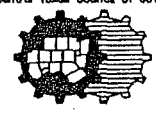
EXCAVATED AREA FOR STORAGE AS NECESSARY, SHAPE MAY VARY



PLAN VIEW

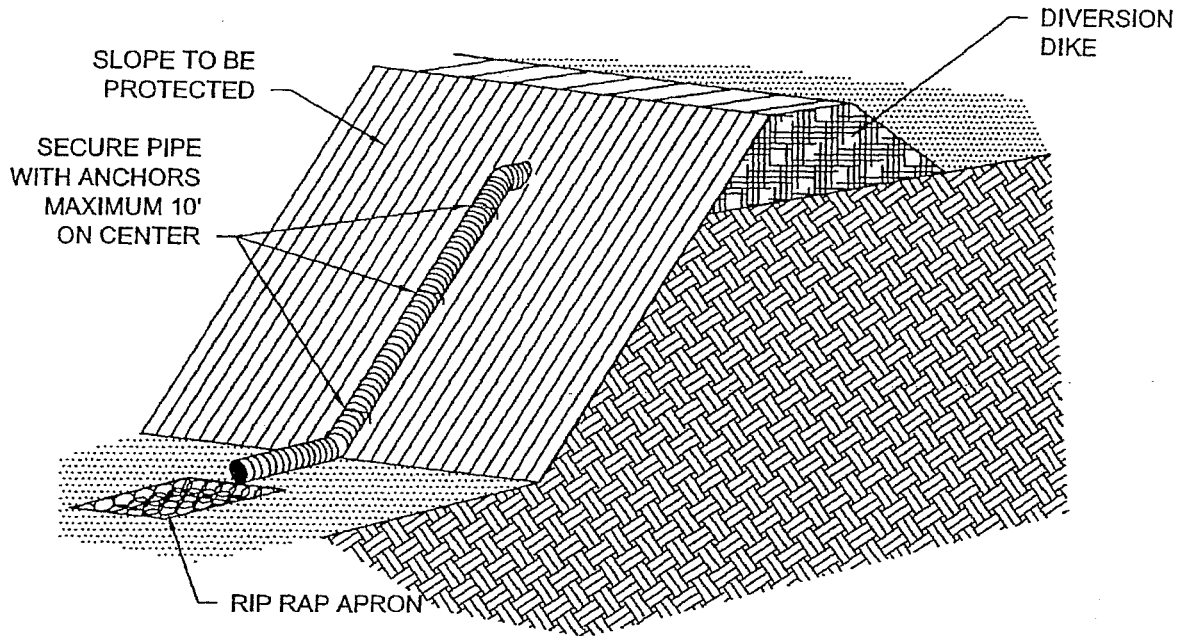
PIPE OUTLET
SEDIMENT BASIN

North Central Texas Council of Governments

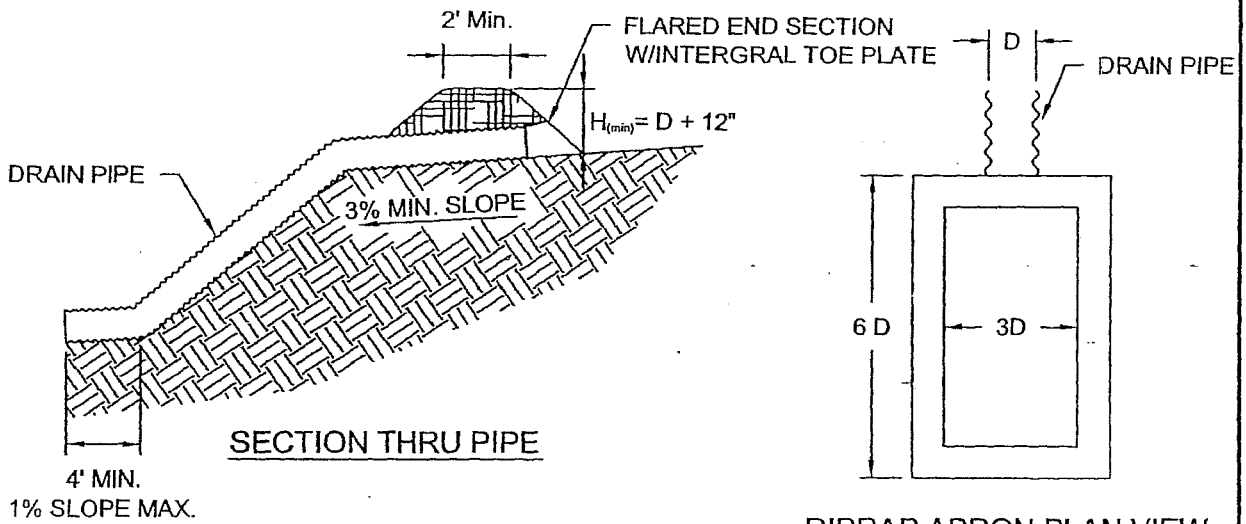


STANDARD SPECIFICATION REFERENCE

DATE: OCT. '04
STANDARD DRAWING NO.: 1100



ISOMETRIC PLAN VIEW



RIPRAP SHALL CONSIST OF 50 TO 150 POUND STONES PLACED IN A LAYER OF NOT LESS THAN 12 INCHES. THE DEPTH OF THE APRON SHALL EQUAL THE PIPE DIAMETER BUT IN NO CASE SHALL IT BE LESS THAN 12 INCHES.

PIPE SLOPE DRAIN

North Central Texas Council of Governments



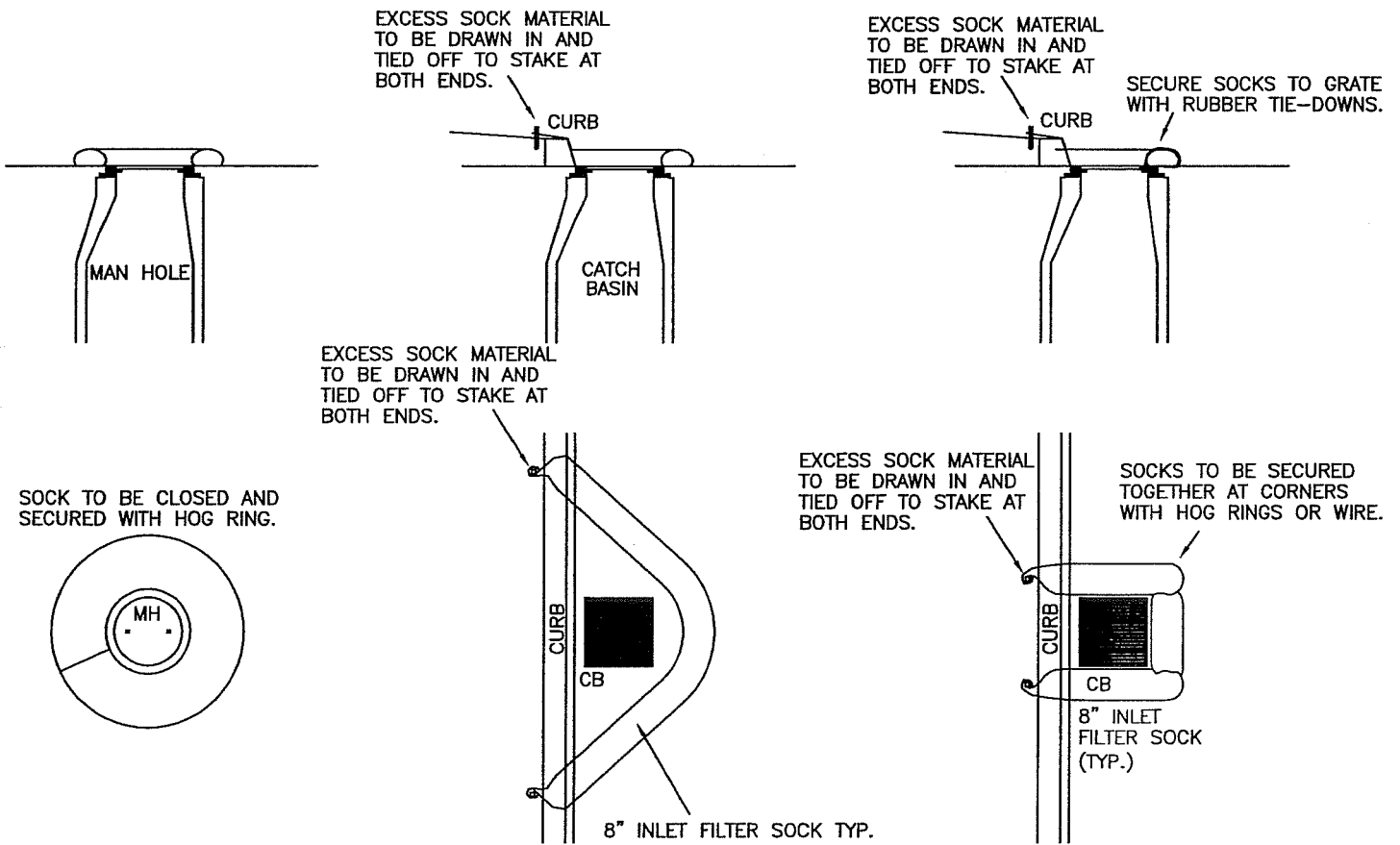
STANDARD SPECIFICATION REFERENCE

201.13

DATE	STANDARD DRAWING NO.
OCT. '04	1110

NOTES:

1. ALL MATERIAL TO MEET CITY OF MELISSA SPECIFICATIONS.
2. SECURE INLET FILTER SOCK TO GROUND AT EACH END.



MANHOLE

CATCH BASIN
(OPTION "A")

CATCH BASIN
(OPTION "B")

FOR USE IN TIGHTER AREAS,
NARROW ROADS ETC.

M* - CITY OF MELISSA REVISION

INLET PROTECTION FILTER BARRIERS

CITY OF MELISSA



NCTCOG STANDARD SPECIFICATION REFERENCE

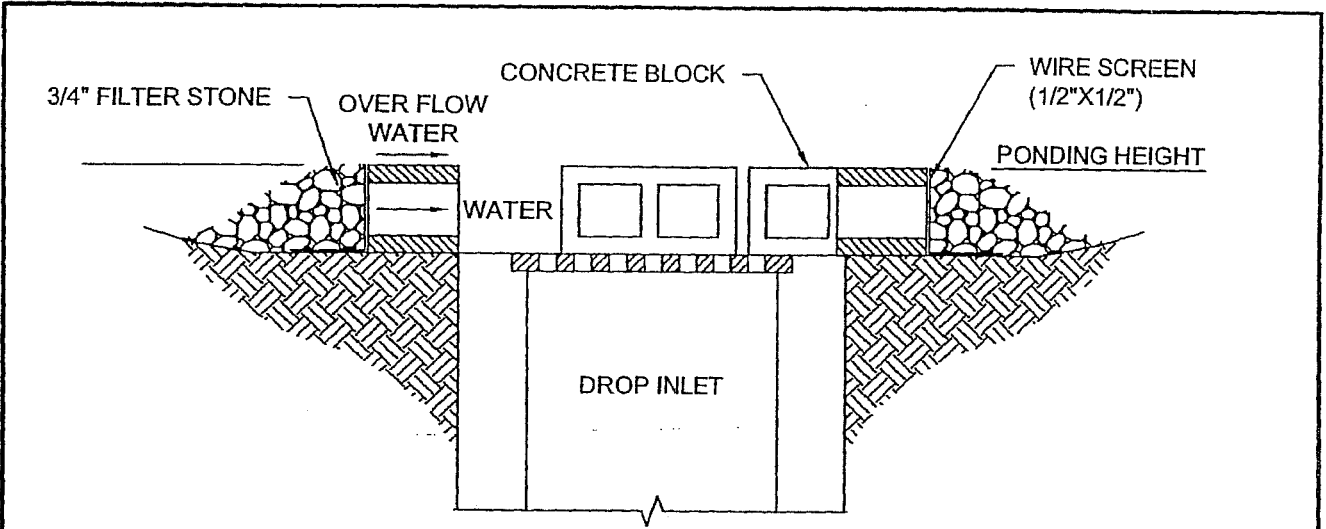
201.14

DATE

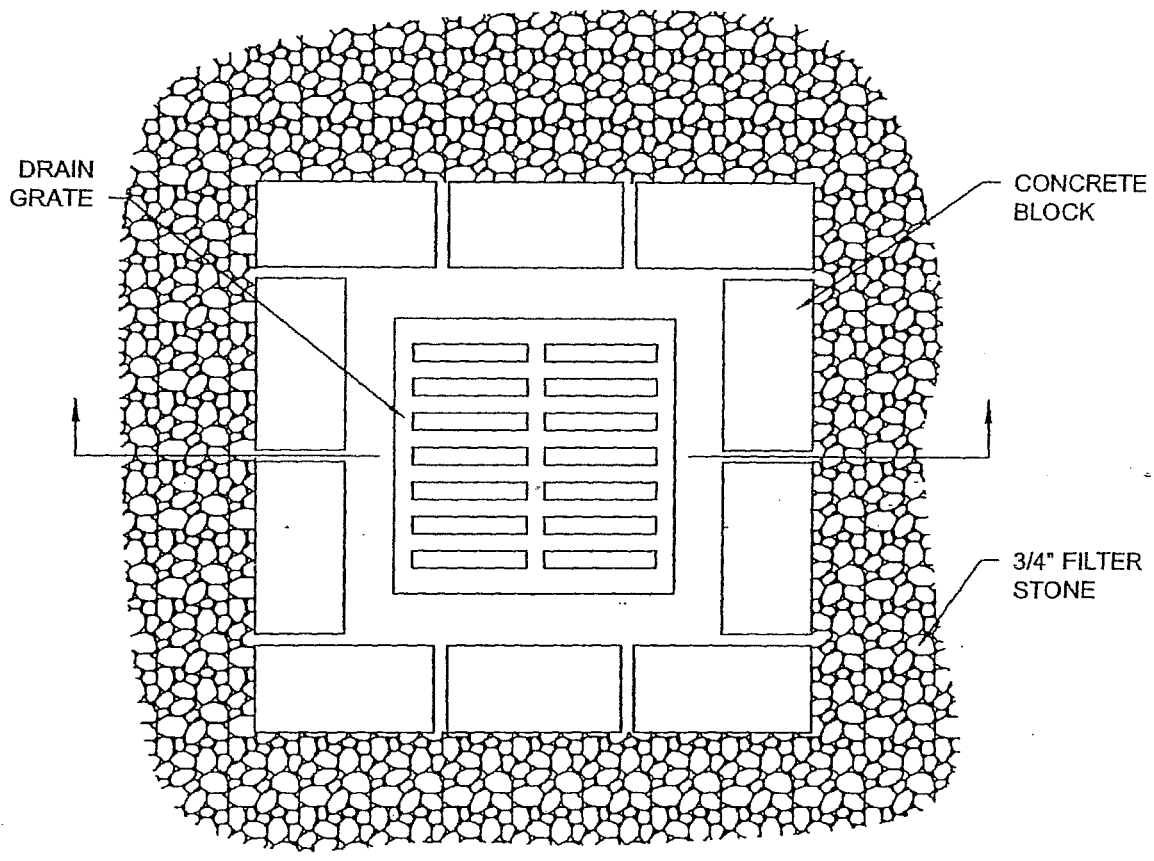
11/17/08

STANDARD DRAWING NO.

1120M*

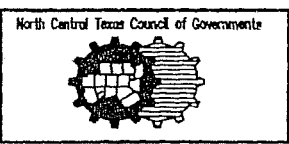


CROSS SECTION

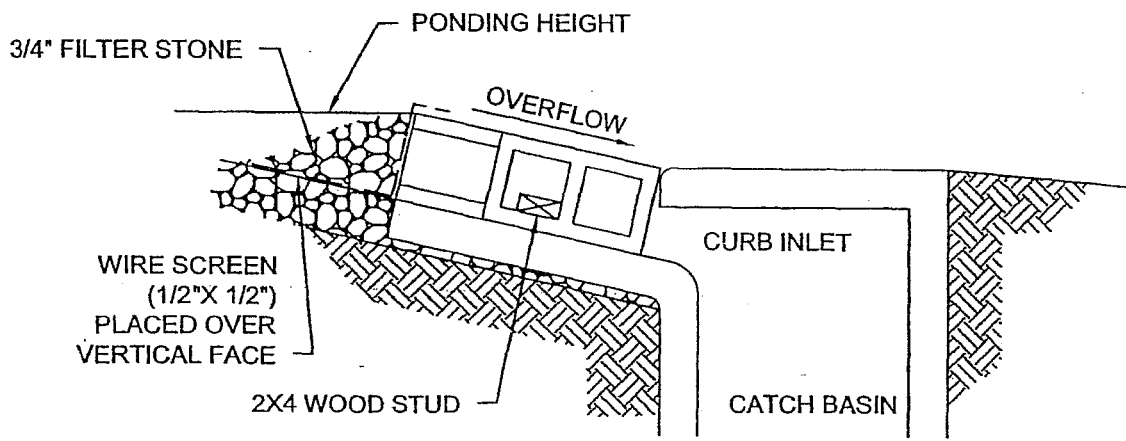


PLAN VIEW

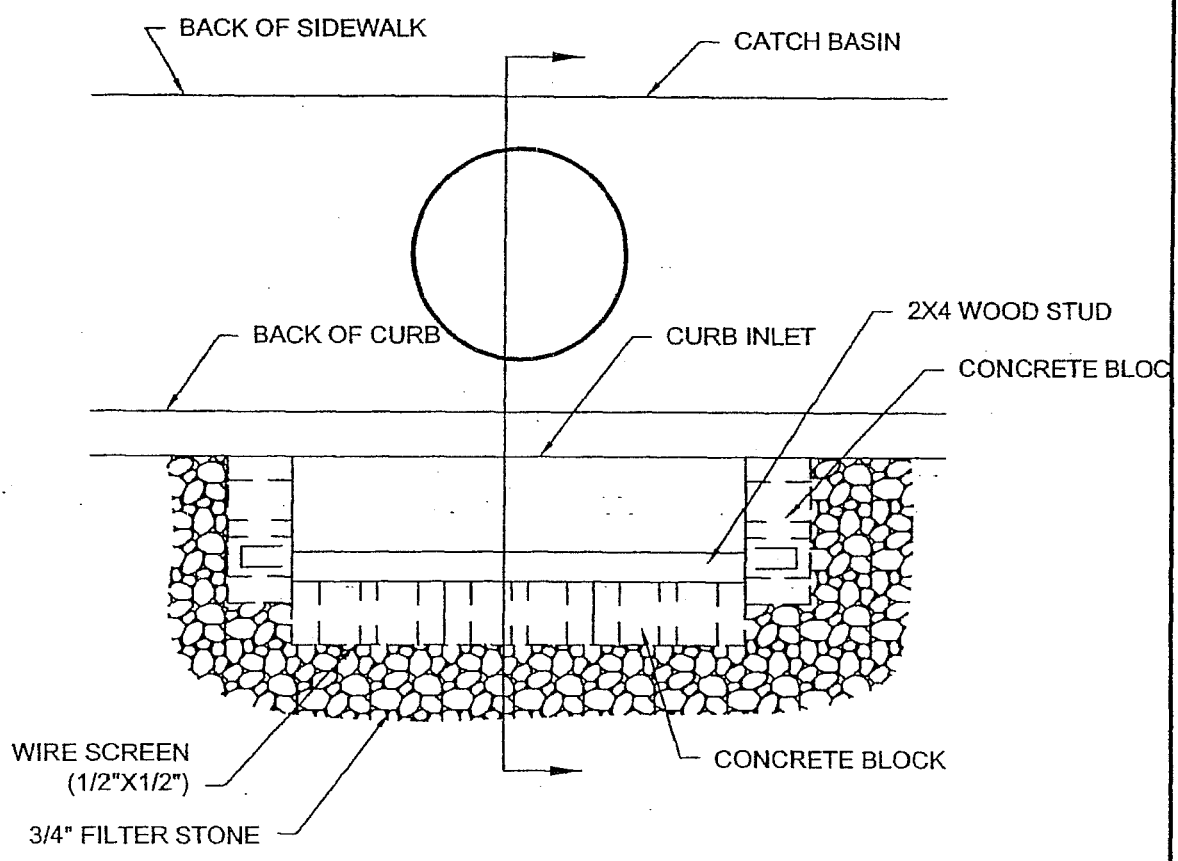
INLET PROTECTION—DROP
BLOCK AND GRAVEL



STANDARD SPECIFICATION REFERENCE 201.14	
DATE OCT. '04	STANDARD DRAWING NO. 1130



CROSS SECTION



PLAN VIEW

INLET PROTECTION—CURB
BLOCK AND GRAVEL

North Central Texas Council of Governments

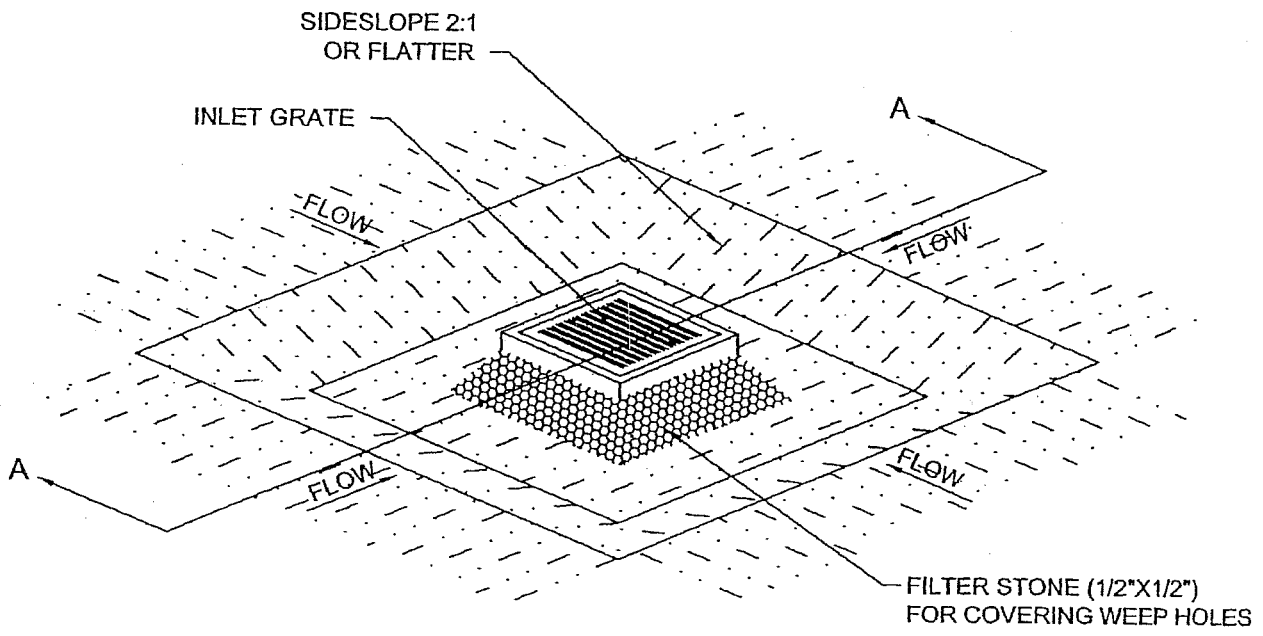


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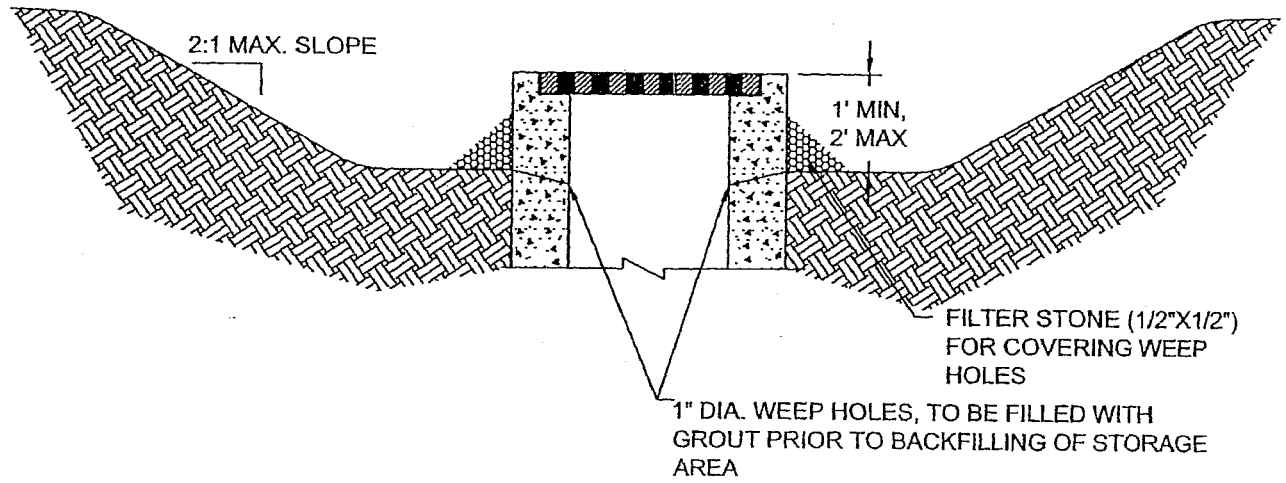
201.14

DATE
OCT. '04


STANDARD DRAWING NO.
1140



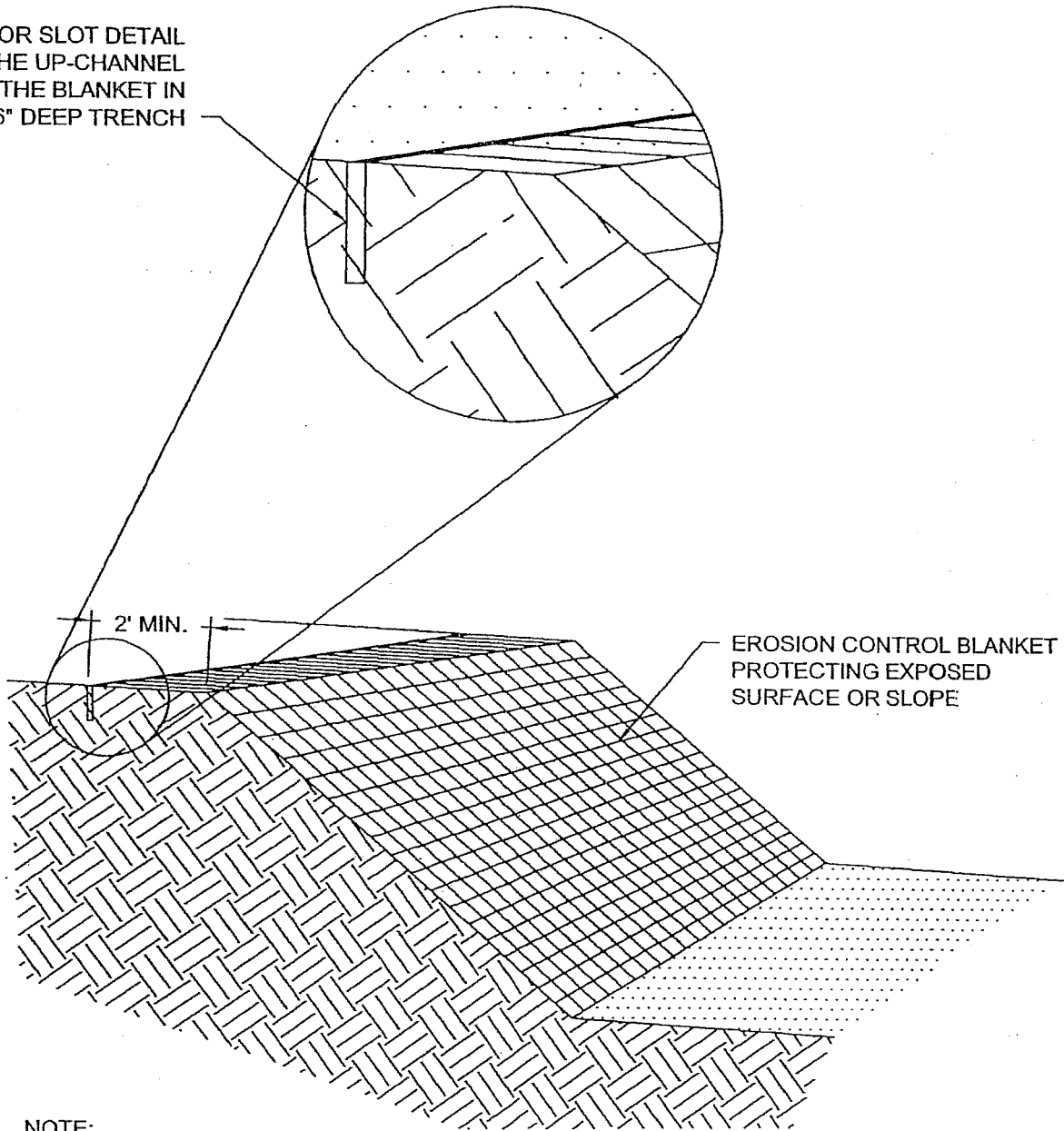
ISOMETRIC PLAN VIEW



SECTION A-A

<p>INLET PROTECTION EXCAVATED IMPOUNDMENT</p>	<p>North Central Texas Council of Governments</p> 	<p>STANDARD SPECIFICATION REFERENCE 201.14</p>	
		<p>DATE OCT. '04</p>	<p>STANDARD DRAWING NO. 1150</p>

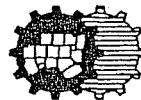
ANCHOR SLOT DETAIL
BURY THE UP-CHANNEL
END OF THE BLANKET IN
A 6" DEEP TRENCH



NOTE:
ANCHORING OF THE EROSION CONTROL BLANKETS SHALL BE
DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

EROSION CONTROL BLANKETS

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

201.15

DATE

OCT. '04

STANDARD DRAWING NO.

1160A

EROSION CONTROL BLANKETS GENERAL NOTES:

1. PRIOR TO THE INSTALLATION OF ANY EROSION CONTROL BLANKETS, ALL ROCKS, DIRT CLODS, STUMPS, ROOTS, TRASH AND ANY OTHER OBSTRUCTIONS THAT WOULD PREVENT THE BLANKET FROM LYING IN DIRECT CONTACT WITH THE SOIL SHALL BE REMOVED. ANCHOR TRENCHING SHALL BE LOCATED ALONG THE ENTIRE PERIMETER OF THE INSTALLATION AREA, EXCEPT FOR SMALL AREAS WITH LESS THAN 2% SLOPE.
2. INSTALLATION AND ANCHORING SHALL CONFORM TO THE RECOMMENDATIONS SHOWN WITHIN THE MANUFACTURER'S PUBLISHED LITERATURE FOR THE APPROVED EROSION CONTROL BLANKET. PARTICULAR ATTENTION MUST BE PAID TO JOINTS AND OVERLAPPING MATERIAL.
3. AFTER APPROPRIATE INSTALLATION, THE BLANKETS SHOULD BE CHECKED FOR UNIFORM CONTACT WITH THE SOIL, SECURITY OF THE LAP JOINTS, AND FLUSHNESS OF THE STAPLES WITH THE GROUND.
4. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP.

EROSION CONTROL BLANKETS

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

201.15

DATE

OCT. '04

STANDARD DRAWING NO.

1160B

1. THE CITY OF MELISSA SHALL MAKE PERIODIC INSPECTIONS OF THE CONSTRUCTION OF IMPROVEMENTS.
2. INSPECTION OF IMPROVEMENTS DOES NOT RELIEVE THE SUBDIVIDER, OR HIS CONTRACTOR, FROM ENSURING THAT THE IMPROVEMENTS ARE CONSTRUCTED IN ACCORDANCE WITH THE ACCEPTED PLANS AND SPECIFICATIONS.
3. THE SUBDIVIDER, OR HIS CONTRACTOR, SHALL MAINTAIN CONTACTS WITH THE CITY ENGINEER, OR HIS REPRESENTATIVE, DURING CONSTRUCTION OF IMPROVEMENTS.
4. SHOP SPECIFICATIONS INCLUDING A TRENCH SAFETY PLAN (IF APPLICABLE), SHALL BE SUBMITTED TO THE CITY ENGINEER OR A REPRESENTATIVE FOR APPROVAL PRIOR TO ANY INSTALLATION OF SUCH ITEM(S) ARE PREFORMED.
5. NO SANITARY SEWER, WATER, OR STORM SEWER PIPE SHALL BE COVERED WITHOUT APPROVAL OF THE CITY ENGINEER, OR HIS REPRESENTATIVE. NO FLEXIBLE BASE MATERIAL, SUBGRADE MATERIAL, OR STABILIZATION SHALL BE APPLIED TO THE STREET SUBGRADE WITHOUT SAID APPROVAL. NO CONCRETE SHALL BE POURED NOR ASPHALT SURFACE APPLIED WITHOUT SAID APPROVAL.
6. THE CITY ENGINEER MAY AT ANY TIME, CAUSE ANY CONSTRUCTION, INSTALLATION, MAINTENANCE, OR LOCATION OF IMPROVEMENTS TO CEASE WHEN, IN HIS JUDGMENT, THE REQUIREMENTS OF THE CITY OF MELISSA OR THE STANDARD AND SPECIFICATIONS HAVE BEEN VIOLATED, AND MAY REQUIRE SUCH RECONSTRUCTION OR OTHER WORK AS MAY BE NECESSARY TO CORRECT ANY SUCH VIOLATION.
7. THE CITY OF MELISSA WILL RETAIN A COMMERCIAL MATERIALS TESTING LABORATORY TO PERFORM TESTS NECESSARY TO VERIFY THAT SPECIFICATIONS ARE BEING MET FOR ALL PUBLIC IMPROVEMENTS.
8. THE COST FOR MATERIALS TESTING SHALL BE REIMBURSED TO THE CITY BY THE DEVELOPER.
9. CONTRACTOR SHALL COORDINATE WITH THE CITY ENGINEER TO ENSURE THAT ALL REQUIRED TESTING IS COMPLETED. FAILURE TO DO SO MAY RESULT IN DELAYS AND/OR REWORK, TO ACCEPT THE COMPLETED PROJECT.
10. MATERIALS AND WORKMANSHIP FOR ALL IMPROVEMENTS SHALL CONFORM TO THE LATEST EDITION OF STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION PUBLISHED BY THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG), UNLESS OTHERWISE SPECIFIED BY THE CITY ENGINEER.
11. THE MAINTENANCE BOND PER DEVELOPMENT PERMIT APPROVAL WILL BE REQUIRED BEFORE THE COMPLETED PROJECT IS ACCEPTED BY THE CITY ENGINEER.
12. AS-BUILT PLANS AND AN ELECTRONIC FILE SHALL BE SUBMITTED TO THE CITY ENGINEER PRIOR TO APPROVAL OF THE COMPLETED PROJECT.

M* - CITY OF MELISSA REVISION

GENERAL CONSTRUCTION NOTES

CITY OF MELISSA



NCTCOG STANDARD SPECIFICATION REFERENCE

N/A

DATE

STANDARD DRAWING NO.

11/06/03

7001M*

SIGNATURE BLOCK:

	DATE:	PRINTED NAME	COMPANY/PHONE #	APPROVAL SIGNATURE
ENGINEERING				
FIRE PREVENTION				
WATER DEPARTMENT				
SEWER DEPARTMENT				
SANITATION DEPARTMENT				
NOTE: DEVELOPER SHALL SECURE SIGNATURES FROM THE FOLLOWING FRANCHISE UTILITIES PRIOR TO APPROVAL OF THE PLAT				
TXU / GCEC				
ONCOR				
SBC TELEPHONE				
CABLE TV FRANCHISE				

STANDARD DRAWING NO.
7002M*

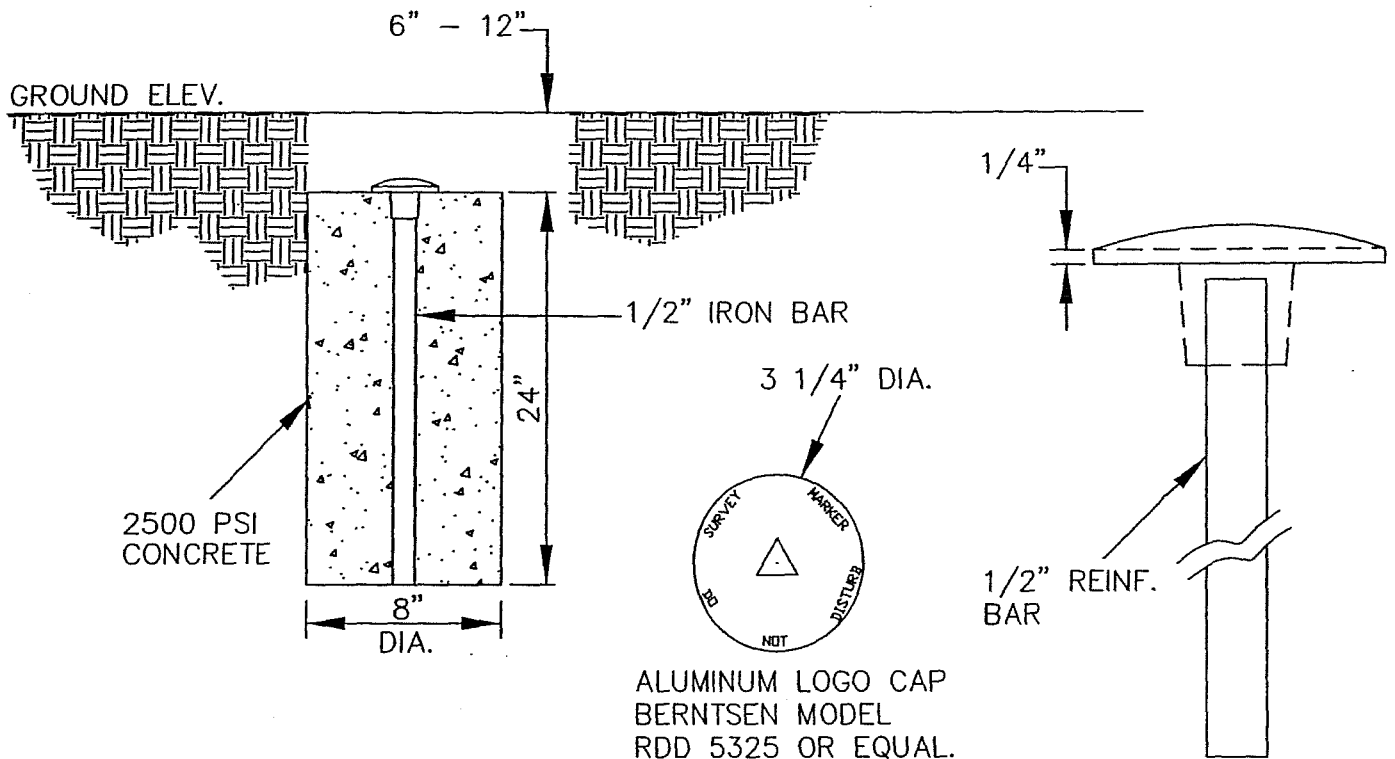
SIGNATURE BLOCK
CITY OF MELISSA



M* - CITY OF MELISSA REVISION
NCTCOG STANDARD SPECIFICATION REFERENCE
N/A
DATE 11/06/03
STANDARD DRAWING NO. 7002M*

NOTE:

1. ALL LOT MARKERS SHALL BE ONE-HALF INCH (1/2") REINFORCING BAR, EIGHTEEN (18) INCHES LONG, OR APPROVED EQUAL, AND SHALL BE PLACED AT ALL LOT CORNERS FLUSH WITH THE GROUND OR AT SUCH AN ELEVATION THAT THEY WILL NOT BE DISTURBED DURING OR AFTER CONSTRUCTION AND THE TOP OF THE MONUMENT SHALL NOT BE MORE THAN TWELVE (12) INCHES BELOW THE FINISH GROUND ELEVATION.
2. CONCRETE MONUMENTS SHALL BE PLACE ON AT LEAST TWO (2) BLOCK CORNERS, BOUNDARY CORNERS OR ANGLE POINTS FOR EACH PLAT OR PHASE OF A MULTIPLATTED AREA OR SUBDIVISION.
3. CONCRETE MONUMENTS SHALL BE TIED INTO THE PLANE COORDINATES FOR THE LAMBERT CONFORMAL CONIC PROJECTION FOR TEXAS, NORTH CENTRAL ZONE. REFERENCE MAY BE MADE TO SPECIAL PUBLICATION NO. 252, PLANE COORDINATE PROJECTION TABLES FOR TEXAS, PUBLISHED AND PRINTED BY THE UNITED STATES DEPARTMENT OF COMMERCE, COAST AND GEODETIC SURVEY.
4. WHERE NO BENCH MARK IS ESTABLISHED OR CAN BE FOUND WITHIN THREE HUNDRED (300) FEET OF THE BOUNDARY OF THE SUBDIVISION, SUCH BENCH MARK SHALL BE ESTABLISHED AS A MONUMENT, AND SHALL BE READILY ACCESSIBLE AND IDENTIFIABLE ON THE GROUND AND SHALL BE RECORDED ON THE CITY OF MELISSA BENCH MARK DATUM.



CONCRETE MONUMENT
NTS

M* - CITY OF MELISSA REVISION

MONUMENTS & MARKERS
CITY OF MELISSA



NCTCOG STANDARD SPECIFICATION REFERENCE

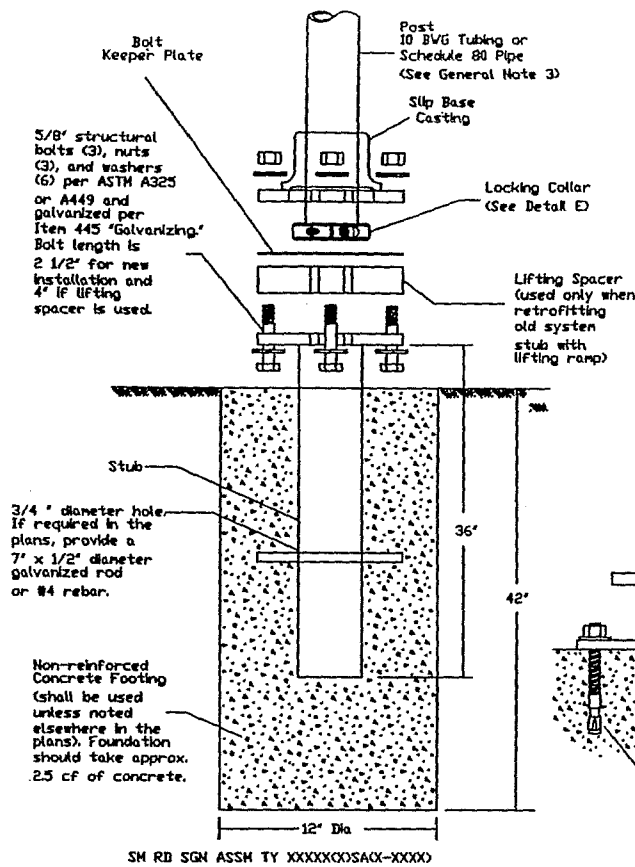
N/A

DATE

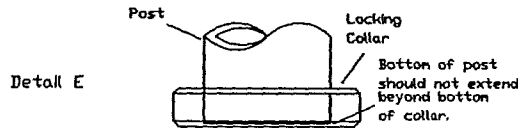
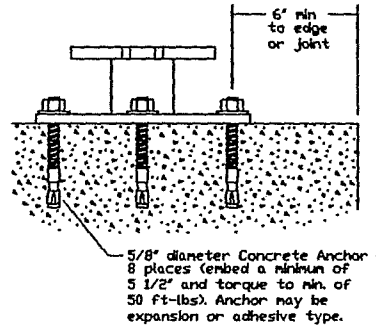
STANDARD DRAWING NO.

11/06/03

700.3M*

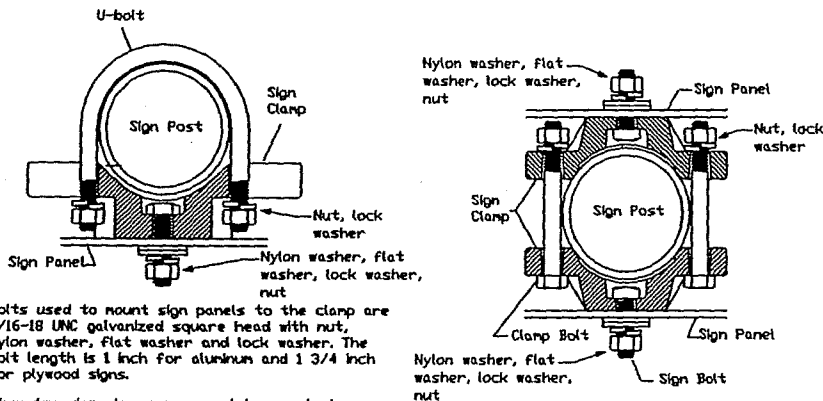


Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxyes and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time, per the manufacturer's recommendations.



TEXAS UNIVERSAL TRAIANGLE SUBBASE SYSTEM

NTS



Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum and 1 3/4 inch for plywood signs.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGN ATTACHMENT DETAIL

NTS

M* - CITY OF MELISSA REVISION

SIGN POST DETAIL
CITY OF MELISSA



NCTCOG STANDARD SPECIFICATION REFERENCE

N/A

DATE

STANDARD DRAWING NO.

11/06/03

700111*

AS-BUILT DRAWINGS

DATE

THIS DOCUMENT IS SUBMITTED AS AN "AS-BUILT DRAWING" FOR RECORD PURPOSES ONLY.

I, _____ THE DEVELOPER OR ITS REPRESENTATIVE, DO HERBY CERTIFY THAT THIS DOCUMENT REPRESENTS IMPROVEMENTS AS CONSTRUCTED AND THAT IMPROVEMENTS WERE CONSTRUCTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AS ACCEPTED BY THE CITY OF MELISSA, EXCEPT FOR CHANGES OR MODIFICATIONS REFLECTED HEREON.

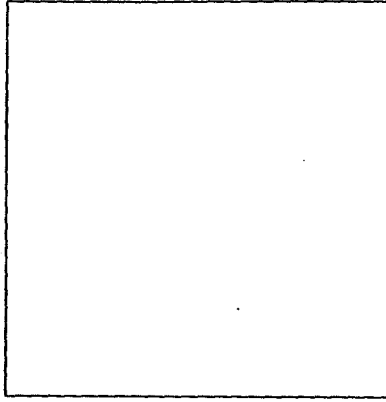
SIGNATURE

DATE

I, _____ P.E., DO HERBY CERTIFY THAT THIS DOCUMENT ACCURATELY REFLECTS AS-BUILT CONDITIONS AS REPORTED BY THE DEVELOPER, ITS REPRESENTATIVE, OR THE CONTRACTOR(S).

SIGNATURE

DATE



ENGINEERING SEAL



AS-BUILT SIGNATURE BLOCK

CITY OF MELISSA

M* - CITY OF MELISSA REVISION

NCTCOG STANDARD SPECIFICATION REFERENCE

N/A

DATE

12/03/03

STANDARD DRAWING NO.

700511*

STANDARD DRAWING NO.

700511*

Site Plan Summary

	Required	Proposed
Lot Area (sq. ft.)		
Minimum Lot Width (ft.)		
Minimum Lot Depth (ft.)		
Front Yard Setback (ft.)		
Side Yard Setback (ft.)/interior lot		
Side Yard Setback (ft.)/corner lot		
Rear Yard Setback (ft.)		
Maximum Height (stories or ft.)		
Maximum Lot Coverage (%)		
Minimum Dwelling Size (sq. ft.)*		
Maximum Density Per Acre		
Parking**		

*The minimum floor area of any dwelling shall be exclusive of garages, breezeways, and porches.

**Provide detailed parking calculations



Non-Residential Landscaping Summary

	Required	Proposed
Minimum Landscaping Area (% of pavement area on site)	10	
Landscaping Along Street ROW	-	-
Minimum Width of Landscape Edge (ft) ^a	10	
Minimum No. of Shade Trees Within Landscape Edge Per 500ft ² ^b	1	
OR Minimum Number of Approved Ornamental Trees per 500 ft ²	1	
Minimum No. of Shrubs per 500 ft ² of Landscaped Edge Where Parking Lots and Drives Abut the Landscaped Edge ^c	10	
Shrubs or Berms, If Parking Lot is Located More Than 50 ft. From Street ROW	No	
Interior Parking Lot Landscaping	-	-
Required For At Least 20 Parking Spaces	Yes	
Area of Interior Landscaping For Each 180 Square Foot Parking Space (ft ²)	8	
Minimum No. of Shade Trees For Every 20 Parking Spaces ^d	1	
OR Minimum No. of Approved Ornamental Trees For Every 20 Parking Spaces	1	
Landscaping For Corner Lots	-	-
Only Required For Intersection of Two Major or Larger Throughfares	Yes	
Minimum Width of Landscaped Edge Located Along Street ROW Beginning at the Corner and Extending 175 ft or to the Closest Driveway (ft) ^e	15	
Minimum Landscaped Edge Required at a Right-Turn Lane Location (ft)	7.5	
Minimum Area Located at the Intersection Corner of the Lot (ft ²) ^f	900	
Landscaping/Screening for Parking Lots Adjacent to Residential Areas	-	-
Continuous Screen of Shrubs (5 Gallons Min.) Required Where Parking is Within 50 ft of Residentially Zoned Property and is Not Screened From View By a Screening Wall	Yes	

^a may be reduced in C-1 district to minimum of 2 ft where lots are less than 2 acres. In such case, a minimum of 1 shade tree (3" caliper minimum) or an approved ornamental tree shall be planted for every 50 ft of frontage on any public street.

^b 3" caliper minimum

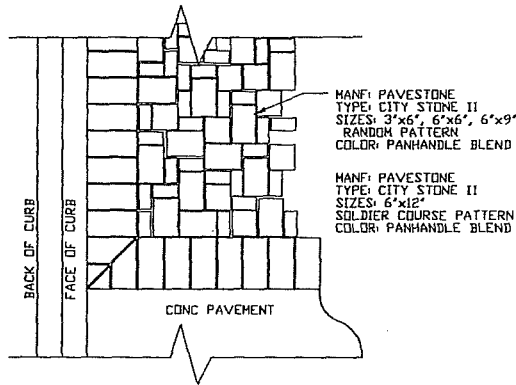
^c a berm may be placed within the landscaped edge in lieu of the required shrubs. The berm must be 42 in. above the average grade of the street and parking lot curbs. The slope of the berm shall not exceed a 3 to 1 grade.

^d 4" caliper minimum

^e beyond this point, the landscaped edge may be gradually reduced (over a distance of 25 feet) to 10 feet in width

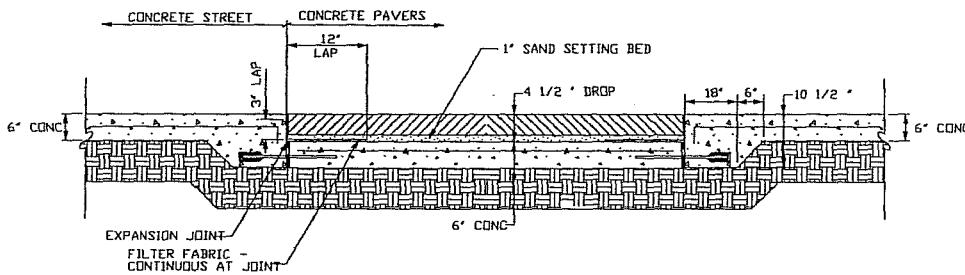
^f this landscaped area shall be provided within the area measured a minimum distance of 40 ft from the projected corner of the intersection on both sides of the lot. No trees should be planted in this area.





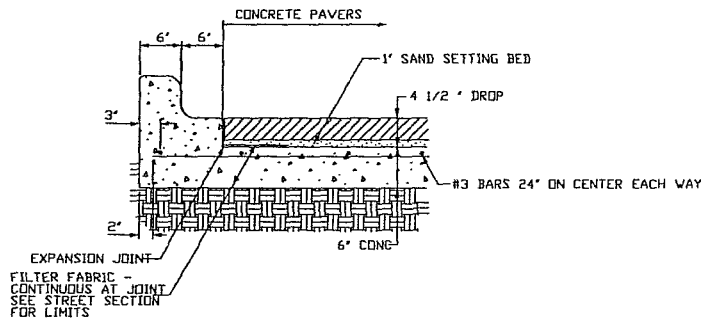
PATTERN DETAIL

NTS



STREET SECTION THROUGH CONCRETE PAVERS

NTS



PAVER DEPRESSION DETAIL

NTS

M* - CITY OF MELISSA REVISION

PAVE STONE DETAILS
CITY OF MELISSA



NCTCOG STANDARD SPECIFICATION REFERENCE

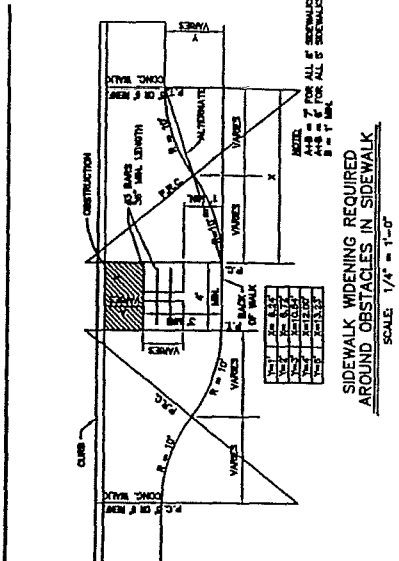
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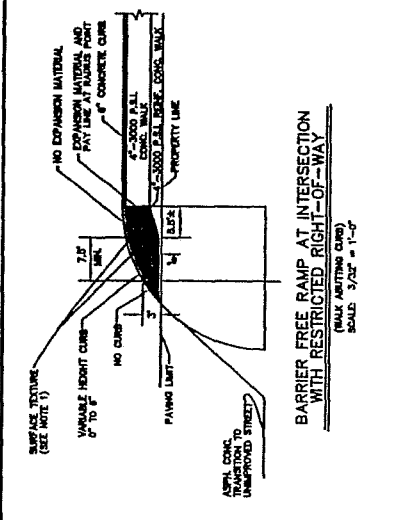
STANDARD DRAWING NO.

05/03/05

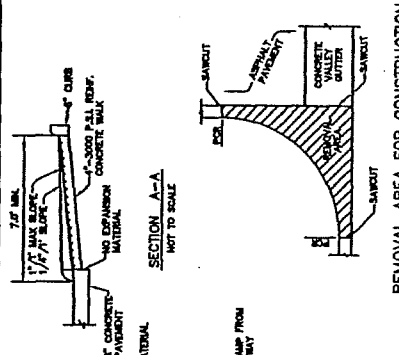
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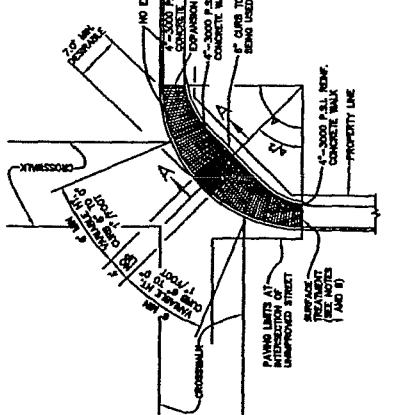
SIDEWALK WIDENING REQUIRED AROUND OBSTACLES IN SIDEWALK
SCALE: 1/4" = 1'-0"



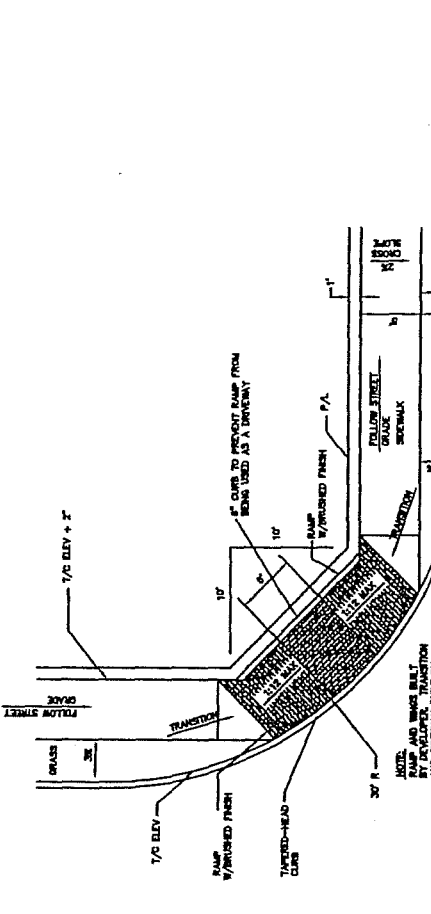
Barrier Free Ramp at Intersection with Restricted Right-of-Way
(Walk Mounting Curb)
SCALE: 3/32" = 1'-0"



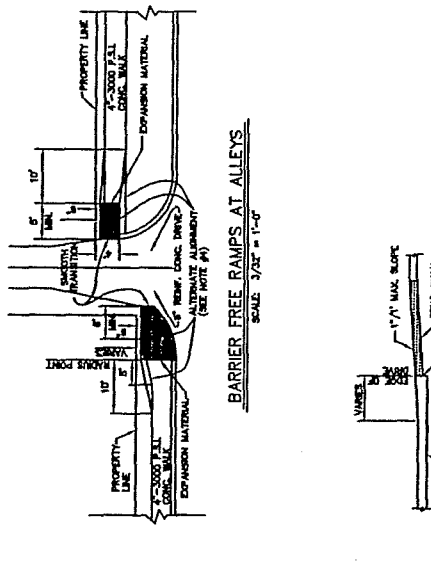
REMOVAL AREA FOR CONSTRUCTION OF A BARRIER FREE RAMP
SCALE: 3/32" = 1'-0"



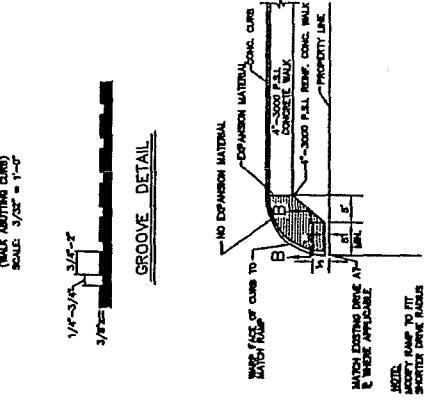
Barrier Free Ramp Detail at Intersecting Street
(Walk Mounting Curb)
SCALE: 3/32" = 1'-0"



31' ROAD SIDEWALK RAMP
SCALE: 1/4" = 1'-0"



Barrier Free Ramps at Alleys
SCALE: 3/32" = 1'-0"



Barrier Free Ramp Detail at Drive
(Walk Mounting Curb)
SCALE: 3/32" = 1'-0"

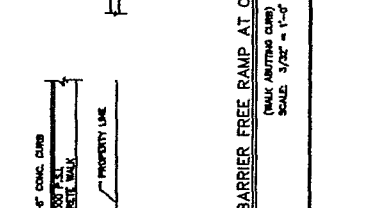
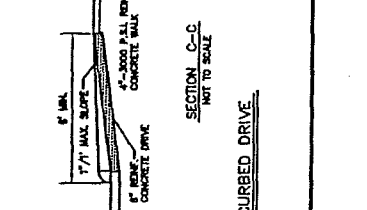
NO.	REVISION	BY	DATE

CITY OF MELISSA, TEXAS
DEPARTMENT OF ENGINEERING
STANDARD CONSTRUCTION DETAILS
PAVING

APPROVED
DATE: 7 AUGUST, 2004

SIDEWALK DETAILS

NOTES:
1. HANDICAP RAMP SHALL INCLUDE GROOVES 1/4"-3/4" WIDE AT 3/4"-2" SPACING AT A MAX. DEPTH OF 3/16".
2. MINIMUM SLOPE ON BARRIER FREE RAMP MUST NOT EXCEED 1" PER FOOT.
3. DECORATIVE FINISHES FOR 4" CURBS, FOR CURBS WITH HEIGHT GREATER THAN 4", FINISHES MUST BE PROPORTIONATELY.
4. FINISHES FOR 4" CURBS MUST BE PROPORTIONATELY.
5. LOCATION OF BARRIER FREE RAMP MAY BE SHIFTED TO CLEAR OBSTRUCTIONS.
6. CONSTRUCTION OF BARRIER FREE RAMP FROM OUTSIDE LINE OF STREET TO INSIDE LINE OF STREET SHALL NOT EXCEED 10'.
7. SIDEWALK GROOVING STOP IMPEDIMENTS MUST HAVE 2% CROSS-SLOPE AWAY FROM CURB.
8. SIDEWALK SHALL BE CONSTRUCTED AFTER INSTALLATION OF ALL UNDERGROUND UTILITIES.



Barrier Free Ramp at Curbed Drive
(Walk Mounting Curb)
SCALE: 3/32" = 1'-0"