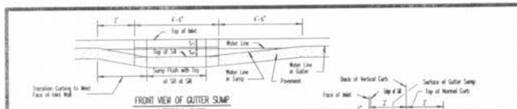
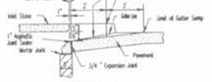
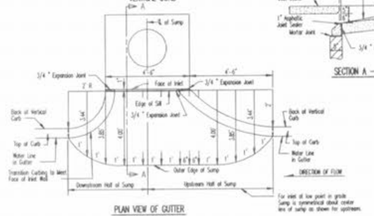
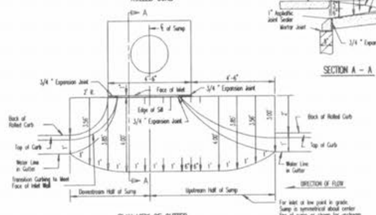
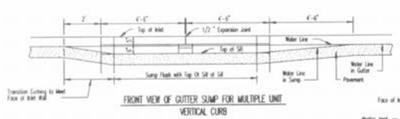


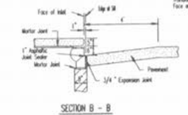


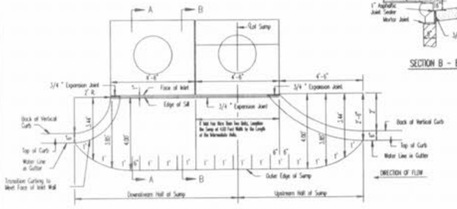


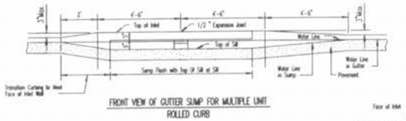


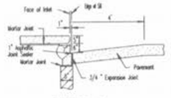
1. Do not scale drawing. Follow dimensions.
2. The details shown are adapted from Revised Standard Construction Details for Sewers and Drainage Facilities dated 1992.
3. The standard specification sections noted refer to the Standard Construction Specifications for Sewers and Drainage Facilities of The Metropolitan St. Louis Sewer District dated 1992.
4. Inlets may be located 2.5 feet from the back of rolled curb. Add 0.5 feet to all sump dimensions for all inlets that are 2.5 feet offset.
5. For canted inlets, the sump shall extend 2.0 feet from the projection of the back of the curb.

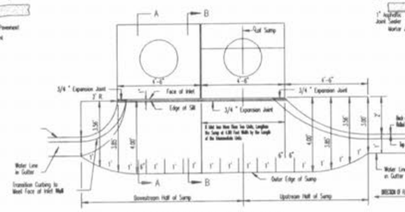












SAINT CHARLES COUNTY
HIGHWAY DEPARTMENT
ST. CHARLES, MISSOURI

SEWER CONSTRUCTION DETAILS

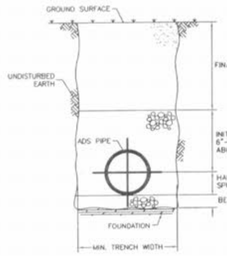
STREET INLET SUMPS

DATE: June, 2002

DRAWING
C604.36

TRENCH INSTALLATION DETAIL

NOTE:
HDPE PIPE IS TO BE N-12 WT
AND SHALL MEET ASTM F1417
WATER TIGHT FIELD TEST.



TYPICAL TRENCH CROSS-SECTION
(N.T.S.)

NOTE TO THE ENGINEER: WHEN THIS DETAIL IS TO BE INCORPORATED INTO CONTRACT DOCUMENTS, PLEASE REFERENCE SECTION X-2, "RECOMMENDATIONS FOR INCORPORATION INTO CONTRACT DOCUMENTS" OF ASTM SPECIFICATION D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS" SO THAT APPROPRIATE MODIFICATIONS CAN BE MADE TO ACCOMMODATE SITE SPECIFIC NEEDS.

NOTES:

1. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I, OR II MATERIAL AS DEFINED IN ASTM D2321, "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A WOVEN GEOTEXTILE FABRIC.
2. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
   UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100-600mm) AND 42"-48"(1050-1200mm) CORRUGATED POLYETHYLENE PIPE (CPEP); 6" (150mm) FOR 30"-36" (750-900mm) CPEP.
3. HAUNCHING AND INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
4. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:

NOMINAL Ø in (mm)	MIN. RECOMMENDED TRENCH WIDTH in (mm)
4 (100)	21 (530)
6 (150)	23 (580)
8 (200)	25 (630)
10 (250)	28 (710)
12 (300)	31 (790)
15 (375)	34 (860)
18 (450)	39 (990)
24 (600)	48 (1220)
30 (750)	66 (1680)
36 (900)	78 (1980)
42 (1050)	83 (2110)
48 (1200)	89 (2260)
60 (1500)	102 (2590)

5. MINIMUM COVER: MINIMUM RECOMMENDED DEPTHS OF COVER FOR VARIOUS LIVE LOADING CONDITIONS ARE SUMMARIZED IN THE FOLLOWING TABLE. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TAKEN FROM THE TOP OF PIPE TO THE GROUND SURFACE.

SURFACE LIVE LOADING CONDITION	MINIMUM RECOMMENDED COVER, in (mm)
H25 (FLEXIBLE PAVEMENT)	12 (300)*
H25 (RIGID PAVEMENT)	12 (300)
E80 RAILWAY	24 (610)
HEAVY CONSTRUCTION	48 (1220)

*TOP OF PIPE TO BOTTOM OF BITUMINOUS PAVEMENT SECTION

ADS STANDARD DETAILS DISCLAIMER: "ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS STANDARD DETAIL TO DEMONSTRATE ADS' RECOMMENDED INSTALLATION OF ITS PRODUCTS FOR THE DEPICTED APPLICATION. IN ADDITION TO ADS' RECOMMENDATIONS, THERE MAY BE OTHER NATIONAL, STATE OR LOCAL SPECIFICATIONS THAT ARE PERTINENT TO THIS APPLICATION. ADS' STANDARD DETAIL IS NOT INTENDED TO SUPERSEDE ANY NATIONAL, STATE OR LOCAL SPECIFICATIONS, AND ADS RECOMMENDS THAT THOSE REQUIREMENTS BE REVIEWED AND CONSULTED PRIOR TO THE INSTALLATION OF ADS' PRODUCTS. ADS HAS NOT AUTHORIZED, AND IT BEARS NO RESPONSIBILITY FOR, ANY REVISIONS, ALTERATIONS OR DEVIATIONS FROM THIS STANDARD DETAIL."

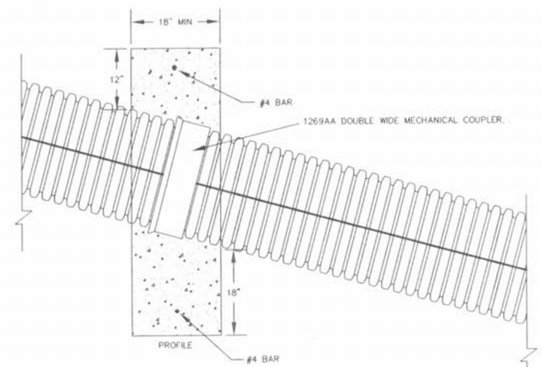
ADS
ADVANCED DRAINAGE SYSTEMS, INC.

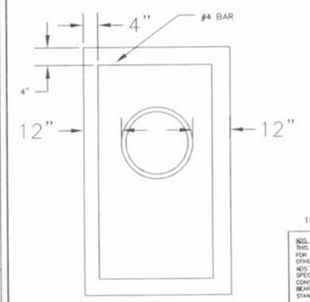
DRAWN BY	APPROVED BY	DRAWING #
K.M.J. 5-7-99	P.X.C. 5-7-99	STD-101

REVISIONS	
BY	DATE

NOTE: ALL SEWER STRUCTURES SHALL BE PRE-CAST.

CONCRETE ANCHORS FOR STEEPLY SLOPED PIPES





ELEVATION

NOTES

1. ANCHORS SHALL BE PLACED EVERY JOINT.
2. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI.
3. PIPE TO BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS. SEE STD-101.
4. VELOCITY REDUCTION METHODS SHALL BE TAKEN WHEN SLOPE CREATES VELOCITY GREATER THAN 20 FPS.

11/15/05 STANDARD DRAWING REVISED PER JIM SURRELL OF ADS.

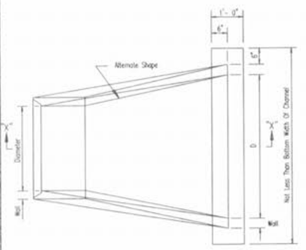
ADS STANDARD DETAILS DISCLAIMER: "ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS STANDARD DETAIL TO DEMONSTRATE ADS' RECOMMENDED INSTALLATION OF ITS PRODUCTS FOR THE DEPICTED APPLICATION. IN ADDITION TO ADS' RECOMMENDATIONS, THERE MAY BE OTHER NATIONAL, STATE OR LOCAL SPECIFICATIONS THAT ARE PERTINENT TO THIS APPLICATION. ADS' STANDARD DETAIL IS NOT INTENDED TO SUPERSEDE ANY NATIONAL, STATE OR LOCAL SPECIFICATIONS, AND ADS RECOMMENDS THAT THOSE REQUIREMENTS BE REVIEWED AND CONSULTED PRIOR TO THE INSTALLATION OF ADS' PRODUCTS. ADS HAS NOT AUTHORIZED, AND IT BEARS NO RESPONSIBILITY FOR, ANY REVISIONS, ALTERATIONS OR DEVIATIONS FROM THIS STANDARD DETAIL."

ADS
ADVANCED DRAINAGE SYSTEMS, INC.

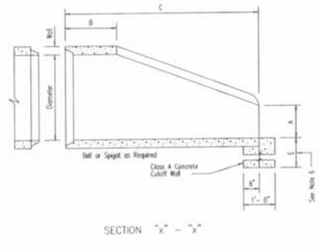
DRAWN BY	APPROVED BY	DRAWING #
K.M.J. ~~6-12-99~~	~~P.X.C.~~	~~STD-804~~

REVISIONS	
BY	DATE
PXC	5-31-00

NOTE: ALL DIMENSIONS ARE NOMINAL



PLAN VIEW



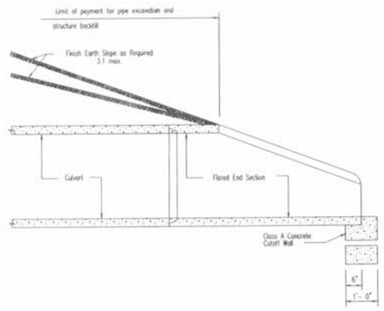
SECTION "X" - "X"

DIMENSIONS						
Dia.	Wall	A	B(min.)	C(min.)	D	E
12"	2"	4"	4'-0"	6"	2'-0"	
15"	2-1/4"	6"	5'-10"	6"	2'-6"	
18"	2-1/2"	6"	5'-10"	6"	3'-0"	
21"	2-3/4"	6"	5'-2"	6"	3'-6"	
24"	3"	9-1/2"	2'-6"	6"	4'-0"	
27"	3-1/4"	10-1/2"	2'-1"	6"	4'-6"	
30"	3-1/2"	1'-0"	1'-7"	6"	5'-0"	
36"	4"	1'-3"	2'-10"	8"	6'-0"	
42"	4-1/2"	1'-6"	2'-11"	8"	6'-6"	
48"	5"	2'-0"	2'-2"	8"	7'-0"	
54"	5-1/2"	2'-3"	2'-11"	8"	7'-6"	
60"	6"	2'-6"	3'-3"	8"	8'-0"	
66"	6-1/2"	2'-0"	1'-9"	8"	8'-6"	

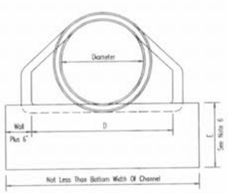
REINFORCEMENT					
ADJOINING PIPE DIAMETER INCH	BARREL SECTION REINFORCEMENT			FLARE SECTION REINFORCEMENT (ONE LAYER ONLY IN CTR. OF WALL)	
	CIRCULAR		ELLIPTICAL		
	INNER CAGE SQ. IN./LIN. FT	OUTER CAGE SQ. IN./LIN. FT		HORIZONTAL SQ. IN./LIN. FT	VERTICAL SQ. IN./LIN. FT
12"	0.07	——	——	0.048	0.048
15"	0.07	——	——	0.054	0.054
18"	0.07	——	0.07	0.060	0.060
21"	0.07	——	0.07	0.066	0.066
24"	0.07	——	0.07	0.072	0.072
27"	0.13	——	0.11	0.078	0.078
30"	0.14	——	0.12	0.084	0.084
36"	0.12	0.09	0.13	0.096	0.096
42"	0.15	0.12	0.17	0.108	0.108
48"	0.18	0.14	0.20	0.120	0.120
54"	0.22	0.16	0.24	0.132	0.132
60"	0.25	0.19	0.28	0.144	0.144
66"	0.31	0.23	0.34	0.156	0.156

GENERAL NOTES

1. Do not scale drawing. Follow dimensions.
2. Slight variations in both shape and dimensions from those shown may be accepted if approved by the Engineer.
3. Not more than three lift holes may be drilled or cast in the End Section for handling and laying.
4. Lift lugs or bars will be permitted in precast Cutoff Walls.
5. Cutoff Wall may be cast-in-place or precast.
6. Cutoff Wall to be constructed a minimum of 2' at intake end and 3' at outlet end or to rock.
7. For construction details refer to the Sewer Construction Details for "Chutes, Collars and Large Sewer Connections," Std. Dwg. C604.41.
8. The details shown are adapted from the Missouri Department of Transportation, Standard Drawings.



INSTALLATION DETAILS



END VIEW

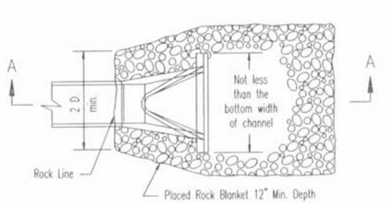
SAINT CHARLES COUNTY
HIGHWAY DEPARTMENT
ST. CHARLES, MISSOURI

SEWER CONSTRUCTION DETAILS

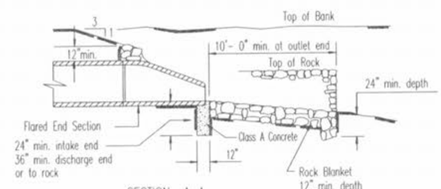
FLARED END SECTION
(PRECAST CONCRETE)

DATE: June, 2002

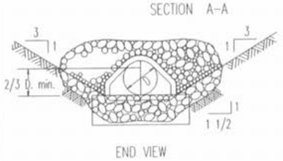
DRAWING
C604.40



PLAN VIEW



SECTION A-A



END VIEW

NOTE:
1. To be used at intake and discharge end of pipe. Grade of Rock Blanket to be adjusted accordingly.
2. Woven Geotextile Fabric required under Rock Blanket.

SAINT CHARLES COUNTY
HIGHWAY DEPARTMENT
ST. CHARLES, MISSOURI

SEWER CONSTRUCTION DETAILS

FLARED END SECTION
(INLET/OUTLET PROTECTION)

DATE: September, 2002

DRAWING
C604.42

CITY OF O'FALLON FILE NUMBER: 3104.01

REVISIONS	
09/24/05	REVISED PER CITY OF O'FALLON COMMENTS
11/02/05	APPROVED BY THE CITY OF O'FALLON
11/16/05	REVISED PER DEVELOPER

IMPROVEMENT PLANS
ELK RIDGE
STORM DETAILS 3

ST. CHARLES ENGINEERING & SURVEYING, INC.
801 S. FIFTH STREET, SUITE 202
ST. CHARLES, MO 63301
TEL. (636) 947-0607 FAX: (636) 947-2448

SCES

STATE OF MISSOURI
MICHAEL NEWELL
MEMBERS NUMBER E-22458
REGISTERED PROFESSIONAL ENGINEER

ORDER NO.
040486

DATE
04/15/05

D5

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