DETAILS
LOT 5
AMBER MEADOWS

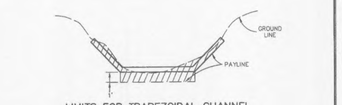
00-11289D — 9-13-07

ROUND PIPE				HORIZONTAL ELLIPTICAL PIPE			
INSIDE DIAMETER OF PIPE (INCHES)	"W" PAYLINE WIDTH OF TRENCH (INCHES)	"W" PAYLINE WIDTH OF TRENCH (FEET)	PAY-VOLUMES CU. FT. PER FT. CONCRETE ENCASEMENT	INSIDE DIMENSIONS OF PIPE (INCHES)	"W" PAYLINE WIDTH OF TRENCH (INCHES)	"W" PAYLINE WIDTH OF TRENCH (FEET)	PAY-VOLUMES CU. FT. PER FT. CONCRETE ENCASEMENT
4	30	2.50	3.28				
6	30	2.50	3.59				
8	30	2.50	3.87				
10	30	2.50	4.09				
12	30	2.50	4.25				
15	36	3.00	5.55				
18	36	3.00	5.77	14 x 23	41	3.42	5.94
21	39	3.25	6.61				
24	42	3.50	7.39	19 x 30	49	4.08	7.68
27	45	3.75	8.18	22 x 34	53	4.42	8.61
30	49	4.08	9.30	24 x 38	58	4.83	9.70
33	53	4.42	10.53	27 x 42	62	5.17	10.71
36	56	4.67	11.43	29 x 45	66	5.50	11.72
39	DISCONTINUED			32 x 49	71	5.92	13.14
42	63	5.25	13.38	34 x 53	75	6.25	14.05
48	70	5.83	15.87	38 x 60	83	6.92	16.18
54	77	6.42	18.15	43 x 68	92	7.67	18.81
60	84	7.00	20.73	48 x 76	101	8.42	21.59
66	91	7.58	23.45	53 x 83	109	9.08	24.35
72	98	8.17	26.37	58 x 91	118	9.83	27.45
78	105	8.75	29.39	63 x 98	126	10.50	30.50
84	112	9.33	32.57	68 x 106	135	11.25	33.91
90	119	9.92	35.90	72 x 113	143	11.92	36.99
96	126	10.50	39.37	77 x 121	152	12.67	40.69
102	133	11.08	42.99	82 x 128	160	13.33	44.45
108	140	11.67	46.75	87 x 136	168	14.00	47.79
114	147	12.25	50.66	92 x 143	176	14.67	51.70
120	154	12.83	54.72	97 x 151	185	15.42	56.01
126	161	13.42	58.92				
132	168	14.00	63.27	106 x 166	202	16.83	64.48
144	182	15.17	72.40	116 x 180	218	18.17	73.59

TABLE 1
PAYLINE WIDTHS OF TRENCH AND PAY-QUANTITIES OF CONCRETE

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction

Dr. B.E.B. | Ch. J.C.K. | 2000 | SHEET 1

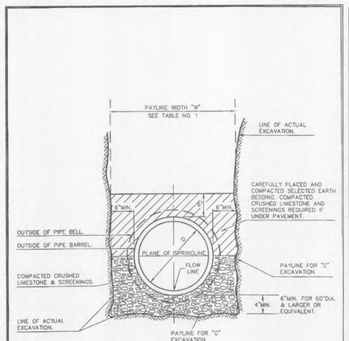


NOTE:
PAYLINE FOR ANY OTHER TYPE OF CHANNEL EXCAVATION SHALL BE THE EXACT SHAPE OF THE SUBGRADE.

PAYLINE LIMITS FOR EXCAVATION

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction

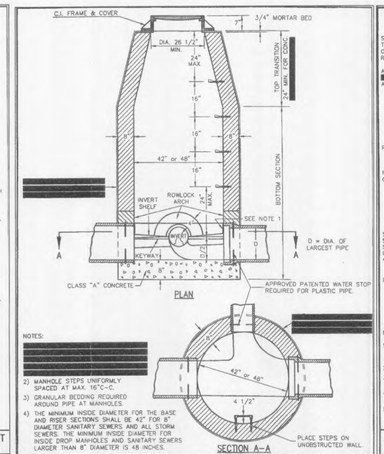
Dr. W.S.H. | Ch. J.C.K. | 2000 | SHEET 2



PIPE BEDDING CLASS "C" (MODIFIED FOR REINFORCED CONCRETE PIPE)

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction

Dr. W.S.H. | Ch. J.C.K. | 2000 | SHEET 5

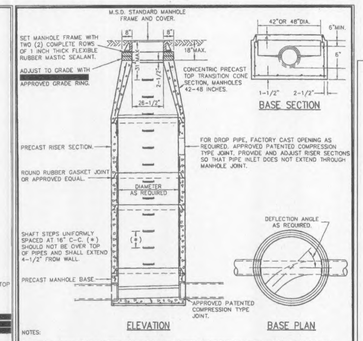


NOTES:
2) MANHOLE STEPS UNIFORMLY SPACED AT MAX. 16"C-C.
3) GRANULAR BEDDING REQUIRED AROUND PIPE AT MANHOLES.
4) THE MINIMUM INSIDE DIAMETER FOR THE BASE AND RISER SECTIONS SHALL BE 42" FOR 8" DIAMETER SANITARY SEWERS AND ALL STORM SEWERS. THE MINIMUM INSIDE DIAMETER FOR INSIDE DROP MANHOLES AND SANITARY SEWERS LARGER THAN 8" DIAMETER IS 48 INCHES.

LINE MANHOLE PIPE SEWERS 8"–24" DIA.

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction

Dr. WSH/SAM | Ch. J.C.K. | 2000 | SHEET 10

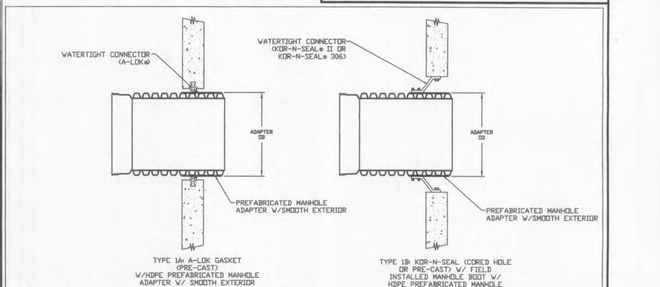


NOTES:
1) THE MINIMUM INSIDE DIAMETER FOR THE BASE AND RISER SECTIONS SHALL BE 42 INCHES FOR 8 INCH DIAMETER SANITARY SEWERS AND ALL STORM SEWERS. THE MINIMUM INSIDE DIAMETER FOR SANITARY SEWERS LARGER THAN 8 INCH DIAMETER IS 48 INCHES. MANHOLE SHALL MEET ASTM C-478 REQUIREMENTS.
2) FLOWLINE ELEVATION OF INCOMING PIPES SHALL BE 0.1 INCH HIGHER THAN THAT OF OUTGOING PIPE.
3) PIPE SIZES LARGER THAN 24 INCH DIAMETER MAY REQUIRE MANHOLE DIAMETERS OF 60 INCH, 72 INCH OR 96 INCH AS DETERMINED BY OUTSIDE DIAMETERS AND ORIENTATIONS OF CONNECTING PIPES.
4) ECCENTRIC CONES SHALL BE USED ON DIAMETERS 60 INCH AND LARGER. STEPS SHALL EXTEND DOWN VERTICAL WALL OF CONE.
5) PRIOR TO FABRICATION, SHOP DRAWINGS SHALL BE SUBMITTED TO THE DISTRICT FOR APPROVAL OF MANHOLES ON PIPE DIAMETERS LARGER THAN 24 INCH AND ALSO FOR THOSE STRUCTURES WITH A DROP PIPE CONNECTION.

PRECAST CONCRETE MANHOLE

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction

Dr. WSH/SAM | Ch. J.C.K. | 2000 | SHEET 21



TYPE 1A® A-LOK GASKET (PRE-CAST) W/HDPE PREFABRICATED MANHOLE ADAPTER W/ SMOOTH EXTERIOR

TYPE 1B® KOR-N-SEAL (CORED HOLE OR PRE-CAST) W/ FIELD INSTALLED MANHOLE BOOT W/ HDPE PREFABRICATED MANHOLE ADAPTER W/ SMOOTH EXTERIOR

SEE STANDARD DETAIL STD-201 AND TECHNICAL NOTE 5.04 HDPE CONNECTIONS TO MANHOLES AND STRUCTURES FOR INSTALLATION RECOMMENDATIONS.

PIPE SIZE(CM)	ADAPTER ID (IN)	ADS PRODUCT CODES			KOR-N-SEAL®		A-LOK RING®	
	A-PROFILE	I-PROFILE	A-PROFILE	H-PROFILE	SERIES 1 OR SERIES 3061	SERIES 306	A-PROFILE	H-PROFILE
12	14.75	14.45	12032NWB	12024NWH	3106-150-V-S	N/A	480	475
15	18.0	17.65	15032NWB	15024NWH	3106-200-V-S	3306-02	590	580
18	21.75	21.0	18032NWB	18024NWH	3206-02	3306-03	710	710
24	28.57	28.9	24032NWB	24024NWH	3206-32	3306-32	915	930
30	35.93	36.0	30032NWB	30024NWH	3206-46	3306-46	1180	1180
36	41.85	46.25	36032NWB	36024NWH	3206-46	3306-46	1359	1360
42	48.52	48.75	42032NWB	42024NWH	3206-52L	3306-52L	1560	1570
48	54.66	55.75	48032NWB	48024NWH	3206-58L	3306-58L	1745	1790
54	N/A	61.75	N/A	CUSTOM	3206-64L	N/A	1940	1940
60	67.46	68.05	60032NWB	60024NWH	3206-72	N/A	2170	2170

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ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

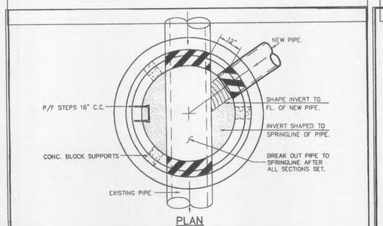
REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
1	UPDATED DRAWING	TJR	02/01/07	CKS
		BY	MM/DD/YY	CHK'D

NOTES ALL DIMENSIONS ARE IN U.S. FEET.

DIA. DET/PET SYSTEM
WATERTIGHT STRUCTURE CONNECTION TYPE 1 DETAIL
DRAWING NUMBER: STD-204A

ADS — 4640 TRUEMAN BLVD. HILLIARD, OHIO 43026 — ADVANCED DRAINAGE SYSTEMS, INC.

DRAWN: CKS — 02/01/07
CHECKED: CKS — 02/15/06
SCALE: NTS
SHT: 1 OF 1

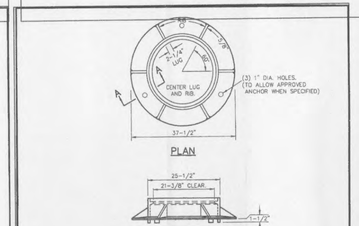


NOTE:
WATER STOP REQUIRED FOR P.V.C.

PRECAST MANHOLE ON EXIST. PIPE W/CONTINUOUS FLOW ONLY

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction

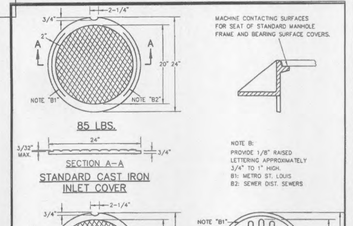
Dr. S.A.M. | Ch. P.W.S. | 2000 | SHEET 22



CAST IRON MANHOLE FRAME

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction

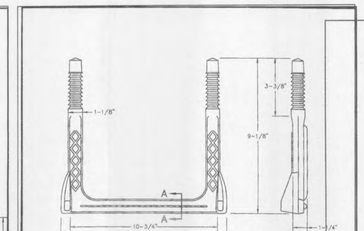
Dr. DAB/SAM | Ch. J.C.K. | 2000 | SHEET 52



CAST IRON COVERS MANHOLES AND INLETS

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction

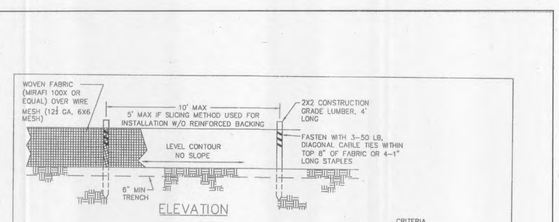
Dr. ROW/SAM | Ch. J.C.K. | 2000 | SHEET 53



MANHOLE STEP FOR PRECAST & CAST-IN-PLACE MANHOLE

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction

Dr. D.A.B. | Ch. J.C.K. | 2000 | SHEET 58



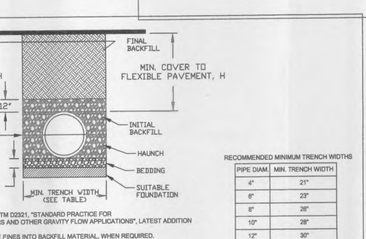
NOTE: IF FABRIC IS INSTALLED BY EQUIPMENT DESIGNED TO SLICE INTO THE GROUND, THE TRENCH IS NOT REQ'D.

CRITERIA
1. SILT FENCE SHALL BE 30 INCHES HIGH.
2. SILT FENCE SHALL NOT BE USED FOR CONCENTRATED FLOWS.
3. GEOSYNTHETIC REINFORCED SILT FENCE BACKING MAY BE USED IN LIEU OF WIRE MESH.

St. Charles County
Erosion & Sediment Controls
Standard Drawings

SILT FENCE INSTALLATION
SHEET FLOW (ONLY)

DATE: MAY 2005 | DRAWING: ESC-5



RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 12" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

MINIMUM RECOMMENDED COVER BASED ON LOADING CONDITIONS

	SURFACE LIVE LOADING CONDITION	
PIPE DIAM.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12"-48"	12"	48"
54"-60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

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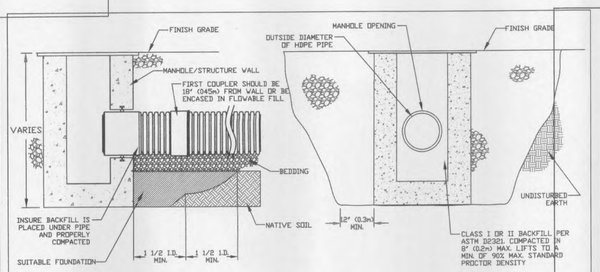
REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
1	UPDATED DRAWING	TJR	02/01/07	CKS
		BY	MM/DD/YY	CHK'D

NOTES ALL DIMENSIONS ARE IN U.S. FEET.

DIA. DET/PET SYSTEM
TYPICAL TRENCH DETAIL
DRAWING NUMBER: STD-101

ADS — 4640 TRUEMAN BLVD. HILLIARD, OHIO 43026 — ADVANCED DRAINAGE SYSTEMS, INC.

DRAWN: CKS — 02/01/07
CHECKED: CKS — 02/15/06
SCALE: NTS
SHT: 1 OF 1



NOTES:

1. MAXIMUM INSERTION ANGLE SHALL NOT EXCEED REQUIREMENTS AS SPECIFIED BY THE MANUFACTURER.
2. SEE STANDARD DETAILS STD-202 (A-B) THROUGH STD-204 (A-E) FOR STRUCTURE CONNECTIONS, PRODUCT INFORMATION AND DIMENSIONAL PIPE DATA. INSTALLATION RECOMMENDATIONS ARE ALSO SPECIFIED IN TECHNICAL NOTE 5.04- HDPE CONNECTIONS TO MANHOLES AND STRUCTURES.
3. PERFORMANCE HIGHLY DEPENDENT ON INSTALLATION. CONTRACTOR MUST INSURE MANHOLE GASKET IS UNIFORMLY SEATED AROUND STRUCTURE ADAPTER. EXTRA PRECAUTIONSMUST BE TAKEN TO PREVENT DIFFERENTIAL SETTLEMENT BETWEEN THE PIPE AND MANHOLE.

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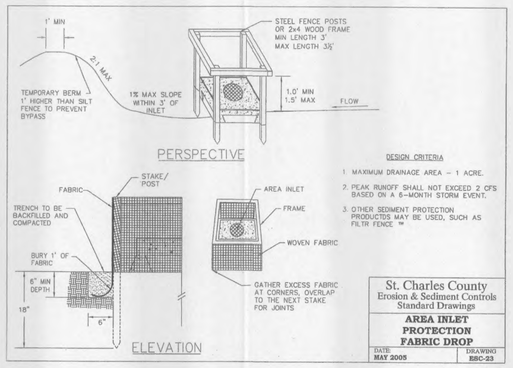
REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
1	UPDATED DRAWING	TJR	02/01/07	CKS
		BY	MM/DD/YY	CHK'D

NOTES ALL DIMENSIONS ARE IN U.S. FEET.

DIA. DET/PET SYSTEM
STRUCTURE CONNECTION INSTALLATION DETAIL
DRAWING NUMBER: STD-201

ADS — 4640 TRUEMAN BLVD. HILLIARD, OHIO 43026 — ADVANCED DRAINAGE SYSTEMS, INC.

DRAWN: CKS — 02/01/07
CHECKED: CKS — 02/15/06
SCALE: NTS
SHT: 1 OF 1



DESIGN CRITERIA
1. MAXIMUM DRAINAGE AREA – 1 ACRE.
2. PEAK RUNOFF SHALL NOT EXCEED 2 CFS BASED ON A 5-MONTH STORM EVENT.
3. OTHER SEDIMENT PROTECTION PRODUCTS MAY BE USED, SUCH AS FILTR FENCE ™

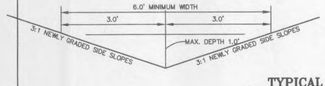
St. Charles County
Erosion & Sediment Controls
Standard Drawings

AREA INLET PROTECTION FABRIC DROP

DATE: MAY 2005 | DRAWING: ESC-23

Maximum Discharge (Q) = 4.00 cfs
Maximum Velocity (V) = 4.00 ft/sec
N = 0.020 (soil)
Maximum side slopes = 3 (horizontal) :1 (vertical)

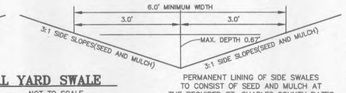
Longitudinal Slope (%)	Discharge (cfs)	Velocity (ft/sec)	Depth (ft)
0.5	4	2.57	0.72
1.0	4	3.33	0.63
2.0	2.94	4.00	0.50
3.0	1.60	4.00	0.37
4.0	1.04	4.00	0.29
5.0	0.74	3.99	0.25
6.0	0.56	3.99	0.22
7.0	0.45	4.00	0.19
8.0	0.37	4.00	0.17
9.0	0.31	4.00	0.16
10.0	0.26	3.99	0.15



TYPICAL YARD SWALE
NOT TO SCALE

Maximum Discharge (Q) = 4.00 cfs
Maximum Velocity (V) = 4.00 ft/sec
N = 0.050 (grass)
Maximum side slopes = 3 (horizontal) :1 (vertical)

Longitudinal Slope (%)	Discharge (cfs)	Velocity (ft/sec)	Depth (ft)
0.5	1.30	0.98	0.67
1.0	1.84	1.38	0.67
2.0	2.60	1.95	0.67
3.0	3.19	2.39	0.67
4.0	3.68	2.76	0.67
5.0	4.00	3.06	0.66
6.0	4.00	3.28	0.64
7.0	4.00	3.47	0.62
8.0	4.00	3.65	0.60
9.0	4.00	3.82	0.59
10.0	4.00	3.97	0.58



PERMANENT LINING OF SIDE SWALES TO CONSIST OF SEED AND MULCH AT THE REQUIRED ST. CHARLES COUNTY RATES

STATE OF MISSOURI
CLIFFORD J. HEITMANN
NUMBER E-29210
REGISTERED PROFESSIONAL ENGINEER

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.

2/2

E:\DWG\A11000PLUS\11289-FIESE ROAD TRACT\Construction\Lot 5 con\11289 lot 5con.dwg, 24 x 36 Construction, 2/5/2008 1:22:00 PM, Sta 72 MJT