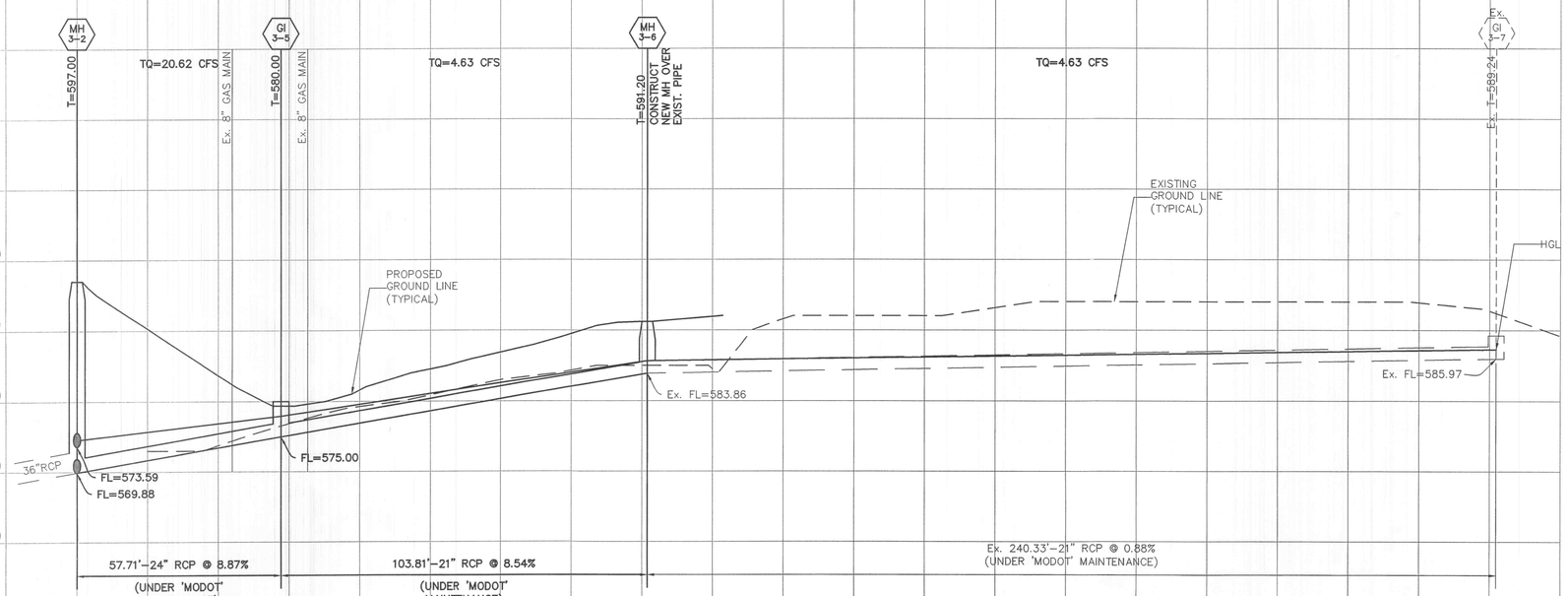
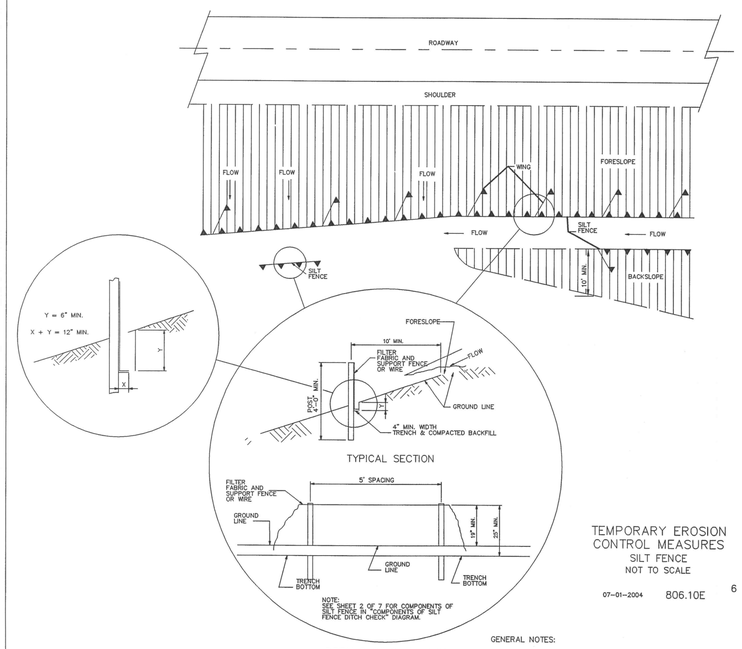


STORM SEWER PROFILES

Scale: 1"=20' Horizontal
1"=10' Vertical



DETAILS OF SILT FENCE

TEMPORARY EROSION CONTROL MEASURES

SILT FENCE
NOT TO SCALE

07-01-2004 806.10E

6

7

GENERAL NOTES:

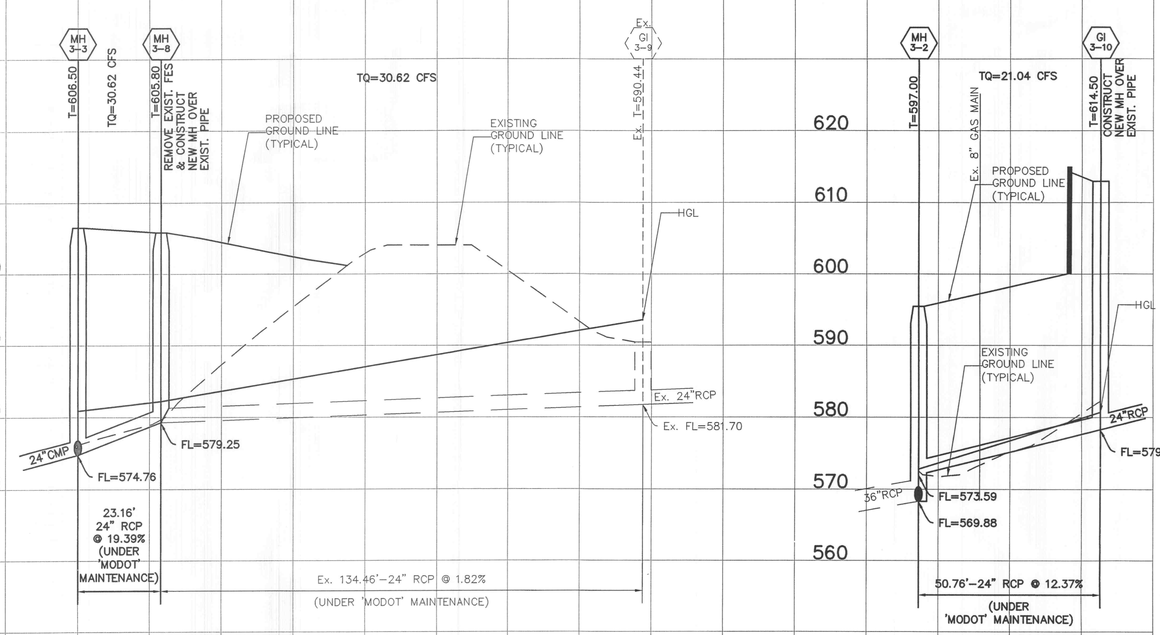
USE SILT FENCE FOR FILL HEIGHTS GREATER OR EQUAL TO 10 FEET. ON ALL FILLS GREATER THAN 10 FEET HIGH, MID-SLOPE RUNS OF SILT FENCE SHOULD BE CONSIDERED.

MINIMUM LONGITUDINAL SPLICE OVERLAP SHALL BE 2' WITH A POST AT EACH END.

SECURE FABRIC TO POSTS.

INSTEAD OF SILT FENCE ACROSS DRAINAGE DITCHES AND DRAINS, DITCH CHECK SHALL BE USED AS SHOWN ON PLANS OR AS DIRECTED BY ENGINEER.

SILT FENCE WING SPACING APPROXIMATELY TWICE DITCH CHECK SPACING.



STORM SEWER PROFILES

```
                                DESCRIPTION =
                                SYSTEM NUMBER =          3
                                RETURN PERIOD (YR) =     15
                                RAINFALL DURATION (MIN) = 20
                                RUNOFF FACTOR MULTIPLIER = 1.00
                                STARTING HGL ELEV. (FT) = 558.56
                                USE ST. LOUIS CO./MSD LOSSES? = Y
```

STRUCTURES-UPR/LWR	FLOWLINES-UPR/LWR	DIAM/ANGL	LENGTH/CURVES?	N	AREA/PI	QADD	QTOTAL/QFULL	CONS/REQDS	YN/YC	PARTIAL-V/Y	FULL-V/VHEAD	LOSSES-F/C	LOSSES-V/T	COND-UP/LWR	HGL-UPR/LWR	UPPER STR TOP/FREEBD
GI 3-10	579.87	24	50.76	0.013	1.96	7.55	21.04	12.37	0.70	21.43	6.70	7.58	0.93	OF	582.80	614.50
MH 3-2	573.59	48	N		3.85		79.79	0.86	1.64	0.70	0.70	0.00	0.00	ND	574.29	31.70
GI 3-7	585.97	21	240.33	0.013	1.96	4.63	4.63	0.08	0.67	1.92	1.92	1.01	0.62	ND	587.26	589.24
MH 3-6	583.86	39	N		2.36		14.89	0.08	0.79	1.77	0.06	0.00	0.00	FP	585.63	1.98
MH 3-6	583.86	21	103.81	0.013	0.00	0.00	4.63	8.54	0.37	1.92	1.92	7.73	0.00	OF	585.63	591.20
AI 3-5	575.00	65	N		0.00		46.42	0.08	0.79	2.88	0.06	0.00	0.02	FP	577.88	5.57
AI 3-5	575.00	24	57.71	0.013	3.92	8.43	20.62	8.87	0.76	6.56	6.56	3.02	0.87	OF	577.88	580.00
MH 3-2	569.88	90	N		2.15		67.56	0.83	1.63	4.10	0.67	0.00	0.01	FP	573.98	2.12
GI 3-9	581.70	24	134.46	0.013	8.31	30.62	30.62	1.82	2.00	9.75	9.75	2.45	1.97	FP	585.76	590.44
MH 3-8	579.25	5	N		2.54		30.62	1.82	1.87	2.09	1.68	0.00	0.00	OF	581.34	4.68
MH 3-8	579.25	24	23.16	0.013	0.00	0.00	30.62	19.39	0.76	9.75	9.75	2.57	0.00	OF	581.34	605.80
MH 3-3	574.76	90	N		0.00		99.88	1.82	1.87	3.92	1.48	0.00	0.09	FP	578.68	24.46
MH 3-4B	614.00	15	202.40	0.013	0.74	2.79	2.80	1.85	0.48	6.37	2.28	4.51	0.11	OF	615.36	620.50
MH 3-4A	610.26	86	N		3.80		8.81	0.19	0.67	0.48	0.08	0.00	0.00	ND	610.74	5.14
MH 3-4A	607.47	15	234.54	0.013	0.00	0.00	2.80	11.92	0.30	2.28	2.28	27.20	0.11	OF	608.83	616.76
MH 3-4	579.51	5	N		0.00		22.36	0.19	0.67	2.01	0.08	0.00	0.00	FP	581.52	7.93
MH 3-4	579.51	24	58.91	0.013	0.68	2.62	5.42	8.06	0.39	1.73	1.73	2.83	0.01	OF	581.52	615.00
MH 3-3	574.76	0	N		3.85		64.41	0.06	0.82	3.92	0.05	0.00	0.00	FP	578.68	33.68
MH 3-3	574.76	24	33.80	0.013	0.00	30.62	36.04	14.44	0.90	11.47	11.47	2.78	1.04	OF	578.68	606.50
MH 3-2	569.88	62	N		0.00		86.19	2.52	0.00	4.10	2.04	0.00	0.88	FP	573.98	27.82
MH 3-2	569.88	36	548.15	0.013	0.00	34.09	70.13	2.61	1.76	9.92	9.92	14.32	0.38	OF	573.98	597.00
FES 3-1	555.56	0	N		0.00		108.09	1.10	2.66	3.00	1.53	0.00	0.72	OJ	558.56	23.02

LEGEND		
UPR - AT UPPER END OF PIPE	YN - NORMAL DEPTH (FT)	COND - FLOW CONDITION CODE AT EACH END OF PIPE:
LWR - AT LOWER END OF PIPE	YC - CRITICAL DEPTH (FT)	FP - FULL PIPE FLOW
DIAM - PIPE DIAMETER (IN)		OC - OPEN CHANNEL FLOW
ANGL - DOWNSTREAM DEFLECTION (DEG)	PARTIAL - CONDITIONS AT LOWER END OF PIPE	ND - SET TO NORMAL DEPTH
LENGTH - PIPE LENGTH (FT)	FULL - CONDITIONS ASSUMING FULL PIPE FLOW	CD - SET TO CRITICAL DEPTH
CURVES - CURVES IN PIPE?	V - VELOCITY (FPS)	OF - INITIALLY SET TO OPEN CHANNEL DEPTH
N - MANNING'S ROUGHNESS FACTOR	Y - DEPTH (FT)	THEN SET TO FULL PIPE FLOW
AREA - UPPER DRAINAGE AREA (AC)	VHEAD - VELOCITY HEAD (FT)	OJ - OPEN CHANNEL FLOW BUT HYDRAULIC
PI - RUNOFF FACTOR (CFS/AC)		JUMP WILL OCCUR DOWNSTREAM
QADD - ADDED FLOWRATE (CFS)	LOSSES - MAJOR AND MINOR HEAD LOSSES	
QTOTAL - TOTAL FLOWRATE (CFS)	F - FRICTION IN PIPE (FT)	HGL - HYDRAULIC GRADE LINE ELEVATION (FT)
QFULL - PIPE FULL CAPACITY (CFS)	C - CURVE IN PIPE (FT)	
CONS - CONSTRUCTION SLOPE OF PIPE (%)	V - VELOCITIES IN UPPER STRUCTURE (FT)	TOP - ELEVATION OF TOP OF UPPER STRUCTURE (FT)
REQDS - MINIMUM REQUIRED SLOPE (%)	T - TURNS IN UPPER STRUCTURE (FT)	FREEBD - DIFFERENCE BTWN UPPER HGL AND TOP (FT)

NOTES:
1. FRICTION LOSSES COMPUTED WITH MANNING'S FORMULA IF FULL PIPE FLOW OR BACK-CALCULATED IF OPEN CHANNEL FLOW (SIMULATING FLOW PROFILE)
2. HGL AT UPPER STRUCTURE INCLUDES STRUCTURE LOSSES CALCULATED WITH ACTUAL INFLOWING VELOCITIES USING ITERATIVE PROCEDURE
3. VELOCITY AND TURN STRUCTURE LOSS COMPONENTS ONLY COMPUTED FOR INCOMING PIPES WITH INVERT ELEVATIONS BELOW OUTLET CROWN ELEVATION

Call Before you DIG
TOLL FREE
1-800-344-7483
MISSOURI ONE-CALL SYSTEM INC.
MODOT (314) 340-4100

Underground facilities, structures and utilities have been plotted from available surveys, records and information and, therefore, do not necessarily reflect the actual existence, nonexistence, size, type, number of, location or depth of these facilities, structures and utilities.

The Contractor shall be responsible for verifying the actual location of all underground facilities, structures and utilities, either shown or not shown on these plans. The underground facilities, structures and utilities shall be located in the field prior to any grading, excavation or construction of improvements. Should the actual location, size or depth of any underground facilities, structures or utilities differ from those indicated on these plans, the Contractor shall immediately notify Clayton Engineering prior to proceeding with the installation of any proposed improvements in the area where the difference exists. These provisions shall in no way absolve any party from complying with the Underground Facility Safety and Damage Prevention Act, Chapter 319, RSMO.

The signed and sealed original of this drawing is on file at the offices of The Clayton Engineering Company, Inc. The signed and sealed original is the official document and shall take precedence over any digital version.

2	10-05-05	SLH	REVISED PER CITY OF O'FALLON COMMENTS
1	08-16-05	SLH	REVISED PER MODOT COMMENTS

REVISIONS

STORM SEWER PROFILES
PHILLIPS 66
879 BRYAN ROAD O'FALLON, MO. 63366

Prepared for:
U-GAS STL, INC.
895 BOLGER CT.
FENTON, MO 63026
314-343-9770

the clayton engineering company, inc.
ENGINEERS • SURVEYORS • PLANNERS
11920 WESTLINE INDUSTRIAL DRIVE
ST. LOUIS, MISSOURI 63146
(314) 692-8888 FAX: (314) 692-8688
clayton-engineering.com

Designed	SWQ
Drawn	SLH, MRW
Checked	MJV
Date	07/06/05
Project Number	04221
Sheet Number	5 of 6

F.S. F.B. 1214 SUR FILE: G:\04XXX\04221\PLANS\VWYPROFILE.DWG PLOTTED: 10/05/05 14:52 BY: SLH