



TRANSPORTATION CABINET

Frankfort, Kentucky 40622
www.transportation.ky.gov/

Steven L. Beshear
Governor

Michael W. Hancock, P.E.
Secretary

September 10, 2012

CALL NO. 316
CONTRACT ID NO. 121326
ADDENDUM # 1

Subject: Cumberland County, JL04 029 0061 NEW-LOC
Letting September 14, 2012

- (1) Revised - Plan Sheets - R1, R2e, R2f, & R2g
- (2) Added - Plan Sheets - U1 through U8
- (3) Revised - Table of Contents - Page 2 of 70
- (4) Revised - Special Notes - Pages 16-19 of 70
- (5) Added - Specifications & Contract Documents - Pages 19(a)-19(eee) of 70
- (6) Added - Department of the Army - Pages 34(a)-34(m) of 70
- (7) Revised - Bid Items - Pages 62-70 of 70

Proposal revisions are available at <http://transportation.ky.gov/Construction-Procurement/>.

Plan revisions are available at <http://www.lynnimaging.com/kytransportation/>.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

A handwritten signature in blue ink that reads "Ryan Griffith".

Ryan Griffith
Director
Division of Construction Procurement

RG:ks
Enclosures

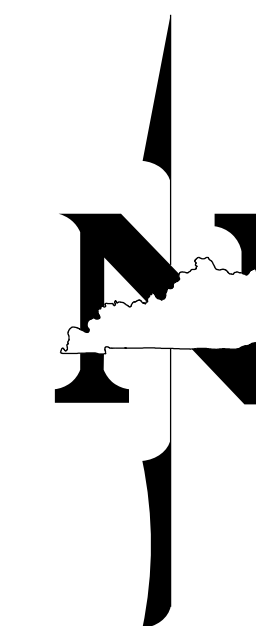


An Equal Opportunity Employer M/F/D

Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS

PLANS OF PROPOSED PROJECT

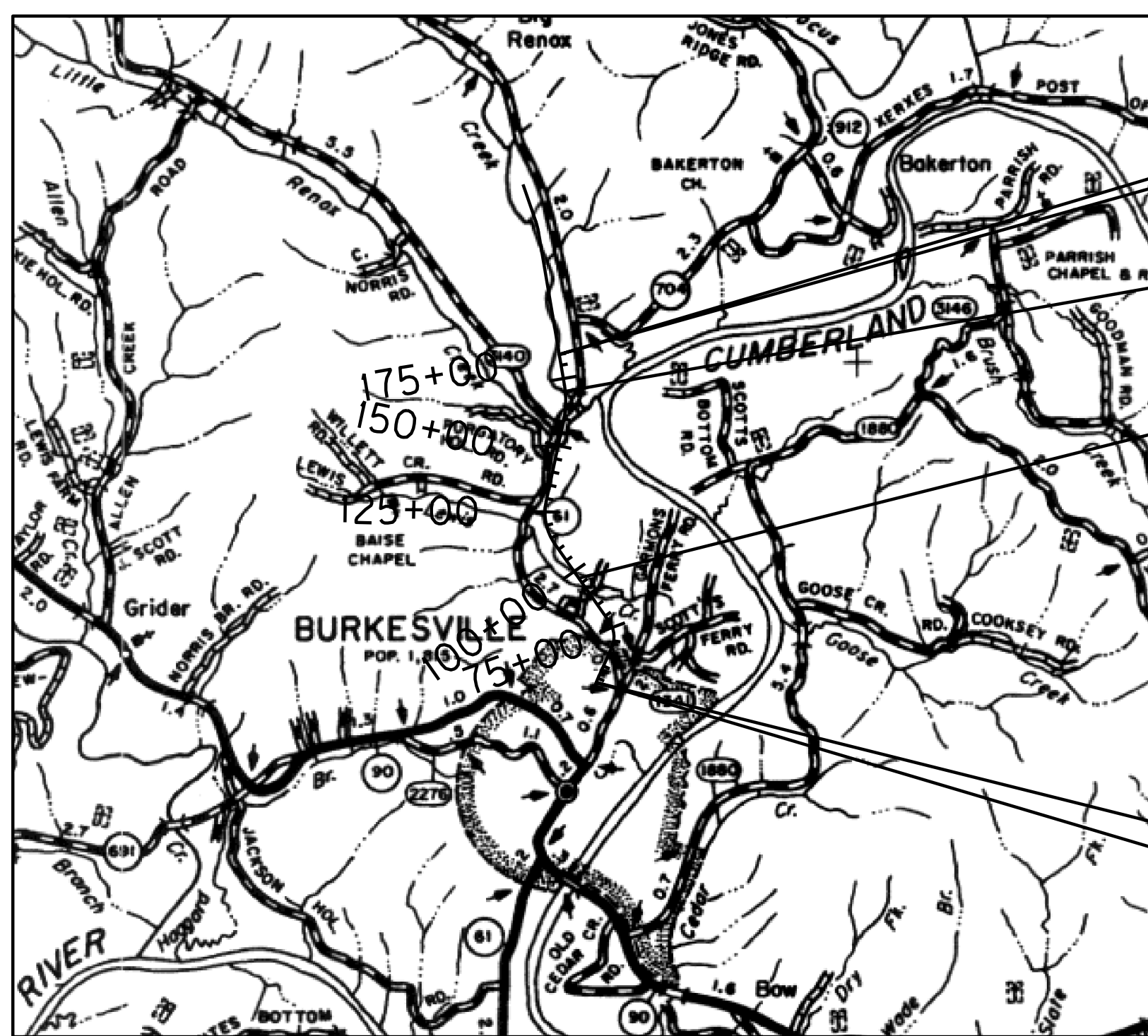
CUMBERLAND COUNTY KY 61 RELOCATION (SECTION 1) GRADE, DRAIN AND SURFACING PLANS JL04 029 0061 NEW LOCATION



SHEET NO.	DESCRIPTION
R1	LAYOUT SHEET
R2-R2L *	TYPICAL SECTIONS-SUMMARY OF QUANTITIES
R3-R34	PLAN AND PROFILE SHEETS
R35-R36	RIGHT OF WAY SUMMARY SHEETS
R37-R41	RIGHT OF WAY STRIP MAP SHEETS
R42-R49	COORDINATE CONTROL SHEETS
R50-R65	TRAFFIC CONTROL SHEETS
R66-R76B	DETAIL SHEETS
R77-R82	EROSION CONTROL SHEETS
R83-R94	SOIL PROFILE SHEETS
R95-R116	PIPE DRAINAGE SHEETS
S1-S8	STRUCTURE PLANS # 26710 STA. 70+65
S1-S8	STRUCTURE PLANS # 26711 STA. 141+30
S1-S22	STRUCTURE PLANS # 26712 STA. 97+03.57
S1-S23	STRUCTURE PLANS # 26713 STA. 170+24.47
U1-U8	UTILITY PLANS (GAS)
X1-X161	CROSS SECTION SHEETS
*R2J	NOT USED

SHEETS NOT INCLUDED IN TOTAL SHEETS
R2A-R2L, R7A, R76A-R76B

STANDARD DRAWINGS			
NUMBER			
RBC-001-10	RDB-273-05	RDI-002-04	RDX-300-03
RBC-002-02	RDB-410-05	RDI-003-04	RFC-002-04
RBC-003-07	RDB-430-04	RDI-011-02	RFQ-005-05
RBI-001-10	RDD-040-04	RDI-016-02	RG5-001-06
RBI-002-06	RDH-020-03	RDI-020-08	RGX-001-05
RBR-001-11	RDH-110-02	RDI-021	RGX-040-01
RBR-005-10	RDH-120-02	RDI-025-04	RGX-100-05
RBR-010-05	RDH-210-03	RDI-026	RGX-105-07
RBR-015-04	RDH-212-02	RDI-035-01	RPM-100-09
RBR-016-04	RDH-214-03	RDI-100-04	RPM-110-06
RBR-035-10	RDH-216-02	RDI-120-03	RPM-150-07
RDB-004-09	RDH-310-04	RDM-001-06	RPM-152-07
RDB-006-07	RDH-320-04	RDM-100-02	RPM-170-08
RDB-011-07	RDH-330-04	RDP-001-05	TTC-150-02
RDB-105-05	RDH-340-05	RDP-005-04	TTD-110-01
RDB-106-04	RDH-1010-02	RDP-006-03	TTD-120-01
RDB-155-01	RDH-1015-02	RDP-010-08	TTD-125-01
RDB-160-01	RDH-1135-02	RDX-210-02	BGX-006-09
RDB-270-08	RDH-1205-02	RDX-220-04	BGX-012-02
RDB-271-04	RDH-1324-03	RDX-225	BGX-015-02
RDB-272-06	RDI-001-09	RDX-230	BGX-017-01



END CONSTRUCTION
STA. 184+00

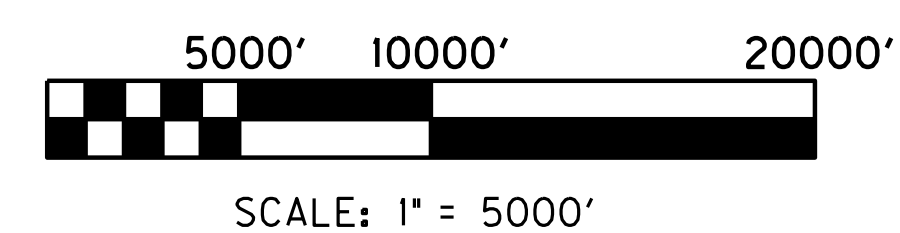
STA. 170+24.47 CONSTRUCT
115' - 150' P.C.I.B. BRIDGE

STA. 97+03.57 CONSTRUCT
70' - 70' P.C.I.B. BRIDGE

BEGIN CONSTRUCTION
STA. 53+20.79

NOTE:
ANY WORK BEING PERFORMED FROM
STATION 165+00 TO STATION 171+00
WILL REQUIRE PRIOR NOTIFICATION
OF THE DIVISION OF ENVIRONMENTAL
ANALYSIS.

THE CONTROL OF ACCESS ON THIS
PROJECT SHALL BE BY PERMIT



LAYOUT MAP

FILE NAME: F:\WORK\CUMBERLAND KY 61\08-0156-10\CONTRACT PLANS AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\ROAD001.S.DGN
USER: ryan
DATE PLOTTED: May 4, 2012
E-SHEET NAME:
MicroStation v8.11.7.180

DESIGN CRITERIA	
CLASS OF HIGHWAY	RURAL MAJOR COLLECTOR
TYPE OF TERRAIN	ROLLING
DESIGN SPEED	55 MPH (RURAL), 35 MPH (URBAN)
REQUIRED NPSD	495 FT/55M.P.H. 250 FT/35M.P.H.
REQUIRED PSD	N/A
LEVEL OF SERVICE	
ADT PRESENT (2007)	1500
ADT FUTURE (2027)	2500
DHV (2027)	280
D %	50
T %	5
GEOGRAPHIC COORDINATES	
LATITUDE	36 DEGREES 49 MINUTES 00 SECONDS NORTH
LONGITUDE	85 DEGREES 22 MINUTES 22 SECONDS WEST
DESIGNED	
% RESTRICTED SD	
LEVEL OF SERVICE	
MAX. DISTANCE W/O PASSING	

LENGTH	LIN. FT.	MILES	ADDED	DEDUCTED	FOR EQUALITIES	NOT INCLUDED	RAILROAD CROSSINGS NO.	LIN. FT.	BRIDGES	LIN. FT.
12674	2,400								405	

**Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS
COUNTY OF
CUMBERLAND**

ITEM NO. 8-158.10
PROJECT NUMBER: JL04 029 0061 NEW LOCATION
LETTING DATE:

RECOMMENDED BY: JOE GOSSAGE 05-07-2012
PROJECT MANAGER DATE:

PLAN APPROVED BY: [Signature] 05-09-2012
STATE HIGHWAY ENGINEER DATE:



COUNTY OF	ITEM NO.	SHEET NO.
CUMBERLAND	8-158.10	RI

REVISED 09-07-2012



Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS

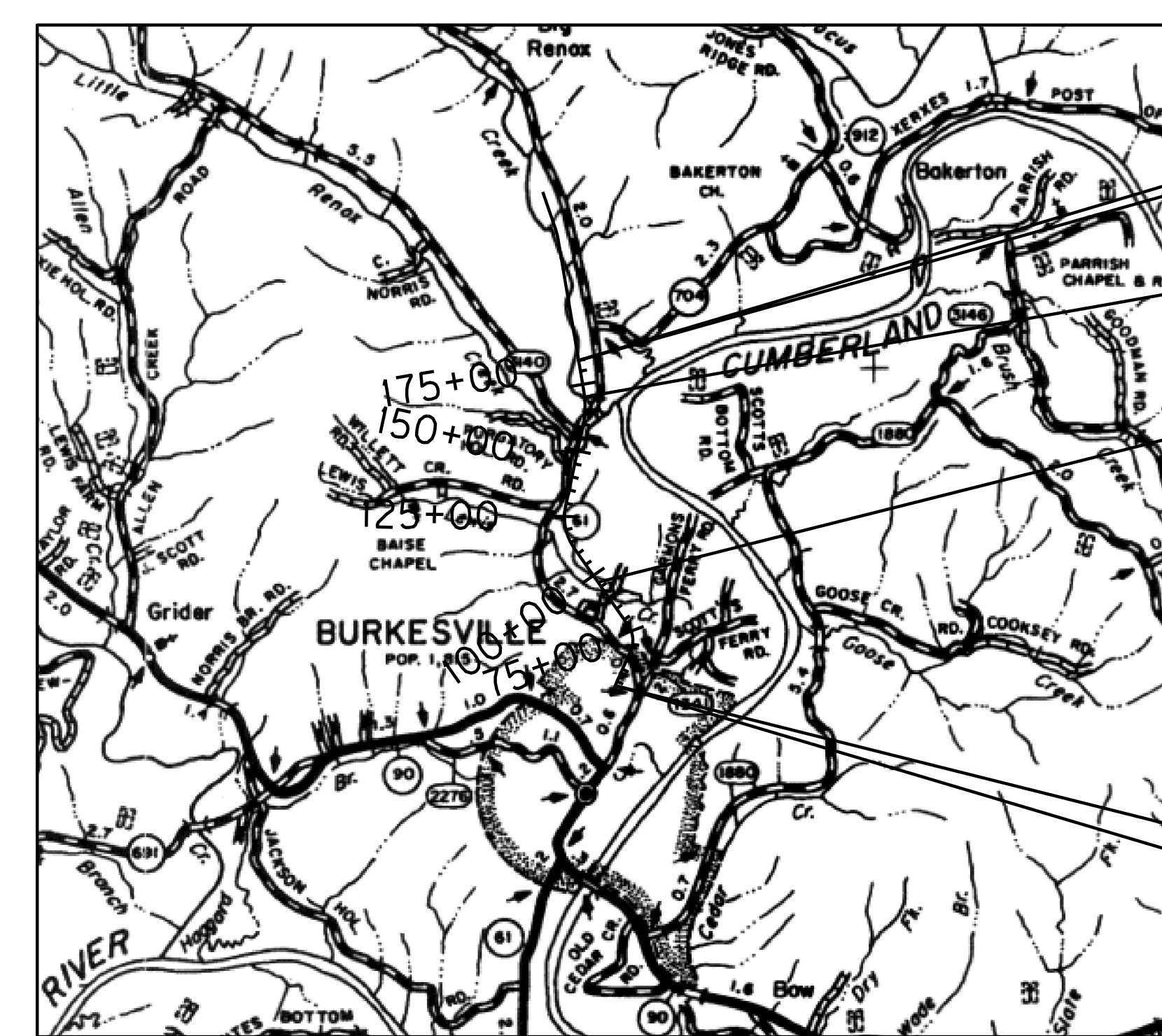
PLANS OF PROPOSED PROJECT

CUMBERLAND COUNTY KY 61 RELOCATION (SECTION 1) GRADE, DRAIN AND SURFACING PLANS JL04 029 0061 NEW LOCATION

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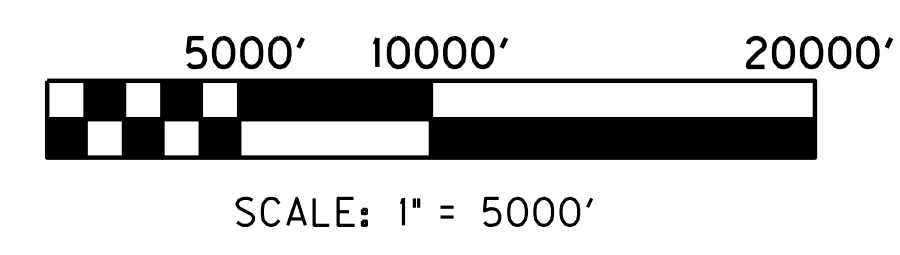
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RDB-271-04	RDH-1324-03	RDX-225	BGX-015-02
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LAYOUT MAP

FILE NAME: F:\WORK\CUMBERLAND KY 61\08-0156-10\CONTRACT PLANS AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\ROAD001.S.DGN
USER: rypn
DATE PLOTTED: May 4, 2012
E-SHEET NAME:
MicroStation v8.11.7.180

DESIGN CRITERIA	
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TYPE OF TERRAIN	ROLLING
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REQUIRED PSD	N/A
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ADT PRESENT (2007)	1500
ADT FUTURE (2027)	2500
DHV (2027)	280
D %	50
T %	5
GEOGRAPHIC COORDINATES	
LATITUDE	36 DEGREES 49 MINUTES 00 SECONDS NORTH
LONGITUDE	85 DEGREES 22 MINUTES 22 SECONDS WEST
DESIGNED	
% RESTRICTED SD	
LEVEL OF SERVICE	
MAX. DISTANCE W/O PASSING	

LENGTH	LIN. FT.	MILES	ADDED	DEDUCTED	FOR EQUALITIES	NOT INCLUDED	RAILROAD CROSSINGS NO.	LIN. FT.	BRIDGES	LIN. FT.
12674	2,400								405	

**Commonwealth of Kentucky
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ITEM NO. 8-158.10
PROJECT NUMBER: JL04 029 0061 NEW LOCATION
LETTING DATE:

RECOMMENDED BY: **JOE GOSSAGE** 05-07-2012
PROJECT MANAGER DATE:

PLAN APPROVED BY: *[Signature]* 05-09-2012
STATE HIGHWAY ENGINEER DATE:



PAVING AREAS

ITEM	S	Q	U	A	R	E	Y	A	R	D	S	TOTAL PROJECT	
													MAINLINE KY 61
1.25" CL2 ASPH. SURF. 0.380 PG64-22	58287		1757	1081	574	1001	1185			859	785	1667	67196
2.00" CL2 ASPH. BASE 1.000 PG64-22												1667	1667
3.00" CL2 ASPH. BASE 1.000 PG64-22										868	792		1660
3.25" CL2 ASPH. BASE 1.000 PG64-22	48988		1769	1087	578	1009							53431
3.50" CL2 ASPH. BASE 1.000 PG64-22	36858						1193						38051
4.50" CL2 ASPH. BASE 1.000 PG64-22	2702												2702
4" CRUSHED STONE BASE	9960		1769	1087	578	1009	1193					1732	17328
4.50" CRUSHED STONE BASE	26648									868	792	78	26648
6" CRUSHED STONE BASE	17166												17166
8" CRUSHED STONE BASE	1588												1588
FULL DEPTH CRUSHED STONE BASE (AVG. = 3.9')			402	208	138	254							1002
FULL DEPTH CRUSHED STONE BASE (AVG. = 6.75')	13312												13312
FULL DEPTH CRUSHED STONE BASE (AVG. = 6.70')										480	435		915
FULL DEPTH CRUSHED STONE BASE (AVG. = 6.90')													358
12" KENTUCKY COARSE AGGREGATE (#2s, #3s OR #23s)	13501												13501
4" TRAFFIC BOUND BASE												3039	3039

PAVING SUMMARY - PAVING ALTERNATE 1

ITEM CODE	ITEM	UNIT	MAINLINE KY 61	APPROACHES	ENTRANCES	DIVERSIONS	TOTAL PROJECT
00301	CL2 ASPH. SURF. 0.380 PG64-22	TON	4007	385	115	113	4620
00212	CL2 ASPH. BASE 1.000 PG64-22	TON	16521	1024	183	278	18006
00003	CRUSHED STONE BASE (1)	TON	23025	1663	425	934	26147 (9)
00078	KY COARSE AGGREGATE (#2s, #3s OR #23s) (2)	TON	8101				8101
00020	TRAFFIC BOUND BASE (1) **INCLUDES 200 TONS FOR MAINTENANCE OF TRAFFIC	TON			699		899
00008	CEMENT STABILIZED ROADBED	SY	42799	5636			48435
02542	CEMENT (4)	TON	832	110			942
00358	ASPHALT CURING SEAL (5)	TON	43	6			49
02702	SAND FOR BLOTTER (6)	TON	107	13			120
00100	ASPHALT SEAL AGGREGATE (7)	TON	67	9			76
00291	EMULSIFIED ASPHALT RS-2 (8)	TON	8	1			9
02599	FABRIC-GEOTEXTILE TYPE IV	SY	28500				28500
00190	LEVEL & WEDGING PG64-22	TON	1767				1767
10203ND	PAVEMENT ADJUSTMENT (ASPHALT) (10)	LP SUM					1
02200	ROADWAY EXCAVATION	CY					203022

NOTES

ALL ASPHALT MIXTURES SHALL BE ESTIMATED AT 110 LBS. PER SQ. YD. PER INCH OF DEPTH, UNLESS NOTED OTHERWISE.

- (1) ESTIMATED AT 115 LBS. PER SQ. YD. PER INCH OF DEPTH.
- (2) ESTIMATED AT 100 LBS. PER SQ. YD. PER INCH OF DEPTH.
- (3) ESTIMATED AT 95 LBS. PER SQ. YD. PER INCH OF DEPTH.

- (4) CEMENT ESTIMATED AT 6% DRY WEIGHT (108 PCF)
- (5) ASPHALT CURING SEAL ESTIMATED AT 2 LB PER SY
- (6) SAND FOR BLOTTER ESTIMATED AT 5 LB PER SY
- (7) ASPHALT SEAL AGGREGATE ESTIMATED AT 20 LB PER SY
- (8) EMULSIFIED ASPHALT ESTIMATED AT 2.4 LB PER SY
- (9) INCLUDES 100 TONS OF CRUSHED STONE BASE FOR MAINTENANCE OF TRAFFIC

(10) SEE PROPOSAL FOR SPECIAL ALTERNATE PAVEMENT BID

- PROJECT EARTHWORK TOTALS -

130,574	C.Y.	COM.
58,642	C.Y.	ROCK EXC.
7,233	C.Y.	TRANS. BENCH
1,644	C.Y.	EMB. BENCH
2,243	C.Y.	DT. LT.
1,606	C.Y.	DT. RT.
1,080	C.Y.	INLET/OUTLET DITCHES
203,022	C.Y.	TOTAL RDWY. EXC.
145,873	C.Y.	EMB.
7,233	C.Y.	TRANS. BENCH
1,644	C.Y.	EMB. BENCH
89	C.Y.	REFILL
154,839	C.Y.	TOTAL EMB.

PAVEMENTS ALTERNATES APPLY TO STA. 72+20.79 - STA. 168+92 ONLY

**PAVING SUMMARY
ALTERNATE 1**

PAVING AREAS

ITEM	S		Q		U		A		R		E		Y		A		R		D		TOTAL PROJECT
	MAINLINE KY 61		TYE #1 KY 61		SCOTT'S FERRY ROAD	GARMON'S FERRY ROAD	GARY MORGAN ROAD	TYE #2 KY 61		DIVERSION #1		DIVERSION #2	ENTRANCES								
1.25" CL2 ASPH. SURF. 0.380 PG64-22	58287		1757	1081	574	1001	1185		859		785	1667									67196
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3.25" CL2 ASPH. BASE 1.000 PG64-22	48988		1769	1087	578	1009			868		792										53431
3.50" CL2 ASPH. BASE 1.000 PG64-22	36858						1193														38051
4.50" CL2 ASPH. BASE 1.000 PG64-22	2702																				2702
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FULL DEPTH CRUSHED STONE BASE (AVG. = 6.90')																					358
12" KENTUCKY COARSE AGGREGATE (#2s, #3s OR #23s)	13501																				13501
4" TRAFFIC BOUND BASE																					3039
																					3039

PAVING SUMMARY - PAVING ALTERNATE 1

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**PAVING SUMMARY
ALTERNATE 1**

Revised 9-5-12

PAVING AREAS

ITEM	S	Q	U	A	R	E	Y	A	R	D	S				
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3.00" CL2 ASPH. BASE 1.00D PG64-22												868	792		1660
3.25" CL2 ASPH. BASE 1.00D PG64-22	5968		1769	1087	578	1009									10411
3.50" CL2 ASPH. BASE 1.00D PG64-22	10210						1193								11403
4.50" CL2 ASPH. BASE 1.00D PG64-22	2702														2702
6" JPC PAVEMENT	16945														16945
8" JPC PAVEMENT	25854														25854
4" CRUSHED STONE BASE	9960		1769	1087	578	1009	1193							1732	17328
4.50" CRUSHED STONE BASE	25854											868	792	78	1738
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12" KENTUCKY COARSE AGGREGATE (#2s, #3s OR #23s)	13501														13501
4" TRAFFIC BOUND BASE														3039	3039

PAVING SUMMARY - PAVING ALTERNATE 2

ITEM CODE	ITEM	UNIT	MAINLINE KY 61	APPROACHES	ENTRANCES	DIVERSIONS	TOTAL PROJECT
00301	CL2 ASPH. SURF. 0.38D PG64-22	TON	1065	385	115	113	1678
00212	CL2 ASPH. BASE 1.00D PG64-22	TON	3701	1024	183	278	5186
02084	JPC PAVEMENT - 8 IN.	SY	25854				25854
02078	JPC PAVEMENT - 6 IN. SHLD.	SY	16945				16945
00003	CRUSHED STONE BASE ①	TON	21257	1663	425	934	24379 ③
00078	KY COARSE AGGREGATE (#2s, #3s OR #23s) ②	TON	8101				8101
00020	TRAFFIC BOUND BASE ① -- INCLUDES 200 TONS FOR MAINTENANCE OF TRAFFIC	TON			699		899
00008	CEMENT STABILIZED ROADBED	SY	42799	5636			48435
02542	CEMENT ④	TON	832	110			942
00358	ASPHALT CURING SEAL ⑤	TON	43	6			49
02702	SAND FOR BLOTTER ⑥	TON	107	13			120
00100	ASPHALT SEAL AGGREGATE ⑦	TON	67	9			76
00291	EMULSIFIED ASPHALT RS-2 ⑧	TON	8	1			9
02599	FABRIC-GEOTEXTILE TYPE IV	SY	28500				28500
00190	LEVEL & WEDGING PG64-22	TON	1767				1767
10203ND	PAVEMENT ADJUSTMENT (CONCRETE) ⑩	LP SUM					1
02200	ROADWAY EXCAVATION	CY					203022

NOTES

ALL ASPHALT MIXTURES SHALL BE ESTIMATED AT 110 LBS. PER SQ. YD. PER INCH OF DEPTH, UNLESS NOTED OTHERWISE.

- ① ESTIMATED AT 115 LBS. PER SQ. YD. PER INCH OF DEPTH.
- ② ESTIMATED AT 100 LBS. PER SQ. YD. PER INCH OF DEPTH.
- ③ ESTIMATED AT 95 LBS. PER SQ. YD. PER INCH OF DEPTH.

- ④ CEMENT ESTIMATED AT 6% DRY WEIGHT (108 PCF)
- ⑤ ASPHALT CURING SEAL ESTIMATED AT 2 LB PER SY
- ⑥ SAND FOR BLOTTER ESTIMATED AT 5 LB PER SY
- ⑦ ASPHALT SEAL AGGREGATE ESTIMATED AT 20 LB PER SY
- ⑧ EMULSIFIED ASPHALT ESTIMATED AT 2.4 LB PER SY
- ⑨ INCLUDES 100 TONS OF CRUSHED STONE BASE FOR MAINTENANCE OF TRAFFIC

⑩ SEE PROPOSAL FOR SPECIAL ALTERNATE PAVEMENT BID

- PROJECT EARTHWORK TOTALS -

130,574	C.Y.	COM.
58,642	C.Y.	ROCK EXC.
7,233	C.Y.	TRANS. BENCH
1,644	C.Y.	EMB. BENCH
2,243	C.Y.	DT. LT.
1,606	C.Y.	DT. RT.
1,080	C.Y.	INLET/OUTLET DITCHES
203,022	C.Y.	TOTAL RDWY. EXC.
145,873	C.Y.	EMB.
7,233	C.Y.	TRANS. BENCH
1,644	C.Y.	EMB. BENCH
89	C.Y.	REFILL
154,839	C.Y.	TOTAL EMB.

PAVEMENTS ALTERNATES APPLY TO STA. 72+20.79 - STA. 168+92 ONLY

**PAVING SUMMARY
ALTERNATE 2**

PAVING AREAS

ITEM	S	Q	U	A	R	E	Y	A	R	D	S	
												MAINLINE KY 61
1.25" CL2 ASPH. SURF. 0.380 PG64-22	32433		1757	1081	574	1001	1185					41342
2.00" CL2 ASPH. BASE 1.000 PG64-22												1667
3.00" CL2 ASPH. BASE 1.000 PG64-22												1667
3.25" CL2 ASPH. BASE 1.000 PG64-22	23134		1769	1087	578	1009	1193					1660
3.50" CL2 ASPH. BASE 1.000 PG64-22	10210											27577
4.50" CL2 ASPH. BASE 1.000 PG64-22	2702											11403
												2702
8" JPC PAVEMENT	25854											25854
4" CRUSHED STONE BASE	9960		1769	1087	578	1009	1193					17328
4.50" CRUSHED STONE BASE	25854											25854
6" CRUSHED STONE BASE	17166											1738
8" CRUSHED STONE BASE	1588											17166
8.50" CRUSHED STONE BASE (AVG. = 3.9')			402	208	138	254						1588
FULL DEPTH CRUSHED STONE BASE (AVG. = 6.75')	13312											1002
FULL DEPTH CRUSHED STONE BASE (AVG. = 6.70')												13312
FULL DEPTH CRUSHED STONE BASE (AVG. = 6.90')												915
												358
12" KENTUCKY COARSE AGGREGATE (#2s, #3s OR #23s)	13501											13501
4" TRAFFIC BOUND BASE												3039
												3039

PAVING SUMMARY - PAVING ALTERNATE 3

ITEM CODE	ITEM	UNIT	MAINLINE KY 61	APPROACHES	ENTRANCES	DIVERSIONS	TOTAL PROJECT
00301	CL2 ASPH. SURF. 0.380 PG64-22	TON	2230	385	115	113	2843
00212	CL2 ASPH. BASE 1.000 PG64-22	TON	6769	1024	183	278	8254
02084	JPC PAVEMENT - 8 IN.	SY	25854				25854
00003	CRUSHED STONE BASE ①	TON	22820	1663	425	934	25942 ⑨
00078	KY COARSE AGGREGATE (#2s, #3s OR #23s) ②	TON	8101				8101
00020	TRAFFIC BOUND BASE ① -- INCLUDES 200 TONS FOR MAINTENANCE OF TRAFFIC	TON			699		899
00008	CEMENT STABILIZED ROADBED	SY	42799	5636			48435
02542	CEMENT ④	TON	832	110			942
00358	ASPHALT CURING SEAL ⑤	TON	43	6			49
02702	SAND FOR BLOTTER ⑥	TON	107	13			120
00100	ASPHALT SEAL AGGREGATE ⑦	TON	67	9			76
00291	EMULSIFIED ASPHALT RS-2 ⑧	TON	8	1			9
02599	FABRIC-GEOTEXTILE TYPE IV	SY	28500				28500
00190	LEVEL & WEDGING PG64-22	TON	1767				1767
10203ND	PAVEMENT ADJUSTMENT (CONCRETE) ⑩	LP SUM					1
02200	ROADWAY EXCAVATION	CY					203022

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**PAVING SUMMARY
ALTERNATE 3**

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4" CRUSHED STONE BASE	9960		1769	1087	578	1009	1193			1732		17328
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6" CRUSHED STONE BASE	17166											17166
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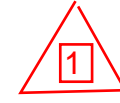
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**PAVING SUMMARY
ALTERNATE 3**



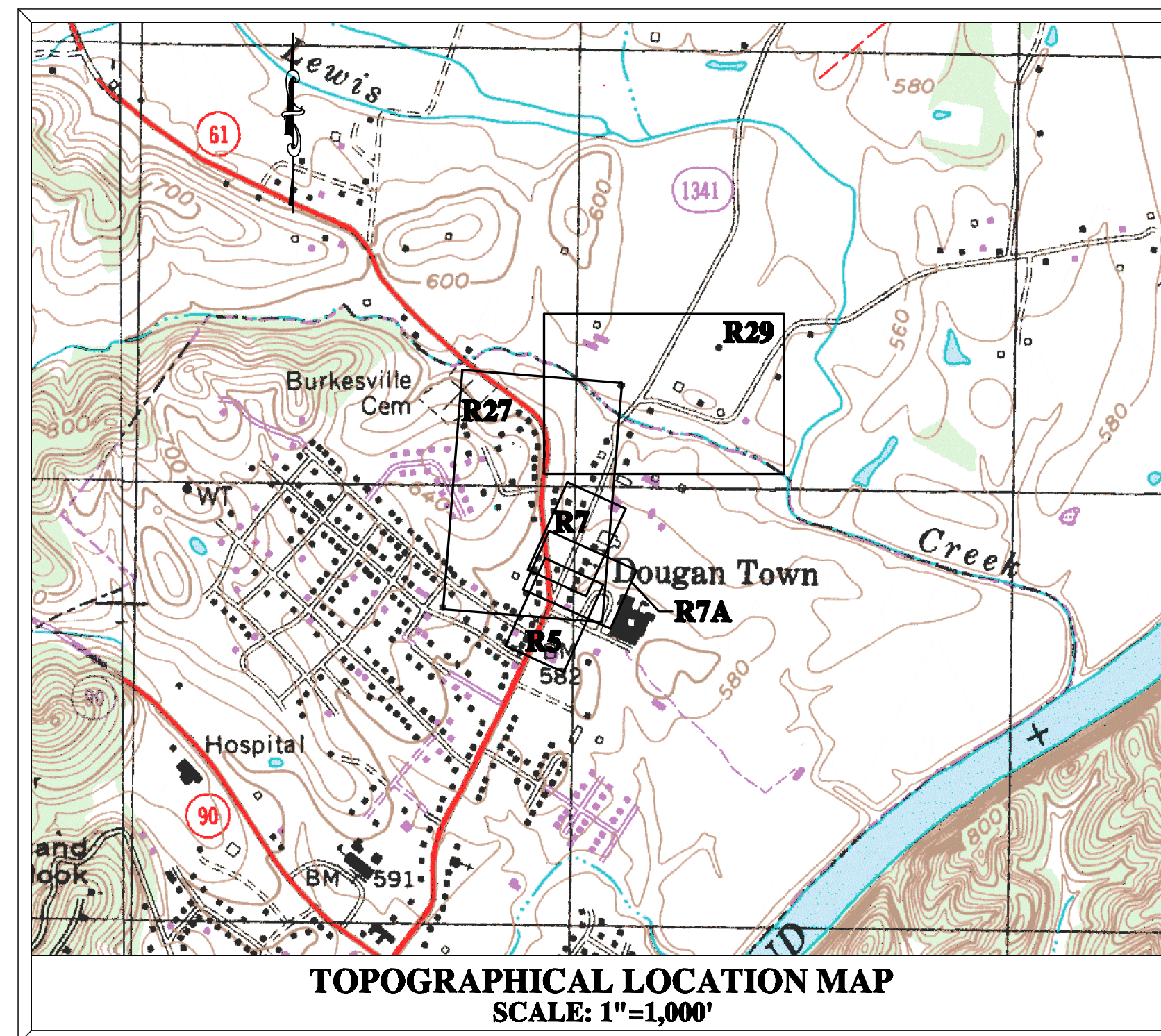
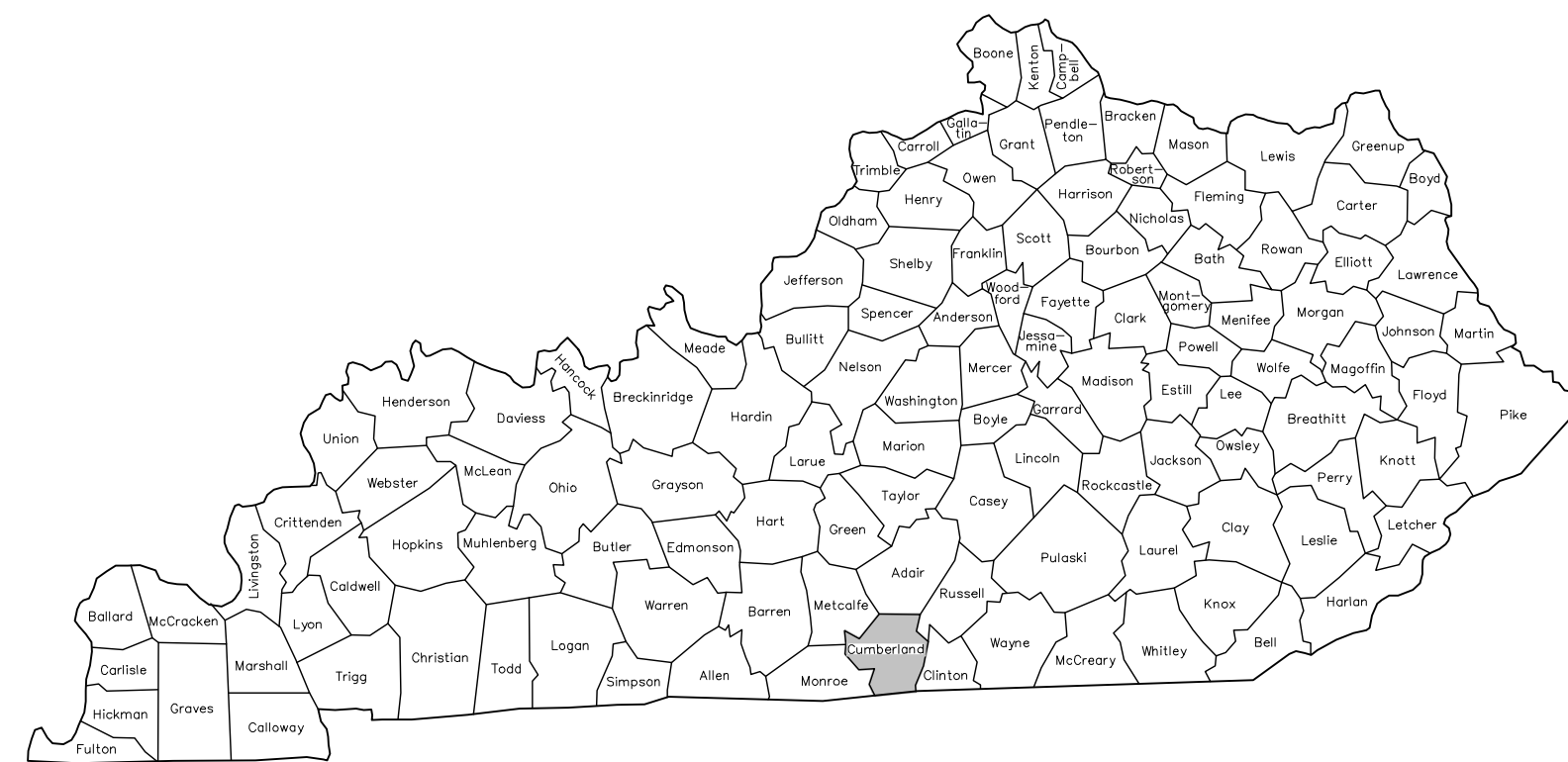
Revised 9-5-12

BURKESVILLE GAS COMPANY

KY HWY 61 RELOCATION (SECTION 1)

CUMBERLAND COUNTY, KENTUCKY

ITEM NO. 08-158.10



INDEX OF SHEETS

DESCRIPTION	SHEET NO.
COVER SHEET	U1
GENERAL NOTES	U2
PLAN SHEET	U3, U4, U5, U6 & U7
MISCELLANEOUS DETAILS	U8

GENERAL SUMMARY

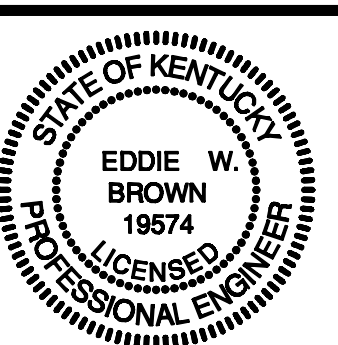
Item No.	Item	Unit	QUANTITY
22803EN	GAS MAIN PL-4 IN IPS SDR 11.5 PE 2406 PP	LF	1,090
22802EN	GAS MAIN PL-2 IN IPS SDR 11.5 PE 2406 PP	LF	1,229
1061	STEEL ENCASUREMENT PIPE-4 IN BORED	LF	35
1061	STEEL ENCASUREMENT PIPE-4 IN OPEN CUT	LF	90
1063	STEEL ENCASUREMENT PIPE-6 IN OPEN CUT	LF	90
20084NN	CUT & CAP EXISTING 4 IN LINE	EA	1
20084NN	CUT & CAP EXISTING 2 IN LINE	EA	6
20084NN	CUT & CAP EXISTING 3/4 IN LINE	EA	1
23337EC	GAS VALVE-2 IN POLY	EA	2
22093NN	TIE IN TO GAS LINE-4 IN GL W/ POLY VALVE	EA	3
22093NN	TIE IN TO GAS LINE-2 IN GL W/ POLY VALVE	EA	6
20311EC	SERVICE LINE-3/4 IN	LF	254
03437	RECONNECT SERVICE	EA	2
23309EC	PAVEMENT REPLACEMENT	SF	60

Prepared By:



KENVIRONS, INC.
FRANKFORT, KENTUCKY

U1



GENERAL GAS LINE NOTES

1. Stations shown on the utility lines are for reference only and do not reflect the actual linear lengths of pipe required for construction.
2. The Contractor shall be responsible for coordinating all construction work with local utility companies and other concerned parties.
3. Existing buried utilities are shown on the drawings in their general location utilizing the best available information. Before construction begins each utility company shall be notified, a request for the exact location of the utility shall be made, and permission to proceed with construction obtained. The utility shall be given at least one week advance notice for location verification. BUD provides a clearinghouse service for member utilities relative to underground utility location. The Contractor shall contact BUD at telephone number 1-800-752-6007.
4. Before construction begins through any property, the Contractor shall make himself aware of the exact location of construction through the property and the bounds of the permanent and temporary construction easements.
5. The Contractor shall have on hand at the job site an assortment of fittings for use where necessary for proper installation.
6. At some locations, the Contractor may be required to provide extra cover over pipe. Cost of extra cover is to be included in unit price bid for line installation and no separate payment will be made for such extra cover.
7. Connecting new lines to existing lines or to work in other contracts is subsidiary to the contract unless specifically itemized in the Bid Schedule. It includes all fittings, etc., but does not include valves, which are typically a separate pay item.
8. All fittings and appurtenances to construct the pipelines as shown shall be included in the unit cost for the pipe and are not separate pay items.
9. The material quantities as shown in the Bid Schedule are not guaranteed and should not be used indiscriminately when ordering materials. The Contractor shall be responsible for ordering pipe quantities necessary for installation to the limits as shown on the Drawings unless otherwise instructed. Any left-over quantities shall be the property of the Contractor. The Owner shall not be responsible for re-stocking or other charges associated with the left-over pipe materials or increased costs associated with price increases for materials needed to complete the project as shown on the drawings.
10. All streets, roads, and driveways that are crossed with a utility line shall be backfilled with KDOT #78 aggregate.
11. Paved driveways may be free-bored at the direction of the Engineer. Free bore unit prices are contained in Bid Schedule. The material in which the free bore is made is unclassified. Free bore average size shall not be more than 2" larger than the carrier pipe size.
12. Copper Tracer Wire shall be installed with plastic utility lines.
13. Rough cleanup is included in the unit price for pipe installation and must be done before payment for pipe will be approved. Final cleanup, which includes seeding and straw mulch along the entire length of the pipeline trench, must be done before the final payment will be released. A power landscape rake shall be used for seedbed preparation.
14. The pipeline shall be "swabbed" prior to pressure testing. Pipeline swabbing is not a separate bid item but shall be included in the Unit Price for pipe.
15. Locations where pipeline is to be installed on state road right-of-way are approximately delineated on the drawings. The CONTRACTOR, along with the ENGINEERS REPRESENTATIVE, shall determine, precisely, the field locations for transitions between private easements, and state and county road rights-of-way.
16. All pipelines installed in the ditchline on state and county rights-of-way shall have 42" minimum cover over top of pipe.
17. All crossings of streams that appear as a blue line on a USGS 7.5 minute topographical map shall be accomplished in accordance with: GENERAL CERTIFICATION - NATIONWIDE PERMIT #12, UTILITY LINE BACKFILL AND BEDDING. It is the intent of the plans to identify a stream crossing at each blue line stream. Small creek crossings, less than 15 feet measured from top of bank to top of bank, may be accomplished by trenching when the stream is in a no-flow condition. If the stream is in a flow condition, the crossing shall be accomplished by directional boring or other method that complies with the General Certification and is approved by the Engineer. Specific details for stream crossings are contained in the Miscellaneous Details. Bid items for specific stream crossings may be contained in the Bid Schedule with the type of crossing shown on the Plan Sheets. Payment shall be "Each" for directional bores of small stream crossings. All small stream crossings in the project shall be considered the same regardless of width (up to 15 L.F.) or depth. It is the responsibility of the Contractor to determine an average unit price that will be used for payment for each instance a blue line stream is crossed. Stream crossings may be added, for extended lines beyond those shown on the plans, at the same unit price providing the crossings are reasonably similar to those in the initial project. Stream crossings may be deleted, without effecting the unit price, if a line is deleted or shortened. Payment for specific bid item directional bored stream crossings shall be "Lump Sum".
18. The contractor shall obtain, and pay for, all grading, storm water, etc. permits, if any required to complete the work. The contractor shall maintain compliance with all conditions, limitations and stipulations of all permits. The contractor shall not commence work, except mobilization, until he has obtained all required permits for said work. The contractor shall supply the owner with copies of all permits. A KPDES Storm Water Discharge Permit will be required for this project. The contractor shall fill out, sign and submit the Notice of Intent (NOI) and the Notice of Termination (NOT). **The Notice to Proceed will not be issued until the permit has been provided.**
19. Minimum cover over gas line to be 30" or to depths shown on drawings.
20. Lay new lines under the existing water lines and gas lines or as shown on the plans.
21. All tie-in locations shall be uncovered prior to construction to maintain proper alignment and elevation of new connections.

GENERAL GAS LINE NOTES (CONTINUED)

22. Contractor shall inventory required materials, and assemble if necessary all required fittings prior to cut-ins or tie-ins so as to insure minimum down time for connection.
23. All culverts and cross drains at streets, drives and entrances near the work area shall be protected. If in the path of the gas ditch, they shall be removed and relayed as part of the trenching and backfill operation.
24. All personnel responsible for fusing PE lines or service tie-ins shall be industrial training service (I.T.S.) certified for said connections and shall present written proof of certification to the owner prior to work being conducted.
25. Residential and Commercial natural gas service relights shall be the responsibility of the contractor and shall be performed by a licensed master plumber.
26. Exact sizes, depths, materials and locations of existing utilities are not guaranteed. It shall be the Contractor's responsibility to determine the exact location of these far enough in advance of the pipeline operation so as not to cause any unnecessary delays. The Contractor shall be responsible for notifying utility companies having property in the area prior to excavation. Continuous communications on a day to day basis will be required.
27. All rocks, clods, earth and other large material shall be removed from the trench bottom prior to placement of the bedding.
28. At stream crossings:
 - a. Vertical Bends may be required at stream crossings.
 - b. During construction, no material may be placed in streams or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc.
 - c. The Trench shall be backfilled as closeley as possible to the original contour. All excess material from construction of the trench shall be disposed of outside of the flood plain.

ENVIRONMENTAL NOTES

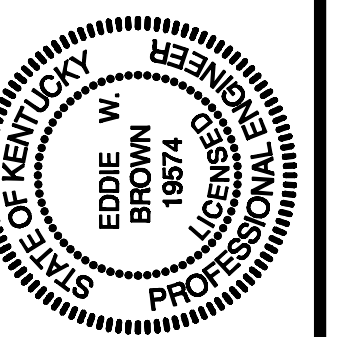
1. When crossing all streams, silt barriers, ie. straw bales or silt fences, shall be put in place to prevent sediment runoff into stream. Conventional stream crossings shall be accomplished during low flow periods. Stream banks shall be reseeded with native vegetation beneficial to wildlife immediately following completion of the stream crossing. Disturbed surfaces shall be restored to original contours and excess materials removed to a properly confined area.
2. If the removal of any trees greater than (6) inches in diameter at breast height is required, The tree removal shall be accomplished between October 15 and March 31.

HIGHWAY DEPARTMENT NOTES

1. Underground utilities installed inside state right of way shall be located within 3-5 feet from the edge of the right of way unless otherwise shown on the plans.
2. Underground utilities shown more than 5 feet from the edge of the right of way shall be installed with a minimum depth of cover of 42 inches.
3. Underground utilities crossing any paved driveway inside state right of way shall be installed by freeboring unless written permission to open cut is obtained from the property owner.
4. Underground utilities shall not be installed in embankment fills or between edge of pavement and ditchline unless specifically noted on permitted plans.
5. All effected roadway ditchlines shall remain free of excess silt or erosion and constructed to the normal typical section of the roadway with a minimum depth of 18 inches from the shoulder break point.
6. All necessary steps shall be taken to prevent erosion or siltation of the public right-of-way, adjoining property and waterways.

GENERAL NOTES

CITY OF BURKESVILLE
KY HWY 61 RELOCATION (SECTION 1)
ITEM NO. 08-158.10
CUMBERLAND COUNTY, KENTUCKY



DRAWN BY: PTH	CHECKED BY: EWB
DATE: Sep. 2012	SCALE: As Noted
REVISIONS	

KENVIRONS, INC.
FRANKFORT, KENTUCKY

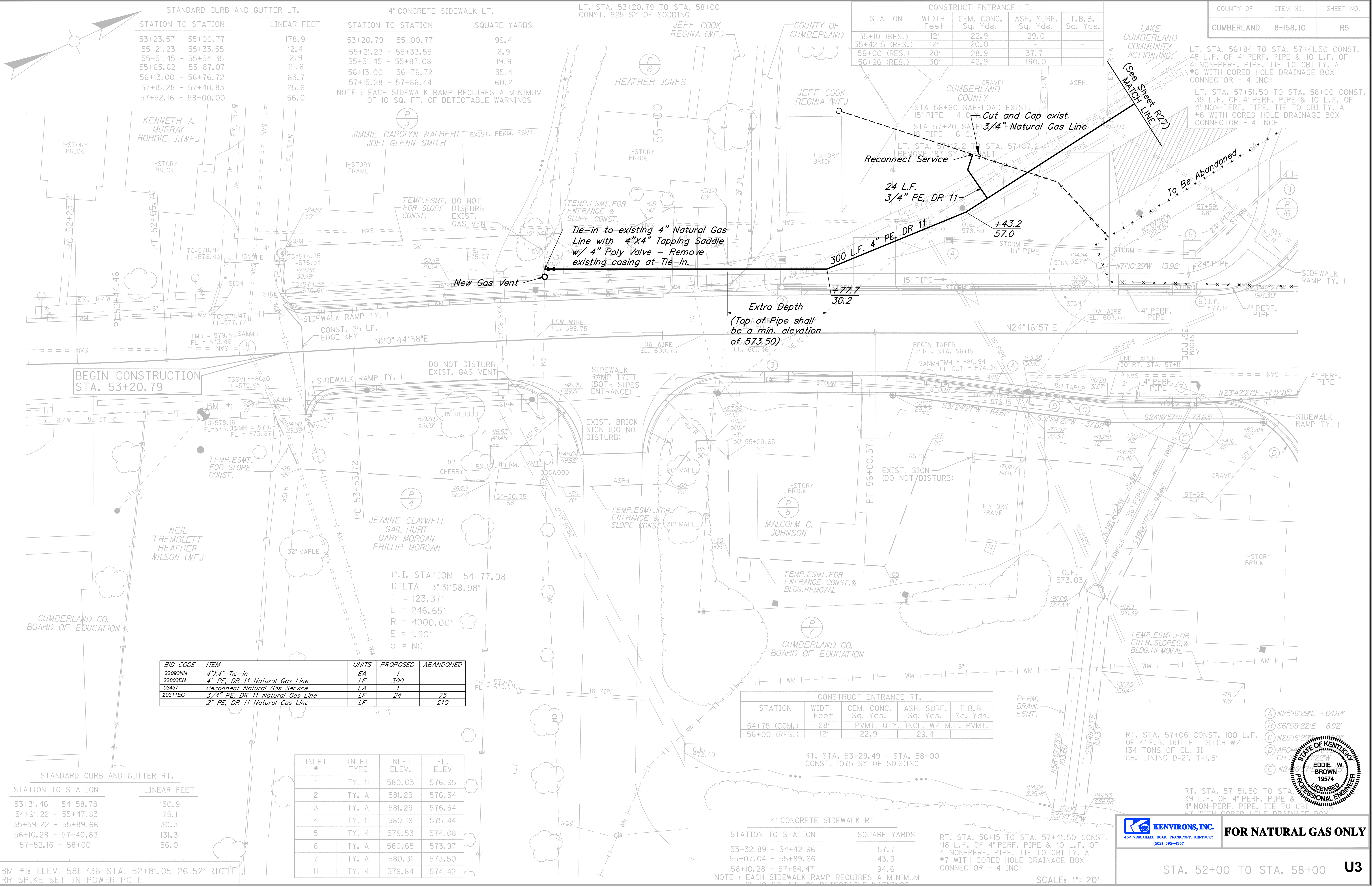


PROJECT NO.
2012126

SHEET NO.
U2

STANDARD CURB AND GUTTER LT.		4" CONCRETE SIDEWALK LT.	
STATION TO STATION	LINEAR FEET	STATION TO STATION	SQUARE YARDS
53+23.57 - 55+00.77	178.9	53+20.79 - 55+00.77	99.4
55+21.23 - 55+33.55	12.4	55+21.23 - 55+33.55	6.9
55+51.45 - 55+54.35	2.9	55+51.45 - 55+87.08	19.9
55+65.62 - 55+87.07	21.6	56+13.00 - 56+76.72	35.4
56+13.00 - 56+76.72	63.7	57+15.28 - 57+86.44	60.2
57+15.28 - 57+40.83	25.6		
57+52.16 - 58+00.00	56.0		

CONSTRUCT ENTRANCE LT.				
STATION	WIDTH Feet	CEM. CONC. Sq. Yds.	ASH. SURF. Sq. Yds.	T.B.B. Sq. Yds.
55+10 (RES.)	12'	22.9	29.0	-
55+42.5 (RES.)	12'	20.0	-	-
56+00 (RES.)	20'	28.9	37.7	-
56+96 (RES.)	30'	42.9	190.0	-



NOTE: EACH SIDEWALK RAMP REQUIRES A MINIMUM OF 10 SQ. FT. OF DETECTABLE WARNINGS

Tie-in to existing 4" Natural Gas Line with 4"x4" Tapping Saddle w/ 4" Poly Valve - Remove existing casing at tie-in.

Cut and Cap exist. 3/4" Natural Gas Line

Reconnect Service

24 L.F. 3/4" PE, DR 11

+43.2 57.0

Extra Depth (Top of Pipe shall be a min. elevation of 573.50)

BEGIN CONSTRUCTION STA. 53+20.79

P.I. STATION 54+77.08
 DELTA 3°31'58.98"
 T = 123.37'
 L = 246.65'
 R = 4000.00'
 E = 1.90'
 e = NC

BID CODE	ITEM	UNITS	PROPOSED	ABANDONED
22093NN	4" X4" Tie-in	EA	1	
22093EN	4" PE, DR 11 Natural Gas Line	LF	300	
03437	Reconnect Natural Gas Service	EA	1	
20311EC	3/4" PE, DR 11 Natural Gas Line	LF	24	75
	2" PE, DR 11 Natural Gas Line	LF		210

CONSTRUCT ENTRANCE RT.				
STATION	WIDTH Feet	CEM. CONC. Sq. Yds.	ASH. SURF. Sq. Yds.	T.B.B. Sq. Yds.
54+75 (COM.)	28'	PVMT. QTY. INCL. W/ M.L.	PVMT.	
56+00 (RES.)	12'	22.9	29.4	-

INLET #	INLET TYPE	INLET ELEV.	FL. ELEV.
1	TY. II	580.03	576.95
2	TY. A	581.29	576.54
3	TY. A	581.29	576.54
4	TY. II	580.19	575.44
5	TY. 4	579.53	574.08
6	TY. A	580.65	573.97
7	TY. A	580.31	573.50
II	TY. 4	579.84	574.42

STANDARD CURB AND GUTTER RT.	
STATION TO STATION	LINEAR FEET
53+31.46 - 54+58.78	150.9
54+91.22 - 55+47.83	75.1
55+59.22 - 55+89.66	30.3
56+10.28 - 57+40.83	131.3
57+52.16 - 58+00	56.0

4" CONCRETE SIDEWALK RT.	
STATION TO STATION	SQUARE YARDS
53+32.89 - 54+42.96	57.7
55+07.04 - 55+89.66	43.3
56+10.28 - 57+84.47	94.6

BM #1: ELEV. 581.736 STA. 52+81.05 26.52' RIGHT RR SPIKE SET IN POWER POLE

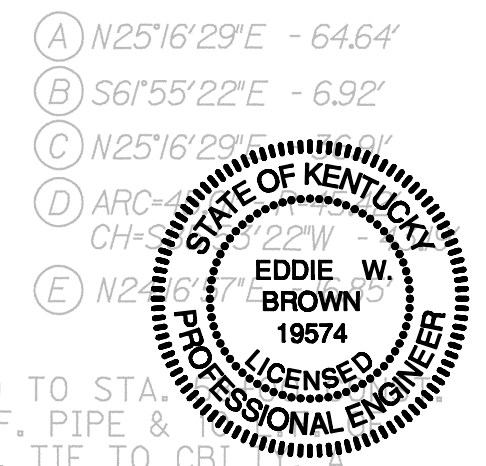
NOTE: EACH SIDEWALK RAMP REQUIRES A MINIMUM OF 10 SQ. FT. OF DETECTABLE WARNINGS

SCALE: 1"= 20'

KENVIRONS, INC.
 458 VERSAILLES ROAD, FRANKFORT, KENTUCKY
 (502) 695-4357

FOR NATURAL GAS ONLY

STA. 52+00 TO STA. 58+00 **U3**



INLET #	INLET TYPE	INLET ELEV.	FL. ELEV.
5	TY. 4	579.53	574.08
6	TY. A	580.65	573.97
7	TY. A	580.31	573.50
8	TY. A	580.13	575.38
9	TY. A	580.13	575.71
10	TY. 4	578.63	574.96
11	TY. 4	579.84	574.42

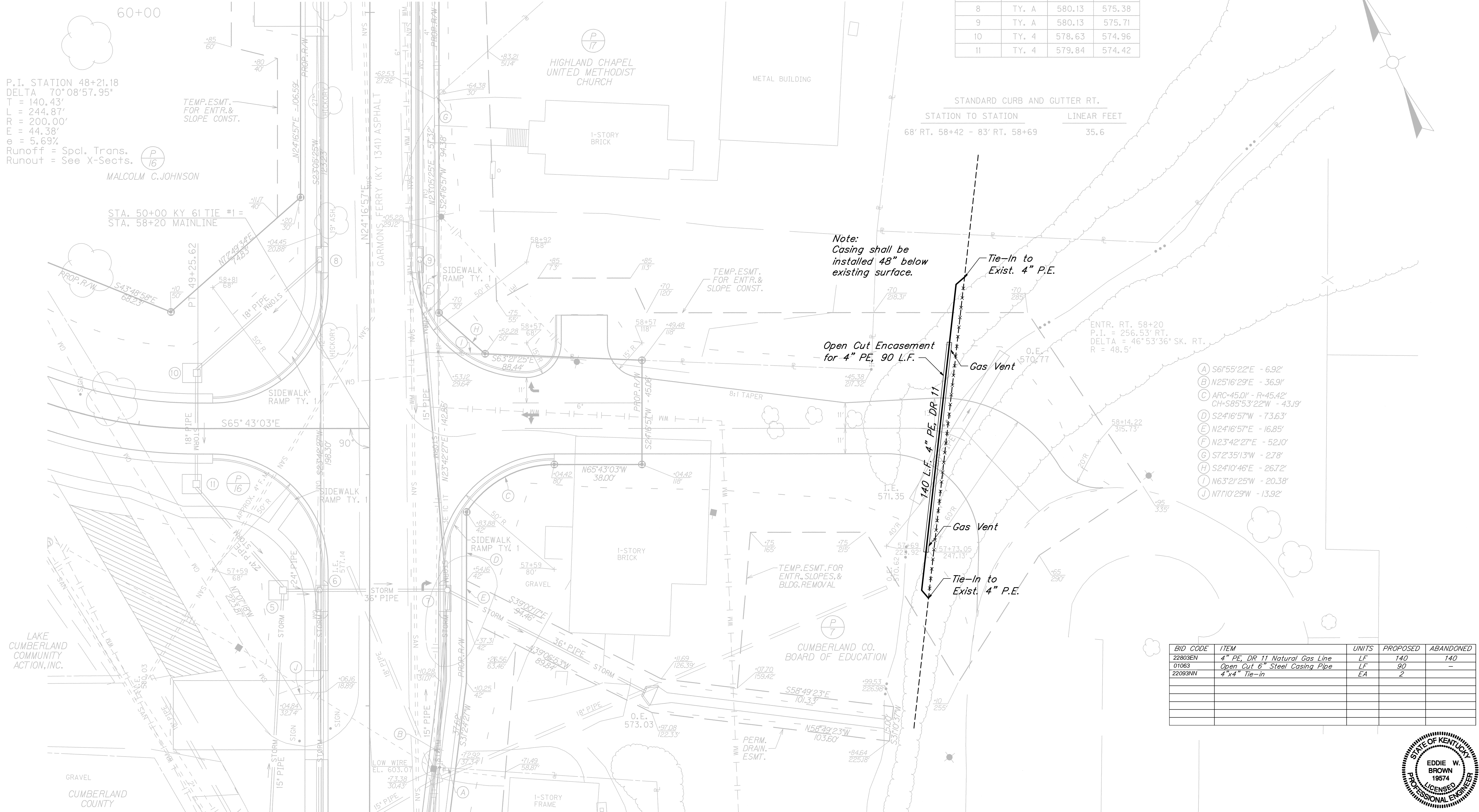
STANDARD CURB AND GUTTER RT.	
STATION TO STATION	LINEAR FEET
68' RT. 58+42 - 83' RT. 58+69	35.6

FILE NAME: F:\WORK\CUMBERLAND KY 6108-0158-10\CONTRACT PLANS AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\ROOT\ROADPL.DGN
 USRS: PYN
 DATE PLOTTED: May 4, 2012
 E-SHEET NAME:
 MicroStation v8.11.7.180

P.I. STATION 48+21.18
 DELTA 70°08'57.95"
 T = 140.43'
 L = 244.87'
 R = 200.00'
 E = 44.38'
 e = 5.63%
 Runoff = Spol. Trans.
 Runout = See X-Sects.

MALCOLM C. JOHNSON

STA. 50+00 KY 61 TIE #1 =
 STA. 58+20 MAINLINE



Note:
Casing shall be installed 48" below existing surface.

Open Cut Encasement for 4" PE, 90 L.F.

Tie-In to Exist. 4" P.E.

Tie-In to Exist. 4" P.E.

- (A) S61°55'22"E - 6.92'
- (B) N25°16'29"E - 36.91'
- (C) ARC=45.01' - R=45.42'
CH=S85°53'22"W - 43.19'
- (D) S24°16'57"W - 73.63'
- (E) N24°16'57"E - 16.85'
- (F) N23°42'27"E - 52.10'
- (G) S72°35'13"W - 2.78'
- (H) S24°10'46"E - 26.72'
- (I) N63°21'25"W - 20.38'
- (J) N71°10'29"W - 13.92'

BID CODE	ITEM	UNITS	PROPOSED	ABANDONED
22803EN	4" PE, DR 11 Natural Gas Line	LF	140	140
01063	Open Cut 6" Steel Casing Pipe	LF	90	-
22093NN	4"x4" Tie-in	EA	2	-



CONSTRUCT ENTRANCE RT.				
STATION	WIDTH Feet	CEM. CONC. Sq. Yds.	ASH. SURF. Sq. Yds.	T.B.B. Sq. Yds.
58+20(COM.)*	33'	PVMT. QTY. INCL. W/	M.L. PVMT.	
93' RT. 58+20(COM.)	20'	PVMT. QTY. INCL. W/	M.L. PVMT.	

* - ENTR. CONSTRUCTION INCLUDES 75 L.F. - 60" REINFORCED CONCRETE PIPE - NO ALTERNATES

FOR NATURAL GAS ONLY

ENTRANCE RT. STA. 58+20 **U5**

SCALE: 1"= 20'

STATION	SIZE - SHAPE TYPE	DITCH CONSTRUCTION LT.		
		TYPE	T=	D=
45+40 - 49+18	NORM. RDWY.	ECB		1'
				QUANTITY
				336 SY

- (A) N15°04'44"E - 138.75'
- (B) S6°01'26"W - 27.89'
- (C) ARC=122.39' - R=1033.64'
CH=503°07'16"W - 122.32'
- (D) S8°13'28"W - 28.41'
- (E) N4°25'55"E - 20.30'
- (F) ARC=104.21' - R=1033.64'
CH=503°09'33"E - 104.17'
- (G) S6°18'04"E - 153.43'
- (H) S7°34'16"E - 28.52'
- (I) S4°25'55"W - 15.00'
- (J) S7°23'49"W - 26.96'
- (K) ARC=30.94' - R=973.64'
CH=N00°54'14"W - 30.94'
- (L) N7°10'29"W - 13.92'

LT. STA. 44+30 CONST. 16' ENTRANCE
WITH 39.9 SQ. YDS. OF T.B.B.

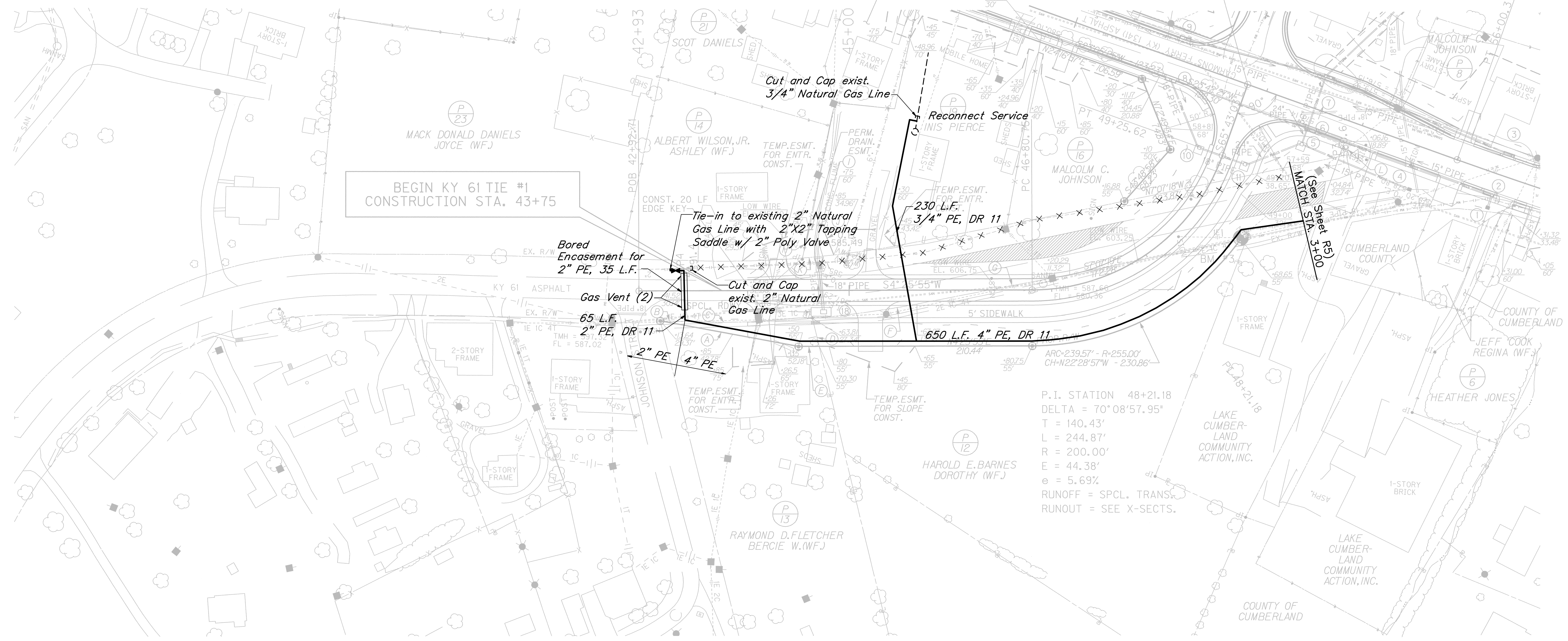
LT. STA. 45+21 CONST. 12' ENTRANCE
WITH 41.9 SQ. YDS. OF T.B.B.

LT. STA. 44+73 @ 5' SK. LT. CONST.
16 LF OF 9' TO 3' FB OUTLET DT. W/
16 TONS CL II CHANNEL LINING T=1', D=1.5'

LT. STA. 45+70.5 TO STA. 48+00.6
REMOVE 267 SY ASPHALT

BID CODE	ITEM	UNITS	PROPOSED	ABANDONED
22083NN	2"x2" Tie-in	EA	1	
20084NN	Cut & Cap Exist. 2" Natural Gas Line	EA	1	
22803EN	4" PE, DR 11 Natural Gas Line	LF	650	548
03437	Reconnect Natural Gas Service	EA	1	
20311EC	3/4" PE, DR 11 Natural Gas Line	LF	230	
22802EN	2" PE, DR 11 Natural Gas Line	LF	65	600
1061	Bored 4" Steel Casing Pipe	LF	35	
20084NN	Cut & cap Exist. 3/4" Natural Gas Line	EA	1	

STA. 58+20 MAINLINE =
STA. 50+00 KY 61 TIE #1



P.I. STATION 48+21.18
DELTA = 70°08'57.95"
T = 140.43'
L = 244.87'
R = 200.00'
E = 44.38'
e = 5.69%
RUNOFF = SPCL. TRANS.
RUNOUT = SEE X-SECTS.

INLET #	INLET TYPE	INLET ELEV.	FL. ELEV.
4	TY. 11	580.19	575.44
5	TY. 4	579.53	574.08
6	TY. A	580.62	573.97
10	TY. 4	578.63	574.86
11	TY. 4	579.84	574.42
18	TY. 6E	589.42	586.63

FROM STA. 44+00 TO STA. 44+50 TAPER AND TIE
PVMT., SHLDRS., DITCHES, & SIDEWALK FROM
EXISTING TO PROPOSED

STATION TO STATION	SQUARE YARDS
44+00 - 49+32	312.6

RT. STA. 43+75 - STA. 49+32
CONST. 1260 SY OF SODDING

RT. STA. 45+21 CONST. 24' ENTRANCE
WITH 128.6 SQ. YDS. OF ASPH. PVMT.

RT. STA. 44+15 CONST. 12' ENTRANCE
WITH 113.3 SQ. YDS. OF ASPH. PVMT.
AND 35 L.F. OF 18" ENTR. PIPE

BM #3: ELEV. 584.463 STA. 48+69.71 54.30' RIGHT
RR SPIKE SET IN POWER POLE

STATION	SIZE - SHAPE TYPE	DITCH CONSTRUCTION RT.		
		TYPE	T=	D=
43+75 - 43+98	SPCL. RDWY.	ECB		1'
44+33 - 44+62.50	SPCL. RDWY.	ECB		1'
44+82 - 49+20	NORM. RDWY.	ECB		1'
				QUANTITY
				15 SY
				20 SY
				389 SY



FOR NATURAL GAS ONLY



KY 61 TIE #1

U6

SCALE: 1"= 50'

FILE NAME: F:\WORK\CUMBERLAND KY 61\08-DISB-CONTRACT PLANS AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\02\00PL.DGN
 DATE PLOTTED: May 4, 2012
 E-SHEET NAME:

BM #2105: ELEV. 574.752 ML STA. 78+04.94 113.09' LEFT IRON BAR AND CAP IN CONCRETE

DITCH CONSTRUCTION RT. GARMONS FERRY					
STATION	SIZE - SHAPE TYPE	LINING			
		TYPE	T=	D=	QUANTITY
47+47 - 47+60	SPCL. RDWY.	ECB		1'	9 SY
48+01 - 48+10	2' F.B. SPCL.	ECB		1'	10 SY
48+10 - 49+57	2' F.B. SURF.	ECB		1'	140 SY

RT. GARMONS FERRY STA. 47+80 CONST. 16' ENTRANCE WITH 49.4 SQ. YDS. OF ASPH. PVMT. AND 41 L.F. OF 24" ENTR. PIPE

RT. GARMONS FERRY STA. 49+60 @ 0° SKEW CONST. 10.75 L.F. OF 9' TO 2' F.B. OUTLET DITCH W/ 11 TONS OF CL. II CH. LINING D=1', T=1.5'

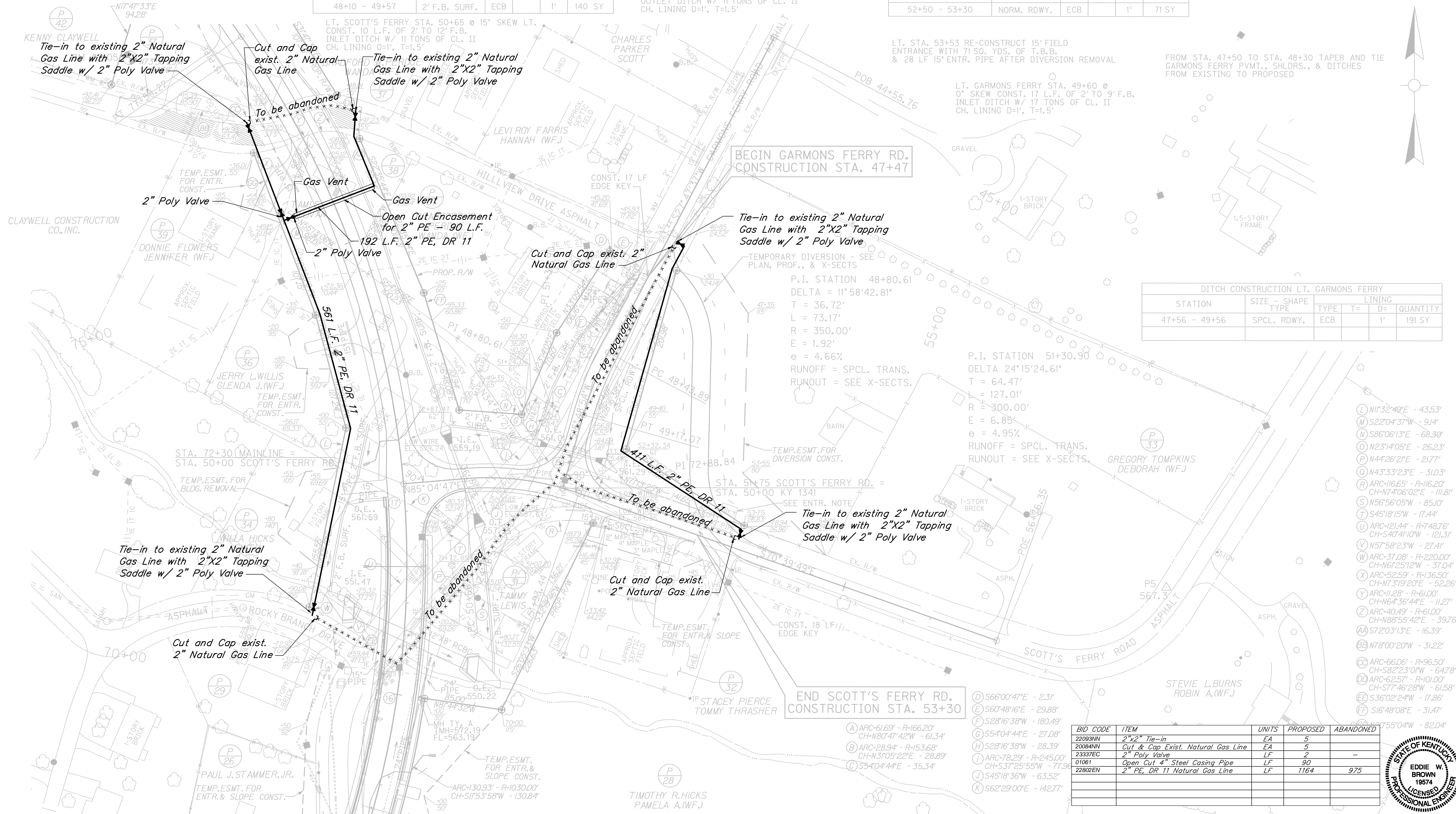
DITCH CONSTRUCTION LT. SCOTT'S FERRY RD.					
STATION	SIZE - SHAPE TYPE	LINING			
		TYPE	T=	D=	QUANTITY
50+55 - 51+30	2' F.B. SURF.	ECB		1'	77 SY
52+25 - 52+50	SPCL. RDWY.	ECB		1'	24 SY
52+50 - 53+30	NORM. RDWY.	ECB		1'	71 SY

LT. STA. 53+53 RE-CONSTRUCT 15' FIELD ENTRANCE WITH 71 SQ. YDS. OF T.B.B. & 28 LF 15" ENTR. PIPE AFTER DIVERSION REMOVAL

LT. GARMONS FERRY STA. 49+60 @ 0° SKEW CONST. 17 L.F. OF 2' TO 9' F.B. INLET DITCH W/ 17 TONS OF CL. II CH. LINING D=1', T=1.5'

FROM STA. 47+50 TO STA. 48+30 TAPER AND TIE GARMONS FERRY PVMT., SHLDRS., & DITCHES FROM EXISTING TO PROPOSED

COUNTY OF	ITEM NO.	SHEET NO.
CUMBERLAND	8-158.10	R29



LT. SCOTT'S FERRY STA. 50+65 @ 15° SKEW LT. CONST. 10 L.F. OF 2' TO 12' F.B. INLET DITCH W/ 11 TONS OF CL. II CH. LINING D=1', T=1.5'

Tie-in to existing 2" Natural Gas Line with 2"X2" Tapping Saddle w/ 2" Poly Valve

Tie-in to existing 2" Natural Gas Line with 2"X2" Tapping Saddle w/ 2" Poly Valve

Cut and Cap exist. 2" Natural Gas Line

2" Poly Valve

Gas Vent

Open Cut Encasement for 2" PE - 90 L.F.

192 L.F. 2" PE, DR 11

2" Poly Valve

Cut and Cap exist. 2" Natural Gas Line

BEGIN GARMONS FERRY RD. CONSTRUCTION STA. 47+47

Tie-in to existing 2" Natural Gas Line with 2"X2" Tapping Saddle w/ 2" Poly Valve

TEMPORARY DIVERSION - SEE PLAN, PROF., & X-SECTS

P.I. STATION 48+80.61
DELTA = 11° 58' 42.81"
T = 36.72'
L = 73.17'
R = 350.00'
E = 1.92'
e = 4.66%
RUNOFF = SPCL. TRANS.
RUNOUT = SEE X-SECTS.

P.I. STATION 51+30.90
DELTA 24° 15' 24.61"
T = 64.47'
L = 127.01'
R = 300.00'
E = 6.85'
e = 4.95%
RUNOFF = SPCL. TRANS.
RUNOUT = SEE X-SECTS.

Tie-in to existing 2" Natural Gas Line with 2"X2" Tapping Saddle w/ 2" Poly Valve

Tie-in to existing 2" Natural Gas Line with 2"X2" Tapping Saddle w/ 2" Poly Valve

Cut and Cap exist. 2" Natural Gas Line

END SCOTT'S FERRY RD. CONSTRUCTION STA. 53+30

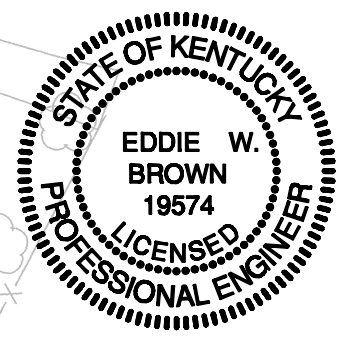
DITCH CONSTRUCTION LT. GARMONS FERRY					
STATION	SIZE - SHAPE TYPE	LINING			
		TYPE	T=	D=	QUANTITY
47+56 - 49+56	SPCL. RDWY.	ECB		1'	191 SY

- (L) N11°32'49"E - 43.53'
- (M) S22°04'37"W - 9.4'
- (N) S86°06'13"E - 68.30'
- (O) N23°14'05"E - 26.23'
- (P) N44°26'28"E - 21.77'
- (Q) N43°33'23"E - 31.03'
- (R) ARC=16.65° - R=116.20'
CH=N7°40'02"E - 111.81'
- (S) N56°58'05"W - 85.10'
- (T) S45°18'15"W - 17.44'
- (U) ARC=121.44° - R=748.76'
CH=S40°41'10"W - 121.31'
- (V) N57°58'23"W - 27.41'
- (W) ARC=37.08° - R=220.00'
CH=N61°25'12"W - 37.04'
- (X) ARC=52.59° - R=136.50'
CH=N73°19'20"E - 52.26'
- (Y) ARC=11.28° - R=61.00'
CH=N64°36'44"E - 11.27'
- (Z) ARC=40.49° - R=61.00'
CH=N88°55'42"E - 39.76'
- (AA) S72°03'13"E - 16.39'
- (AB) N78°00'20"W - 31.22'
- (AC) ARC=66.06° - R=96.50'
CH=S82°23'01"W - 64.78'
- (AD) ARC=62.57° - R=101.00'
CH=ST7°46'28"W - 61.58'
- (AE) S36°02'24"W - 17.86'
- (AF) S16°48'08"E - 31.47'
- (AG) N27°55'04"W - 82.04'

- (D) S66°00'47"E - 2.31'
- (E) S60°48'16"E - 29.88'
- (F) S28°16'38"W - 180.49'
- (G) S54°04'44"E - 27.08'
- (H) S28°16'38"W - 28.39'
- (I) ARC=78.29° - R=245.00'
CH=S37°25'55"W - 77.9'
- (J) S45°18'36"W - 63.52'
- (K) S62°29'00"E - 142.77'

- (A) ARC=61.69° - R=166.20'
CH=N80°47'42"W - 61.34'
- (B) ARC=28.94° - R=153.68'
CH=N31°05'22"E - 28.89'
- (C) S54°04'44"E - 35.34'

BID CODE	ITEM	UNITS	PROPOSED	ABANDONED
22093NN	2"x2" Tie-in	EA	5	
20084NN	Cut & Cap Exist. Natural Gas Line	EA	5	
23337EC	2" Poly Valve	LF	2	
01061	Open Cut 4" Steel Casing Pipe	LF	90	
22802EN	2" PE, DR 11 Natural Gas Line	LF	1164	975



RT. SCOTT'S FERRY STA. 50+65 @ 15° SKEW LT. CONST. 11 L.F. OF 12' TO 2' F.B. OUTLET DITCH W/ 12 TONS OF CL. II CH. LINING D=1', T=1.5'

RT. STA. 52+19 @ 8° SK. LT. CONST. 12' ENTRANCE WITH 34.1 SQ. YDS. OF T.B.B. AND 23 L.F. OF 15" ENTR. PIPE

FROM STA. 52+58 TO STA. 53+30 TAPER AND TIE SCOTT'S FERRY PVMT., SHLDRS., & DITCHES FROM PROPOSED TO EXISTING

RT. STA. 53+07 CONST. 12" ENTRANCE WITH 31.3 SQ. YDS. OF CONC. PVMT.

DITCH CONSTRUCTION RT. SCOTT'S FERRY RD.					
STATION	SIZE - SHAPE TYPE	LINING			
		TYPE	T=	D=	QUANTITY
52+32.75 - 52+75	SPCL. RDWY.	ECB		1'	38 SY

SCALE: 1" = 50'

KENVIRONS, INC.
452 YERSALLIES ROAD, FRANKFORT, KENTUCKY
(502) 695-4357

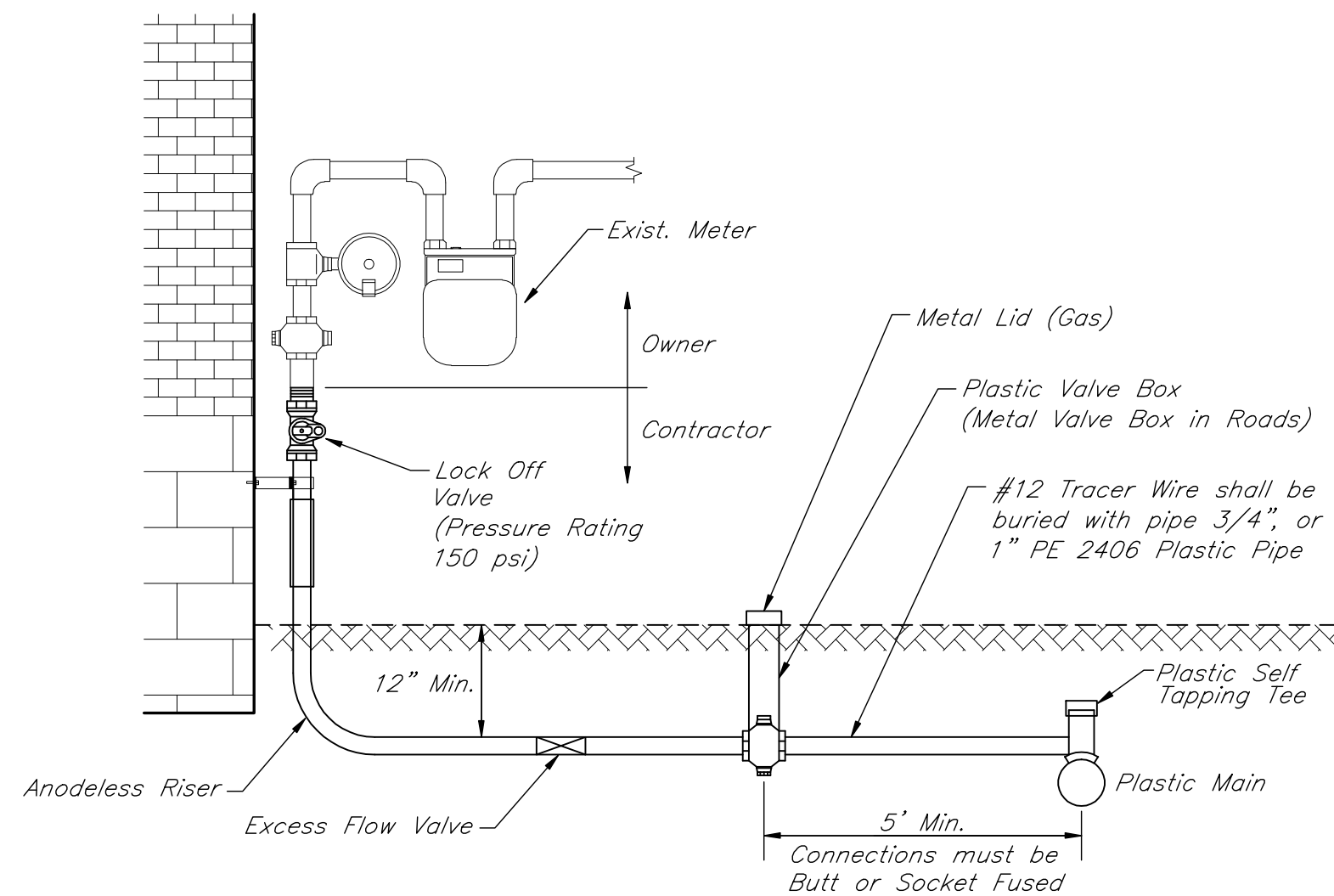
FOR NATURAL GAS ONLY

SCOTT'S FERRY ROAD & GARMON'S FERRY ROAD

U7

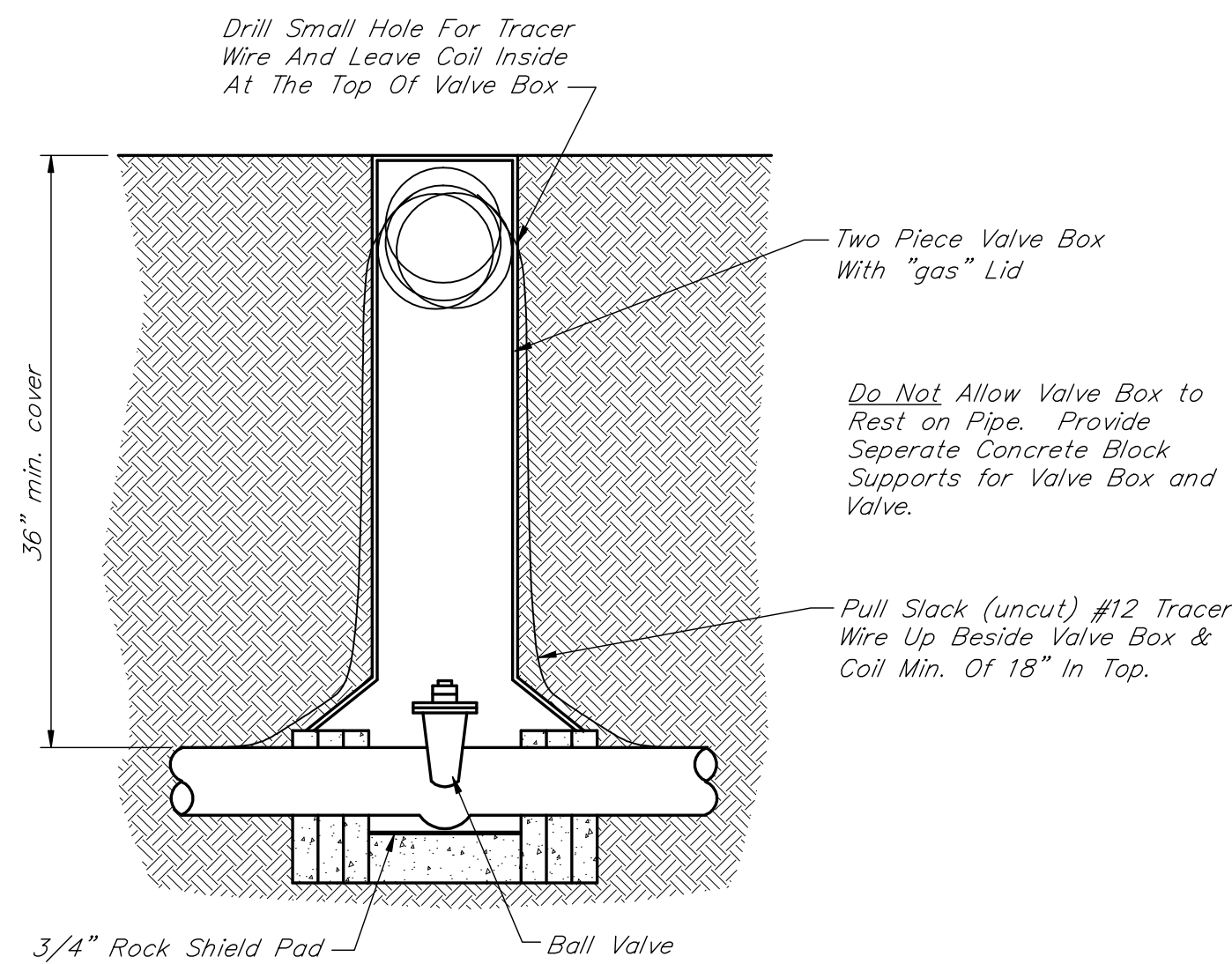
WAYNE A. SCHRAMM & KATHERYN DABB SCHRAMM, TRUSTEES OF THE SCHRAMM FAMILY TRUST

FILE NAME: F:\WORK\CUMBERLAND KY 6108-0158\CONTRACT PLANS AND PROPOSAL\CONTRACT PLAN SET\ROADWAY\RD2900PL.DGN
 DATE PLOTTED: May 4, 2012
 E-SHEET NAME:



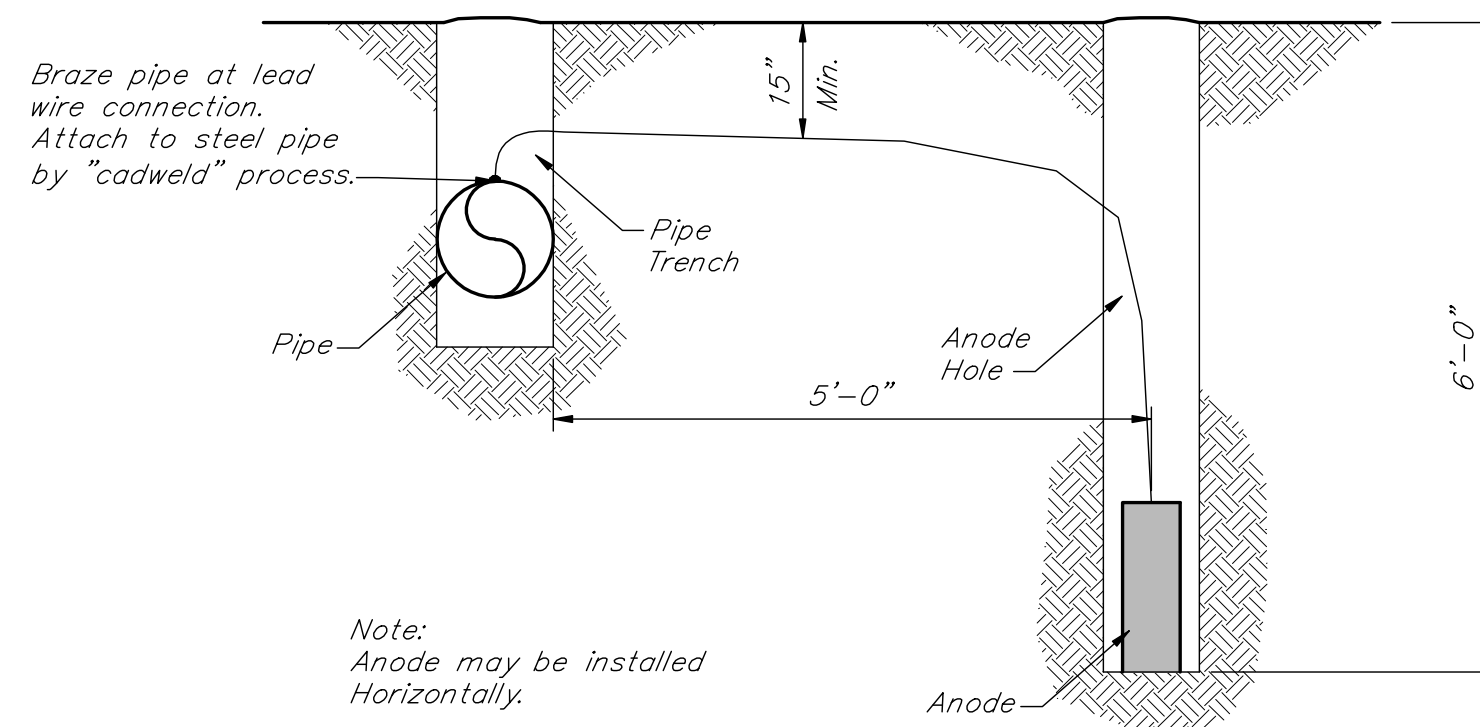
**RESIDENTIAL SERVICE INSTALLATION
(PLASTIC MAIN - PLASTIC SERVICE LINE)**

NOT TO SCALE

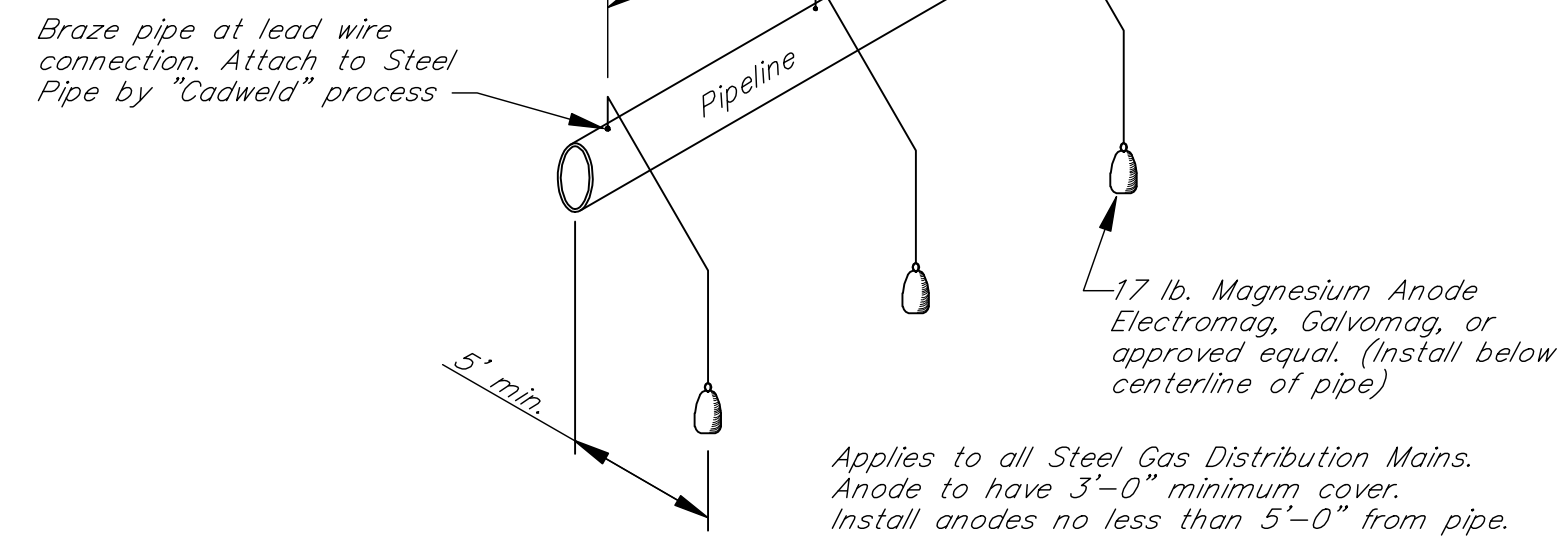


BALL VALVE - UNDERGROUND INSTALLATION

NOT TO SCALE

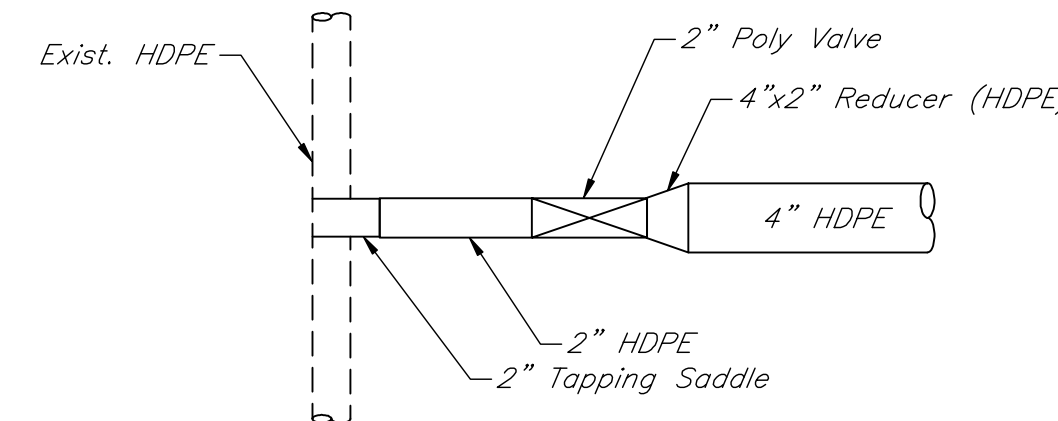
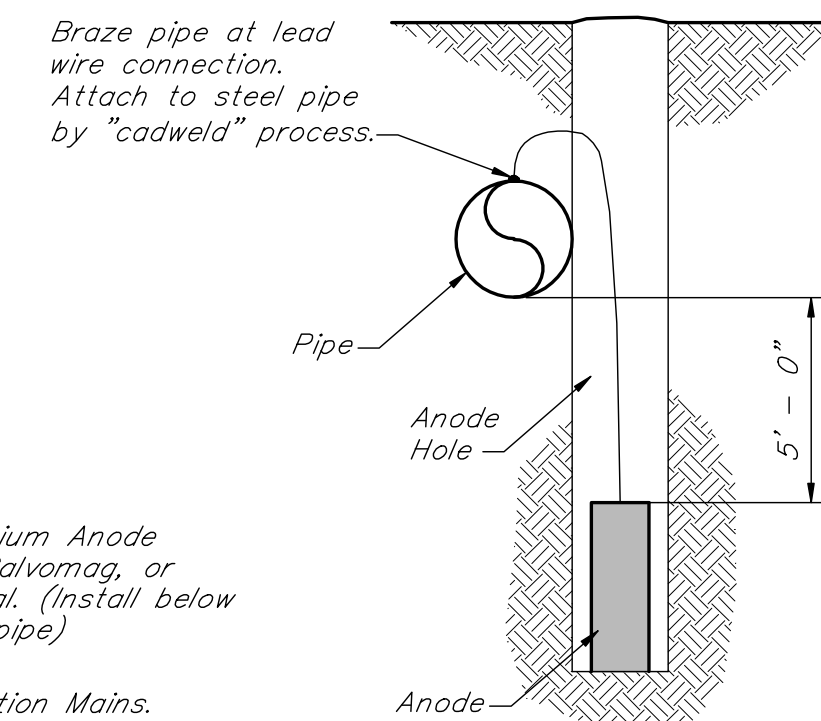


Maximum spacing for Anodes:
 3" - 1260' on center
 4" - 960' on center
 6" - 630' on center
 8" - 480' on center



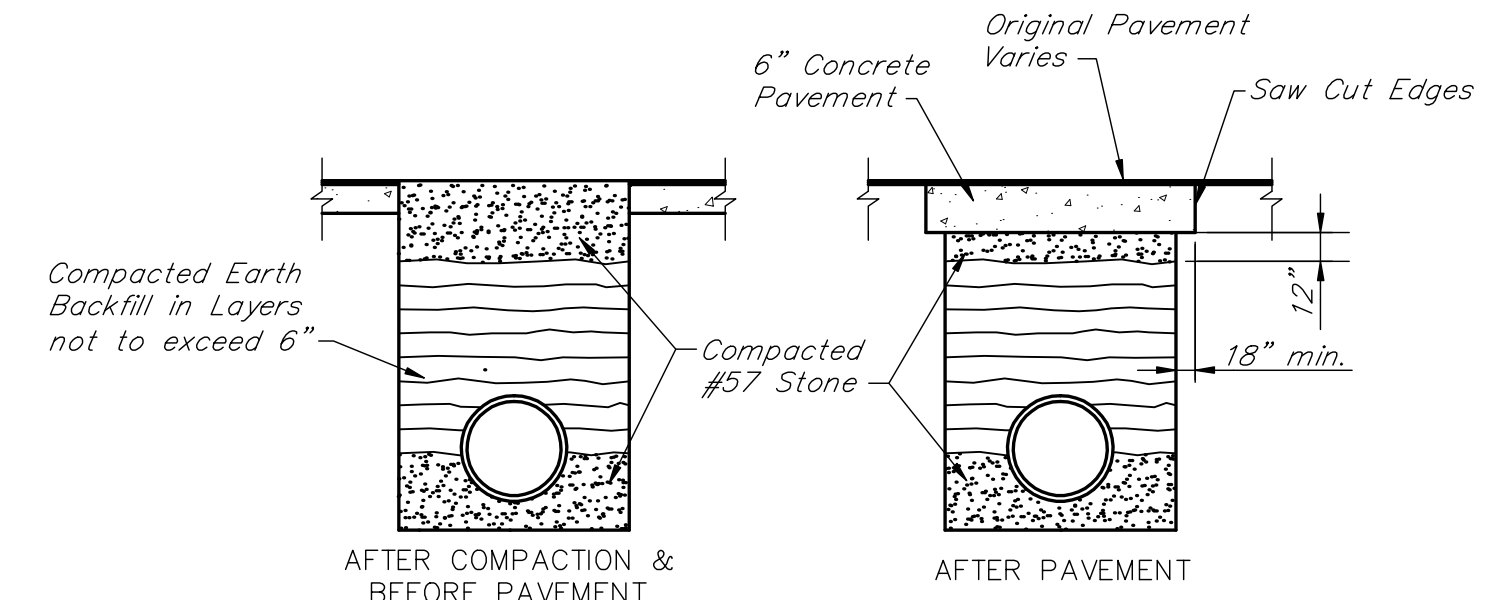
MAGNESIUM ANODE INSTALLATION

N.T.S.



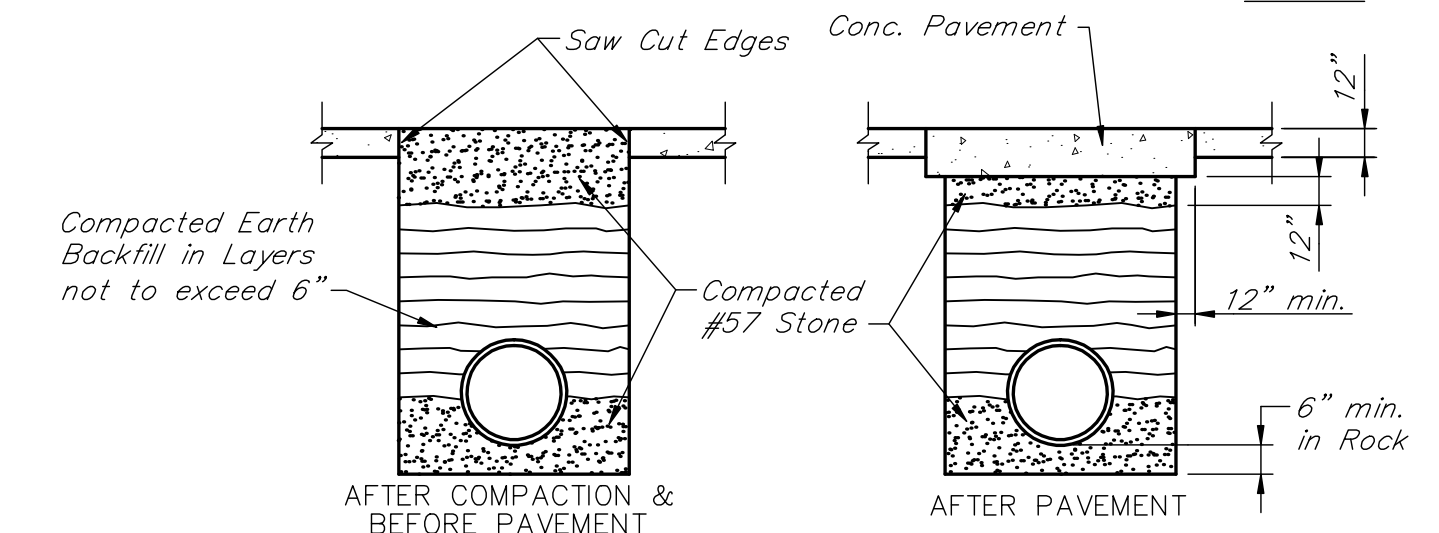
TIE-IN DETAIL

NOT TO SCALE



BITUMINOUS PAVEMENT

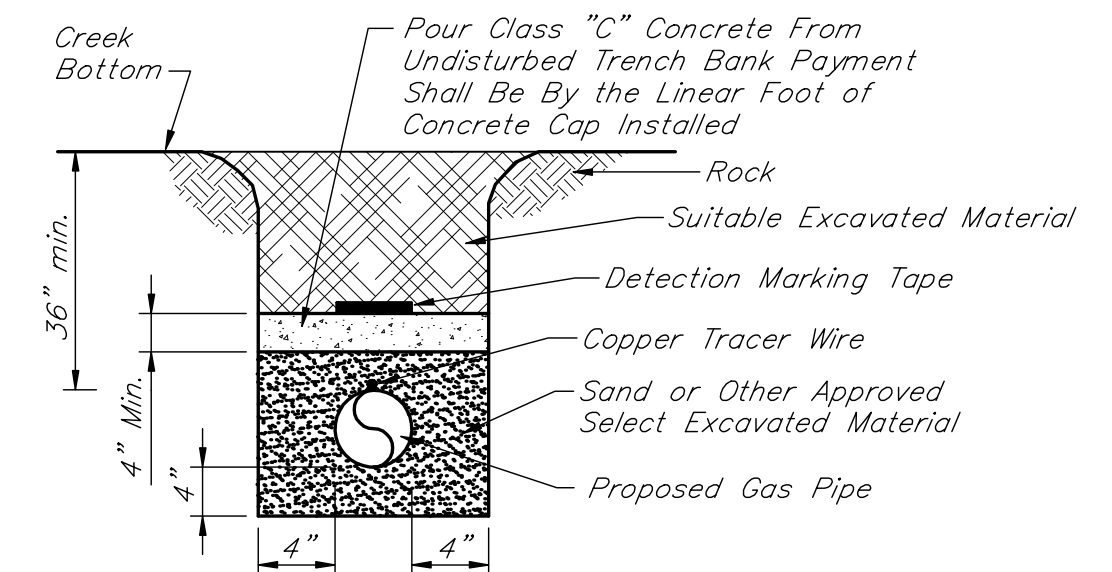
Width of excavation not to exceed the nominal pipe diameter plus 24"



CONCRETE PAVEMENT

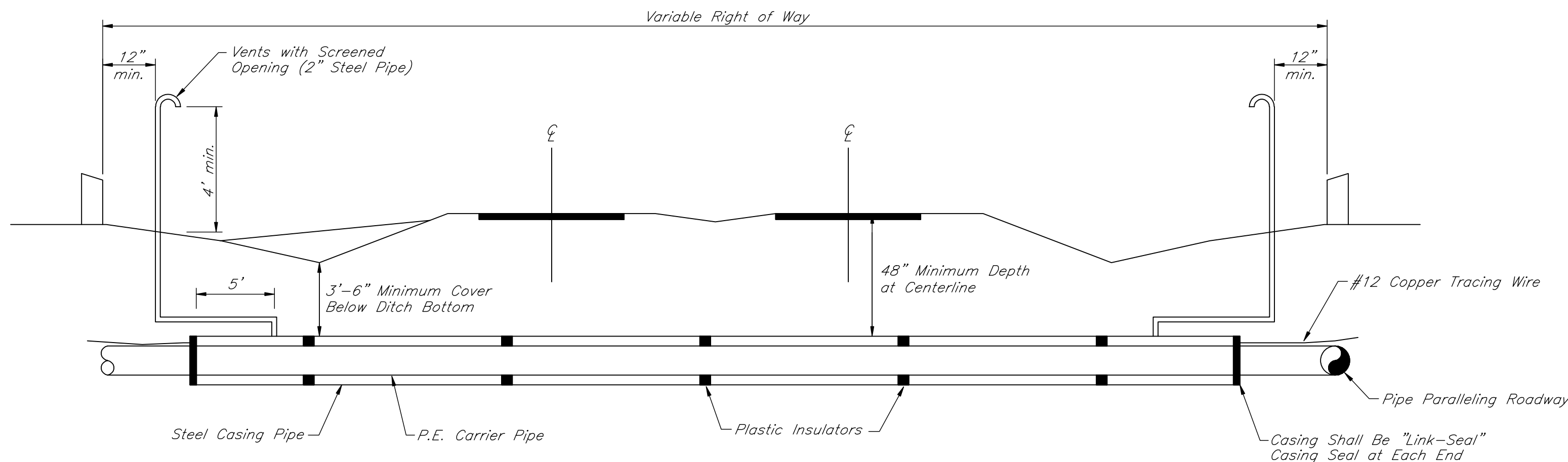
PAVEMENT RESTORATION

NOT TO SCALE



CONCRETE CAP METHODS

N.T.S.

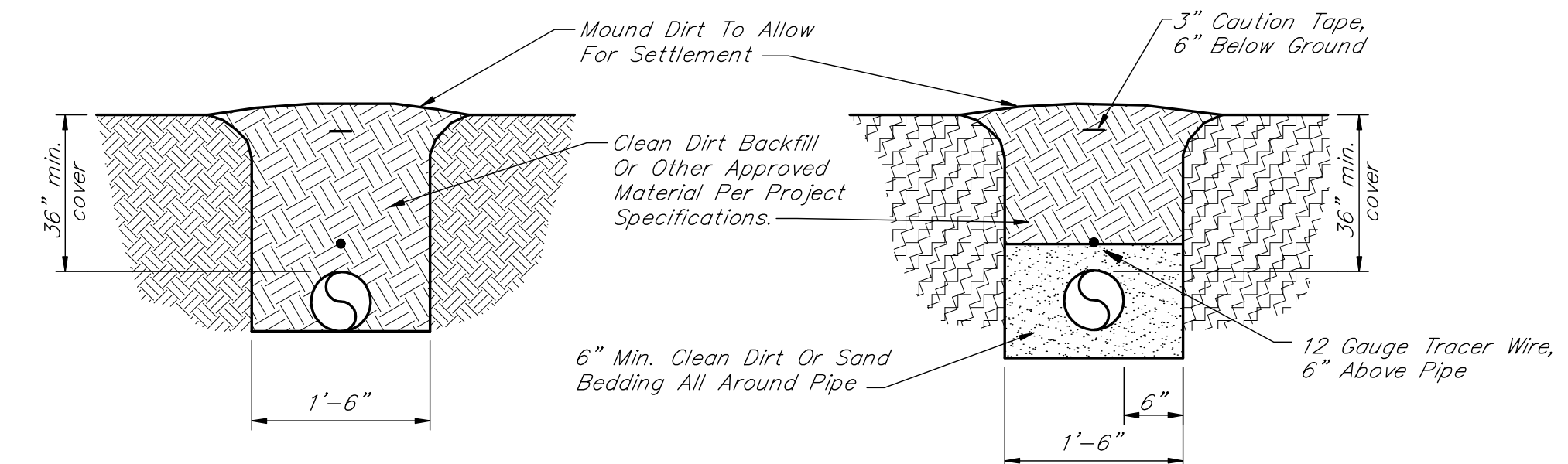


NOTES:

1. Casing shall be installed in a manner which prevents the formation of a waterway under the roadway. It shall have even bearing throughout its length and shall slope towards one end.
2. Vent pipes shall be welded to top of casing and shall extend not less than 4 feet above ground. Vents shall be primed and painted.
3. Steel casing pipe not required for steel gas lines in a bore under state highway and/or roadway.

TYPICAL CASSED HIGHWAY CROSSING FOR H.D.P.E. GAS LINES

N.T.S.



CONVENTIONAL EXCAVATION

ROCK EXCAVATION

TYPICAL TRENCH EXCAVATION

NOT TO SCALE

MD-1

MISCELLANEOUS DETAILS

DRAWN BY: PTH
CHECKED BY: EWB
DATE: Sep. 2012
SCALE: As Noted
REVISIONS



TABLE OF CONTENTS

PART I	SCOPE OF WORK
	<ul style="list-style-type: none">• PROJECT(S), COMPLETION DATE(S), & LIQUIDATED DAMAGES• CONTRACT NOTES• STATE CONTRACT NOTES• COMPACTION OPTION A• SPECIAL NOTE(S) APPLICABLE TO PROJECT• WASTE AND BORROW SITES• RIGHT OF WAY NOTES• UTILITY CLEARANCE• UTILITY SPECIFICATIONS• KPDES STORM WATER PERMIT, BMP AND NOI• COMMUNICATING ALL PROMISES• PERMIT(S)
PART II	SPECIFICATIONS AND STANDARD DRAWINGS
	<ul style="list-style-type: none">• SPECIFICATIONS REFERENCE• SUPPLEMENTAL SPECIFICATION• [SN-1I] PORTABLE CHANGEABLE SIGNS• [SP-69] EMBANKMENT AT BRIDGE END BENT STRUCTURES
PART III	EMPLOYMENT, WAGE AND RECORD REQUIREMENTS
	<ul style="list-style-type: none">• LABOR AND WAGE REQUIREMENTS• EXECUTIVE BRANCH CODE OF ETHICS• KENTUCKY EQUAL EMPLOYMENT OPPORTUNITY ACT OF 1978• PROJECT WAGE RATES
PART IV	INSURANCE
PART V	BID ITEMS

SPECIAL NOTES FOR UTILITY CLEARANCE

IMPACT ON CONSTRUCTION

CUMBERLAND COUNTY
FD04 029 48776 09U
BURKESVILLE – COLUMBIA ROAD (KY 61)
ITEM NUMBER 8-158.10

GENERAL PROJECT NOTE ON UTILITY PROTECTION

All existing utilities are to remain in service until their proposed utility relocations are complete. Holidays, bad weather, and facility outages may affect the below mentioned completion dates. The below utility company completion dates are anticipated and are subject to change. They may complete relocation work sooner than anticipated or it may take longer than anticipated. The Road Contractor cannot file a claim for delays or interference due to the existing utility company facilities or construction of them. It is recommended the Road Contractor contact the utility companies in order to coordinate utility relocation and roadway construction. Note: No railroads are on project..

NOTE: DO NOT DISTURB THE FOLLOWING UTILITIES LOCATED WITHIN THE PROJECT DISTURB LIMITS

Cumberland County Water District: is 100% complete with their relocation work. Cumberland County Water District has a waterline at the north end of the project where the proposed new road ties into KY 61. The road contractor is responsible for contacting Cumberland County Water District and having their line located in the field to avoid conflicts. List all applicable utilities whose facilities are present and are not to be disturbed during construction activities.

The Contractor is fully responsible for protection of all utilities listed above

THE FOLLOWING COMPANIES ARE RELOCATING/ADJUSTING THEIR UTILITIES WITHIN THE PROJECT LIMITS AND WILL BE COMPLETE PRIOR TO CONSTRUCTION

Not Applicable

THE FOLLOWING COMPANIES HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE COMPANY OR THE COMPANY'S SUBCONTRACTOR AND IS TO BE COORDINATED WITH THE ROAD CONTRACT

City of Burkesville Water/Sewer District: is 0% complete with their relocation work. They anticipate having a utility contractor secured by March 1, 2013 to begin with relocation work. Once work begins, the City of Burkesville anticipates an additional 90 working days for completion; this would clear their facilities by July 5, 2013. All of the City of Burkesville facilities are located at the southern part of the project along the curb and gutter section. The road contractor is responsible for contacting the City of Burkesville Water District and having their lines located in the field to avoid conflicts.

Tri-County Electric: is 20% complete with their relocation work. They are currently working on the north end of the project and working their way south. Tri-County Electric anticipates clearing facilities by December 31, 2012.

Windstream Communications: is 0% complete with their relocation work. They anticipate clearing the project 1 month after Tri-County Electric completes their relocation; this would clear their facilities by January 31, 2013.

Duo County Telephone: is 20% complete with their relocation work. They anticipate clearing the project 1 month after Tri-County Electric completes their relocation working concurrently with

SPECIAL NOTES FOR UTILITY CLEARANCE
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Windstream Communications; this would clear their facilities by January 31, 2013.

Mediacom: is 0% complete with their relocation work. They anticipate clearing the project 1 month after Windstream Communications completes their relocation; this would clear their facilities by February 28, 2013.

The Department will consider submission of a bid as the Contractor's agreement to not make any claims for additional compensation due to delays or other conditions created by the operations of the City of Burkesville Water District, Tri-County Electric, Windstream Communications, Duo County Telephone, or Mediacom..

**THE FOLLOWING COMPANIES HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE ROAD
CONTRACTOR AS INCLUDED IN THIS CONTRACT**

Burkesville Gas (AKA Apache Gas): Plans are currently being prepared by Kenvirons Inc. to be included in the road contract for relocation of the City of Burkesville Gas line. They have facilities on the southern ½ mile curb and gutter section.

SPECIAL CAUTION NOTE – PROTECTION OF UTILITIES

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate his activities. The contractor will coordinate his activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation

SPECIAL NOTES FOR UTILITY CLEARANCE IMPACT ON CONSTRUCTION

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work with the facility owner and Resident Engineer. The Kentucky Transportation Cabinet maintains the right to remove or alter portions of this contract if a utility conflict occurs.

The utility facilities as noted in the previous section(s) have been determined using data garnered by varied means and with varying degrees of accuracy: from the facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless specified as such. It is the contractor’s responsibility to verify all utilities and their respective locations before excavating.

BEFORE YOU DIG

The contractor is instructed to call 1-800-752-6007 to reach KY 811, the one-call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that owners of underground facilities are not required to be members of the KY 811 one-call Before-U-Dig (BUD) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area.

Please Note: The information presented in this Utility Note is informational in nature and the information contained herein is not guaranteed.

AREA UTILITIES CONTACT LIST

<u>Utility Company/Agency</u>	<u>Contact Name</u>	<u>Contact Information</u>
Cumberland County Water District	Johnny Carter	133 Lower River Street Burkesville, KY. 42717 (270) 864-3133
Engineer	Deron Byrne (Monarch Engineering) dbyrne@monarchengineering.net	(502) 839-1310
City of Burkesville Water/Sewer	Edward Peretto	P.O. Box 250

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		Burkesville, KY. 42717 (270) 864-5391 (859) 223-3999
Engineer	Mike Jacobs (GRW Engineering) mjacobs@grwinc.com	
Tri-County Electric	Steve Linville slinville@tcemc.org	P.O. Box 40 405 College Street LaFayette, TN. 37083 (615) 666-2111
Windstream Communications	Roger Redford roger.redford@windstream.com	229 Lees Valley Road Shepherdsville, KY. 40165 (502) 957-7140
Duo County Telephone	Rick Eldridge reldridge@duotel.com	P.O. Box 80 Jamestown, KY. 42629 (270) 343-3131
Mediacom Southeast LLC	Albert Gaboriault agaboriault@mediacomcc.com	90 North Main Street Benton, KY 42025 (270) 527-9939
City of Brukesville Gas (Apache Gas)	David Kemton	P.O. Box 69 119 Upper River Street Burkesville, KY. 42717 (270) 864-9400 (502) 695-4357
Engineer	Eddie Brown (Kenvirons) ebrown@kenvirons.com	

SPECIFICATIONS AND CONTRACT DOCUMENTS

BURKESVILLE GAS COMPANY
BURKESVILLE, KENTUCKY

KY 61 – GAS LINE RELOCATION
ITEM NO. 8-158.10

PREPARED BY:

KENVIRONS, INC.
452 VERSAILLES ROAD
FRANKFORT, KY 40601

PROJECT No. 2012126

AUGUST 2012

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SECTION 00410 BID FORM

Project Identification: **KY 61 – Gas Line Relocation – Item No. 8-158.10**

Item No.	Item	Unit	Quantity	Unit Price	Item Price
1	4-Inch PE, DR 11 Gas Pipe	LF	1,310	\$ _____	\$ _____
2	2-Inch PE, DR 11 Gas Pipe	LF	1,164	_____	_____
3	¾" PE, DR 11 Gas Pipe	LF	500	_____	_____
4	2" Poly Valve	EA	2	_____	_____
5	Tie-In to Existing 4" PE w/ 4"x4" Tapping Saddle & 4" Poly Valve	EA	2	_____	_____
6	Tie-In to Existing 2" PE w/ 4"x2" Tapping Saddle & 4" Poly Valve	EA	1	_____	_____
7	Tie-In to Existing 2" PE w/ 2"x2" Tapping Saddle & 2" Poly Valve	EA	5	_____	_____
8	8" Casing Pipe for 4" PE Gas Line	LF	80	_____	_____
9	Cut & Cap Existing 4" PE Gas Line	EA	1	_____	_____
10	Cut & Cap Existing 2" PE Gas Line	EA	6	_____	_____
11	Reconnect Services	EA	5	_____	_____
12	Free Bore	LF	210	_____	_____
13	Pavement Replacement	LF	100	_____	_____
Total Base Bid					\$ _____

00410-1

SECTION 01000

SPECIAL CONDITIONS

1. PURPOSE OF SPECIFICATIONS

These specifications, and the Standard Construction Details accompanying them, are provided by the Owner, to govern and control the materials and installation of natural gas facilities that are, or will become, the responsibility of the Owner to operate and maintain as a portion of its system. They are intended to require facilities of such quality, and to the appropriate design criteria, such that will satisfy the requirements of the Owner, the Kentucky Public Services Commission, the United States Department of Transportation safety requirements, and any other agencies exercising control, such as the Owner, the Kentucky Transportation Cabinet, or various railway companies. They are intended primarily for the use of subdivision or other property developers who desire to construct the natural gas facilities within the confines of or adjacent to their development.

These specifications may from time to time be changed by Addendum. Any items of construction not covered by these specifications or construction details will be provided by the Owner when the need or necessity is brought to their attention.

2. STANDARD PROCEDURE

If a Developer elects to perform the construction of natural gas facilities within and adjacent to his development, as required to connect his system to the Owner's existing system, the following is to be performed by the Developer:

a. Employ a Registered Professional Engineer, experienced in natural gas facilities work to prepare plans for the proposed work, and submit the plans to the Owner for their review and approval. The Developer shall pay the Owner a non-refundable plan review fee of \$100.00 for each set of drawings and specifications proposed to be reviewed by the department. The name, address and telephone number of the proposed Engineer shall be submitted to the Owner for review and approval. The prospective Engineer shall provide a list of similar projects, with references, to the Owner. The Owner reserves the right to reject any proposed Engineer. Further, the Owner reserves the right to have the proposed drawings reviewed by their consulting engineer at the expense of the Developer. The plans to be submitted shall consist of the following:

(1) A Project Map, or plan of the development, showing thereon all lots to be served; contours, on USGS Datum, at not greater than 2 foot intervals; location of all main gas lines (does not include

service line to lots); valves and easements, if required, for those mains where off the street and location of other existing and proposed utilities.

(2) For new gas lines there shall also be provided separate plan and profile sheets showing the water line elevations and other utility crossings with valves and other appurtenances with pipe material and size indicated. Scale of the plan view shall be no smaller than 1"=100', and vertical scale of profile shall be no smaller than 1"=10'.

(3) A vicinity Map shall also be provided, showing the location of the development in relation to other areas of the City.

(4) The standard sheet size is 24" x 36", and plans submitted shall be on this size sheet, except for the Project Map, which may be larger, if necessary.

(5) Initial submittal shall be 2 sets of paper prints of the above required plans. The Department will review the plans for conformance with their standards and with their overall plans for their natural gas system. If changes are required in the plans, the Developer will cause the changes to be made and resubmit the plans in 3 sets. The Developer shall then submit the proposed drawings to the appropriate review agencies for approval. All fees associated with such submittals shall be paid by the Developer. After agency approvals are received and the project is fully constructed, the Developer shall provide 1 paper copy and 1 digital copy in pdf format of "as constructed" plans to the Owner for their files.

(6) It should specifically be noted that developers proposing the construction of restaurants and/or other commercial, industrial or institutional facilities shall assure the Owner that all requirements will be addressed in their final site design, including the installation of meters with size shown.

(7) The Developer's engineer shall prepare, and the Developer secure, all necessary permits or easements required from the Kentucky Transportation Cabinet, railway companies and private properties, in the name of the City for the benefit of the Owner and deliver them to the Department. All private property easements and state highway and railroad encroachment permits shall be delivered to the Owner prior to acceptance of the completed project by the City.

b. Employ an experienced utility Contractor to perform the necessary construction work. The Contractor shall keep on the work, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Department. Equipment and tools shall be of adequate size and in proper condition to perform the work.

c. The name, address and telephone number of the proposed contractor shall be submitted to the Owner for review and approval. The prospective Contractor shall provide a list of similar projects, with references to the Owner. The Owner reserves the right to reject any proposed Contractor.

d. The proposed utility contractor shall submit for review and approval by the Owner the following material, including data as required by the Pipeline Safety Act:

(1) One copy of the CONTRACTOR'S current Operator Qualification Plan. This plan shall include all qualified employees for performing each task pertaining to the particular project.

(2) One copy of the contractor's current "Drug Prevention Program," which shall include procedures for random drug testing.

(3) One copy of the contractor's current "Safety and Operations" plan.

(4) Copies of each welding certificate for each employee joining welded steel pipe and accessories.

(5) Copies of each jointing certificate for each employee jointing fused polyethylene gas pipe and accessories.

3. DEFINITIONS

Unless otherwise noted, the terms "OWNER," "CONTRACTOR," and "ENGINEER" as used in these specifications, shall mean the following.

a. "OWNER" shall mean the City of Columbia, Kentucky.

b. "CONTRACTOR" shall mean the Developer.

c. "ENGINEER" shall mean the Consulting Engineer of the City of Columbia, Kentucky.

The term "Subcontractor" as employed herein, includes only those having a direct contract with the CONTRACTOR, such as the Developer's Engineer, or the utility contractor employed by the Developer.

The term "work" of the CONTRACTOR or Subcontractor includes labor or material or both, equipment, transportation or other facilities necessary to complete the project.

The law of the place of building shall govern the construction.

4. DESIGN CRITERIA

All natural gas facilities shall be designed and installed to conform with "Regulations for the Transportation of Natural and Other Gas by Pipeline," Parts 191 and 192 of Title 49 of the Code of Federal Regulations, the Pipe line Safety Act as promulgated by the United States Department of Transportation and the Kentucky Public Service Commission. All materials used for construction of natural gas facilities shall be new. Used materials are specifically prohibited.

All polyethylene gas mains shall be designed to include #10 gauge solid copper tracer wire. The following design criteria shall also be utilized:

a. Medium Pressure Gas Mains and Appurtenances

- (1) All gas lines to carry less than 50 psi shall be polyethylene.
- (2) Gas lines operating at greater than 50 psi shall be steel.
- (3) The planned size of a new gas main shall be determined using the following applicable design:
 - (a) Single unit, residential housing shall be calculated using 30 cubic feet of usage per degree day based on a low temperature of 0 degrees Fahrenheit plus a monthly allowance of 8 Mcf for gas appliances (dryers, hot water heaters, etc.).
 - (b) Multi-unit housing usage shall be estimated based on the number of units and using the criteria for single unit housing.
 - (c) Commercial, industrial and/or institutional usage shall be as estimated by the developer.
- (4) Main line gas valves, steel or polyethylene, shall be ball valves and shall be located at all pipe junctions.
- (5) Minimum depth of bury for gas mains shall be 30 inches, unless otherwise approved in writing by the OWNER.

(6) Gas services shall be minimum 3/4-inch in diameter and utilize polyethylene pipe, SDR 11.

(7) Service lines to single residential dwellings connected to gas mains containing 10 psi or greater pressures shall be equipped with excessive flow valves. The valve shall be installed at or near the tapping tee.

(8) Meter set details shall comply with Owner.

(9) Service lines attached to gas mains operating at greater than 50 psi shall be steel and will require a field regulator set.

5. INSPECTION AND TESTING OF MATERIALS

Attention is called to the portions of the specifications requiring various testing of materials.

6. SECOND HAND AND SALVAGED MATERIALS

The use of second hand and/or salvaged materials will not be permitted, unless specifically approved by the OWNER.

7. PERIOD OF LIABILITY

The CONTRACTOR shall return to the site of the work at any time within a period of one year from date of final acceptance of the work, and shall repair any defect due to faulty workmanship or materials which may occur within this period. This guarantee shall include, but not be limited to, damage done by settlement of backfills, such damage and sinking of fills being considered as defective workmanship.

8. SHOP DRAWINGS

The CONTRACTOR shall submit 3 copies of all shop drawings required for the work to the OWNER for approval before ordering material or equipment.

9. OWNERSHIP OF SPECIFICATIONS

All plans, specifications and copies thereof furnished by the OWNER are the property of the OWNER, and are to be returned to the OWNER at completion of the work.

10. PERMITS AND REGULATIONS

Permits, easements, and licenses necessary for the prosecution of the work shall be secured and paid for by the CONTRACTOR.

The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the CONTRACTOR observes that the plans and specifications are at variance therewith, he shall promptly notify the OWNER in writing, and any necessary changes shall be adjusted. The CONTRACTOR shall not perform any work knowing it to be contrary to such laws, ordinances, rules, and regulations.

11. PROTECTION OF PUBLIC, WORKMEN, WORK AND PROPERTY

The CONTRACTOR shall continuously maintain adequate protection of all his work from damage and shall protect the OWNER'S property from injury or loss arising in connection with this work. He shall make good any such damage, injury, or loss. This shall not include completed portions of work taken over by OWNER for use and operation, where protection is the responsibility of the OWNER'S operating forces and where the damage was not caused by the CONTRACTOR'S operation on this or other portions of the work but only by lack of protection on the part of the OWNER'S forces. He shall also adequately protect adjacent property as provided by law.

The CONTRACTOR shall take all necessary precautions for the safety of the public and employees and others engaged on the work and shall comply with all applicable provisions of federal, state, and municipal safety laws, traffic regulations and building codes, to prevent accidents or injury to persons on, about or adjacent to the premises where the work is being performed. He shall erect and properly maintain at all times, as required by the conditions and progress of the work all necessary safeguards for the protection of workmen, survey parties and the public, and shall post danger signs at proper places (in case of streets, as far out as one block beyond), warning against the hazards created by such features of construction as survey instruments, ditches, protruding nails, falling materials, machinery, equipment and other hazards. Barricades and signs shall be kept clearly painted with applicable designations. All barricades, holes and obstructions shall be illuminated from sunset to sunrise.

12. INSPECTION OF WORK

The OWNER, the ENGINEER, and their representatives shall at all times have access to the work wherever it is in preparation or progress and the CONTRACTOR shall provide proper facilities for such access and for inspection. If the specifications, the OWNER'S instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the CONTRACTOR shall give the OWNER'S timely notice of its readiness for

inspection, and, if the inspection is by another authority than the OWNER, of the date fixed for such inspection. Inspections by the OWNER shall be promptly made and where practicable at the source of supply. If any work shall be covered up without approval or consent of the OWNER, it must, if required by the OWNER, be uncovered for examination at the CONTRACTOR'S expense.

The OWNER will furnish a construction inspector for the project. Materials and construction must at all times have his approval.

13. CORRECTION OF WORK AFTER FINAL ACCEPTANCE

The final acceptance shall not relieve the CONTRACTOR of responsibility for faulty materials or workmanship and, unless otherwise specified, he shall remedy any defect due thereto and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of final acceptance of the work by the OWNER. The OWNER shall give notice of observed defects with reasonable promptness. If replacements are not made within 10 days after notice is given of such defects in workmanship, or 30 days in case of materials, then the OWNER shall have the right to make replacements and charge cost of same to the CONTRACTOR or his bondsman.

14. LIENS

Before the work is finally accepted by the OWNER, the CONTRACTOR, if required, shall deliver to the OWNER a complete release of all liens arising out of this project, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as he has knowledge or information, the releases and receipts include all the labor and material for which a lien could be filed; but the CONTRACTOR may, if any Subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the OWNER, to indemnify him against any lien. If any lien remains unsatisfied after all payments are made, the CONTRACTOR shall refund to the OWNER all moneys that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

15. SUBCONTRACTORS

The CONTRACTOR agrees that he is as fully responsible to the OWNER for the acts and omissions of his Subcontractors and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

Nothing contained in the specifications shall create any contractual relation between any Subcontractor and the OWNER.

The name of each Subcontractor proposed for work shall be submitted to the OWNER for approval prior to starting the work, together with such information as may be required to prove his ability to handle the work involved.

16. ENGINEER'S STATUS

In rendering general engineering service and resident engineering and inspection on construction, in either case, the ENGINEER and the OWNER shall not be in charge of or be responsible for the methods of construction, construction forces and equipment, their safety procedures, or knowledge of status of CONTRACTOR'S payment of his bills for labor and materials on the project.

17. FINAL INSPECTION

Prior to acceptance by the Owner, an inspection shall be made of all facilities included in the construction. All noted defective items shall be corrected before final acceptance.

18. COST OF CONSTRUCTION

Unless otherwise agreed by the OWNER, the CONTRACTOR shall bear all costs incidental to installation of all facilities within and extending to the development. However, the OWNER may participate in the cost of "oversizing" the facilities to serve additional areas, if the larger facilities are required by the OWNER'S master plan for the system. Each application for cost participation shall be considered on its own merits, and the OWNER reserves the right to approve or reject any application, as it may see fit.

19. FACILITIES FOR LAYING OUT WORK

a. General

The CONTRACTOR's personnel engaged in the layout work described herein and the aides furnished to his Engineer shall be fully capable of performing the duties and shall be fully qualified chiefs of party, instrumentmen, chainmen and/or axemen, as required.

b. Gas Mains

Trench line stations shall be set at least every hundred feet by the CONTRACTOR'S Engineer ahead of trenching. Lines shall be laid out according to approved plans and to avoid obstacles as far as possible, consistent with maintenance of alignment necessary to finding pipeline in the future and avoiding obstruction to future utilities.

20. "AS BUILT" DRAWINGS AND RECORDS

The CONTRACTOR shall assist the OWNER'S Inspector in making measurements to properly locate all facilities, including tee service lines on valves, fittings and appurtenances on gas mains. The OWNER will provide his own "as built" record drawings from the information gathered.

21. PERFORMANCE AND PAYMENT BOND

The CONTRACTOR will be required to furnish a Performance and Payment Bond, acceptable to the OWNER, to run for a period of one year after date of acceptance of the work, in an amount equal to 100 percent of the value of the work.

22. ADDITIONAL STATE AGENCY REQUIREMENTS

22.1 Construction activities disturbing more than one acre of land require coverage under the General KPDES Permit for Storm Water Point Source Discharges – Construction Activities (KPDES No. KY410). The CONTRACTOR will be required to apply for the KPDES permit, including the preparation of a Best Management Practices (BMP) Plan.

23. LIST OF APPROVED CONTRACTORS

All contractors shall have their Operations Qualifications Plan up to date to be considered for this project. The following contractors have been approved by the Engineer:

23.1 CLEARY COONSTRUCTION, INC.
2006 EDMONTON ROAD
TOMPKINSVILLE, KY 42167
(270) 487-1784

23.2 GARRISON CONSTRUCTION, INC.
6960 GREENSBURG ROAD
GREENSBURG, KY 42743
(270) 384-3774

23.3 MARTIN CONTRACTING, INC.
2371 IRVINE ROAD
RICHMOND, KY 40475
(859) 623-0112

23.4 OR APPROVED BY ENGINEER/OWNER

END OF SECTION

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SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1.0 GENERAL

1.1 SANITARY FACILITIES

A. The Contractor shall develop and maintain, in a sanitary condition, sanitary facilities for the Contractor's employees and also employees of the Subcontractors. The Contractor shall, at completion of the Contract Work, properly dispose of these sanitary facilities.

1.2 UTILITIES

A. The obtaining of all utilities for construction, including power and water, shall be the responsibility of the Contractor, and he shall bear the cost of all utilities used for construction. Cost of all connections and facilities for use of utilities shall be borne by the Contractor.

1.3 MAINTENANCE OF SERVICE IN EXISTING UTILITIES

A. Where the existing utilities, including in-plant process piping and plant water piping, must be disturbed during construction under this Contract, their operation and function shall be maintained by the Contractor to such a degree that service to customers will be interrupted for minimum time periods only. Such disturbances and any maintenance use of these lines shall constitute no cost to the Owner. **The Owner shall be notified of interruptions in sufficient time to prepare for them and shall agree to the hour, date, and duration of them before they are undertaken.**

B. Should shutdowns in service be in excess of the time of duration agreed upon, and such excessive shutdown time be due to the Contractor's negligence, faulty Work and/or inability to perform, then and in that event, the Contractor shall be held liable to the Owner for any and all damages that may accrue to the Owner, by reason of such excessive shutdown periods.

C. Digging through services with trenching machines will not be permitted. Upon damage to utility services, such services shall be repaired immediately and tested to the satisfaction of the Engineer. The Contractor shall notify all utility users of impending interruption of service and shall be responsible for all damage resulting from same. Payment for necessary disconnection and reconnection of utility services shall be included as a part of the Contractor's bid and no extra compensation will be made for same.

D. The Contractor shall at all times maintain on hand an adequate supply of repair materials and tools with which to make repair to damaged water, gas and sewer lines. Should the Contractor inadvertently damage existing utilities, he shall make immediate repair thereto and in no event shall he leave the site before such repair has been made and proven to be successful.

E. As far as possible, the locations and sizes of existing mains are indicated on the Drawings; however, exact locations, pipe materials and sizes cannot be guaranteed. It shall be the responsibility of the Contractor to locate and uncover existing lines, to which new mains are to be connected, and provide all connecting fittings of the correct size and type for each connection. Payment for the above shall be included in the unit price bid for each item used for the connection as indicated on the Drawings or as specified.

F. Where existing structures and equipment at the treatment plant or station are disturbed during construction under this Contract, their operation and function shall be maintained by the Contractor to such degree that the treatment process will not be impaired. Such maintenance shall constitute no extra cost to the Owner.

1.4 PROPERTY PROTECTION

A. Care is to be exercised by the Contractor in all phases of construction, to prevent damage and/or injury to the Owner's and/or other property. Payments for the repair and restoration are limited as set forth in "Conflict With or Damage to Underground Facilities" of the Supplementary General Conditions.

B. The Contractor shall avoid unnecessary injury to trees and shall remove only those **authorized** to be removed by written consent of the Owner. Fences, gates, and terrain damaged or disarranged by the Contractor's forces shall be immediately restored in their original condition or better.

1.5 CONSTRUCTION WARNING SIGNS

A. The Contractor shall provide construction warning signs for each location where he is working in the State highway right-of-way or in City streets. He will further provide flagmen as required and shall abide by all Kentucky Transportation Cabinet, Department of Highways safety rules, including size, type and placement of construction signs. All signs shall be of professional quality.

1.6 ACCESS ROADWAYS

A. The Contractor shall construct all access roadways needed during construction, and the planned access roadways for the completed project. The Contractor shall maintain access roadways continuously during the construction period.

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B. The Contractor shall maintain all existing roadways within the project site which are used for any purpose by his construction operations. The degree and frequency of maintenance shall be adequate to keep existing roadways in a condition at least equal to their condition prior to construction. Road maintenance shall include dust control and grading as necessary.

1.7 RESPONSIBILITY FOR TRENCH SETTLEMENT

A. The Contractor shall be responsible for any settlement caused by the construction, that occurs within 1 year after the final acceptance of this Contract by the Owner. Repair of any damage caused by settlement shall meet the approval of the Owner.

1.8 DAMAGE TO CROPS, LIVESTOCK AND VEGETATION

A. The Contractor shall protect crops, livestock and vegetation against damage or injury from construction operations at all times. Crops damaged or equipment access obtained outside of the easements provided shall be the responsibility of the Contractor. Temporary fences shall be provided at no extra cost to the Owner wherever necessary to keep livestock away from the construction area. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Damaged limbs shall be trimmed and damaged tree trunks shall be treated with wound dressing.

1.9 WASTE DISPOSAL

A. The Contractor shall dispose of waste, including any hazardous waste, off-site in accordance with all applicable laws and regulations.

2.0 PRODUCTS

Not used.

3.0 EXECUTION

Not used.

SECTION 02326

STEEL COVER PIPE

1.0 GENERAL

1.1 SCOPE OF WORK

A. Steel cover pipe shall be furnished and installed as shown on the Drawings and specified herein.

1.2 RELATED WORK

A. Pressure pipe is specified in Section 02610.

2.0 PRODUCTS

2.1 STEEL COVER PIPE

A. Steel cover or jack pipe shall be plain end steel pipe with minimum yield strength of 35,000 psi and tensile strength of 60,000 psi per API-5L Grade B material. The steel pipe supplied shall be manufactured by the seamless, electric-weld, submerged-arc weld or gas metal-arc weld process as specified in API-5L. Certification of 35,000 psi minimum yield strength shall be furnished by the supplier through the Contractor to the Owner in sufficient copies before pipe is shipped to job to permit the Owner to retain three copies.

B. Used pipe shall be acceptable if it meets the minimum requirements for size, thickness and strength for new pipe. Supplier shall furnish through the Contractor to the Owner 3 copies of certification of test results of strength tests conducted on the used pipe prior to shipment to job site. Used pipe with excessive corrosion and pitting present shall not be supplied.

C. The inside diameter of steel cover pipe shall be at least 2 inches greater than the largest outside diameter of the carrier pipe, joints or couplings, except for carrier pipe 6 inches or greater in diameter the difference shall be 4 inches instead of 2 inches.

D. Cover pipe shall have a **minimum** wall thickness as shown in the following table:

Diameter (Inches)	Wall Thickness (Inches)	Diameter (Inches)	Wall Thickness (Inches)
Under 10	0.188	24	0.438
10 & 12	0.250	26	0.438
14 & 16	0.281	28 & 30	0.500
18	0.312	32	0.500
20	0.344	34 & 36	0.562
22	0.375	38 & 42	0.562

3.0 EXECUTION

3.1 TUNNELING, BORING OR JACKING

A. Boring or jacking as specified herein will be allowed at locations other than those noted on the Drawings, where advantageous to lay pipe under streets, driveways, and sidewalks, without their monolithic structure being destroyed.

B. Tunneling under paving, railroads, buildings and underground structures is included as an alternate to boring or repaving required by open cut trenching. Bore and cover pipe is also included as an alternate to tunneling. Backfilling of tunnels shall be mechanically tamped in not more than 3 inch layers and with materials rendered suitable for tamping before being placed in tunnel unless otherwise shown on the Drawings.

C. In tunneling under buildings, the Contractor will be held responsible for all damage by his operations and methods of excavation and backfilling.

D. Boring or jacking under highways, railroads, sidewalks, pipelines, etc., shall be done at the locations shown on the Drawings. It shall be performed by mechanical means and accurate vertical and horizontal alignment must be maintained. When shown on the Drawings, cover pipe shall be used and shall be installed inside bored holes concurrently with boring, or jacking.

3.2 STEEL COVER PIPE INSTALLATION

A. Steel cover pipe shall be of the size and wall thickness as shown on the Drawings.

B. When cover pipe is jacked, concurrent with boring, all joints shall be solidly welded. The weld shall be such that the joint shall be of such strength to withstand the forces exerted from the boring and jacking operation as well as the vertical loading imposed on the pipe after installation. The weld shall also be such that it provides a smooth, non-obstructing joint in the interior of the pipe

which will allow easy installation of the carrier pipe without hanging or abrasion to the carrier pipe upon installation.

C. When cover pipe is installed in open trench or permanent tunnel, it shall be bedded and backfilled per Specifications applying to gas line pipe in such locations. When cover pipe is installed in temporary tunnel, it shall be laid accurately to alignment of proposed gas line and at an elevation below gas line necessary to support it at the planned elevation. Bedding and backfill for cover pipe in temporary tunnel shall be per Specifications for gas line in temporary tunnel.

D. Cover pipe in open trench, permanent tunnel and temporary tunnel shall be joined in such manner that they will not be moved out of alignment or grade and that will prevent backfill material from entering joint. Where cover pipes are shown on the Drawings to be equipped with vent pipes, vents shall be installed as shown on the Drawings.

3.3 CARRIER PIPE IN COVER PIPE INSTALLATION

A. Pipeline Spacers

1. High density polyethylene (HDPE) casing spacer shall be non-metallic and molded in segments for easy field assembly with a supplied ball tip Allen wrench. Individual segments shall have a solid core with runners extending to within 1.5" from the casing pipe. The runners shall essentially center the carrier pipe within the casing. Plastic casing spacers shall be located within two feet of both ends of the casing. Casing Spacers shall be installed along the carrier pipe length at the spacing indicated in the table below. All casing spacers shall be supplied with a molded TPR (Thermo Plastic Rubber) non-slip button comprised of pliable material having a high coefficient of friction that is designed to grip all types of pipe materials. All mounting hardware shall be constructed from 304 or 316 stainless steel. The casing spacers shall be Cascade Phoenix Gold Series, as manufactured by Cascade Waterworks Mfg. Co., Yorkville, Illinois, or approved equal.
2. Spacers shall be of such dimensions to provide 1) full supportive load capacity of the pipe and contents; 2) of such thickness to allow installation and/or removal of the pipe; and 3) to allow no greater than 1/2 inch movement of the carrier pipe within the cover pipe after the carrier pipe is installed.

3. Spacers shall be located immediately behind each bell and at a maximum spacing distance as shown below unless a lesser maximum spacing distance is recommended by the pipe manufacturer:

Diameter (inches)	Max. Spacing (feet)
2 – 2 – ½	4
3 – 8	7
10 – 26	10
28	9
30	8
32	7
34	6
36 – 38	5.5
40 – 44	5
46 – 48	4

The materials and spacing to be used shall be accepted by the Engineer prior to installation. The pipeline spacers shall be manufactured by Cascade Waterworks Manufacturing Co., of Yorkville, Illinois, Pipeline Seal and Insulator, Inc., of Houston, Texas, or equal. Installation shall be in accordance with manufacturer's recommendations.

B. Cover Pipe End Seals

1. Upon completion of installation of the carrier pipe, the annular space at the ends of the cover pipe shall be sealed to prevent the entrance of groundwater, silt, etc., into the cover pipe. The seal shall be a manufactured product specially made for this purpose. The seal shall be Link Seal - PL as manufactured by the Thunderline Corporation, Wayne, Michigan, or equal.

C. Cover Pipe Vents

1. Vent pipes shall be installed on the ends of cover pipes in the following numbers and at the following locations:
 - a. U.S. routes and interstate routes—each end of cover pipe.
 - b. Kentucky state routes and other major streets—one end of cover pipe.
 - c. At locations as directed by the Owner.

2. Vent pipes shall be installed at a distance from the end of the cover pipe sufficient not to interfere with the installation or removal of the cover pipe end seals. Vent pipes shall be extended to the street, road, highway, or railroad right-of-way line(s) or as directed by the Owner.
3. Vent pipes shall be constructed of 2-inch coated steel pipe, same as for main line steel pipe, with return bend and bug screen. Vent pipes return bend to be 6 feet above ground elevation or as directed by the Owner.
4. Steel coating of vent pipe shall extend 6 inches above ground surface with the remaining above ground portion to be painted with 2 coats of white.

SECTION 02610

PRESSURE PIPE

1.0 GENERAL

1.1 SUMMARY

A. For Cover Pipe and Boring and/or Jacking see Section 02326.

1.2 SUBMITTALS

A. Prior to the shipment of any pressure pipe to the project site, the Contractor shall submit to the Owner a bill of materials and shop drawings for all, in the number of copies listed in Special Conditions.

B. Supplemental Submittal Requirements

1. Shop drawings are required for metering and regulating facilities only.
2. All testing and certification requirements and descriptive literature remain as described.

1.3 SAFETY

A. Natural gas pressure pipe shall be installed and inspected in compliance with the requirements of the Pipeline Safety Regulations, 49 CFR, Part 192, Minimum Federal Safety Standards.

2.0 PRODUCTS

2.1 MATERIALS - GAS PIPE

A. Polyethylene Pipe for Gas Service

1. Pipe

a. General

- (1) All polyethylene pipe and tubing furnished under this Specification shall meet or exceed all applicable requirements of ASTM D 2513-81, "Standard Specification for Thermoplastic Gas Pressure Pipe, Tubing and Fittings." In addition to complying with the

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above standard, the pipe, tubing and fittings shall meet, be equivalent to or exceed the additional requirements herein specified.

b. Material Qualification

- (1) The polyethylene plastic compound to be extruded shall conform to the requirements as listed in ASTM D 1248-81a for Grade P23 (Type II, Grade 3), Class C, material, and ASTM D 3350-81a as listed for cell classification of 234433. The plastic compound shall be of virgin quality and have been listed by the Plastic Pipe Institute as a PE 2306 designated compound.

c. Pipe Size, Dimensions and Tolerances

- (1) The polyethylene pipe 3 inches in diameter and higher shall meet all applicable dimensional requirements of ASTM D 2513-81 for SDR 11.5 rated pipe. Polyethylene service tubing 2 inches in diameter and less shall be rated as SDR 11.0.

d. Marking

- (1) Marking of the tubing shall conform to the requirements listed in ASTM D 2513-81.

e. Packaging

- (1) Tubing shall be delivered in cardboard disposable reels or coils standard to the supplier.
- (2) Reels to be sequentially marked numerically as extruded with reference to quality control.

2. Fittings

- a. Fittings furnished under this Specification shall meet all applicable requirements of ASTM D 2683-80 "Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe" for use with SDR 11 polyethylene pipe.
- b. Fittings furnished for this project shall be manufactured by the same manufacturer as the pipe.

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2.2 SOURCE QUALITY CONTROL

A. Polyethylene Pipe for Gas Service

1. General

- a. A nominal physical properties list for the base compound shall be submitted and accepted as part of this Specification. Manufacturer shall certify that production materials used are in conformance with the published properties.

2. Quality Tests

- a. The P.E. tubing shall be subjected to the applicable quality control tests outlined in Appendix X4, ASTM D 2513-81, "Recommended In-plant Quality Control Program for Plastic Pipe and Fittings Intended for Use in Natural Gas Distribution Systems."
- b. The polyethylene pipe and fittings shall also be tested for "Time-to-Failure of Plastic Pipe Under Constant Internal Pressure," ASTM D 98-81, "Short-Time Hydraulic Failure Pressure of Plastic Pipe, Tubing and Fittings," ASTM D 1599-81 and the long-term pressure test as noted in Appendix X2.2 of ASTM D 2513-81 using test method per ASTM D 2837-76 (1981).

3. Inspection

- a. The Owner reserves the right to inspect the product at the place of manufacture, or at the point of delivery and to reject any shipment which does not conform to these Specifications. Defective tubing shall be replaced by the Contractor, at no cost to the Owner. Upon request, the manufacturer shall allow access to the OWNER during the extrusion of the specific lot purchased.

4. Qualification of Manufacturer

- a. The manufacturer shall have adequate equipment and quality control facilities to continually produce finished tubing that will have the properties indicated herein.

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3.0 EXECUTION

3.1 TRENCH EXCAVATION - PRESSURE PIPE

A. General

1. Trenching shall include all clearing and grubbing, including all weeds, briars, trees and stumps encountered in the trenching, regardless of size. The Contractor shall dispose of any such material by burning, burial or hauling away or as noted on the Drawings.
2. Trenching also includes such items as railroad, street, road, sidewalk, pipe and small creek crossings; cutting, moving or repairing damage to fences, poles or gates and other surface structures, regardless of whether shown on the Drawings. The Contractor shall protect existing facilities against danger or damage while pipeline is being constructed and backfilled or from damage due to settlement of the backfill.
3. All excavation shall be open trenches, except where the Drawings call for tunneling, boring or jacking under structures, railroads, sidewalks, roads or highways.

B. Trees and Shrubs

1. Where pipelines run through wooded terrain, cutting of trees within limits of maximum permissible trench widths, as set forth in this article, will be permitted. However, cutting of additional trees on sides of trench to accommodate operating of trenching machine will not be permitted.

C. Highways, Streets and Railroads

1. Construction equipment injurious to paving encountered shall not be used. Curbs, sidewalks, and other structures shall be protected by the Contractor from damage by his construction equipment.
2. Where trenching is cut through paving which does not crumble on edges, trench edge shall be cut to at least 2 inches deep to straight and neat edges, before excavation is started, and care taken to preserve the edge to facilitate neat repaving.
3. The Contractor shall so coordinate his work as to produce a minimum of interference with normal traffic on highways and streets. He may, with the approval of the governing agency, close a

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street to traffic for such length of time considered necessary, provided persons occupying property abutting the street have an alternate route of access to the property which is suitable for their needs during the time of closure. It shall be the responsibility of the Contractor to give 24 hours advance notice to fire and police departments and to occupants of a street which will be closed, in a manner approved by the governing body.

4. The Contractor shall maintain road crossings in a passable condition for traffic until the final acceptance of the work.
5. Railroad and Highway Department requirements in regard to trenching, tunneling, boring and jacking shall take precedence over the foregoing general specifications and the following tunneling and boring or jacking specifications, where they are involved.
6. Uneven surfaces or humps in the ground encountered and high driveways and road crossings shall be dug through to such depth that pipe may be laid to a reasonably even grade and have minimum cover at the low places.

D. Existing Utilities

1. The Contractor shall determine, as far as possible in advance, the location of all existing sewer, culvert, drain, water, electric, telephone conduits, and gas pipes, and other subsurface structures and avoid disturbing same in opening his trenches. In case of sewer, water and gas services and other facilities easily damaged by machine trenching, same shall be uncovered without damage ahead of trenching machine and left intact or removed without permanent damage ahead of trenching and restored immediately after trenching machine has passed. The Contractor shall protect such existing facilities, including power and telephone poles and guy wires, against danger or damage while pipeline is being constructed and backfilled, or from damage due to settlement of his backfill. It shall be the responsibility of the Contractor to inform the customers of utilities of disruption of any utility service as soon as it is known that it has been or will be cut off.

E. Pipelines in Same Trench

1. Pipelines, force mains, and sewers laid in same trench shall, in all cases, be bedded on original earth, or other specified bedding materials, regardless of divergence in their elevations, unless otherwise specified. They shall never be laid in unsupported backfill or one above the other.

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F. Location of Proposed Pipelines

1. The location of pipelines and their appurtenances as shown are those intended for the final construction. However, conditions may present themselves before construction on any line is started that would indicate desirable changes in location. Also, development of property traversed may require location changes. In such cases, the Owner reserves the right to make reasonable changes in line and structure locations. The Owner is under no obligation to locate pipelines so that they may be excavated by machine.

G. Trench Requirements

1. All trenches must be dug neatly to lines and grades.
2. The opening of more than 500 feet of trench ahead of pipe laying and more than 500 feet of open ditch left behind pipe laying, before backfilling, will not be permitted, except upon written consent of the Owner. No trench shall be left open or work stopped on same for a considerable length of time. In case of objectionable delay trench shall be refilled according to backfill specifications.
3. Where subgrade of trench has insufficient stability to support the pipeline and hold it to its original grade, the Owner may order stabilization by various means. Exclusive of dewatering normally required for construction and instability caused by neglect of the Contractor, such items as extra excavation, crushed rock for pipe bedding, concrete cradle or piling may be required.
4. Excavation for pipe laying must be made of sufficient width to allow for proper jointing and alignment of the pipe, but not greater than the maximums permitted in the following table:

MAXIMUM TRENCH WIDTH

Pipe Size (inches)	Trench Width (inches)	Pipe Size (inches)	Trench Width (inches)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		

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5. Trenches in earth or rock shall be dug as shown on the Drawings and be sufficiently deep to insure a 30 inch minimum cover over gas lines, or as noted on the Drawings. Depths of trenching shall also be adequate for at least 1 foot minimum cover over valve nuts. In order to insure an earth cushion under the pipe for uniform bearing, trench depth shall be the cover requirement plus outside diameter of barrel of pipe plus the required bedding cushion. The cushion construction requirement shall also apply to tunnels.
6. Trench line stations and locations of accessories will be set ahead of the trenching. These will be set at least each 100 feet of pipeline. Trenches must be dug true to alignment of stakes. Alignment of trenches or pipes in trench must not be changed to pass around obstacles such as poles, fences and other evident obstructions without the permission of the Owner. Lines will be laid out to avoid obstacles as far as possible, contingent with maintenance of alignment necessary to finding pipeline in the future and avoiding obstruction to future utilities.

H. Damage to Existing Structures

1. Hand trenching is required, at no extra payment, where undue damage would be caused to existing structures and facilities by machine trenching.
2. In case of damage to any existing structures, repair and restoration shall be made at once and backfill shall not be replaced until this is done. In all cases, restoration and repair shall be such that the damaged structure will be in as good condition and serve its purpose as completely as before. Where there is the possibility of damage to existing utility lines by trenching machine, the Contractor shall make hand search excavation ahead of machine trenching to uncover same.

I. Dewatering of Trenches

1. Dewatering of trenches shall be considered a part of trenching. Dewatering of trenches shall include groundwater and storm or sanitary sewage. Suitable pumping and other dewatering equipment is to be provided by the Contractor, to insure the installation of the pipeline structure in a dewatered trench and under the proper conditions. Dewatering shall include all practical means available for prevention of surface runoff into trenches and scouring against newly laid pipe.

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2. Piles of excavated materials shall be trenched or temporarily piped to prevent, as far as practical, blockage of drainage ditches and gutters, and water carriage of excavated materials over street and highway surfaces.

3.2 LAYING PRESSURE PIPE

A. General

1. Inspection of Materials

- a. All pipe, fittings and accessories shall be subject to an inspection by the Owner at the job site. Any damaged materials shall be repaired or replaced to the satisfaction of the Owner. Should repairs to the piping materials be necessary, then same shall be made in the presence of the Owner using proven methods prescribed by the pipe manufacturer.
- b. The Owner's inspection of materials shall in no way relieve the Contractor of his responsibility.

2. Laying Requirements

- a. Pressure pipe shall be laid to lines, cover or grades shown on the Drawings.
- b. Pipes must be swabbed out before lowering into trench. In the case of pipelines 4 inch through 20 inch, a swab must also be dragged through the pipe after it is in place. Larger size pipe shall be visually inspected for cleanliness and proper jointing.
- c. The points insisted upon in the laying of pipe will be: Proper alignment, evenness of width and depth of joints, perfection in jointing, and care of the pipe in handling. For gas lines, proper coating and wrapping, electrical inspection and blow-down (purging of air in case of gas lines) of pipes are also essential and will be required.
- d. Precautions must be taken to prevent flotation of the pipe should water enter the trench prior to putting the pipeline into operation.
- e. In wet, yielding and mucky locations where pipe is in danger of sinking below grade or floating out of grade or alignment,

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or where the backfill materials are of such a fluid nature that such movements of the pipe might take place during the placing of the backfill, the pipe must be weighted or secured permanently in place by such means as will prove effective.

- f. Whenever pipe laying is stopped, the end of the pipe shall be securely plugged with the manufacturer's standard expandable pipe plug, or similar conical plug, held in place by proper bracing or backing is required.
- g. No pipe shall be laid resting on solid rock, blocking or other unyielding objects. Jointing before placing in the trench and subsequent lowering of more than one section jointed together may be allowed, subject to the Owner's permission.

3. Installing Gas Pipe in Cover Pipe

- a. Installation of gas pipe in cover pipe is covered in Section 02326 of these specifications.

B. Laying Plastic Pipe

1. Installing Polyethylene Pipe for Gas Service

- a. The pipe shall be bedded in 4 inches minimum of Class I sand with the haunching and initial backfill lightly consolidated to a depth of 12 inches above the top of the pipe with Class I sand. The machined placed backfill may contain rock no larger than 12 inches in any dimension and to an extent no greater than 2 the volume of backfill materials used. The top 12 inches of backfill shall contain no rocks over 1-1/2 inches in diameter nor pockets of crushed rock.
- b. Polyethylene pipe shall be joined by the heat fusion welding process. Welding equipment may be either electric or electrofusion as the Contractor may select. The welding equipment must be capable of attaining the temperature recommended by the manufacturer for the particular polyethylene extrusion used on the project. Pouring of water on completed joints to speed cooling will not be allowed.
- c. Care shall be taken in lowering the pipe onto the earth bedding. The pipe shall be snaked into the trench, employing the natural snaking tendency of the pipe. Sharper bends shall be made with fittings rather than bending the pipe

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alone. The pipe will be rejected if it contains kinks and gouges.

- d. After the pipe is placed in the trench on the required bedding, Class I sand shall be placed to a minimum depth of 12 inches over the pipe. The remainder of the trench may then be machine backfilled with material excavated from the trench, except in no case shall rock spalls over 8 inches be permitted.
- e. All polyethylene pipe installed shall have installed in the trench with the pipe #10 solid copper tracing wire. The wire shall be buried directly over the pipe in the 12 inch covering of earth.
- f. At each 500 feet of new pipeline installed, or at locations as directed by the Owner, cathodic test boxes as specified under steel pipe installation shall be installed. These boxes will be installed with the pipe locator wire attached to the poles in the box and used for pipe location only.
- g. Where tie-in to existing steel main is made, the connection shall be made with special factory molded transition fittings. The polyethylene end of the polyethylene to steel transition shall be of the same material as that of the polyethylene pipe supplied. Compression type transition fittings for polyethylene gas mains will be allowed only for unusual conditions encountered during construction.
- h. Compression type fittings will be allowed for use on polyethylene service lines at locations such as curb valves and meter risers. It is the intent of this requirement that all other joining of polyethylene service line be accomplished by heat fusion.

C. Supplemental Backfilling Information

1. General

- a. Excavated materials from trenches and tunnels, in excess of quantity required for trench backfill, shall be disposed of by the Contractor. It shall be the responsibility of the Contractor to obtain location or permits for its disposal.
- b. Where sod is destroyed in areas maintained equivalent to residence yards, it shall be replaced on slightly ridged

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backfill on trench, and where destroyed in areas adjacent to the trench, it shall be replaced by the Contractor with fresh sod. The timing of resodding shall be controlled by the Owner. Ground shall be prepared and fertilized as herewith specified for seeded areas. In small patches, supplying of 3 inches of topsoil and raking may be substituted for disking.

- c. Where pastures, thin grass or cover crops are destroyed by trenching, laying, backfilling, or tunneling operations, surface shall be prepared by disking, fertilizing, and seeding, as specified in Section 02930. The timing of this operation shall be controlled by the Owner. Requirements of the Department of Highways for reseeding shall take precedence over these Specifications.
- d. Before completion of the Contract, all backfills shall be reshaped, holes filled, and surplus materials hauled away and all permanent walks, street, driveways, and highway paving and sod replacement and reseeding performed.
- e. Backfill material must be uniformly ridged over trench, and excess hauled away. Ridged backfill shall be confined to the width of the trench and not allowed to overlap onto firm original earth, and its height shall not be in excess of needs for replacement of settlement of backfill.
- f. All rock, including crushed rock or gravel from construction, must be removed from yards and fields. Streets and walks shall be broomed to remove all earth and loose rock immediately following backfilling.

2. Special Requirements

- a. In case of street, highway, railroad, sidewalk and driveway crossings or within any roadway paving, or about manholes, valve and meter boxes located in such paving, the following backfill material and procedure is required.
- b. The pipe shall be bedded in 4 inches minimum depth (for pipe sizes through 16 inches) of crushed rock meeting the requirements of the Kentucky Department of Highways standard size No. 8.
- c. Similar material shall be used for haunching up to the spring line of the pipe, and it shall be worked under the haunch of the pipe to provide adequate side support. The crushed rock

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shall then be hand placed to a point 12 inches above the top of the pipe.

- d. After the above bedding and selected backfill have been placed, fill trench to within 6 inches of the surface with Kentucky Department of Highways No. 57 crushed stone, uniformly distributed, or other gradation acceptable to the Owner. In order to accommodate compacted temporary surfacing it may be necessary to bulkhead or otherwise confine the stone fill at the open end of the trench.
- e. Temporary surfacing of street, highway, railroad, sidewalk and driveway crossings, or within any roadway paving, or about manholes, valve and meter boxes located in such paving, shall consist of 6 inches compacted depth of crushed stone as specified under Section 02235 for temporary walkway or road surfacing, placed and compacted in the trench. Compaction shall be accomplished by methods which shall be sufficient to confine stone to the trench under normal traffic. Backfills shall be maintained easily passable to traffic at original paving level until acceptance of project or replacement of paving or sidewalks.
- f. Railroad Company and Department of Highways requirements in regard to backfilling will take precedence over the above general specifications where they are involved.

D. Cut-Ins, Tie-Ins, and Cutting and Plugging

- 1. The Owner shall not be responsible for extra costs of cut-ins, tie-ins, cutting and plugging, due to flow not being entirely cut off by the existing main valves.
- 2. A cut-in is defined as the removal of one section of existing pipeline (2 cuts of pipe) and insertion of one or more new pipeline connections therein.
- 3. A tie-in is defined as the removal of an existing plug or cap and the connecting of the new pipeline into the existing pipeline or fitting or valve at the joint opened by such removal.
- 4. A cutting and plugging is defined as the cutting and installation of a plug in an existing line.

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3.3 FIELD QUALITY CONTROL

A. Testing Polyethylene Gas Pipe

1. Prior to the beginning of construction, the Owner may require a sample joint to be performed by each jointer the Contractor plans to use on the project. The Owner may require a "bend" test on each joint performed or a visual inspection by sampling a portion of the completed joint, or both.
2. Upon completion of each line installed, an air test shall be applied. The test pressure shall be 150 percent of the maximum allowable operating pressure (MAOP) or 90 psi, whichever is greater. The test pressure shall be maintained for a period of 24 hours, with pressure recording chart, without loss of air or appreciable drop in pressure. Should a line pressure drop occur, it shall be the responsibility of the Contractor to locate and repair the leaks and retest the line. The Contractor shall provide the compressor with valves and pressure gauges for the tests as well as all operational personnel to perform the tests.
3. Only lines which have been tested as outlined above in the presence of the Owner or his authorized representative, will be approved for incorporation into the Gas system.

3.4 PURGING OF GAS LINES

A. Scope

1. These procedures cover the purging of air or natural gas from distribution facilities. They describe the manner in which the facilities are to be purged, how to determine when the purge is complete, and items to be considered prior to and during purging.
2. Purging procedures and examples are included.

B. General

1. Purging is required when:
 - a. New or existing facilities are temporarily taken out of service and the removal of natural gas is necessary.
 - b. Existing facilities are temporarily taken out of service and the removal of natural gas is necessary.

- c. Lines are abandoned.
 - d. Service restoration due to emergency depressurization for any cause.
2. Except for simple line piping systems, a written plan for purging should be prepared prior to the work and reviewed with owner personnel involved. The following items should be discussed:
 - a. The extent of the facility to be purged and points of isolation.
 - b. The purging medium to be used.
 - c. The sequence of operation and assignment of personnel.
 - d. Safe working practices (especially around plastic pipe).
 - e. Means of communication during purging.
 - f. Means of determining end of purge at vent points.
 - g. Procedure for handling emergencies, such as gas ignition.
 - h. Notification for governmental authorities (police, fire, medical).
 - i. Back-up provisions, in case of unanticipated occurrences (i.e. compressor failure, purging medium, etc.).
3. When purging, the air or gas to be removed must be removed from all sections of the piping system. Branches and services must be individually purged. The straight through section should be purged first, then each lateral.
4. Injection Rate
 - a. Injection of purging medium into a medium or pipeline should be done at high enough velocity to create a minimum lineal flow of 100 feet per minute. This flow rate will maintain a turbulent interface, thereby minimizing mixing of gases and the possibility of the gases stratifying.
 - b. When purging air from pipelines, the minimum inlet control pressure specified in Table 1 should be maintained whenever possible. This pressure will create a flow velocity which greatly exceeds the 100 feet per minute requirement, maximizes turbulence and shortens purge duration.
 - c. For purging air in other than low pressure systems, a cracked main line valve will create a minimum lineal velocity of 100 feet per minute within the pipeline.

5. It is essential that vented natural gas and air/gas mixtures be diffused into the air without hazard to Owner personnel, the general public, or property. Valved vertical vent stacks should be used to keep the natural gas out of the work area and to blow it in a safe direction. Buildings, overhead lines and other obstructions or sources of ignition should be considered when determining the location for venting the gas.
 6. Considerations must be given to public relations with regard to noise and odor as well as to any applicable state and local noise and air pollution regulation. Such considerations may include the notification of residents in close proximity to the blow down operation, reduction of line pressure, reduced rate of venting, etc.
 7. Purging once started, must be continued until complete.
- C. Purging Air from Facilities to Be Placed in Service
1. Purging Services
 - a. Service installations may be purged by opening the riser valve after the service tee has been tapped. Care must be given to blow gas away from structures by connecting a meter bend or street ell to the riser valve and pointing the stream of gas in a safe direction. The valve should be opened slowly to the full open position; no person or object should be in the exhaust stream area. The operator shall hold the wrench and keep it in contact with the valve at all times. Care must also be taken that no source of ignition is present in the area. A sufficient amount of gas should be blown to atmosphere to insure that all air is removed from the line. Service lines should be purged immediately after the service tee has been tapped and gas is in the service line.
 2. Purging of Pipelines
 - a. Small diameter mains should be purged of air by injecting gas at high enough velocities to create a minimum lineal flow of 100 feet per minute within the pipeline. If this velocity cannot be met, a slug of nitrogen between the air and gas is required (see Procedure 4).
 3. The following methods can be used to determine the absence of air:

- a. A portable combustible gas indicator set on percent gas scale. The reading must indicate 100 percent gas.

D. Purging Natural Gas from Existing Facilities

1. When natural gas is purged by injecting air into lines less than 10 inches in diameter, it is not necessary to separate the air and natural gas with a nitrogen slug.
2. The disposal of large volumes of natural gas into the atmosphere should be minimized as far as practical by transferring as much as possible to adjacent systems.
3. Determine the absence of natural gas with a combustible gas indicator set on 100 percent gas.
4. Working on Existing Pipelines Which Have Been Purged
 - a. When it is necessary to perform work on an existing pipeline which has been purged, precautions shall be taken to verify that a combustible mixture has not developed inside the pipeline due to leakage from a segment of pipeline remaining in service, or from the release of gas from residual liquids in the pipeline. Special care must be taken when performing cutting or welding operations on such a line. The degree of isolation should be determined by observing any pressure increases within the purged space with all vents closed and by monitoring for the presence of natural gas using the method of Section C.3.

E. Purging Procedures

1. Purging Air with Natural Gas in Newly Installed Piping
 - a. Close off lines at C and D, isolating by pinching, fitting, valve or other means.
 - b. Open vent at 1.
 - c. Open valve A. Leave valve B closed.
 - d. Close vent at 1 when 100 percent natural gas is detected.
 - e. Open vent at 2. Close when 100 percent natural gas is detected.
 - f. Open vent at 3. Close when 100 percent natural gas is detected.
 - g. Open vent at 4. Close when 100 percent natural gas is detected.

- h. Open vent at 5. Close when 100 percent natural gas is detected.
- i. Open isolation point C and D.
- j. Open valve B.
- k. Purge all service lines installed. Stub services do not have to be purged.

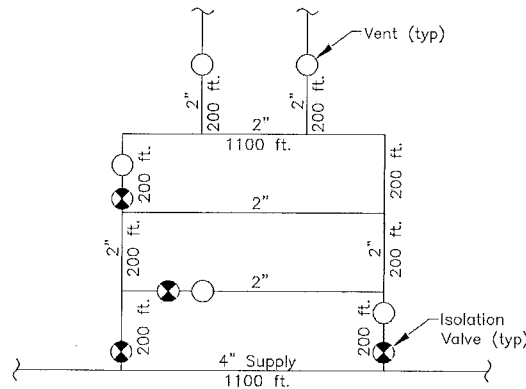


FIGURE 1

- 2. Purging Air from Pipelines Using Natural Gas Without a Nitrogen Slug
 - a. Determine blow-off size from table 1, using pipeline size and length of section to be purged (2-inch blow-off, 6-inch pipeline, 6000-foot section).
 - a. Determine minimum inlet control pressure from Table 1 (22.4 psig). Verify that upstream pressure is equal to or greater than the inlet control pressure. If it is not, determine if adequate pressure exists to ensure a flow of 100 feet per minute. If this velocity cannot be met, a slug of nitrogen is required between the air and gas.
 - b. Install on the section to be purged and near the upstream mainline valve, a pressure gauge which is accurate and readable within 1 psi, so that the inlet pressure can be observed. (The gauge should be connected through several feet of flexible tubing to eliminate excessive vibration.)

- c. Open the blow off valve at the downstream end of the section to be purged. Downstream blow off valves should always be in the fully open position.
- d. Begin purging by cracking upstream mainline valve to quickly bring the inlet pressure to the minimum inlet control pressure (12 psig) or greater. When minimum inlet control pressure cannot be obtained, purge at the highest feasible inlet pressure.
- e. Monitor blow off gas until combustible gas indicator reads essentially 100 percent natural gas. Close mainline valve to stop injection. The use of a combustible gas indicator provides a means of analyzing the gas/air mixture throughout the purging operation. If the pressure at the gauge is maintained at the minimum inlet control pressure, the time it takes for natural gas to reach the blow off location should be approximately 2 minutes for every mile of pipeline being purged.
- f. Close blow off valve and return pipe to service.

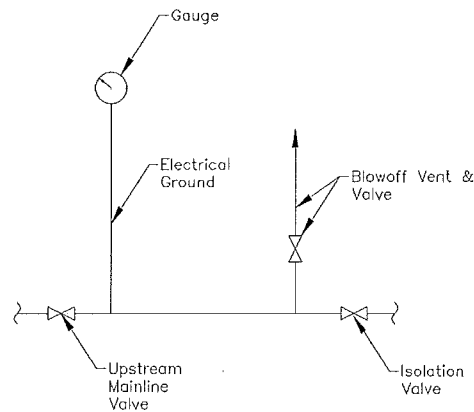


FIGURE 2

3. Purging of Natural Gas from Pipelines Using Air Without a Nitrogen Slug
 - a. Determine blowdown valve size and vent pipe diameter from Table 1.

02610-18

- b. Determine injection rate required for a minimum slug velocity of 100 feet per minute for a 6 inch pipe. Table 2 shows an injection rate of 20 cfm is required.
- c. Determine air injection pressure. Table 3 shows that air injection pressure of 20 cfm through a $\frac{3}{4}$ inch I.D. hose 50 feet long is 3 psig.
- d. Install connection to inject air.
- e. Open blow off valve near downstream mainline valve.
- f. Blow down line to atmospheric pressure and leave vent open.
- g. Inject air; maintain at least 3 psig on the gauge at the inlet to the air hose.
- h. Stop injection of air when no natural gas can be detected. Refer to Section C.3 for method to determine presence of natural gas.
- i. Positive steps should be taken before working on a section of pipeline which has been purged to isolate the purge section from any source of leakage. Isolation of the section may be accomplished by insertion of blanks, approved stoppers or actual detachment. Actual detachment is preferred.

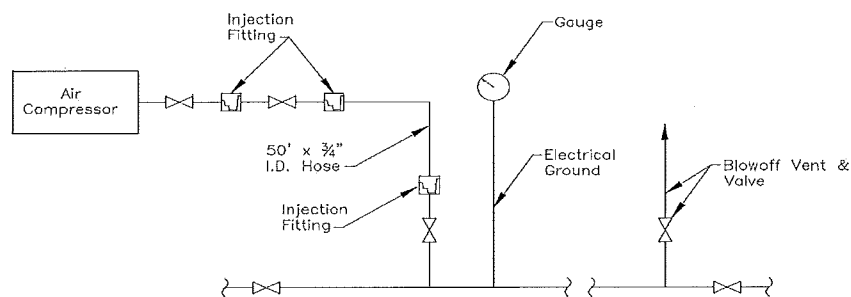


FIGURE 3

TABLE 1 - MINIMUM INLET CONTROL PRESSURE (psig)

BlowOff Valve (in.)	Line Size (in.)	Length of Pipeline (miles)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2	4	14	20	25	29	33	37	40	43	46	49	52	55	57	60
	6	22	25	28	30	32	35	37	39	41	43	44	46	48	50
4	6	8	12	16	19	22	24	27	29	32	34	36	38	40	41
	8	8	11	13	16	18	20	22	24	26	28	29	31	32	34

Information from Table 8-1 "Purging Principles and Practices," AGA #XK0775

TABLE 2 - NITROGEN PURGING DATA FOR 4" TO 8"

Volume of nitrogen required for inert slug and injection rates								
Pipe Size	Pipe Connect Cu. Ft./Ft.	Slug Veloc	Inject Rate Cu. Ft./Min.	Cu. Ft. Nitrogen per length				
				500'	1000'	2000'	5000'	10000'
4"	.09	100	10	10	10	20	20	20
6"	.22	100	20	30	30	30	40	50
8"	.37	100	40	70	70	80	90	120

TABLE 3 - MEASURING INJECTION PRESS. THRU HOSES AND ORIFICES

Determination of pressure required to inject flow rates of nitrogen or air through various size hoses and orifices				
Desired Inject Rate CFM	Minimum required pressure upstream of hose or orifice, psi			
	Each 3/4" I.D. 50' Hose	Each 1 - 1/4" 50'	Each 2" I.D. 50' Hose	Orifices 3/8" 1/2" 5/8"
10	3			
20	5			
40	11			
60	18			25

SECTION 02740

PAVEMENT REPLACEMENT

1.0 GENERAL

The Contractor shall replace all pavement cut or disturbed, with pavement similar in all respects to existing pavement in accordance with the Standard Details and at those locations approved by the Engineer. Every effort shall be made to avoid cutting the pavement. In restoring pavement, new pavement is required, except that granite paving blocks, sound brick or sound asphalt paving blocks may be reused. No permanent paving shall be placed within thirty (30) days after the backfilling has been completed. All concrete and asphalt paving materials shall be in conformance with the Standard Details shown in the plans. The pipeline trench through all paved areas (parking lots, driveways, roads, etc.) shall be fully backfilled with crushed stone.

1.1 CONCRETE PAVEMENT REPLACEMENT

This pavement replacement shall be Portland cement concrete construction in accordance with the requirements shown in the Standard Details. It shall include all pavement replacement on concrete surfaced roads, concrete driveways, concrete sidewalks and concrete parking areas, both public and private.

1.2 LIGHT DUTY BITUMINOUS PAVEMENT REPLACEMENT

This type of pavement replacement shall be bituminous concrete constructed in accordance with the details. This item shall include all light-duty bituminous concrete roadways, bituminous driveways and bituminous parking lots, both public and private.

2.0 MATERIALS

The crushed stone backfill as noted on the drawings shall be dense graded aggregate per Kentucky Department of Highways Specifications or as noted on the Drawings. The Contractor shall continuously be responsible for the maintenance of the aggregate and the surface of the trenches until the pavement replacement is completed.

Portland cement concrete for pavement replacement shall contain a minimum of 6 sacks of cement per cubic yard, the maximum free water content shall be 6 gallons per sack of cement, the slump shall be between 2 and 4 inches, and the concrete shall have minimum 28-day compression strength of at least 3,500 PSI. Cement, aggregate and water shall be described in these specifications for Class "A" concrete. A set of cylinders shall be made and tested for each 25 cubic

yards of concrete placed, or fraction thereof, to supply representative sampling and testing of the concrete, upon the direction of the Engineer. The Contractor shall produce a broomed, or burlaped uniformly smooth and nonskid surface, consistent with the existing pavement.

Bituminous materials and mixes shall be consistent with the recommended practice of the Asphalt Institute, and it shall conform to the requirements of the Kentucky Department of Highways for prime coat and Class 1 bituminous concrete. The bituminous concrete shall consist of a binder or base course and a surface course.

3.0 EXECUTION

The Contractor shall cut back the surfacing adjacent to the trench for 12 inches on both sides of the trench and shall cut down the dense graded aggregate he has placed to a depth required for either type of pavement replacement. The resulting surface shall be rolled to yield a smooth, dense surface and a uniform depth.

The concrete shall be placed in accordance with standard practice, with the welded wire mesh if required in proper position and thoroughly vibrated into place. The Contractor shall produce a surface consistent with the existing pavement. The Contractor shall apply a liquid curing component, sprayed on the surface of the concrete, and shall provide adequate protection to the pavement until it has set.

For bituminous concrete, the Contractor shall clean and broom the prepared surface, then apply the prime coat at the rate of 0.20 to 0.25 gallons per square yard, with a pressure distributor or approved pressure spray method. When the prime coat has become tacky but not dry and hard, the bituminous binder course, or base course, whichever applies, shall be placed and compacted. The Contractor shall then apply the surface course. It is recommended, but not required, that the base course remain in place for approximately one week before placing the surface course. The finished course shall be compacted and the completed surface shall match the grades and slopes of the adjacent existing surfacing and be free of offsets, depressions, raised places and all other irregular surfaces.

3.1 SEASONAL AND WEATHER LIMITATIONS FOR PAVEMENT REPLACEMENT

In the event the progress and scheduling of the work is such that the bituminous pavement replacement would occur in the winter months, during adverse cold weather and/or during such times the asphalt plants are not in operation, then the final pavement replacement shall be postponed until favorable weather occurs in the spring and the asphalt plants resume normal operations. No bituminous

concrete shall be placed when the temperature is below 40°F except by written permission of the Engineer.

Concrete pavement shall not be placed when the temperature is such that the pavement placed will freeze before it has had adequate time to set and shall be placed in conformance with the temperature conditions specified in this section of the specifications.

The Contractor shall be responsible for replacement of pavement which he has placed which has been damaged by cold weather or freezing without additional compensation.

In the meantime, the Contractor will be required to maintain the temporary surfacing until the permanent pavement is placed. Such labor, materials and equipment as is required for temporary maintenance of the streets, roadways and driveways shall be provided at the Contractor's expense, and is not a pay item. The Contractor will be required to use a cold mix asphaltic concrete as a temporary surface for trenches under heavy traffic use.

3.2 SIDEWALKS

Sidewalks which partially or fully lie over the line may be removed to accommodate installation of lines, and they shall be replaced in a neat and workmanlike manner at the expense of the Contractor.

Throughout the work of gas line installation and replacement, the Contractor shall exercise caution in providing protection to adjacent walks, pavement, curbs, gutters and related structures. Care shall be taken not to mar concrete or bituminous surfaces with equipment, and damage to such surfaces shall be properly repaired at Contractor's expense.

4.0 **PAYMENT**

The unit price bid per linear foot for pavement replacement, as measured along the main center line, shall constitute full compensation for the work, or be included in the lump sum as bid.

Replacement of gravel or stone roadways or drives disturbed during construction shall be performed by the Contractor and shall be deemed to be paid for under prices bid under gas lines. Also, pavement disturbed by the Contractor's equipment, but in the normal line of work, shall be repaired by the Contractor at his expense.

The one year guarantee as specified in the contract documents is also applicable to trench settlement and pavement replacement.

SECTION 02930

SODDING AND SEEDING

1.0 GENERAL

1.1 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required to perform sodding and seeding as shown on the Drawings and as specified herein.

B. All areas disturbed by construction operations shall receive a protective cover of vegetation. The work shall consist of preparing the area for treatment, furnishing and placing soil amendments, fertilizer, sod, seed, inoculants, mulch and plantings as specified in the designated areas.

1.2 QUALIFICATIONS

A. The work shall be done by a provider who is experienced, reputable, and qualified in the tasks required.

1.3 SUBMITTALS

A. Shop Drawings and other items needed to establish compliance with the Drawings and these Specifications shall be submitted to the Owner.

B. Where fertilizer is furnished from bulk storage, the Contractor shall furnish a supplier's certification of analysis and weight. When required by the Contract, a representative sample of the fertilizer shall be furnished the Owner for chemical analysis.

2.0 PRODUCTS

2.1 SOD

A. The sod to be used shall be Kentucky Bluegrass comparatively free from weeds or heavy root structure, cut in strips of 10 inches to 12 inches wide, 18 inches to 24 inches long, with a thickness of 1 1/2 inches to 2 inches.

2.2 SEED

A. All seed shall conform to the current rules and regulations of the state where it is being used and from the latest crop available. It shall meet or exceed the standards for purity and germination listed herein.

02930-1

B. Seed shall be labeled in accordance with the state laws and the U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act in effect on the date of invitations for bids. Bag tag figures will be evidence of purity and germination. No seed will be accepted with a date of test of more than 9 months prior to the date of delivery to the site.

C. The seed for use on this project shall be of the type as listed below with the listed germination and purity qualifications.

Species	% Purity	% Germination
KY 31 Tall Fescue (<i>Festuca arundinacea</i>)	98.5	80
Ryegrass (<i>Lolium multiflorum</i>)	98.0	90
Oats (<i>Avena sativa</i>)	98.0	90
Rye, grain, (<i>Secale cereale</i>)	97.0	85
Redtop (<i>Agrostis alba</i>)	90.0	80
KY Bluegrass (<i>Poa pratensis</i>)	81.0	70

2.3 FERTILIZER

A. Unless otherwise specified the fertilizer shall be a commercial grade fertilizer or as specified herein. The fertilizer shall meet the standard for grade and quality specified by state law.

2.4 INOCULANTS

A. The inoculant for treating legume seeds shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species and shall not be used later than the date indicated on the container or as otherwise specified. A mixing medium, as recommended by the manufacturer, shall be used to bond the inoculant to the seed. Two times the amount of the inoculant recommended by the manufacturer shall be used, except when seed is applied by use of hydraulic seeder, in which case 4 times the amount of inoculant recommended by the manufacturer shall be used. Seed shall be sown within 24 hours of treatment and shall not remain in the hydraulic seeder longer than 4 hours.

2.5 SOIL AMENDMENTS

A. Lime shall consist of standard ground agricultural limestone, or equal. Standard ground agricultural limestone is defined as ground limestone meeting current requirements of the State Department of Agriculture. Agricultural lime or other needed soil amendments will be uniformly applied at the rate specified herein.

2.6 ASPHALT EMULSION

A. Asphalt emulsion shall conform to the requirements of ASTM D 977-80, "Emulsified Asphalt." The emulsified asphalt may be rapid, medium, or slow cure materials.

2.7 STRAW MULCH MATERIALS

A. Straw mulch materials shall consist of wheat, oat, or rye straw, hay, grass clippings cut from any native grasses or other plants acceptable to the Owner. The mulch material shall be air dry, reasonably light in color, and shall not be musty, moldy, caked, or otherwise of low quality. The use of mulch that contains noxious weeds will not be permitted. The Contractor shall provide a method satisfactory to the OWNER for determining weight of mulch furnished.

2.8 OTHER MULCH MATERIALS

A. Mulching materials, such as wood cellulose fiber mulch, emulsion type, synthetic fiber mulch, netting, mesh, and other mulching materials that may be required for specialized locations and conditions, when specified, must be accompanied by the manufacturer's recommendations for methods of application.

3.0 EXECUTION

3.1 EXTENT

A. Sodding

1. Where sod is destroyed in areas maintained equivalent to residence yards, it shall be replaced on slightly ridged backfill on trench, and where destroyed in areas adjacent to the trench, it shall be replaced by the Contractor with fresh sod. Sodding will be required only on those Contracts where specifically shown on the Drawings or called for in the Specifications or Form of Proposal.

B. Seeding

1. Where lawns, pastures, thin grass or cover crops are destroyed by trenching, laying, backfilling, or tunneling operations, surface shall be prepared by disking, fertilizing and seeding. Seeding, fertilizing, and mulching shall be included in the price for trenching and backfilling. The timing of this operation shall be controlled by the Owner. Requirements of the Department of Highways for reseeding shall take precedence over these Specifications where they are involved.

02930-3

2. When the construction project is located on privately owned property on easements acquired by the Owner and the individual landowner requires the cover grass to be the same as present at the beginning of construction, the Contractor shall supply the seed required by the landowner. Seeding and fertilizing in such instances, shall be at the rate as recommended by the seed producer with soil preparation and mulching as stated herein.
3. When the construction project encroaches within the rights-of-way of the Department of Highways, the seed mixture, application rate and method of mulching shall be as required by the Department of Highways.

3.2 SOIL PREPARATION

A. All areas to be seeded or sodded shall be thoroughly cleaned, removing all debris of whatever nature. After the area has been cleaned, the soil for seeding and sodding shall be prepared as follows:

1. Loosen the soil to a depth of not less than 4 inches.
2. Work the soil until it is in good condition, raking with hand rake to complete the soil preparation and make final finished grade.
3. Broadcast 15 pounds of 8-8-8 or better fertilizer on each 1,000 square feet of area (for sodded areas only).
4. Rake area to receive sod, to spread fertilizer and work into soil.
5. On areas to be seeded, the raking in of fertilizer may be done concurrently with raking in of seed as hereinafter specified.

3.3 SODDING

A. The timing of resodding shall be controlled by the Owner. Ground shall be prepared and fertilized as previously specified under Article 3.02 of this Specification Section. In small patches, supplying of 3 inches of topsoil and raking may be substituted for disking.

B. The strips of sod are to be laid so the joints will be broken. After the sod has been laid, it is to be watered thoroughly then rolled with a roller weighing 300 to 400 pounds, supplemented by hand tamping of sections inaccessible by roller.

C. After the sod has been put down, as described above, each piece is to have a minimum of 2 stakes to hold it in place, the stakes to be 1/2 inch square,

10 inches long, and driven into the ground with 2 inches of the stake left above the sod.

D. Sod shall be kept moist by watering for at least one month or until the Project is completed and the facilities accepted by the Owner for operation.

3.4 SEEDING

A. Temporary Cover (All Areas)

1. This item shall consist of seeding a temporary cover of grass, or grass and small grain, on areas disturbed on the construction site which will not be redisturbed within a 60 day period. The determination of the area to be temporarily seeded and the time of seeding shall be controlled by the Owner.
2. The seed mixtures to be used for temporary cover will be governed by the time of year the seeding is accomplished. The mixtures and time of seeding shall be as follows:
 - a. Time of Seeding - 2/15 to 6/1
 - (1) Rye 1-1/2 bushels and ryegrass 25 pounds per acre; or tall fescue 30 pounds and ryegrass 20 pounds per acre.
 - b. Time of Seeding - 6/2 to 8/15
 - (1) Tall fescue 30 pounds and ryegrass 20 pounds per acre; or, spring oats 2 bushels and ryegrass 30 pounds per acre.
 - c. Time of Seeding - 8/16 to 2/14
 - (1) Rye 2 bushels and ryegrass 20 pounds per acre; or, tall fescue 30 pounds and ryegrass 20 pounds per acre.
 - d. Lime will not be required for temporary seeding.
 - e. Fertilize at the rate of 400 pounds per acre of 10-10-10 fertilizer, or equivalent, broadcast uniformly on the area to be seeded.
 - f. All seed shall be broadcast evenly over the area to be seeded and cultipacked or otherwise pressed into the soil.

02930-5

Seed and fertilizer may be mixed together and applied after the seed bed has been prepared.

- g. Mulch for temporary seeding will not be required except on those areas, in the Owner's opinion, too steep to hold the seed without protective cover.

B. Seeding (Permanent Cover)

- 1. This item consists of seeding all areas disturbed during construction. All grading and/or filling of rills and gullies to a cross section acceptable to the Owner shall be included in the seed bed preparation.

- a. Pastures and Cover Crops

- (1) All areas to be seeded shall be seeded with 50 pounds of tall fescue (KY-31) per acre, subject to the provisions here-inbefore stated in this Specification group.
- (2) Prepare seed bed as specified in Article 3.02 of this Specification Section unless instructed otherwise by the Owner. Apply 2 tons of lime per acre.
- (3) No mulch will be required except when seeding is done during the period October 16 through January 31, or May 2 through July 31, tall fescue straw shall be used at the rate of 2 tons per acre.

- b. Lawns and Yards

- (1) This item consists of seeding all areas equivalent to residence lawns or yards disturbed during construction. All grading and filling shall be accomplished in a manner acceptable to the Owner prior to the placement of seed and materials. Seed shall consist of a mixture of one part Red Top and 3 parts high grade Kentucky Bluegrass seed mixed together and broadcast at the rate of 2 lbs. to each 1,000 square feet of surface, to be seeded. Apply 2 tons of lime per acre. Apply 1500 pounds of 10-20-20 fertilizer per acre. Apply mulch at the rate of 2 tons per acre. Mulch shall be applied to all lawn areas regardless of the time seeded.

02930-6

3.5 MULCHING

A. Mulch materials, meeting the requirements of Part 2 of this Specification Section, shall be applied at the rate of 2 tons per acre.

B. The mulch shall be stabilized by running a "weighted" disk harrow with disks set straight, over the area on the contour, after the mulch has been applied, so as to imbed or press a part of the straw into the soil sufficiently to hold it in place. On earth embankments or areas too steep for use of mechanized equipment, the mulch shall be held in place by using small stakes and twine or other method acceptable to the Owner. The blown-on asphalt-treated straw mulch method of placing the mulch will be an acceptable placing method.

C. Mesh, netting or other special protective cover shall be at locations as shown on the Drawings and shall be installed according to the manufacturer's recommendations.

SECTION 15100

NATURAL GAS VALVES AND GAS MAIN ACCESSORIES

1.0 GENERAL

1.1 SCOPE OF WORK

A. Furnish all labor, materials, equipment and incidentals required to install complete and ready for operation all natural gas valves, gas main accessories and all related appurtenances as shown on the Drawings and as specified herein.

B. The equipment shall include, but not be limited to, the following:

1. Polyethylene Gas Valves

1.2 RELATED WORK

A. Excavation, backfill and grading is included in Division 2.

B. Piping is included in Division 2.

1.3 DESCRIPTIONS OF SYSTEMS

A. All of the equipment and material specified herein is intended to be standard for use in natural gas systems.

B. See the Drawings for equipment sizes, quantities, connections, type, location, etc.

1.4 QUALIFICATIONS

A. All of the types of equipment and appurtenances shall be products of well established firms that are fully experienced, reputable and qualified in the manufacture of the particular equipment to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these specifications as applicable.

B. Acceptable Manufacturers

1. Polyethylene Gas Valves - Flowserve
2. Or Approved Equal

1.5 SUBMITTALS

- A. Complete shop drawing of all equipment and appurtenances shall be submitted to the Owner for review.
- B. The Owner shall be furnished 2 certified copies of reports covering proof-of-design tests on the valves.

2.0 **PRODUCTS**

2.1 MATERIALS AND EQUIPMENT

A. General

- 1. All equipment and appurtenances shall be of the size and type shown on the Drawings.
- 2. All equipment and appurtenances shall have the name of the maker, flow-directional arrows, and the working pressure for which they are designed cast in raised letter on some appropriate part of the body.
- 3. All buried valves shall open left (counter clockwise). Insofar as possible, all valves shall open counter clockwise.
- 4. All valves and equipment shall be provided with suitable operating devices and adapted for the operation in the position in which they are shown on the Drawings.
- 5. Bolts and Studs
 - a. All bolts and studs shall be in accordance with ASTM A-307 Grade B and nuts shall be in accordance with ASTM A-563. bolts, studs and nuts shall be electrogalvanized according to ASTM B-633.
 - b. All bolts, studs and nuts in contact with water, in any moist atmosphere or damp area such as occurs above water, or exposed to weather shall be stainless steel.
 - c. All bolts delivered to the job shall be free of rust and dirt and shall be stored in a manner to protect them from rust and dirt. All bolts shall be tightened to the proper torque. They shall be of the size recommended for the pipe and fittings they are to be used on and shall be in the recommended

quantity. Tightening of bolts shall be alternated, so as to not produce undue stress on the valves and fittings.

2.2 BALL VALVES

A. Polyethylene Gas Valves

1. Valve body shall be high density polyethylene with BUNA N capable of withstanding 100 psi service pressures butt or socket fused.
2. Valve shall be of the size shown on the drawings or the size of the adjacent pipe.
3. Valve shall be Poly-Gas as manufactured by Flow Serve or approved equal.

3.0 EXECUTION

3.1 GENERAL

- A. All equipment and appurtenances shall be installed at the location shown on the Drawings. All necessary material, parts, operator and gaskets shall be provided.
- B. All flanged valves shall be bolted to the adjacent pipe with 304 stainless steel bolts and nuts.
- C. Buried valves shall be installed with operating stem vertical. Tips of operating nuts shall be not more than 30 inches below ground surface. Where valve operating nuts are more than 30 inches below tops of valve boxes, stem shall be provided to bring the operating nut to within 12 inches of box tops.
- D. Valve boxes shall be accurately centered over valve operating nuts and the backfill shall be mechanically tamped about them, to prevent subsequent movement. Tops of boxes shall be flush with the surface, paving, walk, or road surface and shall have the appropriate grade cover to withstand loading.
- E. All equipment and appurtenances shall be installed in strict accordance with the manufacturers recommendations/instructions.

3.2 TOOLS AND SPARE PARTS

- A. All special tools required for normal operation and maintenance shall be furnished by the valve manufacturer.

15100-3

3.3 SHOP COATING

A. The exterior surface of various parts of the equipment shall be thoroughly cleaned of all scale, dirt, grease, or other foreign matter and thereafter shop coated with an approved rust-inhibitive primer of the manufacturers recommendations and compatible with the final field coating specified in Section 02610.

3.4 FIELD COATING

A. All buried equipment shall be field coated with the same material used to field coat the adjacent piping as specified in Section 02610.

B. All exposed equipment shall be field coated with the same material used to field coat the adjacent piping as specified on the Drawings.

C. The Contractor and the equipment manufacturer shall coordinate shop and field coating to assure compatibility as specified in Section 02610.

3.5 INSPECTION AND TESTING

A. The various pipelines in which the equipment and appurtenances are to be installed are specified to be field tested. During these tests and defective equipment or appurtenance shall be adjusted, removed and replaced, or otherwise made acceptable to the Engineer.

B. Various regulating valves, strainers, or other appurtenances shall be tested to demonstrate their conformance with the specified operation capabilities any deficiencies shall be corrected or the devise replaced or otherwise made acceptable to the Engineer.

SECTION 15105

SERVICE CONNECTION

1.0 GENERAL

The Contractor shall furnish all labor, tools, and equipment for installing taps as shown in the detailed drawings.

2.0 MATERIALS

A. Curb-Cock

The service connection will consist of a butt fusion service tee and appropriate size curb-cock with the PE pipe butt fused to both ends. The curb-cock will have a proper size valve box extended to the surface. The contractor shall furnish to the LCGA a Model 250 American Meter and a Reliance 1813c Regulator with 3/16" orifice for each service connection set. All materials shall be furnished by the CONTRACTOR.

B. Lock-Off Valve

Valves shall be designed for a minimum working pressure of not less than 175 pounds per square inch. Valves shall have ends required for the piping in which they are installed. Valves shall be installed with a double lock-wing safety device. Valve shall be Mueller or approved equal.

C. Excess Flow Valve

Flow Valve shall be made from Polyethylene with ends required for the piping in which they are installed. Body, Retainer, and poppet shall be made of Thermoplastic and be chemical resistant. The spring shall be made of Stainless Steel. Excess flow valve shall be Dresser Style 480 or approved equal.

D. Anode-less Riser

The riser shall be made of Polyethylene material with the ends required for the piping in which they are installed.

E. 3/4" PE, DR 11 Pipe

The polyethylene plastic compound to be extruded shall conform to the requirements as listed in ASTM D 1248-81a for Grade P23 (Type II, Grade 3), Class C, material, and ASTM D 3350-81a as listed for cell classification of 234433. The plastic compound shall be of virgin quality and have been listed by the Plastic Pipe Institute as a PE 2306 designated compound. See Section 02610.

3.0 EXECUTION

The CONTRACTOR shall install the service connection material as shown in the detailed DRAWINGS. The curb-cock shall be taken to the customers property or other location as directed by the OWNER.

4.0 PAYMENT

The unit price bid shall constitute full compensation for all labor and material. The service tubing shall be paid per LF as specified under the bid item 3/4" PE pipe. **No extra payment for service line bores under roads will be allowed.**

SECTION 15123

FREE BORE

1.0 GENERAL

Under this item, the CONTRACTOR shall provide all labor, tools, equipment and materials to install the free bore at selected bituminous and concrete driveways and/or county road unless otherwise directed by the ENGINEER.

2.0 MATERIALS

Not applicable.

3.0 EXECUTION

The CONTRACTOR shall provide a jacking pit and bore through the earth at the proper line and grade. The augured hole shall be as small as practical to allow the carrier pipe to pass through.

This bid item does not apply to service tubing under roads.

4.0 PAYMENT

The unit price bid per linear foot for free boring, as measured from edge of pavement to edge of pavement, regardless of size of bore, shall constitute full compensation for the work specified.

N O T I C E

**DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
LETTER OF PERMISSION (LOP) & INDIVIDUAL WQC AUTHORIZATION**

PROJECT: Cumberland County, KY 61
Relocation

The Section 404 & 401 activities for this project have been previously permitted under the authority of the Department of the Letter of Permission (LOP) & Division of Water Individual Water Quality Certification. In order for these authorizations to be valid, the attached conditions must be followed. The contractor shall post a copy of these LOP & Individual WQC authorizations in a conspicuous location at the project site for the duration of construction and comply with the general & special conditions as required.

To more readily expedite construction, the contractor may elect to alter the design or perform the work in a manner different from what was originally proposed and specified. Prior to commencing such alternative work, the contractor shall obtain **written** permission from the Division of Construction and the Corps of Engineers. A copy of any request to the Corps of Engineers to alter this proposal and subsequent responses shall be forwarded to the Division of Environmental Analysis, DA Permit Coordinator, for office records and for informational purposes.



DEPARTMENT OF THE ARMY
NASHVILLE DISTRICT, CORPS OF ENGINEERS
3701 Bell Road
NASHVILLE, TENNESSEE 37214

September 4, 2012

Subject: File No. 2009-01526; Proposed Kentucky Highway 61 Relocation Project with Associated Wetland and Stream Impacts on Lewis Creek and Unnamed Tributaries to Lewis Creek and Big Renox Creek, tributaries to Cumberland River Mile 428.1L, in Cumberland County, Kentucky (KYTC Item #8-158.10)

Mr. Roy Collins
Permit Coordinator
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, Kentucky 40622

Dear Mr. Collins:

This is in regard to Kentucky Transportation Cabinet's (KYTC) application for a Department of the Army Permit (DA) permit for the proposed KY Highway 61 improvement project, Item #8-158.10. Please refer to DA #2009-01526 in any future correspondence related to this proposed phase of the project. Another section of the Highway 61 improvement project (KYTC Item #8-158.20) has been previously permitted by separate DA permit, File No. 2007-00733, on March 17, 2008, concerning improvements from Jones Chapel to Burkesville, KY.

In accordance with the Letter of Permission (LOP) for Kentucky transportation projects, pursuant to 33 CFR 325.5(b)(2) and Section 404 of the Clean Water Act, the proposed highway improvement project for Highway 61, KYTC #8-158.10, in Cumberland County, is hereby authorized. The proposed highway project would start at the Burkesville, KY, city limits and continue north to terminate at the intersection of KY Highway 704. A summary table of the proposed stream and wetland impacts is attached. The proposed work must be performed as shown on the attached plans and performed in accordance with the attached LOP conditions. In addition to the LOP conditions, the proposed work must adhere to the following special conditions:

1. You must debit 402 AMUs from the KYTC Pumphrey-Buck Creek Advanced Mitigation Site in Pulaski County for the proposed stream impacts at Sta 103+75.
2. You must debit 5.19 wetland credits from the KYTC Wayne County Wetland Bank for the proposed wetland impacts at Sta 102+90.

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3. Prior to commencement of construction of the project, you shall provide notification to this office proof of both the stream and wetland debits from the appropriate mitigation sites/banks.
4. You must have a qualified biologist examine the old bridge prior to deconstruction to determine the likelihood of bats utilizing it as a roost. If federally listed bats or an undetermined species of bat is seen using the old bridge prior to or during deconstruction, the activities should be delayed and KYTC should contact US Fish and Wildlife Service to develop a plan to ensure potential adverse effects on listed bats are minimized during the deconstruction of the old bridge.
5. The minimization measures associated with gray bat foraging habitat as outlined in the Biological Assessment and approved by the USFWS shall be incorporated into the project plans and fully implemented.
6. The measures and construction practices, including best management practices (BMPs), outlined in the KYTC LOP Assessment of Environmental, Social, and Other Factors Document shall be incorporated into the project plans and fully implemented to further minimize potential impacts to mussels and bats.

Should you disagree with certain terms and/or conditions of this LOP, the enclosed Notification of Administrative Appeal Options outlines the steps to take to file your objection (Corps Regulations 33 CFR Part 331). However, once you begin any work authorized by this LOP, you forfeit the opportunity to appeal this permit. **It is not necessary to submit a Notification of Administrative Appeal Options form to the Division Office if you do not object to the decision in this letter.**

The Commonwealth of Kentucky, Department for Environmental Protection, Division of Water, issued a Section 401 Water Quality Certification for the proposed work (copy attached). Therefore, you must adhere to the conditions of the 401 certification for the proposed work. You are also responsible for obtaining any other Federal, State, and/or local permits, approvals, or authorizations.

This work is authorized until September 4, 2017. If you find you need more time to complete the authorized activity, you must submit your request for a time extension to this office for consideration at least three months before the expiration date.

If changes in the location or approved plans are necessary, revised plans shall be submitted promptly to this office for review and approval. **Please sign and return the enclosed "Compliance Certification" form upon completion of the proposed activity.**

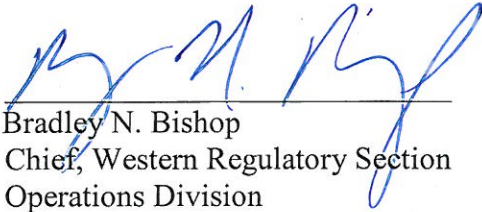
-3-

If you have any questions regarding this project and the DA permit, please contact Ms. Amy Robinson at the above address, telephone (615) 369-7509, or email amy.m.robinson@usace.army.mil.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

James A. DeLapp
Lieutenant Colonel
Corps of Engineers
District Engineer

BY:


Bradley N. Bishop
Chief, Western Regulatory Section
Operations Division

Enclosures

Copy Furnished:

Mr. Adam Jackson
Kentucky Division of Water
Water Quality Certification Section
200 Fair Oaks Lane, 4th Floor
Frankfort, KY 40601

GENERAL CONDITIONS:

1. Discharges of dredged or fill material into "waters of the U.S." must be minimized or avoided to the maximum extent practicable at the project site (i.e. on-site). In determining the minimal impact threshold, the Districts will consider the direct, secondary, and cumulative impacts of the fill or work and any mitigation measures.
2. The permittee shall provide a mitigation/monitoring plan for impacts resulting from the placement of fill into "waters of the U.S." in excess of 300 linear feet of intermittent or perennial stream; the filling of greater than 0.10 acre (4,356 sq. feet) of waters of the U.S; or work causing more than minimal effects, to compensate for impacts to the "waters of the U.S." These impact thresholds are applied for each crossing. When mitigation is required, the permittee will develop the mitigation site concurrently with, or in advance of, the site construction unless the Corps determines on a project specific basis that it is not practical to do so. This will ensure that aquatic functions are not lost for long periods of time (e.g. temporal loss) which could adversely affect water quality and wildlife. The requirement for conservation easements or deed restrictions will be determined on a project specific basis.
3. The permittee shall ensure that sedimentation and soil erosion control measures are in place prior to commencement of construction activities. These measures will remain in place and be properly maintained throughout construction. Sedimentation and soil control measures shall include the installation of straw bale barriers, silt fencing and/or other approved methods to control sedimentation and erosion. Sedimentation and erosion controls will not be placed in "waters of the U.S." except if specifically approved by the District.
4. The permittee shall ensure that areas disturbed by any construction activity, including channel and stream banks, are immediately stabilized and revegetated with a combination of non-invasive plants (grasses, legumes and shrubs) which are compatible with the affected area and will not compete with native vegetation.
5. The permittee shall ensure that no in-stream construction activity is performed during periods of high stream flow or during the fish spawning season (April 1 through June 30) without first contacting the Kentucky Department of Fish and Wildlife Resources (KDFWR) for their expertise on impacts to the fishery resource. Additionally, the discharge of dredged and/or fill material in known waterfowl breeding and wintering areas must be avoided to the maximum extent practicable.
6. The permittee will ensure that the activity authorized will not disrupt movement of those aquatic species indigenous to the waterbody, including those species which normally migrate through the area, unless the activity's specific purpose is to impound water.
7. The permittee shall ensure that all construction equipment is refueled and maintained on an upland site away from existing streams, drainageways and wetland areas. Heavy equipment working in wetlands must be placed on mats or other measures must be taken to minimize soil disturbance.

8. The permittee must comply with any case specific special conditions added by the Corps or by the State Section 401 Water Quality Certification (WQC). The conditions imposed in the State Section 401 WQC are also conditions of this LOP.

9. The permittee shall ensure that no activity authorized by the LOP may cause more than a minimal adverse effect on navigation.

10. The permittee shall ensure proper maintenance of any structure or fill authorized by the LOP, in good condition and in conformance with the terms and conditions of the LOP, including maintenance to ensure public safety. The permittee is not relieved of this requirement if the permitted activity is abandoned, although the permittee may make a good faith transfer to a third party. Should the permittee wish to cease to maintain the authorized activity or desire to abandon it without a good faith transfer, the permittee must obtain a modification to the LOP from the Corps, which may require restoration of the area.

11. The permittee shall not perform any work within any Wild and Scenic Rivers or in any river officially designated as a "study river" for possible inclusion in the system, unless the appropriate Federal agency, with direct management responsibility for such river, has determined in writing that the proposed activity authorized by the LOP will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal Land Management agency in the area (e.g. U.S. Forest Service, Bureau of Land Management, the National Parks Service, or the U.S. Fish and Wildlife Service).

12. The permittee shall not perform any work under the LOP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act, or which is likely to destroy or adversely modify the critical habitat of such species. The permittee shall notify the Corps and coordinate the proposed action with the USFWS to determine if any listed species or critical habitat might be affected and/or adversely modified by the proposed work. No activity is authorized under the LOP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed. At the direction of the Corps, the permittee shall complete the necessary consultation with the USFWS, satisfying the requirements of Section 7(a)(2) of the Endangered Species Act. The permittee shall not begin work until notified by the District Engineer that the requirements of the Endangered Species Act have been satisfied and that the activity is authorized. Authorization of an activity under the LOP does not authorize the "take" of a threatened or endangered species as defined under the Federal Endangered Species Act. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. Fish and Wildlife Service, both lethal and non-lethal "takes" of protected species are in violation of the Endangered Species Act.

Obligations under Section 7 of the Act must be reconsidered by the Corps Districts if (1) new information reveals impacts of the proposed action may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during consultation, or (3) new species are listed or critical habitat designated that might be affected

13. The permittee shall not perform any activity under the LOP which may affect historic properties listed, or eligible for listing, in the National Register of Historic Places until the District Engineer has complied with the provisions of 33 CFR Part 325, Appendix C. The permittee must notify the District Engineer if the activity authorized by the LOP may affect any historic properties listed, determined to be eligible or which the permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin construction until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the Kentucky Heritage Council.

If the permittee discovers any previously unknown historic or archaeological remains while accomplishing the activity authorized by the LOP, work must be immediately stopped and this office immediately notified regarding the discovery. The District will initiate the Federal, Tribal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

14. The permittee shall not perform any work under the LOP where the discharge of dredged and/or fill material will occur in the proximity of a public water supply intake.

15. No activity, including structures or work in "waters of the U.S." or discharges of dredged or fill material may consist of unsuitable materials (e.g. trash, debris, car bodies, asphalt, etc.) and that materials used for construction or discharge must be free from toxic pollutants in toxic amounts.

16. The permittee shall, to the maximum extent practicable, design the project to maintain pre-construction downstream flow conditions. Furthermore, the work must not permanently restrict or impede the passage of normal or expected high flows and the structure or discharge of fill must withstand expected high flows. The project must provide, to the maximum extent practicable, for retaining excess flows from the site and for establishing flow rates from the site similar to pre-construction conditions.

17. The permittee shall ensure that all temporary fills, authorized under the LOP, be removed in their entirety and the affected areas returned to pre-construction elevation.

18. Representatives from the Corps of Engineers and/or the State of Kentucky may inspect any authorized activity or mitigation site at any time deemed necessary to ensure compliance with the terms and conditions of the LOP, Section 401 WQC, and applicable laws.

19. All work authorized by this LOP must be completed within five years after the date of the Corps authorization letter. If you find you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least three months before the expiration date.

20. The permittee, after completion of work under the LOP, shall submit a signed certification letter regarding the completed work and required mitigation, if applicable. The certification letter will include a statement that the work was done in accordance with the LOP authorization including compliance with all general and special conditions and completion of mitigation work.

21. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of the LOP.

22. For Section 10 waters, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.



STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

August 21, 2012

David Waldner, Director
KYTC Division of Environmental Analysis
200 Mero Street, 5th Floor
Frankfort, KY 40622

Re: Water Quality Certification #2010-011-7M
KY 61 - Cumberland Co
MODIFICATION
KYTC Item No. 8-158.10
AI No.: 84619, Activity ID: APE20120001
Cumberland County, Kentucky

Dear Mr. Waldner:

Pursuant to Section 401 of the Clean Water Act (CWA), the Commonwealth of Kentucky certifies it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 304, 306, and 307 of the CWA, will not be violated by the above referenced project provided that the U.S. Army Corps of Engineers authorizes the activity under 33 CFR part 330, and the attached conditions are met.

All future correspondence on this project must reference **AI No. 84619**. **The attached document is your official Water Quality Certification; please read it carefully.** If you should have any questions concerning the conditions of this water quality certification, please contact Adam Jackson of my staff by calling (502) 564-3410.

Sincerely,

A handwritten signature in black ink that reads "Barbara J. Scott".

Barbara Scott, Supervisor
Water Quality Certification Section
Kentucky Division of Water

BJS: AJ

Attachment

cc: Amy Robinson, USACE: Nashville District
Lee Andrews, USFWS: Frankfort
Roy Collins, KYTC DEA

KTC Water Quality Certification

KY 61 - Cumberland Co
Facility Requirements
Permit Number: WQC#2010-011-7M
Activity ID No.: APE20120001

Page 1 of 2

ACTV0000000002 (KY 61 - Cumberland Co) Impacts to facilitate relocation project (MODIFICATION):

Submittal/Action Requirements:

Condition No.	Condition
S-1	The Kentucky Transportation Cabinet shall submit notification: Due prior to construction commencement to the Water Quality Certification Section of the Kentucky Division of Water. This notification shall contain proof of the debit of 402 stream Adjusted Mitigation Units (AMUs) from the KYTC Pumphrey-Buck Creek Advanced Mitigation Site in Pulaski County. Notification shall also contain proof of the debit of 5.19 wetland credits from the KYTC Wayne County Wetland Bank. The U.S. Army Corps of Engineers may require a different amount. [Clean Water Act]
S-2	The Kentucky Transportation Cabinet must notify the Division: Due prior to any construction activity. Notification Adam Jackson at adam.jackson@ky.gov or (502) 564-3410 at least two weeks prior to construction. [Clean Water Act]
S-3	The Kentucky Transportation Cabinet must notify the Division: Due when construction is complete. Notify Adam Jackson at adam.jackson@ky.gov or (502) 564-3410 no later than two weeks post-construction. [Clean Water Act]

Narrative Requirements:

Condition No.	Condition
T-1	The work approved by this certification shall be limited to: <ul style="list-style-type: none">- the loss of 402 linear feet of poor quality intermittent stream channel due to the construction of two culverts (Station 103+75).- the loss of 2.59 acres of palustrine emergent (PEM) wetland (Station 102+90). [Clean Water Act]
T-2	All work performed under this certification shall adhere to the design and specifications set forth in the Application for Section 404 Nationwide Permit & Section 401 Water Quality Certification, received November 6, 2009, as well as the revised Mitigation document received by the Kentucky Division of Water on August 21, 2012. [Clean Water Act]
T-3	The Kentucky Transportation Cabinet is responsible for preventing degradation of waters of the Commonwealth from soil erosion. An erosion and sedimentation control plan must be designed, implemented, and maintained in effective operating condition at all times during construction. [Clean Water Act]
T-4	The Division of Water reserves the right to modify or revoke this certification should it be determined that the activity is in noncompliance with any condition set forth in this certification. [Clean Water Act]

KTC Water Quality Certification

KY 61 - Cumberland Co
Facility Requirements
Permit Number: WQC#2010-011-7M
Activity ID No.: APE20120001

ACTV0000000002 (continued):

Narrative Requirements:

Condition No.	Condition
T-5	If construction does not commence within two years of the date of this renewed Water Quality Certification, this authorization will become void. A letter requesting a renewal should be submitted. Please note that any further requests to renew this approved project will result in an up to date review and calculation of the most current mitigation assessments associated with the stream and wetland impacts associated with this project, based on the time of further renewal request. [Clean Water Act]
T-6	Other permits may be required from the Division of Water for this project. If this project takes place within the floodplain, a permit may be required from the Surface Water Permits Branch. The contact person is Todd Powers. If this project will disturb one acre or more of land, a KPDES general storm water permit will be required from the Surface Water Permits Branch. The contact person is Allen Ingram. Both can be reached at (502) 564-3410. [Clean Water Act]



STEPHEN L.
BESHEAR
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

LEONARD K. PETERS
SECRETARY

ATTENTION APPLICANT

If your project involves one or more of the following activities, you may need more than one permit from the Kentucky Division of Water.

- *building in a floodplain**
- *road culvert in a stream**
- *streambank stabilization**
- *stream cleanout**
- *utility line crossing a stream**
- *construction sites an acre or more**

- **If the project will disturb one acre or more of land, or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land, a Kentucky Pollution Discharge Elimination System (KPDES) stormwater permit shall be required from the Operational Permits Section. This permit requires the creation of an erosion control plan.
Contact Allen Ingram.**
- **Projects that involve filling in the floodplain will require a stream construction permit from the Floodplain Management Section.
Contact Todd Powers.**
- **Projects that involve work IN a stream, such as bank stabilization, road culverts, utility line crossings, and stream alteration will require a stream construction permit and a Water Quality Certification from the Water Quality Certification Section.
Contact Barbara Scott.**

All three contacts listed above can be reached at 502/564-3410. A complete listing of environmental programs administered by the Kentucky Department for Environmental Protection is available from Pete Goodman by calling 502/564-3410.

GENERAL CONDITIONS FOR WATER QUALITY CERTIFICATION

1. The Kentucky Division of Water may require submission of a formal application for an Individual Certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.
2. Nationwide permits issued by the U.S. Army Corps of Engineers for projects in Outstanding State Resource Waters, Cold Water Aquatic Habitats, and Exceptional Waters as defined by 401 KAR 10:026 shall require individual water quality certifications.
3. Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur.
4. Sediment and erosion control measures (e.g., check-dams, silt fencing, or hay bales) shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, placement shall not be conducted in such a manner that may cause instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control measures shall be removed and the natural grade restored prior to withdrawal from the site.
5. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
6. To the maximum extent practicable, all in-stream work under this certification shall be performed during low flow.
7. Heavy equipment (e.g. bulldozers, backhoes, draglines, etc.), if required for this project, should not be used or operated within the stream channel. In those instances where such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize re-suspension of sediments and disturbance to the channel, banks, or riparian vegetation.
8. If there are water supply intakes located downstream that may be affected by increased turbidity, the permittee shall notify the operator when work will be performed.
9. Removal of existing riparian vegetation should be restricted to the minimum necessary for project construction.
10. Should stream pollution, wetland impairment, and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling 800/564-2380.

CONTRACT ID: 121326
 COUNTY: CUMBERLAND
 PROPOSAL: JL04 029 0061 NEW-LOC

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 LETTING: 09/14/12
 CALL NO: 316

LINE NO	ITEM	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT PRICE	AMOUNT
SECTION 0001 PAVING (ALTERNATE 1)						
0010	00003	CRUSHED STONE BASE	26,147.000	TON		
0020	00008	CEMENT STABILIZED ROADBED	48,435.000	SQYD		
0030	00020	TRAFFIC BOUND BASE	899.000	TON		
0040	00078	CRUSHED AGGREGATE SIZE NO 2	8,101.000	TON		
0050	00100	ASPHALT SEAL AGGREGATE	76.000	TON		
0060	00190	LEVELING & WEDGING PG64-22	1,767.000	TON		
0070	00212	CL2 ASPH BASE 1.00D PG64-22	18,006.000	TON		
0080	00291	EMULSIFIED ASPHALT RS-2	9.000	TON		
0090	00301	CL2 ASPH SURF 0.38D PG64-22	4,620.000	TON		
0100	00358	ASPHALT CURING SEAL	49.000	TON		
0110	02200	ROADWAY EXCAVATION	203,022.000	CUYD		
0120	02542	CEMENT (REVISED: 9-10-12)	942.000	TON		
0130	02599	FABRIC-GEOTEXTILE TYPE IV	28,500.000	SQYD		
0140	02702	SAND FOR BLOTTER	120.000	TON		
0150	10203ND	PAVEMENT ADJUSTMENT (ASPHALT)	(1.00)	LS	224,906.00	224,906.00
SECTION 0002 PAVING (ALTERNATE 2)						
0160	00003	CRUSHED STONE BASE	24,379.000	TON		
0170	00008	CEMENT STABILIZED ROADBED	48,435.000	SQYD		
0180	00020	TRAFFIC BOUND BASE	899.000	TON		
0190	00078	CRUSHED AGGREGATE SIZE NO 2	8,101.000	TON		

CONTRACT ID: 121326
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 PROPOSAL: JL04 029 0061 NEW-LOC

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LINE NO	ITEM	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT PRICE	AMOUNT
0200	00100	ASPHALT SEAL AGGREGATE	76.000	TON		
0210	00190	LEVELING & WEDGING PG64-22	1,767.000	TON		
0220	00212	CL2 ASPH BASE 1.00D PG64-22	5,186.000	TON		
0230	00291	EMULSIFIED ASPHALT RS-2	9.000	TON		
0240	00301	CL2 ASPH SURF 0.38D PG64-22	1,678.000	TON		
0250	00358	ASPHALT CURING SEAL	49.000	TON		
0260	02078	JPC PAVEMENT-6 IN SHLD	16,945.000	SQYD		
0270	02084	JPC PAVEMENT-8 IN	25,854.000	SQYD		
0280	02200	ROADWAY EXCAVATION	203,022.000	CUYD		
0290	02542	CEMENT (REVISED: 9-10-12)	942.000	TON		
0300	02599	FABRIC-GEOTEXTILE TYPE IV	28,500.000	SQYD		
0310	02702	SAND FOR BLOTTER	120.000	TON		
0320	10203ND	PAVEMENT ADJUSTMENT (CONCRETE)	(1.00)	LS	99,577.00	99,577.00
SECTION 0003		PAVING				
ALT GROUP AA3		(ALTERNATE 3)				
0330	00003	CRUSHED STONE BASE	25,942.000	TON		
0340	00008	CEMENT STABILIZED ROADBED	48,435.000	SQYD		
0350	00020	TRAFFIC BOUND BASE	899.000	TON		
0360	00078	CRUSHED AGGREGATE SIZE NO 2	8,101.000	TON		
0370	00100	ASPHALT SEAL AGGREGATE	76.000	TON		
0380	00190	LEVELING & WEDGING PG64-22	1,767.000	TON		
0390	00212	CL2 ASPH BASE 1.00D PG64-22	8,254.000	TON		

CONTRACT ID: 121326
 COUNTY: CUMBERLAND
 PROPOSAL: JL04 029 0061 NEW-LOC

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LINE NO	ITEM	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT PRICE	AMOUNT
0400	00291	EMULSIFIED ASPHALT RS-2	9.000	TON		
0410	00301	CL2 ASPH SURF 0.38D PG64-22	2,843.000	TON		
0420	00358	ASPHALT CURING SEAL	49.000	TON		
0430	02084	JPC PAVEMENT-8 IN	25,854.000	SQYD		
0440	02200	ROADWAY EXCAVATION	203,022.000	CUYD		
0450	02542	CEMENT (REVISED: 9-10-12)	942.000	TON		
0460	02599	FABRIC-GEOTEXTILE TYPE IV	28,500.000	SQYD		
0470	02702	SAND FOR BLOTTER	120.000	TON		
0480	10203ND	PAVEMENT ADJUSTMENT (CONCRETE)	(1.00)	LS	99,577.00	99,577.00
SECTION 0004 ROADWAY						
0490	01810	STANDARD CURB AND GUTTER	3,189.000	LF		
0500	01891	ISLAND HEADER CURB TYPE 2	100.000	LF		
0510	02014	BARRICADE-TYPE III	3.000	EACH		
0520	02091	REMOVE PAVEMENT	2,663.000	SQYD		
0530	02101	CEM CONC ENT PAVEMENT-8 IN	617.000	SQYD		
0540	02159	TEMP DITCH	12,665.000	LF		
0550	02223	GRANULAR EMBANKMENT	620.000	CUYD		
0560	02275	FENCE-8 FT CHAIN LINK	380.000	LF		
0570	02287	DOUBLE VEHICULAR CHAIN LINK GATE	1.000	EACH		
0580	02351	GUARDRAIL-STEEL W BEAM-S FACE	4,025.000	LF		
0590	02360	GUARDRAIL TERMINAL SECTION NO 1	13.000	EACH		

CONTRACT ID: 121326
 COUNTY: CUMBERLAND
 PROPOSAL: JL04 029 0061 NEW-LOC

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LINE NO	ITEM	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT PRICE	AMOUNT
0600	02363	GUARDRAIL CONNECTOR TO BRIDGE END TY A	10.000	EACH		
0610	02372	REMOVE GUARDRAIL CON TO BR END	2.000	EACH		
0620	02381	REMOVE GUARDRAIL	787.500	LF		
0630	02391	GUARDRAIL END TREATMENT TYPE 4A	7.000	EACH		
0640	02404	SEPTIC TANK TREATMENT	4.000	EACH		
0650	02429	RIGHT-OF-WAY MONUMENT TYPE 1	122.000	EACH		
0660	02430	RIGHT-OF-WAY MONUMENT TYPE 1A	1.000	EACH		
0670	02432	WITNESS POST	25.000	EACH		
0680	02469	CLEAN SINKHOLE	2.000	EACH		
0690	02483	CHANNEL LINING CLASS II	1,903.000	TON		
0700	02484	CHANNEL LINING CLASS III	1,023.000	TON		
0710	02545	CLEARING AND GRUBBING (59 ACRES)	(1.00)	LS		
0720	02562	SIGNS	750.000	SQFT		
0730	02585	EDGE KEY	103.000	LF		
0740	02596	FABRIC-GEOTEXTILE TYPE I	2,087.000	SQYD		
0750	02598	FABRIC-GEOTEXTILE TYPE III	15,700.000	SQYD		
0760	02599	FABRIC-GEOTEXTILE TYPE IV	339.000	SQYD		
0770	02600	FABRIC GEOTEXTILE TY IV FOR PIPE	5,032.000	SQYD	2.00	10,064.00
0780	02650	MAINTAIN & CONTROL TRAFFIC	(1.00)	LS		
0790	02651	DIVERSIONS (BY-PASS DETOURS) (#1 SCOTTSFERRY ROAD)	(1.00)	LS		
0800	02651	DIVERSIONS (BY-PASS DETOURS) (#2 GARY MORGAN ROAD)	(1.00)	LS		

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LINE NO	ITEM	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT PRICE	AMOUNT
0810	02671	PORTABLE CHANGEABLE MESSAGE SIGN	2.000	EACH		
0820	02676	MOBILIZATION FOR MILL & TEXT	(1.00)	LS		
0830	02677	ASPHALT PAVE MILLING & TEXTURING	259.000	TON		
0840	02690	SAFELOADING	10.000	CUYD		
0850	02701	TEMP SILT FENCE	12,665.000	LF		
0860	02703	SILT TRAP TYPE A	59.000	EACH		
0870	02704	SILT TRAP TYPE B	59.000	EACH		
0880	02705	SILT TRAP TYPE C	59.000	EACH		
0890	02706	CLEAN SILT TRAP TYPE A	177.000	EACH		
0900	02707	CLEAN SILT TRAP TYPE B	177.000	EACH		
0910	02708	CLEAN SILT TRAP TYPE C	177.000	EACH		
0920	02709	CLEAN TEMP SILT FENCE	12,665.000	LF		
0930	02720	SIDEWALK-4 IN CONCRETE	1,936.200	SQYD		
0940	02726	STAKING	(1.00)	LS		
0950	05950	EROSION CONTROL BLANKET	12,863.000	SQYD		
0960	05952	TEMP MULCH	284,979.000	SQYD		
0970	05953	TEMP SEEDING AND PROTECTION	284,979.000	SQYD		
0980	05966	TOPDRESSING FERTILIZER	6.130	TON		
0990	05985	SEEDING AND PROTECTION	106,741.000	SQYD		
1000	05990	SODDING	11,680.000	SQYD		
1010	06510	PAVE STRIPING-TEMP PAINT-4 IN	60,000.000	LF		

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1020	06514	PAVE STRIPING-PERM PAINT-4 IN	61,000.000	LF		
1030	08019	CYCLOPEAN STONE RIP RAP	2,087.000	TON		
1040	20210EP69	COHESIVE PILE CORE	439.000	CUYD		
1050	20550ND	SAWCUT PAVEMENT	2,860.000	LF		
1060	21289ED	LONGITUDINAL EDGE KEY	2,860.000	LF		
1070	23158ES505	DETECTABLE WARNINGS	120.000	SQFT		
SECTION 0005 DRAINAGE						
1080	00078	CRUSHED AGGREGATE SIZE NO 2	10.000	TON		
1090	00440	ENTRANCE PIPE-15 IN	650.000	LF		
1100	00441	ENTRANCE PIPE-18 IN	80.000	LF		
1110	00443	ENTRANCE PIPE-24 IN	471.000	LF		
1120	00462	CULVERT PIPE-18 IN	160.000	LF		
1130	00464	CULVERT PIPE-24 IN	159.000	LF		
1140	00466	CULVERT PIPE-30 IN	58.000	LF		
1150	00468	CULVERT PIPE-36 IN	190.000	LF		
1160	00470	CULVERT PIPE-48 IN	230.000	LF		
1170	00472	CULVERT PIPE-60 IN	113.000	LF		
1180	00496	CULVERT PIPE-36 IN EQUIV	56.000	LF		
1190	00521	STORM SEWER PIPE-15 IN	1,302.000	LF		
1200	00522	STORM SEWER PIPE-18 IN	205.000	LF		
1210	00524	STORM SEWER PIPE-24 IN	571.000	LF		

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1220	00528	STORM SEWER PIPE-36 IN	150.000	LF		
1230	01000	PERFORATED PIPE-4 IN	3,152.000	LF		
1240	01010	NON-PERFORATED PIPE-4 IN	335.000	LF		
1250	01024	PERF PIPE HEADWALL TY 2-4 IN	1.000	EACH		
1260	01028	PERF PIPE HEADWALL TY 3-4 IN	7.000	EACH		
1270	01032	PERF PIPE HEADWALL TY 4-4 IN	2.000	EACH		
1280	01450	S & F BOX INLET-OUTLET-18 IN	3.000	EACH		
1290	01451	S & F BOX INLET-OUTLET-24 IN	3.000	EACH		
1300	01452	S & F BOX INLET-OUTLET-30 IN	2.000	EACH		
1310	01453	S & F BOX INLET-OUTLET-36 IN	2.000	EACH		
1320	01456	CURB BOX INLET TYPE A	14.000	EACH		
1330	01499	DROP BOX INLET TYPE 4	3.000	EACH		
1340	01544	DROP BOX INLET TYPE 11	2.000	EACH		
1350	01740	CORED HOLE DRAINAGE BOX CON-4 IN	22.000	EACH		
1360	01756	MANHOLE TYPE A	3.000	EACH		
1370	02597	FABRIC-GEOTEXTILE TYPE II	745.000	SQYD		
1380	08100	CONCRETE-CLASS A	41.380	CUYD		
1390	08150	STEEL REINFORCEMENT	2,953.000	LB		
1400	21981NN	METAL END SECTION TY 3-36 IN (EQUIV)	2.000	EACH		
1410	22767ES710	DROP BOX INLET TY 6E	1.000	EACH		
1420	23131ER701	PIPELINE VIDEO INSPECTION	1,550.000	LF		

SECTION 0006 BRIDGE

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LINE NO	ITEM	DESCRIPTION	APPROXIMATE UNIT QUANTITY	UNIT PRICE	AMOUNT
1430	02220	FLOWABLE FILL	48.000 CUYD		
1440	02231	STRUCTURE GRANULAR BACKFILL	703.000 CUYD		
1450	02998	MASONRY COATING	1,044.000 SQYD		
1460	03299	ARMORED EDGE FOR CONCRETE	195.300 LF		
1470	08001	STRUCTURE EXCAVATION-COMMON	146.000 CUYD		
1480	08002	STRUCTURE EXCAV-SOLID ROCK	13.000 CUYD		
1490	08003	FOUNDATION PREPARATION (26710)	(1.00) LS		
1500	08003	FOUNDATION PREPARATION (26711)	(1.00) LS		
1510	08019	CYCLOPEAN STONE RIP RAP	2,432.000 TON		
1520	08033	TEST PILES	142.000 LF		
1530	08039	PRE-DRILLING FOR PILES	134.400 LF		
1540	08046	PILES-STEEL HP12X53	973.000 LF		
1550	08051	PILES-STEEL HP14X89	210.000 LF		
1560	08094	PILE POINTS-12 IN	45.000 EACH		
1570	08100	CONCRETE-CLASS A	689.200 CUYD		
1580	08104	CONCRETE-CLASS AA	740.800 CUYD		
1590	08150	STEEL REINFORCEMENT	77,236.000 LB		
1600	08151	STEEL REINFORCEMENT-EPOXY COATED	199,729.000 LB		
1610	08633	PRECAST PC I BEAM TYPE 3	700.800 LF		
1620	21532ED	RAIL SYSTEM TYPE III	824.300 LF		
1630	24413EC	PPC I-BEAM TY BT84-49	1,062.700 LF		
SECTION 0007 UTILITY - GAS LINE (ADDED: 9-10-12)					

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LINE NO	ITEM	DESCRIPTION	APPROXIMATE QUANTITY	UNIT	UNIT PRICE	AMOUNT
1640	01061	STEEL ENCASEMENT PIPE-4 IN (4 IN BORED)	35.000	LF		
1650	01061	STEEL ENCASEMENT PIPE-4 IN (4 IN OPEN CUT)	90.000	LF		
1660	01063	STEEL ENCASEMENT PIPE-6 IN (6 IN OPEN CUT)	90.000	LF		
1670	03437	RECONNECT SERVICE	2.000	EACH		
1680	20084NN	CUT & CAP (2/3 IN LINE)	1.000	EACH		
1690	20084NN	CUT & CAP (EXISTING 2 IN LINE)	6.000	EACH		
1700	20084NN	CUT & CAP (EXISTING 4 IN LINE)	1.000	EACH		
1710	20311EC	SERVICE LINE-3/4 IN	254.000	LF		
1720	22093NN	TIE IN TO GAS LINE (2 IN GL W/POLY VALVE)	6.000	EACH		
1730	22093NN	TIE IN TO GAS LINE (4 IN GL W/POLY VALVE)	3.000	EACH		
1740	22802EN	GAS MAIN PL-2 IN (IPS SDR 11.5 PE 2406 PP)	1,229.000	LF		
1750	22803EN	GAS MAIN PL-4 IN (IPS SDR 11.5 PE 2406 PP)	1,090.000	LF		
1760	23309EC	PAVEMENT REPLACEMENT	60.000	SQFT		
1770	23337EC	GAS VALVE-2 IN (POLY)	2.000	EACH		
SECTION 0008 MOBILIZATION / DEMOBILIZATION						
1780	02568	MOBILIZATION (NO MORE THAN 5%)		LUMP		
1790	02569	DEMOBILIZATION (AT LEAST 1.5%)		LUMP		
TOTAL BID						