

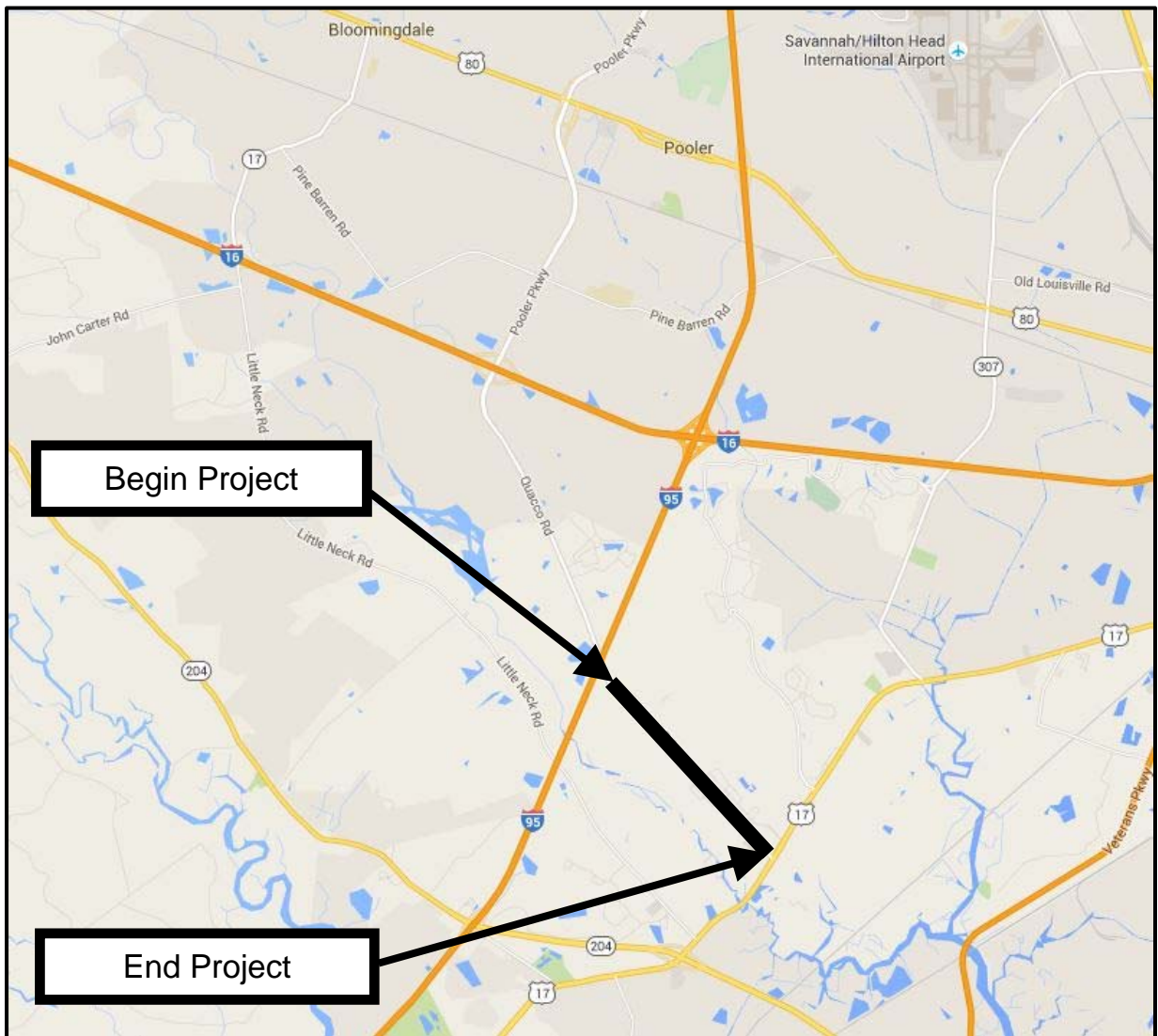
CHATHAM COUNTY STATE OF GEORGIA

CONCEPT REPORT

Project Type:	<u>Widening</u>	P.I. Number:	<u>N/A</u>
GDOT District:	<u>5</u>	County:	<u>Chatham</u>
Federal Route Number:	<u>17</u>	State Route Number:	<u>25</u>
Project Number:	<u></u>		<u>N/A</u>

Quacco Road Improvements

PROJECT LOCATION MAP



County: Chatham

DESIGN AND STRUCTURAL

Description of Proposed Project: *Quacco Road Improvements*

Major Structures: *8'X5' Reinforced Concrete Box Culvert*

Mainline Design Features: *Quacco Road*

Feature	Existing	Standard*	Proposed
Typical Section			
- Number of Lanes	2	2	2-3
- Lane Width(s)	11'	12'	12'
- Median Width & Type	N/A	14'	14' flush; 20' raised
- Outside Shoulder Width	Varies 0'- 6'	10'	10'
- Outside Shoulder Slope	Varies	6%	6%
- Sidewalks	N/A	5'	10' shared use path & 5' sidewalk
- Auxiliary Lanes	12'	12'	12'
- Bike Lanes	N/A	4'	10' shared use path; 4' (US 17)
Posted Speed	50; 40		50mph; 40mph
Design Speed	50; 40		50mph; 40mph
Min Horizontal Curve Radius		833; 533	1950
Maximum Superelevation Rate		6%; 4%	6%; 4%
Maximum Grade		6%; 7%	3.7433%
Minimum Rate of Vertical Curvature, K			
- AASHTO 2011 Green Book, Crest		44 ft/A; 84 ft/A	84 ft/A; 44 ft/A
- AASHTO 2011 Green Book, Sag		64 ft/A; 96 ft/A	96 ft/A; 64 ft/A
Design Vehicle	Passenger Car/ City Bus	Passenger Car/ City Bus	Passenger Car/ City Bus
Pavement Type	Asphalt	Asphalt	Asphalt
<i>Additional Items as warranted</i>			

*According to current GDOT design policy if applicable

UTILITY AND PROPERTY

Railroad Involvement: *None*

Utility Involvements: GA Power, Atlanta Gas Light, City of Savannah Water & Sewer, Telecommunications

SUE Required: No Yes

Right-of-Way: Existing width: 80 ft. Proposed width: 100-200 ft.
 Required Right-of-Way anticipated: No Yes Undetermined
 Easements anticipated: None Temporary Permanent Utility Other

Anticipated total number of impacted parcels: 149
 Displacements anticipated: Businesses: 0
 Residences: 0
 Other: 0
 Total Displacements: 0

ENVIRONMENTAL AND PERMITS

MS4 Compliance – Is the project located in an MS4 area? No Yes

Environmental Permits, Variances, Commitments, and Coordination anticipated:

- Section 404 permit anticipated, NWP #14
- Requirements for stream buffer variance will be coordinated with state waters determinations made by ACOE.

Project Cost Estimate and Funding Responsibilities:

	Breakdown of PE	ROW	Reimbursable Utility	CST*	Environmental Mitigation	Total Cost
	Chatham County	Chatham County	Chatham County	GDOT	Chatham County	
Quacco Road Total 2.6 mi.	\$933,030	TBD	TBD	\$8,396,100	TBD	\$9,329,130
SR 25/US 17 at Quacco Road Intersection (GDOT Project ID 16-630)	\$233,481	TBD	TBD	\$900,000	TBD	\$1,133,481

*CST Cost includes: Construction, Engineering and Inspection, and Contingencies.

ALTERNATIVES DISCUSSION

Alternative 1A: *Realignment of Quacco Road CL at SR 25/US 17*

Estimated CST Time: **18 months**

Rationale: *This alternative slightly realigns Quacco Road to the north to avoid impacts to 2-54" and 2-34" oak trees along the south side of Quacco Road. This centerline shift will provide an approximate 74-degree intersection skew and accommodate a future 4-lane widening through the tree locations.*

Alternative 1B: *Widening SR 25/US 17 to provide dual left turn lanes onto Quacco Road*

Estimated CST Time: **18 months**

Rationale: *This alternative will begin as a 3-lane section with a 14' flush median and right turn lanes at appropriate intersections. Approaching SR 25/US 17 will consist of a 3-lane section with a 20' raised median and will include dual left turn lanes from Quacco Road to Northbound SR 25/US 17. Along SR 25/US 17 is currently four 12-foot lanes with a 20' raised median and will be widened to provide dual left turn lanes onto Quacco Road from the Northbound approach.*

Alternative 2: *No Widening for existing left turn lane from SR 25/US 17*

Estimated CST Time: **18 months**

Rationale: *This alternative will begin as a 3-lane section with a 14' flush median and right turn lanes at appropriate intersections. Approaching SR 25/US 17 will consist of a 3-lane section with a 20' raised median and will include dual left turn lanes from Quacco Road to Northbound SR 25/US 17. SR 25/US 17 will remain in its existing condition with no additional turn lane capacity.*

LIST OF ATTACHMENTS/SUPPORTING DATA

1. Concept Layout
2. Typical sections
3. Cost Estimates
4. Traffic diagrams or projections
5. Summary of TE Study and Capacity Analysis

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moffatt & nichol

COST ESTIMATE

**QUACCO ROAD WIDENING (INCLUDING SR 25/US 17 INTERSECTION)
CHATHAM COUNTY**

ITEM NO.	ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	EXTENSION
ROADWAY					
150-1000	TRAFFIC CONTROL -	LS	1	320,000.00	320,000.00
207-0203	FOUND BK FILL MATL, TP II	CY	16	59.64	954.24
210-0100	GRADING COMPLETE -	LS	1	1,240,000.00	1,240,000.00
310-1101	GR AGGR BASE CRS, INCL MATL	TN	28300	22.35	632,505.00
318-3000	AGGR SURF CRS	TN	360	23.45	8,442.00
402-1812	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	TN	12400	80.00	992,000.00
402-4510	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL POLYMER-MODIFIED BITU	TN	9600	100.00	960,000.00
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	4300	90.00	387,000.00
413-1000	BITUM TACK COAT	GL	8000	2.27	18,160.00
432-5010	MILL ASPH CONC PVMT, VARIABLE DEPTH	SY	12800	1.93	24,704.00
441-0016	DRIVEWAY CONCRETE, 6 IN TK	SY	320	38.42	12,294.40
441-0018	DRIVEWAY CONCRETE, 8 IN TK	SY	920	53.16	48,907.20
441-0104	CONC SIDEWALK, 4 IN	SY	20600	30.53	628,918.00
441-0740	CONCRETE MEDIAN, 4 IN	SY	290	30.67	8,894.30
441-0748	CONCRETE MEDIAN, 6 IN	SY	110	47.97	5,276.70
441-4030	CONC VALLEY GUTTER, 8 IN	SY	58	53.11	3,080.38
441-5002	CONCRETE HEADER CURB, 6 IN, TP 2	LF	240	19.78	4,747.20
441-6222	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	LF	9300	15.68	145,824.00
500-3101	CLASS A CONCRETE	CY	50	697.86	34,893.00
500-9999	CLASS B CONC, BASE OR PVMT WIDENING	CY	130	214.03	27,823.90
511-1000	BAR REINF STEEL	LB	4900	0.99	4,851.00
550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	LF	8100	35.82	290,142.00
550-1240	STORM DRAIN PIPE, 24 IN, H 1-10	LF	210	48.57	10,199.70
550-1360	STORM DRAIN PIPE, 36 IN, H 1-10	LF	93	72.38	6,731.34
550-2180	SIDE DRAIN PIPE, 18 IN, H 1-10	LF	480	28.07	13,473.60
550-3318	SAFETY END SECTION 18 IN, STORM DRAIN, 4:1 SLOPE	EA	4	562.30	2,249.20
550-4118	FLARED END SECTION 18 IN, SIDE DRAIN	EA	60	538.27	32,296.20
550-4218	FLARED END SECTION 18 IN, STORM DRAIN	EA	9	692.15	6,229.35
550-4224	FLARED END SECTION 24 IN, STORM DRAIN	EA	3	797.97	2,393.91
550-4236	FLARED END SECTION 36 IN, STORM DRAIN	EA	1	1,243.34	1,243.34
573-2006	UNDDR PIPE INCL DRAINAGE AGGR, 6 IN	LF	100	21.96	2,196.00
634-1200	RIGHT OF WAY MARKERS	EA	78	115.25	8,989.50
643-8200	BARRIER FENCE (ORANGE), 4 FT	LF	4700	2.09	9,823.00
668-1100	CATCH BASIN, GP 1	EA	19	2,518.63	47,853.97
668-2100	DROP INLET, GP 1	EA	45	2,349.43	105,724.35
SIGNING & MARKING					
636-1033	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	SF	110	16.16	1,777.60
636-1036	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 11	SF	170	14.87	2,527.90
636-2070	GALV STEEL POSTS, TP 7	LF	280	5.76	1,612.80
636-2090	GALV STEEL POSTS, TP 9	LF	250	6.70	1,675.00
652-0105	PAVEMENT MARKING, BIKE SHARED LANE SYMBOL	EA	6	45.00	270.00
653-0120	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	EA	71	70.29	4,990.59
653-0170	THERMOPLASTIC PVMT MARKING, ARROW, TP 7	EA	2	101.45	202.90
653-1501	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	LF	35400	0.40	14,160.00
653-1502	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	LF	27900	0.41	11,439.00
653-1704	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	LF	350	5.56	1,946.00
653-1804	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	LF	1700	1.83	3,111.00
653-3501	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	GLF	9200	0.27	2,484.00
653-3502	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, YELLOW	GLF	23800	0.26	6,188.00
653-6004	THERMOPLASTIC TRAF STRIPING, WHITE	SY	85	3.40	289.00
653-6006	THERMOPLASTIC TRAF STRIPING, YELLOW	SY	750	3.18	2,385.00
654-1001	RAISED PVMT MARKERS TP 1	EA	320	3.20	1,024.00
654-1002	RAISED PVMT MARKERS TP 2	EA	300	3.14	942.00
654-1003	RAISED PVMT MARKERS TP 3	EA	270	3.55	958.50
SIGNALIZATION					
615-1200	DIRECTIONAL BORE - 3 IN	LF	560	9.96	5,577.60
615-1200	DIRECTIONAL BORE - 5 IN	LF	50	17.55	877.50
636-1041	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 9	SF	30	26.19	785.70
639-4004	STRAIN POLE, TP IV	EA	4	9,337.15	37,348.60
647-1000	TRAFFIC SIGNAL INSTALLATION NO - 1	LS	1	60,000.00	60,000.00
682-6120	CONDUIT, RIGID, 2 IN	LF	710	16.89	11,991.90
PERMANENT EROSION CONTROL					
603-2181	STN DUMPED RIP RAP, TP 3, 18 IN	SY	25	57.69	1,442.25
603-7000	PLASTIC FILTER FABRIC	SY	25	3.75	93.75
700-6910	PERMANENT GRASSING	AC	19	1,361.95	25,877.05
700-7000	AGRICULTURAL LIME	TN	56	69.91	3,914.96
700-8000	FERTILIZER MIXED GRADE	TN	8	552.80	4,422.40
700-8100	FERTILIZER NITROGEN CONTENT	LB	930	2.76	2,566.80
710-9000	PERMANENT SOIL REINFORCING MAT	SY	18775	6.45	121,098.75
716-2000	EROSION CONTROL MATS, SLOPES	SY	50900	1.20	61,080.00

QUACCO ROAD WIDENING (INCLUDING SR 25/US 17 INTERSECTION)
CHATHAM COUNTY

ITEM NO.	ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	EXTENSION
TEMPORARY EROSION CONTROL					
163-0232	TEMPORARY GRASSING	AC	10	724.49	7,244.90
163-0240	MULCH	TN	400	133.72	53,488.00
163-0300	CONSTRUCTION EXIT	EA	2	1,512.38	3,024.76
163-0501	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 1	EA	1	1,119.78	1,119.78
163-0503	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	EA	7	503.49	3,524.43
163-0528	CONSTRUCT AND REMOVE FABRIC CHECK DAM - TYPE C SILT FENCE	LF	6500	6.40	41,600.00
163-0550	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	EA	29	163.91	4,753.39
165-0030	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	LF	13400	0.51	6,834.00
165-0041	MAINTENANCE OF CHECK DAMS - ALL TYPES	LF	3300	3.68	12,144.00
165-0085	MAINTENANCE OF SILT CONTROL GATE, TP 1	EA	1	114.35	114.35
165-0087	MAINTENANCE OF SILT CONTROL GATE, TP 3	EA	7	75.43	528.01
165-0101	MAINTENANCE OF CONSTRUCTION EXIT	EA	2	545.83	1,091.66
165-0105	MAINTENANCE OF INLET SEDIMENT TRAP	EA	29	62.23	1,804.67
167-1000	WATER QUALITY MONITORING AND SAMPLING	EA	2	353.14	706.28
167-1500	WATER QUALITY INSPECTIONS	MO	6	953.39	5,720.34
171-0030	TEMPORARY SILT FENCE, TYPE C	LF	26700	3.38	90,246.00
BOARDWALK NO. 1 & NO. 2					
520-0001	BOARDWALK NO.1 STA 149+50	LF	20	200.00	4,000.00
520-0002	BOARDWALK NO.1 STA 152+00	LF	110	200.00	22,000.00
520-2214	PILING, PSC, 14 IN SQ	LF	280	46.62	13,053.60
				SUB-TOTAL PROJECT COST \$	6,716,879.50
				10% E&I Contingency \$	671,687.95
				15% Unit Cost Contingency \$	1,007,531.93
				Total Contingencies \$	1,679,219.88
				Total Fuel Adjustment \$	-
				Total Liquid AC Adjustment \$	-
				CONSTRUCTION TOTAL \$	8,396,100.00

COST ESTIMATE

 QUACCO ROAD WIDENING (SR 25/US 17 INTERSECTION ONLY)
 CHATHAM COUNTY

ITEM NO.	ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	EXTENSION
ROADWAY					
150-1000	TRAFFIC CONTROL -	LS	1	40,000.00	40,000.00
210-0100	GRADING COMPLETE -	LS	1	90,000.00	90,000.00
310-1101	GR AGGR BASE CRS, INCL MATL	TN	1890	22.35	42,241.50
318-3000	AGGR SURF CRS	TN	20	23.45	469.00
402-1812	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	TN	530	74.44	39,453.20
402-4510	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL POLYMER-MODIFIED BITUM	TN	1900	76.98	146,262.00
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	260	70.10	18,226.00
413-1000	BITUM TACK COAT	GL	1020	2.27	2,315.40
432-5010	MILL ASPH CONC PVMT, VARIABLE DEPTH	SY	12730	1.93	24,568.90
441-0018	DRIVEWAY CONCRETE, 8 IN TK	SY	260	53.16	13,821.60
441-0104	CONC SIDEWALK, 4 IN	SY	630	30.53	19,233.90
441-0740	CONCRETE MEDIAN, 4 IN	SY	110	30.67	3,373.70
441-0748	CONCRETE MEDIAN, 6 IN	SY	110	47.97	5,276.70
441-4030	CONC V VALLEY GUTTER, 8 IN	SY	100	53.11	5,311.00
441-5002	CONCRETE HEADER CURB, 6 IN, TP 2	LF	300	19.78	5,934.00
441-6222	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	LF	1700	15.68	26,656.00
500-9999	CLASS B CONC, BASE OR PVMT WIDENING	CY	39	214.03	8,347.17
550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	LF	1100	35.82	39,402.00
550-4218	FLARED END SECTION 18 IN, STORM DRAIN	EA	1	692.15	692.15
573-2006	UNDDR PIPE INCL DRAINAGE AGGR, 6 IN	LF	100	21.96	2,196.00
634-1200	RIGHT OF WAY MARKERS	EA	9	115.25	1,037.25
643-8200	BARRIER FENCE (ORANGE), 4 FT	LF	500	2.09	1,045.00
668-1100	CATCH BASIN, GP 1	EA	6	2,518.63	15,111.78
SIGNING & MARKING					
636-1020	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	SF	10	13.18	131.80
636-1033	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	SF	30	16.16	484.80
636-2070	GALV STEEL POSTS, TP 7	LF	20	5.76	115.20
636-2090	GALV STEEL POSTS, TP 9	LF	31	6.70	207.70
652-0105	PAVEMENT MARKING, BIKE SHARED LANE SYMBOL	EA	6	45.00	270.00
653-0120	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	EA	16	70.29	1,124.64
653-0170	THERMOPLASTIC PVMT MARKING, ARROW, TP 7	EA	2	101.45	202.90
653-1501	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	LF	7000	0.40	2,800.00
653-1502	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	LF	2400	0.41	984.00
653-1704	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	LF	120	5.56	667.20
653-1804	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	LF	1700	1.83	3,111.00
653-3501	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	GLF	6100	0.27	1,647.00
653-6004	THERMOPLASTIC TRAF STRIPING, WHITE	SY	62	3.40	210.80
653-6006	THERMOPLASTIC TRAF STRIPING, YELLOW	SY	580	3.18	1,844.40
654-1003	RAISED PVMT MARKERS TP 3	EA	140	3.55	497.00
SIGNALIZATION					
615-1200	DIRECTIONAL BORE - 3 IN	LF	560	9.96	5,577.60
615-1200	DIRECTIONAL BORE - 5 IN	LF	50	17.55	877.50
636-1041	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 9	SF	30	26.19	785.70
639-4004	STRAIN POLE, TP IV	EA	4	9,337.15	37,348.60
647-1000	TRAFFIC SIGNAL INSTALLATION NO - 1	LS	1	60,000.00	60,000.00
682-6120	CONDUIT, RIGID, 2 IN	LF	710	16.89	11,991.90
PERMANENT EROSION CONTROL					
603-2181	STN DUMPED RIP RAP, TP 3, 18 IN	SY	12	57.69	692.28
603-7000	PLASTIC FILTER FABRIC	SY	12	3.75	45.00
700-6910	PERMANENT GRASSING	AC	2	1,361.95	2,723.90
700-7000	AGRICULTURAL LIME	TN	5	69.91	349.55
700-8000	FERTILIZER MIXED GRADE	TN	1	552.80	552.80
700-8100	FERTILIZER NITROGEN CONTENT	LB	80	2.76	220.80
710-9000	PERMANENT SOIL REINFORCING MAT	SY	70	6.45	451.50
716-2000	EROSION CONTROL MATS, SLOPES	SY	2500	1.20	3,000.00
TEMPORARY EROSION CONTROL					
163-0232	TEMPORARY GRASSING	AC	1	724.49	724.49
163-0240	MULCH	TN	29	133.72	3,877.88
163-0300	CONSTRUCTION EXIT	EA	2	1,512.38	3,024.76
163-0503	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	EA	2	503.49	1,006.98
163-0528	CONSTRUCT AND REMOVE FABRIC CHECK DAM - TYPE C SILT FENCE	LF	150	6.40	960.00
163-0550	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	EA	2	163.91	327.82
165-0030	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	LF	1700	0.51	867.00
165-0041	MAINTENANCE OF CHECK DAMS - ALL TYPES	LF	80	3.68	294.40
165-0087	MAINTENANCE OF SILT CONTROL GATE, TP 3	EA	2	75.43	150.86
165-0101	MAINTENANCE OF CONSTRUCTION EXIT	EA	2	545.83	1,091.66
165-0105	MAINTENANCE OF INLET SEDIMENT TRAP	EA	2	62.23	124.46
167-1000	WATER QUALITY MONITORING AND SAMPLING	EA	2	353.14	706.28
167-1500	WATER QUALITY INSPECTIONS	MO	6	953.39	5,720.34
171-0030	TEMPORARY SILT FENCE, TYPE C	LF	3300	3.38	11,154.00
SUB-TOTAL PROJECT COST \$					719,920.75
10% E&I Contingency \$					71,992.08
15% Unit Cost Contingency \$					107,988.11
Total Contingencies \$					179,980.19
Total Fuel Adjustment \$					-
Total Liquid AC Adjustment \$					-
CONSTRUCTION TOTAL \$					900,000.00