CHATHAM COUNTY PURCHASING DEPARTMENT

ADDENDUM NO. 3 TO 11-0043-4

FOR: SR 307/DEAN FOREST ROAD WIDENING FROM US 17 TO I-16

PLEASE SEE THE FOLLOWING FOR ADDITIONS, CLARIFICATIONS AND/OR CHANGES:

1. See attached sheet (1) that responds to questions received.

2. See attached *Soil Survey (15 sheets).*

3. This addendum also incorporates 2 Plan Sheets that have been revised. These Plan Sheets can be downloaded from the Purchasing web page : purchsing.chathamcounty.org or from Clayton Digital Reprographics (CDR) @ 912-352-3880.

THE BID OPENING REMAINS :

2PM, WEDNESDAY, FEBRUARY 22, 2011.

THE BIDDER IS RESPONSIBLE FOR MAKING THE NECESSARY CHANGES AND MUST ACKNOWLEDGE RECEIPT OF ADDENDUM.

2-16-12
DATE

ROBERT E. MARSHALL
SENIOR PROCUREMENT SPECIALIST
CHATHAM COUNTY

Addendum #3 SR 307 Widening Bid No. 11-0043-4

1. Please see the attached revisions for Traffic Signal Installation No. 1 – US 17, sheets SG1.1 and SG1.2.

2. The borrow material to be obtained from the County site is located about one mile inside the property off of Basin Road. The entrance to the property is approximately 7 miles from the intersection of SR 307 and US 17.

Questions Received February 15, 2012

1. Please provide the breakdown of quantities typical for a GDOT project plan set so that bidders understand the quantities, what items are accounted for in the quantities and can verify these quantities. The only quantity sheets provided were for signs (QN1.1 – 1.5). We need this for all other quantities as well – drainage, paving, concrete flatwork, striping, etc.

1Answer. A summary of quantities will not be provided at this time. All the necessary information can be found in the plans.

2. Will temporary pavement paid for at the unit prices provided for the respective pay items? If so, there is no pay item for 6" GABC.

2Answer. Temporary pavement will be paid for at the unit price for respective permanent items. Please see the revised bid sheet from addendum 2, item code 310-5060, GR AGGR BASE CRS, 6 INCH, INCL MATL by the SY for 6" GABC.

3. Is a soil report available for this project? If so please make available to bidders.

3Answer. The Soil Survey Summary Report will be provided for your review. Please keep in mind that this survey was completed prior to the SR 307/ Hardin Canal Culvert project which included grading between stations 65+00 and 108+00.

4. Does the GDOT special provision requiring televised inspection and laser profiling of installed storm drainage pipe apply to this project?

4Answer. Yes, Special Provision 550 is included in the contract. See Special Condition No. 1 in the bid documents.

5. Will the County be responsible for traffic signal timing and traffic counts? This is usually a pay item.

5Answer. The Georgia Department of Transportation will set up the timing for the signals.

SOIL SURVEY SUMMARY
For
State Route 307 Widening
STP00-0002-00(140), Chatham County
PI No.: 0002140

1. **Project Description** — This project is for the widening of State Route 307 in Chatham County, Georgia. The soil survey covers the existing State Route 307 between Station 50+00 (at the intersection of S.R.307 and HWY 17) and Station 175+00 (at the intersection of S.R.307 and I-16).

2. **Geology** — This project is geologically sited in the Silver Bluff Shoreline Formation of the Georgia Coastal Plain Region.

3. **Rock** — None encountered.

4. **Removal** — Materials unsuitable for embankment construction (soft plastic clays) which require removal were encountered at the following stations to the maximum depth indicated on this project:

Station to Station	Location	Maximum Depth (feet)
71+75 to 72+25	Rt.	5.0

This material has been removed and replaced - PB

The removed material shall be wasted outside the construction limits of the project. Replacement material should be with granular embankment, placed to a depth of 18 inches above the water elevation at the time of construction. This work shall be done in accordance with Special Provision Section 208.

The actual soil conditions may vary between the exploration hand auger borings. The final location considering removal of soft clayey soils should be decided during the site-preparation work.

5. **Waste** — The soils removed from the marsh area shall be wasted outside the construction limits of the project.

6. **Subgrade Materials** — We recommend that the top 12 inches of subgrade on this project, including ramps and cross roads, be constructed with Class II B2 or better materials.

This work shall be done in accordance with Special Provision Section 209.

7. **Pavement Design Values** We recommend the following values for use in the pavement design calculations for this project:

   Soil Support Value = 4.0

   Regional Factor = 1.7

   Subgrade Reaction k = 190 pci

   Acceptable base materials for use on this project are graded aggregate and limerock bases. Asphalt concrete base is not recommended for use on this project due to potential stability problems with operating the paving spreader on the clean, gap-graded sands on this project.

8. **Slope** The soils in the marsh are very soft and would require a very flat slope to minimize the potential of slope failure along the edge. A slope of 5:1 (horizontal to vertical) would be safe and appropriate in the mash area for this project. The owner (Chatham County) has indicated availability of right of way for such flat slope.

9. **Groundwater** The project crosses low lying areas and marshes which will be inundated during high tides at the time of construction. Because of the relatively flat terrain and environmental constraints on building on marsh, it is not feasible to drain marshes to lower water table. The soils in the low lying areas and marshes listed below consist primarily of very soft sandy silts to sandy clays (the measured compression index C_c was around 1.0) in the upper 9 to 12 feet below the existing ground surface, which will require reinforcement to stabilize the new embankments and preloading with surcharge to limit post-construction settlement. We recommend one layer of high-strength reinforcement filter fabric be placed on the top of the existing ground prior to placing the fill, as shown on the attached detail, to provide stability over the soft ground. Preloading with surcharge is also recommended to allow consolidation of the soft soil layers before roadway construction. The required surcharge height will be six (6) feet over the finished grade. We recommend a slope of 1:1 be considered for the surcharge and a surcharge time of 180 days. The areas where the fabric and surcharge will be required are as follows:

Station to Station	**Location**
50+00 to 64+50	Rt.
88+00 to 106+50	Lt.

It is not feasible to drain the areas during construction and a mat of granular fill should be placed to a height of 18 inches above the water level prior to placing normal fills. This work should be done in accordance with Special

Provision Sections 208 and 881.

10. Shrinkage We recommend an average shrinkage factor of 30% for use in the earthwork calculations for this project.

11. Culvert We recommend that a 12-inch blanket of Type II Foundation Backfill material be placed under the barrel of all culverts and 48 inch diameter and larger cross-drains on this project.

12. Corrosion Reference should be made to the attached "Pipe Culvert Material Recommendations" for materials allowable by the laboratory corrosion test.

13. Bench Detail Where new fills are to be placed on existing slopes steeper than 3:1, the existing slope should be benched in accordance with the attached detail.

14. Special Problem Several residences are located very close to the construction limits of this project. Vibrations from construction may cause some concerns with property owners. We recommend that the Project Engineer contact the Geotechnical Engineering Bureau prior to construction to evaluate the need for crack surveys and vibration monitoring.

Reported By: Yong Tan, Ph.D. and Zengxuan (Frank) Li, P.E.

March 2, 2011

Reviewed By: Guoming Lin, Ph.D., PE

Hand Auger Boring Records
State Route 307 Widening
Project No. STP00-0002-00(140), Chatham County
P. I. No.: 0002140

WPC Project Number: WPC3209.00010

Station 52+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	dark brown, sandy clay with organics	IV
1.0-2.0	grey, sandy clay	IV
2.0-3.0	dark brown, sandy clay with organics and grasses	IV
3.0-5.0	black, sandy clay with organics	IV
5.0-10.0	dark brown, sandy clay	IV
Groundwater encountered at 1 ft below ground surface		

Station 60+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	dark brown and grey, sandy clay with organics and grasses	IV
1.0-3.0	grey, sandy clay with organics	IV
3.0-5.0	grey and orange, sandy clay	IV
Groundwater encountered at 0.75 ft below ground surface (Standing Water in Vicinity)		

Station 72+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-3.0	tan and orange, poorly graded sand with silt	II
3.0-5.0	tan and orange, poorly graded sand	II
5.0-6.0	dark brown, clayey sand	II
6.0-8.0	dark brown, sandy clay with organics	II
8.0-10.0	dark brown, clayey sand	II
Groundwater not encountered		

Station 95+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-2.0	dark brown, sandy clay with organics and grasses	IV
2.0-3.0	grey and brown, clayey sand	II
3.0-5.0	dark brown, sandy clay with organics	IV
Groundwater encountered at 0.75 ft below ground surface		

Station 135+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	brown and orange, clayey sand with organics and grass roots	II
1.0-3.0	grey, brown, red, and orange, clayey sand	II
3.0-5.0	grey, red, and orange, clayey sand	II
Groundwater not encountered		

Station 170+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	brown and tan, silty sand	II
1.0-2.0	brown and orange, sandy clay with organics	II
2.0-3.0	brown, poorly graded sand with silt	II
3.0-5.0	orange, sandy clay	III
Groundwater encountered at 4 ft below ground surface		

Hand Auger Boring Records
State Route 307 Widening
Project No. STP00-0002-00(140), Chatham County
P. I. No.: 0002140

WPC Project Number: WPC3209.00010

Station 51+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-5.0	Very soft, dark, brown, sandy clay	IV
Ground water encountered at 0.5 ft above the ground surface		

Station 52+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-2.0	Very soft, gray, brown, sandy silt	IV
2.0-10.0	Very soft, dark, gray, sandy clay	IV
10.0-13.0	Soft, dark, gray, sandy clay	IV
Ground water encountered at 0.5 ft above the ground surface		

Station 53+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-2.0	Gray, brown, sandy silt	IV
2.0-5.0	Very soft, dark, gray, sandy clay	IV
Ground water encountered at the ground surface		

Station 54+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.5	Gray, yellowish-brown, sandy silt	IV
1.5-5.0	Very soft, dark, gray, sandy clay	IV
Ground water encountered at the ground surface		

Station 55+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-0.5	Gray, brown, sandy silt with many roots	IV
0.5-1.0	Gray, brown, sandy silt	IV
1.0-4.0	Very soft, gray, brown, sandy clay	
Ground water encountered at the ground surface		

Station 56+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-0.5	Very soft, dark, gray, sandy clay, with many roots and concrete fragments	IV
0.5-5.0	Very soft, dark, gray, sandy clay	IV
Ground water encountered at the ground surface		

Hand Auger Boring Records
State Route 307 Widening
Project No. STP00-0002-00(140), Chatham County
P. I. No.: 0002140

WPC Project Number: WPC3209.00010

Station 57+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	Very soft, dark, gray, sandy silt	IV
1.0-5.0	Very soft, dark, gray, sandy clay	IV
Ground water encountered at the ground surface		

Station 58+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-5.0	Very soft, dark, gray, sandy clay	IV
Ground water encountered at the ground surface		

Station 59+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-0.5	Very soft, yellowish-brown, sandy silt with many roots	IV
0.5-5.0	Very soft, dark, gray, sandy clay	IV
Ground water encountered at the ground surface		

Station 60+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-10.0	Very soft, gray, brown, sandy clay	IV
Ground water encountered at the ground surface		

Station 61+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-5.0	Very soft, dark, gray, sandy clay	IV
Ground water encountered at the ground surface		

Station 62+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-0.5	Very soft, dark, gray, sandy silt	IV
0.5-5.0	Very soft, dark, gray, sandy clay	IV
Ground water encountered at the ground surface		

Hand Auger Boring Records
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P. I. No.: 0002140

WPC Project Number: WPC3209.00010

Station 63+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-5.0	Very soft, dark, gray, sandy clay	IV
Ground water encountered at the ground surface		

Station 64+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-2.0	Soft, gray, yellowish-brown, sandy clay	IV
2.0-5.0	Very soft, gray, brown, sandy clay	IV
Ground water encountered at the ground surface		

Station 65+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-0.5	Gray, yellowish-brown, silty fine sand	IA3
0.5-2.5	gray, brown, sandy silt	IA3
2.5-5.0	Firm, dark, gray, sandy clay	IIB2
Ground water not encountered		

Station 66+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	Gray, brown, silty fine sand with many roots	IA3
1.0-5.0	Firm to stiff, gray, yellowish-brown, sandy clay	IIB2
Ground water not encountered		

Station 67+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	Gray, brown, silty fine sand with many roots	IA3
1.0-5.0	Firm to stiff, gray, yellowish-brown, sandy clay	IIB2
Ground water not encountered		

Station 68+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-0.5	Dark, brown, silty fine sand with some roots	IA3
0.5-5.0	Very stiff, dark, gray, brown, sandy clay	IIB2
Ground water not encountered		

Hand Auger Boring Records
State Route 307 Widening
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P. I. No.: 0002140

WPC Project Number: WPC3209.00010

Station 69+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-5.0	Very stiff to hard, gray, brown, sandy clay	IIB2
Ground water not encountered		

Station 70+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-0.5	Dark, brown, silty fine sand with some roots	IA3
0.5-5.0	Very stiff, brown, sandy clay	IIB2
Ground water not encountered		

Station 71+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-0.75	Gray, brown, silty fine sand	IA3
0.75-5.0	Very stiff to hard, dark, gray, sandy clay	IIB2
Ground water not encountered		

Station 72+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-5.0	Soft, dark, gray, clay	IV
5.0-10.0	Firm to very stiff, gray, yellowish-brown, sandy clay	IIB2
Ground water @ 1.0 ft BGS		

Station 73+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.5	gray, brown, silty fine sand	IA3
1.5-5.0	Firm to stiff, gray, yellowish-brown, sandy clay	IIB2
Ground water not encountered		

Station 74+00 ± Rt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	Dark, brown, silty fine sand with some roots	IA3
1.0-5.0	Firm to stiff, gray, yellowish-brown, sandy clay	IIB2
Ground water not encountered		

Hand Auger Boring Records
State Route 307 Widening
Project No. STP00-0002-00(140), Chatham County
P. I. No.: 0002140

WPC Project Number: WPC3209.00010

Station 80+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	Gray, yellowish-brown, silty fine sand	IA3
1.0-5.0	Firm to stiff, gray, brown, sandy clay	IIB2
Ground water not encountered		

Station 85+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	Gray, yellowish-brown, clayey sand	IA3
1.0-5.0	Firm to stiff, gray, brown, sandy clay	IIB2
Ground water encountered at 3 inches below the ground surface		

Station 90+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.5	Soft, yellowish-brown, sandy silt	IV
1.5-5.0	Very soft, dark, gray, sandy clay	IV
Ground water encountered at the ground surface		

Station 95+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-0.5	Brown, sandy silt with a trace of organics and roots	IV
0.5-5.0	Very soft, dark, brown, sandy silt	IV
Ground water encountered at the ground surface		

Station 100+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	Yellowish-brown, sandy clay	IV
1.0-5.0	Soft, dark, brown, sandy clay	IV
Ground water encountered at 6 inches below the ground surface		

Station 105+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-0.5	Soft, yellowish-brown, sandy silt	IV
0.5-5.0	Very soft, brown, sandy silt	IV
Ground water encountered at the ground surface		

Hand Auger Boring Records
State Route 307 Widening
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P. I. No.: 0002140

WPC Project Number: WPC3209.00010

Station 110+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	Gray, yellowish-brown, silty fine sand	IA3
1.0-5.0	Firm to stiff, gray, brown, sandy clay	IIB2
Ground water not encountered		

Station 115+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.5	Gray, yellowish-brown, clayey sand	IA3
1.5-5.0	Firm to stiff, gray, brown, sandy clay	IIB2
Ground water not encountered		

Station 120+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.5	Brown, silty fine sand	IA3
1.5-5.0	Firm to stiff, gray, yellowish-brown, sandy clay	IIB2
Ground water not encountered		

Station 125+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.5	Gray, yellowish-brown, silty fine sand	IA3
1.5-5.0	Firm to stiff, gray, brown, sandy clay	IIB2
Ground water not encountered		

Station 130+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	Gray, brown, silty fine sand	IA3
1.0-5.0	Firm to very stiff, gray, brown, sandy clay	IIB2
Ground water not encountered		

Station 135+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-3.0	Brown, silty fine sand	IA3
3.0-5.0	Firm to very stiff, gray, brown, sandy clay	IIB2
Ground water not encountered		

Hand Auger Boring Records
State Route 307 Widening
Project No. STP00-0002-00(140), Chatham County
P. I. No.: 0002140

WPC Project Number: WPC3209.00010

Station 140+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	Gray, yellowish-brown, silty fine sand	IA3
1.0-5.0	Firm to stiff, gray, brown, sandy clay	IIB1
Ground water not encountered		

Station 145+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.5	Gray, yellowish-brown, clayey sand	IA3
1.5-5.0	Firm to stiff, gray, brown, sandy clay	IIB2
Ground water not encountered		

Station 150+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-5.0	Firm to stiff, dark, brown, sandy clay	IA3
Ground water not encountered		

Station 155+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	Gray, brown, silty fine sand	IA3
1.0-5.0	Firm to stiff, gray, yellowish-brown, sandy clay	IIB2
Ground water not encountered		

Station 160+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	Firm to stiff, dark, brown, sandy clay	IIB2
1.0-5.0	Firm to very stiff, gray, brown, sandy clay	IIB2
Ground water not encountered		

Station 165+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.5	Brown, silty fine sand	IA3
1.5-5.0	Firm to very stiff, gray, brown, sandy clay	IIB2
Ground water not encountered		

Hand Auger Boring Records
State Route 307 Widening
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Station 170+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-1.0	Gray, yellowish-brown, silty fine sand	IA3
1.0-5.0	Firm to stiff, gray, brown, sandy clay	IIB2
Ground water not encountered		

Station 175+00 ± Lt.		
Depth Below Grade (ft), BGS	**Material Description**	**Soil Classifications**
0.0-0.5	Brown, silty fine sand	IA3
0.5-5.0	Firm to stiff, gray, brown, sandy clay	IIB2
Ground water not encountered		

LABORATORY SOIL REPORT

State Route 307 Widening
STP00-0002-00(140), Chatham County
PI No. 0002140

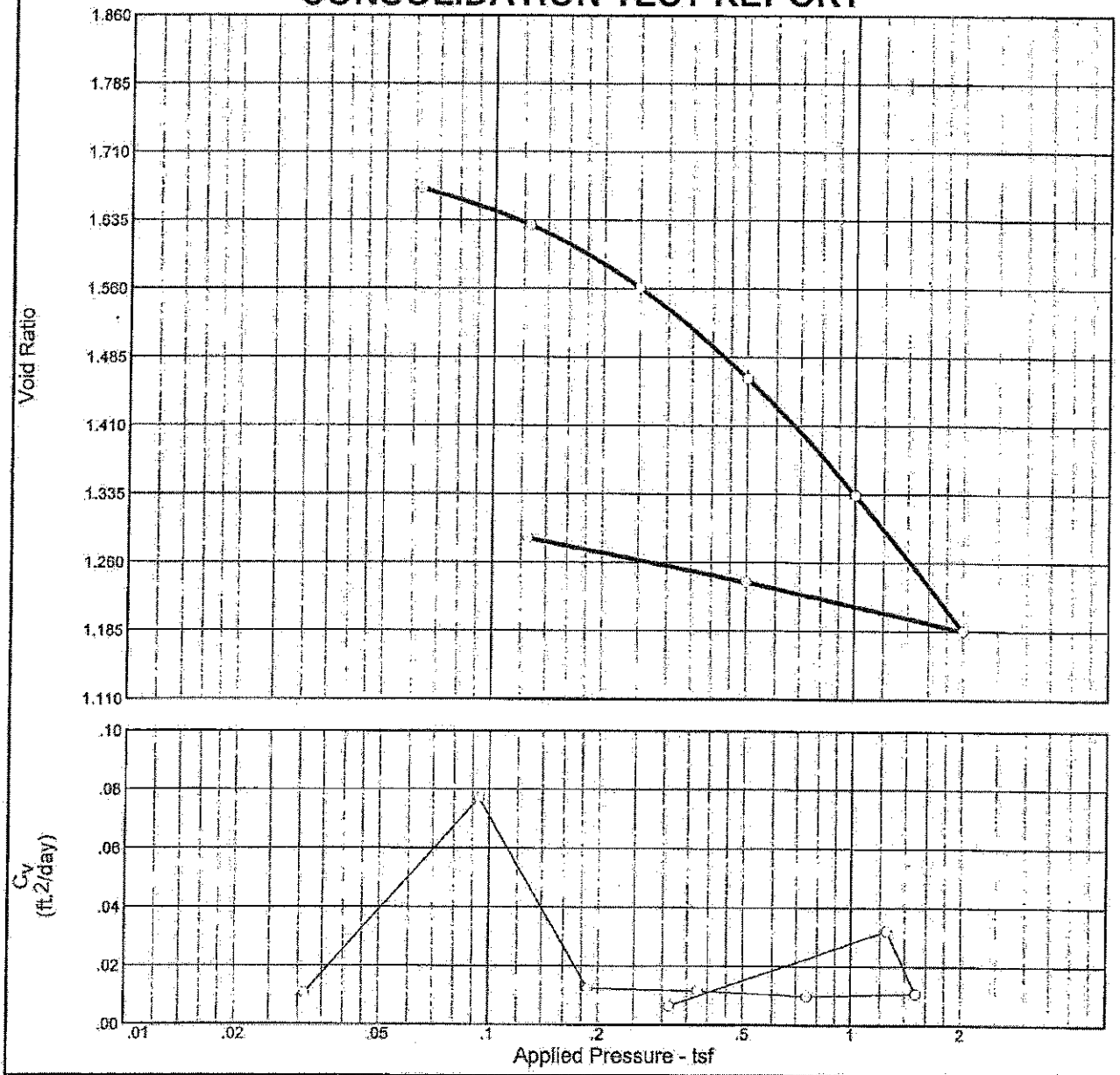
WPC, Inc.
2201 Rowland Avenue
Savannah, Georgia 31404

Project Engineer: Yong Tan
WPC Project No. WPC3209.00010

Sample No.	Date Recd.	County	Contract Number	Material Code	Station No.	Location	Sample Depth (ft)	Examine For	Date Complete	Percent Passing Standard Sieve						% Clay	% Vol Chan	% Swell	% Shrink	Max Dry Den	% Opt Moi.	% Liq. Limit	PI	Eros. Index	Natural Moisture	CBR Soaked	pH	Resistivity, ohm-cm	% Orga.	GDT Soil Class
										2-1/2	1-1/2	#10	#40	#60	#200															
1	11/16/2010	Chatham		Embsoil	52+00	Rt	1 to 5	810 Test	12/13/2010	100.0	100.0	100.0	90.3	85.7	31.8	25.2	8.5	7.7	0.8	109	14.3				89.1				5.1	IV
2	11/19/2010	Chatham		Embsoil	52+00	Rt	5 to 10	810 Test	12/13/2010	100.0	100.0	100.0	97.9	96.2	67.5	58.0	14.7	8.2	6.5	110	16.7	48	26		41.2				5.8	IV
3	11/19/2010	Chatham		Embsoil	60+00	Rt	1 to 5	810 Test	12/13/2010	100.0	100.0	100.0	98.3	89.9	61.3	51.2	14.8	7.6	7.2	99.8	17.5	46	28		25.9				5.9	IV
4	11/19/2010	Chatham		Embsoil	72+00	Rt	1 to 5	810 Test	12/13/2010	100.0	100.0	99.5	97.5	84.6	29.9	17.3	7.2	2.6	4.6	109.7	17.7				5.0				1.9	IIB3
5	11/19/2010	Chatham		Embsoil	72+00	Rt	5 to 10	810 Test	12/13/2010	100.0	99.9	99.1	81.5	71.7	48.4	36.5	9.3	2.1	3.2	116.5	16.4				8.2					IIB3
6	11/19/2010	Chatham		Embsoil	95+00	Rt	1 to 5	810 Test	12/13/2010	100.0	99.6	98.2	89.8	83.2	57.6	52.3	38.1	37.2	0.9	97.6	19.4				50.7				8.1	IV
7	11/19/2010	Chatham		Embsoil	135+00	Rt	1 to 5	810 Test	12/13/2010	100.0	98.9	98.6	96.3	93.9	47.3	36.5	4.3	1.8	2.5	113.3	17.2				14.3					IIB2
8	11/19/2010	Chatham		Embsoil	170+00	Rt	1 to 5	810 Test	12/13/2010	100.0	100.0	99.8	95.2	90.6	17.6	6.2	4.8	2.2	2.6	109.8	13.7				7.0					IIB2
11	11/19/2010	Chatham		Embsoil	58+00	Rt	1.5	Chemical	3/13/2009																		7.32	556		
9	3/9/2009	Chatham		Embsoil	95+00	Lt	3.0	Chemical	3/13/2009																		6.31	2380		
ASTM Designation:		D-2216	D-698		D-1557	D-4318		D-854	D-2435				D-2950			D-1883	D-5084	D-422	D-1140											
AASHTO Designation:																														

Location Of Samples	Comments	Lab Completion Information
		Date 12/3/2010
		By Scott I. Lewis

CONSOLIDATION TEST REPORT



Natural Sat.	Natural Moist.	Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
133.5 %	83.2 %	62.8	92	50	2.7		0.30	0.50	0.08			1.683

MATERIAL DESCRIPTION	USCS	AASHTO
Very Dark Gray Sandy SILT w/ few organics	MH	A-7-5(48)

Project No. 3209.00010 **Client:**

Project: Soil Survey For GA Highway 307 Widening

Source: STA 53+00 **Sample No.:** NA **Elev./Depth:** NA

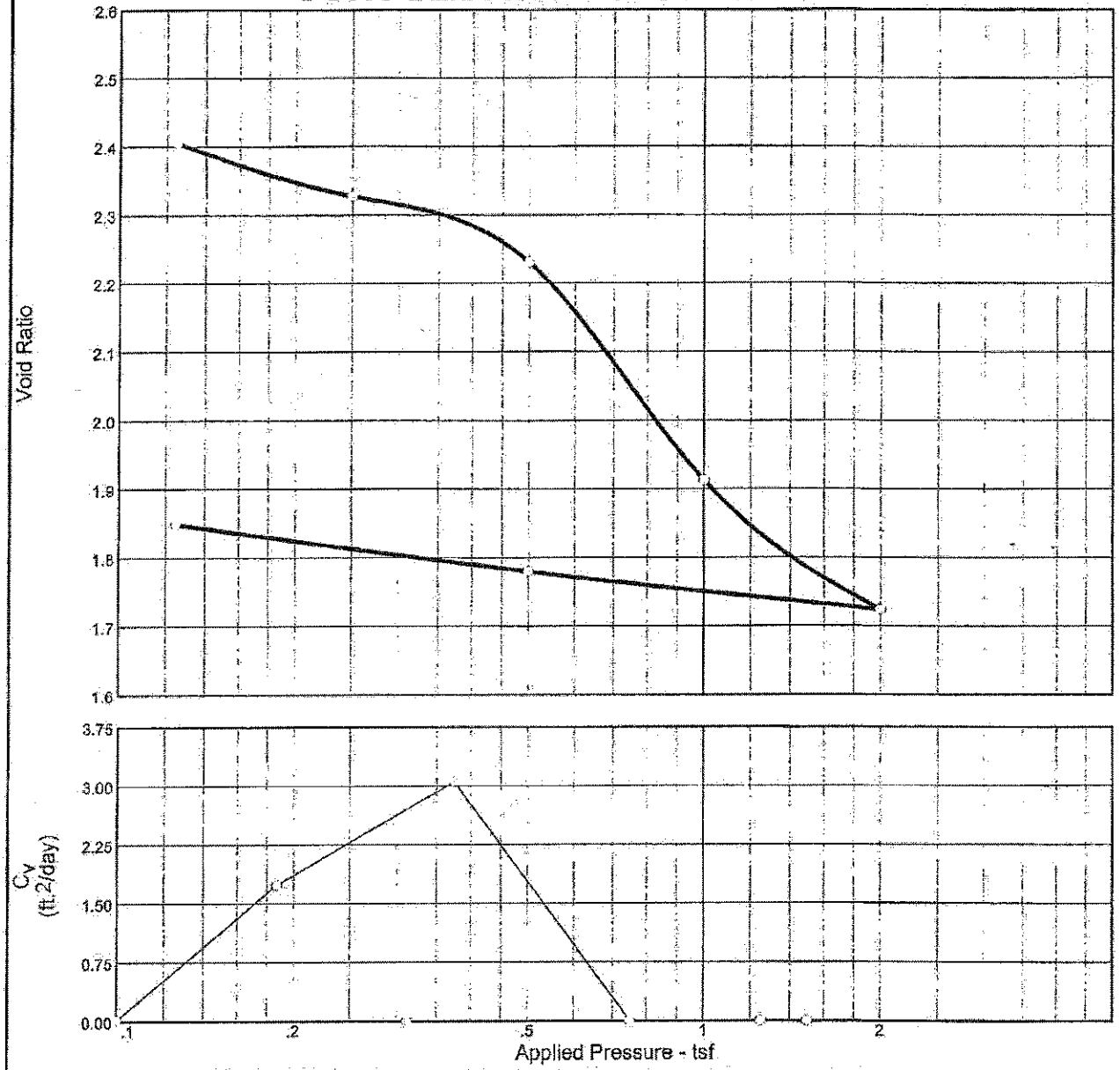
WPC

Jacksonville, FL

Remarks:

Figure

CONSOLIDATION TEST REPORT



Natural Sat.	Natural Moist.	Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
83.8 %	76.7 %	48.6	107	65	2.70		0.44	1.03	0.10			2.470

MATERIAL DESCRIPTION	USCS	AASHTO
Very Dark Gray Sandy CLAY w/ little organics	CH	A-7-5(49)

Project No. 3209.00010 **Client:**

Project: Soil Survey For GA Highway 307 Widening

Source: STA 61+00 **Sample No.:** NA **Elev./Depth:** NA

WPC

Jacksonville, FL

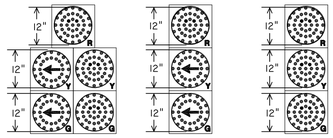
Remarks:

Figure

PHASING DIAGRAM

Ø1	Ø2	Ø3 OMIT	Ø4
Ø5 OMIT	Ø6	Ø7 OMIT	Ø8 OMIT

LED SIGNAL HEADS



Ogeechee Rd
D-SPEC-1

Dean Forest Rd
D-SPEC-2

Dean Forest Rd
D-SPEC-3

LEFT TURN YIELD ON GREEN
R10-12

YIELD
R1-2

SR 307 DEAN FOREST ROAD

EXISTING EDGE OF PAVEMENT

EXISTING GUARDRAIL

INSTALL TYPE IV STRAIN POLE, WITH LUMINAIRE
TYPE 3 PULLBOX, CONDUIT TO PULLBOX
INSTALL CONDUITS PER SIGNAL DETAILS (TYPICAL)
STA: 107+06.16
OFFSET: 85.32' RT

INSTALL 332 CABINET AND BASE W/2070 CONTROLLER.

EXISTING R1-2

L4A

INSTALL 6x40 QUADRUPOLE LOOP (TYP)

INSTALL TYPE IV STRAIN POLE WITH LUMINAIRE
TYPE 3 PULLBOX, CONDUIT TO PULLBOX
STA: 105+41.15
OFFSET: 67.93' RT

INSTALL 1-2" NON METAL CONDUIT

INSTALL TYPE 2 PULLBOX

INSTALL 1-2" NON METAL CONDUIT

INSTALL 6x6 PULSE LOOP (TYP)

INSTALL TYPE 2 PULLBOX

INSTALL TYPE 2 PULLBOX

330' FROM STOP BAR
(45 MPH)

L2B

L2A

U.S. Hwy 17 (Ogeechee Road)

110+00 109+00 108+00 107+00 106+00 105+00 104+00 103+00 102+00

D-SPEC #2

240' STORAGE

L1

R10-12

D-SPEC #3

L6A

L6B

330' FROM STOP BAR
(45 MPH)

INSTALL 6x6 PULSE LOOP (TYP)

INSTALL TYPE 2 PULLBOX

INSTALL 1-2" NON METAL CONDUIT

INSTALL TYPE 2 PULLBOX

INSTALL CLASS II 35' TIMBER POLE
INSTALL 2" GRS RAISER

INSTALL 4" MESSENGER CABLE

INSTALL 6x40 QUADRUPOLE LOOP (TYP)

D-SPEC #4

INSTALL TYPE IV STRAIN POLE, WITH LUMINAIRE ATTACHMENT POINT.
TYPE 3 PULLBOX, CONDUIT TO PULLBOX
STA: 105+55.44
OFFSET: 56.30' LT

INSTALL TYPE IV STRAIN POLE, WITH COLLAR FOR LOOP LEAD-IN AND LUMINAIRE.
TYPE 3 PULLBOX, CONDUIT TO PULLBOX.
STA: 106+56.61
OFFSET: 54.74' LT

HARDIN CANAL

R/W

NOTE:
TYPICAL 100' SPACING BETWEEN TYPE 2 PULLBOXES.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

GEORGIA REGISTERED No. 030648 PROFESSIONAL 1/20/12 ENGINEER DOYLE D. KELLY

NO.	REVISIONS	BY	DATE
1	START PROJECT STA: 63+84.95 - ADDENDUM 1	VBA	1/20/12

THOMAS & HUTTON ENGINEERING CO.
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SOUTH CAROLINA - HILTON HEAD, BEAUFORT, MYRTLE BEACH
NORTH CAROLINA - WILMINGTON

S.R. 307 WIDENING
CHATHAM COUNTY, GEORGIA

BOARD OF COMMISSIONERS CHATHAM COUNTY

SIGNAL PLAN - US17

JOB NO:	J-21320
DATE:	03/19/10
DRAWN:	VBA/AA
DESIGNED:	JJI
REVIEWED:	DMD
APPROVED:	DDK
SCALE:	1" = 30'

SHEET SG1.1

TRAFFIC SIGNAL GENERAL NOTES:

1. SIGNAL HEADS SHALL BE ERECTED TO PROVIDE AT LEAST 17 FEET BUT NO MORE THAN 19 FEET CLEARANCE FROM BOTTOM OF SIGNAL HEAD TO TOP OF ROAD SURFACE AND A MINIMUM OF 8 FEET MEASURED HORIZONTALLY BETWEEN CENTERS OF SIGNAL FACES.
2. THE CONTRACTOR SHALL LOCATE UNDERGROUND UTILITIES IN VICINITY OF NEW TRAFFIC SIGNAL POLES BEFORE INSTALLATION. AT THE DISCRETION OF THE ENGINEER, MINOR SHIFTS (UP TO A MAXIMUM OF 5 FEET), IN LOCATION OF NEW SIGNAL POLES, ARE ACCEPTABLE TO AVOID UNDERGROUND UTILITITES. MINIMUM CLEARANCES FROM EDGE OF PAVEMENT SHALL BE MAINTAINED. PLACEMENT OF THE SIGNAL HEADS SHALL BE RETAINED AS SHOWN ON PLANS.
3. MATERIAL CERTIFICATION IS REQUIRED PRIOR TO BEGINNING ANY SIGNAL INSTALLATION WORK. THE CONTRACTOR SHALL FOLLOW PROCEDURES OUTLINED IN GDOT SPECIAL PROVISION 647
4. RETURN MATERIAL TO GDOT, CALL 912-427-5703 TO SCHEDULE.

332 CABINET INPUT ASSIGNMENT

SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14

UPPER INPUT FILE

	TYPE	DET	DET	DET	DET	DET	DET	DET	DET	DET	TBA	TBA	DC	DC	DC
	CARD		2-CHANNEL				2-CHANNEL						DC ISO	DC ISO	DC ISO
CHANNEL 1	CI PIN	56	39	63	47	58	41	65	49	60		80	67	68	81
	FUNCTION		L2A				L4A					ADVANCED			FLASH
	FIELD TERM	TB2 1,2	TB2 5,6	TB2 9,10	TB4 1,2	TB4 5,6	TB4 9,10	TB6 1,2	TB6 5,6	TB6 9,10			TB8 4,6	TB8 7,9	N/C
ACTRA/SEPAC	DETECTOR	1	3	5	7	9	11	13	15	17			PED 2	PED 6	
ACTRA/SEPAC	ASSIGNED	5	2	2	2	7	4	4	4	5			ø2	ø6	

CHANNEL 2	CI PIN	56	43	76	47	58	45	78	49	62		53	69	70	82
	FUNCTION		L2B									ENABLED			STOP TIME
	FIELD TERM	TB2 3,4	TB2 7,8	TB2 11,12	TB4 3,4	TB4 7,8	TB4 11,12	TB6 3,4	TB6 7,8	TB6 11,12			TB8 5,6	TB8 8,9	N/C
ACTRA/SEPAC	DETECTOR	1	4	6	7	9	12	14	15	18			PED 3	PED 8	
ACTRA/SEPAC	ASSIGNED	5	2	2	2	7	4	4	4	7			ø4	ø8	

LOWER INPUT FILE

	TYPE	DET	DET	DET	DET	DET	DET	DET	DET	DET	TBA	TBA	DC	DC	DC
	CARD	2-CHANNEL	2-CHANNEL												
CHANNEL 1	CI PIN	55	40	64	48	57	42	66	50	59		54	71	72	51
	FUNCTION	L1A	L6A										EVA	EVB	RR1
	FIELD TERM	TB3 1,2	TB3 5,6	TB3 9,10	TB5 1,2	TB5 5,6	TB5 9,10	TB7 1,2	TB7 5,6	TB7 9,10			TB9 4,6	TB9 7,9	TB9 10,12
ACTRA/SEPAC	DETECTOR	19	21	23	25	29	31	33	35	37		SPARE 2	PRE 3	PRE 4	PRE 1
ACTRA/SEPAC	ASSIGNED	1													

CHANNEL 2	CI PIN	55	44	77	48	57	46	79	50	61		75	73	74	52
	FUNCTION		L6B									SPARE 3	EVC	EVD	RR2
	FIELD TERM	TB3 3,4	TB3 7,8	TB3 11,12	TB5 3,4	TB5 7,8	TB5 11,12	TB7 3,4	TB7 7,8	TB7 11,12			TB9 5,6	TB9 8,9	TB9 11,12
ACTRA/SEPAC	DETECTOR	19	22	24	25	29	32	34	35	38			PRE 5	PRE 6	PRE 2
ACTRA/SEPAC	ASSIGNED	1	6	6	6	3	8	8	8	3					

SIGNAL QUANTITIES - 2070

ITEM	UNIT	QUAN
CONTROLLER/CABINET ASSEMBLIES		
A. CONTROLLER UNIT, MODEL 2070L	EA	1
D. CABINET ASSEMBLY, MODEL 332	EA	1
E. SWITCH PACK	EA	4
G. LOOP DETECTOR, 2-CHANNEL	EA	4
J. CONFLICT MONITOR	EA	1
LOOP/PED LEAD-IN WIRE (SHIELDED, TWISTED 1000 FT		
A. 3-PAIR, 18 AWG	REEL	3
SIGNAL CABLE		
B. 7 CONDUCTOR PER 1000 FT	REEL	3
LOOP DETECTOR WIRE (14 AWG. STRANDED/1000 FT)	REEL	2
ONE-WAY, 3-SECTION, 12" PIXELATED LED SIGNAL HEADS PLASTIC	EA	5
ONE-WAY, 5-SECTION, 12" PIXELATED LED SIGNAL HEADS PLASTIC	EA	1
BACK PLATE FOR ONE-WAY 3-SECTION, 12" SIGNAL HEAD	EA	5
BACK PLATE FOR ONE-WAY 5-SECTION, 12" SIGNAL HEAD	EA	1
HARDWARE FOR SPAN WIRE ERECTION	EA	6
PULL BOX, TP 2	EA	5
PULL BOX, TP 3	EA	4
LOOP SAW CUT	LF	700
CONDUIT 2" GRS	LF	35
CONDUIT 1" GRS	LF	20
CONDUIT 1" PVC	LF	100
CONDUIT 2" PVC	LF	700
LEFT TURN YIELD ON GREEN BALL SIGN	EA	1
MISC. MATERIALS TO COMPLETE INSTALLATION	LUMP	1
CLASS II TIMBER POLE 35' W/GUYS	EA	1

SIGNAL QUANTITIES - PAY ITEMS

PAY ITEM	DESCRIPTION	UNITS	QUAN
647-1000	TRAFFIC SIGNAL INSTALLATION NO. 1	LUMP	1
682-6233	CONDUIT 2" NON-METAL, TP3, 2"	LF	250
639-5001	CONCRETE STRAIN POLE, TP IV INCL LUMINARE ARM	EA	4

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 030648 DOYLE D. KELLY 1/20/12

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DESIGNED:	JJI
REVIEWED:	DMD
APPROVED:	DDK
SCALE:	N/A

SHEET SG1.2