MANATEE COUNTY

May 29, 2009

All Interested Bidders:

SUBJECT: Invitation for Bid #09-1583-OV
17th Street West (From Business 41 U.S. 41 to U.S. 41)
Road and Utility Improvements, Palmetto, FL`

ADDENDUM #1

Bidders are hereby notified that this Addendum shall be acknowledged on page 00300-1 of the Bid Form and made a part of the above named bidding and contract documents. Bids submitted without acknowledgement of the Addendum will be considered incomplete.

The following items are issued to add to, modify, and clarify the bid and contract documents. These items shall have the same force and effect as the original bidding and contract documents, and cost involved shall be included in the bid prices. Bids to be submitted on the specified bid date, shall conform to the additions and revisions listed herein.

Bidders:

Answers to the questions have been provided by Messrs. Blake, Theung, P.E., Wade Trim and Mr. Paul Schamell, Project Manager, Manatee County Government, Project Management Division.

Bidders: See attached Revised Bid Forms (Pages 00300-2 thru 00300-11, Bid "A" and Bid "B") revising, deleting items.

Q1. What work in included in Item no. 13, FDOT 110-3: Removal of Existing Structures (bridge remnants)?

A1. This bid item covers the removal of headwalls and associated items at the end of the exiting 96-inch cross drain at approximately station 113+00m, East of the railroad.

Q2. Are specifications available for the Conspan?

A2. Conspan is not usually detailed on the plans. It is a specific product and should be detailed in shop drawings provided by the manufacturer through the contractor.

Q3. Is a CSX Train schedule available detailing days, times and number of trains that may pass through?

Financial Management Department – Purchasing Division
1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205
Phone: 941-749-3014 – Fax: 941-749-3034

A3. A CSX schedule is not available, however, there are approximately 1to 2 trains which pass through monthly.

Q4. If there is excess fill / soil excavated where is the material to be stored?

A4. Excess fill / soil is the property of Manatee County and may be stored on site North of the large mitigation pool just West of CSX line.

Q5. Page 2 of the Special Provisions stipulate the usage of Manatee County Utility Standards and Specifications dated November 1999. We understand Manatee County has recently approved and updated their Utility Standards. What version should be utilized?

A5. Manatee County Public Works Utility Standards, Public Works Department dated March 2009 shall be utilized.

Q6. Bid Form – "Signalization Improvements". What does Item no. 62, FDOT 555-1-2: Direction Bore (6" to <12") 90 LF pay for?

A6. Note: This pay item has been revised to Item no. 67 (see revised bid forms attached). This pay item is for the three (3) 2-inch conduits that cross 17th Street (approximate station: 68+95), just west of Canal Rd.

Q7. How is the force main relocated?

A7. Revisions to the plans will be made regarding the force mains and other utilities.

Q8. Are full size drawings of the project available?

A8. Drawings will be available via CD through the Project Management Division Office. You may pick up the CD at 1022 16th Avenue East, Bradenton, FL 34208 or you may contact Marlene Marlatt at 941-708-7450, Extension 7349 between the hours of 8:00 AM and 4:00 PM. Please provide your Federal Express, UPS Account Number if CD is to be shipped. See attached PDF of revised Construction Drawings for both City of Palmetto and Manatee County.

Q9. Why are we using a fiberglass liner for two (2) manholes?

A9. The liners will be changed to meet the latest Manatee County Utility Standards dated March 2009 which will include other liners.

Q10. Does Manatee County pay for stored materials on site?

A10. Manatee County does pay for materials stored on site provided proper documentation is presented and approved.

Q11. Who will be removing the "Church"?

A11. The Church will be demolished and disposed of by Manatee County prior to construction. Manatee County will also remove and dispose of any septic system.

Q12. The railroad will require additional insurance while working within their ROW. On what page may we find these requirements?

A12. See Attachment "E", Agreement between CSX and Manatee County.

Q13. On sheet #2 of the Manatee County plans, there is a footnote for item number 639-2-1. I have not located an item number 639-2-1 within the bid.

A13. The footnote will be changed to reference items 715-1-12 and 715-1-13.

Q14. On page 11 of the Special Provisions, you mention a schedule to be submitted with the bids. May this be changed where only the successful bidder is to generate a schedule after the award of the project?

A14. A preliminary construction schedule shall be included with your Bid submittal. The preliminary schedule shall show major work items and any phases the Contractor proposes. The schedule will show duration of work items and phases.

Q15. The current plans and specifications do not give a complete picture of the existing soil conditions. Is there any more additional soil boring data available?

A15. Please refer to the attached "Drainage Report" dated February 4, 22004 for Geotechnical Evaluations and recommendations.

Q16. Will Bid Opening date be revised from June 4, 2008 at 2:00 PM?

A16. Yes, Bid Opening date has been revised to June 25, 2009 at 2:00 PM.

END OF ADDENDUM #1

Bids will be received at the **Manatee County Purchasing Division, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205 until 2:00 P.M. on June 25, 2009.**

Sincerely,

R. C. "Rob" Cuthbert, CPM, CPPO
Purchasing Division Manager

Attached: Revised Bid Forms – Pages 00300-2 through 00300-11
17th Street West Drainage Report
Drawings via PDF

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Phone: 941-749-3014 – Fax: 941-749-3034

ADDENDUM 1 (5/29/2009)
(Submit in Triplicate)
17th STREET WEST (FROM BUSINESS U.S. 41 TO U.S. 41)
and City of Palmetto Utlity Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID "A"' - Based on Completion Time of 460 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
ROADWAY IMPROVEMENTS						
1	101-1	Mobilization	LS	1	$	$
2	102-1	Maintenance of Traffic	LS	1	$	$
3	102-3	Commercial Matl for Drwy Maint	CY	800	$	$
***4**	**Spec.Prov.**	**Utility Coordination (*Addendum #1)**	**LS**	**1**	$	$
***5**	**Spec.Prov.**	**Railroad Coordination (*Addendum #1)**	**LS**	**1.0**	$	$
6	104-10-2	Synthetic Bales	LF	1,050	$	$
7	104-11	Floating Turbidity Barrier	LF	80	$	$
***8**	**104-12**	**Staked Turbidity Barrier (* Addendum #1)**	**LF**	**88**	$	$
9	104-13-1	Staked Silt Fence (Type III)	LF	10,600	$	$
10	104-15	Soil Tracking Prevention Device	EA	2	$	$
11	104-16	Rock Bags	EA	550	$	$
12	110-1-1	Clearing & Grubbing	AC	15.1	$	$
13	110-3	Removal of Exist. Struct. (Bridge Remnants)	LS	1	$	$
14	110-4	Removal of Exist. Conc. Pvmt.	SY	3,500	$	$
15	110-7-1	Mailbox (Furnish & Install)	EA	15	$	$
16	120-1	Regular Excavation	CY	35,659	$	$
17	120-4	Excavation, Subsoil	CY	5,231	$	$
18	120-6	Embankment	CY	13,636	$	$
***19**	**160-4**	**Type B Stabilization (*Addendum #1)**	**SY**	**418**	$	$
***20**	**160-6**	**12" Stabilized Sub-base (*Addendum #1)**	**SY**	**24,246**	$	$
21	285-701	4" Type ABC-III Base	SY	591	$	$
***22**	**285-709**	**10" Limerock Base (*Addendum #1)**	**SY**	**19,929**	$	$
***23**	**285-709**	**10" Limerock Base Comp. to 98% or 6" Asph. BaseType B12.5 (*Addendum #1)**	**SY**	**365**	$	$
***24**	**327-70-6**	**Milling Existing Asphalt Pavement (1.5" Avg Depth) (*Addendum #1)**	**SY**	**1,447**	$	$
***25**	**334-1-12**	**3" SP 12.5 Structure Course (*Addendum #1)**	**TN**	**55**	$	$
***26**	**334-1-14**	**2" Type S-1 Asphalt Concrete (Incl Tack Coat) (*Addendum #1)**	**TN**	**3,049**	$	$
***27**	**334-1-14**	**1" Type S-III Asphalt Concrete (Incl Tack Coat) (*Addendum #1)**	**TN**	**1,025**	$	$
***28**	**337-7-6**	**FC-6 Friction course (1 1/2")(*Addendum #1)**	**TN**	**120**	$	$
29	400-1-2	Clas I Concrete (Endwalls)	CY	6.00	$	$
30	400-1-15	Class I Concrete (Misc)	CY	10	$	$
31	400-4-1	Class IV Concrete (Culverts)	CY	27	$	$
32	415-1-6	Reinforcing Steel	LB	3,400	$	$
33	425-1-351	Inlets (Curb) (Type P-5) (<10')	EA	23	$	$
34	425-1-361	Inlets (Curb) (Type P-6) (<10')	EA	2	$	$
35	425-1-451	Inlets (Curb) (Type J-5) (<10)	EA	3	$	$
36	425-1-521	Inlet (Dt Bot) (Type C) (<10')	EA	4	$	$
37	425-1-541	Inlet (Dt Bot) Type D) (<10')	EA	6	$	$
38	425-1-581	Inlet (Dt Bot) Type H (<10')	EA	2	$	$
39	425-1-900	Diversion Structure (Attenuation Pond)	EA	1	$	$
40	425-2-41	Manholes (P-7) (<10')	EA	7	$	$
41	425-2-71	Manholes (J-7) (<10')	EA	6	$	$
***42**	**425-11**	**Modify Existing City Conflict Manholes (*Addendum #1)**	**EA**	**6**	$	$
***43**	**430-175-101**	**Pipe Storm Sewer Culv (RCP) (15") (*Addendum #1)**	**LF**	**127**	$	$
***44**	**430-175-101**	**Pipe Storm Sewer Culv (RCP) (18") *(Addendum #1)**	**LF**	**1,882**	$	$
***45**	**430-175-101**	**Pipe Storm Sewer Culv (RCP) (24") (*Addendum #1)**	**LF**	**1,620**	$	$

Bidder:_____

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17th STREET WEST (FROM BUSINESS U.S. 41 TO U.S. 41)
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ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID "A"' - Based on Completion Time of 460 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
*46	430-175-102	Pipe Storm Sewer Culv (RCP) (30") (*Addendum #1)	LF	195	$	$
*47	430-175-201	Pipe Storm Sewer Culv (ERCP) (14" x 23") (*Addendum #1)	LF	40	$	$
*48	430-175-202	Pipe Storm Sewer Culv (ERCP) (29" x 45") (*Addendum #1)	LF	427	$	$
*49	430-175-204	Pipe Storm Sewer Culv (ERCP) (43" x 68") (*Addendum #1)	LF	96	$	$
*50	430-175-205	Pipe Storm Sewer Culv (ERCP) (58" x 91") (*Addendum #1)	LF	105	$	$
51	430-963-2	Pipe, Polyvinyl Chloride (8")	LF	29	$	$
*52	430-984-123	MES (Round) (15" SD) (*Addendum #1)	EA	1	$	$
*53	430-984-129	MES (Round) (24" SD) (*Addendum #1)	EA	2	$	$
54	430-984-642	MES (Ellip) (43" x 68") (SD)	EA	3	$	$
55	430-984-645	MES (Ellip) (58" x91" (SD)	EA	2	$	$
*56	Manof.Spec.	ConSpan or Equal Structure (64' x 7' x 16') (*Addendum #1)	LS	1	$	$
*57	515-1-2	Pipe Handrail (Aluminum) (*Addendum #1)	LF	78	$	$
58	520-1-10	Type F Curb & Gutter	LF	8,012	$	$
59	522-1	4" Concrete Sidewalk	SY	3,899	$	$
60	522-2	6" Concrete Sidewalk	SY	1,525	$	$
61	530-3-3	Rip-Rap (Rubble) (Bank & Shore)	TN	366.8	$	$
62	547-70-2	Rip-Rap (Fabric Formed Conc) (10")	SY	63	$	$
*63	570-1-2	Sodding (Performance Turf) (Includes Mowing, Fert. Water) (*Addendum #1)	SY	19,335	$	$
64		Record Drawings (Stormwater)	LS	1	$	$15,000.00
65		Record Drawings (Utilities)	LS	1	$	$20,000.00
66		Record Drawings (Roadway)	LS	1	$	$25,000.00
		ROADWAY SUBTOTAL				$
SIGNALIZATION IMPROVEMENTS						
*67	555-1-2	Directional Bore (6" to <12") (*Addendum #1)	LF	200	$	$
*68	630-1-12	Conduit (F & I) (Underground) (*Addendum #1)	LF	331	$	$
69	632-7-1	Cable (Signal)(F&I)	PI	1	$	$
70	635-1-11	Pull & Junction Boxes	EA	9	$	$
71	649-31-202	M/Arm F & I (E3-T2)	EA	2	$	$
*72	650-51-311	Signal Traffic (F & I) (3 Sct 1 Way) (Special) (*Addendum #1)	AS	2	$	$
*73	650-51-311	Signal Traffic (F & I) (5 Sct 2 Way) (Special) (*Addendum #1)	AS	3	$	$
74	653-191	Signal Pedestrian (LED) (Countdown) (1-Way)	AS	4	$	$
*75	659-101	Signal Head Auxiliaries (Back Plates 3 Sct) (*Addendum #1)	EA	4	$	$
*76	659-107	Signal Head Auxiliaries (Aluminum Poles) (*Addendum #1)	EA	4	$	$
*77	659-118	Signal Head Auxiliaries (Back Plates 5 Sct) (*Addendum#1)	EA	3	$	$
78	660-2-102	Loop Assembly (F & I) (Type B)	AS	4	$	$
79	660-2-106	Loop Assembly (F & I) (Type F)	AS	6	$	$
80	665-13	Detector Pedestal (F & I) (Det w/sign only)	EA	4	$	$
81	670-5-410	Traffic Control Assembly Modify	AS	1	$	$
82	690-10	Remove Traffic Signal Head Assembly	EA	4	$	$
83	690-20	Remove Pedestrian Assembly	EA	4	$	$
*84	690-33-1	Pole removal (Deep) (Direct Burial) (*Addendum #1)	LF	40	$	$
85	690-70	Remove Pedestrian Detector Assembly	EA	4	$	$
86	690-90	Remove Cabling and Conduit	PI	1	$	$
87	690-100	Remove Miscellaneous Signal Equipment	PI	1	$	$
*88	699-41	Internally Illuminated Sign (Relocate) (Street Name) (*Addendum #1)	EA	2	$	$
		SIGNALIZATION SUBTOTAL				$

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ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
SIGNING & PAVEMENT MARKING						
*89	700-20-11	Sign Single Post (Less than 12 SF) (*Addendum #1)	AS	42	$	$
*90	700-20-12	Sign Single Post (12 - 20 SF) (*Addendum #1)	AS	15	$	$
91	700-20-41	Sign Single Post (Relocate)	AS	19	$	$
*92	706-3	Retro-Reflective Pavement Markers	EA	390	$	$
93	711-11-160	Pavement Messages, Thermoplastic (School)	EA	2	$	$
94	711-11-160	Pavement Messages, Thermoplastic (R.R. Markings)	EA	4	$	$
95	711-11-160	Pavement Messages, Thermoplstic (Bike Lane Markings)	EA	24	$	$
*96	711-11-170	Directional Arrows, Thermoplastic (*Addendum #1)	EA	9	$	$
*97	711-11-151	Guide Lines, Thermoplastic (White) (*Addendum #1)	LF	1,239	$	$
*98	711-11-141	Skip Traffic Stripe, 10' - 30' White, Thermoplastic (*Addendum #1)	LF	180	$	$
*99	711-11-241	Skip Traffic Stripe, 10' - 30' Yellow, Thermoplastic (*Addendum #1)	LF	1,072	$	$
*100	711-11-123	Solid Traffic Stripe, 12" White, Thermoplastic (Crosswalk) (*Addendum #1)	LF	2,426	$	$
*101	711-11-125	Solid Traffic Stripe, 24" White, Thermoplastic (Stop Bar) (*Addendum #1)	LF	650	$	$
*102	711-11-224	Solid Traffic Stripe, 18" Yelllow, Thermoplastic (Chevron) (*Addendum #1)	LF	208	$	$
*103	711-11-111	Solid Traffic Stripe, 6" White, Thermoplastic (*Addendum #1)	NM	1,393	$	$
*104	711-11-211	Solid Traffic Stripe, 6" Yellow, Thermoplastic (*Addendum #1)	NM	1,866	$	$
		SIGNING & PAVEMENT MARKING SUBTOTAL				$
LIGHTING						
*105	715-1-12	Conductor (F & I) (Insulated) (No. 6) (*Addendum #1)	LF	7,365	$	$
*106	715-1-13	Conductor (F & I) (Insulated) (No. 4) (*Addendum #1)	LF	16,089	$	$
*107	715-2-11	Conduit (F & I) (Underground) (PVC SCH 40) (2") (*Addendum #1)	LF	7,875	$	$
108	715-7-11	Load Center (F & I) (Secondary Voltage)	EA	2	$	$
109	715-14-11	Pull Box (F & I) (Roadside) (Moulded)	EA	130	$	$
110	715-14-42	Pull Box (Relocate) (Sidewalk)	EA	2	$	$
111	715-500-1	Pole Cable Distribution System (Conventional)	EA	94	$	$
112	715-516-112	Light Pole Comp (F & I) (Ornamental) (MH 12')	EA	93	$	$
113	715-540-000	Light Pole Comp (Relocate)	EA	1	$	$
		LIGHTING SUBTOTAL				$
WATER IMPROVEMENTS						
114	110-3	Removal of Existing Structure (Vault)	LS	1	$	$
115	1000-6	Utility Work - Water (Master Meter Assembly)	LS	1	$	$
*116	1050-11-92	Water Service Conn. (F & I) (HDPE) CI 200 (1") (*Addendum #1)	EA	9	$	$
*117	1050-11-420	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (2") (Incl Ftgs) (*Addendum #1)	LF	226	$	$
*118	1050-11-420	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (6") (Incl Ftgs) (*Addendum #1)	LF	140	$	$
119	1050-11-424	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (8")	LF	1,274	$	$
*120	1050-11-424	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (12") (*Addendum #1)	LF	644	$	$
121	1050-11-424	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (16")	LF	64	$	$
*122	1050-16-224	Pipe Removal (Less than 18") (*Addendum #1)	LF	1,915	$	$
*123	1055-11-414	Bend (DI) (45 Degree) (12") (*Addendum #1)	EA	3	$	$
*124	1055-11-414	Bend (DI) (45 Degree) (12") (Cut-In) (*Addendum #1)	EA	1	$	$
*125	1055-11-414	Bend (DI) (45 Degree) (16") (*Addendum #1)	EA	2	$	$
*126	1055-11-414	Bend (DI) (45 Degree) (16") (Cut-In) (*Addendum #1)	EA	2	$	$
*127	1055-11-424	Tee (DI) (6" x 2") (*Addendum #1)	EA	1	$	$

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*128	1055-11-424	Tee (DI) (8" x 6") (*Addendum#1)	EA	5	$	$
*129	1055-11-424	Tee (DI) (12" x 12") (*Addendum #1)	EA	1	$	$
*130	1055-11-424	Tee (DI) (16" x 12") (*Addendum #1)	EA	1	$	$
*131	1055-11-434	Reducer (DI) (8" x 6") (*Addendum #1)	EA	1	$	$
*132	1055-11-434	Reducer (DI) (12" x 6") (*Addendum #1	EA	1	$	$
133	1055-11-434	Reducer (DI) (12" x 8")	EA	1	$	$
*134	1055-11-494	Sleeve (DI) (16") (*Addendum #1)	EA	2	$	$
*135	1080-11-101	Water Meter Box (Relocate) (*Addendum #1)	EA	9	$	$
*136	1080-11-25	Blowoff Assembly (F & I) (2") (*Addendum #1)	EA	1	$	$
*137	1080-11-11	Valve Assembly Gate (F & I) (CI) (250 PSI) (2") (*Addendum #1)	EA	1	$	$
*138	1080-11-34	Valve Assembly Gate (F & I) (CI) (250 PSI) (6"))*Addendum #1)	EA	10	$	$
139	1080-11-44	Valve Assembly Gate (F & I) (CI) (250 PSI) (8")	EA	1	$	$
*140	1080-11-44	Valve Assembly Gate (F & I) (CI) (250 PSI) (12") (*Addendum #1)	EA	1	$	$
141	1080-11-44	Valve Assembly Butterfly (F & I) (CI) (250 PSI) (16")	EA	2	$	$
*142	1644-13	Fire Hydrant Assembly (Standard) (F & I) (6") (*Addendum #1)	EA	1	$	$
143	1644-53	Fire Hydrant Assembly (Relocate)	EA	1	$	$
		WATER SUBTOTAL				$
SEWER IMPROVEMENTS						
*144	1060-15	Manhole Rim & Cover (*Addendum #1)	EA	8	$	$
*145	1060-15	Manhole Rim Adjustment (*Addendum #1)	EA	3	$	$
*146	1060-15	Install Manhole Liner (*Addendum #1)	EA	8	$	$
		SEWER SUBTOTAL				$

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CITY OF PALMETTO UTILITY RELOCATIONS						
147		Furnish & Install 4" PVC Pressure Sewer	EA	700	$	$
148		Furnish & Install 8" PVC Pressure Sewer	EA	140	$	$
149		Furnish & Install 4" Diameter SS Manhole	EA	1	$	$
150		Furnish & Install12" PVC Pressure Sewer	LF	900	$	$
151		Furnish & Install 12" PVC Non-Potable Water Main	LF	2,620	$	$
152		Furnish & Install 12" PVC Potable Water Main	LF	2,300	$	$
153		Furnish & Install 12" DIP W/Thurst Collar	LF	160	$	$
154		Furnish & Install 8" PVC Potable Water Main	LF	20	$	$
155		Furnish & Install 8" DIP Potable Water Main	LF	20	$	$
156		Furnish & Install 6" PVC Potable Water Main	LF	60	$	$
157		Furnish & Install 6" DIP Potable Water Main	LF	140	$	$
158		Furnish & Install 12" Gate Valve	EA	4	$	$
159		Furnish & Install 6" Gate Valve	EA	6	$	$
160		Furnish & Install Fire Hydrant - Complete Assembly (Hydrant, Tee,Valve, Blocking, Tie Rods, Stone, and Appurtenances	EA	2	$	$
161		Furnish & Install 6" Fire Hydrant Extension	EA	2	$	$
162		Furnish & Install 12" Fire Hydrant Extension	EA	2	$	$
163		Furnish & Install 18" Fire Hydrant Extension	EA	1	$	$
164		Fittings @ 25% LF	LBS	1,730	$	$
165		Bacteriological Sample Point	EA	2	$	$
166		Miscellaneous Concrete	CU YDS	25	$	$
167		Mobilization, Demobilization, and Sitework	LS	1	$	$
168		Contngency (15%)	LS	1	$	$
169		Furnish & Install 4: Diameter SS Manhole	EA	1	$	$
CITY OF PALMETTO UTILITY RELOCATION SUBTOTAL						$

DESCRIPTION SUMMARY	PRICE
ROADWAY SUBTOTAL	$
SIGNALIZATION SUBTOTAL	$
SIGNING & MARKING SUBTOTAL	$
LIGHTING SUBTOTAL	$
WATER SUBTOTAL	$
SEWER SUBTOTAL	$
CITY OF PALMETTO UTILITY RELOCATION SUBTOTAL	$
DISCRETIONARY WORK	$600,000.00
TOTAL BID PRICE - BID "A"- Based on 460 Calendar days	$

Bidder:_____

ADDENDUM 1 (5/29/2009)
(Submit in Triplicate)
17th STREET WEST (FROM BUSINESS U.S. 41 TO U.S. 41)
and City of Palmetto Utlity Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID "B"' - Based on Completion Time of 540 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
ROADWAY IMPROVEMENTS						
1	101-1	Mobilization	LS	1	$	$
2	102-1	Maintenance of Traffic	LS	1	$	$
3	102-3	Commercial Matl for Drwy Maint	CY	800	$	$
***4**	**Spec.Prov.**	**Utility Coordination (*Addendum #1)**	**LS**	**1**	$	$
***5**	**Spec.Prov.**	**Railroad Coordination (*Addendum #1)**	**LS**	**1.0**	$	$
6	104-10-2	Synthetic Bales	LF	1,050	$	$
7	104-11	Floating Turbidity Barrier	LF	80	$	$
***8**	**104-12**	**Staked Turbidity Barrier (* Addendum #1)**	**LF**	**88**	$	$
9	104-13-1	Staked Silt Fence (Type III)	LF	10,600	$	$
10	104-15	Soil Tracking Prevention Device	EA	2	$	$
11	104-16	Rock Bags	EA	550	$	$
12	110-1-1	Clearing & Grubbing	AC	15.1	$	$
13	110-3	Removal of Exist. Struct. (Bridge Remnants)	LS	1	$	$
14	110-4	Removal of Exist. Conc. Pvmt.	SY	3,500	$	$
15	110-7-1	Mailbox (Furnish & Install)	EA	15	$	$
16	120-1	Regular Excavation	CY	35,659	$	$
17	120-4	Excavation, Subsoil	CY	5,231	$	$
18	120-6	Embankment	CY	13,636	$	$
***19**	**160-4**	**Type B Stabilization (*Addendum #1)**	**SY**	**418**	$	$
***20**	**160-6**	**12" Stabilized Sub-base (*Addendum #1)**	**SY**	**24,246**	$	$
21	285-701	4" Type ABC-III Base	SY	591	$	$
***22**	**285-709**	**10" Limerock Base (*Addendum #1)**	**SY**	**19,929**	$	$
***23**	**285-709**	**10" Limerock Base Comp. to 98% or 6" Asph. BaseType B12.5 (*Addendum #1)**	**SY**	**365**	$	$
***24**	**327-70-6**	**Milling Existing Asphalt Pavement (1.5" Avg Depth) (*Addendum #1)**	**SY**	**1,447**	$	$
***25**	**334-1-12**	**3" SP 12.5 Structure Course (*Addendum #1)**	**TN**	**55**	$	$
***26**	**334-1-14**	**2" Type S-1 Asphalt Concrete (Incl Tack Coat) (*Addendum #1)**	**TN**	**3,049**	$	$
***27**	**334-1-14**	**1" Type S-III Asphalt Concrete (Incl Tack Coat) (*Addendum #1)**	**TN**	**1,025**	$	$
***28**	**337-7-6**	**FC-6 Friction course (1 1/2")(*Addendum #1)**	**TN**	**120**	$	$
29	400-1-2	Clas I Concrete (Endwalls)	CY	6.00	$	$
30	400-1-15	Class I Concrete (Misc)	CY	10	$	$
31	400-4-1	Class IV Concrete (Culverts)	CY	27	$	$
32	415-1-6	Reinforcing Steel	LB	3,400	$	$
33	425-1-351	Inlets (Curb) (Type P-5) (<10')	EA	23	$	$
34	425-1-361	Inlets (Curb) (Type P-6) (<10')	EA	2	$	$
35	425-1-451	Inlets (Curb) (Type J-5) (<10)	EA	3	$	$
36	425-1-521	Inlet (Dt Bot) (Type C) (<10')	EA	4	$	$
37	425-1-541	Inlet (Dt Bot) Type D) (<10')	EA	6	$	$
38	425-1-581	Inlet (Dt Bot) Type H (<10')	EA	2	$	$
39	425-1-900	Diversion Structure (Attenuation Pond)	EA	1	$	$
40	425-2-41	Manholes (P-7) (<10')	EA	7	$	$
41	425-2-71	Manholes (J-7) (<10')	EA	6	$	$
***42**	**425-11**	**Modify Existing City Conflict Manholes (*Addendum #1)**	**EA**	**6**	$	$
***43**	**430-175-101**	**Pipe Storm Sewer Culv (RCP) (15") (*Addendum #1)**	**LF**	**127**	$	$
***44**	**430-175-101**	**Pipe Storm Sewer Culv (RCP) (18") *(Addendum #1)**	**LF**	**1,882**	$	$
***45**	**430-175-101**	**Pipe Storm Sewer Culv (RCP) (24") (*Addendum #1)**	**LF**	**1,620**	$	$

Bidder:_____

ADDENDUM 1 (5/29/2009)
(Submit in Triplicate)
17th STREET WEST (FROM BUSINESS U.S. 41 TO U.S. 41)
and City of Palmetto Utlity Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID "B"' - Based on Completion Time of 540 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
*46	430-175-102	Pipe Storm Sewer Culv (RCP) (30") (*Addendum #1)	LF	195	$	$
*47	430-175-201	Pipe Storm Sewer Culv (ERCP) (14" x 23") (*Addendum #1)	LF	40	$	$
*48	430-175-202	Pipe Storm Sewer Culv (ERCP) (29" x 45") (*Addendum #1)	LF	427	$	$
*49	430-175-204	Pipe Storm Sewer Culv (ERCP) (43" x 68") (*Addendum #1)	LF	96	$	$
*50	430-175-205	Pipe Storm Sewer Culv (ERCP) (58" x 91") (*Addendum #1)	LF	105	$	$
51	430-963-2	Pipe, Polyvinyl Chloride (8")	LF	29	$	$
*52	430-984-123	MES (Round) (15" SD) (*Addendum #1)	EA	1	$	$
*53	430-984-129	MES (Round) (24" SD) (*Addendum #1)	EA	2	$	$
54	430-984-642	MES (Ellip) (43" x 68") (SD)	EA	3	$	$
55	430-984-645	MES (Ellip) (58" x91" (SD)	EA	2	$	$
*56	Manof.Spec.	ConSpan or Equal Structure (64' x 7' x 16') (*Addendum #1)	LS	1	$	$
*57	515-1-2	Pipe Handrail (Aluminum) (*Addendum #1)	LF	78	$	$
58	520-1-10	Type F Curb & Gutter	LF	8,012	$	$
59	522-1	4" Concrete Sidewalk	SY	3,899	$	$
60	522-2	6" Concrete Sidewalk	SY	1,525	$	$
61	530-3-3	Rip-Rap (Rubble) (Bank & Shore)	TN	366.8	$	$
62	547-70-2	Rip-Rap (Fabric Formed Conc) (10")	SY	63	$	$
*63	570-1-2	Sodding (Performance Turf) (Includes Mowing, Fert. Water) (*Addendum #1)	SY	19,335	$	$
64		Record Drawings (Stormwater)	LS	1	$	$15,000.00
65		Record Drawings (Utilities)	LS	1	$	$20,000.00
66		Record Drawings (Roadway)	LS	1	$	$25,000.00
		ROADWAY SUBTOTAL				$
SIGNALIZATION IMPROVEMENTS						
*67	555-1-2	Directional Bore (6" to <12") (*Addendum #1)	LF	200	$	$
*68	630-1-12	Conduit (F & I) (Underground) (*Addendum #1)	LF	331	$	$
69	632-7-1	Cable (Signal)(F&I)	PI	1	$	$
70	635-1-11	Pull & Junction Boxes	EA	9	$	$
71	649-31-202	M/Arm F & I (E3-T2)	EA	2	$	$
*72	650-51-311	Signal Traffic (F & I) (3 Sct 1 Way) (Special) (*Addendum #1)	AS	2	$	$
*73	650-51-311	Signal Traffic (F & I) (5 Sct 2 Way) (Special) (*Addendum #1)	AS	3	$	$
74	653-191	Signal Pedestrian (LED) (Countdown) (1-Way)	AS	4	$	$
*75	659-101	Signal Head Auxiliaries (Back Plates 3 Sct) (*Addendum #1)	EA	4	$	$
*76	659-107	Signal Head Auxiliaries (Aluminum Poles) (*Addendum #1)	EA	4	$	$
*77	659-118	Signal Head Auxiliaries (Back Plates 5 Sct) (*Addendum#1)	EA	3	$	$
78	660-2-102	Loop Assembly (F & I) (Type B)	AS	4	$	$
79	660-2-106	Loop Assembly (F & I) (Type F)	AS	6	$	$
80	665-13	Detector Pedestal (F & I) (Det w/sign only)	EA	4	$	$
81	670-5-410	Traffic Control Assembly Modify	AS	1	$	$
82	690-10	Remove Traffic Signal Head Assembly	EA	4	$	$
83	690-20	Remove Pedestrian Assembly	EA	4	$	$
*84	690-33-1	Pole removal (Deep) (Direct Burial) (*Addendum #1)	LF	40	$	$
85	690-70	Remove Pedestrian Detector Assembly	EA	4	$	$
86	690-90	Remove Cabling and Conduit	PI	1	$	$
87	690-100	Remove Miscellaneous Signal Equipment	PI	1	$	$
*88	699-41	Internally Illuminated Sign (Relocate) (Street Name) (*Addendum #1)	EA	2	$	$
		SIGNALIZATION SUBTOTAL				$

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and City of Palmetto Utlity Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID "B"' - Based on Completion Time of 540 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
SIGNING & PAVEMENT MARKING						
*89	700-20-11	Sign Single Post (Less than 12 SF) (*Addendum #1)	AS	42	$	$
*90	700-20-12	Sign Single Post (12 - 20 SF) (*Addendum #1)	AS	15	$	$
91	700-20-41	Sign Single Post (Relocate)	AS	19	$	$
*92	706-3	Retro-Reflective Pavement Markers	EA	390	$	$
93	711-11-160	Pavement Messages, Thermoplastic (School)	EA	2	$	$
94	711-11-160	Pavement Messages, Thermoplastic (R.R. Markings)	EA	4	$	$
95	711-11-160	Pavement Messages, Thermoplstic (Bike Lane Markings)	EA	24	$	$
*96	711-11-170	Directional Arrows, Thermoplastic (*Addendum #1)	EA	9	$	$
*97	711-11-151	Guide Lines, Thermoplastic (White) (*Addendum #1)	LF	1,239	$	$
*98	711-11-141	Skip Traffic Stripe, 10' - 30' White, Thermoplastic (*Addendum #1)	LF	180	$	$
*99	711-11-241	Skip Traffic Stripe, 10' - 30' Yellow, Thermoplastic (*Addendum #1)	LF	1,072	$	$
*100	711-11-123	Solid Traffic Stripe, 12" White, Thermoplastic (Crosswalk) (*Addendum #1)	LF	2,426	$	$
*101	711-11-125	Solid Traffic Stripe, 24" White, Thermoplastic (Stop Bar) (*Addendum #1)	LF	650	$	$
*102	711-11-224	Solid Traffic Stripe, 18" Yelllow, Thermoplastic (Chevron) (*Addendum #1)	LF	208	$	$
*103	711-11-111	Solid Traffic Stripe, 6" White, Thermoplastic (*Addendum #1)	NM	1,393	$	$
*104	711-11-211	Solid Traffic Stripe, 6" Yellow, Thermoplastic (*Addendum #1)	NM	1,866	$	$
		SIGNING & PAVEMENT MARKING SUBTOTAL				$
LIGHTING						
*105	715-1-12	Conductor (F & I) (Insulated) (No. 6) (*Addendum #1)	LF	7,365	$	$
*106	715-1-13	Conductor (F & I) (Insulated) (No. 4) (*Addendum #1)	LF	16,089	$	$
*107	715-2-11	Conduit (F & I) (Underground) (PVC SCH 40) (2") (*Addendum #1)	LF	7,875	$	$
108	715-7-11	Load Center (F & I) (Secondary Voltage)	EA	2	$	$
109	715-14-11	Pull Box (F & I) (Roadside) (Moulded)	EA	130	$	$
110	715-14-42	Pull Box (Relocate) (Sidewalk)	EA	2	$	$
111	715-500-1	Pole Cable Distribution System (Conventional)	EA	94	$	$
112	715-516-112	Light Pole Comp (F & I) (Ornamental) (MH 12')	EA	93	$	$
113	715-540-000	Light Pole Comp (Relocate)	EA	1	$	$
		LIGHTING SUBTOTAL				$
WATER IMPROVEMENTS						
114	110-3	Removal of Existing Structure (Vault)	LS	1	$	$
115	1000-6	Utility Work - Water (Master Meter Assembly)	LS	1	$	$
*116	1050-11-92	Water Service Conn. (F & I) (HDPE) CI 200 (1") (*Addendum #1)	EA	9	$	$
*117	1050-11-420	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (2") (Incl Ftgs) (*Addendum #1)	LF	226	$	$
*118	1050-11-420	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (6") (Incl Ftgs) (*Addendum #1)	LF	140	$	$
119	1050-11-424	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (8")	LF	1,274	$	$
*120	1050-11-424	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (12") (*Addendum #1)	LF	644	$	$
121	1050-11-424	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (16")	LF	64	$	$
*122	1050-16-224	Pipe Removal (Less than 18") (*Addendum #1)	LF	1,915	$	$
*123	1055-11-414	Bend (DI) (45 Degree) (12") (*Addendum #1)	EA	3	$	$
*124	1055-11-414	Bend (DI) (45 Degree) (12") (Cut-In) (*Addendum #1)	EA	1	$	$
*125	1055-11-414	Bend (DI) (45 Degree) (16") (*Addendum #1)	EA	2	$	$
*126	1055-11-414	Bend (DI) (45 Degree) (16") (Cut-In) (*Addendum #1)	EA	2	$	$
*127	1055-11-424	Tee (DI) (6" x 2") (*Addendum #1)	EA	1	$	$

Bidder:_____

ADDENDUM 1 (5/29/2009)
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17th STREET WEST (FROM BUSINESS U.S. 41 TO U.S. 41)
and City of Palmetto Utlity Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID "B"' - Based on Completion Time of 540 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
*128	1055-11-424	Tee (DI) (8" x 6") (*Addendum#1)	EA	5	$	$
*129	1055-11-424	Tee (DI) (12" x 12") (*Addendum #1)	EA	1	$	$
*130	1055-11-424	Tee (DI) (16" x 12") (*Addendum #1)	EA	1	$	$
*131	1055-11-434	Reducer (DI) (8" x 6") (*Addendum #1)	EA	1	$	$
*132	1055-11-434	Reducer (DI) (12" x 6") (*Addendum #1	EA	1	$	$
133	1055-11-434	Reducer (DI) (12" x 8")	EA	1	$	$
*134	1055-11-494	Sleeve (DI) (16") (*Addendum #1)	EA	2	$	$
*135	1080-11-101	Water Meter Box (Relocate) (*Addendum #1)	EA	9	$	$
*136	1080-11-25	Blowoff Assembly (F & I) (2") (*Addendum #1)	EA	1	$	$
*137	1080-11-11	Valve Assembly Gate (F & I) (CI) (250 PSI) (2") (*Addendum #1)	EA	1	$	$
*138	1080-11-34	Valve Assembly Gate (F & I) (CI) (250 PSI) (6"))*Addendum #1)	EA	10	$	$
139	1080-11-44	Valve Assembly Gate (F & I) (CI) (250 PSI) (8")	EA	1	$	$
*140	1080-11-44	Valve Assembly Gate (F & I) (CI) (250 PSI) (12") (*Addendum #1)	EA	1	$	$
141	1080-11-44	Valve Assembly Butterfly (F & I) (CI) (250 PSI) (16")	EA	2	$	$
*142	1644-13	Fire Hydrant Assembly (Standard) (F & I) (6") (*Addendum #1)	EA	1	$	$
143	1644-53	Fire Hydrant Assembly (Relocate)	EA	1	$	$
		WATER SUBTOTAL				$
SEWER IMPROVEMENTS						
*144	1060-15	Manhole Rim & Cover (*Addendum #1)	EA	8	$	$
*145	1060-15	Manhole Rim Adjustment (*Addendum #1)	EA	3	$	$
*146	1060-15	Install Manhole Liner (*Addendum #1)	EA	8	$	$
		SEWER SUBTOTAL				$

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(Submit in Triplicate)
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and City of Palmetto Utlity Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID "B"' - Based on Completion Time of 540 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
CITY OF PALMETTO UTILITY RELOCATIONS						
147		Furnish & Install 4" PVC Pressure Sewer	EA	700	$	$
148		Furnish & Install 8" PVC Pressure Sewer	EA	140	$	$
149		Furnish & Install 4" Diameter SS Manhole	EA	1	$	$
150		Furnish & Install12" PVC Pressure Sewer	LF	900	$	$
151		Furnish & Install 12" PVC Non-Potable Water Main	LF	2,620	$	$
152		Furnish & Install 12" PVC Potable Water Main	LF	2,300	$	$
153		Furnish & Install 12" DIP W/Thurst Collar	LF	160	$	$
154		Furnish & Install 8" PVC Potable Water Main	LF	20	$	$
155		Furnish & Install 8" DIP Potable Water Main	LF	20	$	$
156		Furnish & Install 6" PVC Potable Water Main	LF	60	$	$
157		Furnish & Install 6" DIP Potable Water Main	LF	140	$	$
158		Furnish & Install 12" Gate Valve	EA	4	$	$
159		Furnish & Install 6" Gate Valve	EA	6	$	$
160		Furnish & Install Fire Hydrant - Complete Assembly (Hydrant, Tee,Valve, Blocking, Tie Rods, Stone, and Appurtenances	EA	2	$	$
161		Furnish & Install 6" Fire Hydrant Extension	EA	2	$	$
162		Furnish & Install 12" Fire Hydrant Extension	EA	2	$	$
163		Furnish & Install 18" Fire Hydrant Extension	EA	1	$	$
164		Fittings @ 25% LF	LBS	1,730	$	$
165		Bacteriological Sample Point	EA	2	$	$
166		Miscellaneous Concrete	CU YDS	25	$	$
167		Mobilization, Demobilization, and Sitework	LS	1	$	$
168		Contngency (15%)	LS	1	$	$
169		Furnish & Install 4: Diameter SS Manhole	EA	1	$	$
CITY OF PALMETTO UTILITY RELOCATION SUBTOTAL						$

DESCRIPTION SUMMARY	PRICE
ROADWAY SUBTOTAL	$
SIGNALIZATION SUBTOTAL	$
SIGNING & MARKING SUBTOTAL	$
LIGHTING SUBTOTAL	$
WATER SUBTOTAL	$
SEWER SUBTOTAL	$
CITY OF PALMETTO UTILITY RELOCATION SUBTOTAL	$
DISCRETIONARY WORK	$600,000.00
TOTAL BID PRICE - BID "B"- Based on 540 Calendar days	$

Bidder:_____

17th STREET WEST

Manatee County, Florida

DRAINAGE REPORT

Prepared By:

Wade-Trim
4919 Memorial Highway, Suite 200
Tampa, Florida 33634

Prepared For:

Manatee County Government
Project Management Department
1026 26th Avenue East
Bradenton, Florida 34208

February 2004

17th STREET WEST

Manatee County, Florida

DRAINAGE REPORT

Prepared By:

Wade-Trim
4919 Memorial Highway, Suite 200
Tampa, Florida 33634

Prepared For:

Manatee County Government
Project Management Department
1026 26th Avenue East
Bradenton, Florida 34208

February 2004

PROFESSIONAL ENGINEER CERTIFICATE

I hereby certify that I am a registered professional engineer in the State of Florida practicing with Wade-Trim, Inc., and that I have supervised the preparation of, and approve the findings, opinions, conclusions, and technical advice hereby reported for:

PROJECT: **17th Street West**

REPORT: **Drainage Report**

DATE: **February 25, 2004**

This report contains calculations for hydrologic and hydraulic analyses of the stormwater management plan for this project. The information used to determine hydrologic and hydraulic parameters for the calculations was based on the best information available at the time of the analyses. I acknowledge that the procedures and references used for this report and its calculations are standard to the practice of civil engineering as applied through professional judgment and experience.

NAME: Jeffrey D. Trim 42106
FL PE No.

SIGNATURE: Jeff D. Trim

DATE: 2/25/04

17th STREET WEST
FROM BUSINESS US 41 to US 41
MANATEE COUNTY
COUNTY PROJECT NO: 6035261

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APPENDICES

GENERAL PROJECT INFORMATION

1.1 INTRODUCTION

This Drainage Report serves to assess and document the existing drainage conditions, and to present the design criteria, resources, and analysis utilized to design the proposed stormwater management system for this project.

1.2 SITE LOCATION AND PROJECT DESCRIPTION

The project involves improving the existing two lane undivided rural roadway into a two lane urban roadway, bicycle lanes, and sidewalks in each direction. The roadway will widen to three lanes down near the east end of the project near Lincoln Middle School to accommodate for the school traffic turning in and out of the complex. The CSX R.R. and adjacent Carr Drain act as the major basin divides for the project. The length of this project is approximately 0.75 miles. The project lies within Section(s) 11, 12, 13, and 14, Township 34 South, and Range 17 East. Refer to **Figures 1.2.1** and **1.2.2** for the Project Location Maps. Located in Manatee County, the land use in the project vicinity is mostly residential with some business scattered along the roadway. Most of the businesses are located west of the railroad near the beginning of the project. The posted speed limit is 30 miles per hour throughout the project.

Figure 1.2.1 Project Location Map

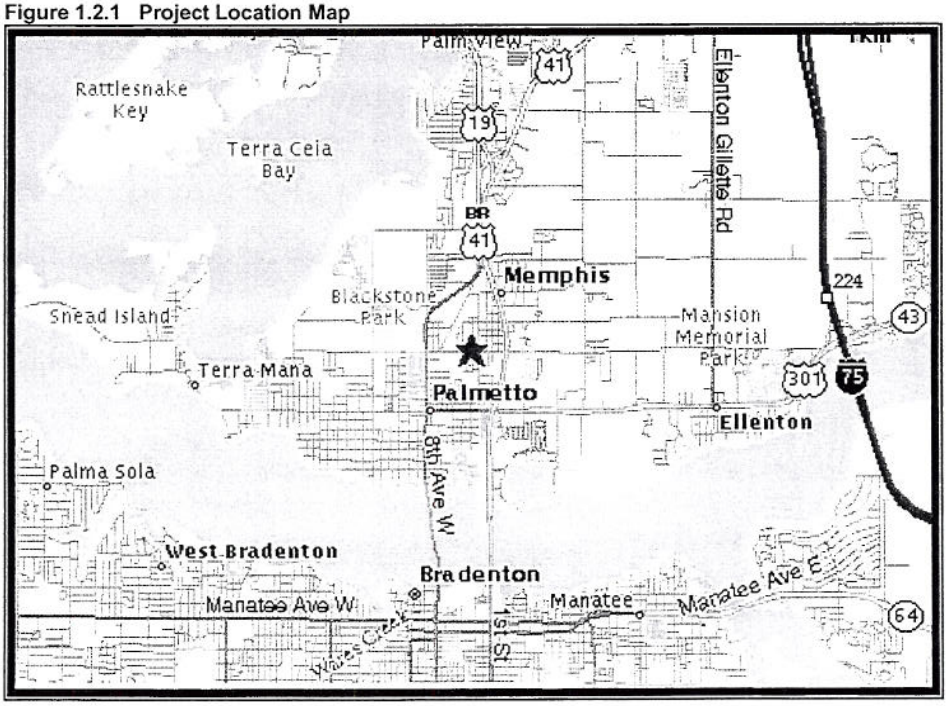
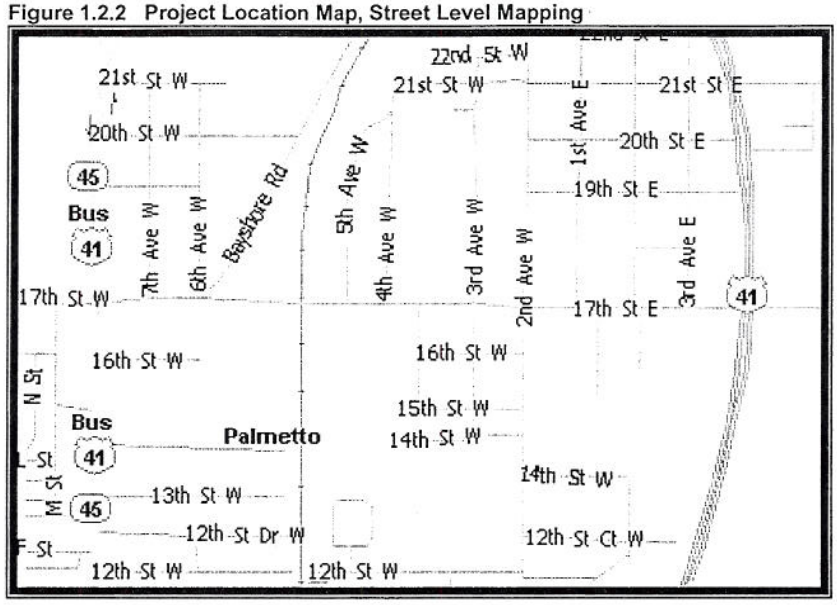


Figure 1.2.2 Project Location Map, Street Level Mapping



The existing drainage facilities consist of curb and gutter with a storm sewer conveyance system west of the CSX R.R., and roadside ditches with side drains east of the CSX R.R. The existing ditches provide only conveyance of runoff. No stormwater runoff is retained for treatment in the ditches. The proposed roadway improvement spans three major drainage basin divides. The westernmost basin consists of stormwater from Business US 41 to the Railroad tracks and discharges into the Carr Drain. The roadway stormwater in the western basin starts at approximately 2nd Avenue West and flows west to discharge into the Carr Drain. The last Basin is the area close to US 41 that flows into the FDOT stormwater system along US 41. Please refer to **Figure 1.2.3** for an aerial photo of the site and **Figure 1.2.4** for the project area topography.

Figure 1.2.3 Aerial Photo of Project Site

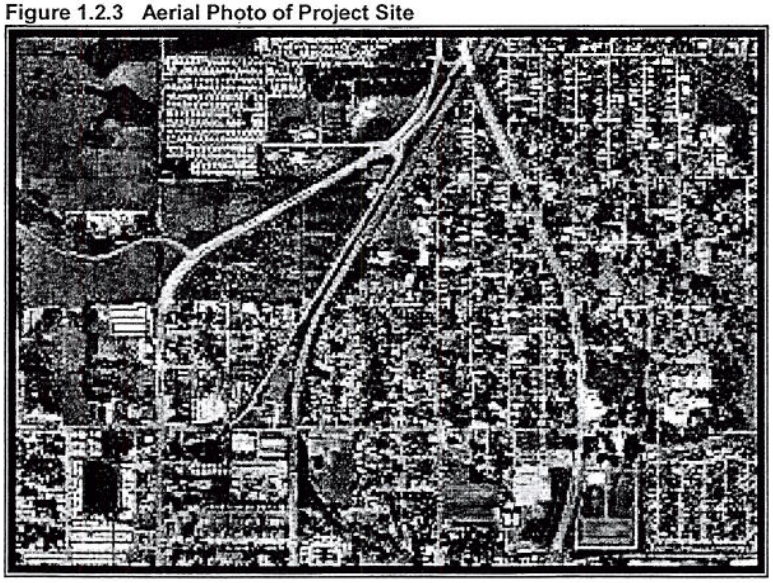
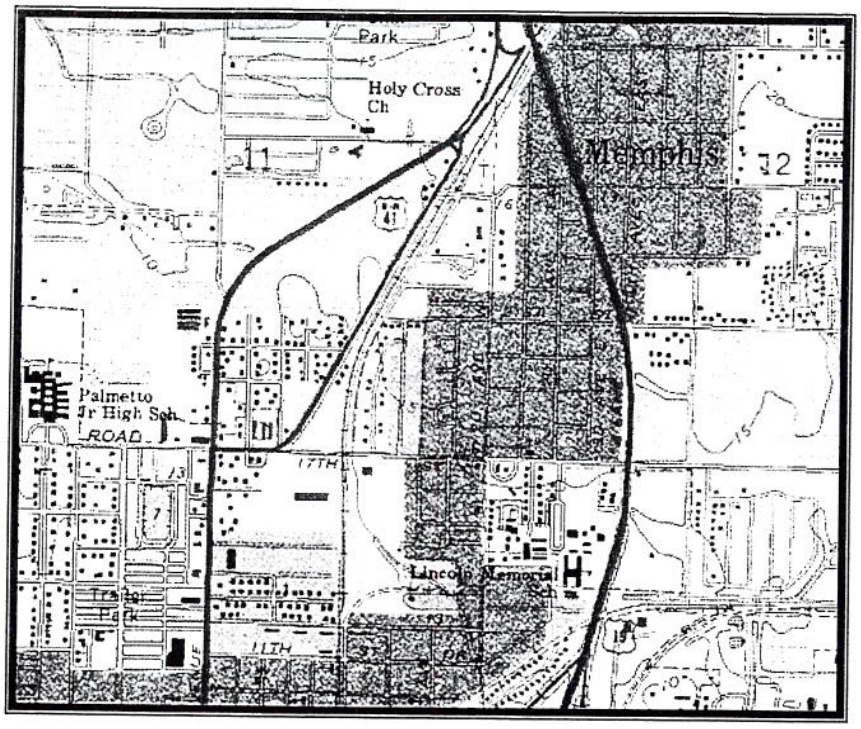
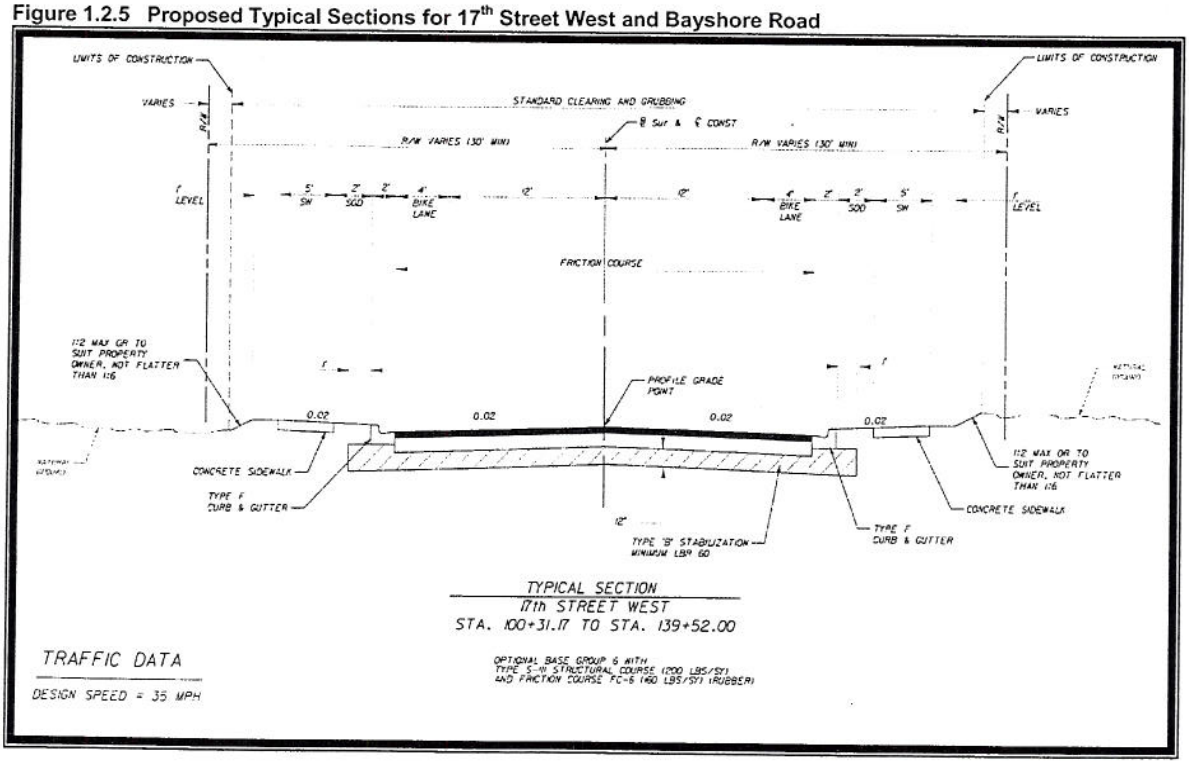


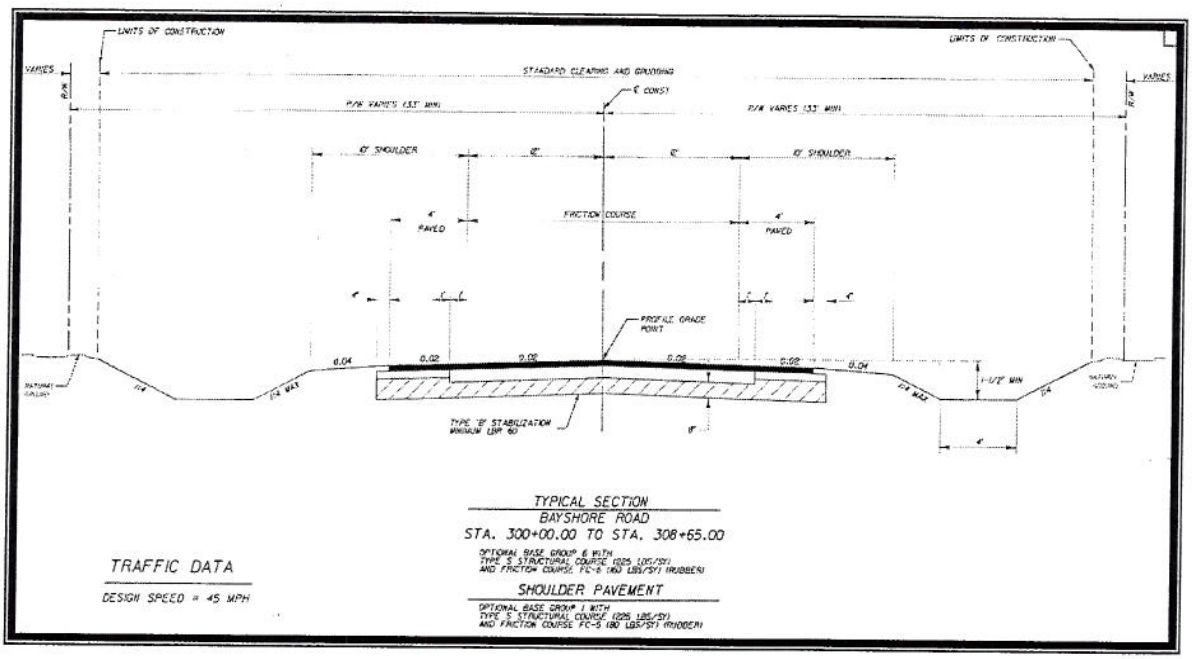
Figure 1.2.4 Project Area Topography



The existing 17th Street West rural roadway section from US 41 to Business US 41 will be reconstructed with an urban roadway typical. The proposed roadway typical will include curb & gutter, sidewalks and additional turn lane storage. Bayshore Road, intersecting 17th Street West from the north, will be realigned to intersect at with a "T" intersection at 17th Street West. Refer to **Figure 1.2.5** for the Proposed Typical Sections.

Figure 1.2.5 Proposed Typical Sections for 17th Street West and Bayshore Road





1.3 SOIL CHARACTERISTICS AND SEASONAL HIGH GROUNDWATER

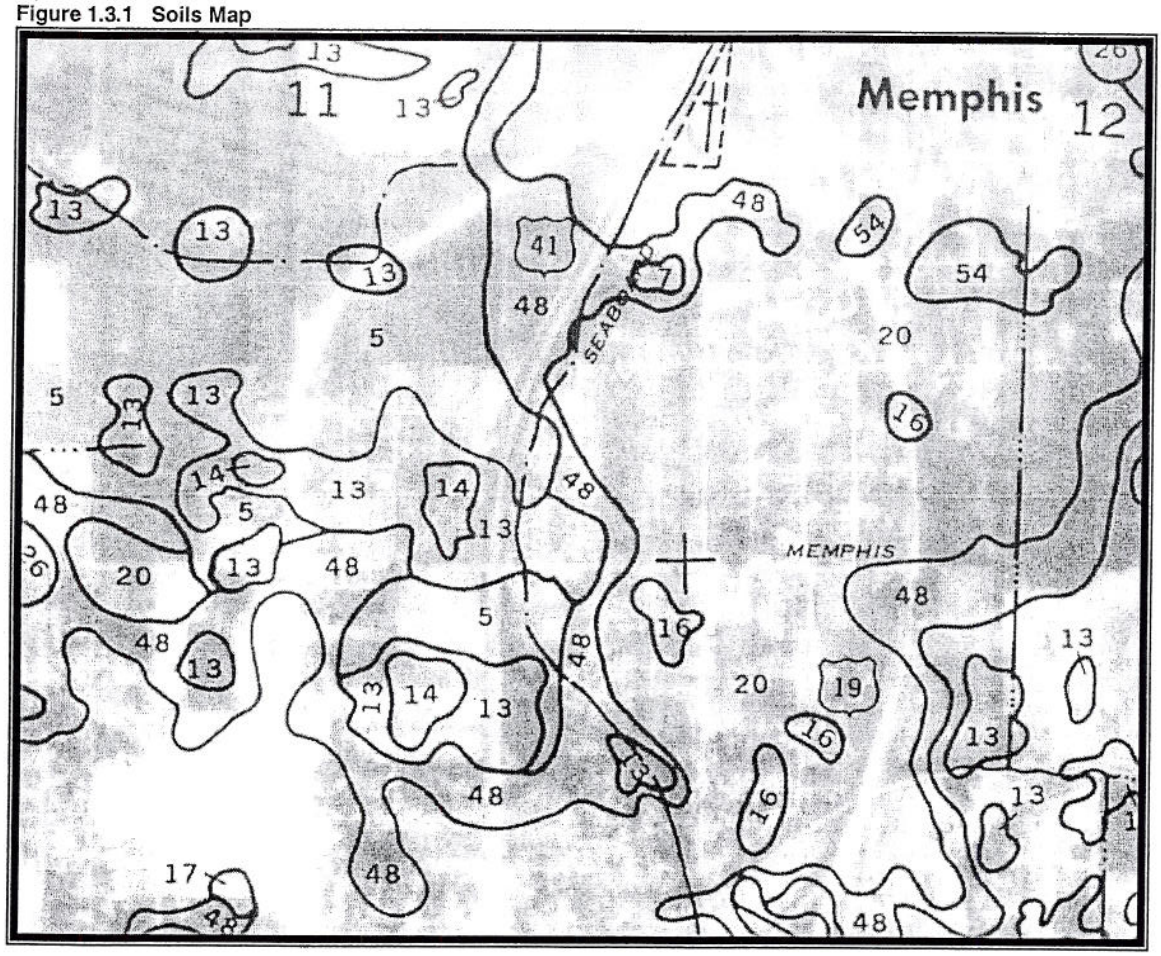
The Soil Conservation Service (SCS) Soil Survey maps for Manatee County identify five main soil units within the influence of the project. Refer to **Figure 1.3.1** for the Soils Map. **Table 1.3.1** is a legend for the map symbols shown on the Soils Map. The soils present in the area are classified as Bradenton fine sand, Chobee loamy fine sand, Chobee Variant sandy clay loam, EauGallie fine sand and Wabasso fine sand. All five constitute sandy soils that are nearly level, poorly drained to very poorly drained soil. For the majority of the project the soils represented have a seasonal high water table varying in from ten inches during the rainy season to 40 inches below existing ground surface during the dry season according the SCS Soil Survey.

A geotechnical investigation was conducted in October of 2003 which included two shallow hand auger borings within the treatment pond area, and six Standard Penetration Test (SPT) in the attenuation pond area. Groundwater was encountered at an average depth of 2.3 to 3.7 feet below existing ground elevations while Seasonal High Water elevations ranged from 0.0 to 2.0 feet below existing ground elevations. Results of the groundwater observations are included in the Geotechnical Report excerpt located in **Appendix 3.0.**

Table 1.3.1 Soils Map Legend

MAP SYMBOL	SOIL NAME	SOIL TYPE	HYDROLOGIC GROUP
5	Bradenton	fine sand	B/D
13	Chobee	loamy fine sand	B/D
14	Chobee Variant	sandy clay loam	D
20	EauGallie	fine sand	B/D
48	Wabasso	fine sand	B/D

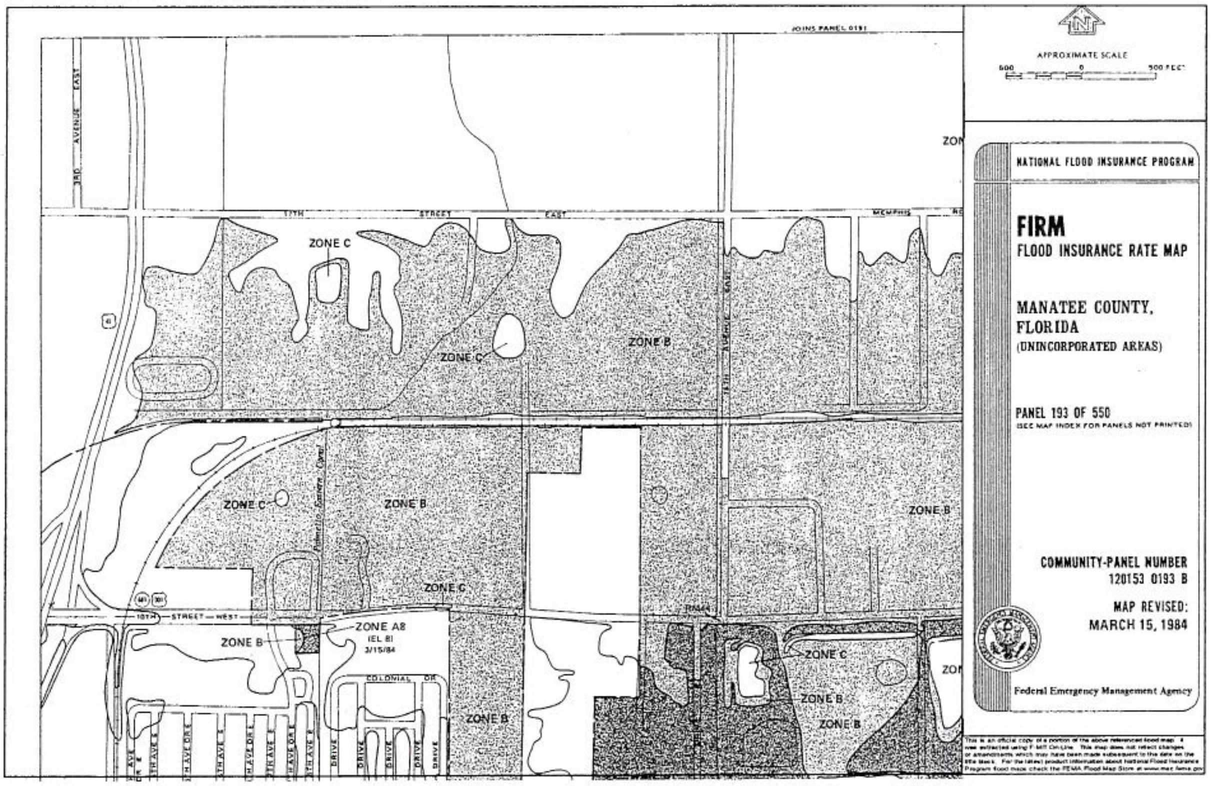
Figure 1.3.1 Soils Map

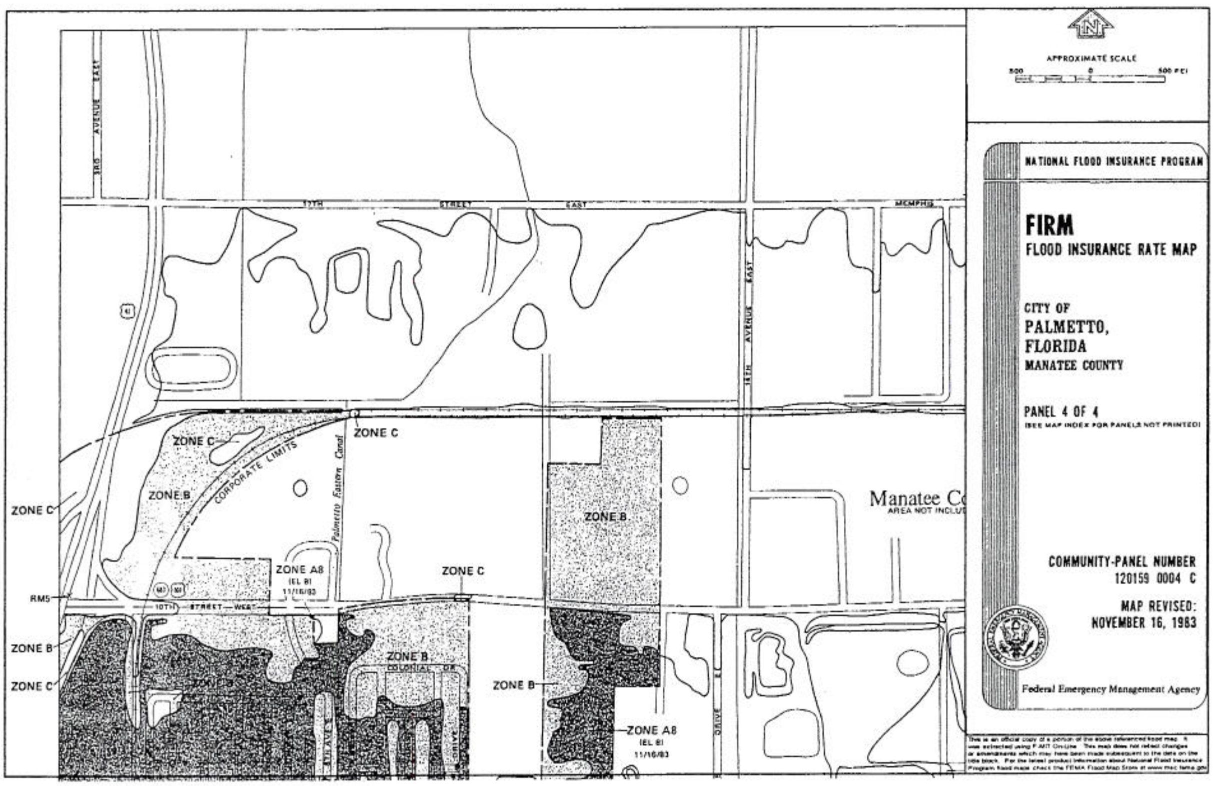


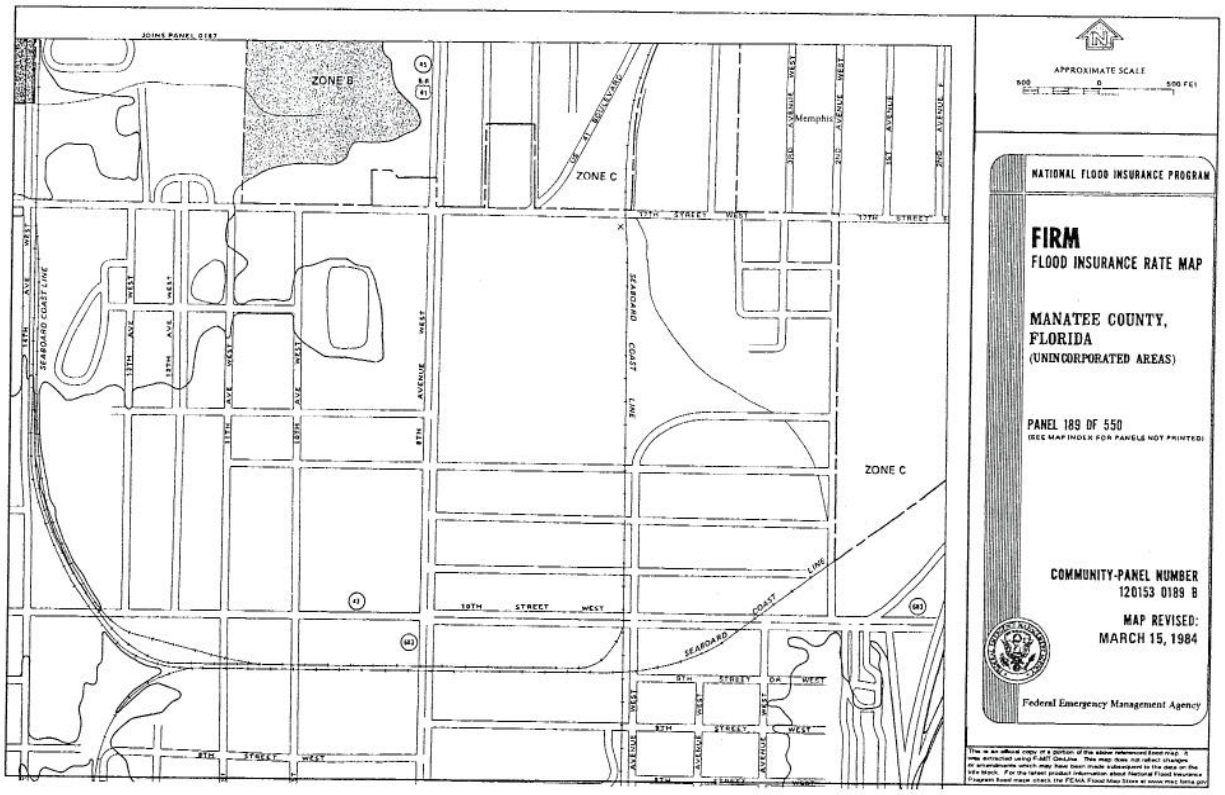
1.4 FLOOD PLAIN INFORMATION

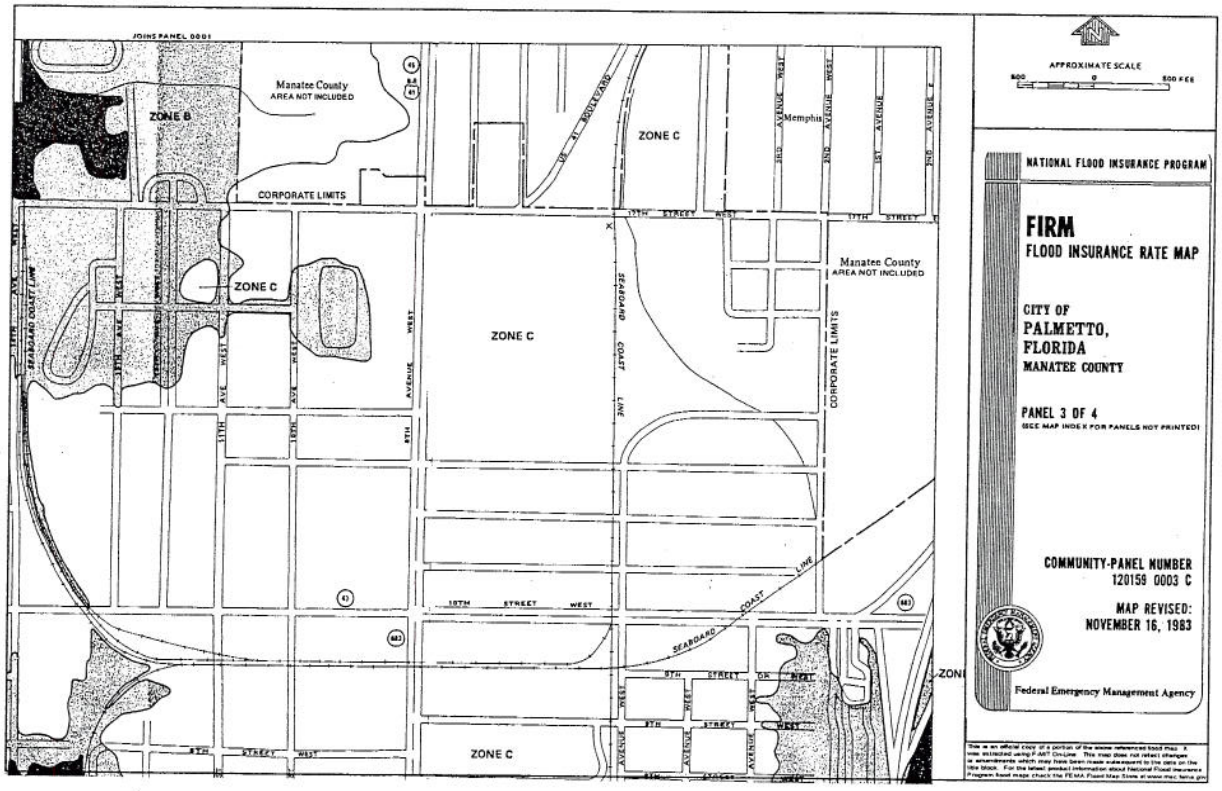
The project is not located within areas considered to be flood zones as defined by the Federal Emergency Management Agency (FEMA). Since the area is not located in a flood prone area there will be no floodplain mitigation required for this project. The Flood Insurance Rate Maps for this project can be found below. Refer to **Figure 1.4.1**.

Figure 1.4.1 Flood Insurance Rate Maps






JOINS PANEL 0187
ZONE B
ZONE C
Memphis
SEABOARD COAST LINE
ZONE C
APPROXIMATE SCALE
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
MANATEE COUNTY, FLORIDA
(UNINCORPORATED AREAS)
PANEL 189 OF 550
(SEE MAP INDEX FOR PANELS NOT PRINTED)
COMMUNITY-PANEL NUMBER
120153 0189 B
MAP REVISED:
MARCH 15, 1984
Federal Emergency Management Agency


JOINS PANEL 0002
ZONE B
Manatee County
AREA NOT INCLUDED
CORPORATE LIMITS
ZONE C
Memphis
ZONE C
Manatee County
AREA NOT INCLUDED
CORPORATE LIMITS
ZONE C
ZONE C
APPROXIMATE SCALE
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
CITY OF
PALMETTO,
FLORIDA
MANATEE COUNTY
PANEL 3 OF 4
(SEE MAP INDEX FOR PANELS NOT PRINTED)
COMMUNITY-PANEL NUMBER
120159 0003 C
MAP REVISED:
NOVEMBER 16, 1983
Federal Emergency Management Agency

DRAINAGE REFERENCE AND RESOURCE INFORMATION

2.1 MEETING AND FIELD REVIEWS

Initial investigations and data collection were conducted to establish the existing conditions and available information. Field reviews and a pre-application meeting with SWFWMD were all part of the investigation process, the outcomes of which are discussed in the subsections below.

2.1.1 FIELD REVIEW

Numerous field reviews and project walks have been conducted within the project area.

- The western most drainage basins along 17th Street West drain a portion of Business US 41. The system runs along the Southside of road collecting roadway and off-site drainage before discharging into the Carr Drain near station 113+00, please see Drainage Maps.

- The central part of the project from 2nd Avenue West to the railroad tracks is also serviced by a drainage system along the Southside of the road. Roadway and off-site drainage starting from 2nd Avenue flows west through the system until discharging into the Carr Drain.

- The third drainage basin runs from 2nd Avenue East to US 41. This system is comprised of both offsite and roadway drainage. The system originates at 2nd Avenue East and discharges into the FDOT right-of-way at US 41.

- There is a section of 17th Street West between 2nd Avenue West and 2nd Avenue East that has no drainage system in place. Upon review of the SWFWMD aerials and discussions with the City of Palmetto engineering staff, it appears as if this area historically drained to a low area south of the road adjacent to the school. It appears that when the school was expanded, the low area was filled and turned into athletic fields.

2.1.2 SWFWMD COORDINATION

On October 21, 2003, a SWFWMD pre-application meeting for this project was held at their Sarasota office. It was established that the consultant would treat an inch across the directly connected impervious area in the area west of the Railroad tracks and ½ inch of treatment along Bayshore Road in a dry swale system. Due to the fact that the roadway traffic capacity was not being increased and lack of available pond sites in the central portion of the project, a treatment/attenuation alternative was reached. Due to the extensive stormwater flooding in the area, Manatee County would fully develop the pond site adjacent to Bayshore Road to construct an offline attenuation pond that would attenuate some portion of the flows from the Carr Drain to help reduce flooding in the area. Refer to **Appendix 1.0** for the minutes of the pre-application meeting with the SWFWMD staff.

2.2 CURVE NUMBERS

The Curve Number (CN) for all impervious (asphalt, concrete, buildings, and water) is 98 regardless of the soil type. For the unpaved areas, varies CN values were developed dependant on ground cover and soil types encountered within each contributing basin. The majorities of the soils within the project limits are in their natural state and appear to be poorly drained, therefore hydrologic group D was used for the calculation. Refer to **Appendix 4.0** for calculations.

2.3 RESOURCES FOR ANALYSIS

The following is a list of resources utilized for the site selection analysis and design of the stormwater management facilities for this project:

1. South West Florida Water Management District (SWFWMD)
   a. Staff directives
   b. Environmental Resource Permitting Information Manual (August '03)
   c. Aerial Contour Maps

2. Manatee County
   a. Staff directives
   b. Highway & Drainage Standards (March '02)

3. Florida Department of Transportation
   a. FDOT Drainage Manual (English Units) (October '00)
   b. FDOT Storm Drain Handbook (August '00)
   c. FDOT Design Standards (English Units) (January '02)

4. Other Studies and Analysis
   a. Jackson Park Stormwater Improvements Alternative Report dated February 2002 by Jones, Edmunds & Associates, Inc. and provideD by Manatee County

5. Field Analysis
   a. Land Survey by Zoller, Najjar & Shroyer, L.C.
   b. Geotechnical Assessment by Driggers Engineering Services

2.4 DESIGN CRITERIA

The project runoff will discharge to an open basin. Roadway stormwater and treatment pond design will be based on a Florida Modified 25-year, 24-hour storm as per SWFWMD and Manatee County criteria. The IDF Curves for Zone 6 will be utilized for the rainfall intensity for the appropriate time of concentration at each inlet designed to convey roadway runoff.

2.5 DESIGN METHODOLOGY

The following list summarizes the methods used for the hydraulic evaluation of the existing and proposed conditions for this report:

- The existing roadway and off site drainage areas were modeled using ICPR. TR55 was utilized in calculating Time of Concentrations.

- The proposed roadway stormwater system and stormwater pond system were designed using ICPR and ASAD. TR55 was utilized in calculating Time of Concentrations for the offsite area. Proposed roadway Time of Concentrations where derived from the ASAD storm tabs.

EXISTING DRAINAGE CHARACTERISTICS

3.1 EXISTING ROADWAY DRAINAGE BASIN DESCRIPTIONS

- The westernmost drainage basins along 17th Street West drain a portion of Business US 41. The system runs along the Southside of road collecting roadway and off-site drainage before discharging into the Carr Drain near station 113+00, please see Drainage Maps.

- The central part of the project from 2nd Avenue West to the railroad tracks is also serviced by a drainage system along the Southside of the road. Roadway and off-site drainage starting from 2nd Avenue flows west through the system until discharging into the Carr Drain.

- The third drainage basin runs from 2nd Avenue East to US 41. This system is comprised of both offsite and roadway drainage. The system originates at 2nd Avenue East and discharges into the FDOT right-of-way at US 41.

- There is a section of 17th Street West between 2nd Avenue West and 2nd Avenue East that has no drainage system in place. Upon review of the SWFWMD aerials and discussions with the City of Palmetto engineering staff, it appears as if this area historically drained to a low area south of the road adjacent to the school. It appears that when the school was expanded, the low area was filled and turned into athletic fields.

EXISTING WETLAND CHARACTERISTICS

Carr Drain is a man made drainage system that starts at the apex of US 41 and Business US 41 in north Palmetto. The system consists of a trunk line that runs along the Railroad right-of-way which parallels US 41 and Business 41 in a southerly direction and is feed by ditches and small stormwater systems which bisect the north portion of Palmetto. Carr Drain is maintained on a regular basis and thus has minimal wetland species in it.

PROPOSED STORMWATER MANAGEMENT DESIGN

5.1 STORMWATER MANAGEMENT DESIGN APPROACH

The proposed western drainage system would take the roadway and off-site drainage from US Business 41 and discharge to a two celled pond system at the Bible Baptist Church property just northwest of the Carr Drain and 17th Street West. The first cell, F-12B, would provide water quality treatment and the second cell, F-12D, would provide water quantity attenuation.

The easternmost proposed drainage system will discharge directly into the FDOT right-of-way from about 3rd Avenue East to US 41. This system will discharge no more than the pre-development discharge rate for the FDOT critical storm analysis.

The central portion of the project from the railroad right-of-way to 3rd Avenue East will be directly discharged into the Carr Drain. Initial discussions with the SWFWMD have indicated that if the church property is large enough and the seasonal high water elevation low enough, that additional runoff from the Carr Drain could be diverted into the second cell of the proposed pond to minimize downstream flooding. Additional treatment of off-site drainage would have to be provided for in the first cell but a second treatment pond for the central part of the project would not be necessary.

The existing CMP for the Carr Drain will be replaced with a 7' high by 12' wide concrete culvert as modeled and recommend by Jones, Edmunds & Associates, Inc. in the Jackson Park Stormwater Improvements Report provided to Wade-Trim by Manatee County or 8' high by 16' wide ConSpan arch as requested by the City of Palmetto. This report and ICPR analysis were preformed using the ConSpan arch.

5.2 DESIGN CRITERIA

The stormwater management design for this project will meet the criteria set forth in the following manuals:

a. Manatee County Stormwater Management Technical Manual (March '02)
b. FDOT Drainage Manual (English Units) (October '00)
c. FDOT Drainage Handbook Hydrology (October '00)
d. FDOT Storm Drain Handbook (August '00)
e. SWFWMD ERP Information Manual (July '02)

5.3 PROPOSED STORMWATER MANAGEMENT

In the proposed condition, the western drainage system would take the roadway and off-site drainage from US Business 41 to the railroad tracks and discharge into pond F-12B at the Bible Baptist Church property just northwest of the Carr Drain and 17th Street West. Time of Concentration for the roadway improvements and basin size were derived from ASAD Storm Tabs. Please refer to **Appendix 5.1** for "West" ASAD calculations. The first cell, F-12B, would provide water quality treatment for one inch of rainfall over 3.56-acres of impervious area. In addition, pond F-12B will provide 1.17 +/- acres-ft of water quantity volume, between the DHW and treatment elevations, before discharging into the attenuation/diversionary pond F-12D.

Swale F-12C will treat in excess of 1/2-inch of stormwater generated by the realigned Bayshore Road before discharging into attenuation pond F-12D via three, 48" overflow weirs. **Appendix 5.2** summarizes the results of the Modret treatment volume drawdown and recovery data. In addition, please note that the Hydraulic Conductivity used is not representative of the existing soil at the proposed swale location. In the roadway construction specifications, the contractor while be instructed to use clean, permeable fill to construct the swale system.

A portion of the roadway improvements east of the railroad tracts will be discharged directly into the Carr Drain south of the ConSpan and a small portion will follow historic drainage patterns and discharge into the FDOT stormwater system along US 41. The proposed roadway improvement east of the railroad tracts to approximately 2nd Avenue East will discharge directly into the Carr Drain south of the ConSpan roadway crossing, much as in the current condition. Please refer to **Appendix 5.1** for "East" ASAD calculations.

The last section of road will continue flowing toward US 41 and enter the FDOT storm sewer system along US 41. Please refer to Appendix 5.1 for "FDOT" ASAD calculations.

In order to properly examine the effect of the proposed roadway improvement while negating the effect of the Carr Drain on the system, the two ponds and swale were modeled independent of tailwater generated by the Drain, FLMOD 24-hr, 25-yr event. **Table 5.3.1** summarizes the Pre vs. Post discharge and examines the effect of the roadway on the stage elevation of the pond system.

Table 5.3.1 Pre vs. Post Discharge Rates for 24-hr, 25-yr event

NODE	PRE (cfs)	POST (cfs)	STAGE
F-12B	5.19	5.67	10.30
F-12C	3.50	3.05	9.94
F-12D	13.92	4.75	6.62
Total discharge	22.60	13.47	
Reduction in discharge	**9.13 cfs**		

Attenuation pond F-12D has a DHW elevation of 6.62 when tailwater condition in the Carr Drain a negated but with tailwater taken into account, the DHW elevation for a 25-year event raise up to elevation 10.55. This rise in DHW elevation demonstrated the additional 10.25 acre-ft the pond provides for floodwater diversion.

Attenuation pond F-12D will act as the receiving water body for overflow discharges from detention pond F-12B and retention Swale F-12C along with holding diverted stormwater from Carr Drain to bring down stage elevations in the area.

Manatee County proposes to place a diversionary structure in the Drain that would allow base flows to continue going downstream while diverting stormwater into the attenuation pond where a control structure would release the diverted waters after the peak of the storm event thus reducing stage/flood elevation in the area. Base flow waters would be allowed to continue flowing downstream via an 8" x 36" rectangular orifice. During a storm event, water will be staged up by the orifice until it reaches a 120" weir which will divert the water into attenuation pond F-12D. Once in attenuation pond F-12D storm waters will be controlled by a trapezoidal weir and released back into the Carr Drain after the peak of the rainfall event has passed. The diversionary structure will also have a 72" emergency overflow weir, which during very large storm events will allow stormwater to bypass the attenuation pond and continue flowing down the Drain in order to maintain the DHW elevation in the attenuation Pond. **Table 5.3.2** summarizes the Pre vs. Post Stage elevations along the Carr Drain and attenuation pond site.

Table 5.3.2 Pre vs. Post Stage Elevations

RETURN FREQUENCY (YEARS)	NODE	LOCATION	EXISTING ELEVATION (FEET)	PROPOSED ELEVATION (FEET)	CHANGE (+/-) IN ELEVATION (FEET)
2.0 yr	F-12B	Treatment/Attenuation Pond	9.44	9.34	-0.10
	F-12C	Treatment Swale	9.44	10.86	1.42
	F-12D	Attenuation/Diversion Pond	9.44	8.85	-0.59
	Drain 8	Node south of railroad Box Culvert	9.37	8.42	-0.96
	Drain 10	Node west of RR, West Channel	9.28	8.22	-1.07
	Drain 14	Node North of Diversion Structure	9.47	9.01	-0.46
	Drain 15	Node East of Diversion Structure	9.44	8.98	-0.46
2.33 yr	F-12B	Treatment/Attenuation Pond	9.59	9.50	-0.08
	F-12C	Treatment Swale	9.59	10.87	1.28
	F-12D	Attenuation/Diversion Pond	9.59	8.99	-0.59
	Drain 8	Node south of railroad Box Culvert	9.53	8.54	-0.98
	Drain 10	Node west of RR, West Channel	9.45	8.40	-1.05
	Drain 14	Node North of Diversion Structure	9.62	9.20	-0.42
	Drain 15	Node East of Diversion Structure	9.59	9.17	-0.42
5 yr	F-12B	Treatment/Attenuation Pond	10.15	10.11	-0.04
	F-12C	Treatment Swale	10.15	10.90	0.75
	F-12D	Attenuation/Diversion Pond	10.15	9.56	-0.59
	Drain 8	Node south of railroad Box Culvert	10.08	9.15	-0.94
	Drain 10	Node west of RR, West Channel	10.06	9.12	-0.94
	Drain 14	Node North of Diversion Structure	10.18	9.79	-0.39
	Drain 15	Node East of Diversion Structure	10.14	9.76	-0.39

10 yr	F-12B	Treatment/Attenuation Pond	10.57	10.41	-0.15
	F-12C	Treatment Swale	10.57	10.92	0.35
	F-12D	Attenuation/Diversion Pond	10.57	9.97	-0.59
	Drain 8	Node south of railroad Box Culvert	10.50	9.61	-0.89
	Drain 10	Node west of RR, West Channel	10.50	9.63	-0.87
	Drain 14	Node North of Diversion Structure	10.59	10.20	-0.40
	Drain 15	Node East of Diversion Structure	10.57	10.16	-0.41
25 yr	F-12B	Treatment/Attenuation Pond	11.14	10.79	-0.34
	F-12C	Treatment Swale	11.14	10.94	-0.19
	F-12D	Attenuation/Diversion Pond	11.14	10.55	-0.59
	Drain 8	Node south of railroad Box Culvert	11.06	10.24	-0.82
	Drain 10	Node west of RR, West Channel	11.11	10.31	-0.80
	Drain 14	Node North of Diversion Structure	11.16	10.78	-0.38
	Drain 15	Node East of Diversion Structure	11.12	10.76	-0.37
50 yr	F-12B	Treatment/Attenuation Pond	11.60	11.26	-0.35
	F-12C	Treatment Swale	11.60	10.97	-0.64
	F-12D	Attenuation/Diversion Pond	11.60	10.95	-0.66
	Drain 8	Node south of railroad Box Culvert	11.52	10.76	-0.76
	Drain 10	Node west of RR, West Channel	11.61	10.86	-0.75
	Drain 14	Node North of Diversion Structure	11.63	11.21	-0.42
	Drain 15	Node East of Diversion Structure	11.58	11.18	-0.41
100 yr	F-12B	Treatment/Attenuation Pond	11.74	11.41	-0.33
	F-12C	Treatment Swale	11.74	11.08	-0.66
	F-12D	Attenuation/Diversion Pond	11.74	11.08	-0.66
	Drain 8	Node south of railroad Box Culvert	11.66	10.91	-0.76
	Drain 10	Node west of RR, West Channel	11.76	11.01	-0.75
	Drain 14	Node North of Diversion Structure	11.77	11.34	-0.43
	Drain 15	Node East of Diversion Structure	11.72	11.33	-0.39

Please note that during larger storm events there is a small increase in the downstream stage elevation, Node BO7 and BO8. This increase was anticipated both by the Jones, Edmund & Associates, Inc. model and this model. In the current condition, stormwater are held back by the existing 96-inch CMP that currently conveys the Carr Drain under 17th Street West. Due to increase in flow capacity of the proposed ConSpan versus the existing 96-inch CMP, stormwater will be allowed to continue downstream without significant loss of head energy along the crossing. This reduction in head loss in the crossing is represented in the slight gain of elevation in the downstream nodes during larger events that can't be completely held under control by the upstream attenuation pond F-12D.

5.4 PROPOSED FLOOD PLAIN IMPACTS AND COMPENSATION

No flood plain impacts are proposed at this time.

ENVIRONMENTAL CONSIDERATIONS

Given that Carr Drain is a regularly maintained man made ditch system with minimal wetland species no wetland mitigation is proposed at this time.

MTE 2080.01(215)

REPORT OF THE GEOTECHNICAL INVESTIGATION

17TH STREET WEST
MANATEE COUNTY, FLORIDA

DRIGGERS ENGINEERING SERVICES INCORPORATED
GEOTECHNICAL ENGINEERING and
CONSTRUCTION MATERIALS TESTING

Wade Trim, Inc.
4919 Memorial Highway, Suite 200
One Memorial Center
Tampa, Florida 33634

December 10, 2003

Attention: Mr. Jeffrey Trim, P.E.

RE: Report of the Geotechnical Investigation
17th Street West
Palmetto, Florida
Our File: DES 034798

Dear Jeff:

Pursuant to your authorization, **DRIGGERS ENGINEERING SERVICES, INC.** has completed the geotechnical investigation relative to the subject project. Presented herein are the results of our field and laboratory studies together with geotechnical recommendations for your consideration.

It has been our pleasure to be of service to you and we trust, if you have any questions concerning our report, you will not hesitate to contact this office at your convenience.

Respectfully submitted,
DRIGGERS ENGINEERING SERVICES, INC.

Nicholas T. Korecki

Nicholas T. Korecki, P.E.
Senior Geotechnical Engineer
FL Registration No. 45529

E. Jaime Driggers, P.E.
President
FL Registration No. 16989

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NTK/REP/034798
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INTRODUCTION AND PROJECT DESCRIPTION

Improvements are planned for 17th Street West in Palmetto, Manatee County, Florida. The project will encompass about 4,000 lineal feet between Business U. S. 41 and U. S. 41. Also included is a realignment of the southern portion of Bayshore Road to provide a 90 degree intersection with 17th Street and stormwater management ponds between the existing and new Bayshore alignments and between the new alignment and the railroad tracks. In general, the improvements will consist of the construction of an urban section with curbs and sidewalks along 17th Street and a rural section with roadside swales along the new Bayshore alignment.

A geotechnical investigation was authorized in order to develop information with respect to subsurface soil and groundwater conditions that could impact design and construction requirements.

GEOTECHNICAL INVESTIGATION PROGRAM

A combined field and laboratory investigation program was undertaken to acquire subsurface soils and groundwater information to assist in the development of design and construction requirements for the planned facilities.

FIELD INVESTIGATION PROGRAM - The requested field investigation consisted of a series hand auger borings and along the edge of the existing road, and along the new road alignment. Occasional cores of the existing pavement were also performed to facilitate sampling of the subgrade soils where existing buried utilities hampered borings along the edge of the road. Standard Penetration Test (SPT) borings and hand auger borings were also conducted in the planned ponds. Each of these programs is discussed below.

Roadway Borings - Thirty-six (36) classification borings (HA-1 through HA-36) were performed to investigate pavement subgrade conditions. Thirty (30) of the borings were conducted along the edge of the existing roadway on 17th Street, with four (4) of these being performed by first removing a core of the existing pavement where utility conflicts prevented boring adjacent to the pavement. Six (6) of the borings were performed for the Bayshore Road alignment, with boring HA-36 being conducted through a core in the existing pavement. The classification borings were conducted utilizing hand auger equipment wherein the soils were

classified virtually continuously from existing grade to termination at a nominal depth of 6 feet. A few borings were terminated at shallower depths where possible or probable previously unidentified buried utilities were encountered.

The borings were staked in the field by our geotechnician utilizing the aerial photo and plans provided to us. Boring locations are indicated by approximate Station and offset on each log. Note that these locations are approximate since they were not surveyed. Logs of the borings are presented in Appendix A. Soil Profile columns are being provided to you electronically.

Stormwater Management Areas - The investigation for stormwater management areas consisted of six (6) Standard Penetration test (SPT) borings (B-3 through B-8). These borings were conducted in general accordance with ASTM D-1586 to nominal depths of 10 to 12 feet to obtain samples from discrete intervals for visual examination and laboratory classification testing. Two (2) hand auger borings (B-1 and B-2) were manually advanced to depths of 5.5 to 6 feet within the smaller pond area since wet surface conditions at the time of our field studies prohibited drill rig access.

Logs of the exploratory borings are presented in Appendix B of the attachments indicating visual together with estimated Unified and AASHTO Soil Classifications. Tabulated and graphically plotted Standard Penetration resistance values are also noted corresponding to each sample interval. The pond area borings were located in the field by our geotechnician utilizing the aerial photograph provided to us. The approximate boring locations are illustrated on Plate I in the report attachments. Note that the locations are approximate since they were not surveyed.

LABORATORY INVESTIGATION - Laboratory classification tests were conducted to aid in characterizing the engineering properties of the subsurface soils. Our laboratory tests included grainsize analyses and Atterberg limits determinations together with organic content tests on selected specimens. The results of the laboratory tests are included in the report attachments. Laboratory testing was performed in general accordance with applicable FDOT Standard Specifications. Classification test results were previously provided on the Cross Section Soil Survey sheet.

Limerock Bearing Ratio (LBR) testing was also performed on selected samples of subgrade soils obtained adjacent to the existing roadway. Results of these tests are included in the report attachments.

GENERALIZED SUBSURFACE CONDITIONS

In general, the subgrade soils encountered along the existing roadways typically consisted of sandy soils with variable silt, clay and organic fines. These soils generally comprised the A-3 and A-2-4 AASHTO Soil Classifications. Some of these predominately sandy soils also contained rock and shell fragments and appear to represent fill and backfill soils associated with the existing roadway and utility construction. Although the above referenced sands were evidenced to the completion depth of several borings, they were found to overlay silty to clayey sands (A-2-4 to A-2-6 soils) as well as occasional variably cemented silts and clays (A-4 to A-7-6 soils) in other areas.

Within the planned stormwater ponds, the borings typically penetrated thin surficial sands overlying variably cemented silts and clays. At boring locations B-1, B-3 and B-6 moderately to highly organic soils were evidenced at the ground surface.

The boring logs, together with the soil profiles and associated soil survey summary sheet submitted to you electronically present further information with respect to soil stratification, grainsize distribution, organic content and plasticity characteristics.

The depth at which groundwater was recorded during the course of our studies is noted on each respective boring log and tabulated in the appended Table I. As seen, the depths to groundwater varied from 2.8 to 5.2 feet below existing grade. Groundwater was also absent within a depth of 6 feet at several boring locations. The profile sheets of the plan documents depict observed groundwater levels. The estimated normal seasonal high groundwater levels, based upon the results of our geotechnical investigation, are also presented in Table I. Please note that our field studies were conducted following a relatively dry month of September after a wetter than normal summer. Since many of the soils evidenced in the borings represent fill and backfill with variable characteristics, accurate determinations of normal seasonal high groundwater levels is difficult, since "natural" soil profiles are absent. Further, construction and development in the area, including drainage improvements have also influenced groundwater levels.

The Soil Survey of Manatee County indicates the presence of predominately EauGallie fine sands along the eastern half of the 17th Street alignment. Chobee and Wabasso soils are indicated along the western half and along Bayshore Road, including the proposed pond areas. However, as previously mentioned, most of the near surface soils penetrated along the existing roadways represent embankment fill or backfill associated with the current construction. Further, the existing drainage features in the vicinity have also affected groundwater levels. Therefore, the estimated normal seasonal high levels presented herein do not necessarily conform to the SCS estimates since the soils evidenced in the borings may not generally represent the original conditions reflected in the Soil Survey.

GEOTECHNICAL EVALUATION AND RECOMMENDATIONS

ROADWAY DESIGN AND CONSTRUCTION

Suitability of Subgrade Soils - In general, our geotechnical investigation has identified the presence of existing subgrade soils that are generally suitable for support of the planned pavement structure with proper subgrade preparation. Subgrade preparation will necessitate stripping of surface vegetation and organic topsoil, where present, followed by proof-rolling and compaction of the subgrade prior to the placement of any additional fill materials needed to establish the design subgrade elevation. Subgrade preparation and compaction shall conform to requirements set forth in the FDOT Standard Specifications for Road and Bridge Construction (latest edition).

In localized areas, soils with excessive organic content or plasticity were evidenced relatively near the ground surface. Where evidenced at shallow depths during construction, these soils will require removal in accordance with FDOT Standard Specification Index Sheet No. 500. Plate III in the attachments presents a summary of the organic and plastic soils evidenced in the roadway borings which would, or may, warrant such removal. Organic soils should be removed in their full vertical extent and to horizontal limits identified in Index 500. The required undercutting of plastic soils to at least 24 inches below the pavement section will depend upon final design grades. We presume that grades along 17th Street would not be significantly lower than current grades.

Construction Considerations - The subgrade soils generally consist of predominantly sandy soils comprising the A-3 to A-2-4 AASHTO Soil Classifications. These soils exhibit negligible to low plasticity and will respond favorably to vibratory compaction. Where localized areas of subgrade soils, grouped into the A-2-4 AASHTO Soil Classification, may contain appreciable silt or clay fines, these soils are clearly weather sensitive and will require appropriate adjustment in moisture contents to achieve required compaction. It is recommended that moisture contents in all soils be controlled to within ±2% of the optimum moisture content as established by the Modified Proctor moisture density relationship of AASHTO T-180.

Your attention is directed to the fact that where groundwater may occur at relatively shallow depths particularly during periods of increased rainfall, the contractor must plan for maintaining proper drainage and control of groundwater levels so as to maintain the subgrade in a suitable moisture condition for developing required compaction of the subgrade and subsequent fill lifts needed to establish design grades.

STORMWATER MANAGEMENT AREAS - A summary of measured groundwater levels and estimated normal seasonal high groundwater levels is presented on Plate I in the report appendix. The Soil Survey of Manatee County indicates the presence of Chobee and Wabasso soils in the proposed pond areas. Due to the presence of low permeability soils at or near the present ground surface, water may occur in a generally perched condition at shallow depths in response to significant rainfall.

UTILITY CONSTRUCTION - It is envisioned that the construction of any new storm drainage will probably occur either in an open excavation or perhaps utilizing trench box construction. Where open excavation is contemplated, we recommend utilization of side slopes no steeper than 1.5 horizontal to 1 vertical. Regardless, the contractor must comply with OSHA requirements with respect to trench safety. The utilization of the above slope ratio mandates proper dewatering to control groundwater levels to at least one (1) foot below the excavation bottom. Further, slopes must be protected from scour and erosion that can result in slope instability.

Groundwater is likely to be encountered which will mandate proper dewatering. It is recommended that groundwater levels be lowered no less than 1 foot below the bottom of trench excavation to permit proper compaction of the subgrade and backfill soils. Considering the stratified nature of the subsurface soils, it is recommended that the wellpoints be properly sand encased and designed with due consideration given to the varying permeabilities of the subsurface soils.

BORROW SOIL CHARACTERISTICS - Our test borings have generally identified the presence of highly organic and silty to clayey soils within the proposed pond areas. With the exception of some of the thin near surface sands, some of which represent fill and contain shell, rock concrete and brick fragments, virtually none of these soils would be suitable for use as embankment fill or utility backfill.

Fill and backfill soils should comprise the A-3 and A-2-4 Soil Classifications. As previously discussed, soils with increased fines content, such as those comprising the A-2-4 Soil Classification, will require appropriate spreading and aeration in order to adjust moisture contents to effect proper compaction and maintain stability during the compaction activities. Thus, these silty and slightly organic sands are generally considered more weather sensitive and will require an increased level of earthwork management in order to efficiency place and compact. Mass earthwork operations afford an excellent opportunity for placement of these soils in relatively thin lifts that can be efficiently aerated for moisture content control. With proper earthwork management, soils with increased fines can usually be blended with sands with minimal fines content to improve workability and compaction efficiency.

LIMITATIONS - The geotechnical investigation herein was conducted to develop generalized information with respect to subsurface soil and groundwater conditions for design of the planned facilities. Our investigation was conducted in accordance with generally accepted geotechnical engineering practice with respect to the contemplated facilities. Our studies may not have included development of all information that may be required by the prospective contractor in the preparation of his bid proposal. The contractor is certainly encouraged to conduct such additional studies as he may deem necessary to qualify his bid proposal.

There is always the potential that conditions could be encountered that may not have been evidenced by the general program of geotechnical investigation. Accordingly, careful inspection during earthwork operations will clearly be warranted so that geotechnical decisions can be made with respect to subgrade preparation requirements. Without careful geotechnical engineering inspection, the potential exists that soils with minor organic contents or low plasticity characteristics could unnecessarily be removed which would result in inordinate subgrade preparation expense. Therefore, we would certainly encourage the involvement of a representative of the project geotechnical engineer especially during the subgrade preparation phase of the planned facilities.

APPENDIX INCLUDES

PLATE I - POND BORING LOCATION PLAN

PLATE II - SUMMARY OF GROUNDWATER DATA

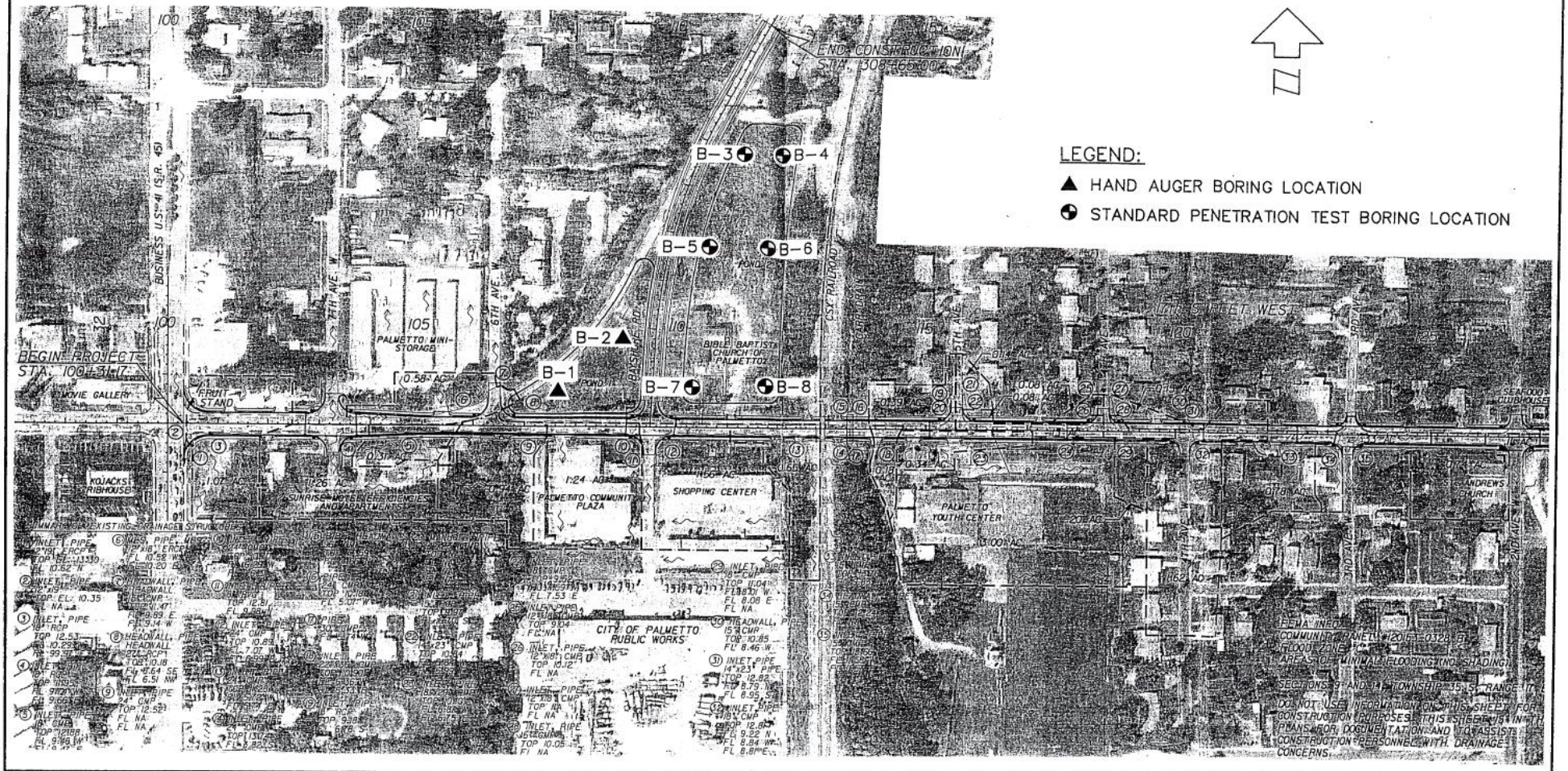
PLATE III - SUMMARY OF ORGANIC AND PLASTIC SOILS

APPENDIX A - ROADWAY CLASSIFICATION BORINGS

APPENDIX B - DRAINAGE AREA BORINGS

APPENDIX C - LABORATORY TEST RESULTS
- SUMMARY OF LABORATORY RESULTS
- GRAINSIZE DISTRIBUTION CURVES
- LIMEROCK BEARING RATIO TESTS

PLATE I - POND BORING LOCATION PLAN



CAD / ENGINEER	SHEET TITLE	PROJECT NO.	DATE
R.D.B. / N.T.K.	POND BORING LOCATION PLAN	DES 034798	11/19/03
PREPARED BY	PROJECT NAME	SCALE	SHEET NO.
DRIGGERS ENGINEERING SERVICES, INCORPORATED	17th STREET WEST FROM BUSINESS U.S. 41 TO U.S. 41 MANATEE COUNTY, FLORIDA	1" = 200'	PLATE 1

PLATE II - SUMMARY OF GROUNDWATER INFORMATION

SUMMARY OF GROUNDWATER DATA
17TH STREET WEST
DES 034798

BORING	MEASURED GW DEPTH (FT.)	EST. NORMAL SHGW DEPTH (FT.)		BORING	MEASURED GW DEPTH (FT.)	EST. NORMAL SHGW DEPTH (FT.)
HA-1	2.8	1.5		HA-23	3.8	1.5
HA-2	3.0	1.5		HA-24	4.0	1.5
HA-3	3.2	1.5		HA-25	3.7	1.7
HA-4	3.2	1.5		HA-26	3.8	1.5
HA-5	4.2	2.0		HA-27	4.2	1.3
HA-6	4.3	2.0		HA-28	3.6	2.2
HA-7	4.8	2.0		HA-29	3.8	1.3
HA-8	>3.3	2.0		HA-30	3.7	1.0
HA-9	>6.0	1.0		HA-31	2.9	0.0
HA-10	>6.0	1.5		HA-32	5.0	0.5
HA-11	>6.0	1.5		HA-33	5.0	0.5
HA-12	>6.0	2.0		HA-34	5.2	1.5
HA-13	5.4	1.5		HA-35	4.8	1.0
HA-14	>3.3	1.5		HA-36	4.8	1.0
HA-15	5.7	2.0		B-1	2.3	0.0
HA-16	5.8	2.0		B-2	3.5	0.5
HA-17	>2.7	1.5		B-3	3.7	0.0
HA-18	3.4	1.0		B-4	2.7	1.0
HA-19	3.9	2.0		B-5	2.6	2.0
HA-20	3.57	0.5		B-6	2.6	0.0
HA-21	3.79	1.5		B-7	2.7	0.0
HA-22	3.9	1.5		B-8	2.8	1.0

Note: Borings conducted in October, 2003.

PLATE III - SUMMARY OF ORGANIC AND PLASTIC SOILS

SUMMARY OF ORGANIC AND SHALLOW PLASTIC SOILS
ROADWAY BORINGS
17TH STREET EAST
PALMETTO, FLORIDA
DES 034798

LOCATION	SOIL TYPE, DEPTH RANGE (FT. BELOW EXISTING GRADE)			
	A-8	A-4	A-2-6	A-7-6
HA-2			4.0 - 5.4	
HA-6			3.8 - 5.0	
HA-7				5.2 - 6.0+
HA-9		1.4 - 2.5		
HA-10			5.0 - 6.0+	
HA-12				5.4 - 6.0+
HA-13			1.9 - 5.1	5.1 - 6.0+
HA-16			3.0 - 5.2	5.2 - 6.0+
HA-18	--			1.6 - 3.8
HA-19				5.8 - 6.0+
HA-20	--			0.7 - 2.6
HA-26			5.8 - 6.0+	
HA-31	--		3.0 - 5.0	0.0 - 0.8 5.0 - 6.0+
HA-32	--			2.2 - 3.0 4.5 - 6.0+
HA-33				4.6 - 6.0+
HA-34			2.2 - 4.0	5.0 - 6.0+
HA-35	3.7 - 5.4		1.6 - 3.7 5.4 - 6.0+	3.7 - 5.4
HA-36			2.0 - 3.8	

PLATE III

APPENDIX A - ROADWAY CLASSIFICATION BORINGS

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 2.8'	DATE: 10/17/03
TECHNICIAN: D.R./R.D.		DATE: 10/17/03	COMPLETION DEPTH: 2.8' *
LOCATION: See "Remarks"		TEST NUMBER: HA-1	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	9-1/4" Asphalt Pavement	0		Location: 17th Street West; Sta. 102+00; Offset 20' Left of Centerline Construction
	Dark brown and gray slightly silty Fine SAND (SP-SM) (A-2-4)	1		
		2		
		3		* Encountered PVC pipe at depth 2.8' - terminated boring
		4		
		5 '		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 3.0'	DATE: 10/17/03
TECHNICIAN: D.R./R.D.		DATE: 10/17/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-2	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	7-5/8" Asphalt Pavement	0		Location: 17th Street West; Sta. 103+00; Offset 22' Left of Centerline Construction
	Dark brown to gray slightly silty Fine SAND (SP-SM) (A-2-4)	1		
	Pale brown slightly silty Fine SAND (SP-SM) (A-2-4)	2		
		3		
		4		
	Light gray to light brown clayey Fine SAND (SC) (A-2-6)	5		
	Pale brown silty Fine SAND (SM) (A-2-4)	6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 3.2'	DATE: 10/17/03
TECHNICIAN: D.R./R.D.		DATE: 10/17/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-3	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	3" Asphalt Pavement	0		Location: 17th Street West; Sta. 103+98; Offset 23' Left of Centerline Construction
	8" Concrete			
	Brown to gray Fine SAND (SP) (A-3)	1		
		2		
	Pale brown, gray and rust colored silty, slightly clayey Fine SAND (SM) (A-2-4)	3		
		4		
		5		
	Light gray slightly silty Fine SAND (SP-SM) (A-2-4)	6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 3.2'	DATE: 10/17/03
TECHNICIAN: D.R./R.D.		DATE: 10/17/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-3	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	3" Asphalt Pavement	0		Location: 17th Street West; Sta. 102+98; Offset 23' Left of Centerline Construction
	8" Concrete			
	Brown to gray Fine SAND (SP) (A-3)	1		VOID
		2		
	Pale brown, gray and rust colored silty, slightly clayey Fine SAND (SM) (A-2-4)	3		
		4		
		5		
	Light gray slightly silty Fine SAND (SP-SM) (A-2-4)	6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 3.2'	DATE: 10/17/03
TECHNICIAN: D.R./R.D.		DATE: 10/17/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-4	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	3" Asphalt Pavement	0		Location: 17th Street West; Sta. 105+00; Offset 25' Left of Centerline Construction
	8-1/2" Concrete			
	Brown to gray Fine SAND (SP) (A-3)	1		
	Gray to brown silty, slightly clayey Fine SAND (SM) (A-2-4)	2		
		3		
		4		
	Light gray slightly silty Fine SAND (SP-SM) (A-2-4)	5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 4.2'	DATE: 10/15/03
TECHNICIAN: D.R./R.D.		DATE: 10/15/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-5	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Dark brownish-gray slightly silty Fine SAND with roots and rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 107+00; Offset 13' Left of Centerline Construction
		1		
		2		
		3		
	Dark brown slightly silty Fine SAND (SP-SM) (A-2-4)	4		
		5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		**CLIENT:** Wade-Trim	
		WATER TABLE: 4.3'	**DATE:** 10/15/03
TECHNICIAN: D.R./R.D.		**DATE:** 10/15/03	**COMPLETION DEPTH:** 6.0'
LOCATION: See "Remarks"		**TEST NUMBER:** HA-6	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brownish-gray slightly silty Fine SAND with roots and rock fragments (SP-SM) (A-2-4)	0 1 2 3		Location: 17th Street West; Sta. 108+00; Offset 10' Left of Centerline Construction
	Dark gray clayey Fine SAND (SC) (A-2-6)	4		
	Pale brown silty, slightly clayey Fine SAND (SM) (A-2-4)	5 6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 4.8'	DATE: 10/15/03
TECHNICIAN: D.R./R.D.		DATE: 10/15/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-7	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brownish-gray slightly silty Fine SAND with roots and rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 109+00; Offset 10' Left of Centerline Construction
		1		
		2		
	Dark gray silty, slightly clayey Fine SAND with rock fragments (SM) (A-2-4)	3		
		4		
		5		
	Dark gray sandy CLAY with dolomite (CH) (A-7-6)	6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: See "Note".	DATE: 10/15/03
TECHNICIAN: D.R./R.D.		DATE: 10/15/03	COMPLETION DEPTH: 3.3' *
LOCATION: See "Remarks"		TEST NUMBER: HA-8	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brownish-gray silty Fine SAND with roots and rock fragments (SM) (A-2-4)	0		Location: 17th Street West; Sta. 111+00; Offset 15' Right of Centerline Construction
		1		
		2		- encountered purple utility detection tape at depth 2.5'
		3		* Refusal of penetration at depth 3.3'
		4		Note: Groundwater not encountered within depth of 3.3'
		5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: See "Note"	DATE: 10/15/03
TECHNICIAN: D.R./R.D.		DATE: 10/15/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-9	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brownish-gray slightly silty Fine SAND with trace of roots (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 112+00; Offset 10' Left of Centerline Construction
		1		
	Light brownish-gray cemented SILT (ML) (A-4)	2		
	Dark grayish-brown silty Fine SAND (SM) (A-2-4)	3		
		4		
	Brownish-gray silty, slightly clayey Fine SAND (SM) (A-2-4)	5		
	Light brown to light gray silty, slightly clayey Fine SAND (SM) (A-2-4)	6		Note: Groundwater not encountered within depth of 6.0'
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: See "Note"	DATE: 10/15/03
TECHNICIAN: D.R./R.D.		DATE: 10/15/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-10	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Dark brownish-gray slightly silty Fine SAND with rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 113+00; Offset 10' Left of Centerline Construction
	Gray slightly silty Fine SAND with dolomite (SP-SM) (A-2-4)	1		
	Dark brownish-gray slightly silty Fine SAND with rock fragments (SP-SM) (A-2-4)	2		
		3		
	Brownish-gray silty Fine SAND (SM) (A-2-4)	4		
	Dark gray clayey Fine SAND (SC) (A-2-6)	5		
		6		Note: Groundwater not encountered within depth of 6.0'
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: See "Note"	DATE: 10/15/03
TECHNICIAN: D.R./R.D.		DATE: 10/15/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-11	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Gray silty Fine SAND with trace of roots and rock fragments (SM) (A-2-4)	0		Location: 17th Street West; Sta. 114+00; Offset 10' Left of Centerline Construction
	Dark gray silty Fine SAND with light gray dolomite (SM) (A-2-4)	3		
	Gray to pale brown silty Fine SAND with light gray dolomite fragments (SM) (A-2-4)	5		
		6		Note: Groundwater not encountered within depth of 6.0'
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: See "Note"	DATE: 10/16/03
TECHNICIAN: D.R./R.D.		DATE: 10/16/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-12	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Dark brown to gray slightly silty Fine SAND with roots (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 115+00; Offset 10' Left of Centerline Construction
		1		
		2		
	Light brown to light gray silty Fine SAND (SM) (A-2-4)	3		
		4		
	Light gray silty Fine SAND (SM) (A-2-4)	5		
	Light gray silty CLAY (CH) (A-7-6)	6		Note: Groundwater not encountered within depth of 6.0'
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida	CLIENT: Wade-Trim
	WATER TABLE: 5.4' / DATE: 10/16/03
TECHNICIAN: D.R./R.D.	DATE: 10/16/03 / COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"	TEST NUMBER: HA-13

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brown to gray slightly silty Fine SAND with roots and rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 116+00; Offset 8' Left of Centerline Construction
		1		
	Dark gray clayey Fine SAND (SC) (A-2-6)	2		
		3		
		4		
		5		
	Dark gray silty CLAY (CH) (A-7-6)	6		Note: Groundwater not encountered within depth of 6.0'
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: See "Note"	DATE: 10/16/03
TECHNICIAN: D.R./R.D.		DATE: 10/16/03	COMPLETION DEPTH: 3.3' *
LOCATION: See "Remarks"		TEST NUMBER: HA-14	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brown to gray slightly silty Fine SAND with roots and rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 117+00; Offset 8' Left of Centerline Construction
		1		
		2		
		3		
		4		* Encountered hollow pipe at depth 3.3' - terminated borehole Note: Groundwater not encountered within depth of 3.3'
		5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 5.7'	DATE: 10/16/03
TECHNICIAN: D.R./R.D.		DATE: 10/16/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-15	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brown to gray slightly silty Fine SAND with roots and rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 118+00; Offset 10' Left of Centerline Construction
		1		
		2		
	Gray to brown silty Fine SAND with rock fragments (SM) (A-2-4)	3		
	Dark brown silty Fine SAND with trace of finely divided organic material (SM) (A-2-4)	4		
		5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 5.8'	DATE: 10/16/03
TECHNICIAN: D.R./R.D.		DATE: 10/16/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-16	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brown to gray slightly silty Fine SAND with trace of roots and rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 119+00; Offset 14' Right of Centerline Construction
		1		
		2		
	Dark gray clayey Fine SAND (SC) (A-2-6)	3		
		4		
		5		
	Gray to light brown sandy CLAY (CH) (A-7-6)			
	Tan silty CLAY (CH) (A-7-6)	6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: See "Note"	DATE: 10/17/03
TECHNICIAN: D.R./R.D.		DATE: 10/17/03	COMPLETION DEPTH: 2.7' *
LOCATION: See "Remarks"		TEST NUMBER: HA-17	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brownish-gray slightly silty Fine SAND (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 121+00; Offset 15' Right of Centerline Construction
	Pale brown slightly silty Fine SAND (SP-SM) (A-2-4)	1		
		2		
		3		* Encountered pink pipe at depth 2.7' - terminated boring
		4		Note: Groundwater not encountered within depth of 2.7'
		5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 3.4'	DATE: 10/17/03
TECHNICIAN: D.R./R.D.		DATE: 10/17/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-18	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Light brown to light gray slightly silty Fine SAND with rock fragments and trace of roots (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 123+00; Offset 16' Right of Centerline Construction
		1		
	Gray silty CLAY (CH) (A-7-6)	2		
		3		
	Dark brown silty Fine SAND with cemented fragments (SM) (A-2-4)	4		
	Light brown Fine SAND (SP) (A-3)	5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 3.9'	DATE: 10/17/03
TECHNICIAN: D.R./R.D.		DATE: 10/17/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-19	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brown slightly silty Fine SAND with trace of roots and rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 124+00; Offset 8' Left of Centerline Construction
		1		
		2		
		3		
	Dark brown and light gray slightly silty Fine SAND (SP-SM) (A-2-4)	4		
	Light brown Fine SAND (SP) (A-3)	5		
	Pale brown sandy CLAY (CH) (A-7-6)	6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 3.5'	DATE: 10/17/03
TECHNICIAN: D.R./R.D.		DATE: 10/17/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-20	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brown to gray slightly silty Fine SAND with roots and rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 125+00; Offset 16' Right of Centerline Construction
	Light brown and tan CLAY (CH) (A-7-6)	1		
		2		
	Dark brown slightly silty Fine SAND (SP-SM) (A-2-4)	3		
	Brown to light brown slightly silty Fine SAND (SP-SM) (A-2-4)	4		
	Pale brown Fine SAND (SP) (A-3)	5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 3.7'	DATE: 10/18/03
TECHNICIAN: R.J./R.D.		DATE: 10/18/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-21	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Gray to brown slightly silty Fine SAND with trace of roots and rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 126+00; Offset 15' Right of Centerline Construction
		1		
		2		
	Dark gray slightly silty Fine SAND (SP-SM) (A-2-4)	3		
	Dark reddish-brown slightly silty Fine SAND (SP-SM) (A-2-4)			
	Pale brown Fine SAND (SP) (A-3)	4		
		5		
	Pale brown to brown silty Fine SAND (SM) (A-2-4)			
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida	**CLIENT:** Wade-Trim
TECHNICIAN: R.J./R.D.	**WATER TABLE:** 3.9' / **DATE:** 10/17/03
LOCATION: See "Remarks"	**DATE:** 10/17/03 / **COMPLETION DEPTH:** 6.0'
	TEST NUMBER: HA-22

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brown to gray slightly silty Fine SAND with shell fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 128+00; Offset 16' Right of Centerline Construction
	Brown slightly silty Fine SAND with shell fragments (SP-SM) (A-2-4)	1		
	Light gray to pale brown Fine SAND (SP) (A-3)	2		
		3		
	Dark brown to dark gray slightly organic, slightly silty Fine SAND (SP-SM) (A-2-4)	4		
	Brown to dark brown slightly silty Fine SAND (SP-SM) (A-2-4)	5		
	Pale brown to brown Fine SAND (SP) (A-3)	6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida	CLIENT: Wade-Trim
	WATER TABLE: 3.8' / DATE: 10/17/03
TECHNICIAN: R.J./R.D.	DATE: 10/17/03 / COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"	TEST NUMBER: HA-23

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brown slightly silty Fine SAND with trace of roots (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 129+00; Offset 15' Right of Centerline Construction
		1		
	Light gray Fine SAND (SP) (A-3)	2		
		3		
	Brown slightly silty Fine SAND (SP-SM) (A-2-4)	4		
	Pale brown Fine SAND (SP) (A-3)	5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 4.0'	DATE: 10/17/03
TECHNICIAN: R.J./R.D.		DATE: 10/17/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-24	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Gray to brown slightly silty Fine SAND with trace of roots and rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 131+00; Offset 13' Right of Centerline Construction
		1		
	Light gray Fine SAND (SP) (A-3)	2		
	Brown slightly silty Fine SAND (SP-SM) (A-2-4)	3		
		4		
	Pale brown slightly silty Fine SAND (SP-SM) (A-2-4)	5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 3.7'	DATE: 10/17/03
TECHNICIAN: R.J./R.D.		DATE: 10/17/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-25	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Light brown to light gray Fine SAND with trace of shell fragments (SP) (A-3)	0		Location: 17th Street West; Sta. 133+00; Offset 13' Right of Centerline Construction
		1		
	Light gray Fine SAND (SP) (A-3)	2		
		3		
	Dark brown Fine SAND (SP) (A-3)	4		
		5		
	Pale brown Fine SAND (SP) (A-3)	6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		**CLIENT:** Wade-Trim	
		WATER TABLE: 3.8'	**DATE:** 10/18/03
TECHNICIAN: R.J./R.D.		**DATE:** 10/18/03	**COMPLETION DEPTH:** 6.0'
LOCATION: See "Remarks"		**TEST NUMBER:** HA-26	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Grayish-brown slightly silty Fine SAND with rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 134+00; Offset 12' Left of Centerline Construction
		1		
	Brown to reddish-brown Fine SAND (SP) (A-3)	2		
	Gray Fine SAND (SP) (A-3)	3		
	Pale brown Fine SAND (SP) (A-3)	4		
		5		
	Pale brownish-gray clayey Fine SAND (SC) (A-2-6)	6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida	CLIENT: Wade-Trim
	WATER TABLE: 4.2' / DATE: 10/18/03
TECHNICIAN: R.J./R.D.	DATE: 10/18/03 / COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"	TEST NUMBER: HA-27

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Gray to brown slightly silty Fine SAND with roots and rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 135+00; Offset 12' Right of Centerline Construction
	Pale brown slightly silty Fine SAND (SP-SM) (A-2-4)	1		
	Light gray Fine SAND (SP) (A-3)	2		
		3		
		4		
	Dark gray slightly silty Fine SAND (SP-SM) (A-2-4)	5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 3.6'	DATE: 10/18/03
TECHNICIAN: R.J./R.D.		DATE: 10/18/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-28	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brownish-gray slightly silty Fine SAND with rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 136+00; Offset 12' Right of Centerline Construction
		1		
	Pale brownish-gray Fine SAND (SP) (A-3)	2		
	Gray Fine SAND (SP) (A-3)			
	Brownish-gray Fine SAND (SP) (A-3)	3		
	Brown Fine SAND (SP) (A-3)	4		
	Light brown Fine SAND (SP) (A-3)	5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 3.8'	DATE: 10/18/03
TECHNICIAN: R.J./R.D.		DATE: 10/18/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-29	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Gray to brown slightly silty Fine SAND with roots and rock fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 138+00; Offset 12' Right of Centerline Construction
		1		
	Light gray to brown Fine SAND (SP) (A-3)	2		
		3		
	Dark reddish-brown weakly cemented, slightly silty Fine SAND (SP-SM) (A-2-4)	4		
	Pale brown Fine SAND (SP) (A-3)	5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		**CLIENT:** Wade-Trim	
		WATER TABLE: 3.7'	**DATE:** 10/18/03
TECHNICIAN: R.J./R.D.		**DATE:** 10/18/03	**COMPLETION DEPTH:** 5.0' *
LOCATION: See "Remarks"		**TEST NUMBER:** HA-30	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Pale brownish-gray slightly silty Fine SAND with shell fragments (SP-SM) (A-2-4)	0		Location: 17th Street West; Sta. 139+00; Offset 13' Right of Centerline Construction
	Gray Fine SAND (SP) (A-3)	1		
		2		
	Dark reddish-brown slightly silty Fine SAND (SP-SM) (A-2-4)	3		
	Pale brown Fine SAND (SP) (A-3)	4		
		5		* Encountered obstruction at depth 5.0' - terminated boring
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		**CLIENT:** Wade-Trim	
		WATER TABLE: 2.9'	**DATE:** 10/14/03
TECHNICIAN: R.J./P.T.		**DATE:** 10/14/03	**COMPLETION DEPTH:** 6.0'
LOCATION: See "Remarks"		**TEST NUMBER:** HA-31	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Light gray CLAY with limerock nodules (CH) (A-7-6)	0		Location: New Bayshore Road; Sta. 301+00; Offset 10' Left of Centerline Construction
	Dark brown to gray silty Fine SAND (SM) (A-2-4)	1		- trace of roots from depth 0.8' - 2.0'
		2		
	Light gray clayey Fine SAND (SC) (A-2-6)	3		
		4		
	Light gray CLAY with limerock nodules (CH) (A-7-6)	5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 5.0'	DATE: 10/14/03
TECHNICIAN: R.J./P.T.		DATE: 10/14/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-32	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Dark brown slightly silty Fine SAND with small rock fragments (SP-SM) (A-2-4)	0		Location: New Bayshore Road; Sta. 302+00; Offset 10' Right of Centerline Construction
	Dark brown silty Fine SAND with trace of rock and red brick fragments (SM) (A-2-4)	1		
	Gray silty, slightly clayey Fine SAND (SM) (A-2-4)	2		
	Dark gray and light gray silty CLAY (CH) (A-7-6)	3		
	Dark gray slightly organic, silty Fine SAND (SM) (A-2-4)	4		
	Dark gray silty Fine SAND (SM) (A-2-4)	5		
	Light gray CLAY (CH) (A-7-6)	6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 5.0'	DATE: 10/14/03
TECHNICIAN: R.J./P.T.		DATE: 10/14/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-33	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brown slightly silty Fine SAND with trace of white CLAY (SP-SM) (A-2-4)	0		Location: New Bayshore Road; Sta. 303+50; Offset 10' Left of Centerline Construction
	Brown to light gray silty Fine SAND with trace of CLAY (SM) (A-2-4)	1		
	Dark brown to dark gray slightly organic, silty, clayey Fine SAND (SM-SC) (A-2-6)	2		
		3		
		4		
	Light gray CLAY with limerock nodules (CH) (A-7-6)	5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida	**CLIENT:** Wade-Trim
TECHNICIAN: R.J./D.R.	**WATER TABLE:** 5.2' — **DATE:** 10/16/03
LOCATION: See "Remarks"	**DATE:** 10/16/03 — **COMPLETION DEPTH:** 6.0'
	TEST NUMBER: HA-34

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Dark brown to gray slightly silty Fine SAND with roots and rock fragments (SP-SM) (A-2-4)	0		Location: New Bayshore Road; Sta. 305+20; Offset 15' Right of Centerline Construction
		1		
		2		
	Gray and tan silty clayey Fine SAND with dolomite (SM-SC) (A-2-6)	3		
	Dark gray silty Fine SAND (SM) (A-2-4)	4		
	Dark brown CLAY (CH) (A-7-6)	5		
	Light grayish-tan CLAY (CH) (A-7-6)	6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida	CLIENT: Wade-Trim
	WATER TABLE: 5.0' / DATE: 10/14/03
TECHNICIAN: R.J./P.T.	DATE: 10/14/03 / COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"	TEST NUMBER: HA-32

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Dark brown slightly silty Fine SAND with small rock fragments (SP-SM) (A-2-4)	0		Location: New Bayshore Road; Sta. 302+00; Offset 10' Right of Centerline Construction
	Dark brown silty Fine SAND with trace of rock and red brick fragments (SM) (A-2-4)	1		
	Gray silty, slightly clayey Fine SAND (SM) (A-2-4)	2		
	Dark gray and light gray silty CLAY (CH) (A-7-6)	3		
	Dark gray slightly organic, silty Fine SAND (SM) (A-2-4)	4		
	Dark gray silty Fine SAND (SM) (A-2-4)			
	Light gray CLAY (CH) (A-7-6)	5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida	CLIENT: Wade-Trim
TECHNICIAN: R.J./P.T.	WATER TABLE: 5.0' / DATE: 10/14/03
LOCATION: See "Remarks"	DATE: 10/14/03 / COMPLETION DEPTH: 6.0'
	TEST NUMBER: HA-33

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brown slightly silty Fine SAND with trace of white CLAY (SP-SM) (A-2-4)	0		Location: New Bayshore Road; Sta. 303+50; Offset 10' Left of Centerline Construction
	Brown to light gray silty Fine SAND with trace of CLAY (SM) (A-2-4)	1		
	Dark brown to dark gray slightly organic, silty, clayey Fine SAND (SM-SC) (A-2-6)	2		
		3		
		4		
	Light gray CLAY with limerock nodules (CH) (A-7-6)	5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida	**CLIENT:** Wade-Trim
TECHNICIAN: R.J./D.R.	**WATER TABLE:** 5.2' — **DATE:** 10/16/03
LOCATION: See "Remarks"	**DATE:** 10/16/03 — **COMPLETION DEPTH:** 6.0'
	TEST NUMBER: HA-34

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Dark brown to gray slightly silty Fine SAND with roots and rock fragments (SP-SM) (A-2-4)	0		Location: New Bayshore Road; Sta. 305+20; Offset 15' Right of Centerline Construction
		1		
		2		
	Gray and tan silty clayey Fine SAND with dolomite (SM-SC) (A-2-6)	3		
	Dark gray silty Fine SAND (SM) (A-2-4)	4		
	Dark brown CLAY (CH) (A-7-6)	5		
	Light grayish-tan CLAY (CH) (A-7-6)	6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		CLIENT: Wade-Trim	
		WATER TABLE: 4.8'	DATE: 10/16/03
TECHNICIAN: R.J./D.R.		DATE: 10/16/03	COMPLETION DEPTH: 6.0'
LOCATION: See "Remarks"		TEST NUMBER: HA-35	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brown to gray slightly silty Fine SAND (SP-SM) (A-2-4)	0		Location: New Bayshore Road; Sta. 306+40; Offset 15' Left of Centerline Construction
	Gray and brown clayey Fine SAND with dolomite (SC) (A-2-6)	1		
		2		
		3		
	Dark gray highly organic, clayey Fine SAND (Pt) (A-8)	4		
		5		
	Dark brown clayey Fine SAND with light gray dolomite (SC) (A-2-6)	6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida		**CLIENT:** Wade-Trim	
		WATER TABLE: 4.8'	**DATE:** 10/17/03
TECHNICIAN: R.J./D.R.		**DATE:** 10/17/03	**COMPLETION DEPTH:** 4.8' *
LOCATION: See "Remarks"		**TEST NUMBER:** HA-36	

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	3" Asphalt Pavement	0		Location: New Bayshore Road; Sta. 308+00; Offset 15' Right of Centerline Construction
	7-1/8" Concrete			
	Dark brown silty Fine SAND with shell fragments (SM) (A-2-4)	1		
	Dark gray clayey Fine SAND (SC) (A-2-6)	2		
		3		
	Pale brown slightly silty Fine SAND with trace of shell fragments (SP-SM) (A-2-4)	4		
		5		* Encountered obstruction (possible pipe) at depth 4.8' - terminated boring
		6		
		7		

APPENDIX B - STORMWATER MANAGEMENT AREA BORINGS

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida	CLIENT: Wade-Trim
	WATER TABLE: 2.3' / DATE: 10/8/03
TECHNICIAN: B.B.	DATE: 10/8/03 / COMPLETION DEPTH: 5.5' *
LOCATION: See Plate I	TEST NUMBER: B-1

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Dark brown organic, silty Fine SAND with roots (SM/Pt) (A-8)	0		
		1		
	Light gray slightly sandy CLAY (CH) (A-7-6)	2		
	Light cream colored CLAY with rock fragments (CH) (A-7-6)	3		
	Light green CLAY (CH) (A-7-6)	4		
		5		
		6		* Refusal of penetration at depth 5.5'
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING LOG

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41 Manatee County, Florida	CLIENT: Wade-Trim
	WATER TABLE: 3.5' / DATE: 10/8/03
TECHNICIAN: B.B.	DATE: 10/8/03 / COMPLETION DEPTH: 6.0'
LOCATION: See Plate I	TEST NUMBER: B-2

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	REMARKS
	Brown Fine SAND with roots and seams of light gray CLAY (SP/CH) (A-3/A-7-6)	0		
		1		
	Dark brown organic, silty Fine SAND (SM/Pt) (A-8)	2		
	Dark brown silty, slightly clayey Fine SAND (SM) (A-2-4)			
	Light gray cemented CLAY (CL) (A-7-6)	3		
		4		
		5		
		6		
		7		

DRIGGERS ENGINEERING SERVICES INCORPORATED

Project No. DES 034798 **BORING NO. B-3**

Project 17th Street West from Business U.S. 41 to U.S. 41, Manatee County, FL

Location See Plate I Foreman B.B.

Completion Depth 10.5' Date 10/8/03 Depth To Water 2.7' Time Date 10/8/03

DEPTH, FT	SYMBOL	SAMPLES	SOIL DESCRIPTION	BLOWS ON SAMPLER PER 6" OR PEN. STR.	STANDARD PENETRATION TEST BLOWS/FT. ON 2" O.D. SAMPLER-140 LB. HAMMER, 30" DROP
			SURF. EL:		10 20 40 60 80
0			Dark gray organic, sandy SILT with roots (Pt) (A-8)		
			Firm light greenish-gray sandy CLAY (CH) (A-7-6)	1/3/3	
5			Hard light gray cemented SILT (ML) (A-4)	4/50*	* 0.2' Penetration
				20/31/50*	* 0.3' Penetration
			- very stiff seam at depth 8.0'	11/8/7	
10				50*	* 0.5' Penetration
15					
20					
25					
30					

Remarks Borehole Grouted

Casing Length

DRIGGERS ENGINEERING SERVICES INCORPORATED

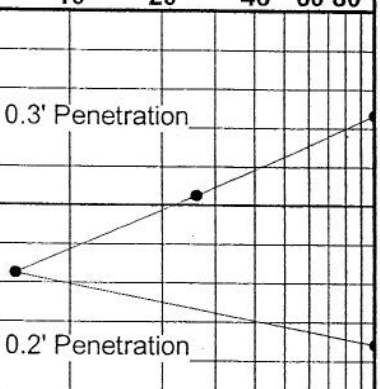
Project No. DES 034798 **BORING NO. B-4**

Project 17th Street West from Business U.S. 41 to U.S. 41, Manatee County, FL

Location See Plate I Foreman B.B.

Completion Depth 10.4' Date 10/8/03 Depth To Water 2.7' Time Date 10/8/03

DEPTH, FT	SYMBOL	SAMPLES	SOIL DESCRIPTION	BLOWS ON SAMPLER PER 6" OR PEN. STR.	STANDARD PENETRATION TEST BLOWS/FT. ON 2" O.D. SAMPLER-140 LB. HAMMER, 30" DROP
			SURF. EL:		10 20 40 60 80
0			Dark brown organic Fine SAND (SP-SM/Pt) (A-8)		
			Dark gray slightly silty Fine SAND (SP-SM) (A-2-4)		
			Hard to very stiff light gray and yellow to light gray cemented SILT (ML) (A-4)	2/5/50*	* 0.3' Penetration
5				25/21/5	
			Soft light gray weakly cemented SILT (MH) (A-4)	3/2/2	
			Very dense light gray Fine SAND with seams of cemented SILT (SP/ML) (A-3/A-4)	10/28/50*	* 0.2' Penetration
10			- 50% loss of circulation at depth 10.0'	50*	* 0.4' Penetration
			Hard light gray and yellow cemented SILT (ML) (A-4)		
15					
20					
25					
30					



Remarks Borehole Grouted

Casing Length

DRIGGERS ENGINEERING SERVICES INCORPORATED

Project No. DES 034798 **BORING NO. B-5**

Project 17th Street West from Business U.S. 41 to U.S. 41, Manatee County, FL

Location See Plate I Foreman B.B.

Completion Depth 11.5' Date 10/8/03 Depth To Water 2.6' Time _____ Date 10/8/03

DEPTH, FT	SYMBOL	SAMPLES	SOIL DESCRIPTION	BLOWS ON SAMPLER PER 6" OR PEN. STR.	STANDARD PENETRATION TEST BLOWS/FT. ON 2" O.D. SAMPLER-140 LB. HAMMER, 30" DROP
			SURF. EL:		10 20 40 60 80
0			Brown Fine SAND with roots, brick and concrete fragments (SP) (A-3)		
			Very loose dark brown slightly silty Fine SAND with brick, concrete and limerock fragments (SP-SM) (A-2-4)	3/1/1	
5			Soft dark gray sandy CLAY (CH) (A-7-6)	1/2/2	
			Hard light gray cemented SILT (ML) (A-4)	3/17/50*	* 0.1' Penetration
				50*	* 0.1' Penetration
10			- phosphatic at depth 10.0'	34/30/50*	* 0.5' Penetration
15					
20					
25					
30					

Remarks Borehole Grouted

Casing Length _____

DRIGGERS ENGINEERING SERVICES INCORPORATED

Project No. DES 034798 **BORING NO. B-6**

Project 17th Street West from Business U.S. 41 to U.S. 41, Manatee County, FL

Location See Plate I Foreman B.B.

Completion Depth 12.5' Date 10/8/03 Depth To Water 2.6' Time Date 10/8/03

DEPTH, FT	SYMBOL	SAMPLES	SOIL DESCRIPTION	BLOWS ON SAMPLER PER 6" OR PEN. STR.	STANDARD PENETRATION TEST BLOWS/FT. ON 2" O.D. SAMPLER-140 LB. HAMMER, 30" DROP
			SURF. EL:		10 20 40 60 80
0			Dark brown organic Fine SAND with roots (SP-SM/Pt) (A-8)		
			Light gray silty Fine SAND with shell fragments (SM) (A-2-4)	3/5/13	
			Very stiff light green cemented SILT (ML) (A-4)	9/7/10	
5			Very stiff to hard light green to light greenish-gray cemented CLAY (CL) (A-7-6)	10/38/50*	* 0.2' Penetration
			Very stiff to hard light yellowish-gray to light gray cemented SILT (ML) (A-4)	50*	* 0.2' Penetration
10				8/15/8	
			- 100% loss of circulation, - phosphatic at depth 12.0'	50*	* 0.5' Penetration
15					
20					
25					
30					

Remarks Borehole Grouted

Casing Length

DRIGGERS ENGINEERING SERVICES INCORPORATED

Project No. DES 034798 **BORING NO. B-7**

Project 17th Street West from Business U.S. 41 to U.S. 41, Manatee County, FL

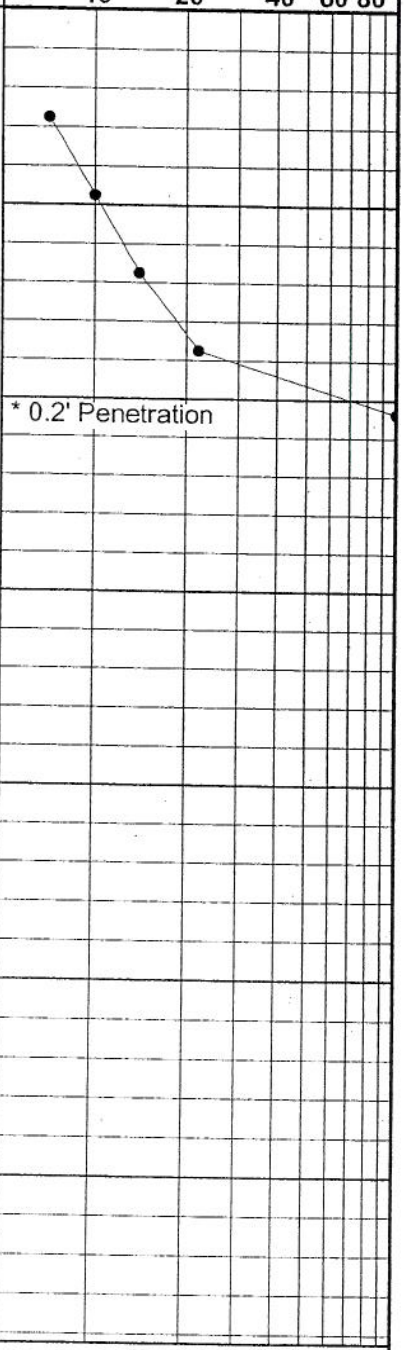
Location See Plate I Foreman B.B.

Completion Depth 10.8' Date 10/8/03 Depth To Water 2.7' Time Date 10/8/03

DEPTH, FT	SYMBOL	SAMPLES	SOIL DESCRIPTION	BLOWS ON SAMPLER PER 6" OR PEN. STR.
			SURF. EL:	
0			Dark brown silty, slightly clayey Fine SAND (SM) (A-2-4)	
			Dark brown Fine SAND with rock fragments (SP) (A-3)	2/1/4
			Firm brown CLAY with rock fragments (CH) (A-7-6)	
5			Stiff gray cemented CLAY (CL) (A-7-6)	6/5/5
			Stiff to very stiff light greenish-gray to light green CLAY (CH) (A-7-6)	5/6/8
				4/6/16
10			Hard light green CLAY with seams of brown cemented SILT (CH/ML) (A-7-6/A-4)	12/50*
15				
20				
25				
30				

STANDARD PENETRATION TEST BLOWS/FT. ON 2" O.D. SAMPLER-140 LB. HAMMER, 30" DROP

10 20 40 60 80



Remarks Borehole Grouted

Casing Length

DRIGGERS ENGINEERING SERVICES INCORPORATED

Project No. DES 034798 **BORING NO. B-8**

Project 17th Street West from Business U.S. 41 to U.S. 41, Manatee County, FL

Location See Plate I Foreman B.B.

Completion Depth 12.1' Date 10/8/03 Depth To Water 2.8' Time Date 10/8/03

DEPTH, FT	SYMBOL	SAMPLES	SOIL DESCRIPTION	BLOWS ON SAMPLER PER 6" OR PEN. STR.	STANDARD PENETRATION TEST BLOWS/FT. ON 2" O.D. SAMPLER-140 LB. HAMMER, 30" DROP
			SURF. EL:		10 20 40 60 80
0			Brown silty, slightly clayey Fine SAND (SM) (A-2-4)		
			Light gray clayey Fine SAND (SC) (A-2-6)		
			Dark gray Fine SAND (SP) (A-3)	2/1/2	
			Soft light gray sandy CLAY (CH) (A-7-6)		
5			Stiff to very stiff light gray cemented CLAY (CL) (A-7-6)	2/4/5	
				6/10/13	
			Very stiff light greenish-gray CLAY (CH) (A-7-6)	6/9/14	
10			Hard light green cemented CLAY (CL) (A-7-6)	6/10/50*	* 0.5' Penetration
			Hard yellowish-brown cemented SILT (ML) (A-4)	50*	* 0.1' Penetration
15					
20					
25					
30					

Remarks Borehole Grouted

Casing Length

APPENDIX C - LABORATORY TEST RESULTS
- SUMMARY OF LABORATORY RESULTS
- GRAINSIZE DISTRIBUTION CURVES
- LIMEROCK BEARING RATIO TESTS

APPENDIX C - LABORATORY TEST RESULTS
- SUMMARY OF LABORATORY RESULTS

SUMMARY OF LABORATORY TEST RESULTS

BORING NO.	DEPTH (ft)	DESCRIPTION	W %	Y_d (pcf)	G_s	ATTERBERG LIMITS			P.P. (tsf)	U.C.	CON	G.S.	ORG (%)	pH	Cl. (ppm)	SO_4 (ppm)	RES. (Ohm-cm)
						LL	PL	SL									
B-3	0.0 - 2.0	Dark gray organic, sandy SILT with roots											7.3				
HA-2	1.8 - 4.0	Pale brown slightly silty Fine SAND										*					
HA-6	3.3 - 5.0	Dark gray clayey Fine SAND	23.0			30	15					** 23.7					
HA-10	3.2 - 5.0	Brownish-gray silty Fine SAND										*					
HA-13	1.9 - 5.1	Dark gray clayey Fine SAND	19.0			39	15					** 33.8					
HA-16	3.0 - 5.2	Dark gray clayey Fine SAND	20.5			36	16					** 28.0					
HA-18	1.6 - 3.8	Gray silty CLAY	30.1			60	20					*					
HA-20	2.6 - 3.2	Dark brown slightly silty Fine SAND										*					
HA-21	5.0 - 6.0	Pale brown to brown silty Fine SAND	19.4			NP	NP					*					
HA-24	0.0 - 1.6	Gray to brown slightly silty Fine SAND with trace of roots and rock fragments										*					
HA-31	3.0 - 5.0	Light gray clayey Fine SAND	18.4			25	15					** 31.1					
HA-32	3.0 - 3.8	Dark gray slightly organic, silty Fine SAND										*	3.8				
HA-34	2.2 - 4.0	Gray and tan silty Fine SAND with dolomite										*					
HA-35	3.7 - 5.4	Dark gray highly organic, clayey Fine SAND	30.3			48	23					*	13.0				
HA-36	2.0 - 3.8	Dark gray clayey Fine SAND	12.7			29	19					*					

W % = Water Content
Y_d (pcf) = Dry Density
G_S = Specific Gravity
LL = Liquid Limit
PL = Plastic Limit
SL = Shrinkage Limit
P.P. (tsf) = Pocket Penetrometer
U.C. = Unconfined Compression

Con. = Consolidation Test
G.S. (+1) = Grainsize Analysis (Hydrometer)
ORG. (%) = Organic Content
Cl. (ppm) = Total Chloride
SO_4 (ppm) = Total Sulfate
RES. (ohm-cm) = Lab Resistivity
* = See Test Curves
** = Percent Passing No. 200 Sieve

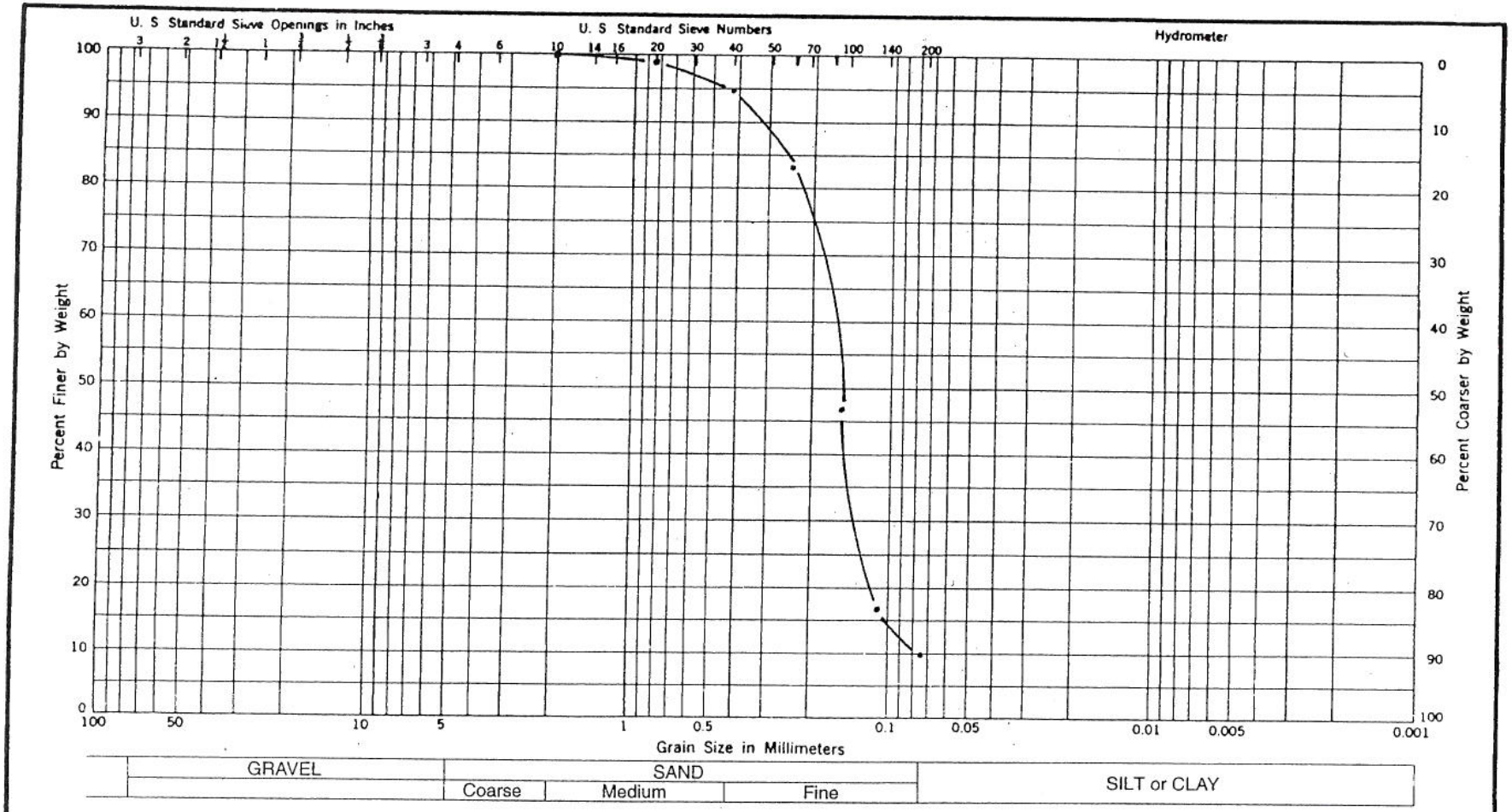
CLIENT: Wade-Trim

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41, Manatee County, Florida

FILE: DES 034798

APPENDIX C - LABORATORY TEST RESULTS
- GRAINSIZE DISTRIBUTION CURVES

DRIGGERS ENGINEERING SERVICES, INC.



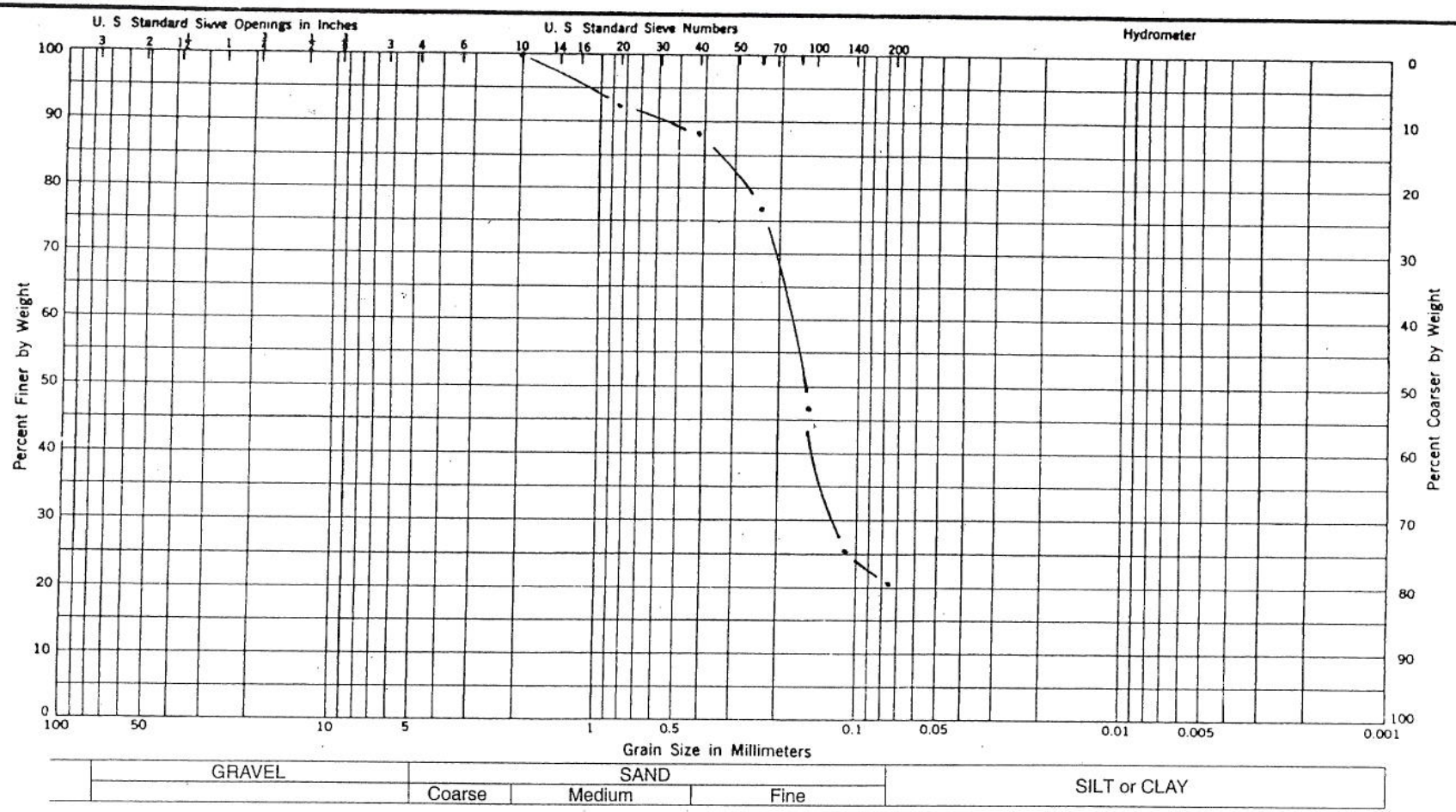
Number	Depth	Natural Moisture	L. L.	P. L.	P. I.	Classification
HA-2	1.8' - 4.0'					Pale brown slightly silty Fine SAND

CLIENT: Wade-Trim

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41, Manatee County, Florida

FILE: DES 034798

DRIGGERS ENGINEERING SERVICES, INC.



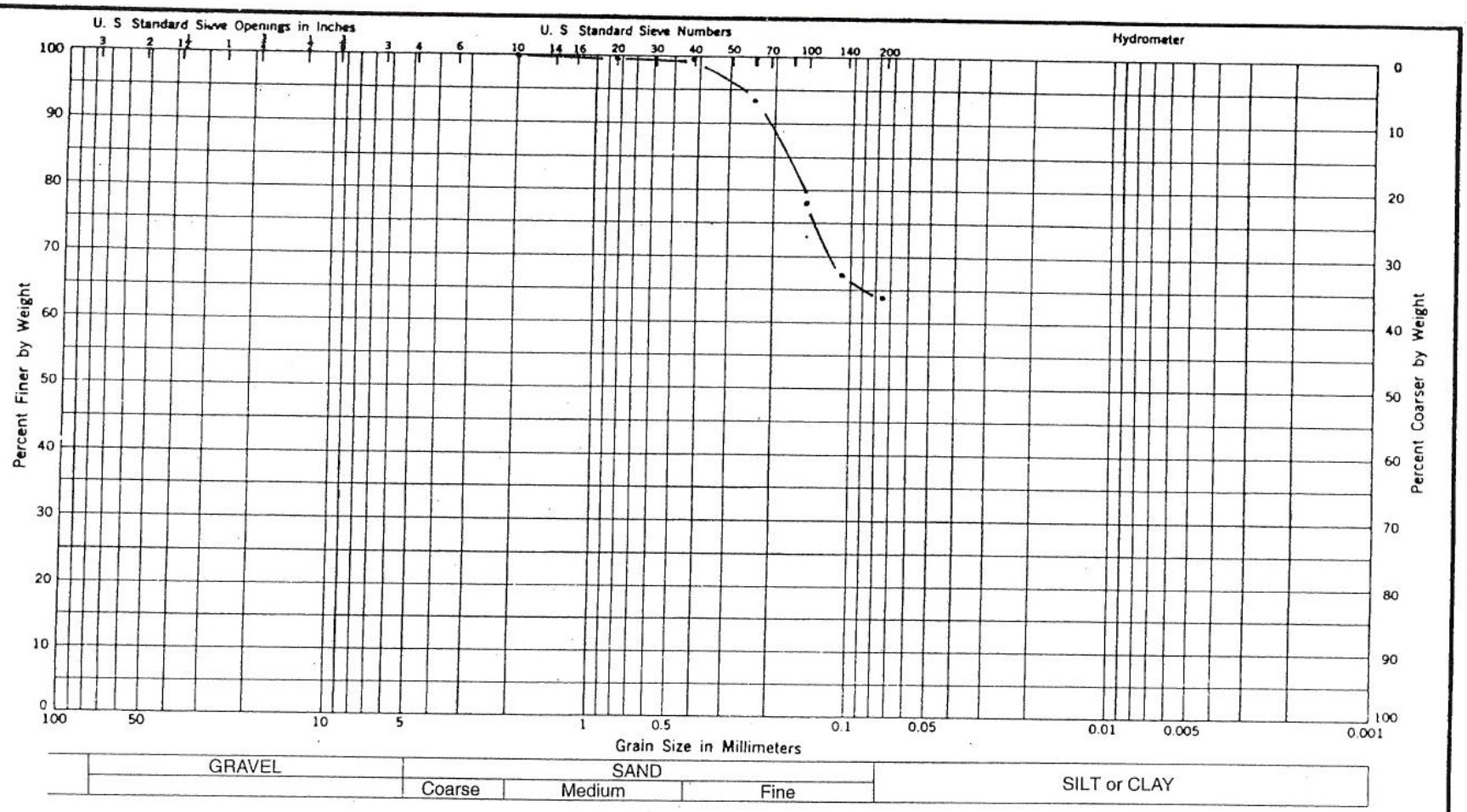
Number	Depth	Natural Moisture	L. L.	P. L.	P. I.	Classification
HA-10	3.2' - 5.0'					Brownish-gray silty Fine SAND

CLIENT: Wade-Trim

PROJECT: 17th Street West
from Business U.S. 41 to U.S. 41,
Manatee County, Florida

FILE: DES 034798

DRIGGERS ENGINEERING SERVICES, INC.



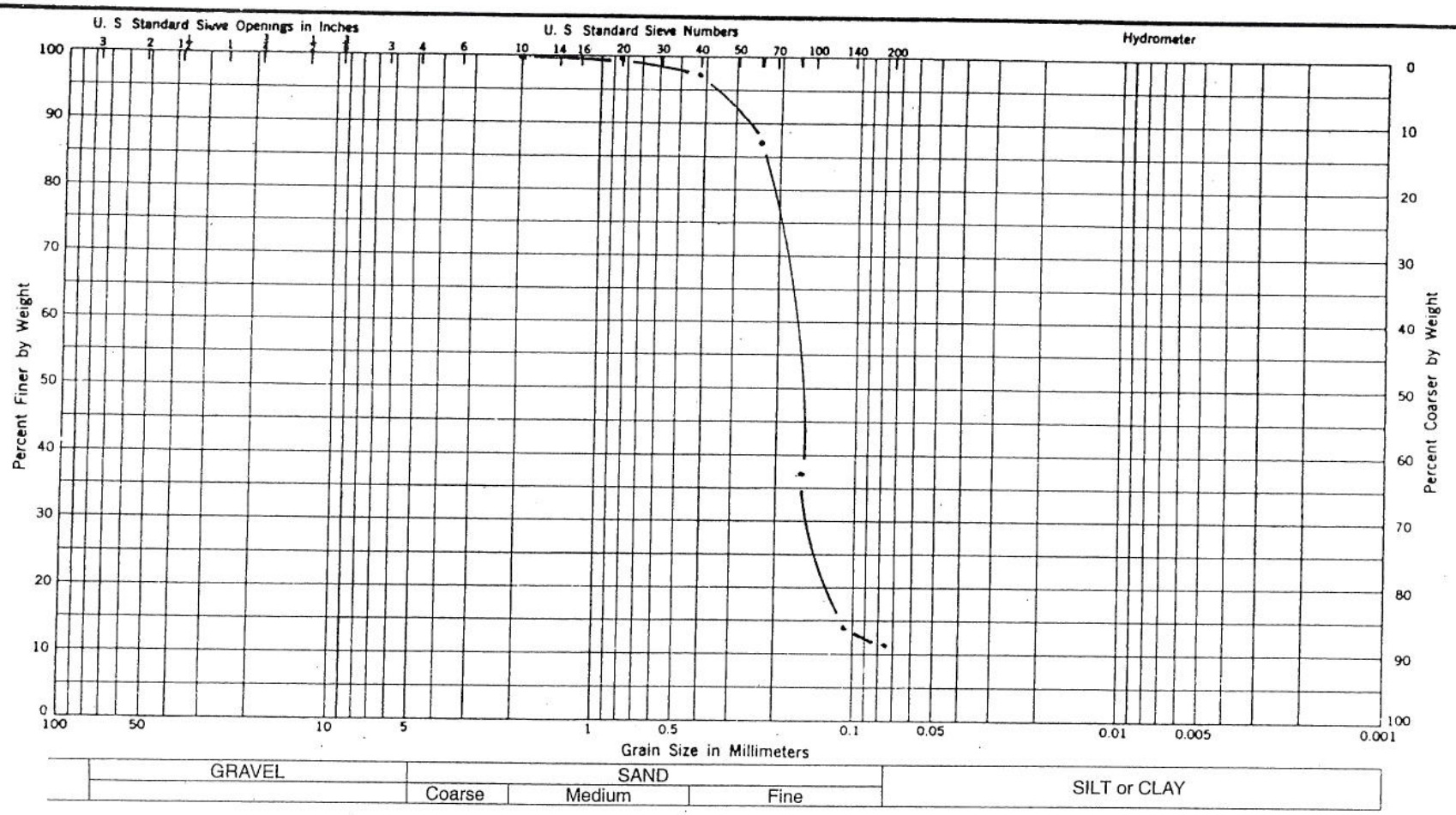
Number	Depth	Natural Moisture	L L.	P. L.	P. I.	Classification
HA-18	1.6' - 3.8'					Gray silty CLAY

CLIENT: Wade-Trim

PROJECT: 17th Street West
from Business U.S. 41 to U.S. 41,
Manatee County, Florida

FILE: DES 034798

DRIGGERS ENGINEERING SERVICES, INC.



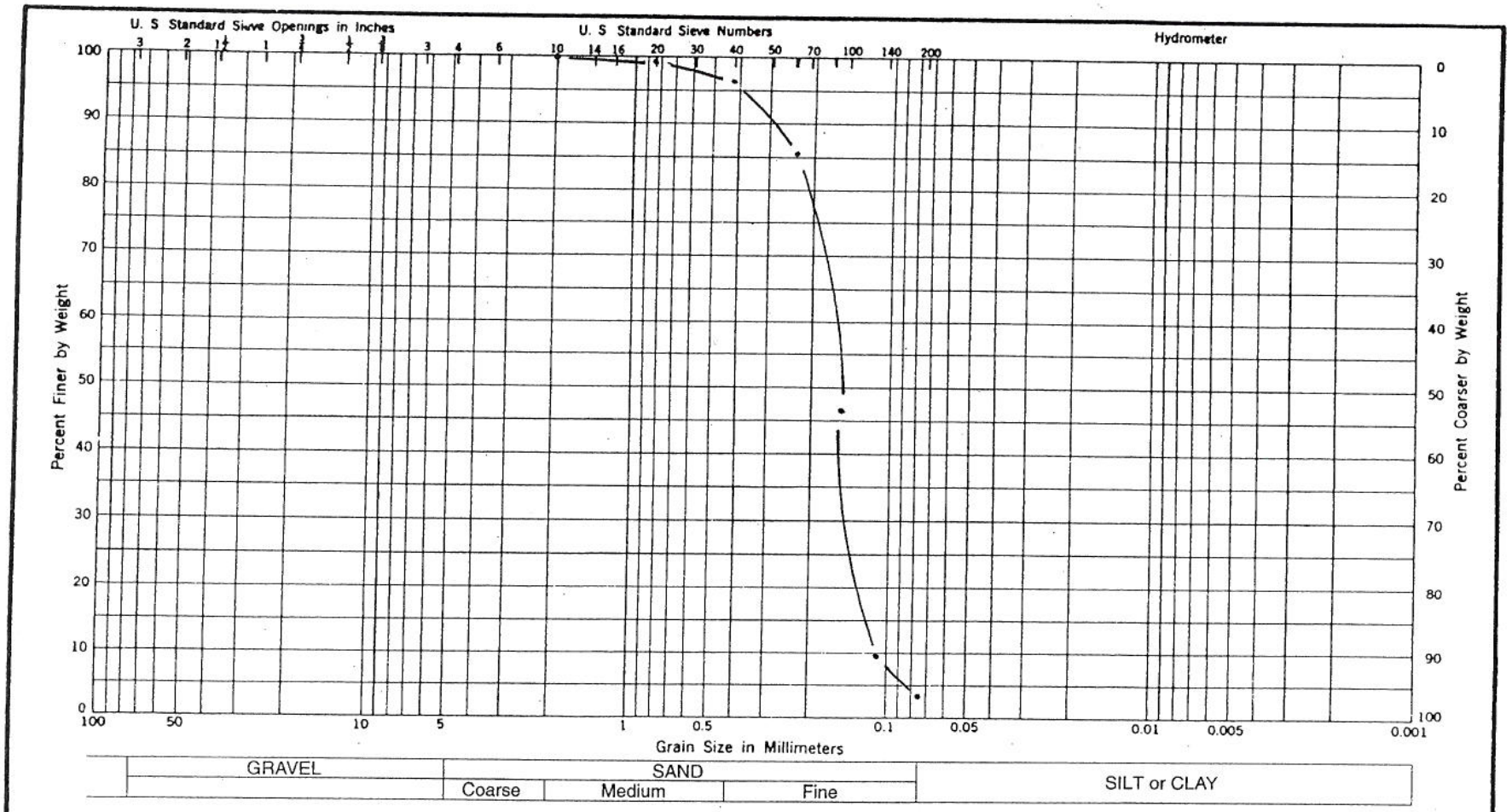
Number	Depth	Natural Moisture	L. L.	P. L.	P. I.	Classification
HA-20	2.6' - 3.2'					Dark brown slightly silty Fine SAND

CLIENT: Wade-Trim

PROJECT: 17th Street West
from Business U.S. 41 to U.S. 41,
Manatee County, Florida

FILE: DES 034798

DRIGGERS ENGINEERING SERVICES, INC.



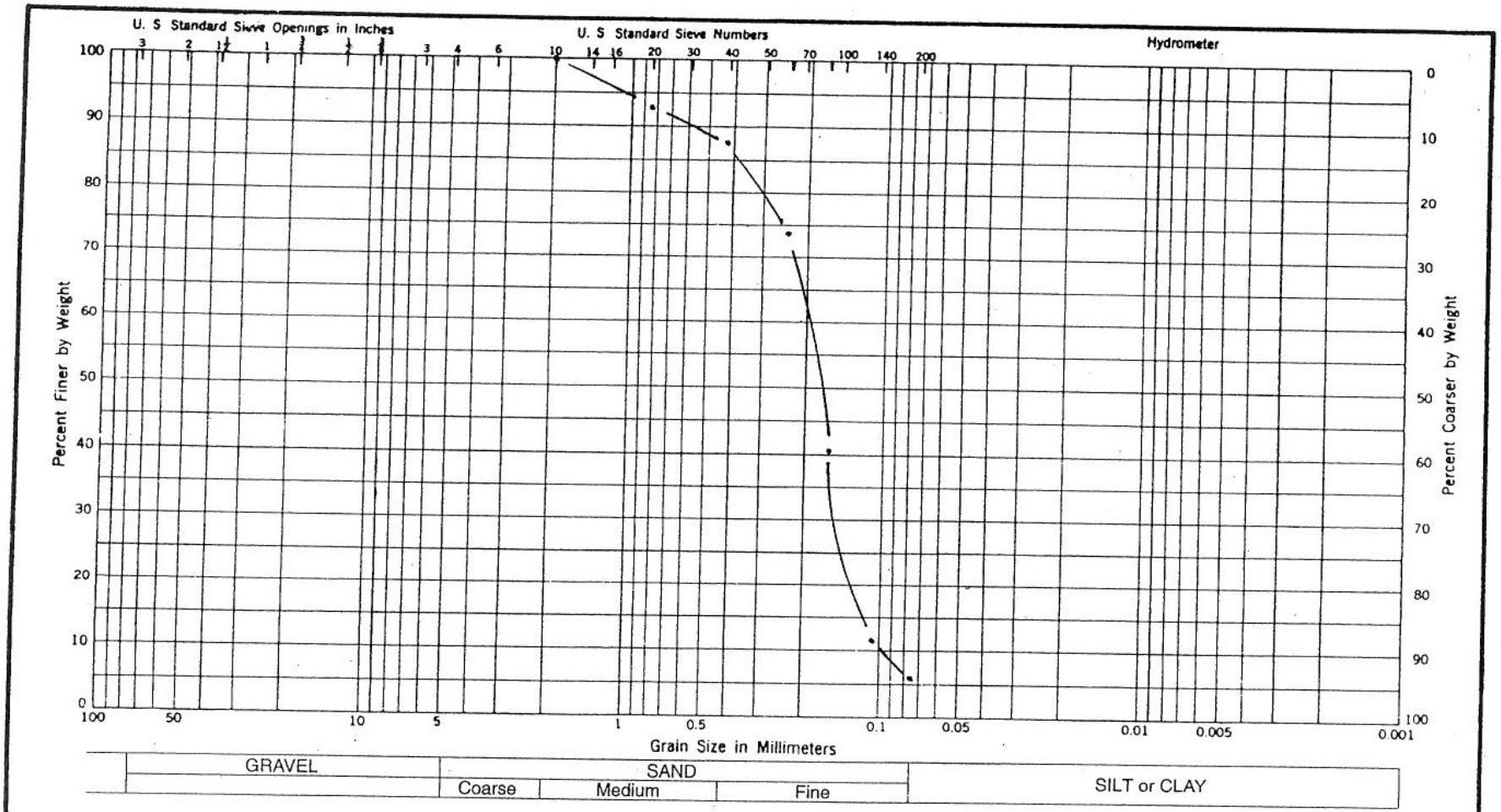
Number	Depth	Natural Moisture	L. L.	P. L.	P. I.	Classification
HA-21	5.0' - 6.0'					Pale brown to brown silty Fine SAND

CLIENT: Wade-Trim

PROJECT: 17th Street West
from Business U.S. 41 to U.S. 41,
Manatee County, Florida

FILE: DES 034798

DRIGGERS ENGINEERING SERVICES, INC.



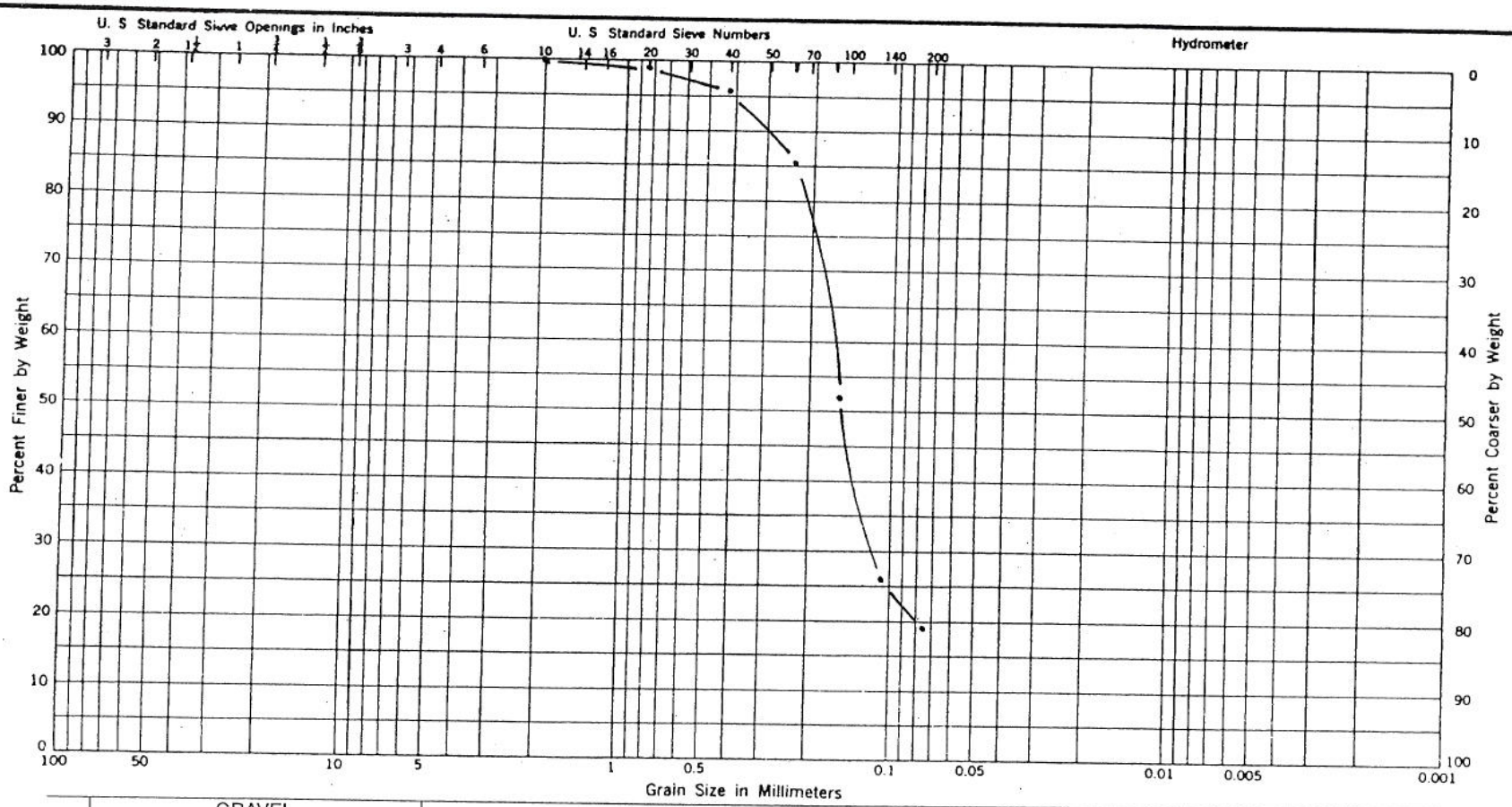
Number	Depth	Natural Moisture	L. L.	P. L.	P. I.	Classification
HA-24	0.0' - 1.6'					Gray to brown slightly silty Fine SAND with trace of roots and rock fragments

CLIENT: Wade-Trim

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41, Manatee County, Florida

FILE: DES 034798

DRIGGERS ENGINEERING SERVICES, INC.



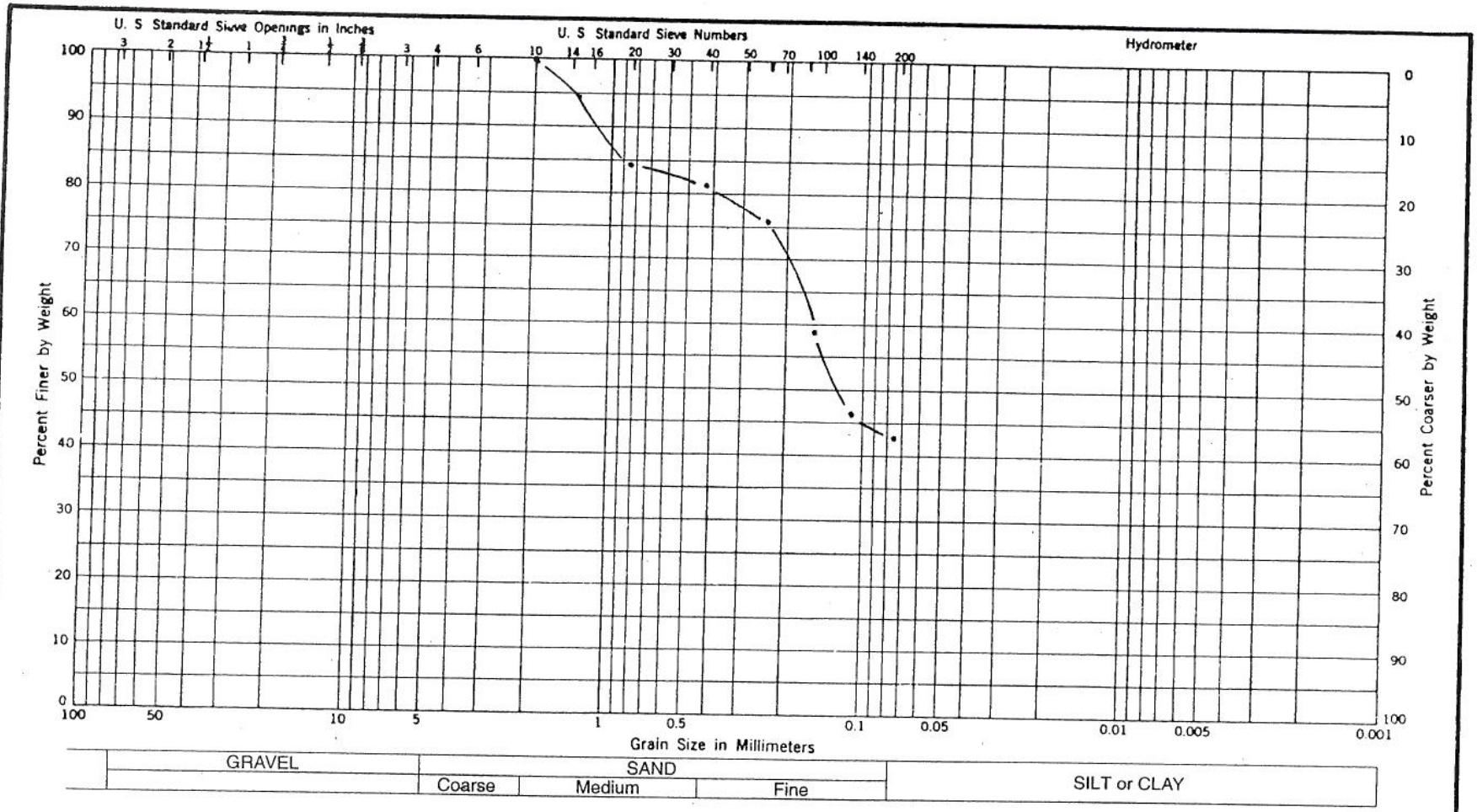
Number	Depth	Natural Moisture	L. L.	P. L.	P. I.	Classification
HA-32	3.0' - 3.8'					Dark gray slightly organic, silty Fine SAND

CLIENT: Wade-Trim

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41, Manatee County, Florida

FILE: DES 034798

DRIGGERS ENGINEERING SERVICES, INC.



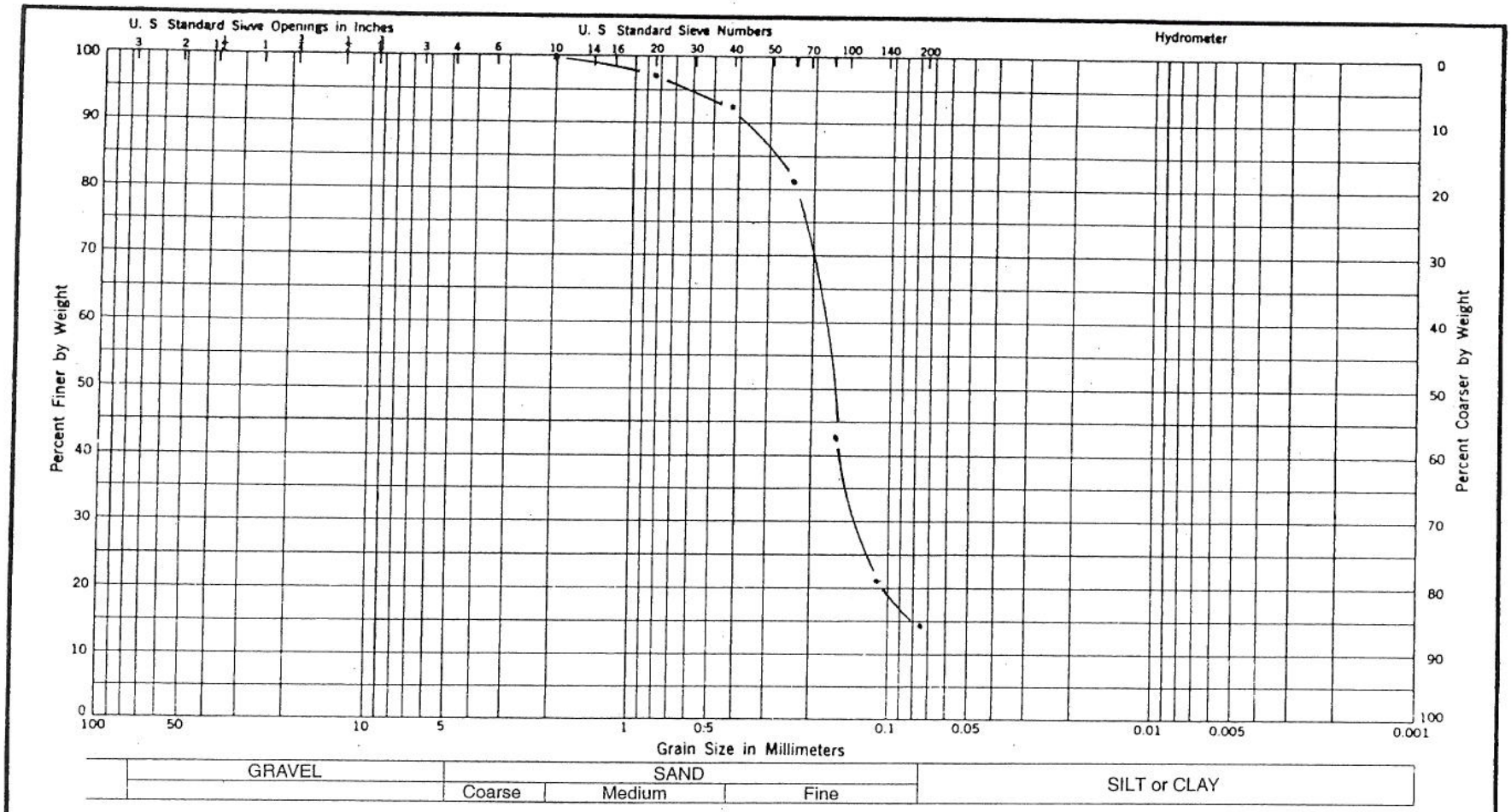
Number	Depth	Natural Moisture	L. L.	P. L.	P. I.	Classification
HA-34	2.2' - 4.0'					Gray and tan silty Fine SAND with dolomite

CLIENT: Wade-Trim

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41, Manatee County, Florida

FILE: DES 034798

DRIGGERS ENGINEERING SERVICES, INC.



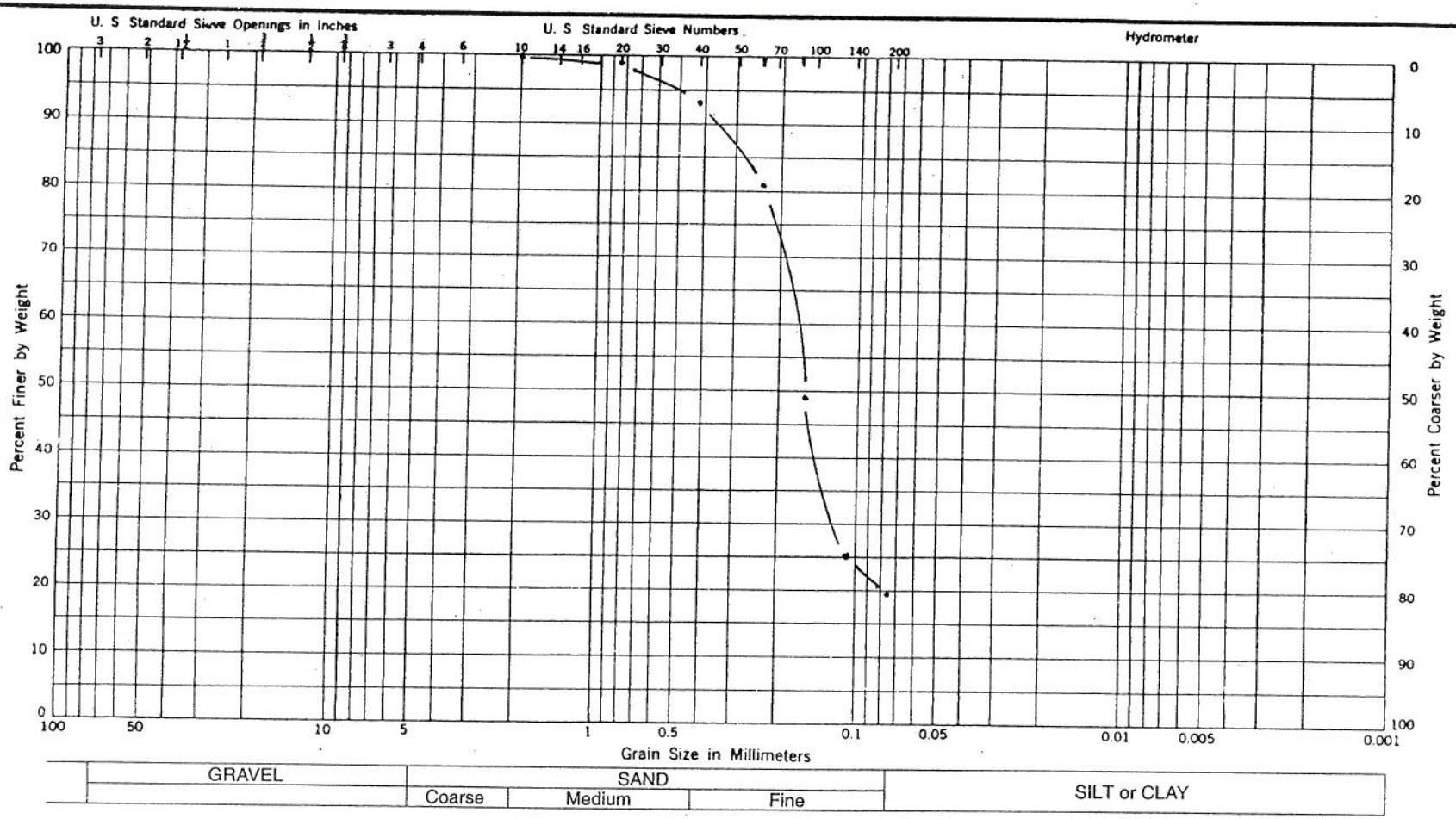
Number	Depth	Natural Moisture	L. L.	P. L.	P. I.	Classification
HA-35	3.7' - 5.4'					Dark gray highly organic, clayey Fine SAND

CLIENT: Wade-Trim

PROJECT: 17th Street West from Business U.S. 41 to U.S. 41, Manatee County, Florida

FILE: DES 034798

DRIGGERS ENGINEERING SERVICES, INC.



Number	Depth	Natural Moisture	L. L.	P. L.	P. I.	Classification
HA-36	2.0' - 3.8'					Dark gray clayey Fine SAND

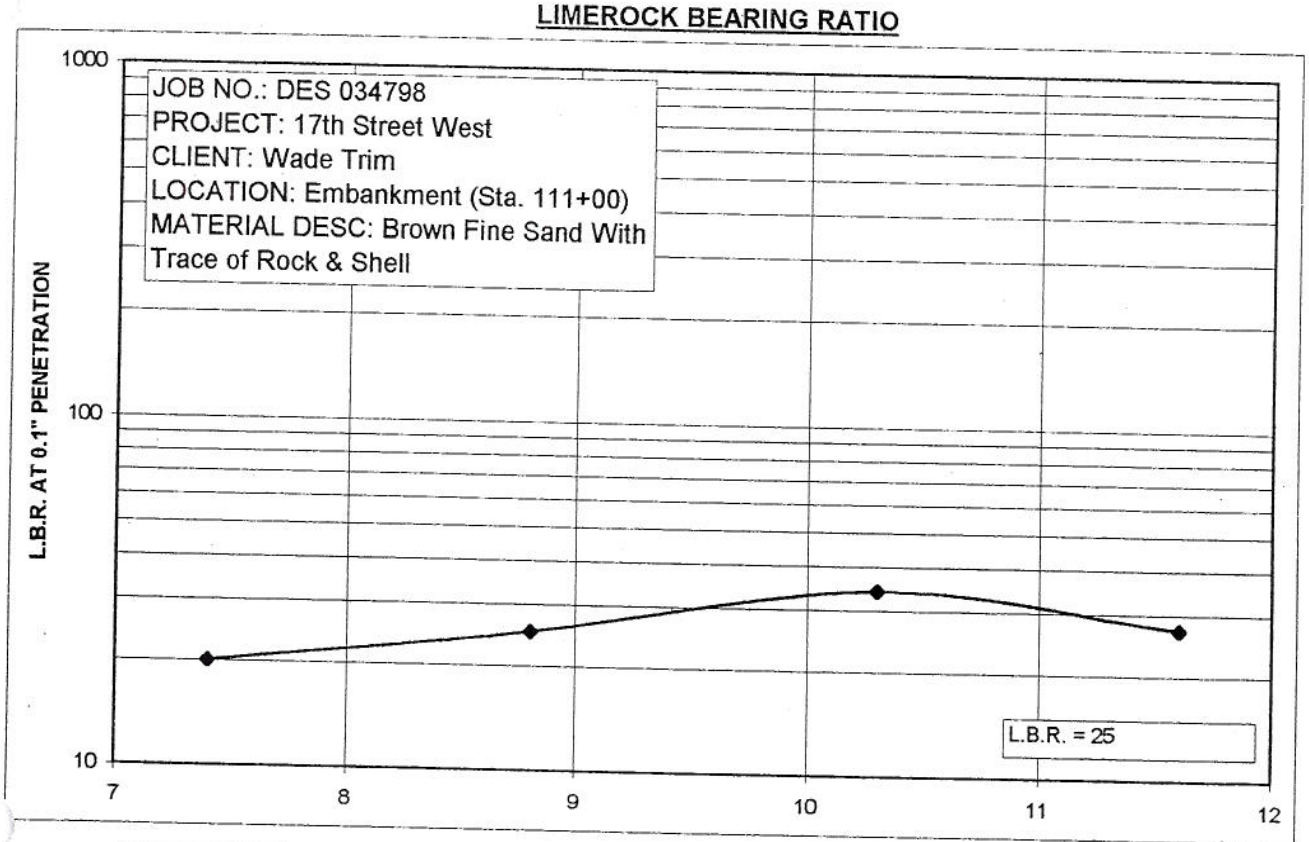
CLIENT: Wade-Trim

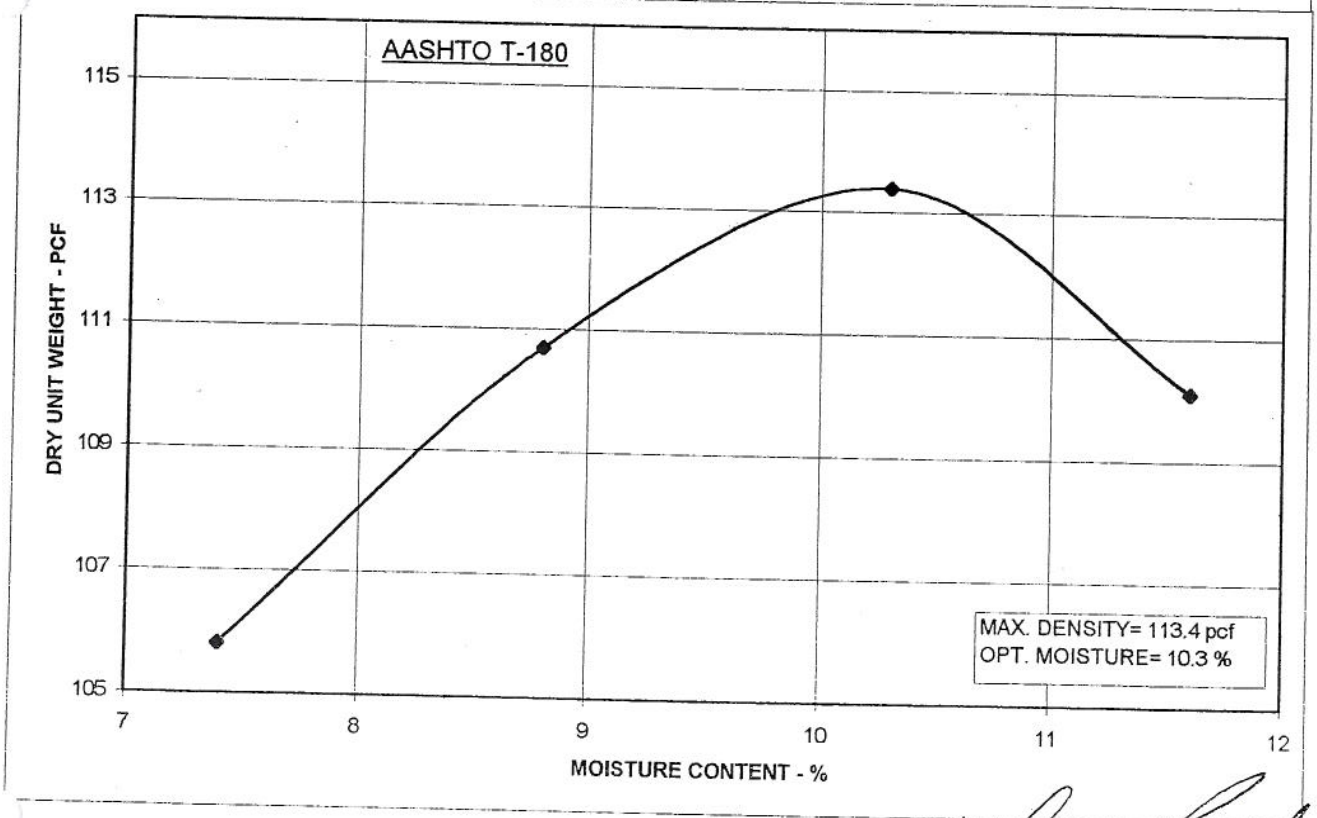
PROJECT: 17th Street West from Business U.S. 41 to U.S. 41, Manatee County, Florida

FILE: DES 034798

APPENDIX C - LABORATORY TEST RESULTS
- LIMEROCK BEARING RATIO TESTS

LIMEROCK BEARING RATIO





By: _____
Construction Services Manager

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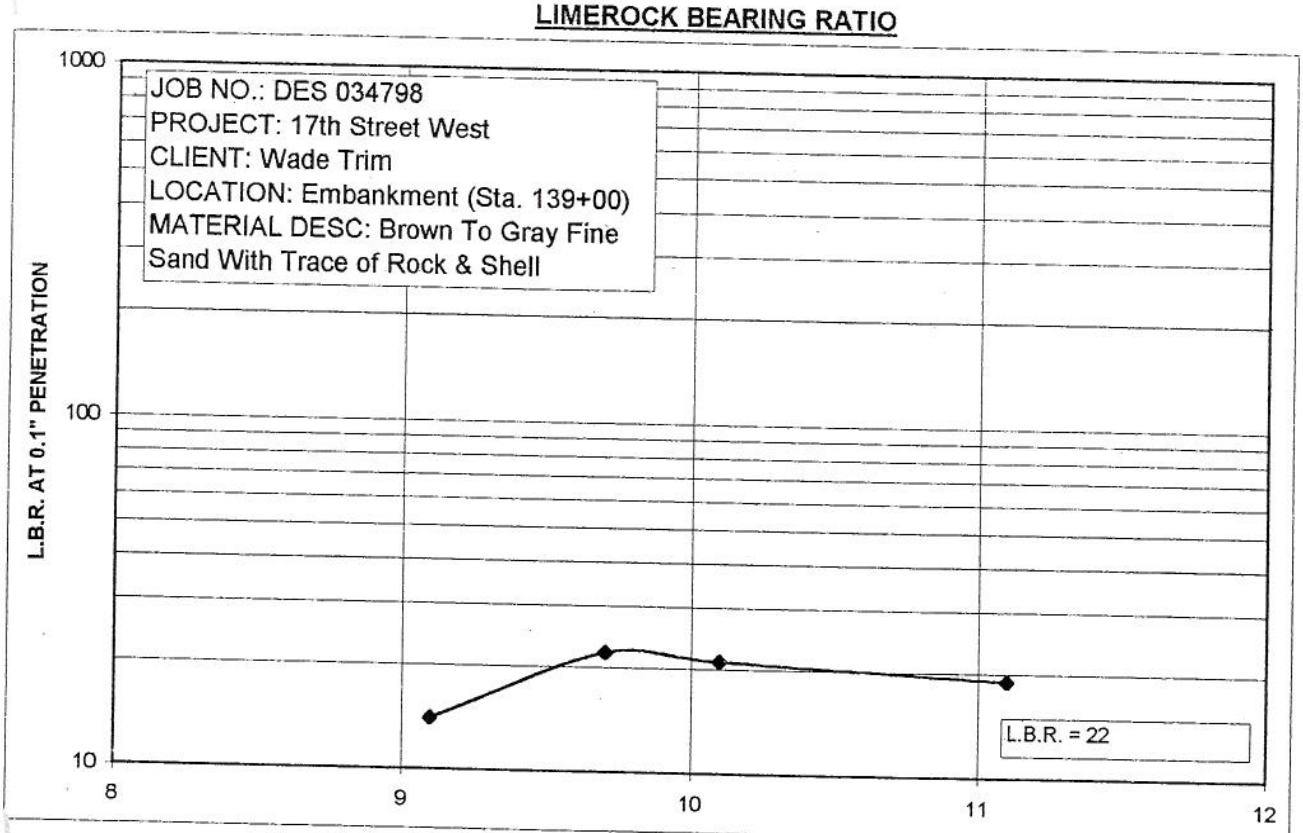
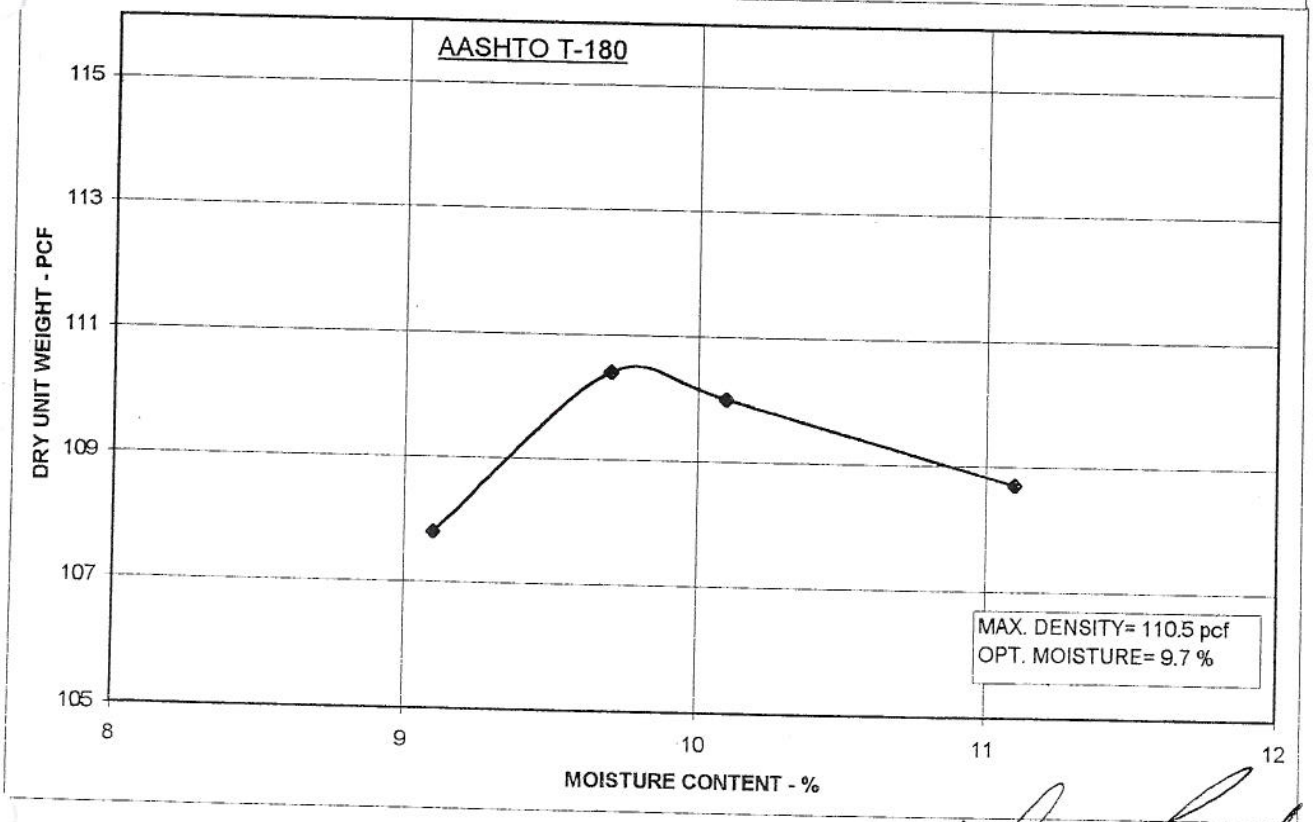
LIMEROCK BEARING RATIO





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