44TH AVENUE EAST

PROP. R/W

@ SURVEY & @ CONST.

EXIST. R/W

36" WM / TO BE REPLACED MANATEE COUNTY

BURIED COPPER CABLE / TO BE REMOVED VERIZON

2-4"x2-4" SQUARE AT GROUND

FPL EASEMENT

BTV / TO REMAIN BRIGHT HOUSE NETWORKS

OE / TO REMAIN FPL TRANSMISSION

BT / TO REMAIN VERIZON

OTV / TO REMAIN BRIGHT HOUSE NETWORKS

MATCHLINE STA. 158+00.00

MATCHLINE STA. 165+00.00

60.00'

28.00'

28.00'

95.45'

40.00'

158 159 160 161 162 163 164 165

0 10 50

Feet

PROFILE GRADE LINE

PI +80.00 EL. 17.69

PI +50.00 EL. 16.94

(+)0.300% (-)0.300%

(-)0.300% (+)0.300%

17.09

17.69

SHW EL. = 14.2

EXIST. GROUND

20 15 10 5

15.4 15.1

DONALD R. HOLCOMB LICENSE NO. 51970 STATE OF FLORIDA

Donald R. Holcomb 5-23-14

No.	REVISIONS	DATE	BY

SCALE	AS NOTED
DESIGNED BY	JLS
DRAWN BY	JHC
CHECKED BY	DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE 05/27/14

PROJECT NO. 607160

Manatee County FLORIDA MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER DONALD R. HOLCOMB

FL. LICENSE NO. 51970

UTILITY ADJUSTMENT SHEET

SHEET NO. 160

44TH AVENUE EAST

1-1/4" HDPE / TO REMAIN VERIZON
FOC HH / TO REMAIN VERIZON
4" PVC / PROPOSED VERIZON
SUE TRENCH
PROP. R/W
BURIED COPPER CABLE / TO BE REMOVED VERIZON
36" WM / TO BE REPLACED MANATEE COUNTY
COPPER PEDESTAL #4400 / TO BE REMOVED VERIZON
FPL EASEMENT
OTV / TO REMAIN BRIGHT HOUSE NETWORKS
2 - 1-1/4" SPLIT DUCT / PROPOSED VERIZON
FOC HH / PROPOSED VERIZON
EXIST. R/W
FOC HH / TO BE REMOVED VERIZON
45TH STREET EAST
30" WM / TO REMAIN MANATEE COUNTY
COPPER PEDESTAL #4511 / TO BE REMOVED VERIZON
BURIED COPPER CABLE / TO BE REMOVED VERIZON
@ SURVEY & @ CONST.
2-1/4" HDPE W/ FOC / TO REMAIN VERIZON
2.4'X2.4' SQUARE AT- GROUND
SUE TRENCH
OE / TO REMAIN FPL DISTRIBUTION
1-1/4" HDPE W/ FOC / TO REMAIN VERIZON
OE / TO REMAIN FPL TRANSMISSION
SUE TRENCHES EXCAVATED TO 7' DEPTH NO UTILITES ENCOUNTERED
COPPER PEDESTAL / PROPOSED VERIZON
BURIED COPPER CABLE / PROPOSED VERIZON
1-1/4" HDPE W/ FOC / PROPOSED VERIZON
FOC HH / PROPOSED VERIZON
FOC HH / TO BE REMOVED VERIZON
1-1/4" HDPE W/ FOC / TO BE REMOVED VERIZON
EXIST. R/W
4" PVC W/ FOC / TO REMAIN VERIZON

MATCHLINE STA. 165+00.00
MATCHLINE STA. 172+00.00
60.00'
28.00'
40.00'
35.45'
20.95'
27.18'
63.54'
30'
50'
499

0 10 50
Feet

PI +73.95
EL. 17.92
PI +50.00
EL. 17.39
(+) 0.300%
(-) 0.300%
(-) 0.300%
(-) 0.07%
PROFILE GRADE LINE
EXIST. GROUND
17.69
17.22
17.1
15.1

20
15
10
5
165
166
167
168
169
170
171
172

LICENSED PROFESSIONAL ENGINEER
NO. 51970
STATE OF FLORIDA
5-25-14

No.	REVISIONS	DATE	BY	SCALE AS NOTED DESIGNED BY JLS DRAWN BY JHC CHECKED BY DRH	HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE 05/27/14 PROJECT NO. 6071160	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER DONALD R. HOLCOMB FL. LICENSE NO. 51970	UTILITY ADJUSTMENT SHEET	SHEET NO. 161

44TH AVENUE EAST

1-1/4" HDPE W/ FOC / TO BE REMOVED
VERIZON

BURIED COPPER CABLE / PROPOSED
VERIZON

1-1/4" HDPE W/ FOC / PROPOSED
VERIZON

FOC HH / PROPOSED
VERIZON

COPPER PEDESTAL / PROPOSED
VERIZON

PROP. R/W

END PROJECT
END CONSTRUCTION
STA. 173+05.70

BURIED COPPER CABLE / TO REMAIN
VERIZON

1-1/4" HDPE W/ FOC / TO REMAIN
VERIZON

℄ SURVEY & ℄ CONST.

EXIST. R/W

MATCHLINE STA. 172+00.00

20.95'

27.18'

63.46'

173 174 175 176 177 178

COPPER PEDESTAL #4609 / TO BE REMOVED
VERIZON

BURIED COPPER CABLE / TO BE REMOVED
VERIZON

4" PVC W/ FOC / TO REMAIN
VERIZON

OE / TO REMAIN
FPL TRANSMISSION

EXIST. R/W

N

0 10 50
Feet

END PROJECT
STA. 173+05.70

17.23

17.22

PROFILE GRADE LINE

EXIST. GROUND

25 20 15 10

172 173 174 175 176 177 178 179

DONALD R. HOLCOMB
LICENSE
NO. 51970
STATE OF FLORIDA
5-23-14

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

UTILITY ADJUSTMENT SHEET

SHEET NO.: 162

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

CONTRACT PLANS

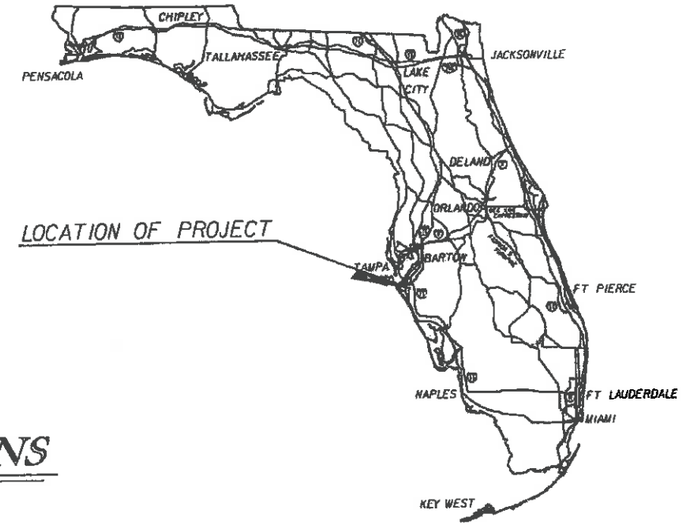
MANATEE COUNTY

(6071160)

44TH AVENUE EAST

FROM 30TH STREET EAST TO 45TH STREET EAST

SIGNING AND PAVEMENT MARKING PLANS



INDEX OF SIGNING AND PAVEMENT MARKING PLANS

SHEET NO.	SHEET DESCRIPTION
S-1	KEY SHEET
S-2	TABULATION OF QUANTITIES
S-3	GENERAL NOTES
S-4 TO S-12	SIGNING AND PAVEMENT MARKING PLANS
S-13	GUIDESIGN WORKSHEET

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED 2014,
AND STANDARD SPECIFICATIONS FOR ROAD AND
BRIDGE CONSTRUCTION DATED 2013,
AS AMENDED BY CONTRACT DOCUMENTS.

SIGNING AND PAVEMENT MARKING SHOP DRAWINGS
TO BE SUBMITTED TO:
DONALD R. HOLCOMB, P.E.
HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD., STE. 400
SARASOTA, FLORIDA 34232-6212
PHONE NO. (941) 342-2700

PLANS PREPARED BY:
HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD., STE. 400
SARASOTA, FLORIDA 34232-6212
PHONE NO. (941) 342-2700
FAX (941) 342-6589
CONTRACT NO. 12348
VENDOR NO. VF-470680568
CERTIFICATE OF AUTHORIZATION No. 4213

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

DONALD ROBERT HOLCOMB * No. 51970 * STATE OF FLORIDA * PROFESSIONAL ENGINEER

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

SIGNING AND PAVEMENT MARKING PLANS ENGINEER OF RECORD: DONALD R. HOLCOMB, P.E.

P.E. NO.: 51970

FISCAL YEAR	SHEET NO.
14	S-1

Signing & Pavement Marking Plans

MANATEE COUNTY PROJECT MANAGER: KENT D. BONTRAGER, P.E.

5/23/2014 12:45:46 PM P:\Projects\CON0044\B\000\G000133435\03.CAD\12345615201\signing\keyss01.dgn

TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS																		TOTAL THIS SHEET		GRAND TOTAL		REF. SHEET
			S-4		S-5		S-6		S-7		S-8		S-9		S-10		S-11		S-12						
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL					
700-20-11	SINGLE POST SIGN (F&I) (< 12 SF)	AS			2		2		2		2		3		5						16		16		
700-20-12	SINGLE POST SIGN (F&I) (12-20 SF)	AS			1		1		2		2				1						7		7		
700-20-60	SINGLE POST SIGN (REMOVE)	AS	6		5																11		11		
705-11-1	DELINEATOR (FLEXIBLE TUBULAR)																				11		11		
	(YELLOW/GREEN)	EA			3		2		2		2		2		1						9		9		
	(RED/RED)	EA			6		3																		
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS																		17		514		514		
	(WHITE/RED)	EA	16		79		92		91		49		79		91		9		68		195		195		
	(YELLOW/YELLOW)	EA			2				4		8				104						4.105		4.105		
*	PAINTED PAVT. MARKINGS (STD., WHITE, SOLID, 6")	NM	0.098		0.937		0.815		0.544		0.252		0.609		0.520		0.042		0.288		834		834		
*	PAINTED PAVT. MARKINGS (STD., WHITE, SOLID, 8")	LF											45		789						755		755		
*	PAINTED PAVT. MARKINGS (STD., WHITE, SOLID, 12")	LF							291		299				165						338		338		
*	PAINTED PAVT. MARKINGS (STD., WHITE, SOLID, 18")	LF											1		337						324		324		
*	PAINTED PAVT. MARKINGS (STD., WHITE, SOLID, 24")	LF			105				57		34				52				76		1.177		1.177		
*	PAINTED PAVEMENT MARKINGS (STD., WHITE, SKIP, 6") (10'-30')	GM	0.023		0.085		0.133		0.125		0.235		0.424		0.152						56		56		
*	PAINTED PAVEMENT MARKINGS (STD., WHITE, SKIP, 6") (2'-4')	LF													56						2		2		
*	PAINTED PAVEMENT MARKINGS (STD., WHITE, MERGE)	EA											2								39		39		
*	PAINTED PAVEMENT MARKINGS (STD., WHITE, ARROWS, "LEFT")	EA	1		6		6		7		5		6		3				5		3		3		
*	PAINTED PAVEMENT MARKINGS (STD., WHITE, ARROWS, "RIGHT")	EA													3						2		2		
*	PAINTED PAVEMENT MARKINGS (STD.,WHITE,ARROWS, "MERGE")	EA											2								3.613		3.613		
*	PAINTED PAVEMENT MARKINGS (STD., YELLOW, SOLID, 6")	NM	0.076		0.384		0.846		0.485		0.221		0.488		0.700		0.057		0.356		566		566		
*	PAINTED PAVEMENT MARKINGS (STD., YELLOW, SOLID, 18")	LF													495		1		70		128		128		
*	PAINTED PAVEMENT MARKINGS (STD., YELLOW, SKIP, 6") (2'-4')	LF									64				64						24		24		
710-11-160	PAINTED PAVEMENT MARKINGS (STD., WHITE, BIKE/ARROW)	EA			5		5		5		2		4		3						155.4		155.4		
710-11-190	PAINTED PAVEMENT MARKINGS (STD., WHITE, ISLAND NOSE)	SF			92.5		11.2		14.7		14.8		14.8		7.4						4.105		4.105		
710-11-290	PAINTED PAVEMENT MARKINGS (STD., YELLOW, ISLAND NOSE)	SF																			834		834		
711-11-111	THERMOPLASTIC (STD., WHITE, SOLID, 6")	NM	0.098		0.937		0.815		0.544		0.252		0.609		0.520		0.042		0.288		755		755		
711-11-122	THERMOPLASTIC (STD., WHITE, SOLID, 8")	LF											45		789						338		338		
711-11-123	THERMOPLASTIC (STD., WHITE, SOLID, 12")	LF							291		299				165						273		273		
711-11-124	THERMOPLASTIC (STD., WHITE, SOLID, 18")	LF											1		337						1.177		1.177		
711-11-125	THERMOPLASTIC (STD., WHITE, SOLID, 24")	LF			105				57		34				52				25		56		56		
711-11-131	THERMOPLASTIC (STD., WHITE, SKIP, 6") (10'-30')	GM	0.023		0.085		0.133		0.125		0.235		0.424		0.152						2		2		
711-11-151	THERMOPLASTIC (STD., WHITE, SKIP, 6") (2'-4')	LF													56						39		39		
711-11-160	THERMOPLASTIC (STD., WHITE, MERGE)	EA											2								3		3		
711-11-170	THERMOPLASTIC (STD., WHITE, ARROWS)																				2		2		
	("LEFT")	EA	1		6		6		7		5		6		3				5		3.613		3.613		
	("RIGHT")	EA													3						566		566		
	("MERGE")	EA											2								128		128		
711-11-211	THERMOPLASTIC (STD., YELLOW, SOLID, 6")	NM	0.076		0.384		0.846		0.485		0.221		0.488		0.700		0.057		0.356						
711-11-224	THERMOPLASTIC (STD., YELLOW, SOLID, 18")	LF													495		1		70						
711-11-251	THERMOPLASTIC (STD., YELLOW, SKIP, 6") (2'-4')	LF									64				64										

THESE QUANTITIES ARE PAID UNDER PAINTED PAVEMENT MARKING (FINAL SURFACE). LUMP SUM ITEM NO. 710-90.
THE QUANTITIES ARE FOR ONE APPLICATION: SEE SPECIFICATION 710 FOR THE NUMBER OF APPLICAITONS REQUIRED.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

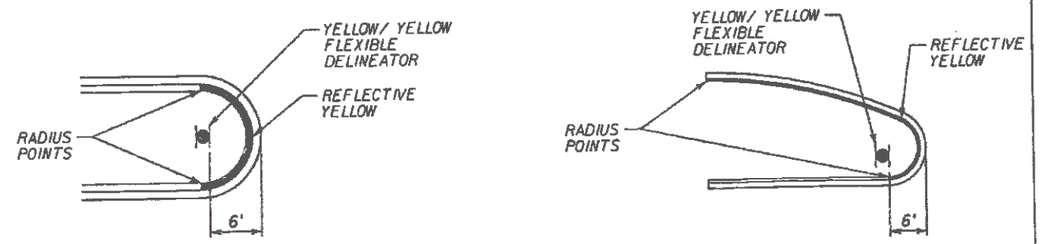
TABULATION OF QUANTITIES

SHEET NO.: S-2

DONALD ROBERT HOLCOMB LICENSE No. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER

SIGNING AND PAVEMENT MARKING GENERAL NOTES:

1. PAVEMENT MARKINGS SHOULD BE PLACED AS SHOWN IN THE PLANS AND THE APPROPRIATE FDOT DESIGN STANDARDS INDEX.
2. THE SIGN LOCATIONS SHOWN ARE APPROXIMATE AND MAY REQUIRE FIELD ADJUSTMENT AS DIRECTED BY THE COUNTY.
3. THE RETRO REFLECTIVE PAVEMENT MARKER ADHESIVE USED SHALL BE THE ONE CURRENTLY ON THE FDOT QUALIFIED PRODUCTS LIST (QPL).
4. REFER TO FDOT STANDARD INDEX NO. 17352 FOR RPM PLACEMENT DETAILS.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LENGTH OF SIGN COLUMN SUPPORTS IN THE FIELD PRIOR TO FABRICATION.
6. PAINT ALL MEDIAN NOSES REFLECTIVE YELLOW OR REFLECTIVE WHITE AS INDICATED IN THE DETAILS SHOWN ON THIS SHEET AND AS SHOWN ON THE PLANS.
7. ALL ROUTE MARKER AUXILIARIES SHALL MATCH THE COLOR COMBINATION OF THE RESPECTIVE MARKER WHICH THEY SUPPLEMENT.
8. ALL STRIPING SHALL BE APPLIED BEFORE RAISED MARKERS ARE INSTALLED.
9. FOR MARKING PLACEMENT REQUIREMENTS SEE FDOT DESIGN STANDARD INDEX NO. 17346.
10. SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 11860 AND NO. 17302. FOOTING DEPTHS TO BE DETERMINED BY FDOT STANDARD INDEX NO. 11861.
11. ALL EXISTING STRIPING THAT IS IN CONFLICT WITH PROPOSED STRIPING AS SHOWN IN THESE PLANS IS TO BE REMOVED PER FDOT SPECIFICATIONS.
12. CROSSWALKS SHALL BE 6' IN WIDTH UNLESS OTHERWISE INDICATED.
13. SIZES FOR ALL PROPOSED SIGNS SHALL CONFIRM TO SIZES SHOWN IN MUTCD, LATEST EDITION.
14. THE CONTRACTOR IS TO USE CAUTION WHEN WORKING IN OR AROUND AREAS OR EXISTING LOOP AND LEAD IN WIRES, OVERHEAD TRANSMISSION LINES AND UNDERGROUND UTILITIES.
15. FORTY EIGHT HOURS PRIOR TO DIGGING, THE CONTRACTOR SHALL CALL SUNSHINE STATE ONE CALL OF FLORIDA, TELEPHONE NUMBER 1-800-432-4770, AND THE UTILITY OWNER TO REQUEST UTILITY LOCATIONS. A CONTRACTOR'S REPRESENTATIVE MUST BE PRESENT WHEN THE UTILITY COMPANY LOCATES THEIR FACILITIES.
16. THE NEW PAVEMENT STRIPING ENDS MUST MATCH EXISTING STRIPING.
17. SEE MANATEE COUNTY TRANSPORTATION DEPARTMENT TRAFFIC SUPPLEMENTAL SPECIFICATION 553 FOR STREET SIGN SPECIFICATIONS.



GRASS MEDIANS

MEDIAN NOSE PAINT DETAILS
N.T.S

NOTES: USE PAY ITEM 710-11-290 FOR THE REFLECTIVE PAINT
USE PAY ITEM 705-11-1 (TUBULAR DELINEATORS) FOR GRASS NOSED MEDIANS

DONALD ROBERT HOLCOMB
LICENSE
No. 51970
STATE OF FLORIDA
PROFESSIONAL ENGINEER

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

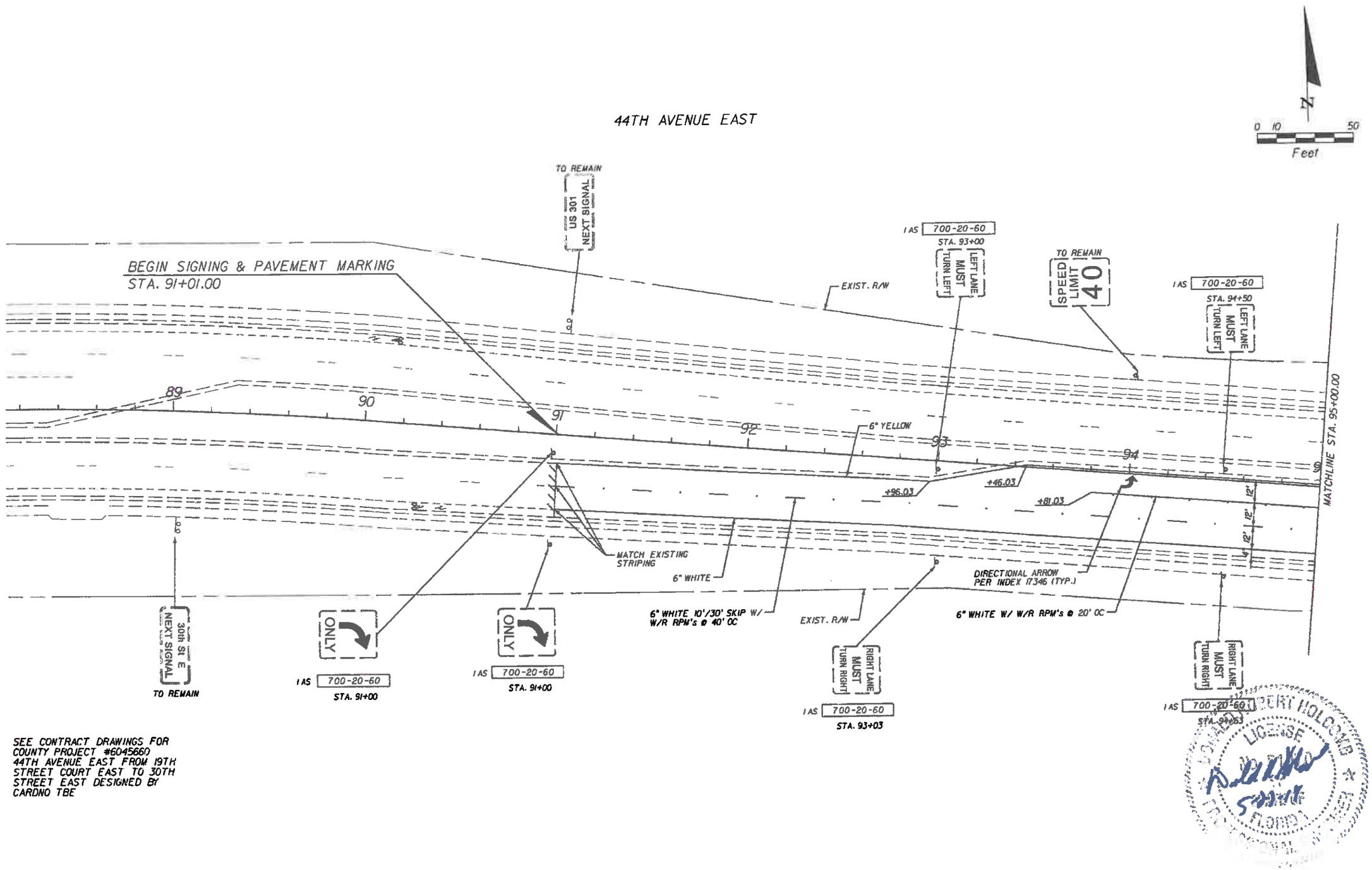
DATE: 05/27/14
PROJECT NO.: 6071160

Manatee County FLORIDA — MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

GENERAL NOTES

SHEET NO.: S-3



SEE CONTRACT DRAWINGS FOR COUNTY PROJECT #6045660 44TH AVENUE EAST FROM 19TH STREET COURT EAST TO 30TH STREET EAST DESIGNED BY CARDNO TBE

DONALD R. HOLCOMB LICENSE 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of Authorization No. 4213

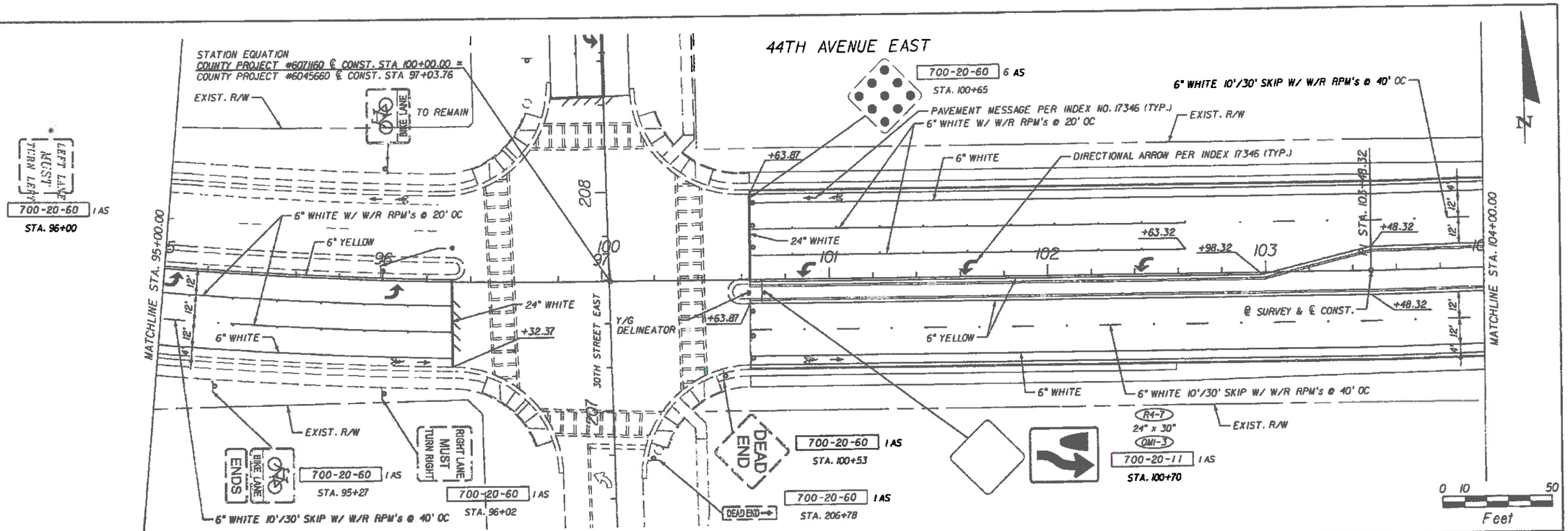
DATE: 05/27/14
PROJECT NO.: 6071160

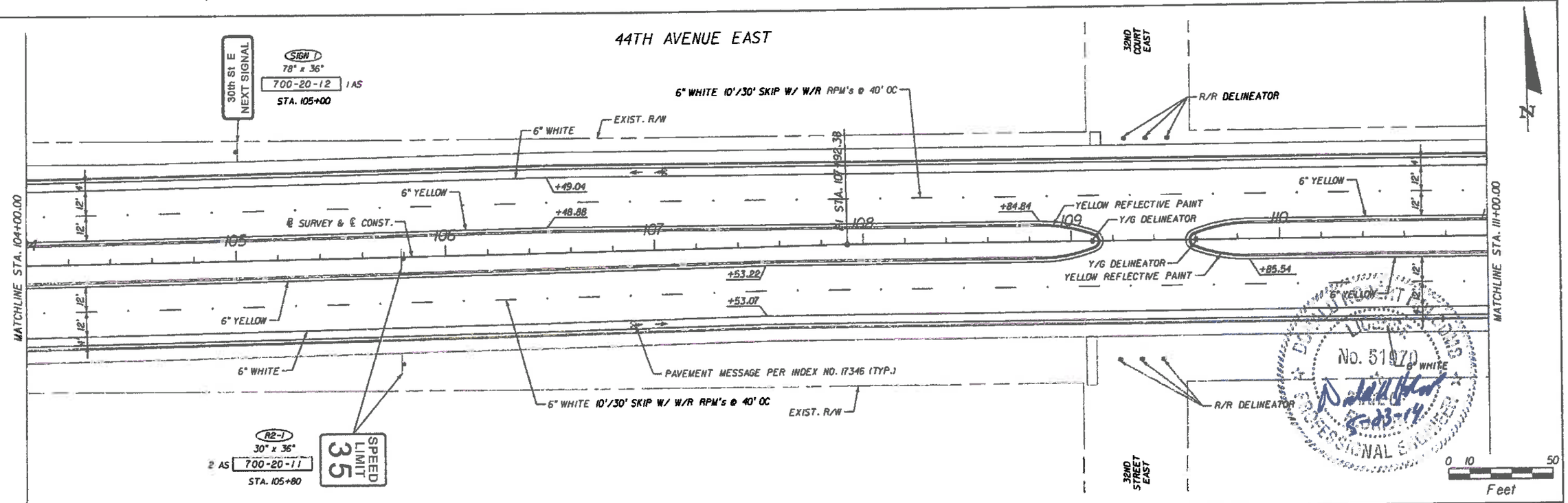
Manatee County FLORIDA — MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

SIGNING & PAVEMENT MARKING PLAN STA. 88+00 TO STA. 95+00

SHEET NO.: S-4





No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

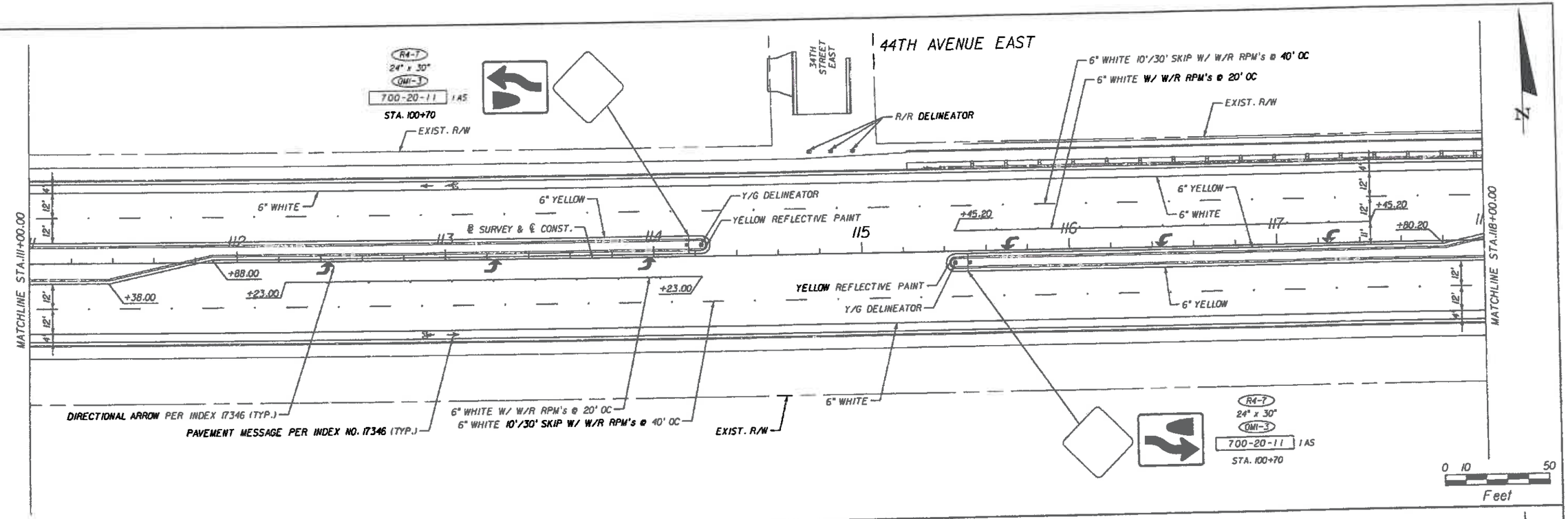
DATE: 05/27/14
PROJECT NO.: 6071160

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

SIGNING & PAVEMENT MARKING PLAN
STA. 95+00 TO STA. 111+00

SHEET NO.: S-5



No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

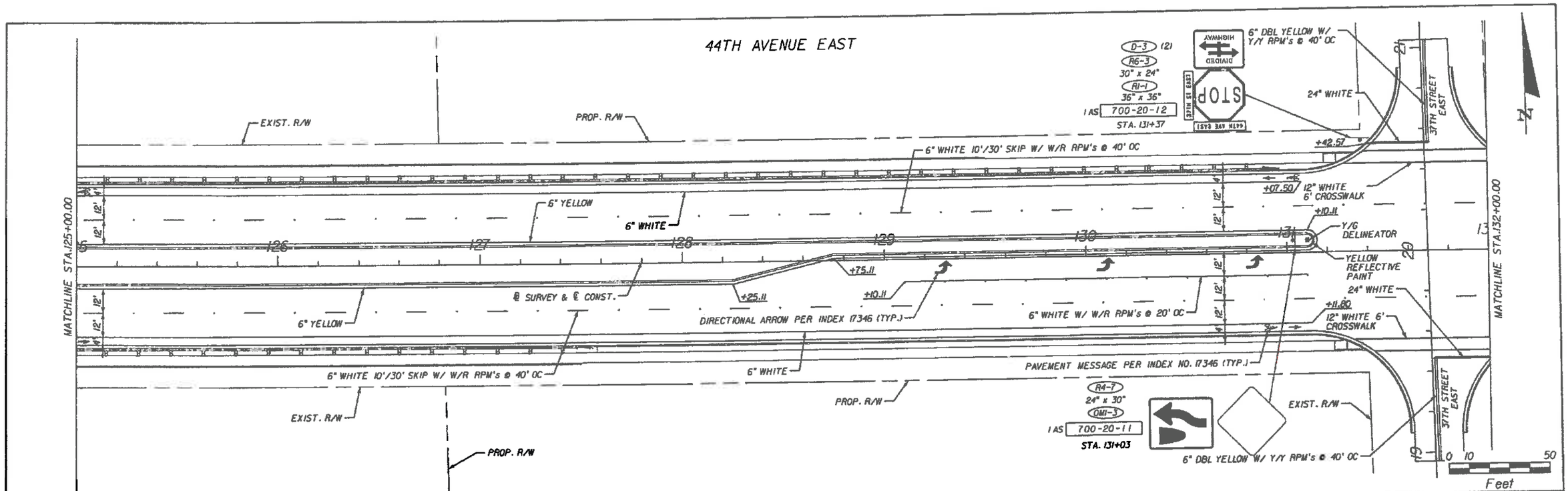
DATE: 05/27/14
PROJECT NO.: 607160

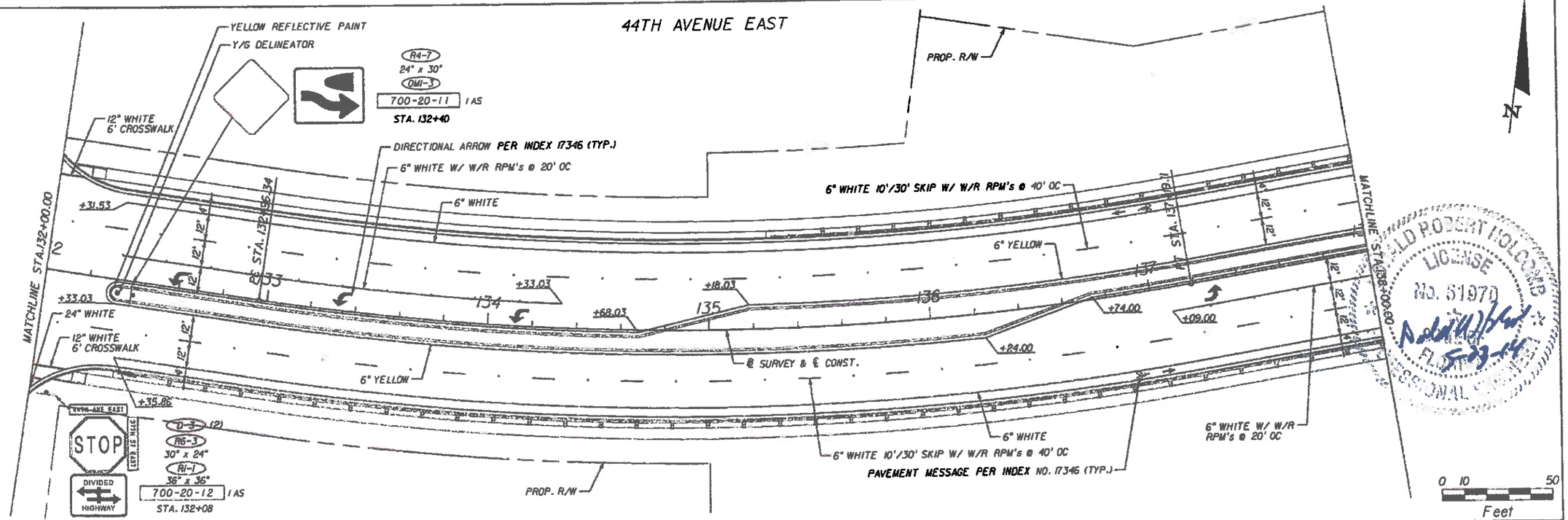
Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

SIGNING & PAVEMENT MARKING PLAN
STA. 111+00.00 TO STA. 125+00.00

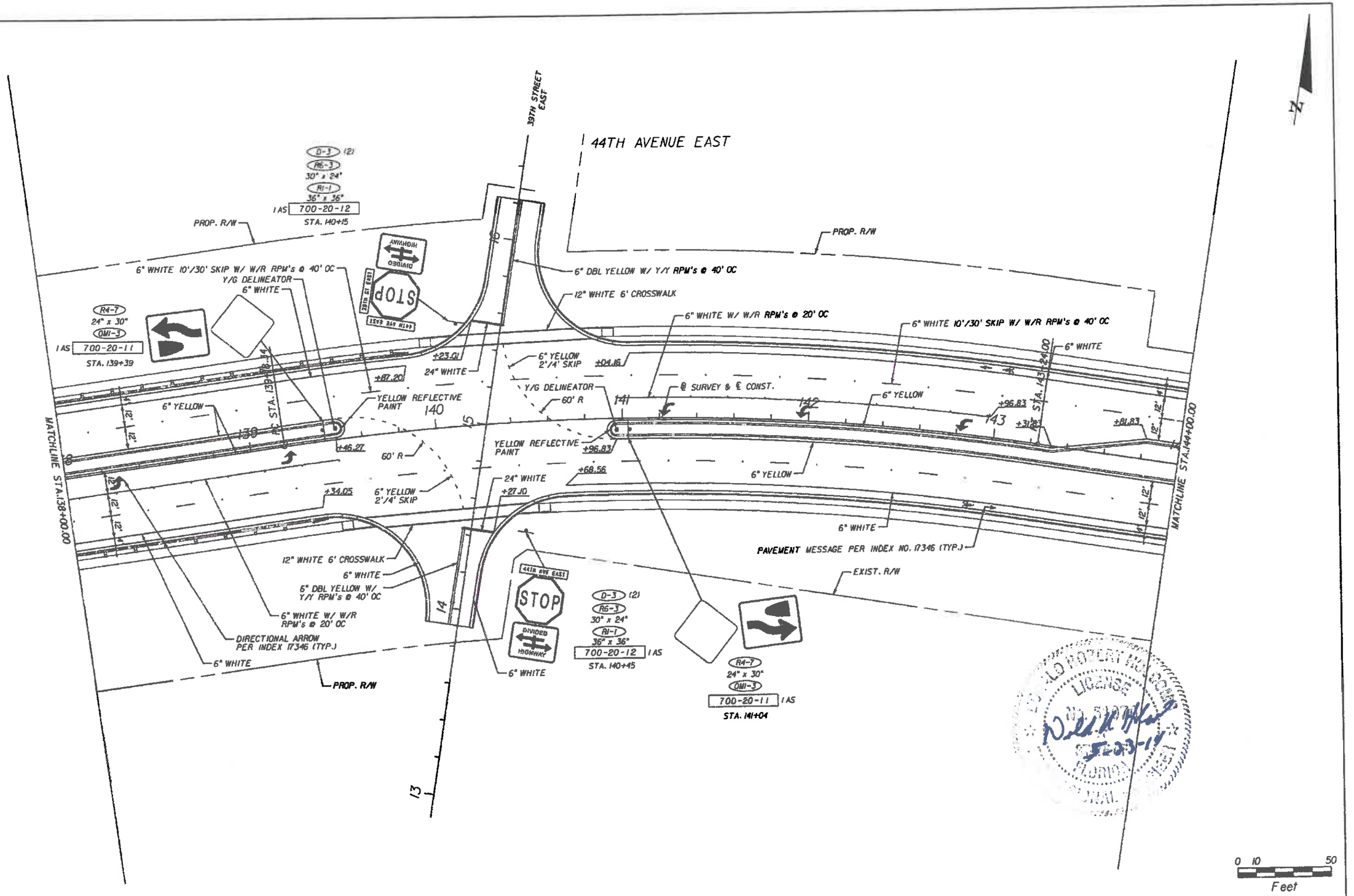
SHEET NO.: S-6





				SCALE: AS NOTED	HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE 05/27/14	Manatee County FLORIDA MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER DONALD R. HOLCOMB	SIGNING & PAVEMENT MARKING PLAN STA. 125+00.00 TO STA. 138+00.00	SHEET NO. S-7
				DESIGNED BY JLS		PROJECT NO. 6071160		FL. LICENSE NO. 51970		
				DRAWN BY JHC						
No.	REVISIONS	DATE	BY	CHECKED BY DRH						

DONALD ROBERT HOLCOMB LICENSE No. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER



No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

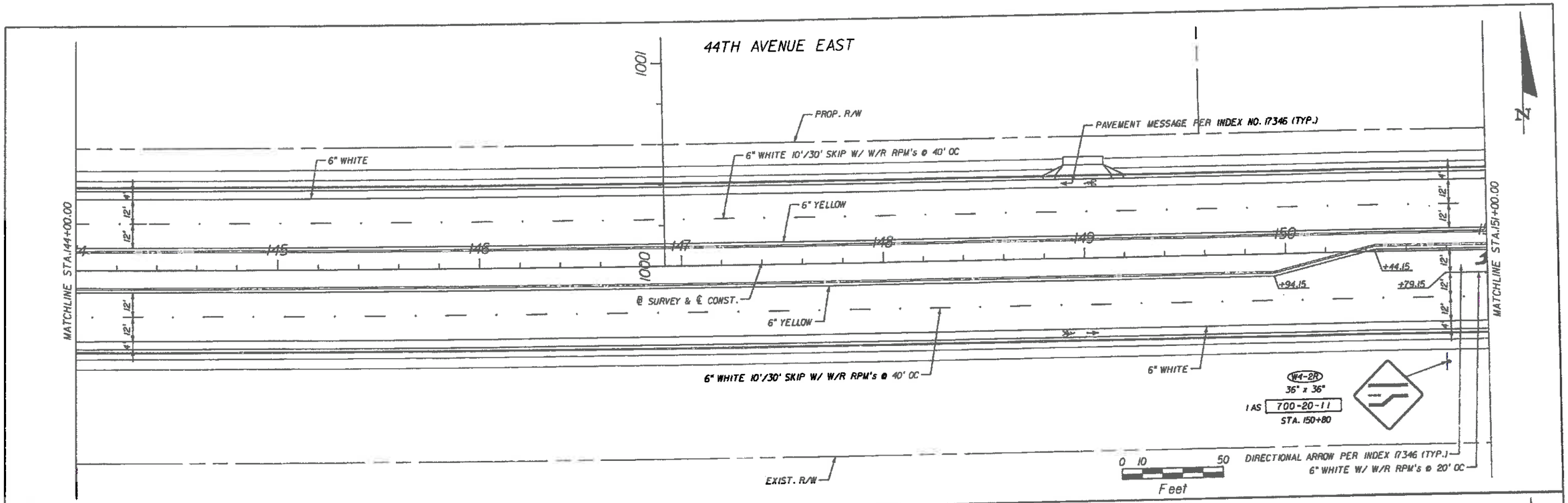
DATE: 05/27/14
PROJECT NO.: 6071160

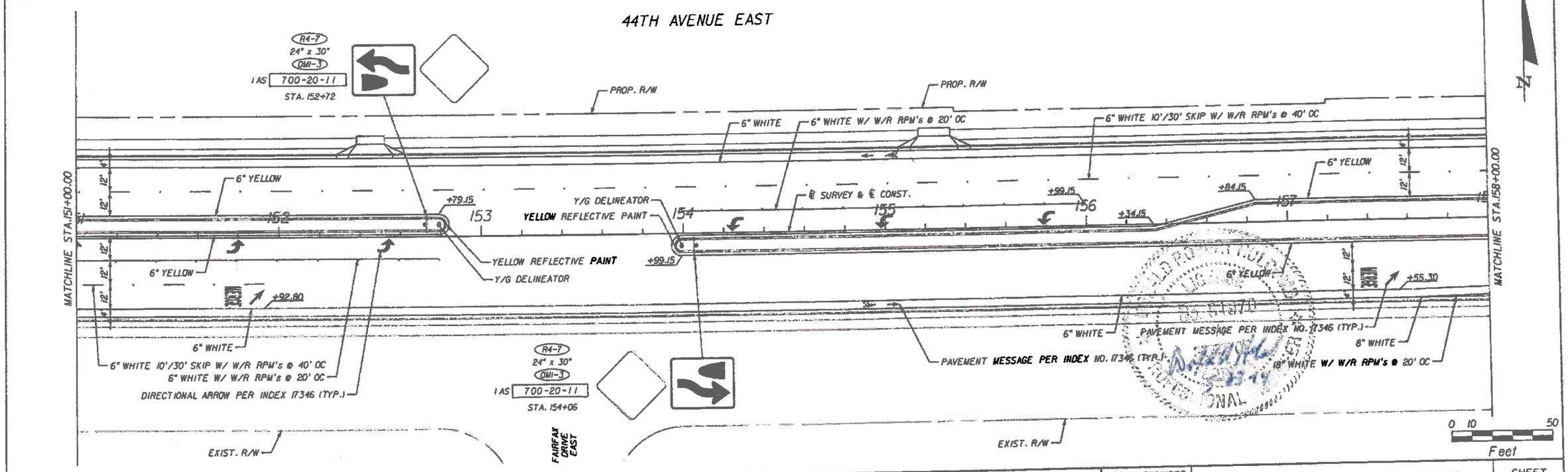
Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

SIGNING & PAVEMENT MARKING PLAN
STA. 138+00.00 TO STA. 144+00.00

SHEET NO.: S-8





No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

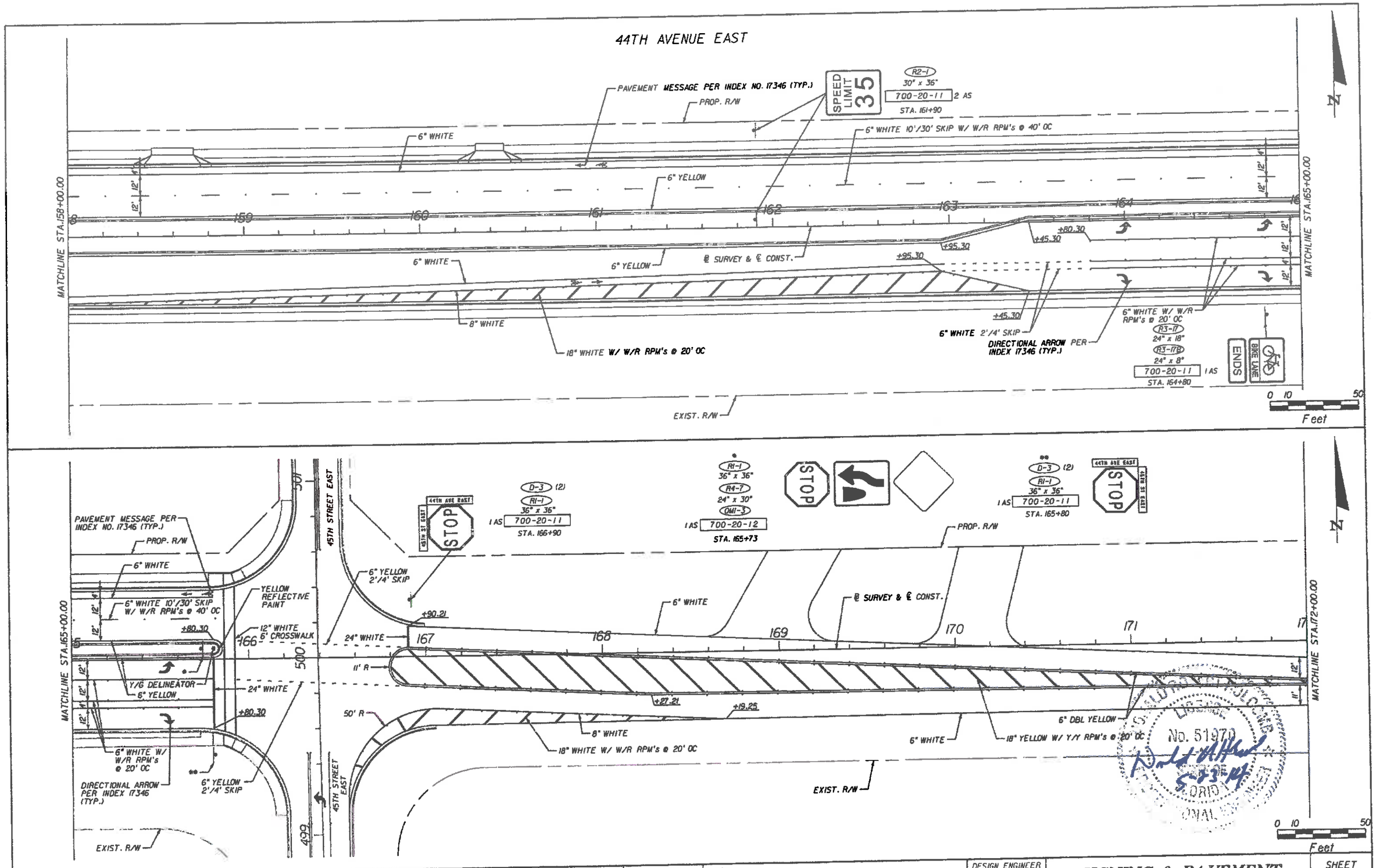
DATE: 05/27/14
PROJECT NO.: 6071160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

SIGNING & PAVEMENT MARKING PLAN
STA. 144+00.00 TO STA. 158+00.00

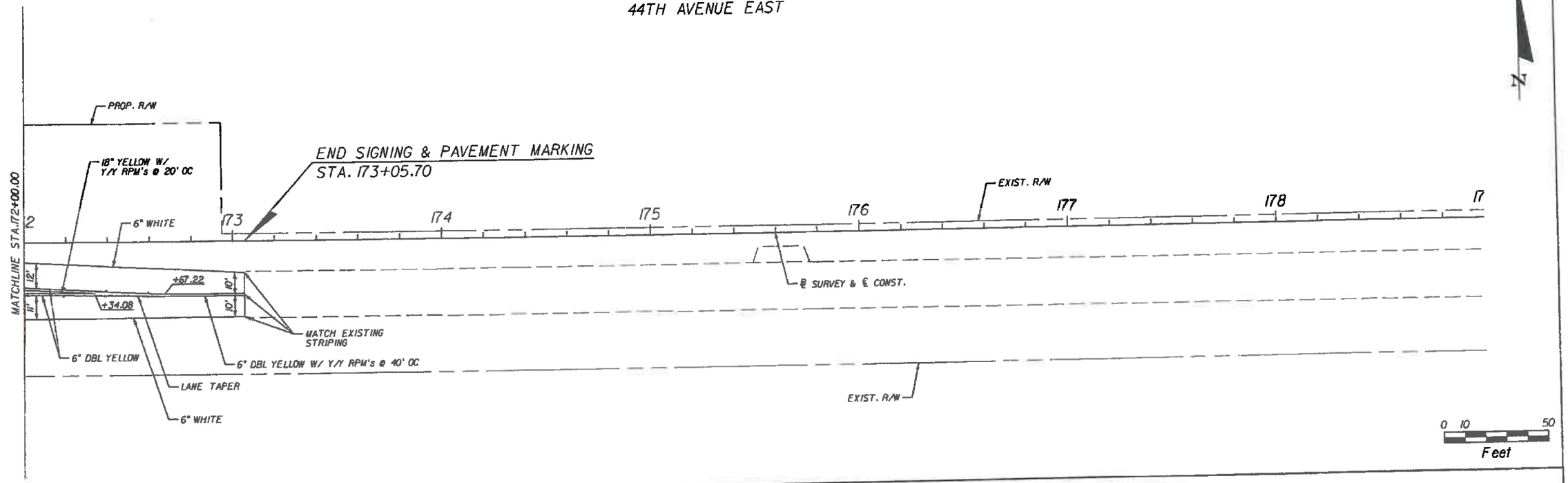
SHEET NO.: S-9



SCALE: AS NOTED	HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE: 05/27/14	Manatee County FLORIDA — MANATEE COUNTY PUBLIC WORKS
DESIGNED BY: JLS		PROJECT NO.: 6071160	
DRAWN BY: JHC			
CHECKED BY: DRH			

DESIGN ENGINEER	SIGNING & PAVEMENT MARKING PLAN STA. 158+00.00 TO STA. 172+00.00	SHEET NO.
DONALD R. HOLCOMB		S-10
FL. LICENSE NO. 51970		

No.	REVISIONS	DATE	BY



DONALD ROBERT HOLCOMB
LICENSE
5-23-14
FLORIDA

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

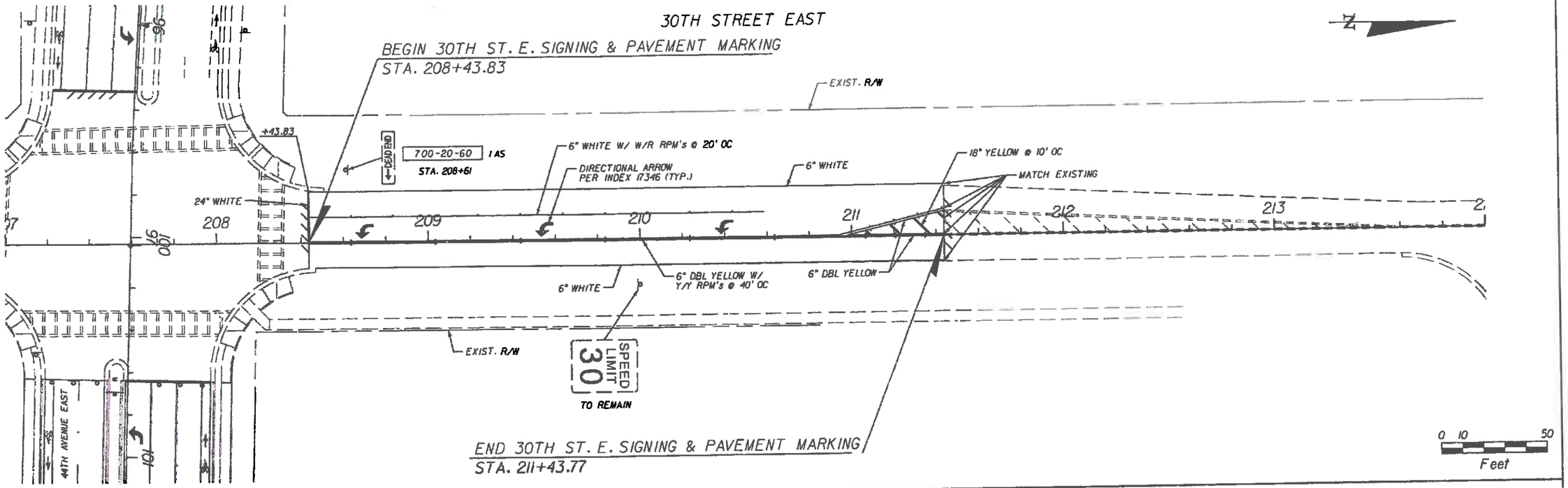
DATE: 05/27/14
PROJECT NO.: 6071160

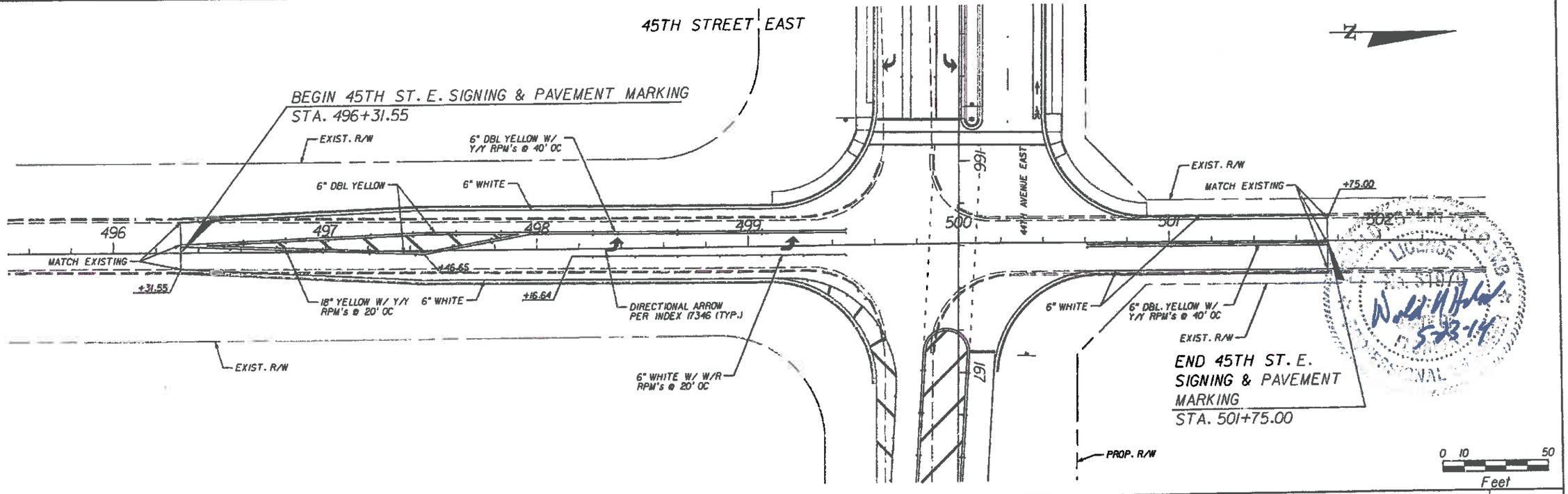
Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

SIGNING & PAVEMENT MARKING PLAN
STA. 172+00.00 TO STA. 179+00.00

SHEET NO.: S-11





SCALE: AS NOTED	HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE: 05/27/14	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER: DONALD R. HOLCOMB
DESIGNED BY: JLS		PROJECT NO.: 607160		FL. LICENSE NO.: 51970
DRAWN BY: JHC				
CHECKED BY: DRH				

No.	REVISIONS	DATE	BY

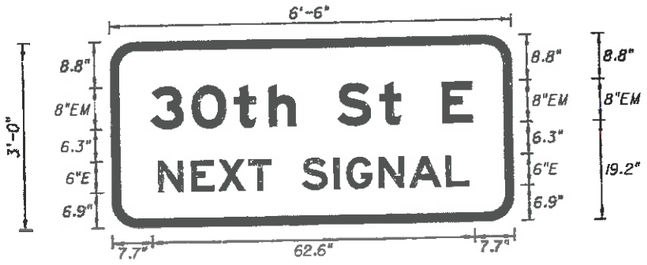
SIGNING & PAVEMENT MARKING PLAN
SIDE STREETS

SHEET NO. S-12

SIGN NAME	1		QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER				105+00
WIDTH	6'-6"	WIDTH	1.75"			
HEIGHT	3'-0"	RADII	5"			
LEGEND	White	COLOR	White			
COLOR	Green					

SYMBOL(S)	ANGLE	X	Y	WID	HT

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lane	COLUMN SIZE		AVERAGE LENGTH



NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

COPY		S	O	t	h		S	t		E		L														
SPACE	7.7	8.1	8.3	6.7	5.3	8	8.2	4.9	8	6.9	7.7	62.6														
COPY		N	E	X	T		S	I	G	N	A	L		L												
SPACE	8	8.4	5.3	5.9	4.5	8	6.1	2.5	8.2	6.9	7.1	4.5	8.6	80.4												
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SIGN NAME		QTY	SIGN NUMBER	STATION(S)
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WIDTH	WIDTH			
HEIGHT	RADII			
LEGEND	COLOR			
COLOR				

SYMBOL(S)	ANGLE	X	Y	WID	HT

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lane	COLUMN SIZE		AVERAGE LENGTH

NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

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SIGN NAME		QTY	SIGN NUMBER	STATION(S)
PANEL	BORDER			
WIDTH	WIDTH			
HEIGHT	RADII			
LEGEND	COLOR			
COLOR				

SYMBOL(S)	ANGLE	X	Y	WID	HT

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lane	COLUMN SIZE		AVERAGE LENGTH

NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE

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NO.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
DONALD R. HOLCOMB
FL. LICENSE NO.
51970

GUIDESIGN WORKSHEET

SHEET NO.
S-13

STATE OF FLORIDA
DONALD R. HOLCOMB
NO. 51970
REGISTERED
PROFESSIONAL ENGINEER

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

CONTRACT PLANS

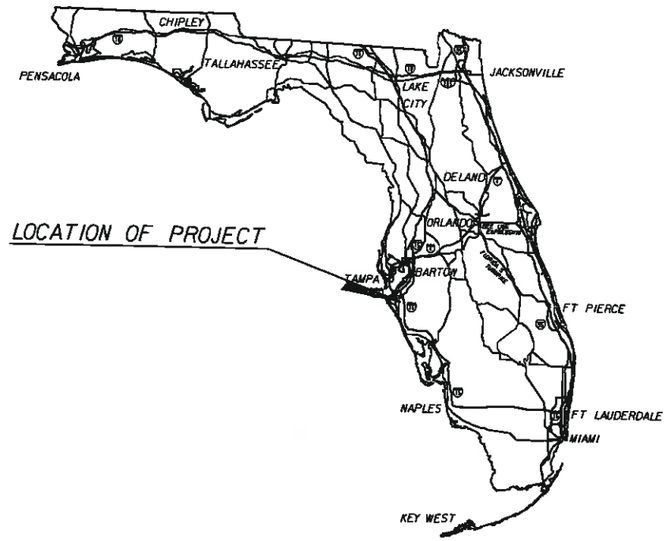
MANATEE COUNTY

(6071160)

44TH AVENUE EAST

FROM 30TH STREET EAST TO 45TH STREET EAST

LIGHTING PLANS



INDEX OF LIGHTING PLANS

SHEET NO.	SHEET DESCRIPTION
L-1	KEY SHEET
L-2	TABULATION OF QUANTITIES
L-3	GENERAL NOTES
L-4	POLE DATA AND LEGEND SHEET
L-5 TO L-10	LIGHTING PLANS
L-11	SERVICE POINT DETAIL

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED 2014,
AND STANDARD SPECIFICATIONS FOR ROAD AND
BRIDGE CONSTRUCTION DATED 2013,
AS AMENDED BY CONTRACT DOCUMENTS.

LIGHTING SHOP DRAWINGS
TO BE SUBMITTED TO:
DONALD R. HOLCOMB, P.E.
HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, STE. 400
SARASOTA, FLORIDA 34232-6233
PHONE NO. (941) 342-2705

PLANS PREPARED BY:
HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD., STE. 400
SARASOTA, FLORIDA 34232-6233
PHONE NO. (941) 342-2700
FAX (941) 342-6589
CONTRACT NO. 12348
VENDOR NO. VF-470680568
CERTIFICATE OF AUTHORIZATION No. 4213

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REDUCTION.

DONALD ROBERT HOLCOMB
LICENSE
No. 51970
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Donald R. Holcomb 5-28-14

LIGHTING PLANS
ENGINEER OF RECORD: DONALD R. HOLCOMB, P.E.

P.E. NO.: 51970

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

Lighting Plans

MANATEE COUNTY PROJECT MANAGER: KENT D. BONTRAGER, P.E.

FISCAL YEAR	SHEET NO.
14	L-1

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TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS																		TOTAL THIS SHEET		GRAND TOTAL		REF. SHEET
			L-5		L-6		L-7		L-8		L-9		L-10												
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	
715-1-12	LIGHTING CONDUCTORS (F&I) (INSULATED) (NO.8-6)	LF	7433		14305		14130		5553		13995		5557								60973		60973		
715-2-11	LIGHTING CONDUIT (F&I) (UNDERGROUND)	LF	1104		2537		1730		617		1710		879								8577		8577		
715-4-123	LIGHT POLE COMPLETE (F&I) (WIND SPEED 130) (POLE HEIGHT 50')	EA	2				6		3		4		2								17		17		
715-4-129	LIGHT POLE COMPLETE (F&I) (WIND SPEED 130) (CUSTOM HEIGHT) (DUAL ARM)	EA	5		6		3				6		4								24		24		
715-4-129	LIGHT POLE COMPLETE (F&I) (WIND SPEED 130) (CUSTOM HEIGHT) (SINGLE ARM)	EA			10																10		10		
715-7-11	LOAD CENTER (F&I) (SECONDARY VOLTAGE)	EA					1														1		1		
715-14-11	LIGHTING PULL BOX (F&I) (ROADSIDE)	EA	1		4		3				3		1								12		12		
715-500-1	POLE CABLE DISTRIBUTION SYSTEM (CONVENTIONAL)	EA	7		16		9		3		10		6								51		51		
783-4-112	ITS CONDUIT, (F&I) (UNDERGROUND)	LF	1052		1400		1300		617		1400		780								6549		6549		
783-5-1	ITS PULL BOX FOR FO CABLE (F&I)	EA	2		2		3		1		3		2								13		13		
783-6-1	ITS SPLICE BOX FOR FO CABLE (F&I)	EA											1								1		1		

DONALD ROBERT HOLCOMB
LICENSE
No. 51970
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
5-23-14

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: LIR
DRAWN BY: JLS
CHECKED BY: SAW

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

TABULATION OF QUANTITIES

SHEET NO.: L-2

4:35:46 PM 6/16/2014

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ROADWAY LIGHTING GENERAL NOTES

1. SPARE CONDUIT AT PAVEMENT CROSSINGS SHALL BE CAPPED AT BOTH ENDS.

2. PRIOR TO ANY EQUIPMENT ORDER, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL EQUIPMENT SPECIFICATION OR DESIGN DATA FOR ALL MATERIAL PROPOSED FOR THE PROJECT. THESE MUST INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
   A) LUMINAIRE PHOTOMETRICS, INCLUDING ELECTRONIC IES PHOTOMETRIC FILES
   B) POLE STRENGTH CALCULATIONS
   C) POLE FRANGIBILITY TEST
   D) BOLT SPECIFICATIONS AND BOLT CIRCLE DIAMETER
   E) POLE SHOP DRAWINGS
   F) LOAD CENTER ELECTRICAL EQUIPMENT, INCLUDING WIRING SCHEMATICS
   G) PULL BOXES AND LIDS
   H) POWER SERVICE POLE SHOP DRAWING

3. UTILITY OWNERS:

COMPANY	CONTACT	TELEPHONE NUMBERS
BRIGHTHOUSE NETWORKS	ALEX FLEMING	(941) 748-3816
FLORIDA POWER AND LIGHT TRANSMISSION	TAMEKA AUGUSTIN	(561) 694-4107
FLORIDA POWER AND LIGHT DISTRIBUTION	GREG COKER	(941) 723-4430
FLORIDA POWER AND LIGHT LAND MANAGEMENT	MARK BYERS	(941) 316-6288
MANATEE COUNTY UTILITIES	KATHY MCMAHON	(941) 792-8811
VERIZON FLORIDA	DENISE HUTTON	(941) 906-6722

4. THE LOCATIONS OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, ARE APPROXIMATE AND BASED ON THE INFORMATION FURNISHED TO THE ENGINEER BY THE UTILITY OWNER(S) AND ARE SHOWN AS NOTICE TO THE CONTRACTOR THAT UNDERGROUND UTILITIES EXIST. BEFORE EXCAVATING TAKE RESPONSIBILITY FOR NOTIFYING THE UTILITY COMPANY OWNER(S) AND REQUEST THEM TO LOCATE AND STAKE THEIR UNDERGROUND FACILITIES.

5. PROVIDE NOTICE TO THE UTILITY OWNER(S) PER FLORIDA STATUTE 556 (2008). THIS STATUTE REQUIRES THAT BEFORE EXCAVATION, NOTICE BE GIVEN TO THE SUNSHINE STATE ONE-CALL OF FLORIDA, INC. (SSOCOF) A MINIMUM OF TWO (2) FULL BUSINESS DAYS BEFORE BEGINNING ANY EXCAVATION OR DEMOLITION, EXCLUDING SATURDAY, SUNDAY, AND LEGAL HOLIDAYS. NOT ALL UTILITY COMPANIES ARE MEMBERS OF SSOCOF 1-800-432-4770.

6. THE LOCATION OF THE POLES, CONDUCTORS, CONDUITS AND JUNCTION BOXES ARE DIAGRAMMATIC ONLY AND MAY BE SHIFTED BY THE ENGINEER TO ACCOMMODATE LOCAL CONDITIONS AND EXISTING UTILITY LOCATIONS.

7. ALUMINUM POLES, LUMINAIRES AND BASES SHALL BE FABRICATED IN ACCORDANCE WITH AASHTO'S "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" AND SHALL HAVE BEEN TESTED BY FHWA-APPROVED METHODS. CERTIFICATION FOR TESTS SHALL BE SUBMITTED WITH THE SHOP DRAWINGS.

8. SUBMITTAL DATA SHALL INCLUDE COMPUTER PRINTOUT SHOWING HORIZONTAL FOOTCANDLE LEVELS TO BE OBTAINED USING THE SUBMITTED LUMINAIRES ON THIS PROJECT. AT FINAL INSPECTION, THE CONTRACTOR SHALL VERIFY THE HORIZONTAL FOOTCANDLE LEVELS ON THE ROADWAY WITH AN APPROVED CALIBRATED LIGHT METER.

9. ALL ELECTRICAL WORK SHALL MEET ALL REQUIREMENTS OF THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE, THE NATIONAL ELECTRICAL SAFETY CODE, AND THE STATE OF FLORIDA D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND DESIGN STANDARDS.

10. IN ACCORDANCE WITH N.E.C., IDENTIFY ALL CIRCUITS AND EQUIPMENT WITH "LAMACOID TAGS". INSTALL SIMILAR TAGS OF STAINLESS STEEL IDENTIFYING CIRCUIT FOR EACH LUMINAIRE AT ACCESS HANDHOLE FOR EACH POLE.

11. PULLING INSTRUCTIONS: CONNECT PULLING DEVICES TO COPPER WIRE AND NOT TO JACKET AND MEET MANUFACTURER'S REQUIREMENTS. USE PULLING COMPOUND PER MANUFACTURER'S REQUIREMENTS. ALL BENDS SHALL NOT BE LESS THAN RECOMMENDED BY N.E.C. OR N.E.S.C. FOR CABLE USED.

12. FURNISH AND INSTALL AN ALUMINUM IDENTIFICATION TAG ON EACH ROADWAY LIGHTING STANDARD. TAGS SHALL BE 2" x 8" IN SIZE WITH BLACK LETTERS ON YELLOW BACKGROUND, ATTACHED WITH APPROVED ADHESIVE (NO SCREWS OR RIVETS). NUMBERS SHALL BE AS SHOWN ON THE POLE IDENTIFICATION TAG DETAIL. COST OF TAGS SHALL BE INCLUDED IN THE BID ITEMS FOR LIGHT POLE COMPLETE. TAG SHALL BE PLACED 5 FEET ABOVE GRADE.

13. ALL EXISTING LIGHTING NOT SPECIFICALLY SHOWN TO BE REMOVED OR DE-ENERGIZED SHALL REMAIN IN PLACE AND OPERATIONAL UNTIL PROPOSED LIGHTING IS CONSTRUCTED AND OPERATIONAL. IN ALL CASES MAINTAIN EXISTING LIGHTING LEVELS (AT NIGHT) AS A MINIMUM DURING ALL PHASES OF CONSTRUCTION.

14. THE POLE CABLE DISTRIBUTION SYSTEM FOR CONVENTIONAL LIGHTING MUST BE IN STRICT CONFORMANCE WITH THE CABLE SYSTEM DESCRIBED IN SECTION 992 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE APPLICABLE PROVISIONS OF THE NATIONAL ELECTRIC CODE. NO EXCEPTIONS WILL BE PERMITTED.

15. ALL CONDUITS UNDER ROADWAY SHALL BE INSTALLED PRIOR TO INSTALLATION OF ROADWAY BASE AND SURFACE (OR CONCRETE), EXCEPT WHERE OTHERWISE SPECIFIED IN THE PLANS.

16. JACK AND BORE OPERATIONS IF USED SHALL MEET THE REQUIREMENTS OF F.D.O.T.'S UTILITY ACCOMMODATION GUIDE MANUAL 2007.

17. STAKE ALL POLE LOCATIONS AND REQUEST UTILITY COMPANIES TO LOCATE AND STAKE UNDERGROUND UTILITIES PRIOR TO EXCAVATING. AT LOCATIONS WHERE UNDERGROUND UTILITIES ARE WITHIN 2' TO THE LIGHTING POLE FOUNDATIONS AND/OR CONDUIT RUN(S), AS DETERMINED BY THE ENGINEER, HAND DIG THE FIRST 4 FEET OF THE HOLE FOR THE POLE FOUNDATION AND/OR CONDUIT RUN(S).

18. ALL CONDUIT TRENCHES SHALL BE BACKFILLED COMPLETELY TO PROVIDE SAFE CROSSING BY THE END OF EACH WORKING DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE. THE CONTRACTOR SHALL NOT OPEN ANY AREA THAT CAN NOT BE BACKFILLED IN THE SAME DAY/NIGHT OPERATION.

19. ALL EXCESS DIRT AND DEBRIS EXCAVATED FROM POLE FOUNDATIONS SHALL BE REMOVED DAILY TO AREAS APPROVED BY THE ENGINEER. COST SHALL BE INCLUDED IN APPLICABLE LIGHT POLE PAY ITEMS.

20. THE LIGHTING SYSTEM WILL BE MAINTAINED BY MANATEE COUNTY UPON FINAL ACCEPTANCE.

21. PREPARE ACCURATELY DIMENSIONED "AS-BUILT" PLANS OF THE FINAL POLE, PULL BOXES, CABLE AND CONDUIT LOCATIONS. PLANS SHALL BE REVIEWED AND APPROVED BY THE COUNTY. COST OF SUCH PREPARATION SHALL BE INCIDENTAL TO PAY ITEMS PROVIDED.

22. WHEN THE SOIL IS EXPOSED, PREPARE TEMPORARY STABILIZATION AS SOON AS PRACTICABLE, BUT IN NO CASE SHALL THE TIME BE GREATER THAN SEVEN (7) CALENDAR DAYS.

23. ALL PULL BOX COVERS SHALL BE MARKED "STREET LIGHTING" AND ALL METAL COVERS SHALL BE PROVIDED WITH A GROUND LUG AND BONDED TO THE GROUND ROD WITH #6 FLEXIBLE BARE COPPER CONDUCTOR.

24. VERIFY POLE LENGTHS REQUIRED PER THE ROADWAY CROSS SECTIONS AND OFFSETS IN ORDER TO ACHIEVE THE PROPER MOUNTING HEIGHT FOR EACH LUMINAIRE. THIS VERIFICATION SHALL OCCUR PRIOR TO THE SUBMISSION OF SHOP DRAWINGS. MOUNTING HEIGHTS ARE DETERMINED FROM THE BOTTOM OF THE LUMINAIRE HOUSING VERTICALLY TO PAVEMENT GRADE.

25. CONDUIT LOCATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. CONDUIT MUST BE PLACED WITHIN THE RIGHT-OF-WAY BUT CAN BE ADJUSTED TO FIT AROUND THE EXISTING AND PROPOSED UTILITIES. WHERE PLANNED LOCATION OF LIGHTING CONDUIT RUNS 30" UNDER PAVEMENT IS FOUND TO CONFLICT WITH UNDERGROUND UTILITIES, THE LIGHTING CONDUIT POSITION SHALL BE ALTERED VERTICALLY OR HORIZONTALLY TO AVOID THE CONFLICT AS RECOMMENDED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. A 24" ABSOLUTE MINIMUM DEPTH SHALL BE MAINTAINED WHERE LIGHTING CONDUITS ARE RELOCATED CLOSER THAN 30" BELOW THE GROUND SURFACE AND SHALL BE PLACED IN AN ADDITIONAL 3" COATED RGS CONDUIT SLEEVE OR BACKFILLED WITH A MINIMUM OF 4" x 4" CONCRETE COVER. COST OF SUCH TREATMENT WILL BE INCIDENTAL TO PAY ITEMS PROVIDED.

26. ALL SPLICES SHALL BE MADE IN PULL BOXES ONLY WITH COMPRESSION SLEEVES OR SPLIT BOLT CONNECTORS, PROPERLY TAPED AND WATERPROOFED AS PER CURRENT STANDARD INDEX.

27. SPLICES AND CONNECTIONS MADE IN PULL BOXES SHALL BE LIMITED TO THE SERVICE POINT AND CONDUIT JUNCTION WITH MULTI-DIRECTIONAL CONDUITS AS INDICATED ON PLANS. THE CONNECTION MADE AT THESE POINTS SHOULD BE PROPERLY TAPED AND HEAT SHRINK TUBES OR CAPS SHALL BE USED TO WATERPROOF THESE CONNECTIONS.

28. INSPECT ALIGNMENT OF EACH INDIVIDUAL POLE AND FIXTURE AS FOLLOWS:

    POLE ALIGNMENT: WITHIN ONE HALF DEGREE ON VERTICAL +/-. CONFIRM VERTICAL ALIGNMENT, VIEWING FROM ADJACENT SERIES OF POLES, IN BOTH DIRECTIONS.

    FIXTURE ALIGNMENT: WITHIN ONE DEGREE OF HORIZONTAL +/-. USING CALIBRATED LEVEL ALONG BOTH AXES OF CUT-OFF FIXTURE FACE, WITH LENS ONLY. NO FIXTURE REFRACTOR SHALL BE USED.

29. ALL CONDUITS SHALL BE MANDREL TESTED AND CLEANED. CONDUITS PLACED FOR FUTURE USE SHALL HAVE POLYESTER CORD PULLED IN PLACE AND CAPPED WITH NOTATION INSIDE CONDUIT AS TO LOCATION OF OPPOSITE END. PLACE DUCT MARKER OR PULL BOXES TO MARK ENDS OF EMPTY CONDUITS.

30. REMOVE ALL OUT OF SERVICE LIGHTING EQUIPMENT INCLUDING BUT NOT LIMITED TO FIXTURES, CONDUITS, WIRE, PULL BOXES, AND ALL OTHER COMPONENTS THAT MAKE UP A COMPLETE LIGHTING SYSTEM.

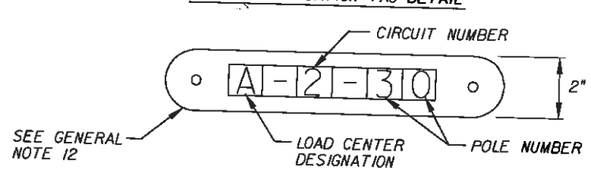
31. PULL BOXES SHALL NOT BE INSTALLED WITHIN ANY DITCHES OR AREAS THAT MAY CAUSE WATER INTRUSION.

32. THE CONTRACTOR SHALL USE THE CONCRETE FOUNDATION ON INDEX 17503.

33. HANDHOLE COVERS FOR POLES SHALL BE LOCATED IN THE OPPOSITE DIRECTION TO APPROACHING TRAFFIC.

34. ALL LIGHT POLES SHALL HAVE A PULL BOX INSTALLED BY ITS FOUNDATION PER DESIGN STANDARDS.

POLE IDENTIFICATION TAG DETAIL



PAY ITEM NOTES

1. 783-5-1 & 783-6-1:

   THE LIDS SHALL BE STAMPED "ATMS" IN RAISED LETTERS. APPROPRIATELY SIZE EACH PULL BOX SO THAT THE FIBER COMMUNICATIONS CABLE DOES NOT EXCEED MANUFACTURER'S RECOMMENDED BENDING RADIUS. THE CONTRACTOR SHALL FOLLOW F.D.O.T. STANDARD INDEX 18220.

2. 783-4-112:
   2 INCH HDPE CONDUIT SHALL BE USED FOR UNDERGROUND COMMUNICATION CONDUIT INSTALLATIONS. THE INSTALLATION AND TERMINATION OF THE CONDUIT SHALL ADHERE TO INDEX 18202 AND INDEX 18204 OF THE 2008 F.D.O.T. DESIGN STANDARDS.

DONALD ROBERT HOLCOMB
No. 51970
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5-23-14

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: LIR
DRAWN BY: JLS
CHECKED BY: SAW

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

Manatee County FLORIDA — MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

GENERAL NOTES

SHEET NO.: L-3

4:35:54 PM 5/28/2014

POLE DATA

POLE NO.	CIRCUIT	STATION/OFFSET	ARM LENGTH	TILT	LUMINAIRE WATTAGE	MOUNTING HEIGHT	PAY ITEM NO.
1	A-7	STA. 100+98, 50.3' LT	15'	0°	400	50'	715-4-123
2	A-6	STA. 102+55, 50.3' LT	15'	0°	400	50'	715-4-123
3	A-5	STA. 104+08, 00.3' LT	15'	0°	2 x 150	30'	715-4-129
4	A-8	STA. 105+49, 00.6' LT	15'	0°	2 x 150	30'	715-4-129
5	A-7	STA. 106+91, 01.1' LT	15'	0°	2 x 150	30'	715-4-129
6	A-6	STA. 108+38, 00.0'	15'	0°	2 x 150	30'	715-4-129
7	A-5	STA. 109+78, 00.0'	15'	0°	2 x 150	30'	715-4-129
8	A-8	STA. 111+19, 00.0'	15'	0°	2 x 150	30'	715-4-129
9	A-5	STA. 112+68, 47.1' LT	10'	0°	150	30'	715-4-129
10	A-6	STA. 112+63, 47.0' RT	10'	0°	150	30'	715-4-129
11	A-7	STA. 113+94, 47.0' LT	10'	0°	150	30'	715-4-129
12	A-8	STA. 113+89, 47.0' RT	10'	0°	150	30'	715-4-129
13	A-5	STA. 115+24, 49.0' LT	10'	0°	150	30'	715-4-129
14	A-6	STA. 115+18, 47.0' RT	10'	0°	150	30'	715-4-129
15	A-7	STA. 116+47, 49.0' LT	10'	0°	150	30'	715-4-129
16	A-8	STA. 116+44, 47.0' RT	10'	0°	150	30'	715-4-129
17	A-5	STA. 117+41, 49.0' LT	10'	0°	150	30'	715-4-129
18	A-6	STA. 117+37, 47.0' RT	10'	0°	150	30'	715-4-129
19	A-6	STA. 118+64, 00.0'	15'	0°	2 x 150	30'	715-4-129
20	A-5	STA. 119+99, 00.0'	15'	0°	2 x 150	30'	715-4-129
21	A-8	STA. 121+29, 00.1' LT	15'	0°	2 x 150	30'	715-4-129
22	A-7	STA. 122+61, 01.0' LT	15'	0°	2 x 150	30'	715-4-129
23	A-6	STA. 124+00, 00.0'	15'	0°	2 x 150	30'	715-4-129
24	A-5	STA. 125+39, 00.0'	15'	0°	2 x 150	30'	715-4-129
25	A-8	STA. 126+73, 00.0'	15'	0°	2 x 150	30'	715-4-129
26	A-7	STA. 127+96, 00.0'	15'	0°	2 x 150	30'	715-4-129
27	A-6	STA. 129+41, 50.3' LT	15'	0°	400	50'	715-4-123
28	A-5	STA. 130+91, 50.3' LT	15'	0°	400	50'	715-4-123
29	A-1	STA. 132+55, 50.3' LT	15'	0°	400	50'	715-4-123
30	A-2	STA. 134+04, 50.2' LT	15'	0°	400	50'	715-4-123
31	A-1	STA. 135+86, 50.2' LT	15'	0°	400	50'	715-4-123
32	A-2	STA. 137+64, 50.2' LT	15'	0°	400	50'	715-4-123
33	A-1	STA. 139+40, 50.3' LT	15'	0°	400	50'	715-4-123
34	A-2	STA. 141+42, 50.3' LT	15'	0°	400	50'	715-4-123
35	A-1	STA. 143+02, 50.2' LT	15'	0°	400	50'	715-4-123
36	A-3	STA. 144+24, 0.0'	15'	0°	2 x 150	30'	715-4-129
37	A-4	STA. 145+60, 00.0'	15'	0°	2 x 150	30'	715-4-129
38	A-3	STA. 147+00, 00.0'	15'	0°	2 x 150	30'	715-4-129
39	A-4	STA. 148+37, 00.0'	15'	0°	2 x 150	30'	715-4-129
40	A-3	STA. 149+73, 00.0'	15'	0°	2 x 150	30'	715-4-129
41	A-2	STA. 150+88, 50.3' LT	15'	0°	400	50'	715-4-123
42	A-1	STA. 152+62, 50.2' LT	15'	0°	400	50'	715-4-123
43	A-2	STA. 154+45, 50.2' LT	15'	0°	400	50'	715-4-123
44	A-1	STA. 156+10, 50.3' LT	15'	0°	400	50'	715-4-123
45	A-4	STA. 157+38, 00.0'	15'	0°	2 x 150	30'	715-4-129
46	A-3	STA. 158+80, 00.0'	15'	0°	2 x 150	30'	715-4-129
47	A-4	STA. 160+21, 00.0'	15'	0°	2 x 150	30'	715-4-129
48	A-3	STA. 161+60, 00.0'	15'	0°	2 x 150	30'	715-4-129
49	A-4	STA. 162+94, 00.0'	15'	0°	2 x 150	30'	715-4-129
50	A-2	STA. 164+32, 50.3' LT	15'	0°	400	50'	715-4-123
51	A-1	STA. 165+75, 50.3' LT	15'	0°	400	50'	715-4-123

LEGEND

SYMBOLS	DESCRIPTION
●—▬	SHOULDER MOUNTED 400 WATT HIGH PRESSURE SODIUM CLEAR FLAT GLASS LUMINAIRE. DESIGNED FOR FULL CUTOFF, TYPE III DISTRIBUTION. INTEGRAL MAGNETIC REGULATOR TYPE BALLAST WIRED FOR 480 VOLT OPERATION. MOUNTING HEIGHT IS 50 FEET. SYMBOL INCLUDES LUMINAIRE, ARM, POLE WITH VIBRATION DAMPER AND PAD, PULL BOX AND CONCRETE SLAB. COST OF PULL BOX AND CONCRETE SLAB IS INCIDENTAL TO THE LIGHT POLE COMPLETE PAY ITEM NO. 715-4-123. LUMINAIRE IS GE'S COBRA HEAD FIXTURE (MDCL40S5FMC3) OR APPROVED EQUAL, PHOTOMETRIC CURVE NO. 451002.
○—○—○	2 x 150 WATT HIGH PRESSURE SODIUM CLEAR FLAT GLASS LUMINAIRES. DESIGNED FOR FULL CUTOFF, TYPE III DISTRIBUTION. INTEGRAL MAGNETIC REGULATOR TYPE BALLAST WIRED FOR 480 VOLT OPERATION. MOUNTING HEIGHT IS 30 FEET. SYMBOL INCLUDES LUMINAIRES, ARMS, POLE WITH VIBRATION DAMPER AND PAD, PULL BOX AND CONCRETE SLAB. COST OF PULL BOX AND CONCRETE SLAB IS INCIDENTAL TO THE LIGHT POLE COMPLETE PAY ITEM NO. 715-4-129. LUMINAIRE IS GE'S COBRA HEAD FIXTURE (MDCU5S5FMC3) OR APPROVED EQUAL, PHOTOMETRIC CURVE NO. 450387.
○—○	150 WATT HIGH PRESSURE SODIUM CLEAR FLAT GLASS LUMINAIRES. DESIGNED FOR FULL CUTOFF, TYPE III DISTRIBUTION. INTEGRAL MAGNETIC REGULATOR TYPE BALLAST WIRED FOR 480 VOLT OPERATION. MOUNTING HEIGHT IS 30 FEET. SYMBOL INCLUDES LUMINAIRES, ARMS, POLE WITH VIBRATION DAMPER AND PAD, PULL BOX AND CONCRETE SLAB. COST OF PULL BOX AND CONCRETE SLAB IS INCIDENTAL TO THE LIGHT POLE COMPLETE PAY ITEM NO. 715-4-129. LUMINAIRE IS GE'S COBRA HEAD FIXTURE (MDCU5S5FMC3) OR APPROVED EQUAL, PHOTOMETRIC CURVE NO. 450387.
——●——	ONE - 2" (UNLESS OTHERWISE SPECIFIED) SCHEDULE 40 PVC UNDERGROUND CONDUIT CONTAINING RHW-2 XLP OR THWN-2 CONDUCTORS. AWG SIZES AND TOTAL CONDUCTORS CALLED OUT ON PLAN SHEETS. CALL OUT NUMBER INCLUDES ONE COPPER GROUND CONDUCTOR (TW GREEN INSULATION) INSIDE CONDUIT WITH OTHER CONDUCTORS, UNLESS NOTED OTHERWISE.
——●●——	ONE - 2" HDPE CONDUIT FOR FUTURE INTERCONNECT.
▯D	DISTRIBUTION POINT. FOR REQUIREMENTS SEE INDEX NO. 17504 OF DESIGN STANDARDS. SEE SHEET L-11 FOR SERVICE POINT DETAIL.
□	PULL BOX AND CONCRETE SLAB. FOR SPECIFICATIONS SEE SECTION 635 OF STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, INDEX 17500 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS, AND SECTION A635 OF THE MINIMUM SPECIFICATIONS FOR TRAFFIC CONTROL SIGNAL DEVICES. COST OF CONCRETE SLAB IS INCIDENTAL TO THE PULL BOX PAY ITEM NO. 715-14-11.
▬◤	FIBER OPTIC PULL BOX FOR FUTURE INTERCONNECT
◔	FIBER OPTIC SPLICE BOX FOR FUTURE INTERCONNECT.
◌	EXISTING FIBER OPTIC SPLICE BOX TO REMAIN.

DONALD ROBERT HOLCOMB
LICENSE
No. 51970
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5-23-14

CONVENTIONAL LIGHTING DESIGN CRITERIA

AVERAGE INITIAL INTENSITY	1.5 FOOTCANDLES
UNIFORMITY RATIO AVG./MIN.	4:1 OR LESS
MAX./MIN.	10:1 OR LESS
VEILING LUMINANCE RATIO [Lv(max.)/Lavg.]	0.3:1 OR LESS
WIND SPEED	130 MPH

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: LIR
DRAWN BY: JLS
CHECKED BY: SAW

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

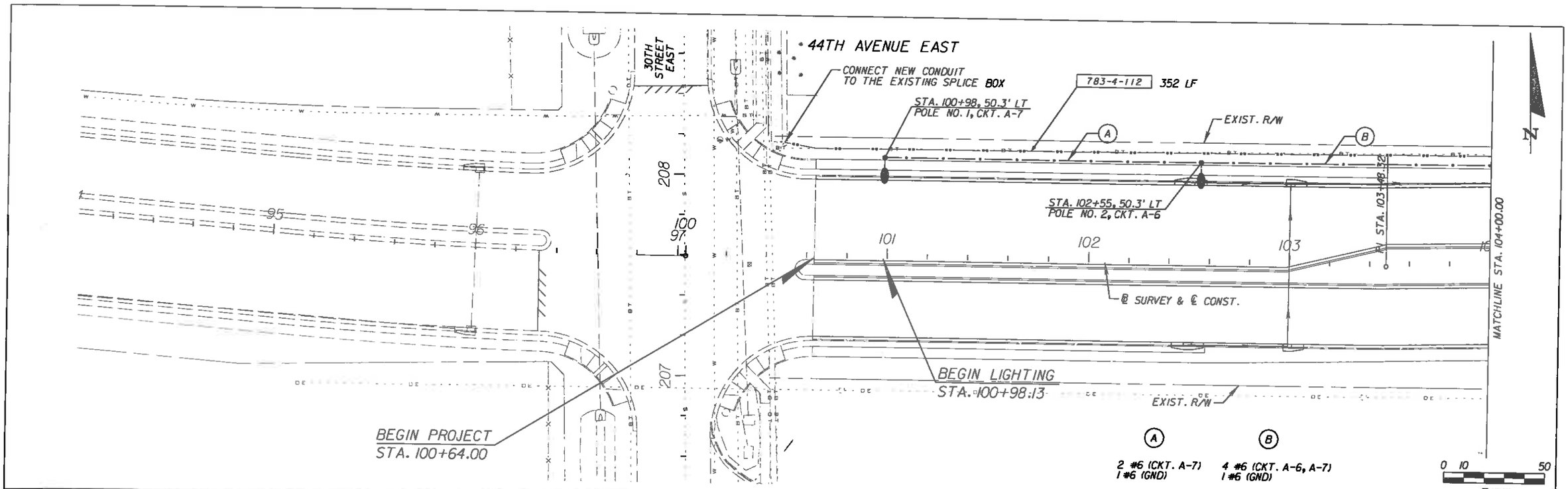
DATE: 05/27/14
PROJECT NO.: 607I160

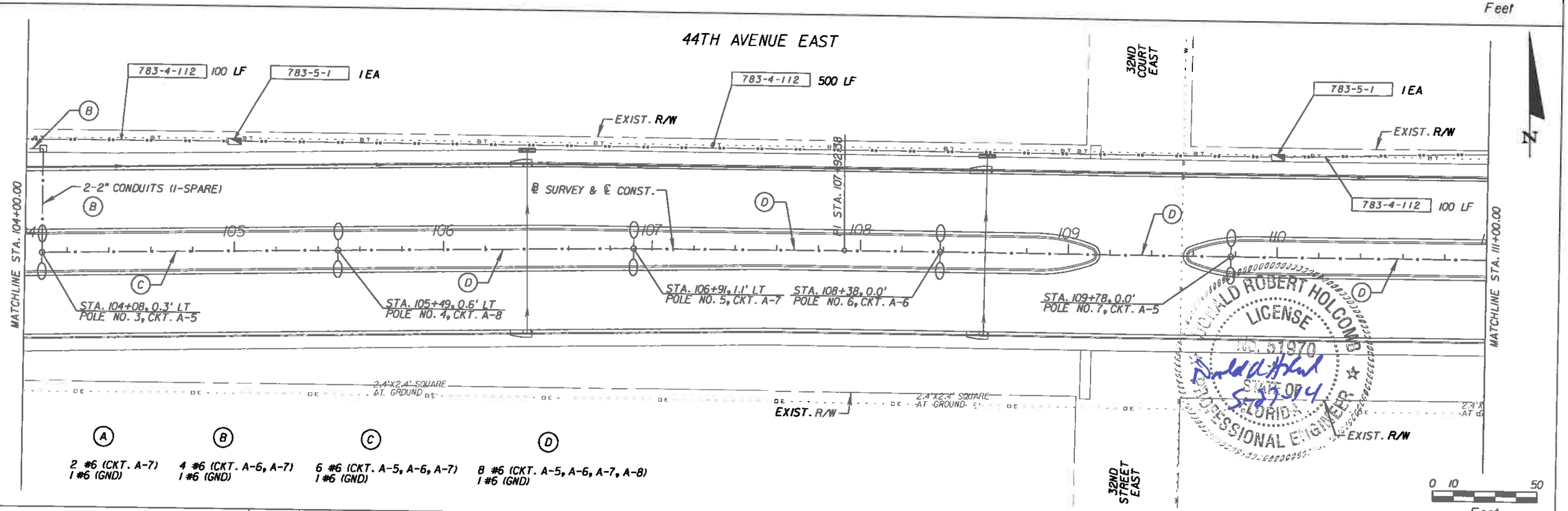
Manatee County FLORIDA — MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

POLE DATA AND LEGEND SHEET

SHEET NO.: L-4





DONALD ROBERT HOLCOMB
LICENSE
NO. 51970
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5-27-14

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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DRAWN BY: JLS
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HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

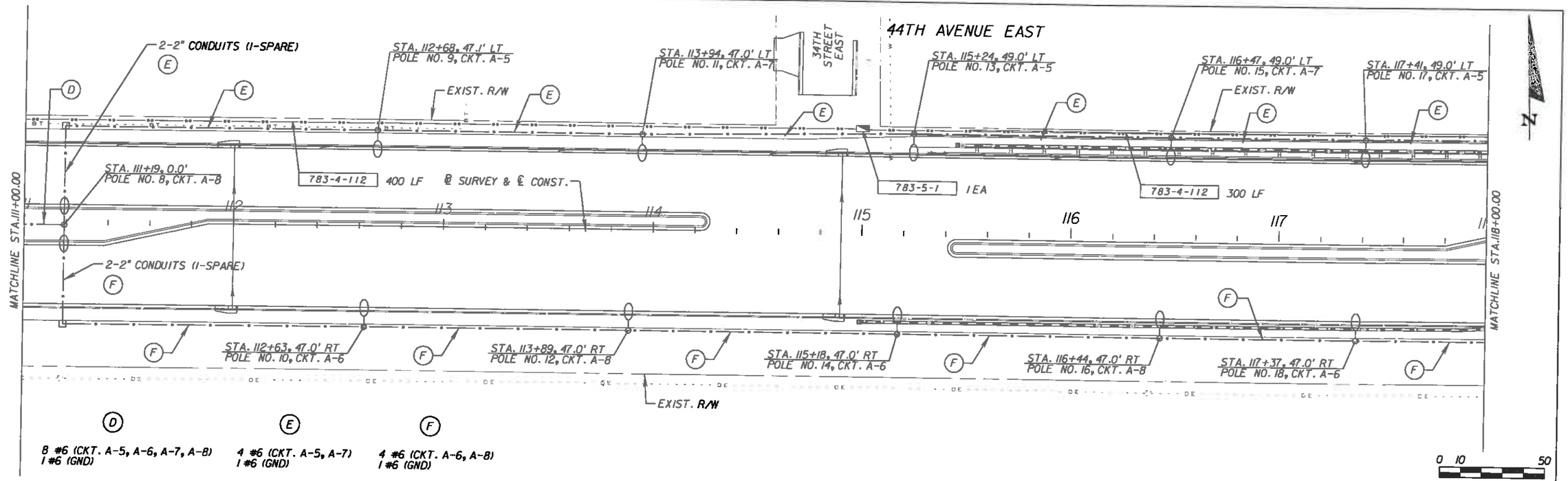
Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

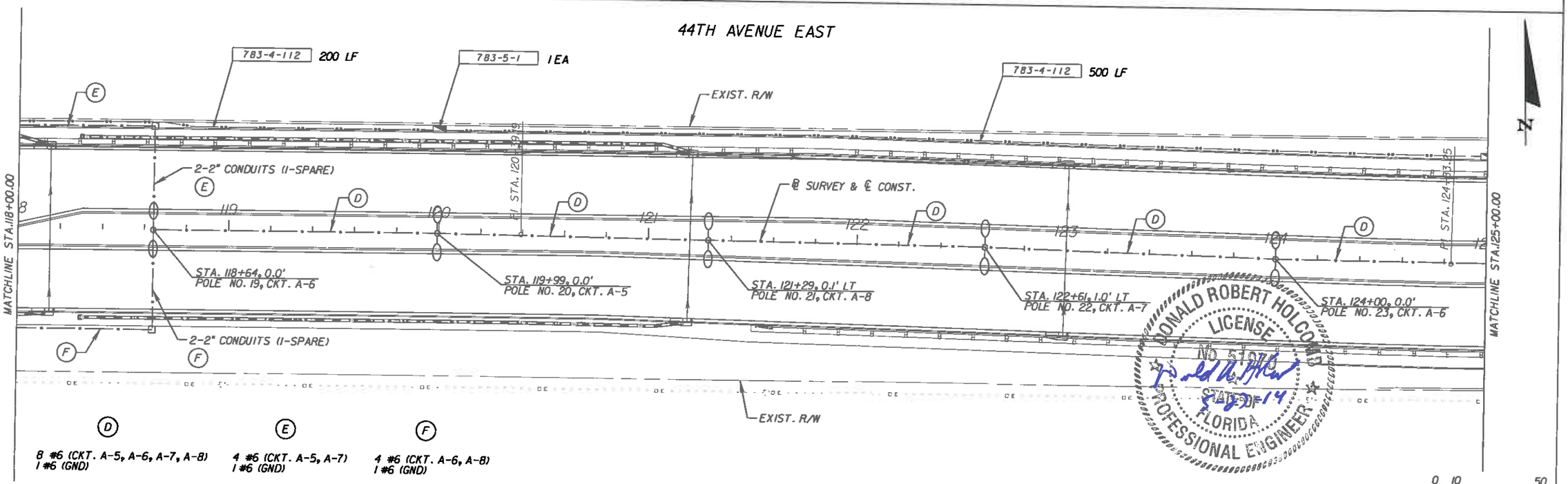
DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

LIGHTING PLAN
STA. 100+98.13 TO STA. 111+00.00

SHEET NO.: L-5

4:36:06 PM 6/16/2014





DONALD ROBERT HOLCOMB
LICENSE
NO. 51970
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5-27-14

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: LIR
DRAWN BY: JLS
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HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

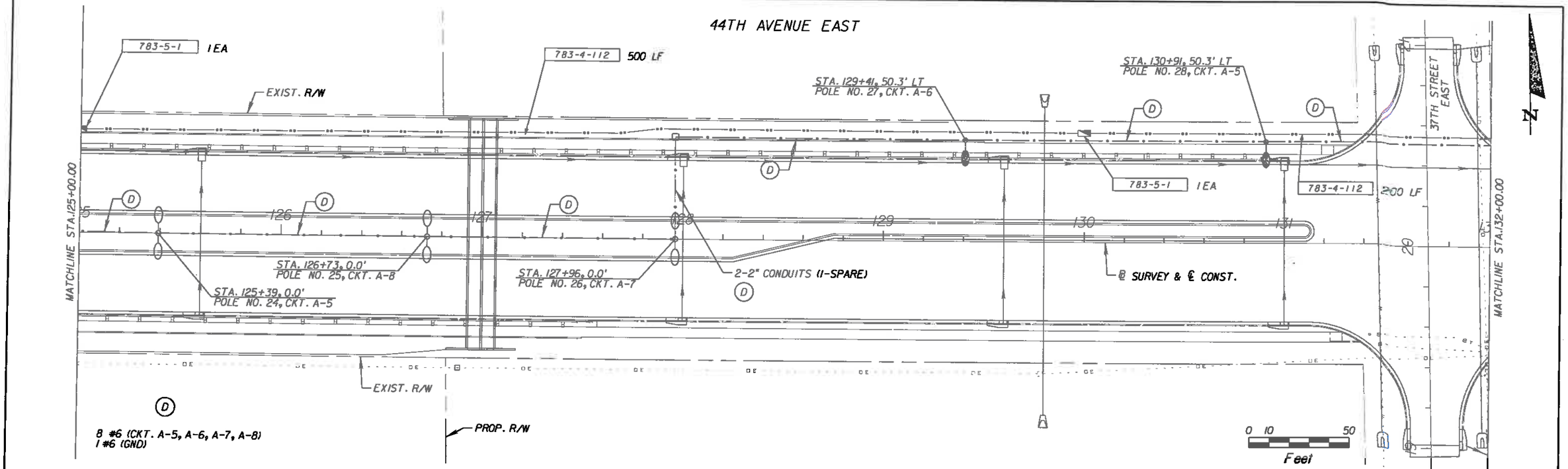
Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

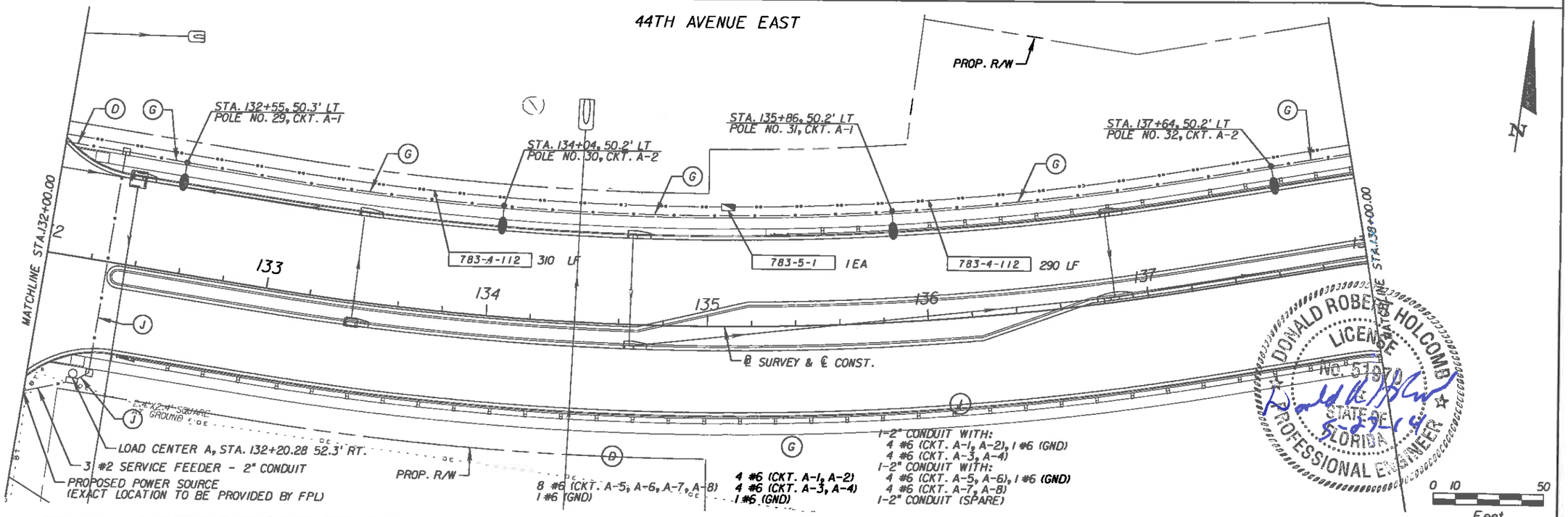
DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

LIGHTING PLAN
STA. 111+00.00 TO STA. 125+00.00

SHEET NO.: L-6

4:36:17 PM 6/16/2014





DONALD ROBERT HOLCOMB
LICENSE
NO. 51970
STATE OF FLORIDA
PROFESSIONAL ENGINEER

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: LIR
DRAWN BY: JLS
CHECKED BY: SAW

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-8233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

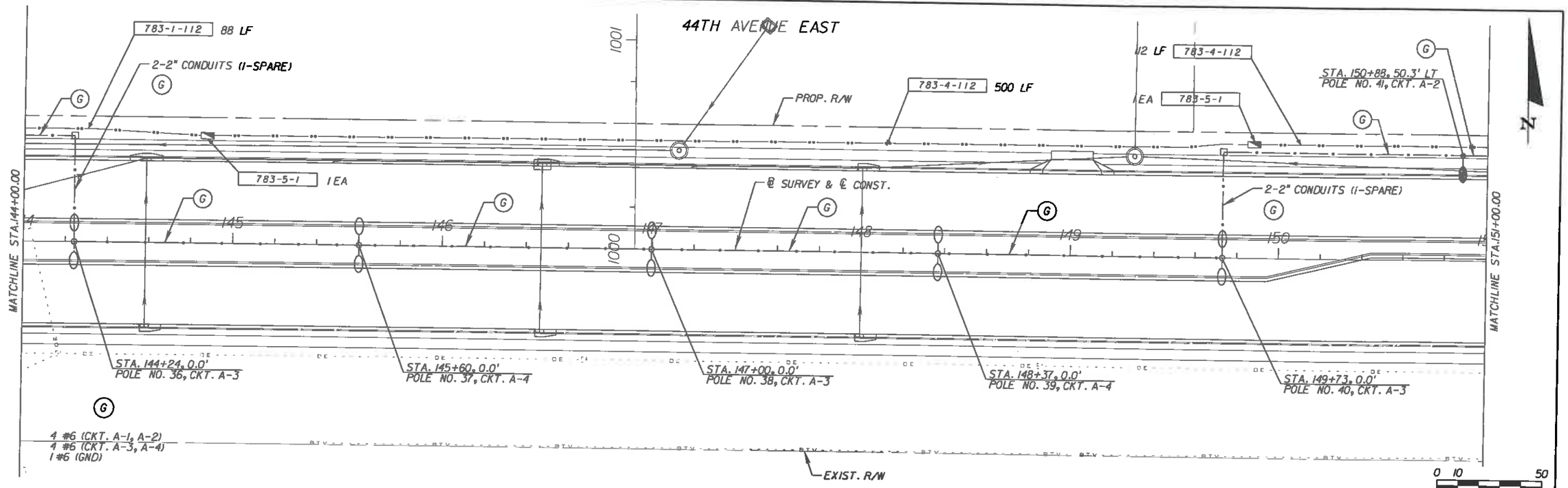
Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

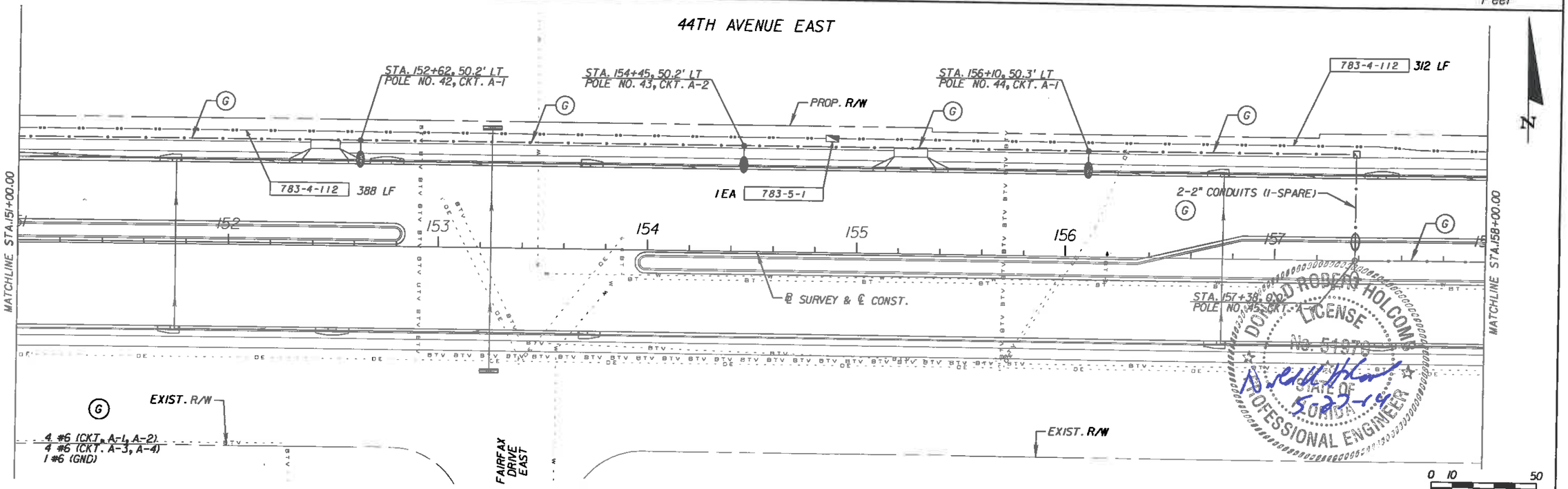
DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

LIGHTING PLAN
STA. 125+00.00 TO STA. 138+00.00

SHEET NO.: L-7

4:36:26 PM 6/16/2014





DONALD RODERO HOLCOMB
LICENSE
No. 51970
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5-27-14

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: LIR
DRAWN BY: JLS
CHECKED BY: SAW

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

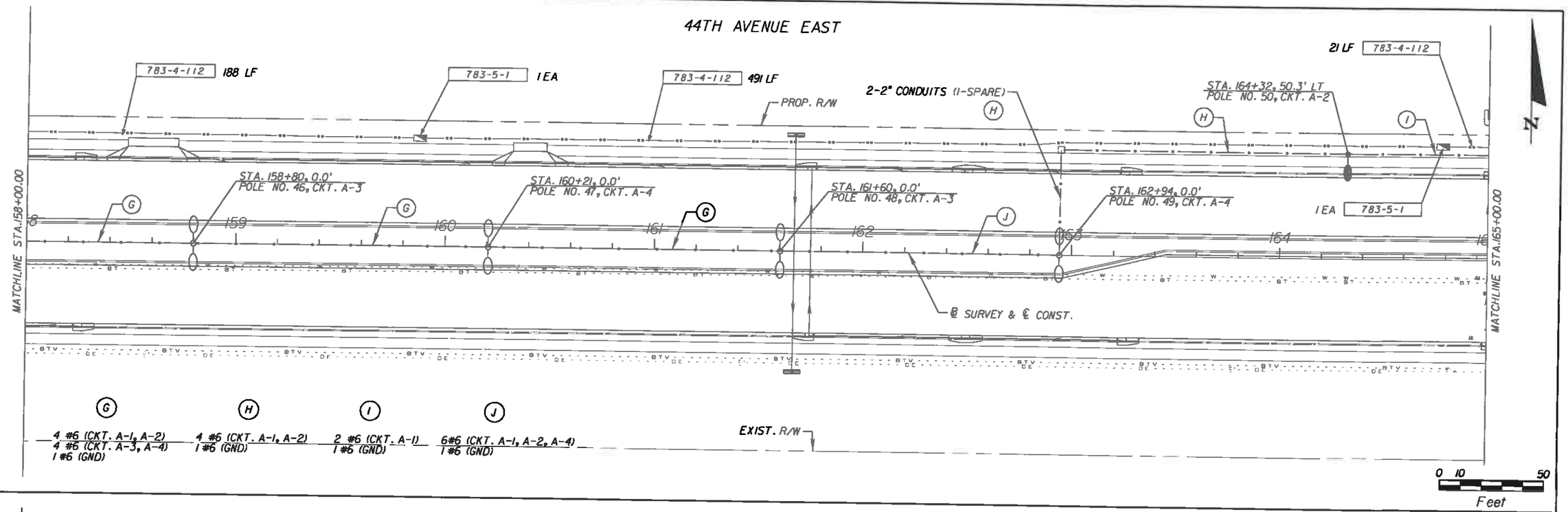
Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

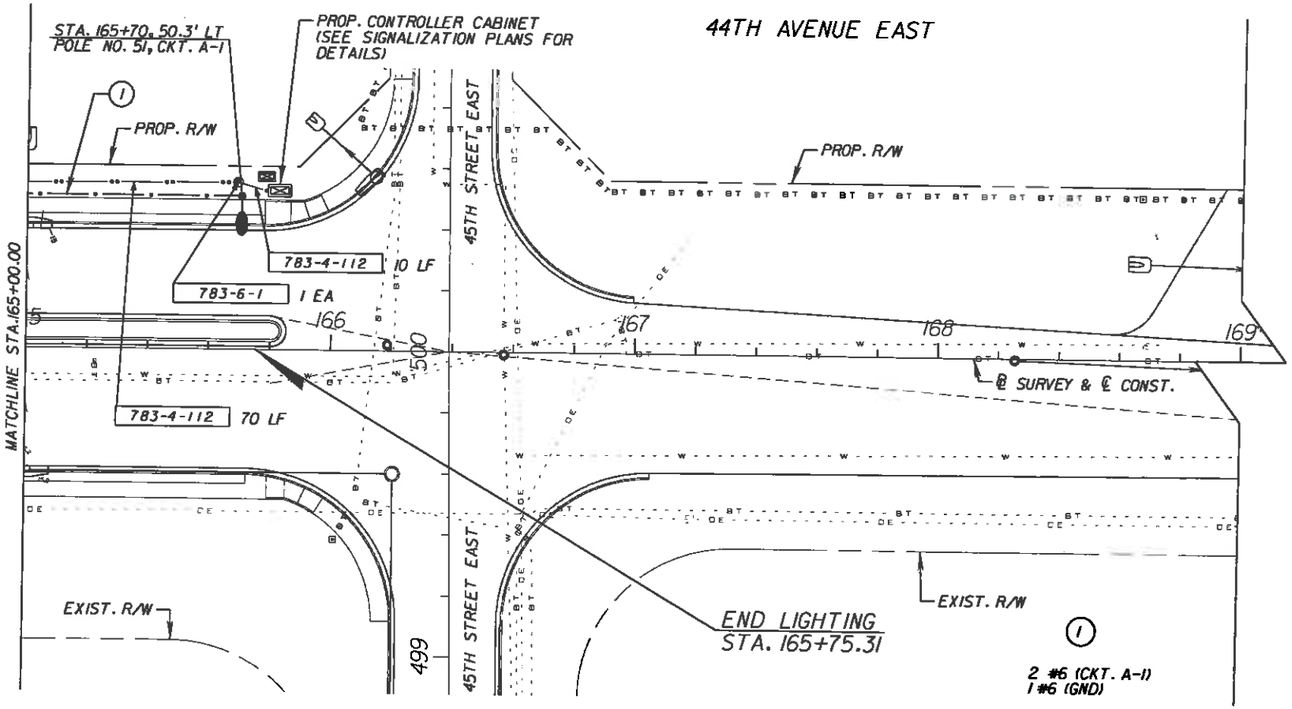
DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

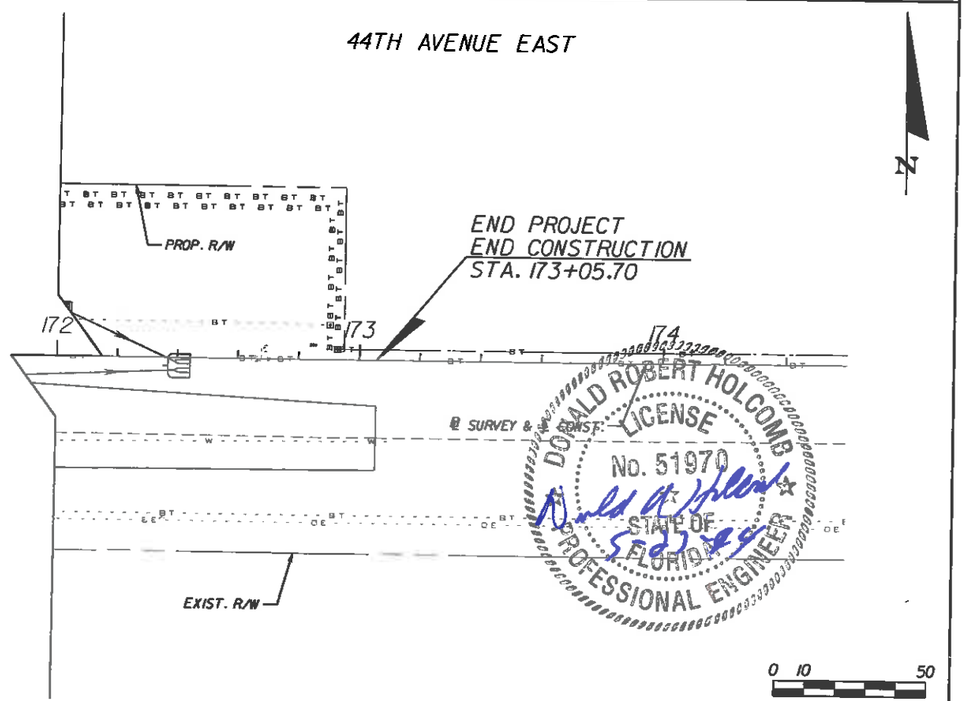
LIGHTING PLAN
STA. 144+00.00 TO STA. 158+00.00

SHEET NO.: L-9

4:36:42 PM 5/15/2014







DONALD ROBERT HOLCOMB
LICENSE
No. 51970
STATE OF FLORIDA
PROFESSIONAL ENGINEER

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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Sarasota, FL 34232-6233
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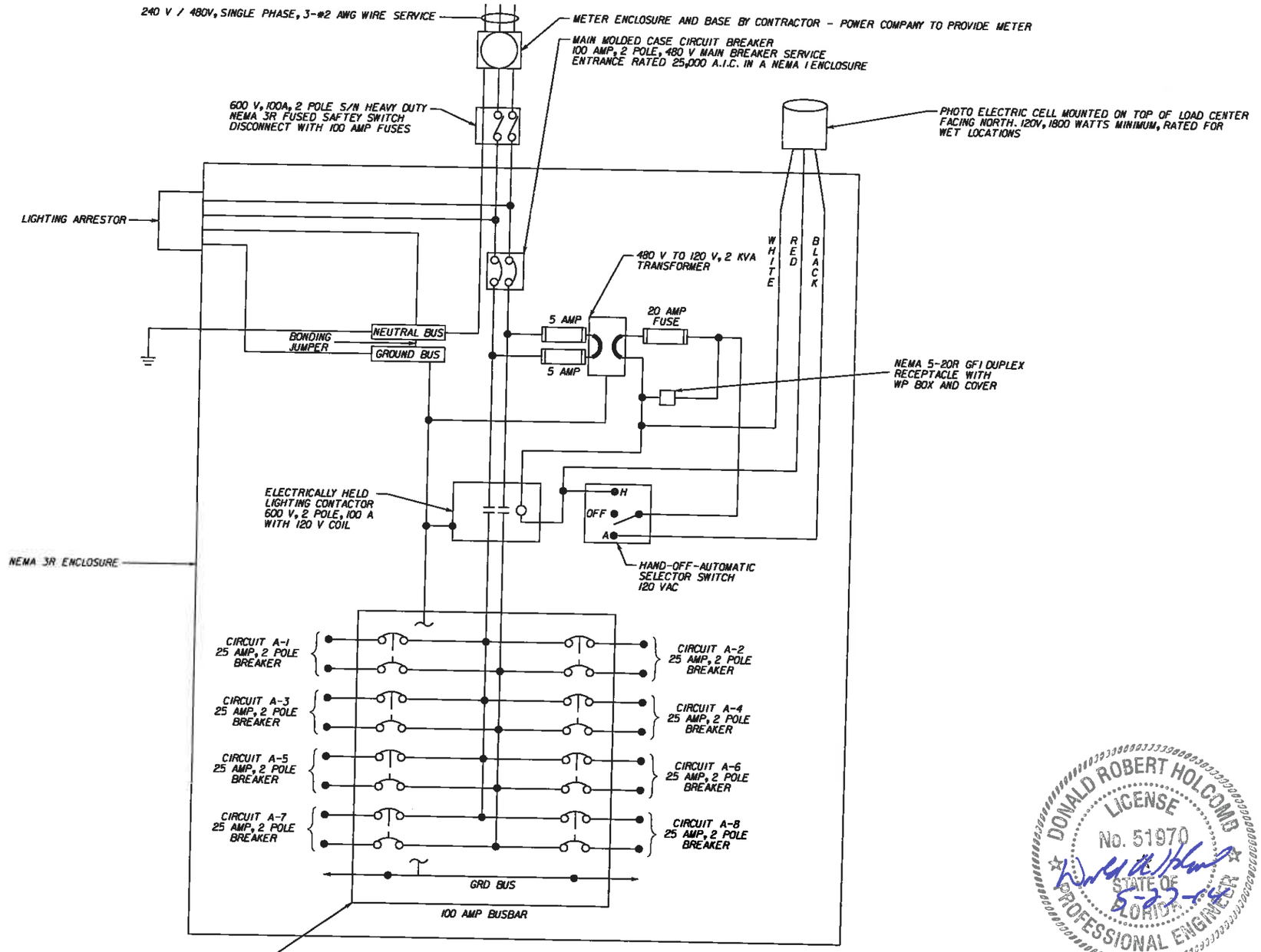
Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

LIGHTING PLAN
STA. 158+00.00 TO STA. 165+75.31

SHEET NO.: L-10



CONTROL CABINET WIRING DIAGRAM FOR LOAD CENTER "A"
N.T.S.

DONALD ROBERT HOLCOMB
LICENSE
No. 51970
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
5-23-14

NOTES:

1. PROVIDE TWO 25AMP, 2-POLE SPARE BREAKERS AND FOUR SPACES FOR FUTURE USE.
2. REFER TO THE 2012-2013, FDOT STANDARD DESIGN INDEX 17504 FOR ADDITIONAL SERVICE POINT DETAILS.
3. CONTRACTOR SHALL FURNISH ENCLOSURE SIZED FOR THE EQUIPMENT FURNISHED AND WIRE MANAGEMENT.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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CHECKED BY: SAW

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

SERVICE POINT DETAIL

SHEET NO.: L-11

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

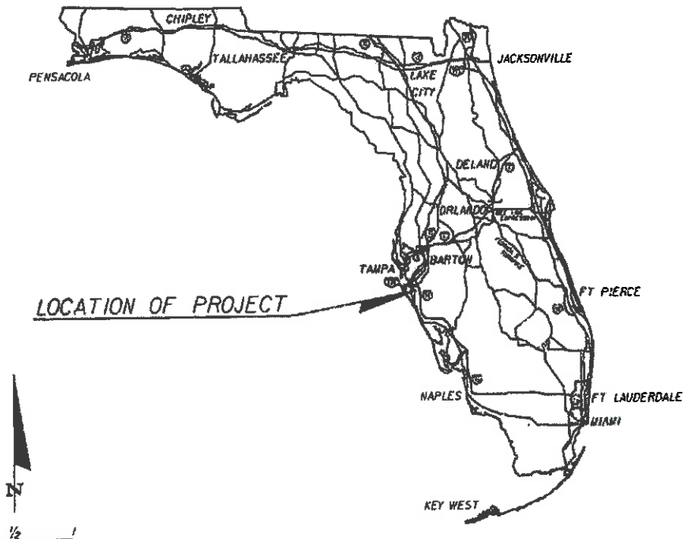
CONTRACT PLANS

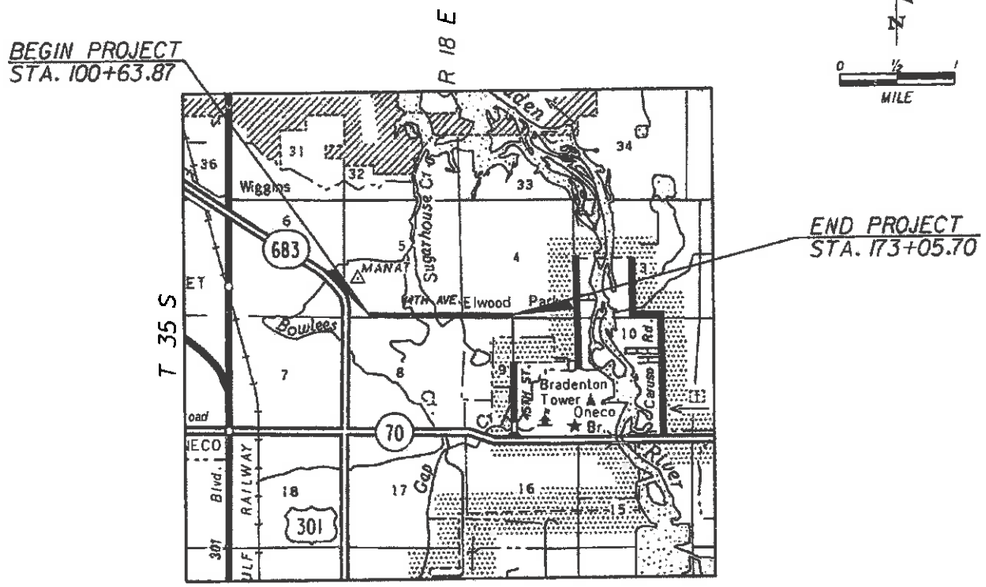
MANATEE COUNTY

(6071160)

44TH AVENUE EAST

FROM 30TH STREET EAST TO 45TH STREET EAST
POTABLE WATER MAIN PLANS





A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT

INDEX OF WATER MAIN PLANS

SHEET NO.	SHEET DESCRIPTION
W-1	KEY SHEET
W-2	WATER GENERAL NOTES
W-3 TO W-13	PLAN AND PROFILE SHEETS
W-14	CROSS SECTIONS
W-15 TO W-24	WATER DETAILS

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED 2014,
AND STANDARD SPECIFICATIONS FOR ROAD AND
BRIDGE CONSTRUCTION DATED 2013,
AS AMENDED BY CONTRACT DOCUMENTS.

REVISIONS

WATER MAIN SHOP DRAWINGS
TO BE SUBMITTED TO:
DONALD R. HOLCOMB, P.E.
HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD., STE. 400
SARASOTA, FLORIDA 34232-6233
PHONE NO. (941) 342-2700

PLANS PREPARED BY:
HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD., STE. 400
SARASOTA, FLORIDA 34232-6233
PHONE NO. (941) 342-2700
FAX (941) 342-6589
CONTRACT NO. 12348
VENDOR NO. VF-470680568
CERTIFICATE OF AUTHORIZATION No. 4213

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

DONALD ROBERT HOLCOMB
LICENSE
5-14
STATE OF FLORIDA
PROFESSIONAL ENGINEER

WATER MAIN PLANS
ENGINEER OF RECORD: DONALD R. HOLCOMB, P.E.

P.E. NO.: 51970

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

Water Plans

MANATEE COUNTY PROJECT MANAGER: KENT D. BONTRAGER, P.E.

FISCAL YEAR	SHEET NO.
14	W-1

GENERAL NOTES

1. ALL WATER WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS TECHNICAL MANUAL, LATEST EDITION (DETAILS AND SPECIFICATIONS). THE DETAILS AND STANDARDS DESCRIBED ABOVE SHALL BE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS FOR THIS PROJECT.

2. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC. WHICH ARE WITHIN THE PROJECT AREA AND WHICH HAVE BEEN INSTALLED AND CONSTRUCTED SINCE THE PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY PRIOR TO CONSTRUCTION THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) AFFECTING HIS WORK.

3. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF WORK. ALL CONTRACTORS ARE DIRECTED PRIOR TO BIDDING TO CONDUCT WHATEVER INVESTIGATIONS THEY MAY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.

4. THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THERE MAY BE SOME UTILITY CONFLICTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ANY AND ALL EXISTING UTILITIES ON THE PROJECT.

5. FIELD CONDITIONS MAY NECESSITATE SLIGHT ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED UTILITIES TO AVOID OBSTACLES, AS ORDERED BY THE ENGINEER. THE CONTRACTOR SHALL USE ADDITIONAL FITTINGS, OFFSETS OR BENDS AS REQUIRED TO AVOID CONFLICTS, MAKE ADJUSTMENTS AND MAINTAIN CLEARANCES AS DIRECTED BY THE COUNTY.

6. THE CONTACTOR SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE VARIOUS UTILITY COMPANIES IN ORDER TO PERMIT THE LOCATION OF EXISTING UNDERGROUND UTILITIES IN ADVANCE OF CONSTRUCTION. CONTACT UTILITIES NOTIFICATION CENTER AT 1-800-432-4770.

7. CONTRACTOR SHALL MAINTAIN A CLEAR PATH FOR SURFACE WATER, DRAINAGE STRUCTURES AND DITCHES DURING ALL PHASES OF CONSTRUCTION.

8. CONTRACTOR SHALL PROVIDE WARNING SIGNALS, SIGNS, LIGHTS AND FLAGMEN AS REQUIRED BY FDOT IN THE "MANUAL OF TRAFFIC CONTROL & SAFE PRACTICES".

9. CONTRACTOR SHALL MAINTAIN AT LEAST ONE ACCESS ENTRANCE TO COMMERCIAL PROPERTIES AT ALL TIMES.

10. CONTRACTOR SHALL MAINTAIN A SET OF PLANS WITH CURRENT FIELD CHANGES MARKED THERE-ON AND SHALL DELIVER THESE PLANS TO THE ENGINEER UPON COMPLETION OF CONSTRUCTION.

11. THE CONTRACTOR SHALL NOTIFY THE COUNTY IMMEDIATELY WHEN CONFLICTS BETWEEN DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED.

12. ONLY MANATEE COUNTY PERSONNEL SHALL OPERATE VALVES.

13. ALL ROAD CROSSINGS ARE OPEN CUT UNLESS OTHERWISE NOTED ON THE DRAWINGS.

14. ALL ROADWAY CONSTRUCTION WORK (WIDENING, ALIGNMENT, CURBING, DRIVES, UTILITY ADJUSTMENTS, STORMWATER COLLECTION SYSTEMS, ETC.) IS NOT PART OF THE WATER UTILITY IMPROVEMENTS DEPICTED IN THESE PLANS. NEITHER SHOULD THE PLANS BE USED FOR ROADWAY CONSTRUCTION.

15. ALL MAINS SHALL HAVE A MINIMUM COVER OF 36" BELOW EXISTING GRADE UNLESS OTHERWISE NOTED.

16. ALL TEES, CROSSES, BENDS (HORIZONTAL & VERTICAL), PLUGS, VALVES AND OTHER APPURTENANCES SHALL BE RESTRAINED AS SHOWN ON THE RESTRAINED JOINT TABLE AS A MINIMUM. AREAS REQUIRING ADDITIONAL RESTRAINED LENGTHS ARE SHOWN ON THE PLANS.

17. ALL PIPE FITTINGS AND APPURTENANCES USED TO PROVIDE CONNECTIONS TO THE WATER SYSTEM OR USED TO PROVIDE DEAD END FUTURE CONNECTIONS SHALL BE RESTRAINED.

18. ALL TEST POINTS AND CHLORINATION POINT PIPING SHALL BE CUT LOOSE FROM THE CORPORATION STOP AND COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE. THE CORPORATION STOP SHALL BE CAPPED AND REMAIN IN PLACE.

19. WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE JOINT DEFLECTION SHALL NOT EXCEED 80% OF THE MANUFACTURER'S RECOMMENDED DEFLECTION ANGLE.

20. SHOP DRAWINGS SHALL BE FURNISHED TO THE ENGINEER FOR APPROVAL OF ALL PIPE CONNECTIONS, TRANSITIONS AND SPECIALS PRIOR TO FABRICATION OR DELIVERY TO THE JOB SITE.

21. STATIONING FOR ALL FIRE HYDRANT ASSEMBLIES, ISOLATION VALVES, FITTINGS AND OTHER APPURTENANCES IS APPROXIMATE. THE CONTRACTOR SHALL LOCATE AIR RELEASE VALVES IN THE FIELD AT THE HIGHEST POINT BEFORE THE DOWNWARD BREAK IN THE VICINITY OF THE STATION INDICATED.

22. ALL LOCATIONS FOR FIRE HYDRANTS, ISOLATION VALVES AND AIR RELEASE VALVES MUST BE APPROVED BY THE COUNTY.

GENERAL NOTES (CONT.)

23. MAINTAIN 6' HORIZONTAL CLEARANCE BETWEEN EXISTING OR PROPOSED WATER MAINS AND SANITARY SEWERS. WHEN MAINS ARE CLOSER THAN 6', USE DUCTILE IRON PIPE FOR BOTH MAINS WITH STAGGERED JOINTS OR CONCRETE ENCASE THE SEWER MAIN. WATER MAIN CROSSING SEWERS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 12" BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. WHERE THE 12" VERTICAL DISTANCE CANNOT BE MAINTAINED, THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE, USING MECHANICAL OR PUSH JOINTS, FOR A DISTANCE OF AT LEAST 10' ON EITHER SIDE OF THE CROSSING. WATER MAINS CROSSING STORM SEWERS SHALL HAVE A MINIMUM SEPERATION OF 12".

24. THE CONTRACTOR SHALL COORDINATE ALL TIE-INS WITH MANATEE COUNTY.

25. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE COUNTY FOR ANY DEVIATION FROM THE DRAWINGS OR TECHNICAL SPECIFICATIONS.

26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL OF THE COUNTY'S EXISTING FACILITIES WITHIN THE PROJECT LIMITS PRIOR TO CONSTRUCTION.

27. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE LATEST EDITION OF THE MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS.

28. PRIOR TO FINAL TIE-INS, CONTRACTOR SHALL PROVIDE RECORD DRAWINGS TO THE COUNTY. THE COUNTY WILL OBTAIN REGULATORY CLEARANCE TO COMPLETE FINAL TIE-INS.

29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING LOCATION AND CONSTRUCTION OF THE WATER MAIN WITH THE SUBSEQUENT CONSTRUCTION AND LOCATION OF THE ROADWAY IMPROVEMENTS.

DONALD ROBERT HOLCOMB
LICENSE
No. 51970
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2801 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 607/160

Manatee County FLORIDA — MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
F.L. LICENSE NO.: 51970

WATER GENERAL NOTES

SHEET NO.: W-2

44TH AVENUE EAST

30TH STREET EAST

EXIST. R/W

PROPOSED 8" WATER MAIN (BY OTHERS)

BT / TO REMAIN
VERIZON

24" WM / TO REMAIN
MANATEE COUNTY

℄ SURVEY & ℄ CONST.

AH STA. 103+49.32

MATCHLINE STA. 104+00.00

28.00'

60.00'

46.50'

STA. 100+15, 46.5' RT. 24" x 8" TAPPING SLEEVE AND VALVE (BY OTHERS). CONTRACTOR SHALL VERIFY EXACT LOCATION AND DEPTH OF EXIST. 24" WATER MAIN PRIOR TO CONSTRUCTION.

FPL EASEMENT

EXIST. R/W

STA. 100+80, 46.5' RT.
8" PLUG (R.J.) (BY OTHERS)

CONST. 8" PVC WATER MAIN

BEGIN CONSTRUCTION
BEGIN PROJECT
STA. 100+64.00

6" PVC FM / TO REMAIN
MANATEE COUNTY

OE / TO REMAIN
FPL

0 10 50
Feet

RESTRAIN ALL PIPE JOINTS

STA. 100+15.2

STA. 100+90.2

PROPOSED GRADE AT CENTERLINE OF PROPOSED WATER MAIN

EXIST. GRADE AT CENTERLINE OF PROPOSED WATER MAIN

ARV (SEE GENERAL NOTE 21)

24" x 8" TAPPING SLEEVE AND VALVE (R.J.) (BY OTHERS)

36" MIN. COVER

EXIST. 24" WATER MAIN

PROPOSED 8" WATER MAIN (BY OTHERS)

DEFLECT PIPE AS REQUIRED (SEE GENERAL NOTE 19)

8" PLUG (R.J.) (BY OTHERS)

CONST. 8" PVC WATER MAIN

DONALD ROBERT HOLCOMB
LICENSE
No. 51970
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

SCALE:
1" = 50' HORZ.
1" = 5' VERT.

No.	REVISIONS	DATE	BY

SCALE AS NOTED
DESIGNED BY
DRAWN BY JHC
CHECKED BY DSB

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE 05/27/14

PROJECT NO. 6071160

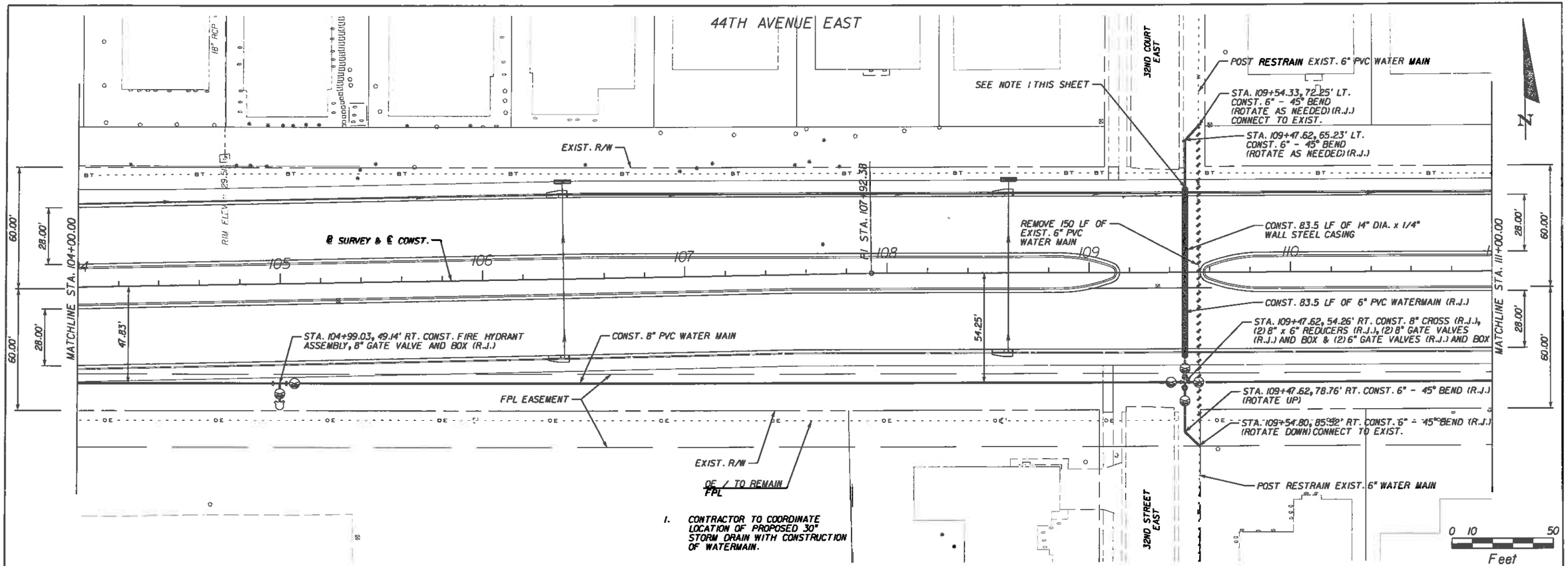
Manatee County FLORIDA MANATEE COUNTY PUBLIC WORKS

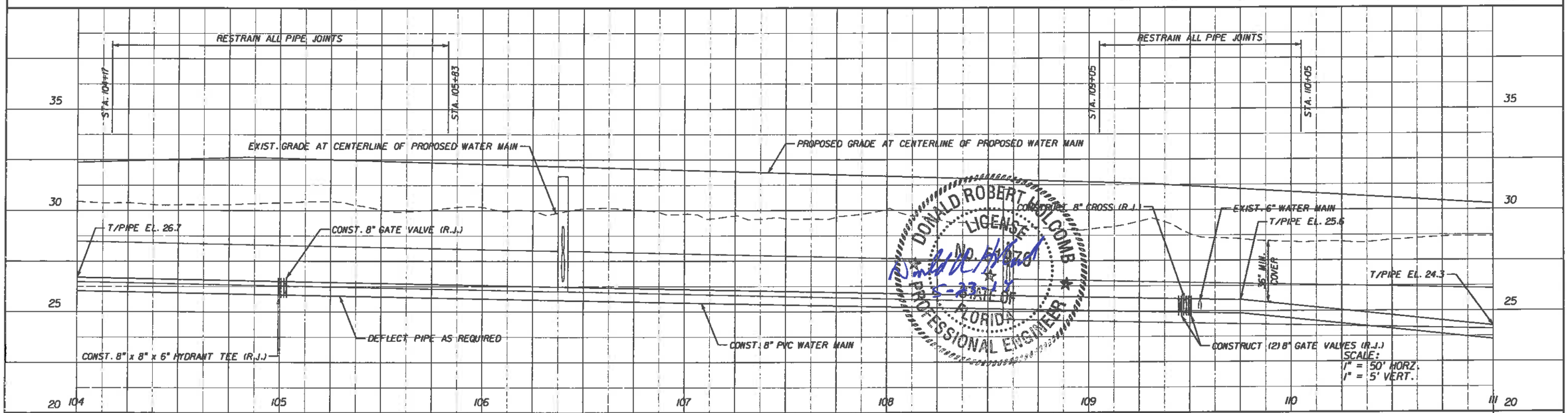
DESIGN ENGINEER DONALD R. HOLCOMB

FL. LICENSE NO. 51970

WATER PLAN AND PROFILE SHEET

SHEET NO. W-3





DONALD ROBERT HOLCOMB LICENSE No. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER

				SCALE: AS NOTED	HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE: 05/27/14	Manatee County FLORIDA MANATEE COUNTY PUBLIC WORKS
				DESIGNED BY:		PROJECT NO.: 6071160	
				DRAWN BY: JHC			
				CHECKED BY: DSB			
No.	REVISIONS	DATE	BY				

DESIGN ENGINEER		SHEET NO.
DONALD R. HOLCOMB	WATER PLAN AND PROFILE SHEET	W-4
FL. LICENSE NO. 51970		

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44TH AVENUE EAST

1. CONTRACTOR TO COORDINATE LOCATION OF PROPOSED 30" STORM DRAIN WITH CONSTRUCTION OF WATERMAIN.

EXIST. R/W

8" PVC WM / TO REMAIN MANATEE COUNTY

SEE NOTE 1 THIS SHEET

STA. 115+13.11, 42.25' LT. REMOVE EXISTING BLOWOFF ASSEMBLY AND CONNECT TO EXIST. 8" WATER MAIN. CONTRACTOR SHALL VERIFY EXACT LOCATION AND DEPTH OF EXIST. 8" WATER MAIN PRIOR TO CONSTRUCTION.

60.00' 28.00' 28.00' 60.00' MATCHLINE STA. 111+00.00 54.25'

112 113 114 115 116 117

@ SURVEY & ℄ CONST.

CONST. 8" PVC WATER MAIN

STA. 115+06.54, 54.39' RT. CONST. 8" GATE VALVE AND BOX (R.J.)

CONST. 83.5 LF OF 8" PVC WATER MAIN (R.J.). MAINTAIN 12" CLEARANCE BELOW PROPOSED 30" STORM DRAIN.

CONST. 83.5 LF OF 18" DIA. x 1/2" WALL STEEL CASING

54.25' MATCHLINE STA. 118+00.00 39.00' 28.00' 60.00' 60.00'

FPL EASEMENT

STA. 115+00.39, 54.25' RT. CONST. FIRE HYDRANT ASSEMBLY

STA. 115+19.78, 54.25' RT. CONSTRUCT 8" GATE VALVE AND BOX (R.J.)

EXIST. R/W

STA. 115+13.11, 54.25' RT. CONST. 8" TEE AND 8" GATE VALVE

OE / TO REMAIN FPL

0 10 50 Feet

EXIST. GRADE AT CENTERLINE OF PROPOSED WATER MAIN

PROPOSED GRADE AT CENTERLINE OF PROPOSED WATER MAIN

RESTRAIN ALL PIPE JOINTS

STA. 114+30

STA. 116+00

30 25 20 15

TYPIPE EL. 24.3

36" MIN. COVER

CONST. 8" PVC WATER MAIN

CONST. 8" x 8" x 6" HYDRANT TEE (R.J.)

CONST. 8" GATE VALVE (R.J.)

CONST. 8" GATE VALVE (R.J.)

CONST. 8" TEE (R.J.) AND 8" GATE VALVE

TYPIPE EL. 18.9

111 112 113 114 115 116 117 118

SCALE: 1" = 50' HORZ. 1" = 5' VERT.

DONALD ROBERT HOLCOMB LICENSE No. 51070 STATE OF FLORIDA

No.	REVISIONS	DATE	BY

SCALE AS NOTED
DESIGNED BY
DRAWN BY JHC
CHECKED BY DSB

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of Authorization No. 4213

DATE 05/27/14

PROJECT NO. 6071160

Manatee County FLORIDA MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER DONALD R. HOLCOMB

FL. LICENSE NO. 51970

WATER PLAN AND PROFILE SHEET

SHEET NO. W-5

44TH AVENUE EAST

EXIST. R/W

PI STA. 120+29.19

PI STA. 124+33.25

MATCHLINE STA. 118+00.00

MATCHLINE STA. 125+00.00

60.00'

28.00'

54.25'

46.50'

118 119 120 121 122 123 124 125

@ SURVEY & @ CONST.

STA. 120+22.93, 54.25' RT. CONST. FIRE HYDRANT ASSEMBLY

STA. 120+29.52, 54.25' RT. CONST. 8" GATE VALVE AND BOX (R.J.)

CONST. 8" PVC WATER MAIN

FPL EASEMENT

OE / TO REMAIN FPL

EXIST. R/W

N

0 10 50

Feet

RESTRAIN ALL PIPE JOINTS

STA. 119+40

STA. 121+06

EXIST. GRADE AT CENTERLINE OF PROPOSED WATER MAIN

PROPOSED GRADE AT CENTERLINE OF PROPOSED WATER MAIN

T/PIPE EL. 16.9

CONST. 8" PVC WATER MAIN

36" MIN. COVER

T/PIPE EL. 13.3

CONST. 8" x 8" x 6" HYDRANT TEE (R.J.)

CONST. 8" GATE VALVE (R.J.)

DEFLECT PIPE AS REQUIRED

MAINTAIN 36" MIN. COVER BELOW EXISTING GRADE

SEE NOTE 1 THIS SHEET

20 15 10 5

118 119 120 121 122 123 124 125

DONALD ROBERT HOLCOMB LICENSE NO. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER

5-27-14

SCALE: 1" = 50' HORZ. 1" = 5' VERT.

NOTE 1- PRIOR TO WATER MAIN CONSTRUCTION, PROVIDE WELL COMPACTED FILL, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, TO AN ELEVATION AT LEAST 3 FEET ABOVE THE TOP OF THE PROPOSED WATER MAIN.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY:
DRAWN BY: JHC
CHECKED BY: DSB

HDR Engineering, Inc.
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Suite 400
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Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

Manatee County FLORIDA

MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

WATER PLAN AND PROFILE SHEET

SHEET NO.: W-6

44TH AVENUE EAST

EXIST. R/W

PROP. R/W

37TH STREET EAST

MATCHLINE STA. 125+00.00

MATCHLINE STA. 132+00.00

60.00'

28.00'

46.50'

STA. 126+56.59, 46.5' RT. CONST. 8" GATE VALVE AND BOX (R.J.)

STA. 126+50.0, 46.50' RT. CONST. FIRE HYDRANT ASSEMBLY AND 8" GATE VALVE AND BOX (R.J.)

℄ SURVEY & ℄ CONST.

CONST. 8" PVC WATER MAIN

FPL EASEMENT

OE / TO REMAIN FPL

CONST. 100 LF OF 8" PVC WATERMAIN (R.J.)

JACK AND BORE 100 LF OF 18" DIA. x 1/2" WALL STEEL CASING

STA. 131+15.05, 46.50' RT. CONST. 8" TEE (R.J.) (ROTATED UP) AND (2) 8" GATE VALVES (R.J.) AND BOXES

STA. 131+15.05, 65.62' RT.
STA. 131+17.70, 68.43' RT.
CONST. (2) 8" - 45° BENDS (R.J.)

STA. 131+48.97, 68.43' RT. CONST. 8" TEE (R.J.) (ROTATED DOWN) AND (3) 8" GATE VALVES (R.J.) AND BOXES

CONTRACTOR SHALL VERIFY EXACT DEPTH AND LOCATION OF EXIST. 8" WATER MAIN AND ALL OTHER UNDERGOUND UTILITIES PRIOR TO CONSTRUCTING CASING AND CONNECTION

0 10 50
Feet

RESTRAIN ALL PIPE JOINTS

STA. 125+86

STA. 127+14

SEE NOTE 2 THIS SHEET

EXIST. GRADE AT CENTERLINE OF PROPOSED WATER MAIN

PROPOSED GRADE AT CENTERLINE OF PROPOSED WATER MAIN

STA. 130+65

T/PIPE EL. 13.3

T/PIPE EL. 13.7

36" MIN. COVER

12" MIN. CLEARANCE

CONST. 8" x 8" x 6" HYDRANT TEE (R.J.)

CONST. 8" GATE VALVE (R.J.)

CONST. 8" PVC WATER MAIN

EXIST. 8" WATER MAIN

CONST. 8" TEE (R.J.) AND (2) 8" GATE VALVES (R.J.) AND BOXES

CONST. (2) 8" - 45° BENDS (R.J.)

CONST. 100 LF OF 18" DIA. x 1/2" WALL STEEL CASING

CONST. 8" TEE (R.J.) AND (2) 8" GATE VALVES (R.J.) AND BOXES

DEFLECT PIPE AS REQUIRED TO MAINTAIN MIN. CLEARANCE UNDER PROPOSED 24" DRAINAGE PIPE

SEE NOTE 1 THIS SHEET

NOTE 1 - PRIOR TO WATER MAIN CONSTRUCTION, PROVIDE WELL COMPACTED FILL, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, TO AN ELEVATION AT LEAST 3 FEET ABOVE THE TOP OF THE PROPOSED WATER MAIN.

NOTE 2 - DEFLECT PIPE AS REQUIRED TO PROVIDE 12" MIN. CLEARANCE ABOVE PROPOSED BOX CULVERT. PROVIDE D.I.P. BETWEEN STA. 126+40 AND STA. 127+80.

DONALD R. HOLCOMB LICENSE NO. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER 5-23-14

SCALE: 1" = 50' HORZ. 1" = 5' VERT.

0 5 10 15

125 126 127 128 129 130 131 132

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY:
DRAWN BY: JHC
CHECKED BY: DSB

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
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FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14

PROJECT NO. 6071160

Manatee County FLORIDA

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB

FL. LICENSE NO. 51970

WATER PLAN AND PROFILE SHEET

SHEET NO. W-7

44TH AVENUE EAST

PROP. R/W

4" PVC

60.00'

104.35'

MATCHLINE STA. 132+00.00

46.50'

60.00'

8" STA. 132+96.34

133

134

135

136

137

STA. 137+19.11

MATCHLINE STA. 138+00.00

28.00'

40.00'

110.00'

115.00'

.05"/ft

STA. 132+30.00, 46.50' RT. CONST. FIRE HYDRANT ASSEMBLY AND 8" GATE VALVE AND BOX (R.J.)

@ SURVEY & ℄ CONST.

CONST. 8" PVC WATER MAIN

DEFLECT PIPE AS REQUIRED

STA. 137+30.00, 46.50' RT. CONST. FIRE HYDRANT ASSEMBLY AND 8" GATE VALVE AND BOX (R.J.)

JACK AND BORE

OE / TO REMAIN

FPL

PROP. R/W

FPL EASEMENT

OE

N

0 10 50

Feet

EXIST. GRADE AT CENTERLINE OF PROPOSED WATER MAIN

RESTRAIN ALL PIPE JOINTS

STA. 133+16

PROPOSED GRADE AT CENTERLINE OF PROPOSED WATER MAIN

STA. 136+88

RESTRAIN ALL PIPE JOINTS

STA. 137+12

15

10

5

0

T/PIPE EL. 8.8

CONST. 8" x 8" x 6" HYDRANT TEE (R.J.)

SEE NOTE 2

18"

T/PIPE EL. 8.8

CONST. 8" x 8" x 6" HYDRANT TEE (R.J.)

CONST. 8" GATE VALVE (R.J.)

CONST. 18" DIA. x 1/2" WALL STEEL CASING

DEFLECT PIPE AS REQUIRED

CONST. 8" PVC WATER MAIN

SEE NOTE 1

CONST. 8" GATE VALVE (R.J.)

NOTE 1 - PRIOR TO WATER MAIN CONSTRUCTION, PROVIDE WELL COMPACTED FILL, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, TO AN ELEVATION AT LEAST 3 FEET ABOVE THE TOP OF THE PROPOSED WATER MAIN.

NOTE 2 - CONTRACTOR TO COORDINATE LOCATION OF PROPOSED 36" STORM DRAIN WITH CONSTRUCTION OF WATER MAIN.

132 133 134 135 136 137 138

DONALD ROBERT HOLCOMB LICENSE No. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER

5-23-14

SCALE:
1" = 50' HORZ.
1" = 5' VERT.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY:
DRAWN BY: JHC
CHECKED BY: DSB

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14

PROJECT NO.: 6071160

Manatee County FLORIDA

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB

FL. LICENSE NO.: 51970

WATER PLAN AND PROFILE SHEET

SHEET NO.: W-8

5:03:50 PM 6/16/2014

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44TH AVENUE EAST

PROP. R/W

39TH STREET EAST

OT / TO REMAIN VERIZON

PROP. R/W

℄ SURVEY & ℄ CONST.

EXIST. R/W

PC STA. 139+18.34

PT STA. 143+24.00

MATCHLINE STA. 138+00.00

MATCHLINE STA. 144+00.00

CONST. 115 LF OF 8" PVC WATERMAIN (R.J.)

CONST. 8" PVC WATER MAIN

STA. 140+75.00, 46.50' RT. CONST. FIRE HYDRANT ASSEMBLY AND 8" GATE VALVE AND BOX (R.J.)

DEFLECT JOINTS AS REQUIRED

DEFLECT JOINTS AS REQUIRED

OPEN CUT 115 LF OF 18" DIA. x 1/2" WALL STEEL CASING (ACCESS TO DRIVEWAY MUST BE MAINTAINED AT ALL TIMES)

PROP. R/W

EXIST. R/W

OE / TO REMAIN FPL

FPL EASEMENT

110.00'

115.00'

28.00'

40.00'

46.50'

28.00'

60.00'

95.45'

139 140 141 142 143

14

15

16

N

0 10 50

Feet

RESTRAIN ALL PIPE JOINTS

STA. 139+20

STA. 141+81

PROPOSED GRADE AT CENTERLINE OF PROPOSED WATER MAIN

EXIST. GRADE AT CENTERLINE OF PROPOSED WATER MAIN

T/PIPE EL. 8.8

T/PIPE EL. 8.8

12" MIN.

CONST. 8" PVC WATER MAIN

CONST. 8" GATE VALVE (R.J.)

36" MIN. COVER

CONST. 8" x 8" x 6" HYDRANT TEE (R.J.)

OPEN CUT 115 LF OF 18" DIA. x 1/2" WALL STEEL CASING

SEE NOTE 1

15 10 5 0

138 139 140 141 142 143 144

NOTE 1- PRIOR TO WATER MAIN CONSTRUCTION, PROVIDE WELL COMPACTED FILL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS TO AN ELEVATION AT LEAST 3 FEET ABOVE THE TOP OF THE PROPOSED WATER MAIN.

SCALE:
1" = 50' HORZ.
1" = 5' VERT.

DONALD ROBERT HOLCOMB LICENSE 51970 STATE OF FLORIDA

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY:
DRAWN BY: JHC
CHECKED BY: DSB

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14

PROJECT NO.: 607160

Manatee County FLORIDA

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB

FL. LICENSE NO.: 51970

WATER PLAN AND PROFILE SHEET

SHEET NO.: W-9

44TH AVENUE EAST

1001

1000

PROP. R/W

℄ SURVEY & ℄ CONST.

EXIST. R/W

MATCHLINE STA. 144+00.00

MATCHLINE STA. 151+00.00

60.00'

28.00'

28.00'

46.50'

95.45'

40.00'

145 146 147 148 149 150

CONST. 8" PVC WATER MAIN

FPL EASEMENT

FPL EASEMENT

STA. 145+75.00, 46.50' RT. CONST.
FIRE HYDRANT ASSEMBLY &
8" GATE VALVE & BOX

OE / TO REMAIN
FPL

BTV / TO REMAIN
BRIGHT HOUSE NETWORKS

EXIST. R/W

STA. 150+50.12, 46.50' RT. CONST.
8" GATE VALVE AND BOX (R.J.)

N

0 10 50
Feet

RESTRAIN ALL PIPE JOINTS

STA. 145+33

STA. 146+47

RESTRAIN ALL PIPE JOINTS

STA. 150+08

STA. 150+92

PROPOSED GRADE AT CENTERLINE OF PROPOSED WATER MAIN

DEFLECT PIPE
AS REQUIRED

CONST. 8" GATE VALVE

T/PIPE EL. 10.4

EXIST. GRADE AT CENTERLINE
OF PROPOSED WATER MAIN

CONST. 8" PVC WATER MAIN

CONST. 8" GATE VALVE

T/PIPE EL. 10.4

T/PIPE EL. 8.8

CONST. 8" x 8" x 6"
HYDRANT TEE (R.J.)

SEE NOTE 1

20 15 10 5

144 145 146 147 148 149 150 151

NOTE 1 — PRIOR TO WATER MAIN CONSTRUCTION, PROVIDE WELL COMPACTED FILL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, TO AN ELEVATION AT LEAST 3 FEET ABOVE THE TOP OF THE PROPOSED WATER MAIN.

SCALE:
1" = 50' HORZ.
1" = 5' VERT.

DONALD ROBERT HOLCOMB
LICENSE
No. 51970
STATE OF FLORIDA
5-23-14

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY:
DRAWN BY: JHC
CHECKED BY: DSB

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14

PROJECT NO.: 607160

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
DONALD R. HOLCOMB

FL. LICENSE NO.
51970

WATER PLAN AND PROFILE SHEET

SHEET NO.
W-10

44TH AVENUE EAST

NOTE 1 - PRIOR TO WATER MAIN CONSTRUCTION, PROVIDE WELL COMPACTED FILL, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, TO AN ELEVATION AT LEAST 3 FEET ABOVE THE TOP OF THE PROPOSED WATER MAIN.

NOTE 2 - IN ADVANCE OF SUBMITTING PIPE SHOP DRAWINGS, CONTRACTOR SHALL EXCAVATE THE 36" WM TO DETERMINE DEPTH, LOCATION AND JOINT TYPE AT THE PROPOSED TIE-IN LOCATION

36" WM / TO REMAIN MANATEE COUNTY

STA. 153+47.03, 47.01' LT. CONST. 36" 45° BEND (R.J.)

STA. 153+60.54, 33.50' LT. CONST. 36" 45° BEND (R.J.)

EXIST. R/W

STA. 153+47, APPROX. 55' LT. CONST. 36" DIP x PCCP ADAPTER (R.J.) (CONNECT TO EXISTING) SEE NOTE 2

STA. 153+78.82, 33.50' LT. CONST. 36" x 36" x 8" TEE (R.J.), 8" GATE VALVE AND BOX (R.J.) & 36" BUTTERFLY VALVE & BOX (R.J.)

PROP. R/W

PROP. R/W

60.00'

28.00'

40.00'

95.45'

46.50'

MATCHLINE STA. 151+00.00

EXIST. R/W

151 152 153 154 155 156 157

33.50'

MATCHLINE STA. 158+00.00

28.00'

60.00'

28.00'

95.45'

CONST. 36" DIP WATER MAIN

℄ SURVEY & ℄ CONST.

CONST. 70 LF OF 18" DIA. x 1/2" WALL STEEL CASING

CONST. 70 LF OF 8" PVC WATER MAIN

CONST. 8" PVC WATER MAIN

BT / TO REMAIN VERIZON

STA. 152+80.00, 46.50' RT. CONST. FIRE HYDRANT ASSEMBLY

STA. 153+79.02, 42.57' RT. CONST. 8" 45° BEND (R.J.)

STA. 153+79.02, 46.50' RT. CONST. 8" 90° BEND (ROLLED DOWN) (R.J.)

BTV / TO REMAIN BRIGHT HOUSE NETWORKS

36" WM AND 8" WM / TO BE REMOVED MANATEE COUNTY

BTV / TO REMAIN BRIGHT HOUSE NETWORKS

STA. 153+57.02, 46.50' RT. CONST. 8" TEE (R.J.), 8" GATE VALVE AND BOX (R.J.) AND 8" - 11 1/4° BEND (R.J.). CONNECT TO EXISTING 8" WATER MAIN

8" PVC WM / TO REMAIN MANATEE COUNTY

EXIST. R/W

OE / TO REMAIN FPL

36" WATER MAIN TO BE REMOVED MANATEE COUNTY

FAIRFAX DRIVE EAST

0 10 50

Feet

RESTRAIN ALL 8" PVC PIPE JOINTS

STA. 152+59

STA. 153+79

20 15 10 5

EXIST. GRADE AT CENTERLINE OF PROPOSED WATER MAIN

PROPOSED GRADE AT CENTERLINE OF PROPOSED WATER MAIN

CONST. 8" TEE (R.J.)

CONST. 8" x 8" x 6" HYDRANT TEE (R.J.)

CONST. 8" TEE (R.J.), 8" - 11 1/4° BEND (R.J.) AND 8" GATE VALVE AND BOX (R.J.)

CONST. 36" x 8" TEE (R.J.), 8" GATE VALVE AND BOX (R.J.), 8" - 90° BEND (ROLLED DOWN) (R.J.) AND 8" - 45° BEND (R.J.)

CONST. 36" BUTTERFLY VALVE AND BOX (R.J.)

CONST. 36" DIP WATER MAIN

T/PIPE EL. 10.4

T/PIPE EL. 10.5

CONST. 8" PVC WATER MAIN

SEE NOTE 1 THIS SHEET

CONNECT TO EXIST. 36" WATER MAIN

STA. 153+48

CONST. (2) 36" - 45° BENDS (R.J.)

RESTRAIN ALL 36" DIP PIPE JOINTS

STA. 156+35

151 152 153 154 155 156 157 158

DONALD ROBERT HOLCOMB LICENSED No. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER

5-23-14

SCALE: 1" = 50' HORZ. 1" = 5' VERT.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY:
DRAWN BY: JHC
CHECKED BY: DSB

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO. 6071160

Manatee County FLORIDA

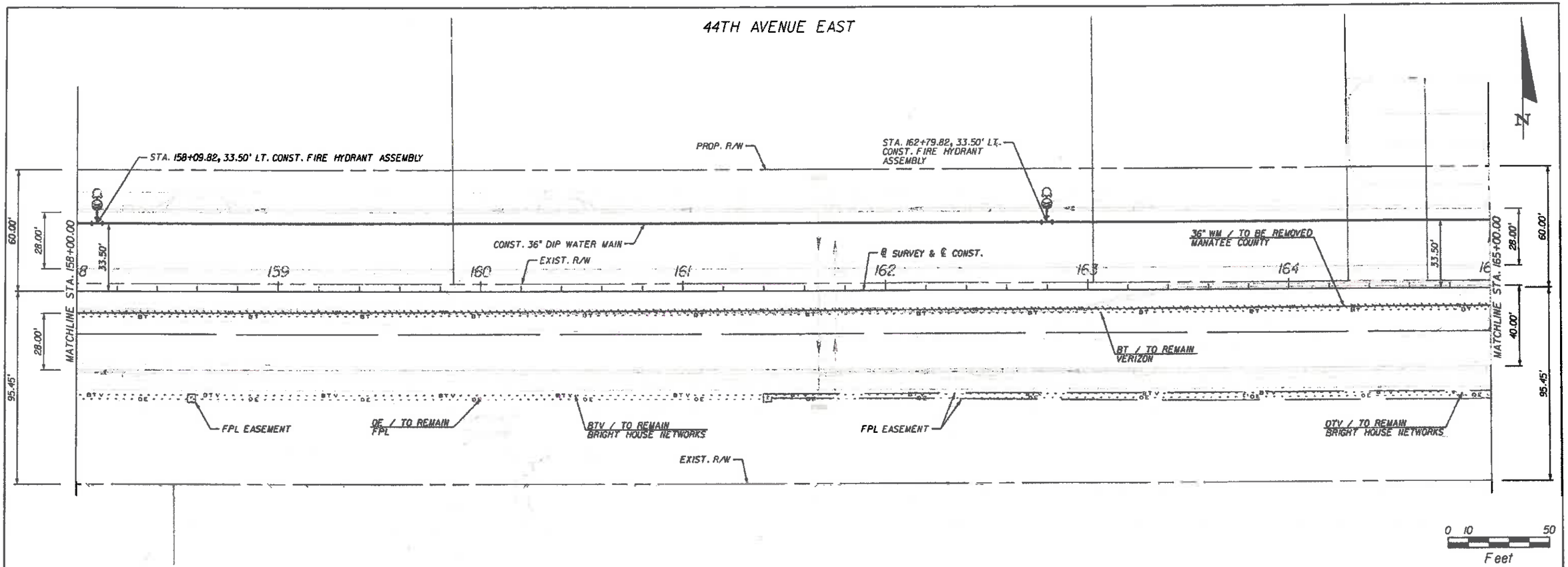
MANATEE COUNTY PUBLIC WORKS

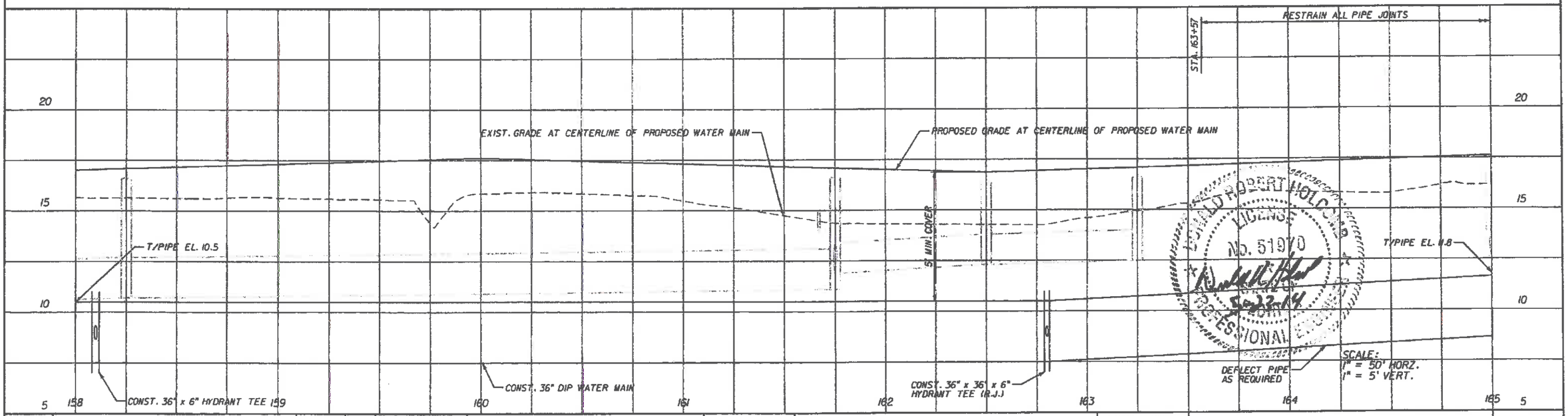
DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO. 51970

WATER PLAN AND PROFILE SHEET

SHEET NO. W-11

44TH AVENUE EAST





DONALD ROBERT HOLCOMB LICENSE No. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER
5-23-14

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY:
DRAWN BY: JHC
CHECKED BY: DSB

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

WATER PLAN AND PROFILE SHEET

SHEET NO.: W-12

44TH AVENUE EAST

NOTES:

1). IN ADVANCE OF SUBMITTING PIPE SHOP DRAWINGS, CONTRACTOR SHALL EXCAVATE THE 30" AND 6" WM TO DETERMINE DEPTH, LOCATION AND JOINT TYPE AT THE PROPOSED TIE-IN LOCATION.

PROP. R/W

CONNECT TO EXISTING 6" WATER MAIN (SEE NOTE 1)

PROP. R/W

CONST. 36" DIP WATER MAIN

STA. 166+33.13, 33.50' LT. CONST. 36" x 36" x 6" TEE (R.J.) AND 6" GATE VALVE (R.J.)

45TH STREET EAST

REMOVE 18 L.F. OF EXIST. 6" WATERMAIN AND 6" VALVE AND CONST. 6" PLUG (R.J.)

STA. 166+56.73, 33.50' LT. CONST. 36" x 36" x 30" TEE (R.J.) AND 30" BUTTERFLY VALVE (R.J.) CONNECT TO EXIST.

STA. 166+80.00, 33.50' LT. CONST. 36" TEE & (2) 36" BUTTERFLY VALVES (R.J.)

CONST. 36" PLUG (R.J.)

PROP. R/W

STA. 166+80.00, 3.20' LT. CONST. 36" - 90° BEND (R.J.) & CONNECT TO EXIST. 36" WATERMAIN (SEE NOTE 1)

CONNECT TO EXIST. 30" WATER MAIN (SEE NOTE 1)

BT / TO REMAIN VERIZON

30" WM / TO REMAIN MANATEE COUNTY

℄ SURVEY & ℄ CONST.

EXIST. R/W

30" WM / TO REMAIN MANATEE COUNTY

EXIST. R/W

36" WM / TO BE REMOVED MANATEE COUNTY

FPL EASEMENT

OTV / TO REMAIN BRIGHT HOUSE NETWORKS

OE / TO REMAIN FPL

EXIST. R/W

MATCHLINE STA. 165+00.00

60.00'

28.00'

33.50'

40.00'

95.45'

20.95'

27.18'

63.54'

166 167 168 169 170 171

501 500 499

0 10 50

Feet

RESTRAIN ALL PIPE JOINTS

STA. 166+90

PROPOSED GRADE AT CENTERLINE OF PROPOSED WATER MAIN

EXIST. GRADE AT CENTERLINE OF PROPOSED WATER MAIN

5' MIN COVER

T/PIPE EL. 11.8

CONST. 36" PLUG (R.J.)

CONST. 36" DIP WATER MAIN

CONSTRUCT 36" x 36" x 30" TEE (R.J.) AND 30" BUTTERFLY VALVE (R.J.)

CONST. 36" BUTTERFLY VALVE (R.J.)

CONSTRUCT 36" TEE (R.J.) AND BUTTERFLY VALAVE (R.J.)

CONNECT TO EXIST. 30" WATER MAIN

20 15 10 5

165 166 168 169 170 171 172

DONALD ROBERT HOLCOMB LICENSE No. 51970 STATE OF FLORIDA 5-23-14

SCALE: 1" = 50' HORZ. 1" = 5' VERT.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY:
DRAWN BY: JHC
CHECKED BY: DSB

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO. 607160

Manatee County FLORIDA

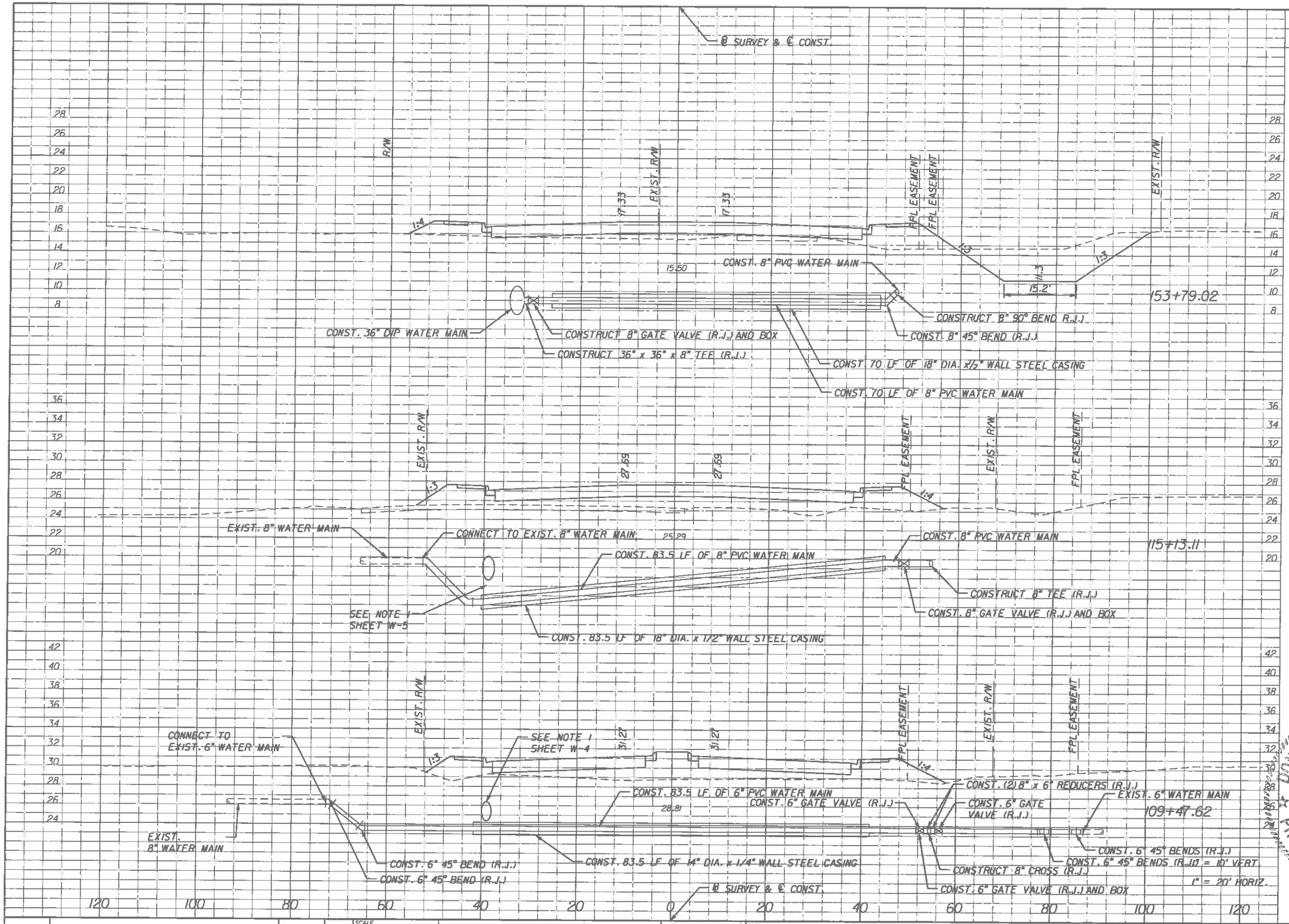
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO. 51970

WATER PLAN AND PROFILE SHEET

SHEET NO. W-13

Regular Exc.		Embankment	
A	V	A	V



DONALD ROBERT HOLCOMB
LICENSE
NO. 51970
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 607160

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

CROSS SECTIONS

SHEET NO.: W-14

5:04:43 PM 6/16/2014
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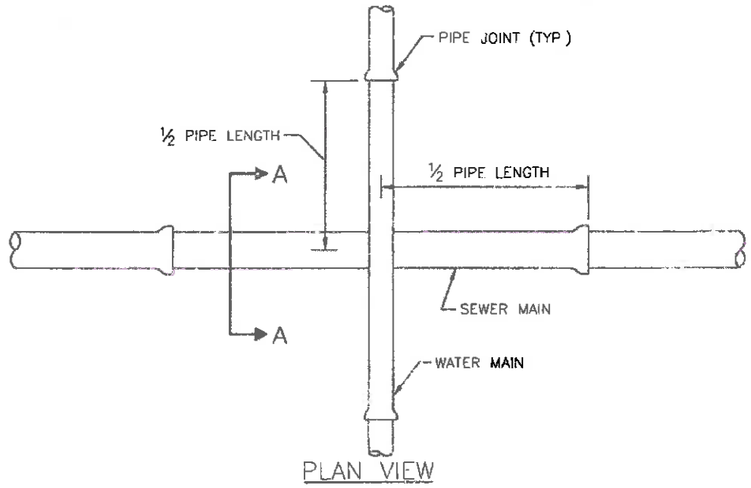
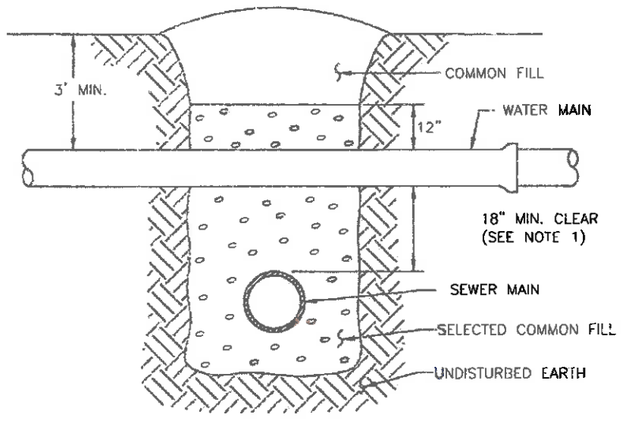


PLAN VIEW

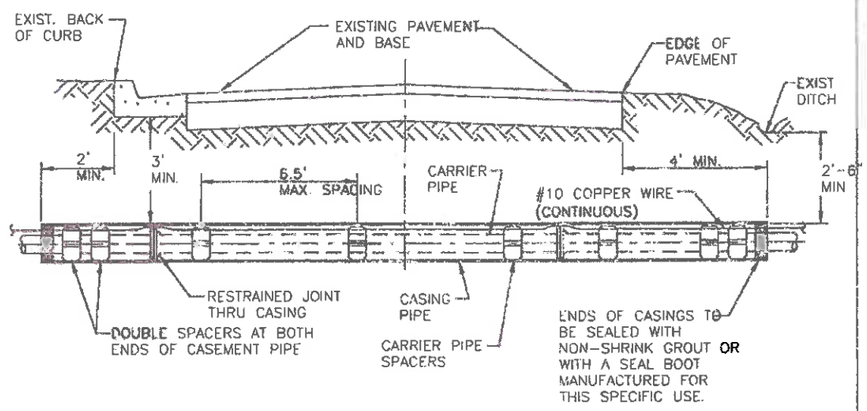


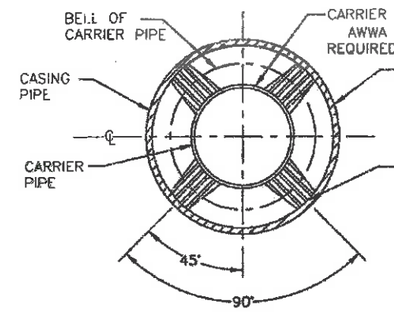
SECTION A–A

NOTES:

1. CLEARANCE MAY BE REDUCED TO 6" FOR GRAVITY SEWER WHERE WATER MAIN IS DUCTILE IRON OR 3" FOR FORCE MAIN WHERE FORCE MAIN IS ENCASED A MINIMUM OF 10' EACH SIDE OF CROSSING.
2. WHERE NO ENCASEMENT IS REQUIRED, PIPE SECTIONS SHALL BE FULL–LENGTH AND SHALL BE ADJUSTED HORIZONTALLY SO THAT THE CROSSING IS AT EACH PIPE SECTION'S MIDPOINT REGARDLESS OF THE VERTICAL CLEARANCE.
3. REFER TO THE JACK & BORE CROSSING DETAIL FOR CASING AND SPACER REQUIREMENTS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE	MAY 10, 2011	TYPICAL NEW WATER & SEWER LINE CROSSING	UG–2
CLB/BR	11/10	DATE OF APPROVAL		





CARRIER PIPE TO BE DUCTILE IRON CLASS 350 OR AWWA C–900 PVC CLASS 235 (DR–18) AS REQUIRED.

STEEL CASING PIPE JOINTS SHALL BE MADE BY USING A FULL CIRCUMFERENCE COMPLETE PENETRATION GROOVE WELD. STEEL MATERIAL SHALL MEET OR EXCEED ASTM A139 GRADE B. PIPE SHALL BE STRAIGHT SEAM PIPE OR SEAMLESS PIPE.

CARRIER PIPE SPACERS: 304 STAINLESS STEEL BAND CASING INSULATORS AS MANUFACTURED BY ADVANCE PRODUCTS & SYSTEMS INC. AND PIPELINE SEAL & INSULATOR INC. OR PLASTIC (HDPE) SPACERS AS MANUFACTURED BY RACI OR APPROVED EQUAL BY MANATEE COUNTY.

CARRIER SIZE & MINIMUM CASING SIZE									
CARRIER	4"	6"	8"	10"	12"	14"	16"	18"	20"
CASING	12"	14"	18"	20"	24"	30"	30"	36"	36"
CASING / WALL THICKNESS	0.188	0.188	0.250	0.250	0.344	0.406	0.406	0.406	0.406

NOTES:

1. THE ENGINEER OF RECORD MAY SELECT LARGER CASING DIAMETERS.
2. FOR JACK & BORE SPECIFICATIONS UNDER STATE ROADS AND RAILROADS REFER TO THE F.D.O.T. UTILITY ACCOMMODATION MANUAL, LATEST EDITION.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE	MAY 10, 2011	JACK & BORE CROSSING	UG–3
CLB/BR	11/10	DATE OF APPROVAL		

DONALD ROBERT HOLCOMB LICENSE NO. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER 5-23-14

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-8233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

Manatee County FLORIDA — MANATEE COUNTY PUBLIC WORKS

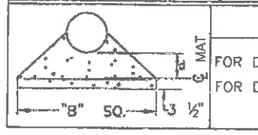
DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

WATER DETAILS

SHEET NO.: W-15

THRUST BLOCK DIMENSIONS B ft. x d inches

PIPE SIZE (IN.)	90°BEND		45°BEND		22 5°BEND		11.25°BEND		DEAD END & TEE		45° WYE	
	B	d	B	d	B	d	B	d	B	d	B	d
4	1.5	3 ½	1.1	3 ½	0.8	3 ½	0.6	3 ½	1.3	3 ½	1.1	3 ½
6	2.2	5 ¼	1 6	3 ¾	1.2	3 ½	0 8	3 ½	1.9	4 ½	1.6	3 ¾
8	2.9	7	2.1	5	1.5	3 ½	1.1	3 ½	2.4	5 ¾	2 0	4 ¾
10	3.5	8 ½	2 5	6 ¼	1 9	4 ½	1.3	3 ½	3 0	7 ¼	2 5	6
12	4.2	10	3.1	7 ½	2.2	5 ¼	1.6	3 ¾	3.5	8 ¼	3.0	7 ¼
14	4.9	11 ¾	3.6	8 ¾	2.6	6 ¼	1.8	4 ¼	4.1	9 ¾	3.4	8 ¼
16	5.5	13 ¼	4.1	9 ¾	2.9	7	2.1	5	4.7	11 ¼	3.9	9 ¼
18	6.2	15	4.6	11	3.3	8	2.3	5 ½	5.2	12 ½	4.4	10 ½
20	6.9	16 ½	5.0	12	3.6	8 ¾	2.6	6 ¼	5.8	14	4.9	11 ¾
24	8.2	19 ¾	6.0	14 ½	4.3	10 ¼	3.1	7 ½	6.9	16 ½	5.8	14
30	10.1	24 ¼	7.5	18	5.3	12 ¾	3.8	9	8.5	20 ½	7.2	17 ¼
36	12.1	29	8.9	21 ¼	6.4	15 ¼	4.5	10 ¾	10.2	24 ½	8.6	20 ¾



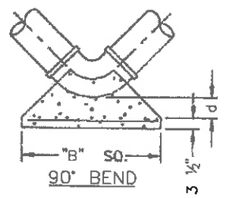
REINFORCEMENT MAT SCHEDULE

FOR DIM "B" BETWEEN 5.75' & 12.5' USE #4 @ 8" EACH WAY

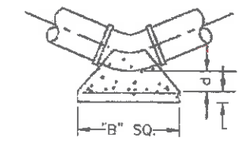
FOR DIM. "B" LESS THAN 5.75' USE #3 @ 8" EACH WAY

NOTES:

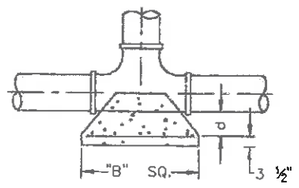
1. ALL THRUST BLOCKS SHALL BE CAST IN PLACE FITTINGS ADJACENT TO THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE.
2. THIS TABLE IS BASED ON WATER PRESSURE=180 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE=2000 PSF. CONCRETE STRENGTH f_c =3000 PSI, REINFORCEMENT f_y =60.0 KSI. THRUST BLOCK SHALL BE CAST AGAINST FIRM UNDISTURBED SOIL.
3. FOR LARGER "B" DIMENSIONS IT IS NECESSARY TO CHECK THAT PIPE IS SUFFICIENTLY DEEP TO ALLOW 15" MIN. SOIL COVER OVER TOP EDGE OF THRUST BLOCK.
4. RESTRAINED JOINTS MAY BE USED IN LIEU OF THRUST BLOCKS TO SAVE SPACE. THRUST BLOCKS SHALL BE USED IN SITUATIONS WHERE THRUST BLOCKS AND RESTRAINED JOINTS ARE BOTH REQUIRED



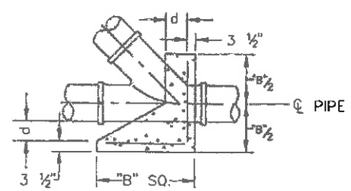
90° BEND



45°, 22.5° OR 11.25° BEND



TEE OR DEAD END



45° WYE

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE	MAY 10, 2011 DATE OF APPROVAL	CONCRETE THRUST BLOCKS	UG-7
CLB/BR	11/10			PAGE 107

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE

MAIN PIPE SIZE	HORIZ BENDS			TEES					REDUCERS			PLUGS & VALVES
	90°	45°	22.5°	SIZE / LENGTH					SIZE / LENGTH			
24	90	38	18	X24 / 169	X20 / 132	X16 / 90	X12 / 38	X10 / 6	X20 / 64	X15 / 117	X12 / 158	214
20	78	32	16	X20 / 141	X16 / 101	X12 / 53	X10 / 24	X8 / 1	X16 / 65	X12 / 115	X10 / 149	184
16	66	27	13	X16 / 111	X12 / 67	X10 / 41	X8 / 12		X12 / 64	X10 / 107	X8 / 111	151
12	52	22	10	X12 / 80	X10 / 56	X8 / 31	X6 / 1		X10 / 58	X8 / 62	X6 / 86	118
10	44	18	9	X10 / 63	X8 / 40	X6 / 7			X8 / 33	X6 / 61	X4 / 81	100
8	37	15	7	X8 / 49	X6 / 18	X4 / 1			X6 / 35	X4 / 60		83
6	29	12	6	X6 / 29	X4 / 1				X4 / 33			63
4	21	8	4	X4 / 12								45

NOTES:

1. RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.
2. ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTINGSECTIONS OF PIPE.
3. ALL ISOLATIONVALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
4. PIPE SIZES ARE GIVEN IN INCHES.
5. RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
6. LENGTHS SHOWN ARE FOR A TEST PRESURE OF 180 PSI.
7. THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFTEY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
8. RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL RESTRAINED LENGTHS FOR PIPE.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE	MAY 10, 2011 DATE OF APPROVAL	RESTRAINED LENGTHS FOR PVC PIPE	UG-8
CLB/BR	11/10			PAGE 108

DONALD ROBERT HOLCOMB LICENSE No. 51970 STATE OF FLORIDA Sep-11

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE: 05/27/14
PROJECT NO. 6071160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO. 51970

WATER DETAILS

SHEET NO. W-16

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS			TEES						REDUCERS				PLUGS & VALVES
	90°	45°	22.5°	SIZE / LENGTH						SIZE / LENGTH				
36	142	59	28	x36 393	x30 318	x24 232	x20 165	x16 84	x12 1	X30 137	X24 247	X20 309	X16 359	453
30	124	51	25	X30 333	X24 252	X20 189	X16 115	X12 23	X10 1	X24 137	X20 213	X16 276		391
24	106	44	21	X24 270	X20 211	X16 143	X12 61	X10 10	X8 1	X20 98	X16 178	X12 241		327
20	92	38	18	X20 225	X16 161	X12 85	X10 39	X8 1		X16 98	X12 176	X10 227		280
16	77	32	15	X16 177	X12 107	X10 65	X8 19	X6 1		X12 98	X10 163	X8 169		231
12	61	25	12	X12 127	X10 89	X8 50	X6 1			X10 88	X8 96	X6 131		181
10	52	22	10	X10 101	X8 64	X6 11				X8 51	X6 94	X4 125		153
8	44	18	9	X8 78	X6 30	X4 1				X6 54	X4 92			128
6	34	14	7	X6 46	X4 1					X4 50				98
4	24	10	5	X4 19										69

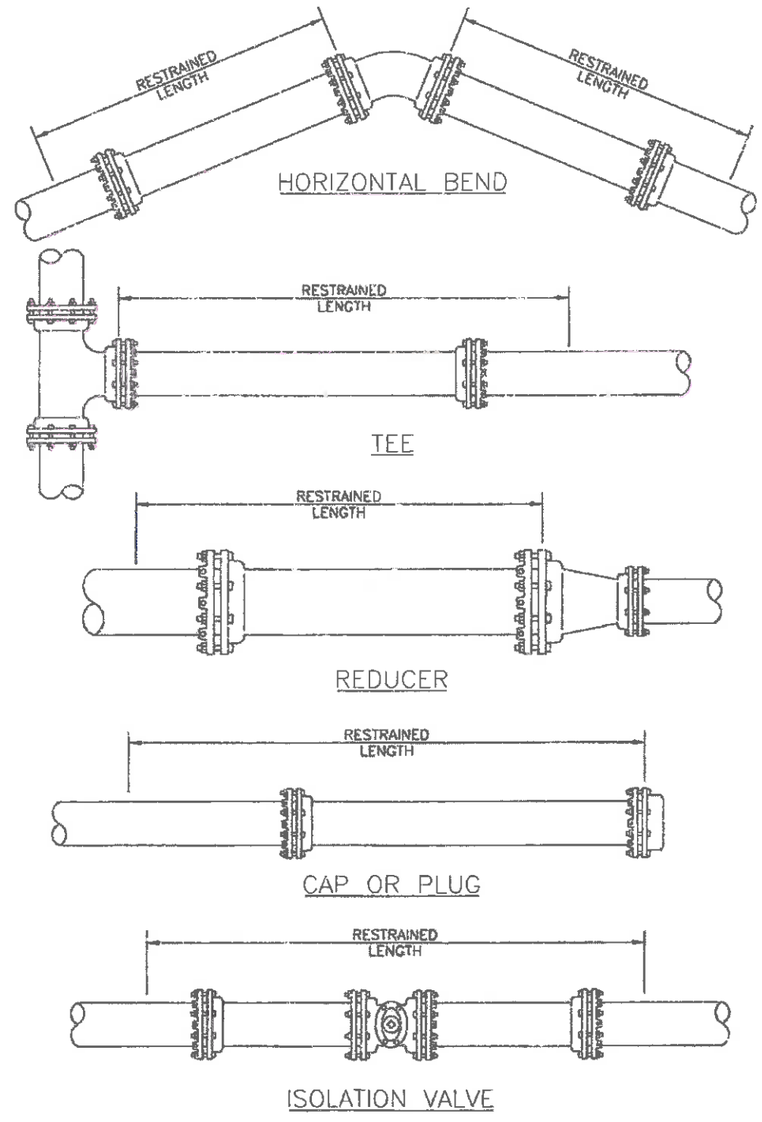
REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS			TEES						REDUCERS				PLUGS & VALVES
	90°	45°	22.5°	SIZE / LENGTH						SIZE / LENGTH				
36	100	42	20	x36 163	x30 132	x24 96	x20 68	x16 35	x12 1	X30 57	X24 103	X20 128	X16 149	188
30	88	37	18	X30 138	X24 104	X20 78	X16 48	X12 10	X10 1	X24 57	X20 88	X16 114		162
24	75	31	15	X24 112	X20 87	X16 59	X12 25	X10 4	X8 1	X20 40	X16 74	X12 100		135
20	65	27	13	X20 93	X16 67	X12 35	X10 16	X8 1		X16 41	X12 73	X10 94		116
16	54	22	11	X16 73	X12 44	X10 27	X8 8	X6 1		X12 41	X10 68	X8 70		96
12	43	18	8	X12 53	X10 37	X8 21	X6 1			X10 37	X8 40	X6 54		75
10	37	15	7	X10 42	X8 26	X6 5				X8 21	X6 39	X4 52		63
8	30	13	6	X8 32	X6 12	X4 1				X6 22	X4 38			53
6	24	10	5	X6 19	X4 1					X4 21				41
4	17	7	3	X4 8										29

NOTE:

SEE RESTRAINED LENGTHS FOR PVC PIPE DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE	MAY 10, 2011	RESTRAINED LENGTHS FOR DIP	UG-9
CLB/BR	11/10	DATE OF APPROVAL		PAGE 109



MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE	MAY 10, 2011	RESTRAINED LENGTHS FOR PIPE	UG-10
CLB/BR	11/10	DATE OF APPROVAL		PAGE 110

DONALD ROBERT HOLCOMB LICENSE No. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER FL 5-27-14

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

Manatee County FLORIDA — MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

WATER DETAILS

SHEET NO.: W-17

NOTES:

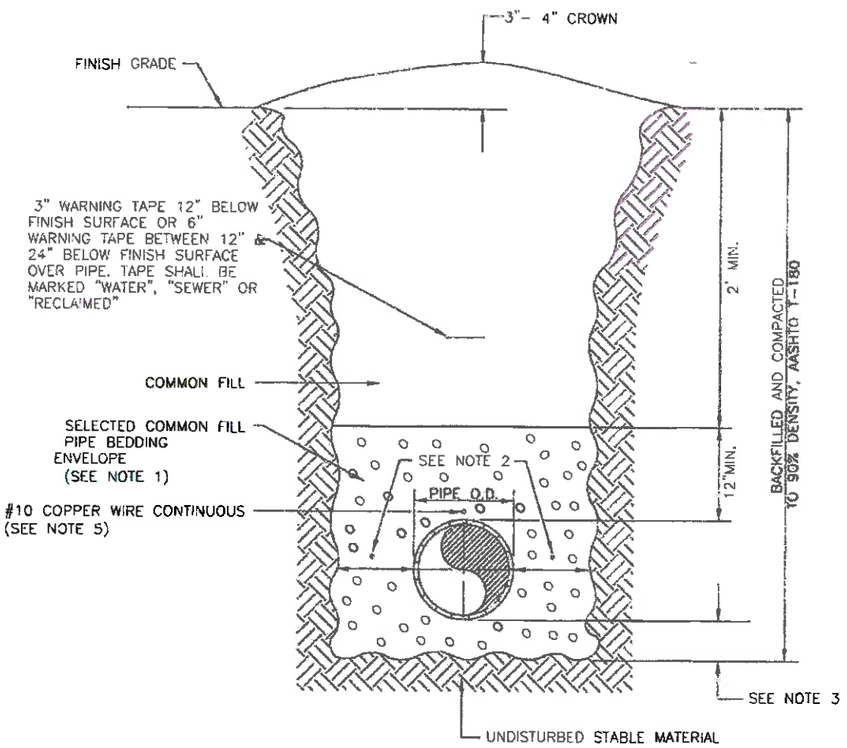
1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.

3. TYPICALLY 4" TO 6".

4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	UG-11
REV.BY	DATE	MAY 10, 2011		PAGE 111
WRT/KE	03/11	DATE OF APPROVAL		

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.

3. TYPICALLY 4" TO 6"

4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5. ASPHALTIC CONCRETE STRUCTURE COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF 1 1/4 INCH, WHICHEVER IS GREATER

6. MILL 25' BACK FROM TRENCH SAW CUT. ADJUST MILLING PER INDIVIDUAL SITE TO NOT IMPACT BASE. BUTT JOINT TO EXIST ASPHALT. FINAL OVERLAY LIMITS ARE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT. FINAL OVERLAY TO MATCH EXISTING WITH NO DISCERNABLE "BUMP" AT JOINT. MILLING LIMITS THAT IMPACT INTERSECTION SHALL BE ADDRESSED ON A CASE BY CASE BASIS AND APPROVED BY MANATEE COUNTY.

7 SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.

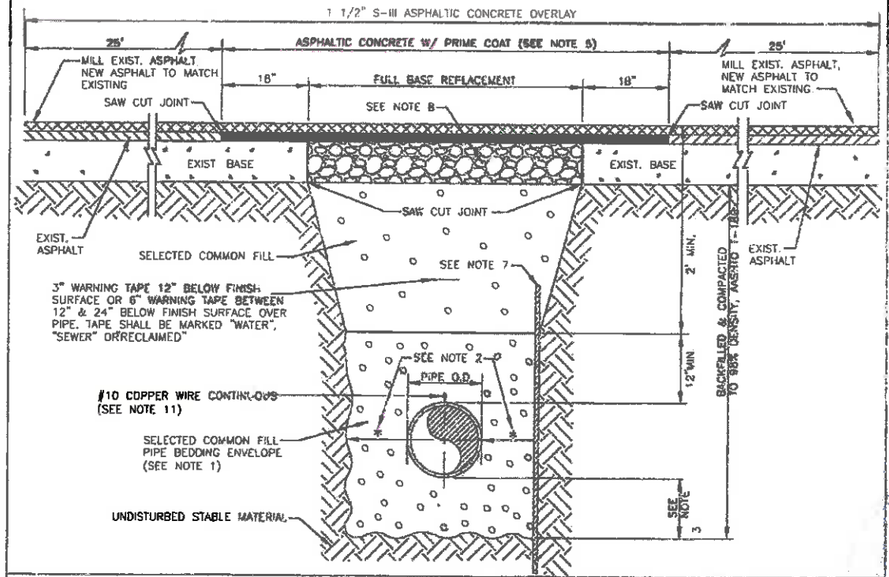
8 BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.

9 TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE

10. RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FDOT STANDARDS, LATEST EDITION.

11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS

12 NOTES 5 THRU 10. ARE MINIMUM REQUIREMENTS FOR A TRENCH IN A ROAD. REFER TO LATEST EDITION OF MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-12
REV.BY	DATE	MAY 10, 2011		PAGE 112
WRT/KE	03/11	DATE OF APPROVAL		

DONALD ROBERT HOLCOMB LICENSE No. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER 5-23-14

					SCALE	AS NOTED	
					DESIGNED BY	JLS	
					DRAWN BY	JHC	
					CHECKED BY	DRH	
No.	REVISIONS	DATE	BY				

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER	WATER DETAILS	SHEET NO.
05/27/14		DONALD R. HOLCOMB		W-18
PROJECT NO. 607116D		FL. LICENSE NO. 51970		

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.

3. TYPICALLY 4" TO 6".

4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5. THICKNESS TO MATCH EXISTING OR BE 8" MINIMUM, WHICHEVER IS GREATER.

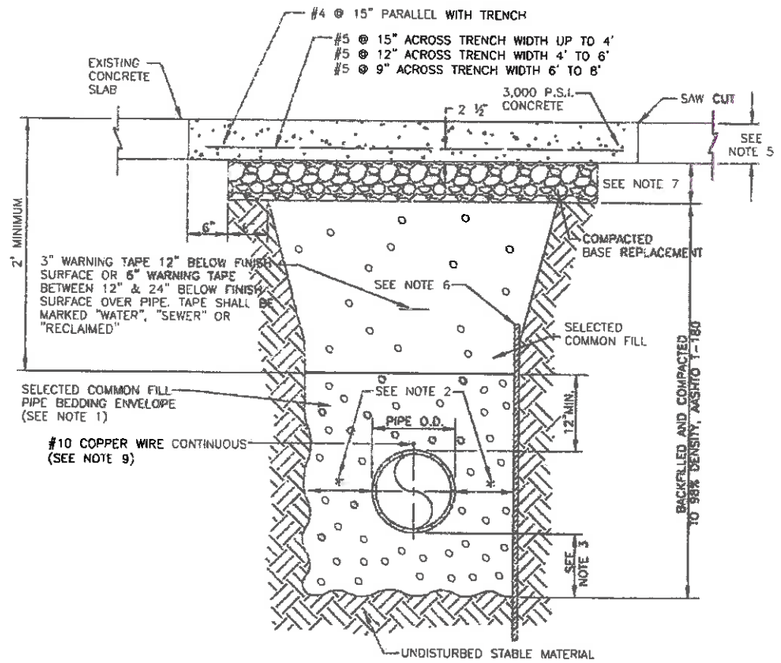
6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE

7 BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.

8. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE

9. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS

10. NOTES 5. THRU 8. ARE MINIMUM REQUIREMENTS REFER TO MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			
REV.BY	DATE	TRENCH WITH CONCRETE PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-13
CLB/BR	11/10		
		MAY 10, 2011 DATE OF APPROVAL	PAGE 113

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.

3. TYPICALLY 4" TO 6"

4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS

5. THICKNESS TO MATCH EXISTING OR BE 6" MINIMUM, WHICHEVER IS GREATER

6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISH GRADE OR 12" BELOW SUBGRADE

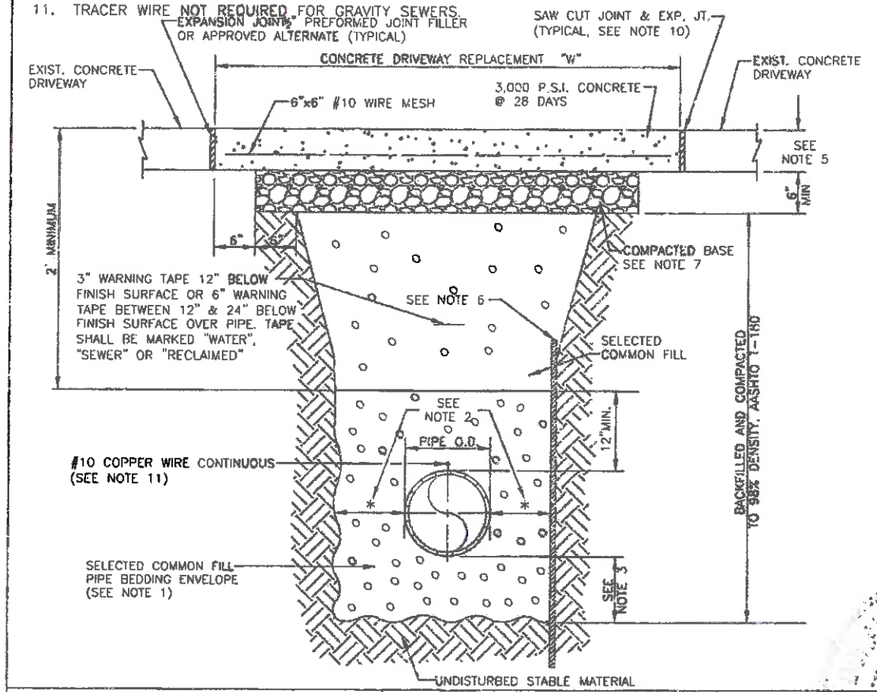
7. BASE SHALL BE COMPACTED 6" MINIMUM THICKNESS OF APPROVED MATERIAL.

8. DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST ADOPTED CONSTRUCTION STANDARDS OF THE MANATEE COUNTY TRANSPORTATION DEPARTMENT.

9. IF THE DRIVEWAY IS 12' OR WIDER, SAWCUT AN EXPANSION JOINT ALONG THE CENTER OF THE DRIVEWAY (3/16" WIDE AND 1½" DEEP) AFTER THE CONCRETE HAS SET.

10. IF THERE IS AN EXISTING EXPANSION JOINT WITHIN 3' OF THE PROPOSED JOINT, EXTEND DRIVEWAY REPLACEMENT TO THE EXISTING JOINT.

11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			
REV BY	DATE	TRENCH WITH CONCRETE DRIVEWAY SURFACE TYPE A-1 PIPE BEDDING	UG-14
CLB/BR	11/10		
		MAY 10, 2011 DATE OF APPROVAL	PAGE 114

DONALD ROBERT HOLCOMB LICENSE No. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER 5-23-14

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 6071160

Manatee County FLORIDA — MANATEE COUNTY PUBLIC WORKS

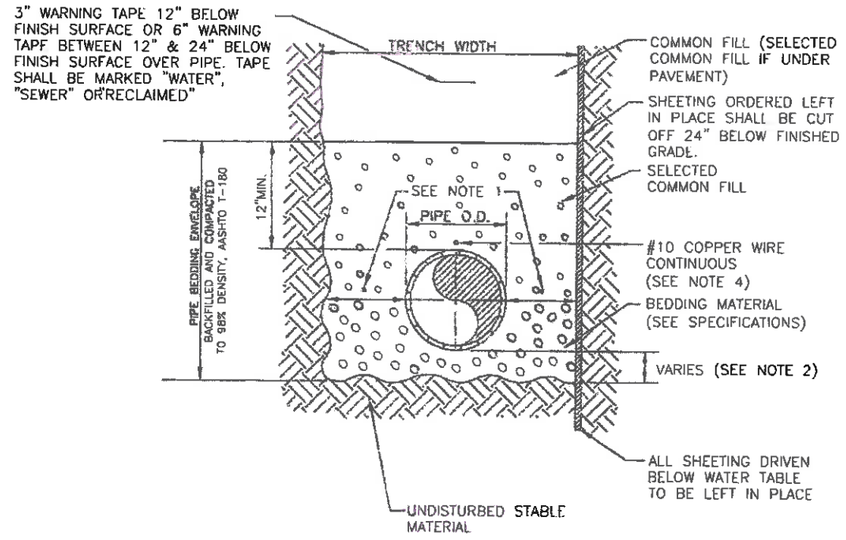
DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

WATER DETAILS

SHEET NO.: W-19

NOTES:

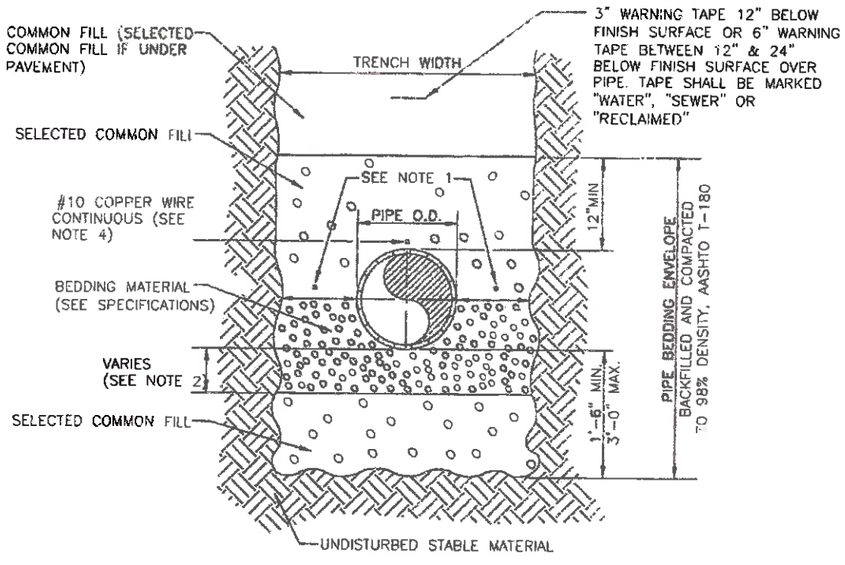
1. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS
2. TYPICALLY 4" TO 6".
3. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH WITH TYPE A-2 PIPE BEDDING	UG-15
REV.BY	DATE	MAY 10, 2011		PAGE 115
CLB/BR	11/10	DATE OF APPROVAL		

NOTES:

2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH WITH TYPE A-3 PIPE BEDDING	UG-16
REV.BY	DATE	MAY 10, 2011		PAGE 116
CLB/BR	11/10	DATE OF APPROVAL		

DONALD ROBERT HOLCOMB LICENSE NO. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER 5-23-14

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of Authorization No. 4213

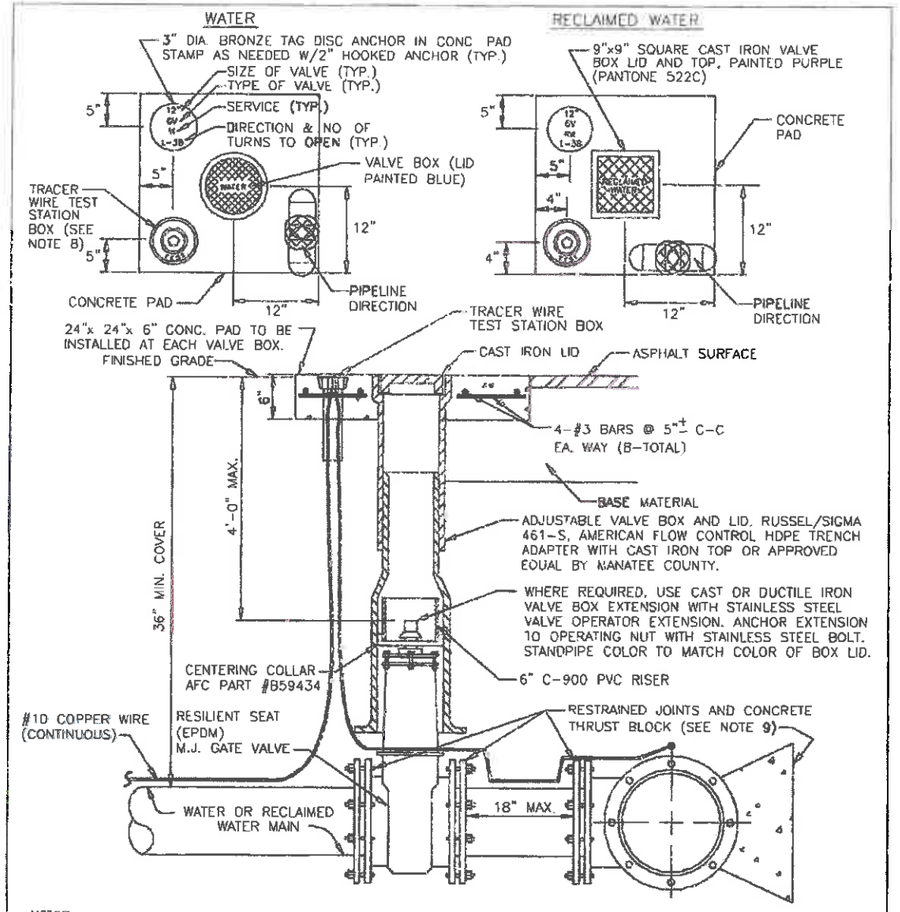
DATE: 05/27/14
PROJECT NO.: 6071160

Manatee County FLORIDA — MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

WATER DETAILS

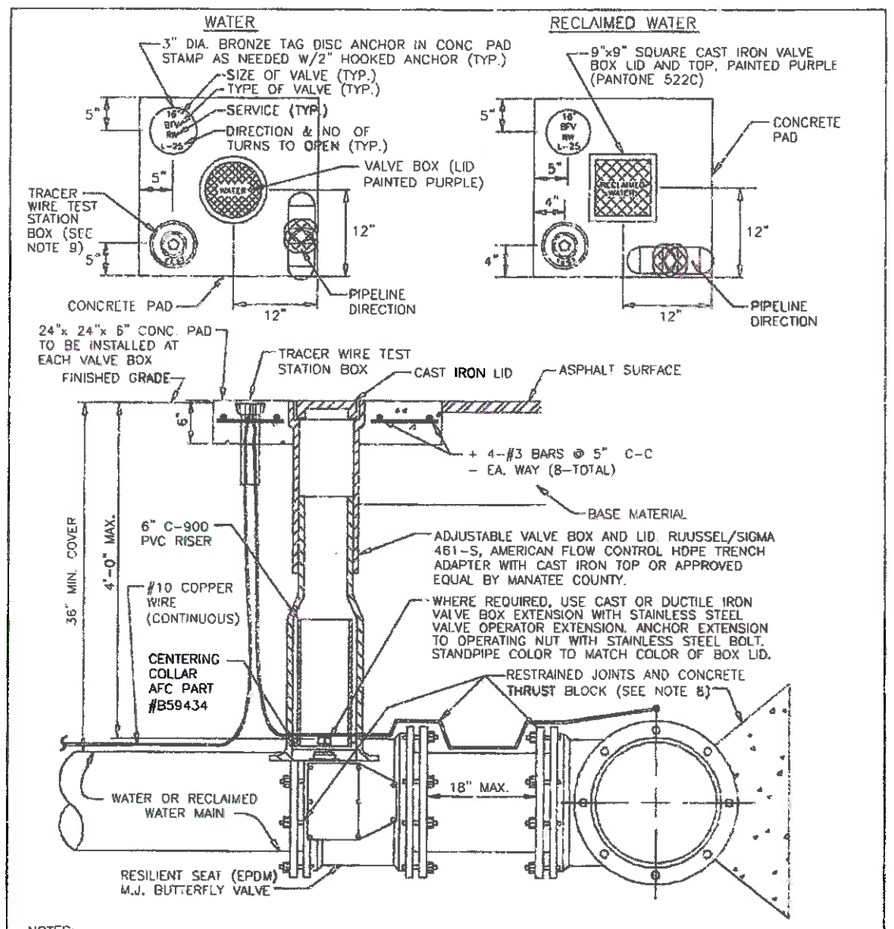
SHEET NO.: W-20



NOTES:

1. "WV" OR "RWV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "WV" OR PURPLE DISC WITH "RWV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
3. WATER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS & THRUST BLOCKS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. FOR VALVES 16" AND LARGER, USE BUTTERFLY VALVES.
7. PIPELINE DIRECTION TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD
8. TRACER WIRE TEST STATION BOX IS NOT REQUIRED IN VALVE BOX PAD IF THE GATE VALVE IS LOCATED WITHIN 200 FEET OF A WATER SERVICE, BLOW-OFF, BACKFLOW PREVENTER OR FIRE HYDRANT THAT HAS A TRACER WIRE BOX.
9. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
10. BINGHAM & TAYLOR P20ONFG FOR NORMAL YARD SERVICE. WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE P525RD CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE	MAY 10, 2011	GATE VALVE, BOX, LID AND TAG	UW-2
CLB/KE	11/10	DATE OF APPROVAL		PAGE 120



NOTES:

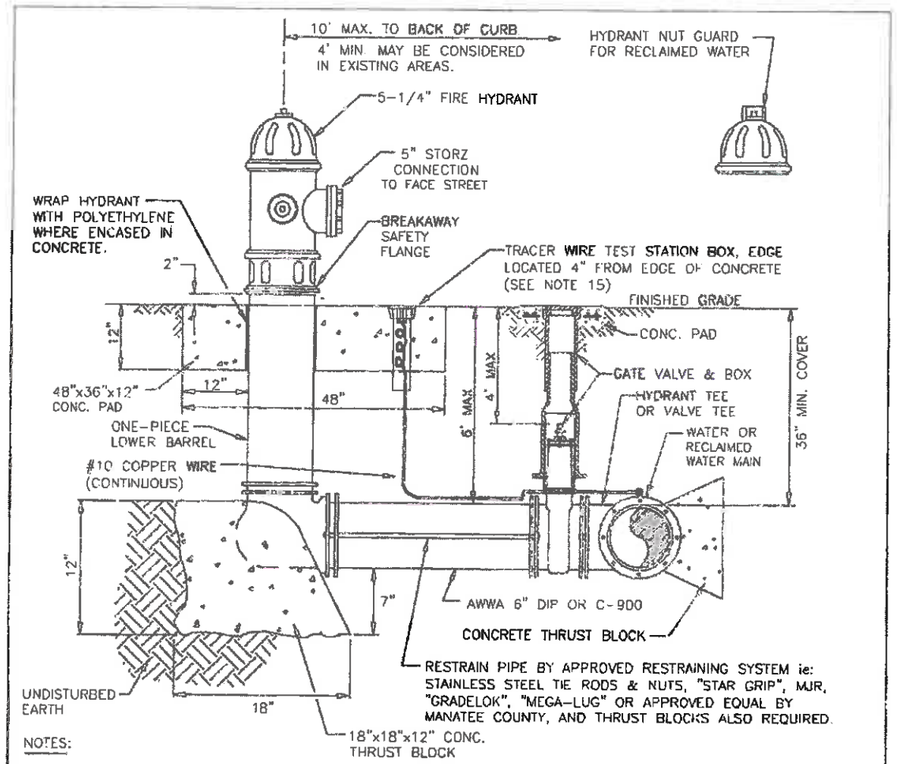
1. "WV" OR "RWV" TO BE IMPRESSED INTO THE NEWLY--POURED CONCRETE CURB, ALONG WITH IF NO CURB, INSTALL A BLUE DISC WITH "WV" OR PURPLE DISC DISTANCE IN FEET TO THE VALVE. WITH "RWV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
3. WATER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS & THRUST BLOCKS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. FOR VALVES 16" AND LARGER, USE BUTTERFLY VALVES.
7. PIPELINE DIRECTION TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD.
8. WHERE THRUST BLOCK NOT USED. RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
9. BINGHAM & TAYLOR P20ONFG OR EQUAL FOR NORMAL YARD SERVICE. WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE P525RD CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE	MAY 10, 2011	BUTTERFLY VALVE, BOX, LID AND TAG	UW-3
CLB/KE	11/10	DATE OF APPROVAL		PAGE 121

REGISTERED PROFESSIONAL ENGINEER DONALD R. HOLCOMB LICENSE 51970 STATE OF FLORIDA 5-23-14

				SCALE: AS NOTED	HDR Engineering, Inc. 2601 Cattlemen Road Suite 400 Sarasota, FL 34232-6233 FBPR Certificate of Authorization No. 4213	DATE: 05/27/14	MANATEE COUNTY PUBLIC WORKS
				DESIGNED BY: JLS		PROJECT NO.: 6071160	
				DRAWN BY: JHC			
				CHECKED BY: DRH			
No.	REVISIONS	DATE	BY				

DESIGN ENGINEER		SHEET NO.
DONALD R. HOLCOMB	WATER DETAILS	W-21
FL. LICENSE NO. 51970		



NOTES:

1. WEEPHOLES SHALL BE EXCLUDED FROM THE FIRE HYDRANT.
2. FIRE HYDRANTS SHALL BE A MINIMUM OF 6' OFF EDGE OF PAVEMENT AND 10' MAX. FROM BACK OF CURB. WHERE POSSIBLE AND WHERE SIDEWALK IS TO BE INSTALLED, FIRE HYDRANT SHALL BE LOCATED BETWEEN SIDEWALK AND RIGHT-OF-WAY LINE.
3. HYDRANTS SHALL BE FUSION BONDED EPOXY COATED SAFETY YELLOW FOR WATER AND PURPLE (PANTONE 522C) FOR RECLAIMED WATER. HYDRANT SHALL BE DUCTILE IRON CONSTRUCTION.
4. FIRE HYDRANTS SHALL BE PLACED SO THAT STORM WATER FLOWS AWAY FROM THE HYDRANT.
5. FIRE HYDRANTS SHALL BE CONSTRUCTED WITH "GROUND LINE" SET TO FINISHED GRADES AS ESTABLISHED IN THE FIELD. NORMAL BURY IS 3 FEET OF COVER FOR ALL WATER LINES.
6. FIRE HYDRANTS MAY BE CONSTRUCTED WITH "GRADELOK" OFFSET FITTING.
7. RAISED REFLECTIVE PAVEMENT MARKER (BLUE) FOR POTABLE WATER (PURPLE) FOR RECLAIMED WATER. SHALL BE INSTALLED AT CENTERLINE OF PAVEMENT ADJACENT TO EACH HYDRANT.
8. PRECAST CONCRETE THRUST BLOCKS & PADS SHALL NOT BE USED.
9. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2" CHAMFER.
10. FIRE HYDRANT VALVE SHALL BE FASTENED DIRECTLY TO TEE.
11. IN-LINE VALVES SHOULD BE LOCATED AT HYDRANT TEES.
12. HYDRANTS SHALL BE LOCATED ON SAME SIDE OF ROAD AS WATER MAIN UNLESS OTHERWISE APPROVED.
13. THERE MUST BE A CLEARANCE OF 7 1/2 FEET FROM FRONT AND BOTH SIDES, AND FOUR FEET TO THE REAR OF THE HYDRANT, TO ABOVE GRADE OBSTRUCTIONS INCLUDING POSTS, FENCES, TREES, ETC. PER THE FLORIDA FIRE PREVENTION CODE.
14. SEE STANDARD DETAIL GATE VALVE, BOX, LID AND TAG.
15. SHOULD THE FIRE HYDRANT'S CONCRETE PAD OVERLAP THE SIDEWALK, THE TRACER WIRE TEST STATION BOX SHALL NOT BE LOCATED WITHIN THE SIDEWALK.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE	MAY 10, 2011	FIRE HYDRANT ASSEMBLY	UW-5
CLB/KE	11/10	DATE OF APPROVAL		PAGE 123

DONALD ROBERT HOLCOMB LICENSE No. 51970 STATE OF FLORIDA 5-23-14

No.	REVISIONS	DATE	BY	SCALE: AS NOTED	DESIGNED BY JLS	DRAWN BY JHC	CHECKED BY DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of
Authorization No. 4213

DATE 05/27/14

PROJECT NO. 607160

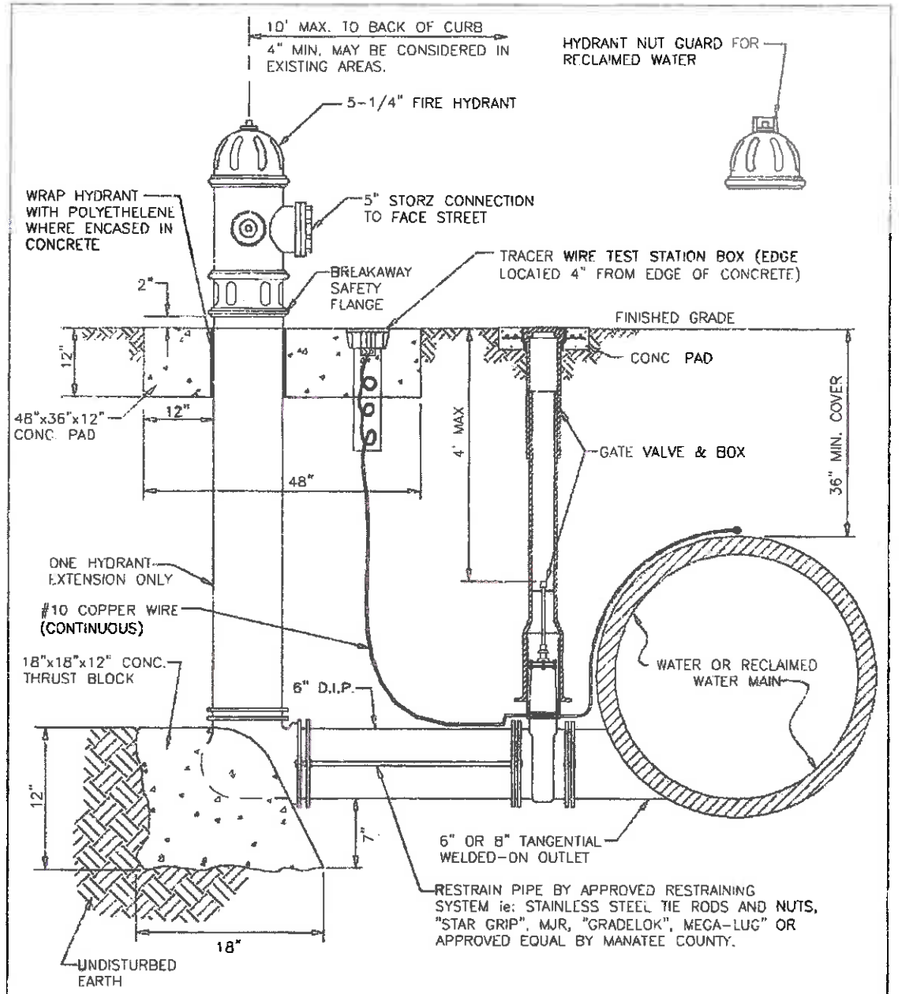
Manatee County FLORIDA MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER DONALD R. HOLCOMB

FL. LICENSE NO. 51970

WATER DETAILS

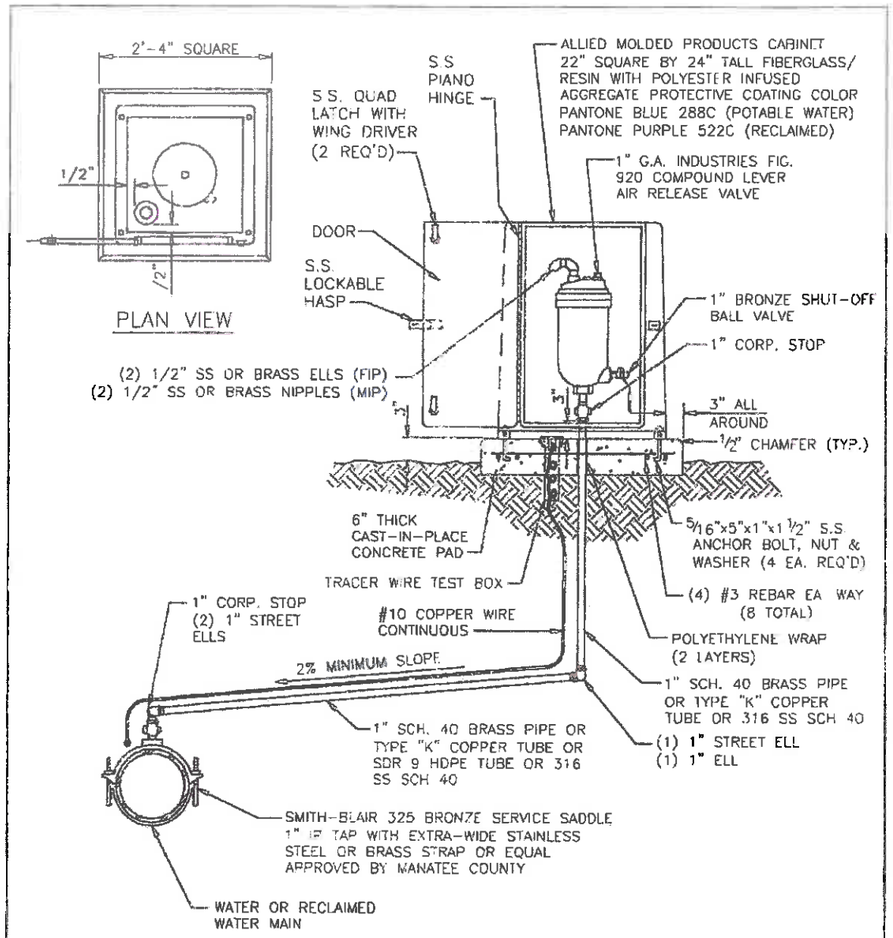
SHEET NO. W-22



NOTES:

1. FIRE HYDRANT BLOW-OFF ASSEMBLY TO COMPLY WITH NOTES 1-15 OF THE FIRE HYDRANT ASSEMBLY DETAIL.
2. TYPICAL LOCATION FOR TANGENTAL OUTLET IS AT LOW POINT ALONG THE MAIN WHERE SEDIMENTS ACCUMULATE.
3. SEE GATE VALVE, BOX, LID AND TAG DETAIL.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT			FIRE HYDRANT BLOW-OFF ASSEMBLY FOR 12" MAINS AND LARGER	UW-8
REV.BY	DATE	MAY 10, 2011		PAGE 126
CLB/KE	11/10	DATE OF APPROVAL		



NOTES:

1. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS ALONG WATER MAINS WHERE SPECIFICALLY INDICATED ON THE PLAN.
2. ARV VENT ORIFICE TO BE SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION FOR WATER MAIN SIZE.
3. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL, BRASS OR COPPER.
4. ALL PIPE THREADS TO BE SEALED AIR TIGHT.
5. VENT PIPE TO BE LAID ACCURATELY ON SLOPE, WITHOUT HIGH OR LOW POINTS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT			ABOVE-GROUND AIR RELEASE VALVE ASSY. FOR 12-INCH AND SMALLER WATER MAINS	UW-9
REV.BY	DATE	MAY 10, 2011		PAGE 127
CLB/KE	11/10	DATE OF APPROVAL		

DONALD ROBERT HOLCOMB LICENSE No. 51970 STATE OF FLORIDA 5-23-14

REVISIONS	NO.	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of Authorization No. 4213

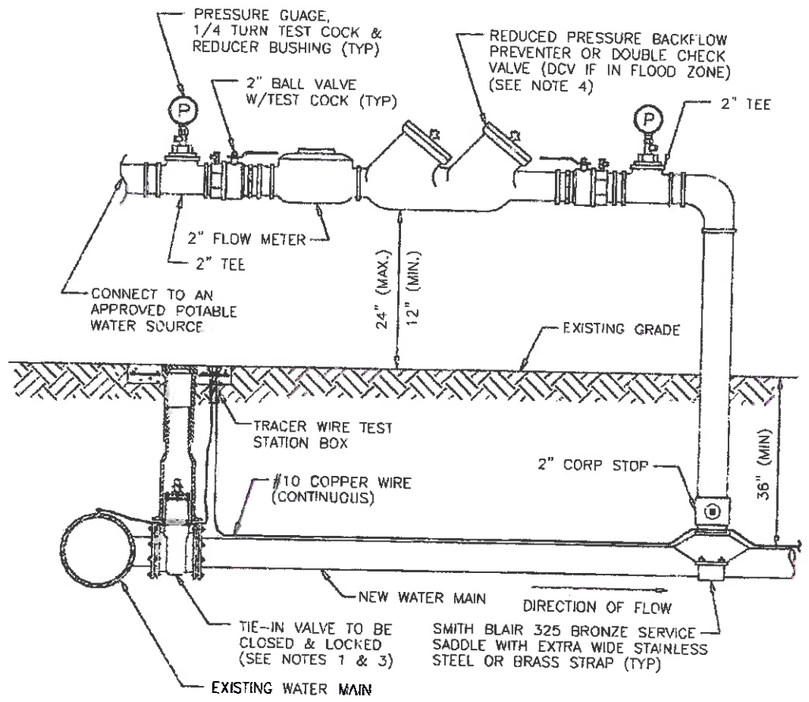
DATE: 05/27/14
PROJECT NO.: 6071160

Manatee County FLORIDA — MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

WATER DETAILS

SHEET NO.: W-23



SECTION

NOTES:

1. FOR TIE-IN VALVE, SEE DETAIL UW-4 FOR TAPPING SLEEVE VALVE, DETAIL UW-2 FOR GATE VALVE AND DETAIL UW-3 FOR BUTTERFLY VALVE.
2. CORPORATION STOP CONNECTIONS TO WATER MAINS SHALL BE AT A SUFFICIENT DISTANCE FROM NEW TAPPING SLEEVE & VALVE (TIE-IN VALVE). ALL CORPORATION STOP TAPS SHALL BE PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP DIAMETERS (WHICHEVER IS LARGER) FROM THE NEW TIE-IN VALVE (TAPPING VALVE & SLEEVE). A CROSS MAY BE INSTALLED IF THE EXISTING WATER MAIN IS NOT LARGER THAN THE NEW WATER MAIN.
3. IF THE EXISTING WATER MAIN IS LOCATED UNDER PAVEMENT OR CLOSE TO THE ROADWAY, BOTH JUMPER CORPORATION STOPS MAY CONNECT TO THE NEW WATER MAIN LOCATED OUTSIDE OF THE PAVEMENT. AN ADDITIONAL GATE VALVE OR BUTTERFLY VALVE SHALL BE INSTALLED AND THE VALVE MAY BE LOCATED AT THE ROW LINE. PIPING AND APPURTENANCES BETWEEN THE EXISTING MAIN AND ISOLATION VALVE AND JUMPER SHALL BE DISINFECTED BY SPRAYING OR SWABBING.
4. BACKFLOW PREVENTER SHALL BE STRUCTURALLY SUPPORTED.
5. SEE DETAIL UW-22 FOR ADDITIONAL JUMPER CONNECTION NOTES.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		TEMPORARY JUMPER CONNECTION	UW-21
WT/KE	01/11	MAY 10, 2011 DATE OF APPROVAL		PAGE 139

1. A temporary jumper connection is required at all connections between existing active potable water mains and proposed new water main improvements with the following exceptions:
   A. Projects that include a permanent backflow preventer at the right-of-way which is adjacent to the existing water main;
   B. Projects that include new water mains that are less than or equal to 18 linear feet in length; or
   C. Other proposed cases that are approved by Manatee County and the construction drawings specifically state that a temporary jumper connection is not required.
2. A temporary jumper shall be used and be connected to an approved potable water source (e.g., existing fire hydrant, existing main, existing service tap or tank truck, etc.) as shown in the standard temporary jumper detail UW-21. A temporary jumper shall be used for filling, flushing and for disinfection of any new main of any size. The jumper connection shall be maintained until after the filling, flushing, testing and disinfection of the new main has been successfully completed and clearance for use from the Florida Department of Environmental Protection (FDEP) or the Florida Department of Health (FDOH) has been obtained.
3. Locations and orientation of jumpers associated with connections to existing water mains that are located under the roadway pavement shall be approved on a case-by-case basis.
4. Pipe and fittings used for connecting the new pipe to the existing pipe shall be disinfected prior to installation in accordance with AWWA C651, latest edition. Unless approved otherwise, the tapping sleeve, and exterior of the existing main to be tapped, piping within the jumper, and new piping shown on standard temporary jumper detail UW-21 shall be disinfected by spraying or swabbing per Section 4.6 of AWWA C651.
5. A separate and successful hydrostatic test on the new system shall occur between the tie-in valve and the closest downstream gate valve or butterfly valve before performing a hydrostatic test on the remainder of the newly constructed water main. The tie-in valve and the closest downstream gate valve or butterfly valve shall be closed during the hydrostatic test of the remainder of the newly constructed water main.
6. The jumper shall include a flow meter to ensure that the flow from the supply source is at a constant measured rate while chlorinating the new main. The chlorine concentration shall be measured at regular intervals to ensure that it is fed at a constant rate of not less than 25 milligrams per liter (mg/L) of free chlorine.
7. The jumper connection shall also be used to maintain a minimum pressure of 20 psi in the new mains continuously after disinfection and until FDEP/FDOH clearance letter is obtained.
8. All temporary backflow devices or "jumpers" utilized during pipeline construction must show certification that they have been tested annually according to the Florida Building Code, Plumbing Section, Chapter 3, Section 312.9.1, 312.9.2, Chapter 6, Section 606, and Resolution R87-125. Annual certification must be valid at time of installation and provided to the Manatee County Inspector upon request.
9. Except as required to flush lines greater than 6 inches in diameter, the lockable tie-in valve shall remain closed and shall be locked in the closed position by Manatee County. The tie-in valve shall remain closed and locked until the new system has been cleared for use by the FDEP/FDOH and all other pertinent agencies.
10. After receipt of clearance for use by FDEP/FDOH, Manatee County, and all other pertinent agencies, the Contractor shall remove the temporary jumper connection. The corporation stops are to be closed and plugged with 2-inch brass or PVC stops.
11. All installation and maintenance of the temporary jumper connection and associated backflow prevention device, flow meter, fittings, valves, etc., shall be the responsibility of the Contractor.
12. The tie-in valve shall remain closed if the potable water source is a tank truck.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		TEMPORARY JUMPER CONNECTION NOTES	UW-22
JAA/JEA	02/09	MAY 10, 2011 DATE OF APPROVAL		PAGE 140

DONALD ROBERT HOLCOMB LICENSE NO. 51970 STATE OF FLORIDA 5-22-14

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: JHC
CHECKED BY: DRH

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233
FBPR Certificate of Authorization No. 4213

DATE: 05/27/14
PROJECT NO.: 607160

Manatee County FLORIDA MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: DONALD R. HOLCOMB
FL. LICENSE NO.: 51970

WATER DETAILS

SHEET NO.: W-24

SPECIAL PROVISIONS

(Revised 8.12.2014)
(Revised 9.9.2014 – Contract Contingency)
(Revised 9.12.2014 – Change Orders)

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GENERAL

This Section amends, enhances, or otherwise revises the Contract Documents and Standard Specifications.

CONTRACT PLANS

The Contract Plans will include the following plan sets:

1. Plans for 44th Avenue East from 30th Street East to 45th Street East.
    a. Roadway Plans
    b. Signing and Pavement Marking Plans
    c. Lighting Plans
    d. Water Main Plans

STANDARD SPECIFICATIONS

The Standard Specifications to be used for this work shall be Division II and III of the Florida Department of Transportation (FDOT) *Standard Specifications for Road and Bridge Construction (2014 Edition)*, and all Supplemental Specifications thereto, hereinafter referred to as the *Standard Specifications*, for roadway construction, except as amended under this Contract, or as noted on the construction plans meeting the Manatee County Highway, Traffic & Stormwater Standards (dated 2007).

The Contractor's work shall follow the Manatee County Public Works Utility Standards and Specifications (dated 2011) for the water main work, reclaimed water main, sanitary sewer, and force main work.

These specifications cover the usual construction requirements for work specified by the County Public Works Department; however, in the event it is determined that the specific work to be done is of such a nature that the method of construction, type and/or kind of material is not defined by the *Standard Specifications*, such work shall be performed in accordance with the Special Provisions for Contract Plans Sections 1.a-c and in accordance with the *Infrastructure Engineering Standard Specifications* for Contract Plans Section 1.d.

The apparent silence of the Specifications as to any detail of the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used. Interpretation of these specifications shall be made upon that basis.

PRIORITY

The controlling hierarchy for this contract shall be the following:
Special Provisions and Technical Specifications
General Conditions
Contract Plans
Standard Specifications

NO SEPARATE PAYMENT FOR SPECIAL PROVISIONS

No separate payment will be made for the Contractor to execute Special Provisions. All expenses borne by the Contractor shall be included in the individual unit prices for the particular pay item, applicable pay item or as part of the lump sum quantity for Mobilization.

CONSTRUCTION STAKING AND SURVEY CONTROL

All construction staking and survey work shall be completed prior to Clearing and Grubbing activities and shall be performed by a Registered Land Surveyor, unless otherwise approved. The right-of-way shall be staked within 20 days of the Notice to Proceed and shall include any easements (TCE or permanent) and maintained through the duration of construction. Right-of-way stakes shall be placed at all right-of-way corners and a maximum of 200 feet between corners, and shall be visible for contractor personnel, utility companies, and County representatives.

Contractor shall protect all primary control (section corners, existing property corners, Second Order, Class II, Stability "B" benchmarks, etc.) within the right-of-way. If, during construction, damages occur to the primary control as defined above, Contractor shall reset the control at no cost to the County prior to project closeout. This work shall be performed by a licensed surveyor in the State of Florida, and documentation shall be submitted to the County for acceptance.

MATERIALS

a. **Delivery Tickets**: It will be necessary to submit a copy of all delivery tickets for materials used on the project, regardless of the basis of payment.

b. **Job Mix Formula for Asphaltic Concrete**: Attention is directed to the requirement that job mix formulas for asphaltic concrete, of the type specified, be submitted at least 14 days before plant operations begin. The submitted formula should be derived, or approved, by the laboratory approved by the County Representative to make test on the Project. Costs for such job mix formulation will be paid by the Contractor directly to the assigned laboratory.

c. **Job Mix Formula for Portland Cement Concrete**: Attention is directed to the requirement that job mix design formulas for all Portland Cement Concrete, of the type specified, be submitted at least 14 days prior to use on the project. The submitted formulas shall be derived or approved by the County Representative and/or its agents. All concrete mix designs shall meet FDOT Concrete Class mix guidelines, except as follows: when approved, in writing by the County Representative, an Alternate Class I Concrete mix design formula, for concrete curb and gutter to be placed by automated curb machines, may show, as a substitution for #57 aggregate, an amount of #89 aggregate not to exceed 33 percent, by weight, of the #57 aggregate.

LABORATORY TESTING

Testing for the Work shall be performed at no expense to the Contractor. However, any test that fails or is not performed, as a result of the Contractor's action will, in turn, be back-charged to the Contractor, including the cost of all re-testing due to defective materials or construction. The testing laboratory shall be approved by the County Representative.

The samples and tests used for determining the quality and acceptability of the materials and workmanship, which have been or are to be incorporated in the Work, shall conform to the requirements of the State of Florida Department of Transportation Materials Sampling, Testing and Reporting Guide, latest edition.
Testing shall be in accordance with the applicable portions of Section 6 of the *Standard Specifications* and these specifications.

CONTRACTOR'S RESPONSIBILITIES DURING LABORATORY TESTING

a. Cooperate with laboratory personnel; provide access to Work and/or to Manufacturer's operations.

b. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.

c. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other material mixes which require control by the testing laboratory.

d. Materials and equipment used in the performance of work under this Contract are subject to inspection and testing at the point of manufacture or fabrication. Standard specifications for quality and workmanship are indicated in the Contract Documents. The County may require the Contractor to provide statements or certificates from the manufacturers and fabricators that the materials and equipment provided by them are manufactured or fabricated in full accordance with the standard specifications for quality and workmanship indicated in the Contract Documents. All costs of this testing and providing statements and certificates shall be a subsidiary obligation of the Contractor and no extra charge to the County shall be allowed on account of such testing and certification

e. Furnish incidental labor and facilities:

   1. To provide access to work to be tested
   2. To obtain and handle samples at the project site or at the source of the product to be tested
   3. To facilitate inspections and tests
   4. For storage and curing of test samples

f. Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests. When tests or inspections cannot be performed due to insufficient notice, Contractor shall reimburse County for laboratory personnel and travel expenses incurred due to Contractor's negligence.

g. Employ and pay for the services of the same or a separate, equally qualified independent testing laboratory to perform additional inspections, sampling and testing required for the Contractor's convenience and as approved by the County.

h. If the test results indicate the material or equipment complies with the Contract Documents, the County shall pay for the cost of the testing laboratory. If the tests and any subsequent retests indicate the materials and equipment fail to meet the requirements of the Contract Documents, the contractor shall pay for the laboratory costs directly to the testing firm or the total of such costs shall be deducted from any payments due the Contractor.

MEASUREMENT AND PAYMENT

Measurement and payment shall be made in accordance with FDOT Standard Specifications, all Supplemental Specifications, and Technical Special Provisions herein.

a. All work completed under the terms of this contract shall be measured according to United States Standard Measures.

b. All measurements shall be taken horizontally or vertically unless specifically provided otherwise.

c. No payment will be made for construction over a greater area than authorized, nor for material moved from outside of stakes and data shown on the plans, except when such work is performed upon instructions of the County Representative.

d. The Contractor shall accept compensation provided under the terms of this contract as full payment for furnishing all materials and for performing all work contemplated and embraced under this contract. Such compensation shall also be for any and all loss or damage arising out of the nature of the work or from the action of the elements, or from any unforeseen difficulties or obstructions encountered during the contract period until final acceptance by the County Representative.

e. Whenever any change, or combination of changes, on the plans results in an increase or decrease in the original contract quantities, and the work added or decreased/eliminated is of the same general character as that called for on the plans, the Contractor shall accept payment in full at the original contract unit prices for the actual quantity of work performed, with no allowance for any loss of anticipated profits.

f. Any quantity item not indicated in the Bid Proposal List but shown on the Plans shall be included as part of the lump sum quantity for **Mobilization** (Item 101-1).

g. It is the Contractor's responsibility to perform a detailed quantity take-off from the plans to determine actual quantities for ordering and delivery purposes. The County Representative will not be responsible for quantities ordered in excess of those installed and constructed. The Contractor should be aware that some of the pay items may have contingency quantities. Payment shall be made only for final in-place quantities.

h. No payment shall be made for contingency quantities or additional work unless otherwise directed and approved in writing by the County Representative.

i. Measurement and Payment clarifications are listed below:

Bid Item 101-1 – Mobilization

Measurement and payment for this Bid Item shall include full compensation for the required 100 percent (100%) Performance Bond, 100 Percent (100%) Payment Bond, all required insurance for the project and the Contractor's mobilization and demobilization costs as shown in the Bid Form. Mobilization includes, but it not limited to: preparation and movement of personnel, equipment, supplies and incidentals such as safety and sanitary supplies/ facilities. All mobilization by the Contractor for wetland mitigation work on Walker Crews Preserve shall be included in this Bid Item.

Partial payments for this Bid Item will be made in accordance with the following schedule:

Percent of Original Contract Amount:	Percent Allowable Payment of Mobilization/Demobilization Bid Item Price:
5	25
10	35
25	45
50	50
75	75
100	100

These payments will be subject to the standard retainage provided in the Contract. Payment of the retainage will be made after completion of the work and demobilization.

Bid Item 141-70 – Settlement Plate Assembly

Each settlement plate assembly acceptably installed and maintained in a satisfactory and operating condition until final acceptance of the project, will be paid for at the unit price bid for each assembly which price and payment shall be full compensation for furnishing all material, labor and equipment for proper installation of the assembly, for protecting the assembly, for repair and replacing damaged assemblies and for all other work and incidentals necessary to complete the work.

Bid Item WMS-1 - Wetland Mitigation Site Creation and Enhancement

Measurement for this Bid Item shall include the removal of exotics and debris, regrading of spoils, and replanting of bare zones in the Forested Enhancement Area on Walker Crews Preserve as defined in the Environmental Resource Permit and in the Contract Plans. Price and payment shall be full compensation for furnishing all material, labor, and equipment for proper enhancement of the Walker Crews Preserve Wetland Mitigation Site and for all other work and incidentals necessary to complete the work.

Bid Item - Contract Contingency

Payment for all work under this Bid Item shall be made only at the County's discretion in order to satisfactorily complete the project in accordance with the Plans and Specifications. The Bidder shall calculate and enter a dollar amount for this Bid Item.

REQUESTS FOR PAYMENT

The Contractor shall submit Applications for Payment to the County Project Manager or as directed at the preconstruction meeting in accordance with the schedule established by the Contract Documents. Payment requests shall be submitted by the Contractor in the forms provided by the County with itemized data typed in accordance with the Bid Form. Construction photographs shall be provided in accordance with the Contract Documents.

When the County requires substantiating data, the Contractor shall submit one copy of data with cover letter for each copy of the Application.

The Contractor shall submit three (3) copies of the Applications for Payment at the times stipulated in the Agreement. Each Application shall be signed and certified by the Contractor.

CHANGE ORDER PROCEDURES

A Change Order shall be submitted if there is a change in contract scope, price, or time that must be approved and executed before it becomes effective. An Administrative Change Adjustment shall be submitted for minor change orders under 10% of the project cost or under 20% of the project time. A Field Directive approves changes in Work, but does not involve a change in the initial Scope of Work, including the Contract Price and Contract Time. A Field Directive must be issued by the Project Manager to authorize use of Contract Contingency funds.

The Contractor shall promptly implement change order procedures by providing full written data required to evaluate changes, maintain detailed records of work done on a time and material account basis, and provide full documentation to the County upon request. The Contractor shall designate a representative who is authorized to accept changes to the work and who is responsible for informing others in the Contractor's employ of the authorized changes to the work.

Changes may be initiated by the County by submitting a Request to Contractor, which shall include:

1. Detailed description of the change, products, costs and location.
2. Supplementary or revised Drawings and Specifications
3. The projected time extension for making the change.
4. A specified period of time during which the requested price will not be considered valid.

The Request is for information only and is not an instruction to execute the changes, nor to stop work in progress.

Changes may be initiated by the Contractor by submitting written notice to the County containing:

1. Detailed description of the proposed changes.
2. Statement of the reason for making the changes.
3. Statement of the effect on the Contract Sum and the Contract Time.
4. Statement of the effect on the work of separate contractors.
5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

In lieu of a Change Order, the County may issue a Field Directive for the Contractor to proceed with additional work within the original project intent. The Field Directive shall describe changes in the work, with backup information to define details. The Contractor shall sign and date the Field Directive to indicate agreement with the terms therein.

Documentation of Proposals and Claims

The Contractor shall support each quotation for a lump sum proposal and for each unit price which has not previously been established, with sufficient substantiating data to allow the County to evaluate the quotation.

Each request shall provide additional data to support time and cost computations:

1. Labor required
2. Equipment required
3. Products required
4. Taxes, insurance, and bonds
5. Credit for work deleted from the Contract, similarly documented
6. Overhead and profit
7. Justification for any change to Contract Time

The Contractor shall support each claim for additional costs and for work done on a time and material basis with documentation as required for a lump sum proposal:

1. Name of the County's authorized agent who ordered the work and the date of the order
2. Date and time work was performed and by whom
3. Time record, summary of hours work and hourly rates paid
4. Receipts and invoices for
    a. Equipment used, listing dates and time of use
    b. Products used, listing of quantities
    c. Subcontracts

Preparation of Change Orders

The Project Manager shall prepare each Change Order. Change Orders shall describe changes in the work (additions and deletions) with the necessary attachments to define the details of the change. Any adjustment to the Contract Sum and Contract Time shall be accounted in the Change Order.

Lump Sum / Fixed Price Change Orders shall be initiated by the Project Manager, including a description of the changes involved and attachments based upon documentation submitted by the Contractor, requests from the County, or both. Once the form has been completed, all copies shall be sent to the Contractor, then the County, for approval. The County shall distribute executed copies after approval by the Board of County Commissioners.

Contents of Unit Price Change Orders shall be based on either the County's definition of the scope of the required changes, the Contractor's proposal for a change, or a survey of the completed work. The amounts of the unit prices shall be those stated in the Agreement or those mutually agreed upon between the County and the Contractor.

At the completion of the change, the Contractor shall submit itemized accounting and supporting data as listed above. The County shall determine the allowable costs of such work, as provided in the Contract Documents. The County shall sign and date the Change Order to establish the change in Contract Sum and in Contract Time. Then the County and Contractor shall sign and date the Change Order to indicate their agreement.

The Contractor shall periodically revise the Schedule of Values and Application for Payment forms to record each change as a separate item of work and to record the adjusted Contract Sum. The Contractor shall periodically revise the Construction Schedule to reflect each change in Contract Time. Upon completion of work under a Change Order, the pertinent changes shall be entered into the Record Documents.

CONTRACT CLOSEOUT

The Contractor shall submit the following items when the work is considered to be substantially complete:

1. A written notice that the work or designated portion thereof, is substantially complete.
2. A list of items to be completed or corrected.

The County shall make an inspection to determine the status of completion. Project record documents and operation and maintenance manuals must be submitted before the project shall be considered substantially complete.

If the County determines that the work is not substantially complete:

1. The County shall notify the Contractor in writing.
2. The Contractor shall remedy the deficiencies in the work and send a second written notice of substantial completion to the County.

3. The County shall re-inspect the work.

When the County finds that the work is substantially complete:

1. The Engineer shall prepare and deliver to the County a tentative Certificate of Substantial Completion (Manatee County Project Management Form PMD-8) with a tentative list of the items to be completed or corrected before final payment.
2. The Engineer shall consider any objections made by the County. When the Engineer considers the work substantially complete, he will execute and deliver to the County a definite Certificate of Substantial Completion (Manatee County Project Management Form PMD-8) with a revised tentative list of items to be completed or corrected.

When the Contractor considers the work to be complete, written certification shall be submitted stating that:

1. The Contract Documents have been reviewed.
2. The work has been inspected for compliance with Contract Documents.
3. The work has been completed in accordance with Contract Documents.
4. The equipment and systems have been tested in the presence of the County's representative and are operational.
5. The work is completed and ready for final inspection.

The County shall make an inspection to verify the status of completion after receipt of such certification. If the County determines that the work is incomplete or defective:

1. The County shall promptly notify the Contractor in writing, listing the incomplete or defective work.
2. The Contractor shall take immediate steps to remedy the stated deficiencies and send a second written certification to County that the work is complete.
3. The County shall reinspect the work.

Upon finding the work to be acceptable under the Contract Documents, the County shall request the Contractor to make closeout submittals. Each additional inspection beyond a total of three (3) inspections for substantial completion and final completion due to the incompleteness of the work shall require reimbursement of the County's fees by the Contractor.

The closeout submittal shall include Project Record Documents, Operation and Maintenance Manuals, Warranties and Bonds, Evidence of Payment and Release of Liens, Certification Letters (if applicable), Certificates of Insurance for Products and Completed Operations, Final Reconciliation, Warranty Period Declaration, and Contractor's Affidavit (Manatee County Project Management Form PMD-9).

A final statement of accounting shall be submitted by the Contractor. This statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum

2. Additions and deductions resulting from previous Change Orders, Unit Prices, Penalties, Bonuses, Liquidated Damages, and other adjustments
3. Total Contract Sum, as adjusted
4. Previous payments
5. Sum remaining due

The Project Manager shall prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders. The Contractor shall submit the Application for Final Payment in accordance with procedures and requirements stated in the Contract Documents.

RESTORATION

Payment for restoration shall be covered under the applicable restoration Pay Items as specified in the proposal. If a specific restoration Pay Item is not listed in the proposal, the cost of such work shall be included in the applicable Pay Item unless otherwise provided under separate restoration section or pay quantity of these Specifications.

COOPERATION WITH OTHERS

The Contractor shall cooperate with the owner of any underground or overhead utility lines in their removal and rearrangement operations, in order that these operations may progress in a reasonable manner and that service rendered by these parties will not be interrupted. The County shall not be responsible for costs associated with delays, disruptions and remobilizations attributed to utility agency scheduling.

SITE INVESTIGATION

The Contractor acknowledges that he has satisfied himself as to the nature and location of the work; the general and local conditions, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials; availability of labor, water, electric power, roads; and uncertainties of weather, water stages, tides or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during prosecution of the work.

The Contractor further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered, insofar as this information presented by the drawings and Specifications made a part of this contract.

The Contractor shall carefully review and adhere to conditions and recommendations made in the project geotechnical report.

Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work.

The County assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the County. The County also assumes no responsibility for any understanding or representations made by its officers or agents

during or prior to the execution of this Contract, unless (1) such understanding or interpretations are made in writing by the County or are expressly stated in the Contract and (2) the Contract expressly provides that the responsibility therefore is assumed by the County.

CONTRACTOR'S SUPERVISION

a. Prosecution of Work: The Contractor shall give the work the constant attention necessary to assure the scheduled progress. He shall cooperate fully with the County Representative and with other Contractors at work in the vicinity.

b. Contractor's Superintendent: The Contractor shall at all times have on the work site as his agent, a competent superintendent capable of thoroughly interpreting the plans and specifications and thoroughly experienced in the type of work being performed, who shall receive the instructions from the County Representative or his authorized representatives. The superintendent shall have full authority to execute the orders or directions of the County Representative and to supply promptly any materials, tools, equipment, labor and incidentals that may be required. Such superintendence shall be furnished regardless of the amount of work sublet.

c. The Contractor's superintendent shall speak and understand English, and at least one responsible person who speaks and understands English shall be on the project during all working hours.

d. Supervision for Emergencies: The Contractor shall have a responsible person available at or reasonably near the work site on a 24-hour basis, 7 days a week, in order that he may be contacted for emergencies and in cases where immediate action must be taken to maintain traffic or to handle any other problem that may arise. The Contractor's responsible person for supervision for emergencies shall speak and understand English. The Contractor shall submit, by certified mail, phone numbers and names of personnel designated to be contacted in cases of emergencies along with a description of the project location to the Florida Highway Patrol and all other local law enforcement agencies.

LIST OF EMERGENCY CONTACT NUMBERS & UTILITY SERVICE MAINTENANCE

The Contractor shall obtain and maintain a list of emergency contact phone numbers for all utilities during the course of the project. The Contractor shall maintain utility service during the project except for interruptions authorized by the utility owner. If interruptions are required, the Contractor shall notify the utility owner 48 hours in advance.

MAINTENANCE AND RESTORATION OF JOB SITE

The Contractor shall conduct his operations in such a manner as will result in a minimum of inconvenience to occupants of adjacent homes and business establishments and shall provide temporary access as directed or as may be required by the Project Manager. All final restoration must be performed to an equal or better condition than that which existed prior to construction.

Good housekeeping on this project is extremely important and the Contractor will be responsible for keeping the construction site neat and clean, with debris being removed daily as the work progresses or as otherwise directed by the Project Manager. Good housekeeping at the job site shall include: Removing all tools and temporary structures, dirt, rubbish, etc.; hauling all excess dirt, rock, etc., from excavations to a dump provided by the Contractor; and all clean up shall be

accomplished to the satisfaction of the Project Manager. Dust will be controlled daily as may be required. Immediately after construction completion in an area or part thereof (including restoration), barricades, construction equipment and surplus and discarded materials shall be removed by the Contractor.

In the event that the timely clean up and restoration of the job site is not accomplished to the satisfaction of the Project Manager, the Project Manager shall make arrangements to affect the necessary clean up by others. The Contractor shall be charged for these costs through deductions in payment due the contractor. If such action becomes necessary on the part of and in the opinion of the Project Manager, the County shall not be responsible for the inadvertent removal from the work site of materials which the Contractor would not normally have disposed of had he affected the required clean up.

REQUIREMENTS FOR CONTROL OF THE WORK

Prior to the start of the Work described in this contract, a pre-construction conference shall be held by the Project Manager to be attended by the Contractor and representatives of the various utilities and others as required, for the purpose of establishing a schedule of operations which will coordinate the work to be done under this contract with all related work to be done by others within the limits of the project.

All items of work in this contract shall be coordinated so that progress of each related item will be continuous from week to week. The progress of the work will be reviewed by the Project Manager at the end of each week, and if the progress of any item of work during that week is found to be unsatisfactory, the Contractor shall be required to adjust the rate of progress on that item or other items as directed by the Project Manager without additional compensation. The Contractor will continuously control the work until completed.

PROJECT SCHEDULE

The Contractor shall submit a detailed construction bar chart schedule within 15 days of the notification of award or its intent for the County to review. The submittal shall meet the following requirements:

- A CPM Schedule will be submitted on 11-inch by 17-inch paper.
- The time scale (horizontal) shall be in weeks. The activities shall be listed on the left hand side (vertical).
- Activities shall show most Work activities. The listing from top to bottom shall be in a logical sequence of how the Work will be accomplished. Space shall be provided between activities or within bars to allow for marking of actual progress.
- The submittal shall show the order and interdependence of activities and the sequence for accomplishing the work. All activities shall be described in sufficient detail so that the Engineer can readily identify the work and measure the progress on of each activity. The submittal shall show each activity with a beginning work date, duration, and a monetary value. Include activities for procurement fabrication, and deliver of materials, plant, and equipment, and review time for shop drawings and submittals. Include milestone activities when milestones are required by the Contract Documents. In a

project with more than one phase, adequately identify each phase and its completion date, and do not allow activities to span more than one phase.

- The Contractor shall conduct sufficient liaison and provide sufficient information to indicate coordination activities with utility owners that have facilities within the limits of construction have been resolved. Incorporate in the schedule any utility adjustment schedules included in the Contract Documents unless the utility company and Manatee County mutually agree to changes to the utility schedules shown in the Contract. Submit a working plan with the schedule, consisting of a concise written description of the construction plan.
- The Project Manager will return inadequate schedules to the Contractor for corrections. Resubmit a corrected schedule within 15 calendar days from the date of the Project Manager's return transmittal.
- The Contractor shall submit an updated Work Progress Schedule, for Project Manager's acceptance, if there is a significant change in the planned order or duration of an activity. The Project Manager will review the corrected schedule and respond within 7 calendar days of receipt.

A copy of the schedule, clearly showing progress made, shall be submitted on a monthly basis during the progress of the work. Review or acceptance will neither impose on the County responsibility for the progress or scheduling of the Work, nor relieve the Contractor from full responsibility therefore.

By acceptance of the schedule, the Project Manager does not endorse or otherwise certify the validity or accuracy of the activity durations or sequencing of activities. The Project Manager will use the accepted schedule as the baseline against which to measure the progress.

The Contractor shall provide a revised Work schedule if, at any time, the County considers the completion date to be in jeopardy because of "activities behind schedule". An activity that cannot be completed by its original or latest completion date shall be deemed to be behind schedule. The revised Work schedule is designed to show how the Contractor intends to accomplish the Work to meet the contractual completion date. The form and method employed by the Contractor shall be the same as for the original Work schedule.

If the Contractor fails to finalize either the initial or a revised schedule in the time specified, the Project Manager will withhold all Contract payments until the Project Manager accepts the schedule.

The cost to prepare and revise the schedule is considered incidental to the Work.

USE OF PRIVATE PROPERTY

All construction activities required to complete this project in accordance with the Contract Documents shall be confined to public right-of-way, easements of record or temporary construction easements, unless the Contractor makes specific arrangements with private property owners for his use of their property. Written authorization from the granting property owner shall be placed on file with the Project Manager prior to utilization of said private properties. The County assumes no responsibility for damage to private property in such instances. The

Contractor is responsible for protection of private property abutting all work areas on this project. Adequate equipment storage and material storage shall also be accomplished outside the County's right-of-way. Pipe and other materials shall not be strung out along the right-of-way, but will be delivered in quantities adequate for one day's installation. The County will coordinate with the Contractor to identify possible storage sites.

PRE-CONSTRUCTION AND CONSTRUCTION PROGRESS PHOTOGRAPHY

General

The Contractor shall employ a competent photographer to take construction record digital photos and perform video recording, including providing all labor, materials, equipment and incidentals necessary to obtain photos and/or video recordings of all areas within the project limits or as otherwise specified in the Contract specifications.

The word "Photo" includes standard photographic methods involving digital photography and production of hard copies for photos and saving photos as jpg files on diskettes and CD-ROMs.

Qualifications

A competent camera operator who is fully experienced and qualified with the specified equipment shall do all photography.

For the video recording, the audio portion should be done by a person qualified and knowledgeable in the specifics of the Contract, who shall speak with clarify and diction so as to be easily understood.

Project Photos for Construction Progress

Provide photos of the entire work area during construction for the purpose of records of completed work. Photos should be spaced at approximately 100-foot intervals. Three prints of each standard photograph shall be provided to the County. In addition to the CD_ROM media, one print of each digital photograph shall be provided to the County.

The Contractor shall pay all costs associated with the required photographs and prints. Any parties requiring additional photography or prints will pay the photographer directly.

Each print shall have clearly marked on the back the name of the project, the orientation of view, the date and time of exposure, name and address of photographer and the photographers numbered identification of exposure.

All project photographs shall be a single weight, color image. All finishes shall be smooth surface and glossy, and all prints shall be 8 inches by 10 inches.

All project photos shall be taken from locations to adequately illustrate conditions prior to construction, or conditions of construction and state of progress. The Contractor shall consult with the County Representative at each period of photography for instructions concerning views required.

The Contractor shall deliver photos in conformance with the above requirements to the County Representative. No construction shall begin until pre-construction photo are completed and submitted to the County Representative.

Record Photos
The Contractor shall require that photographer maintain digital copies of photos for a period of two years from date of Substantial Completion of the Project.

Photographer shall agree to furnish additional prints to the County Representative at commercial rates applicable at the time of purchase. Photographer shall also agree to participate as required in any litigation requiring the photographer as expert witness.

Video Recording for Pre-Construction
Video recording shall be used in lieu of photos for pre-construction. It shall be of sufficient quality to fully illustrate details of conditions and construction, including special features

Video recording shall be accomplished along all routes that are scheduled for construction.

The video recording shall, when viewed, depict an image with ¼ of the image being the roadway fronting of property and ¾ of the image being of the property. The video recording shall be done so as to show the roadway and property in an oblique view (30 degrees).

A complete view, in sufficient detail, of all driveways, with audio description of the exact location shall be provided.

The Engineering plans shall be used as a reference for stationing in the audio portion of the video recording for easy location identifications. If visible, house numbers shall be mentioned on the audio.

Two complete sets of video recording shall be delivered to the Owner for the permanent and exclusive use of the Owner prior to the start of any construction on the project.

All video recording shall contain the name of the project, the date and time of the video recording the name and address of the photographer and any other identifying information required.

Payment for this item shall be included under the pay item for Mobilization.

PROJECT IDENTIFICATION SIGN

The Contractor shall be responsible for furnishing, installing and maintaining four (4) County project identification signs and removal of same upon completion of the construction. Project identification sign shall be constructed and maintained at the project site as directed by the County Representative. The Contractor shall erect, maintain and relocate the sign as directed for the duration of the Project.

The Contractor shall mount the sign using 4-inch pressure treated lumber or as approved by the County Representative, and other supports as required, at a location mutually agreed by the County Representative and the Contractor.

The identification signs shall not be less than 32 square feet in area. The Contractor shall coordinate with the County Representative for the sign verbiage before fabrication. The signs shall be painted with graphic content to include:

- Title of Project
- Name of Owner
- Names and Titles of authorities, as directed by the County Representative
- Prime Contractor
- Construction Cost

The signs shall be erected prior to commencement of work at a lighted location of high public visibility, adjacent to the main entrance at each end of the project, as approved by the County Representative.

The signs shall be a minimum of 8 feet wide and 4 feet high. The signs shall be constructed of high density ¾-inch exterior plywood without waves or buckles, mounted and braced with pressure treated lumber as necessary and maintained in a presentable condition for the duration of the project. Hardware shall be galvanized. The surface of the sign shall be of exterior softwood plywood with medium density overlay.

Painting shall be constructed with materials to resist weathering and fading during the construction period. Experienced professionals shall perform painting. Graphic design and style shall be in accordance with the following:

- The signs will be placed in accordance with Manatee County Development Code, Ordinance 90-01, Section 724, Signs and Section 713, Visibility Triangles.

Payment for installing and maintaining the project identification signs shall be included as part of the lump sum quantity under the pay item for **Mobilization**. The sign will remain the property of the County upon completion of the Project unless otherwise directed.

44TH AVENUE EAST
FROM 30TH STREET EAST TO 45TH STREET EAST

Board of County Commissioners
LARRY BUSTLE
CHAIRMAN

JOHN CHAPPIE

CAROL WHITMORE

ROBIN DiSABATINO

MICHAEL GALLEN

VANESSA BAUGH

BETSY BENAC

CONSTRUCTION COST
$ (Enter Amount)

PRIME CONTRACTOR
(Enter Contractor Name)

SOIL EROSION AND SILTATION

The Contractor shall plan and control the Work to minimize all soil erosion and the siltation of drains and canals resulting from such erosion.

At the pre-construction meeting, the Contractor shall present his proposed plan and schedule, which shall specifically indicate the proposed used of temporary erosion control features. The plan shall include:

- **Synthetic Bales** designed, furnished and installed by the Contractor in accordance with the plans, FDOT Section 104-6-4, and FDOT Design Standard Index No. 102.

- **Floating turbidity barriers and staked turbidity barriers** furnished and installed by the Contractor as shown on the plans and/or required by conditions of the permits and as outlined in FDOT Section 104-6.4.11.

SHOP DRAWINGS

This project will include multiple EOR's for different areas of practice or different plan sets. The shop drawings shall include, but not be limited to:

- Traffic Control Plan
- Erosion Control Plan
- Drainage components
- Lighting components
- Signs and object markers

The Contractor shall submit to the County Project Manager for distribution and approval, all working drawings and shop drawings with descriptive specifications and engineering calculations necessary for the successful completion of the Work. The shop drawing shall be submitted in pdf format, along with a submittal log and the number of the submittals should follow the number on the submittal log. Each shop drawing shall have a cover sheet and reference the submittal log number, following the sample format provided in the contact documents.

The Contractor is responsible for maintaining a Submittal Activity Record (Logbook) on this project. The Contractor shall submit all shop drawings to the Roadway Engineer of Record for processing to the appropriate Area of Practice EOR for review. The Area of Practice EOR will complete the review and return the shop drawing to the Roadway Engineer of Record for logging and processing back to the Contractor and to the County Representative.

The logbook shall be updated each day that any Shop Drawing submittal activity occurs.

The following minimum data shall be entered in the logbook for each submittal:

County Project Number
Submittal Number
Description of Submittal
Number of Sheets in the Submittal

Number of Pages of Calculations, in Reports, in Manuals, etc.
Date Transmitted by Contractor to the Roadway Engineer of Record
Date Transmitted by Roadway EOR to the Area of Practice EOR
Date Roadway EOR Receives Shop Drawing Back From Area of Practice EOR
Date Roadway EOR Sends Shop Drawing Back to Contractor
Disposition as either "A" (Approved), "AN" (Approved as Noted), "R" (Resubmit) or "NA" (Not Approved).

The Logbook is a historical record of the activity devoted to an individual submittal as well as that for the project as a whole. It can serve as a verification of review time, to respond to inquiries of a particular submittal's status and as a record of manpower effort to aid in estimating and allocating future workload.

SUBSOIL EXCAVATION

The Contractor shall detect and remove all unsuitable material within project limit, following FDOT Design Standard Index 500, latest version. Payment for subsoil excavation shall be included in the subsoil excavation pay items unless separate pay items are specified.

TEMPORARY PAVEMENT

Temporary pavement shall consist of a minimum of Optional Base Group 04 and one (1) inch of Type SP structural course (Traffic C) asphalt over a firm, unyielding, well-compacted subgrade. The Contractor shall immediately repair all potholes that develop within the project limits and shall maintain a supply of cold mix on the project site to expedite these repairs.

The Temporary by-pass road shall provide adequate cover and protection of existing utilities. It is the Contractor's responsibility to coordinate with utility companies to repair and damages to the existing utilities during the construction at no additional cost to the County.

Payment for the temporary pavement and maintenance of this pavement shall be under Maintenance of Traffic

DEWATERING, SHEETING AND BRACING

Payment for dewatering, sheeting and bracing shall be included in the applicable pay items unless separate pay items are specified.

Approval of Dewatering Plan:
At least 10 days prior to the commencement of any dewatering activity, the Contractor shall submit to the Project Manager for record purposes only, a detailed description of the proposed dewatering system. This plan shall include design computations, layout, type, and spacing of dewatering devices, number and size of pumps and other equipment, with a description of the installation and operating procedures.

EARTHWORK

Quantities included on cross-section sheets, if any, represent estimated in-place quantities and do not include shrinkage and expansion factors. The quantities were calculated by the method with

average end areas between the station-to-station limits. Payment for Earthwork shall be made based on average end area method calculations. Contractor shall provide supporting survey data (before and after cross-sections) and calculations for payment purposes.

MAINTENANCE OF TRAFFIC AND CONSTRUCTION PHASING

The Contractor shall prepare and submit a Maintenance of Traffic plan and submit it to the County Representative for review prior to implementation. The Maintenance of Traffic Plan will require the seal of a Florida licensed Professional Engineer with a current FDOT Advance Work Zone certification if any change is made to the FDOT Index 600 Series. The primary goals for the Maintenance of Traffic Plan are as follows:

1. Maintain positive drainage throughout the project during construction.
2. Provide phasing of construction to allow for the earthwork and settlement needs to cross Seller's Pit.
3. Provide phasing of construction to accommodate the existing traffic patterns for the area. Detour plans have been included in the contract plans when work necessitates the closure of an intersection. Local residential access shall be available at all times.
4. No roadway closure shall be allowed unless coordinated with Manatee County Traffic Representative in advance.
5. Comply with all FDOT safety criteria, FDOT Design Standards 600 Series Indexes, FHWA and MUTCD standards, and allow for traffic to operate in daytime or nighttime.

Payment for all items related to maintenance of traffic shall be included under the pay item for **Maintenance of Traffic**. This shall include, but not be limited to, preparation of the signed and sealed maintenance of traffic plan for all segments of roadway construction, all maintenance of traffic signs including business signs and advance warning signs for side streets, all barricades and drums, temporary concrete barrier wall, all warning lights, temporary pavement if required, removal of existing pavement markings, temporary pavement markings, temporary RPM's, portable changeable message signs, advance warning arrow panels, shoulder treatment for drop off conditions, off duty police officer, temporary asphalt aprons around utility and storm manholes and valve boxes located within the pavement area, and any other items required to comply with safety and design standards.

MAINTENANCE OF STORM DRAINAGE SYSTEM

The Contractor shall be responsible at all times to maintain the operation of existing stormwater facilities, or, when existing stormwater facilities are removed, to provide equivalent capacity. Temporary drainage systems should be of adequate size to prevent upstream flooding in excess of existing conditions. This responsibility shall include the installation of temporary connections, bypass pumping, or other temporary means necessary until the new drainage system is fully operational. Payment for these items shall be included under the applicable pay item.

FINAL STORM SYSTEM CLEANUP

The Contractor shall televise culverts, clean and remove/dispose all siltation and debris from all proposed storm culverts, structures, swales and ponds. Payment for these items shall be included under the pay item for **Mobilization** or applicable pay item.

POST-CONSTRUCTION STORM PIPE TESTING

The Contractor shall inspect and televise all newly constructed storm pipes on the project. The purpose is to assure the pipes are properly constructed and do not leak at the joints. Laser profile, Video DVD, and report shall be provided for those pipes whose diameters are equal or smaller than 48 inch, following FDOT Specifications 2014. Payment for this item shall be included under the pay item for **Mobilization**.

SIDEWALKS TO REMAIN OPEN

Existing sidewalks and proposed sidewalks completed during construction shall remain open at all times unless approved otherwise by the County Representative. Temporary sidewalk may be required to maintain pedestrian movement. Payment for these items shall be included under the pay item for **Maintenance of Traffic**.

EXISTING SIDEWALK

If the Contractor, in the process of performing his contract operations, breaks any of the existing sidewalk that is to remain in place, replacement of this sidewalk will be at the Contractor's expense.

PEDESTRIAN ACCESS

The Contractor shall provide access and make provisions to maintain school zones during construction. The Contractor is to facilitate pedestrian traffic whether for school or public transportation. Any pedestrian detours needed shall comply with FDOT Design Standards Index 660.

DUST CONTROL

The Contractor shall control dust resulting from construction operations at all times. The locations and frequencies of applications shall be as directed by the County Representative. Dust control is required to be in accordance with the FDOT *Standard Specifications* Section 102-5. Payment for Dust Control shall be made under **Mobilization** unless separate pay item for Dust Control is specified.

UNDERGROUND UTILITY LOCATIONS

The Contractor shall field verify by means of subsurface locating or other approved method all existing utilities to remain and conditions as may be required for the work area. This shall include all areas of potential conflicts with proposed storm, sanitary, force main and water main. The Contractor shall locate all existing utilities to remain at potential conflict locations prior to construction activities and before ordering any proposed structures. The Contractor shall contact and coordinate with Sunshine State One Call 811 as well the individual utilities prior to and during construction for utility locations, relocation and assistance while installing in potential conflict areas. All utility coordination and relocations shall be factored into the Contractor's construction schedule at no additional cost to the County.

The cost of all labor, materials and incidentals required for the performance of any survey and utility location work shall be included under the pay item for **Mobilization**. A Florida registered land surveyor shall perform all survey work.

UTILITY CONFLICTS

It shall be the Contractor's responsibility to avoid conflicts with other utilities. The County will not be responsible for additional costs incurred by the Contractor for incorrect installations, relocations and breaks due to service conflicts.

UTILITY COORDINATION

The Contractor shall be responsible for coordination of the work with all affected utility owners. The Contractor must take into consideration the required utility adjustments and relocations in development of his schedule for completing the work including construction of temporary work to allow phased construction of the permanent facilities.

The Contractor shall coordinate and schedule utility relocations and/or adjustments with the utility owners along the project in order to avoid delays. The work includes remobilization if required after utility relocation is complete. The intent is to coordinate utility construction activities so the project construction continues and is not stopped or delayed at any time due to utility work being done. Once Notice to Proceed is issued, the Contractor shall contact the affected utilities to discuss the Contractor's anticipated means and methods so temporary and permanent relocation plans can be implemented as needed to meet OSHA safety requirements.

The Contractor shall hold a utility owners meeting every two weeks / or alternate time schedule agreed to by the Owner at 1022 26th Avenue East. The meeting shall review current and upcoming activities for the project. Written meeting minutes will be prepared by the Contractor and distributed to the meeting participants within 3 calendar days of the meeting.

During the design phase of this project the Engineer performed research to obtain the best information available for the existing utilities located within the project limits. The information found from this research has been illustrated on the project plans or provided back to the County in electronic format on CD. The following information is offered to assist the Contractor in understanding the extent of the utility investigations and coordination.

1. Atlas maps for County owned water and sewer utilities were obtained from the County. The existing water and sewer information from the atlas maps were transferred to the plans.
2. A topographic survey was performed for the project and used to prepare the mapping for the project plans. This topographic survey obtained location information for above ground utilities including fire hydrants, valve box tops, manhole tops, and manhole inverts.
3. Subsurface utility engineering survey was performed at specific locations where the Engineer determined there may be potential utility conflicts. The mast arm pole foundation locations shown on the plans were surveyed to verify these specific locations were clear of any existing underground utilities. Potential utility conflicts between proposed water utility improvements and storm sewer or other existing utilities were

evaluated by obtaining field verified horizontal and vertical locations of the existing utilities. The field verified locations of existing utilities are at specific points where the conflicts were shown to occur on the drawings.

4. Utility coordination was provided during the design process with all known utility owners. This included submitting plans to the utility owners at the 30%, 75% and 100% design development phases. Marked plans were received from utility owners showing the disposition of their existing or proposed utilities. This information has been transferred to the Utility Adjustment Plans.
5. One utility coordination meeting was held with the utility owners at the 75% design development phase. Minutes of the utility coordination meeting has been provided to Manatee County on the information CD. The information CD is available for Contractor's review.

DAILY CLEAN-UP REQUIREMENTS

The Contractor shall clean up the job site at the end of each workday. Clean up will include the elimination of rubble and waste material on public and private property. Driveways shall remain accessible by residents. Each Friday, the Contractor shall prepare the road surface and barricades in an acceptable manner for weekend traffic use.

PROJECT SCHEDULE

The Contractor shall submit a preliminary construction schedule with the bid. The preliminary schedule shall show major work items and any phases the Contractor proposes. The schedule will show duration of work items and phases.

The Contractor shall submit a detailed Critical Path Method (CPM) construction schedule within 15 days of the notification of award or its intent for the County to review. The submittal shall meet the following requirements:

- Schedule will be submitted on 11-inch by 17-inch paper.
- The time scale (horizontal) shall be in weeks. The activities shall be listed on the left hand side (vertical).
- Activities shall show most Work activities. The listing from top to bottom shall be in a logical sequence of how the Work will be accomplished. Space shall be provided between activities or within bars to allow for marking of actual progress.

A copy of the CPM schedule, clearly showing progress made, shall be submitted on a monthly basis during the progress of the work at the monthly meeting. Review or acceptance will neither impose on the County responsibility for the progress or scheduling of the Work, nor relieve the Contractor from full responsibility therefore.

The Contractor shall provide a revised CPM schedule if, at any time, the County considers the completion date to be in jeopardy because of "activities behind schedule". An activity that cannot be completed by its original or latest completion date shall be deemed to be behind schedule. The revised CPM schedule is designed to show how the Contractor intends to accomplish the Work to meet the contractual completion date. The form and method employed by the Contractor shall be the

same as for the original CPM schedule. The cost to prepare and revise the schedule is considered incidental to the Work.

RECORD DRAWINGS AND PROJECT CERTIFICATION

The County Representative will furnish the Contractor copies of the bid plans to be used for the record drawings. A Florida Registered Surveyor shall perform a field survey and any differences between the plan elevations or dimensions shall be marked through and the as-built elevation or dimension legibly entered. All elevations and dimensions that are correct shall have a check mark placed beside it.

The Contractor shall keep a complete set of surveyed 'As-built" records. These records shall show all items of Work and existing features of utilities revealed by excavation work. The records shall be kept in a professional manner, in a form that shall be approved by the County prior to the Work. These results shall be available at all times during construction for reference by the County Representative and shall be delivered to the County Representative upon completion of the Work. All completed "As-Builts" must be certified by a Florida Licensed Surveyor or Engineer per chapter 61 G 17-6, Florida Administrative Code, pursuant to Sec. 47207, Florida Statutes.

The following information is required on the "Record Drawings":

The "Record Drawings" shall, at a minimum, include the following:

A. Roadway centerline profile [100-foot maximum interval]

B. Roadway cross sections [100-foot maximum interval]

C. Swale or ditch cross sections [100-foot maximum interval] and at all grade breaks (vertical and horizontal)

D. Drainage structures including all plan dimensions, structure top and bottom elevations, weir elevations, skimmer dimensions/elevations and culvert invert elevations

E. Side bank, underdrain filters or exfiltration trenches. Provide dimensions and elevations of all including clean-outs, pipes and connections to other structures.

F. Flow line on all pipes and ditch breaks.

G. Stormwater ponds and treatment swales with cross sections [25-foot maximum interval] (sufficient to calculate volumes). Also limits of planted littoral shelves.

H. Wetland mitigation or restoration areas. Provide cross-sections [50-foot maximum interval], number and location/elevation of all plantings.

I. All underground piping with elevations and dimensions, changes to piping locations, horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements. Actual installed pipe material, class, etc. Dimensions at these locations shall indicate distance from the centerline of construction.

J. Field changes of dimensions and details.

K. Details not on original contract drawings.

L. Bench marks and elevation datum shall be indicated.

M. Additional elevations or dimensions as required by the County Representative

Following completion of construction and prior to final payment, the Contractor shall submit a Certification by the Contractor and Manufacturer including test data that the materials (filter fabric, filter media, etc.) installed meet plan specifications and regulatory requirements.

Upon completion of the work, four (4) sets of draft "Record Drawings" shall be submitted to the County Representative for review. Such drawings shall accurately show all approved field changes to the original Construction Drawings, including actual locations, dimensions and elevations and shall be subjected to a field review in the presence of the County Representative. The drawings are to be prepared by competent personnel, neatly drafted and certified, signed and sealed by a Florida Registered Surveyor.

The Contractor shall incorporate any comments from the County Representative and shall submit two write-only CD-ROMs (showing changes in AutoCAD format), one set of 24-inch by 36-inch mylar record drawings, and four sets of 24 by 36-inch certified prints with the Surveyor's certification.

All Digital Drawings shall be identical to those submitted as hard copy. The Digital Drawing files shall be AutoCAD format (Release 2010 or later) and shall include all external reference drawings, text fonts, shape files and all other files necessary to make use of the drawings.

In addition, $150,000 or five percent (whichever is smaller) of the Contract price shall be retained until the County Representative has approved the "Record Drawings". The County Representative will review and approve the "Record Drawings within 30 days unless additional information is required. No final payment shall be made until such time as the "Record Drawings" have been approved and accepted by SWFWMD for Maintenance and Operation Phase Transfer. Unless there is a separate pay item for Record Drawings, payment shall be included as part of the lump sum quantity for Mobilization.

CURE TIME BEFORE THERMOPLASTIC APPLICATION

The Contractor shall allow minimum 30 days cure time before applying the thermoplastic pavement striping and markings. Necessary re-mobilization for this purpose shall be included under the Pay Item for mobilization. Provide temporary pavement markings during the interim period if the road is open to traffic. The price of temporary pavement marking shall be included in the **Painted Pavement Markings (Final Surface)**.

MAILBOX REMOVAL

The Contractor shall remove and replace all existing mailboxes within the project right-of-way. This work shall include:

a. Coordinating with each County Representative or resident regarding removal of the existing mailboxes from the right-of-way.

b. Working with the Local Postmaster to develop a method of temporary mail service for the period between removal and completion of construction activities.

c. Installing new mailboxes in the right-of-way.

Payment for mailbox removal and replacement shall be included under the pay item for **Mailbox (Furnish & Install).**

EXISTING TREES

All existing trees located within Right-of-way and Easement limits shall remain unless otherwise noted in the construction plans. Extra attention shall be given for oak trees that are to remain when the excavation is close to the trees and cutting of the roots is unavoidable. Any roots over 1-inch diameter shall have clean cut. The Certified Arborist shall be present during any root pruning process. The payment for tree removal shall be included under **Clearing and Grubbing** pay item.

WETLAND MITIGATION

The Contract Plans contain three (3) identified Wetland Mitigation Sites: North, South, and offsite at Walter Crews Preserve. The Environmental Resource Permit outlines the requirements for the areas and Planting Plans for the identified sites are included in the Contract Plans. The costs for materials and work to install the planting plans on the Wetland Mitigation Sites shall be covered under the pay item for **Landscape Complete – Large Plants – Planting Plan.**

OTHER PERMITS

The Contractor shall comply and adhere to conditions stipulated in other project related permits. It is the Contractor's responsibility to request or obtain a listing of available required permits for this project.

CONTRACTOR TO EXECUTE NPDES "NOTICE OF INTENT"

Prior to proceeding with construction, the Contractor shall prepare and submit a "Notice of Intent to Use Generic Permit for Stormwater Discharge from Construction Activities that Disturb One or More Acres of Land" to the Florida Department of Environmental Protection (FDEP). The Contractor shall monitor the site at all times and take appropriate action to prevent erosion including the use of BMPs. No pumping of ground or surface water shall be performed without approval from the Water Management District. Following completion of construction, Contractor shall prepare and submit a "Notice of Termination of Generic Permit Coverage" to FDEP. Payment for this item shall be included under the pay item for Mobilization.

WORKSITE TRAFFIC SUPERVISOR

a. The Contractor shall have a Worksite Traffic Supervisor who will be responsible for initiating, installing and maintaining all traffic control devices as described in Section 102 of the FDOT *Standard Specifications for Road and Bridge Construction* and in the Plans. The Worksite Traffic Supervisor shall have at least one year of experience directly related to work site traffic control in a supervisory or responsible capacity and shall be certified by the American Traffic Safety Services Association Worksite Traffic Supervisor Certification Program or an equal

approved by FDOT. Approved alternate Worksite Traffic Supervisors may be used when necessary.

b. The Worksite Traffic Supervisor shall be available on a 24-hour per day basis and shall review the project on a day-to-day basis as well as being involved in all changes to traffic control. The Worksite Traffic Supervisor shall have access to all equipment and materials needed to maintain traffic control and handle traffic related situations. The Worksite Traffic Supervisor shall ensure that routine deficiencies are corrected within a 24-hour period.

c. The Worksite Traffic Supervisor shall be available on the site within 45 minutes after notification of an emergency situation, prepared to positively respond to repair the work zone traffic control or to provide alternate traffic arrangements.

d. Failure of the Worksite Traffic Supervisor to comply with the provisions of the Sub-article may be grounds for decertification or removal from the project or both. Failure to maintain a designated Worksite Traffic Supervisor or failure to comply with these provisions will result in temporary suspension of all activities except traffic and erosion control and such other activities deemed to be necessary for project maintenance.

e. Payment for Worksite Traffic Supervisor shall be included under the pay item for Maintenance of Traffic.

COMPLIANCE WITH THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT (SWFWMD) STORMWATER MANAGEMENT AND DISCHARGE PERMIT REQUIREMENTS AND/OR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) DREDGE AND FILL PERMIT REQUIREMENTS

Southwest Florida Water Management District Stormwater Management and Discharge permits or exemptions, if any, and/or a Department of Environmental Protection Dredge and Fill permit, if any, required for this project have been obtained by the County Representative. The Contractor shall comply with the stipulations of the Permits or Exemptions as stated herein.

The Contractor shall allow periodic inspection of the work by authorized representatives of the Department of Environmental Protection, the Southwest Florida Water Management District, as well as other duly authorized law enforcement officers of the State.

The County Representative will furnish the Contractor A copy of the Permit Document, which shall be posted in a conspicuous location at the work site during the entire period of the work. The permit document shall be readily available at the project site to any duly authorized representative of DEP, SWFWMD or other duly empowered law enforcement agency who may wish to enter the work area for ascertaining compliance with the terms of this permit.

The Contractor shall not remove and/or emplace more material or exceed the limits of construction authorized by the Permit. Any unauthorized deviation from the approved drawings, Specifications and conditions of the permit shall constitute grounds for permit revocation and enforcement action by DEP and/or SWFWMD. Any conflicts between the Permit and construction plans or Specifications shall be pointed out to the County Representative in writing.

The Contractor shall exercise extreme care during construction activities to avoid damaging or adversely affecting the personal or property rights of others.

The Contractor shall assume and accept all responsibility and liability for and agrees to save DEP, SWFWMD and all their employees harmless from all claims of damage arising out of operations conducted pursuant to the permit.

The Contractor shall not violate the Water Quality Standards as specified in Chapter 62-302, 62-4 and 62-25 Florida Administrative Codes, including but not limited to:

62-302.500 Minimum Conditions of All Waters, Times and Places

The Contractor shall not allow the turbidity to exceed 29 Nephelometric Turbidity Units (NTU's) as related to standard candle turbidimeter above background or exceed turbidity limits as dictated by the Department of Environmental Protection (DEP). The Contractor is required to have a functional turbidity meter on the job site at all times along with personnel to operate this meter. Turbidity samples will be taken as directed by the County Representative or his representative.

When a turbidity violation is noted, the Contractor shall be required to implement sampling after corrective actions have been taken. The samples shall be taken in the same manner as routine monitoring is done. If samples indicate that the water quality standard for turbidity is still being violated, sampling shall continue at two-hour intervals until the samples indicate no violation is present. In no case shall operations resume until a set of samples has been taken which indicates that the water quality standard for turbidity is no longer being violated.

All turbidity monitoring data shall be submitted as soon as possible after collection. The County Representative will allow a maximum of a one-week period for submittal of data which indicates no violations of the standard.

Monitoring data shall normally be submitted within one week of analysis with documents containing the following information as a minimum: (1) permit number; (2) dates of sampling and analysis; (3) a statement describing the methods used in collection, handling, storage and analysis of the samples; (4) a map indicating the sampling locations and (5) a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data.

Monitoring reports shall include, but not be limited to, the following information for each sample that is taken:

(1) time of day samples taken;
(2) depth of water body;
(3) depths of samples;
(4) antecedent weather conditions;
(5) tidal stage and direction of flow; and
(6) wind direction and velocity.

If monitoring reveals apparent violations of the state water quality standard for turbidity, dredging activities shall cease immediately and not resume until corrective measures have been taken, turbidity has returned to acceptable levels, and a compliance inspection by DEP Department personnel has been conducted.

The Contractor shall not disturb any wetland species until after all desirable species have been relocated by others as directed by the County Representative.

The Contractor shall be required to use silt barriers upstream and downstream of the project. Construction of silt barriers shall be in accordance with plans and Specifications.

The Contractor shall use a qualified testing lab to perform the required monitoring as stipulated in the permit conditions. The Contractor shall be required to cooperate with the testing lb performing the monitoring and shall provide adequate space for storage of any testing equipment, which may be needed at the job site.

If the above-mentioned monitoring reveals apparent violations of the State Water Quality Standards for turbidity, construction activities shall cease immediately as directed by the County Representative.

The Contractor shall perform all work in strict accordance with the permit, plans and Specifications. Any violation of or failure by the Contractor to comply with this permit will subject the Contractor to liability for damages caused to the waters or property, including animal, plant and aquatic life of the State, restoration of the waters and property to their former condition, and civil penalties in the amount of ten thousand dollars ($10,000) for each day for which the violation occurs.

Copies of the DEP License or Exemption and/or a Dredge and Fill permit issued to the County Representative are available to the Contractor upon request by contacting the County Representative.

CRUSHED CONCRETE BASE

Crushed Concrete Base shall follow FDOT Standard Specifications 2007 (rev 8-07) except that the Lime Rock Bearing Ratio (LBR) shall be minimum 150. The layer coefficient of 0.18 with LBR minimum150 is allowed to calculate the base thickness.

Only FDOT certified piles are acceptable to this project. The producing process certified by FDOT without the actual pile certified is not considered solid enough for the acceptance of the material. The contract shall send the engineer the deliver tickets with FDOT certified pile number, pile location, project name and manufactory contact information shown.

Additional tests and pile inspections will be required for the quality control and the contractor will be responsible for the cost of the initial ten tests and any re-tests when needed. The material will be rejected by the County if the initial test fails. The rejected material shall be completely removed from the project site.

1) Regarding structural number on Crushed Concrete Base, Manatee County to approve SN 0.18 if following criteria is met and maintained:

A) Limerock Bearing Ratio value of 150 or greater 10" compacted thickness in place.

B) Gradation conforms to FDOT Specifications2007 (rev 8-07).

C) Deleterious materials conform to FDOT Specifications2007 (rev 8-07).

D) Delivery ticket indicates FDOT approved source, actual lot allocated to a particular project.

E) Piles or lots to be inspected by Manatee County representative prior to acceptance.

2) Regarding Limerock Bearing Ratio value:

A) No Limerock Bearing Ratio value less than 150, with no under tolerance.

3) Regarding source approval:

A) FDOT approved source, allocated lot sufficient to serve project's needs, delivery tickets stating FDOT approved source, project name, FDOT preapproved lot or pile number.

4) Regarding deleterious materials:

A) Deleterious material content in addition to the FDOT Specifications2007 (rev 8-07) should state that no construction debris such as Styrofoam insulation, telephone wire, lumber, shingles, aluminum window or door frames etc., or household trash ie: bottles, cans, paper goods etc. is acceptable.

5) Material source inspection:

A) Prior to acceptance of base product, a representative of Manatee County will visit the Producer's location and obtain a sample of the proposed base for the specified project. In addition to sampling, the pile will be visually inspected for deleterious materials, substantial segregation, or any other undesirable characteristics. The pile shall have a traceable identification by pile number or lot number and an accurate quality assessment.

6) Import and placement of base product:

A) During import of base product, a county inspector or duly designated representative of the county will be onsite monitoring incoming loads, making visual assessments of the product and checking load tickets for verification of materials.

7) Import and placement of base product:

A) After spreading out, prior to compacting, samples of the base product will be obtained by Manatee County approved testing lab, every 500 LF staggering right, left, center of the roadway for Limerock Bearing Ratio, gradation and deleterious material testing.

8) Rejection of materials:

A) Material not meeting above requirements will subject to rejection and be removed from the project site. Any three (3) concurrent rejections will require immediate shut down of imported material and require review and remedies prior to restart.

9) Compaction of material:

A) In place material should be a minimum of 10" in compacted thickness and achieve 98% of AASHTO T-180 compaction.

LIST OF PERMIT DOCUMENTS

IFB#14-2404-OV, 44TH Avenue East,
(From 30th Street East to 45th Street East)
Project No.: 6071160

Note: Attached Permits shall be provided to the successful bidder

Document Number	Permit Name	Notes
1	Environmental Resource General Const. Permit Number 43035341.001 – SWFWMD (23 pages)	Issued 02/24/2011 Revised 07/11/2012 Expires 02/24/2016
2	ERP General Construction Modification Permit Number 44035341.002 (16 pages)	Issued 06/07/2012 Expires 06/07/2017
3	Individual Permit – Department of the Army Permit Number SAJ-2010-01862(SP-MEP) (13 pages)	Expires 09/13/2018
4	FPL Agreement executed December 18, 2012 (7 pages)	
5	Water Distribution Utility Permit No. 0133068-956 DSGP (30 pages)	Expires 10/27/2015

LIST OF GEOTECHNICAL DOCUMENTS

IFB#14-2404-OV, 44TH Avenue East,
(From 30th Street East to 45th Street East)
Project No.: 6071160

1. Tierra, Inc., Roadway Soil Survey Report (44th Avenue from 30th Street East to 45th Street East), dated May 29, 2012 (26 pages)

2. Tierra, Inc., Pond and Floodplain Mitigation Site Soil Survey Report (44th Avenue from 30th Street East to 45th Street East), dated May 29, 2012 (159 pages)

Date:___/___/_____ Submittal No. _____

SHOP DRAWING SUBMITTAL COVER SHEET

(IFB) # *[Insert IFB Number]*

Project Name: *[Insert Full Project Name]*

Project File No.: *[Insert Project Number]*

Specification Title Number: [Insert Section No.] Specification No.: Part *[Insert Part No.], [Insert Item No.]* Page(s): *[Insert Page No.]*

Submittal Description: *[Insert Title, Description of Submittal and Use]*

[Manatee County Shop Drawing Review Stamp goes here. Please leave blank.]

Your Company Logo and/or information
[Contractor's Name]
[Contractor's Title]
[Company Name]
[Company Address]
[Office Number]
[Fax Number]
[email address]
[Approval Signature:_____
[Approval Date:___/___/_____

EXAMPLE

Date: 10/26/2011 Submittal No. 7

Shop Drawing Submittal Cover Sheet

(IFB) # XX-XXXX-XX

Project Name: Project Name Goes Here – Group or Phase 3

Specification Title Number: 2620 Specification No.: Part 2, 2.01.A Page(s): 141

Submittal Description: *National Pipe & Plastics Polyethylene PE 3608 DIPS Potable Water Pipe HDPE*

SHOP DRAWING REVIEW

RESPONSE NOT REQUIRED	RESPONSE REQUIRED
☐ NO EXCEPTIONS TAKEN	☐ NOTE MARKINGS, CONFIRM
☐ NOTE MARKINGS	☑ NOTE MARKINGS, RESUBMIT
	☐ REJECTED, RESUBMIT

Engineer's review is for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the project drawings and specifications, nor departure therefrom. The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly, and for performing his work in a safe manner.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

By:_____ Date:_____

John Doe
Project Manager
Manatee County
1022 26th Ave E.]
(941) 708-7450]
(941) 708-7431
email@email.com
Approval Signature:_____
Approved: 10/26/2011

TECHNICAL SPECIAL PROVISION
FOR
SETTLEMENT PLATES

44TH AVENUE EAST FROM 30TH STREET EAST TO 45TH STREET EAST
MANATEE COUNTY, FLORIDA
MANATEE COUNTY PROJECT NO. 6071160

Notice: The official record of this document is the electronic file signed and sealed under Rule 61G15-23.003, F.A.C.

Prepared by: Erick M. Frederick, P.E.
Florida License No.: 63920
Date: 12/2/2010
Pages 1 through 3

Tech Spec Prov. Settlement Plates 3/95

Rev. 8/12/14

SETTLEMENT PLATES

T-141-1 DESCRIPTION

A. Fabricate, install, protect and maintain settlement plates in accordance with Florida Department of Transportation (FDOT) Design Standard index 540, these Technical Special Provisions, the details shown on the plans and as directed by the Engineer. The Contractor shall be responsible for the fabrication, installation, protection and maintenance of settlement plates.

B. The system of settlement plates is designed to enable the Engineer to observe and determine the magnitude and rate of embankment settlement. The determination of the time at which the at which the necessary consolidation settlement has taken place and the embankment may be released for additional lifts or placement of roadway base will be determined by the Engineer on the basis of the data obtained from the combined settlement monitoring instrumentation.

T141-2 MATERIALS

The settlement plate assemblies shall be constructed in accordance with the plate and stem options as shown in Standard Index 540. All iron pipe and fittings shall be schedule 40; the size shall be as shown on Standard Index 540. Materials will be accepted on the basis of a visual inspection.

T141-3 INSTALLATION

A. Install the settlement plates once the causeway embankment fill height is approximately 6 inches above the water level within Seller's Pit at the time of construction; establishing a working platform.

B. Install the settlement plates at the locations shown on the **Settlement Monitoring for Causeway Construction** plan sheet.

C. Make an excavation slightly larger than the settlement plate. Excavate to form a pit a minimum of twelve inches deep with a level bottom.

D. Place the plate in the pit with one section of marker pipe attached. The attached marker pipe shall be4.5 feet in length as shown in FDOT Standard Index 540. Ensure that the plate has full bearing and the marker pipe is plumb before proceeding with the stem assembly. When realignment of the plate and marker pipe is necessary, remove the plate and pipe and reshape the pit bottom for proper alignment. If timber plates are selected for installation, and the soil is dense enough to suspend the plate on the fabrication bolts, seat the plate by grooving the bottom of the pit under the lines of bolts.

E. With plate and marker pipe in place, wrap the lower 6 inches of marker pipe with oakum; slip one section of casing pipe over the marker pipe; and lower the casing to uniformly encase the oakum seal while seating the casing on the plate as shown in FDOT Standard Index 540.

F. With marker pipe and casing centered with respect to each other and maintained in a vertical position, backfill the pit in layers by hand and thoroughly compact by hand to the elevation of the natural ground. Prior to backfilling the pit, determine the elevation of the

top of the plate. A maximum of one foot of soil cover can be placed to stabilize the settlement plates.

G. When the installation described in these Technical Special Provisions is complete, the Contractor shall notify the Engineer to determine the elevation of the top of the marker pipe at that time. No embankment fill shall be placed until this elevation has been determined. The casing shall be capped, as shown in Standard Index 540, immediately after the elevation is determined. The settlement plate shall be flagged and protected from construction vehicles and equipment. If the settlement plate assembly is disturbed, it shall be replaced in kind within 24 hours, unless otherwise directed by the Engineer.

H. Place and compact the embankment material in the immediate vicinity of the settlement plate stem in accordance with the requirements of the FDOT Standard Specifications, or as directed by the Engineer. Hand place and hand compact embankment within three feet of the stem with non-impact, light vibratory plate compactors.

I. When surface of the embankment reaches a level approximately two feet below the top of the stem section in place, notify the Engineer. After the Engineer establishes the elevation of the marker pipe in place, install the next section of marker pipe and casing in the presence of the Engineer. As soon as the Engineer establishes the elevation of the added marker pipe, cap the casing and flag the stem for protection. Added sections will be five feet in length.

J. As the height of the embankment increases, repeat this procedure until the embankment is completed.

K. Settlement plate assemblies shall remain in place and become the property of the County.

L. The Engineer will obtain and record all measurements and elevation necessary for accurate determinations of settlement data during construction of the embankment and surcharge.

T141-4 PROTECTION AND MAINTENANCE

A. The settlement plate stem shall remain in a vertical position at all times during the life of this Contract. The Contractor shall operate his equipment in a manner to insure that settlement plate assemblies are not damaged or displaced laterally. Each assembly shall be clearly marked and flagged as approved by the Engineer and protective barricades shall be erected around each assembly. Stems deviating from a vertical position, becoming uncoupled or broken shall be repaired or replaced by the Contractor, as directed by the Engineer, at the Contractor's Expense.

B. The Contractor will not be held responsible for repair or replacement of any settlement plate assembly which is made inoperable as a result of instability of the embankment caused by factors, which in the opinion of the Engineer, are beyond the control of the Contractor.

END OF THIS TECHNICAL SPECIAL PROVISION

44TH Avenue East

(From 30th Street East to 45th Street East)

Infrastructure Engineering Standard Specifications

Potable Water Main)

Potable W.M-139/95

INFRASTRUCTURE ENGINEERING STANDARD SPECIFICATIONS

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This specification includes by reference the Manatee County Utility Standards approved May 2011.

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01005 GENERAL REQUIREMENTS

PART 1 GENERAL

1.01 SCOPE AND INTENT

A. Description

The work to be done consists of the furnishing of all labor, materials and equipment, and the performance of all work included in this Contract.

B. Work Included

The Contractor shall furnish all labor, superintendence, materials, plant, power, light, heat, fuel, water, tools, appliances, equipment, supplies, shop drawings, working drawings and other means of construction necessary or proper for performing and completing the work. He shall obtain and pay for all required permits necessary for the work, other than those permits such as the DEP permit and railroad permit which may have already been obtained. He shall perform and complete the work in the manner best calculated to promote rapid construction consistent with safety of life and property and to the satisfaction of the County, and in strict accordance with the Contract Documents. The Contractor shall clean up the work and maintain it during and after construction, until accepted, and shall do all work and pay all incidental costs. He shall repair or restore all structures and property that may be damaged or disturbed during performance of the work.

The cost of incidental work described in these General Requirements, for which there are no specific Contract Items, shall be considered as part of the general cost of doing the work and shall be included in the prices for the various Contract Items. No additional payment will be made.

The Contractor shall be solely responsible for the adequacy of his workmanship, materials and equipment.

C. Public Utility Installations and Structures

Public utility installations and structures shall be understood to include all poles, tracks, pipes, wires, conduits, house service connections, vaults, manholes and all other appurtenances and facilities pertaining thereto.

The Contractor shall protect all installations and structures from damage during the work. Access across any buried public utility installation or structure shall be made only in such locations and by means approved by the County. All required protective devices and construction shall be provided by the Contractor at his expense. All existing public utilities damaged by the Contractor which are shown on the Plans or have been located in the field by the utility shall be repaired by the Contractor, at his expense, as approved by the County. No separate payment shall be made for such protection or repairs to public utility installations or structures.

Public utility installations or structures owned or controlled by the County or other governmental body, which are required by this contract to be removed, relocated, replaced or rebuilt by the Contractor not identified in any separate bid item shall be considered as a part of the general cost of doing the work and shall be included in the prices bid for the various contract items. No separate payment shall be made.

Where public utility installations or structures owned or controlled by the County or other governmental body are encountered during the course of the work, and are not indicated on the Plans or in the Specifications, and when, in the opinion of the County, removal, relocation, replacement or rebuilding is necessary to complete the work under this Contract, such work shall be accomplished by the utility having jurisdiction, or such work may be ordered, in writing by the County, for the contractor to accomplish. If such work is accomplished by the utility having jurisdiction, it will be carried out expeditiously and the Contractor shall give full cooperation to permit the utility to complete the removal, relocation, replacement or rebuilding as required. If such work is accomplished by the Contractor, it will be in accordance with the General and Supplemental General Conditions.

The Contractor shall give written notice to County and other governmental utility departments and other owners of public utilities of the location of his proposed construction operations, at least forty-eight hours in advance of breaking ground in any area or on any unit of the work. This can be accomplished by making the appropriate contact with the "Sunshine State One-Call of Florida, Inc. Call Center ("Call Sunshine") and per all requirements provided for in the Florida Underground Facilities Damage Prevention and Safety Act (Florida Statutes, Title XXXIII, Chapter 556).

The maintenance, repair, removal, relocation or rebuilding of public utility installations and structures, when accomplished by the Contractor as herein provided, shall be done by methods approved by the County.

1.02 PLANS AND SPECIFICATIONS

A. Plans

When obtaining data and information from the Plans, figures shall be used in preference to scaled dimensions, and large scale drawings in preference to small scale drawings.

B. Copies Furnished to Contractor

The Contractor shall furnish each of the subcontractors, manufacturers, and material men such copies of the Contract Documents as may be required for their work. Additional copies of the Plans and Specifications, when requested, may be furnished to the Contractor at cost of reproduction.

C. Supplementary Drawings

When, in the opinion of the County, it becomes necessary to explain more fully the work to be done or to illustrate the work further or to show any changes which may be required, drawings known as Supplementary Drawings, with specifications pertaining thereto, will be prepared by the County and five paper prints thereof will be given to the Contractor.

D. Contractor to Check Plans and Data

The Contractor shall verify all dimensions, quantities and details shown on the Plans, Supplementary Drawings, Schedules, Specifications or other data received from the County, and shall notify him of all errors, omissions, conflicts, and discrepancies found therein. Failure to discover or correct errors, conflicts or discrepancies shall not relieve the Contractor of full responsibility for unsatisfactory work, faulty construction or improper operation resulting therefrom nor from rectifying such conditions at his own expense. He will not be allowed to take advantage of any errors or omissions, as full instructions will be furnished by the County, should such errors or omissions be discovered. All schedules are given for the convenience of the County and the Contractor and are not guaranteed to be complete. The Contractor shall assume all responsibility for the making of estimates of the size, kind, and quality of materials and equipment included in work to be done under the Contract.

E. Specifications

The Technical Specifications consist of three parts: General, Products and Execution. The General Section contains General Requirements which govern the work. Products and Execution modify and supplement these by detailed requirements for the work and shall always govern whenever there appears to be a conflict.

F. Intent

All work called for in the Specifications applicable to this Contract, but not shown on the Plans in their present form, or vice versa, shall be of like effect as if shown or mentioned in both. Work not specified in either the Plans or in the Specifications, but involved in carrying out their intent or in the complete and proper execution of the work, is required and shall be performed by the Contractor as though it were specifically delineated or described.

The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these Specifications shall be made upon that basis.

The inclusion of the Related Requirements (or work specified elsewhere) in the General part of the specifications is only for the convenience of the Contractor, and shall not be interpreted as a complete list of related Specification Sections.

1.03 MATERIALS AND EQUIPMENT

A. Manufacturer

All transactions with the manufacturers or subcontractors shall be through the Contractor, unless the Contractor shall request, in writing to the County, that the manufacturer or subcontractor deal directly with the County. Any such transactions shall not in any way release the Contractor from his full responsibility under this Contract.

Any two or more pieces or material or equipment of the same kind, type or classification, and being used for identical types of services, shall be made by the same manufacturer.

B. Delivery

The Contractor shall deliver materials in ample quantities to insure the most speedy and uninterrupted progress of the work so as to complete the work within the allotted time. The Contractor shall also coordinate deliveries in order to avoid delay in, or impediment of, the progress of the work of any related Contractor.

C. Tools and Accessories

The Contractor shall, unless otherwise stated in the Contract Documents, furnish with each type, kind or size of equipment, one complete set of suitably marked high grade special tools and appliances which may be needed to adjust, operate, maintain or repair the equipment. Such tools and appliances shall be furnished in approved painted steel cases, properly labeled and equipped with good grade cylinder locks and duplicate keys.

Spare parts shall be furnished as specified.

Each piece of equipment shall be provided with a substantial nameplate, securely fastened in place and clearly inscribed with the manufacturer's name, year of manufacture, serial number, weight and principal rating data.

D. Installation of Equipment.

The Contractor shall have on hand sufficient proper equipment and machinery of ample capacity to facilitate the work and to handle all emergencies normally encountered in work of this character.

Equipment shall be erected in a neat and workmanlike manner on the foundations at the locations and elevations shown on the Plans, unless directed otherwise by the County during installation. All equipment shall be correctly aligned, leveled and adjusted for satisfactory operation and shall be installed so that proper and necessary connections can be made readily between the various units.

The Contractor shall furnish, install and protect all necessary anchor and attachment bolts and all other appurtenances needed for the installation of the devices included in the equipment specified. Anchor bolts shall be as approved by the County and made of ample size and strength for the purpose intended. Substantial templates and working drawings for installation shall be furnished.

The Contractor shall furnish all materials and labor for, and shall properly bed in non-shrink grout, each piece of equipment on its supporting base that rests on masonry foundations.

Grout shall completely fill the space between the equipment base and the foundation. All metal surfaces coming in contact with concrete or grout shall receive a coat of coal tar epoxy equal to Koppers 300M or provide a 1/32-inch neophrene gasket between the metal surface and the concrete or grout.

E. Service of Manufacturer's Engineer

The Contract prices for equipment shall include the cost of furnishing (as required by equipment specifications sections) a competent and experienced engineer or superintendent who shall represent the manufacturer and shall assist the Contractor, when required, to install, adjust, test and place in operation the equipment in conformity with the Contract Documents. After the equipment is placed in permanent operation by

the County, such engineer or superintendent shall make all adjustments and tests required by the County to prove that such equipment is in proper and satisfactory operating condition, and shall instruct such personnel as may be designated by the County in the proper operation and maintenance of such equipment.

1.04 INSPECTION AND TESTING

A. General

Inspection and testing of materials will be performed by the County unless otherwise specified.

For tests specified to be made by the Contractor, the testing personnel shall make the necessary inspections and tests and the reports thereof shall be in such form as will facilitate checking to determine compliance with the Contract Documents. Three (3) copies of the reports shall be submitted and authoritative certification thereof must be furnished to the County as a prerequisite for the acceptance of any material or equipment.

If, in the making of any test of any material or equipment, it is ascertained by the County that the material or equipment does not comply with the Contract, the Contractor will be notified thereof and he will be directed to refrain from delivering said material or equipment, or to remove it promptly from the site or from the work and replace it with acceptable material, without cost to the County.

Tests of electrical and mechanical equipment and appliances shall be conducted in accordance with recognized test codes of the ANSI, ASME, or the IEEE, except as may otherwise be stated herein.

The Contractor shall be fully responsible for the proper operation of equipment during tests and instruction periods and shall neither have nor make any claim for damage which may occur to equipment prior to the time when the County formally takes over the operation thereof.

B. Costs

All inspection and testing of materials furnished under this Contract will be performed by the County or duly authorized inspection engineers or inspections bureaus without cost to the Contractor, unless otherwise expressly specified.

The cost of shop and field tests of equipment and of certain other tests specifically called for in the Contract Documents shall be borne by the Contractor and such costs shall be deemed to be included in the Contract price.

Materials and equipment submitted by the Contractor as the equivalent to those specifically named in the Contract may be tested by the County for compliance. The Contractor shall reimburse the County for the expenditures incurred in making such tests on materials and equipment which are rejected for non-compliance.

C. Inspections of Materials

The Contractor shall give notice in writing to the County, at least two weeks in advance of his intention to commence the manufacture or preparation of materials especially manufactured or prepared for use in or as part of the permanent construction. Such notice

shall contain a request for inspection, the date of commencement and the expected date of completion of the manufacture of preparation of materials. Upon receipt of such notice, the County will arrange to have a representative present at such times during the manufacture as may be necessary to inspect the materials or he will notify the Contractor that the inspection will be made at a point other than the point of manufacture, or he will notify the Contractor that inspection will be waived. The Contractor must comply with these provisions before shipping any material. Such inspection shall not release the Contractor from the responsibility for furnishing materials meeting the requirements of the Contract Documents.

D. Certificate of Manufacture

When inspection is waived or when the County so requires, the Contractor shall furnish to him authoritative evidence in the form of Certificates of Manufacture that the materials to be used in the work have been manufactured and tested in conformity with the Contract Documents. These certificates shall be notarized and shall include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer.

E. Shop Tests of Operating Equipment

Each piece of equipment for which pressure, duty, capacity, rating, efficiency, performance, function or special requirements are specified shall be tested in the shop of the maker in a manner which shall conclusively prove that its characteristics comply fully with the requirements of the Contract Documents. No such equipment shall be shipped to the work until the County notifies the Contractor, in writing, that the results of such tests are acceptable.

The cost of shop tests and of furnishing manufacturer's preliminary and shop test data of operating equipment shall be borne by the Contractor.

F. Preliminary Field Tests

As soon as conditions permit, the Contractor shall furnish all labor, materials, and instruments and shall make preliminary field tests of equipment. If the preliminary field tests disclose any equipment furnished under this Contract which does not comply with the requirements of the Contract Documents, the Contractor shall, prior to the acceptance tests, make all changes, adjustments and replacements required. The furnishing Contractor shall assist in the preliminary field tests as applicable.

G. Final Field Tests

Upon completion of the work and prior to final payment, all equipment and piping installed under this Contract shall be subjected to acceptance tests as specified or required to prove compliance with the Contract Documents.

The Contractor shall furnish labor, fuel, energy, water and all other materials, equipment and instruments necessary for all acceptance tests, at no additional cost to the County. The Supplier shall assist in the final field tests as applicable.

H. Failure of Tests

Any defects in the materials and equipment or their failure to meet the tests, guarantees or requirements of the Contract Documents shall be promptly corrected by the Contractor. The decision of the County as to whether or not the Contractor has fulfilled his obligations under the Contract shall be final and conclusive. If the Contractor fails to make these corrections or if the improved materials and equipment, when tested, shall again fail to meet the guarantees of specified requirements, the County, notwithstanding its partial payment for work, and materials and equipment, may reject the materials and equipment and may order the Contractor to remove them from the site at his own expense.

In case the County rejects any materials and equipment, then the Contractor shall replace the rejected materials and equipment within a reasonable time. If he fails to do so, the County may, after the expiration of a period of thirty (30) calendar days after giving him notice in writing, proceed to replace such rejected materials and equipment, and the cost thereof shall be deducted from any compensation due or which may become due the Contractor under his Contract.

I. Final Inspection

During such final inspections, the work shall be clean and free from water. In no case will the final pay application be prepared until the Contractor has complied with all requirements set forth and the County has made his final inspection of the entire work and is satisfied that the entire work is properly and satisfactorily constructed in accordance with the requirements of the Contract Document.

1.05 TEMPORARY STRUCTURES

A. Temporary Fences

If, during the course of the work, it is necessary to remove or disturb any fence or part thereof, the Contractor shall, at his own expense, if so ordered by the County, provide a suitable temporary fence which shall be maintained until the permanent fence is replaced. The County shall be solely responsible for the determination of the necessity for providing a temporary fence and the type of temporary fence to be used.

1.06 TEMPORARY SERVICES

A. First Aid

The Contractor shall keep upon the site, at each location where work is in progress, a completely equipped first aid kit and shall provide ready access thereto at all times when people are employed on the work.

1.07 LINES AND GRADES

A. Grade

All work under this Contract shall be constructed in accordance with the lines and grades shown on the Plans, or as given by the County. The full responsibility for keeping alignment and grade shall rest upon the Contractor.

B. Safeguarding Marks

The Contractor shall safeguard all points, stakes, grade marks, monuments and bench marks made or established on the work, bear the cost of reestablishing them if disturbed, and bear the entire expense of rectifying work improperly installed due to not maintaining or protecting or removing without authorization such established points, stakes and marks.

The Contractor shall safeguard all existing and known property corners, monuments and marks adjacent to but not related to the work and, if required, shall bear the cost of reestablishing them if disturbed or destroyed.

C. Datum Plane

All elevations indicated or specified refer to the Mean Sea Level Datum of the NGVD 1929 Datum and/or NAVD 1988.

1.08 ADJACENT STRUCTURES AND LANDSCAPING

A. Responsibility

The Contractor shall also be entirely responsible and liable for all damage or injury as a result of his operations to all other adjacent public and private property, structures of any kind and appurtenances thereto met with during the progress of the work. The cost of protection, replacement in their original locations and conditions or payment of damages for injuries to such adjacent public and private property and structures affected by the work, whether or not shown on the Plans, and the removal, relocation and reconstruction of such items called for on the Plans or specified shall be included in the various Contract Items and no separate payments will be made therefore. Where such public and private property, structures of any kind and appurtenances thereto are not shown on the Plans and when, in the opinion of the County, additional work is deemed necessary to avoid interference with the work, payment therefore will be made as provided for in the General Conditions.

Contractor is expressly advised that the protection of buildings, structures, tunnels, tanks, pipelines, etc. and related work adjacent and in the vicinity of his operations, wherever they may be, is solely his responsibility. Conditional inspection of buildings or structures in the immediate vicinity of the project which may reasonably be expected to be affected by the Work shall be performed by and be the responsibility of the Contractor.

Contractor shall, before starting operations, make an examination of the interior and exterior of the adjacent structures, buildings, facilities, etc., and record by notes, measurements, photographs, etc., conditions which might be aggravated by open excavation and construction. Repairs or replacement of all conditions disturbed by the construction shall be made to the satisfaction of the County. This does not preclude conforming to the requirements of the insurance underwriters. Copies of surveys, photographs, reports, etc., shall be given to the County.

Prior to the beginning of any excavations, the Contractor shall advise the County of all buildings or structures on which he intends to perform work or which performance of the project work will affect.

B. Protection of Trees

1. All trees and shrubs shall be adequately protected by the Contractor with boxes and otherwise and in accordance with ordinances governing the protection of

trees. No excavated materials shall be placed so as to injure such trees or shrubs. Trees or shrubs destroyed by negligence of the Contractor or his employees shall be replaced by him with new stock of similar size and age, at the proper season and at the sole expense of the Contractor.

2. Beneath trees or other surface structures, where possible, pipelines may be built in short tunnels, backfilled with excavated materials, except as otherwise specified, or the trees or structures carefully supported and protected from damage.
3. The County may order the Contractor, for the convenience of the County, to remove trees along the line or trench excavation. If so ordered, the County will obtain any permits required for removal of trees. Such tree removal ordered shall be paid for under the appropriate Contract Items.

C. Lawn Areas

Lawn areas shall be left in as good condition as before the starting of the work. Where sod is to be removed, it shall be carefully removed, and later replaced, or the area where sod has been removed shall be restored with new sod.

D. Restoration of Fences

Any fence, or part thereof, that is damaged or removed during the course of the work shall be replaced or repaired by the Contractor and shall be left in as good a condition as before the starting of the work. The manner in which the fence is repaired or replaced and the materials used in such work shall be subject to the approval of the County. The cost of all labor, materials, equipment, and work for the replacement or repair of any fence shall be deemed included in the appropriate Contract Item or items, or if no specific Item is provided therefore, as part of the overhead cost of the work, and no additional payment will be made therefore.

1.09 PROTECTION OF WORK AND PUBLIC

A. Barriers and Lights

During the prosecution of the work, the Contractor shall put up and maintain at all times such barriers and lights as will effectually prevent accidents. The Contractor shall provide suitable barricades, red lights, "danger" or "caution" or "street closed" signs and watchmen at all places where the work causes obstructions to the normal traffic or constitutes in any way a hazard to the public, in accordance with state and local requirements.

B. Smoke Prevention

A strict compliance with ordinances regulating the production and emission of smoke will be required. No open fires will be permitted.

C. Noise

The Contractor shall eliminate noise to as great an extent as practicable at all times. Air compressing plants shall be equipped with silencers and the exhaust of all engines or other power equipment shall be provided with mufflers. In the vicinity of hospitals and schools, special care shall be used to avoid noise or other nuisances. The Contractor shall strictly observe all local regulations and ordinances covering noise control.

D. Access to Public Services

Neither the materials excavated nor the materials or plant used in the construction of the work shall be so placed as to prevent free access to all fire hydrants, valves or manholes.

E. Dust prevention

The Contractor shall prevent dust nuisance from his operations or from traffic by keeping the roads and/or construction areas sprinkled with water at all times.

1.10 CUTTING AND PATCHING

The Contractor shall do all cutting, fitting or patching of his portion of the work that may be required to make the several parts thereof join and coordinate in a manner satisfactory to the County and in accordance with the Plans and Specifications. The work must be done by competent workmen skilled in the trade required by the restoration.

1.11 CLEANING

A. During Construction

During construction of the work, the Contractor shall, at all times, keep the site of the work and adjacent premises as free from material, debris and rubbish as is practicable and shall remove the same from any portion of the site if, in the opinion of the County, such material, debris, or rubbish constitutes a nuisance or is objectionable. The Contractor shall remove from the site all of his surplus materials and temporary structures when no further need therefore develops.

B. Final Cleaning

At the conclusion of the work, all equipment, tools, temporary structures and materials belonging to the Contractor shall be promptly taken away, and he shall remove and promptly dispose of all water, dirt, rubbish or any other foreign substances.

The Contractor shall thoroughly clean all equipment and materials installed by him and shall deliver such materials and equipment undamaged in a bright, clean, polished and new operating condition.

1.12 MISCELLANEOUS

A. Protection Against Siltation and Bank Erosion

1. The Contractor shall arrange his operations to minimize siltation and bank erosion on construction sites and on existing or proposed water courses and drainage ditches.
2. The Contractor, at his own expense, shall remove any siltation deposits and correct any erosion problems as directed by the County which results from his construction operations.

B. Protection of Wetland Areas

The Contractor shall properly dispose of all surplus material, including soil, in accordance with Local, State and Federal regulations. Under no circumstances shall surplus material

be disposed of in wetland areas as defined by the Florida Department of Environmental Protection or Southwest Florida Water Management District.

C. Existing Facilities

The work shall be so conducted to maintain existing facilities in operation insofar as is possible. Requirements and schedules of operations for maintaining existing facilities in service during construction shall be as described in the Special Provisions.

D. Use of Chemicals

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant, or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01010 SUMMARY OF WORK

PART 1 GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS/REQUIREMENTS INCLUDED

A. The work included in this contract generally consists of the construction of approximately 5,110 LF of 8" PVC watermain; 1,365 LF of 36" DIP watermain; and includes all appurtenances and items necessary to tie into the County's existing water distribution system and removal of approximately 1,615 LF of existing watermains.

B. The Contractor shall furnish all shop drawings, working drawings, labor, materials, equipment, tools, services and incidentals necessary to complete all work required by these Specifications and as shown on the Contract Drawings.

C. The Contractor shall perform the work complete, in place and ready for continuous service and shall include any repairs, replacements, and/or restoration required as a result of damages caused prior to acceptance by the County.

D. The Contractor shall furnish and install all materials, equipment and labor which is reasonably and properly inferable and necessary for the proper completion of the work, whether specifically indicated in the Contract Documents or not.

1.02 CONTRACTS

Construct all the Work under a single contract.

1.03 WORK SEQUENCE

A. All work done under this Contract shall be done with a minimum of inconvenience to the users of the system or facility. The Contractor shall coordinate his work with private property owners such that existing utility services are maintained to all users to the maximum extent possible.

B. The Contractor shall, if necessary and feasible, construct the work in stages to accommodate the County's use of the premises during the construction period; coordinate the construction schedule and operations with the County's Representative.

C. The Contractor shall, where feasible, construct the Work in stages to provide for public convenience and not close off public use of any facility until completion of construction to provide alternative usage.

1.04 CONSTRUCTION AREAS

A. The Contractor shall: Limit his use of the construction areas for work and for storage, to allow for:

1. Work by other Contractors.
2. County's Use.
3. Public Use.

B. Coordinate use of work site under direction of County's Representative.

C. Assume full responsibility for the protection and safekeeping of products under this Contract, stored on the site.

D. Move any stored products under the Contractor's control, which interfere with operations of the County or separate contractor.

E. Obtain and pay for the use of additional storage of work areas needed for Contractor operations.

1.05 COUNTY OCCUPANCY

A. It is assumed that portions of the Work will be completed prior to completion of the entire Work. Upon completion of construction of each individual facility, including testing, if the County, at its sole discretion, desires to accept the individual facility, the Contractor will be issued a dated certificate of completion and acceptance for each individual facility. The County will assume ownership and begin operation of the individual facility on that date and the three-year guaranty period shall commence on that date. The County has the option of not accepting the entire work as a whole until it is completed, tested and approved by the County.

1.06 PARTIAL COUNTY OCCUPANCY

The Contractor shall schedule his operations for completion of portions of the Work, as designated, for the County's occupancy prior to substantial completion of the entire work.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01015 CONTROL OF WORK

PART 1 GENERAL

1.01 WORK PROGRESS

The Contractor shall furnish personnel and equipment which will be efficient, appropriate and adequately sized to secure a satisfactory quality of work and a rate of progress which will insure the completion of the work within the time stipulated in the Contract. If at any time such personnel appears to the County to be inefficient, inappropriate, or insufficient for securing the quality of work required for producing the rate of progress aforesaid, he may order the Contractor to increase the efficiency, change the character, or increase the personnel and equipment and the Contractor shall conform to such order. Failure of the County to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required.

1.02 PRIVATE LAND

The Contractor shall not enter or occupy private land outside of easements, except by permission of the affected property owner.

1.03 WORK LOCATIONS

Work shall be located substantially as indicated on the drawings, but the County reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons.

1.04 OPEN EXCAVATIONS

A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons and damage to property. The Contractor shall, at his own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. Bridges provided for access to private property during construction shall be removed when no longer required. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, the County may require special construction procedures such as limiting the length of open trench, prohibiting stacking excavated material in the street and requiring that the trench shall not remain open overnight.

B. The Contractor shall take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, or other obstacles which could be dangerous to the public shall be barricaded and well lighted at all times when construction is not in progress.

1.05 DISTRIBUTION SYSTEMS AND SERVICES

A. The Contractor shall avoid interruptions to water, telephone, cable TV, sewer, gas, or other related utility services. He shall notify the County and the appropriate agency well in advance of any requirement for dewatering, isolating, or relocating a section of a utility, so that necessary arrangements may be made.

B. If it appears that utility service will be interrupted for an extended period, the County may order the Contractor to provide temporary service lines at the Contractor's expense.

Inconvenience of the users shall be kept to the minimum, consistent with existing conditions. The safety and integrity of the systems are of prime importance in scheduling work.

1.06 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

A. The Contractor shall assume full responsibility for the protection of all buildings, structures and utilities, public or private, including poles, signs, services to building utilities, gas pipes, water pipes, hydrants, sewers, drains and electric and telephone cables and other similar facilities, whether or not they are shown on the Drawings. The Contractor shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the Contractor's operation shall be repaired by the Contractor at his expense.

B. The Contractor shall bear full responsibility for obtaining locations of all underground structures and utilities (including existing water services, drain lines and sewers). Services to buildings shall be maintained and all costs or charges resulting from damage thereto shall be paid by the Contractor.

C. Protection and temporary removal and replacement of existing utilities and structures as described in this Section shall be a part of the work under the Contract and all costs in connection therewith shall be included in the unit prices established in the Bid.

D. If, in the opinion of the County, permanent relocation of a utility owned by the County is required, he may direct the Contractor, in writing, to perform the work. Work so ordered will be paid for at the Contract unit prices, if applicable, or as extra work as classified in the General Conditions. If relocation of a privately owned utility is required, the County will notify the utility to perform the work as expeditiously as possible. The Contractor shall fully cooperate with the County and utility and shall have no claim for delay due to such relocation. The Contractor shall notify public utility companies in writing at least 48 hours (excluding Saturdays, Sundays and legal holidays) before excavating near their utilities.

1.07 TEST PITS

Test pits for the purpose of locating underground pipeline or structures in advance of the construction shall be excavated and backfilled by the Contractor immediately after the utility location and the surface shall be restored in a manner equal or better than the original condition. No separate payment will be made.

1.08 CARE AND PROTECTION OF PROPERTY

A. The Contractor shall be responsible for the preservation of all public and private property and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition equal or better to that existing before the damage was done, or he shall make good the damage in another manner acceptable to the County.

B. All sidewalks which are disturbed by the Contractor's operations shall be restored to their original or better condition by the use of similar or comparable materials. All curbing shall be restored in a condition equal to the original construction and in accordance with the best modern practice.

C. Along the location of this work, all fences, walks, bushes, trees, shrubbery and other physical features shall be protected and restored in a thoroughly workmanlike manner unless otherwise shown on the drawings. Fences and other features removed by the Contractor shall be replaced in the location indicated by the County as soon as conditions permit. All grass areas beyond the limits of construction which have been damaged by the Contractor shall be regraded and sodded to equal or exceed original conditions.

D. Trees close to the work which drawings do not specify to be removed, shall be boxed or otherwise protected against injury. The Contractor shall trim all branches that are liable to damage because of his operations, but in no case shall any tree be cut or removed without prior notification to the County. All injuries to bark, trunk, limbs and roots of trees shall be repaired by dressing, cutting and painting according to approved methods, using only approved tools and materials.

E. The protection, removal and replacement of existing physical features along the line of work shall be a part of the work under the Contract and all costs in connection therewith shall be included in the unit and/or lump sum prices established under the items in the Bid.

1.09 MAINTENANCE OF TRAFFIC

A. Open pits, trenches, unpaved streets, debris, or other obstructions due to construction that will prevent the normal flow of traffic during an extended construction stoppage, for any reason, shall be minimized. In the event an extended construction stoppage is found to be necessary, Contractor shall, at his own expense, provide normal traffic flow during extended construction stoppage. Extended stoppage will be defined by the County.

B. All excavated material shall be placed so that vehicular and pedestrian traffic may be maintained at all times. If the Contractor's operations cause traffic hazards, he shall repair the road surface, provide temporary roadways, erect wheel guards or fences, or take other safety measures which are satisfactory to the County.

C. Any changes to the traffic pattern require a Traffic Control Plan as detailed in section 01570 of this specification.

1.10 WATER FOR CONSTRUCTION PURPOSES

A. In locations where public water supply is available, the Contractor may purchase water for all construction purposes.

B. The Contractor shall be responsible for paying for all water tap fees incurred for the purpose of obtaining a potable water service or temporary use meter.

1.11 MAINTENANCE OF FLOW

The Contractor shall at his own cost, provide for the flow of sewers, drains and water courses interrupted during the progress of the work and shall immediately cart away and remove all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the County well in advance of the interruption of any flow.

1.12 CLEANUP

During the course of the work, the Contractor shall keep the site of his operations in as

clean and neat a condition as is possible. He shall dispose of all residue resulting from the construction work and at the conclusion of the work, he shall remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures and any other refuse remaining from the construction operations and shall leave the entire site of the work in a neat and orderly condition.

1.13 COOPERATION WITHIN THIS CONTRACT

A. All firms or person authorized to perform any work under this Contract shall cooperate with the General Contractor and his subcontractors or trades and shall assist in incorporating the work of other trades where necessary or required.

B. Cutting and patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or directed by the County.

1.14 PROTECTION OF CONSTRUCTION AND EQUIPMENT

A. All newly constructed work shall be carefully protected from injury in any way. No wheeling or walking or placing of heavy loads on it shall be allowed and all portions injured shall be reconstructed by the Contractor at his own expense.

B. All structures shall be protected in a manner approved by the County. Should any of the floors or other parts of the structures become heaved, cracked, or otherwise damaged, all such damaged portions of the work shall be completely repaired and made good by the Contractor, at his own expense and to the satisfaction of the County. If, in the final inspection of the work, any defects, faults, or omissions are found, the Contractor shall cause the same to be repaired or removed and replaced by proper materials and workmanship without extra compensation for the materials and labor required. Further, the Contractor shall be fully responsible for the satisfactory maintenance and repair of the construction and other work undertaken herein, for at least the warranty period described in the Contract.

C. Further, the Contractor shall take all necessary precautions to prevent damage to any structure due to water pressure during and after construction and until such structure is accepted and taken over by the County.

1.15 CONSTRUCTION WITHIN RIGHT-OF-WAY

Where pipe lines are installed within FDOT right-of-way, all excavation backfill and compaction for the purpose of reconstructing roadways and/or adjacent slopes contiguous thereto shall be in accordance with FDOT or Manatee County Standards and Specifications, whichever is applicable. Contractor shall satisfy the authorized representative of the FDOT with respect to proper safety procedures, construction methods, required permitting, etc., within the FDOT right-of-way.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01030 SPECIAL PROJECT PROCEDURES

PART 1 GENERAL

1.01 PERMITS

Upon notice of award, the Contractor shall immediately apply for all applicable permits not previously obtained by the County to do the work from the appropriate governmental agency or agencies. No work shall commence until all applicable permits have been obtained and copies delivered to the County. The costs for obtaining all permits shall be borne by the Contractor.

1.02 CONNECTIONS TO EXISTING SYSTEM

The Contractor shall perform all work necessary to locate, excavate and prepare for connections to the existing systems all as shown on the Drawings or where directed by the County. The cost for this work and for the actual connection shall be included in the price bid for the project and shall not result in any additional cost to the County. The termination point for each contract shall be as shown on the Contract Drawings.

1.03 RELOCATIONS

The Contractor shall be responsible for the coordination of the relocation of structures, including but not limited to light poles, power poles, signs, sign poles, fences, piping, conduits and drains that interfere with the positioning of the work as set out on the Drawings. No relocation of the items under this Contract shall be done without approval from the County.

1.04 EXISTING UNDERGROUND PIPING, STRUCTURES AND UTILITIES

A. The attention of the Contractor is drawn to the fact that during excavation, the possibility exists of the Contractor encountering various utility lines not shown on the Drawings. The Contractor shall exercise extreme care before and during excavation to locate and flag these lines as to avoid damage to the existing lines.

B. It is the responsibility of the Contractor to ensure that all utility or other poles, the stability of which may be endangered by the close proximity of excavation, are temporarily stayed in position while work proceeds in the vicinity of the pole and that the utility or other companies concerned be given reasonable advance notice.

C. The existing utility locations are shown without express or implied representation, assurance, or guarantee that they are complete or correct or that they represent a true picture of underground piping to be encountered. The Contractor shall be responsible for notifying the various utility companies to locate their respective utilities in advance of construction in conformance with all requirements provided for in the Florida Underground Facilities Damage Prevention and Safety Act (Florida Statutes, Title XXXIII, Chapter 556).

D. The existing piping and utilities that interfere with new construction shall be rerouted as shown, specified, or required. Before any piping and utilities not shown on the Drawings are disturbed, the Contractor shall notify the County and shall provide suggestions on how best to resolve the issue.

E. The Contractor shall exercise care in any excavation to locate all existing piping and utilities. All utilities which do not interfere with complete work shall be carefully protected against damage. Any existing utilities damaged in any way by the Contractor shall be restored or replaced by the Contractor at his expense as directed by the County.

F. It is intended that wherever existing utilities such as water, sewer, gas, telephone, electrical, or other service lines must be crossed, deflection of the pipe within recommended limits and cover shall be used to satisfactorily clear the obstruction unless otherwise indicated in the Drawings. However, when in the opinion of the County this procedure is not feasible, he may direct the use of fittings for a utilities crossing as detailed on the Drawings. No deflections will be allowed in gravity sanitary sewer lines or in existing storm sewer lines.

1.05 SUSPENSION OF WORK DUE TO WEATHER

Refer to FDOT Standards and Specifications Book, Section 8.

1.06 HURRICANE PREPAREDNESS PLAN

A. Within 30 days of the date of Notice to Proceed, the Contractor shall submit to the County a Hurricane Preparedness Plan. The plan should outline the necessary measures which the Contractor proposes to perform at no additional cost to the County in case of a hurricane warning.

B. In the event of inclement weather, or whenever County shall direct, Contractor shall insure that he and his Subcontractors shall carefully protect work and materials against damage or injury from the weather. If, in the opinion of the County, any portion of work or materials is damaged due to the failure on the part of the Contractor or Subcontractors to protect the work, such work and materials shall be removed and replaced at the expense of the Contractor.

1.07 POWER SUPPLY

Electricity as may be required for construction and permanent power supply shall be secured and purchased by the Contractor.

1.08 SALVAGE

Any existing equipment or material, including, but not limited to, valves, pipes, fittings, couplings, etc., which is removed or replaced as a result of construction under this project may be designated as salvage by the County and if so shall be protected for a reasonable time until picked up by the County. Any equipment or material not worthy of salvaging, as directed by the County, shall be disposed of by the Contractor at no additional cost.

1.09 DEWATERING

A. The Contractor shall do all groundwater pumping necessary to prevent flotation of any part of the work during construction operations with his own equipment.

B. The Contractor shall pump out water and wastewater which may seep or leak into the excavations for the duration of the Contract and with his own equipment. He shall dispose of this water in an appropriate manner.

1.10 ADDITIONAL PROVISIONS

A. Before commencing work on any of the existing pipelines, structures or equipment, the Contractor shall notify the County, in writing, at least 10 calendar days in advance of the date he proposes to commence such work.

B. The Contractor shall provide, at his own expense, all necessary temporary facilities for access to and for protection of, all existing facilities. The County's personnel must have ready access at all times to the existing facilities. The Contractor is responsible for all damage to existing structures, equipment and facilities caused by his construction operations and must repair all such damage when and as ordered by the County.

1.11 CONSTRUCTION CONDITIONS

The Contractor shall strictly adhere to the specific requirements of the governmental unit(s) and/or agency(ies) having jurisdiction over the work. Wherever there is a difference in the requirements of a jurisdictional body and these Specifications, the more stringent shall apply.

1.12 PUBLIC NUISANCE

A. The Contractor shall not create a public nuisance including but not limited to encroachment on adjacent lands, flooding of adjacent lands, excessive noise or dust.

B. Sound levels must meet Manatee County Ordinance #87-34, (which amends Ordinance 81-3, The Manatee County Noise Control Ordinance). Sound levels in excess of such ordinance are sufficient cause to have the work halted until equipment can be quieted to these levels. Work stoppage by the County for excessive noise shall not relieve the Contractor of the other portions of this specification.

C. No extra charge may be made for time lost due to work stoppage resulting from the creation of a public nuisance.

1.13 WARRANTIES

A. All material supplied under these Specifications shall be warranted by the Contractor and the manufacturers for a period of three (3) years. Warranty period shall commence on the date of County acceptance.

B. The material shall be warranted to be free from defects in workmanship, design and materials. If any part of the system should fail during the warranty period, it shall be replaced at no expense to the County. All material and installation costs shall be 100% borne by the Contractor.

C. The manufacturer's warranty period shall run concurrently with the Contractor's warranty or guarantee period. No exception to this provision shall be allowed. The Contractor shall be responsible for obtaining warranties from each of the respective suppliers or manufacturers for all the material specified under these contract specifications,

D. In the event that the manufacturer is unwilling to provide a three-year warranty commencing at the time of County acceptance, the Contractor shall obtain from the manufacturer a four (4) year warranty starting at the time of equipment delivery to the job

site. This four-year warranty shall not relieve the Contractor of the three-year warranty starting at the time of County acceptance of the equipment.

1.14 FUEL STORAGE & FILLING

A. If the contractor is storing fuel on site, or doing his own fuel filling of portable equipment (other than hand-held equipment), he is responsible for any required response, clean-up or reporting required, at no additional cost to the county.

B. The Contractor shall prepare and submit a fuel storage / spill abatement plan prior to start of construction if required.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01045 CUTTING AND PATCHING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. The Contractor shall be responsible for all cutting, fitting and patching, including excavation and backfill, required to complete the work or to:

1. Make its several parts fit together properly.
2. Uncover portions of the work to provide for installation of ill-timed work.
3. Remove and replace defective work.
4. Remove and replace work not conforming to requirements of Contract Documents.
5. Provide penetrations of non-structural surfaces for installation of piping and electrical conduit.

PART 2 PRODUCTS

2.01 MATERIALS

Comply with specifications and standards for each specific product involved.

PART 3 EXECUTION

3.01 INSPECTION

A. Inspect existing conditions of project, including elements subject to damage or to movement during cutting and patching.

B. After uncovering work, inspect conditions affecting installation of products, or performance of work.

C. Report unsatisfactory or questionable conditions to County. Do not proceed with work until County has provided further instructions.

3.02 PREPARATION

A. Provide adequate temporary support as necessary to assure structural value to integrity of affected portion of work.

B. Provide devices and methods to protect other portions of project from damage.

C. Provide protection from elements for that portion of the project which may be exposed by cutting and patching work and maintain excavations free from water.

3.03 PERFORMANCE

A. Execute cutting and demolition by methods which will prevent damage to other work and will provide proper surfaces to receive installation of repairs.

B. Execute excavating and backfilling by methods which will prevent settlement or damage to other work.

C. Fit and adjust products to provide a finished installation to comply with specified products, functions, tolerances and finishes.

D. Restore work which has been cut or removed; install new products to provide completed work in accordance with the requirements of the Contract Documents.

E. Replace surfaces airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.

F. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes.

END OF SECTION

SECTION 01050 FIELD ENGINEERING AND SURVEYING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. The Contractor shall provide and pay for field surveying service required for the project.

B. The Contractor shall furnish and set all necessary stakes to establish the lines and grades as shown on the Contract Drawings and layout each portion of the Work of the Contract.

1.02 QUALIFICATION OF SURVEYOR AND ENGINEER

All construction staking shall be conducted by or under the supervision of a Florida Registered Professional Surveyor and Mapper. The Contractor shall be responsible for the layout of all such lines and grades, which will be subject to verification by the County.

1.03 SURVEY REFERENCE POINTS

A. Existing basic horizontal and vertical control points for the Project are designated on the Contract Drawings.

B. Locate and protect all survey monumentation, property corners and project control points prior to starting work and preserve all permanent reference points during construction. All costs associated with the replacement of all survey monumentation, property corners and project control points shall be borne by the Contractor.

Make no changes or relocations without prior written notice to County.

Report to County when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

Require surveyor to replace project control points which may be lost or destroyed.

Establish replacements based on original survey control.

1.04 PROJECT SURVEY REQUIREMENTS

The Contractor shall establish temporary bench marks as needed, referenced to data established by survey control points.

1.05 RECORDS

The Contractor shall employ a Professional Engineer or Surveyor registered in the State of Florida to verify survey data and properly prepare record drawings per Section 01720.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01090 REFERENCE STANDARDS

PART 1 GENERAL

1.01 REQUIREMENTS

Abbreviations and acronyms used in Contract Documents to identify reference standards.

A. Application: When a standard is specified by reference, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents, or applicable codes established stricter standards.

B. Publication Date: The most recent publication in effect on the date of issue of Contract Documents, except when a specific publication date is specified.

1.03 ABBREVIATIONS, NAMES AND ADDRESSES OR ORGANIZATIONS

Obtain copies of reference standards direct from publication source, when needed for proper performance of work, or when required for submittal by Contract Documents.

AA
Aluminum Association
818 Connecticut Avenue, N.W.
Washington, DC 20006

AASHTO
American Association of State Highway and Transportation Officials
444 North Capital Street, N.W.
Washington, DC 20001

ACI
American Concrete Institute
Box 19150
Reford Station
Detroit, MI 48219

AI
Asphalt Institute
Asphalt Institute Building
College Park, MD 20740

AISC
American Institute of Steel Construction
1221 Avenue of the Americas
New York, NY 10020

AISI
American Iron and Steel Institute
1000 16th Street NW
Washington, DC 20036

ANSI
American National Standards Institute
1430 Broadway
New York, NY 10018

ASHRAE
American Society of Heating, Refrigerating and Air Conditioning Engineers
1791 Tullie Circle, N.E.
Atlanta, GA 30329

ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
AWS	American Welding Society 2501 N.W. 7th Street Miami, FL 33125
CRSI	Concrete Reinforcing Steel Institute 180 North LaSalle Street, Suite 2110 Chicago, IL 60601
FDEP	Florida Department of Environmental Protection 3900 Commonwealth Blvd. Tallahassee, Florida 32399
FDOT	Florida Department of Transportation Standards Specifications for Road and Bridge Construction Maps & Publication Sales - Mail Station 12 605 Suwannee St. Tallahassee, FL 32399-0450
FS	Federal Specification General Services Administration Specifications and Consumer Information Distribution Section (WFSIS) Washington Navy Yard, Bldg. 197 Washington, DC 20407
MCPW UTIL STD	Manatee County Utility Engineering 4410-B 66th St. W. Bradenton, FL 34210
MLSFA	Metal Lath/Steel Framing Association 221 North LaSalle Street Chicago, IL 60601
MMA	Monorail Manufacturer's Association 1326 Freeport Road Pittsburgh, PA 15238
NAAMM	National Association of Architectural Metal Manufacturers 221 North LaSalle Street Chicago, IL 60601
NEMA	National Electrical Manufacturer's Assoc.

2101 L Street N.W.
Washington, DC 20037

OHSA	Occupational Safety and Health Assoc. 5807 Breckenridge Pkwy., Suite A Tampa, FL 33610-4249
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 20076
PCI	Prestressed Concrete Institute 20 North Wacker Drive Chicago, IL 60606
SDI	Steel Door Institute 712 Lakewood Center North Cleveland, OH 44107
SMACNA	Sheet Metal and Air Conditioning Contractor's National Association 8224 Old Court House Road Vienna, VA 22180
SSPC	Steel Structures Painting Council 402 24th Street, Suite 600 Pittsburgh, PA 15213
SWFWMD	Southwest Florida Water Management District 2379 Broad Street Brooksville, FL 34604-6899
UL	Underwriter's Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01150 MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SCOPE

A. The scope of this section of the Contract Documents is to further define the items included in each Bid Item in the Bid Form section of the Contract Documents. Payment will be made based on the specified items included in the description in this section for each bid item.

B. All contract prices included in the Bid Form section will be full compensation for all shop drawings, working drawings, labor, materials, tools, equipment and incidentals necessary to complete the construction as shown on the Drawings and/or as specified in the Contract Documents to be performed under this Contract. Actual quantities of each item bid on a unit price basis will be determined upon completion of the construction in the manner set up for each item in this section of the Specifications. Payment for all items listed in the Bid Form will constitute full compensation for all work shown and/or specified to be performed under this Contract.

1.02 ESTIMATED QUANTITIES

The quantities shown are approximate and are given only as a basis of calculation upon which the award of the Contract is to be made. The County does not assume any responsibility for the final quantities, nor shall the Contractor claim misunderstanding because of such estimate of quantities. Final payment will be made only for satisfactorily completed quantity of each item.

1.03 WORK OUTSIDE AUTHORIZED LIMITS

No payment will be made for work constructed outside the authorized limits of work.

1.04 MEASUREMENT STANDARDS

Unless otherwise specified for the particular items involved, all measurements of distance shall be taken horizontally or vertically.

1.05 AREA MEASUREMENTS

In the measurement of items to be paid for on the basis of area of finished work, the lengths and/or widths to be used in the calculations shall be the final dimensions measured along the surface of the completed work within the neat lines shown or designated.

1.06 LUMP SUM ITEMS

Where payment for items is shown to be paid for on a lump sum basis, no separate payment will be made for any item of work required to complete the lump sum items. Lump sum contracts shall be complete, tested and fully operable prior to request for final payment. Contractor may be required to provide a break-down of the lump sum totals.

1.07 UNIT PRICE ITEM

Separate payment will be made for the items of work described herein and listed on the Bid Form. Any related work not specifically listed, but required for satisfactory completion of the

work shall be considered to be included in the scope of the appropriate listed work items.

No separate payment will be made for the following items and the cost of such work shall be included in the applicable pay items of work. Final payments shall not be requested by the Contractor or made by the County until as-built (record) drawings have been submitted and approved by the County.

1. Shop Drawings, Working Drawings.
2. Clearing, grubbing and grading except as hereinafter specified.
3. Trench excavation, including necessary pavement removal and rock removal, except as otherwise specified.
4. Dewatering and disposal of surplus water.
5. Structural fill, backfill, and grading.
6. Replacement of unpaved roadways, and shrubbery plots.
7. Cleanup and miscellaneous work.
8. Foundation and borrow materials, except as hereinafter specified.
9. Testing and placing system in operation.
10. Any material and equipment required to be installed and utilized for the tests.
11. Pipe, structures, pavement replacement, asphalt and shell driveways and/or appurtenances included within the limits of lump sum work, unless otherwise shown.
12. Maintaining the existing quality of service during construction.
13. Maintaining or detouring of traffic.
14. Appurtenant work as required for a complete and operable system.
15. Seeding and hydromulching.
16. As-built Record Drawings.

BID ITEM - PVC (C-900 & C-905) WATER MAINS

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per the schedule of prices for furnishing and installing the listed diameter PVC water main (AWWA C-900, CL-150 or C-905, CL-235) pipe and fittings as shown on the Contract Drawings and listed in the Bid Form. Measurement and Payment shall be made for the actual length of the listed diameter pipe installed and will represent full compensation for all labor, materials, excavation, including rock, dewatering, bedding, backfill, compaction, testing and disinfection and equipment required to complete these Bid Items. No additional compensation will be made for excavation below the bottom of the pipe, for rock removal or bedding and backfill materials, or for repair of any trench settlement.

Item Nos: MC-1; MC-5

BID ITEM - DIP (C-900 & C-905) WATER MAINS

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per the schedule of prices for furnishing and installing the listed diameter DIP water main (ANSI/AWWA C150/A21.50 and ANSI/AWWA C151/A21.51) pipe and fittings as shown on the Contract Drawings and listed in the Bid Form. Measurement and Payment shall be made for the actual length of the listed diameter pipe installed and will represent full compensation for all labor, materials, excavation, including rock, dewatering, bedding, backfill, compaction, testing and disinfection and equipment required to complete these Bid Items. No additional compensation will be made for excavation below the bottom of the pipe,

for rock removal or bedding and backfill materials, or for repair of any trench settlement.

Item Nos: MC-6; MC-20

BID ITEM - STEEL CASING PIPES (J&B/OPEN CUT)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per the schedule of prices for furnishing and installing the listed diameter and wall thickness Steel Casing (ASTM A139 Grade B) pipe, insulators, seals, spacers, and fittings as shown on the Contract Drawings (and listed in the Bid Form. Measurement and Payment shall be made for the actual length of the listed diameter pipe installed and will represent full compensation for all labor, materials, excavation, including rock, dewatering, bedding, backfill, compaction, testing and disinfection and equipment required to complete these Bid Items. No additional compensation will be made for excavation below the bottom of the pipe, for rock removal or bedding and backfill materials, or for repair of any trench settlement.

Item Nos: MC-16; MC-17; MC-18

BID ITEM - GATE, PLUG AND BUTTERFLY VALVES

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per each valve for furnishing and installing the listed diameter valve, box, cover and concrete pad as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, excavation, including rock as necessary, bedding, backfill, compaction, testing and disinfection and equipment required to complete these Bid Items.

Item Nos: MC-3; MC-4; MC-15; MC-22; MC-23; MC-27

BID ITEM - HYDRANT ASSEMBLY

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per each hydrant assembly, including hydrant lead, tee, gate valve, box cover, concrete pads, restraining rods and/or thrust blocks, as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, equipment, excavation, including rock, bedding, backfill, compaction, testing and disinfection required to complete these Bid Items.

Item Nos: MC-13; MC-14

BID ITEM - AIR RELEASE VALVE

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per each air release valve assembly for furnishing and installing the valve, cabinet, concrete pad and appurtenances as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, equipment, excavation, including rock, bedding, backfill, compaction, testing and disinfection required to complete these Bid Items.

Item No: MC-28

BID ITEM - DUCTILE IRON FITTINGS, WATER

Payment for all work included in these Bid Items will be made at the applicable Contract unit price bid for furnishing and installing each ductile iron fitting (cement-lined) as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, equipment, excavation, including rock, bedding, backfill, compaction, testing and disinfection required to complete these Bid Items.

Item Nos: MC-2; MC-7; MC-8; MC-9; MC-10; mc-11; MC-12; MC-19; MC-21; MC-24; MC-25; MC-26

BID ITEM - TEMPORARY JUMPER CONNECTION

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per each jumper connection, including the tie-in valve; backflow preventer; pipe; fittings; testing; disinfection and appurtenances as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, equipment, excavation, including rock, bedding, backfill, compaction, testing and disinfection required to complete this Bid Item.

Item No: MC-33

BID ITEM - REMOVAL OF PIPE AND VALVES

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per the schedule of prices for removal of the listed diameter DIP water mains and valves as shown on the Contract Drawings and listed in the Bid Form. Measurement and Payment shall be made for the actual length of the listed diameter pipe removed or size of valve removed and will represent full compensation for all labor, materials, excavation, dewatering, backfill, compaction, and equipment required to complete these Bid Items.

Item No: MC-29; MC-30; MC-31; MC-32

BID ITEM - MISCELLANEOUS CONCRETE

Payment for all work under this Bid Item shall be made at the applicable Contract unit price bid per cubic yard of concrete as shown on the Bid Form for furnishing, placing and installing the miscellaneous concrete, measured in place, within the lines and grades as shown on the Contract Drawings and as described in the Specifications. All concrete placed outside these lines and grades to fill unauthorized excavation and all concrete for replacing defective work shall be at the expense of the Contractor. Concrete specifically included under any other Bid Item will not be measured or paid for under this Bid Item.

Measurement for miscellaneous concrete shall be per actual cubic yard of concrete furnished, placed and installed as shown on the Contract Drawings or as ordered by the County in writing. This Bid Item includes encasements, nonreinforced pipe cradles, and like work. Payment shall represent full compensation for all labor, materials, and equipment for mixing, placing, forming and curing of the concrete and all incidentals necessary to complete the concrete work, ready for approval and acceptance by the County.

Item Nos: MC-34

BID ITEM NO. - MOBILIZATION

Measurement and payment for this Bid Item shall include full compensation for the required 100 percent (100%) Performance Bond, 100 Percent (100%) Payment Bond, all required insurance for the project and the Contractor's mobilization and demobilization costs as shown in the Bid Form. Mobilization includes, but it not limited to: preparation and movement of personnel, equipment, supplies and incidentals such as safety and sanitary supplies/ facilities

Payment for mobilization shall not exceed 10 percent (10%) of the total Contract cost unless the Contractor can prove to the County that his actual mobilization cost exceeds 10 percent (10%).

Partial payments for this Bid Item will be made in accordance with the following schedule:

Percent of Original Contract Amount:	Percent Allowable Payment of Mobilization/Demobilization Bid Item Price:
5	25
10	35
25	45
50	50
75	75
100	100

These payments will be subject to the standard retainage provided in the Contract. Payment of the retainage will be made after completion of the work and demobilization.

Item No: 101 1

BID ITEM - MAINTENANCE OF TRAFFIC

This Bid Item shall not exceed 5% of the Bidders Total Base Bid. The Bidder shall calculate and enter a dollar amount for this Bid Item.

Item Nos: 101 2

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01152 REQUESTS FOR PAYMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

Submit Applications for Payment to the Project Manager or as directed at the preconstruction meeting, in accordance with the schedule established by Conditions of the Contract and Agreement between County and Contractor.

1.02 FORMAT AND DATA REQUIRED

A. Submit payment requests in the form provided by the County with itemized data typed in accordance with the Bid Form.

B. Provide construction photographs in accordance with Contract Documents.

1.03 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

A. When the County requires substantiating data, Contractor shall submit suitable information with a cover letter.

B. Submit one copy of data and cover letter for each copy of application.

1.04 PREPARATION OF APPLICATION FOR FINAL PAYMENT

Fill in application form as specified for progress payments.

1.05 SUBMITTAL PROCEDURE

A. Submit applications for payment at the times stipulated in the Agreement.

B. Number: Three (3) copies of each application; all signed and certified by the Contractor.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01153 CHANGE ORDER PROCEDURES

PART 1 GENERAL

1.01 DEFINITION

A. Change Order: Change in contract scope, price or time that must be approved and executed by the Project Representative before it becomes effective.

B. Administrative Change Adjustment: Minor change order under 10% of project cost or 20% time, does not have to be Board approved.

C. Field Order: Change to contract quantity that does not require a change of price.

1.02 REQUIREMENTS INCLUDED

A. The Contractor shall promptly implement change order procedures:

1. Provide full written data required to evaluate changes.
2. Maintain detailed records of work done on a time-and-material/force account basis.
3. Provide full documentation to County on request.

B. The Contractor shall designate a member of the Contractor's organization who:

1. Is authorized to accept changes to the Work.
2. Is responsible for informing others in the Contractor's employ of the authorized changes into the Work.

1.03 PRELIMINARY PROCEDURES

A. Project Manager may initiate changes by submitting a Request to Contractor. Request will include:

1. Detailed description of the change, products, costs and location of the change in the Project.
2. Supplementary or revised Drawings and Specifications.
3. The projected time extension for making the change.
4. A specified period of time during which the requested price will be considered valid.
5. Such request is for information only and is not an instruction to execute the changes, nor to stop work in progress.

B. Contractor may initiate changes by submitting a written notice to the Project Manager, containing:

1. Description of the proposed changes.
2. Statement of the reason for making the changes.
3. Statement of the effect on the Contract Sum and the Contract Time.
4. Statement of the effect on the work of separate contractors.
5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

1.04 FIELD ORDER CHANGE

A. In lieu of a Change Order, the Project Manager may issue a Field Order for the Contractor to proceed with additional work within the original intent of the Project.

B. Field Order will describe changes in the work, with attachments of backup information to define details of the change.

C. Contractor must sign and date the Field Order to indicate agreement with the terms therein.

1.05 DOCUMENTATION OF PROPOSALS AND CLAIMS

A. Support each quotation for a lump sum proposal and for each unit price which has not previously been established, with sufficient substantiating data to allow the County to evaluate the quotation.

B. On request, provide additional data to support time and cost computations:

1. Labor required.
2. Equipment required.
3. Products required.
   a. Recommended source of purchase and unit cost.
   b. Quantities required.
4. Taxes, insurance and bonds.
5. Credit for work deleted from Contract, similarly documented.
6. Overhead and profit.
7. Justification for any change in Contract Time.

C. Support each claim for additional costs and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal.

1. Name of the County's authorized agent who ordered the work and date of the order.
2. Date and time work was performed and by whom.
3. Time record, summary of hours work and hourly rates paid.
4. Receipts and invoices for:
   a. Equipment used, listing dates and time of use.
   b. Products used, listing of quantities.
   c. Subcontracts.

1.06 PREPARATION OF CHANGE ORDERS

A. Project Manager will prepare each Change Order.

B. Change Order will describe changes in the Work, both additions and deletions, with attachments as necessary to define details of the change.

C. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

1.07 LUMP SUM/FIXED PRICE CHANGE ORDER

A. Project Manager initiates the form, including a description of the changes involved and

attachments based upon documents and proposals submitted by the Contractor, or requests from the County, or both.

B. Once the form has been completed, all copies should be sent to Contractor for approval. After approval by Contractor, all copies should be sent to County for approval. The County will distribute executed copies after approval by the Board of County Commissioners.

1.08 UNIT PRICE CHANGE ORDER

A. Contents of Change Orders will be based on, either:

1. County's definition of the scope of the required changes.
2. Contractor's Proposal for a change, as approved by the County.
3. Survey of completed work.

B. The amounts of the unit prices to be:

1. Those stated in the Agreement.
2. Those mutually agreed upon between County and Contractor.

1.09 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/CONSTRUCTION CHANGE AUTHORIZATION

A. At completion of the change, Contractor shall submit itemized accounting and supporting data as provided in the Article "Documentation of Proposals and Claims" of this Section.

B. County will determine the allowable cost of such work, as provided in General Conditions and Supplementary Conditions.

C. County will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.

D. County and Contractor will sign and date the Change Order to indicate their agreement therewith.

1.10 CORRELATION WITH CONTRACTOR'S SUBMITTALS

A. Periodically revise Schedule of Values and Application for Payment forms to record each change as a separate item of work, and to record the adjusted Contract Sum.

B. Periodically revise the Construction Schedule to reflect each change in Contract Time. Revise sub schedules to show changes for other items of work affected by the changes.

C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01200 PROJECT MEETINGS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. The County shall schedule the pre-construction meeting, periodic progress meetings and special meetings, if required, throughout progress of work.

B. Representatives of contractors, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.

C. The Contractor shall attend meetings to ascertain that work is expedited consistent with Contract Documents and construction schedules.

1.02 PRE-CONSTRUCTION MEETING

A. Attendance:

1. County's Engineer.
2. County's Project Manager
3. Contractor.
4. Resident Project Representative.
5. Related Labor Contractor's Superintendent.
6. Major Subcontractors.
7. Major Suppliers.
8. Others as appropriate.

B. Suggested Agenda:

1. Distribution and discussion of:
   a. List of major subcontractors.
   b. Projected Construction Schedules.
   c. Coordination of Utilities
2. Critical work sequencing.
3. Project Coordination.
   a. Designation of responsible personnel.
   b. Emergency contact persons with phone numbers.
4. Procedures and processing of:
   a. Field decisions.
   b. Submittals.
   c. Change Orders.
   d. Applications for Payment.
5. Procedures for maintaining Record Documents.
6. Use of premises:
   a. Office, work and storage areas.
   b. County's REQUIREMENTS.
7. Temporary utilities.
8. Housekeeping procedures.
9. Liquidated damages.
10. Equal Opportunity Requirements.
11. Laboratory testing.
12. Project / Job meetings: Progress meeting, other special topics as needed.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01310 CONSTRUCTION SCHEDULE & PROJECT RESTRAINTS

PART 1 GENERAL

1.01 GENERAL

A. Construction under this contract must be coordinated with the County and accomplished in a logical order to maintain utilization and flow through existing facilities and public properties and rights-of-way and to allow construction to be completed within the time allowed by Contract Documents and in the manner set forth in the Contract.

1.02 CONSTRUCTION SCHEDULING GENERAL PROVISIONS

A. No work shall be done between 7:00 p.m. and 7:00 a.m. nor on weekends or legal holidays without written permission of the County. However, emergency work may be done without prior permission.

B. Night work may be established by the Contractor as regular procedure with the written permission of the County. Such permission, however, may be revoked at any time by the County if the Contractor fails to maintain adequate equipment and supervision for the proper execution and control of the work at night.

C. Due to potential health hazards and requirements of the State of Florida and the U.S. Environmental Protection Agency, existing facilities must be maintained in operation.

D. The Contractor shall be fully responsible for providing all temporary piping, plumbing, electrical hook-ups, lighting, temporary structure, or other materials, equipment and systems required to maintain the existing facility's operations. All details of temporary piping and temporary construction are not necessarily shown on the Drawings or covered in the Specifications. However, this does not relieve the Contractor of the responsibility to insure that construction will not interrupt proper facility operations.

E. The Contractor shall designate an authorized representative of his firm who shall be responsible for development and maintenance of the schedule and of progress and payment reports. This representative of the Contractor shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling the commitments of the Contractor's schedule.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. The Contractor shall submit a critical path schedule as described herein.

B. The planning, scheduling, management and execution of the work is the sole responsibility of the Contractor. The progress schedule requirement is established to allow County to review Contractor's planning, scheduling, management and execution of the work; to assist County in evaluating work progress and make progress payments and to allow other contractors to cooperate and coordinate their activities with those of the Contractor.

2.02 FORM OF SCHEDULES

A. Prepare schedules using the latest version of Microsoft Project, or other County approved software, in the form of a horizontal bar chart diagram. The diagram shall be time-scaled and sequenced by work areas. Horizontal time scale shall identify the first work day of each week.

B. Activities shall be at least as detailed as the Schedule of Values. Activity durations shall be in whole working days. In addition, man-days shall be shown for each activity or tabulated in an accompanying report.

C. Diagrams shall be neat and legible and submitted on sheets at least 8-1/2 inches by 11 inches suitable for reproduction. Scale and spacing shall allow space for notations and future revisions.

2.03 CONTENT OF SCHEDULES

A. Each monthly schedule shall be based on data as of the last day of the current pay period.

B. Description for each activity shall be brief, but convey the scope of work described.

C. Activities shall identify all items of work that must be accomplished to achieve substantial completion, such as items pertaining to Contractor's installation and testing activities; items pertaining to the approval of regulatory agencies; contractor's time required for submittals, fabrication and deliveries; the time required by County to review all submittals as set forth in the Contract Documents; items of work required of County to support pre-operational, startup and final testing; time required for the relocation of utilities. Activities shall also identify interface milestones with the work of other contractors performing work under separate contracts with County.

D. Schedules shall show the complete sequence of construction by activities. Dates for beginning and completion of each activity shall be indicated as well as projected percentage of completion for each activity as of the first day of each month.

E. Submittal schedule for shop drawing review, product data, and samples shall show the date of Contractor submittal and the date approved submittals will be required by the County, consistent with the time frames established in the Specifications.

F. For Contract change orders granting time extensions, the impact on the Contract date(s) shall equal the calendar-day total time extension specified for the applicable work in the Contract change orders.

G. For actual delays, add activities prior to each delayed activity on the appropriate critical path(s). Data on the added activities of this type shall portray all steps leading to the delay and shall further include the following: separate activity identification, activity description indicating cause of the delay, activity duration consistent with whichever set of dates below applies, the actual start and finish dates of the delay or, if the delay is not finished, the actual start date and estimated completion date.

H. For potential delays, add an activity prior to each potentially delayed activity on the appropriate critical path(s). Data for added activities of this type shall include alternatives available to mitigate the delay including acceleration alternatives and further show the following: separate activity identification, activity description indicating cause of the potential delay and activity duration equal to zero work days.

2.04 SUPPORTING NARRATIVE

A. Status and scheduling reports identified below shall contain a narrative to document the project status, to explain the basis of Contractor's determination of durations, describe the Contract conditions and restraints incorporated into the schedule and provide an analysis pertaining to potential problems and practical steps to mitigate them.

B. The narrative shall specifically include:

1. Actual completion dates for activities completed during the monthly report period and actual start
   dates for activities commenced during the monthly report period.
2. Anticipated start dates for activities scheduled to commence during the following monthly report period.
3. Changes in the duration of any activity and minor logic changes.
4. The progress along the critical path in terms of days ahead or behind the Contract date.
5. If the Monthly Status Report indicates an avoidable delay to the Contract completion date or interim completion dates as specified in the Agreement, Contractor shall identify the problem, cause and the activities affected and provide an explanation of the proposed corrective action to meet the milestone dates involved or to mitigate further delays.
6. If the delay is thought to be unavoidable, the Contractor shall identify the problem, cause, duration, specific activities affected and restraints of each activity.
7. The narrative shall also discuss all change order activities whether included or not in the revised/current schedule of legal status. Newly introduced change order work activities and the CPM path(s) that they affect, must be specifically identified. All change order work activities added to the schedule shall conform with the sequencing and Contract Time requirements of the applicable Change Order.
8. Original Contract date(s) shall not be changed except by Contract change order. A revision need not be submitted when the foregoing situations arise unless required by County. Review of a report containing added activities will not be construed to be concurrence with the duration or restraints for such added activities; instead the corresponding data as ultimately incorporated into the applicable Contract change order shall govern.
9. Should County require additional data, this information shall be supplied by Contractor within 10 calendar days.

2.05 SUBMITTALS

A. Contractor shall submit estimated and preliminary progress schedules (as identified in the Terms and Conditions of the Contract and the General Conditions), monthly status reports, a start-up schedule and an as-built schedule report all as specified herein.

B. All schedules, including estimated and preliminary schedules, shall be in conformance with the Contract Documents.

C. The finalized progress schedule discussed in the Contract Documents shall be the first monthly status report and as such shall be in conformance with all applicable specifications contained herein.

D. Monthly Status Report submittals shall include a time-scaled (days after notice to proceed) diagram showing all contract activities and supporting narrative. The initial detailed

schedule shall use the notice to proceed as the start date. The finalized schedule, if concurred with by County, shall be the work plan to be used by the contractor for planning, scheduling, managing and executing the work.

E. The schedule diagram shall be formatted as above. The diagram shall include (1) all detailed activities included in the preliminary and estimated schedule submittals, (2) calendar days prior to substantial completion, (3) summary activities for the remaining days. The critical path activities shall be identified, including critical paths for interim dates, if possible.

F. The Contractor shall submit progress schedules with each application for payment.

2.06 MONTHLY STATUS REPORTS

A. Contractor shall submit detailed schedule status reports on a monthly basis with the Application for Payment. The first such status report shall be submitted with the first Application for Payment and include data as of the last day of the pay period. The Monthly Report shall include a "marked-up" copy of the latest detailed schedule of legal status and a supporting narrative including updated information as described above. The Monthly Report will be reviewed by County and Contractor at a monthly schedule meeting and Contractor will address County's comments on the subsequent monthly report. Monthly status reports shall be the basis for evaluating Contractor's progress.

B. The "marked-up" diagram shall show, for the latest detailed schedule of legal status, percentages of completion for all activities, actual start and finish dates and remaining durations, as appropriate. Activities not previously included in the latest detailed schedule of legal status shall be added, except that contractual dates will not be changed except by change order. Review of a marked-up diagram by County will not be construed to constitute concurrence with the time frames, duration, or sequencing for such added activities; instead the corresponding data as ultimately incorporated into an appropriate change order shall govern.

2.07 STARTUP SCHEDULE

A. At least 60 calendar days prior to the date of substantial completion, Contractor shall submit a time-scaled (days after notice to proceed) diagram detailing the work to take place in the period between 60 days prior to substantial completion, together with a supporting narrative. County shall have 10 calendar days after receipt of the submittal to respond. Upon receipt of County's comments, Contractor shall make the necessary revisions and submit the revised schedule within 10 calendar days. The resubmittal, if concurred with by County, shall be the Work Plan to be used by Contractor for planning, managing, scheduling and executing the remaining work leading to substantial completion.

B. The time-scaled diagram shall use the latest schedule of legal status for those activities completed ahead of the last 60 calendar days prior to substantial completion and detailed activities for the remaining 60-day period within the time frames outlined in the latest schedule of legal status.

C. Contractor will be required to continue the requirement for monthly reports, as outlined above. In preparing this report, Contractor must assure that the schedule is consistent with the progress noted in the startup schedule.

2.08 REVISIONS

A. All revised Schedule Submittals shall be made in the same form and detail as the initial submittal and shall be accompanied by an explanation of the reasons for such revisions, all of which shall be subject to review and concurrence by County. The revision shall incorporate all previously made changes to reflect current as-built conditions. Minor changes to the approved submittal may be approved at monthly meetings; a minor change is not considered a revision in the context of this paragraph.

B. A revised schedule submittal shall be submitted for review when required by County.

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01340 SHOP DRAWINGS, PROJECT DATA AND SAMPLES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. The Contractor shall submit to the County for review and approval: working drawings, shop drawings, test reports and data on materials and equipment (hereinafter in this section called data), and material samples (hereinafter in this section called samples) as are required for the proper control of work, including, but not limited to those working drawings, shop drawings, data and samples for materials and equipment specified elsewhere in the Specifications and in the Contract Drawings.

B. The Contractor is to maintain an accurate updated submittal log and will bring this log to each scheduled progress meeting with the County. This log should include the following items:

1. Submittal description and number assigned.
2. Date to County.
3. Date returned to Contractor (from County).
4. Status of Submittal (No exceptions taken, returned for confirmation or resubmittal, rejected).
5. Date of Resubmittal and Return (as applicable).
6. Date material released (for fabrication).
7. Projected date of fabrication.
8. Projected date of delivery to site.
9. Projected date and required lead time so that product installation does not delay contact.
10. Status of O&M manuals submitted.

1.03 CONTRACTOR'S RESPONSIBILITY

A. It is the duty of the Contractor to check all drawings, data and samples prepared by or for him before submitting them to the County for review. Each and every copy of the Drawings and data shall bear Contractor's stamp showing that they have been so checked. Shop drawings submitted to the County without the Contractor's stamp will be returned to the Contractor for conformance with this requirement. Shop drawings shall indicate any deviations in the submittal from requirements of the contract Documents.

B. Determine and verify:

1. Field measurements.
2. Field construction criteria.
3. Catalog numbers and similar data.
4. Conformance with Specifications and indicate all variances from the Specifications.

C. The Contractor shall furnish the County a schedule of Shop Drawing submittals fixing the respective dates for the submission of shop and working drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment. This schedule shall indicate those that are critical to the progress schedule.

D. The Contractor shall not begin any of the work covered by a drawing, data, or a sample returned for correction until a revision or correction thereof has been reviewed and returned to him, by the County, with No Exceptions Taken or Approved As Noted.

E. The Contractor shall submit to the County all drawings and schedules sufficiently in advance of construction requirements to provide no less than twenty-one (21) calendar days for checking and appropriate action from the time the County receives them.

F. All material & product submittals, other than samples, may be transmitted electronically as a pdf file. All returns to the contractor will be as a pdf file only unless specifically requested otherwise.

G. The Contractor shall be responsible for and bear all cost of damages which may result from the ordering of any material or from proceeding with any part of work prior to the completion of the review by County of the necessary Shop Drawings.

1.04 COUNTY'S REVIEW OF SHOP DRAWINGS AND WORKING DRAWINGS

A. The County's review of drawings, data and samples submitted by the Contractor shall cover only general conformity to the Specifications, external connections and dimensions which affect the installation.

B. The review of drawings and schedules shall be general and shall not be construed:

1. As permitting any departure from the Contract requirements.
2. As relieving the Contractor of responsibility for any errors, including details, dimensions and materials.
3. As approving departures from details furnished by the County, except as otherwise provided herein.

C. If the drawings or schedules as submitted describe variations and show a departure from the Contract requirements which the County finds to be in the interest of the County and to be so minor as not to involve a change in Contract Price or time for performance, the County may return the reviewed drawings without noting any exception.

D. When reviewed by the County, each of the Shop and Working Drawings shall be identified as having received such review being so stamped and dated. Shop Drawings stamped "REJECTED" and with required corrections shown shall be returned to the Contractor for correction and resubmittal.

E. Resubmittals will be handled in the same manner as first submittals. On resubmittals, the Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, to revisions other than the corrections requested by the County on previous submissions. The Contractor shall make any corrections required by the County.

F. If the Contractor considers any correction indicated on the drawings to constitute a change to the Contract Drawings or Specifications, the Contractor shall give written notice thereof to the County.

G. The County shall review a submittal/resubmittal a maximum of three (3) times after which cost of review shall be borne by the Contractor. The cost of engineering shall be equal to the County's actual payroll cost.

H. When the Shop and Working Drawings have been completed to the satisfaction of the County, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the County.

I. No partial submittals shall be reviewed. Incomplete submittals shall be returned to the Contractor and shall be considered not approved until resubmitted.

1.05 SHOP DRAWINGS

A. When used in the Contract Documents, the term "Shop Drawings" shall be considered to mean Contractor's plans for material and equipment which become an integral part of the Project. These drawings shall be complete and detailed. Shop Drawings shall consist of fabrication, drawings, setting drawings, schedule drawings, manufacturer's scale drawings and wiring and control diagrams. Cuts, catalogs, pamphlets, descriptive literature and performance and test data, shall be considered only as supportive to required Shop Drawings as defined above.

B. Drawings and schedules shall be checked and coordinated with the work of all trades involved, before they are submitted for review by the County and shall bear the Contractor's stamp of approval and original signature as evidence of such checking and coordination. Drawings or schedules submitted without this stamp of approval and original signature shall be returned to the Contractor for resubmission.

C. Each Shop Drawing shall have a blank area 3-1/2 inches by 3-1/2 inches, located adjacent to the title block. The title block shall display the following:

1. Number and title of the drawing.
2. Date of Drawing or revision.
3. Name of project building or facility.
4. Name of contractor and subcontractor submitting drawing.
5. Clear identification of contents and location of the work.
6. Specification title and number.

D. If drawings show variations from Contract requirements because of standard shop practice or for other reasons, the Contractor shall describe such variations in his letter of transmittal. If acceptable, proper adjustment in the contract shall be implemented where appropriate. If the Contractor fails to describe such variations, he shall not be relieved of the responsibility of executing the work in accordance with the Contract, even though such drawings have been reviewed.

E. Data on materials and equipment shall include, without limitation, materials and equipment lists, catalog sheets, cuts, performance curves, diagrams, materials of construction and similar descriptive material. Materials and equipment lists shall give, for each item thereon, the name and location of the supplier or manufacturer, trade name, catalog reference, size, finish and all other pertinent data.

F. For all mechanical and electrical equipment furnished, the Contractor shall provide a list including the equipment name and address and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained.

G. All manufacturers or equipment suppliers who proposed to furnish equipment or products shall submit an installation list to the County along with the required shop drawings. The

installation list shall include at least five installations where identical equipment has been installed and have been in operation for a period of at least one (1) year.

H. Only the County will utilize the color "red" in marking shop drawing submittals.

1.06 WORKING DRAWINGS

A. When used in the Contract Documents, the term "working drawings" shall be considered to mean the Contractor's fabrication and erection drawings for structures such as roof trusses, steelwork, precast concrete elements, bulkheads, support of open cut excavation, support of utilities, groundwater control systems, forming and false work; underpinning; and for such other work as may be required for construction of the project.

B. Copies of working drawings as noted above, shall be submitted to the County where required by the Contract Documents or requested by the County and shall be submitted at least thirty (30) days (unless otherwise specified by the County) in advance of their being required for work.

C. Working drawings shall be signed by a registered Professional Engineer, currently licensed to practice in the State of Florida and shall convey, or be accompanied by, calculation or other sufficient information to completely explain the structure, machine, or system described and its intended manner of use. Prior to commencing such work, working drawings must have been reviewed without specific exceptions by the County, which review will be for general conformance and will not relieve the Contractor in any way from his responsibility with regard to the fulfillment of the terms of the Contract. All risks of error are assumed by the Contractor; the County and Engineer shall not have responsibility therefor.

1.07 SAMPLES

A. The Contractor shall furnish, for the review of the County, samples required by the Contract Documents or requested by the County. Samples shall be delivered to the County as specified or directed. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in work until reviewed by the County.

B. Samples shall be of sufficient size and quantity to clearly illustrate:

1. Functional characteristics of the product, with integrally related parts and attachment devices.
2. Full range of color, texture and pattern.
3. A minimum of two samples of each item shall be submitted.

C. Each sample shall have a label indicating:

1. Name of product.
2. Name of Contractor and Subcontractor.
3. Material or equipment represented.
4. Place of origin.
5. Name of Producer and Brand (if any).
6. Location in project.
   (Samples of finished materials shall have additional markings that will identify them under the finished schedules.)

7. Reference specification paragraph.

D. The Contractor shall prepare a transmittal letter in triplicate for each shipment of samples containing the information required above. He shall enclose a copy of this letter with the shipment and send a copy of this letter to the County. Review of a sample shall be only for the characteristics or use named in such and shall not be construed to change or modify any Contract requirements.

E. Reviewed samples not destroyed in testing shall be sent to the County or stored at the site of the work. Reviewed samples of the hardware in good condition will be marked for identification and may be used in the work. Materials and equipment incorporated in work shall match the reviewed samples. If requested at the time of submission, samples which failed testing or were rejected shall be returned to the Contractor at his expense.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01370 SCHEDULE OF VALUES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. The Contractor shall submit to the County a Schedule of Values allocated to the various portions of the work, within 10 days after date of Notice to Proceed.

B. Upon request of the County, the Contractor shall support the values with data which will substantiate their correctness.

C. The Schedule of Values shall be used only as the basis for the Contractor's Applications for Payment.

1.02 FORM AND CONTENT OF SCHEDULE OF VALUES

A. Schedule of Values will be considered for approval by County upon Contractor's request. Identify schedule with:

1. Title of Project and location.
2. Project number.
3. Name and address of Contractor.
4. Contract designation.
5. Date of submission.

B. Schedule of Values shall list the installed value of the component parts of the work in sufficient detail to serve as a basis for computing values for progress payments during construction.

C. Follow the table of contents for the Contract Document as the format for listing component items for structures:

1. Identify each line item with the number and title of the respective major section of the specification.
2. For each line item, list sub values of major products or operations under item.

D. Follow the bid sheets included in this Contract Documents as the format for listing component items for pipe lines.

E. The sum of all values listed in the schedule shall equal the total Contract sum.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01380 CONSTRUCTION PHOTOGRAPHS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. The Contractor shall employ a competent photographer to take construction record photographs or perform video, recording including furnishing all labor, materials, equipment and incidentals necessary to obtain photographs and/or video recordings of all construction areas.

B. Preconstruction record information shall consist of video recordings on digital video disks (DVD).

C. Construction progress information shall consist of photographs and digital photographs on a recordable compact disc (CD-R).

1.02 QUALIFICATIONS

A. All photography shall be done by a competent camera operator who is fully experienced and qualified with the specified equipment.

B. For the video recording, the audio portion should be done by a person qualified and knowledgeable in the specifics of the Contract, who shall speak with clarity and diction so as to be easily understood.

1.03 PROJECT PHOTOGRAPHS

A. Provide one print of each photograph with each pay application.

B. Provide one recordable compact disc with digital photographs with each pay application.

C. Negatives:

1. All negatives shall remain the property of photographer.
2. The Contractor shall require that photographer maintain negatives or protected digital files for a period of two years from date of substantial completion of the project.
3. Photographer shall agree to furnish additional prints to County at commercial rates applicable at time of purchase. Photographer shall also agree to participate as required in any litigation requiring the photographer as an expert witness.

D. The Contractor shall pay all costs associated with the required photography and prints. Any parties requiring additional photography or prints shall pay the photographer directly.

E. All project photographs shall be a single weight, color image. All finishes shall be smooth surface and glossy and all prints shall be 8 inches x 10 inches.

F. Each print shall have clearly marked on the back, the name of the project, the orientation of view, the date and time of exposure, name and address of the photographer and the photographers numbered identification of exposure.

G. All project photographs shall be taken from locations to adequately illustrate conditions

prior to construction, or conditions of construction and state of progress. The Contractor shall consult with the County at each period of photography for instructions concerning views required.

1.04 VIDEO RECORDINGS

A. Video, recording shall be done along all routes that are scheduled for construction. Video, recording shall include full, recording of both sides of all streets and the entire width of easements plus 10 feet on each side on which construction is to be performed. All video recording shall be in full color.

B. A complete view, in sufficient detail with audio description of the exact location shall be provided.

C. The engineering plans shall be used as a reference for stationing in the audio portion of the recordings for easy location identification.

D. Two complete sets of video recordings shall be delivered to the County on digital video disks (DVD) for the permanent and exclusive use of the County prior to the start of any construction on the project.

E. All video recordings shall contain the name of the project, the date and time of the video, recording, the name and address of the photographer and any other identifying information required.

F. Construction shall not start until preconstruction video recordings are completed, submitted and accepted by the County. In addition, no progress payments shall be made until the preconstruction video recordings are accepted by the County.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01410 TESTING AND TESTING LABORATORY SERVICES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. County shall employ and pay for the services of an independent testing laboratory to perform testing specifically indicated on the Contract Documents or called out in the Specifications. County may elect to have materials and equipment tested for conformity with the Contract Documents at any time.

1. Contractor shall cooperate fully with the laboratory to facilitate the execution of its required services.
2. Employment of the laboratory shall in no way relieve the Contractor's obligations to perform the work of the Contract.

1.02 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

A. Laboratory is not authorized to:

1. Release, revoke, alter or enlarge on requirements of Contract Documents.
2. Approve or accept any portion of the Work.
3. Perform any duties of the Contractor.

1.03 CONTRACTOR'S RESPONSIBILITIES

A. Cooperate with laboratory personnel; provide access to Work and/or to Manufacturer's operations.

B. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.

C. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other material mixes which require control by the testing laboratory.

D. Materials and equipment used in the performance of work under this Contract are subject to inspection and testing at the point of manufacture or fabrication. Standard specifications for quality and workmanship are indicated in the Contract Documents. The County may require the Contractor to provide statements or certificates from the manufacturers and fabricators that the materials and equipment provided by them are manufactured or fabricated in full accordance with the standard specifications for quality and workmanship indicated in the Contract Documents. All costs of this testing and providing statements and certificates shall be a subsidiary obligation of the Contractor and no extra charge to the County shall be allowed on account of such testing and certification.

E. Furnish incidental labor and facilities:

1. To provide access to work to be tested.
2. To obtain and handle samples at the project site or at the source of the product to be tested.
3. To facilitate inspections and tests.
4. For storage and curing of test samples.

F. Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.

1. When tests or inspections cannot be performed due to insufficient notice, Contractor shall reimburse County for laboratory personnel and travel expenses incurred due to Contractor's negligence.

G. Employ and pay for the services of the same or a separate, equally qualified independent testing laboratory to perform additional inspections, sampling and testing required for the Contractor's convenience and as approved by the County.

H. If the test results indicate the material or equipment complies with the Contract Documents, the County shall pay for the cost of the testing laboratory. If the tests and any subsequent retests indicate the materials and equipment fail to meet the requirements of the Contract Documents, the contractor shall pay for the laboratory costs directly to the testing firm or the total of such costs shall be deducted from any payments due the Contractor.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01510 TEMPORARY AND PERMANENT UTILITIES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

The Contractor shall be responsible for furnishing all requisite temporary utilities, i.e., power, water, sanitation, etc. The Contractor shall obtain and pay for all permits required as well as pay for all temporary usages. The Contractor shall remove all temporary facilities upon completion of work.

1.02 REQUIREMENTS OF REGULATORY AGENCIES

A. Comply with National Electric Code.

B. Comply with Federal, State and Local codes and regulations and with utility company requirements.

C. Comply with County Health Department regulations.

PART 2 PRODUCTS

2.01 MATERIALS, GENERAL

Materials for temporary utilities may be "used". Materials for electrical utilities shall be adequate in capacity for the required usage, shall not create unsafe conditions and shall not violate requirements of applicable codes and standards.

2.02 TEMPORARY ELECTRICITY AND LIGHTING

Arrange with the applicable utility company for temporary power supply. Provide service required for temporary power and lighting and pay all costs for permits, service and for power used.

2.03 TEMPORARY WATER

A. The Contractor shall arrange with Manatee County Utilities Customer Service office to provide water for construction purposes, i.e., meter, pay all costs for installation, maintenance and removal, and service charges for water used.

B. The Contractor shall protect piping and fitting against freezing.

2.04 TEMPORARY SANITARY FACILITIES

A. The Contractor shall provide sanitary facilities in compliance with all laws and regulations.

B. The Contractor shall service, clean and maintain facilities and enclosures.

PART 3 EXECUTION

3.01 GENERAL

A. The Contractor shall maintain and operate systems to assure continuous service.

B. The Contractor shall modify and extend systems as work progress requires.

3.02 REMOVAL

A. The Contractor shall completely remove temporary materials and equipment when their use is no longer required.

B. The Contractor shall clean and repair damage caused by temporary installations or use of temporary facilities.

END OF SECTION

SECTION 01570 TRAFFIC REGULATION

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. The Contractor shall be responsible for providing safe and expeditious movement of traffic through construction zones. A construction zone is defined as the immediate areas of actual construction and all abutting areas which are used by the Contractor and which interfere with the driving or walking public.

B. The Contractor shall remove temporary equipment and facilities when no longer required, restore grounds to original or to specified conditions.

1.02 TRAFFIC CONTROL

A. The necessary traffic control shall include, but not be limited to, such items as proper construction warning signs, signals, lighting devices, markings, barricades, channelization and hand signaling devices. The Contractor shall be responsible for installation and maintenance of all devices and detour routes and signage for the duration of the construction period. The Contractor shall utilize the appropriate traffic plan from the FDOT Maintenance of Traffic Standards, Series 600 of the FDOT Roadway & Traffic Design Standards, Latest Edition.

B. Should there be the necessity to close any portion of a roadway carrying vehicles or pedestrians the Contractor shall submit a Traffic Control Plan (TCP) at least 5 days before a partial or full day closure, and at least 8 days before a multi-day closure. TCP shall be submitted, along with a copy of their accreditation, by a certified IMSA or ATSA Traffic Control Specialist.

1. At no time will more than one (1) lane of a roadway be closed to vehicles and pedestrians without an approved road closure from the County Transportation Department. With any such closings, adequate provision shall be made for the safe expeditious movement of each.
2. All traffic control signs must be in place and inspected at least 1 day in advance of the closure. Multi-day closures notification signs shall be in place al least 3 days in advance of the closure. All signs must be covered when no in effect, and checked twice a day by the Worksite Traffic Supervisor when they are in effect.

C. The Contractor shall be responsible for removal, relocation, or replacement of any traffic control device in the construction area which exists as part of the normal preconstruction traffic control scheme. Any such actions shall be performed by the Contractor under the supervision and in accordance with the instructions of the applicable highway department unless otherwise specified.

D. The Contractor will consult with the County immediately on any vehicular or pedestrian safety or efficiency problem incurred as a result of construction of the project.

E. The Contractor shall provide ready access to businesses and homes in the project area during construction. The Contractor shall be responsible for coordinating this work with affected homeowners.

F. When conditions require the temporary installation of signs, pavement markings and traffic

barriers for the protection or workers and traffic, the entire array of such devices shall be depicted on working drawings for each separate stage of work. These drawings shall be submitted to the County for review and approval prior to commencement of work on the site.

G. Precast concrete traffic barriers shall be placed adjacent to trenches and other excavations deeper than six inches below the adjacent pavement surface.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01580 PROJECT IDENTIFICATION AND SIGNS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Furnish, install and maintain County project identification signs.

B. Remove signs on completion of construction.

C. Allow no other signs to be displayed except for traffic control and safety.

1.02 PROJECT IDENTIFICATION SIGN (COUNTY)

A. One painted sign, of not less than 32 square feet (3 square meters) area, with painted graphic content to include:

1. Title of Project.
2. Name of County.
3. Names and titles of authorities as directed by County.
4. Prime Contractor.

B. Graphic design, style of lettering and colors: As approved by the County.

C. Erect on the site at a lighted location of high public visibility, adjacent to main entrance to site, as approved by the County

1.03 INFORMATIONAL SIGNS

A. Painted signs with painted lettering, or standard products.

1. Size of signs and lettering: as required by regulatory agencies, or as appropriate to usage.
2. Colors: as required by regulatory agencies, otherwise of uniform colors throughout project.

B. Erect at appropriate locations to provide required information.

1.04 QUALITY ASSURANCE

A. Sign Painter: Professional experience in type of work required.

B. Finishes, Painting: Adequate to resist weathering and fading for scheduled construction period.

1.05 PUBLIC NOTIFICATION

A. Door Hangers: The Contractor shall generate and distribute door hangers to all residents who will be impacted by project construction.

1. Residents impacted include anyone who resides inside, or within 500 feet of project limits of construction.

B. Door Hangers shall be distributed prior to start of construction of the project. Hangers shall be affixed to doors of residents via elastic bands or tape.

EXAMPLE:

PLEASE PARDON THE INCONVENIENCE WHILE THE ROADWAY IS BEING RECONSTRUCTED IN YOUR NEIGHBORHOOD

This project consists of utility improvements and the reconstruction of ??? Boulevard from U.S. ??? to ??? Street West. The project is expected to begin in August, 200X and be completed in July 200X.

Location Map

WE HOPE TO KEEP ANY INCONVENIENCE TO A MINIMUM. HOWEVER, IF YOU HAVE ANY PROBLEMS, PLEASE CONTACT THE FOLLOWING:

A. Contractor
Contractor Address
Contractor Phone (Site Phone)

Project Manager
PM Address
PM Phone No. & Ext.

B. Project Inspector
Inspector Phone Number

AFTER HOURS EMERGENCY NUMBER - (941) 747-HELP
THANK YOU FOR YOUR UNDERSTANDING AND PATIENCE
MANATEE COUNTY GOVERNMENT - PROJECT MANAGEMENT DEPT.

PART 2 PRODUCTS

2.01 SIGN MATERIALS

A. Structure and Framing: May be new or used, wood or metal, in sound condition structurally adequate to work and suitable for specified finish.

B. Sign Surfaces: Exterior softwood plywood with medium density overlay, standard large sizes to minimize joints.

1. Thickness: As required by standards to span framing members, to provide even, smooth surface without waves or buckles.

C. Rough Hardware: Galvanized.

D. Paint: Exterior quality, as specified in the Contract Documents.

PART 3 EXECUTION

3.01 PROJECT IDENTIFICATION SIGN

A. Paint exposed surface or supports, framing and surface material; one coat of primer and one coat of exterior paint.

B. Paint graphics in styles, size and colors selected.

3.02 MAINTENANCE

The Contractor shall maintain signs and supports in a neat, clean condition; repair damages to structures, framing or sign.

3.03 REMOVAL

The Contractor shall remove signs, framing, supports and foundations at completion of project.

END OF SECTION

SECTION 01590 COUNTY'S FIELD OFFICE

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

Contractor shall furnish, install and maintain one temporary field office during the entire construction period for the sole use of the County.

1.02 OTHER REQUIREMENTS

A. Prior to installation of the County's field office, the Contractor shall consult with the County on location, access and related facilities.

B. All site use approvals shall be obtained by the Contractor.

C. Upon completion of construction, the Contractor shall remove the field office and restore the site to its original condition.

1.03 REQUIREMENTS FOR FACILITIES

A. Construction:

1. The field office shall be structurally sound, weather tight, with floors raised aboveground.
2. At Contractor's option, portable or mobile buildings may be used.

B. Office for Field Engineer:

1. A separate office for sole use of the County with secure entrance doors, key and lock shall be provided.
2. Area: 250 sq. ft. minimum, with minimum dimension of 8 feet.
3. Windows:
   a. Minimum of three (3).
   b. Operable sash and insect screens.
   c. Locate field office to provide maximum view of construction areas.
4. Furnishings:
   a. Two standard size chairs and desks with three drawers each.
   b. One drafting table: 39"x72"x36" high, with one equipment drawer.
   c. One metal, double-door storage cabinet with lock and key.
   d. One plan rack to hold a minimum of six sets of project drawings.
   e. One standard four-drawer legal-size metal filing cabinet with lock and key.
   f. Six linear feet of bookshelves.
   g. One swivel arm chair.
   h. Two straight chairs.
   i. One drafting table stool.
   j. One waste basket.
   k. One tackboard, 36"x30".
   l. One fire extinguisher.
   m. One first aid kit.
5. Services:
   a. Adequate lighting.
   b. Exterior lighting at entrance door.

c. Automatic heating and mechanical cooling equipment to maintain comfort conditions.
d. Minimum of four 110 volt duplex electric convenience outlets, at least one on each wall.
e. Electric distribution panel: Two circuits minimum 110 volt, 60 hertz service.
f. Convenient access to drinking water and toilet facilities.
g. Telephone: One private direct line instrument.
h. Fax: combination fax/duplicator.

PART 2 PRODUCTS

2.01 MATERIALS, EQUIPMENT, FURNISHINGS

May be new or used, but must be serviceable, adequate for required purpose and must adhere to all applicable codes or regulations including the Manatee County Building Codes.

PART 3 EXECUTION

3.01 PREPARATION

Fill and grade site as necessary for temporary structure to provide positive surface drainage.

3.02 INSTALLATION

A. Construct temporary field office on proper foundation and provide connections for all utility services.

1. Secure portable or mobile building when used.
2. Provide steps and landings at entrance doors.

END OF SECTION

SECTION 01600 MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Material and equipment incorporated into the work:

1. Conform to applicable specifications and standards.
2. Comply with size, make, type and quality specified, or as specifically approved in writing by the County.
3. Manufactured and Fabricated Products:
   a. Design, fabricate and assemble in accordance with the best engineering and shop practices.
   b. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
   c. Two or more items of the same kind shall be identical and manufactured by the same manufacturer.
   d. Products shall be suitable for service conditions.
   e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
4. Do not use material or equipment for any purpose other than that for which it is specified.
5. All material and equipment incorporated into the project shall be new.

1.02 MANUFACTURER'S INSTRUCTIONS

A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to County. Maintain one set of complete instructions at the job site during installation and until completion.

B. Handle, install, connect, clean, condition and adjust products in strict accordance with such instructions and in conformity with specified requirements. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with County prior to proceeding. Do not proceed with work without clear instructions.

1.03 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site.

1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals and that products are properly protected and undamaged.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.04 SUBSTITUTIONS AND PRODUCT OPTIONS

Contractor's Options:

1. For products specified only by reference standard, select any product meeting that standard.
2. For products specified by naming one or more products or manufacturers and "or equal", Contractor must submit a request for substitutions of any product or manufacturer not specifically named in a timely manner so as not to adversely affect the construction schedule.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01620 STORAGE AND PROTECTION

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

Provide secure storage and protection for products to be incorporated into the work and maintenance and protection for products after installation and until completion of Work.

1.02 STORAGE

A. Store products immediately on delivery and protect until installed in the Work, in accord with manufacturer's instructions, with seals and labels intact and legible.

B. Exterior Storage

1. Provide substantial platform, blocking or skids to support fabricated products above ground to prevent soiling or staining.
   a. Cover products, subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.
   b. Prevent mixing of refuse or chemically injurious materials or liquids.

C. Arrange storage in manner to provide easy access for inspection.

1.03 MAINTENANCE OF STORAGE

A. Maintain periodic system of inspection of stored products on scheduled basis to assure that:

1. State of storage facilities is adequate to provide required conditions.
2. Required environmental conditions are maintained on continuing basis.
3. Surfaces of products exposed to elements are not adversely affected. Any weathering of products, coatings and finishes is not acceptable under requirements of these Contract Documents.

B. Mechanical and electrical equipment which requires servicing during long term storage shall have complete manufacturer's instructions for servicing accompanying each item, with notice of enclosed instructions shown on exterior of package.

1. Equipment shall not be shipped until approved by the County. The intent of this requirement is to reduce on-site storage time prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the County.
2. All equipment having moving parts such as gears, electric motors, etc. and/or instruments shall be stored in a temperature and humidity controlled building approved by the County until such time as the equipment is to be installed.
3. All equipment shall be stored fully lubricated with oil, grease, etc. unless otherwise instructed by the manufacturer.
4. Moving parts shall be rotated a minimum of once weekly to insure proper lubrication and to avoid metal-to-metal "welding". Upon installation of the equipment, the Contractor shall start the equipment, at least half load, once weekly for an adequate period of time to insure that the equipment does not deteriorate

from lack of use.

5. Lubricants shall be changed upon completion of installation and as frequently as required, thereafter during the period between installation and acceptance.
6. Prior to acceptance of the equipment, the Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guaranty the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the Contractor's expense.

1.04 PROTECTION AFTER INSTALLATION

A. Provide protection of installed products to prevent damage from subsequent operations. Remove when no longer needed, prior to completion of work.

B. Control traffic to prevent damage to equipment and surfaces.

C. Provide coverings to protect finished surfaces from damage.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01700 CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

Comply with requirements stated in Conditions of the Contract and in Specifications for administrative procedures in closing out the work.

1.02 SUBSTANTIAL COMPLETION

A. The Contractor shall submit the following items when the Contractor considers the work to be substantially complete:

1. A written notice that the work, or designated portion thereof, is substantially complete.
2. A list of items to be completed or corrected.

B. Within a reasonable time after receipt of such notice, the County shall make an inspection to determine the status of completion.

C. Project record documents and operations and maintenance manuals must be submitted before the project shall be considered substantially complete.

D. If the County determines that the work is not substantially complete:

1. The County shall notify the Contractor in writing, stating the reasons.
2. The Contractor shall remedy the deficiencies in the work and send a second written notice of substantial completion to the County.
3. The County shall reinspect the work.

E. When the County finds that the work is substantially complete:

1. The Engineer shall prepare and deliver to the County a tentative Certificate of Substantial Completion (Manatee County Project Management Form PMD-8) with a tentative list of the items to be completed or corrected before final payment.
2. The Engineer shall consider any objections made by the County as provided in Conditions of the Contract. When the Engineer considers the work substantially complete, he will execute and deliver to the County a definite Certificate of Substantial Completion (Manatee County Project Management Form PMD-8) with a revised tentative list of items to be completed or corrected.

1.03 FINAL INSPECTION

A. When the Contractor considered the work to be complete, he shall submit written certification stating that:

1. The Contract Documents have been reviewed.
2. The work has been inspected for compliance with Contract Documents.
3. The work has been completed in accordance with Contract Documents.
4. The equipment and systems have been tested in the presence of the County's representative and are operational.
5. The work is completed and ready for final inspection.

B. The County shall make an inspection to verify the status of completion after receipt of such certification.

C. If the County determines that the work is incomplete or defective:

1. The County shall promptly notify the Contractor in writing, listing the incomplete or defective work.
2. The Contractor shall take immediate steps to remedy the stated deficiencies and send a second written certification to County that the work is complete.
3. The County shall reinspect the work.

D. Upon finding the work to be acceptable under the Contract Documents, the County shall request the Contractor to make closeout submittals.

E. For each additional inspection beyond a total of three (3) inspections for substantial and final completion due to the incompleteness of the work, the Contractor shall reimburse the County's fees.

1.04 CONTRACTOR'S CLOSEOUT SUBMITTALS TO COUNTY

A. Project Record Documents (prior to substantial completion).

B. Operation and maintenance manuals (prior to substantial completion).

C. Warranties and Bonds.

D. Evidence of Payment and Release of Liens: In accordance with requirements of General and Supplementary Conditions.

E. Certification letter from Florida Department of Transportation and Manatee County Department of Transportation, as applicable.

F. Certificate of Insurance for Products and Completed Operations.

G. Final Reconciliation, Warranty Period Declaration, and Contractor's Affidavit (Manatee County Project Management Form PMD-9).

1.05 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit a final statement of accounting to the County.

B. Statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum.
2. Additions and deductions resulting from:
   a. Previous Change Orders
   b. Unit Prices
   c. Penalties and Bonuses
   d. Deductions for Liquidated Damages
   e. Other Adjustments
3. Total Contract Sum, as adjusted.
4. Previous payments.

5. Sum remaining due.

C. Project Management shall prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

1.06 FINAL APPLICATION FOR PAYMENT

Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01710 CLEANING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

Execute cleaning during progress of the work and at completion of the work, as required by the General Conditions.

1.02 DISPOSAL REQUIREMENTS

Conduct cleaning and disposal operations to comply with all Federal, State and Local codes, ordinances, regulations and anti-pollution laws.

PART 2 PRODUCTS

2.01 MATERIALS

A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.

B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.

C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 EXECUTION

3.01 DURING CONSTRUCTION

A. Execute periodic cleaning to keep the work, the site and adjacent properties free from accumulation of waste materials, rubbish and wind-blown debris, resulting from construction operations.

B. Provide on-site containers for the collection of waste materials, debris and rubbish.

C. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas away from the site.

3.02 DUST CONTROL

A. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.

B. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.

3.03 FINAL CLEANING

A. Employ skilled workmen for final cleaning.

B. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.

C. Prior to final completion or County occupancy, Contractor shall conduct an inspection of sight-exposed interior and exterior surfaces and all work areas to verify that the entire work is clean.

END OF SECTION

SECTION 01720 PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Contractor shall maintain at the site for the County one record copy of:

1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. County's field orders or written instructions.
6. Approved shop drawings, working drawings and samples.
7. Field test records.
8. Construction photographs.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Store documents and samples in Contractor's field office apart from documents used for construction.

1. Provide files and racks for storage of documents.
2. Provide locked cabinet or secure storage space for storage of samples.

B. File documents and samples in accordance with CSI format.

C. Maintain documents in a clean, dry, legible, condition and in good order. Do not use record documents for construction purposes.

D. Make documents and samples available at all times for inspection by the County.

1.03 MARKING DEVICES

A. Provide felt tip marking pens for recording information in the color code designated by the County.

1.04 RECORDING

A. Label each document "PROJECT RECORD" in neat large printed letters.

B. Record information concurrently with construction progress.

C. Do not conceal any work until required information is recorded.

D. Drawings; Legibly mark to record actual construction:

1. All underground piping with elevations and dimensions. Changes to piping location. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements. Actual installed pipe material, class, etc. Locations of drainage ditches, swales, water lines and force mains shall be shown every 200 feet (measured along the centerline) or alternate lot lines, whichever is closer. Dimensions at these locations shall indicate

distance from centerline of right-of-way to the facility.

2. Field changes of dimension and detail.
3. Changes made by Field Order or by Change Order.
4. Details not on original contract drawings.
5. Equipment and piping relocations.
6. Locations of all valves, fire hydrants, manholes, water and sewer services, water and force main fittings, underdrain cleanouts, catch basins, junction boxes and any other structures located in the right-of-way or easement, shall be located by elevation and by station and offset based on intersection P.I.'s and centerline of right-of-way. For facilities located on private roads, the dimensioning shall be from centerline of paving or another readily visible baseline.
7. Elevations shall be provided for all manhole rim and inverts; junction box rim and inverts; catch basin rim and inverts; and baffle, weir and invert elevations in control structures. Elevations shall also be provided at the PVI's and at every other lot line or 200 feet, whichever is less, of drainage swales and ditches. Bench marks and elevation datum shall be indicated.
8. Slopes for pipes and ditches shall be recalculated, based on actual field measured distances, elevations, pipe sizes, and type shown. Cross section of drainage ditches and swales shall be verified.
9. Centerline of roads shall be tied to right-of-way lines. Elevation of roadway centerline shall be given at PVI's and at all intersections.
10. Record drawings shall show bearings and distances for all right-of-way and easement lines, and property corners.
11. Sidewalks, fences and walls, if installed at the time of initial record drawing submittal, shall be located every 200 feet or alternate lot lines, whichever is closer. Dimensions shall include distance from the right-of-way line and the back of curb and lot line or easement line.
12. Sanitary sewer mainline wyes shall be located from the downstream manhole. These dimensions shall be provided by on-site inspections or televiewing of the sewer following installation.
13. Elevations shall be provided on the top of operating nuts for all water and force main valves.
14. Allowable tolerance shall be ± 6.0 inches for horizontal dimensions. Vertical dimensions such as the difference in elevations between manhole inverts shall have an allowable tolerance of ± 1/8 inch per 50 feet (or part thereof) of horizontal distance up to a maximum tolerance of ± 2 inch.
15. Properly prepared record drawings on mylar, together with two copies, shall be certified by a design professional (Engineer and/or Surveyor registered in the State of Florida), employed by the Contractor, and submitted to the County.

E. Specifications and Addenda; Legibly mark each Section to record:

1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.
2. Changes made by field order or by change order.

F. Shop Drawings (after final review and approval):

1. Five sets of record drawings for each process equipment, piping, electrical system and instrumentation system.

1.05 SUBMITTAL

A. Prior to substantial completion and prior to starting the bacteria testing of water lines, deliver signed and sealed Record Documents and Record Drawings to the County. These will be reviewed and verified by the inspector. If there are any required changes or additions, these shall be completed and the entire signed and sealed set resubmitted prior to final pay application.

B. The Contractor shall employ a Professional Engineer or Surveyor registered in the State of Florida to verify survey data and properly prepare record drawings. Record drawings shall be certified by the professional(s) (Engineer or Surveyor licensed in Florida), as stipulated by the Land Development Ordinance and submitted on signed and sealed paper drawings, signed and dated mylar drawings together with an AutoCAD version on a recordable compact disk (CD).

C. The CD shall contain media in AutoCad Version 2004 or later, or in any other CAD program compatible with AutoCad in DWG or DXF form. All fonts, line types, shape files or other pertinent information used in the drawing and not normally included in AutoCad shall be included on the media with a text file or attached noted as to its relevance and use.

D. Accompany submittal with transmittal letter, containing:

1. Date.
2. Project title and number.
3. Contractor's name and address.
4. Title and number of each Record Document.
5. Signature of Contractor or his authorized representative.

Note: The data required to properly prepare these record drawings shall be obtained at the site, at no cost to the County by the responsible design professional or his/her duly appointed representative. The appointed representative shall be a qualified employee of the responsible design professional or a qualified inspector retained by the responsible design professional on a project-by-project basis.

PART 2 STANDARDS

2.01 MINIMUM RECORD DRAWING STANDARDS FOR ALL RECORD DRAWINGS SUBMITTED TO MANATEE COUNTY

A. Record drawings shall be submitted to at least the level of detail in the contract documents. It is anticipated that the original contract documents shall serve as at least a background for all record information. Original drawings in CAD format may be requested of the County.

B. Drawings shall meet the criteria of paragraph 1.04 D above.

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01730 OPERATING AND MAINTENANCE DATA

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Compile product data and related information appropriate for County's maintenance and operation of products furnished under Contract.

Prepare operating and maintenance data as specified in this and as referenced in other pertinent sections of Specifications.

B. Instruct County's personnel in maintenance of products and equipment and systems.

C. Provide three (3) sets of operating and maintenance manuals for each piece of equipment provided within this Contract.

1.02 FORM OF SUBMITTALS

A. Prepare data in form of an instructional manual for use by County's personnel.

B. Format:

1. Size: 8-1/2 inch x 11 inch
2. Paper: 20 pound minimum, white, for typed pages
3. Text: Manufacturer's printed data or neatly typewritten
4. Drawings:
   a. Provide reinforced punched binder tab, bind in with text.
   b. Fold larger drawings to size of text pages.
5. Provide fly-leaf for each separate product or each piece of operating equipment.
   a. Provide typed description of product and major component parts of equipment.
   b. Provide indexed tabs.
6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:
   a. Title of Project.
   b. Identity of separate structures as applicable.
   c. Identity of general subject matter covered in the manual.

C. Binders:

1. Commercial quality three-ring binders with durable and cleanable plastic covers.
2. Maximum ring size: 1 inch.
3. When multiple binders are used, correlate the data into related consistent groupings.

1.03 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Submit three copies of complete manual in final form.

B. Content for each unit of equipment and system, as appropriate:

1. Description of unit and component parts.

a. Function, normal operating characteristics and limiting conditions.
b. Performance curves, engineering data and tests.
c. Complete nomenclature and commercial number of replaceable parts.

2. Operating Procedures:
   a. Start-up, break-in, routine and normal operating instructions.
   b. Regulation, control, stopping, shut-down and emergency instructions.
   c. Summer and winter operating instructions.
   d. Special operating instructions.
3. Maintenance Procedures:
   a. Routine operations.
   b. Guide to "trouble-shooting".
   c. Disassembly, repair and reassembly.
   d. Alignment, adjusting and checking.
4. Servicing and lubricating schedule.
   a. List of lubricants required.
5. Manufacturer's printed operating and maintenance instructions.
6. Description of sequence of operation by control manufacturer.
7. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
   a. List of predicted parts subject to wear.
   b. Items recommended to be stocked as spare parts.
8. As installed control diagrams by controls manufacturer.
9. Each contractor's coordination drawings.
   a. As installed color coded piping diagrams.
10. Charts of valve tag numbers, with location and function of each valve.
11. List of original manufacturer's spare parts, manufacturer's current prices and recommended quantities to be maintained in storage.
12. Other data as required under pertinent sections of specifications.

C. Content, for each electric and electronic system, as appropriate:

1. Description of system and component parts.
   a. Function, normal operating characteristics and limiting conditions.
   b. Performance curves, engineering data and tests.
   c. Complete nomenclature and commercial number of replaceable parts.
2. Circuit directories of panelboards.
   a. Electrical service.
      b. Controls.
   c. Communications.
3. As-installed color coded wiring diagrams.
4. Operating procedures:
   a. Routine and normal operating instructions.
   b. Sequences required.
   c. Special operating instructions.
5. Maintenance procedures:
   a. Routine operations.
   b. Guide to "trouble-shooting".
   c. Disassembly, repair and reassembly.
   d. Adjustment and checking.
6. Manufacturer's printed operating and maintenance instructions.
7. List of original manufacture's spare parts, manufacturer's current prices and recommended quantities to be maintained in storage.
8. Prepare and include additional data when the need for such data becomes

apparent during instruction of County's personnel.

D. Prepare and include additional data when the need for such data becomes apparent during instruction on County's personnel.

E. Additional requirements for operating and maintenance data: Respective sections of Specifications.

1.04 SUBMITTAL SCHEDULE

A. Submit one copy of completed data in final form fifteen days prior to substantial completion.

1. Copy will be returned after substantial completion, with comments (if any).

B. Submit two copies of approved data in final form. Final acceptance will not be provided until the completed manual is received and approved.

1.05 INSTRUCTION OF COUNTY'S PERSONNEL

A. Prior to final inspection or acceptance, fully instruct County's designated operating and maintenance personnel in operation, adjustment and maintenance of products, equipment and systems.

B. Operating and maintenance manual shall constitute the basis of instruction.

1. Review contents of manual with personnel in full detail to explain all aspects of operations and maintenance.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01740 WARRANTIES AND BONDS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Compile specified warranties and bonds.

B. Compile specified service and maintenance contracts.

C. Co-execute submittals when so specified.

D. Review submittals to verify compliance with Contract Documents.

E. Submit to County for review and transmittal.

1.02 SUBMITTAL REQUIREMENTS

A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers and subcontractors.

B. Number of original signed copies required: Two each.

C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.

1. Product or work item.
2. Firm, with name of principal, address and telephone number.
3. Scope.
4. Date of beginning of warranty, bond or service and maintenance contract.
5. Duration of warranty, bond or service maintenance contract.
6. Provide information for County's personnel:
   a. Proper procedure in case of failure.
   b. Instances which might affect the validity of warranty or bond.
7. Contractor, name of responsible principal, address and telephone number.

1.03 FORM OF SUBMITTALS

A. Prepare in duplicate packets.

B. Format:

1. Size 8-1/2 inch x 11 inch punched sheets for standard 3-ring binder. Fold larger sheets to fit into binders.
2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List:
   a. Title of Project.
   b. Name of Contractor.

C. Binders: Commercial quality, three-ring, with durable and cleanable plastic covers.

1.04 TIME OF SUBMITTALS

A. Make submittals within ten days after date of substantial completion and prior to final request for payment.

B. For items of work, where acceptance is delayed materially beyond date of substantial completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.05 SUBMITTALS REQUIRED

A. Submit warranties, bonds, service and maintenance contracts as specified in respective sections of Specifications.

B. Approval by the County of all documents required under this section is a pre-requisite to requesting a final inspection and final payment

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

DIVISION 2 SITE WORK

SECTION 02064 MODIFICATIONS TO EXISTING STRUCTURES, PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SCOPE OF WORK

Furnish all labor, materials, equipment and incidentals required to modify, alter and/or convert existing structures as shown or specified and as required for the installation of piping, mechanical equipment and appurtenances. Existing piping and equipment shall be removed and dismantled as necessary for the performance of facility alterations in accordance with the requirements herein specified.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 GENERAL

A. The Contractor shall cut, repair, reuse, excavate, demolish or otherwise remove parts of the existing structures or appurtenances, as indicated on the Contract Drawings, herein specified, or necessary to permit completion of the work under this Contract. The Contractor shall dispose of surplus materials resulting from the above work in an approved manner. The work shall include all necessary cutting and bending of reinforcing steel, structural steel, or miscellaneous metal work found embedded in the existing structures.

B. The Contractor shall dismantle and remove all existing equipment, piping, and other appurtenances required for the completion of the work. Where called for or required, the contractor shall cut existing pipelines for the purpose of making connections thereto. Anchor bolts for equipment and structural steel removed shall be cut off one inch below the concrete surface. Surface shall be finished as specified in the Contract Documents.

C. At the time that a new connection is made to an existing pipeline, additional new piping, extending to and including a new valve, shall be installed. Pipe anchorage, if required, is part of the installation shall also be installed as directed by the County.

D. No existing structure, equipment, or appurtenance shall be shifted, cut, removed, or otherwise altered except with the express approval of and to the extent approved by the County.

E. When removing materials or portions of existing utility pipelines and/or structures or when making openings in walls and partitions, the Contractor shall take all precautions and use all necessary barriers and other protective devices so as not to damage the structures beyond the limits necessary for the new work, and not to damage the structures or contents by falling or flying debris. Unless otherwise permitted, line drilling will be required in cutting existing concrete.

F. Materials and equipment removed in the course of making alterations and additions shall remain the property of the County, except that items not salvageable, as determined by the County, shall become the property of the Contractor to be disposed of by him off the

work site at his own place of disposal. Operating equipment shall be thoroughly cleaned, lubricated, and greased for protection during prolonged storage.

G. All alterations to existing utility pipes and structures shall be done at such time and in such manner as to comply with the approved time schedule. So far as possible before any part of the work is started, all tools, equipment, and materials shall be assembled and made ready so that the work can be completed without delay.

H. All workmanship and new materials involved in constructing the alterations shall conform to the General Specifications for the classes of work insofar as such specifications are applicable.

I. All cutting of existing concrete or other material to provide suitable bonding to new work shall be done in a manner to meet the requirements of the respective section of these Specifications covering the new work. When not covered, the work shall be carried on in the manner and to the extent directed by the Resident Project Representative.

J. Surfaces of seals visible in the completed work shall be made to match as nearly as possible the adjacent surfaces.

K. Non-shrink grout shall be used for setting wall castings, sleeves, leveling pump bases, doweling anchors into existing concrete and elsewhere as shown.

L. Where necessary or required for the purpose of making connections, the Contractor shall cut existing pipelines in a manner to provide an approved joint. Where required, he shall use flanges, or provide Dresser Couplings, all as required.

M. The Contractor shall provide flumes, hoses, piping and other related items to divert or provide suitable plugs, bulkheads, or other means to hold back the flow of water or other liquids, all as required in the performance of the work under this Contract.

N. Care shall be taken not to damage any part of existing buildings or foundations or outside structures.

3.02 CONNECTING TO EXISTING PIPING AND EQUIPMENT

The Contractor shall verify exact location, material, alignment, joint, etc. of existing piping and equipment prior to making the connections called out in the Drawings. The verifications shall be performed with adequate time to correct any potential alignment or other problems prior to the actual time of connection. A Manatee County representative must be present for all tie-ins for a visual inspection.

3.03 REMOVAL AND ABANDONMENT OF ASBESTOS CEMENT PIPE AND APPURTENANCES

A. All work associated with the removal or abandonment of existing asbestos cement pipe and appurtenances shall be performed by a licensed asbestos abatement contractor or subcontractor registered in the State of Florida. After removal of the facilities, all trenches shall be backfilled in accordance with the Contract Documents. The cost of disposing of the removed materials shall be borne by the Contractor.

B. The asbestos abatement contractor or subcontractor shall contact the appropriate regulatory agencies prior to removal or abandonment of any asbestos material and shall

obtain all required permits and licenses and issue all required notices. The Contractor shall be responsible for all fees associated with permits, licenses and notices to the governing regulatory agencies. An asbestos manifest form must accompany each and every shipment of such pipe or pipe material waste to the Manatee County Lena Road Landfill. Prior to each shipment, a minimum of 24 hours notice to the Landfill field office (Phone #748-5543) is required.

C. All work associated with removal or abandonment of asbestos cement pipe and appurtenances shall be performed in accordance with the standards listed below and all other applicable local, State, or Federal standards.

1. Florida Administrative Code, Chapter 62-257, "Asbestos Program".
2. National Emission Standards Hazardous Air Pollution (NESHAP), 40 CFR, Part 61, Subpart M, latest revision.
3. Occupational Safety and Health Act, 29 CFR, 1910.1001 - Asbestos.
4. Title 40 CFR, Part 763, Asbestos.
5. Florida Statute Title XXXII, Chapter 469, Asbestos Abatement.

3.04 IN-PLACE GROUTING OF EXISTING PIPE

A. Where water and wastewater utility pipes are to be abandoned in place, they shall be filled with a sand/cement grout as specified herein. When such pipes are constructed with asbestos cement materials, the abandonment activities shall be performed by a licensed asbestos abatement contractor as specified in these Specifications.

B. Grout shall be injected within the pipe sections indicated on the Drawings. The ends of these sections shall be capped and/or plugged. The grouting program shall consist of pumping sand-cement grout with suitable chemical additives at pressures necessary to fill the pipe sections shown on the Drawings to prevent the potential for future collapse.

C. The pump used for grouting should be a continuous flow, positive displacement model with a pugmill type mixing vat having a minimum shaft speed of 60 rpm and incorporated as an integral part of the equipment. Alternate equipment may be used subject to the approval of the County. The rate of pumping shall not exceed six (6) cubic feet per minute. The pumping pressures shall be in the range of 100 to 150 psi.

D. The Contractor shall provide standpipes and/or additional means of visual inspection as required by the County to determine if adequate grout material has filled the entire pipe section(s). The Contractor shall make necessary provisions for the County's representative to monitor all grouting operations.

E. All pipe to be abandoned shall be capped or plugged with a fitting or material that will prevent soil or other material from entering the pipe. All caps and plugs shall be subject to approval by the County.

END OF SECTION

SECTION 02100 SITE PREPARATION

PART 1 GENERAL

1.01 SCOPE OF WORK

A. This Section covers clearing, grubbing and stripping of the project site and/or along the pipeline route.

B. The Contractor shall clear and grub all of the area within the limits of construction or as required, which includes, but is not limited to utility easements. The width of the area to be cleared shall be reviewed by the County prior to the beginning of any clearing.

C. The Contractor's attention is directed to any Soil Erosion and Sediment Control Ordinances in force in Manatee County. The Contractor shall comply with all applicable sections of these ordinances.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 CLEARING

The surface of the ground, for the area to be cleared and grubbed shall be completely cleared of all timber, brush, stumps, roots, grass, weeds, rubbish and all other objectionable obstructions resting on or protruding through the surface of the ground. However, trees shall be preserved as hereinafter specified unless otherwise designated by the County. Clearing operations shall be conducted so as to prevent damage to existing structures and installations and to those under construction, so as to provide for the safety of employees and others. Soil erosion control devices such as hay bales and silt fences shall be installed to satisfy all Federal, State and County requirements.

3.02 GRUBBING

Grubbing shall consist of the complete removal of all stumps, roots larger than 1-1/2 inches in diameter, matted roots, brush, timber, logs and any other organic or metallic debris not suitable for foundation purposes, resting on, under or protruding through the surface of the ground to a depth of 18 inches below the subgrade. All depressions excavated below the original ground surface for or by the removal of such objects, shall be refilled with suitable materials and compacted to a density conforming to the surrounding ground surface.

3.03 STRIPPING

In areas so designated, topsoil shall be stockpiled. Topsoil so stockpiled shall be protected until it is placed as specified. The County shall have the option to receive all excess topsoil materials. The Contractor shall pay all equipment and labor cost to deliver excess top soil material to a remote site chosen by the County within a five mile radius of the construction site. Should County not choose to receive any or all excess topsoil materials, the Contractor shall dispose of said material at no additional cost to County.

3.04 DISPOSAL OF CLEARED AND GRUBBED MATERIAL

The Contractor shall dispose of all material and debris from the clearing and grubbing operation by hauling such material and debris off site. The cost of disposal (including hauling) of cleared and grubbed material and debris shall be considered a subsidiary obligation of the Contractor; the cost of which shall be included in the prices bid for the various classes of work.

3.05 PRESERVATION OF TREES

Those trees which are not designated for removal by the County shall be carefully protected from damage. The Contractor shall erect such barricades, guards and enclosures as may be considered necessary by him for the protection of the trees during all construction operation.

3.06 PRESERVATION OF DEVELOPED PRIVATE PROPERTY

A. The Contractor shall exercise extreme care to avoid unnecessary disturbance of developed private property adjacent to proposed project site. Trees, shrubbery, gardens, lawns and other landscaping, which are not designated by the County to be removed, shall be replaced and replanted to restore the construction easement to the condition existing prior to construction.

B. All soil preservation procedures and replanting operations shall be under the supervision of a nursery representative experienced in such operations.

C. Improvements to the land such as fences, walls, outbuildings and other structures which of necessity must be removed, shall be replaced with equal quality materials and workmanship.

D. The Contractor shall clean up the construction site across developed private property directly after construction is completed upon approval of the County.

3.07 PRESERVATION OF PUBLIC PROPERTY

The appropriate paragraphs of these Specifications shall apply to the preservation and restoration of public lands, parks, rights-of-way, easements and all other damaged areas. This includes, but is not limited to the trimming of trees damaged by contractor's equipment.

END OF SECTION

SECTION 02220 EXCAVATION, BACKFILL, FILL AND GRADING FOR STRUCTURES

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Structural excavation shall consist of the removal of material for the construction of foundations for structures and other excavation designated on the drawings or in these specifications.

B. Structural excavation and backfill shall consist of furnishing material, if necessary and placing and compacting backfill material around structures to the lines and grades designated on the drawings, as specified or directed by the County.

C. Structural excavation and backfill shall include the furnishing of all materials, equipment and other facilities which may be necessary to perform the excavations, place and compact the backfill, install sheeting and bracing, and carry out any necessary dewatering. It shall also include the wasting or disposal of surplus excavated material in a manner and in locations approved by the County.

D. The Contractor is responsible for the protection of every tree which is scheduled to remain in the project area. This includes trees which may or may not be shown on the plans. Every tree shall be adequately protected in place at no additional cost to the County. This includes, but is not limited to, protecting the root systems and adjusting grades as necessary for tree/root protection.

1.02 QUALITY ASSURANCE

A. Testing Agency:

1. In place soil compaction tests shall be performed by a qualified testing laboratory.
2. Compaction tests shall be taken every 500 feet, except in the road crossings or road shoulders. Tests are to be taken according to current FDOT Standards.

B. Reference Standards:

1. American Society for Testing and Materials (ASTM):
   a. ASTM D1557, Moisture-Density Relations of Soils Using 10-lb. (4.5-kg) Rammer and 18-in. (457-mm) Drop.

1.03 JOB CONDITIONS

A. The Contractor shall provide, operate and maintain all necessary pumps, discharge lines, well points, etc., in sufficient number and capacity to keep all excavation, bases, pits, etc., free from seepage, standing or running water at all times throughout the period of construction.

B. The Contractor shall assume all responsibility for the security of the excavation required, employing bracing, lining or other accepted means necessary to accomplish same.

C. Excavated areas shall be cleared of all debris, water, slush, muck, clay and soft or loose earth and shall be conditioned to the entire satisfaction of the County.

D. All excavated material unsuitable for use or which will not be used shall be disposed of in a manner consistent with State and County regulation.

E. All unsuitable organic materials, roots, logs, etc., found during excavation shall be removed by the Contractor and the trench shall be refilled with suitable material.

PART 2 PRODUCTS

2.01 MATERIAL FOR CONTROLLED FILL

A. Composition: Only approved material free from organic matter and lumps of clay, shall be used for backfill. Excavated earth free from debris or organic material may be used for backfilling foundations or fill.

B. Crushed stone and shell shall meet or exceed current FDOT Standards.

2.02 UNSUITABLE MATERIAL

Unsuitable material shall be defined as highly organic soil per ASTM D2487 Group PT. This includes, but is not limited to, such items as topsoil, roots, vegetable matter, trash, debris, and clays that cannot be dried sufficiently to obtain specified compaction.

PART 3 EXECUTION

3.01 INSPECTION

A. The Contractor shall verify that work preceding the affected work of this Section has been satisfactorily completed.

B. Conditions adversely affecting the work of this Section shall be corrected to the satisfaction of the County.

3.02 REMOVAL OF UNSUITABLE MATERIALS

A. The Contractor shall remove unsuitable material from within the limits of the Work.

B. Materials meeting requirements for controlled fill shall be stockpiled as necessary and in such a manner satisfactory to the County.

C. All material excavated shall be placed so as to minimize interference with public travel and to permit proper access for inspection of the work.

3.03 EXCAVATION

A. When concrete or shell subbase footing is to rest on an excavated surface, care shall be taken not to disturb the natural soil. Final removal and replacement of the foundation material and subbase compaction to grade shall not be made until just before the concrete or masonry is placed.

B. When any structural excavation is completed, the Contractor shall notify the County who will make an inspection of the excavation. No concrete or masonry shall be placed until the excavation has been approved by the County.

C. The elevations of the footing bottom and the base slab as shown on the Drawings, shall be considered as approximate and the County may order in writing, such changes in dimensions or elevations of the footings and slab base as necessary to secure satisfactory foundations.

D. All excavation shall be made within an area bounded by lines five feet outside and parallel to the exterior walls of the structure to allow for correct forming, shoring and inspection of foundation work. Pouring of concrete against earth side walls shall not be permitted.

E. If the ground is excavated below the grade called for by the Drawings or becomes unstable due to the Contractor's carelessness or operations, the ground shall be excavated to undisturbed native soil before continuing concreting operations.

F. If in the opinion of the County, the material at or below the normal grade of the bottom of the trench is unsuitable for pipe or structure foundation, it shall be removed to the depth directed by the County and if so directed, replaced by crushed stone or washed shell.

3.04 STRUCTURAL BACKFILL

A. Structural backfill shall not be placed until the footings or other portions of the structure or facility have been inspected by the County and approved for backfilling.

B. A minimum of 1-1/2" layer of lean concrete shall be placed as a working mat for the concrete base slabs and footings if required by the County.

C. Fill shall be placed in uniform layers not more than 12" thick and compacted to a minimum of 98 percent of the maximum density determined by ASTM D1557, Method A or C, or as directed by the County. The Contractor shall securely tamp the backfill with pneumatic rammer around all wall foundations. The method of compaction shall be satisfactory to the County.

D. Compaction of structural backfill by ponding and jetting may be permitted when, as determined by the County: the backfill material is of such character that it will be self-draining when compacted; foundation materials will not soften or be otherwise damaged by the applied water; no damage from hydrostatic pressure will result to the structure. Ponding and jetting within two feet below finished subgrade shall not be permitted in roadway areas. At the discretion of the County, ponding and jetting may be permitted with compaction layers not to exceed four feet.

E. Surplus material not used on-site shall be removed and disposed of off-site by the Contractor. In no case shall surplus material be deposited on adjacent lands. Fill used for grading shall be placed in layers not to exceed 12 inches in thickness and shall be compacted to a density equal or greater to that of the surrounding natural ground.

3.05 BACKFILLING AROUND STRUCTURES

A. Common fill and structural fill are specified for use as backfill against the exterior walls of the structures. Fill shall be placed in layers having a maximum thickness of eight (8) inches in loose state and shall be compacted sufficiently to prevent settlement. If compaction is by rolling or ramming, material shall be wetted down as required. Where material can be suitably compacted by jetting or puddling, the Contractor may use one of these methods. No boulders shall be allowed to roll down the slopes and hit the walls.

B. Backfilling shall be carried up evenly on all walls of an individual structure simultaneously. A variation of two (2) feet in elevation will be the maximum allowable. No backfill shall be allowed against walls until the walls and their supporting slabs, if applicable, have attained sufficient strength. Backfilling shall be subjected to approval by the County.

C. In locations where pipes pass through building walls, the Contractor shall take the following precautions to consolidate the refill up to an elevation of at least one foot above the bottom of the pipes:

1. Place structural fill in such areas for a distance of not less than three feet either side of the center line of the pipe in level layers not exceeding 6-inches in depth.
2. Wet each layer to the extent directed and thoroughly compact each layer with a power tamper to the satisfaction of the County.
3. Structural fill shall be of the quality specified under Part 2 of this Section.

D. The surface of filled areas shall be graded to smooth true lines, strictly conforming to grades indicated on the grading plan. No soft spots or uncompacted areas shall be allowed in the work.

E. Temporary bracing shall be provided as required during construction of all structures to protect partially completed structures against all construction loads, hydraulic pressure and earth pressure. The bracing shall be capable of resisting all loads applied to the walls as a result of backfilling.

3.06 FIELD QUALITY CONTROL

A. The density of soil in place shall be a minimum of 95 percent in accordance with ASTM test 1557-70T, Method A or C.

END OF SECTION

SECTION 02221 TRENCHING, BEDDING AND BACKFILL FOR PIPE

PART 1 GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals necessary to perform all excavation, backfill, fill, grading, trench protection or other related work required to complete the piping work shown on the Drawings and specified herein. The work shall include, but not be limited to: vaults; duct conduit; pipe; roadways and paving; backfilling; required fill or borrow operations; grading; disposal of surplus and unsuitable materials; and all related work such as sheeting, bracing and dewatering.

B. Prior to commencing work, the Contractor shall examine the site and review test borings if available, or undertake his own subsurface investigations and take into consideration all conditions that may affect his work.

C. The Contractor is responsible for the protection of every tree which is scheduled to remain in the project area. This includes trees which may or may not be shown on the plans. Every tree shall be adequately protected in place at no additional cost to the County. This includes, but is not limited to protecting the root systems and adjusting grades as necessary for tree/root protection.

1.02 PROTECTION

A. Sheeting and Bracing in Excavations:

1. In connection with construction of underground structures, the Contractor shall properly construct and maintain cofferdams. These shall consist of: sheeting and bracing as required to support the sides of excavations, to prevent any movement which could in any way diminish the width of the excavation below that necessary for proper construction and to protect adjacent structures, existing yard pipe and/or foundation material from disturbance, undermining, or other damage. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and rammed.
2. Trench sheeting for pipes: no sheeting is to be withdrawn if driven below, mid-diameter of any pipe and no wood sheeting shall be cut off at a level lower than one foot above the top of any pipe unless otherwise directed by the County. During the progress of the work, the County may direct the Contractor in writing to leave additional wood sheeting in place. If steel sheeting is used for trench sheeting, removal shall be as specified above, unless written approval is given for an alternate method of removal.
3. All sheeting and bracing not left in place shall be carefully removed in such a manner as not to endanger the construction or other structures, utilities, existing piping, or property. Unless otherwise approved or indicated on the Drawings or in the Specification, all sheeting and bracing shall be removed after completion of the piping or structure, care being taken not to disturb or otherwise injure the pipeline or finished masonry. All voids left or caused by withdrawal of sheeting shall be immediately refilled with sand by ramming with tools specifically made for that purpose, by watering, or as may otherwise be directed.
4. The Contractor shall construct, to the extent he deems it desirable for his method of operation, the cofferdams and sheeting outside the neat lines of the pipeline trench or foundation unless otherwise indicated on the Drawings or directed by the

County. Sheeting shall be plumb and securely braced and tied in position. Sheeting, bracing and cofferdams shall be adequate to withstand all pressures to which the pipeline or structure will be subjected. Pumping, bracing and other work within the cofferdam shall be done in a manner to avoid disturbing any construction of the pipeline or the enclosed masonry. Any movement or bulging which may occur shall be corrected by the Contractor at his own expense so as to provide the necessary clearances and dimensions.

5. Drawings of the cofferdams and design computations shall be submitted to the County and approved prior to any construction. However, approval of these drawings shall not relieve the Contractor of the responsibility for the cofferdams. The drawings and computations shall be prepared and stamped by a Registered Professional Engineer in the State of Florida and shall be in sufficient detail to disclose the method of operation for each of the various stages of construction, if required, for the completion of the pipeline and substructures.

B. Dewatering, Drainage and Flotation

1. The Contractor shall construct and place all pipelines, concrete work, structural fill, bedding rock and limerock base course, in-the-dry. In addition, the Contractor shall make the final 24" of excavation for this work in-the-dry and not until the water level is a minimum of 6" below proposed bottom of excavation.
2. The Contractor shall, at all times during construction, provide and maintain proper equipment and facilities to remove promptly and dispose of properly all water entering excavation and keep such excavations dry so as to obtain a satisfactory undisturbed subgrade foundation condition until the fill, structure, or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural elevations.
3. Dewatering shall at all times be conducted in such a manner as to preserve the natural undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.
4. Wellpoints may be required for dewatering the soil prior to final excavation for deeper in-ground structures or piping and for maintaining the lowered groundwater level until construction has been completed to avoid the structure, pipeline, or fill from becoming floated or otherwise damaged. Wellpoints shall be surrounded by suitable filter sand and no fines shall be removed by pumping. Pumping from wellpoints shall be continuous and standby pumps shall be provided.
5. The Contractor shall furnish all materials and equipment to perform all work required to install and maintain the proposed drainage systems for handling groundwater and surface water encountered during construction of structures, pipelines and compacted fills.
6. Where required, the Contractor shall provide a minimum of two operating groundwater observation wells at each structure to determine the water level during construction of the pipeline or structure. Locations of the observation wells shall be at structures and along pipelines as approved by the County prior to their installation. The observation wells shall be extended to 6 inches above finished grade, capped with screw-on caps protected by 24" x 24" wide concrete base and left in place at the completion of this Project.
7. Prior to excavation, the Contractor shall submit his proposed method of dewatering and maintaining dry conditions to the County for approval. Such approval shall not relieve the Contractor of the responsibility for the satisfactory performance of the system. The Contractor shall be responsible for correcting any disturbance of natural bearing soils for damage to pipeline or structures caused by an inadequate

dewatering system or by interruption of the continuous operation of the system as specified.

8. As part of his request for approval of a dewatering system, the Contractor shall demonstrate the adequacy of the proposed system and wellpoint filter sand by means of a test installation. Discharge water shall be clear, with no visible soil particles in a one quart sample. Discharge water shall not flow directly into wetlands or Waters of the State as defined by FDEP and SWFWMD.
9. During backfilling and construction, water levels shall be measured in observation wells located as directed by the County.
10. Continuous pumping will be required as long as water levels are required to be below natural levels.

PART 2 PRODUCTS

2.01 MATERIALS

A. General

1. Materials for use as fill and backfill shall be described below. For each material, the Contractor shall notify the County of the source of the material and shall furnish the County, for approval, a representative sample weighing approximately 50 pounds, at least ten calendar days prior to the date of anticipated use of such material.
2. Additional materials shall be furnished as required from off-site sources and hauled to the site.

B. Structural Fill

1. Structural fill in trenches shall be used below spread footing foundations, slab-on-grade floors and other structures as backfill within three feet of the below grade portions of structures.
2. Structural fill material shall be a minimum of 60 percent clean sand, free of organic, deleterious and/or compressible material. Minimum acceptable density shall be 98 percent of the maximum density as determined by AASHTO T-180. Rock in excess of 2-1/2" in diameter shall not be used in the fill material. If the moisture content is improper for attaining the specified density, either water shall be added or material shall be permitted to dry until the proper moisture content for compaction is reached.

C. Common Fill

1. Common fill material shall be free from organic matter, muck or marl and rock exceeding 2-1/2" in diameter. Common fill shall not contain broken concrete, masonry, rubble or other similar materials. Existing soil may be used to adjust grades over the site with the exception of the construction area.
2. Material falling within the above specification, encountered during the excavation, may be stored in segregated stockpiles for reuse. All material which, in the opinion of the County, is not suitable for reuse shall be spoiled as specified herein for disposal of unsuitable materials by the Contractor.

D. Crushed Stone

1. Crushed stone may be used for pipe bedding, manhole bases, as a drainage layer below structures with underdrains and at other locations indicated on the Drawings.
2. Crushed stone shall be size No. 57 with gradation as noted in Table 1 of Section 901 of Florida Department of Transportation, Construction of Roads and Bridges.

PART 3 EXECUTION

3.01 TRENCH EXCAVATION AND BACKFILLING

A. Excavation for all trenches required for the installation of pipes and electrical ducts shall be made to the depths indicated on the Drawings and in such manner and to such widths as will give suitable room for laying the pipe or installing the ducts within the trenches.

B. Rock shall be removed to a minimum 6" clearance around the bottom and sides of all the pipe or ducts being laid.

C. Where pipes or ducts are to be laid in limerock bedding or encased in concrete, the trench may be excavated by machinery to or just below the designated subgrade provided that the material remaining in the bottom of the trench is no more than slightly disturbed.

D. Where the pipes or ducts are to be laid directly on the trench bottom, the lower part of the trenches shall not be excavated to grade by machinery. The last of the material being excavated manually, shall be done in such a manner that will give a flat bottom true to grade so that pipe or duct can be evenly supported on undisturbed material. Bell holes shall be made as required.

E. Backfilling over pipes shall begin as soon as practicable after the pipe has been laid, jointed and inspected and the trench filled with suitable compacted material to the mid-diameter of the pipe.

F. Backfilling over ducts shall begin not less than three days after placing concrete encasement.

G. All backfilling shall be prosecuted expeditiously and as detailed on the Drawings.

H. Any space remaining between the pipe and sides of the trench shall be packed full by hand shovel with selected earth, free from stones having a diameter greater than 2" and thoroughly compacted with a tamper as fast as placed, up to a level of one foot above the top of the pipe.

I. The filling shall be carried up evenly on both sides with at least one man tamping for each man shoveling material into the trench.

J. The remainder of the trench above the compacted backfill, as just described above, shall be filled and thoroughly compacted by rolling, ramming, or puddling, as the County may direct, sufficiently to prevent subsequent settling.

END OF SECTION

SECTION 02223 EXCAVATION BELOW GRADE AND CRUSHED STONE OR SHELL REFILL

PART 1 GENERAL

1.01 SCOPE OF WORK

A. If in the opinion of the County, the material at or below the normal grade of the bottom of the trench is unsuitable for pipe or structure foundation, it shall be removed to the depth directed by the County and replaced by crushed stone or washed shell.

PART 2 PRODUCTS (NOT USED)

PART 3 MATERIALS

3.01 EXCAVATION AND DRAINAGE

A. Whatever the nature of unstable material encountered or the groundwater conditions, trench stabilization shall be complete and effective.

B. Should the Contractor excavate below the grade shown on the Contract drawings because of negligence or for his own convenience; due to failure in properly dewatering the trench; disturbs the subgrade before dewatering is sufficiently complete; he shall be directed by the County to excavate below grade. The work of excavating below grade and furnishing and placing the approved refill material shall be performed at the Contractor's expense.

3.02 REFILL

A. Should the material at the level of trench bottom consist of fine sand, sand and silt or soft earth, the subgrade material shall be removed as directed by the County and the excavation shall be refilled with crushed stone or washed shell.

END OF SECTION

SECTION 02325 ROAD AND RAILROAD CROSSINGS

PART 1 GENERAL

1.01 SCOPE OF WORK

The Contractor shall furnish all labor, equipment, materials and incidentals required to install road or railroad crossings as shown on the Drawings and as specified herein.

1.02 OPERATIONS ON MANATEE COUNTY OR STATE OF FLORIDA PROPERTY

A. All work affecting Manatee County, Florida Department of Transportation, any other governmental agency's right-of-way or facilities, or railroad right-of-way shall be carried out to the full satisfaction of the applicable Department's authorized representative. The Contractor shall be responsible to meet any and all requirements of the Department of Transportation, railroad, or other agency pertaining to the specific project and shall conduct all his work accordingly.

B. Prior to the start of the jacking operation, a detailed jacking plan shall be submitted to the County for review and approval. No work shall be permitted until the submittals are accepted. A Bore Path Report shall be submitted with in three (3) days of completion of the bore.

C. Prior to construction, a minimum of three working days written notice prior to start of the actual work shall be given to the County and to the Florida Department of Transportation or other applicable agency.

D. The Contractor shall install, maintain and leave in place any sheeting, underpinning, cribbing and other related items (other than that required for the jacking pits) to support any structures or facility on the right-of-way owned by either Manatee County, Florida Dept. of Transportation or other governmental agency or railroad entity. The Contractor, at his expense, may be directed by the Department of Transportation, other applicable agency, or the County, to leave sheeting in place.

E. The Contractor shall perform all necessary soil test borings to determine actual soil conditions and shall utilize the results of said borings to determine the procedures required for each jack and bore operation, including, but not limited to, the presence of rock and necessary dewatering requirements.

F. No wires, equipment, or other appurtenances shall be permitted to be placed across or pass across State property without the express written permission of the Department of Transportation's authorized representative.

G. All equipment used by the Contractor on State property may be inspected by the State and shall not be used if it is deemed unsatisfactory by an authorized State representative. State highways shall be kept free of obstructions at all times.

H. No blasting shall be permitted under or adjacent to any State highways.

I. The Contractor shall be responsible for all damages arising from his negligence or failure to comply with any State or Manatee County regulations or requirements or deviations from the Contract Documents.

J. All State highway crossings shall be performed and completed in a manner fully satisfactory to the Department of Transportation and Manatee County.

K. Traffic control requirements and procedures are detailed in Section 01570 of this specification.

1.03 SHOP DRAWINGS

The Contractor shall furnish working drawings showing all fabrication and construction details for the jacked crossings.

1.04 SUBMITTALS

A. Contractor shall submit a Jacking Plan that includes the following:

1. Site layout plan for entry and exit pit locations, drawn to scale, depicting the position of all required equipment, access points, existing facilities to remain in place, existing traffic lanes to be maintained in operation, office trailers and storage sites.
2. Qualification information on jack/bore contractor.
3. Manufacturer's information on equipment to be used.
4. Methods and materials for retaining walls for jacking and receiving pits.

B. Bore Report that details final alignment, dimensions, and record documentation.

PART 2 PRODUCTS

2.01 MATERIALS

Sleeve, carrier pipe, skids, insulation, bulkheads, etc. shall be per contract plans.

PART 3 EXECUTION

3.01 JACKING SLEEVE

A. The Contractor shall provide all labor, material, equipment and appurtenances required for jacking the sleeves beneath the roadway or railroad tracks. The steel sleeve shall be welded steel pipe and jacked in one continuous operation at the locations shown on the drawings. Once the operation starts, jacking shall not be discontinued. Proper alignment and elevation of the sleeves shall be consistently maintained throughout the jacking operation.

B. The Contractor shall shore the jacking pits with sheeting or such other materials as required. Sheeting shall be driven to a sufficient depth below the invert of the steel sleeve to resist any pressure developed by the soil outside the jacking pit. Sheeting shall terminate not less than 3-feet, 6-inches above existing grade.

C. The sections of steel sleeve shall be field welded in accordance with the applicable portions of AWWA C-206 for field welded water pipe joints. Steel sleeve shall receive one coat of Tnemec 46H-413 Hi-Build Tnemec-tar applied in accordance with manufacturer's recommendation.

D. At the completion of the jacking operations, the Contractor shall be required to leave all sheeting in place. The top of the sheeting shall be cut off 36-inches below finished grade.

E. The Contractor shall be responsible for preventing voids outside the steel sleeves. Should they occur, the Contractor may be directed to fill them with grout in a method approved by the County. The Contractor shall exercise care in the sleeve removal to prevent voids.

F. The Contractor shall be responsible for furnishing, installing and removing the thrust block or restraint which was employed in driving the sleeve forward. No additional payment for the jacking restraint shall be made other than the unit price for this item. The entire jacking operation shall be discussed and accepted by the County prior to commencing jack and bore operation. After completion, the backup structures shall be removed in part or whole to permit construction of the pipeline in the sleeve.

3.02 INSTALLING PIPE IN SLEEVE

A. The Contractor shall install the pipe in full conformity with the Contract Documents. The pipe shall be installed to the lines and grades required within the sleeve and placed to the approval of the County. The pipe shall be braced to the side and the top of the sleeve to prevent flotation or motion.

B. A bulkhead shall be placed at the ends of the sleeve to keep the surrounding soil and material from migrating into the voids in the sleeve..

3.03 TESTING

The pipe shall be tested as provided in the Contract Document.

END OF SECTION

SECTION 02615 DUCTILE IRON PIPE AND FITTINGS

PART 1 GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals required to install ductile iron pipe and restrained joint ductile iron pipe and cast iron or ductile iron restrained joint fittings, complete, as shown on the Drawings and specified in these Standards.

B. Fittings are noted on the drawings for the Contractor's convenience and do not relieve him from laying and jointing different or additional items where required.

C. The Contractor shall furnish all labor, materials, equipment and incidentals required to install push-on joint or restrained joint ductile iron pipe, complete as shown on the Drawings and Specifications.

D. Newly installed pipe shall be kept clean and free of all foreign matter. All DI pipe installed underground shall be poly wrapped unless noted otherwise on the plans.

1.02 SUBMITTALS

A. The Contractor shall submit to the County, within ten days after receipt of Notice to Proceed, a list of materials to be furnished, the names of the suppliers and the appropriate shop drawings for all ductile iron pipe and fittings.

B. The Contractor shall submit the pipe manufacturer's certification of compliance with the applicable sections of the Specifications.

PART 2 PRODUCTS

2.01 MATERIALS

A. Ductile iron pipe shall conform to ANSI/AWWA C150/A21.50 and ANSI/AWWA C151/A21.51. Thickness of pipe shall be Class 50 or pressure Class 350. All pipe not buried shall be Class 53. All ductile iron pipe shall be clearly marked on the outside of the barrel to readily identify it from cast iron.

B. Unrestrained joint pipe shall be supplied in lengths not to exceed 21 feet. Unless otherwise called for in the Contract Documents, unrestrained joint pipe shall be either the rubber-ring type push-on joint or standard mechanical joint pipe as manufactured by the American Cast Iron Pipe Company, U.S. Pipe and Foundry Company, or approved equal.

C. All mechanical joint fittings shall be pressure rated for 350 psi and meet the requirement of AWWA C110 or AWWA C153 except flanged fittings shall be rated for 250 psi. Rubber gaskets shall conform to AWWA C111 for mechanical and push-on type joints and shall be EPDM (Ethylene-Propylene Diene Monomer) rubber for potable water and reclaimed water pipelines. Standard gaskets shall be such as Fastite as manufactured by American Cast Iron Pipe Company, or an approved equal. Acrylonitrile butadiene (NBR) gaskets shall be used for potable water mains that are located in soil that is contaminated with low molecular-weight petroleum products or non-chlorinated organic solvents or non-aromatic organic solvents. Fluorocarbon (FKM) gaskets shall be used for potable water mains that

are located in soil that is contaminated with aromatic hydrocarbons or chlorinated hydrocarbons. Fluorocarbon (FKM) gaskets shall be used where both classes of contaminates are found.

D. Water Mains: All ductile iron pipe and fittings shall have a standard thickness cement lining on the inside in accordance with AWWA/ANSI C104/A21.4 and a coal tar enamel coating on the outside. The coal tar enamel shall be in accordance with ANSI A21.4. All interior linings shall be EPA/NSF approved.

E. Force Main: All ductile iron pipe and fittings shall have a factory applied fusion bonded epoxy or epoxy and polyethylene lining on the inside in accordance with manufacturer's specifications and a coal tar enamel coating on the outside. The coal tar enamel shall be in accordance with ANSI A21.4. The interior lining is to be based on manufacturer's recommendation for long-term exposure to raw sewage. It shall have a minimum ten year warranty covering failure of the lining and bond failure between liner and pipe.

F. Restrained joints shall be provided at all horizontal and vertical bends and fittings, at casings under roads and railroads and at other locations shown on the Contract Drawings. Restrained joint pipe fittings shall be designed and rated for the following pressures: 350 psi for pipe sizes up to and including 24" diameter; 250 psi for pipe sizes 30" diameter and above.

2.02 IDENTIFICATION

A. Each length of pipe and each fitting shall be marked with the name of the manufacturer, size and class and shall be clearly identified as ductile iron pipe. All gaskets shall be marked with the name of the manufacturer, size and proper insertion direction.

B. Pipe shall be poly wrapped blue for potable water mains, purple for reclaimed water mains and green for sewage force mains. All potable water pipe shall be NSF certified and copies of lab certification shall be submitted to the County.

C. All above ground potable water mains and appurtenances shall be painted safety blue.

END OF SECTION

SECTION 02616 DISINFECTING POTABLE WATER PIPE LINES

PART 1 GENERAL

1.01 SCOPE OF WORK

The Contractor shall furnish all labor, materials, equipment and incidentals required to clean and disinfect potable water pipe lines. This work is required to place all types of pipe into service as potable water lines.

1.02 CLEANING WATER MAINS

At the conclusion of the work, the Contractor shall thoroughly clean all of the new pipes to remove all dirt, stones, pieces of wood or other material which may have entered during the construction period per Section 02618.

1.03 DISINFECTING POTABLE WATER PIPE LINES

A. All record drawing requirements must be submitted to the County prior to starting the bacteriological testing of the water lines.

B. Prior to being placed in service, all potable water pipe lines shall be chlorinated in accordance with AWWA 651, "Standard Procedure for Disinfecting Water Main". The procedure shall meet Health Department requirements. The location of the chlorination and sampling points shall be determined by the County. Taps for chlorination and sampling shall be uncovered and backfilled by the Contractor as required.

C. The general procedure for chlorination shall be to flush all dirty or discolored water from the lines, then introduce chlorine in approved dosages through a tap at one end while water is being withdrawn at the other end of the line. The chlorine solution shall remain in the pipe line for 24 hours.

Water for flushing, filling and disinfecting the new lines must be obtained without contaminating existing pipe lines. Water obtained from existing pipe lines for this purpose shall pass through an approved air gap or backflow prevention device.

D. Following the chlorination period, all treated water shall be flushed from the lines at their extremities and replaced with water from the distribution system. Bacteriological sampling and analysis of the replacement water shall then be made by an approved laboratory or the Health Department in full accordance with the AWWA Manual C651. The line shall not be placed in service until the requirements of the State and County Public Health Department are met. Results of the bacteriological tests together with certified record drawings must be submitted to the Health Department (FDEP) within 30 days of the tests.

E. Special disinfecting procedures when approved by the County, may be used where the method outlined above is not practical.

END OF SECTION

SECTION 02617 INSTALLATION AND TESTING OF PRESSURE PIPE

PART 1 GENERAL

1.01 INSTALLING PIPE AND FITTINGS

A. The Contractor shall install all pipe in accordance with the recommendations of the pipe manufacturer and as specified herein.

B. The Contractor shall take care in handling, storage and installation of pipe and fittings to prevent injury to the pipe or coatings. All pipe and fittings shall be examined before installation and pipe which is deemed to be defective by the County shall not be installed.

C. The Contractor shall thoroughly clean and keep thoroughly clean, all pipe and fittings prior to during and after installation.

D. The Contractor shall lay the pipe to the lines and grades shown on the Contract Drawings with bedding and backfill as shown on the Drawings or called out in the Contract Documents. Blocking under the pipe shall not be permitted except through casing sleeves.

E. The Contractor shall keep the open ends of all pipe closed with a tightly fitting plug when installation is not in progress or the potential exists for dirt or debris to enter the pipe.

F. The pipe or accessories shall not be dropped into the trench under any circumstances.

G. The Contractor shall construct all water mains pursuant to the provisions of "Recommended Standards for Water Works", Part 8, incorporated by reference in Rule 17-555.330(3), F.A.C.

H. As a marker for the Surveyor, a PVC pipe marker or 2" x 4" marker shall be inserted by the Contractor on the top of pipe for potable water mains, reclaimed water mains and sanitary force mains at intervals no greater than 200 feet apart and at locations where there is a substantial grade change. The pipe markers shall indicate the pipe diameter and shall be labeled PWM in "safety" blue, RWM in purple, and FM in green, for potable water mains, reclaimed water mains and sanitary force mains, respectively. As a marker for the Surveyor, a PVC pipe marker or 2" x 4" marker shall be inserted by the Contractor on the top of all pipe fittings (other than sanitary sewer service wyes, potable water saddles and reclaimed water saddles). The markers for fittings shall indicate the type of fitting and shall be labeled PWF in "safety" blue, RWF in purple, and FMF in green, for potable water fittings, reclaimed water fittings, and sanitary force main fittings, respectively. The Contractor is responsible for making the aforementioned markers available to the Surveyor. The Contractor shall field locate the mains and fittings when markers are not made available to the Surveyor.

I. A PVC pipe marker or 2" x 4" marker shall be inserted by the Contractor at the beginning and end of each horizontal directional drill (HDD). The HDD Contractor shall provide a certified report and bore log indicating the horizontal and vertical location every 25 linear feet or less along the pipe.

J. A 2" PVC pipe marker with a painted end cap shall be inserted by the Contractor at the ROW line indicating each individual new service location or stub out. The marker shall be a 6 foot length of PVC pipe inserted 2 feet into the ground and shall be painted "safety"

blue for potable water, purple for reclaimed water, and green for sewer.

1.02 PROCEDURE FOR TESTING WATER LINES, FORCE MAINS AND RECLAIMED WATER LINES

A. A 48-hour notice is needed prior to testing. A letter stating the reasons testing should be scheduled ahead of other jobs must accompany all emergency testing requests.

B. County and Contractor must be present for all testing, except for testing tapping valves and sleeves.

C. All pressure pipe lines shall remain undisturbed for 24 hours to develop complete strength at all joints. All pipe lines shall be subjected to a hydrostatic pressure test for two (2) hours at full working pressure, but not less than 180 psi for water/reclaimed (150 psi for force main). Maximum length of pipe to be tested at one time is 2,600 feet. If line is longer than 2,600 feet and cannot be sectioned in 2,600 feet (max.) lengths, the allowable leakage will be figured at 2,600 feet.

D. Allowable leakage shall be determined by AWWA C600 table for hydrostatic tests. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof; to maintain the test pressure after the air in the pipe line has been expelled and the pipe has been filled with water.

E. All digging on the job site in the right-of-way must be completed before any testing of water or sewer. Any digging or boring across water or sewer lines after they have been tested may result in a retest of the lines at the County's request.

F. If any revisions or changes are made after initial testing, lines will be re-tested at the County's request.

G. Disconnect water supply during test.

H. All force mains will be tested from the valves in the valve vault at the lift station to the point of connection whether it be against a valve on another force main or into a manhole.

I. All services to be aboveground during test. The services should be the correct length so they will be one (1) foot inside right-of-way line.

J. All fire hydrant gate valves to be open during test.

K. All visible leaks are to be repaired, regardless of the amount of leakage.

L. Check gauge pressure periodically during test. If test pressure drops to 175 psi for water/reclaimed lines or to 145 psi for force mains during test, the line must be repumped back to 180 psi for water/reclaimed (150 psi force mains) and the amount of leakage measured. The test will continue on with the remaining time left. At the end of the test, the line must be repumped again back to 180 psi (150 psi for force main) and the amount of leakage measured and added to any previous leakage determined earlier in the test.

M. After the line passes the test, the pressure will be blown off from the opposite end of line from the gauge location. Fire hydrants, services and end-of-line blow offs will be opened to demonstrate they were on line during the test.

N. At end of test, the test gauge must return to zero. The pressure gauge must read 0 psi to a maximum of 300 psi in 5 psi increments.

O. The section of line being tested must be identified on the charge sheet. The length and size of pipe, the exact area being tested and the valves being tested against, must be identified. Use Station numbers if available.

P. A punch list must be made at the end of all tests.

Q. A copy of the charge sheet will be given to the County and the Contractor at the end of the test.

1.03 INSPECTION/TESTING PROCEDURE COVERING BORED PIPE LINES OR CASING AND CONDUITS INSTALLED ACROSS PREVIOUSLY TESTED AND/OR COUNTY ACCEPTED WATER AND SEWER PIPE WITHIN DEVELOPMENT PROJECTS UNDER ACTIVE CONSTRUCTION

A. Prior to testing water and sewer lines, every effort will be made to install sleeves for underground utilities that will cross these water and sewer lines or services.

B. Where it has not been possible to pre-install sleeves prior to testing and bores or conduits are required, it is the responsibility of the utility company and/or their Contractor performing the work to provide Manatee County Utility Operations Department or the Engineer of Record with accurate horizontal and vertical as-built information of the sleeves, bores and conduits installed by said utility company. This applies to all bores and conduits crossing water and sewer lines.

C. Procedures to be followed for installation of conduits, pipe lines and bores that will cross, or be closer than 5'-0" horizontally and 18 inches vertically to, previously tested water and sewer lines that are still under the ownership of the developer/contractor.

1. Notify the County and obtain the best as-built information available. Allow sufficient time for the County to field locate the existing pipe lines.
2. Submit drawings of proposed location to the County and Manatee County Utility Operations Dept. Utility Locations Section for review.
3. Obtain a County Right-of-Way Use Permit if the work area is within a dedicated area of right-of-way.
4. Perform installation in the presence of a County representative. Call (941) 792-8811, ext. 5061 or ext. 5069 with at least two (2) working days notice.
5. Submit two (2) copies of as-built information to the County to incorporate into the record drawings to be submitted to the County.
6. Failure to follow steps 2) thru 5) will result in additional charges for retesting the previously tested water and sewer lines.

D. Procedures to be followed for installation of conduits, pipe lines and bores crossing or closer than 5'-0" horizontally and 18 inches vertically to previously tested water and sewer lines that have been previously accepted by Manatee County:

1. Obtain record drawing information from the County.
2. If roadway has been dedicated to Manatee County, obtain Right-of-Way Use Permit and copy the Project Management Department Locations Section with proposed location drawing.
3. Follow procedures in "Sunshine State One-Call", paying special attention to the

requirements of Section VII.

E. Should water or sewer lines be damaged during the bore pipe line or casing installation, the cost of any repairs and retesting will be paid for by the utility company that installed the bore. The actual clearance between a bored casing crossing a water or sewer pipe should not be less than 18 inches.

1.04 DETECTION

A. Direct buried pipe shall have 3" detectable metallic tape of the proper color placed directly above the pipe and 12" below finished grade or 6" detectable tape between 12" and 24" below finished grade.

B. Direct buried or horizontal directional drilled non-metalic pipe shall also have tracer wire installed along the pipe alignment. The tracer wire to be used shall be a solid, 10 gauge, high strength, copper clad steel wire with a polyethylene jacket of appropriate color manufactured by Copperhead Industries or Manatee County approved equal.

END OF SECTION

SECTION 02618 PIPELINE CLEANING

PART 1 GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals required to clean all new lines 4" and larger, and existing pipelines as specified in this specification and as indicated on the Drawings.

B. This work shall include the furnishing and installation of all pig launching and retrieval devices and the appropriate pigs for the cleaning procedure, and all necessary excavations, shutdowns, fittings and valves required.

1.02 RELATED WORK

A. The contractor is responsible for all necessary supply water.

B. The contractor is responsible for all necessary bypass pumping.

C. The contractor is responsible for the proper disposal of any materials removed from the pipe lines as a result of the cleaning procedure.

1.03 SUBMITTALS

A. The Contractor shall submit prior to construction, a cleaning plan, Shop Drawings, and layout diagram for approval to the County.

B. The Contractor shall submit to the County a list of materials to be furnished, and the names of suppliers.

1.04 QUALIFICATIONS

A. The Contractor performing this work shall be fully qualified, experienced and equipped to complete this work expeditiously and in a satisfactory manner.

B. The Contractor shall also be capable of providing crews as needed to complete this work without undue delay.

C. The County reserves the right to approve or disapprove the Contractor, based on the submitted qualifications.

PART 2 PRODUCTS

2.01 GENERAL

A. The contractor shall be responsible for furnishing pigs in sufficient numbers and sizes, of appropriate densities, coatings and configurations to properly clean the piping systems.

B. All pigs used for the cleaning of sewer or reclaimed water lines shall not be used in the cleaning of potable water lines.

2.02 MATERIALS

A. The pig launching and retrieval equipment shall be of the latest design and construction and shall include the means to maintain constant monitoring of the in-line flows and pressures of the system being cleaned and the constant location of the cleaning pigs in the system. Launching and retrieval systems shall be fabricated, designed and manufactured according to ANSI standards and capable of withstanding working pressures of 150 psi. Launching and receiving devices shall be sized one diameter larger than the system to which it will be attached with a minimum length of 2.5 times the diameter.

B. The contractor shall have available for immediate use an electronic pig detector for use in the system being cleaned to provide a means of tracking the passage of the pig in the system to locate areas of potential or suspected blockage and other disparities in the system.

C. The pig shall be constructed of elastomer polyurethane with an open cell construction and a density equal to or suitable for use in the piping system being cleaned. Pig configuration shall consist of a parabolic nose with a concave base and coated with a resilient surface material that will maintain a peripheral seal and will effectively clean the piping system without over abrading the interior pipe wall. Pig characteristics shall include the ability to navigate through 90 degree bends, 180 degree turns, bi-directional fittings, full port valves, reduce its cross sectional area and return to its original design configuration and be propelled by hydraulic pressure.

PART 3 EXECUTION

3.01 PIPELINE CLEANING

A. The cleaning of the pipe line shall be done by the controlled and pressurized passage of a polyurethane pig of varying dimensions, coatings and densities as determined by the County through the piping system.

B. A series of pigs shall be entered into the system at a point as near to the beginning as is logistically and mechanically feasible.

C. A launching assembly shall be used as the entrance point for the pig. This assembly shall allow for the following:

1. The entering of pigs into the system by providing the means to induce flow from an external source, independent of the flows and pressures immediately available from the system, on the back of the pig to develop sufficient pressure to force the pig through the system.
2. A means to control and regulate the flow.
3. A means to monitor the flows and pressures.
4. A means to connect and disconnect from the system without any disruption to the operation of the system.

D. The pig shall be removed or discharged from the system at a point as near to the end as is logistically and mechanically feasible.

E. The contractor shall be responsible for the retrieval of the pig at the discharge point. This may include setting a trap that will not disrupt normal flow and operations but will capture the pig and any debris. A retrieval assembly may also be used but said assembly shall be

able to connect and disconnect from the system without any disruption to the operation of the system.

F. Alternative launching and retrieval methods shall be done with the prior approval of the County.

G. Any pig that cannot progress through the piping system shall be located by the contractor and removed by excavation of the pipe in order to remove the blockage. All pipe repairs shall be the responsibility of the contractor and shall be performed with as little disruption to the system as possible.

H. Any increase in pressure that cannot be accounted for, i.e. fittings or valves or additional cleaning runs, shall be investigated, per the Engineers' approval, by locating the pig at the beginning of the increased pressure and excavating to determine the cause of the pressure increase. All pipe repairs shall be the responsibility of the contractor and shall be performed with as little disruption to the system as possible.

I. Final flushing of the cleansed lines shall be performed after the last successful run of the pig as determined by the County. The contractor shall be responsible for all applicable flushing and disinfection requirements for potable water lines.

3.02 ACCEPTANCE

A. The contractor shall maintain and provide a report at the end of the cleaning procedure containing the following:

1. The pressures in the pipe during the pigging procedure.
2. Any inline problems encountered during the procedure including all excavations with detailed locations, reason for the excavation and any corrective measures taken to the pipeline.
3. A record of the pigs used, their sizes, styles and other pertinent information regarding what materials were used during the cleaning.
4. An analysis of the condition of the pipeline before and after the cleaning procedure.

END OF SECTION

SECTION 02622 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS (AWWA SPECIFICATIONS C-900 & C-905)

PART 1 GENERAL

1.01 SCOPE OF WORK

The Contractor shall furnish all labor, materials, equipment and incidentals required to install the plastic piping, fittings and appurtenances complete and ready for use as specified in the Contract Documents and these Standards.

1.02 DESCRIPTION OF SYSTEM

The Contractor shall install the piping in the locations as shown on the Drawings.

1.03 QUALIFICATIONS

All plastic pipe, fittings and appurtenances shall be furnished by a single manufacturer who is fully experienced, reputable, qualified and specializes in the manufacture of the items to be furnished. The pipe and fittings shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications.

1.04 SUBMITTALS

A. The Contractor shall submit shop drawings to the County including, but not limited to, dimensions and technical specifications for all piping.

B. The Contractor shall submit to the County, samples of all materials specified herein.

C. The Contractor shall submit and shall comply with pipe manufacturer's recommendation for handling, storing and installing pipe and fittings.

D. The Contractor shall submit pipe manufacturer's certification of compliance with these Specifications.

1.05 TOOLS

The Contractor shall supply special tools, solvents, lubricants, and caulking compounds required for proper installation.

PART 2 PRODUCTS

2.01 MATERIALS

A. Pressure Class-Rated Polyvinyl Chloride (PVC) Pipe

1. Pressure class-rated PVC pipe and accessories four to twelve inches (4"-12") in diameter, shall meet the requirements of AWWA Specification C-900 "Polyvinyl Chloride (PVC) Pressure Pipe". Pipe shall be Class 150, meeting requirements of Dimension Ratio (DR) 18 and shall have the dimension of ductile iron outside

diameters. Each length of pipe shall be hydrotested to four (4) times its class pressure by the manufacturer in accordance with AWWA C-900.

2. PVC pipe 14" through 36" shall meet the requirements of AWWA Standard C-905, Polyvinyl Chloride (PVC) Water Transmission Pipe. Pipe 14" thru 24" for potable and reclaim water shall meet the requirements for dimension ratio (DR) 18. Each length of pipe shall be tested at twice the pressure rating (PR 235 psi) for a minimum dwell of 5 seconds in accordance with AWWA C-905. Fourteen inch (14") thru 36" PVC pipe for sewer force mains shall meet AWWA C-905 requirements for dimension ratio (DR) 21. Each length of pipe shall be tested at twice the pressure rating (PR 200 psi) for a minimum dwell of five seconds in accordance with AWWA C-905.

   Pipe shall be listed by Underwriters Laboratories. Provisions shall be made for expansion and contraction at each joint with an elastomeric ring, and shall have an integral thickened bell as part of each joint. PVC Class pipe shall be installed as recommended by the manufacturer. Pipe shall be furnished in nominal lengths of approximately 20 feet, unless otherwise directed by the County. Pipe and accessories shall bear the NSF mark indicating pipe size, manufacturer's names, AWWA and/or ASTM Specification number, working pressure, and production code.

3. Gaskets for 16" diameter and larger pipe used for potable water pipe shall be EPDM (Ethylene-Propylene Dine Monomer).

4. PVC pipe 3" and less in diameter may be constructed using pipe conforming to ASTM D2241 with push-on joints. Pipe shall be 200 psi pipe-SDR 21 unless otherwise specified by the County. This PVC pipe shall not be used for working pressures greater than 125 psi.

5. Pipe shall be <u>blue</u> for potable water mains, <u>green</u> for sewage force mains and <u>purple</u> for reclaimed water mains. All potable water pipe shall be NSF certified and copies of lab certification shall be submitted to the County.
6. Where colored pipe is unavailable, white PVC color coded spiral wrapped pipe shall be installed.

B. Joints

1. The PVC joints for pipe shall be of the push-on type unless otherwise directed by the County so that the pipe and fittings may be connected on the job without the use of solvent cement or any special equipment. The push-on joint shall be a single resilient gasket joint designed to be assembled by the positioning of a continuous, molded resilient ring gasket in an annular recess in the pipe or fitting socket and the forcing of the plain end of the entering pipe into the socket, thereby compressing the gasket radially to the pipe to form a positive seal. The gasket and annular recess shall be designed and shaped so that the gasket is locked in place against displacement as the joint is assembled.

   The resilient ring joint shall be designed for thermal expansion or contraction with a total temperature change of at least 75 degrees F in each joint per length of pipe. The bell shall consist of an integral wall section with a solid cross section elastomeric ring which shall meet requirements of ASTM F-477. The thickened bell section shall be designed to be at least as strong as the pipe wall. Lubricant furnished for lubricating joints shall be nontoxic, shall not support the growth of

bacteria, shall have no deteriorating effects on the gasket or pipe material, and shall not impart color, taste, or odor to the water. Gaskets shall be suitable for use with potable water, reclaimed water or sanitary sewer as applicable.

2. Restrained joints shall be provided at all horizontal and vertical bends and fittings, at casings under roads and railroads and at other locations shown on the Contract Drawings. PVC joints for pipe shall be restrained by the following methods: thrust blocks, restraining glands such as Certa-Lok Restraining Joint Municipal Water Pipe by the Certain Teed Corporation of Valley Forge, PA, or approved equal. All Grip, Star Grip by Star Products, MJR by Tyler Pipe, Tyler, Texas. Restrained joint PVC pipe shall be installed in strict accordance with the manufacturer's recommendation.

C. Fittings

1. All fittings for class-rated PVC pipe shall be ductile iron with mechanical joints and shall conform to the specifications for ductile iron fittings, unless otherwise directed. Class 200, C-900 PVC fittings are allowable for sewage force main applications up to and including 12" diameter only. DR ratio shall be the same as the pipe.

2. The manufacturer of the pipe shall supply all polyvinyl chloride accessories as well as any adapters and/or specials required to perform the work as shown on the Drawings and specified herein. Standard double bell couplings will not be accepted where the pipe will slip completely through the coupling.

PART 3 EXECUTION

3.01 INSTALLATION

The Contractor shall install the plastic pipe in strict accordance with the manufacturer's technical data and printed instructions. Direct bury pipe shall have 3" detectable metallic tape of the proper color placed directly above the pipe 12" below finished grade or 6" detectable tape between 12" and 24" below grade.

3.02 INSPECTION AND TESTING

All pipe lines shall remain undisturbed for 24 hours to develop complete strength at all joints. All pipe lines shall be subjected to a hydrostatic pressure test for two (2) hours at full working pressure, but not less than 180 psi for water/reclaimed (150 psi for force main). All visible leaks shall be repaired and retested for approval by the County. Prior to testing, the pipe lines shall be supported in a manner approved by the County to prevent movement during tests.

END OF SECTION

SECTION 02640 VALVES AND APPURTENANCES

PART 1 GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals required and install complete and ready for operation all valves and appurtenances as shown on the Drawings and as specified herein.

B. All valves and appurtenances shall be of the size shown on the Drawings and, to the extent possible, all equipment of the same type on the Project shall be from one manufacturer.

C. All valves and appurtenances shall have the name of the manufacturer and the working pressure for which they are designed cast in raised letters upon some appropriate part of the body.

D. All valves shall have a factory applied, fusion bonded epoxy coating on interior and exterior unless noted otherwise in the plans or this specification.

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

1. Gate valves (Sec. 2.01)
2. Pressure Sustaining and Check Valves (Sec. 2.02)
3. Ball Valves for PVC Pipe (Sec. 2.03)
4. Butterfly Valves (Sec. 2.04)
5. Plug Valves (Sec. 2.05)
6. Valve Actuators (Sec. 2.06)
7. Air Release Valves (Sec. 2.07)
8. Valves Boxes (Sec. 2.08)
9. Corporation Cocks (Sec. 2.09)
10. Flange Adapter Couplings (Sec. 2.10)
11. Flexible Couplings (Sec. 2.11)
12. Hose Bibs (Sec. 2.12)
13. Slow Closing Air and Vacuum Valves (Sec. 2.13)
14. Surge Anticipator Valve (Sec. 2.14)
15. Check Valves (Sec. 2.15)
16. Hydrants (Sec. 2.16)
17. Restraining Clamps (Sec. 2.17)
18. Tapping Sleeves and Tapping Valves (Sec. 2.18)
19. Single Acting Altitude Valves (Sec. 2.19)

1.02 DESCRIPTION OF SYSTEMS

All of the equipment and materials specified herein are intended to be standard for use in controlling the flow of potable water, reclaim water, wastewater, etc., depending on the applications.

1.03 QUALIFICATIONS

All of the types of valves and appurtenances shall be products of well established reputable firms who are fully experienced and qualified in the manufacture of the particular

equipment to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications as applicable. Valves shall be as covered under mechanical devices in Section 8 of ANSI/NSF Standard 61.

1.04 SUBMITTALS

A. Submit to the County within 30 days after execution of the contract a list of materials to be furnished, the names of the suppliers and the date of delivery of materials to the site.

B. Complete shop drawings of all valves and appurtenances shall be submitted to the County for approval in accordance with the Specifications.

1.05 TOOLS

Special tools, if required for normal operation and maintenance shall be supplied with the equipment.

PART 2 PRODUCTS

2.01 GATE VALVES

A. All buried valves shall have cast or ductile iron three (3) piece valve bodies.

B. Where indicated on the drawings or necessary due to locations, size, or inaccessibility, chain wheel operators shall be furnished with the valves. Such operators shall be designed with adequate strength for the valves with which they are supplied and provide for easy operation of the valve. Chains for valve operators shall be galvanized.

C. Where required, gate valves shall be provided with a box cast in a concrete slab and a box cover. Length of box shall include slab thickness. Box cover opening shall be for valve stem and nut. Valve wrenches and extension stems shall be provided by the manufacturer to actuate the valves. The floor box and cover shall be equal to those manufactured by Rodney Hunt Machine Company, Orange, Massachusetts, Clow, DeZurik or approved equal.

D. Gate valves with 3"-20" diameters shall be resilient seated, manufactured to meet or exceed the requirements of AWWA C509 or C515 and UL/FM of latest revision and in accordance with the following specifications. Valves shall have an unobstructed waterway equal to or greater than the full nominal diameter of the valve.

E. Wrench nut shall be provided for operating the valve.

F. Valves shall be suitable for an operating pressure of 200 psi and shall be tested in accordance with AWWA C509 or C515. Mueller, Kennedy, M&H, and Clow are acceptable valves.

G. All bonnet bolts, nuts and studs shall be stainless steel.

2.02 PRESSURE SUSTAINING AND CHECK VALVE

A. Pressure sustaining and check valve shall be pilot operated diaphragm actuated valve with cast iron body, bronze trim, and 125-pound flanged ends. The valve shall be

hydraulically operated, diaphragm type globe valve. The main valve shall have a single removable seat and a resilient disc, of rectangular cross section, surrounded on three and a half sides. The stainless steel stem shall be fully guided at both ends by a bearing in the valve cover, and an integral bearing in the valve seat. It shall be sleeved at both ends with delrin. No external packing glands are permitted and there shall be no pistons operating the main valve or any controls. The valve shall be equipped with isolation cocks to service the pilot system while permitting flow if necessary. Main valve and all pilot controls shall be manufactured in the United States of America. Valve shall be single chamber type, with seat cut to 5 degrees taper.

B. Valve shall maintain a minimum (adjustable) upstream pressure to a preset (adjustable) maximum. The pilot system shall consist of two direct acting, adjustable, spring loaded diaphragm valves.

C. Valve shall be cast iron (ASTM A48) with main valve trim of brass (QQB-B-626) and bronze (ASTM B61). The pilot control valves shall be cast brass (ASTM B62) with 303 stainless steel trim. All ferrous surfaces inside and outside shall have a 2-part epoxy coating. Valve shall be similar in all respects to CLA-VAL Company, Model 692G-01ABKG, as manufactured by CLA-VAL Company, Winter Park, Florida, or similar pressure sustaining and check valve as manufactured by Golden Alderson; or approved equal.

2.03 BALL VALVES FOR PVC PIPE

A. Ball valves for PVC pipe shall be of PVC Type 1 with union, socket, threaded or flanged ends as required. Ball valves shall be full port, full flow, all plastic construction, 150 psi rated with teflon seat seals and T-handles. PVC ball valves shall be as manufactured by Celanese Piping Systems, Inc., Wallace and Tiernan, Inc., Plastiline, Inc., or approved equal.

B. All valves shall be mounted in such a position that valve position indicators are plainly visible when standing on the floor.

2.04 BUTTERFLY VALVES

A. Butterfly valves shall conform to the AWWA Standard Specifications for Rubber Seated Butterfly Valves, Designated C504, except as hereinafter specified. Valves, except as specified hereinafter, shall be Class 150A or B, except that valves furnished downstream of the high service pumps shall be Class 250 and equal to those manufactured by Henry Pratt Company, DeZurik, Mueller, or approved equal. M&H/Kennedy/Clow are not generally approved equals. Ductile iron conforming to ASTM A536, Grade 65-45-12 shall be provided for all Class 250 valves. All valves shall be leak tested at 200 psi.

B. The face-to-face dimensions of flanged end valves shall be in accordance with Table 1 of above mentioned AWWA Specification for short-body valve. Adequate two-way thrust bearings shall be provided. Flange drilling shall be in accordance with ANSI B16.1.

C. Valve seats shall be an EPDM elastomer. Valve seats 24 inches and larger shall be field adjustable and replaceable without dismounting operator disc or shaft and without removing the valve from the line. All retaining segments and adjusting devices shall be of corrosion resistant material with stainless Nylock screws and be capable of the 1/8-inch adjustment. Valves 20 inches and smaller shall have bonded or mechanically restrained seats as outlined in AWWA C 504. Where the EPDM seat is mounted on the valve body,

the mating edge of the valve disc shall be 18-8 stainless steel or Nickel-Chrome, 80-20%. Where the EPDM seat is mounted on the valve disc, the valve body shall be fitted with an 18-8 stainless steel seat offset from the shaft, mechanically restrained and covering 360 degrees of the peripheral opening or seating surface.

D. The valve body shall be constructed of ductile iron or close grain cast iron per ASTM A126, Class B with integrally cast hubs for shaft bearing housings of the through boss-type. Butterfly valves of the "wafer" or "spool" type will not be accepted.

E. The valve shaft shall be turned, ground, and polished constructed of 18-8, ASTM A-276, Type 304 stainless steel and designed for both torsional and shearing stresses when the valve is operated under its greatest dynamic or seating torque. Shaft shall be of either a one piece unit extending full size through the valve disc and valve bearing or it may be of a stub shaft design. Shaft bearings shall be teflon or nylon, self-lubricated type.

F. All valves shall be subject to hydrostatic and leakage tests at the point of manufacture. The hydrostatic test for Class 250 valves shall be performed with an internal hydrostatic pressure equal to 500 psi applied to the inside of the valve body of each valve for a period of five minutes. During the hydrostatic test, there shall be no leakage through the metal, the end joints or the valve shaft seal. The leakage test for the Class 250 valves shall be performed at a differential pressure of 230 psi and against both sides of the valve. No adjustment of the valve disc shall be necessary after pressure test for normal operation of valve. The Class 150 valves shall be tested in conformance with AWWA C-504.

G. In general, the butterfly valve operators shall conform to the requirements of Section 3.8 of the AWWA Standard Specifications for Rubber Seated Butterfly Valves, Designation C504, insofar as applicable, and as herein specified.

H. Gearing for the operators shall be totally enclosed in a gear case in accordance with paragraph 3.8.3 of the above mentioned AWWA Standard Specification.

I. Operators shall be capable of seating and unseating the disc against the full design pressure of velocity, as specified for each class, into a dry system downstream and shall transmit a minimum torque to the valve. Operators shall be rigidly attached to the valve body.

J. The manufacturer shall certify that the required tests on the various materials and on the completed valves have been satisfactory and that the valves conform with all requirements of this Specification and the AWWA standard.

K. Where indicated on the Drawings, extension stems, floor stands, couplings, stem guides, and floor boxes as required shall be furnished and installed.

2.05 PLUG VALVES

A. All plug valves shall be eccentric plug valves capable of sustaining 150 psi in either direction without leaking.

Exception: Single direction plug valves may be used if it is clearly demonstrated they will never be required to resist pressure in both directions either in service or during pipe line testing.

B. Plug valves shall be tested in accordance with current AWWA Standard C-504-80 Section

5. Each valve shall be performance tested in accordance with paragraph 5.2 and shall be given a leakage test and hydrostatic test as described in paragraphs 5.3 and 5.4. Plug valves shall be Kennedy or Dezurik.

C. Plug valves shall be of the non-lubricated eccentric type with resilient faced plugs and shall be furnished with end connections as shown on the Plans. Flanged valves shall be faced and drilled to the ANSI 150 lb. standard. Mechanical joint ends shall be to the AWWA Standard C111-72. Bell ends shall be to the AWWA Standard C100-55 Class B. Screwed ends shall be to the NPT standard.

D. Plug valve bodies shall be of ASTM A126 Class B Semi-steel, 31,000 psi tensile strength minimum in compliance with AWWA Standard C507-73, Section 5.1 and AWWA Standard C504-70 Section 6.4. Port areas for valves 20-inches and smaller shall be 80 percent of full pipe area. Valves 24 inch and larger shall have a minimum port area between 80 and 100 percent of full nominal pipe area. All exposed nuts, bolts, springs, washers, etc. shall be zinc or cadmium plated. Resilient plug facings shall be of Hycar or Neoprene.

E. Plug valves shall be furnished with permanently lubricated stainless steel or oil-impregnated bronze upper and lower plug stem bushings. These bearings shall comply with current AWWA Standards.

2.06 VALVE ACTUATORS

A. General

1. All valve actuators shall conform to Section 3.8 of the AWWA Standard Specification and shall be either manual or motor operated.
2. Actuators shall be capable of seating and unseating the disc against the full design pressure and velocity, as specified for each class, into a dry system downstream, and shall transmit a minimum torque to the valve. Actuators shall be rigidly attached to the valve body.
3. Butterfly valve actuators shall conform to the requirements of Section 3.8 of the AWWA Standard specifications for Rubber Seated Butterfly Valves, Designated C504, insofar as applicable and as herein specified.

B. Manual Actuators

1. Manual actuators shall have permanently lubricated, totally enclosed gearing with handwheel and gear ratio sized on the basis of actual line pressure and velocities. Actuators shall be equipped with handwheel, position indicator, and mechanical stop-limiting locking devices to prevent over travel of the disc in the open and closed positions. They shall turn counter-clockwise to open valves. Manual actuators shall be of the traveling nut, self-locking type and shall be designed to hold the valve in any intermediate position between fully open and fully closed without creeping or fluttering. Actuators shall be fully enclosed and designed to produce the specified torque with a maximum pull of 80 pounds on the handwheel or chainwheel. Actuator components shall withstand an input of 450 foot pounds for 30" and smaller and 300 foot pounds for larger than 30" size valves at extreme actuator positions without damage. Valves located above grade shall have handwheel and position indicator, and valves located below grade shall be equipped with a two inch (2") square AWWA operating nut located at ground level and cast iron extension type valve box. Valve actuators shall conform to AWWA C504, latest revision.

C. Motor Actuators (Modulating)

1. The motor actuated valve controller shall include the motor, actuator unit gearing, limit switch gearing, limit switches, position transmitter which shall transmit a 4-20 mA DC signal, control power transformer, electronic controller which will position the valve based on a remote 4-20 milliamp signal, torque switches, bored and key-wayed drive sleeve for non-rising stem valves, declutch lever and auxiliary handwheel as a self-contained unit.
2. The motor shall be specifically designed for valve actuator service using 480 volt, 60 Hertz, three phase power as shown, on the electrical drawings. The motor shall be sized to provide an output torque and shall be the totally enclosed, non-ventilated type. The power gearing shall consist of helical gears fabricated from heat treated alloy steel forming the first stage of reduction. The second reduction stage shall be a single stage worm gear. The worm shall be of alloy steel with carburized threads hardened and ground for high efficiency. The worm gear shall be of high tensile strength bronze with hobbed teeth. All power gearing shall be grease lubricated. Ball or roller bearings shall be used throughout. Preference will be given to units having a minimum number of gears and moving parts. Spur gear reduction shall be provided as required.
3. Limit switches and gearing shall be an integral part of the valve control. The limit switch gearing shall be made of bronze and shall be grease lubricated, intermittent type and totally enclosed to prevent dirt and foreign matter from entering the gear train. Limit switches shall be of the adjustable type capable of being adjusted to trip at any point between fully opened valve and fully closed valve.
4. The speed of the actuator shall be the responsibility of the system supplier with regard to hydraulic requirements and response compatibility with other components within the control loop. Each valve controller shall be provided with a minimum of two rotor type gear limit switches, one for opening and one for closing. The rotor type gear limit switch shall have two normally open and two normally closed contacts per rotor. Gear limit switches must be geared to the driving mechanism and in step at all times whether in motor or manual operation. Provision shall be made for two additional rotors as described above, each to have two normally open and two normally closed contacts. Each valve controller shall be equipped with a double torque switch. The torque switch shall be adjustable and will be responsive to load encountered in either direction of travel. It shall operate during the complete cycle without auxiliary relays or devices to protect the valve, should excessive load be met by obstructions in either direction of travel. The torque switch shall be provided with double-pole contacts.
5. A permanently mounted handwheel shall be provided for manual operation. The handwheel shall not rotate during electric operations, but must be responsive to manual operation at all times except when being electrically operated. The motor shall not rotate during hand operation nor shall a fused motor prevent manual operation. When in manual operating position, the unit will remain in this position until motor is energized at which time the valve operator will automatically return to electric operation and shall remain in motor position until handwheel operation is desired. This movement from motor operation to handwheel operation shall be accomplished by a positive declutching lever which will disengage the motor and motor gearing mechanically, but not electrically. Hand operation must be reasonably fast. It shall be impossible to place the unit in manual operation when the motor is running. The gear limit switches and torque switches shall be housed in a single easily accessible compartment integral with the power compartment of the valve control. All wiring shall be accessible through this compartment.

Stepping motor drives will not be acceptable.

6. The motor with its control module must be capable of continuously modulating over its entire range without interruption by heat protection devices. The system, including the operator and control module must be able to function, without override protection of any kind, down to zero dead zone.
7. All units shall have strip heaters in both the motor and limit switch compartments.
8. The actuator shall be equipped with open-stop-close push buttons, an auto-manual selector switch, and indicating lights, all mounted on the actuator or on a separate locally mounted power control station.
9. The electronics for the electric operator shall be protected against temporary submergence.
10. Actuators shall be Limitorque L120 with Modutronic Control System containing a position transmitter with a 4-20MA output signal or equal.

D. Motor Actuators (Open-Close)

1. The electronic motor-driven valve actuator shall include the motor, actuator gearing, limit switch gearing, limit switches, torque switches, fully machined drive sleeve, declutch lever, and auxiliary handwheel as a self-contained unit.
2. The motor shall be specifically designed for valve actuator service and shall be of high torque totally enclosed, nonventilated construction, with motor leads brought into the limit switch compartment without having external piping or conduit box.
   (a) The motor shall be of sufficient size to open or close the valve against maximum differential pressure when voltage to motor terminals is 10% above or below nominal voltage.
   (b) The motor shall be prelubricated and all bearings shall be of the anti-friction type.
3. The power gearing shall consist of helical gears fabricated from heat treated steel and worm gearing. The worm shall be carburized and hardened alloy steel with the threads ground after heat treating. The worm gear shall be of alloy bronze accurately cut with a hobbing machine. All power gearing shall be grease lubricated. Ball or roller bearings shall be used throughout.
4. Limit switches and gearing shall be an integral part of the valve actuator. The switches shall be of the adjustable rotor type capable of being adjusted to trip at any point between fully opened valve and fully closed valve. Each valve controller shall be provided with a minimum of two rotor type gear limit switches, one for opening and one for closing (influent valves require additional contacts to allow stopping at an intermediate position). The rotor type gear limit switch shall have two normally open and two normally closed contacts per toro. Additional switches shall be provided if shown on the control and/or instrumentation diagrams. Limit switches shall be geared to the driving mechanism and in step at all times whether in motor or manual operation. Each valve actuator shall be equipped with a double torque switch. The torque switch shall be adjustable and will be responsive to load encountered in either direction of travel. It shall operate during the complete cycle without auxiliary relays or devices to protect the valve should excessive load be met by obstructions in either direction of travel. Travel and thrusts shall be independent of wear in valve disc or seat rings.
5. A permanently mounted handwheel shall be provided for manual operation. The handwheel shall not rotate during electric operation except when being electrically operated. The motor shall not rotate during hand operation, nor shall a fused motor prevent manual operation. When in manual operating position, the unit will remain in this position until motor is energized at which time the valve actuator will automatically return to electric operation and shall remain in motor position until

handwheel operation is desired. Movement from motor operation to handwheel operation shall be accomplished by a positive declutching lever which will disengage the motor and motor gearing mechanically, but not electrically. Hand operation must be reasonably fast. It shall be impossible to place the unit in manual operation when the motor is running.

6. Valve actuators shall be equipped with an integral reversing controller and three phase overload relays, Open-Stop-Close push buttons, local-remote-manual selector switch, control circuit transformer, three-phase thermal overload relays and two pilot lights in a NEMA 4X enclosure. In addition to the above, a close coupled air circuit breaker or disconnect switch shall be mounted and wired to the valve input power terminals for the purpose of disconnecting all underground phase conductors.
7. The valve actuator shall be capable of being controlled locally or remotely via a selector switch integral with the actuator. In addition, an auxiliary dry contact shall be provided for remote position feedback.
8. Valve A.C. motors shall be designed for operation on a 480 volt, 3-phase service. Valve control circuit shall operate from a fuse protected 120 volt power supply.
9. Motor operators shall be as manufactured by Limitorque Corporation, Type L120 or approved equal.

2.07 AIR RELEASE VALVES

The air release valves for use in water or force mains shall be installed as shown on the Drawings. The valves shall have a cast iron body cover and baffle, stainless steel float, bronze water diffuser, Buna-N or Viton seat, and stainless steel trim. The fittings shall be threaded. The air release valves shall be Model 200A or 400A as manufactured by APCO Valve and Primer Corporation, Schaumburg, Illinois; or approved equal.

2.08 VALVE BOXES

A. Buried valves shall have cast-iron three piece valve boxes or HDPE adjustable valve boxes. Cast iron valve boxes shall be provided with suitable heavy bonnets and shall extend to such elevation at or slightly above the finished grade surface as directed by the County. The barrel shall be two-piece, screw type, having a 5-1/4 inch shaft. The upper section shall have a flange at the bottom with sufficient bearing area to prevent settling and shall be complete with cast iron covers. Covers shall have WATER, SEWER, or RECLAIM, as applicable, cast into the top. Lids will be painted "safety" blue for potable, purple for reclaimed, and green for sanitary sewer.

B. All valves shall have actuating nuts extended to within four (4) feet of the top of the valve box. All valve extensions will have a centering guide plate two (2) inches maximum below the actuating nut. The valve extension shall be fastened to the existing nut with a set screw. Valve boxes shall be provided with a concrete base and a valve nameplate engraved with lettering 1/8-inch deep as shown on the Drawings.

C. HDPE adjustable valve boxes shall be one complete assembled unit composed of the valve box and extension stem. All moving parts of the extension stem shall be enclosed in a housing to prevent contact with the soil. Valve box assembly shall be adjustable to accommodate variable trench depths.

D. The entire assembly shall be made of heavy wall high density polyethylene. All exterior components shall be joined with stainless steel screws. The valve box top section shall be adaptable to fit inside a valve box upper section.

E. The stem assembly shall be of a telescoping design that allows for variable adjustment length. The stem material shall be of plated steel square tubing. The stem assembly shall have a built-in device that keeps the stem assembly from disengaging at its fully extended length. The extension stem must be torque tested to 1000 foot pounds. Covers shall have WATER, SEWER or RECLAIMED clearly and permanently impressed into the top surface.

2.09 CORPORATION COCKS

Corporation cocks for connections to cast-iron, ductile iron or steel piping shall be all brass or bronze suitable for 180 psi operating pressure and similar to Mueller Co. H-10046 or approved equal by Clow Corp., and shall be of sizes required and/or noted on the Drawings.

2.10 FLANGE ADAPTER COUPLINGS

Flange adapter couplings shall be of the size and pressure rating required for each installation and shall be suitable for use on either cast iron or ductile iron pipe. They shall be similar or approved equal to Dresser Company, Style 128. All couplings shall have a sufficient number of factory installed anchor studs to meet or exceed a minimum test pressure rating of 230 psi minimum.

2.11 FLEXIBLE COUPLINGS

Flexible couplings shall be either the split type or the sleeve type as shown on the Drawings.

1. Split type coupling shall be used with all interior piping and with exterior pipings noted on the Drawings. The couplings shall be mechanical type for radius groove piping. The couplings shall mechanically engage and lock grooved pipe ends in a positive couple and allow for angular deflection and contracting and expansion.
2. Couplings shall consist of malleable iron, ASTM Specification A47, Grade 32510 housing clamps in two or more parts, a single chlorinated butyl composition sealing gasket with a "C" shaped cross-section and internal sealing lips projecting diagonally inward, and two or more oval track head type bolts with hexagonal heavy nuts conforming to ASTM Specification A 183 and A194 to assemble the housing clamps. Bolts and nuts shall be hot dipped galvanized after fabrication.
3. Victualic type couplings and fittings may be used in lieu of flanged joints. Pipes shall be radius grooved as specified for use with the Victaulic couplings. Flanged adapter connections at fittings, valves, and equipment shall be Victaulic Vic Flange Style 741, equal by Gustin-Bacon Group, Division of Certain-Teed Products, Kansas City, Kansas, or approved equal.
4. Sleeve type couplings shall be used with all buried piping. The couplings shall be of steel and shall be Dresser Style 38 or 40, as shown on the Drawings, or equal. The coupling shall be provided with hot dipped galvanized steel bolts and nuts unless indicated otherwise.
5. All couplings shall be furnished with the pipe stop removed.
6. Couplings shall be provided with gaskets of a composition suitable for exposure to the liquid within the pipe.
7. If the Contractor decides to use victaulic couplings in lieu of flanged joints, he shall be responsible for supplying supports for the joints.

2.12 HOSE BIBS

Hose bibs shall be 3/4" or 1" brass, polished chromium plated brass, with vacuum breaker as noted on the drawings.

2.13 SLOW CLOSING AIR AND VACUUM VALVES

A. The Contractor shall furnish and install slow closing air and vacuum valves as shown on the Drawings which shall have two (2) independent valves bolted together. The air and vacuum valve shall have all stainless steel float, guided on both ends with stainless shafts. The air and vacuum valve seat shall be Buna-N to insure drop tight closure. The Buna-N seat shall be fastened to the cover stainless shoulder screws in a manner to prevent distortion of the seat. The float shall be guided at both ends with stainless steel bushings.

B. The valve cover shall have a male lip designed to fit into the body register for accurate alignment of the float into the Buna-N seat. The valve cover shall have 250-pound class flanged outlet connection.

C. The surge check valve shall be bolted to the inlet of the air and vacuum valve and consist of a body, seat, disc, and compression spring. A surge check unit shall operate on the interphase between the kinetic energy and relative velocity flows of air and water, so that after air passes through, and water rushes into the surge check, the disc starts to close, reducing the rate of flow of water into the air valve by means of throttling orifices in the disc to prevent water hammer in the air valves. The surge check orifices must be adjustable type for regulation in the field to suit operating conditions. Valve shall be rated for 250-pound class working pressure.

D. The complete slow closing air and vacuum valve with air release valve shall have been flow tested in the field, substantiated with test data to show reduction of surge pressure in the valve. Flow test data shall be submitted with initial shop drawings for approval.

E. Valve exterior to be painted Red Oxide, Phenolic TT-P86, Primer or approved equal for high resistance to corrosion.

F. All materials of construction shall be certified in writing to conform to ASTM specifications as follows:

Air Valve Cover, Body, and Surge Check Body	Cast Iron	ASTM A48, Class 30
Float	Stainless Steel	ASTM A240
Surge Check Seat and Disc	Stainless Steel	ASTM A582
Air Valve Seat	Buna-N	
Spring	Stainless Steel	T302

2.14 SURGE ANTICIPATOR VALVES

A. Surge anticipator valves shall be furnished for the pumping systems as shown on the Drawings. The valve shall be hydraulically operated, pilot controlled, and diaphragm or piston actuated. The main valve shall be cast iron conforming to ASTM A48 with bronze trim conforming to ASTM B61 and flanged ends conforming to ANSI B161.1. The main valve shall be globe type with a single removable seat and a resilient disc.

B. The diaphragm actuated valve shall have a stainless steel stem guided at both ends by a bearing in the valve cover and an integral bearing surface in the seat. No external packing glands shall be permitted. The valve shall be fully serviceable without removing it from the line. The pilot system shall be of noncorrosive construction and provided with isolation cocks.

C. The piston actuated valve shall operate on the differential piston principle. The valve piston shall be guided on its outside diameter. The valve shall be able to operate in any position and shall be fully serviceable without removing it from the line. The pilot system shall be provided with isolation cocks, and be of noncorrosive materials of construction.

D. The valve shall be designed specifically to minimize the effects of water hammer, resulting from power failure at the pumping station, or from normal stopping and starting of pumping operators. The valve shall open hydraulically on a down surge, or low pressure wave created when the pump stops, remain open during the low pressure cycle in order to be open when the high pressure wave returns. The high pressure pilot shall be adjustable over a 20 to 200 psi range and the low pressure pilot shall be adjustable over a 15 to 75 psi range. The valve shall be the 250 Class.

2.15 CHECK VALVES

A. Check valves for cast iron and ductile iron pipe lines shall be swing type and shall meet the material requirements of AWWA Specification C508. The valves shall be iron body, bronze mounted, single disc, 175 psi working water pressure and nonshock. Valves shall be as manufactured by Mueller, Clow, Kennedy, or M&H. Valves 8" and larger shall be air cushioned to reduce valve slam.

B. When there is no flow through the line, the disc shall hang lightly against its seat in practically a vertical position. When open, the disc shall swing clear of the waterway.

C. Check valves shall have bronze seat and body rings, extended bronze hinge pins and bronze nuts on the bolts of bolted covers. The interior and exterior of the valve body shall have a factory applied fusion bonded or 10 mil 2 part epoxy coating (Protecto 401 or approved equal).

D. Valves shall be so constructed that disc and body seat may easily be removed and replaced without removing the valve from the line. Valves shall be fitted with an extended hinge arm with outside lever and weight. Weights provided and approved by the County shall be installed.

2.16 HYDRANTS

Hydrants shall be AVK Series 2780 Barrel (nostalgic style with stainless steel bolts) American Darling B-84-B or Mueller Super Centurian 250, or approved equal and shall conform to the "Standard Specification for Fire Hydrants for Ordinary Water Works

Service", AWWA C502, and UL/FM certified, and shall in addition meet the specific requirements and exceptions which follow:

1. Hydrants shall be according to manufacturer's standard pattern and of standard size, and shall have one 4-1/2" steamer nozzle and two 2-1/2" hose nozzles.
2. Hydrant inlet connections shall have mechanical joints for 6" ductile-iron pipe.
3. Hydrant valve opening shall have an area at least equal to that area of a 5-1/4" minimum diameter circle and be obstructed only by the valve rod. Each hydrant shall be able to deliver 500 gallons minimum through its two 2-1/2" hose nozzles when opened together with a loss of not more than 2 psi in the hydrants.
4. Each hydrant shall be designed for installation in a trench that will provide 5-ft. cover.
5. Hydrants shall be hydrostatically tested as specified in AWWA C502.
6. Hydrants shall be rated at 200 psi.
7. All nozzle threads shall be American National Standard.
8. Each nozzle cap shall be provided with a Buna N rubber washer.
9. Hydrants shall be so arranged that the direction of outlets may be turned 90 degrees without interference with the drip mechanism and without the mechanism obstructing the discharge from any outlet.
10. Hydrants must be capable of being extended without removing any operating parts.
11. Hydrants shall have bronze-to-bronze seatings as per AWWA C502-85.
12. Hydrant main valve closure shall be of the compression type opening against the pressure and closing with the pressure. The resilient seat material shall meet the requirements of AWWA C-509 and shall preferably be EPDM Elastomer.
13. Internal and below ground iron parts (bonnet, nozzle section and base) shall have a fusion bonded epoxy coating per AWWA C550. Aboveground external hydrant parts (cap, bonnet and nozzle section) shall be either epoxy coated together with a UV resistant polyester coating or have two shop coats of paint per AWWA C502. The lower stand pipe or barrel shall be protected with asphaltic coatings per AWWA C502.
14. Exterior nuts, bolts and washer shall be stainless steel. Bronze nuts may be used below grade.
15. All internal operating parts shall be removable without requiring excavation.

2.17 RESTRAINING CLAMPS

Restraining clamp assemblies as detailed in the drawings for use at hydrant connections to water mains, or at fittings where shown on the Drawings, shall be as manufactured by American Cast Iron Pipe, Star Pipe Products, U.S. Pipe; or approved equal.

2.18 TAPPING SLEEVES AND GATE VALVES

A. Tapping valves shall meet the requirement of AWWA C500. The valves shall be flanged, shall be mechanical joint outlet with nonrising stem, designed for vertical burial and shall open left or counterclockwise. Stuffing boxes shall be the "O-ring" type. Operating nut shall be AWWA Standard 2" square for valves 2" and up. The valves shall be provided with an overload seat to permit the use of full size cutters. Gaskets shall cover the entire area of flange surfaces and shall be supplied with EPDM wedges up to 30" diameter.

B. Tapping sleeves and saddles shall seal to the pipe by the use of a confined "O" ring gasket, and shall be able to withstand a pressure test of 180 psi for one hour with no leakage in accordance with AWWA C110, latest edition. A stainless steel 3/4" NPT test

plug shall be provided for pressure testing. All bolts joining the two halves shall be stainless steel and shall be included with the sleeve or saddle. Sleeves and saddles shall be protected from corrosion by being fusion applied epoxy coated, or be made of 18-8 Type 304 stainless steel. Saddle straps shall be 18-8 Type 304 stainless steel.

2.19 SINGLE ACTING ALTITUDE VALVES

A. Function

1. The altitude control valve shall be of the single acting type, closing off tightly when the water reaches the maximum predetermined level in the tank to prevent overflow; and opening to permit replenishing of the tank supply when the water level drops approximately 6" to 12" below the maximum level.
2. A hand operated valve in the power water line to the top of the piston shall permit adjustment of the speed of valve closing. The tank water level control shall be by means of a diaphragm operated, spring loaded, three way pilot which directs power water to or from the top of the main valve piston. The three way pilot shall be of bronze construction. The diaphragm surface exposed to the tank head shall be not less than 57 sq. inches. It shall be possible to adjust the spring above the diaphragm for water level control approximately 20% above or below the factory setting.

B. Description

1. The main valve shall operate on the differential piston principle such that the area on the underside of the piston is no less than the pipe area on the upper surface of the piston is of a greater area than the underside of the piston.
2. The valve piston shall be guided on its outside diameter by long stroke stationary Vee ports which shall be downstream of the seating surface to minimize the consequences of throttling. Throttling shall be done by the valve Vee ports and not the valve seating surfaces.
3. The valve shall be capable of operating in any position and shall incorporate only one flanged cover at the valve top from which all internal parts shall be accessible. There shall be no stems, stem guides, or spokes within the waterway. There shall be no springs to assist the valve operation.

C. Construction

1. The valve body shall be of cast iron ASTM A-126 with flanges conforming to the latest ANSI Standards. The valve shall be extra heavy construction throughout. The valve interior trim shall be bronze B-62 as well as the main valve operation.
2. The valve seals shall be easily renewable while no diaphragm shall be permitted within the main valve body.
3. All controls and piping shall be of non-corrosive construction.
4. A visual valve position indicator shall be provided for observing the valve piston position at any time.

D. Figure Number

The valves shall be the 20" Globe type (Fig. 3200-D) as manufactured by GA Industries of Mars, Pennsylvania, or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. All valves and appurtenances shall be installed in the location shown, true to alignment and rigidly supported. Any damage occurring to the above items before they are installed shall be repaired to the satisfaction of the County.

B. After installation, all valves and appurtenances shall be tested at least two hours at the working pressure corresponding to the class of pipe, unless a different test pressure is specified. If any joint proves to be defective, it shall be repaired to the satisfaction of the County.

C. Install all floor boxes, brackets, extension rods, guides, the various types of operators and appurtenances as shown on the Drawings that are in masonry floors or walls, and install concrete inserts for hangers and supports as soon as forms are erected and before concrete is poured. Before setting these items, the Contractor shall check all plans and figures which have a direct bearing on their location and he shall be responsible for the proper location of these valves and appurtenances during the construction of the structures.

D. Pipe for use with flexible couplings shall have plain ends as specified in the respective pipe sections.

E. Flanged joints shall be made with high strength, low alloy Corten bolts, nuts and washers. Mechanical joints shall be made with mild corrosion resistant alloy steel bolts and nuts. All exposed bolts shall be painted the same color as the pipe. All buried bolts and nuts shall be heavily coated with two (2) coats of bituminous paint comparable to Inertol No. 66 Special Heavy.

F. Prior to assembly of split couplings, the grooves as well as other parts shall be thoroughly cleaned. The ends of the pipes and outside of the gaskets shall be moderately coated with petroleum jelly, cup grease, soft soap or graphite paste, and the gasket shall be slipped over one pipe end. After the other pipe has been brought to the correct position, the gasket shall be centered properly over the pipe ends with the lips against the pipes. The housing sections then shall be placed. After the bolts have been inserted, the nuts shall be tightened until the housing sections are firmly in contact, metal-to-metal, without excessive bolt tension.

G. Prior to the installation of sleeve-type couplings, the pipe ends shall be cleaned thoroughly for a distance of 8". Soapy water may be used as a gasket lubricant. A follower and gasket, in that order, shall be slipped over each pipe to a distance of about 6" from the end.

H. Valve boxes with concrete bases shall be installed as shown on the Drawings. Mechanical joints shall be made in the standard manner. Valve stems shall be vertical in all cases. Place cast iron box over each stem with base bearing on compacted fill and the top flush with final grade. Boxes shall have sufficient bracing to maintain alignment during backfilling. Knobs on cover shall be parallel to pipe. Remove any sand or undesirable fill from valve box.

3.02 HYDRANTS

A. Hydrants shall be set at the locations designated by the County and/or as shown on the Drawings and shall be bedded on a firm foundation. A drainage pit on crushed stone as shown on the Drawings shall be filled with gravel or crushed stone and satisfactorily compacted. During backfilling, additional gravel or crushed stone shall be brought up around and 6" over the drain port. Each hydrant shall be set in true vertical alignment and shall be properly braced. Concrete thrust blocks shall be placed between the back of the hydrant inlet and undisturbed soil at the end of the trench. Minimum bearing area shall be as shown on the plans. Felt paper shall be placed around the hydrant elbow prior to placing concrete. CARE MUST BE TAKEN TO INSURE THAT CONCRETE DOES NOT PLUG THE DRAIN PORTS. Concrete used for backing shall be as specified herein.

B. When installations are made under pressure, the flow of water through the existing main shall be maintained at all times. The diameter of the tap shall be a minimum of 2" less than the inside diameter of the branch line.

C. The entire operation shall be conducted by workmen thoroughly experienced in the installation of tapping sleeves and valves, and under the supervision of qualified personnel furnished by the manufacturer. The tapping machine shall be furnished by the Contractor if tap is larger than 12" in diameter.

D. The Contractor shall determine the locations of the existing main to be tapped to confirm the fact that the proposed position for the tapping sleeve will be satisfactory and no interference will be encountered such as the occurrence of existing utilities or of a joint or fitting at the location proposed for the connection. No tap will be made closer than 30" from a pipe joint.

E. Tapping valves shall be set in vertical position and be supplied with a 2" square operating nut for valves 2" and larger. The valve shall be provided with an oversized seat to permit the use of full sized cutters.

F. Tapping sleeves and valves with boxes shall be set vertically or horizontally as indicated on the Drawings and shall be squarely centered on the main to be tapped. Adequate support shall be provided under the sleeve and valve during the tapping operation. Sleeves shall be no closer than 30" from water main joints. Thrust blocks shall be provided behind all tapping sleeves. Proper tamping of supporting earth around and under the valve and sleeve is mandatory. After completing the tap, the valve shall be flushed to ensure that the valve seat is clean.

3.03 SHOP PAINTING

Ferrous surfaces of valves and appurtenances shall receive a coating of rust-inhibitive primer. All pipe connection openings shall be capped to prevent the entry of foreign matter prior to installation.

3.04 FIELD PAINTING

All metal valves and appurtenances specified herein and exposed to view shall be painted.

All above ground potable water main valves shall be painted safety blue.

3.05 INSPECTION AND TESTING

Completed pipe shall be subjected to hydrostatic pressure test for two hours at 180 psi. All leaks shall be repaired and lines retested as approved by the County. Prior to testing, the pipelines shall be supported in an approved manner to prevent movement during tests.

END OF SECTION

DIVISION 3 CONCRETE

SECTION 03200 CONCRETE REINFORCEMENT

PART 1 GENERAL

1.01 WORK INCLUDED

A. Reinforcing steel bars and welded steel wire fabric for cast-in-place concrete, complete with tie wire.

B. Support chairs, bolsters, bar supports and spacers, for reinforcing.

1.02 QUALITY ASSURANCE

Perform concrete reinforcing work in accordance with ACI 318 unless specified otherwise in this Section.

1.03 REFERENCES

A. ACI 318 - Building Code Requirements for Reinforced Concrete.

B. ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.

C. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.

D CRSI 63 - Recommended practice for placing reinforcing bars.

E. CRSI 65 - Recommended practice for placing bar supports, specifications and nomenclature.

F. ACI 315 - American Concrete Institute - Manual of Standard Practice.

1.04 SHOP DRAWINGS

A. Submit shop drawings in accordance with Contract Documents.

B. Indicate bar sizes, spacings, locations and quantities of reinforcing steel and wire fabric, bending and cutting schedules and supporting and spacing devices.

C. Manufacturer's Literature: Manufacturer's specifications and installation instructions for splice devices.

PART 2 PRODUCTS

2.01 REINFORCING

A. Reinforcing steel: Grade 60, Minimum Yield Strength 60,000 psi, deformed billet steel bars, ASTM A615; plain finish.

B. Welded steel wire fabric: Deformed wire, ASTM A497; smooth wire ASTM A185 in flat

sheets; plain finish.

2.02 ACCESSORY MATERIALS

A. Tie wire: Minimum 16 gauge annealed type, or patented system accepted by County.

B. Chairs, bolsters, bar supports, spacers: Sized and shaped for strength and support of reinforcing during construction conditions.

C. Special chairs, bolsters, bar supports, spacers (where adjacent to architectural concrete surfaces): Stainless steel type sized and shaped as required.

2.03 FABRICATION

A. Fabricate concrete reinforcing in accordance with ACI 315.

B. Locate reinforcing splices, not indicated on Drawings, at points of minimum stress. Location of splices shall be reviewed by County.

C. Where indicated, weld reinforcing bars in accordance with AWS D12.1.

PART 3 EXECUTION

3.01 PLACEMENT

A. Reinforcing shall be supported and secured against displacement. Do not deviate from true alignment.

B. Before placing concrete, ensure reinforcing is clean, free of loose scale, dirt, or other foreign coatings which would reduce bond to concrete.

3.02 QUALITY ASSURANCE

A. Acceptable Manufacturers: Regularly engaged in manufacture of steel bar and welded wire fabric reinforcing.

B. Installer Qualifications: Three years experience in installation of steel bar and welded wire fabric reinforcing.

C. Allowable Tolerances:

1. Fabrication:
   a. Sheared length: +l in.
   b. Depth of truss bars: +0, -1/2 in.
   c. Stirrups, ties and spirals: ±1/4 in.
   d. All other bends: ±1 in.
2. Placement:
   a. Concrete cover to form surfaces: ±1/4 in.
   b. Minimum spacing between bars: 1 in.
   c. Top bars in slabs and beams:
      (1) Members 8 in. deep or less: ±1/4 in.
      (2) Members more than 8 in.: ±1/2 in.
   d. Crosswise of members: Spaced evenly within 2 in. of stated separation.

e. Lengthwise of members: Plus or minus 2 in.

3. Maximum bar movement to avoid interference with other reinforcing steel, conduits, or embedded items: 1 bar diameter.

3.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver reinforcement to project site in bundles marked with metal tags indicating bar size and length.

B. Handle and store materials to prevent contamination.

3.05 INSTALLATION

A. Placement:

1. Bar Supports: CRSI 65.
2. Reinforcing Bars: CRSI 63.

B. Steel Adjustment:

1. Move within allowable tolerances to avoid interference with other reinforcing steel, conduits, or embedded items.
2. Do not move bars beyond allowable tolerances without concurrence of County.
3. Do not heat, bend, or cut bars without concurrence of County.

C. Splices:

1. Lap splices: Tie securely with wire to prevent displacement of splices during placement of concrete.
2. Splice devices: Install in accordance with manufacturer's written instructions.
3. Do not splice bars without concurrency of County, except at locations shown on Drawings.

D. Wire Fabric:

1. Install in longest practicable length.
2. Lap adjoining pieces one full mesh minimum, and lay splices with 16 gauge wire.
3. Do not make end laps midway between supporting beams, or directly over beams of continuous structures.
4. Offset end laps in adjacent widths to prevent continuous laps.

E. Cleaning: Remove dirt, grease, oil, loose mill scale, excessive rust, and foreign matter that will reduce bond with concrete.

F. Protection During Concreting: Keep reinforcing steel in proper position during concrete placement.

END OF SECTION

SECTION 03300 CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 WORK INCLUDED

Poured-in-place concrete slabs, thrust blocks, pile caps and pipe support cradles.

1.02 QUALITY ASSURANCE

Perform cast-in-place concrete work in accordance with ACI 318, unless specified otherwise in this Section.

1.03 TESTING LABORATORY SERVICES

A. Inspection and testing will be performed by the testing laboratory currently under contract to Manatee County in accordance with the Contract Documents.

B. Provide free access to work and cooperate with appointed firm.

C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of work.

D. Tests of cement and aggregates may be performed to ensure conformance with requirements stated herein.

E. Three concrete test cylinders will be taken for every 100 cu. yds. or part thereof of each class of concrete placed each day. Smaller pours shall have cylinders taken as directed by the County.

F. One slump test will be taken for each set of test cylinders taken.

1.04 REFERENCES

A. ASTM C33 - Concrete Aggregates

B. ASTM C150 - Portland Cement

C. ACI 318 - Building Code Requirements for Reinforced Concrete

D. ASTM C260 - Air Entraining Admixtures for Concrete

E. ASTM C94 - Ready-Mixed Concrete

F. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete

G. ACI 305 - Recommended Practice for Hot Weather Concreting

PART 2 PRODUCTS

2.01 CONCRETE MATERIALS

A. Cement: Moderate-Type II, High early strength-Type III, Portland type, ASTM C150.

B. Fine and Coarse Aggregates: ASTM C33.

C. Water: Clean and free from injurious amounts of oil, alkali, organic matter, or other deleterious material.

2.02 ADMIXTURES

A. Air Entrainment: ASTM C260.

B. Chemical: ASTM C494 Type A - water reducing admixture.

2.03 ACCEPTABLE MANUFACTURERS

Acceptable Products:

1. Pozzolith
2. WRDA

2.04 ACCESSORIES

Non-shrink grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2400 psi in 2 days and 7000 psi in 28 days.

2.05 CONCRETE MIXES

A. Mix concrete in accordance with ASTM C94.

B. Provide concrete of following strength:

1. Required concrete strengths as determined by 28 day cylinders shall be as shown on the Drawings, but shall not be less than 3000 psi.
2. Select proportions for normal weight concrete in accordance with ACI 301 3.8 Method 1, Method 2, or Method 3. Add air entraining agent to concrete to entrain air as indicated in ACI 301 Table 3.4.1.
3. All mixes shall be in accordance with FDOT Specifications.

C. Use set-retarding admixtures during hot weather only when accepted by County.

D. Add air entraining agent to concrete mix for concrete work exposed to exterior.

2.06 FORMS

A. Forms shall be used for all concrete masonry, including footings. Form shall be so constructed and placed that the resulting concrete will be of the shape, lines, dimensions, appearance and to the elevations indicated on the Drawings.

B. Forms shall be made of wood, metal, or other approved material. Wood forms shall be constructed of sound lumber or plywood of suitable dimensions, free from knotholes and loose knots; where used for expose surfaces, boards shall be dressed and matched. Plywood shall be sanded smooth and fitted with tight joints between panels. Metal forms

shall be of an approved type for the class of work involved and of the thickness and design required for rigid construction.

C. Edges of all form panels in contact with concrete shall be flush within 1/32-inch and forms for plane surfaces shall be such that the concrete will be plane within 1/16-inch in four feet. Forms shall be tight to prevent the passage of mortar and water and grout.

D. Forms for walls shall have removable panels at the bottom for cleaning, inspection and scrubbing-in of bonding paste. Forms for walls of considerable height shall be arranged with tremies and hoppers for placing concrete in a manner that will prevent segregation and accumulation of hardened concrete on the forms or reinforcement above the fresh concrete.

E. Molding or bevels shall be placed to produce a 3/4-inch chamfer on all exposed projecting corners, unless otherwise shown on the Drawings. Similar chamfer strips shall be provided at horizontal and vertical extremities of all wall placements to produce "clean" separation between successive placements as called for on the Plans.

F. Forms shall be sufficiently rigid to withstand vibration, to prevent displacement or sagging between supports and constructed so the concrete will not be damaged by their removal. The Contractor shall be entirely responsible for their adequacy.

G. Forms, including new pre-oiled forms, shall be oiled before reinforcement is placed, with an approved nonstaining oil or liquid form coating having a non-paraffin base.

H. Before form material is re-used, all surfaces in contact with concrete shall be thoroughly cleaned, all damaged places repaired, all projecting nails withdrawn, all protrusions smoothed and in the case of wood forms pre-oiled.

I. Form ties encased in concrete shall be designed so that after removal of the projecting part, no metal shall be within 1-inch of the face of the concrete. That part of the tie to be removed shall be at least 1/2-inch diameter or be provided with a wood or metal cone at least 1/2-inch in diameter and 1-inch long. Form ties in concrete exposed to view shall be the cone-washer type equal to the Richmond "Tyscru". Throughbolts or common wire shall not be used for form ties.

PART 3 EXECUTION

3.01 PLACING CONCRETE

A. Place concrete in accordance with ACI 304.

B. Notify County minimum 24 hours prior to commencement of concreting operations.

C. Verify anchors, seats, plates and other items to be cast into concrete are placed, held securely and will not cause hardship in placing concrete. Rectify same and proceed with work.

D. Maintain records of poured concrete items. Record date, location of pour, quantity, air temperature and test samples taken.

E. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.

F. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Apply bonding agent in accordance with manufacturer's recommendations.

G. Pour concrete continuously between predetermined construction and control joints. Do not break or interrupt successive pours such that cold joints occur.

H. In locations where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels and pack solidly with non-shrink grout.

I. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify County upon discovery.

J. Conform to ACI 305 when concreting during hot weather.

3.02 SCREEDING

Screed surfaces level, maintaining flatness within a maximum deviation of 1/8" in 10 feet.

3.03 PATCHING

Allow County to inspect concrete surfaces immediately upon removal of forms. Patch imperfections as directed. All patching procedures shall be submitted to and approved by the County prior to use.

3.04 DEFECTIVE CONCRETE

A. Modify or replace concrete not conforming to required lines, details and elevations.

B. Repair or replace concrete not properly placed resulting in excessive honeycomb and other defects. Do not patch, fill, touch-up, repair, or replace exposed architectural concrete except upon express direction of County for each individual area.

3.05 CONCRETE FINISHING

Provide concrete surfaces to be left exposed, columns, beams and joists with smooth rubbed finish.

3.06 CURING AND PROTECTION

Beginning immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures and mechanical injury. Maintain concrete with minimal moisture loss at relatively constant temperature for a period of 7 days or until concrete strengths reaches 75% of the 28 day design strength.

Protection against moisture loss may be obtained with spray on curing compounds or plastic sheets. Protection against heat or cold may be obtained with insulated curing blankets or forms.

3.07 CONCRETE DRIVEWAY RESTORATION

Concrete driveways shall be restored with 6 inches of 3,000 psi concrete with W2.5 X W2.5, 6X6 wire mesh. Place ½ inch expansion joint between back of curb and new

concrete. Area beneath restoration shall be mechanically tamped prior to placing concrete.

3.08 CONCRETE SIDEWALK RESTORATION

Concrete sidewalks across driveways shall be restored with 6 inches of 3,000 psi concrete with W2.5 X W2.5, 6X6 wire mesh. Place ½ inch expansion joint between back of curb and new concrete. Area beneath restoration shall be mechanically tamped prior to placing concrete.

Concrete sidewalks outside of driveways shall be restored with 4 inches of 3,000 psi concrete per FDOT Design Standards, Sections 522 & 310

END OF SECTION

SECTION 03350 CONCRETE FINISHES

PART 1 GENERAL

1.01 SCOPE OF WORK

Furnish all labor, materials, equipment and incidentals required to finish cast-in-place concrete surfaces as specified herein.

1.02 SUBMITTALS

Submit to the County as provided in the Contract Documents, the proposed chemical hardener manufacturer's surface preparation and application procedures.

1.03 SCHEDULE OF FINISHES

A. Concrete for the Project shall be finished in the various specified manners either to remain as natural concrete or to receive an additional applied finish or material under another Section.

B. The base concrete for the following conditions shall be finished as noted and as further specified herein:

1. Exterior, exposed concrete slabs and stairs - broomed finish.
2. Interior, exposed concrete slabs - steel trowel finish.
3. Concrete on which process liquids flow or in contact with sludge - steel trowel finish.
4. Concrete where not exposed in the finished work and not scheduled to receive an additional applied finish or material - off-form finish.
5. Provide concrete surfaces to be left exposed such as walls, columns, beams and joists with smooth rubbed finish.

1.04 RESPONSIBILITY FOR CHANGING FINISHES

A. The surface finishes specified for concrete to receive additional applied finishes or materials are the finishes required for the proper application of the actual products specified under other Sections. Where different products are approved for use, it shall be the Contractor's responsibility to determine if changes in finishes are required and to provide the proper finishes to receive these products.

B. Changes in finishes made to accommodate product different from those specified shall be performed at no additional cost to the County. Submit the proposed new finishes and their construction methods to the County for approval.

PART 2 PRODUCTS

2.01 MATERIALS

A. Portland cement and component materials required for finishing the concrete surfaces shall be as specified in the Contract Documents.

B. Hardener shall be Lapidolith as manufactured by Sonneborn Building Products or approved equal. Hardener shall be used on all floors, stair treads and platforms.

PART 3 EXECUTION

3.01 FORMED SURFACES

A. Forms shall not be stripped before the concrete has attained a strength of at least 50 percent of the ultimate design strength. This is equivalent to approximately five "100 day-degrees" of moist curing.

B. Care shall be exercised to prevent damaging edges or obliterating the lines of chamfers, rustications, or corners when removing the forms or doing any work adjacent thereto.

C. Clean all exposed concrete surfaces and adjoining work stained by leakage of concrete, to the satisfaction of the County.

D. Off-form finish. Fins and other projections shall be removed as approved. Tie cone holes and other minor defects shall be filled with non-shrink grout specified under the Contract Documents.

3.02 FLOORS AND SLABS

A. Floors and slabs shall be screeded to the established grades and shall be level with a tolerance of 1/8-inch when checked with a 10 foot straight edge, except where drains occur, in which case floors shall be pitched to drains as indicated. Failure to meet either of above shall be cause for removal, grinding, or other correction as approved by the County.

B. Following screeding as specified above, power steel trowel as follows:

1. Immediately after final screeding, a dry cement/sand shake in the proportion of 2-sacks of portland cement to 350-pounds of coarse natural concrete sand shall be sprinkled evenly over the surface at the rate of approximately 500 pounds per 1,000 square feet of floor. Neat, dry cement shall not be sprinkled on the surface. This shake shall be thoroughly floated into the surface with an approved disc type power compacting machine weighing at least 200 pounds if a 20-inch disc is used or 300 pounds if a 24-inch disc is used (such as a "Kelly Float" as manufactured by the Weisner-Rapp Corporation of Buffalo, New York). A mechanical blade-type float or trowel is not acceptable for this work.
   NOTE: This operation (application of the cement/sand shake) may be eliminated at the discretion of the County if the base slab concrete exhibits adequate fattiness and homogeneity.
2. In lieu of power steel troweling, small areas as defined by the County shall be compacted by hand steel troweling with the dry cement/sand shake as ordered.
3. The floor or slab shall be compacted to a smooth surface and the floating operation continued until sufficient mortar is brought to the surface to fill all voids. The surfaces shall be tested with a straight edge to detect high and low spots which shall be eliminated.
4. Compaction shall be continued only until thorough densification is achieved and a small amount of mortar is brought to the surface. Excessive floating shall be avoided.

C. After Paragraph 3.02 A and B procedures are accomplished, floors and slabs for particular conditions shall be completed as scheduled in one of the following finishes:

1. Wood float finish. Hand wood float, maintaining the surface tolerance to provide a grained, nonslip finish as approved.
2. Broomed finish. Hand wood float maintaining the surface tolerance and then broom with a stiff bristle broom in the direction of drainage to provide a nonslip finish as approved.
3. Steel trowel finish. Hand steel trowel to a perfectly smooth, hard even finish free from high or low spots or other defects as approved.

D. Floors, stair treads and platforms shall be given a floor hardener. Application shall be according to manufacturer's instructions.

3.03 APPROVAL OF FINISHES

A. All concrete surfaces will be inspected during the finishing process by the County.

B. Surfaces which, in the opinion of the County, are unsatisfactory shall be refinished or reworked until approved by the County.

END OF SECTION

DIVISION 5 METALS

SECTION 05550 AIR RELEASE ENCLOSURE

PART 1 GENERAL

1.01 SCOPE OF WORK

The Contractor shall furnish all labor, materials, equipment and incidentals required to install the above ground air release enclosure as listed in the specifications and as shown on the Drawings.

1.02 RELATED WORK

The contractor shall be responsible for any related work necessary for the proper installation of enclosure. This shall include, but is not limited to, any required bypass pumping, any required earthwork and any required concrete work.

1.03 SUBMITTALS

A. Submit to the County shop drawings and schedules of all enclosure systems and appurtenances required. Submit design data and specification data sheets listing all parameters used in the enclosure system design.

B. Submit to the County the name of the enclosure supplier and a list of materials to be furnished.

1.04 REFERENCE STANDARDS

A. American Water Works Association (AWWA).

B. American Society for Testing and Materials (ASTM).

C. Where reference is made to the above standard, the revision in effect at the time of bid opening shall apply.

1.05 QUALITY ASSURANCE

The enclosure manufacturer shall be a company specializing in the manufacture of such enclosures with at least five (5) years of successful field experience and being lab certified as meeting A.S.S.E 1060 requirements.

1.06 DELIVERY, STORAGE AND HANDLING

A. Care shall be taken in shipping, handling and placing to avoid damaging. Any material damaged in shipment shall be replaced as directed by the County.

B. Any material showing deterioration, or which has been exposed to any other adverse storage condition that may have caused damage, even though no such damage can be seen, shall be marked as rejected and removed at once from the work.

PART 2 PRODUCTS

2.01 GENERAL

All enclosures shall comply with the standard detail for shape and size and shall include a 24"W x 30"H access door with a hasp for a padlock. The enclosure shall be securely attached to a concrete base with anchor brackets installed on the interior of the enclosure, through the flange base of the enclosure itself or through a stainless steel anchor hinge.

2.02 FIBERGLASS ENCLOSURE

A. Enclosure shall be a 1 piece molded fiberglass enclosure with a base flange for mounting to the concrete slab and a full recessed door opening with a lip. Enclosure shall be by Allied Molded Products, or approved equal. Color shall be as directed by the County.

B. Full length piano style hinge, door latch, padlock hasp and all bolts and other hardware shall be of stainless steel.

PART 3 EXECUTION

3.01 INSTALLATION

Enclosure shall be assembled and mounted plumb, level and square on the concrete pad according to the manufacturer's instructions and the contract drawings.

END OF SECTION

Southwest Florida Water Management District

2379 Broad Street, Brooksville, Florida 34604-6899
(352) 796-7211 or 1-800-423-1476 (FL only)
TDD only: 1-800-231-6103 (FL only)
On the Internet at WaterMatters.org

Bartow Service Office
170 Century Boulevard
Bartow, Florida 33830-7700
(863) 534-1448 or
1-800-492-7862 (FL only)

Sarasota Service Office
6750 Fruitville Road
Sarasota, Florida 34240-9711
(941) 377-3722 or
1-800-320-3503 (FL only)

Tampa Service Office
7601 Highway 301 North
Tampa, Florida 33637-6759
(813) 985-7481 or
1-800-836-0797 (FL only)

July 11, 2012

Manatee County Public Works Department
Attn: Sia Molanazar, P.E., Deputy Director Engineering
1022 26th Avenue East
Bradenton, FL 34208

Subject: **Corrected Permit**
Application/Permit No.: 635518/43035341.001
Project Name: Manatee Co - 44th Avenue East from 30th Street East to 45th Street East
County: MANATEE
Sec/Twp/Rge: S08/T35S/R18E, S23/T35S/R18E, S05/T35S/R18E, S04/T35S/R18E, S09/T35S/R18E

Dear Permittee:

District staff has discovered errors in the permit issued to you on February 24, 2011. The corrections are:

1. Pond "North Wet-Mit" area at top of bank is denoted as 19.40 acres; the correct area at top of bank is 2.10 acres.

2. Specific Condition No. 15 states "The Permittee, the Florida Department of Transportation, shall submit to the District a site-specific plan for erosion and sediment control best management practices, pursuant to Section 104, FDOT Standard Specifications for Road and Bridge Construction. The Permittee shall submit this plan and receive District approval prior to construction commencement". Specific Condition No. 15 is not applicable and not required - please refer to Specific Condition No. 21 of ERP 43035341.001 for the correct version.

Please attach this letter to your permit packet.

We hope that this error has not caused an inconvenience for you. If you have any questions, please contact our office.

Sincerely,

Michelle K. Hopkins

Michelle K. Hopkins, P.E.
Environmental Resource Permit Bureau

cc: File of Record
Donald Holcomb, P.E., HDR Engineering

Revised & Issued 7-11-12
23755
SWFWMD Permit

Southwest Florida Water Management District

2379 Broad Street, Brooksville, Florida 34604-6899
(352) 796-7211 or 1-800-423-1476 (FL only)
TDD only: 1-800-231-6103 (FL only)
On the Internet at WaterMatters.org

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Bartow, Florida 33830-7700
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Sarasota, Florida 34240-9711
(941) 377-3722 or
1-800-320-3503 (FL only)

Tampa Service Office
7601 Highway 301 North
Tampa, Florida 33637-6759
(813) 985-7481 or
1-800-836-0797 (FL only)

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David L. Moore
Executive Director
William S. Bilenky
General Counsel

February 24, 2011

Manatee County Board of County Commissioners
c/o Sla Mollanazar, P.E., Public Works Dept.
1022 26th Avenue East
Bradenton, FL 34208

Subject: **Final Agency Action Transmittal Letter**
ERP Individual Construction
Permit No.: 43035341.001
Project Name: Manatee County - 44th Avenue East from 30th Street East to 45th Street East
County: Manatee
Sec/Twp/Rge: 04, 05, 08, 09/35S/18E

Dear Mr. Mollanazar:

This letter constitutes notice of Final Agency Action for approval of the permit referenced above. Final approval is contingent upon no objection to the District's action being received by the District within the time frames described below.

You or any person whose substantial interests are affected by the District's action regarding a permit may request an administrative hearing in accordance with Sections 120.569 and 120.57, Florida Statutes, (F.S.), and Chapter 28-106, Florida Administrative Code, (F.A.C.), of the Uniform Rules of Procedure. *A request for hearing must: (1) explain how the substantial interests of each person requesting the hearing will be affected by the District's action, or proposed action, (2) state all material facts disputed by the person requesting the hearing or state that there are no disputed facts, and (3) otherwise comply with Chapter 28-106, F.A.C.* Copies of Sections 28-106.201 and 28-106.301, F.A.C. are enclosed for your reference. A request for hearing must be filed with (received by) the Agency Clerk of the District at the District's Brooksville address within 21 days of receipt of this notice. Receipt is deemed to be the fifth day after the date on which this notice is deposited in the United States mail. Failure to file a request for hearing within this time period shall constitute a waiver of any right you or such person may have to request a hearing under Sections 120.569 and 120.57, F.S. Mediation pursuant to Section 120.573, F.S., to settle an administrative dispute regarding the District's action in this matter is not available prior to the filing of a request for hearing.

Enclosed is a "Noticing Packet" that provides information regarding the District Rule 40D-1.1010, F.A.C., which addresses the notification of persons whose substantial interests may be affected by the District's action in this matter. The packet contains guidelines on how to provide notice of the District's action, and a notice that you may use.

The enclosed approved construction plans are part of the permit, and construction must be in accordance with these plans.

20% Post-Consumer Waste

If you have questions concerning the permit, please contact Steven J. Lopes, P.E., at the Sarasota Service Office, extension 6506. For assistance with environmental concerns, please contact David W. Jenkins extension 6545.

Sincerely,

Rona T. Morton, P.W.S., Director
Sarasota Regulation Department

RTM/SXL:DWJ:AJR
Enclosures: Approved Permit w/Conditions Attached
Approved Construction Drawings
Statement of Completion
Notice of Authorization to Commence Construction
Noticing Packet (42.00-039)
Sections 28-106.201 and 28-106.301, F.A.C.
cc/enc: File of Record 43030402.001
Donald Holcomb, P.E., HDR Engineering, Inc.
Terri L. Behling, Southwest Florida Water Management District

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE
INDIVIDUAL CONSTRUCTION
PERMIT NO. 43035341.001

Expiration Date: February 24, 2016 PERMIT ISSUE DATE: February 24, 2011

This permit is issued under the provisions of Chapter 373, Florida Statutes, (F.S.), and the Rules contained in Chapters 40D-4 and 40, Florida Administrative Code, (F.A.C.). The permit authorizes the Permittee to proceed with the construction of a surface water management system in accordance with the information outlined herein and shown by the application, approved drawings, plans, specifications, and other documents, attached hereto and kept on file at the Southwest Florida Water Management District (District). Unless otherwise stated by permit specific condition, permit issuance constitutes certification of compliance with state water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. 1341. All construction, operation and maintenance of the surface water management system authorized by this permit shall occur in compliance with Florida Statutes and Administrative Code and the conditions of this permit.

PROJECT NAME:	Manatee County - 44th Avenue East from 30th Street East to 45th Street East
GRANTED TO:	Manatee County Board of County Commissioners Manatee County Public Works Dept. 1022 26th Avenue East Bradenton, FL 34208

ABSTRACT: This permit authorizes the construction of a surface water management system to serve a 1.37 mile roadway project known as Manatee County - 44th Avenue East from 30th Street East to 45th Street East. The project location is the proposed extension of 44th Avenue East from 30th Street East to 45th Street East, located in Manatee County. Information regarding the surface water management system, 100-year floodplain, wetlands and/or surface waters is stated below and on the permitted construction drawings for the project.

OP. & MAINT. ENTITY:	Manatee County Public Works Dept.
COUNTY:	Manatee
SEC/TWP/RGE:	04, 05, 08, 09/35S/18E
TOTAL ACRES OWNED OR UNDER CONTROL:	37.49
PROJECT SIZE:	37.49 Acres
LAND USE:	Road Project
DATE APPLICATION FILED:	June 17, 2010
AMENDED DATE:	N/A

I. Water Quantity/Quality

POND NO.	AREA ACRES @ TOP OF BANK	TREATMENT TYPE
West-3R	1.72	Wet Detention
West-3L	1.05	Wet Detention
East-3	1.91	Wet Detention
Gap-1	0.21	Wet Detention
B-1	0.32	Wet Detention
FMS East-3	1.97	N/A
FMS West-2	0.89	N/A
North Wet-Mit	19.40	N/A
TOTAL	27.47	

Comments: The project is a 1.37 mile roadway consisting of the extension of 44th Avenue east from 30th Street East to 45th Street East. Ponds West-3R and West-3L are interconnected. Ponds FMS East-3, FMS West-2 and North Wet-Mit provide proposed historic basin storage compensation storage only. A receiving waterbody body (WBID 1899, Gap Creek) is impaired for fecal coliform.

A mixing zone is not required.
A variance is not required.

II. 100-Year Floodplain

Encroachment (Acre-Feet of fill)	Compensation (Acre-Feet of excavation)	Compensation Type	Encroachment Result (feet)
8.32	11.35	EE	N/A

EE = Equivalent Excavation to offset project filling per Section 4.4 of the District's Basis of Review;

Comments: According to FEMA floodplain determinations portions of the project lie within Flood Zone X. Ponds FMS East-3, FMS West-2 and North Wet-Mit provide proposed storage to replace the lost historic basin storage, consistent with Basis of Review 4.7 and 4.8. Historic basin storage impacts associated with impacts to onsite wetlands and other surface water are included in the hydrologic/hydraulic drainage modeling.

III. Environmental Considerations

Wetland/Surface Water Information **Count of Wetlands: 20**

Wetland Name	Total Acres	Not Impacted Acres	Permanent Impacts		Temporary Impacts	
			Acres	Functional Loss*	Acres	Functional Loss*
OSW B	0.04	0.00	0.04	0.00	0.00	0.00
OSW F	0.25	0.15	0.10	0.00	0.00	0.00
OSW G	0.70	0.13	0.57	0.00	0.00	0.00
OSW J	0.01	0.00	0.01	0.00	0.00	0.00
OSW K	0.01	0.00	0.01	0.00	0.00	0.00
OSW L	0.01	0.00	0.01	0.00	0.00	0.00
OSW M	0.02	0.00	0.02	0.00	0.00	0.00
OSW N	0.01	0.00	0.01	0.00	0.00	0.00
OSW O	0.28	0.28	0.00	0.00	0.00	0.00
OSW P	0.34	0.00	0.34	0.00	0.00	0.00
OSW Q	0.20	0.00	0.00	0.00	0.20	0.00
OSW R	0.16	0.07	0.09	0.00	0.00	0.00
OSW S	0.35	0.04	0.31	0.00	0.00	0.00
OSW T	0.11	0.00	0.11	0.00	0.00	0.00
Seller's Pit	2.31	0.34	1.97	0.26	0.00	0.00
Walker Crews (WC)	2.93	2.93	0.00	0.00	0.00	0.00
Wetland A*	0.10	0.00	0.10	0.00	0.00	0.00
Wetland C*	0.12	0.07	0.05	0.00	0.00	0.00
Wetland H	2.47	0.80	1.67	1.08	0.00	0.00
Wetland I	0.11	0.09	0.01	0.02	0.01	0.00
Total:	10.53	4.90	5.42	1.36	0.21	0.00

*For impacts that do not require mitigation, their functional loss is not included.

Wetland/Other Surface Water Comments:

There are Five (5) forested wetlands, WL-A, WL-C, WL-H, WL-I and Walker Crews totaling 5.27 acres located within the project area. Four (4) of these wetlands (WL-A, WL-C, WL-H, and WL-I) extend outside the project area. Permanent filling impacts to 1.67 acres of forested wetlands are proposed for construction of a new four-lane county roadway project. Temporary impacts will occur to 0.10 acre of wetland WL-I and 0.20 acre of OSW Q for pond construction and roadway grading. There is a total of 4.80 acres of other surface waters, comprised of fourteen (14) upland-cut ditches and ponds totaling 2.49 acres and one hydric-cut pond, Seller's Pit totaling 2.31 acres, located within the project area. Permanent filling impacts for roadway construction are proposed to 0.73 acre of upland-cut ponds, 0.90 acre of upland-cut ditches, and 1.97 acres of a hydric-cut pond. Permanent filling impacts to 1.67 acres of qualifying wetlands and 2.31 acres surface waters and secondary impacts to 0.72 acre were evaluated using the Uniform Mitigation Assessment Method (UMAM), as required pursuant to Chapter 62-345, F.A.C. The results of the UMAM analysis indicate a functional loss of 1.36 units due to the permanent and secondary impacts proposed. Additional permanent filling impacts are proposed to 0.15 acre of two less than half-acre isolated wetlands, WL-A and WL-C. Habitat mitigation will not be required pursuant to 3.2.2.1 of the Basis of Review. Under this subsection, wetland mitigation is not required for impacts to isolated wetlands that are not connected by standing water or flowing water to other wetlands so that they are greater than one-half acre in size, are not used by threatened or endangered species, are not located in an Area of Critical Concern, and are of minimal value to fish and wildlife.

Mitigation Information **Count of Mitigation: 5**

Mitigation Name	Creation/Restoration		Enhancement		Preservation		Other	
	Acres	Functional Gain	Acres	Functional Gain	Acres	Functional Gain	Acres	Functional Gain
Creation North	0.98	0.25	0.00	0.00	0.00	0.00	0.00	0.00
Creation South	1.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00
Seller's Pit	0.00	0.00	1.66	0.26	0.00	0.00	0.00	0.00
WC Enhancement	0.00	0.00	2.47	0.57	0.00	0.00	0.00	0.00
WC Restoration	0.46	0.23	0.00	0.00	0.00	0.00	0.00	0.00
Total:	2.44	0.73	4.13	0.83	0.00	0.00	0.00	0.00

Mitigation Comments:
Wetland mitigation for permanent impacts will be provided by 1.98 acres of forested wetland creation, 2.93 acres of forested wetland enhancement. Additional mitigation to offset 1.97 acres of permanent impacts to Seller's Pit will be provided by 1.66 acres of enhancement activities including nuisance/exotic species removal and planting of native species in the buffer area and along the causeway. The result of the UMAM analysis indicates a total functional gain of 1.56 units which offsets the 1.36 units of functional loss to wetland habitat and provides an excess of 0.20 units required to address Subsection 3.2 of the Basis of Review, and which will not be available for future mitigation withdrawal.

A regulatory conservation easement is not required.

A proprietary conservation easement is not required.

SPECIFIC CONDITIONS

1. If the ownership of the project area covered by the subject permit is divided, with someone other than the Permittee becoming the owner of part of the project area, this permit shall terminate, pursuant to Section 40D-1.6105, F.A.C. In such situations, each land owner shall obtain a permit (which may be a modification of this permit) for the land owned by that person. This condition shall not apply to the division and sale of lots or units in residential subdivisions or condominiums.

2. Unless specified otherwise herein, two copies of all information and reports required by this permit shall be submitted to:

   Sarasota Regulation Department
   Southwest Florida Water Management District
   6750 Fruitville Road
   Sarasota, FL 34240-9711

   The permit number, title of report or information and event (for recurring report or information submittal) shall be identified on all information and reports submitted.

3. The Permittee shall retain the design engineer, or other professional engineer registered in Florida, to conduct on-site observations of construction and assist with the as-built certification requirements of this project. The Permittee shall inform the District in writing of the name, address and phone number of the professional engineer so employed. This information shall be submitted prior to construction.

4. Within 30 days after completion of construction of the permitted activity, the Permittee shall submit to the Sarasota Service Office a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the required Statement of Completion and Request for Transfer to Operation Entity form identified in Chapter 40D-1.659, F.A.C., and signed, dated and sealed as-built drawings. The as-built drawings shall identify any deviations from the approved construction drawings.

5. The District reserves the right, upon prior notice to the Permittee, to conduct on-site research to assess the pollutant removal efficiency of the surface water management system. The Permittee may be required to cooperate in this regard by allowing on-site access by District representatives, by allowing the installation and operation of testing and monitoring equipment, and by allowing other assistance measures as needed on site.

6. The Permittee shall monitor and maintain the wetland mitigation areas until the criteria set forth in the Wetland Mitigation Success Criteria Conditions above are met. The Permittee shall perform corrective actions identified by the District if the District identifies a wetland mitigation deficiency.

7. The Permittee shall undertake required maintenance activities within the wetland mitigation areas as needed at any time between mitigation area construction and termination of monitoring, with the exception of the final year. Maintenance shall include the manual removal of all nuisance and exotic species, with sufficient frequency that their combined coverage at no time exceeds the Wetland Mitigation Success Criteria Conditions above. Herbicides shall not be used without the prior written approval of the District.

8. A Wetland Mitigation Completion Report shall be submitted to the District within 30 days of completing construction and planting of the wetland mitigation areas. Upon District inspection and approval of the mitigation areas, the monitoring program shall be initiated with the date of the District field inspection being the construction completion date of the mitigation areas. Monitoring events shall occur between March 1 and November 30 of each year. An Annual Wetland Monitoring Report shall be submitted upon the anniversary date of District approval to initiate monitoring.

   Annual reports shall provide documentation that a sufficient number of maintenance inspection/activities were conducted to maintain the mitigation areas in compliance with the Wetland Mitigation Success Criteria Conditions above. Note that the performance of maintenance inspections and maintenance activities will normally need to be conducted more frequently than the collection of other monitoring data to maintain the mitigation areas in compliance with the Wetland Mitigation Success Criteria Conditions above.

   Monitoring Data shall be collected semi-annually.

9. Termination of monitoring for the wetland mitigation areas shall be coordinated with the District by:

   a. notifying the District in writing when the criteria set forth in the Wetland Mitigation Success Criteria Conditions have been achieved;

   b. suspending all maintenance activities in the wetland mitigation areas including, but not limited to, irrigation and addition or removal of vegetation; and

   c. submitting a monitoring report to the District one year following the written notification and suspension of maintenance activities.

   Upon receipt of the monitoring report, the District will evaluate the wetland mitigation sites to determine if the Mitigation Success Criteria Conditions have been met and maintained. The District will notify the Permittee in writing of the evaluation results. The Permittee shall perform corrective actions for any portions of the wetland mitigation areas that fail to maintain the criteria set forth in the Wetland Mitigation Success Criteria Conditions.

10. Following the District's determination that the wetland mitigation has been successfully completed, the Permittee shall operate and maintain the wetland mitigation areas such that they remain in their current or intended condition for the life of the surface water management facility. The Permittee must perform corrective actions for any portions of the wetland mitigation areas where conditions no longer meet the criteria set forth in the Wetland Mitigation Success Criteria Conditions.

11. The Permittee shall, within 90 days of initial wetland impact and prior to beneficial use of the site, complete all aspects of the mitigation plan, including the grading, mulching, and planting, in accordance with the design details in the final approved construction drawingsand information submitted in support of the application.

12. The following boundaries, as shown on the approved construction drawings, shall be clearly delineated on the site prior to initial clearing or grading activities:

    wetland and surface water areas
    limits of approved wetland impacts

    The delineation shall endure throughout the construction period and be readily discernible to construction and District personnel.

13. (WL-A, WL-C, WL-H, WL-I, Walker Crews Enhancement and Restoration) and surface waters Sellers Pit, OSW-B, OSW-F, OSW-G, OSW-J, OSW-K, OSW-L, OSW-M, OSW-N, OSW-O, OSW-P, OSW-Q, OSW-R, OSW-S, and OSW-T) shown on the approved construction drawings shall be binding upon the Permittee and the District.

14. All construction is prohibited within the permitted project area until the Permittee acquires legal ownership or legal control of the project area as delineated in the permitted construction drawings.

15. The Permittee, the Florida Department of Transportation, shall submit to the District a site-specific plan for erosion and sediment control best management practices, pursuant to Section 104, FDOT Standard Specifications for Road and Bridge Construction. The Permittee shall submit this plan and receive District approval prior to construction commencement.

16. The operation and maintenance entity shall submit inspection reports in the form required by the District, in accordance with the following schedule.

    For systems utilizing retention or wet detention, the inspections shall be performed two (2) years after operation is authorized and every two (2) years thereafter.

17. The removal of littoral shelf vegetation (including cattails) from wet detention ponds is prohibited unless otherwise approved by the District. Removal includes dredging, the application of herbicide, cutting, and the introduction of grass carp. Any questions regarding authorized activities within the wet detention ponds shall be addressed to the District's Surface Water Regulation Manager, Sarasota Service Office.

18. Certification of compliance with state water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. 1341 is waived.

19. The District, upon prior notice to the Permittee, may conduct on-site inspections to assess the effectiveness of the erosion control barriers and other measures employed to prevent violations of state water quality standards and avoid downstream impacts. Such barriers or other measures should control discharges, erosion, and sediment transport during construction and thereafter. The District will also determine any potential environmental problems that may develop as a result of leaving or removing the barriers and other measures during construction or after construction of the project has been completed. The Permittee must provide any remedial measures that are needed.

20. This permit is issued based upon the design prepared by the Permittee's consultant. If at any time it is determined by the District that the Conditions for Issuance of Permits in Rules 40D-4.301 and 40D-4.302, F.A.C., have not been met, upon written notice by the District, the Permittee shall obtain a permit modification and perform any construction necessary thereunder to correct any deficiencies in the system design or construction to meet District rule criteria. The Permittee is advised that the correction of deficiencies may require re-construction of the surface water management system and/or mitigation areas.

21. The Permittee shall submit to the District a completed Construction Surface Water Management Plan, signed and sealed by a Florida Professional Engineer. The Permittee shall submit this Plan and receive District approval prior to construction commencement. The Plan and supporting computations shall address proposed construction techniques, sequencing and equipment for:

a. Temporary construction dewatering for the project.
b. Maintenance of hydraulic connection north and south of proposed causeway during construction.
c. Maintenance of hydraulic connection of the existing three (3) culverts (near Sta 127+00 on 44th Avenue East) during construction.
d. Proposed causeway construction; including method for installing any temporary coffer dams.

22. This permit does not authorize any construction dewatering of existing Seller's Pit. A formal modification of this ERP shall be obtained prior to any dewatering of Seller's Pit.

23. Construction turbidity monitoring shall be performed in accordance with the Turbidity Monitoring Plan received by the District on February 14, 2011.

24. It is the Permittee's responsibility to resolve all contaminated site assessment concerns with the Florida Department of Environmental Protection prior to beginning any construction activities on their project.

25. **WETLAND MITIGATION SUCCESS CRITERIA; WETLAND MITIGATION AREA 1 (Creation North; 0.98 acre)**

Mitigation is expected to offset adverse impacts to wetlands and other surface waters caused by regulated activities and to achieve viable, sustainable ecological and hydrological wetland functions. Wetlands constructed for mitigation purposes will be considered successful and will be released from monitoring and reporting requirements when the following criteria are met continuously for a period of at least one year without intervention in the form of irrigation or the additional or removal of vegetation.

a. The mitigation area can reasonably be expected to develop into a **Forested wetland** as determined by the Florida Land Use and Cover and Forms Classification System (third edition; January 1999).
b. Topography, water depth and water level fluctuation in the mitigation area are characteristic of the wetlands/ surface water type specified in criterion "a".
c. The dominant and subdominant species of desirable wetland plants comprising each vegetation zone and stratum shall be as follows:

ZONE	STRATUM	PERCENT COVER	DOMINANT SPECIES[1]	SUBDOMINANT SPECIES[2]
A	Interior Forested Basin	50 %	*Cephalathus occidentalis* *Nyssa sylvatica* *Fraxinus caroliniana*	Any desirable wetland species as listed in 62-340.450, F.A.C.
B	Hardwood Hammock	50%	*Magnolia virginiana* *Quercus nigra* *Ilex cassine* *Liquidambar styraciflua*	Any desirable wetland species as listed in 62-340.450, F.A.C.
C	Transitional	50%	*Celtis laevigata* *Viburnum obovatum* *Ulmus Americana*	Any desirable wetland species as listed in 62-340.450, F.A.C.
D	Buffer	50%	*Quercus virginiana* *Pinus elliottii*	Any desirable wetland species as listed in 62-340.450, F.A.C.

[1] Plant species providing the same function as those listed may also be considered in determining success.
[2] Shrub species must be greater than 6 feet in height, tree species must be greater than 12 feet in height and both must have been planted for greater than 3 years.

This criterion must be achieved within **five (5)** years of initial monitoring. The Permittee shall complete any activities necessary to ensure the successful achievement of the mitigation requirements by the deadline specified. Any request for an extension of the deadline specified shall be accompanied with an explanation and submitted as a formal permit modification to the District for evaluation.

d. Species composition of recruiting wetland vegetation are indicative of the wetland type specified in criterion "a."

e. Coverage of nuisance and exotic vegetation does not exceed five (5) percent.

f. The wetland creation area can be determined to be a wetland or other surface water according to Chapter 62-340, F.A.C.

The mitigation area may be released from monitoring and reporting requirements and be deemed successful at any time during the monitoring period if the Permittee demonstrates that the conditions in the mitigation area have adequately replaced the wetland and surface water functions affected by the regulated activity and that the site conditions are sustainable.

WETLAND MITIGATION SUCCESS CRITERIA; WETLAND MITIGATION AREA 1 (Creation South; 1.00 acre)

Mitigation is expected to offset adverse impacts to wetlands and other surface waters caused by regulated activities and to achieve viable, sustainable ecological and hydrological wetland functions. Wetlands constructed for mitigation purposes will be considered successful and will be released from monitoring and reporting requirements when the following criteria are met continuously for a period of at least one year without intervention in the form of irrigation or the additional or removal of vegetation.

a. The mitigation area can reasonably be expected to develop into a **Forested wetland** as determined by the Florida Land Use and Cover and Forms Classification System (third edition; January 1999).

b. Topography, water depth and water level fluctuation in the mitigation area are characteristic of the wetlands/ surface water type specified in criterion "a".

c. The dominant and subdominant species of desirable wetland plants comprising each vegetation zone and stratum shall be as follows:

ZONE	STRATUM	PERCENT COVER	DOMINANT SPECIES[1]	SUBDOMINANT SPECIES[2]
A	Interior Forested Basin	50 %	*Cephalathus occidentalis* *Nyssa sylvatica* *Fraxinus caroliniana*	Any desirable wetland species as listed in 62-340.450, F.A.C.
B	Hardwood Hammock	50%	*Magnolia virginiana* *Quercus nigra* *Ilex cassine* *Liquidambar styraciflua*	Any desirable wetland species as listed in 62-340.450, F.A.C.
C	Transitional	50%	*Celtis laevigata* *Viburnum obovatum* *Ulmus Americana*	Any desirable wetland species as listed in 62-340.450, F.A.C.
D	Buffer	50%	*Quercus virginiana* *Pinus elliottii*	Any desirable wetland species as listed in 62-340.450, F.A.C.

[1] Plant species providing the same function as those listed may also be considered in determining success.
[2] Shrub species must be greater than 6 feet in height, tree species must be greater than 12 feet in height and both must have been planted for greater than 3 years.

This criterion must be achieved within **five (5)** years of initial monitoring. The Permittee shall complete any activities necessary to ensure the successful achievement of the mitigation requirements by the deadline specified. Any request for an extension of the deadline specified shall be accompanied with an explanation and submitted as a formal permit modification to the District for evaluation.

d. Species composition of recruiting wetland vegetation are indicative of the wetland type specified in criterion "a."

e. Coverage of nuisance and exotic vegetation does not exceed five (5) percent.

f. The wetland creation area can be determined to be a wetland or other surface water according to Chapter 62-340, F.A.C..

The mitigation area may be released from monitoring and reporting requirements and be deemed successful at any time during the monitoring period if the Permittee demonstrates that the conditions in the mitigation area have adequately replaced the wetland and surface water functions affected by the regulated activity and that the site conditions are sustainable.

WETLAND MITIGATION SUCCESS CRITERIA; WETLAND MITIGATION AREA 3 (Walker Crews Enhancement: 2.47 Acres)

Mitigation is expected to offset adverse impacts to wetlands and other surface waters caused by regulated activities and to achieve viable, sustainable ecological and hydrological wetland functions. Wetlands constructed for mitigation purposes will be considered successful and will be released from monitoring and reporting requirements when the following criteria are met continuously for a period of at least one year without intervention in the form of irrigation or the additional or removal of vegetation.

a. The mitigation area can reasonably be expected to develop into a **Forested wetland** as determined by the Florida Land Use and Cover and Forms Classification System (third edition; January 1999).

b. Topography, water depth and water level fluctuation in the mitigation area are characteristic of the wetlands/ surface water type specified in criterion "a".

c. The dominant and subdominant species of desirable wetland plants comprising each vegetation zone and stratum shall be as follows:

ZONE	STRATUM	PERCENT COVER	DOMINANT SPECIES[1]	SUBDOMINANT SPECIES[2]
A	Lower Forested Interior Zones	50%	*Cephalathus occidentalis* *Magnolia virginiana* *Quercus nigra* *Ilex cassine*	Any desirable wetland species as listed in 62-340.450, F.A.C.
B	Higher Elevation Outer Zones	50%	*Liquidambar styraciflua* *Ulmus Americana* *Viburnum obovatum* *Forestiera segregate*	Any desirable wetland species as listed in 62-340.450, F.A.C.
C	Buffer	50%	*Quercus virginiana*	Any desirable wetland species as listed in 62-340.450, F.A.C.

[1] Plant species providing the same function as those listed may also be considered in determining success.
[2] Shrub species must be greater than 6 feet in height, tree species must be greater than 12 feet in height and both must have been planted for greater than 3 years.

This criterion must be achieved within **five (5)** years of initial monitoring. The Permittee shall complete any activities necessary to ensure the successful achievement of the mitigation requirements by the deadline specified. Any request for an extension of the deadline specified shall be accompanied with an explanation and submitted as a formal permit modification to the District for evaluation.

d. Species composition of recruiting wetland vegetation are indicative of the wetland type specified in criterion "a."

e. Coverage of nuisance and exotic vegetation does not exceed five (5) percent.

f. The wetland creation area can be determined to be a wetland or other surface water according to Chapter 62-340, F.A.C.

The mitigation area may be released from monitoring and reporting requirements and be deemed successful at any time during the monitoring period if the Permittee demonstrates that the conditions in the mitigation area have adequately replaced the wetland and surface water functions affected by the regulated activity and that the site conditions are sustainable.

WETLAND MITIGATION SUCCESS CRITERIA; WETLAND MITIGATION AREA 4 (Walker Crews Restoration: 0.46 Acre)

Mitigation is expected to offset adverse impacts to wetlands and other surface waters caused by regulated activities and to achieve viable, sustainable ecological and hydrological wetland functions. Wetlands constructed for mitigation purposes will be considered successful and will be released from monitoring and reporting requirements when the following criteria are met continuously for a period of at least one year without intervention in the form of irrigation or the additional or removal of vegetation.

a. The mitigation area can reasonably be expected to develop into a **Forested wetland** as determined by the Florida Land Use and Cover and Forms Classification System (third edition; January 1999).

b. Topography, water depth and water level fluctuation in the mitigation area are characteristic of the wetlands/ surface water type specified in criterion "a".

c. The dominant and subdominant species of desirable wetland plants comprising each vegetation zone and stratum shall be as follows:

ZONE	STRATUM	PERCENT COVER	DOMINANT SPECIES[1]	SUBDOMINANT SPECIES[2]
A	Braden River Edge	50%	*Cephalathus occidentalis* *Ilex cassine*	Any desirable wetland species as listed in 62-340.450, F.A.C.
B	Interior	50%	*Magnolia virginiana* *Quercus nigra* *Ulmus Americana*	Any desirable wetland species as listed in 62-340.450, F.A.C.
C	Outer Perimeter	50%	*Liquidambar styraciflua* *Viburnum obovatum* *Forestiera segregate*	Any desirable wetland species as listed in 62-340.450, F.A.C.

[1] Plant species providing the same function as those listed may also be considered in determining success.
[2] Shrub species must be greater than 6 feet in height, tree species must be greater than 12 feet in height and both must have been planted for greater than 3 years.

This criterion must be achieved within **five (5)** years of initial monitoring. The Permittee shall complete any activities necessary to ensure the successful achievement of the mitigation requirements by the deadline specified. Any request for an extension of the deadline specified shall be accompanied with an explanation and submitted as a formal permit modification to the District for evaluation.

d. Species composition of recruiting wetland vegetation are indicative of the wetland type specified in criterion "a."

e. Coverage of nuisance and exotic vegetation does not exceed five (5) percent.

f. The wetland creation area can be determined to be a wetland or other surface water according to Chapter 62-340, F.A.C.

The mitigation area may be released from monitoring and reporting requirements and be deemed successful at any time during the monitoring period if the Permittee demonstrates that the conditions in the mitigation area have adequately replaced the wetland and surface water functions affected by the regulated activity and that the site conditions are sustainable.

26. If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, the Permittee shall cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The Permittee shall contact the Florida Department of State, Division of Historical Resources (DHR), Review and Compliance Section at (850) 245-6333 or (800) 847-7278 and the District. Project activities shall not resume without verbal and/or written authorization from the DHR. In the event that unmarked human remains are encountered during permitted activities, all work shall cease immediately and the proper authorities shall be notified in accordance with Section 872.05, F.S.

GENERAL CONDITIONS

1. The general conditions attached hereto as Exhibit "A" are hereby incorporated into this permit by reference and the Permittee shall comply with them.

Authorized Signature

SOUTHWEST FLORIDA
WATER MANAGEMENT DISTRICT

NOTICE OF AUTHORIZATION TO COMMENCE CONSTRUCTION

Manatee County - 44th Avenue East from 30th Street East to 45th Street East

PROJECT NAME

Road Project

PROJECT TYPE

Manatee

COUNTY

04, 05, 08, 09/35S/18E

SEC(s)/TWP(s)/RGE(s)

Manatee County Board of County Commissioners

PERMITTEE

APPLICATION NO.: 43035341.001

DATE ISSUED: February 24, 2011

Issuing Authority

THIS NOTICE SHOULD BE CONSPICUOUSLY DISPLAYED AT THE SITE OF THE WORK

41.00-075 (10/92)

PART II HEARINGS INVOLVING DISPUTED ISSUES OF MATERIAL FACT

28-106.201 Initiation of Proceedings.

(1) Unless otherwise provided by statute, and except for agency enforcement and disciplinary actions that shall be initiated under Rule 28-106.2015, F.A.C., initiation of proceedings shall be made by written petition to the agency responsible for rendering final agency action. The term "petition" includes any document that requests an evidentiary proceeding and asserts the existence of a disputed issue of material fact. Each petition shall be legible and on 8 1/2 by 11 inch white paper. Unless printed, the impression shall be on one side of the paper only and lines shall be double-spaced.

(2) All petitions filed under these rules shall contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action;

(f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and

(g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

(3) Upon receipt of a petition involving disputed issues of material fact, the agency shall grant or deny the petition, and if granted shall, unless otherwise provided by law, refer the matter to the Division of Administrative Hearings with a request that an administrative law judge be assigned to conduct the hearing. The request shall be accompanied by a copy of the petition and a copy of the notice of agency action.

Specific Authority 120.54(3), (5) FS. Law Implemented 120.54(5), 120.569, 120.57 FS. History–New 4-1-97, Amended 9-17-98, 1-15-07.

PART III PROCEEDINGS AND HEARINGS NOT INVOLVING DISPUTED ISSUES OF MATERIAL FACT

28-106.301 Initiation of Proceedings.

(1) Unless otherwise provided by statute and except for agency enforcement and disciplinary actions initiated under subsection 28-106.2015(1), F.A.C., initiation of a proceeding shall be made by written petition to the agency responsible for rendering final agency action. The term "petition" includes any document which requests a proceeding. Each petition shall be legible and on 8 1/2 by 11 inch white paper or on a form provided by the agency. Unless printed, the impression shall be on one side of the paper only and lines shall be doubled-spaced.

(2) All petitions filed under these rules shall contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) An explanation of how the petitioner's substantial interests will be affected by the agency determination;

(d) A statement of when and how the petitioner received notice of the agency decision;

(e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action;

(f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action;

(g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action; and

(h) A statement that no material facts are in dispute.

Specific Authority 120.54(5) FS. Law Implemented 120.54(5), 120.569, 120.57 FS. History–New 4-1-97, Amended 9-17-98, 1-15-07, 12-24-07.

EXHIBIT "A"

1. All activities shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. For general permits authorizing incidental site activities, the following limiting general conditions shall also apply:

   a. If the decision to issue the associated individual permit is not final within 90 days of issuance of the incidental site activities permit, the site must be restored by the permittee within 90 days after notification by the District. Restoration must be completed by re-contouring the disturbed site to previous grades and slopes re-establishing and maintaining suitable vegetation and erosion control to provide stabilized hydraulic conditions. The period for completing restoration may be extended if requested by the permittee and determined by the District to be warranted due to adverse weather conditions or other good cause. In addition, the permittee shall institute stabilization measures for erosion and sediment control as soon as practicable, but in no case more than 7 days after notification by the District.

   b. The incidental site activities are commenced at the permittee's own risk. The Governing Board will not consider the monetary costs associated with the incidental site activities or any potential restoration costs in making its decision to approve or deny the individual environmental resource permit application. Issuance of this permit shall not in any way be construed as commitment to issue the associated individual environmental resource permit.

4. Activities approved by this permit shall be conducted in a manner which does not cause violations of state water quality standards. The permittee shall implement best management practices for erosion and a pollution control to prevent violation of state water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

5. Water quality data for the water discharged from the permittee's property or into the surface waters of the state shall be submitted to the District as required by the permit. Analyses shall be performed according to procedures outlined in the current edition of Standard Methods for the Examination of Water and Wastewater by the American Public Health Association or Methods for Chemical Analyses of Water and Wastes by the U.S. Environmental Protection Agency. If water quality data are required, the permittee shall provide data as required on volumes of water discharged, including total volume discharged during the days of sampling and total monthly volume discharged from the property or into surface waters of the state.

6. District staff must be notified in advance of any proposed construction dewatering. If the dewatering activity is likely to result in offsite discharge or sediment transport into wetlands or surface waters, a written dewatering plan must either have been submitted and approved with the permit application or submitted to the District as a permit prior to the dewatering event as a permit modification. A water use permit may be required prior to any use exceeding the thresholds in Chapter 40D-2, F.A.C.

7. Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

8. Off-site discharges during construction and development shall be made only through the facilities authorized by this permit. Water discharged from the project shall be through structures having a mechanism suitable for regulating upstream stages. Stages may be subject to operating schedules satisfactory to the District.

9. The permittee shall complete construction of all aspects of the surface water management system, including wetland compensation (grading, mulching, planting), water quality treatment features, and discharge control facilities prior to beneficial occupancy or use of the development being served by this system.

10. The following shall be properly abandoned and/or removed in accordance with the applicable regulations:

    a. Any existing wells in the path of construction shall be properly plugged and abandoned by a licensed well contractor.
    b. Any existing septic tanks on site shall be abandoned at the beginning of construction.
    c. Any existing fuel storage tanks and fuel pumps shall be removed at the beginning of construction.

11. All surface water management systems shall be operated to conserve water in order to maintain environmental quality and resource protection; to increase the efficiency of transport, application and use; to decrease waste; to minimize unnatural runoff from the property and to minimize dewatering of offsite property.

12. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District a written notification of commencement indicating the actual start date and the expected completion date.

13. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the occupation of the site or operation of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to a local government or other responsible entity.

14. Within 30 days after completion of construction of the permitted activity, the permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the required Statement of Completion and Request for Transfer to Operation Entity form identified in Chapter 40D-1, F.A.C. Additionally, if deviation from the approved drawings are discovered during the certification process the certification must be accompanied by a copy of the approved permit drawings with deviations noted.

15. This permit is valid only for the specific processes, operations and designs indicated on the approved drawings or exhibits submitted in support of the permit application. Any substantial deviation from the approved drawings, exhibits, specifications or permit conditions, including construction within the total land area but outside the approved project area(s), may constitute grounds for revocation or enforcement action by the District, unless a modification has been applied for and approved. Examples of substantial deviations include excavation of ponds, ditches or sump areas deeper than shown on the approved plans.

16. The operation phase of this permit shall not become effective until the permittee has complied with the requirements of the conditions herein, the District determines the system to be in compliance with the permitted plans, and the entity approved by the District accepts responsibility for operation and maintenance of the system. The permit may not be transferred to the operation and maintenance entity approved by the District until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall request transfer of the permit to the responsible operation and maintenance entity approved by the District, if different from the permittee. Until a transfer is approved by the District, the permittee shall be liable for compliance with the terms of the permit.

17. Should any other regulatory agency require changes to the permitted system, the District shall be notified of the changes prior to implementation so that a determination can be made whether a permit modification is required.

18. This permit does not eliminate the necessity to obtain any required federal, state, local and special District authorizations including a determination of the proposed activities' compliance with the applicable comprehensive plan prior to the start of any activity approved by this permit.

19. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40D-4 or Chapter 40D-40, F.A.C.

20. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the activities authorized by the permit or any use of the permitted system.

21. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under section 373.421(2), F.S., provides otherwise.

22. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of the permitted system or the real property at which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rule 40D-4.351, F.A.C. The permittee transferring the permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to such sale, conveyance or other transfer.

23. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with District rules, regulations and conditions of the permits.

24. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the District and the Florida Department of State, Division of Historical Resources.

25. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

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8. Off-site discharges during construction and development shall be made only through the facilities authorized by this permit. Water discharged from the project shall be through structures having a mechanism suitable for regulating upstream stages. Stages may be subject to operating schedules satisfactory to the District.

9. The permittee shall complete construction of all aspects of the surface water management system, including wetland compensation (grading, mulching, planting), water quality treatment features, and discharge control facilities prior to beneficial occupancy or use of the development being served by this system.

10. The following shall be properly abandoned and/or removed in accordance with the applicable regulations:

    a. Any existing wells in the path of construction shall be properly plugged and abandoned by a licensed well contractor.
    b. Any existing septic tanks on site shall be abandoned at the beginning of construction.
    c. Any existing fuel storage tanks and fuel pumps shall be removed at the beginning of construction.

11. All surface water management systems shall be operated to conserve water in order to maintain environmental quality and resource protection; to increase the efficiency of transport, application and use; to decrease waste; to minimize unnatural runoff from the property and to minimize dewatering of offsite property.

12. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District a written notification of commencement indicating the actual start date and the expected completion date.

13. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the occupation of the site or operation of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to a local government or other responsible entity.

14. Within 30 days after completion of construction of the permitted activity, the permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the required Statement of Completion and Request for Transfer to Operation Entity form identified in Chapter 40D-1, F.A.C. Additionally, if deviation from the approved drawings are discovered during the certification process the certification must be accompanied by a copy of the approved permit drawings with deviations noted.

15. This permit is valid only for the specific processes, operations and designs indicated on the approved drawings or exhibits submitted in support of the permit application. Any substantial deviation from the approved drawings, exhibits, specifications or permit conditions, including construction within the total land area but outside the approved project area(s), may constitute grounds for revocation or enforcement action by the District, unless a modification has been applied for and approved. Examples of substantial deviations include excavation of ponds, ditches or sump areas deeper than shown on the approved plans.

16. The operation phase of this permit shall not become effective until the permittee has complied with the requirements of the conditions herein, the District determines the system to be in compliance with the permitted plans, and the entity approved by the District accepts responsibility for operation and maintenance of the system. The permit may not be transferred to the operation and maintenance entity approved by the District until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall request transfer of the permit to the responsible operation and maintenance entity approved by the District, if different from the permittee. Until a transfer is approved by the District, the permittee shall be liable for compliance with the terms of the permit.

17. Should any other regulatory agency require changes to the permitted system, the District shall be notified of the changes prior to implementation so that a determination can be made whether a permit modification is required.

18. This permit does not eliminate the necessity to obtain any required federal, state, local and special District authorizations including a determination of the proposed activities' compliance with the applicable comprehensive plan prior to the start of any activity approved by this permit.

19. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40D-4 or Chapter 40D-40, F.A.C.

20. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the activities authorized by the permit or any use of the permitted system.

21. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under section 373.421(2), F.S., provides otherwise.

22. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of the permitted system or the real property at which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rule 40D-4.351, F.A.C. The permittee transferring the permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to such sale, conveyance or other transfer.

23. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with District rules, regulations and conditions of the permits.

24. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the District and the Florida Department of State, Division of Historical Resources.

25. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

Southwest Florida Water Management District

2379 Broad Street, Brooksville, Florida 34604-6899
(352) 796-7211 or 1-800-423-1476 (FL only)
TDD only: 1-800-231-6103 (FL only)
On the Internet at WaterMatters.org

An Equal Opportunity Employer

Bartow Service Office
170 Century Boulevard
Bartow, Florida 33830-7700
(863) 534-1448 or
1-800-492-7862 (FL only)

Sarasota Service Office
6750 Fruitville Road
Sarasota, Florida 34240-9711
(941) 377-3722 or
1-800-320-3503 (FL only)

Tampa Service Office
7601 Highway 301 North
Tampa, Florida 33637-6759
(813) 985-7481 or
1-800-836-0797 (FL only)

Ronald Z. Oakley
Chair, Pasco
Hugh M. Gramling
Vice Chair, Hillsborough
H. Paul Senft, Jr.
Secretary, Polk
Douglas B. Tharp
Treasurer, Sumter
Neil Combee
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Jeffrey M. Adams
Pinellas
Carlos Beruff
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Bryan K. Beswick
DeSoto
Jennifer E. Closshey
Hillsborough
Albert G. Joerger
Sarasota
Maritza Rovira-Forino
Hillsborough

David L. Moore
Executive Director
William S. Hlenky
General Counsel

See revised permit dtd. 7-11-13

February 24, 2011

Manatee County Board of County Commissioners
c/o Sia Mollanazar, P.E., Public Works Dept.
1022 26th Avenue East
Bradenton, FL 34208

Subject: **Final Agency Action Transmittal Letter**
ERP Individual Construction
Permit No.: 43035341.001
Project Name: Manatee County - 44th Avenue East from 30th Street East to 45th Street East
County: Manatee
Sec/Twp/Rge: 04, 05, 08, 09/35S/18E

Dear Mr. Mollanazar:

This letter constitutes notice of Final Agency Action for **approval** of the permit referenced above. Final approval is contingent upon no objection to the District's action being received by the District within the time frames described below.

You or any person whose substantial interests are affected by the District's action regarding a permit may request an administrative hearing in accordance with Sections 120.569 and 120.57, Florida Statutes, (F.S.), and Chapter 28-106, Florida Administrative Code, (F.A.C.), of the Uniform Rules of Procedure. *A request for hearing must: (1) explain how the substantial interests of each person requesting the hearing will be affected by the District's action, or proposed action, (2) state all material facts disputed by the person requesting the hearing or state that there are no disputed facts, and (3) otherwise comply with Chapter 28-106, F.A.C.* Copies of Sections 28-106.201 and 28-106.301, F.A.C. are enclosed for your reference. A request for hearing must be filed with (received by) the Agency Clerk of the District at the District's Brooksville address within 21 days of receipt of this notice. Receipt is deemed to be the fifth day after the date on which this notice is deposited in the United States mail. Failure to file a request for hearing within this time period shall constitute a waiver of any right you or such person may have to request a hearing under Sections 120.569 and 120.57, F.S. Mediation pursuant to Section 120.573, F.S., to settle an administrative dispute regarding the District's action in this matter is not available prior to the filing of a request for hearing.

Enclosed is a "Noticing Packet" that provides information regarding the District Rule 40D-1.1010, F.A.C., which addresses the notification of persons whose substantial interests may be affected by the District's action in this matter. The packet contains guidelines on how to provide notice of the District's action, and a notice that you may use.

The enclosed approved construction plans are part of the permit, and construction must be in accordance with these plans.

2-24-11
Original - SWFWMD APPROVAL 21895

If you have questions concerning the permit, please contact Steven J. Lopes, P.E., at the Sarasota Service Office, extension 6506. For assistance with environmental concerns, please contact David W. Jenkins extension 6545.

Sincerely,

Ross T. Morton, P.W.S., Director
Sarasota Regulation Department

RTM:SJL:DWJ:AJR
Enclosures: Approved Permit w/Conditions Attached
Approved Construction Drawings
Statement of Completion
Notice of Authorization to Commence Construction
Noticing Packet (42.00-039)
Sections 28-106.201 and 28-106.301, F.A.C.
cc/enc: File of Record 43030402.001
Donald Holcomb, P.E., HDR Engineering, Inc.
Terri L. Behling, Southwest Florida Water Management District

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE
INDIVIDUAL CONSTRUCTION
PERMIT NO. 43035341.001

Expiration Date: February 24, 2016 PERMIT ISSUE DATE: February 24, 2011

This permit is issued under the provisions of Chapter 373, Florida Statutes, (F.S.), and the Rules contained in Chapters 40D-4 and 40, Florida Administrative Code, (F.A.C.). The permit authorizes the Permittee to proceed with the construction of a surface water management system in accordance with the information outlined herein and shown by the application, approved drawings, plans, specifications, and other documents, attached hereto and kept on file at the Southwest Florida Water Management District (District). Unless otherwise stated by permit specific condition, permit issuance constitutes certification of compliance with state water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. 1341. All construction, operation and maintenance of the surface water management system authorized by this permit shall occur in compliance with Florida Statutes and Administrative Code and the conditions of this permit.

PROJECT NAME: Manatee County - 44th Avenue East from 30th Street East to 45th Street East

GRANTED TO: Manatee County Board of County Commissioners
Manatee County Public Works Dept.
1022 26th Avenue East
Bradenton, FL 34208

ABSTRACT: This permit authorizes the construction of a surface water management system to serve a 1.37 mile roadway project known as Manatee County - 44th Avenue East from 30th Street East to 45th Street East. The project location is the proposed extension of 44th Avenue East from 30th Street East to 45th Street East, located in Manatee County. Information regarding the surface water management system, 100-year floodplain, wetlands and/or surface waters is stated below and on the permitted construction drawings for the project.

OP. & MAINT. ENTITY: Manatee County Public Works Dept.

COUNTY: Manatee

SEC/TWP/RGE: 04, 05, 08, 09/35S/18E

TOTAL ACRES OWNED OR UNDER CONTROL: 37.49

PROJECT SIZE: 37.49 Acres

LAND USE: Road Project

DATE APPLICATION FILED: June 17, 2010

AMENDED DATE: N/A

I. Water Quantity/Quality

POND NO.	AREA ACRES @ TOP OF BANK	TREATMENT TYPE
West-3R	1.72	Wet Detention
West-3L	1.05	Wet Detention
East-3	1.91	Wet Detention
Gap-1	0.21	Wet Detention
B-1	0.32	Wet Detention
FMS East-3	1.97	N/A
FMS West-2	0.89	N/A
North Wet-Mit	19.40	N/A
TOTAL	**27.47**	

Comments: The project is a 1.37 mile roadway consisting of the extension of 44th Avenue east from 30th Street East to 45th Street East. Ponds West-3R and West-3L are interconnected. Ponds FMS East-3, FMS West-2 and North Wet-Mit provide proposed historic basin storage compensation storage only. A receiving waterbody body (WBID 1899, Gap Creek) is impaired for fecal coliform.

A mixing zone is not required.
A variance is not required.

II. 100-Year Floodplain

Encroachment (Acre-Feet of fill)	Compensation (Acre-Feet of excavation)	Compensation Type	Encroachment Result (feet)
8.32	11.35	EE	N/A

EE = Equivalent Excavation to offset project filling per Section 4.4 of the District's Basis of Review;

Comments: According to FEMA floodplain determinations portions of the project lie within Flood Zone X. Ponds FMS East-3, FMS West-2 and North Wet-Mit provide proposed storage to replace the lost historic basin storage, consistent with Basis of Review 4.7 and 4.8. Historic basin storage impacts associated with impacts to onsite wetlands and other surface water are included in the hydrologic/hydraulic drainage modeling.

III. Environmental Considerations

Wetland/Surface Water Information **Count of Wetlands: 20**

Wetland Name	Total Acres	Not Impacted Acres	Permanent Impacts		Temporary Impacts	
			Acres	Functional Loss*	Acres	Functional Loss*
OSW B	0.04	0.00	0.04	0.00	0.00	0.00
OSW F	0.25	0.15	0.10	0.00	0.00	0.00
OSW G	0.70	0.13	0.57	0.00	0.00	0.00
OSW J	0.01	0.00	0.01	0.00	0.00	0.00
OSW K	0.01	0.00	0.01	0.00	0.00	0.00
OSW L	0.01	0.00	0.01	0.00	0.00	0.00
OSW M	0.02	0.00	0.02	0.00	0.00	0.00
OSW N	0.01	0.00	0.01	0.00	0.00	0.00
OSW O	0.28	0.28	0.00	0.00	0.00	0.00
OSW P	0.34	0.00	0.34	0.00	0.00	0.00
OSW Q	0.20	0.00	0.00	0.00	0.20	0.00
OSW R	0.16	0.07	0.09	0.00	0.00	0.00
OSW S	0.35	0.04	0.31	0.00	0.00	0.00
OSW T	0.11	0.00	0.11	0.00	0.00	0.00
Seller's Pit	2.31	0.34	1.97	0.26	0.00	0.00
Walker Crews (WC)	2.93	2.93	0.00	0.00	0.00	0.00
Wetland A*	0.10	0.00	0.10	0.00	0.00	0.00
Wetland C*	0.12	0.07	0.05	0.00	0.00	0.00
Wetland H	2.47	0.80	1.67	1.08	0.00	0.00
Wetland I	0.11	0.09	0.01	0.02	0.01	0.00
Total:	10.53	4.90	5.42	1.36	0.21	0.00

***For impacts that do not require mitigation, their functional loss is not included.**

Wetland/Other Surface Water Comments:
There are Five (5) forested wetlands, WL-A, WL-C, WL-H, WL-I and Walker Crews totaling 5.27 acres located within the project area. Four (4) of these wetlands (WL-A, WL-C, WL-H, and WL-I) extend outside the project area. Permanent filling impacts to 1.67 acres of forested wetlands are proposed for construction of a new four-lane county roadway project. Temporary impacts will occur to 0.10 acre of wetland WL-I and 0.20 acre of OSW Q for pond construction and roadway grading. There is a total of 4.80 acres of other surface waters, comprised of fourteen (14) upland-cut ditches and ponds totaling 2.49 acres and one hydric-cut pond, Seller's Pit totaling 2.31 acres, located within the project area. Permanent filling impacts for roadway construction are proposed to 0.73 acre of upland-cut ponds, 0.90 acre of upland-cut ditches, and 1.97 acres of a hydric-cut pond. Permanent filling impacts to 1.67 acres of qualifying wetlands and 2.31 acres surface waters and secondary impacts to 0.72 acre were evaluated using the Uniform Mitigation Assessment Method (UMAM), as required pursuant to Chapter 62-345, F.A.C. The results of the UMAM analysis indicate a functional loss of 1.36 units due to the permanent and secondary impacts proposed. Additional permanent filling impacts are proposed to 0.15 acre of two less than half-acre isolated wetlands, WL-A and WL-C. Habitat mitigation will not be required pursuant to 3.2.2.1 of the Basis of Review. Under this subsection, wetland mitigation is not required for impacts to isolated wetlands that are not connected by standing water or flowing water to other wetlands so that they are greater than one-half acre in size, are not used by threatened or endangered species, are not located in an Area of Critical Concern, and are of minimal value to fish and wildlife.

Mitigation Information **Count of Mitigation: 5**

Mitigation Name	Creation/Restoration		Enhancement		Preservation		Other	
	Acres	Functional Gain	Acres	Functional Gain	Acres	Functional Gain	Acres	Functional Gain
Creation North	0.98	0.25	0.00	0.00	0.00	0.00	0.00	0.00
Creation South	1.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00
Seller's Pit	0.00	0.00	1.66	0.26	0.00	0.00	0.00	0.00
WC Enhancement	0.00	0.00	2.47	0.57	0.00	0.00	0.00	0.00
WC Restoration	0.46	0.23	0.00	0.00	0.00	0.00	0.00	0.00
Total:	2.44	0.73	4.13	0.83	0.00	0.00	0.00	0.00

Mitigation Comments:
Wetland mitigation for permanent impacts will be provided by 1.98 acres of forested wetland creation, 2.93 acres of forested wetland enhancement. Additional mitigation to offset 1.97 acres of permanent impacts to Seller's Pit will be provided by 1.66 acres of enhancement activities including nuisance/exotic species removal and planting of native species in the buffer area and along the causeway. The result of the UMAM analysis indicates a total functional gain of 1.56 units which offsets the 1.36 units of functional loss to wetland habitat and provides an excess of 0.20 units required to address Subsection 3.2 of the Basis of Review, and which will not be available for future mitigation withdrawal.

A regulatory conservation easement is not required.

A proprietary conservation easement is not required.

SPECIFIC CONDITIONS

1. If the ownership of the project area covered by the subject permit is divided, with someone other than the Permittee becoming the owner of part of the project area, this permit shall terminate, pursuant to Section 40D-1.6105, F.A.C. In such situations, each land owner shall obtain a permit (which may be a modification of this permit) for the land owned by that person. This condition shall not apply to the division and sale of lots or units in residential subdivisions or condominiums.

2. Unless specified otherwise herein, two copies of all information and reports required by this permit shall be submitted to:

   Sarasota Regulation Department
   Southwest Florida Water Management District
   6750 Fruitville Road
   Sarasota, FL 34240-9711

   The permit number, title of report or information and event (for recurring report or information submittal) shall be identified on all information and reports submitted.

3. The Permittee shall retain the design engineer, or other professional engineer registered in Florida, to conduct on-site observations of construction and assist with the as-built certification requirements of this project. The Permittee shall inform the District in writing of the name, address and phone number of the professional engineer so employed. This information shall be submitted prior to construction.

4. Within 30 days after completion of construction of the permitted activity, the Permittee shall submit to the Sarasota Service Office a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the required Statement of Completion and Request for Transfer to Operation Entity form identified in Chapter 40D-1.659, F.A.C., and signed, dated and sealed as-built drawings. The as-built drawings shall identify any deviations from the approved construction drawings.

5. The District reserves the right, upon prior notice to the Permittee, to conduct on-site research to assess the pollutant removal efficiency of the surface water management system. The Permittee may be required to cooperate in this regard by allowing on-site access by District representatives, by allowing the installation and operation of testing and monitoring equipment, and by allowing other assistance measures as needed on site.

6. The Permittee shall monitor and maintain the wetland mitigation areas until the criteria set forth in the Wetland Mitigation Success Criteria Conditions above are met. The Permittee shall perform corrective actions identified by the District if the District identifies a wetland mitigation deficiency.

7. The Permittee shall undertake required maintenance activities within the wetland mitigation areas as needed at any time between mitigation area construction and termination of monitoring, with the exception of the final year. Maintenance shall include the manual removal of all nuisance and exotic species, with sufficient frequency that their combined coverage at no time exceeds the Wetland Mitigation Success Criteria Conditions above. Herbicides shall not be used without the prior written approval of the District.

8. A Wetland Mitigation Completion Report shall be submitted to the District within 30 days of completing construction and planting of the wetland mitigation areas. Upon District inspection and approval of the mitigation areas, the monitoring program shall be initiated with the date of the District field inspection being the construction completion date of the mitigation areas. Monitoring events shall occur between March 1 and November 30 of each year. An Annual Wetland Monitoring Report shall be submitted upon the anniversary date of District approval to initiate monitoring.

   Annual reports shall provide documentation that a sufficient number of maintenance inspection/activities were conducted to maintain the mitigation areas in compliance with the Wetland Mitigation Success Criteria Conditions above. Note that the performance of maintenance inspections and maintenance activities will normally need to be conducted more frequently than the collection of other monitoring data to maintain the mitigation areas in compliance with the Wetland Mitigation Success Criteria Conditions above.

   Monitoring Data shall be collected semi-annually.

9. Termination of monitoring for the wetland mitigation areas shall be coordinated with the District by:

   a. notifying the District in writing when the criteria set forth in the Wetland Mitigation Success Criteria Conditions have been achieved;

   b. suspending all maintenance activities in the wetland mitigation areas including, but not limited to, irrigation and addition or removal of vegetation; and

   c. submitting a monitoring report to the District one year following the written notification and suspension of maintenance activities.

   Upon receipt of the monitoring report, the District will evaluate the wetland mitigation sites to determine if the Mitigation Success Criteria Conditions have been met and maintained. The District will notify the Permittee in writing of the evaluation results. The Permittee shall perform corrective actions for any portions of the wetland mitigation areas that fail to maintain the criteria set forth in the Wetland Mitigation Success Criteria Conditions.

10. Following the District's determination that the wetland mitigation has been successfully completed, the Permittee shall operate and maintain the wetland mitigation areas such that they remain in their current or intended condition for the life of the surface water management facility. The Permittee must perform corrective actions for any portions of the wetland mitigation areas where conditions no longer meet the criteria set forth in the Wetland Mitigation Success Criteria Conditions.

11. The Permittee shall, within 90 days of initial wetland impact and prior to beneficial use of the site, complete all aspects of the mitigation plan, including the grading, mulching, and planting, in accordance with the design details in the final approved construction drawingsand information submitted in support of the application.

12. The following boundaries, as shown on the approved construction drawings, shall be clearly delineated on the site prior to initial clearing or grading activities:

wetland and surface water areas
limits of approved wetland impacts

The delineation shall endure throughout the construction period and be readily discernible to construction and District personnel.

13. (WL-A, WL-C, WL-H, WL-I, Walker Crews Enhancement and Restoration) and surface waters Sellers Pit, OSW-B, OSW-F, OSW-G, OSW-J, OSW-K, OSW-L, OSW-M, OSW-N, OSW-O, OSW-P, OSW-Q, OSW-R, OSW-S, and OSW-T) shown on the approved construction drawings shall be binding upon the Permittee and the District.

14. All construction is prohibited within the permitted project area until the Permittee acquires legal ownership or legal control of the project area as delineated in the permitted construction drawings.

15. The Permittee, the Florida Department of Transportation, shall submit to the District a site-specific plan for erosion and sediment control best management practices, pursuant to Section 104, FDOT Standard Specifications for Road and Bridge Construction. The Permittee shall submit this plan and receive District approval prior to construction commencement.

16. The operation and maintenance entity shall submit inspection reports in the form required by the District, in accordance with the following schedule.

For systems utilizing retention or wet detention, the inspections shall be performed two (2) years after operation is authorized and every two (2) years thereafter.

17. The removal of littoral shelf vegetation (including cattails) from wet detention ponds is prohibited unless otherwise approved by the District. Removal includes dredging, the application of herbicide, cutting, and the introduction of grass carp. Any questions regarding authorized activities within the wet detention ponds shall be addressed to the District's Surface Water Regulation Manager, Sarasota Service Office.

18. Certification of compliance with state water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. 1341 is waived.

19. The District, upon prior notice to the Permittee, may conduct on-site inspections to assess the effectiveness of the erosion control barriers and other measures employed to prevent violations of state water quality standards and avoid downstream impacts. Such barriers or other measures should control discharges, erosion, and sediment transport during construction and thereafter. The District will also determine any potential environmental problems that may develop as a result of leaving or removing the barriers and other measures during construction or after construction of the project has been completed. The Permittee must provide any remedial measures that are needed.

20. This permit is issued based upon the design prepared by the Permittee's consultant. If at any time it is determined by the District that the Conditions for Issuance of Permits in Rules 40D-4.301 and 40D-4.302, F.A.C., have not been met, upon written notice by the District, the Permittee shall obtain a permit modification and perform any construction necessary thereunder to correct any deficiencies in the system design or construction to meet District rule criteria. The Permittee is advised that the correction of deficiencies may require re-construction of the surface water management system and/or mitigation areas.

21. The Permittee shall submit to the District a completed Construction Surface Water Management Plan, signed and sealed by a Florida Professional Engineer. The Permittee shall submit this Plan and receive District approval prior to construction commencement. The Plan and supporting computations shall address proposed construction techniques, sequencing and equipment for:

a. Temporary construction dewatering for the project.
b. Maintenance of hydraulic connection north and south of proposed causeway during construction.
c. Maintenance of hydraulic connection of the existing three (3) culverts (near Sta 127+00 on 44th Avenue East) during construction.
d. Proposed causeway construction; including method for installing any temporary coffer dams.

22. This permit does not authorize any construction dewatering of existing Seller's Pit. A formal modification of this ERP shall be obtained prior to any dewatering of Seller's Pit.

23. Construction turbidity monitoring shall be performed in accordance with the Turbidity Monitoring Plan received by the District on February 14, 2011.

24. It is the Permittee's responsibility to resolve all contaminated site assessment concerns with the Florida Department of Environmental Protection prior to beginning any construction activities on their project.

25. **WETLAND MITIGATION SUCCESS CRITERIA; WETLAND MITIGATION AREA 1 (Creation North; 0.98 acre)**

Mitigation is expected to offset adverse impacts to wetlands and other surface waters caused by regulated activities and to achieve viable, sustainable ecological and hydrological wetland functions. Wetlands constructed for mitigation purposes will be considered successful and will be released from monitoring and reporting requirements when the following criteria are met continuously for a period of at least one year without intervention in the form of irrigation or the additional or removal of vegetation.

a. The mitigation area can reasonably be expected to develop into a **Forested wetland** as determined by the Florida Land Use and Cover and Forms Classification System (third edition; January 1999).
b. Topography, water depth and water level fluctuation in the mitigation area are characteristic of the wetlands/ surface water type specified in criterion "a".
c. The dominant and subdominant species of desirable wetland plants comprising each vegetation zone and stratum shall be as follows:

ZONE	STRATUM	PERCENT COVER	DOMINANT SPECIES[1]	SUBDOMINANT SPECIES[2]
A	Interior Forested Basin	50 %	*Cephalathus occidentalis* *Nyssa sylvatica* *Fraxinus caroliniana*	Any desirable wetland species as listed in 62-340.450, F.A.C.
B	Hardwood Hammock	50%	*Magnolia virginiana* *Quercus nigra* *Ilex cassine* *Liquidambar styracifua*	Any desirable wetland species as listed in 62-340.450, F.A.C.
C	Transitional	50%	*Celitis laevigata* *Viburnum obovatum* *Ulmus Americana*	Any desirable wetland species as listed in 62-340.450, F.A.C.
D	Buffer	50%	*Quercus virginiana* *Pinus elliottii*	Any desirable wetland species as listed in 62-340.450, F.A.C.

[1] Plant species providing the same function as those listed may also be considered in determining success.
[2] Shrub species must be greater than 6 feet in height, tree species must be greater than 12 feet in height and both must have been planted for greater than **3** years.

This criterion must be achieved within **five (5)** years of initial monitoring. The Permittee shall complete any activities necessary to ensure the successful achievement of the mitigation requirements by the deadline specified. Any request for an extension of the deadline specified shall be accompanied with an explanation and submitted as a formal permit modification to the District for evaluation.

d. Species composition of recruiting wetland vegetation are indicative of the wetland type specified in criterion "a."

e. Coverage of nuisance and exotic vegetation does not exceed five (5) percent.

f. The wetland creation area can be determined to be a wetland or other surface water according to Chapter 62-340, F.A.C.

The mitigation area may be released from monitoring and reporting requirements and be deemed successful at any time during the monitoring period if the Permittee demonstrates that the conditions in the mitigation area have adequately replaced the wetland and surface water functions affected by the regulated activity and that the site conditions are sustainable.

WETLAND MITIGATION SUCCESS CRITERIA; WETLAND MITIGATION AREA 1 (Creation South; 1.00 acre)

Mitigation is expected to offset adverse impacts to wetlands and other surface waters caused by regulated activities and to achieve viable, sustainable ecological and hydrological wetland functions. Wetlands constructed for mitigation purposes will be considered successful and will be released from monitoring and reporting requirements when the following criteria are met continuously for a period of at least one year without intervention in the form of irrigation or the additional or removal of vegetation.

a. The mitigation area can reasonably be expected to develop into a **Forested wetland** as determined by the Florida Land Use and Cover and Forms Classification System (third edition; January 1999).

b. Topography, water depth and water level fluctuation in the mitigation area are characteristic of the wetlands/ surface water type specified in criterion "a".

c. The dominant and subdominant species of desirable wetland plants comprising each vegetation zone and stratum shall be as follows:

ZONE	STRATUM	PERCENT COVER	DOMINANT SPECIES[1]	SUBDOMINANT SPECIES[2]
A	Interior Forested Basin	50 %	*Cephalathus occidentalis* *Nyssa sylvatica* *Fraxinus caroliniana*	Any desirable wetland species as listed in 62-340.450, F.A.C.
B	Hardwood Hammock	50%	*Magnolia virginiana* *Quercus nigra* *Ilex cassine* *Liquidambar styraciflua*	Any desirable wetland species as listed in 62-340.450, F.A.C.
C	Transitional	50%	*Celitis laevigata* *Viburnum obovatum* *Ulmus Americana*	Any desirable wetland species as listed in 62-340.450, F.A.C.
D	Buffer	50%	*Quercus virginiana* *Pinus elliottii*	Any desirable wetland species as listed in 62-340.450, F.A.C.

[1] Plant species providing the same function as those listed may also be considered in determining success.
[2] Shrub species must be greater than 6 feet in height, tree species must be greater than 12 feet in height and both must have been planted for greater than **3** years.

This criterion must be achieved within **five (5)** years of initial monitoring. The Permittee shall complete any activities necessary to ensure the successful achievement of the mitigation requirements by the deadline specified. Any request for an extension of the deadline specified shall be accompanied with an explanation and submitted as a formal permit modification to the District for evaluation.

d. Species composition of recruiting wetland vegetation are indicative of the wetland type specified in criterion "a."

e. Coverage of nuisance and exotic vegetation does not exceed five (5) percent.

f. The wetland creation area can be determined to be a wetland or other surface water according to Chapter 62-340, F.A.C.

The mitigation area may be released from monitoring and reporting requirements and be deemed successful at any time during the monitoring period if the Permittee demonstrates that the conditions in the mitigation area have adequately replaced the wetland and surface water functions affected by the regulated activity and that the site conditions are sustainable.

WETLAND MITIGATION SUCCESS CRITERIA; WETLAND MITIGATION AREA 3 (Walker Crews Enhancement: 2.47 Acres)

Mitigation is expected to offset adverse impacts to wetlands and other surface waters caused by regulated activities and to achieve viable, sustainable ecological and hydrological wetland functions. Wetlands constructed for mitigation purposes will be considered successful and will be released from monitoring and reporting requirements when the following criteria are met continuously for a period of at least one year without intervention in the form of irrigation or the additional or removal of vegetation.

a. The mitigation area can reasonably be expected to develop into a **Forested wetland** as determined by the Florida Land Use and Cover and Forms Classification System (third edition; January 1999).

b. Topography, water depth and water level fluctuation in the mitigation area are characteristic of the wetlands/ surface water type specified in criterion "a".

c. The dominant and subdominant species of desirable wetland plants comprising each vegetation zone and stratum shall be as follows:

ZONE	STRATUM	PERCENT COVER	DOMINANT SPECIES[1]	SUBDOMINANT SPECIES[2]
A	Lower Forested Interior Zones	50%	*Cephalathus occidentalis* *Magnolia virginiana* *Quercus nigra* *Ilex cassine*	Any desirable wetland species as listed in 62-340.450, F.A.C.
B	Higher Elevation Outer Zones	50%	*Liquidambar styraciflua* *Ulmus Americana* *Viburnum obovatum* *Forestiera segregate*	Any desirable wetland species as listed in 62-340.450, F.A.C.
C	Buffer	50%	*Quercus virginiana*	Any desirable wetland species as listed in 62-340.450, F.A.C.

[1] Plant species providing the same function as those listed may also be considered in determining success.
[2] Shrub species must be greater than 6 feet in height, tree species must be greater than 12 feet in height and both must have been planted for greater than 3 years.

This criterion must be achieved within **five (5)** years of initial monitoring. The Permittee shall complete any activities necessary to ensure the successful achievement of the mitigation requirements by the deadline specified. Any request for an extension of the deadline specified shall be accompanied with an explanation and submitted as a formal permit modification to the District for evaluation.

d. Species composition of recruiting wetland vegetation are indicative of the wetland type specified in criterion "a."

e. Coverage of nuisance and exotic vegetation does not exceed five (5) percent.

f. The wetland creation area can be determined to be a wetland or other surface water according to Chapter 62-340, F.A.C.

The mitigation area may be released from monitoring and reporting requirements and be deemed successful at any time during the monitoring period if the Permittee demonstrates that the conditions in the mitigation area have adequately replaced the wetland and surface water functions affected by the regulated activity and that the site conditions are sustainable.

WETLAND MITIGATION SUCCESS CRITERIA; WETLAND MITIGATION AREA 4 (Walker Crews Restoration: 0.46 Acre)

Mitigation is expected to offset adverse impacts to wetlands and other surface waters caused by regulated activities and to achieve viable, sustainable ecological and hydrological wetland functions. Wetlands constructed for mitigation purposes will be considered successful and will be released from monitoring and reporting requirements when the following criteria are met continuously for a period of at least one year without intervention in the form of irrigation or the additional or removal of vegetation.

a. The mitigation area can reasonably be expected to develop into a **Forested wetland** as determined by the Florida Land Use and Cover and Forms Classification System (third edition; January 1999).

b. Topography, water depth and water level fluctuation in the mitigation area are characteristic of the wetlands/ surface water type specified in criterion "a".

c. The dominant and subdominant species of desirable wetland plants comprising each vegetation zone and stratum shall be as follows:

ZONE	STRATUM	PERCENT COVER	DOMINANT SPECIES[1]	SUBDOMINANT SPECIES[2]
A	Braden River Edge	50%	*Cephalathus occidentalis* *Ilex cassine*	Any desirable wetland species as listed in 62-340.450, F.A.C.
B	Interior	50%	*Magnolia virginiana* *Quercus nigra* *Ulmus Americana*	Any desirable wetland species as listed in 62-340.450, F.A.C.
C	Outer Perimeter	50%	*Liquidambar styracifua* *Viburnum obovatum* *Forestiera segregate*	Any desirable wetland species as listed in 62-340.450, F.A.C.

[1] Plant species providing the same function as those listed may also be considered in determining success.
[2] Shrub species must be greater than 6 feet in height, tree species must be greater than 12 feet in height and both must have been planted for greater than **3** years.

This criterion must be achieved within **five (5)** years of initial monitoring. The Permittee shall complete any activities necessary to ensure the successful achievement of the mitigation requirements by the deadline specified. Any request for an extension of the deadline specified shall be accompanied with an explanation and submitted as a formal permit modification to the District for evaluation.

d. Species composition of recruiting wetland vegetation are indicative of the wetland type specified in criterion "a."

e. Coverage of nuisance and exotic vegetation does not exceed five (5) percent.

f. The wetland creation area can be determined to be a wetland or other surface water according to Chapter 62-340, F.A.C.

The mitigation area may be released from monitoring and reporting requirements and be deemed successful at any time during the monitoring period if the Permittee demonstrates that the conditions in the mitigation area have adequately replaced the wetland and surface water functions affected by the regulated activity and that the site conditions are sustainable.

26. If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, the Permittee shall cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The Permittee shall contact the Florida Department of State, Division of Historical Resources (DHR), Review and Compliance Section at (850) 245-6333 or (800) 847-7278 and the District. Project activities shall not resume without verbal and/or written authorization from the DHR. In the event that unmarked human remains are encountered during permitted activities, all work shall cease immediately and the proper authorities shall be notified in accordance with Section 872.05, F.S.

GENERAL CONDITIONS

1. The general conditions attached hereto as Exhibit "A" are hereby incorporated into this permit by reference and the Permittee shall comply with them.

Authorized Signature

PART II HEARINGS INVOLVING DISPUTED ISSUES OF MATERIAL FACT

28-106.201 Initiation of Proceedings.

(1) Unless otherwise provided by statute, and except for agency enforcement and disciplinary actions that shall be initiated under Rule 28-106.2015, F.A.C., initiation of proceedings shall be made by written petition to the agency responsible for rendering final agency action. The term "petition" includes any document that requests an evidentiary proceeding and asserts the existence of a disputed issue of material fact. Each petition shall be legible and on 8 1/2 by 11 inch white paper. Unless printed, the impression shall be on one side of the paper only and lines shall be double-spaced.

(2) All petitions filed under these rules shall contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action;

(f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and

(g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

(3) Upon receipt of a petition involving disputed issues of material fact, the agency shall grant or deny the petition, and if granted shall, unless otherwise provided by law, refer the matter to the Division of Administrative Hearings with a request that an administrative law judge be assigned to conduct the hearing. The request shall be accompanied by a copy of the petition and a copy of the notice of agency action.

Specific Authority 120.54(3), (5) FS. Law Implemented 120.54(5), 120.569, 120.57 FS. History–New 4-1-97, Amended 9-17-98, 1-15-07.

PART III PROCEEDINGS AND HEARINGS NOT INVOLVING DISPUTED ISSUES OF MATERIAL FACT

28-106.301 Initiation of Proceedings.

(1) Unless otherwise provided by statute and except for agency enforcement and disciplinary actions initiated under subsection 28-106.2015(1), F.A.C., initiation of a proceeding shall be made by written petition to the agency responsible for rendering final agency action. The term "petition" includes any document which requests a proceeding. Each petition shall be legible and on 8 1/2 by 11 inch white paper or on a form provided by the agency. Unless printed, the impression shall be on one side of the paper only and lines shall be doubled-spaced.

(2) All petitions filed under these rules shall contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) An explanation of how the petitioner's substantial interests will be affected by the agency determination;

(d) A statement of when and how the petitioner received notice of the agency decision;

(e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action;

(f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action;

(g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action; and

(h) A statement that no material facts are in dispute.

Specific Authority 120.54(5) FS. Law Implemented 120.54(5), 120.569, 120.57 FS. History–New 4-1-97, Amended 9-17-98, 1-15-07, 12-24-07.

EXHIBIT "A"

1. All activities shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. For general permits authorizing incidental site activities, the following limiting general conditions shall also apply:

   a. If the decision to issue the associated individual permit is not final within 90 days of issuance of the incidental site activities permit, the site must be restored by the permittee within 90 days after notification by the District. Restoration must be completed by re-contouring the disturbed site to previous grades and slopes re-establishing and maintaining suitable vegetation and erosion control to provide stabilized hydraulic conditions. The period for completing restoration may be extended if requested by the permittee and determined by the District to be warranted due to adverse weather conditions or other good cause. In addition, the permittee shall institute stabilization measures for erosion and sediment control as soon as practicable, but in no case more than 7 days after notification by the District.

   b. The incidental site activities are commenced at the permittee's own risk. The Governing Board will not consider the monetary costs associated with the incidental site activities or any potential restoration costs in making its decision to approve or deny the individual environmental resource permit application. Issuance of this permit shall not in any way be construed as commitment to issue the associated individual environmental resource permit.

4. Activities approved by this permit shall be conducted in a manner which does not cause violations of state water quality standards. The permittee shall implement best management practices for erosion and a pollution control to prevent violation of state water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

5. Water quality data for the water discharged from the permittee's property or into the surface waters of the state shall be submitted to the District as required by the permit. Analyses shall be performed according to procedures outlined in the current edition of Standard Methods for the Examination of Water and Wastewater by the American Public Health Association or Methods for Chemical Analyses of Water and Wastes by the U.S. Environmental Protection Agency. If water quality data are required, the permittee shall provide data as required on volumes of water discharged, including total volume discharged during the days of sampling and total monthly volume discharged from the property or into surface waters of the state.

6. District staff must be notified in advance of any proposed construction dewatering. If the dewatering activity is likely to result in offsite discharge or sediment transport into wetlands or surface waters, a written dewatering plan must either have been submitted and approved with the permit application or submitted to the District as a permit prior to the dewatering event as a permit modification. A water use permit may be required prior to any use exceeding the thresholds in Chapter 40D-2, F.A.C.

7. Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

8. Off-site discharges during construction and development shall be made only through the facilities authorized by this permit. Water discharged from the project shall be through structures having a mechanism suitable for regulating upstream stages. Stages may be subject to operating schedules satisfactory to the District.

9. The permittee shall complete construction of all aspects of the surface water management system, including wetland compensation (grading, mulching, planting), water quality treatment features, and discharge control facilities prior to beneficial occupancy or use of the development being served by this system.

10. The following shall be properly abandoned and/or removed in accordance with the applicable regulations:

    a. Any existing wells in the path of construction shall be properly plugged and abandoned by a licensed well contractor.
    b. Any existing septic tanks on site shall be abandoned at the beginning of construction.
    c. Any existing fuel storage tanks and fuel pumps shall be removed at the beginning of construction.

11. All surface water management systems shall be operated to conserve water in order to maintain environmental quality and resource protection; to increase the efficiency of transport, application and use; to decrease waste; to minimize unnatural runoff from the property and to minimize dewatering of offsite property.

12. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District a written notification of commencement indicating the actual start date and the expected completion date.

13. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the occupation of the site or operation of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to a local government or other responsible entity.

14. Within 30 days after completion of construction of the permitted activity, the permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the required Statement of Completion and Request for Transfer to Operation Entity form identified in Chapter 40D-1, F.A.C. Additionally, if deviation from the approved drawings are discovered during the certification process the certification must be accompanied by a copy of the approved permit drawings with deviations noted.

15. This permit is valid only for the specific processes, operations and designs indicated on the approved drawings or exhibits submitted in support of the permit application. Any substantial deviation from the approved drawings, exhibits, specifications or permit conditions, including construction within the total land area but outside the approved project area(s), may constitute grounds for revocation or enforcement action by the District, unless a modification has been applied for and approved. Examples of substantial deviations include excavation of ponds, ditches or sump areas deeper than shown on the approved plans.

16. The operation phase of this permit shall not become effective until the permittee has complied with the requirements of the conditions herein, the District determines the system to be in compliance with the permitted plans, and the entity approved by the District accepts responsibility for operation and maintenance of the system. The permit may not be transferred to the operation and maintenance entity approved by the District until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall request transfer of the permit to the responsible operation and maintenance entity approved by the District, if different from the permittee. Until a transfer is approved by the District, the permittee shall be liable for compliance with the terms of the permit.

17. Should any other regulatory agency require changes to the permitted system, the District shall be notified of the changes prior to implementation so that a determination can be made whether a permit modification is required.

18. This permit does not eliminate the necessity to obtain any required federal, state, local and special District authorizations including a determination of the proposed activities' compliance with the applicable comprehensive plan prior to the start of any activity approved by this permit.

19. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40D-4 or Chapter 40D-40, F.A.C.

20. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the activities authorized by the permit or any use of the permitted system.

21. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under section 373.421(2), F.S., provides otherwise.

22. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of the permitted system or the real property at which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rule 40D-4.351, F.A.C. The permittee transferring the permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to such sale, conveyance or other transfer.

23. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with District rules, regulations and conditions of the permits.

24. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the District and the Florida Department of State, Division of Historical Resources.

25. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

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14. Within 30 days after completion of construction of the permitted activity, the permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the required Statement of Completion and Request for Transfer to Operation Entity form identified in Chapter 40D-1, F.A.C. Additionally, if deviation from the approved drawings are discovered during the certification process the certification must be accompanied by a copy of the approved permit drawings with deviations noted.

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23. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with District rules, regulations and conditions of the permits.

24. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the District and the Florida Department of State, Division of Historical Resources.

25. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

Southwest Florida Water Management District
2379 Broad Street, Brooksville, Florida 34604-6899
(352) 796-7211 or 1-800-423-1476 (FL only)
SUNCOM 628-4150 TDD only 1-800-231-6103 (FL only)
On the Internet at: WaterMatters.org

An Equal Opportunity Employer

Bartow Service Office
170 Century Boulevard
Bartow, Florida 33830-7700
(863) 534-1448 or
1-800-492-7862 (FL only)

Sarasota Service Office
6750 Fruitville Road
Sarasota, Florida 34240-9711
(941) 377-3722 or
1-800-320-3503 (FL only)

Tampa Service Office
7601 Highway 301 North
Tampa, Florida 33637-6759
(813) 985-7481 or
1-800-836-0797 (FL only)

June 07, 2012

Manatee County Public Works Department
Attn: Sia Mollanazar, P.E.
1022 26th Avenue East
Bradenton, FL 34208

Subject: **Notice of Final Agency Action for Approval**
ERP General Construction Modification

Project Name:	Manatee County - 44th Avenue East from 30th Street East to 45th Street East
App ID/Permit No:	663704 / 44035341.002
County:	MANATEE
Sec/Twp/Rge:	S08/T35S/R18E, S05/T35S/R18E, S04/T35S/R18E, S09/T35S/R18E

Dear Permittee(s):

This letter constitutes notice of Final Agency Action for **approval** of the permit referenced above. Final approval is contingent upon no objection to the District's action being received by the District within the time frames described in the enclosed Notice of Rights.

Approved construction plans are part of the permit, and construction must be in accordance with these plans. These drawings are available for viewing or downloading through the District's Application and Permit Search Tools located at www.WaterMatters.org/permits.

The District's action in this matter only becomes closed to future legal challenges from members of the public if such persons have been properly notified of the District's action and no person objects to the District's action within the prescribed period of time following the notification. The District does not publish notices of agency action. If you wish to limit the time within which a person who does not receive actual written notice from the District may request an administrative hearing regarding this action, you are strongly encouraged to publish, at your own expense, a notice of agency action in the legal advertisement section of a newspaper of general circulation in the county or counties where the activity will occur. Publishing notice of agency action will close the window for filing a petition for hearing. Legal requirements and instructions for publishing notice of agency action, as well as a noticing form that can be used is available from the District's website at www.WaterMatters.org/permits/noticing.

If you publish notice of agency action, a copy of the affidavit of publishing provided by the newspaper should be sent to the Regulation Division at the District Service Office that services this permit.

6-7-12 ERP General Constr Mod - SWFWMD 16 pgs

If you have questions, please contact Steven Lopes, at the Tampa Service Office, extension 6506. For assistance with environmental concerns, please contact Tasha Bowers, extension 6538.

Sincerely,

Michelle K. Hopkins, P.E.
Environmental Resource Permit Bureau

Enclosures: Approved Permit w/Conditions Attached
Statement of Completion
Notice of Authorization to Commence Construction
Notice of Rights
cc: U. S. Army Corps of Engineers
Manatee County Public Works Department
Donnie Holcomb, P.E., HDR Engineering, Inc.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE
GENERAL CONSTRUCTION MODIFICATION
PERMIT NO. 44035341.002

EXPIRATION DATE: June 07, 2017 **PERMIT ISSUE DATE:** June 07, 2012

This permit is issued under the provisions of Chapter 373, Florida Statutes, (F.S.), and the Rules contained in Chapters 40D-4 and 40D-40, Florida Administrative Code, (F.A.C.). The permit authorizes the Permittee to proceed with the construction of a surface water management system in accordance with the information outlined herein and shown by the application, approved drawings, plans, specifications, and other documents, attached hereto and kept on file at the Southwest Florida Water Management District (District). Unless otherwise stated by permit specific condition, permit issuance constitutes certification of compliance with state water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. 1341. All construction, operation and maintenance of the surface water management system authorized by this permit shall occur in compliance with Florida Statutes and Administrative Code and the conditions of this permit.

PROJECT NAME:	Manatee County - 44th Avenue East from 30th Street East to 45th Street East
GRANTED TO:	Manatee County Public Works Department Attn: Sia Mollanazar, P.E. 1022 26th Avenue East Bradenton, FL 34208
OTHER PERMITTEES:	N/A

ABSRACT: This permit authorizes modifications to Environmental Resource Permit (ERP) No. 43035341.001 entitled Manatee County - 44th Avenue East from 30th Street East to 45th Street East, issued on February 24, 2011. The modifications approved in this permit are as follows:

1. Previously permitted Pond East-3 is replaced (and relocated) by proposed Pond East-2.

2. Previously permitted Pond FMS East-3 is replaced (and relocated) by proposed Pond FMS East-2.

Information regarding the surface water management system, 100-year floodplain, wetlands and/or surface waters is stated below and on the permitted construction drawings for the project.

OP. & MAIN. ENTITY:	Manatee County Public Works Department
OTHER OP. & MAIN. ENTITY:	N/A
COUNTY:	MANATEE
SEC/TWP/RGE:	S08/T35S/R18E, S05/T35S/R18E, S04/T35S/R18E, S09/T35S/R18E
TOTAL ACRES OWNED OR UNDER CONTROL:	36.30
PROJECT SIZE:	5.55 Acres
LAND USE:	Road Projects
DATE APPLICATION FILED:	May 04, 2012
AMENDED DATE:	N/A

I. Water Quantity/Quality

POND No.	Area Acres @ Top of Bank	Treatment Type
East-2	1.97	MAN-MADE WET DETENTION
FMS East-2	1.79	NO TREATMENT SPECIFIED
	Total: **3.76**	

Proposed Pond FMS East-2 provides compensation for lost historic basin storage only.

A mixing zone is not required.
A variance is not required.

II. 100-Year Floodplain

Encroachment (Acre-Feet of fill)	Compensation (Acre-Feet of excavation)	Compensation Type	Encroachment Result* (feet)
8.32	11.40	Equivalent Excavation	N/A

According to FEMA floodplain determinations the project lies with Flood Zone X (Unshaded). Ponds FMS East-2, FMS West-2 and North Wet-Mit provide compensation (11.40 acre-feet) for lost historic basin storage (8.32 acre-feet) pursuant to Basis of Review 4.7.

Proposed Pond FMS East-2 provides 6.56 acre-feet storage volume. Ponds FMS West-2 and North Wet-Mit were previously permitted under ERP No. 43035341.001.

*Depth of change in flood stage (level) over existing receiving water stage resulting from floodplain encroachment caused by a project that claims Minimal Impact type of compensation.

III. Environmental Considerations

Wetland/Other Surface Water Information

Wetland/Other Surface Water Name	Total Acres	Not Impacted Acres	Permanent Impacts		Temporary Impacts	
			Acres	Functional Loss*	Acres	Functional Loss*
New WL ISO	0.05	0.05	0.00	0.00	0.00	0.00
Total:	**0.05**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**

*** For impacts that do not require mitigation, their functional loss is not included.**

Wetland/Other Surface Water Comments:
There are 0.05 acre of wetlands (FLUCCS 643) located within the project area for this ERP modification. There are no wetland impacts proposed or authorized by this permit. The project area for this ERP modification also contains 0.01 acre of other surface waters, known as Seller's Pit, that have been previously approved and reported in ERP 43045341.001, entitled Manatee County - 44th Avenue East from 30th Street East to 45th Street East, issued February 24, 2011. This permit modification does not change the impact footprint of any of the previously authorized other surface water impacts or mitigation authorized under ERP 43045341.001, entitled Manatee County - 44th Avenue East from 30th Street East to 45th Street East, issued February 24, 2011.

Mitigation Information
Mitigation is not required.

Specific Conditions

1. If the ownership of the project area covered by the subject permit is divided, with someone other than the Permittee becoming the owner of part of the project area, this permit shall terminate, pursuant to Rule 40D-1.6105, F.A.C. In such situations, each land owner shall obtain a permit (which may be a modification of this permit) for the land owned by that person. This condition shall not apply to the division and sale of lots or units in residential subdivisions or condominiums.

2. Unless specified otherwise herein, two copies of all information and reports required by this permit shall be submitted to the Regulation Department at the District Service Office that services this permit. The permit number, title of report or information and event (for recurring report or information submittal) shall be identified on all information and reports submitted.

3. The Permittee shall retain the design engineer, or other professional engineer registered in Florida, to conduct on-site observations of construction and assist with the as-built certification requirements of this project. The Permittee shall inform the District in writing of the name, address and phone number of the professional engineer so employed. This information shall be submitted prior to construction.

4. Within 30 days after completion of construction of the permitted activity, the Permittee shall submit to the Regulation Department at the District Service Office that services this permit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the required Statement of Completion and Request for Transfer to Operation Entity form identified in Chapter 40D-1, F.A.C., and signed, dated, and sealed as-built drawings. The as-built drawings shall identify any deviations from the approved construction drawings.

5. The District reserves the right, upon prior notice to the Permittee, to conduct on-site research to assess the pollutant removal efficiency of the surface water management system. The Permittee may be required to cooperate in this regard by allowing on-site access by District representatives, by allowing the installation and operation of testing and monitoring equipment, and by allowing other assistance measures as needed on site.

6. Wetland buffers shall remain in an undisturbed condition except for approved drainage facility construction/maintenance.

7. The following boundaries, as shown on the approved construction drawings, shall be clearly delineated on the site prior to initial clearing or grading activities:

   wetland and surface water areas

   wetland buffers

   The delineation shall endure throughout the construction period and be readily discernible to construction and District personnel.

8. All wetland and surface water boundaries shown on the approved construction drawings shall be binding upon the Permittee and the District.

9. This modification, Construction Permit No. 44035341.002, amends the previously issued Construction Permit No. 43035341.001, and adds conditions. All other original permit conditions remain in effect.

10. The District, upon prior notice to the Permittee, may conduct on-site inspections to assess the effectiveness of the erosion control barriers and other measures employed to prevent violations of state water quality standards and avoid downstream impacts. Such barriers or other measures should control discharges, erosion, and sediment transport during construction and thereafter. The District will also determine any potential environmental problems that may develop as a result of leaving or removing the barriers and other measures during construction or after construction of the project has been completed. The Permittee must provide any remedial measures that are needed.

11. This permit is issued based upon the design prepared by the Permittee's consultant. If at any time it is determined by the District that the Conditions for Issuance of Permits in Rules 40D-4.301 and 40D-4.302, F.A.C., have not been met, upon written notice by the District, the Permittee shall obtain a permit modification and perform any construction necessary thereunder to correct any deficiencies in the system design or construction to meet District rule criteria. The Permittee is advised that the correction of deficiencies may require re-construction of the surface water management system.

12. The Permitted Plan Set for this ERP No. 44035341.002 includes the set received by the District on May 29, 2012. The construction plans previously permitted under ERP No. 43035341.001 are no longer authorized for construction.

GENERAL CONDITIONS

1. The general conditions attached hereto as Exhibit "A" are hereby incorporated into this permit by reference and the Permittee shall comply with them.

Michelle K. Hopkins, P.E.

Authorized Signature

EXHIBIT A

GENERAL CONDITIONS:

1. All activities shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. For general permits authorizing incidental site activities, the following limiting general conditions shall also apply:
   a. If the decision to issue the associated individual permit is not final within 90 days of issuance of the incidental site activities permit, the site must be restored by the permittee within 90 days after notification by the District. Restoration must be completed by re-contouring the disturbed site to previous grades and slopes re-establishing and maintaining suitable vegetation and erosion control to provide stabilized hydraulic conditions. The period for completing restoration may be extended if requested by the permittee and determined by the District to be warranted due to adverse weather conditions or other good cause. In addition, the permittee shall institute stabilization measures for erosion and sediment control as soon as practicable, but in no case more than 7 days after notification by the District.
   b. The incidental site activities are commenced at the permittee's own risk. The Governing Board will not consider the monetary costs associated with the incidental site activities or any potential restoration costs in making its decision to approve or deny the individual environmental resource permit application. Issuance of this permit shall not in any way be construed as commitment to issue the associated individual environmental resource permit.

4. Activities approved by this permit shall be conducted in a manner which does not cause violations of state water quality standards. The permittee shall implement best management practices for erosion and a pollution control to prevent violation of state water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

5. Water quality data for the water discharged from the permittee's property or into the surface waters of the state shall be submitted to the District as required by the permit. Analyses shall be performed according to procedures outlined in the current edition of Standard Methods for the Examination of Water and Wastewater by the American Public Health Association or Methods for Chemical Analyses of Water and Wastes by the U.S. Environmental Protection Agency. If water quality data are required, the permittee shall provide data as required on volumes of water discharged, including total volume discharged during the days of sampling and total monthly volume dis-charged from the property or into surface waters of the state.

6. District staff must be notified in advance of any proposed construction dewatering. If the dewatering activity is likely to result in offsite discharge or sediment transport into wetlands or surface waters, a written dewatering plan must either have been submitted and approved with the permit application or submitted to the District as a permit prior to the dewatering event as a permit modification. A water use permit may be required prior to any use exceeding the thresholds in Chapter 40D-2, F.A.C.

7. Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

8. Off-site discharges during construction and development shall be made only through the facilities authorized by this permit. Water discharged from the project shall be through structures having a mechanism suitable for regulating upstream stages. Stages may be subject to operating schedules satisfactory to the District.

9. The permittee shall complete construction of all aspects of the surface water management system, including wetland compensation (grading, mulching, planting), water quality treatment features, and discharge control facilities prior to beneficial occupancy or use of the development being served by this system.

10. The following shall be properly abandoned and/or removed in accordance with the applicable regulations:

    a. Any existing wells in the path of construction shall be properly plugged and abandoned by a licensed well contractor.

    b. Any existing septic tanks on site shall be abandoned at the beginning of construction.

    c. Any existing fuel storage tanks and fuel pumps shall be removed at the beginning of construction.

11. All surface water management systems shall be operated to conserve water in order to maintain environmental quality and resource protection; to increase the efficiency of transport, application and use; to decrease waste; to minimize unnatural runoff from the property and to minimize dewatering of offsite property.

12. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District a written notification of commencement indicating the actual start date and the expected completion date.

13. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the occupation of the site or operation of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to a local government or other responsible entity.

14. Within 30 days after completion of construction of the permitted activity, the permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the required Statement of Completion and Request for Transfer to Operation Entity form identified in Chapter 40D-1, F.A.C. Additionally, if deviation from the approved drawings are discovered during the certification process the certification must be accompanied by a copy of the approved permit drawings with deviations noted.

15. This permit is valid only for the specific processes, operations and designs indicated on the approved drawings or exhibits submitted in support of the permit application. Any substantial deviation from the approved drawings, exhibits, specifications or permit conditions, including construction within the total land area but outside the approved project area(s), may constitute grounds for revocation or enforcement action by the District, unless a modification has been applied for and approved. Examples of substantial deviations include excavation of ponds, ditches or sump areas deeper than shown on the approved plans.

16. The operation phase of this permit shall not become effective until the permittee has complied with the requirements of the conditions herein, the District determines the system to be in compliance with the permitted plans, and the entity approved by the District accepts responsibility for operation and maintenance of the system. The permit may not be transferred to the operation and maintenance entity approved by the

District until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall request transfer of the permit to the responsible operation and maintenance entity approved by the District, if different from the permittee. Until a transfer is approved by the District, the permittee shall be liable for compliance with the terms of the permit.

17. Should any other regulatory agency require changes to the permitted system, the District shall be notified of the changes prior to implementation so that a determination can be made whether a permit modification is required.

18. This permit does not eliminate the necessity to obtain any required federal, state, local and special District authorizations including a determination of the proposed activities' compliance with the applicable comprehensive plan prior to the start of any activity approved by this permit.

19. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40D-4 or Chapter 40D-40, F.A.C.

20. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the activities authorized by the permit or any use of the permitted system.

21. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under section 373.421(2), F.S., provides otherwise.

22. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of the permitted system or the real property at which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rule 40D-4.351, F.A.C. The permittee transferring the permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to such sale, conveyance or other transfer.

23. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with District rules, regulations and conditions of the permits.

24. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the District and the Florida Department of State, Division of Historical Resources.

25. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

SOUTHWEST FLORIDA
WATER MANAGEMENT DISTRICT

NOTICE OF
AUTHORIZATION
TO COMMENCE CONSTRUCTION

Manatee County - 44th Avenue East from 30th Street East to 45th Street East
PROJECT NAME

Road Projects
PROJECT TYPE

MANATEE
COUNTY

S08/T35S/R18E...
See Permit for additional STR listings
SEC(S)/TWP(S)/RGE(S)

Manatee County Public Works Department
PERMITTEE

APPLICATION ID/PERMIT NO: 663704 / 44035341.002

DATE ISSUED: June 07, 2012

Michelle K. Hopkins, P.E.
Issuing Authority

THIS NOTICE SHOULD BE CONSPICUOUSLY DISPLAYED AT THE SITE OF THE WORK

Notice of Rights

ADMINISTRATIVE HEARING

1. You or any person whose substantial interests are or may be affected by the District's action may request an administrative hearing on that action by filing a written petition in accordance with Sections 120.569 and 120.57, Florida Statutes (F.S.), Uniform Rules of Procedure Chapter 28-106, Florida Administrative Code (F.A.C.) and District Rule 40D-1.1010, F.A.C. Unless otherwise provided by law, a petition for administrative hearing must be filed with (received by) the District within 21 days of receipt of written notice of agency action. "Written notice" means either actual written notice, or newspaper publication of notice, that the District has taken or intends to take agency action. "Receipt of written notice" is deemed to be the fifth day after the date on which actual notice is deposited in the United States mail, if notice is mailed to you, or the date that actual notice is issued, if sent to you by electronic mail or delivered to you, or the date that notice is published in a newspaper, for those persons to whom the District does not provide actual notice.

2. Pursuant to Subsection 373.427(2)(c), F.S., for notices of agency action on a consolidated application for an environmental resource permit and use of sovereignty submerged lands concurrently reviewed by the District, a petition for administrative hearing must be filed with (received by) the District within 14 days of receipt of written notice.

3. Pursuant to Rule 62-532.430, F.A.C., for notices of intent to deny a well construction permit, a petition for administrative hearing must be filed with (received by) the District within 30 days of receipt of written notice of intent to deny.

4. Any person who receives written notice of an agency decision and who fails to file a written request for a hearing within 21 days of receipt or other period as required by law waives the right to request a hearing on such matters.

5. Mediation pursuant to Section 120.573, F.S., to settle an administrative dispute regarding District action is not available prior to the filing of a petition for hearing.

6. A request or petition for administrative hearing must comply with the requirements set forth in Chapter 28.106, F.A.C. A request or petition for a hearing must: (1) explain how the substantial interests of each person requesting the hearing will be affected by the District's action or proposed action, (2) state all material facts disputed by the person requesting the hearing or state that there are no material facts in dispute, and (3) otherwise comply with Rules 28-106.201 and 28-106.301, F.A.C. Chapter 28-106, F.A.C. can be viewed at www.flrules.org or at the District's website at www.WaterMatters.org/permits/rules.

7. A petition for administrative hearing is deemed filed upon receipt of the complete petition by the District Agency Clerk at the District's Tampa Service Office during normal business hours, which are 8:00 a.m. to 5:00 p.m., Monday through Friday, excluding District holidays. Filings with the District Agency Clerk may be made by mail, hand-delivery or facsimile transfer (fax). The District does not accept petitions for administrative hearing by electronic mail. Mailed filings must be addressed to, and hand-delivered filings must be delivered to, the Agency Clerk, Southwest Florida Water Management District, 7601 US Hwy. 301, Tampa, FL 33637-6759. Faxed filings must be transmitted to the District Agency Clerk at (813) 987-6746. Any petition not received during normal business hours shall be filed as of 8:00 a.m. on the next business day. The District's acceptance of faxed petitions for filing is subject to certain conditions set forth in the District's Statement of Agency Organization and Operation, available for viewing at www.WaterMatters.org/about.

JUDICIAL REVIEW

1. Pursuant to Sections 120.60(3) and 120.68, F.S., a party who is adversely affected by final District action may seek judicial review of the District's final action. Judicial review shall be sought in the Fifth District Court of Appeal or in the appellate district where a party resides or as otherwise provided by law.

2. All proceedings shall be instituted by filing an original notice of appeal with the District Agency clerk within 30 days after the rendition of the order being appealed, and a copy of the notice of appeal, accompanied by any filing fees prescribed by law, with the clerk of the court, in accordance with Rules 9.110 and 9.190 of the Florida Rules of Appellate Procedure (Fla. R. App. P.). Pursuant to Fla. R. App. P. 9.020(h), an order is rendered when a signed written order is filed with the clerk of the lower tribunal.

Donnie Holcomb, P.E.
HDR Engineering, Inc.
2621 Cattlemen Road
Sarasota, FL 34232

Manatee County Public Works Department
Attn: Sia Mollanazar, P.E.
1022 26th Avenue East
Bradenton, FL 34208

Manatee County Public Works Department
Attn: Walter Sowa
1022 26th Avenue East
Bradenton, FL 34208

U. S. Army Corps of Engineers
Tampa Permitting Section
The Atrium - 10117 Princess Palm Avenue; Suite 120
Tampa, FL 33610

DEPARTMENT OF THE ARMY PERMIT

Permittee: Manatee County Board Of County Commissioners
Manatee County Public Works Department
1022 – 26th Avenue East
Bradenton, Florida 34208

Permit No: SAJ-2010-01862(SP-MEP)

Issuing Office: U.S. Army Engineer District, Jacksonville

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: To pave, widen, and extend 44th Avenue E between 30th Street East and 45 Street East. The project would result in 1.68 acres of permanent impacts to U.S. Army Corps of Engineers (Corps) jurisdictional wetlands. This includes 1.67 acres of direct, permanent impacts to hardwood hammock wetlands, and 0.01 acres of temporary impacts to hardwood hammock wetlands. The project will also permanently impact 3.55 acres of other surface water (OSW) features including a 1.97 acre impact associated with the crossing of Seller's Pit, 0.65 acres of impacts to two small ponds, and 0.93 acres of impacts to ditches and roadside conveyances. In addition to direct impacts, a total of 0.72 acres of secondary impacts to wetlands would result from the proposed road construction. Compensatory mitigation for permanent, unavoidable impacts to wetlands and waters of the U.S. will be provided both on-site and off-site. The work described above is to be completed in accordance with the 13 pages of drawings and 6 attachments affixed at the end of this permit instrument.

Project Location: The project is a 1.37 mile roadway extension of 44th Avenue east, from 30th Street East to 45th Street East, in Sections 4, 5, 8, and 9; Township 35S; Range l8E; Manatee County, Florida.

Directions to site: From I-75, take exit 217 toward Bradenton. Merge onto FL-70 W/Oneco-Myakka City Rd. and drive 2.6 miles to 45th St. East. Turn right onto 45th St. East, and drive 1.1 miles to 44th Ave East. This is the eastern limit of the project.

Approximate Central Coordinates:
Begin Project: Latitude 27.4615°, Longitude -82.5259°
End Project: Latitude 27.4618°, Longitude -82.5056°
Off-Site Mitigation: Latitude 27.4212°. Longitude -82.4797°

Dept of the Army Permit 13285

Permit Conditions

General Conditions:

1. The time limit for completing the work authorized ends on **September 13, 2018**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature and the mailing address of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

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

Special Conditions:

1. **Reporting Address:** All reports, documentation and correspondence required by the conditions of this permit shall be submitted to the following address: U.S. Army Corps of Engineers, Regulatory Division, Enforcement Section, 10117 Princess Palm Avenue, Suite 120, Tampa, FL 33610. The Permittee shall reference this permit number, SAJ-2010-01862(SP-MEP), on all submittals.

2. **Commencement Notification:** Within 10 days from the date of initiating the authorized work, the Permittee shall provide to the Corps a written notification of the date of commencement of work authorized by this permit.

3. **Erosion Control:** Prior to the initiation of any work authorized by this permit, the Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material outside the work area. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas shall be stabilized using sod, degradable mats, barriers, or a combination of similar stabilizing materials to prevent erosion. The erosion control measures shall remain in place and be maintained until all authorized work has been completed and the site has been stabilized.

4. **Cultural Resources/Historic Properties:**

a. No structure or work shall adversely affect impact or disturb properties listed in the National Register of Historic Places (NRHP) or those eligible for inclusion in the NRHP.

b. If during the ground disturbing activities and construction work within the permit area, there are archaeological/cultural materials encountered which were not the subject of a previous cultural resources assessment survey (and which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, ceramics, stone tools or metal implements, dugout canoes, evidence of structures or any other physical remains that could be associated with Native American cultures or early colonial or American settlement), the Permittee shall immediately stop all work and ground-disturbing activities within a 100-meter diameter of the discovery and notify the Corps within the same business day (8 hours). The Corps shall then notify the Florida State Historic Preservation Officer (SHPO) and the appropriate Tribal Historic Preservation Officer(s) (THPO(s)) to assess the significance of the discovery and devise appropriate actions.

c. Additional cultural resources assessments may be required of the permit area in the case of unanticipated discoveries as referenced in accordance with the above Special Condition ; and if deemed necessary by the SHPO, THPO(s), or Corps, in accordance with 36 CFR 800 or 33 CFR 325, Appendix C (5). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume on non-federal lands without written authorization from the SHPO for finds under his or her jurisdiction, and from the Corps.

d. In the unlikely event that unmarked human remains are identified on non-federal lands, they will be treated in accordance with Section 872.05 Florida Statutes. All work and ground disturbing activities within a 100-meter diameter of the unmarked human remains shall immediately cease and the Permittee shall immediately notify the medical examiner, Corps, and State Archeologist within the same business day (8-hours). The Corps shall then notify the appropriate SHPO and THPO(s). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the

permit in accordance with 33 CFR Part 325.7. Such activity shall not resume without written authorization from the State Archeologist and from the Corps.

5. **Compensatory Mitigation:** Within 12 months from the date of initiating the authorized work the Permittee shall complete the following mitigation objectives in accordance with the approved compensatory mitigation plan (Attachment 4) as detailed on Drawings 1 through 6 of:

a. Onsite Mitigation

(1) Wetland Enhancement: Provide 1.66 acres of enhancement activities at Seller's Pit including nuisance/exotic species removal and planting of native species in the buffer area and along the proposed road crossing.

(2) Wetland Creation: Provide 1.98 acres of forested wetland creation from existing uplands that abut the forested floodplain of Sugarhouse Creek.

b. Offsite Mitigation (Walker Crews parcel)

(1) Wetland Enhancement: Provide 2.47 acres of forested wetlands enhancement within highly disturbed forested wetlands within the floodplain of the Braden River by the eradication of nuisance and exotic vegetation, removal of debris, spoil, and rubble to restore the natural elevations and hydrology, and selective enhancement plantings to restore community structure.

(2) Wetland Restoration: Restore 0.46 acres of uplands to forested wetlands. Restoration would include minor earthwork to restore wetland elevations, removal of trash, debris, and undesirable vegetation, and planting of wetlands desirable vegetation.

These onsite and offsite compensatory mitigation areas shall be preserved in perpetuity in accordance with the **Perpetual Conservation** Special Condition of this permit.

6. **Performance Standards:** To meet the objectives of the approved compensatory mitigation plan, the Permittee shall achieve the following performance standards:

a. At least 80 percent cover by appropriate wetland species (i.e., FAC or wetter).

b. Cover of Category I and II invasive exotic plant species, pursuant to the most current list established by the Florida Exotic Pest Plant Council at http://www.fleppc.org, and the nuisance species, dogfennel (Eupatorium capillifolium), Bermudagrass (Cynodon spp.), Bahiagrass (Paspalum notatum), cattail (Typha spp.), and Brazilian pepper (*Schinus terebinthifolius)*, shall total less than 5 percent.

c. Less than 20 percent mortality of planted wetland species.

The Permittee shall achieve the above performance standards by the end of the 5-year monitoring period, with no maintenance during the 5th year of monitoring. In the event that the above performance standards have not been achieved, the Permittee shall undertake a remediation program approved by the Corps in accordance with the **Remediation** Special Condition of this permit.

7. **Monitoring and Reporting Timeframes:** To show compliance with the performance standards the Permittee shall complete the following:

a. Perform a time-zero monitoring event of the wetland mitigation area(s) within 60 days of completion of the compensatory mitigation objectives identified in the **Compensatory Mitigation** Special Condition of this permit.

b. Submit the time-zero report to the Corps within 60 days of completion of the monitoring event. The report will include at least one paragraph depicting baseline conditions of the mitigation site(s) prior to initiation of the compensatory mitigation objectives and a detailed plan view drawing of all created, enhanced and/or restored mitigation areas.

c. Subsequent to completion of the compensatory mitigation objectives, perform semi-annual monitoring of the wetland mitigation areas for the first 3 years and annual monitoring thereafter for a total of no less than 5 years of monitoring.

d. Submit annual monitoring reports to the Corps within 60 days of completion of the monitoring event. Semi-annual monitoring will be combined into one annual monitoring report.

e. Monitor the mitigation area(s) and submit annual monitoring reports to the Corps until released in accordance with the **Mitigation Release** Special Condition of this permit.

8. **Reporting Format:** Annual monitoring reports shall follow a 10-page maximum report format for assessing compensatory mitigation sites. The Permittee shall submit all documentation to the Corps on 8½-inch by 11-inch paper, and include the following:

a. Project Overview (1 Page):

(1) Department of the Army Permit Number

(2) Name and contact information of Permittee and consultant

(3) Name of party responsible for conducting the monitoring and the date(s) the inspection was conducted

(4) A brief paragraph describing the purpose of the approved project, acreage and type of aquatic resources impacted, and mitigation acreage and type of aquatic resources authorized to compensate for the aquatic impacts.

(5) Written description of the location, any identifiable landmarks of the compensatory mitigation project including information to locate the site perimeter(s), and coordinates of the mitigation site (expressed as latitude, longitudes, UTMs, state plane coordinate system, etc.).

(6) Dates compensatory mitigation commenced and/or was completed

(7) Short statement on whether the performance standards are being met

(8) Dates of any recent corrective or maintenance activities conducted since the previous report submission

(9) Specific recommendations for any additional corrective or remedial actions.

b. Requirements (1 page): List the monitoring requirements and performance standards, as specified in the approved mitigation plan and special conditions of this permit, and evaluate whether the compensatory mitigation project site is successfully achieving the approved performance standards or trending towards success. A table is a recommended option for comparing the performance standards to the conditions and status of the developing mitigation site.

c. Summary Data (maximum of 4 pages): Summary data should be provided to substantiate the success and/or potential challenges associated with the compensatory mitigation project. Photo documentation may be provided to support the findings and recommendations referenced in the monitoring report and to assist the PM in assessing whether the compensatory mitigation project is meeting applicable performance standards for that monitoring period. Submitted photos should be formatted to print on a standard 8 ½" x 11" piece of paper, dated, and clearly labeled with the direction from which the photo was taken. The photo location points should also be identified on the appropriate maps.

d. Maps and Plans (maximum of 3 pages): Maps shall be provided to show the location of the compensatory mitigation site relative to other landscape features, habitat types, locations of photographic reference points, transects, sampling data points, and/or other features pertinent to the mitigation plan. In addition, the submitted maps and plans should clearly delineate the mitigation site perimeter(s). Each map or diagram should be formatted to print on a standard 8 ½" x 11" piece of paper and include a legend and the location of any photos submitted for review. As-built plans may be included.

e. Conclusions (1 page): A general statement shall be included that describes the conditions of the compensatory mitigation project. If performance standards are not being met, a brief explanation of the difficulties and potential remedial actions proposed by the Permittee or sponsor, including a timetable, shall be provided. The District Commander will ultimately determine if the mitigation site is successful for a given monitoring period.

9. **Remediation:** If the compensatory mitigation fails to meet the performance standards 5 years after completion of the compensatory mitigation objectives, the compensatory mitigation will be deemed unsuccessful. Within 60 days of notification by the Corps that the compensatory mitigation is unsuccessful, the Permittee shall submit to the Corps an alternate compensatory mitigation proposal sufficient to create the functional lift required under this permit. The alternate compensatory mitigation proposal may be required to include additional mitigation to compensate for the temporal loss of wetland function associated with the unsuccessful compensatory mitigation activities. The Corps reserves the right to fully evaluate, amend, and approve or reject the alternate compensatory mitigation proposal. Within 120 days of Corps approval, the Permittee will complete the alternate compensatory mitigation proposal.

10. **Mitigation Release:** The Permittee's responsibility to complete the required compensatory mitigation, as set forth in the **Compensatory Mitigation** Special Condition of this permit will not be considered fulfilled until mitigation success has been demonstrated and written verification has been provided by the Corps. A mitigation area which has been released will require no further monitoring or reporting by the Permittee; however the Permittee, Successors and subsequent Transferees remain perpetually responsible to ensure that the mitigation area(s) remain in a condition appropriate to offset the authorized impacts in accordance with General Condition 2 of this permit.

11. **As-Builts:** Within 60 days of completion of the authorized work or at the expiration of the construction authorization of this permit, whichever occurs first, the Permittee shall submit as-built drawings of the authorized work and a completed As-Built Certification Form (Attachment 5) to the Corps. The drawings shall be signed and sealed by a registered professional engineer and include the following:

a. A plan view drawing of the location of the authorized work footprint (as shown on the permit drawings) with an overlay of the work as constructed in the same scale as the attached permit drawings (8½-inch by 11-inch). The drawing should show all "earth disturbance," including wetland impacts, water management structures, and any on-site mitigation areas.

b. List any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, describe on the As-Built Certification Form the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations that have been listed. Please note that the depiction and/or description of any deviations on the

drawings and/or As-Built Certification Form does not constitute approval of any deviations by the U.S. Army Corps of Engineers.

c. The Department of the Army Permit number.

d. Include pre- and post-construction aerial photographs of the project site, if available.

12. **Notice of Permit:** The Permittee shall complete and record the Notice of Department of the Army Permit (Attachment 6) with the Clerk of the Circuit Court, Registrar of Deeds or other appropriate official charged with the responsibility of maintaining records of title to or interest in real property within the county of the authorized activity. Within 90 days from the effective date of this permit the Permittee shall provide a copy of the recorded Notice of Permit to the Corps clearly showing a stamp from the appropriate official indicating the book and page at which the Notice of Permit is recorded and the date of recording.

13. **Perpetual Conservation**: The Permittee shall maintain the areas referenced in the **Compensatory Mitigation** Special Condition in their natural state in perpetuity. The Permittee agrees that the only future utilization of these areas will be as a purely natural area and the following uses and/or activities will be prohibited except as required or authorized by this permit:

a. Construction or placing buildings, roads, signs, billboards or other advertising, utilities or other structures on or above the ground. Elevated boardwalks, hiking trails and camping areas will be permitted as long as they do not involve any of the other prohibited uses listed below:

b. Dumping or placing soil or other substance or material as landfill or dumping or placing of trash, waste or unsightly or offensive material.

c. Removal or destruction of trees, shrubs, or other vegetation.

d. Excavation, dredging or removal of loam, peat, gravel, soil, rock, or other material substance in such a manner as to affect the surface.

e. Surface use, except for purposes that permit the land or water area to remain predominantly in its natural condition.

f. Activities detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation.

g. Acts or uses detrimental to such retention of land or water areas.

h. Acts or uses detrimental to the preservation of the structural integrity or the physical appearance of sites or properties of historical, architectural, or cultural significance.

14. **Management:** To provide assurance that the compensatory mitigation areas remain in a condition appropriate to offset the authorized impacts, the Manatee County Parks and Natural Resources Department shall assume management responsibilities of the three forested compensatory mitigation areas (North mitigation site, South mitigation site, and Walker Crews parcel).

15. **Temporary Wetland Impacts:** Within 30 days from the date of completing the authorized work the Permittee shall restore 0.01 acres of temporary wetland impacts to wetland WL-A (as detailed on Drawing 6 of 13) to pre-existing contours, elevations, vegetation, habitat type, and hydrology.

16. **Eastern Indigo Snake Protection Measures:** The Permittee shall comply with U.S. Fish and Wildlife Service's "Standard Protection Measures for the Eastern Indigo Snake" dated February 12, 2004 and provided in Attachment 3 of this permit."

17. **Fill Material**: The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete block with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.

18. **Regulatory Agency Changes**: Should any other regulatory agency require changes to the work authorized or obligated by this permit, the Permittee is advised that a modification to this permit instrument is required prior to initiation of those changes. It is the Permittee's responsibility to request a modification of this permit from the Tampa Regulatory Office.

End of Special Conditions

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

( ) Section 10 of the Rivers and Harbors Act of 1899
(33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

_____ _____
(PERMITTEE) (DATE)

_____
(PERMITTEE NAME-PRINTED)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

_____ _____
(DISTRICT ENGINEER) (DATE)
Alan M. Dodd,
Colonel, U.S. Army
District Commander

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____ _____

(TRANSFEREE-SIGNATURE) (DATE)

_____

(NAME-PRINTED)

_____

(ADDRESS)

_____

(CITY, STATE, AND ZIP CODE)

Attachments to Department of the Army Permit Number SAJ-2010-01862(SP-MEP)

1. PERMIT DRAWINGS: 13 pages, dated 30-April-2012

2. WATER QUALITY CERTIFICATION: Specific Conditions of the water quality permit/certification in accordance with General Condition number 5 on page 2 of this DA permit.

3. EASTERN INDIGO SNAKE CONDITIONS: 1 page

4. MITIGATION PROCEDURES: 9 pages

5. AS-BUILT CERTIFICATION FORM: 2 pages

6. RECORD PERMIT FORM: 2 pages

FACILITIES RELOCATION AGREEMENT
(FPL – TRANSMISSION)

THIS AGREEMENT made and entered into this 18 day of December 2012 ("Agreement") by and between

Manatee County Board of County Commissioners with address P.O. Box 1000 Bradenton, FL 34206-1000, (hereinafter called the "Applicant"), and FLORIDA POWER & LIGHT COMPANY, a Florida corporation with its principal place of business in Palm Beach County, Florida (hereinafter called "FPL").

WITNESSETH:

WHEREAS the Applicant intends to construct the 44kV Ave Bar Project and will require the relocation of certain incompatible and conflicting portions of FPL's Facilities and equipment, and

WHEREAS FPL will incur costs in the relocation of FPL's existing and proposed facilities which costs would not have occurred but for the Applicant's construction,

NOW THEREFORE, in consideration of the mutual promises of the Applicant and FPL and other good and valuable consideration, the Parties agree that FPL shall relocate the FPL facilities and the Applicant shall reimburse FPL for the actual cost of such relocation as follows:

ARTICLE 1 - DEFINITIONS

For the purposes of this Agreement the following terms, whether used in the singular or plural, shall have the meanings set forth below when used with initial capitalization:

1.1 Date Cost Estimate Received, for purposes of this Agreement, shall be deemed to be the day that the cost estimate was hand-delivered or transmitted by facsimile, or if mailed, five (5) days from the date of postmark.

1.2 FPL's Facility or Facilities shall be, but shall not be limited to, any structure consisting of manholes, conduits, poles, wires, cables, substations, system protection equipment or other appurtenances, and associated equipment, and used by FPL in connection with the transmission and/or distribution of electric power.

1.3 Relocation and/or Relocate includes the terms "rearrange or rearrangement" and is the work performed by FPL under this Agreement and any activity made necessary by Applicant's construction which conflicts with or affects FPL, its Facilities, or service. Relocations shall include, but shall not be limited to, permanent or temporary support, protection, relocation, rearrangement, design, redesign, abandonment or reconstruction of the FPL Facilities and all other work required to provide continuity of service to FPL's customers which is a result of a conflict.

1.4 Replacement FPL Facility is any facility which will be constructed under the terms of this Agreement as a consequence of Relocation of an FPL Facility or portion thereof.

ARTICLE II - IDENTIFICATION OF CONFLICTS

2.1 Known Conflicts. The Applicant shall reimburse FPL for costs associated with the Relocation of the FPL Facilities more particularly described and located on property described in Exhibit A attached hereto and incorporated herein ("Property").

2.2 Other Conflicts. The identification of any other conflicting facilities of FPL requiring Relocation shall be undertaken by FPL pursuant to a subsequent written agreement between FPL and the Applicant.

ARTICLE III - DESIGN AND CONSTRUCTION OF REPLACEMENT FACILITIES

3.1 Design Standards. Engineering design standards and material specified shall meet FPL's Current Design Standards. In addition, the design of Relocations will be in conformity with all laws and regulations.

3.2 Construction Standards. Materials and construction procedures shall meet FPL's Current Construction Standards. In addition, Relocations or Replacement Facilities will be accomplished in conformance with all laws, codes and regulations.

FPL agreement

ARTICLE IV - REPLACEMENT RIGHT-OF-WAY

4.1 Replacement Right-of-Way. The Applicant shall provide FPL with replacement rights-of-way in one of the following manners:

___ (a) The Applicant shall reimburse FPL for costs associated with the identification and acquisition of replacement rights-of-way, including, but not limited to, FPL's attorney fees for costs in prosecuting or in connection with any condemnation actions for the acquisition of necessary rights-of-way.

_X_ (b) The Applicant shall convey or grant to FPL replacement rights-of-way sufficient to permit FPL to accomplish Relocations of the FPL Facilities and to operate and maintain the Replacement Facilities in accordance with FPL's customary practices. Such conveyances or grants of replacement rights-of-way shall be accomplished at no cost to FPL and in a form and substance satisfactory to FPL.

4.2 Location of Replacement Right-of-Way. The Location of the aforesaid replacement rights-of-way are generally set forth in Exhibit B attached hereto and shall be within the Property where conflicts are identified due to this project.

ARTICLE V - COST ESTIMATES, CREDITS AND BILLING

5.1 Full Cost. The Applicant shall pay FPL for the full cost of Relocation of the FPL Facilities. The work to be performed by FPL will be in accordance with the construction drawings attached hereto as Exhibit B.

5.2 Cost Estimate. The Applicant shall be responsible for the total cost of the project. The estimated cost to Relocate the FPL Facilities is as below:

a. Relocation: $340,767.98. This cost estimate is set out in detail in Exhibit C attached hereto

Engineering deposit received: $ 36,000

Balance due: $304,767.02. Applicant to send check for this amount to FPL along with two signed copies of this Agreement.

The Applicant understands and agrees that the amount set forth in Exhibit C is an estimate only. The Applicant shall be responsible for the total cost of the project. The cost for the Relocation portion shall not exceed 120% of a valid Relocation cost estimate based upon an actual labor bid, except as provided herein.

5.3 Duration of Cost Estimate.

The cost estimate in Section 5.2 is valid only for the time period which is:

a. Ninety (90) days from the date the estimate is received by Applicant (this includes the estimate attached as Exhibit C and any subsequent estimate) or

b. Subject to the terms and conditions set forth in Section 5.4.

5.4 Re-estimates, Scope of Work Changes.

5.4.1 Pre-construction. If the construction of the Relocation of the FPL Facilities has not commenced within one hundred eighty (180) days of the date that the latest cost estimate is received by Applicant or if the Applicant requests a change in the Relocation scope of work on any individual work order prior to any construction, the estimate is invalid. A new estimate is required. FPL shall provide a re-estimate of the work prior to commencement of the Relocation by FPL. The Applicant shall agree in writing to pay the re-estimated cost and shall be responsible for the full cost of Relocation, not to exceed 120% of the re-estimate.

5.4.2 After Start of Construction. If after the start of construction any of the following occurs: (a) Applicant requests a change in the Relocation scope of work of FPL Facilities; (b) FPL determines that there is a need for a change in the Relocation scope of work and such change causes the reimbursable cost of the project to change by 20% or more; or (c) there is an increase in costs due to unknown or unforeseen physical conditions at the site which differ materially from those originally encountered; FPL shall provide the Applicant with a new estimate as soon as practicable and the Applicant shall pay any increased costs in the revised estimate to FPL within thirty (30) days after receipt of the revised estimate.

5.5 Credits.

5.5.1 The Applicant shall receive a credit for the payment of any non-refundable deposit required for the design, engineering, and estimating of the Relocation of FPL Facilities (as shown in Section 5.2).

5.5.2 The Applicant shall receive a credit for payment made to FPL for a detailed cost estimate, if payment is received by FPL prior to issuing such estimate and if the Agreement has been entered into within ninety (90) days of the date that estimate was received by the Applicant and the Relocation performed.

5.5.3 The Applicant shall receive no credit for payment for an estimate, and such payment shall not be refunded: (a) if the Applicant has not executed the Agreement within ninety (90) days of the date that estimate was received by the Applicant, (b) if a subsequent estimate is required and not paid within thirty (30) days of the date Applicant receives the estimate; or (c) if the Applicant terminates the Agreement.

5.5.4 Any estimate provided to the Applicant after the initial, detailed estimate shall be done at additional cost and expense to Applicant. Applicant's payment for estimates shall be credited or retained by FPL as provided above.

5.6 Billing and Payment. Prior to the commencement of any Relocation of FPL Facilities under this Agreement, the Applicant shall pay in advance the full estimated cost of such Relocation per Sections 5.2 & 5.4.2 above.

5.7 Final Bill. Upon completion of the work, FPL shall at the earliest date practicable furnish to the Applicant a final billing of all outstanding costs, including any overhead costs, incurred in connection with performance of Relocation of the FPL Facilities less any prepaid credits for additional cost estimates. The Applicant shall have thirty (30) days from the date of an invoice to approve and pay the invoice. Failure to provide FPL with written notice to the contrary within the thirty (30) day period shall constitute approval by the Applicant of the invoice against which payment must be remitted in full to FPL within thirty (30) days of the date of the invoice. If payment by the Applicant is not postmarked within thirty (30) days of the date of the invoice, then a late payment charge shall be assessed in the amount of one and one-half percent (1½%) of the amount of the billing per month, charged on a daily basis or highest interest allowable under law.

5.8 Refund and Effect of Termination.

5.8.1 Consistent with the terms of this Agreement, FPL shall refund to the Applicant any amounts which the Applicant has paid to FPL beyond the full cost of Relocation including any overhead costs.

5.8.2 In the event that this Agreement is terminated due to the cancellation or indefinite suspension of work in furtherance of the Applicant's construction, the Applicant shall be responsible for the costs of Relocation already incurred, including but not limited to all engineering, design, equipment, and materials cost, labor costs, and if any, the costs of replacement facilities already installed, necessary to place FPL's Facilities into a permanent condition suitable to provide continuous, reliable electric service to the public in accordance with all applicable laws, regulations and FPL's usual practices as set forth in Article III herein. Nothing in this section shall be construed to modify or abrogate FPL's legal duty to mitigate damages.

ARTICLE VI - INSPECTIONS

6.0 Inspections. All cost records and accounts of FPL directly related to the work performed under this Agreement shall be subject to inspection by the Applicant for a period of one (1) year from the completion date of all work performed under this Agreement. Such inspections shall be performed by the Applicant and in accordance with the following considerations:

(a) The Applicant shall provide FPL with thirty (30) days written notice requesting an inspection,

(b) The specific time of inspection must be mutually agreed to,

(c) Information required for inspection purposes shall be accounts and records kept by FPL directly related to Relocation and reimbursable costs,

(d) The Applicant may request only information reasonably required by it concerning Relocation and such request for information shall be in writing and shall include the purpose of the inspection,

(e) FPL shall make available the requested information at its offices during normal business hours, Monday through Friday,

(f) The Applicant shall bear any costs associated with any inspections, including FPL costs, if any, and (g) information available under this Agreement shall not be used in violation of any law or regulation. FPL shall quote a deposit amount when such a request for inspection is made which the Applicant shall pay in advance.

ARTICLE VII - GENERAL CONDITIONS

7.1 Benefit of Agreement; Assignment. The provisions of this Agreement shall inure to the benefit of and bind the successors and assigns of the Parties to this Agreement but shall not inure to the benefit of any third party or other person. This Agreement shall not be assigned by either Party except upon receipt of the prior written permission of the other Party. Such permission shall not be unreasonably withheld.

7.2 Nonwaiver. The failure of either Party at any time to require performance by the other Party of any provision hereof shall not affect the full right to require such performance at any time thereafter. Waiver by either Party of a breach of the same provision or any other provision shall not constitute a waiver of the provision itself.

7.3 Limitations of Liability. Neither Party shall be liable in contract, in tort (including negligence), or otherwise to the other Party for any incidental or consequential loss or damage whatsoever including but not limited to loss of profits or revenue on work not performed, for loss of use or underutilization of the Party's facilities, or loss of use of revenues or loss of anticipated profits resulting from either Party's performance, nonperformance, or delay in performance of its obligations under this Agreement.

7.4 Indemnification. The Applicant shall indemnify, defend and hold harmless FPL, its parent, subsidiaries or affiliates and their respective officers, directors and employees (collectively "FPL Entities") from and against any liabilities whatsoever, occasioned wholly or in part by the negligence of the Applicant, its contractors, subcontractors or employees, including attorney fees, for injury to or death of person(s), and property damage arising or resulting in connection with any activity associated with work or service under this Agreement. If the liability arises out of a claim made by an employee of the Applicant, its contractors or assigns, the Applicant shall indemnify FPL Entities whether or not the damage or liability is due to or caused by the sole negligence of FPL Entities. The Applicant's obligation to protect, defend and hold FPL Entities free and unharmed against such liabilities shall be subject to the limitation set forth in Section 768.28(5) Florida Statutes, except in the event the Applicant purchases insurance covering the liability with limits in excess of the statutory limits, the Applicant's obligation shall extend up to but shall not exceed the limits of that insurance.

7.5 Insurance. If the Applicant utilizes its own personnel in the construction or maintenance work around the FPL Facilities, the Applicant shall furnish FPL with evidence of insurance maintained by Applicant insuring FPL Entities from liabilities assumed under the above indemnification. Said insurance shall contain a broad form contractual endorsement or, alternatively, the Applicant shall cause FPL, its parent, subsidiaries and affiliates and their respective officers, directors and employees to be named as additional named insured on the Applicant's comprehensive general liability policy. Such liability coverage shall be primary to any liability coverage maintained by or on behalf of FPL up to the $1,000,000 limit of liability.

In the event that the policy is on a "claims made" basis, the retroactive date of the policy shall be the effective date of this Agreement or such other date as to protect the interest of FPL and the coverage shall survive the termination of this Agreement until the expiration of the maximum statutory period of limitations in the State of Florida for actions based in contract or in tort (currently, five years). If coverage is on an "occurrence" basis, such insurance shall be maintained by the Applicant during the entire term of this Agreement. The policy shall not be canceled or materially altered without at least thirty (30) days written notice to FPL.

The Applicant shall provide FPL with evidence of such liability insurance coverage on the standard insurance industry form (ACORD) without modification. A copy of the policy shall be made available for inspection by FPL upon reasonable request.

7.6 Contractor Indemnification. The Applicant further agrees to include the following indemnification in all contracts between the Applicant and its general contractors who perform or are responsible for construction or maintenance work on or around the subject FPL Facilities:

> "The Contractor hereby agrees to release, indemnify, defend, save and hold harmless the Applicant and FPL, its parent, subsidiaries, affiliates or their respective officers, directors, or employees, from all claims, demands, liabilities and suits whether or not due to or caused by negligence of the Applicant or FPL for bodily injuries or death to person(s) or damage to property resulting in connection with the performance of the described work by Contractor, its subcontractor, agents or employees. This indemnification shall extend up to but shall not exceed the sum of $1,000,000.00 for bodily injury or death of person(s) or property damage combined single limit and $3,000,000 occurrence aggregate. In the event the Contractor is insured for liability with limits in excess of these amounts, Contractor's said obligation shall extend up to but shall not exceed the limits of that insurance. Contractor's costs of defending Applicant and FPL, including attorneys' fees are excluded from and are in addition to the aforesaid limitation of liability for injury, death and property damage."

7.7 Contractor Insurance and Notice. The Applicant agrees to require its contractors to obtain insurance to cover the above indemnity and further agrees to verify with its contractors that such insurance is in full force and effect. The Applicant shall provide FPL Group Inc.'s Risk Management Department with notice of the name and address of

Applicant's contractors as specified in Section 7.6 above, prior to the commencement of the Relocation of FPL Facilities by FPL.

7.8 Modification or Termination of Agreement. This Agreement may be modified, amended, or terminated at any time by written agreement of the Parties authorized and executed with the same formality as this Agreement.

7.9 Effect of Headings. The headings set forth herein are for convenience only and shall not be deemed to modify or affect the rights and obligations of the Parties to this Agreement.

7.10 FPL Consent to Relocations. FPL agrees to the Relocation of the FPL Facilities to the extent necessary to eliminate Conflicts with the Applicant's construction in accordance with the terms and conditions of this Agreement. The Applicant, at no expense to FPL, shall make all necessary arrangements and agreements with any person or entity which has facilities attached to the FPL poles for the relocation of those facilities.

7.11 Delegation of Power and Duties Notice. The following persons are designated as the authorized representatives of the Parties for the purposes of this Agreement and all notices or other communications to either Party by the other shall be made in writing and addressed as follows:

To the Applicant: Sia Mollanazar, P.E. Deputy Director Engineering Services
(Name and Title)
1022 26th Ave E.
Bradenton, FL 34208

With Copies to: Manatee County Public Works
1022 26th Ave E.
Bradenton, FL 34208

To FPL: Peter H. Washlo
Transmission Relocation Coordinator
Florida Power & Light Company
700 Universe Boulevard, TS4/JW
Juno Beach, FL 33408

7.12 Notification of FPL Facilities, Form 360. Applicant acknowledges that high voltage electric lines are located in the area of Applicant's project and agrees to warn its employees, agents, contractors and invitees, new and experienced alike, of the danger of holding on to or touching a cable or other piece of equipment that is located or working close to any overhead power line and to use all safety and precautionary measures when working under or near FPL's Facilities. Applicant acknowledges and agrees that he has read and will comply with the Notification of FPL Facilities attached hereto. Applicant shall sign and return two (2) copies of the attached Notification of FPL Facilities along with two (2) signed copies of this Agreement.

7.13 Force Majeure.

(a) Neither Party shall be liable or responsible for any delay in the performance of, or the ability to perform, any duty or obligation required by this Agreement in the event of a Force Majeure occurrence. Such occurrence shall include, but shall not be limited to acts of civil or military authority (including courts or administrative agencies), acts of God, war, riot, or insurrection, inability to obtain required permits or licenses, blockades, embargoes, sabotage, epidemics, fires, unusually severe floods or weather (anywhere in the United States where FPL utility workers and contractors support restoration), strikes, lockouts or other labor disputes or difficulties. The obligation of either Party to pay money in a timely manner is absolute and shall not be subject to the force majeure provisions. Force Majeure as used herein means, without limitation, any cause or event not reasonably within the control of FPL or the Applicant.

(b) In the event of any delay resulting from a Force Majeure circumstance, the time for performance hereunder shall be extended for a period of time reasonably necessary to overcome the effect of such delays.

(c) In the event of any delay or nonperformance caused by a Force Majeure circumstance, the Party affected shall promptly notify the other in writing.

7.14 Severability. In the event that any of the provisions or portions or applications thereof of this Agreement are held to be unenforceable or invalid by any court of competent jurisdiction, the Applicant and FPL shall negotiate an equitable adjustment in the affected provisions of this Agreement. The validity and enforceability of the remaining independent provisions shall not be affected.

7.15 Effective Date. This Agreement shall become effective upon execution by the Parties and shall continue in effect until completion of all Relocation work by FPL unless otherwise provided herein or earlier termination in accordance with this Agreement.

7.16 Complete Agreement. This Agreement shall be signed by the authorized representatives of both Parties and constitutes the final written expression of all the terms of the agreement between the Parties and is a complete and exclusive statement of those terms. Any and all prior or contemporaneous course of dealing, representations, promises, warranties or statements by the Parties or their agents, employees, or representatives that differ in any way from the terms of this written Agreement shall be given no force or effect.

IN WITNESS WHEREOF, the Parties have executed this Agreement, to be effective as of the date first above written.

APPLICANT:

By: John Chappie

Title: Chairman

Date: 12-18-12

Attest: Debi Jessner (Seal) Title:

BOARD OF COUNTY COMMISSIONERS SEAL MANATEE CO., FLA.

FLORIDA POWER & LIGHT COMPANY:

By: David K. Weda

Title: Transmission Engineering Manager

Date: 11/29/12

Manatee County Government Administrative Center
First Floor, Commission Chambers
9:00 a.m. - December 18, 2012

December 18, 2012 Regular Meeting
Agenda Item #21

Subject
44th Avenue East, from US 41 to 45th Street East Roadway Project, FPL Agreement

Briefings
None

Contact and/or Presenter Information

Sia Mollanazar, P.E., Dep. Director, Engineering Services Ext. 7487

Action Requested

Authorization for the Board to approve and the Chairman to sign the Facility Relocation Agreement with FPL for the 44th Avenue East from US 41 to 45th Street East Roadway Project.

Enabling/Regulating Authority

Chapter 12 – Capital Improvement Element of the Comp Plan.

Background Discussion

- In support of the 44th Avenue East from US 41 to 45th Street East roadway project, FPL will be required to relocate several transmission poles west of 15th Street East along 44th Avenue East and east of 15th Street East along the future 44th Avenue East. Relocation of the transmission poles must occur prior to or concurrent with the project. FPL is requiring from Manatee County that a Facility Relocation Agreement be executed prior to the relocation of the facilities. While the County Attorney's Office suggested one change (and FPL rejected that change), it was offered by the County Attorney's Office that execution of the agreement could be done strictly as a business decision. It is recommended that we execute the agreement, as we need them to move the line and this is the least expensive alternative.
- In addition, FPL will not proceed without the payment of the reimbursement balance of the relocation costs, which totals $304,767.02.

County Attorney Review
Formal Written Review (Opinion memo must be attached)

Explanation of Other

Charlie Crist
Governor

FLORIDA DEPARTMENT OF HEALTH

Ana M. Viamonte Ros, M.D., M.P.H.
State Surgeon General

October 28, 2010

Permit #: 0133033-056 DSGP

Mr. Sia Mollanazar, Deputy Director
Manatee County Public Works
1022 26th Avenue East
Bradenton, FL 34208

WATER SYSTEM: Manatee County
PROJECT NAME: 44th Avenue East from 30th Street East to 45th Street East (Potable Water Main Plans)
Project #6071160
EXPIRES: October 27, 2015

Dear Mr. Mollanazar:

Our office received the Notice of Intent to Use a General Permit for construction of the referenced water distribution system on **October 27, 2010.**

Please be advised that the activity must conform to the description contained in your Notice of Intent to Use a General Permit and that any deviation may subject the system to enforcement action.

Upon completion of the project, please provide us with the following:

(1) A "Request for Letter of Release to Place Water Supply System into Service" DEP Form 62-555.900(9).

(2) Copies of satisfactory bacteriological test results taken on two consecutive days at points indicated on approved plans. **Please see sheets W-3 to W-13 for sample locations (10) at end of line connections**

(3) Pressure test results of the water system.

Following the receipt of this information we may then issue a clearance letter releasing the facilities for public use. This project may not be placed into service until a letter of clearance has been issued.

Manatee County Health Department
Environmental Health Services
410 Sixth Avenue East • Bradenton 34208
PHONE (941) 748-0747 • FAX (941) 750-9364

10-28-10
File Dept of Health Permit
30135

This General Permit does not relieve the permittee of the responsibility for obtaining a Dredge and Fill Permit where it is required.

If you have any questions, please call Harry Messick at (941)748-0747, ext. 1355.

Sincerely,

Brian C. Dietz, PE
Environmental Health Services

BCD/hm/bb

cc: Donald R. Holcomb, PE/HDR
Wayne Troxler, PE/MCPWD
Andy Fischer/MCPWD
Dan Gray/MCUD

0133068-956 DSGP

NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

INSTRUCTIONS: This notice shall be completed and submitted by persons proposing to construct projects permitted under the "General Permit for Construction of Water Main Extensions for Public Water Systems" in Rule 62-555.405, F.A.C. AT LEAST 30 DAYS BEFORE BEGINNING CONSTRUCTION OF A WATER MAIN EXTENSION PROJECT, complete and submit one copy of this notice to the appropriate Department of Environmental Protection (DEP) District Office or Approved County Health Department (ACHD) along with payment of the proper permit processing fee. (When completed, Part II of this notice serves as the preliminary design report for a water main extension project, and thus, it is unnecessary to submit a separate preliminary design report or drawings, specifications, and design data with this notice.) All information provided in this notice shall be typed or printed in ink. The DEP permit processing fee for projects requiring the services of a professional engineer during design is $350, and the DEP permit processing fee for projects not requiring the services of a professional engineer during design is $500.* Some ACHDs charge a county permit processing fee in addition to the DEP permit processing fee. Checks for permit processing fees shall be made payable to the Department of Environmental Protection or the appropriate ACHD. NOTE THAT A SEPARATE NOTIFICATION AND A SEPARATE PERMIT PROCESSING FEE ARE REQUIRED FOR EACH NON-CONTIGUOUS PROJECT.†

* *Except as noted in paragraphs 62-555.520(3)(a) and (b), F.A.C., projects shall be designed under the responsible charge of one or more professional engineers licensed in Florida.*

† *Non-contiguous projects are projects that are neither interconnected nor located nearby one another (i.e., on the same site, on adjacent streets, or in the same neighborhood).*

I. General Project Information

A. Name of Project: 44th Avenue East From 30th Street East To 45th Street East (Potable Water Main Plans) Project #6071160

B. Description of Project and Its Purpose. In conjunction with the widening of 44th Avenue East in Manatee County, the County will be installing approximately 5,525 LF of an 8" water main extension and approximately 1,420 LF of 36" water mains.

Manatee CHD

OCT 27 2010

Env. Health Services

C. Location of Project

1. County Where Project Located: Manatee County
2. Description of Project Location: The Project is located along 44th Avenue East, From 30th Street East to 45th Street East

D. Estimate of Cost to Construct Project: $973,000.00

E. Estimate of Dates for Starting and Completing Construction of Project: Start Date = March 2011 End Date = November 2012

F. Permittee

PWS/Company Name: Manatee County			PWS Identification No.:* 6411132
PWS Type:* ☒ Community	☐ Non-Transient Non-Community	☐ Transient Non-Community	☐ Consecutive
Contact Person: Sia Mollanazar		Contact Person's Title: Deputy Director - Engineering	
Contact Person's Mailing Address: 1022 26th Avenue East			
City: Bradenton		State: Fl	Zip Code: 34208
Contact Person's Telephone Number: (941) 708-7487		Contact Person's Fax Number: (941) 708-7549	
Contact Person's E-Mail Address: sia.mollanazar@mymanatee.org			

* *This information is required only if the permittee is a public water system (PWS).*

G. Public Water System (PWS) Supplying Water to Project

PWS Name: Lake Manatee Water Treatment Plant			PWS Identification No.: 6411132
PWS Type: ☒ Community	☐ Non-Transient Non-Community	☐ Transient Non-Community	☐ Consecutive
PWS Owner: Manatee County Utilties Department			
Contact Person: Dan Gray		Contact Person's Title: Director Utility Operations	
Contact Person's Mailing Address: 4410 66th Street West			
City: Bradenton		State: Fl	Zip Code: 34210
Contact Person's Telephone Number: (941) 792-8811		Contact Person's Fax Number: (941) 795-3490	
Contact Person's E-Mail Address: dan.gray@maymanatee.org			

NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: 14th Avenue East From 30th Street East To 45th	Permittee: Manatee County

H. Public Water System (PWS) that Will Own Project After It Is Placed into Permanent Operation

PWS Name: Manatee County Utilities		PWS Identification No.:* 6411132
PWS Type:* ☒ Community ☐ Non-Transient Non-Community	☐ Transient Non-Community	☐ Consecutive
PWS Owner: Manatee County		
Contact Person: Dan Gray	Contact Person's Title: Director Of Utility	
Contact Person's Mailing Address: 4410 66th Street West		
City: Bradenton	State: Fl	Zip Code: 34210
Contact Person's Telephone Number: (941) 792-8811	Contact Person's Fax Number: (941) 795-3490	
Contact Person's E-Mail Address:		

* *This information is required only if the owner/operator is an existing PWS.*

I. Professional Engineer(s) or Other Person(s) in Responsible Charge of Designing Project*

Company Name: Hdr Engineering, Inc	
Designer(s): Donald R. Holcomb, Pe	Title(s) of Designer(s): Vice President
Qualifications of Designer(s): ☒ Professional Engineer(s) Licensed in Florida – License Number(s): ☐ Public Officer(s) Employed by State, County, Municipal, or Other Governmental Unit of State† ☐ Plumbing Contractor(s) Licensed in Florida – License Number(s):^	
Mailing Address of Designer(s): 2621 Cattlemen Road, Ste. 106	
City: Sarasota	State: Fl Zip Code: 34232-6212
Telephone Number of Designer(s): (941) 342-2700	Fax Number of Designer(s): (941) 342-6589
E-Mail Address(es) of Designer(s): donnie.holcomb@hdrinc.com	

* *Except as noted in paragraphs 62-555.520(3)(a) and (b), F.A.C., projects shall be designed under the responsible charge of one or more professional engineers licensed in Florida.*

† *Attach a detailed construction cost estimate showing that the cost to construct this project is $10,000 or less.*

^ *Attach documentation showing that this project will be installed by the plumbing contractor(s) designing this project, documentation showing that this project involves a public water system serving a single property and fewer than 250 fixture units, and a detailed construction cost estimate showing that the cost to construct this project is $50,000 or less.*

II. Preliminary Design Report for Project*

A. Service Area, Water Use, and Service Pressure Information

1. Design Type and Number of Service Connections, and Average Daily Water Demands and MaximumDay Water Demands, in the Entire Area to Be Served by the Water Mains Being Constructed Under this Project:

A = Type of Service Connection	B = Number of Service Connections	C = Average Daily Water Demand Per Service Connection, gpd	D = Total Average Daily Water Demand*, gpd (Column BxC for Residential Service Connections)	E = Total Maximum-Day Water Demand*, gpd
Single-Family Home	0	0	0	0
Mobile Home	0	0	0	0
Apartment	0	0	0	0
Commercial, Institutional, or Industrial Facility†	0		0	0
Total	0		0	0

a. Description of Commercial, Institutional, or Industrial Facilities and Explanation of Method(s) Used to Estimate Average Daily Water Demand for These Facilities: There are no new connections to the water main extension

b. Explanation of Peaking Factor(s) or Method(s) Used to Estimate Maximum-Day Water Demand: N/A

Project Name: 44th Avenue East From 30th Street East To 45th | Permittee: Manatee County

2. Explanation of Peaking Factor(s) or Method(s) Used to Estimate Design Peak-Hour Water Demand and, for Small Water Systems that Use Hydropneumatic Tanks or that Are Not Designed to Provide Fire Protection, Peak Instantaneous Water Demand: N/A

3. Design Fire-Flow Rate and Duration: N/A

4. Design Service Pressure Range: N/A

B. Project Site Information

1. ATTACH A SITE PLAN OR SKETCH SHOWING THE SIZE AND APPROXIMATE LOCATION OF NEW OR ALTERED WATER MAINS, SHOWING THE APPROXIMATE LOCATION OF HYDRANTS, VALVES, METERS, AND BLOW-OFFS IN SAID MAINS, AND SHOWING HOW SAID MAINS CONNECT TO THE PUBLIC WATER SYSTEM SUPPLYING WATER FOR THE PROJECT.
2. Description of Any Areas Where New or Altered Water Mains Will Cross Above or Under Surface Water or Be Located in Soil that Is Known to Be Aggressive: N/A

C. Information About Compliance with Design and Construction Requirements

1. If this project is being designed to comply with the following requirements, initial in ink before the requirements. If any of the following requirements do not apply to this project or if this project includes exceptions to any of the following requirements as allowed by rule, mark "X" before the requirements and complete Part II.C.2 below. *RSWW* = *Recommended Standards for Water Works* as incorporated into Rule 62-555.330, F.A.C.

AEK a. This project is being designed to keep existing water mains and service lines in operation during construction or to minimize interruption of water service during construction. [*RSWW* 1.3.a; exceptions allowed under FAC 62-555.330]

AEK b. All pipe, pipe fittings, pipe joint packing and jointing materials, valves, fire hydrants, and meters installed under this project will conform to applicable American Water Works Association (AWWA) standards. [FAC 62-555.320(21)(b), *RSWW* 8.0, and AWWA standards as incorporated into FAC 62-555.330; exceptions allowed under FAC 62-555.320(21)(c)]

AEK c. All public water system components, excluding fire hydrants that will be installed under this project and that will come into contact with drinking water will conform to NSF International Standard 61 as adopted in Rule 62-555.335, F.A.C., or other applicable standards, regulations, or requirements referenced in paragraph 62-555.320(3)(b), F.A.C. [FAC 62-555.320(3)(b); exceptions allowed under FAC 62-555.320(3)(d)]

AEK d. All pipe and pipe fittings installed under this project will contain no more than 8.0% lead, and any solder or flux used in this project will contain no more than 0.2% lead. [FAC 62-555.322]

AEK e. All pipe and pipe fittings installed under this project will be color coded or marked in accordance with subparagraph 62-555.320(21)(b)3, F.A.C., using blue as a predominant color. (Underground plastic pipe will be solid-wall blue pipe, will have a co-extruded blue external skin, or will be white or black pipe with blue stripes incorporated into, or applied to, the pipe wall; and underground metal or concrete pipe will have blue stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe will have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint will be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe; for pipe with an internal diameter of 24 inches or greater, tape or paint will be applied in continuous lines along each side of the pipe as well as along the top of the pipe. Aboveground pipe will be painted blue or will be color coded or marked like underground pipe) [FAC 62-555.320(21)(b)3]

AEK f. All new or altered water mains included in this project are sized after a hydraulic analysis based on flow demands and pressure requirements. ATTACH A HYDRAULIC ANALYSIS JUSTIFYING THE SIZE OF ANY NEW OR ALTERED WATER MAINS WITH AN INSIDE DIAMETER OF LESS THAN THREE INCHES. [FAC 62-555.320(21)(b) and *RSWW* 8.1]

DMH g. The inside diameter of new or altered water mains that are included in this project and that are being designed to provide fire protection and serve fire hydrants will be at least six inches. [FAC 62-555.320(21)(b) and *RSWW* 8.1.2]

DMH h. New or altered water mains that are included in this project and that are not being designed to carry fire flows do not have fire hydrants connected to them. [FAC 62-555.320(21)(b) and *RSWW* 8.1.5]

DMH i. This project is being designed to minimize dead-end water mains by making appropriate tie-ins where practical. [FAC 62-555.320(21)(b) and *RSWW* 8.1.6.a]

DMH j. New or altered dead-end water mains included in this project will be provided with a fire or flushing hydrant or blow-off for flushing purposes. [FAC 62-555.320(21)(b) and *RSWW* 8.1.6.b]

DMH k. Sufficient valves will be provided on new or altered water mains included in this project so that inconvenience and sanitary hazards will be minimized during repairs. [FAC 62-555.320(21)(b) and *RSWW* 8.2]

DMH l. New or altered fire hydrant leads included in this project will have an inside diameter of at least six inches and will include an auxiliary valve. [FAC 62-555.320(21)(b) and *RSWW* 8.3.3]

DMH m. All fire hydrants that will be installed under this project and that will have unplugged, underground drains will be located at least three feet from any existing or proposed storm sewer, stormwater force main, pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., or vacuum-type sanitary sewer; at least six feet from any existing or proposed gravity- or pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-10, F.A.C.; and at least ten feet from any existing or proposed "on-site sewage treatment and disposal system." [FAC 62-555.314(4)]

DMH n. At high points where air can accumulate in new or altered water mains included in this project, provisions will be made to remove the air by means of air relief valves, and automatic air relief valves will not be used in situations where flooding of the valve manhole or chamber may occur. [FAC 62-555.320(21)(b) and *RSWW* 8.4.1]

DMH o. The open end of the air relief pipe from all automatic air relief valves installed under this project will be extended to at least one foot above grade and will be provided with a screened, downward-facing elbow. [FAC 62-555.320(21)(b) and *RSWW* 8.4.2]

DMH p. New or altered chambers, pits, or manholes that contain valves, blow-offs, meters, or other such water distribution system appurtenances and that are included in this project will not be connected directly to any sanitary or storm sewer, and blow-offs or air relief valves installed under this project will not be connected directly to any sanitary or storm sewer. [FAC 62-555.320(21)(b) and *RSWW* 8.4.3]

DMH q. New or altered water mains included in this project will be installed in accordance with applicable AWWA standards or in accordance with manufacturers' recommended procedures. [FAC 62-555.320(21)(b), *RSWW* 8.5.1, and AWWA standards as incorporated into FAC 62-555.330]

DMH r. A continuous and uniform bedding will be provided in trenches for undergroundpipe installed under this project; backfill material will be tamped in layers around underground pipe installed under this project and to a sufficient height above the pipe to adequately support and protect the pipe; and unsuitably sized stones (as described in applicable AWWA standards or manufacturers' recommended installation procedures) found in trenches will be removed for a depth of at least six inches below the bottom of underground pipe installed under this project. [FAC 62-555.320(21)(b), *RSWW* 8.5.2]

DMH s. All water main tees, bends, plugs, and hydrants installed under this project will be provided with thrust blocks or restrained joints to prevent movement. [FAC 62-555.320(21)(b) and *RSWW* 8.5.4]

DMH t. New or altered water mains that are included in this project and that will be constructed of asbestos-cement or polyvinyl chloride pipe will be pressure and leakage tested in accordance with AWWA Standard C603 or C605, respectively, as incorporated into Rule 62-555.330, F.A.C., and all other new or altered water mains included in this project will be pressure and leakage tested in accordance with AWWA Standard C600 as incorporated into Rule 62-555.330. [FAC 62-555.320(21)(b)1 and AWWA standards as incorporated into FAC 62-555.330]

DMH u. New or altered water mains, including fire hydrant leads and including service lines that will be under the control of a public water system and that have an inside diameter of three inches or greater, will be disinfected and bacteriologically evaluated in accordance with Rule 62-555.340, F.A.C. [FAC 62-555.320(21)(b)2 and FAC 62-555.340]

DMH v. New or altered water mains that are included in this project and that will be installed in areas where there are known aggressive soil conditions will be protected through use of corrosion-resistant water main materials, through encasement of the water mains in polyethylene, or through provision of cathodic protection. [FAC 62-555.320(21)(b) and *RSWW* 8.5.7.d]

w. New or relocated, underground water mains included in this project will be laid to provide a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed vacuum type sanitary sewer, storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C.; a horizontal distance of at least six feet between the outside of the water main and the outside of any existing or proposed gravity-type sanitary sewer (or a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed gravity-type sanitary sewer if the bottom of the water main will be laid at least six inches above the top of the sewer); a horizontal distance of at least six feet between the outside of the water main and the outside of any existing or proposed pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.; and a horizontal distance of at least ten feet between the outside of the water main and all parts of any existing or proposed "on-site sewage treatment and disposal system." [FAC 62-555.314(1); exceptions allowed under FAC 62-555.314(5)]

x. New or relocated, underground water mains that are included in thisproject and that will cross any existing or proposed gravity- or vacuum-type sanitary sewer or storm sewer will be laid so the outside of the water main is at least six inches above the other pipeline or at least 12 inches below the other pipeline; and new or relocated, underground water mains that are included in this project and that will cross any existing or proposed pressure type sanitary sewer, wastewater or stormwater force main, or pipeline conveying reclaimed water will be laid so the outside of the water main is at least 12 inches above or below the other pipeline. [FAC 62-555.314(2); exceptions allowed under FAC 62-555.314(5)]

y. At the utility crossings described in Part II.C.1.w above, one full length of water main pipe will be centered above or below the other pipeline so the water main joints will be as far as possible from the other pipelineor the pipes will be arranged so that all water main joints are at least three feet from all joints in vacuum-type sanitary sewers, storm sewers, stormwater force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least six feet from all joints in gravity- or pressure-type sanitary sewers, wastewater force mains, or pipelines conveying reclaimedwater not regulated under Part III of Chapter 62-610, F.A.C. [FAC 62-555.314(2); exceptions allowed under FAC 62-555.314(5)]

z. New or altered water mains that are included in this project and that will cross above surface water will be adequately supported and anchored, protected from damage and freezing, and accessible for repair or replacement. [FAC 62-555.320(21)(b) and *RSWW* 8.7.1]

aa. New or altered water mains that are included in this project and that will cross under surface water will have a minimum cover of two feet. [FAC 62-555.320(21)(b) and *RSWW* 8.7.2]

bb. New or altered water mains that are included in this project and that will cross under surface water courses greater than 15 feet in width will have flexible or restrained, watertight pipe joints and will include valves at both ends of the water crossing so the underwater main can be isolated for testing and repair; the aforementioned isolation valves will be easily accessible and willnot be subject to flooding; the isolation valve closest to the water supply source will be in a manhole; and permanent taps will be provided on each side of the isolation valve within the manhole to allow for insertion of a small meter to determine leakage from the underwater main and to allow for sampling of water from the underwater main.[FAC 62-555.320(21)(b) and *RSWW* 8.7.2]

cc. This project is being designed to include proper backflow protection at those new or altered service connections where backflow protection is required or recommended under Rule 62-555.360, F.A.C., or in *Recommended Practice for Backflow Prevention and Cross-Connection Control*, AWWA Manual M14, as incorporated into Rule 62-555.330, F.A.C.; or the public water system that will own this project after it is placed into operation has a cross-connection control program requiring water customers to install proper backflow protection at those service connections where backflow protection is required or recommended under Rule 62-555.360, F.A.C., or in AWWA Manual M14. [FAC 62-555.360 and AWWA Manual M14 as incorporated into FAC 62-555.330]

dd. Neither steam condensate, cooling water from engine jackets, nor water used in conjunction with heat exchangers will be returned to the new or altered water mains included in this project. [FAC 62-555.320(21)(b) and *RSWW* 8.8.2]

NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: 44th Avenue East From 30th Street East To 45th	Permittee: Manatee County

2. Explanation for Requirements Marked "X" in Part II.C.1 Above, Including Justification, Documentation, Assurances, and/or Alternatives as Required by Rule for Exceptions to Requirements in Part II.C.1: N/A

I completed Part II of this notice, and the information provided in Part II and on the attachment(s) to Part II is true and accurate to the best of my knowledge and belief.

Signature, Seal, and Date of Professional Engineer (PE) or Signature and Date of Other Person in Responsible Charge of Designing Project:*	Signature, Seal, and Date of Professional Engineer (PE) or Signature and Date of Other Person in Responsible Charge of Designing Project:*
Printed/Typed Name: Donald R. Holcomb	Printed/Typed Name:
License Number of PE or License Number or Title of Other Person in Responsible Charge of Designing Project:* 51770	License Number of PE or License Number or Title of Other Person in Responsible Charge of Designing Project:*
Portion of Preliminary Design Report for Which Responsible:	Portion of Preliminary Design Report for Which Responsible:

* *Except as noted in paragraphs 62-555.520(3)(a) and (b), F.A.C., projects shall be designed under the responsible charge of one or more PEs licensed in Florida. If this project is being designed under the responsible charge of one or more PEs licensed in Florida, Part II of this notice shall be completed, signed, sealed, and dated by the PE(s) in responsible charge. If this project is not being designed under the responsible charge of one or more PEs licensed in Florida, Part II shall be completed, signed, and dated by the person(s) in responsible charge of designing this project.*

NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: 44th Avenue East From 30th Street East To 45th | Permittee: Manatee County

III. Certifications

A. Certification by Permittee

I am duly authorized to sign this notice on behalf of the permittee identified in Part I.F of this notice. I certify that, to the best of my knowledge and belief, this project complies with Chapter 62-555, F.A.C. I also certify that construction of this project has not begun yet and that, to the best of my knowledge and belief, this project does not include any of the following construction work:

- construction of water mains conveying raw or partially treated drinking water;
- construction of drinking water treatment, pumping, or storage facilities or conflict manholes;
- construction of water mains in areas contaminated by low-molecular-weight petroleum products or organic solvents;
- construction of an interconnection between previously separate public water systems or construction of water mains that create a "new system" as described under subsection 62-555.525(1), F.A.C.; or
- construction of water mains that will remain dry following completion of construction.

(A specific construction permit is required for each project involving any of the above listed construction work.)

I understand that, if this project is designed under the responsible charge of one or more professional engineers (PEs) licensed in Florida, the permittee must retain a Florida-licensed PE to take responsible charge of inspecting construction of this project for the purpose of determining in general if the construction proceeds in compliance with the Department of Environmental Protection construction permit, including the approved preliminary design report, for this project. I understand that the permittee must have complete record drawings prepared for this project. I also understand that the permittee must submit a certification of construction completion to the Department and obtain written approval, or clearance, from the Department before the permittee places this project into operation for any purpose other than disinfection or testing for leaks.

Signature and Date	Sia Mollanazar Printed or Typed Name	Deputy Director - Engineering Title

B. Certification by PWS Supplying Water to Project

I am duly authorized to sign this notice on behalf of the PWS identified in Part I.G of this notice. I certify that said PWS will supply the water necessary to meet the design water demands for this project. As indicated below, the water treatment plant(s) to which this project will be connected has(have) the capacity necessary to meet the design water demands for this project, and I certify that all other PWS components affected by this project also have the capacity necessary to meet the design water demands for this project. I certify that said PWS is in compliance with applicable planning requirements in Rule 62-555.348, F.A.C.; applicable cross-connection control requirements in Rule 62-555.360, F.A.C.; and to the best of my knowledge and belief, all other applicable rules in Chapters 62-550, 62-555, and 62-699, F.A.C.; furthermore, I certify that, to the best of my knowledge and belief, said PWS's connection to this project will not cause said PWS to be in noncompliance with Chapter 62-550 or 62-555, F.A.C. I also certify that said PWS has reviewed the preliminary design report for this project and that said PWS considers the connection(s) between this project and said PWS acceptable as designed.

- Name(s) of Water Treatment Plant(s) to Which this Project Will Be Connected: Lake Manatee Water Treatment Plant
- Total Permitted Maximum Day Operating Capacity of Plant(s), gpd: 84
- Total Maximum Day Flow at Plant(s) as Recorded on Monthly Operating Reports During Past 12 Months, gpd: 49

Signature and Date	Dan Gray Printed or Typed Name	Director of Utility Operations Title

C. Certification by PWS that Will Own Project After It Is Placed into Permanent Operation

I am duly authorized to sign this notice on behalf of the PWS identified in Part I.H of this notice. I certify that said PWS will own this project after it is placed into permanent operation. I also certify that said PWS has reviewed the preliminary design report for this project and that said PWS considers this project acceptable as designed.

Signature and Date	Dan Gray Printed or Typed Name	Director of Utility Operations Title

NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: 44th Avenue East From 30th Street East To 45th	Permittee: Manatee County

D. Certification by Professional Engineer(s) in Responsible Charge of Designing Project*

I, the undersigned professional engineer licensed in Florida, am in responsible charge of designing this project. I certifythat, to the best of my knowledge and belief, the design of this project complies with Chapter 62555, F.A.C. I also certify that, to the best of my knowledge and belief, this project is not being designed to include any of the following construction work:

- construction of water mains conveying raw or partially treated drinking water;
- construction of drinking water treatment, pumping, or storage facilities or conflict manholes;
- construction of water mains in areas contaminated by low-molecular-weight petroleum products or organic solvents;
- construction of an interconnection between previously separate public water systems or construction of water mains that creat a "new system" as described under subsection 62-555.525(1), F.A.C.; or
- construction of water mains that will remain dry following completion of construction.

(A specific construction permit is required for each project involving any of the above listed construction work.)

Signature, Seal, and Date:	Signature, Seal, and Date:
Printed/Typed Name: Donald R. Holcomb	Printed/Typed Name:
License Number: 51970	License Number:
Portion of Preliminary Design Report for Which Responsible:	Portion of Preliminary Design Report for Which Responsible:

* *Except as noted in paragraphs 62-555.520(3)(a) and (b), F.A.C., projects shall be designed under the responsible charge of one or more professional engineers (PEs) licensed in Florida. If this project is being designed under the responsible charge of one or more PEs licensed in Florida, Part III.D of this notice shall be completed by the PE(s) in responsible charge. If this project is not being designed under the responsible charge of one or more PEs licensed in Florida, Part III.D does not have to be completed.*

STATE OF FLORIDA
DEPARTMENT OF HEALTH

374285

Drinking Water Programs

RECEIPT

Issued by: Manatee County Health Department

LEGAL AUTHORITY: F.S. 381.0062; 513: F.A.C. 64E-8; 64E-9; 64E-10; 64E-11; 64E-14; 64E-15; 64E-16; 64E-17; 64E-19.

HDR Engineering Inc.
8404 Indian Hills Drive
Omaha NE 68114
PWS General Permit
44th Ave From 30th St To 45th

Control Number:	41-GP-01863
Amount Paid: $	850.00
Date Paid/Issued:	10/27/2010
Cash/Check:	Check 1035861
Payment Type:	Payment ; SDW GP
Receipt Number:	W101027002
Operator:	bjb

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

CONTRACT PLANS

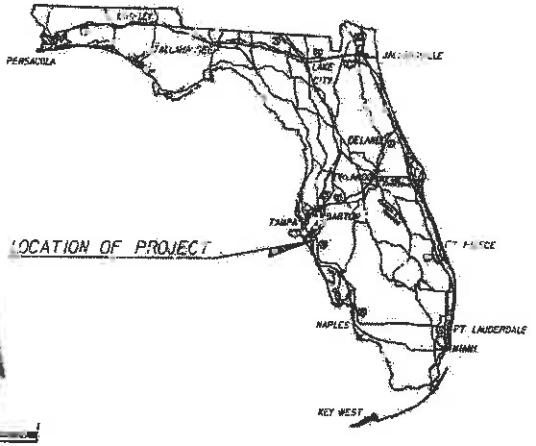
MANATEE COUNTY

(607/160)

44TH AVENUE EAST

FROM 30TH STREET EAST TO 45TH STREET EAST

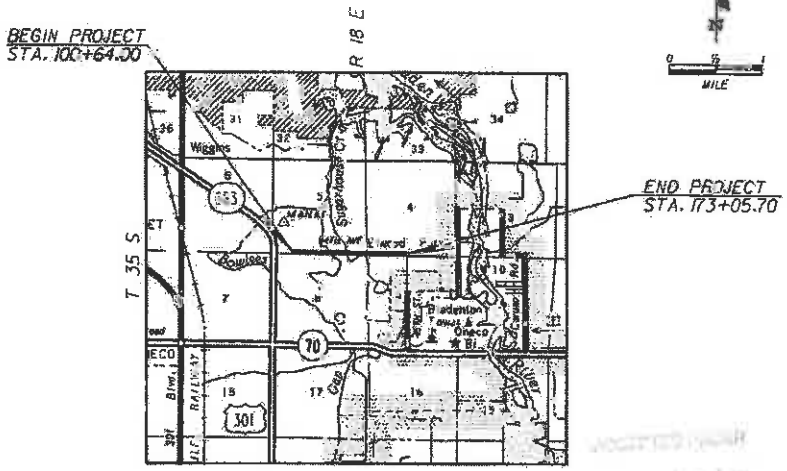
POTABLE WATER MAIN PLANS



A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT

INDEX OF WATER MAIN PLANS

SHEET NO.	SHEET DESCRIPTION
W-1	KEY SHEET
W-2	TRAFFIC GENERAL NOTES
W-3 TO W-13	PLAN AND PROFILE SHEETS – sample locations (10)
W-14	CROSS SECTIONS
W-15 TO W-32	WATER DETAILS


BEGIN PROJECT
STA. 100+64.30
END PROJECT
STA. 173+05.70
T 35 S
R 18 E
Wiggins
Swiftwater Creek
Manatee
Rowlett
Bradenton Country Club
Braden River
Braden River
Braden River

GENERAL NOTES

1. ALL WATER WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS TECHNICAL MANUAL, LATEST EDITION (DETAILS AND SPECIFICATIONS). THE DETAILS AND STANDARDS DESCRIBED ABOVE SHALL BE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS FOR THIS PROJECT.

2. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC. WHICH ARE WITHIN THE PROJECT AREA AND WHICH HAVE BEEN INSTALLED AND CONSTRUCTED SINCE THE PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY PRIOR TO CONSTRUCTION THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) AFFECTING HIS WORK.

3. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF WORK. ALL CONTRACTORS ARE DIRECTED PRIOR TO BIDDING TO CONDUCT WHATEVER INVESTIGATIONS THEY MAY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.

4. THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THERE MAY BE SOME UTILITY CONFLICTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ANY AND ALL EXISTING UTILITIES ON THE PROJECT.

5. FIELD CONDITIONS MAY NECESSITATE SLIGHT ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED UTILITIES TO AVOID OBSTACLES, AS ORDERED BY THE ENGINEER. THE CONTRACTOR SHALL USE ADDITIONAL FITTINGS, OFFSETS OR BENDS AS REQUIRED TO AVOID CONFLICTS, MAKE ADJUSTMENTS AND MAINTAIN CLEARANCES AS DIRECTED BY THE COUNTY.

6. THE CONTACTOR SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE VARIOUS UTILITY COMPANIES IN ORDER TO PERMIT THE LOCATION OF EXISTING UNDERGROUND UTILITIES IN ADVANCE OF CONSTRUCTION. CONTACT UTILITIES NOTIFICATION CENTER AT 1-800-432-4770.

7. CONTRACTOR SHALL MAINTAIN A CLEAR PATH FOR SURFACE WATER, DRAINAGE STRUCTURES AND DITCHES DURING ALL PHASES OF CONSTRUCTION.

8. CONTRACTOR SHALL PROVIDE WARNING SIGNALS, SIGNS, LIGHTS AND FLAGMEN AS REQUIRED BY FDOT IN THE "MANUAL OF TRAFFIC CONTROL & SAFE PRACTICES".

9. CONTRACTOR SHALL MAINTAIN AT LEAST ONE ACCESS ENTRANCE TO COMMERCIAL PROPERTIES AT ALL TIMES.

10. CONTRACTOR SHALL MAINTAIN A SET OF PLANS WITH CURRENT FIELD CHANGES MARKED THERE-ON AND SHALL DELIVER THESE PLANS TO THE ENGINEER UPON COMPLETION OF CONSTRUCTION.

11. THE CONTRACTOR SHALL NOTIFY THE COUNTY IMMEDIATELY WHEN CONFLICTS BETWEEN DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED.

12. ONLY MANATEE COUNTY PERSONNEL SHALL OPERATE VALVES.

13. ALL ROAD CROSSINGS ARE OPEN CUT UNLESS OTHERWISE NOTED ON THE DRAWINGS.

14. ALL ROADWAY CONSTRUCTION WORK (WIDENING, ALIGNMENT, CURBING, DRIVES, UTILITY ADJUSTMENTS, STORMWATER COLLECTION SYSTEMS, ETC.) IS NOT PART OF THE WATER UTILITY IMPROVEMENTS DEPICTED IN THESE PLANS. NEITHER SHOULD THE PLANS BE USED FOR ROADWAY CONSTRUCTION.

15. ALL MAINS SHALL HAVE A MINIMUM COVER OF 36" BELOW FINISHED GRADE UNLESS OTHERWISE NOTED.

16. ALL TEES, CROSSES, BENDS (HORIZONTAL & VERTICAL), PLUGS, VALVES AND OTHER APPURTENANCES SHALL BE RESTRAINED AS SHOWN ON THE RESTRAINED JOINT TABLE AS A MINIMUM. AREAS REQUIRING ADDITIONAL RESTRAINED LENGTHS ARE SHOWN ON THE PLANS.

17. ALL PIPE FITTINGS AND APPURTENANCES USED TO PROVIDE CONNECTIONS TO THE WATER SYSTEM OR USED TO PROVIDE DEAD END FUTURE CONNECTIONS SHALL BE RESTRAINED.

18. ALL TEST POINTS AND CHLORINATION POINT PIPING SHALL BE CUT LOOSE FROM THE CORPORATION STOP AND COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE. THE CORPORATION STOP SHALL BE CAPPED AND REMAIN IN PLACE.

19. WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE JOINT DEFLECTION SHALL NOT EXCEED 80% OF THE MANUFACTURER'S RECOMMENDED DEFLECTION ANGLE.

20. SHOP DRAWINGS SHALL BE FURNISHED TO THE ENGINEER FOR APPROVAL OF ALL PIPE CONNECTIONS, TRANSITIONS AND SPECIALS PRIOR TO FABRICATION OR DELIVERY TO THE JOB SITE.

21. STATIONING FOR ALL FIRE HYDRANT ASSEMBLIES, ISOLATION VALVES, FITTINGS AND OTHER APPURTENANCES IS APPROXIMATE. THE CONTRACTOR SHALL LOCATE AIR RELEASE VALVES IN THE FIELD AT THE HIGHEST POINT BEFORE THE DOWNWARD BREAK IN THE VICINITY OF THE STATION INDICATED.

22. ALL LOCATIONS FOR FIRE HYDRANTS, ISOLATION VALVES AND AIR RELEASE VALVES MUST BE APPROVED BY THE COUNTY.

GENERAL NOTES (CONT.)

23. MAINTAIN 6' HORIZONTAL CLEARANCE BETWEEN EXISTING OR PROPOSED WATER MAINS AND SANITARY SEWERS. WHEN MAINS ARE CLOSER THAN 6', USE DUCTILE IRON PIPE FOR BOTH MAINS WITH STAGGERED JOINTS OR CONCRETE ENCASE THE SEWER MAIN. SEWERS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 12" BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. WHERE THE 12" VERTICAL DISTANCE CANNOT BE MAINTAINED, THE SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE, USING MECHANICAL OR PUSH JOINTS, FOR A DISTANCE OF AT LEAST 10' ON EITHER SIDE OF THE CROSSING. WATER MAINS FOR CROSSING STORM SEWERS SHALL HAVE A MINIMUM SEPERATION OF 12".

24. THE CONTRACTOR SHALL COORDINATE ALL TIE-INS WITH MANATEE COUNTY.

25. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE COUNTY FOR ANY DEVIATION FROM THE DRAWINGS OR TECHNICAL SPECIFICATIONS.

26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL OF THE COUNTY'S EXISTING FACILITIES WITHIN THE PROJECT LIMITS PRIOR TO CONSTRUCTION.

27. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE LATEST EDITION OF THE MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS.

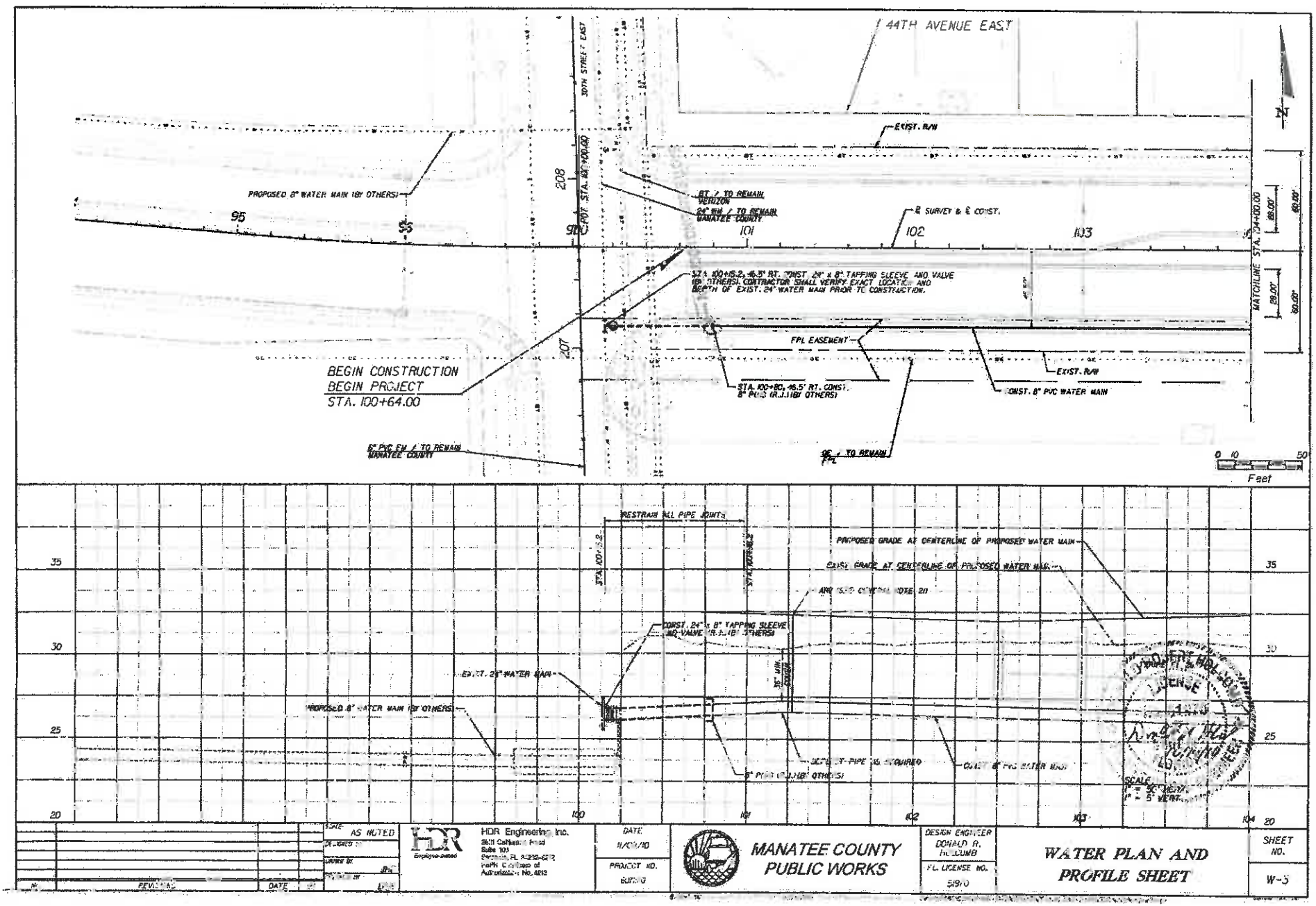
28. PRIOR TO FINAL TIE-INS, CONTRACTOR SHALL PROVIDE RECORD DRAWINGS TO THE COUNTY. THE COUNTY WILL OBTAIN REGULATORY CLEARANCE TO COMPLETE FINAL TIE-INS.

DONALD ROBERT HOLCOMB LICENSE NO. 61970 STATE OF FLORIDA PROFESSIONAL ENGINEER

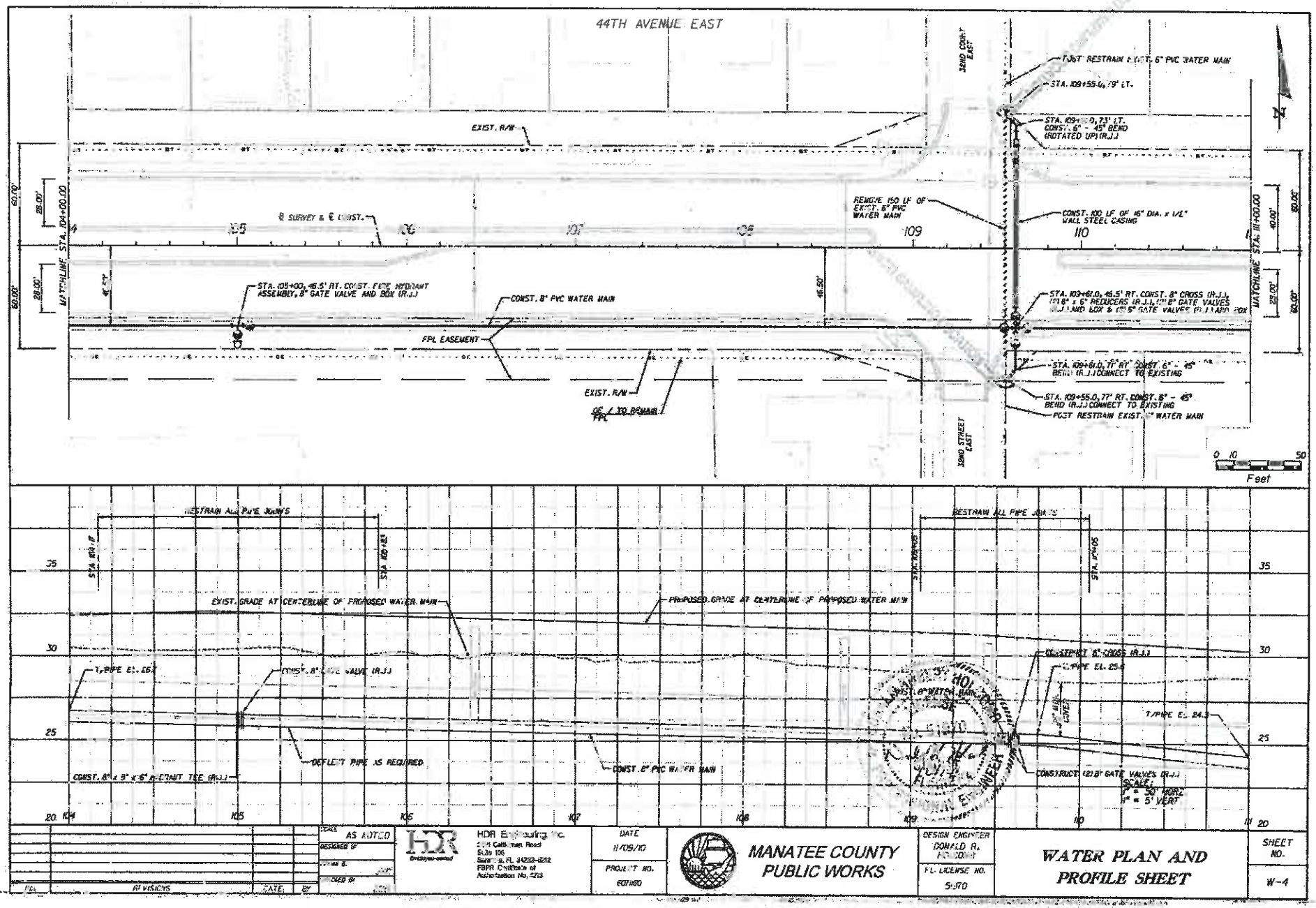
			AS NOTED	HDR Engineering, Inc. 2621 Cattlemen Road Suite 105 Sarasota, FL 34232-6275 HDR Certificate of Authorization No. 4119	DATE 11/09/10	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER DONALD R. HOLCOMB; FL. LICENSE NO. 61970
NO.	REVISIONS	DATE	BY		PROJECT NO. 4040		

WATER GENERAL NOTES

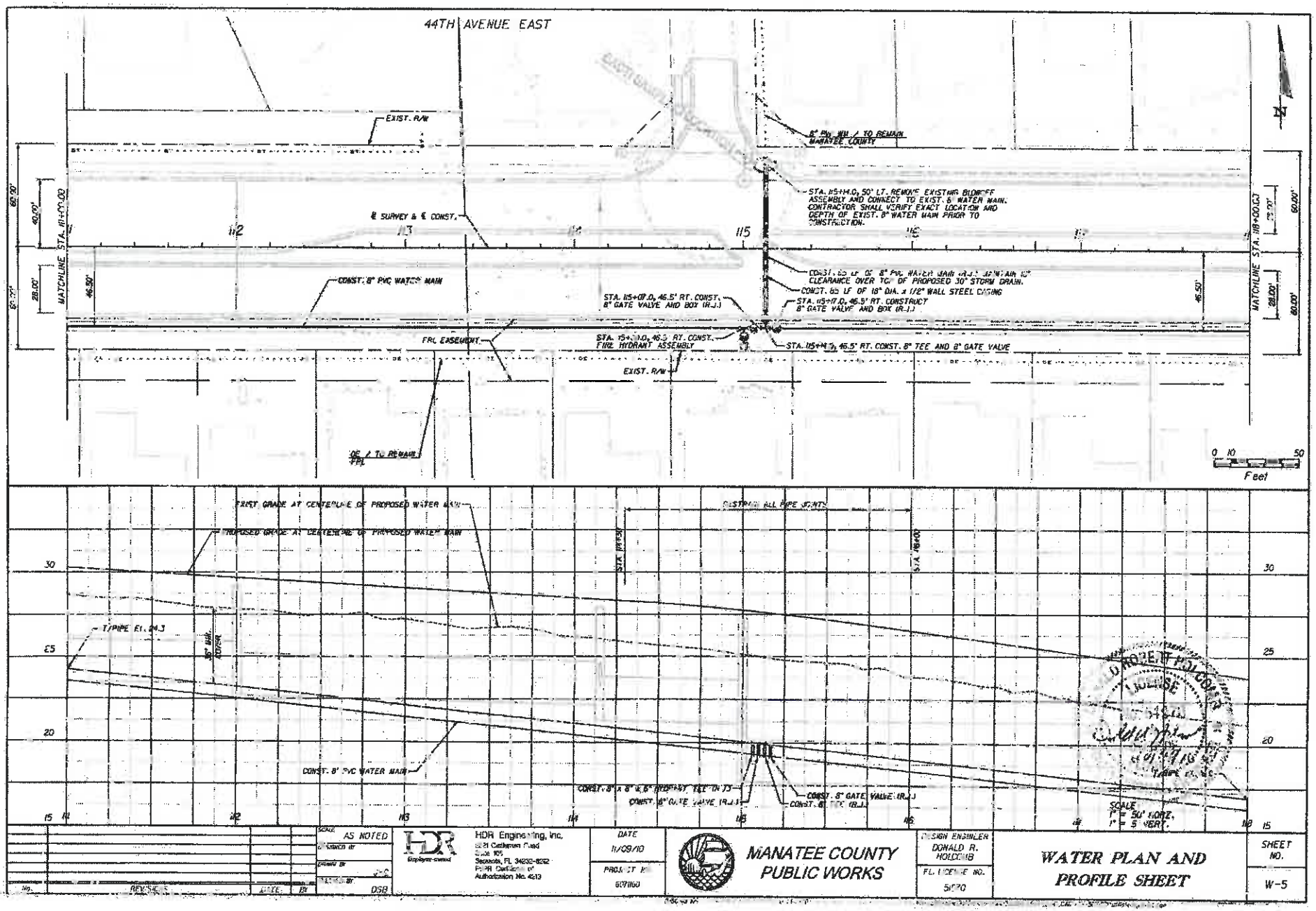
SHEET NO. W-2



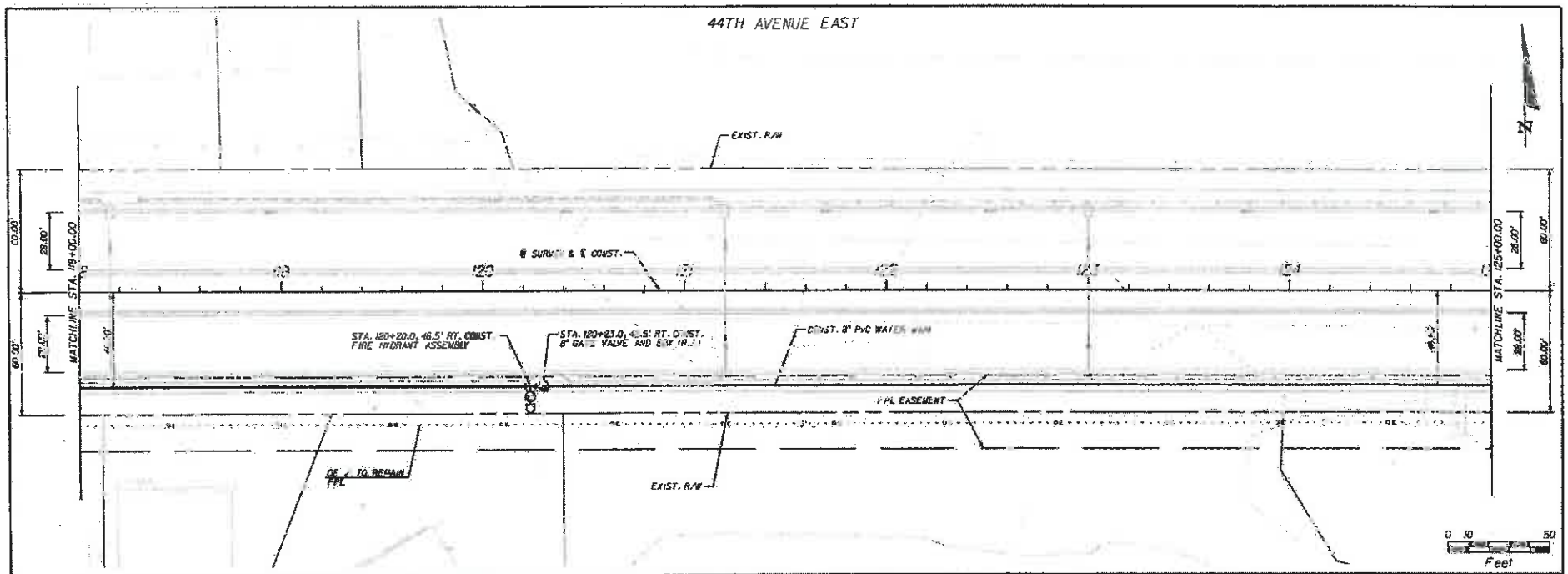
NO. REVISIONS DATE	SCALE AS NOTED	HDR Engineering, Inc.	DATE 11/01/10	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER DONALD R. PLUMB	WATER PLAN AND PROFILE SHEET
	DESIGNED		PROJECT NO. 5170		FL. LICENSE NO. 51970	SHEET NO. W-3
	DRAWN BY JRC					
	CHECKED BY					

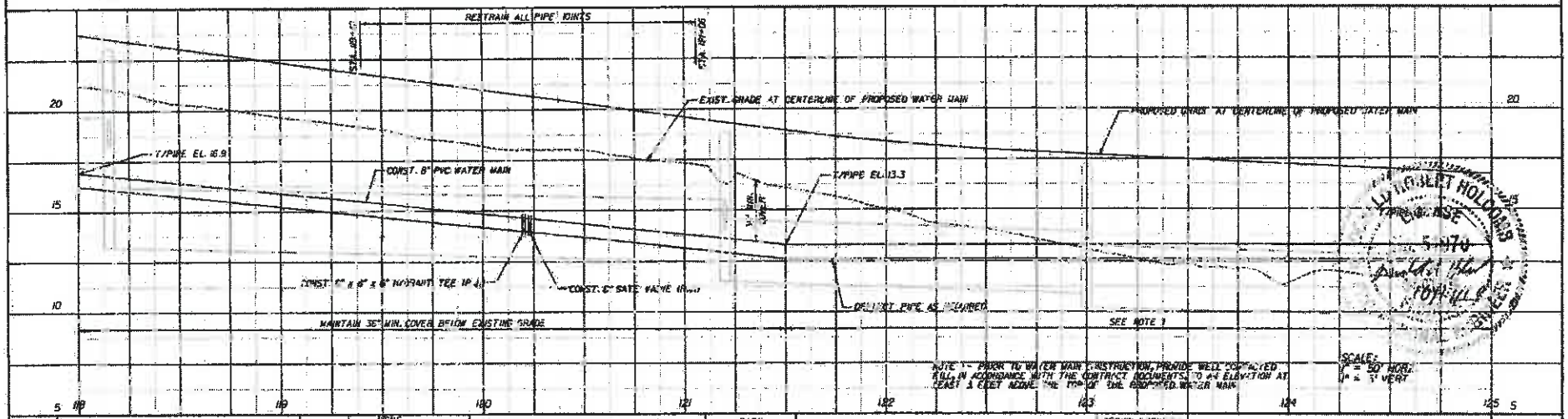


REVISIONS / DATE / BY	SCALE: AS NOTED DESIGNED BY DRAWN BY CHECKED BY	HDR Engineering, Inc. 2415 Cattleman Road Suite 106 Sarasota, FL 34232-6212 FBPR Certificate of Authorization No. 6213	DATE 11/05/10 PROJECT NO. 60116G	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER DONALD R. [illegible] FL. LICENSE NO. 51370	WATER PLAN AND PROFILE SHEET	SHEET NO. W-4

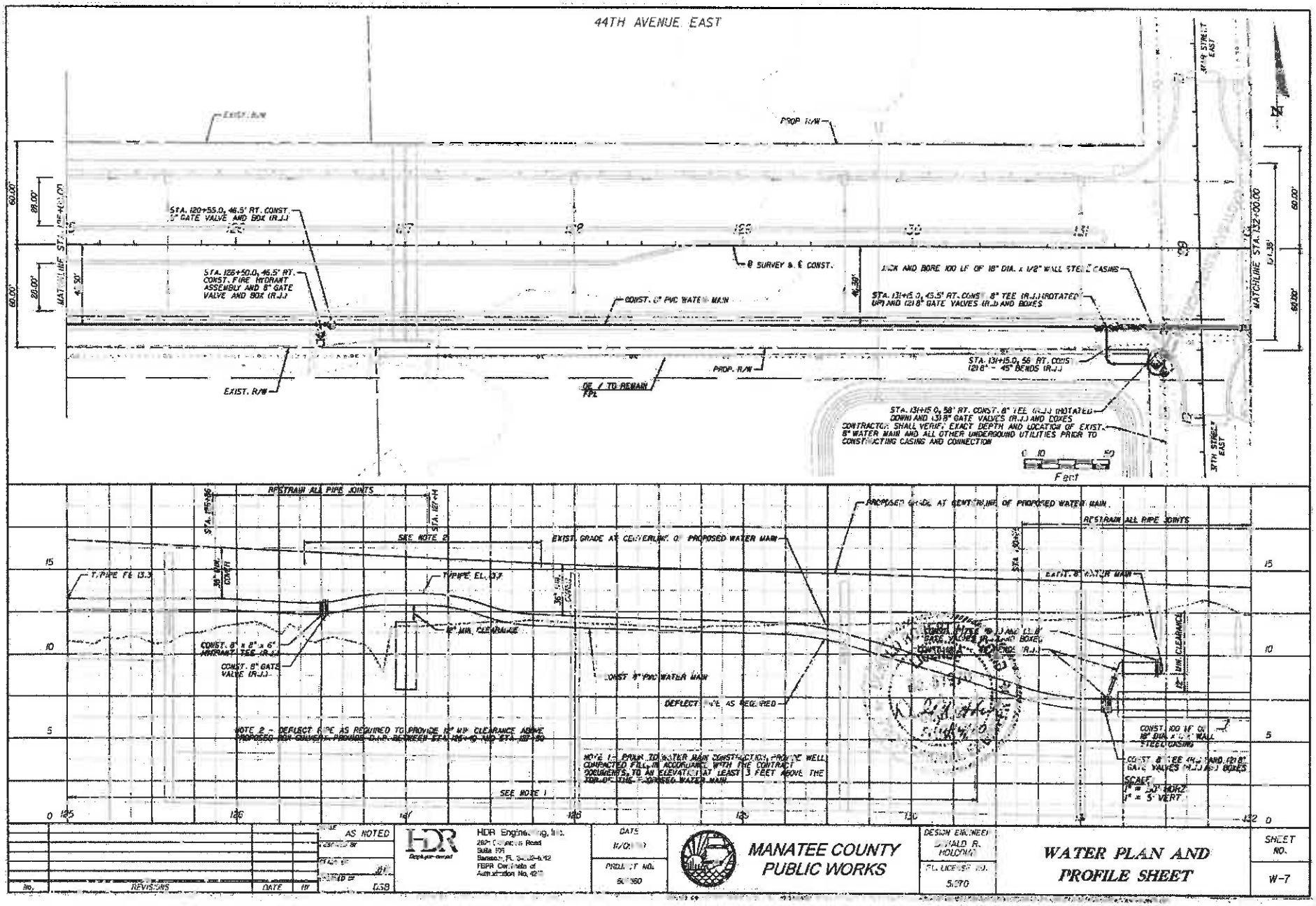


SCALE AS NOTED	HDR Engineering, Inc. 2321 Cattlemen Road Suite 105 Sarasota, FL 34232-6232 FL CA Certificate of Authorization No. 4213	DATE 11/09/10	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER DONALD R. HOLCOMB	WATER PLAN AND PROFILE SHEET	SHEET NO. W-5
DRAWN BY DSB		PROJECT # 607160		FL. LICENSE NO. 50770		
CHECKED BY						
No. REVISIONS DATE BY						





SCALE AS NOTED	HDR Engineering, Inc. 6311 Cattleman Road Suite 100 Sarasota, FL 34232-5.12 FBPR Certificate of Authorization No. 42	DATE 11/02/10	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER DONALD R. HOLCOMB	WATER PLAN AND PROFILE SHEET	SHEET NO. W-6
DESIGNED BY		PROJECT NO. 6...160		FL. LICENSE NO. ...970		
DRN BY						
CHK'D BY						
NO. DATE BY						



No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY
DRAWN BY
CHECKED BY GSB

HDR Employee-owned
HDR Engineering, Inc.
2601 Cattlemen Road
Suite 195
Sarasota, FL 34232-6312
FBPR Certificate of Authorization No. 4277

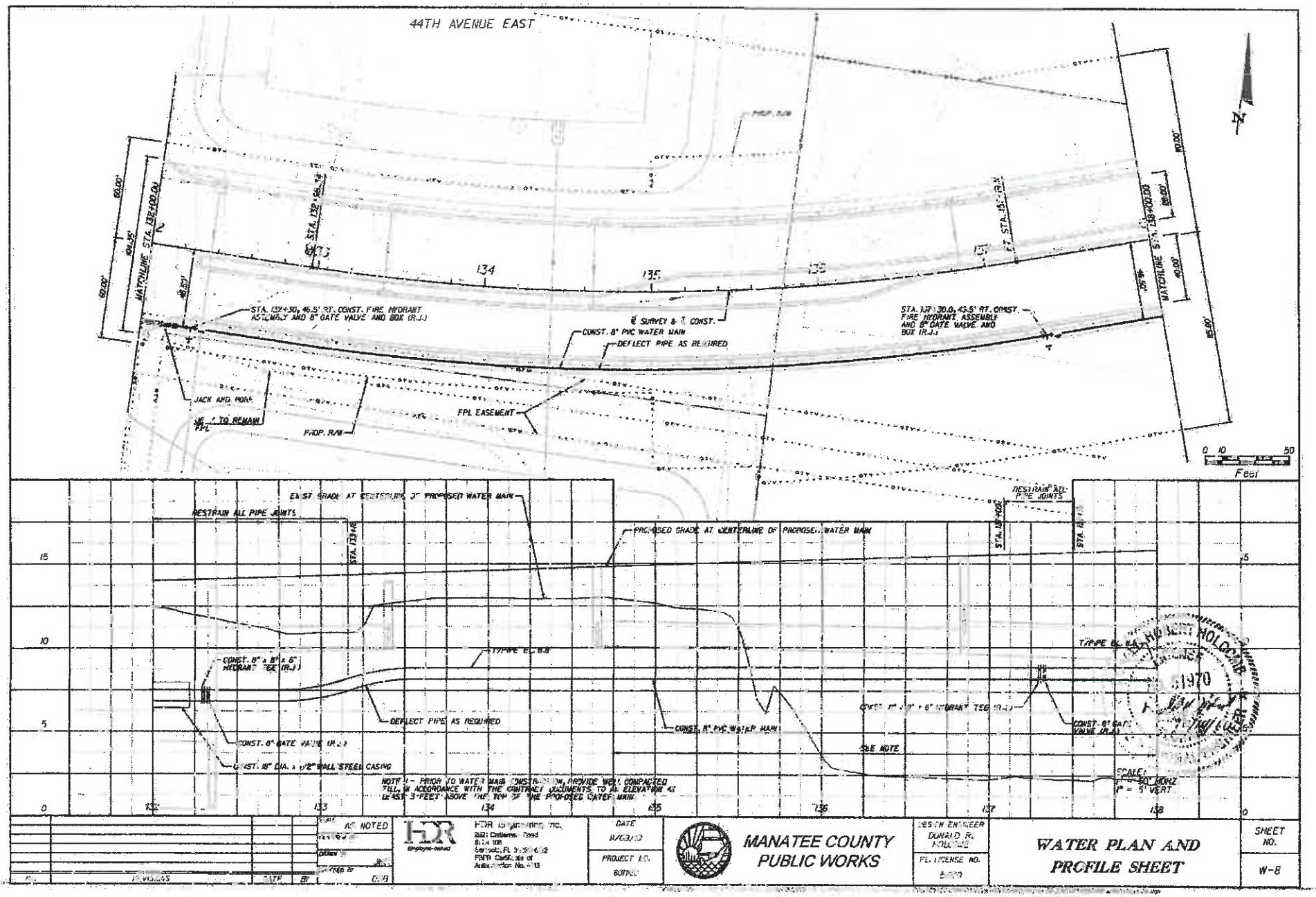
DATE 11/2011
PROJECT NO. 50160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER RONALD R. HOLDMAN
FL LICENSE NO. 51970

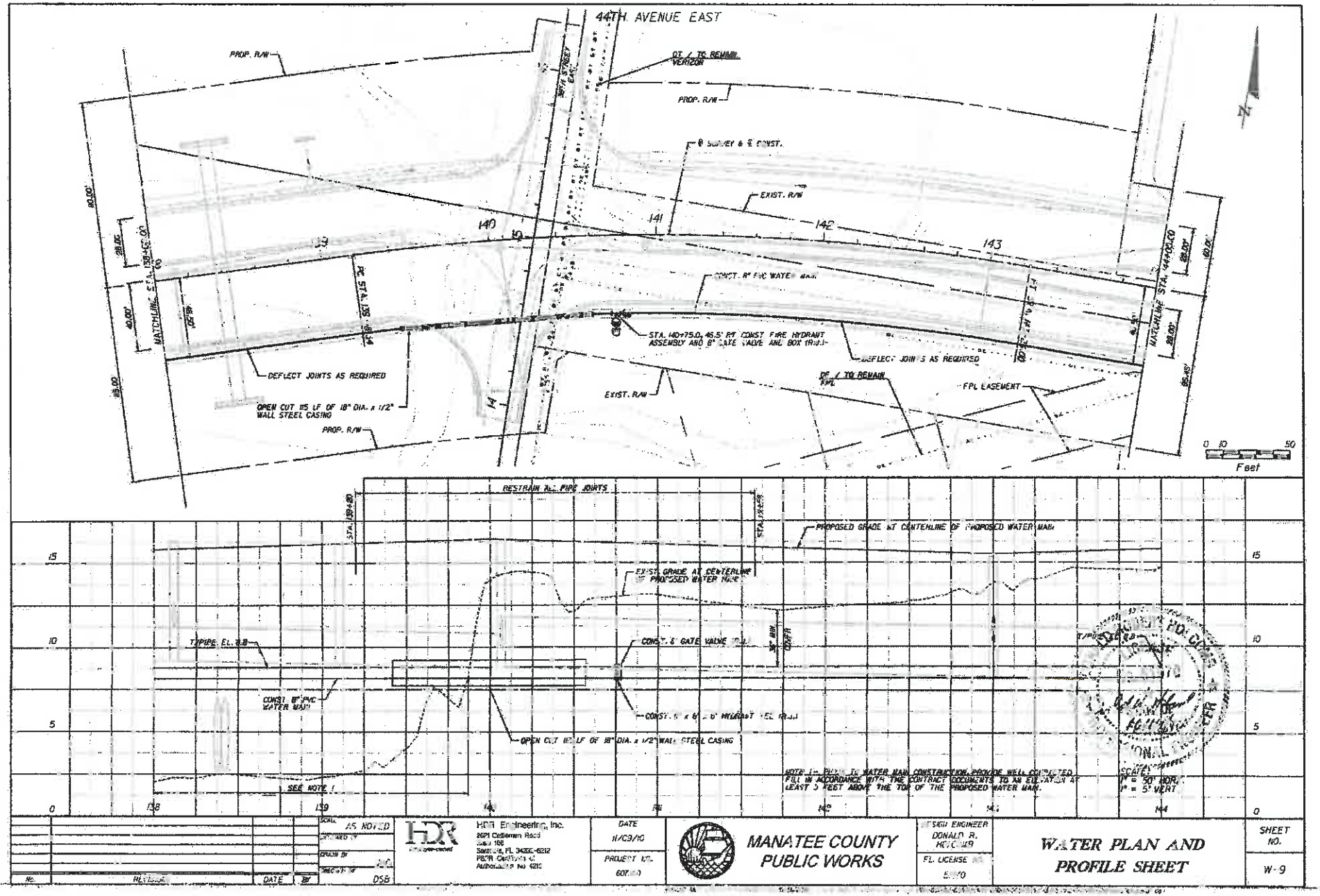
WATER PLAN AND PROFILE SHEET

SHEET NO. W-7



				AS NOTED	HDR Engineering, Inc. 3621 Cattlemen Road Suite 108 Sarasota, FL 34232 FBPE Certificate of Authorization No. 418	DATE 11/03/10	MANATEE COUNTY PUBLIC WORKS
						PROJECT NO. 80750	
NO.	REVISIONS	DATE	BY	CHK'D			

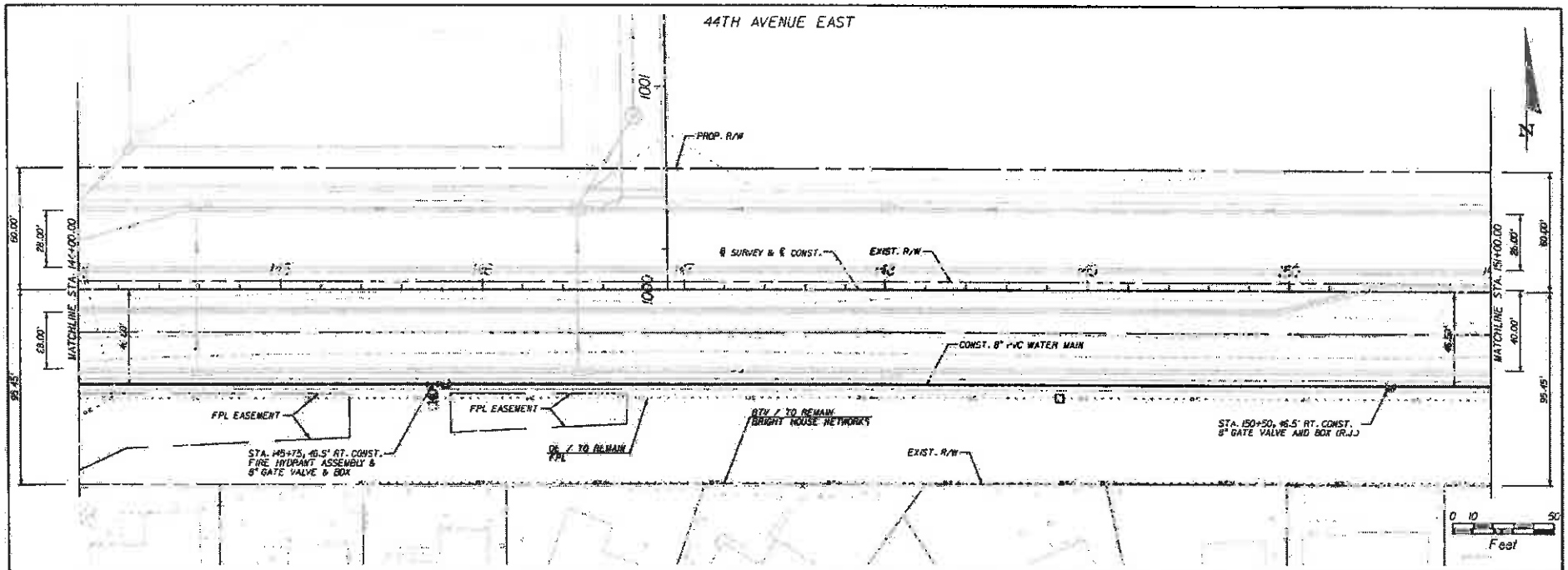
DESIGN ENGINEER DONALD R. HOLCOMB	WATER PLAN AND PROFILE SHEET	SHEET NO. W-8
FL. LICENSE NO. 51970		

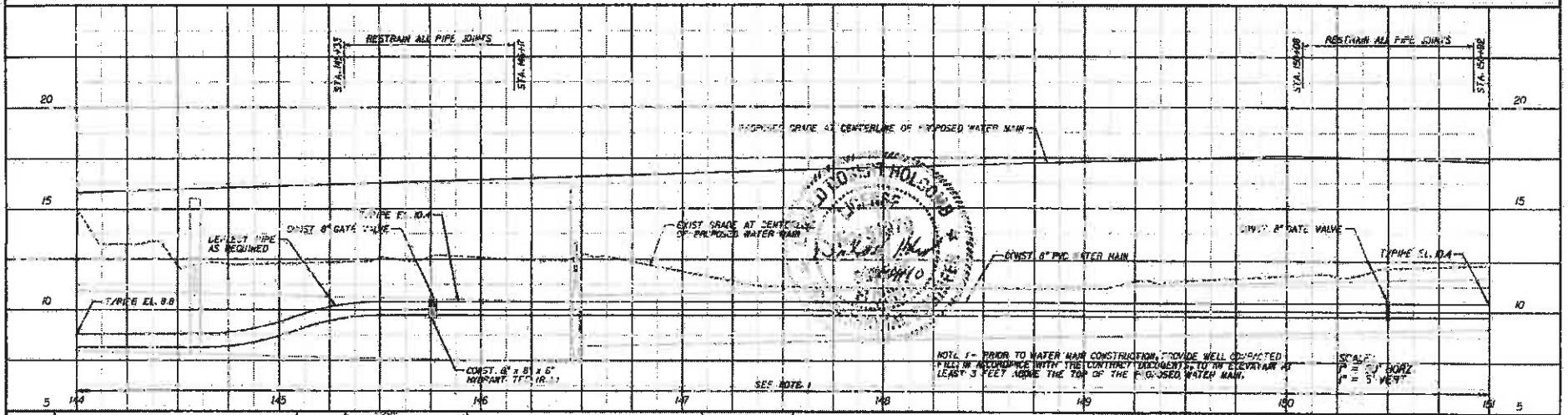


SCALE: AS NOTED	HDR Engineering, Inc.	DATE 11/09/10	MANATEE COUNTY PUBLIC WORKS
DESIGNED BY		PROJECT NO. 607.00	DESIGN ENGINEER DONALD R. HOLLAND
DRAWN BY DSB			FL. LICENSE 51710
CHECKED BY			

WATER PLAN AND PROFILE SHEET

SHEET NO. W-9

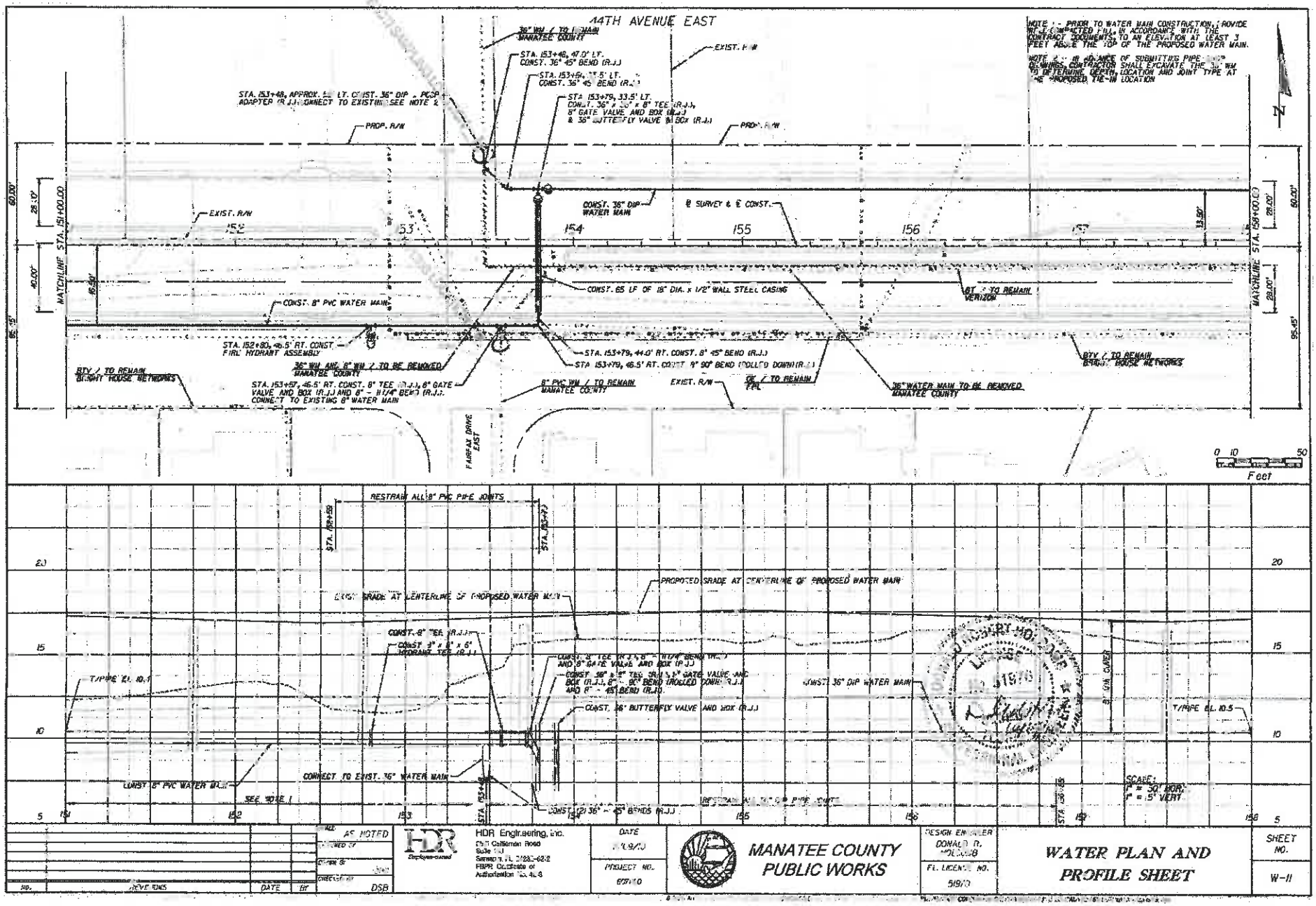




NOTE 1 - PRIOR TO WATER MAIN CONSTRUCTION, PROVIDE WELL COMPACTED FILL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, TO AN ELEVATION AT LEAST 3 FEET ABOVE THE TOP OF THE PROPOSED WATER MAIN.

SCALE: 1" = 5' HORZ
1" = 5' VERT

NO.	REVISION	DATE	BY	DESIGNED AS NOTED DRAWN BY CHECKED BY DSB	HDR Engineering Inc. 2601 Cattlemen Road Suite 300 Sarasota, FL 34232-6212 FBPR Certificate of Authorization No. 4213	L-TE 11/09/10 PROJECT NO. 0960	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER DONALD R. HOFCOMB FL LICENSE NO. (SEAL)	WATER PLAN AND PROFILE SHEET	SHEET NO. W-10



NO.	REVISIONS	DATE	BY

NOTED AS NOTED
DRAWN BY
CHECKED BY
DSB

HDR Engineering, Inc.
Chili Gallerman Road
Suite 100
Sarasota, FL 34240-6242
FBPR Certificate of Authorization No. 4148

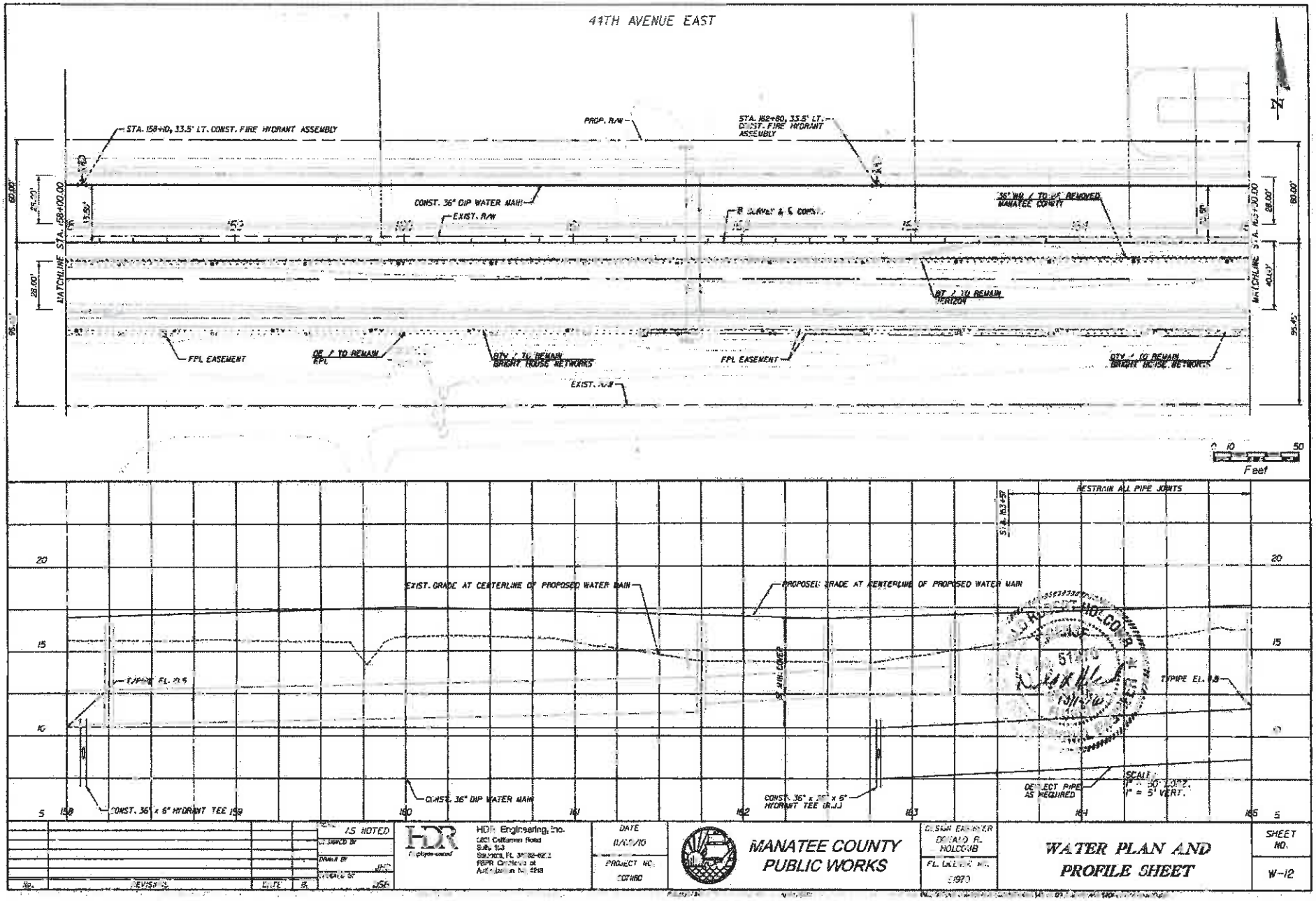
DATE 7/9/10
PROJECT NO. 607410

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER DONALD R. HOLCOMB
FL. LICENSE NO. 51910

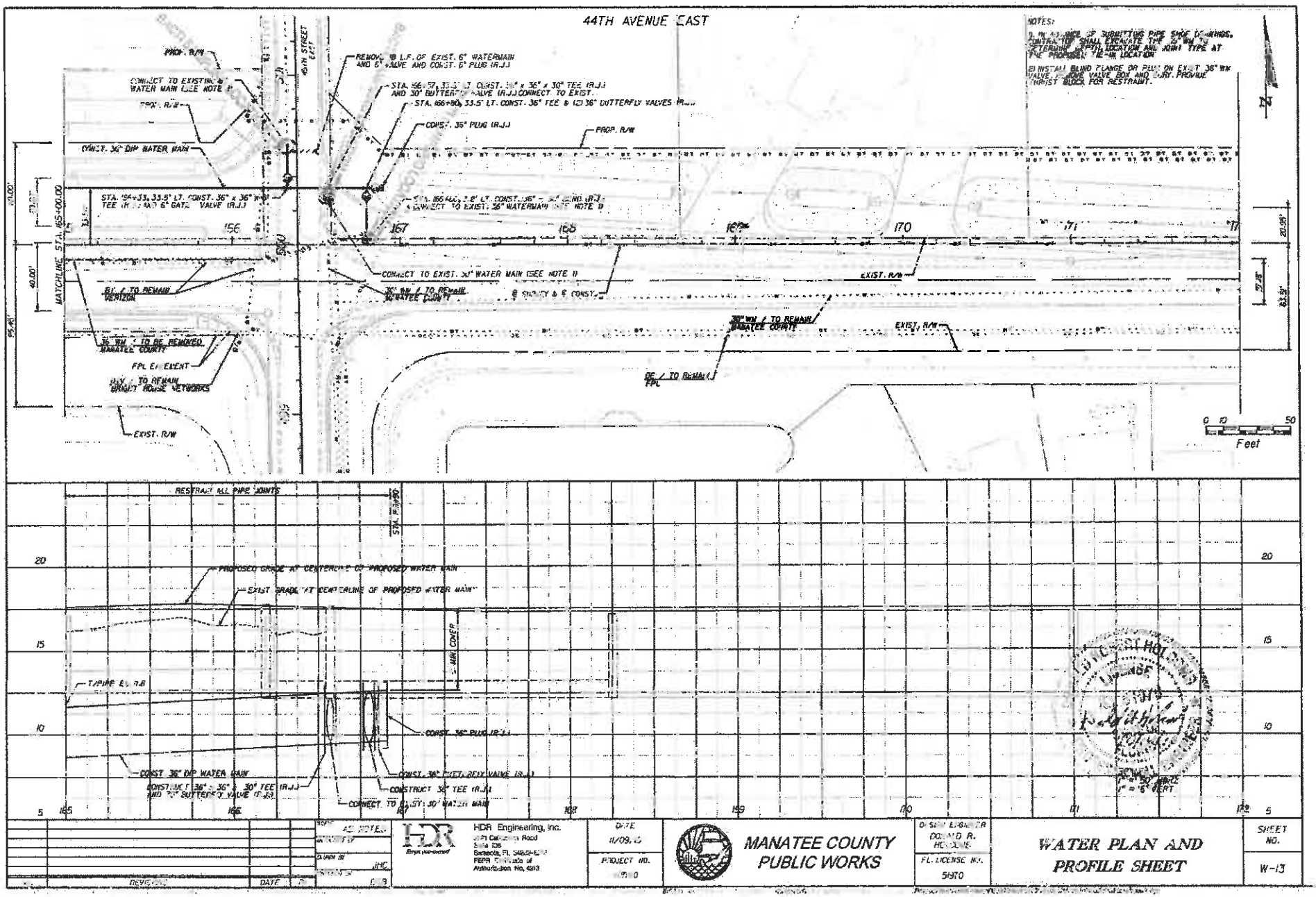
WATER PLAN AND PROFILE SHEET

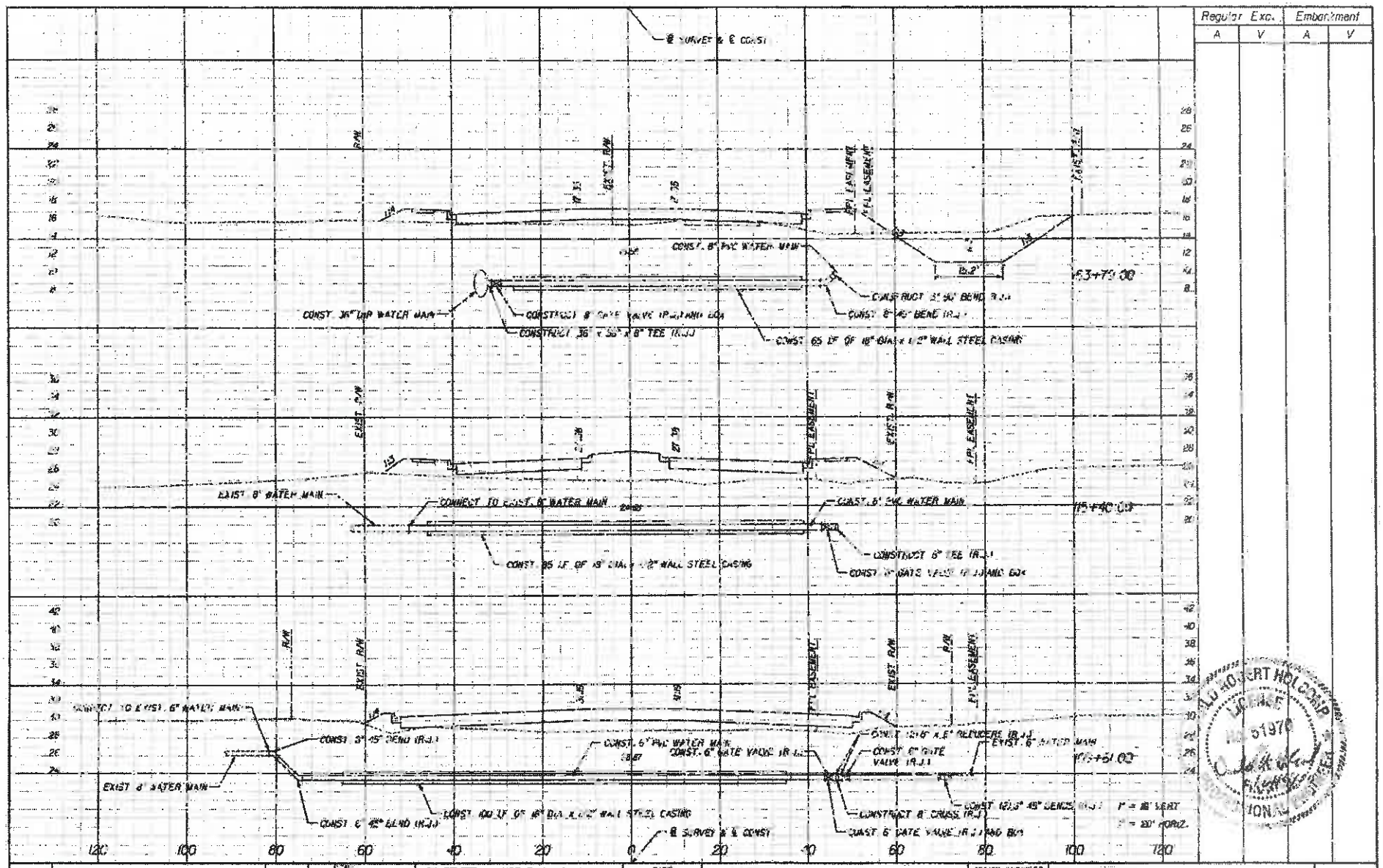
SHEET NO. W-11



No.	REVISIONS	DATE	BY	AS NOTED	HDR Engineering, Inc.	DATE 11/17/10	MANATEE COUNTY PUBLIC WORKS
				DESIGNED BY	4301 Cattlemen Road Suite 100 Sarasota, FL 34232-6212 FBPR Certificate of Authorization No. 6516	PROJECT NO. 20160	
				DRAWN BY HCD			
				CHECKED BY JSF			

DESIGN ENGINEER	WATER PLAN AND PROFILE SHEET	SHEET NO.
DONALD R. HOLCOMB FL. LICENSE NO. 51970		W-12


44TH AVENUE EAST
NOTES:
PROP. R/W
CONNECT TO EXISTING 6" WATER MAIN (SEE NOTE 1)
EXIST. 36" DIP WATER MAIN
MAIN STREET EAST
REMOVE 18 L.F. OF EXIST. 6" WATERMAIN AND 6" VALVE AND CONST. 6" PLUG (R.J.)
STA. 166+57, 33.5' LT. CONST. 36" x 36" x 30" TEE (R.J.) AND 30" BUTTERFLY VALVE (R.J.) CONNECT TO EXIST.
STA. 166+80, 33.5' LT. CONST. 36" TEE & (2) 36" BUTTERFLY VALVES (R.J.)
CONST. 36" PLUG (R.J.)
STA. 194+33, 33.5' LT. CONST. 36" x 36" x 6" TEE (R.J.) AND 6" GATE VALVE (R.J.)
STA. 166+42, 2.8' LT. CONST. 36" - 30" BEND (R.J.) & CONNECT TO EXIST. 36" WATERMAIN (SEE NOTE 1)
CONNECT TO EXIST. 30" WATER MAIN (SEE NOTE 1)
MATCHLINE STA. 165+00.00
156
167
168
169
170
171
EXIST. R/W
BT. / TO REMAIN VERIZON
30" WM / TO REMAIN MANATEE COUNTY
30" WM / TO BE REMOVED MANATEE COUNTY
FPL EASEMENT
O.H. / TO REMAIN BRIGHT HOUSE NETWORKS
OE / TO REMAIN FPL
0 10 50
Feet
RESTRAIN ALL PIPE JOINTS
STA. 165+00
PROPOSED GRADE AT CENTERLINE OF PROPOSED WATER MAIN
EXIST GRADE AT CENTERLINE OF PROPOSED WATER MAIN
MIN. COVER
T/PIPE EL. 7.6
CONST. 36" PLUG (R.J.)
CONST. 36" DIP WATER MAIN
CONST. 36" BUTT. RFLY VALVE (R.J.)
CONSTRUCT 36" x 36" x 30" TEE (R.J.) AND 30" BUTTERFLY VALVE (R.J.)
CONSTRUCT 36" TEE (R.J.)
CONNECT TO EXIST. 30" WATER MAIN
165
166
167
168
169
170
171
172
20
15
10
5
HORIZ. 1" = 30' VERT. 1" = 5'
AS NOTED
DRAWN BY JHC
CHECKED BY C.B.
DEVISED DATE
HDR Engineering, Inc.
4211 Cattlemen Road
Suite 136
Sarasota, FL 34233-5151
FBPE Certificate of Authorization No. 4913
DATE 11/09/10
PROJECT NO. 17110
MANATEE COUNTY PUBLIC WORKS
DESIGN ENGINEER DONALD R. HOLCOMBE
FL. LICENSE NO. 51970
WATER PLAN AND PROFILE SHEET
SHEET NO. W-13



AS NOTED

HDR Engineering, Inc.
Employee-owned
4350 Cypress Point Road
Suite 105
Sarasota, FL 34232-6212
FBPR Certificate of Authorization No. 4233

DATE
03/18/10

PROJECT NO.
607070

MANATEE COUNTY
PUBLIC WORKS

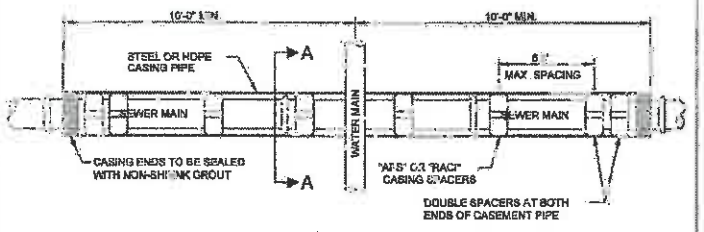
DESIGN ENGINEER
DONOVAN S. DRAMLETT

FL LICENSE NO.
57401

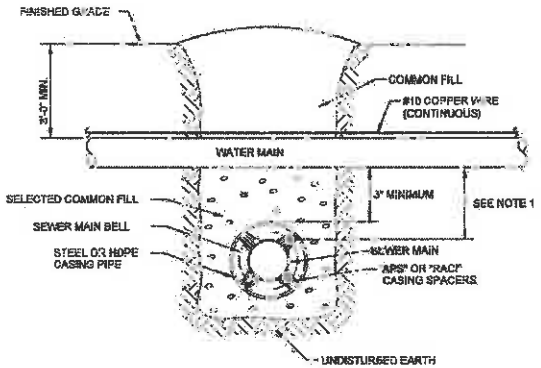
CROSS SECTIONS

SHEET NO.
W-14

No. REVISIONS DATE BY



PLAN VIEW

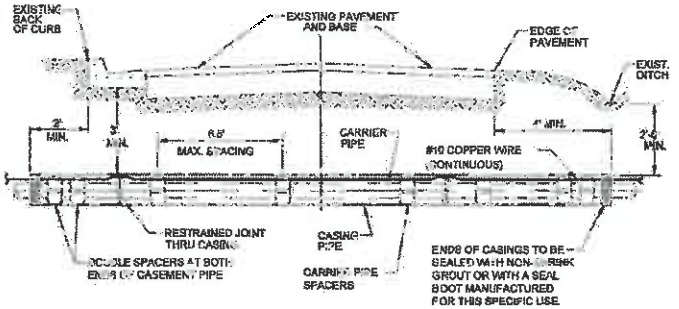


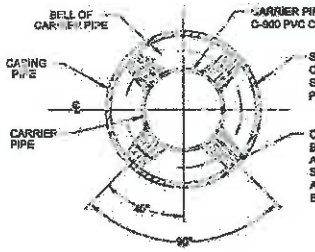
SECTION A-A

NOTE:

1. WHERE CLEARANCE IS LESS THAN 18", SEWER MAIN SHALL BE ENCASED AS DETAILED. FOR VERTICAL CLEARANCE OF 18" OR GREATER NO CASEMENT IS REQUIRED.
2. NEW WATER MAIN AND SEWER MAIN PIPE SECTIONS ARE TO BE CENTERED AT THE CROSSING POINT REGARDLESS OF THE VERTICAL CLEARANCE.
3. REFER TO STANDARD DETAIL UG-3 FOR ADDITIONAL CASING AND SPACER DETAILS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT	TYPICAL WATER & SEWER CROSSING	UG-2
REV.BY / DATE: CLARKE / DEC; JAMES / 03/09 — MARCH 17, 2009 DATE OF APPROVAL		





CARRIER PIPE TO BE DUCTILE IRON CLASS 350 OR AWWA C-900 PVC CLASS 235 (DR-18) AS REQUIRED.

STEEL CASING PIPE JOINTS SHALL BE MADE BY USING A FULL CIRCUMFERENCE COMPLETE PENETRATION GROOVE WELD. STEEL MATERIAL SHALL MEET OR EXCEED ASTM A139 GRADE B. PIPE SHALL BE STRAIGHT SEAM PIPE OR SEAMLESS PIPE.

CARRIER PIPE SPACERS: 304 STAINLESS STEEL BAND CASING INSULATORS AS MANUFACTURED BY ADVANCE PRODUCTS & SYSTEMS INC. AND PIPELINE SEAL & INSULATOR INC. OR PLASTIC (HDPE) SPACERS AS MANUFACTURED BY RACI OR APPROVED EQUAL BY MANATEE COUNTY.

CARRIER SIZE & MINIMUM CASING SIZE									
CARRIER	4"	6"	8"	10"	12"	14"	16"	18"	20"
CASING	12"	14"	16"	20"	24"	30"	30"	36"	36"
CASING WALL THICKNESS	.188	0.188	0.250	0.250	0.344	.438	.438	0.469	0.469

NOTE:

1. THE ENGINEER OF RECORD MAY SELECT LARGER CASING DIAMETERS.
2. FOR JACK & BORE SPECIFICATIONS UNDER STATE ROADS AND RAILROADS REFER TO THE F.D.O.T. UTILITY ACCOMMODATION MANUAL, LATEST EDITION.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT	JACK & BORE CROSSING	UG-3
REV.BY / DATE: CLARKE / 09/05; JAMES / 02/09 — MARCH 17, 2009 DATE OF APPROVAL		

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED JP
DRAWN JP
CHECKED TJC
APPROVED DSB

HDR Engineering, Inc.
5601 Cattleman Road
Suite 100
Sarasota, FL 34232-6212
TBPR Certificate of Authorization No. 4219

DATE 11/09/10
PROJECT NO. 60760

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER DONALD R. HOLCOMB
FL. LICENSE NO. 61370

WATER DETAILS

SHEET NO. W-15

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS			TEES		REDUCERS		PLUGS	VALVES
	90°	45°	22.5°	RUN	BRANCH	SIZE	LENGTH		
36	142	59	30					463	237
30	118	51	26					391	196
24	100	41	21					327	164
20	83	35	18					280	140
16	77	33	16					275	116
12	61	25	12					191	96
10	52	22	10					153	77
8	44	18	9					131	64
6	34	14	7					98	49
4	24	10	5					69	35

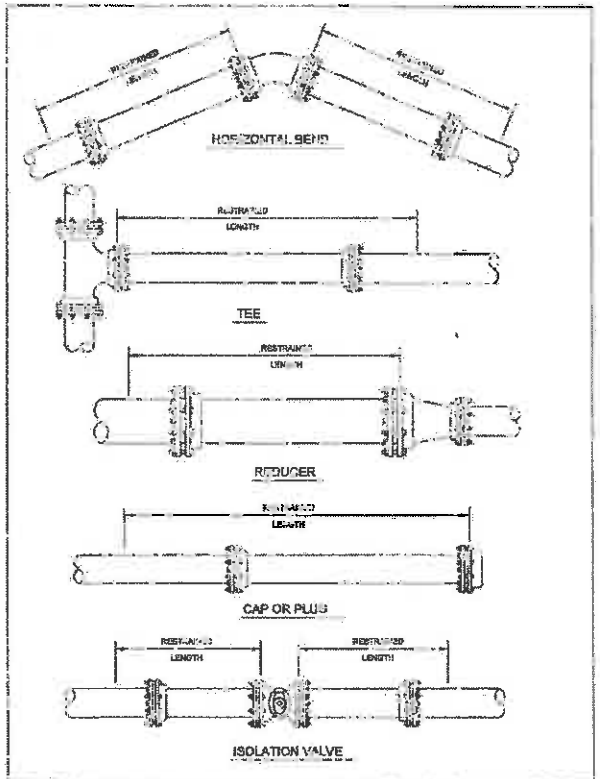
REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS			TEES		REDUCERS		PLUGS	VALVES
	90°	45°	22.5°	RUN	BRANCH	SIZE	LENGTH		
36	100	42	20					199	94
30	88	37	18					162	81
24	77	31	16					135	69
20	66	27	13					110	53
16	54	22	11					86	42
12	42	18	8					76	36
10	37	15	7					63	32
8	30	13	6					53	27
6	24	10	5					41	21
4	17	7	3					30	15

NOTE:

6 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR DIP	UG-9
REVISED	DATE		
PUBLIC WORKS	5/08		
MANAGER	10/08	MARCH 17, 2009	
		DATE OF APPROVAL	



MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR PIPE	UG-10
REVISED	DATE		
PUBLIC WORKS	5/08		
MANAGER	10/08	MARCH 17, 2009	
		DATE OF APPROVAL	

ROBERT HOLCOMB LICENSE NO. 51970 STATE OF FLORIDA PROFESSIONAL ENGINEER

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DRAWN BY:
CHECKED BY: DSC

HDR Engineering, Inc.
2271 Cattlemen Road
Suite 136
Sarasota, FL 34232-6312
FBPE Certificate of Authorization No. 4313

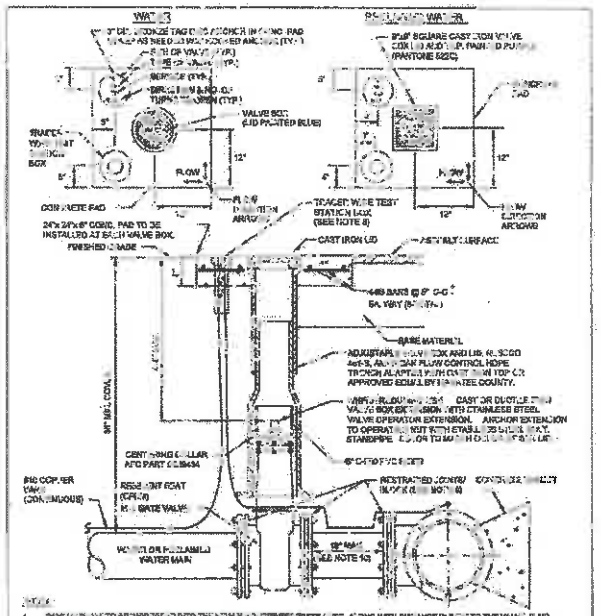
DATE: 1/09/10
PROJECT NO.: 67960

MANATEE COUNTY PUBLIC WORKS

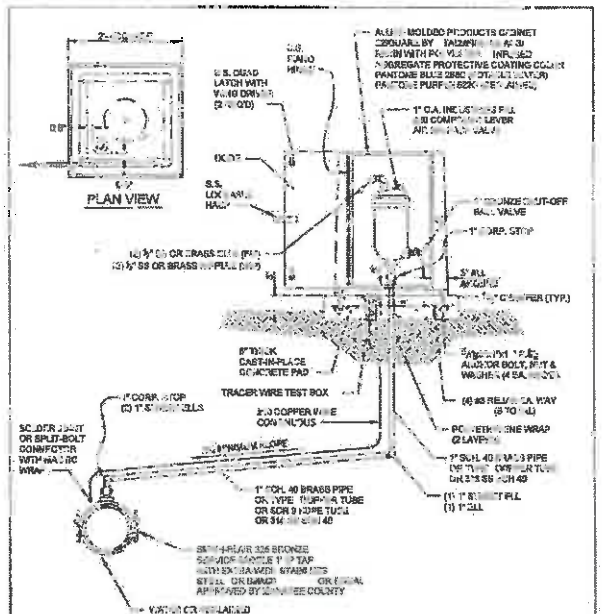
DESIGN ENGINEER: DONALD R. HOLCOMB
FL LICENSE NO. 51970

WATER DETAILS

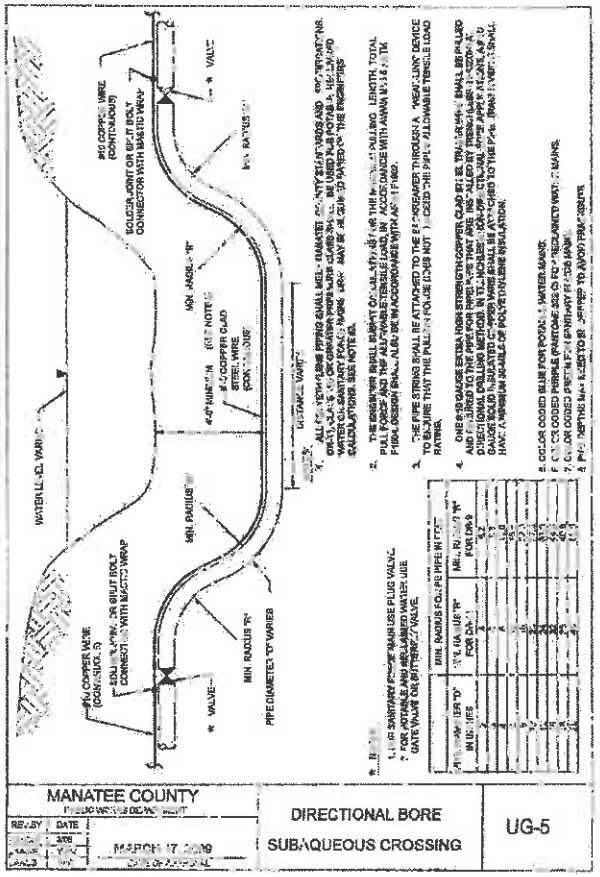
SHEET NO.: W-17



MANATEE COUNTY PUBLIC WORKS DEPARTMENT	GATE VALVE, BOX, LID AND TAG	UW-2
REVISED DATE	MARCH 17, 2009	



MANATEE COUNTY PUBLIC WORKS DEPARTMENT	ABOVE-GROUND AIR RELEASE VALVE ASSY. FOR 12-INCH AND SMALLER WATER MAINS	UW-9
REVISED DATE	MARCH 17, 2009	



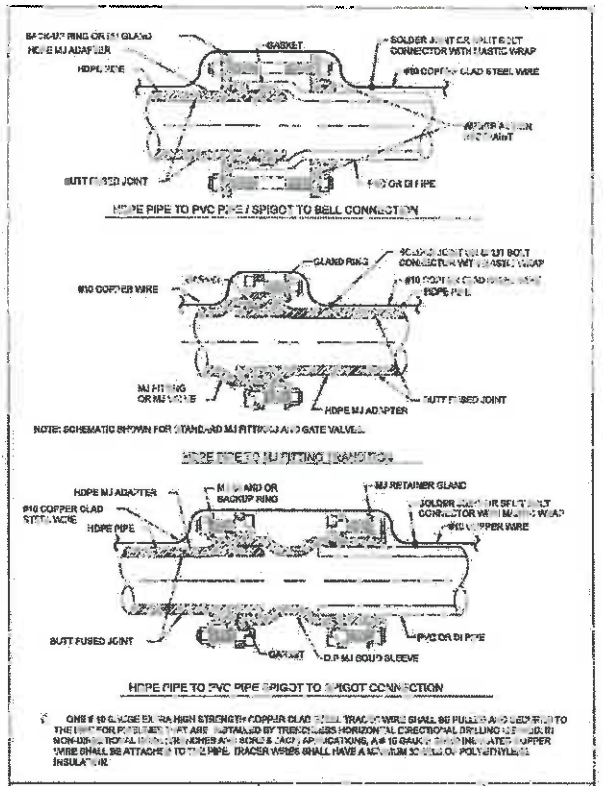
MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV. BY	DATE
[illegible]	3/08
[illegible]	[illegible]

MARCH 17, 2009
DATE OF APPROVAL

DIRECTIONAL BORE
SUBAQUEOUS CROSSING

UG-5



1. ONE # 10 GAUGE EXTRA HIGH STRENGTH COPPER CLAD STEEL TRACER WIRE SHALL BE PULLED AND LOCATED TO THE LIMIT FOR PULLED MAT ARE INSTALLED BY TRENCHLESS HORIZONTAL DIRECTIONAL DRILLING OR SIMILAR NON-DISRUPTIVE TRENCHLESS METHODS. IN TYPICAL APPLICATIONS, A # 10 GAUGE INSULATED COPPER WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRES SHALL HAVE A MINIMUM 30 MILS OF POLYETHYLENE INSULATION.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV. BY	DATE
[illegible]	3/08
[illegible]	[illegible]

MARCH 17, 2009
DATE OF APPROVAL

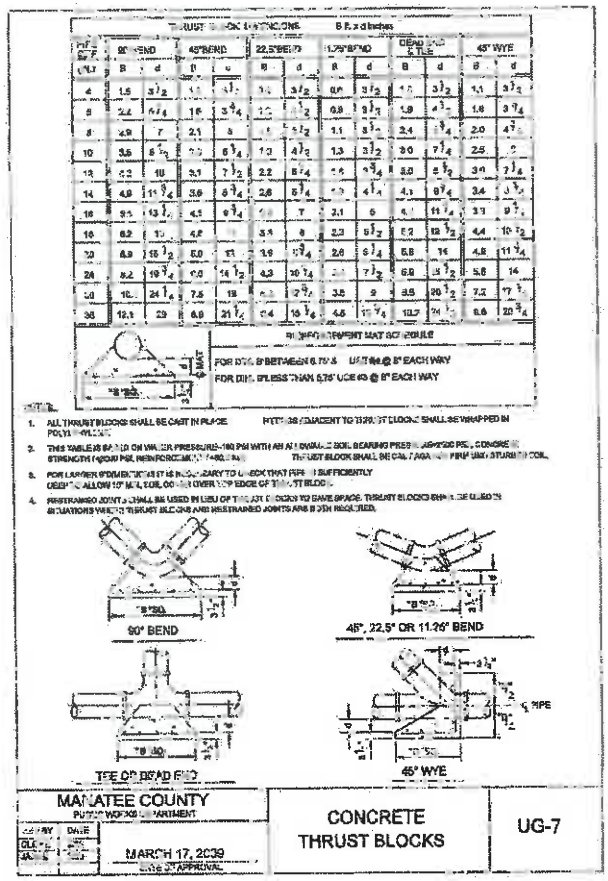
HDPE TO PVC OR
DI PIPE ADAPTER

UG-6

DONALD ROBERT HOLCOMB
LICENSE
NO. 51878
STATE OF FLORIDA
PROFESSIONAL ENGINEER

				SCALE: AS NOTED	HDR Engineering, Inc.	DATE: 11/09/10	MANATEE COUNTY PUBLIC WORKS
				DESIGNED BY:		PROJECT NO.	
				DRAWN BY:			
NO.	REVISIONS	DATE	BY	CHECKED BY: DSB			

DESIGN ENGINEER	WATER DETAILS	SHEET NO.
DONALD R. HOLCOMB		W-21
FL LICENSE NO. 51878		



PIPE SIZE	90° BEND		45° BEND		22.5° BEND		11.25° BEND		DEAD END & TEE		45° WYE	
(IN.)	B	d	B	d	B	d	B	d	B	d	B	d
4	1.5	3 1/2	1.1	3 1/2	0.6	3 1/2	0.4	3 1/2	1.1	3 1/2	1.1	3 1/2
6	2.4	4 1/4	1.8	3 3/4	1.0	3 1/2	0.8	3 1/2	1.9	4 1/2	1.8	3 3/4
8	4.9	7	2.1	5	1.1	4 1/2	1.1	3 1/2	3.4	7 1/4	2.0	4 1/2
10	3.6	8 1/2	2.6	6 1/4	1.3	4 1/2	1.3	3 1/2	3.0	7 1/4	2.5	5
12	5.2	10	3.1	7 1/2	2.2	5 1/4	1.6	4	5.0	8 1/2	3.0	7 1/4
14	4.8	11 3/4	3.6	8 3/4	2.6	6 1/4	1.9	4 1/4	4.1	9 1/4	3.4	8 1/2
16	6.1	13 1/2	4.1	9 3/4	3.0	7	2.1	5	5.3	11 1/4	3.9	9 1/2
18	6.2	15	4.6	11	3.4	8	2.3	5 1/2	6.2	12 1/2	4.4	10 1/2
20	6.9	16 1/2	5.0	12	3.8	8 3/4	2.6	6 1/4	6.8	14	4.8	11 1/4
24	8.2	19 3/4	6.0	14 1/2	4.3	10 1/4	3.0	7 1/2	8.9	18 1/2	5.8	14
30	10.1	24 1/4	7.5	18	5.3	12 3/4	3.8	9	9.8	20 1/2	7.2	17 1/2
36	12.1	29	8.9	21 1/2	6.4	15 1/4	4.5	10 3/4	10.7	24 1/2	8.6	20 3/4

RIGID PAVEMENT MAT SCHEDULE

FOR D/DI BETWEEN 0.75 & [illegible] @ 6" EACH WAY

FOR D/DI LESS THAN 0.75 USE #3 @ 6" EACH WAY

NOTES:

1. ALL THRUST BLOCKS SHALL BE CAST IN PLACE. PIPE IN CONTACT TO THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE.
2. THIS TABLE IS BASED ON WATER PRESSURES UP TO 150 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF, CONCRETE STRENGTH (4000 PSI, NON-REINFORCED) AND [illegible]. THRUST BLOCK SHALL BE CAST AGAINST UNDISTURBED SOIL.
3. FOR LARGER STORM SEWER PIPE IT MAY BE NECESSARY TO CONSTRUCT THRUST BLOCK THAT EXTENDS SUFFICIENTLY DEEP TO ALLOW TOP OF CONCRETE TO BE OVER TOP EDGE OF THE THRUST BLOCK.
4. RESTRAINED JOINT SHALL BE USED IN LIEU OF THRUST BLOCKS TO SAVE SPACE. THRUST BLOCKS SHALL BE USED IN SITUATIONS WHERE THRUST BLOCKS AND RESTRAINED JOINTS ARE BOTH REQUIRED.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		CONCRETE THRUST BLOCKS	UG-7
APPROVED BY / DATE	MARCH 17, 2009 DATE OF APPROVAL		

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)

MAIN PIPE DIAM.	HORIZ. BEND			PIPE		RESTRAINTS		PLUGS	VALVES
	90°	45°	22.5°	SIZE	LENGTH	SIZE	LENGTH		
36	114	60	29					133	227
30	124	51	25					394	195
24	103	44	21					257	104
20	92	38	18					200	143
16	71	32	14					231	115
12	61	25	12					161	91
10	52	22	10					153	77
8	44	18	8					126	64
6	34	14	7					73	49
4	24	10	5					66	32

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

MAIN PIPE SIZE	HORIZ. BEND			PIPE		RESTRAINTS		PLUGS	VALVES
	90°	45°	22.5°	SIZE	LENGTH	SIZE	LENGTH		
36	100	42	19					166	84
30	88	37	16					162	81
24	72	31	15					137	68
20	65	27	13					116	59
16	54	22	11					96	48
12	44	18	9					76	38
10	37	15	7					65	32
8	29	12	6					53	27
6	24	10	5					41	21
4	17	7	3					33	16

NOTE:

SEE MANUFACTURER'S INSTRUCTIONS FOR PVC PIPE DETAILS. FOR NOTES 1 THROUGH 3 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS OF DIP.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR DIP	UG-9
APPROVED BY / DATE	MARCH 17, 2009 DATE OF APPROVAL		

DONALD ROBERT HOLCOMB
LICENSE
No. 51970
STATE OF FLORIDA
PROFESSIONAL ENGINEER

			SCALE: AS NOTED	HDR Engineering, Inc.	DATE: 6/09/10	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER: DONALD R. HOLCOMB	WATER DETAILS
			DRAWN BY:				P.E. LICENSE NO.	SHEET NO.
REVISION	DATE	BY	CHECKED BY: DSB		PROJECT NO. 6V860		51970	W-22

TIERRA

May 29, 2012

HDR Engineering, Inc.
2621 Cattlemen Road, Suite 106
Sarasota, FL 34232

Attn: Mr. Donald R. Holcomb, P.E.
Vice President

RE: Pond and Floodplain Mitigation Site Soil Survey Report
44th Avenue East from 30th Street East to 45th Street East
Manatee County, Florida
County Project No. 6071160
Tierra Project Number: 6511-09-089

Mr. Holcomb,

Tierra, Inc. has completed a Pond & Floodplain Mitigation Site (FMS) Soil Survey Report for the above referenced project. This report is provided as part of the documents needed for the Final Plans Submittal. The Geotechnical services were performed in general accordance with Manatee County and Florida Department of Transportation (FDOT) Guidelines. The results of our field exploration program, laboratory testing and subsequent geotechnical recommendations are presented in this report.

Tierra, Inc. appreciates the opportunity to be of service to HDR Engineering, Inc. (HDR) on this project. If you have any questions or comments regarding this report, please contact our office at your earliest convenience.

Sincerely,

TIERRA, INC.

Joseph R. Antinori, P.E.
Geotechnical Engineer
Florida License No. 73176

Erick M. Frederick, P.E.
Senior Geotechnical Engineer
Florida License No. 63920

Larry P. Moore, P.E.
Principal Geotechnical Engineer
Florida License No. 47673

Geo Tech Pond & FM 5-29-12
Report Floodplain 6/95

7351 Temple Terrace Highway • Tampa, Florida 33637
(813) 989-1354 • Fax (813) 989-1355
Florida Certificate No. 6486

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Pond Soil Survey ..... A-3 and A-4

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Summary of Seasonal High Groundwater Table Estimates B-2

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Summary of Laboratory Test Results C-1
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1.0 PROJECT INFORMATION

1.1 Project Authorization

Authorization to proceed with this project was issued by HDR in accordance with a Subconsultant Agreement.

1.2 Project Description

The project consists of the design of 44th Avenue East from 30th Street East to 45th Street East in Manatee County, Florida. Based on the Typical Section provided by HDR, the new roadway extension will consist of a four lane divided roadway with 12-foot wide travel lanes, 22 foot median, 4-foot wide bicycle lanes and 5-foot wide sidewalks in both directions. A causeway system in conjunction with bridge culverts will traverse Sellers Pit located between 37th Street East and 39th Street East.

It is our understanding that three pond areas (Detention Pond West-3L, Detention Pond West-3R and Detention Pond East-2) are being designed as part of the project. Detention Pond West-3L will be located northeast of the 37th Street East and 44th Avenue East intersection. Detention Pond West-3R will be located southeast of the 37th Street East and 44th Avenue East intersection. Detention Pond East-2 will be located north of 44th Avenue East and east of 39th Street East. In addition to the ponds, the design includes two Floodplain Mitigation Sites (FMS West-2 and FMS East-2). FMS West-2 will be located west of the 37th Street East and south of 44th Avenue East. FMS East-2 will be located west of 39th Street East and south of 38th Avenue. We anticipate that the proposed pond areas will be designed as "wet" detention areas.

This report concentrates on the pond and FMS sites. The purpose of this study is to provide geotechnical (i.e. soils and groundwater) input to the design team to assist in the design of the pond and FMS sites associated with the project.

1.3 General Site Conditions

The proposed project alignment traverses mostly undeveloped and rural land bordered to the north and south by residential developments. Three existing ponds were observed to be located within the path of the proposed alignment. The majority of the alignment west of 37th Street East is a Manatee County easement with power lines. The majority of the alignment east of 39th Street East consists of partially paved roadway and residential land. The alignment between 37th Street East and 39th Street East is mostly occupied by an existing pond (Seller's Pit"). The proposed roadway alignment also traverses low lying wetland areas and swales that are frequently ponded during the rainy season.

2.0 PURPOSE AND SCOPE OF SERVICES

The geotechnical study was performed to obtain information relating to the existing subsurface conditions within the footprint of the proposed ponds and FMS sites associated with the project. The following services were provided:

1. Reviewed soil information obtained from the "Soil Survey of Manatee County, Florida" published by the United States Department of Agriculture (USDA) National Resources Conservation Service (NRCS). Reviewed topographic and potentiometric information obtained from the Bradenton, Florida Quadrangle Map and Potentoimetric Surface of the Upper Floridan Aquifer, West Central Florida Map published by the United States Geological Survey (USGS), respectively.

2. Conducted a visual reconnaissance of the project site, located/staked proposed borings and coordinated utility clearance.

3. Contacted property owners prior to mobilization and scheduled access to gated properties.

4. Performed a geotechnical field study for the proposed pond and FMS sites consisting of borings and subsurface sampling. Fourteen (14) auger borings and ten (10) Standard Penetration Test (SPT) borings were utilized to obtain information of the subsurface conditions within the footprint of the proposed ponds and FMS sites.

5. Visually examined the recovered soil samples in the laboratory. Performed laboratory tests on representative samples to develop the soil legend for the project using the American Association of State Highway and Transportation Officials (AASHTO) Soil Classification System.

6. Completed laboratory testing for purposes of soil and environmental classification.

7. Prepared **Pond Soil Survey** sheets which include boring location plans and soil profiles.

8. Prepared this Pond and FMS Soil Survey Report to support the final plans submittal.

3.0 REVIEW OF AVAILABLE DATA

3.1 Regional Geology

According to the USDA Soil Conservation Service (SCS) "Soil Survey of Manatee County, Florida", there are three (3) geologic formations at or near the surface in Manatee County: The Hawthorn Formation, the Bone Valley Formation, and Caloosahatchee Marl. The Hawthorn Formation consists chiefly of gray phosphatic sand and lenses of green or gray fuller's earth. Known exposures of this formation are confined to the western part of the county. Farther to the east the Hawthorn Formation is overlain by the Bone Valley Formation and by late Pleistocene sand. The fuller's earth varies in thickness from 7 feet to a thin film; in some places it does not occur. It is underlain by a compact, marly, fossiliferous limestone and overlain unconformably by a thin bed of Pleistocene terrace deposits.

The natural deposits of the Bone Valley Formation are rare; therefore, descriptions of it are based almost entirely on examinations of phosphate mines. The Bone Valley Formation has been described as "gray, brown, or mottled sand and phosphate conglomerate in a sand matrix. The brown sands are locally cemented into hard ferruginous sandstone, and slight induration is common".

The Caloosahatchee Marl consists mostly of sand and shells. In many places shells make up a large part of the deposits; in other areas they make up little or none. In fresh unweathered exposures of Caloosahatchee Marl, the shells are commonly white or light gray. After exposures are subjected to the oxidizing effects of weathering, however, their color changes to cream or yellow. Only a few feet of this formation is exposed anywhere, because it occurs in a general level region. In Manatee County this marl is in an area bordering the Gulf of Mexico.

Most of the soils in Florida have developed from a mantle of non-calcareous sands and clays overlying deposits of limestone. This mantle of sand and clay varies greatly in thickness in Manatee County. In the northeastern and central parts of the county it is comparatively thick, whereas in the southeastern and central parts it is so thin that the underlying limestone influences the characteristics of the soil. The Bradenton, Parkwood Variant, Manatee, and Felda soils were derived from or influenced by the underlying marl.

3.2 Review of USDA Soil Survey

The source of soils data provided in this section was obtained from the "Soil Survey of Manatee County Florida", Web Soil Survey available online at: http://websoilsurvey.nrcs.usda.gov/accessed [11/3/2009]. Based on a review of the Manatee County Soil Survey, it appears that there are five (5) soil-mapping units noted within the vicinity of the proposed pond and FMS sites. A USDA Soil Survey Map of the project area is provided in **Appendix A**. A Summary of USDA Soil Survey data for the specific soils in the vicinity of the proposed pond and FMS sites is provided in **Appendix B**. The general soil descriptions as described in the Soil Survey are presented in the following sub-sections.

Bradenton Fine Sand, Limestone Substratum (Map Unit 5)

This component has slopes of 0 to 2 percent and is on rises on marine terraces on coastal plains. The natural drainage class is poorly drained. Depth to a root restrictive layer, bedrock, is about 40 to 80 inches. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October, November and December. Organic matter content in the surface horizon is about 5 percent.

Canova, Anclote, and Okeelanta soils (Map Unit 7)

The *Canova* component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August,

September, October, November and December. Organic matter content in the surface horizon is about 55 percent. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 5 percent.

The *Anclote* component makes up 25 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 3 inches during June, July, August, September, October, November and December. Organic matter content in the surface horizon is about 6 percent.

The *Okeelanta* component makes up 20 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, June, July, August, September, October, November and December. Organic matter content in the surface horizon is about 80 percent.

Chobee Loamy Fine Sand (Map Unit 13)

This component has slopes of 0 to 2 percent and is on depressions on marine terraces on coastal plains. The natural drainage class is very poorly drained. The depth to a root restrictive layer is greater than 60 inches. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 3 inches during January, February, June, July, August, September, October, November and December. Organic matter content in the surface horizon is about 4 percent.

EauGallie Fine Sand (Map Unit 20)

This component has slopes of 0 to 2 percent and is on flats on marine terraces on coastal plains. The depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 to 12 inches during June, July, August, September, and October. Organic matter content in the surface horizon is about 5 percent.

Wabasso Fine Sand (Map Unit 48)

This component has slopes of 0 to 2 percent and is on drainageways on marine terraces on coastal plains. The depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 to 12 inches during June, July, August, September, October and November. Organic matter content in the surface horizon is about 2 percent.

3.3 Review of USGS Quadrangle Map

Based on a review of the USGS Quadrangle Map for Bradenton, Florida and ground surface elevations obtained from the project surveyors, it appears that the elevations in the vicinity of the pond and FMS sites range from approximately +10 to +15 feet National Geodetic Vertical Datum of 1929 (NGVD 29). A USGS Vicinity Map of the project location is provided in **Appendix A.**

3.4 Review of Potentiometric Surface Map

Based on a review of the "Potentiometric Surface of the Upper Floridan Aquifer, West Central Florida" map published by the USGS, the potentiometric surface elevation of the Upper Floridan Aquifer could potentially range from about +10 to +20 feet, NGVD 29. The borings performed did not encounter an artesian flow condition. The Contractor's tools and construction methods should be prepared to handle a potentiometric surface condition of up to +20 feet, NGVD 29 at no additional cost to the County.

4.0 SUBSURFACE EXPLORATION

4.1 General

Prior to commencing our subsurface explorations, boring location plans for the proposed pond and FMS sites were produced. These boring location plans were generated based on a review of the pond and FMS MicroStation files, supplied by HDR and general guidance provided in the FDOT "Soils and Foundations Handbook," along with our engineering judgment. Tierra personnel staked and performed the borings in the field. Generally, the borings were performed at the proposed boring locations. When not possible, due to access, existing structures or utility constraints, the boring locations were altered and the offsets were recorded on the field boring logs using handheld Global Positioning System (GPS) equipment and/or measuring distances from existing site features.

Utility clearances were coordinated by Tierra and updated as required prior to performing the soil borings in order to reduce the potential for damage to the underground utilities during the boring process.

4.2 Pond Borings

A total of fourteen (14) hand auger borings were advanced to approximate depths ranging from 3 to 5½ feet below the existing ground surface within the footprint of the FMS and/or Pond sites. The auger borings were performed by manually twisting a bucket auger into the ground typically in 6 inch increments.

In addition to the hand auger borings, ten (10) SPT borings were performed within the footprint of the proposed FMS and/or ponds to depths ranging from 15 to 20 feet below the ground surface. The SPT borings were performed with the use of a track and truck mounted drill rigs equipped with automatic hammers using Bentonite Mud drilling procedures. The soil sampling was performed in general accordance with the American Society for Testing and Materials (ASTM) Test Designation D-1586 titled Penetration Test and Split-Barrel Sampling of Soils.

Typically, SPT resistance N-values were taken continuously in the initial 10 feet and at intervals of 5 feet thereafter. At SPT boring location PB-1, the initial 2 feet of the SPT boring was manually excavated with a hand auger to verify clearance of privately owned subsurface utilities. As each soil type was encountered, samples were collected and visually classified in the field. Soil profiles of the borings performed are provided in **Appendix A**.

The borings were located using plans and MicroStation files provided by HDR, as well as hand held GPS equipment and/or measuring distances from existing site features. The locations and elevations of the borings performed within the ponds and FMS sites were surveyed by the project surveyor. The boring locations, station, offset and elevation of each boring is shown on the **Pond Soil Survey** sheets in **Appendix A**.

5.0 LABORATORY TESTING

5.1 General

Representative soil samples collected from the borings were classified and stratified in general accordance with the AASHTO Soil Classification System. Our classification was based on visual observations, using the results from the laboratory testing as confirmation. These tests included Grain-size Analyses, Atterberg Limits, Organic Content and Natural Moisture Content determination. Corrosion tests which measure parameters such as pH, resistivity, sulfate content and chloride content were assigned on selected soil samples to provide a basis for environmental classification.

5.2 Test Designation

The following list summarizes the laboratory tests performed and respective test methods.

- Grain-Size Analyses The grain-size analyses were conducted in general accordance with the AASHTO test designation T-088 (ASTM test designation D-422).

- Atterberg Limits - The liquid limit and the plastic limit tests ("Atterberg Limits") were conducted in general accordance with the AASHTO test designations T-089 and T-090, respectively (ASTM test designation D-4318).

- Organic Content - The organic content tests were conducted in general accordance with the AASHTO test designation T-267 (ASTM test designation D-2974).

- Environmental Corrosion - Environmental corrosion tests were conducted in general accordance with the FDOT test designations FM 5-550, FM 5-551, FM 5-552 and FM 5-553.

A summary of the laboratory test results for each soil stratum is presented on the **Roadway Soils Survey** sheet in **Appendix A**. The **Roadway Soils Survey** sheet includes ranges of laboratory test results obtained from different stratum soil samples collected from borings performed for the roadway, ponds and FMS sites. A detailed summary of the laboratory tests with the corresponding results is also presented in **Appendix C**.

6.0 RESULTS OF SUBSURFACE EXPLORATION

6.1 General Soil Conditions

Near surface silty to clayey sand and sandy silt to silty clay were encountered at some of the boring locations. In addition, some of the auger borings were terminated at a depth of less than 5 feet due to silty sand or silty clay with limestone fragments and/or shell.

The location and depth at which these soil conditions were encountered can be seen on the **Pond Soil Survey** sheets in **Appendix A.**

The legend provided below includes soil strata encountered within soil borings completed for both the roadway alignment and ponds associated with the extension of 44th Avenue East. Although Stratum 5 was not encountered within the test borings completed for the pond and FMS sites, Stratum 5 is being included within the Pond Soil Survey legend in order to maintain consistency with the project Roadway Soil Survey.

The soil types encountered during exploration have been assigned to a stratum. The stratum descriptions and soil types associated with this project are listed in the following table.

Stratum No.	Typical Soil Description	AASHTO Classification
1	Gray to Brown Fine SAND to Fine SAND with Silt	A-3
2	Gray to Brown Fine SAND to Fine SAND With Silt with Limerock Fragments or with Shell Fragments	A-1-b/A-3
3	Gray to Dark Gray to Brown Silty to Clayey SAND	A-2-4/A-2-6
4	Light Gray to Dark Gray Sandy SILT to Pale Brown to White Silty CLAY Occasionally Calcareous with Limestone Fragments	A-4/A-6/A-7-6
5	Dark Gray to Black Organic Silty to Clayey SAND to Organic Sandy CLAY Occasionally with Wood	A-8
6	Weathered LIMESTONE	--- (1)

(1) AASHTO nomenclature does not include a classification for Weathered Limestone.

The soil stratification was based on a visual review of the recovered samples, laboratory testing and interpretation of the field boring logs. The boring stratification lines represent the approximate boundaries between soil types of significantly different engineering properties; however, the actual transition may be gradual. In some cases, small variations in properties not considered pertinent to our engineering evaluation may have been abbreviated or omitted for clarity. The boring profiles represent the conditions at the particular boring location and variations do occur among the borings.

6.2 Groundwater

The groundwater table, when apparent, was measured at the pond and FMS boring locations during our field exploration. The depths to the groundwater table ranged from approximately 1 to 5½ feet below the ground surface. The groundwater table is presented on the **Pond Soil Profile**

Sheets in **Appendix A** and on the **Summary of Seasonal High Groundwater Table Estimates** in **Appendix B**.

Groundwater conditions will vary with environmental variations and seasonal conditions, such as the frequency and magnitude of rainfall patterns, as well as man-made influences (i.e. existing water management canals, swales, drainage ponds, underdrains and areas of covered soils, such as paved parking lots and sidewalks).

6.3 Seasonal High Groundwater Estimates

Seasonal high groundwater table levels were estimated at eleven (11) boring locations for the proposed Pond and FMS locations. A summary of the estimated seasonal high groundwater table elevations at these boring locations is presented in **Appendix B**.

In general, the seasonal high groundwater table levels estimated in the vicinity of the proposed ponds were based on soil stratigraphy, measured groundwater levels from the borings, the Manatee County, Florida USDA Soil Survey information and past experience with similar soil conditions.

7.0 ENGINEERING EVALUATIONS AND RECOMMENDATIONS

7.1 General

Based on the results of the test borings the proposed pond and FMS sites appear to be feasible pond and floodplain mitigation sites.

Septic tanks and potable wells may be used in this area of Manatee County. Although septic tanks and wells were not observed during our geotechnical investigation; if encountered during construction they will require proper removal and backfill in accordance with State and Local requirements.

7.2 Depth to Confining Layer

Based on the results of our field exploration and laboratory test results, we anticipate the depth of the confining layer to coincide with the top of Strata 3 and 4. The presence of Strata 3 and 4 is presented on the **Pond Soil Survey** sheets in **Appendix A**.

7.3 On-Site Soil Suitability

The general suitability of the soils encountered during our geotechnical explorations is presented on the **Roadway Soil Survey** sheet in **Appendix A**. Indices 500 and 505 of the FDOT Design Standards should be consulted to determine the specific use/suitability of the soil types encountered during our geotechnical explorations performed to date.

7.4 Excavations

In Federal Register, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction

Standards for Excavations, 29 CFR, Part 1926, Subpart P". This document was issued to better ensure the safety of workmen entering trenches or excavations. It is mandated by this federal regulation that excavations, whether they be utility trenches, basement excavations or footing excavations, be constructed in accordance with the current OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed, the owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractors "responsible persons", as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in all local, state, and federal safety regulations.

We are providing this information solely as a service to our client. Tierra does not assume responsibility for construction site safety or the contractor's or other party's compliance with local, state, and federal safety or other regulations.

8.0 REPORT LIMITATIONS

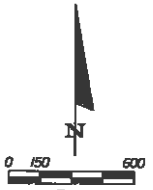
Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices at the time of this report. Our geotechnical engineering evaluation of the site and subsurface conditions with respect to the planned roadway improvements, and our recommendations for site preparation and foundation construction are based upon the following: (1) site observations, (2) the field exploratory test data obtained during the geotechnical study, and (3) our understanding of the project information and anticipated grades as presented in this report. This company is not responsible for the conclusions, opinions or recommendations made by others based on the data presented in this report.

The scope of the exploration was intended to evaluate soil conditions within the ponds and floodplain mitigation sites. The analyses and recommendations submitted in this report are based upon the anticipated location and type of construction and data obtained from the soil borings and test pits performed at the locations indicated and do not reflect any variations which may occur among these locations. If any variations become evident during the course of construction, a re-evaluation of the recommendations contained in this report will be necessary after we have had an opportunity to observe the characteristics of the conditions encountered.

The scope of services, included herein, did not include any environmental assessment for the presence or absence of hazardous or toxic materials in the soil, surface water, groundwater, air, on the site, below and around the site. Any statements in this report or on the boring logs regarding odors, colors, unusual or suspicious items and conditions are strictly for the information of HDR and the Manatee County Public Works Department.

APPENDIX A

USDA & USGS Vicinity Map A-1
Roadway Soil Survey A-2
Pond Soil Survey ..... A-3 and A-5



FMS EAST-2

DETENTION POND EAST-2

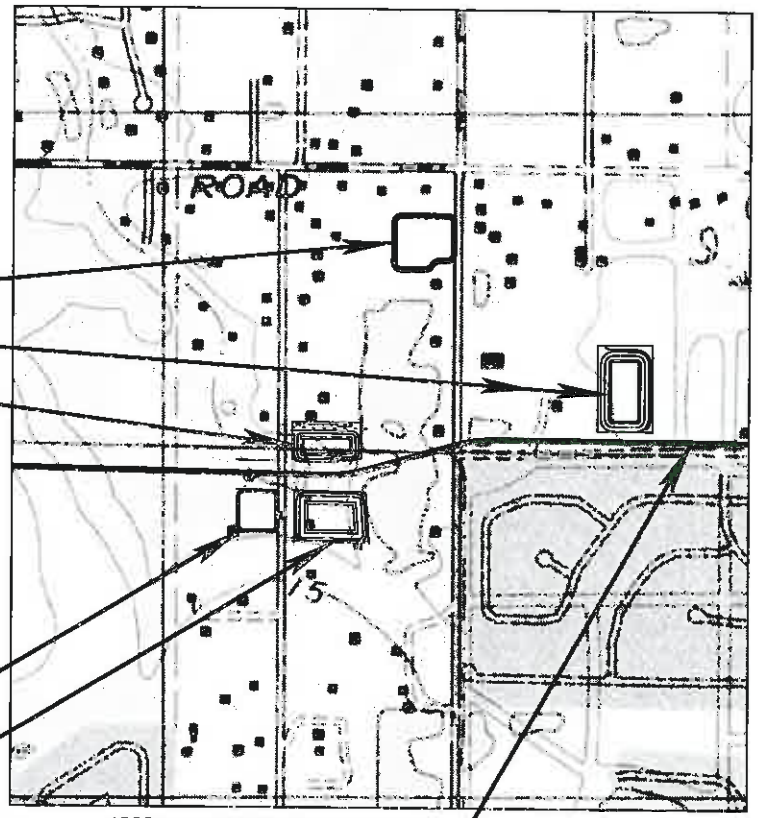
DETENTION POND WEST-3L

DETENTION POND WEST-3R

FMS WEST-2

DETENTION POND WEST-3R

APPROXIMATE PROJECT ALIGNMENT



APPROXIMATE PROJECT ALIGNMENT

REFERENCE: USDA SOIL SURVEY OF MANATEE COUNTY, FLORIDA

TOWNSHIP:	35S
RANGE:	18E
SECTION:	4,5,8 & 9
SCALE:	1 INCH= 600 FT

REFERENCE: USGS QUADRANGLE MAP FOR BRADENTON, FLORIDA

TOWNSHIP:	35S
RANGE:	18E
SECTION:	4,5,8 & 9
SCALE:	1 INCH= 600 FT

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 4/2012
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

POND USDA/USGS VICINITY MAP

SHEET NO.: A-1

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DATE OF SURVEY: DECEMBER 2010 TO APRIL 2012
SURVEY MADE BY: TIERRA, INC.
SUBMITTED BY: ERICK M. FREDERICK, P.E.

MANATEE COUNTY
PUBLIC WORKS

COUNTY PROJECT NO : 607160
PROJECT NAME: 44TH AVENUE EAST FROM 30TH STREET EAST TO 45TH STREET EAST

CROSS SECTION SOIL SURVEY FOR THE DESIGN OF ROADS

SURVEY BEGINS STA.: 100+13.47 SURVEY ENDS STA.: 173+07.83

REFERENCE: CENTERLINE CONSTRUCTION

	ORGANIC CONTENT		MOISTURE CONTENT		SIEVE ANALYSIS RESULTS PERCENT PASS						ATTERBERG LIMITS (%)					CORROSION TEST RESULTS				
STRATUM NO.	NO. OF TESTS	% ORGANIC	NO. OF TESTS	MOISTURE CONTENT	NO. OF TESTS	10 MESH	40 MESH	60 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTIC INDEX	AASHTO GROUP	DESCRIPTION	NO. OF TESTS	RESISTIVITY ohm-cm	CHLORIDE ppm	SULFATES ppm	pH
1	2	2	2	22-23	16	90-100	79-93	65-78	34-45	2-10	---	---	---	A-3	GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT	3	28,000-62,000	15-30	<4.8	5.9-6.9
2	---	---	---	---	5	52-77	43-63	36-53	21-35	4-15	---	---	---	A-1-b/A-3	GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT WITH LIMEROCK FRAGMENTS OR WITH SHELL FRAGMENTS	2	2,700-3,200	30	101-288	7.7-8.0
3	1	2	9	18-60	13	80-100	72-94	62-89	46-59	15-33	6	NP-34	NP-15	A-2-4/A-2-6	GRAY TO DARK GRAY TO BROWN SILTY TO CLAYEY SAND	2	6,500-49,000	15-45	<4.8-37	7.8-8.2
4	1	2	10	17-38	11	100	89-92	80-82	61-65	38-50	10	NP-46	NP-23	A-4/A-6/ A-7-6	LIGHT GRAY TO DARK GRAY SANDY SILT TO PALE BROWN TO WHITE SILTY CLAY OCCASIONALLY CALCAREOUS WITH LIMESTONE FRAGMENTS	2	1,500-2,700	30-60	105-660	7.6-8.3
5	8	5-12	8	27-67	8	---	---	---	---	17-40	3	34-38	18-20	A-8	DARK GRAY TO BLACK ORGANIC SILTY TO CLAYEY SAND TO ORGANIC SANDY CLAY OCCASIONALLY WITH WOOD	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	WEATHERED LIMESTONE	---	---	---	---	---

EMBANKMENT AND SUBGRADE MATERIAL

STRATA BOUNDARIES ARE APPROXIMATE. MAKE FINAL CHECK AFTER GRADING.

▽ - WATER TABLE ENCOUNTERED

▼ - ESTIMATED SEASONAL HIGH GROUNDWATER TABLE

GNA - GROUNDWATER NOT APPARENT

NOTES:

1. THE MATERIAL FROM STRATA 1 (A-3) AND 2 (A-1-b/A-3) APPEARS SATISFACTORY FOR USE IN THE EMBANKMENT WHEN UTILIZED IN ACCORDANCE WITH INDEX 505.
2. THE MATERIAL FROM STRATA 3 (A-2-4/A-2-6) AND 4 (A-4/A-6/A-7-6) IS PLASTIC MATERIAL AND SHALL BE REMOVED IN ACCORDANCE WITH INDEX 500. STRATA 3 AND 4 MAY REMAIN IN PLACE ABOVE THE EXISTING WATER LEVEL (AT THE TIME OF CONSTRUCTION) TO WITHIN 2 FEET OF THE PROPOSED BASE. IT SHOULD BE PLACED UNIFORMLY IN THE LOWER PORTION OF THE EMBANKMENT FOR SOME DISTANCE ALONG THE PROJECT RATHER THAN FULL DEPTH FOR SHORT DISTANCES.
3. THE MATERIAL FROM STRATUM 5 IS MUCK (A-8) MATERIAL AND SHALL BE REMOVED IN ACCORDANCE WITH INDEX 500 FROM STATION 123+40 TO STATION 129+00 AS ILLUSTRATED ON THE MUCK DELINEATION PLAN SHEET.
4. THE MATERIAL FROM STRATUM 6 IS ROCK-LIKE AND IS LOCATED AT SHALLOW DEPTHS IN SOME AREAS ALONG THE PROPOSED ROADWAY IMPROVEMENTS. FOUNDATION AND UTILITY EXCAVATION IN THOSE AREAS MAY BE DIFFICULT AND THE ROCK-LIKE MATERIAL SHALL BE UTILIZED IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

   THE CONTRACTOR SHOULD CONSIDER THE INCREASED COST OF ALL THE UNDERGROUND WORK ACTIVITIES WHILE PREPARING HIS BID. ALL COST OF ROCK-LIKE MATERIAL EXCAVATION SHALL BE INCLUDED IN THE APPROPRIATE ITEMS OF WORK CONTAINED WITHIN THE CONTRACT. NO EXTRA COMPENSATION OR TIME EXTENSION WILL BE ALLOWED FOR ADDITIONAL WORK DIRECTLY ASSOCIATED WITH THE SPLITTING, EXCAVATION, CRUSHING, DISPOSAL, REPLACEMENT OF DISPLACED VOLUME OF EXTRACTED ROCK-LIKE MATERIAL WITH FILL MATERIAL, OR SPECIAL HANDLING OF THE ROCK-LIKE MATERIAL.
5. BASED ON A REVIEW OF THE "POTENTIOMETRIC SURFACE OF THE UPPER FLORIDAN AQUIFER, WEST-CENTRAL FLORIDA" MAPS PUBLISHED BY THE USGS, THE POTENTIOMETRIC SURFACE ELEVATION OF THE UPPER FLORIDAN AQUIFER AT THE PROJECT SITE RANGES FROM APPROXIMATELY +10 TO +20 FEET, NGVD 29. THE SPT BORINGS PERFORMED ALONG THE ALIGNMENT DID NOT ENCOUNTER AN ARTESIAN FLOW CONDITION DURING THE FIELD EXPLORATION. THE CONTRACTOR'S TOOLS AND CONSTRUCTION METHODS SHOULD BE PREPARED TO HANDLE A POTENTIOMETRIC SURFACE CONDITION OF UP TO +20 FT, NGVD 29, AT NO ADDITIONAL COST TO THE COUNTY.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 4/2012
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

ROADWAY SOIL SURVEY

SHEET NO.:

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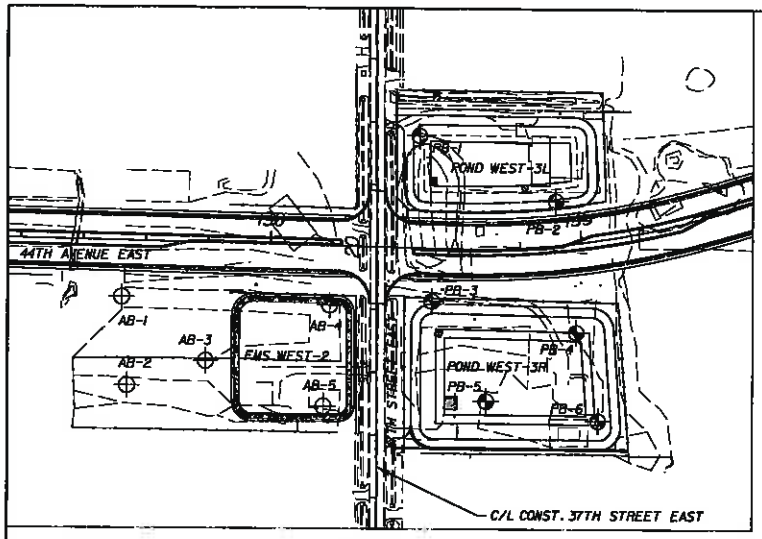


BORING LOCATION PLAN

LEGEND

1. GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2. GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT WITH LIMEROCK FRAGMENTS OR WITH SHELL FRAGMENTS (A-1-b/A-3)
3. GRAY TO DARK GRAY TO BROWN SILTY TO CLAYEY SAND (A-2-4/A-2-6)
4. LIGHT GRAY TO DARK GRAY SANDY SILT TO PALE BROWN TO WHITE SILTY CLAY OCCASIONALLY CALCAREOUS WITH LIMESTONE FRAGMENTS (A-4/A-6/A-7-6)
5. DARK GRAY TO BLACK ORGANIC SILTY TO CLAYEY SAND TO ORGANIC SANDY CLAY OCCASIONALLY WITH WOOD (A-8)
6. WEATHERED LIMESTONE

▽ GROUNDWATER TABLE

▼ ESTIMATED SEASONAL HIGH GROUNDWATER TABLE

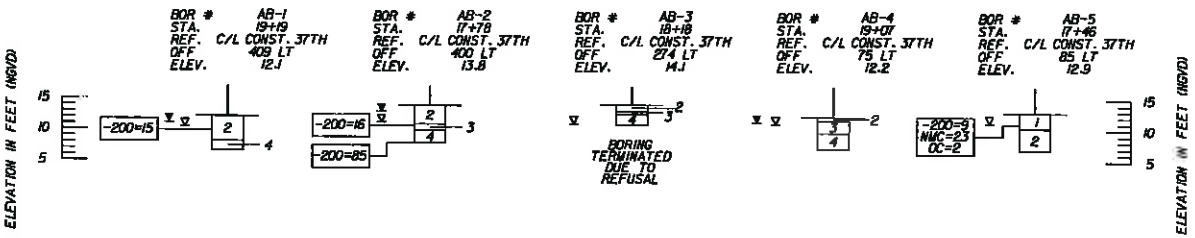
APPROXIMATE SPT BORING LOCATION

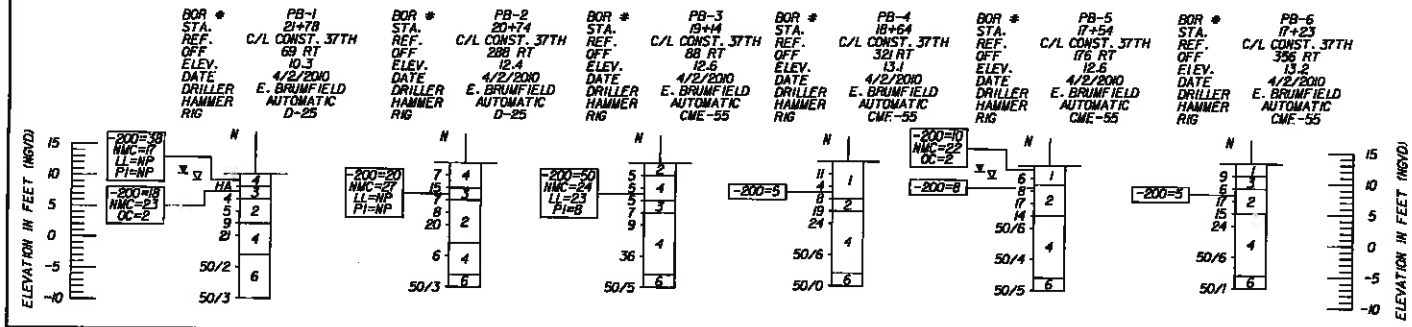
APPROXIMATE AUGER BORING LOCATION

A-3	AASHTO GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND/OR LABORATORY TESTING
N	NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).
50/4	NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION
HA	HAND AUGERED TO VERIFY UTILITY CLEARANCE
NGVD	NATIONAL GEODETIC VERTICAL DATUM OF 1929
GNE	GROUNDWATER NOT ENCOUNTERED
-200	PERCENT PASSING #200 SIEVE
NMC	NATURAL MOISTURE CONTENT (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
OC	ORGANIC CONTENT (%)
C/L CONST. 37TH	CENTERLINE CONSTRUCTION 37TH STREET EAST
C/L CONST. 39TH	CENTERLINE CONSTRUCTION 39TH STREET EAST
B/L POND E	BASELINE POND EAST

NOTES:

1. BASED ON A REVIEW OF THE "POTENTIOMETRIC SURFACE OF THE UPPER FLORIDAN AQUIFER, WEST-CENTRAL FLORIDA" MAPS PUBLISHED BY THE USGS, THE POTENTIOMETRIC SURFACE ELEVATION OF THE UPPER FLORIDAN AQUIFER AT THE PROJECT SITE RANGES FROM APPROXIMATELY +10 TO +20 FEET, NGVD 29. THE SPT BORINGS PERFORMED ALONG THE ALIGNMENT DID NOT ENCOUNTER AN ARTESIAN FLOW CONDITION DURING THE FIELD EXPLORATION. THE CONTRACTOR'S TOOLS AND CONSTRUCTION METHODS SHOULD BE PREPARED TO HANDLE A POTENTIOMETRIC SURFACE CONDITION OF UP TO +20 FT, NGVD 29, AT NO ADDITIONAL COST TO THE COUNTY.
2. HARD SANDY SILT AND WEATHERED LIMESTONE WERE ENCOUNTERED WITHIN THE SPT BORINGS AND SOME OF THE AUGER BORINGS WERE TERMINATED DUE TO REFUSAL EXCAVATION INTO AND THROUGH THESE MATERIALS MAY BE DIFFICULT AND MAY REQUIRE SPECIALIZED EQUIPMENT. THE CONTRACTOR SHOULD BE PREPARED FOR EXCAVATION INTO AND THROUGH THESE MATERIALS. VARIATIONS IN THE DEPTH OF THESE MATERIALS SHOULD BE ANTICIPATED.
3. THE LEGEND PROVIDED ON THIS SHEET INCLUDES SOIL STRATA ENCOUNTERED WITHIN SOIL BORINGS COMPLETED FOR BOTH THE ROADWAY ALIGNMENT AND PONDS ASSOCIATED WITH THE EXTENSION OF 44TH AVENUE EAST. ALTHOUGH STRATUM 5 WAS NOT ENCOUNTERED WITHIN THE TEST BORINGS COMPLETED FOR THE PONDS, STRATUM 5 IS BEING INCLUDED WITHIN THE POND SOIL SURVEY LEGEND IN ORDER TO MAINTAIN CONSISTENCY WITH THE PROJECT ROADWAY SOIL SURVEY.
4. AN ASTERISK (*) ADJACENT TO THE BORING NUMBER INDICATES THAT THE STATION, OFFSET AND ELEVATION OF THE BORING ARE APPROXIMATE AND WERE ESTIMATED USING MICROSTATION FILES IN CONJUNCTION WITH GPS COORDINATES OBTAINED IN THE FIELD BY THE PROJECT SURVEYOR.





	SAFETY HAMMER	AUTOMATIC HAMMER
GRANULAR MATERIALS - RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT.)	SPT N-VALUE (BLOWS/FT.)
VERY LOOSE	LESS THAN 4	LESS THAN 3
LOOSE	4 to 10	3 to 8
MEDIUM DENSE	10 to 30	8 to 24
DENSE	30 to 50	24 to 40
VERY DENSE	GREATER THAN 50	GREATER THAN 40
SILTS AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT.)	SPT N-VALUE (BLOWS/FT.)
VERY SOFT	LESS THAN 2	LESS THAN 1
SOFT	2 to 4	1 to 3
FIRM	4 to 8	3 to 6
STIFF	8 to 15	6 to 12
VERY STIFF	16 to 30	12 to 24
HARD	GREATER THAN 30	GREATER THAN 24

DETENTION POND WEST-3L AND 3R AND FLOODPLAIN MITIGATION SITE WEST-2

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRS
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 5/2012
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

POND SOIL SURVEY

SHEET NO.

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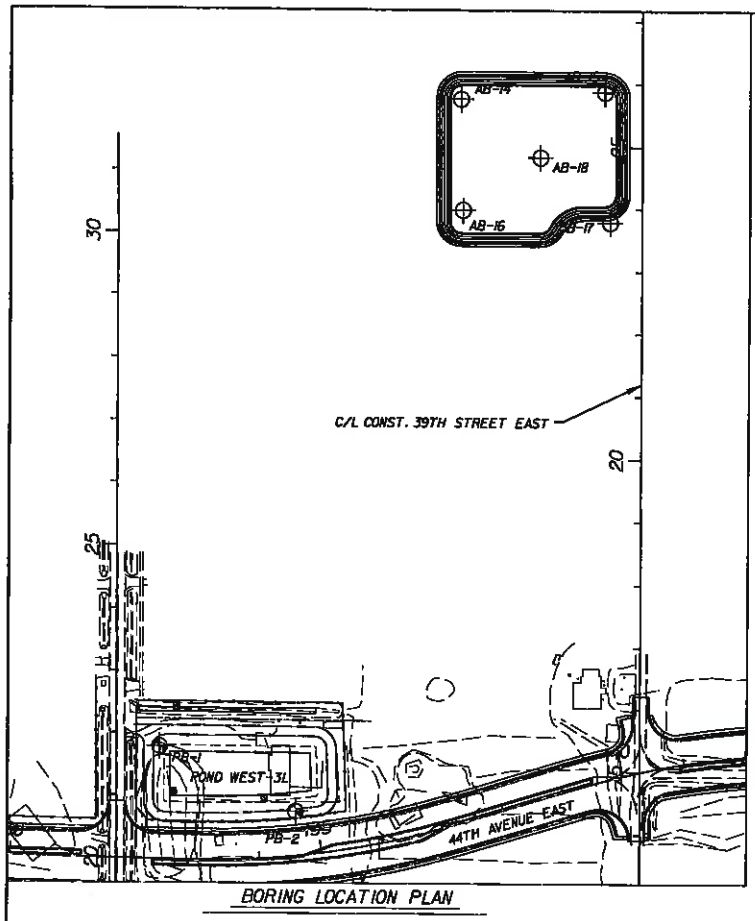
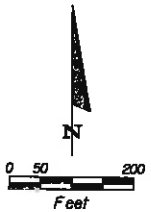


BORING LOCATION PLAN



LEGEND

1. GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2. GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT WITH LIMEROCK FRAGMENTS OR WITH SHELL FRAGMENTS (A-1-b/A-3)
3. GRAY TO DARK GRAY TO BROWN SILTY TO CLAYEY SAND (A-2-4/A-2-6)
4. LIGHT GRAY TO DARK GRAY SANDY SILT TO PALE BROWN TO WHITE SILTY CLAY OCCASIONALLY CALCAREOUS WITH LIMESTONE FRAGMENTS (A-4/A-6/A-7-6)
5. DARK GRAY TO BLACK ORGANIC SILTY TO CLAYEY SAND TO ORGANIC SANDY CLAY OCCASIONALLY WITH WOOD (A-8)
6. WEATHERED LIMESTONE

GROUNDWATER TABLE

ESTIMATED SEASONAL HIGH GROUNDWATER TABLE

APPROXIMATE SPT BORING LOCATION

APPROXIMATE AUGER BORING LOCATION

A-3	AASHTO GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND/OR LABORATORY TESTING
N	NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).
50/4	NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION
HA	HAND AUGERED TO VERIFY UTILITY CLEARANCE
NGVD	NATIONAL GEODETIC VERTICAL DATUM OF 1929
GNE	GROUNDWATER NOT ENCOUNTERED
-200	PERCENT PASSING #200 SIEVE
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C/L CONST. 37TH	CENTERLINE CONSTRUCTION 37TH STREET EAST
C/L CONST. 39TH	CENTERLINE CONSTRUCTION 39TH STREET EAST
B/L POND E	BASELINE POND EAST

NOTES:

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2. HARD SANDY SILT AND WEATHERED LIMESTONE WERE ENCOUNTERED WITHIN THE SPT BORINGS AND SOME OF THE AUGER BORINGS WERE TERMINATED DUE TO REFUSAL. EXCAVATION INTO AND THROUGH THESE MATERIALS MAY BE DIFFICULT AND MAY REQUIRE SPECIALIZED EQUIPMENT. THE CONTRACTOR SHOULD BE PREPARED FOR EXCAVATION INTO AND THROUGH THESE MATERIALS. VARIATIONS IN THE DEPTH OF THESE MATERIALS SHOULD BE ANTICIPATED.
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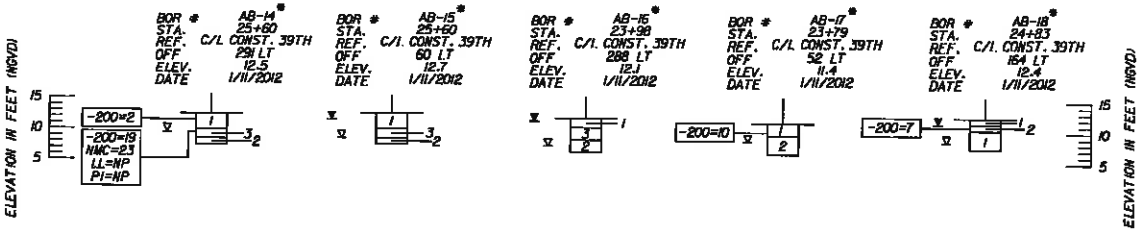
4. AN ASTERISK (*) ADJACENT TO THE BORING NUMBER INDICATES THAT THE STATION, OFFSET AND ELEVATION OF THE BORING ARE APPROXIMATE AND WERE ESTIMATED USING MICROSTATION FILES IN CONJUNCTION WITH GPS COORDINATES OBTAINED IN THE FIELD BY THE PROJECT SURVEYOR.



	SAFETY HAMMER	AUTOMATIC HAMMER
GRANULAR MATERIALS - RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT.)	SPT N-VALUE (BLOWS/FT.)
VERY LOOSE	LESS THAN 4	LESS THAN 3
LOOSE	4 to 10	3 to 8
MEDIUM DENSE	10 to 30	8 to 24
DENSE	30 to 50	24 to 40
VERY DENSE	GREATER THAN 50	GREATER THAN 40
SILTS AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT.)	SPT N-VALUE (BLOWS/FT.)
VERY SOFT	LESS THAN 2	LESS THAN 1
SOFT	2 to 4	1 to 3
FIRM	4 to 8	3 to 6
STIFF	8 to 15	6 to 12
VERY STIFF	15 to 30	12 to 24
HARD	GREATER THAN 30	GREATER THAN 24

FLOODPLAIN MITIGATION SITE EAST-2

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRS
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 5/2012
PROJECT NO.: 6071160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

POND SOIL SURVEY

SHEET NO.

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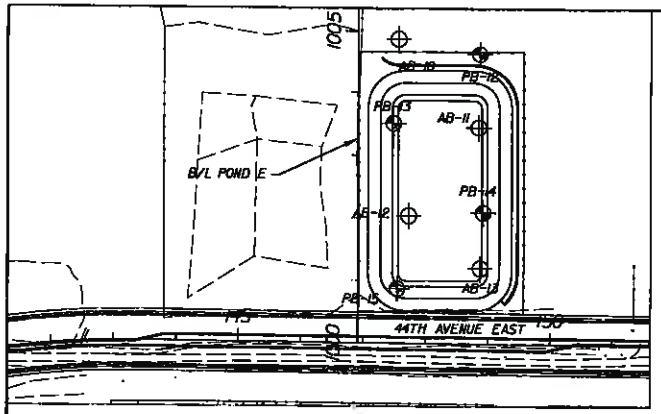
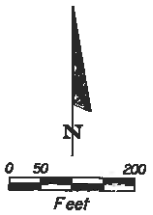


BORING LOCATION PLAN



LEGEND

1. GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2. GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT WITH LIMEROCK FRAGMENTS OR WITH SHELL FRAGMENTS (A-1-b/A-3)
3. GRAY TO DARK GRAY TO BROWN SILTY TO CLAYEY SAND (A-2-4/A-2-6)
4. LIGHT GRAY TO DARK GRAY SANDY SILT TO PALE BROWN TO WHITE SILTY CLAY OCCASIONALLY CALCAREOUS WITH LIMESTONE FRAGMENTS (A-4/A-6/A-7-6)
5. DARK GRAY TO BLACK ORGANIC SILTY TO CLAYEY SAND TO ORGANIC SANDY CLAY OCCASIONALLY WITH WOOD (A-8)
6. WEATHERED LIMESTONE

▽ GROUNDWATER TABLE

▼ ESTIMATED SEASONAL HIGH GROUNDWATER TABLE

⊕ APPROXIMATE SPT BORING LOCATION

⊕ APPROXIMATE AUGER BORING LOCATION

A-3	AASHTO GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND/OR LABORATORY TESTING
N	NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).
50/4	NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION
HA	HAND AUGERED TO VERIFY UTILITY CLEARANCE
NGVD	NATIONAL GEODETIC VERTICAL DATUM OF 1929
GNE	GROUNDWATER NOT ENCOUNTERED
-200	PERCENT PASSING #200 SIEVE
NMC	NATURAL MOISTURE CONTENT (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
OC	ORGANIC CONTENT (%)
C/L CONST. 37TH	CENTERLINE CONSTRUCTION 37TH STREET EAST
C/L CONST. 39TH	CENTERLINE CONSTRUCTION 39TH STREET EAST
B/L POND E	BASELINE POND EAST

NOTES:

1. BASED ON A REVIEW OF THE "POTENTIOMETRIC SURFACE OF THE UPPER FLORIDAN AQUIFER, WEST-CENTRAL FLORIDA" MAPS PUBLISHED BY THE USGS, THE POTENTIOMETRIC SURFACE ELEVATION OF THE UPPER FLORIDAN AQUIFER AT THE PROJECT SITE RANGES FROM APPROXIMATELY +10 TO +20 FEET, NGVD 29. THE SPT BORINGS PERFORMED ALONG THE ALIGNMENT DID NOT ENCOUNTER AN ARTESIAN FLOW CONDITION DURING THE FIELD EXPLORATION. THE CONTRACTOR'S TOOLS AND CONSTRUCTION METHODS SHOULD BE PREPARED TO HANDLE A POTENTIOMETRIC SURFACE CONDITION OF UP TO +20 FT, NGVD 29, AT NO ADDITIONAL COST TO THE COUNTY.
2. HARD SANDY SILT AND WEATHERED LIMESTONE WERE ENCOUNTERED WITHIN THE SPT BORINGS AND SOME OF THE AUGER BORINGS WERE TERMINATED DUE TO REFUSAL. EXCAVATION INTO AND THROUGH THESE MATERIALS MAY BE DIFFICULT AND MAY REQUIRE SPECIALIZED EQUIPMENT. THE CONTRACTOR SHOULD BE PREPARED FOR EXCAVATION INTO AND THROUGH THESE MATERIALS. VARIATIONS IN THE DEPTH OF THESE MATERIALS SHOULD BE ANTICIPATED.
3. THE LEGEND PROVIDED ON THIS SHEET INCLUDES SOIL STRATA ENCOUNTERED WITHIN SOIL BORINGS COMPLETED FOR BOTH THE ROADWAY ALIGNMENT AND PONDS ASSOCIATED WITH THE EXTENSION OF 44TH AVENUE EAST. ALTHOUGH STRATUM 5 WAS NOT ENCOUNTERED WITHIN THE TEST BORINGS COMPLETED FOR THE PONDS, STRATUM 5 IS BEING INCLUDED WITHIN THE POND SOIL SURVEY LEGEND IN ORDER TO MAINTAIN CONSISTENCY WITH THE PROJECT ROADWAY SOIL SURVEY.
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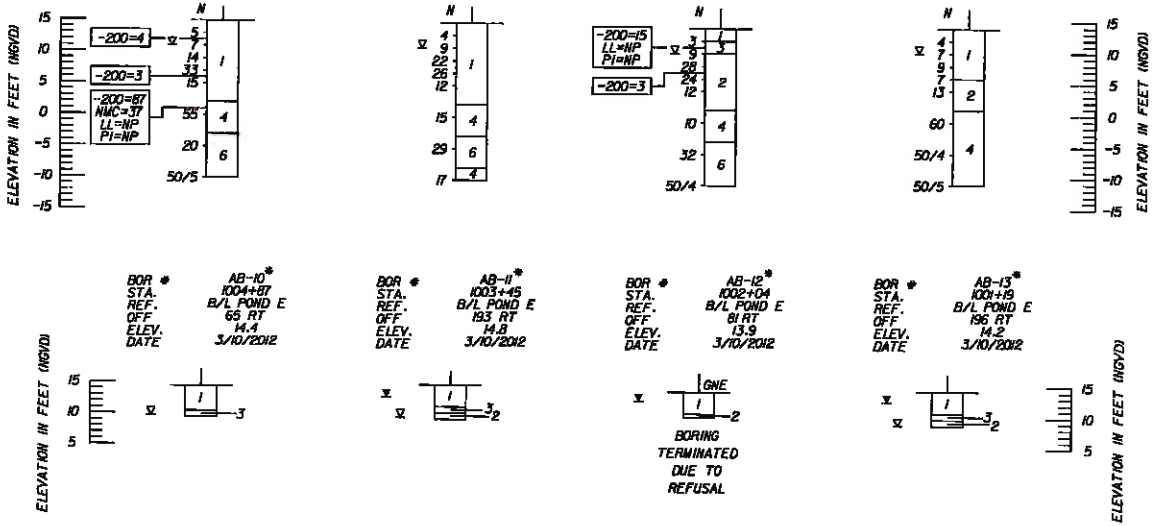

	SAFETY HAMMER	AUTOMATIC HAMMER
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VERY SOFT	LESS THAN 2	LESS THAN 1
SOFT	2 to 4	1 to 3
FIRM	4 to 8	3 to 6
STIFF	8 to 15	6 to 12
VERY STIFF	16 to 30	12 to 24
HARD	GREATER THAN 30	GREATER THAN 24

DETENTION POND EAST-2

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JAS
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 5/2012
PROJECT NO.: 607.1160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

POND SOIL SURVEY

SHEET NO.

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APPENDIX B

Summary of USDA Soil Survey B-1
Summary of Seasonal High Groundwater Table Estimates B-2

SUMMARY OF USDA SOIL SURVEY OF MANATEE COUNTY, FLORIDA

44th Avenue East from 30th Street East to 45th Street East
Manatee County, Florida
County Project No. 6071160
Tierra Project No. 6511-09-089

USDA Map Symbol	USDA Soil Name	Depth (in)	Soil Classification Symbol		Saturated Hydraulic Conductivity (inches/hour)	pH	Seasonal High Water Table	
			USCS	AASHTO			Depth (feet)	Months
5	Bradenton Fine Sand, Limestone Substratum	0-6	SP-SM	A-2-4, A-3	6.0 - 20.0	5.6-7.3	0-1	June- Dec.
		6-13	SM, SP-SM	A-2-4, A-3	6.0 - 20.0	5.6-7.3		
		13-47	SC, SC-SM, SM	A-2-4, A-2-6	0.6 - 2.0	6.6-7.8		
		47-51	Unweathered Bedrock[1]	Unweathered Bedrock[1]	2.0 - 20.0	---		
7	Canova	0-8	PT	A-8	6.0 - 20.0	3.5-6.0	0.0	Jan-Dec
		8-24	SP, SP-SM	A-3	6.0 - 20.0	6.1-8.4		
		24-68	SC, SC-SM, SM	A-2-4, A-2-6	0.6 - 6.0	7.4-8.4		
	Anclote	0-16	SP, SP-SM	A-2-4, A-3	6.0 - 20.0	5.6-8.4	0.0-0.5	June-Dec
		16-80	SM, SP, SP-SM	A-2-4, A-3	6.0 - 20.0	5.6-8.4		
	Okelanta	0-20	PT	A-8	6.0 - 20.0	4.5-6.5	0.0	Jan, June-Dec
		20-54	SM, SP, SP-SM	A-2-4, A-3	6.0 - 20.0	5.1-7.8		
13	Chobee Loamy Fine Sand	0-8	SM, SP-SM	A-2-4	2.0 - 6.0	6.1-8.4	0-0.5	Jan-Dec.
		8-51	SC, SC-SM, SM	A-2-6, A-2-7, A-6, A-7	0.1 - 0.2	6.6-8.4		
		51-80	SC, SC-SM, SM, SP-SM	A-7, A-2-4, A-2-6, A-6	0.2 - 6.0	6.6-8.4		
20	EauGallie Fine Sand, Non-Hydric	0-5	SP, SP-SM	A-3	6.0 - 20.0	4.5-6.0	0.5-1.5	June -Oct.
		5-28	SP, SP-SM	A-3	6.0 - 20.0	4.5-6.0		
		28-42	SM, SP-SM	A-2-4, A-3	0.6 - 6.0	4.5-6.0		
		42-50	SC, SC-SM, SM	A-2-4, A-2-6	0.1 - 2.0	5.6-7.8		
		50-65	SM, SP-SM	A-2-4, A-3	2.0 - 6.0	5.6-7.8		
	EauGallie Fine Sand, Hydric	0-5	SP, SP-SM	A-3	6.0 - 20.0	4.5-6.0	0-1.0	June-Oct.
		5-28	SP, SP-SM	A-3	6.0 - 20.0	4.5-6.0		
		28-42	SM, SP-SM	A-2-4, A-3	0.6 - 6.0	4.5-6.0		
		42-50	SC, SC-SM, SM	A-2-4, A-2-6	0.1 - 2.0	5.6-7.8		
		50-65	SM, SP-SM	A-2-4, A-3	2.0 - 6.0	5.6-7.8		
48	Wabasso Fine Sand, Non-Hydric	0-7	SP, SP-SM	A-3	6.0 - 20.0	4.5-7.3	0.5-1.5	June-Oct.
		7-21	SP, SP-SM	A-3	6.0 - 20.0	4.5-7.3		
		21-31	SM, SP-SM	A-2-4, A-3	0.6 - 6.0	4.5-7.3		
		31-37	SP, SP-SM	A-3	6.0 - 20.0	5.6-7.8		
		37-65	SC, SC-SM	A-2-4, A-2-6	0.1 - 0.2	5.6-7.8		
		65-80	SM, SP-SM	A-2-4,A-3	6.0 - 20.0	5.6-7.8		
	Wabasso Fine Sand, Hydric	0-7	SP, SP-SM	A-3	6.0 - 20.0	4.5-7.3	0-1.0	June-Oct.
		7-21	SP, SP-SM	A-3	6.0 - 20.0	4.5-7.3		
		21-31	SM, SP-SM	A-2-4, A-3	0.6 - 6.0	4.5-7.3		
		31-37	SP, SP-SM	A-3	6.0 - 20.0	5.6-7.8		
		37-65	SC, SC-SM	A-2-4, A-2-6	0.1 - 0.2	5.6-7.8		
		65-80	SM, SP-SM	A-2-4,A-3	6.0 - 20.0	5.6-7.8		

SUMMARY OF SEASONAL HIGH GROUNDWATER TABLE ESTIMATES

Ponds and FMS Sites
44th Avenue East from 30th Street East to 45th Street East
Manatee County, Florida
County Project No. 6071160
Tierra Project No. 6511-09-089

Boring Name	Pond/FMS	Boring Depth[2] (feet)	Date Recorded	Approximate Ground Elevation[1] (feet, NGVD)	Measured Groundwater Table		USDA Soil Survey Information		Estimated SHGWT[5]	
					Depth[3] (feet)	Elevation (feet, NGVD)	Map Symbol	Estimated SHGWT Depth[4] (feet)	Depth[2] (feet)	Elevation (feet, NGVD)
PB - 1	Detention Pond West - 3L	20.0	03/16/10	10.3	1.0	9.3	5 &13	0.0-1.0	0[5]	10.3
PB - 5	Detention Pond West - 3R	20.0	03/16/10	12.6	2.0	10.6	5,20 & 48	0.0-1.5	1.2	11.4
AB - 1	FMS- West - 2	5.5	03/24/10	12.1	1.8	10.3	5 & 38	0.0-1.0	1.0	11.1
AB - 2		6.0	03/24/10	13.9	2.8	11.1			1.5	12.4
AB - 4		5.0	03/24/10	12.2	1.2	11.0			1.0	11.2
AB - 11	Detention Pond East - 2	5.5	03/10/12	14.8[2]	5.5	9.3	20 & 48	0.0-1.5	2.0	12.8
AB - 12		4.0	03/10/12	13.9[2]	5.3	8.7			1.5	12.4
AB - 13		5.5	03/10/12	14.2[2]	5.5	8.7			1.7	12.5
AB - 15	FMS East - 2	5.0	01/11/12	12.7[2]	4.0	8.7	7 & 48	1.0-1.5	1.5	11.2
AB - 16		5.5	01/11/12	12.1[2]	4.5	7.5			1.0	11.1
AB - 18		5.0	01/11/12	12.4[2]	4.0	8.4			1.0	11.4

[1] Boring elevations were obtained from the Project Surveyor.

[2] The ground elevations of boring locations completed within Pond East -2 and FMS East 2 should be considered approximate.The elevations of the boring locations within Pond East 2 were estimated by McKim & Creed using GPS equipment and the elevations of boring locations within FMS East 2 were estimated by HDR using Micro Station TIN files.

[3] Depth below existing grades at time of augering.

[4] Seasonal high groundwater table (SHGWT) depth estimated based on the Manatee County, Florida USDA Soil Survey information

[5] SHGWT estimated based on ground elevations provided by McKim & Creed & HDR, soil stratigraphy, measured groundwater levels from the borings, the Manatee County, Florida USDA Soil Survey information and past experience with similar soil conditions.

APPENDIX C

Summary of Laboratory Test Results C-1and C-2
Summary of Corrosion Test Results C-3

SUMMARY OF SOIL CLASSIFICATION LABORATORY TEST RESULTS

44th Avenue East from 30th Street East to 45th Street East

Manatee County, Florida

County Project No. 6071160

Tierra Project No. 6511-09-089

Boring Name	Sample Depth (ft)	Stratum Number	AASHTO Symbol	Sieve Analysis								Atterberg Limits			Organic Content (%)	Natural Moisture Content (%)
				3/4"	3/8"	#4	#10	#40	#60	#100	#200	Liquid Limit	Plastic Limit	Plasticity Index		
Ponds																
AB - 5	1.5 - 2.0	1	A-3	—	—	—	—	—	—	—	9	—	—	—	2	23
AB - 14	0.0 - 2.0	1	A-3	—	—	—	—	—	—	—	2	—	—	—	—	—
AB - 17	1.0 - 2.0	1	A-2-4	—	—	—	—	—	—	—	10	—	—	—	—	—
PB - 4	4.0 - 6.0	1	A-3	100	99	98	92	79	65	37	5	—	—	—	—	—
PB - 5	0.5 - 1.0	1	A-3	—	—	—	—	—	—	—	10	—	—	—	2	22
PB - 5	2.5 - 3.0	1	A-3	—	—	—	—	—	—	—	8	—	—	—	—	—
PB - 12	2.0 - 4.0	1	A-3	—	—	—	—	—	—	—	4	—	—	—	—	—
PB - 12	8.0 - 10.0	1	A-3	—	—	—	100	87	72	39	3	—	—	—	—	—
PB - 14	6.0 - 8.0	1	A-3	—	—	—	—	—	—	—	3	—	—	—	—	—
AB - 1	2.0 - 4.0	2	A-1-b	76	63	58	52	43	36	25	15	—	—	—	—	—
AB - 18	1.0 - 2.0	2	A-1-b	100	94	80	58	49	39	22	7	—	—	—	—	—
PB - 6	4.0 - 6.0	2	A-3	100	98	92	77	56	46	27	5	—	—	—	—	—
AB - 2	3.0 - 3.5	3	A-2-4	—	—	—	100	87	73	46	16	—	—	—	—	—
AB - 14	2.0 - 4.0	3	A-2-4	—	—	—	—	—	—	—	19	NP	NP	NP	—	23
PB - 1	2.0 - 4.0	3	A-2-4	—	—	—	—	—	—	—	18				2	23
PB - 2	4.0 - 6.0	3	A-2-4	—	—	—	100	94	81	50	20	NP	NP	NP	—	27
PB - 14	2.0 - 4.0	3	A-2-4	—	—	—	—	—	—	—	15	NP	NP	NP	—	—
AB - 2	5.5 - 6.0	4	A-4	—	—	—	—	—	—	—	85	—	—	—	—	—
PB - 1	0.0 - 2.0	4	A-4	—	—	—	—	—	—	—	38	NP	NP	NP	—	17
PB - 3	4.0 - 6.0	4	A-4	—	—	—	—	—	—	—	50	23	15	8	—	24
PB - 12	13.0 - 15.0	4	A-4	—	—	—	—	—	—	—	87	NP	NP	NP	—	37

SUMMARY OF SOIL CLASSIFICATION LABORATORY TEST RESULTS

44th Avenue East from 30th Street East to 45th Street East

Manatee County, Florida

County Project No. 6071160

Tierra Project No. 6511-09-089

Boring Name	Sample Depth (ft)	Stratum Number	AASHTO Symbol	Sieve Analysis								Atterberg Limits			Organic Content (%)	Natural Moisture Content (%)
				3/4"	3/8"	#4	#10	#40	#60	#100	#200	Liquid Limit	Plastic Limit	Plasticity Index		
Roadway (provided to support the data on the Roadway Soil Survey Sheet)																
AB-100R	3.0 - 3.5	1	A-3	—	—	—	100	92	76	42	4	—	—	—	—	—
AB-104R	0.0 2.0	1	A-3	—	—	100	100	93	78	45	4	—	—	—	—	—
AB-130 R	1.0 - 1.5	1	A-3	—	—	—	—	—	—	—	5	—	—	—	—	—
AB-144R	0.0 2.0	1	A-3	—	—	97	90	83	70	40	6	—	—	—	—	—
AB-145 L	2.5 - 3.0	1	A-3	—	—	—	—	—	—	—	5	—	—	—	—	—
AB-163L	0.0 2.0	1	A-3	—	—	97	92	87	70	34	3	—	—	—	—	—
AB-165 L	2.5 - 3.0	1	A-3	—	—	—	—	—	—	—	8	—	—	—	—	—
B-1	0.0 - 2.0	2	A-3	100	93	86	74	63	53	35	9	—	—	—	—	—
AB-160 R	1.0 - 2.0	2	A-1-b	76	68	62	54	48	39	21	4	—	—	—	—	—
AB-120R	4.5 - 5.0	3	A-2-6	—	—	—	100	89	79	59	33	34	19	15	—	32
AB-122R	3.0 - 4.5	3	A-2-4	—	—	—	—	—	—	—	16	—	—	—	—	18
AB-134R	3.5 - 5.0	3	A-2-4	—	—	—	—	—	—	—	31	20	14	6	—	18
AB-135 L	1.0 - 2.0	3	A-2-4	96	95	93	80	72	62	47	30	—	—	—	—	18
B-3	0.0 - 2.0	3	A-2-4	—	—	—	100	91	80	52	15	—	—	—	—	—
AB-153 L	2.0 - 3.0	3	A-2-4	—	—	—	—	—	—	—	19	—	—	—	—	—
AB-157 L	3.5 - 4.5	3	A-2-4	—	—	—	—	—	—	—	17	—	—	—	—	80
AB-165 L	3.5 - 4.0	3	A-2-4	—	—	—	—	—	—	—	19	24	17	7	—	21
AB-115L	0.0 - 0.5	4	A-7-6	—	—	—	100	92	82	65	46	45	22	23	—	35
AB-120R	0.0 - 0.5	4	A-7-6	—	—	—	100	89	80	61	44	46	23	23	—	25
WB - 126 L	2.0 - 4.0	4	A-6	—	—	—	—	—	—	—	60	35	21	14	—	35
AB-126R	1.0 - 2.0	4	A-6	—	—	—	—	—	—	—	81	32	23	9	2	35
B-1	4.0 - 6.0	4	A-4	—	—	—	—	—	—	—	67	NP	NP	NP	—	38
B-1	8.0 - 10.0	4	A-4	—	—	—	—	—	—	—	90	33	29	4	—	33
B-3	8.0 - 10.0	4	A-4	—	—	—	—	—	—	—	80	32	31	1	—	30
WB - 122 L	0.0 - 0.5	5	A-8	—	—	—	—	—	—	—	11	—	—	—	10	63
AB-125 L	0.0 - 0.5	5	A-8	—	—	—	—	—	—	—	13	—	—	—	12	67
AB-125 L	1.0 - 1.5	5	A-8	—	—	—	—	—	—	—	32	38	18	20	5	30
WB - 126 L	0.0 - 2.0	5	A-8	—	—	—	—	—	—	—	40	—	—	—	8	35
Culv-126+40	0.0 - 2.0	5	A-8	—	—	—	—	—	—	—	29	—	—	—	5	31
Culv-126+40	2.0 - 4.0	5	A-8	—	—	—	—	—	—	—	26	—	—	—	5	29
AB-126R	2.5 - 5.0	5	A-8	—	—	—	—	—	—	—	30	38	19	19	5	27
AB-127L	2.0 - 4.0	5	A-8	—	—	—	—	—	—	—	36	34	16	18	7	27

SUMMARY OF ENVIRONMENTAL CLASSIFICATION LABORATORY TEST RESULTS

40th Avenue East from 30th Street East to 45th Street East

Manatee County, Florida

County Project No. 6071160

Tierra Project No. 6511-09-089

Boring Name	Boring Location C/L Const. 44th Ave.		Sample Depth (ft)	Stratum Number	AASHTO Symbol	pH	Chlorides (ppm)	Sulfates (ppm)	Resistivity (ohm-cm)	Substructure Environmental Classifications[1] (Soil)		Substructure Environmental Classifications[1] (Water)	
	Station (feet)	Offset (feet)								Steel	Concrete	Steel	Concrete
Ponds													
PB-1	132 35	180 LT	4.0 - 6.0	2	A-1-b/A-3/A-2-4	8.0	30	101	3,200	Moderately Aggressive	Slightly Aggressive	—	—
PB-5	133 43	243 RT	6.0 - 8.0	2	A-1-b/A-3/A-2-4	7.7	30	288	2,700	Moderately Aggressive	Moderately Aggressive	—	—
Roadway (provided to support the data on the Roadway Soil Survey Sheet)													
AB-104R(LBR#01)	104 + 00	30 RT	0.0 - 2.0	1	A-3	6.4	30	<4.8	32,000	Moderately Aggressive	Slightly Aggressive	—	—
AB-144R(LBR#03)	144 + 00	30 RT	0.0 - 2.0	1	A-3	5.9	15	<4.8	62,000	Extremely Aggressive	Moderately Aggressive	—	—
AB-163L(LBR#04)	163 + 00	25 LT	0.0 - 2.0	1	A-3	6.9	15	<4.8	28,000	Moderately Aggressive	Slightly Aggressive	—	—
AB-125L(LBR#02)	124 + 91	17 LT	0.0 - 2.0	3	A-2-4	7.8	15	<4.8	49,000	Slightly Aggressive	Slightly Aggressive	—	—
B-3	137 + 63	35 RT	2.0 - 4.0	3	A-2-4/A-2-6	8.2	45	37	6,500	Slightly Aggressive	Slightly Aggressive	—	—
Culv-126+40	126 + 00	22 RT	6.0 - 10.0	4	A-4	7.6	30	660	1,500	Moderately Aggressive	Moderately Aggressive	—	—
Water Sample Obtained From Seller's Pit						7.8	65	50	2,200	NA	NA	Moderately Aggressive	Moderately Aggressive

[1] As per Table 1.1a "Criteria for Substructure Environmental Classifications" of the January 2009 FDOT Structures Manual Vol. 1 Structures Design Guidelines.

TIERRA

May 29, 2012

HDR Engineering, Inc.
2621 Cattlemen Road, Suite 106
Sarasota, FL 34232

Attn: Mr. Donald R. Holcomb, P.E.
Vice President

RE: Roadway Soil Survey Report
44th Avenue East from 30th Street East to 45th Street East
Manatee County, Florida
County Project No. 6071160
Tierra Project Number: 6511-09-089

Mr. Holcomb,

Tierra, Inc. has completed a Roadway Soil Survey Report for the above referenced project. This report is provided as part of the documents needed for the Final Roadway Plans Submittal. The results of our field exploration program, laboratory testing and subsequent geotechnical recommendations are presented in this report.

Tierra, Inc. appreciates the opportunity to be of service to HDR Engineering, Inc. (HDR) on this project. If you have any questions or comments regarding this report, please contact our office at your earliest convenience.

Sincerely,

TIERRA, INC.

Joseph R. Antinori, P.E.
Geotechnical Engineer
Florida License No. 73176

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5-29-12 Roadway Soil Survey Rpt. Geotech

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APPENDIX H

FHWA Checklist

1.0 PROJECT INFORMATION

1.1 Project Authorization

Authorization to proceed with this project was issued by HDR in accordance with a Subconsultant Agreement dated June 16, 2009.

1.2 Project Description

The project consists of the design of 44th Avenue East from 30th Street East to 45th Street East in Manatee County, Florida. Based on the Typical Section provided by HDR, the new roadway extension will consist of a four lane divided roadway with 12-foot wide travel lanes, 22 foot median, 4-foot wide bicycle lanes and 5-foot wide sidewalks in both directions. A causeway system will traverse Sellers Pit located between 37th Street East and 39th Street East. Based on roadway cross-sections provided by HDR, there will be gravity walls designed and constructed as part of the project.

The purpose of this study is to provide geotechnical (i.e. soils and groundwater) input to the design team to assist in the roadway and gravity wall design associated with the proposed 44th Avenue Extension.

1.3 General Site Conditions

The proposed project alignment traverses mostly undeveloped and rural land bordered to the north and south by residential developments. The majority of the proposed alignment west of 37th Street East is a Manatee County easement. The majority of the proposed alignment east of 39th Street East consists of partially paved roadway and residential land to the south. The proposed alignment between 37th Street East and 39th Street East traverses an existing pond (Seller's Pit). Two smaller ponds are located within the proposed alignment. One is located northeast of the 37th Street East and the proposed alignment and the other is located at the northeast corner of 39th Street East and 44th Avenue East. The proposed roadway alignment also traverses low lying wetland areas and swales that pond frequently during the rainy season.

2.0 PURPOSE AND SCOPE OF SERVICES

The geotechnical study was performed to obtain information relating to the existing subsurface conditions along the limits of the proposed roadway to assist in the design of construction plans for the proposed roadway extension. The following services were provided:

1. Reviewed soil information obtained from the "Soil Survey of Manatee County, Florida" published by the United States Department of Agriculture (USDA) National Resources Conservation Service (NRCS). Reviewed topographic and potentiometric information obtained from the Bradenton, Florida Quadrangle Map and Potentoimetric Surface of the Upper Floridan Aquifer, West Central Florida Map published by the United States Geological Survey (USGS), respectively.

2. Conducted a visual reconnaissance of the project site, generated boring location plans and located and coordinated utility clearance.

3. Performed a geotechnical field study for the proposed roadway extension and improvements consisting of borings and subsurface sampling. Auger borings were completed at intervals of approximately 100 feet along the proposed roadway alignment. Standard Penetration Test (SPT) borings were completed in the vicinity of the proposed retaining walls, box culvert and causeway embankment.

4. Performed delineation of organic and plastic soils in areas along the proposed roadway alignment. Generated Muck and Plastic Soil Delineation Plan sheets.

5. Performed probes within the footprint of the two smaller existing ponds located in the path of the proposed roadway alignment.

6. Visually examined the recovered soil samples in the laboratory. Performed laboratory tests for soil classification on selected representative samples to develop the soil legend and Roadway Soil Survey for the project using the American Association of State Highway and Transportation Officials (AASHTO) Soil Classification System.

7. Performed laboratory tests to estimate the Environmental Classification of substructures.

8. Performed four (4) Limerock Bearing Ratio (LBR) tests on soil samples collected within the project limits.

9. Generated a Technical Special Provision for Settlement Plates.

10. Prepared this Roadway Soil Survey Report to support the final roadway plans submittal.

3.0 REVIEW OF AVAILABLE DATA

3.1 Regional Geology

According to the USDA Soil Conservation Service (SCS) "Soil Survey of Manatee County, Florida", there are three (3) geologic formations at or near the surface in Manatee County: The Hawthorn Formation, the Bone Valley Formation, and Caloosahatchee Marl. The Hawthorn Formation consists chiefly of gray phosphatic sand and lenses of green or gray fuller's earth. Known exposures of this formation are confined to the western part of the county. Farther to the east the Hawthorn Formation is overlain by the Bone Valley Formation and by late Pleistocene sand. The fuller's earth varies in thickness from 7 feet to a thin film; in some places it does not occur. It is underlain by a compact, marly, fossiliferous limestone and overlain unconformably by a thin bed of Pleistocene terrace deposits.

The natural deposits of the Bone Valley Formation are rare; therefore, descriptions of it are based almost entirely on examinations of phosphate mines. The Bone Valley Formation has been described as "gray, brown, or mottled sand and phosphate conglomerate in a sand matrix. The brown sands are locally cemented into hard ferruginous sandstone, and slight induration is common".

The Caloosahatchee Marl consists mostly of sand and shells. In many places shells make up a large part of the deposits; in other areas they make up little or none. In fresh unweathered

exposures of Caloosahatchee Marl, the shells are commonly white or light gray. After exposures are subjected to the oxidizing effects of weathering, however, their color changes to cream or yellow. Only a few feet of this formation is exposed anywhere, because it occurs in a generally level region. In Manatee County this marl is in an area bordering the Gulf of Mexico.

Most of the soils in Florida have developed from a mantle of non-calcareous sands and clays overlying deposits of limestone. This mantle of sand and clay varies greatly in thickness in Manatee County. In the northeastern and central parts of the county it is comparatively thick, whereas in the southeastern and central parts it is so thin that the underlying limestone influences the characteristics of the soil. The Bradenton, Parkwood Variant, Manatee, and Felda soils were derived from or influenced by the underlying marl.

3.2 Review of USDA Soil Survey

The source of soils data provided in this section was obtained from the USDA NRCS Web Soil Survey available online at: http://websoilsurvey.nrcs.usda.gov/accessed [11/3/2009]. Based on a review of the Manatee County Soil Survey, it appears that there are eight (8) soil-mapping units noted within the vicinity of the proposed project. A USDA Soil Survey Map of the project area is provided in **Appendix A**. A Summary of USDA Soil Survey Data for the specific soils in the vicinity of the proposed roadway construction is provided in **Appendix B**. The general soil descriptions as described in the Soil Survey are presented in the following sub-sections.

Bradenton Fine Sand, Limestone Substratum (Map Unit 5)

This component has slopes of 0 to 2 percent and is on rises on marine terraces on coastal plains. The natural drainage class is poorly drained. Depth to a root restrictive layer, bedrock, is about 40 to 80 inches. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October, November and December. Organic matter content in the surface horizon is about 5 percent.

Chobee Loamy Fine Sand (Map Unit 13)

This component has slopes of 0 to 2 percent and is on depressions on marine terraces on coastal plains. The natural drainage class is very poorly drained. The depth to a root restrictive layer is greater than 60 inches. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 3 inches during January, February, June, July, August, September, October, November and December. Organic matter content in the surface horizon is about 4 percent.

Delray Complex (Map Unit 16)

This component has slopes of 0 to 2 percent and is on drainageways on marine terraces on coastal plains. The depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, June, July, August, September, November and December. Organic matter content in the surface horizon is about 4 percent.

EauGallie Fine Sand (Map Unit 20)

This component has slopes of 0 to 2 percent and is on flats on marine terraces on coastal plains. The depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 to 12 inches during June, July, August, September, and October. Organic matter content in the surface horizon is about 5 percent.

Floridana-Immokalee-Okeelanta Association (Map Unit 26)

This component has slopes of 0 to 2 percent and is on depressions on marine terraces on coastal plains. The depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly to very poorly drained. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, June, July, August, September, October, November and December. Organic matter content in the surface horizon can range from about 2 to 80 percent.

Ona Fine Sand (Map Unit 35)

This component has slopes of 0 to 2 percent and is on flats and flatwoods on marine terraces on coastal plains. The depth to a root restrictive layer, cemented horizon, is 40 to 80 inches. The natural drainage class is poorly drained. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 to 12 inches during June, July, August, September, October and November. Organic matter content in the surface horizon is about 3 percent.

Palmetto Sand (Map Unit 38)

This component has slopes of 0 to 2 percent and is on drainageways on marine terraces on coastal plains. The depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October and November. Organic matter content in the surface horizon is about 2 percent.

Wabasso Fine Sand (Map Unit 48)

This component has slopes of 0 to 2 percent and is on drainageways on marine terraces on coastal plains. The depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. This soil is not flooded. It is not ponded. A seasonal zone

of water saturation is at 6 to 12 inches during June, July, August, September, October and November. Organic matter content in the surface horizon is about 2 percent.

3.3 Review of USGS Quadrangle Map

Based on a review of the USGS Quadrangle Map for Bradenton, Florida and ground surface elevations obtained from the project surveyors, it appears that the project site elevations range from approximately +5 to +30 feet National Geodetic Vertical Datum of 1929 (NGVD29). A USGS Vicinity Map of the project location is provided in **Appendix A**.

3.4 Review of Potentiometric Surface Map

Based on a review of the "Potentiometric Surface of the Upper Floridan Aquifer, West Central Florida" map published by the USGS, the potentiometric surface elevation of the Upper Floridan Aquifer could potentially range from about +10 to +20 feet, NGVD29. The borings performed did not encounter an artesian flow condition. The contractor's tools and construction methods should be prepared to handle a potentiometric surface condition of up to +20 feet, NGVD 29, at no additional cost to the County.

4.0 SUBSURFACE EXPLORATION

4.1 Boring Location Plan, Utility Clearance and Traffic Control

Prior to commencing our subsurface explorations, boring location plans for the proposed roadway alignment were produced. These boring location plans were generated based on a review of the Roadway Plans, supplied by HDR and general guidance provided in the FDOT "Soils and Foundations Handbook," along with our engineering judgment. Tierra personnel staked and performed the borings in the field. Generally, the borings were performed at the proposed boring locations. When not possible, due to access or utility constraints, the boring locations were altered and the offsets were recorded on the field boring logs using handheld Global Positioning System (GPS) equipment and/or measuring distances from existing site features.

Utility clearances were coordinated by Tierra and updated as required prior to performing the soil borings in order to reduce the potential for damage to the underground utilities during the boring process.

4.2 Roadway Borings and Probes

Auger borings were advanced to approximate depths ranging from 4 to 5 feet below the existing ground surface along the proposed roadway alignment. Some of the auger borings were utilized to estimate Seasonal High Groundwater Table levels and to delineate the vertical and horizontal limits of organic and plastic soils. The auger borings were performed by manually twisting a bucket auger into the ground typically in 6 inch increments. As each soil type was encountered, samples were collected and visually classified in the field.

In addition to the hand auger borings, Tierra performed Standard Penetration Test (SPT) borings in Seller's Pit located between 37th Street East and 39th Street East and in the vicinity of

the proposed gravity walls and box culvert. The SPT borings performed within Seller's Pit were advanced to depths ranging from approximately 25 to 50 feet below the mudline (pond bottom) with the use of a barge mounted drill rig. The SPT borings performed in the vicinity of the proposed box culvert and gravity walls were advanced to depths ranging from 10 to 20 feet below the existing ground surface with the use of a track mounted drill rig. The soil sampling was performed in general accordance with the American Society for Testing and Materials (ASTM) Test Designation D-1586 titled, "Penetration Test and Split-Barrel Sampling of Soils". SPT resistance N-values were taken continuously in the initial 10 feet below the mudline/existing ground surface and at intervals of 5 feet thereafter. **Boring Location Plans** and **Soil Profiles** of the auger borings as well as the **Report of Core Borings** of the SPT borings completed are provided in **Appendix A**.

The borings were located using plans and MicroStation files provided by HDR, as well as hand held GPS equipment and/or measuring distances from existing site features. The locations and elevations of the borings performed for evaluation of the Seasonal High Groundwater Table (SHGWT) and SPT borings WB-122L, WB-125R, WB-126L, Culv-126+40, B-1, B-2 B-3 and B-4 performed for the proposed gravity walls and causeway/embankments were surveyed by the project surveyor. The remaining boring locations were obtained from MicroStation files provided by HDR in conjunction with the GPS coordinates obtained by Tierra in the field. The boring locations are shown on the **Boring Location Plan** and **Report of Core Borings** sheets in **Appendix A**.

Probes were performed within the footprint of the existing ponds located within the path of the proposed roadway alignment. Probes P-1, P-2 and P-3 were performed within the pond located east of 37th Street East and north of the proposed 44th Avenue alignment. Probes P-4, P-5 and P-6 were performed within the footprint of the existing pond located at the northeast corner of 39th Street east and 44th Avenue East. The purpose of the probes was to estimate the approximate depth of soft sediments at the pond bottom. The probes were performed by manually pushing a steel rod into the soil until firmer material was encountered. The approximate pond probe locations are shown on the **Boring Location Plan** in **Appendix A**.

5.0 LABORATORY TESTING

5.1 General

Representative soil samples collected from the roadway borings were classified and stratified in general accordance with the AASHTO Soil Classification System. Our classification was based on visual observations, using the results from the laboratory testing as confirmation. These tests included Grain-size Analyses, Atterberg Limits, Organic Content and Natural Moisture Content determination. Corrosion tests which measure parameters such as pH, resistivity, sulfate content and chloride content were assigned on selected soil and water samples to provide a basis for environmental classification. Limerock Bearing Ratio Tests were also performed to assist with the pavement design considerations.

5.2 Test Designation

The following list summarizes the laboratory tests performed and respective test methods.

- Grain-Size Analyses The grain-size analyses were conducted in general accordance with the AASHTO test designation T-088 (ASTM test designation D-422).

- Atterberg Limits - The liquid limit and the plastic limit tests ("Atterberg Limits") were conducted in general accordance with the AASHTO test designations T-089 and T-090, respectively (ASTM test designation D-4318).

- Organic Content - The organic content tests were conducted in general accordance with the AASHTO test designation T-267 (ASTM test designation D-2974).

- Natural Moisture Content - The laboratory moisture content tests were conducted in general accordance with the AASHTO test designation T-265 (ASTM test designation D-2216).

- Environmental Corrosion - Environmental corrosion tests were conducted in general accordance with the FDOT test designations FM 5-550, FM 5-551, FM 5-552 and FM 5-553.

- Limerock Bearing Ratio – Limerock Bearing Ratio (LBR) tests were performed in general accordance with the FDOT test designation FM-5-515.

A summary of the laboratory test results for each soil stratum is presented on the Roadway Soils Survey Sheet in **Appendix A**. The Roadway Soils Survey Sheet includes ranges of laboratory test results for different stratum soil samples collected from borings included in this report as well as the Pond Soil Survey Report prepared for this project. A detailed summary of the laboratory tests with the corresponding results is also presented in **Appendix C**.

6.0 RESULTS OF SUBSURFACE EXPLORATION

6.1 General Soil Conditions

Typically, sandy soils to sandy soils with silt underlain by silty to clayey sand and/or sandy silt to silty clay was encountered at the auger boring locations. Near surface clayey soils and near surface organic soils were encountered at some of the boring locations along the project alignment. In addition, some of the auger borings were terminated at a depth less than 5 feet due to calcareous clay and/or weathered limestone. The location and depth at which these soil conditions were encountered can be seen on the **Roadway Soil Profiles** sheets in **Appendix A**.

The probes performed within the footprint of the existing ponds encountered approximately 2 to 3 feet of soft silty sand sediment underlain by denser material within the pond bottom. The approximate location of the probes is shown on the **Boring Location Plan** in **Appendix A**

The soil types encountered during the geotechnical exploration have been assigned to a stratum. The stratum descriptions and soil types associated with this project are listed in the following table.

Stratum No.	Typical Soil Description	AASHTO Classification
1	Gray to Brown Fine SAND to Fine SAND With Silt	A-3
2	Gray to Brown Fine SAND to Fine SAND With Silt With Limerock Fragments or With Shell Fragments	A-1-b/A-3
3	Gray to Dark Gray to Brown Silty to Clayey SAND	A-2-4/A-2-6
4	Light Gray to Dark Gray Sandy SILT to Pale Brown to White Silty CLAY Occasionally Calcareous With limestone Fragments	A-4/A-6/A-7-6
5	Dark Gray to Black Organic Silty to Clayey SAND to Organic Sandy CLAY Occasionally With Wood	A-8
6	Weathered LIMESTONE	-- (1)

(1) AASHTO nomenclature does not include a classification for Weathered Limestone.

The soil strata shown in the preceding table were encountered during the geotechnical exploration performed for the entire project (Roadway, Ponds and FMS Locations).

Soil stratification was based on a visual review of the recovered samples, laboratory testing and interpretation of the field boring logs. The boring stratification lines shown on the soil profiles represent the approximate boundaries between soil types of significantly different engineering properties; however, the actual transition may be gradual. In some cases, small variations in properties not considered pertinent to our engineering evaluation may have been abbreviated or omitted for clarity. The boring profiles represent the conditions at the particular boring location and variations do occur among the borings.

6.2 Organic Soils

Organic soils were encountered at depths ranging from 6 inches to 4 feet below grade from approximate station 123+40 to station 129+00. Tierra delineated the approximate vertical and horizontal limits of the organic soils within the influence zone of the proposed roadway construction. The removal and utilization of organic material should be performed in accordance with FDOT Design Standard Indices 500 and 505. Tierra identified the approximate limits of muck removal by preparing a **Muck Delineation Plan Sheet**. The **Muck Delineation Plan Sheet** can be found in **Appendix A**.

6.3 Plastic Soils

Plastic soils were encountered at the existing ground surface to depths of approximately 5 feet below the ground surface from approximate station 115+00 to station 120+00. Tierra delineated the approximate vertical and horizontal limits of the plastic soils within the influence zone of the proposed roadway construction. The removal and utilization of plastic soils should be performed

in accordance with FDOT Design Standard Indices 500 and 505. Tierra identified the limits of plastic soil removal by preparing a **Plastic Soil Delineation Plan Sheet**. The **Plastic Soil Delineation Plan Sheet** can be found in **Appendix A**.

6.4 Groundwater

The groundwater table was measured at the roadway boring locations during our field exploration. The depths to the groundwater table along the project alignment were found to range from approximately 2½ to 5 feet below the existing ground surface. The groundwater table measured at each of the boring locations is presented on the **Roadway Soil Profiles** sheets in **Appendix A**. In addition, provided in **Appendix B** is a table that depicts groundwater depths measured at select roadway boring locations where SHGWT levels were also evaluated.

Groundwater conditions will vary with environmental variations and seasonal conditions, such as the frequency and magnitude of rainfall patterns, as well as man-made influences (i.e. existing water management canals, swales, drainage ponds, underdrains and areas of covered soils, such as paved parking lots and sidewalks).

6.5 Seasonal High Groundwater Estimates

Seasonal high groundwater table (SHGWT) levels were estimated at a total of fourteen (14) roadway boring locations along the project alignment. The SHGWT levels ranged from above the existing ground surface to a depth of approximately 1½ feet below grade. The SHGWT estimates at or above the ground surface were typically due to perched conditions in areas where plastic clayey soils were near or at the ground surface. A table summarizing the estimated seasonal high groundwater table elevations is presented in **Appendix B**. The SHGWT estimates are also presented on the corresponding **Roadway Soil Profiles** in **Appendix A**.

The seasonal high groundwater table levels estimated along the project alignment were based on soil stratigraphy, measured groundwater levels from the borings, the Manatee County, Florida USDA Soil Survey information and past experience with similar soil conditions. Minimum separation between the bottom of the base and the SHGWT should be in accordance with the FDOT Flexible Pavement Manual and the FDOT Plans Preparation Manual (PPM).

7.0 ENGINEERING EVALUATIONS AND RECOMMENDATIONS

7.1 General

As mentioned in previous sections, organic and plastic soils were encountered within some of the auger borings performed within the roadway alignment. These areas were delineated to estimate the approximate vertical and horizontal limits of the organic and plastic soils. The organic and plastic soils should be removed and utilized in accordance with FDOT Design Standard Indices 500 and 505. Removal of organic soils is recommended from approximate station 123+40 to 129+00 and removal of plastic soils is recommended from 115+00 to 120+00. The limits of organic and plastic material removal are shown on the **Muck and Plastic Soil Delineation Plan Sheets** in **Appendix A** as well as the roadway cross-sections provided by HDR.

With the exception of the areas identified as having organic and/or plastic soils, the existing shallow subsurface soils encountered in the borings performed elsewhere along the alignment appear suitable for support of the proposed roadway construction after proper subgrade preparation.

As indicated in **Section 6.5**, SHGWT levels were estimated to range from above the existing ground surface to a depth of approximately 1½ feet below the existing ground surface. Separation between the bottom of the proposed roadway base and the Seasonal high Groundwater Table is critical to pavement performance and to achieve the required compaction and stability during construction operations. Tierra recommends that the minimum separation between the bottom of the base and the SHGWT should be in accordance with the FDOT Flexible Pavement Manual and the FDOT Plans Preparation Manual (PPM). Based on discussions with HDR, 44th Avenue is an urban section and therefore the roadway should be designed to maintain a minimum separation of 1 foot between the bottom of the roadway base and the SHGWT.

According to FDOT Index 500, in areas where plastic material is being removed, the side ditches must be at least as deep as the undercut plane. This method of undercutting prevents water from ponding/mounding directly beneath the roadway base. Based on the typical Urban section and our review of the project cross-section, side ditches are not proposed for this portion of the project. As a result, water can pond/perch in the undercut plastic soils. In addition, gravity retaining walls are not meant to be founded within a perched water table. It is our opinion that underdrains will facilitate construction as well as performance of the roadway pavement and gravity walls. For these reasons, Tierra recommends that underdrains be utilized to prevent water from ponding/mounding directly beneath the roadway base by channeling any ponding/mounding water towards a stormwater drain. The underdrains need to be sloped and outfall to a ditch, pond or stormwater control structure. Tierra recommends that Type II underdrains be utilized from approximate station 115+00 to 120+00 and that the underdrain inverts be placed a minimum of 3 feet below the lowest edge of the pavement base.

As part of the proposed roadway improvements embankments will be constructed above the natural grades to achieve the proposed finished grade elevations. As such the existing ponds within the path of the proposed roadway alignment will be backfilled and a causeway will be constructed in order for the roadway to span Seller's Pit. Tierra anticipates that settlement and

lateral spreading of soils will occur during backfilling of the existing ponds and causeway construction. Therefore more fill will likely be required in these areas than theoretically calculated. **Section 7.4** of this report presents our embankment settlement analyses and recommendations for a settlement monitoring program. Fill placement in these areas should be in accordance with Section 120-8.2.2, "Placing in Unsuitable Areas", of the FDOT Standard Specifications for Road and Bridge Construction (SSRBC).

Site preparation should consist of normal clearing and grubbing followed by grading and compaction of subgrade soils. Backfill should consist of materials conforming to FDOT Design Standard Index 505. Clearing and grubbing and compaction should be accomplished in accordance with Sections 110 and 120 of the FDOT SSRBC, latest edition.

7.2 Removal of Plastic and Organic Soil

Removal of organic soils will be required from approximate station 123+40 to station 129+00. Likewise, removal of plastic soils will be required from approximate station 115+00 to station 120+00. Tierra identified the limits of muck and plastic soil removal by preparing a **Muck Delineation Plan** sheet and a **Plastic Soil Delineation Plan** sheet which are presented in **Appendix A**.

7.3 Underdrains

As mentioned previously, Tierra recommends that Type II underdrains be utilized on both sides of the proposed roadway alignment from approximate station 115+00 to 120+00 and that the underdrain inverts be placed a minimum of 3 feet below the lowest edge of the pavement base. The underdrains should be designed and constructed in general accordance with FDOT Standard Indices 286 and 500.

7.4 Embankment Settlement

Settlements for the proposed embankments were estimated using the computer program "FoSSA (2.0)" developed by ADAMA Engineering, Inc. The analyses were performed using the proposed embankment heights and the associated embankment widths estimated from the roadway cross-sections. Settlement analyses utilized embankment geometry shown on cross-sections provided by HDR and the nearest available SPT boring. The computer outputs of the analyses are provided in **Appendix D**.

It is our understanding that an embankment fill roadway section will be utilized to span Seller's Pit located between 37th Street East and 39th Street East (approximate roadway cross-section stations: 136+00 to 139+00). Based on a review of the cross-sections the embankment along the causeway will be approximately 14 feet in height. The borings performed along the proposed causeway alignment typically encountered very loose soils in the initial 4 to 6 feet below the mudline of the pond. Below the very loose soils was approximately 8 to 10 feet of firm to hard sandy silt underlain by weathered limestone. Based on design cross-sections provided by HDR and embankment settlement analyses performed by Tierra, it is anticipated that the proposed causeway across Seller's Pit will undergo up to 1 foot of settlement due to the loose soils below the mudline surface. In addition to this settlement, we anticipate that some lateral spreading of the soils at the base of the embankment and pond bottom will also take place that

will require more fill than "theoretically" calculated. Therefore the total settlement of the causeway is anticipated to range from 6 to 12 inches. We anticipate that the majority of the settlement will occur within 2 to 3 months of completion of embankment construction.

Tierra recommends that settlement plates be installed once the embankment fill height is approximately 6 inches above the water level within Seller's Pit at the time of construction. The settlement plates should be located at approximately 50 foot intervals along the causeway alignment from roadway cross-sections 136+00 to 139+00. A **Settlement Monitoring for Causeway Construction Plan** sheet which shows the proposed locations of settlement plate installation is included in **Appendix A**. Tierra also developed a **Technical Special Provision for Settlement Plates** which is included in **Appendix G**. Settlement plates should be installed in accordance with FDOT Design Standard Index 540. Survey elevations of the settlement should be recorded and reported on a biweekly basis. Prior to placement of the roadway base, we recommend that a professional geotechnical engineer evaluate the settlement plate measurements to determine if the post construction settlement is within tolerable limits of the anticipated settlement to allow base material to be placed.

At other locations along the roadway alignment, embankments are estimated to be approximately 9 feet or less in height. Provided site preparation operations are properly performed and the recommendations previously stated are utilized, the analyses performed indicate that the maximum total settlement of the embankment at locations other than the causeway across Seller's Pit is anticipated to be on the order of 1 to 2 inches with post construction settlement estimated not to exceed approximately ½ inch.

Embankment fill soils should be placed and compacted in accordance with FDOT Standard Specifications for Road and Bridge Construction (SSRBC) and FDOT Design Standard Index 505.

7.5 Slope Stability

Slope stability analyses were performed using the computer program "StablPro". The program uses the method of slices to determine the safety factor against slope failure. Input data for the analyses was based on roadway cross section geometry and subsurface soils encountered within the SPT borings. Slope stability analyses were performed for roadway cross-section 125+00 and 138+00 using soil properties estimated from SPT borings WB-125R and B-1, respectively. StablPro computer output files from the analyses are presented in **Appendix E**. The computer output indicates that factors of safety computed for the embankment slopes analyzed exceed the minimum required safety factor of 1.3 for embankments and 1.5 for gravity walls.

7.6 Gravity Walls

Based on a review of the design information provided by HDR, the proposed gravity walls will have a total height of 6 feet with an exposed wall face of 5 feet above the ground surface and an embedment depth of 1 foot below the ground surface. Tierra performed analyses based on gravity wall geometry specified in the FDOT Standard Index 520 and determined that modified gravity walls would be necessary to meet required FDOT criteria. The analyses were performed using estimated Seasonal High Groundwater Table levels in the vicinity of the proposed gravity

walls, roadway cross sections and gravity wall geometry specified in Index 520. Capacity Demand Ratios for external stability were checked as part of the analyses.

The analyses performed for the modified gravity walls were based on the Scheme 1 geometry outlined in Index 520. The analyses consisted of manipulating the wall embedment depth (while maintaining the exposed wall height of 5 feet and back slope wall geometry of 5 horizontal to 12 vertical) until the minimum required FDOT capacity demand ratios were achieved. **The results of the analyses indicate that the left gravity wall from station 121+50.00, 59' LT to 129+32.26, 59' LT and the right gravity wall from station 123+50, 59 RT to 126+82, 56 RT will require a minimum embedment depth of 3.5 feet rather than the proposed 1 foot.**

The external stability analyses were performed for the proposed walls based on the anticipated maximum wall height. The analysis indicated the required Capacity-Demand-Ratios (CDRs) for eccentricity/overturning, bearing capacity, and sliding were achieved. The results of our external stability analyses are presented in **Appendix F**.

7.7 Cut and Fill Slopes

We anticipate that fill will be required for the proposed construction. Assuming proper subgrade preparation and adequate fill materials are utilized, we recommend that all proposed side slopes be constructed on 1 vertical to 2 horizontal (1V:2H) or flatter for fill materials placed on land. For fill materials placed within existing site ponds, we recommend clean sand (A-3) materials be utilized. In addition, side slopes below the water level of the pond to 2 feet above the water level should be constructed on a 1 vertical to 6 horizontal (1V:6H) slope or flatter to account for normal dispersion of soil placed through the water. The slopes will need to be armored to protect against erosion. Side slopes at elevations greater than 2 feet above the high water level may be constructed at a 1V:2H slope or flatter.

7.8 Temporary Side Slopes

Side slopes for temporary excavations above the water table may stand near 1V:1H for short dry periods of time; however, we recommend that temporary excavations that are deeper than 4 feet and above the water table are cut on slopes of 1V:2H or flatter. Where restrictions will not permit slopes to be laid back as recommended above, the excavation should be shored in accordance with OSHA requirements. Furthermore, open-cut excavations exceeding 10 feet in depth should be properly dewatered and sloped 1V:2H or flatter or benched using a bracing plan approved by a professional engineer licensed in the State of Florida. During foundation construction, excavated materials should not be stockpiled at the top of the slope within a horizontal distance equal to the excavation depth.

7.9 Groundwater Control

Depending upon groundwater levels at the time of construction, some form of dewatering will be required to achieve the required compaction especially for any underground pipe installations.

7.10 Pavement Design Considerations

Four (4) LBR tests were performed on the near surface materials obtained at various locations along the roadway improvements. The LBR tests yielded values ranging from 36 to 52 percent. According to the FDOT Soils and Foundations Handbook, two methods (±2% of Optimum Method and the 90% Method) were applied to the LBR test results to determine the design LBR value and to account for variability in materials, moisture contents and field versus laboratory conditions. The design LBR should be taken as the lower of the values determined by the two methods. Based on our analyses, the ±2% of Optimum Method yielded the lesser **Design LBR value of 31**. The Results of the LBR Tests are presented in **Appendix B**.

It should be noted that the LBR values are based on samples obtained from the insitu soils obtained at depths of approximately 6 inches to 2 feet below the ground surface along the project alignment and may not be representative of borrow materials which may support some of the proposed roadway. The design of the pavement section should be in accordance with the FDOT Flexible Pavement Manual and the FDOT Plans and Preparation Manual (PPM).

7.11 On-Site Soil Suitability

The general suitability of the soils encountered during our geotechnical explorations is presented on the Roadway Soil Survey Sheet in **Appendix A**. Indices 500 and 505 of the FDOT Design Standards should be consulted to determine the specific use/suitability of the soil types encountered during our geotechnical explorations performed to date.

7.12 General Roadway Construction

The overall site preparation and mechanical densification work for the construction of the proposed roadway should be in accordance with the FDOT SSRBC and Standard Index requirements.

8.0 ENVIRONMENTAL CLASSIFICATION

Corrosion testing was performed by Tierra on recovered soil samples from borings performed along the project alignment. The results of the tests performed by Tierra are presented in **Appendix C**. The Roadway Soils Survey Sheet in **Appendix A** includes ranges of corrosion test results for different soil strata.

Based on the laboratory test results and the FDOT Structures Design Guidelines, the environment for substructures is classified as Extremely Aggressive for Steel and Moderately Aggressive for Concrete.

The following is a summary of the environmental classification and ranges of test values. The descriptive data in parentheses are the source and magnitude of the environmental classification parameters resulting in the classification.

Environmental Classification:

Substructure Steel: Extremely Aggressive
(Soil - pH =5.9, Chlorides =15, Resistivity = 62,000 ohm-cm)

Substructure Concrete: Moderately Aggressive
(Soil – pH =5.9, Chlorides =15, Sulfates < 5 and Resistivity = 62,000 ohm-cm)

Range of Soil Test Results:

Resistivity:	1,500 – 62,000 ohm-cm
Chlorides:	15 – 60 ppm
Sulfates:	<5 – 660 ppm
pH:	5.9 – 8.3

9.0 FHWA REVIEW CHECKLIST

As referenced in the DOT Structures Design Guidelines, conformance to the FHWA Report "Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Plans and Specifications" prepared by the Geotechnical and Materials Branch, FHWA, Washington, D.C., dated October 1985, is required when preparing geotechnical reports. The FHWA checklist for this report is enclosed in **Appendix H.**

10.0 REPORT LIMITATIONS

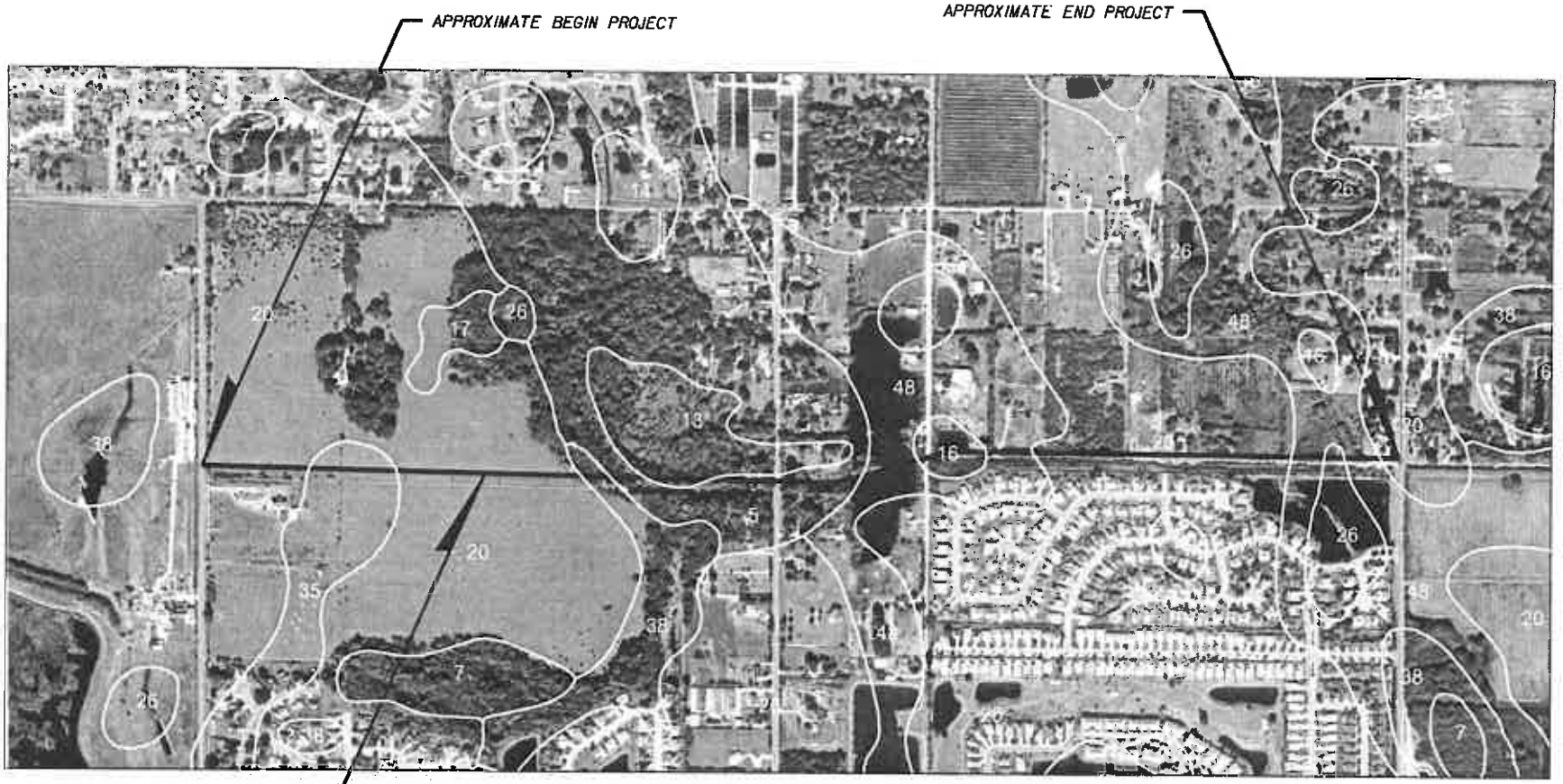
Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices at the time of this report. Our geotechnical engineering evaluation of the site and subsurface conditions with respect to the planned roadway improvements, and our recommendations for site preparation and foundation construction are based upon the following: (1) site observations, (2) the field exploratory test data obtained during the geotechnical study, and (3) our understanding of the project information and anticipated grades as presented in this report. This company is not responsible for the conclusions, opinions or recommendations made by others based on the data presented in this report.

The scope of the exploration was intended to evaluate soil conditions within the influence of the proposed roadway extension and improvements. The analyses and recommendations submitted in this report are based upon the anticipated location and type of construction and data obtained from the soil borings performed at the locations indicated and does not reflect any variations which may occur among these borings. If any variations become evident during the course of construction, a re-evaluation of the recommendations contained in this report will be necessary after we have had an opportunity to observe the characteristics of the conditions encountered.

The scope of services, included herein, did not include any environmental assessment for the presence or absence of hazardous or toxic materials in the soil, surface water, groundwater, air, on the site, below and around the site. Any statements in this report or on the boring logs regarding odors, colors, unusual or suspicious items and conditions are strictly for the information of HDR and the Manatee County Public Works Department.

APPENDIX A

USDA Vicinity Map A-1
USGS Vicinity Map A-2
Roadway Soils Survey A-3
Roadway Boring Location Plan and Soil Profiles ..... A-4 through A-15
Muck Delineation Plan Sheet A-16
Plastic Soil Delineation Plan Sheet A-17
Report of Core Borings ..... A-18 through A-23



REFERENCE: USDA SOIL SURVEY OF MANATEE COUNTY, FLORIDA

TOWNSHIP:	35S
RANGE:	18E
SECTION:	4,5,8 & 9
SCALE:	1 INCH= 600 FT

				SCALE AS NOTED	E.O.R.: ERICK M. FREDERICK, P.E.	DATE 12/2/2010	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER ERICK M. FREDERICK	SHEET NO.
				DESIGNED BY JRA	P.E. LICENSE NUMBER 63920				
				DRAWN BY BJS	TIERRA INC	PROJECT NO. 607160		FL. LICENSE NO. 63920	USDA VICINITY MAP
NO.	REVISIONS	DATE	BY	CHECKED BY EMF	7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637 CERTIFICATE OF AUTHORIZATION: 6485				

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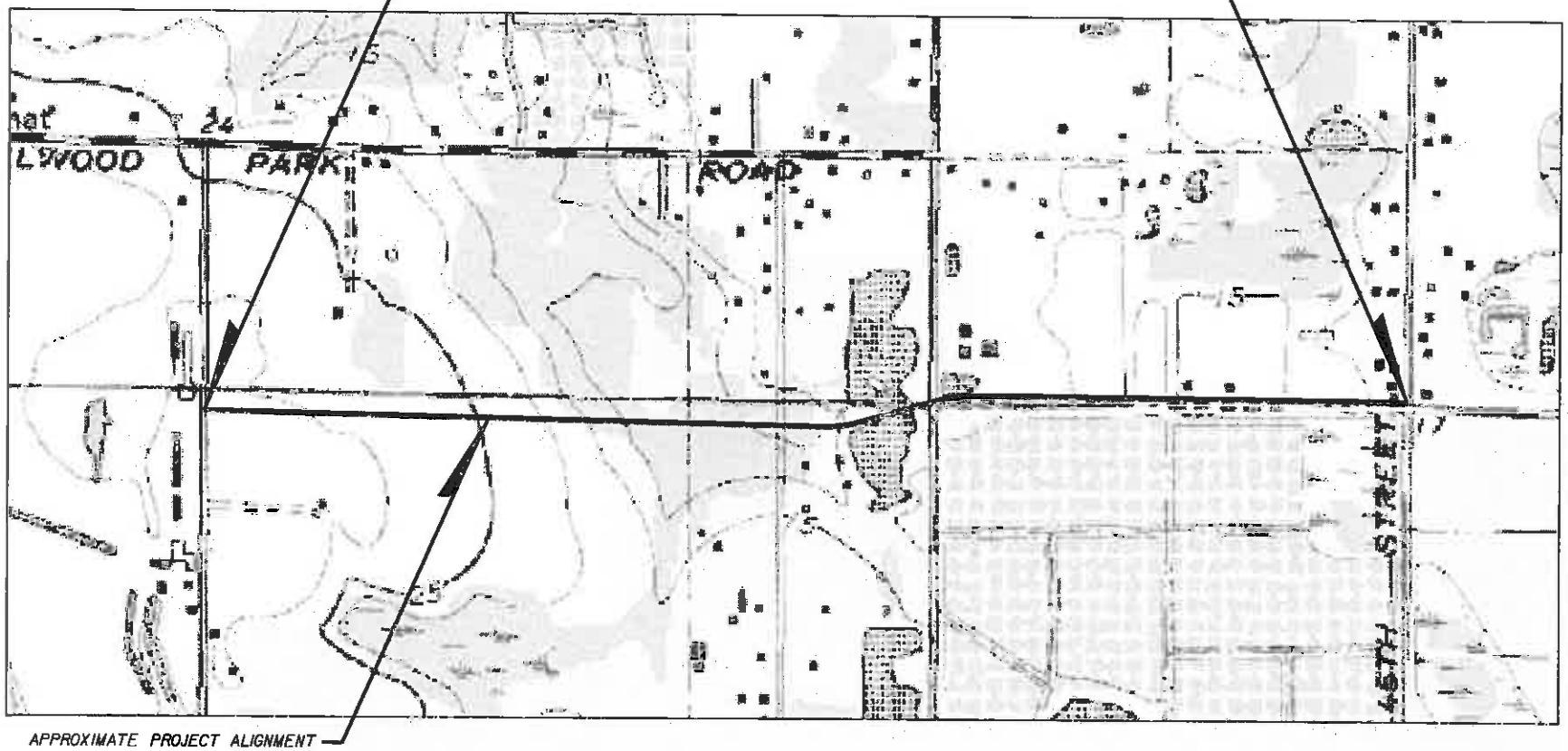

REFERENCE: USGS QUADRANGLE MAP FOR BRADENTON, FLORIDA

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RANGE:	18E
SECTION:	4,5,8 & 9
SCALE:	1 INCH= 600 FT

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

USGS VICINITY MAP

SHEET NO.:

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DATE OF SURVEY: DECEMBER 2010 TO APRIL 2012
SURVEY MADE BY: TIERRA, INC.
SUBMITTED BY: ERICK M. FREDERICK, P.E.

MANATEE COUNTY
PUBLIC WORKS

COUNTY PROJECT NO : 6071160
PROJECT NAME: 44TH AVENUE EAST FROM 30TH STREET EAST TO 45TH STREET EAST

CROSS SECTION SOIL SURVEY FOR THE DESIGN OF ROADS

SURVEY BEGINS STA.: 100+13.47 SURVEY ENDS STA.: 173+07.83

REFERENCE: CENTERLINE CONSTRUCTION

	ORGANIC CONTENT		MOISTURE CONTENT		SIEVE ANALYSIS RESULTS PERCENT PASS						ATTERBERG LIMITS (%)					CORROSION TEST RESULTS				
STRATUM NO.	NO. OF TESTS	% ORGANIC	NO. OF TESTS	MOISTURE CONTENT	NO. OF TESTS	10 MESH	40 MESH	60 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTIC INDEX	AASHTO GROUP	DESCRIPTION	NO. OF TESTS	RESISTIVITY ohm-cm	CHLORIDE ppm	SULFATES ppm	pH
1	2	2	2	22-23	16	90-100	79-93	65-78	34-45	2-10	—	--	--	A-3	GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT	3	28,000-62,000	15-30	<4.8	5.9-6.9
2	--	--	--	--	5	52-77	43-63	35-53	21-35	4-15	—	--	--	A-1-b/A-3	GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT WITH LIMEROCK FRAGMENTS OR WITH SHELL FRAGMENTS	2	2,700-3,200	30	101-288	7.7-8.0
3	1	2	9	18-80	13	80-100	72-94	62-81	46-59	15-33	6	NP-34	NP-15	A-2-4/A-2-6	GRAY TO DARK GRAY TO BROWN SILTY TO CLAYEY SAND	2	6,500-49,000	15-45	<4.8-37	7.8-8.2
4	1	2	10	17-38	11	100	89-92	80-82	61-65	38-90	10	NP-46	NP-23	A-4/A-6/ A-7-6	LIGHT GRAY TO DARK GRAY SANDY SILT TO PALE BROWN TO WHITE SILTY CLAY OCCASIONALLY CALCAREOUS WITH LIMESTONE FRAGMENTS	2	1,500-2,700	30-60	105-660	7.6-8.3
5	8	5-12	8	27-67	8	--	--	--	—	11-40	3	34-38	18-20	A-8	DARK GRAY TO BLACK ORGANIC SILTY TO CLAYEY SAND TO ORGANIC SANDY CLAY OCCASIONALLY WITH WOOD	--	--	--	--	--
6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	WEATHERED LIMESTONE	--	--	--	--	--

EMBANKMENT AND SUBGRADE MATERIAL

STRATA BOUNDARIES ARE APPROXIMATE. MAKE FINAL CHECK AFTER GRADING.

▽ - WATER TABLE ENCOUNTERED

▼ - ESTIMATED SEASONAL HIGH GROUNDWATER TABLE

GNA - GROUNDWATER NOT APPARENT

NOTES:

1. THE MATERIAL FROM STRATA 1 (A-3) AND 2 (A-1-b/A-3) APPEARS SATISFACTORY FOR USE IN THE EMBANKMENT WHEN UTILIZED IN ACCORDANCE WITH INDEX 505.
2. THE MATERIAL FROM STRATA 3 (A-2-4/A-2-6) AND 4 (A-4/A-6/A-7-6) IS PLASTIC MATERIAL AND SHALL BE REMOVED IN ACCORDANCE WITH INDEX 500. STRATA 3 AND 4 MAY REMAIN IN PLACE ABOVE THE EXISTING WATER LEVEL (AT THE TIME OF CONSTRUCTION) TO WITHIN 2 FEET OF THE PROPOSED BASE. IT SHOULD BE PLACED UNIFORMLY IN THE LOWER PORTION OF THE EMBANKMENT FOR SOME DISTANCE ALONG THE PROJECT RATHER THAN FULL DEPTH FOR SHORT DISTANCES.
3. THE MATERIAL FROM STRATUM 5 IS MUCK (A-8) MATERIAL AND SHALL BE REMOVED IN ACCORDANCE WITH INDEX 500 FROM STATION 123+40 TO STATION 129+00 AS ILLUSTRATED ON THE MUCK DELINEATION PLAN SHEET.
4. THE MATERIAL FROM STRATUM 6 IS ROCK-LIKE AND IS LOCATED AT SHALLOW DEPTHS IN SOME AREAS ALONG THE PROPOSED ROADWAY IMPROVEMENTS. FOUNDATION AND UTILITY EXCAVATION IN THOSE AREAS MAY BE DIFFICULT AND THE ROCK-LIKE MATERIAL SHALL BE UTILIZED IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

   THE CONTRACTOR SHOULD CONSIDER THE INCREASED COST OF ALL THE UNDERGROUND WORK ACTIVITIES WHILE PREPARING HIS BID. ALL COST OF ROCK-LIKE MATERIAL EXCAVATION SHALL BE INCLUDED IN THE APPROPRIATE ITEMS OF WORK CONTAINED WITHIN THE CONTRACT. NO EXTRA COMPENSATION OR TIME EXTENSION WILL BE ALLOWED FOR ADDITIONAL WORK DIRECTLY ASSOCIATED WITH THE SPLITTING, EXCAVATION, CRUSHING, DISPOSAL, REPLACEMENT OF DISPLACED VOLUME OF EXTRACTED ROCK-LIKE MATERIAL WITH FILL MATERIAL, OR SPECIAL HANDLING OF THE ROCK-LIKE MATERIAL.
5. BASED ON A REVIEW OF THE "POTENTIOMETRIC SURFACE OF THE UPPER FLORIDAN AQUIFER, WEST-CENTRAL FLORIDA" MAPS PUBLISHED BY THE USGS, THE POTENTIOMETRIC SURFACE ELEVATION OF THE UPPER FLORIDAN AQUIFER AT THE PROJECT SITE RANGES FROM APPROXIMATELY +10 TO +20 FEET, NGVD 29. THE SPT BORINGS PERFORMED ALONG THE ALIGNMENT DID NOT ENCOUNTER AN ARTESIAN FLOW CONDITION DURING THE FIELD EXPLORATION. THE CONTRACTOR'S TOOLS AND CONSTRUCTION METHODS SHOULD BE PREPARED TO HANDLE A POTENTIOMETRIC SURFACE CONDITION OF UP TO +20 FT, NGVD 29, AT NO ADDITIONAL COST TO THE COUNTY.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
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TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 4/2012
PROJECT NO.: 6071160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

ROADWAY SOIL SURVEY

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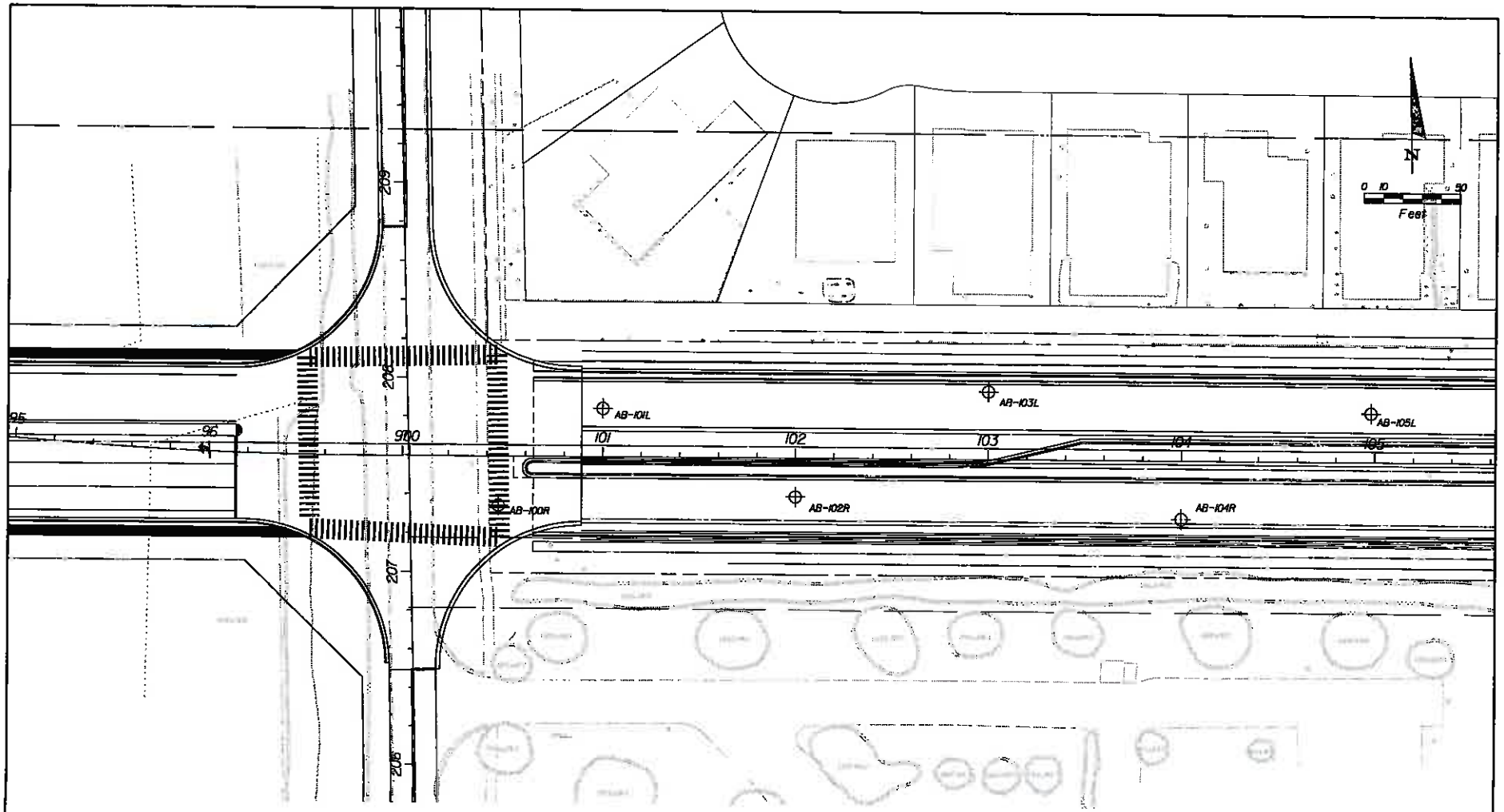

LEGEND

- APPROXIMATE AUGER BORING LOCATION
- APPROXIMATE SPT BORING LOCATION
- APPROXIMATE POND PROBE LOCATION

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
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7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 6071150

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

BORING LOCATION PLAN (1)

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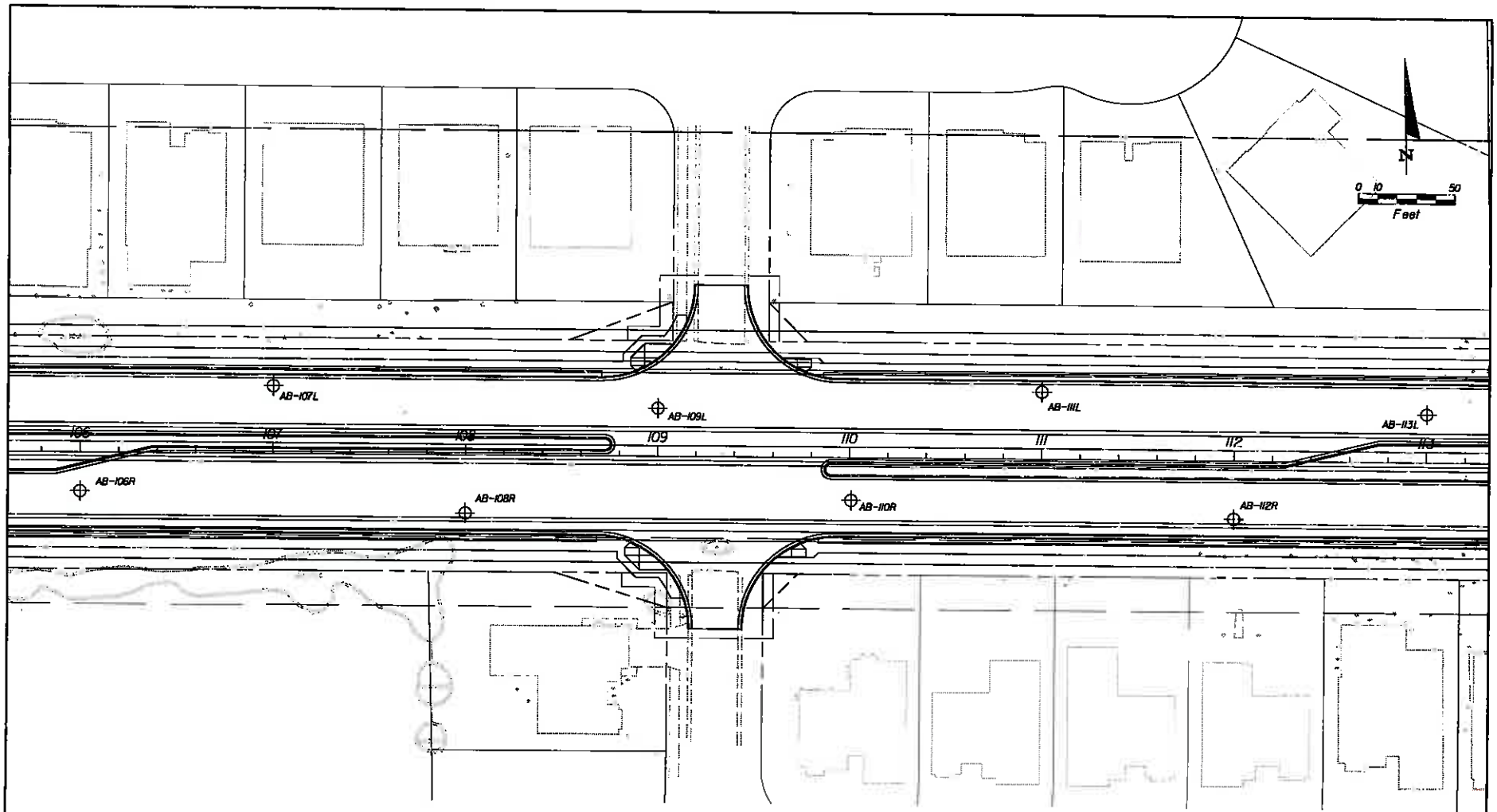

LEGEND

- APPROXIMATE AUGER BORING LOCATION
- APPROXIMATE SPT BORING LOCATION
- APPROXIMATE POND PROBE LOCATION

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 607IIGO

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

BORING LOCATION PLAN (2)

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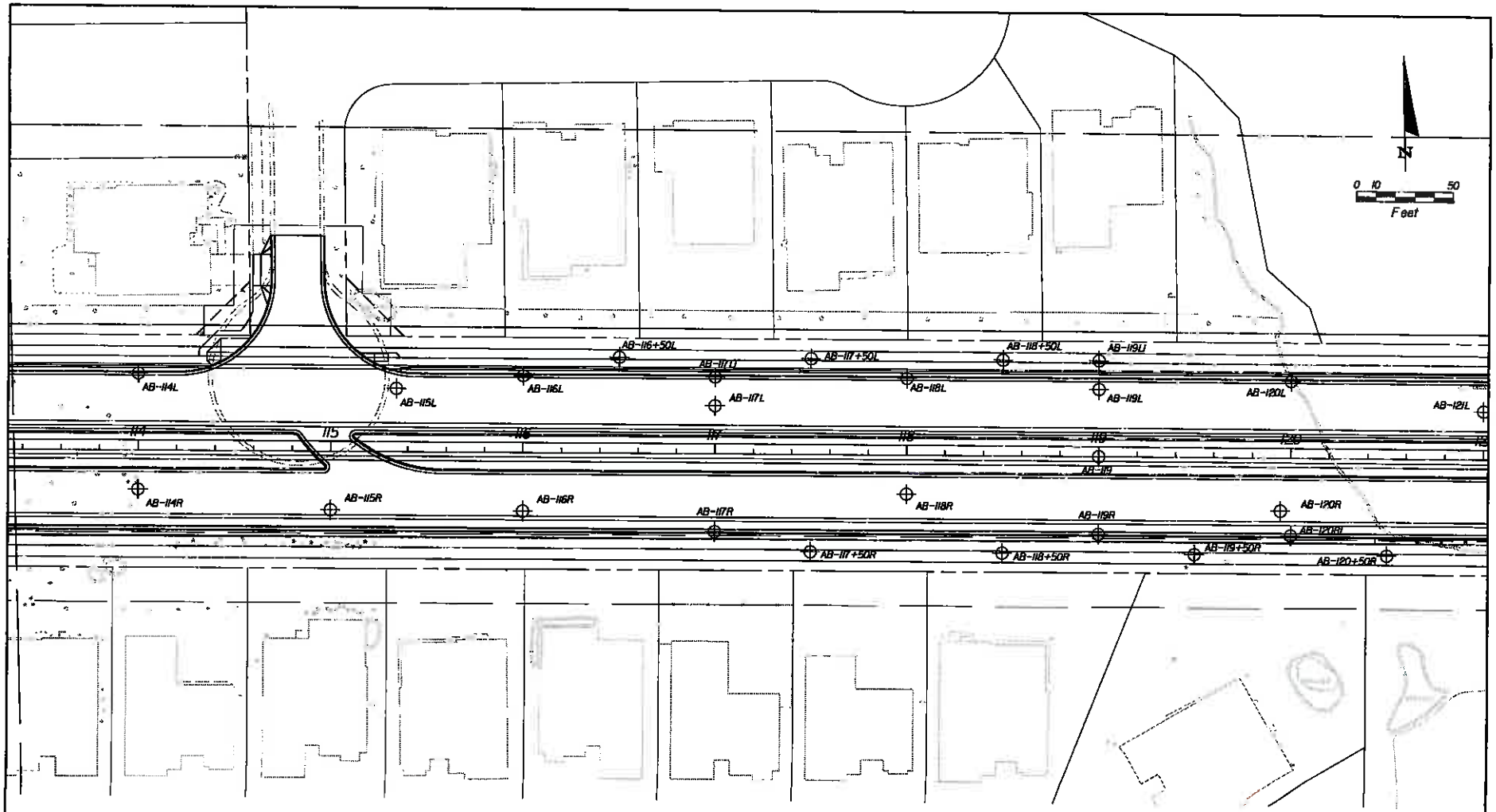

LEGEND

- APPROXIMATE AUGER BORING LOCATION
- APPROXIMATE SPT BORING LOCATION
- APPROXIMATE POND PROBE LOCATION

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 6071160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

BORING LOCATION PLAN (3)

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12/2/2010

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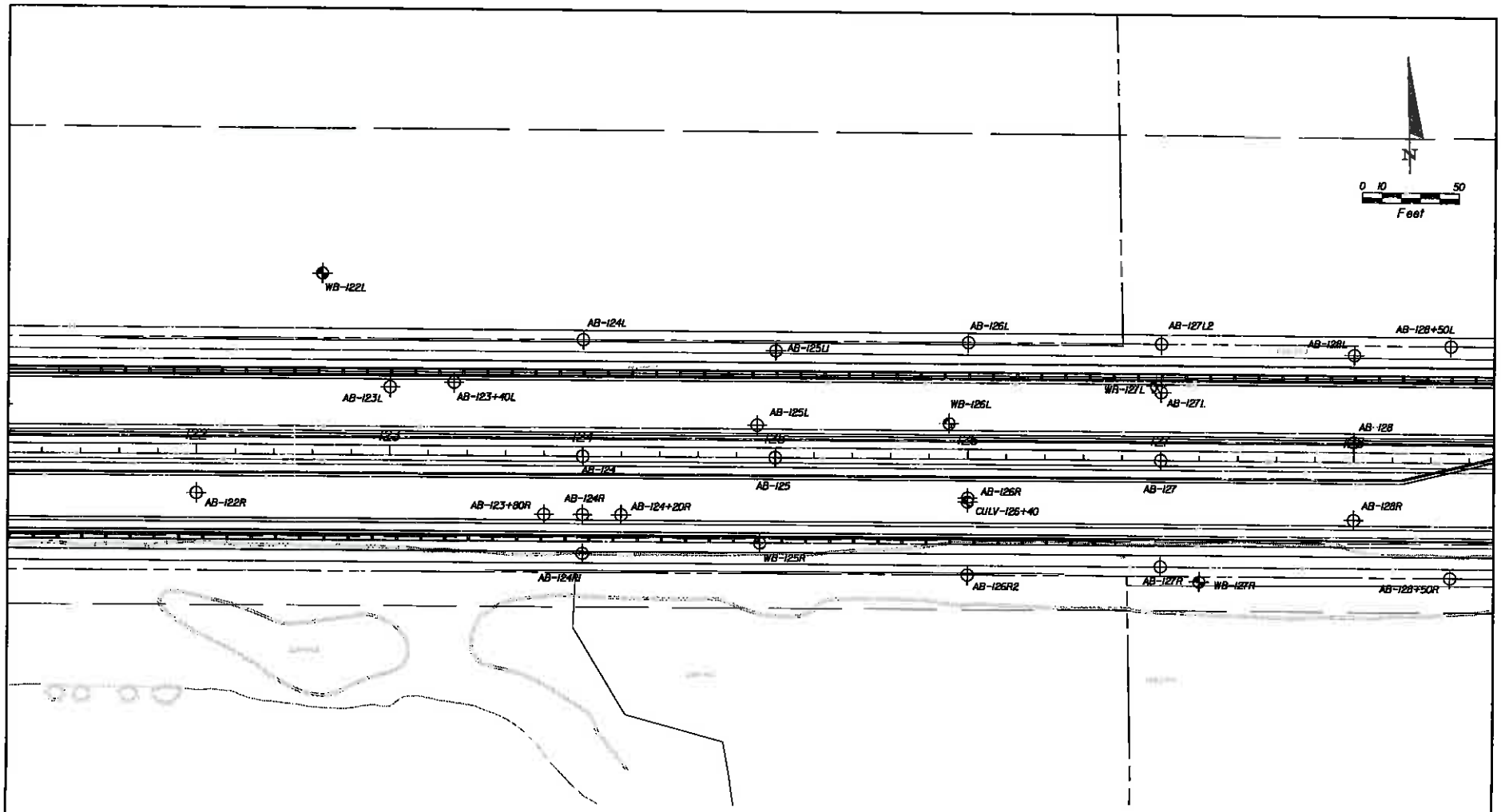

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

BORING LOCATION PLAN (4)

SHEET NO.

11:33:03 PM 12/1/2010

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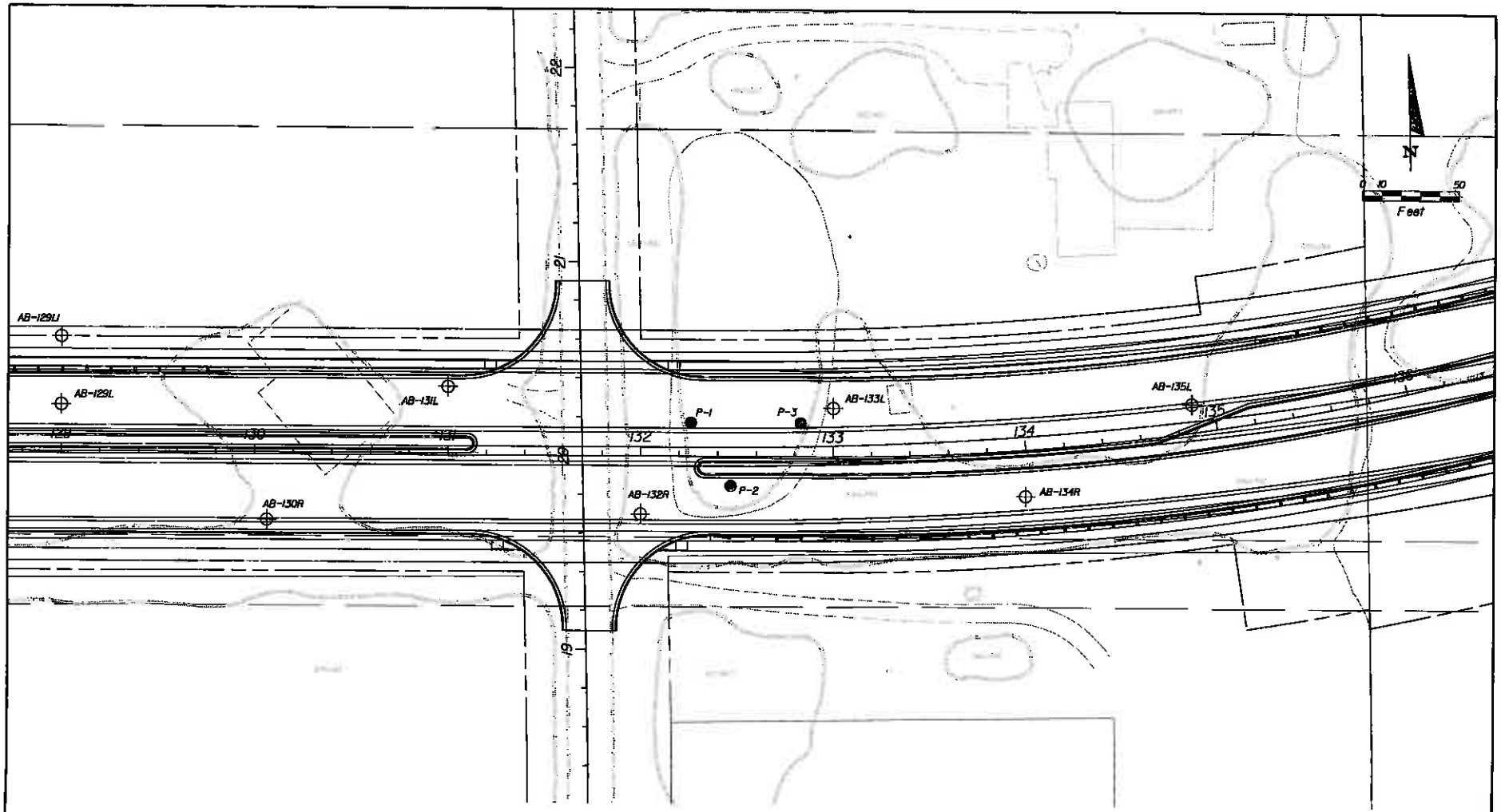

LEGEND

- APPROXIMATE AUGER BORING LOCATION
- APPROXIMATE SPT BORING LOCATION
- APPROXIMATE POND PROBE LOCATION

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 6071150

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

BORING LOCATION PLAN (5)

SHEET NO.

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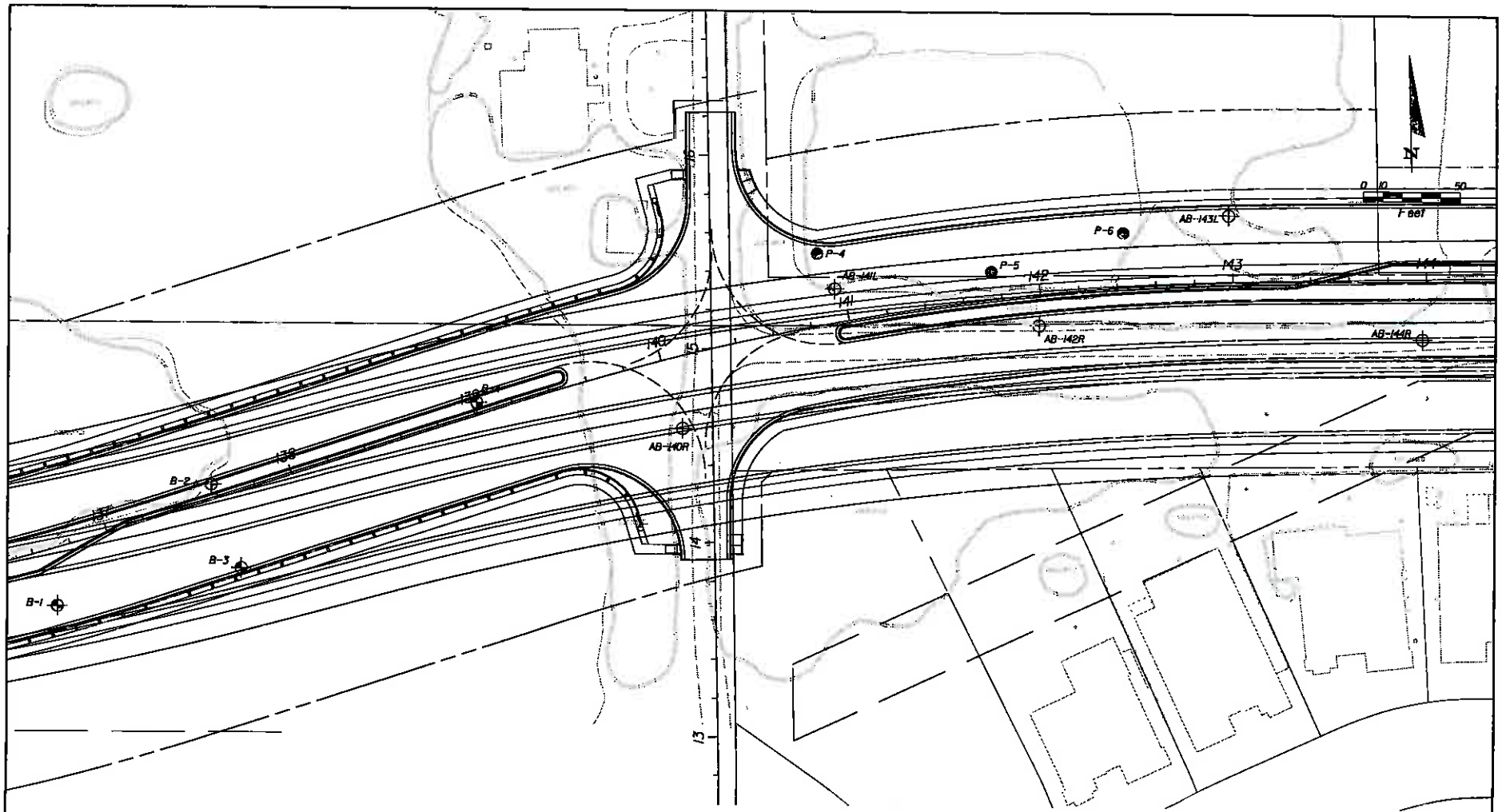

LEGEND

- APPROXIMATE AUGER BORING LOCATION
- APPROXIMATE SPT BORING LOCATION
- APPROXIMATE POND PROBE LOCATION

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 607.1150

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

BORING LOCATION PLAN (6)

SHEET NO.

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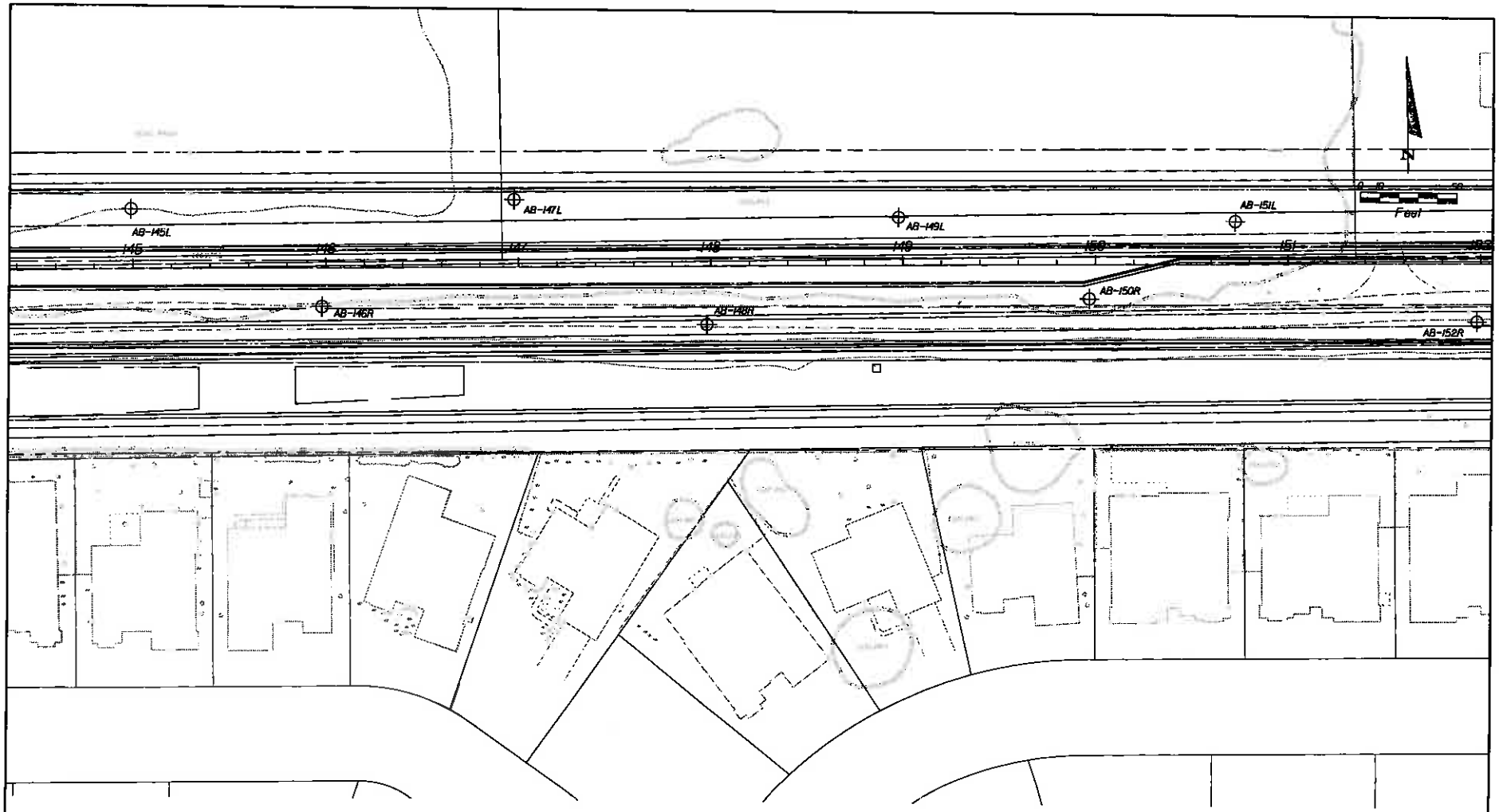

LEGEND

- APPROXIMATE AUGER BORING LOCATION
- APPROXIMATE SPT BORING LOCATION
- APPROXIMATE POND PROBE LOCATION

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

BORING LOCATION PLAN (7)

SHEET NO.

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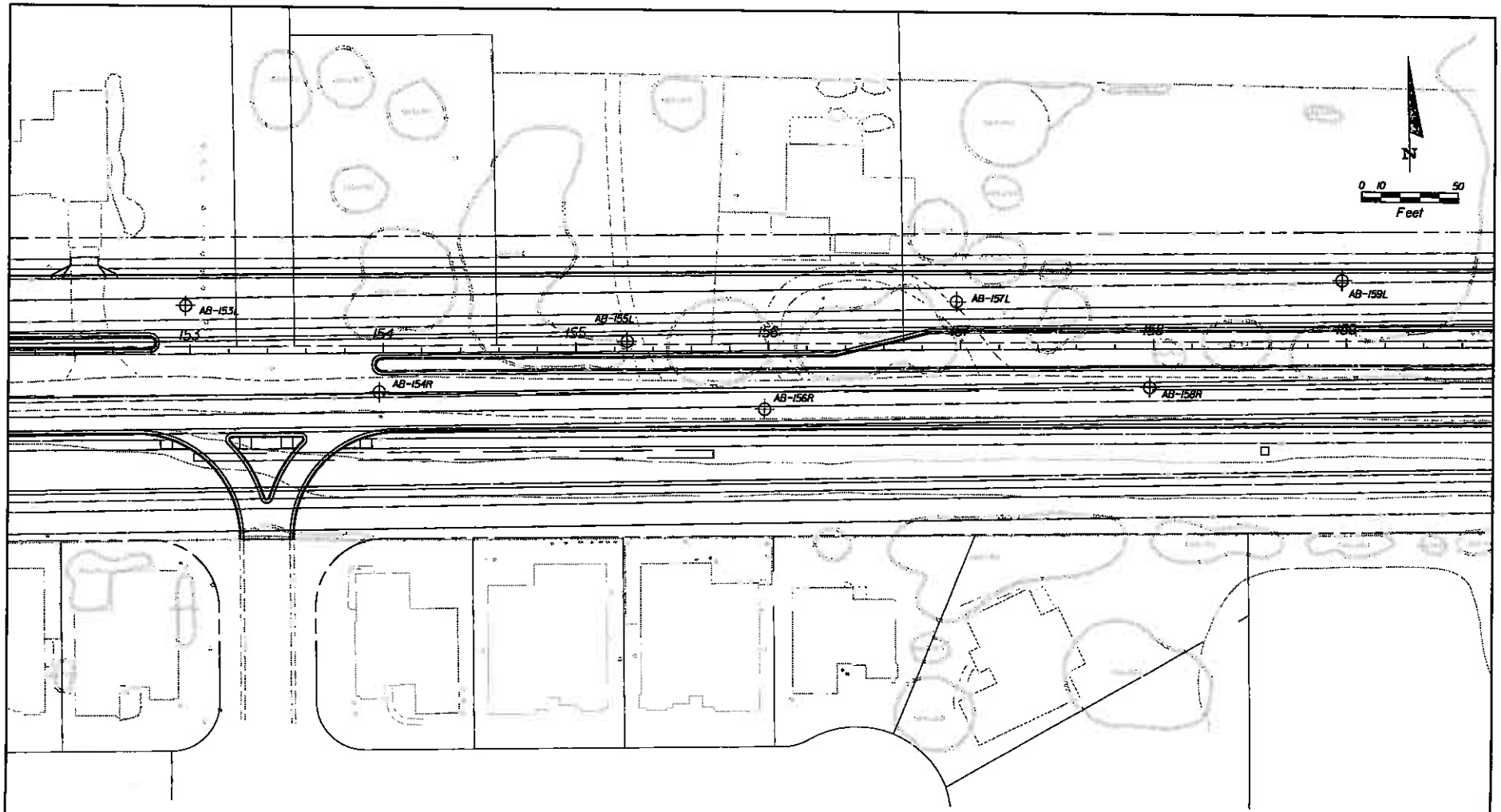

LEGEND

- APPROXIMATE AUGER BORING LOCATION
- APPROXIMATE SPT BORING LOCATION
- APPROXIMATE POND PROBE LOCATION

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

BORING LOCATION PLAN (8)

SHEET NO.

1:33184 PM 12/1/2010

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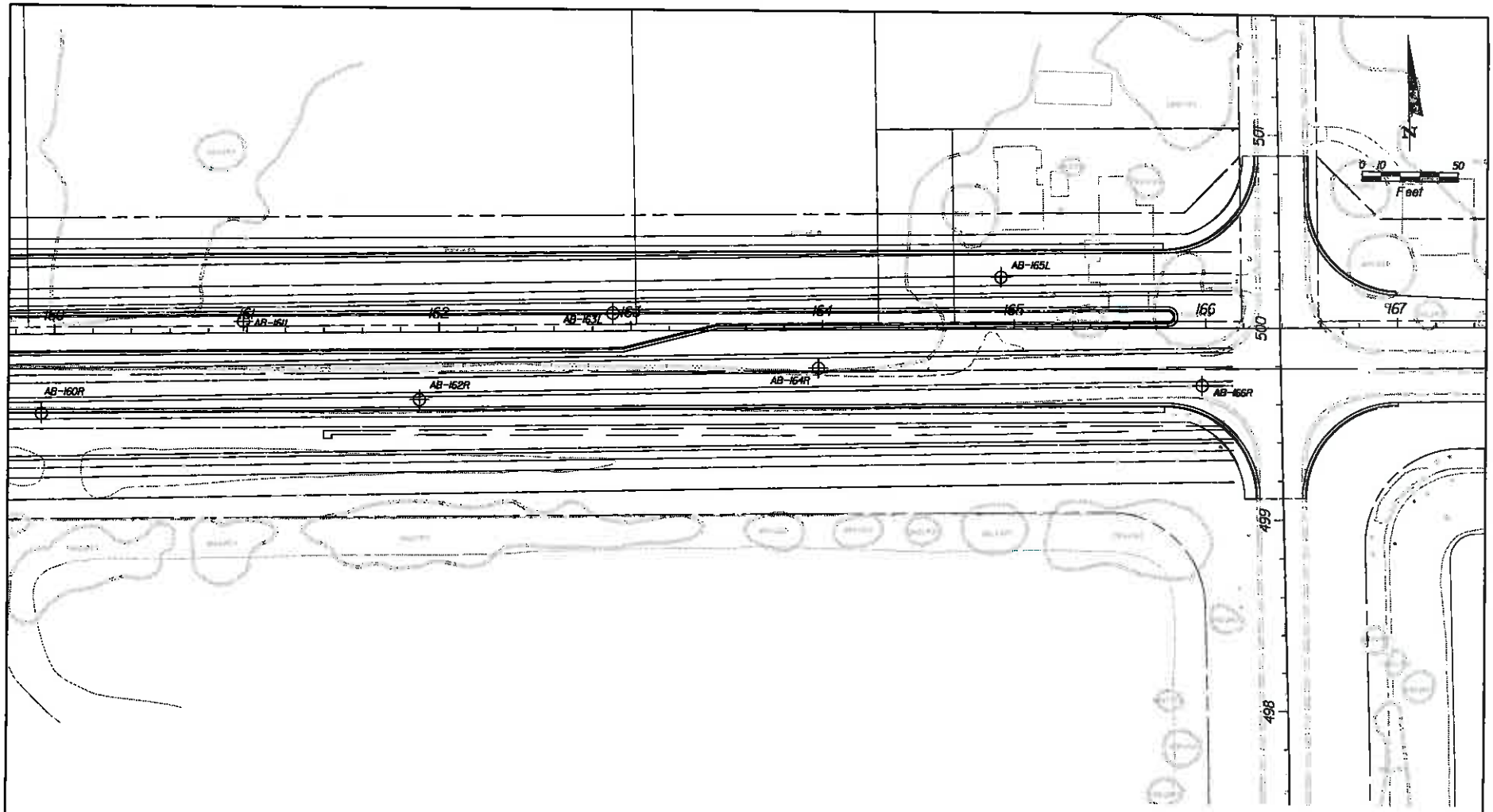

LEGEND

- APPROXIMATE AUGER BORING LOCATION
- APPROXIMATE SPT BORING LOCATION
- APPROXIMATE POND PROBE LOCATION

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

BORING LOCATION PLAN (9)

SHEET NO.

1:33:30 PM 12/1/2010

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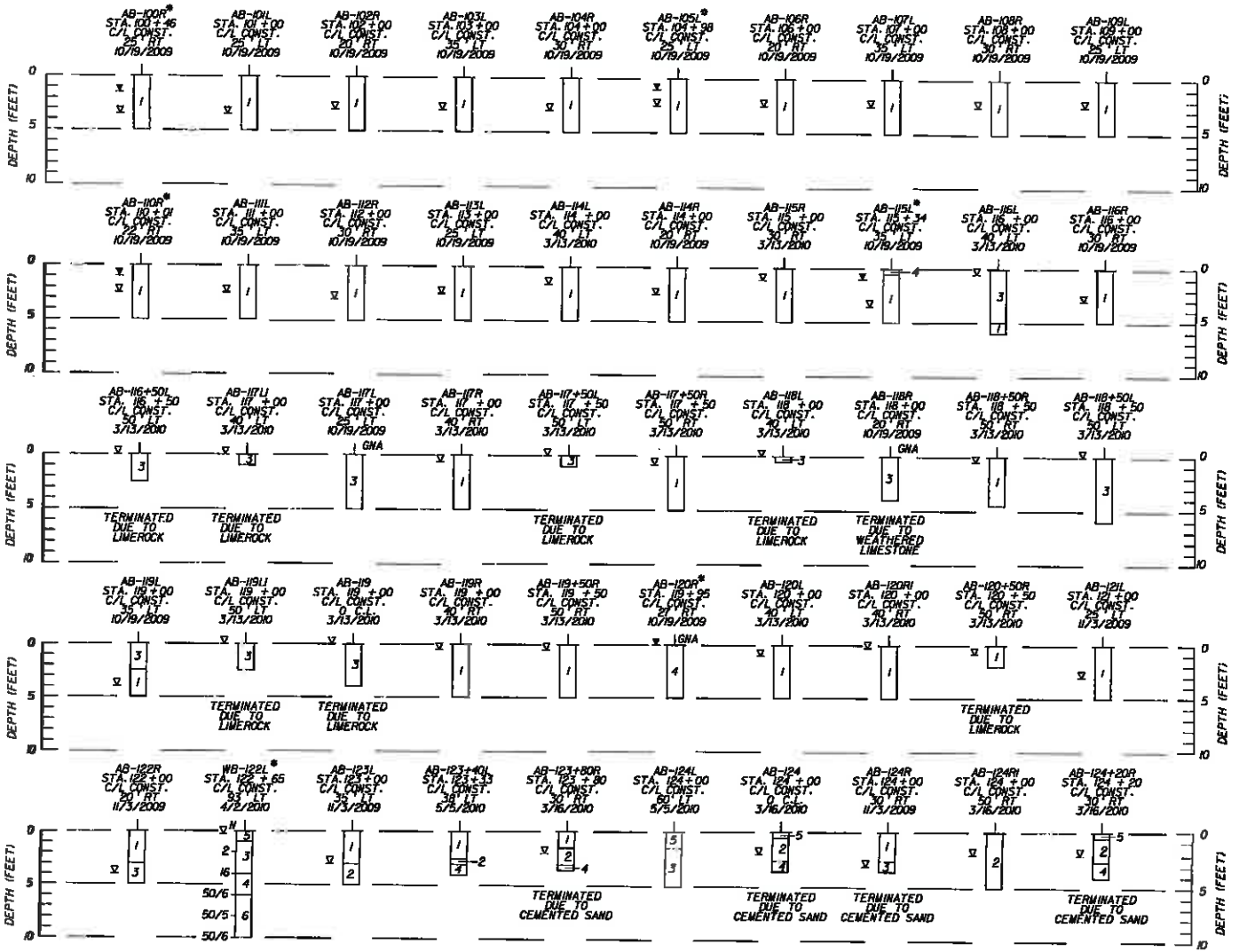

LEGEND

1. GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2. GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT WITH LIMEROCK FRAGMENTS OR WITH SHELL FRAGMENTS (A-1-b/A-3)
3. GRAY TO DARK GRAY TO BROWN SILTY TO CLAYEY SAND (A-2-4/A-2-6)
4. LIGHT GRAY TO DARK GRAY SANDY SILT TO PALE BROWN TO WHITE SILTY CLAY OCCASIONALLY CALCAREOUS WITH LIMESTONE FRAGMENTS (A-4/A-6/A-7-6)
5. DARK GRAY TO BLACK ORGANIC SILTY TO CLAYEY SAND TO ORGANIC SANDY CLAY OCCASIONALLY WITH WOOD (A-8)
6. WEATHERED LIMESTONE

A-3	AASHTO GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND/OR LABORATORY TESTING
N	NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).
50/4	NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION
HA	HAND AUGERED TO VERIFY UTILITY CLEARANCE
WH	FELL UNDER WEIGHT OF ROD AND HAMMER
WR	FELL UNDER WEIGHT OF ROD
T	BORING TRUNCATED AT 10 FEET BELOW GROUND SURFACE. REFER TO REPORT OF CORE BORINGS SHEETS FOR COMPLETE BORING PROFILE.
▽	GROUNDWATER TABLE
▽+	GROUNDWATER TABLE ABOVE EXISTING GRADE
▼	ESTIMATED SEASONAL HIGH GROUND WATER TABLE
▼+	SEASONAL HIGH GROUND WATER TABLE ABOVE EXISTING GRADE
GNA	GROUNDWATER NOT APPARENT DUE TO THE PRESENCE OF SOIL STRATA 3, 4 OR 5
C/L CONST.	CENTERLINE OF CONSTRUCTION OF 44TH AVENUE
*	BORING SURVEY LOCATED
||	CASING

SAFETY HAMMER	
GRANULAR MATERIALS- RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT.)
VERY LOOSE	LESS THAN 4
LOOSE	4 to 10
MEDIUM DENSE	10 to 30
DENSE	30 to 50
VERY DENSE	GREATER THAN 50
SILTS AND CLAYS CONSISTENCY	**SPT N-VALUE (BLOWS/FT.)**
VERY SOFT	LESS THAN 2
SOFT	2 to 4
FIRM	4 to 8
STIFF	8 to 15
VERY STIFF	15 to 30
HARD	GREATER THAN 30

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

ROADWAY SOIL PROFILES (1)

SHEET NO.

h:33:35 PM 12/1/2010

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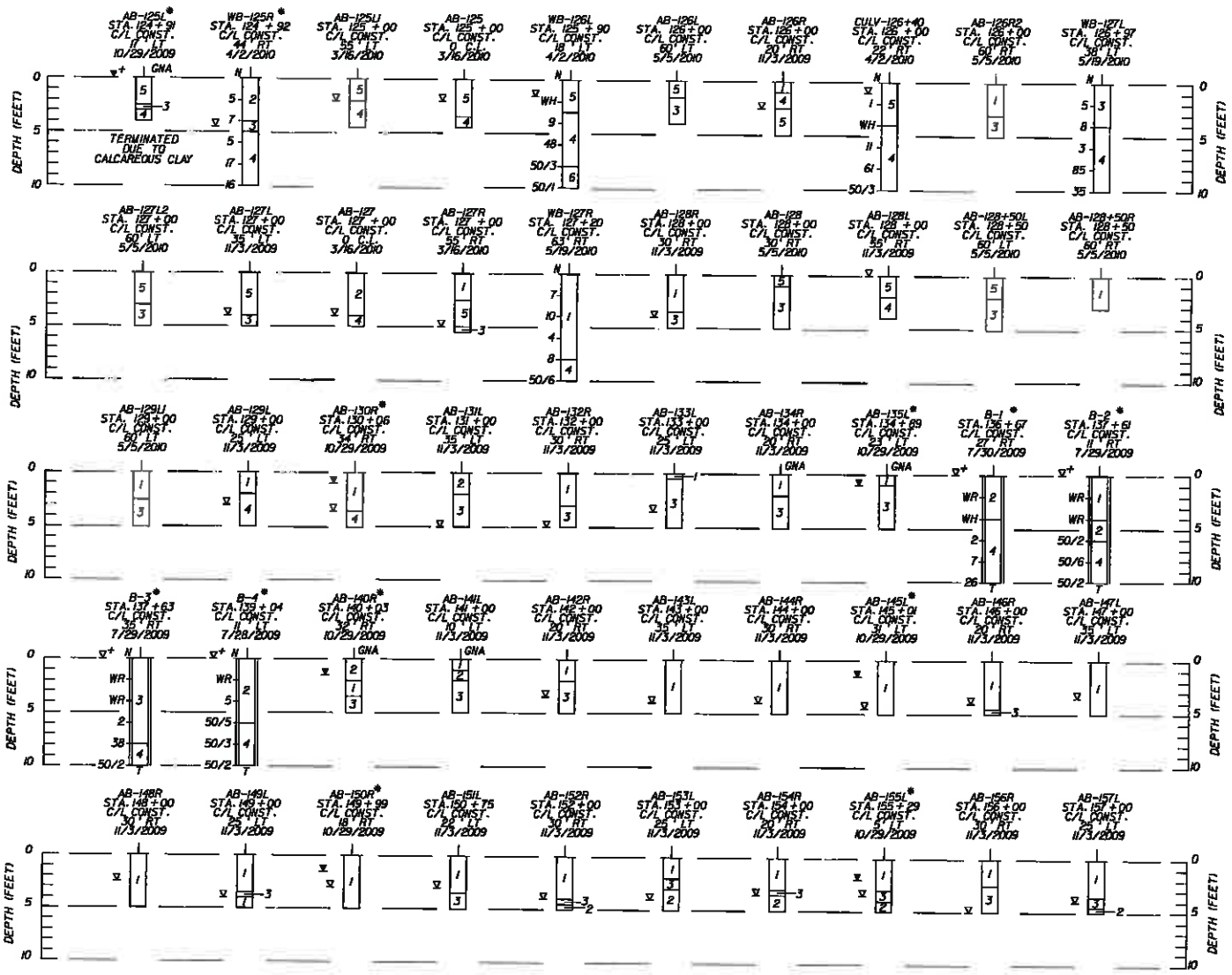

LEGEND

1. GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2. GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT WITH LIMEROCK FRAGMENTS OR WITH SHELL FRAGMENTS (A-1-b/A-3)
3. GRAY TO DARK GRAY TO BROWN SILTY TO CLAYEY SAND (A-2-4/A-2-6)
4. LIGHT GRAY TO DARK GRAY SANDY SILT TO PALE BROWN TO WHITE SILTY CLAY OCCASIONALLY CALCAREOUS WITH LIMESTONE FRAGMENTS (A-4/A-6/A-7-6)
5. DARK GRAY TO BLACK ORGANIC SILTY TO CLAYEY SAND TO ORGANIC SANDY CLAY OCCASIONALLY WITH WOOD (A-8)
6. WEATHERED LIMESTONE

A-3	AASHTO GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND/OR LABORATORY TESTING
N	NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).
50/4	NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION
HA	HAND AUGERED TO VERIFY UTILITY CLEARANCE
WH	FELL UNDER WEIGHT OF ROD AND HAMMER
WR	FELL UNDER WEIGHT OF ROD
T	BORING TRUNCATED AT 10 FEET BELOW GROUND SURFACE. REFER TO REPORT OF CORE BORINGS SHEETS FOR COMPLETE BORING PROFILE.
▽	GROUNDWATER TABLE
▽+	GROUNDWATER TABLE ABOVE EXISTING GRADE
▽	ESTIMATED SEASONAL HIGH GROUND WATER TABLE
▽+	SEASONAL HIGH GROUND WATER TABLE ABOVE EXISTING GRADE
GNA	GROUNDWATER NOT APPARENT DUE TO THE PRESENCE OF SOIL STRATA 3, 4 OR 5
C/L CONST.	CENTERLINE OF CONSTRUCTION OF 44TH AVENUE
*	BORING SURVEY LOCATED
	CASING

SAFETY HAMMER	
GRANULAR MATERIALS- RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT.)
VERY LOOSE	LESS THAN 4
LOOSE	4 to 10
MEDIUM DENSE	10 to 30
DENSE	30 to 50
VERY DENSE	GREATER THAN 50
SILTS AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT.)
VERY SOFT	LESS THAN 2
SOFT	2 to 4
FIRM	4 to 8
STIFF	8 to 15
VERY STIFF	15 to 30
HARD	GREATER THAN 30

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

ROADWAY SOIL PROFILES (2)

SHEET NO.

11:33:40 PM 12/1/2010

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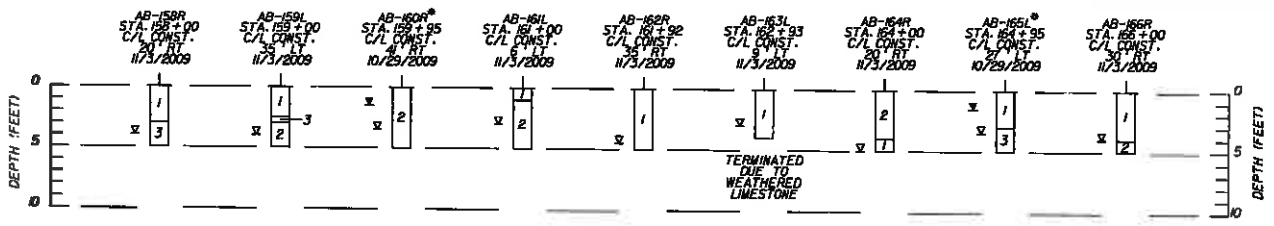

LEGEND

1.	GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2.	GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT WITH LIMEROCK FRAGMENTS OR WITH SHELL FRAGMENTS (A-1-b/A-3)
3.	GRAY TO DARK GRAY TO BROWN SILTY TO CLAYEY SAND (A-2-4/A-2-6)
4.	LIGHT GRAY TO DARK GRAY SANDY SILT TO PALE BROWN TO WHITE SILTY CLAY OCCASIONALLY CALCAREOUS WITH LIMESTONE FRAGMENTS (A-4/A-6/A-7-6)
5.	DARK GRAY TO BLACK ORGANIC SILTY TO CLAYEY SAND TO ORGANIC SANDY CLAY OCCASIONALLY WITH WOOD (A-8)
6.	WEATHERED LIMESTONE
A-3	AASHTO GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND/OR LABORATORY TESTING
N	NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).
50/4	NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION
HA	HAND AUGERED TO VERIFY UTILITY CLEARANCE
WH	FELL UNDER WEIGHT OF ROD AND HAMMER
WH	FELL UNDER WEIGHT OF ROD
T	BORING TRUNCATED AT 10 FEET BELOW GROUND SURFACE. REFER TO REPORT OF CORE BORINGS SHEETS FOR COMPLETE BORING PROFILE.
▽	GROUNDWATER TABLE
▽+	GROUNDWATER TABLE ABOVE EXISTING GRADE
⧗	ESTIMATED SEASONAL HIGH GROUND WATER TABLE
⧗+	SEASONAL HIGH GROUND WATER TABLE ABOVE EXISTING GRADE
GNA	GROUNDWATER NOT APPARENT DUE TO THE PRESENCE OF SOIL STRATA 3, 4 OR 5
C/L CONST.	CENTERLINE OF CONSTRUCTION OF 44TH AVENUE
*	BORING SURVEY LOCATED
[ ]	CASING

SAFETY HAMMER	
GRANULAR MATERIALS- RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT.)
VERY LOOSE	LESS THAN 4
LOOSE	4 to 10
MEDIUM DENSE	10 to 30
DENSE	30 to 50
VERY DENSE	GREATER THAN 50
SILTS AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT.)
VERY SOFT	LESS THAN 2
SOFT	2 to 4
FIRM	4 to 8
STIFF	8 to 15
VERY STIFF	15 to 30
HARD	GREATER THAN 30

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

ROADWAY SOIL PROFILES (3)

SHEET NO.:

h33x46 PM 12/1/2010

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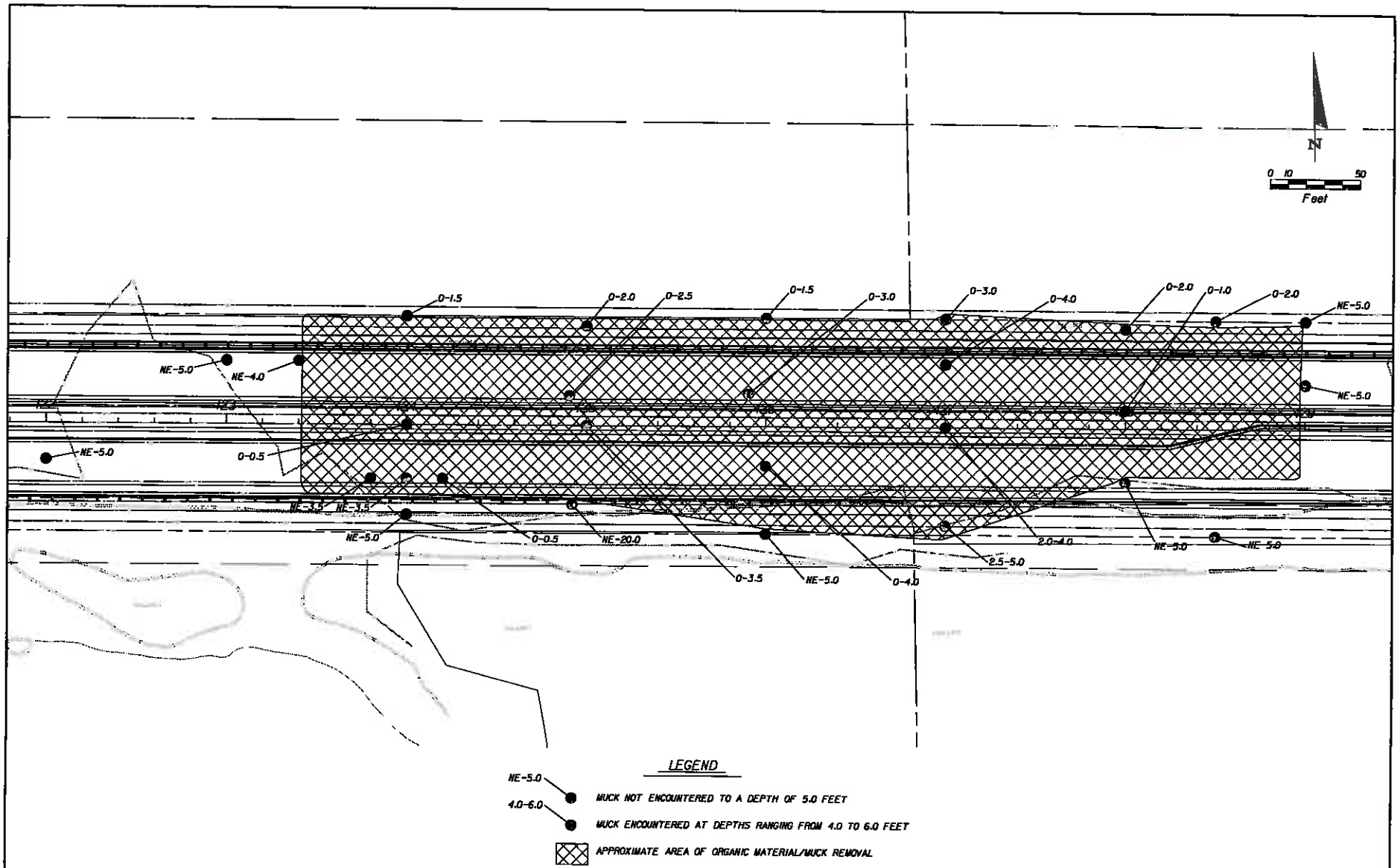

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

MUCK DELINEATION PLAN SHEET

SHEET NO.

2:54:08 PM 12/3/2010

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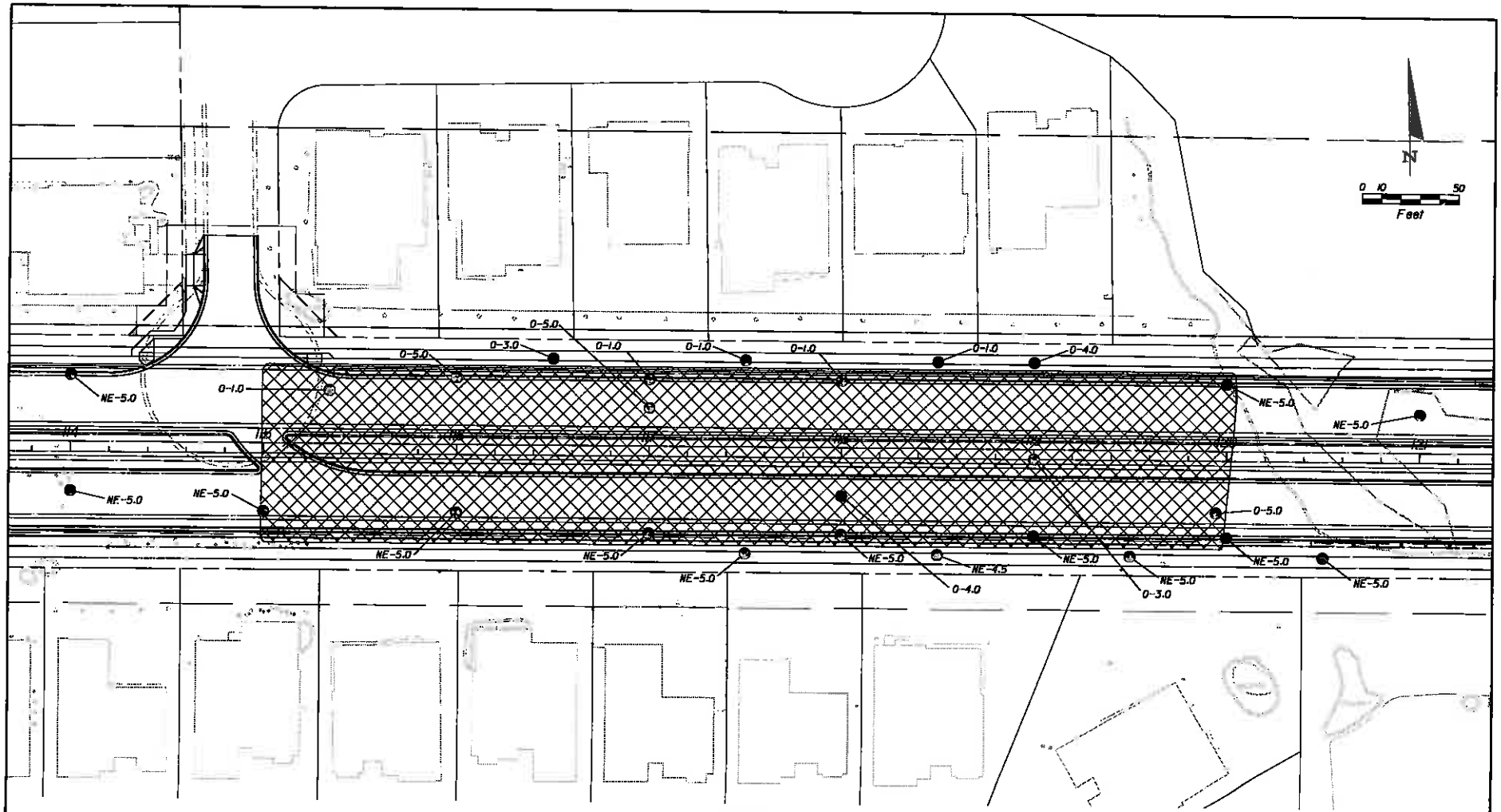

LEGEND

NE-5.0 — PLASTIC SOIL NOT ENCOUNTERED TO A DEPTH OF 5.0 FEET

4.0-6.0 — PLASTIC SOIL ENCOUNTERED AT DEPTHS RANGING FROM 4.0 TO 6.0 FEET

APPROXIMATE AREA OF PLASTIC SOIL REMOVAL

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: ENF

E.O.R.: ERICK M. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK M. FREDERICK
FL. LICENSE NO.: 63920

PLASTIC SOIL DELINEATION PLAN SHEET

SHEET NO.

2x34x85 PM 12/2/2010

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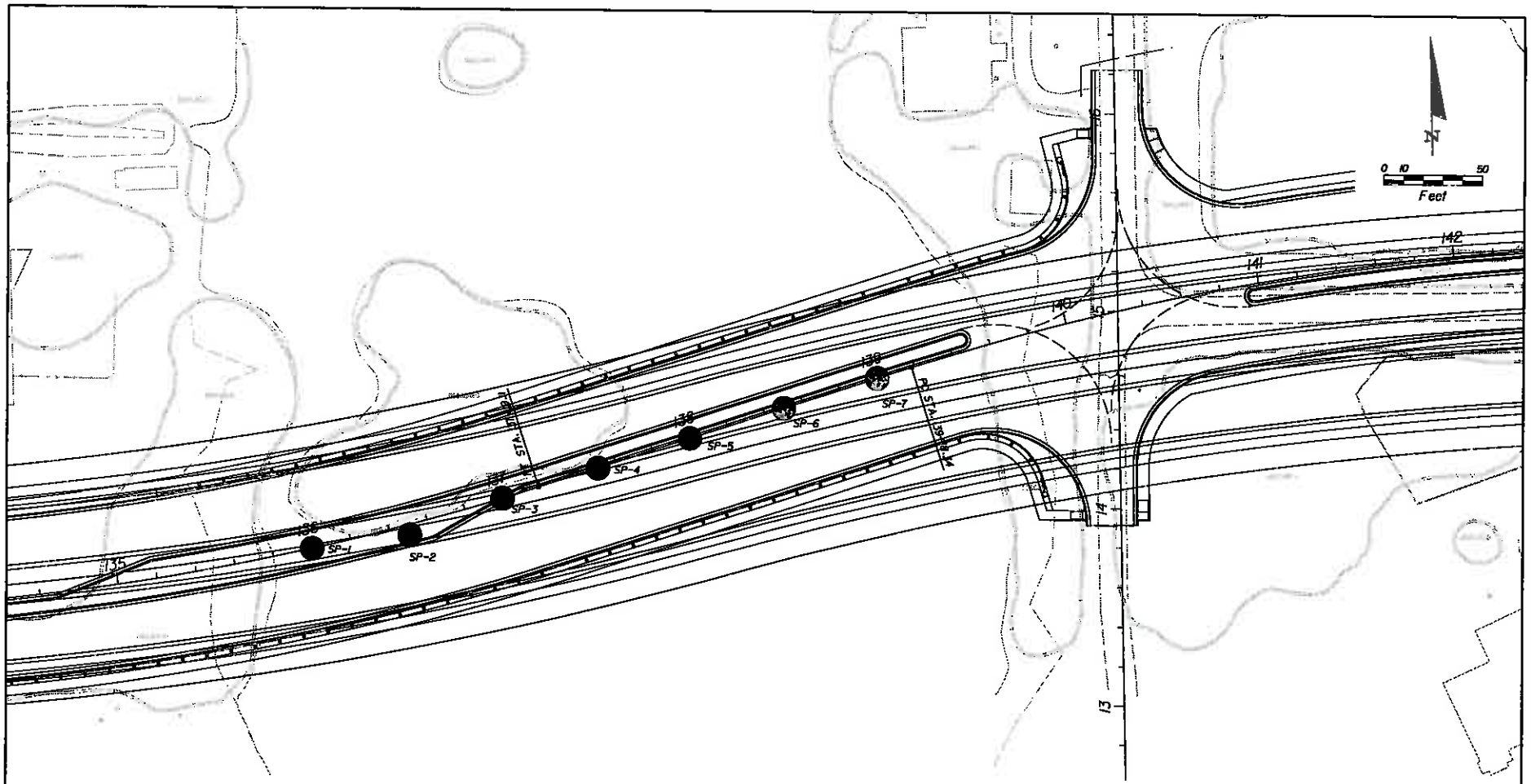


SETTLEMENT PLATE NUMBER	PLATE LOCATION (C/L CONSTRUCTION 44TH AVE.)	
	STATION (FT)	OFFSET (FT)
SP-1	136+00	0 LT
SP-2	136+50	5 RT
SP-3	137+00	0 LT
SP-4	137+50	0 LT
SP-5	138+00	0 LT
SP-6	138+50	0 LT
SP-7	139+00	0 LT

NOTES: 1. SETTLEMENT MONITORING SHALL BE PERFORMED AT THE LOCATIONS AS SHOWN AND ACCORDING TO THE TECHNICAL SPECIAL PROVISION.

2. THE PROPOSED SETTLEMENT PLATE LOCATIONS SHALL BE ADJUSTED TO PREVENT CONFLICTS WITH UTILITIES.

LEGEND

● APPROXIMATE SETTLEMENT PLATE LOCATION

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK W. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 60THGO

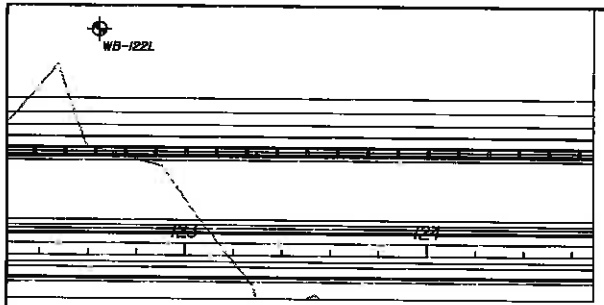
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK W. FREDERICK
FL. LICENSE NO.: 63920

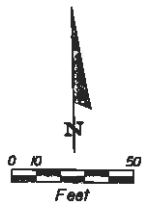
SETTLEMENT MONITORING FOR CAUSEWAY CONSTRUCTION

SHEET NO.

1:34:03 PM 12/1/2010 J:\2011\2008 Files\60-08-088_44th Ave\Alternative Roadway\Maps\85settlementplot.dgn



BORING LOCATION PLAN



NOTES:

1. LIMESTONE AND "ROCK LIKE" MATERIAL WAS ENCOUNTERED IN THE BORINGS PERFORMED. THE CONTRACTOR SHALL ANTICIPATE THE NEED FOR SPECIAL EQUIPMENT AND/OR PROCEDURES TO FACILITATE ROCK EXCAVATION.
2. THE DARK GRAY TO BLACK ORGANIC SILTY TO CLAYEY SAND (SM/SC) ENCOUNTERED WITHIN THE UPPER 3 TO 4 FEET OF SPT BORINGS SHALL BE REMOVED IN ACCORDANCE WITH INDEX 500 OF THE FDOT DESIGN STANDARDS.
3. BASED ON A REVIEW OF THE "POTENTIOMETRIC SURFACE OF THE UPPER FLORIDAN AQUIFER, WEST-CENTRAL FLORIDA" MAPS PUBLISHED BY THE USGS, THE POTENTIOMETRIC SURFACE ELEVATION OF THE UPPER FLORIDAN AQUIFER AT THE PROJECT SITE RANGES FROM APPROXIMATELY +10 TO +20 FEET, NGVD 29. THE SPT BORINGS PERFORMED AT THE BRIDGE SITE DID NOT ENCOUNTER AN ARTESIAN FLOW CONDITION DURING THE FIELD EXPLORATION. HOWEVER, THE CONTRACTOR SHOULD BE PREPARED TO HANDLE THIS CONDITION, IF ENCOUNTERED.

LEGEND

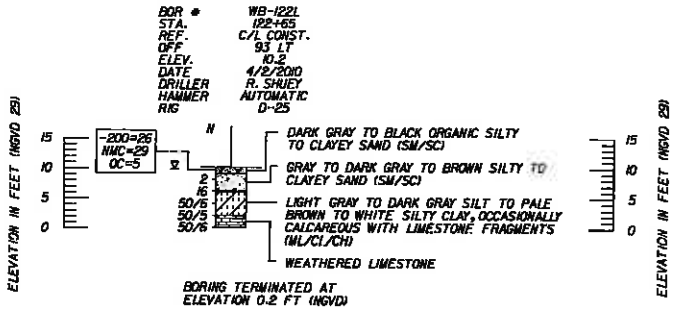
	LIGHT GRAY TO DARK GRAY SILT TO PALE BROWN TO WHITE SILTY CLAY, OCCASIONALLY CALCAREOUS WITH LIMESTONE FRAGMENTS (ML/CL/CH)
	DARK GRAY TO BLACK ORGANIC SILTY TO CLAYEY SAND (SM/SC)
	WEATHERED LIMESTONE
	GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT (SP/SP-SM)
	GRAY TO DARK GRAY TO BROWN SILTY TO CLAYEY SAND (SM/SC)
	GRAY TO BLACK SAND TO SAND WITH SILT (SP/SP-SM)
SP	UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487) GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND/OR LABORATORY TESTING
N	NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).
50/4	NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION
HA	HAND AUGERED TO VERIFY UTILITY CLEARANCE
WH	FELL UNDER WEIGHT OF ROD AND HAMMER
NGVD 29	NATIONAL GEODETIC VERTICAL DATUM OF 1929
	APPROXIMATE SPT BORING LOCATION
▽	GROUNDWATER TABLE

ENVIRONMENTAL CLASSIFICATION:

SUBSTRUCTURE	CONCRETE: MODERATELY AGGRESSIVE (RESISTIVITY=2,700 OHM-CM)
SUBSTRUCTURE	STEEL: MODERATELY AGGRESSIVE (RESISTIVITY=2,700 OHM-CM)
SUPERSTRUCTURE	SLIGHTLY AGGRESSIVE

SOIL TEST RESULTS:

RESISTIVITY	1,500 TO 2,700 OHM-CM
CHLORIDES	30 TO 60 PPM
SULFATES	105 TO 660 PPM
pH	7.6 TO 8.3



	SAFETY HAMMER	AUTOMATIC HAMMER
GRANULAR MATERIALS - RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT.)	SPT N-VALUE (BLOWS/FT.)
VERY LOOSE	LESS THAN 4	LESS THAN 3
LOOSE	4 to 10	3 to 8
MEDIUM DENSE	10 to 30	8 to 24
DENSE	30 to 50	24 to 40
VERY DENSE	GREATER THAN 50	GREATER THAN 40
SILTS AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT.)	SPT N-VALUE (BLOWS/FT.)
VERY SOFT	LESS THAN 2	LESS THAN 1
SOFT	2 to 4	1 to 3
FIRM	4 to 8	3 to 6
STIFF	8 to 15	6 to 12
VERY STIFF	15 to 30	12 to 24
HARD	GREATER THAN 30	GREATER THAN 24

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JRA
DRAWN BY: BJS
CHECKED BY: EMF

E.O.R.: ERICK W. FREDERICK, P.E.
P.E. LICENSE NUMBER 63920
TIERRA INC
7351 TEMPLE TERRACE HIGHWAY, TAMPA, FL. 33637
CERTIFICATE OF AUTHORIZATION: 6486

DATE: 12/2/2010
PROJECT NO.: 607160

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ERICK W. FREDERICK
FL. LICENSE NO.: 63920

REPORT OF CORE BORINGS

SHEET NO.

1:34:10 PM 12/1/2010

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