



1112 Manatee Ave. West
Bradenton, FL 34205
purchasing@mymanatee.org

Solicitation Addendum

Addendum No.: 10
Solicitation No.: 19-TA003162CD
Project No.: 6086960 and 6045662
Solicitation Title: 44th Avenue East Extension Project- from 45th Street East to I-75
Addendum Date: January 29, 2020
Procurement Contact: Chris Daley, CPPO, CPPB- Procurement Manager

IFBC No. 19-TA003162CD is amended as set forth herein. Responses to questions posed by prospective bidders are provided below. This addendum is hereby incorporated in and made a part of IFBC No. 19-TA003162CD.

Replace:

APPENDIX J, BID PRICING FORM, BID PRICING FORM PAGES APPENDIX J-1 THROUGH J-20

Replace Bid Pricing form pages Appendix J-1 through J-20 with the Revised bid Pricing Form pages Appendix J-1 through J-20 that are issued with this Addendum 10.

Replace:

ELECTRONIC BID PRICING FORM

Replace Electronic Bid Pricing Form with the Revised Electronic Bid Pricing Form issued with this Addendum 10.

Replace:

BID ATTACHMENT 2, SPECIAL PROVISIONS

Replace Bid Attachment 2, Special Provisions with the Revised Bid Attachment 2, Special Provisions issued with this Addendum 10.

Add

BID ATTACHMENT 13, BARBED WIRE FENCE INSTALLATION

Bid Attachment 13, Barbed Wire Fence Installation issued with this Addendum No. 10, is hereby incorporated into this IFBC.

Change to:

RESPONSE TO QUESTION 11 ISSUED IN ADDENDUM NO. 8

R11. Line Item #~~24~~, [FDOT 0120 6] – Embankment. The Embankment quantity includes 1700 CY that will be required to fill and grade the existing pond on the north side of 44th Avenue East extending from approximately Sta 235+20 to Sta 236+90. The final grade of the pond area is to be consistent with the surrounding area and shall be restored with sod, to be paid for under separate pay item. Work elements to be included in this pay item for this operation include dewatering/pumping the pond utilizing a sump to facilitate this process and backfilling the pond in 12" layers to a 90% Modified Proctor density. Removal of any vegetation in the bottom and sides of the pond are to be paid for separately under the Clearing and Grubbing pay item. This work shall be completed no later than February 16, 2021 per the License Agreement with the property owner.

Clarification of Engineer's Changes:

Bid Form- Adds a new pay item no. 138 for barbed wire fencing.

Bid Attachment 13- Adds location of new barbed wire fencing along with the material and installation requirements.

Special Provisions- Provides Clarification for the new barbed wire pay item No. 138.

NOTE: Items that are ~~struck through~~ are deleted. Items that are underlined have been added or changed. All other terms and conditions remain as stated in the IFBC.

End of Addendum

INSTRUCTIONS:

Receipt of this addendum must be acknowledged as instructed in the solicitation document. Failure to acknowledge receipt of this Addendum may result in the response being deemed non-responsive.

AUTHORIZED FOR RELEASE Chris Daley

BID FORM

(Submit in Triplicate)

**44th Avenue East Extension Project - from 45th Street East to I-75
 Based on Completion Time of 900 Calendar Days**

PAY ITEM NO.	FDOT ITEM NUMBER	DESCRIPTION	44th Ave. East Braden River Segment QTY.	44th Ave. East- 44th Ave. Plaza East to I-75 QTY	TOTAL PROJECT QTY.	UNITS	BID PRICE PER UNIT (\$)	TOTAL BID PRICE (\$)
ROADWAY & BRIDGE								
1.	0101 1	Mobilization (Includes both projects)			1.00	LS		
2.	0102 1	Maintenance of Traffic (MOT), (Includes both Projects)			1.00	LS		
3.	102-14	Traffic Control Officer	60.00	32.00	92.00	HR		
4.	0102 60	WORK ZONE SIGN	335.00		335.00	ED		
5.	0102 74 1	CHANNELIZING DEVICE- TYPES I, II, DI, VP, DRUM, OR LCD	744.00		744.00	ED		
6.	0102 74 2	CHANNELIZING DEVICE, TYPE III, 6'	203.00		203.00	ED		
7.	0102 76	ARROW BOARD / ADVANCE WARNING ARROW PANEL	400.00		400.00	ED		
8.	0102 78	TEMPORARY RETROREFLECTIVE PAVEMENT MARKER	961.00		961.00	EA		
9.	0102 99	PORTABLE CHANGEABLE MESSAGE SIGN, TEMPORARY	1,800.00		1,800.00	ED		
10.	0102107 1	TEMPORARY TRAFFIC DETECTION AND MAINTENANCE, INTERSECTION	200.00		200.00	ED		
11.	0103 1	TEMPORARY WORK STRUCTURE	1.00		1.00	LS		
12.	0104 10 3	SEDIMENT BARRIER	25,889.00	8,307.00	34,196.00	LF		
13.	0104 11	FLOATING TURBIDITY BARRIER	444.00		444.00	LF		
14.	0104 12	STAKED TURBIDITY BARRIER- NYLON REINFORCED PVC	76.00		76.00	LF		
15.	0104-15	SOIL TRACKING PREVENTION DEVICE		2.00	2.00	EA		
16.	0104 18	INLET PROTECTION SYSTEM	120.00	51.00	171.00	EA		
17.	0107 1	LITTER REMOVAL	17.80	5.28	23.08	AC		
18.	0107 2	MOWING	9.34	5.28	14.62	AC		
19.	0108 2	PROTECTION OF EXISTING STRUCTURES- VIBRATION MONITORING	1.00		1.00	LS		
20.	0110 1 1	CLEARING & GRUBBING	40.10	11.12	51.22	AC		
21.	0110 4 10	REMOVAL OF EXISTING CONCRETE	4,041.00	3,269.00	7,310.00	SY		
22.	0120 1	REGULAR EXCAVATION	81,736.00	16,678.00	98,414.00	CY		
23.	0120 4	SUBSOIL EXCAVATION	1,851.00		1,851.00	CY		
24.	0120 6	EMBANKMENT	68,998.00	3,707.00	72,705.00	CY		

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25.	120-77	SURCHARGE EMBANKMENT	21,600.00		21,600.00	CY		
26.	0160 4	TYPE B STABILIZATION	101,690.00	23,500.00	125,190.00	SY		
27.	0180-72	RIGID PAVEMENT STABILIZED SUBBASE- SPECIAL WORK PLATFORM	14.00		14.00	CY		
28.	0210-2	LIMEROCK, NEW MATERIAL FOR REWORKING BASE	7.00		7.00	CY		
29.	0285701	OPTIONAL BASE, BASE GROUP 01	10,354.00		10,354.00	SY		
30.	0285709	OPTIONAL BASE, BASE GROUP 09	70,797.00	20,874.00	91,671.00	SY		
31.	0327 70 5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	4,591.00		4,591.00	SY		
32.	0327-70-6	MILLING EXIST ASPH PAVT, 1 1/2" AVG DEPTH		15,664.00	15,664.00	SY		
33.	0334 1 12	SUPERPAVE ASPHALTIC CONC, TRAFFIC B	647.70		647.70	TN		
34.	0334 1 13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	10,641.00	4,737.00	15,378.00	TN		
35.	0337 7 83	ASPHALT CONCRETE FRICTION COURSE, Traffic C, FC-12.5, PG 76-22, ARB	9,501.00	3,015.00	12,516.00	TN		
36.	0339 1	MISCELLANEOUS ASPHALT PAVEMENT	85.25		85.25	TN		
37.	0400 0 11	CONCRETE CLASS NS, GRAVITY WALL	318.00	75.00	393.00	CY		
38.	0400 1 2	CONCRETE CLASS I, ENDWALLS	15.00		15.00	CY		
39.	0400 2 4	CONC CLASS II, SUPERSTRUCTURE	4,851.20		4,851.20	CY		
40.	0400 2 10	CONCRETE CLASS II, APPROACH SLABS	248.60		248.60	CY		
41.	0400 4 5	CONCRETE CLASS IV, SUBSTRUCTURE	920.50		920.50	CY		
42.	0400 9	BRIDGE DECK GROOVING & PLANING, DECK 8.5'>	13,368.90		13,368.90	SY		
43.	0400147	COMPOSITE NEOPRENE PADS	142.40		142.40	CF		
44.	0415 1 4	REINFORCING STEEL - SUPERSTRUCTURE	1,268,424.00		1,268,424.00	LB		
45.	0415 1 5	REINFORCING STEEL- SUBSTRUCTURE	220,858.00		220,858.00	LB		
46.	0415 1 9	REINFORCING STEEL- APPROACH SLABS	47,262.00		47,262.00	LB		
47.	0425 11	MODIFY EXISTING DRAINAGE STRUCTURE		3.00	3.00	EA		
48.	0425 1351	INLETS, CURB, TYPE P-5, <10'	19.00	24.00	43.00	EA		
49.	0425 1352	INLETS, CURB, TYPE P-5, >10'	2.00		2.00	EA		
50.	0425-1-355	INLETS, CURB, TYPE P-5, PARTIAL		2.00	2.00	EA		
51.	0425 1361	INLETS, CURB, TYPE P-6, <10'	18.00	2.00	20.00	EA		
52.	0425-1-365	INLETS, CURB, TYPE P-6, PARTIAL		4.00	4.00	EA		

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53.	0425 1451	INLETS, CURB, TYPE J-5, <10'	11.00	3.00	14.00	EA		
54.	0425 1452	INLETS, CURB, TYPE J-5, >10'	9.00		9.00	EA		
55.	0425 1461	INLETS, CURB, TYPE J-6, <10'	9.00	3.00	12.00	EA		
56.	0425 1462	INLETS, CURB, TYPE J-6, >10'	2.00		2.00	EA		
57.	0425-1-529	INLETS, DT BOT, TYPE C, MODIFY		1.00	1.00	EA		
58.	0425 1531	INLETS, DITCH BOTTOM, TYPE C MODIFIED- BACK OF SIDEWALK, <10'	20.00		20.00	EA		
59.	0425 1541	INLETS, DT BOT, TYPE D, <10'	3.00	2.00	5.00	EA		
60.	0425-1-549	INLETS, DT BOT, TYPE D, MODIFY		2.00	2.00	EA		
61.	0425 1551	INLETS, DT BOT, TYPE E, <10'	4.00		4.00	EA		
62.	0425 1581	INLETS, DT BOT, TYPE H, <10'	2.00		2.00	EA		
63.	0425 1891	INLETS, BARRIER WALL, <10'	5.00		5.00	EA		
64.	0425 1910	INLETS, CLOSED FLUME	3.00		3.00	EA		
65.	0425 2 41	MANHOLES, P-7, <10'	6.00		6.00	EA		
66.	0425-2-61	MANHOLES, P-8, < 10'		2.00	2.00	EA		
67.	0425-2-63	MANHOLES, P-8, PARTIAL		1.00	1.00	EA		
68.	0425 2 71	MANHOLES, J-7, <10'	9.00		9.00	EA		
69.	0425 2 72	MANHOLES, J-7, >10'	5.00		5.00	EA		
70.	0425-2-91	MANHOLES, J-8, < 10'		2.00	2.00	EA		
71.	0430174115	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 15"SD	63.00		63.00	LF		
72.	0430174215	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 15"SD	68.00		68.00	LF		
73.	0430175112	PIPE CULVERT,OPTIONAL MATERIAL,ROUND, 12"S/CD	53.00		53.00	LF		
74.	0430-175-115	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 15" S/CD		141.00	141.00	LF		
75.	0430175118	PIPE CULVERT,OPTIONAL MATERIAL,ROUND, 18"S/CD	4,228.00	2,679.00	6,907.00	LF		
76.	0430175124	PIPE CULVERT,OPTIONAL MATERIAL,ROUND, 24"S/CD	2,223.00	636.00	2,859.00	LF		
77.	0430175130	PIPE CULVERT, OPT MATERIAL, ROUND, 30"S/CD	716.00	99.00	815.00	LF		
78.	0430175136	PIPE CULVERT, OPT MATERIAL, ROUND, 36"S/CD	1,329.00	360.00	1,689.00	LF		
79.	0430175142	PIPE CULVERT, OPT MATERIAL, ROUND, 42"S/CD	695.00		695.00	LF		

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80.	0430175148	PIPE CULVERT, OPT MATERIAL, ROUND, 48"S/CD	1,234.00		1,234.00	LF		
81.	0430175154	PIPE CULVERT, OPT MATERIAL, ROUND, 54"S/CD	3,056.00		3,056.00	LF		
82.	0430175160	PIPE CULVERT, OPT MATERIAL, ROUND, 60"S/CD	1,516.00		1,516.00	LF		
83.	0430175218	PIPE CULVERT,OPTIONAL MATERIAL,OTHER-ELIP/ARCH, 18"S/CD	226.00	8.00	234.00	LF		
84.	0430175224	PIPE CULVERT,OPTIONAL MATERIAL,OTHER SHAPE-ELIP/ARCH, 24"S/CD	277.00	4.00	281.00	LF		
85.	0430175230	PIPE CULVERT, OPT MATERIAL, OTHER SHAPE - ELIP/ARCH, 30"S/CD	79.00		79.00	LF		
86.	0430175242	PIPE CULVERT, OPT MATERIAL, OTHER SHAPE - ELIP/ARCH, 42"S/CD	198.00		198.00	LF		
87.	0430175254	PIPE CULVERT, OPT MATERIAL, OTHER SHAPE - ELIP/ARCH, 54"S/CD	36.00		36.00	LF		
88.	0430982123	MITERED END SECTION, OPTIONAL ROUND, 15" CD		1.00	1.00	EA		
89.	0430982125	MITERED END SECTION, OPTIONAL ROUND, 18" CD	2.00	1.00	3.00	EA		
90.	0430982129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	3.00	2.00	5.00	EA		
91.	0430-982-133	MITERED END SECTION, OPTIONAL ROUND, 30" CD	1	1.00	2.00	EA		
92.	0430-982-138	MITERED END SECTION, OPTIONAL ROUND, 36" CD		1.00	1.00	EA		
93.	430-982-140	MITERED END SECTION, OPTIONAL ROUND, 42" CD	1.00		1.00	EA		
94.	0430982142	MITERED END SECTION, OPTIONAL ROUND, 54" CD	2.00		2.00	EA		
95.	0430982143	MITERED END SECTION, OPTIONAL ROUND, 60" CD	1.00		1.00	EA		
96.	0430982625	MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 18" CD	2.00		2.00	EA		
97.	0430982629	MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 24" CD	1.00		1.00	EA		
98.	0430984123	MITERED END SECTION, OPTIONAL ROUND, 15" SD	6.00		6.00	EA		
99.	0430984625	MITERED END SECT, OPTIONAL - ELLIPTICAL / ARCH, 18" SD	4.00		4.00	EA		
100.	0450 2 45	PREST BEAMS: FLORIDA-I BEAM 45"	14,937.90		14,937.90	LF		
101.	0455 34 5	PRESTRESSED CONCRETE PILING, 24" SQ	13,278.90		13,278.90	LF		
102.	0455143 5	TEST PILES-PRESTRESSED CONCRETE,24" SQ	1,217.00		1,217.00	LF		
103.	0458 1 11	BRIDGE DECK EXPANSION JOINT, NEW CONSTRUCTION, F&I POURED JOINT WITH BACKER ROD	689.00		689.00	LF		

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104.	0459 71	PILES, POLYETHYLENE SHEETING	59.40		59.40	SY		
105.	0515-1-1	PIPE HANDRAIL - GUIDERAIL, STEEL		550.00	550.00	LF		
106.	0515 1 2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	1,068.00		1,068.00	LF		
107.	0515 42	PEDESTRIAN/BICYCLE RAILING, ALUMINUM, DOUBLE BULLET RAIL	3,124.80		3,124.80	LF		
108.	0519-78	BOLLARDS	4.00		4.00	EA		
109.	0520 1 10	CONCRETE CURB & GUTTER, TYPE F	16,912.00	4,145.00	21,057.00	LF		
110.	0520-2-2	CONCRETE CURB & GUTTER, TYPE AB	7,681.00	8,515.00	16,196.00	LF		
111.	0520 5 11	TRAFFIC SEPARATOR CONCRETE-TYPE I, 4' WIDE	1,386.00		1,386.00	LF		
112.	0520 5 16	TRAFFIC SEPARATOR CONCRETE- TYPE I, 8.5' WIDE	1,401.00		1,401.00	LF		
113.	0521 1	MEDIAN CONCRETE BARRIER WALL	507.00		507.00	LF		
114.	0521 5 1	CONCRETE TRAFFIC RAILING, BRIDGE 32" F - SHAPE	6,249.70		6,249.70	LF		
115.	0521 6 11	CONCRETE PARAPET, PEDESTRIAN/BICYCLE, 27" HEIGHT	3,124.80		3,124.80	LF		
116.	0521 72 5	SHOULDER CONCRETE BARRIER WALL, RIGID-CURB & GUTTER	595.00		595.00	LF		
117.	0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	5,901.00	4,484.00	10,385.00	SY		
118.	0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	2,849.00		2,849.00	SY		
119.	0524-1-2	CONCRETE DITCH PAVEMENT, NON-REINFORCED, 4"		11.90	11.90	SY		
120.	0527 2	DETECTABLE WARNINGS	495.00	379.00	874.00	SF		
121.	0530 1	RIPRAP, SAND-CEMENT	55.00		55.00	CY		
122.	0530 3 3	RIPRAP- RUBBLE, BANK AND SHORE	1,558.00		1,558.00	TN		
123.	0530-74	BEDDING STONE	1,440.00		1,440.00	TN		
124.	0536 1 0	GUARDRAIL -ROADWAY, GENERAL/LOW SPEED TL-2	366.80		366.80	LF		
125.	0536 85 24	GUARDRAIL END ANCHORAGE ASSEMBLY- PARALLEL	1.00		1.00	EA		
126.	0536 85 26	GUARDRAIL END ANCHORAGE ASSEMBLY- TYPE CRT	1.00		1.00	EA		
127.	0542-70	BUMPER GUARDS, CONCRETE	11.00		11.00	EA		
128.	0550-10-222	FENCING, TYPE B, 5.1-6.0, W/ VINYL COATING	983.00		983.00	LF		
129.	0570 1 1	PERFORMANCE TURF	26,152.00		26,152.00	SY		
130.	0570 1 2	PERFORMANCE TURF, SOD	19,369.00	18,550.00	37,919.00	SY		

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131.	0710 11101	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SOLID, 6"	3.34	3.11	6.45	GM		
132.	0710 11124	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SOLID FOR DIAGONAL OR CHEVRON, 18"	97.80		97.80	LF		
133.	0710 11125	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SOLID FOR STOP LINE OR CROSSWALK, 24"	528.10	183.00	711.10	LF		
134.	0710 11131	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SKIP, 10-30 OR 3-9 SKIP, 6" WIDE	52.79		52.79	GM		
135.	0710 11160	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, MESSAGE OR SYMBOL	2.00		2.00	EA		
136.	0710 11201	PAINTED PAVEMENT MARKINGS, STANDARD, YELLOW, SOLID, 6"	55.40	2.947	58.347	GM		
137.	0710 11224	PAINTED PAVEMENT MARKINGS, STANDARD, YELLOW, SOLID FOR DIAGONAL OR CHEVRON, 18"	680.20		680.20	LF		
138.	FL 382	FENCING, FLORIDA FENCE (FL 382), BARBWIRE	2,711.00		2,711.00	LF		
SUBTOTAL (ROADWAY & BRIDGE ONLY)								
CONTRACT CONTINGENCY WORK FOR ROADWAY & BRIDGE (USED ONLY WITH COUNTY APPROVAL)							10%	
SIGNING AND PAVEMENT MARKING								
139.	0654 2 21	RECTANGULAR RAPID FLASHING BEACON, F&I- SOLAR POWERED, COMPLETE SIGN ASSEMBLY- SINGLE DIRECTION		2.00	2.00	AS		
140.	0654 2 22	RECTANGULAR RAPID FLASHING BEACON, FURNISH & INSTALL- SOLAR POWERED, COMPLETE ASSEMBLY- BACK TO BACK	2.00	1.00	3.00	AS		
141.	0700 1 11	SINGLE POST SIGN, F&I GROUND MOUNT, UP TO 12 SF	58.00	26.00	84.00	AS		
142.	0700 1 12	SINGLE POST SIGN, F&I GROUND MOUNT, 12-20 SF	6.00	1.00	7.00	AS		
143.	0700 1 13	SINGLE POST SIGN, F&I GROUND MOUNT, 21-30 SF	1.00	5.00	6.00	AS		
144.	0700 1 50	SINGLE POST SIGN, RELOCATE	4.00	1.00	5.00	AS		
145.	0700 1 60	SINGLE POST SIGN, REMOVE	21.00		21.00	AS		
146.	0700-1-74	SINGLE POST SIGN, F&I CUSTOM, 31+ SF		1.00	1.00	AS		
147.	0700 2 12	MULTI- POST SIGN, F&I GROUND MOUNT, 12-20 SF	1.00		1.00	AS		
148.	0700 2 13	MULTI- POST SIGN, F&I GROUND MOUNT, 21-30 SF	1.00		1.00	AS		

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149.	0700 2 14	MULTI- POST SIGN, F&I GROUND MOUNT, 31-50 SF	2.00	2.00	4.00	AS		
150.	0700 3601	SIGN PANEL, REMOVE, UP TO 12 SF	3.00	2.00	5.00	EA		
151.	0700 6 60	HIGHLIGHTED SIGN, REMOVE	3.00		3.00	AS		
152.	0705 10 1	OBJECT MARKER, TYPE 1	23.00	17.00	40.00	EA		
153.	0705 10 4	OBJECT MARKER, TYPE 4	6.00	3.00	9.00	EA		
154.	0705-11-1	DELINEATOR, FLEXIBLE TUBULAR, YELLOW - YELLOW		8.00	8.00	EA		
155.	0705 11 3	DELINEATOR, FLEXIBLE HIGH VISABILITY MEDIAN	14.00		14.00	EA		
156.	0706 3	RETRO-REFLECTIVE PAVEMENT MARKERS	1,159.00		1,159.00	EA		
157.	0710 11290	PAINTED PAVEMENT MARKINGS, STANDARD, YELLOW, ISLAND NOSE	111.00	124.00	235.00	SF		
158.	0710-90	PAINTED PAVEMENT MARKINGS, FINAL SURFACE		1.00	1.00	LS		
159.	0711 11123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK AND ROUNDABOUT	1,606.00	1,436.00	3,042.00	LF		
160.	0711 11124	THERMOPLASTIC, STANDARD, WHITE, SOLID, 18" FOR DIAGONALS AND CHEVRONS	500.00		500.00	LF		
161.	0711 11125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK	395.00	290.00	685.00	LF		
162.	0711 11141	THERMOPLASTIC, STANDARD, WHITE, 2-4 DOTTED GUIDELINE/ 6-10 GAP EXTENSION, 6"	0.616	0.502	1.118	GM		
163.	0711 11160	THERMOPLASTIC, STANDARD, WHITE, MESSAGE OR SYMBOL	2.00		2.00	EA		
164.	0711 11170	THERMOPLASTIC, STANDARD, WHITE, ARROW	74.00	25.00	99.00	EA		
165.	0711 11224	THERMOPLASTIC, STANDARD, YELLOW, SOLID, 18" FOR DIAGONAL OR CHEVRON	474.00	29.00	503.00	LF		
166.	0711 11241	THERMOPLASTIC, STANDARD, YELLOW, 2-4 DOTTED GUIDE LINE /6-10 DOTTED EXTENSION LINE, 6"	0.376	0.186	0.562	GM		
167.	0711 14125	THERMOPLASTIC, PREFORMED, WHITE, SOLID, 24" FOR CROSSWALK	520.00	526.00	1,046.00	LF		
168.	0711 14160	THERMOPLASTIC, PREFORMED, WHITE, MESSAGE	35.00	8.00	43.00	EA		
169.	0711 14170	THERMOPLASTIC, PREFORMED, WHITE, ARROWS	35.00	8.00	43.00	EA		
170.	0711 16101	THERMOPLASTIC, STANDARD-OTHER SURFACES, WHITE, SOLID, 6"	8.653	3.263	11.916	GM		
171.	0711 16102	THERMOPLASTIC, STANDARD-OTHER SURFACES, WHITE, SOLID, 8"	0.087		0.087	GM		

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**44th Avenue East Extension Project - from 45th Street East to I-75
 Based on Completion Time of 900 Calendar Days**

PAY ITEM NO.	FDOT ITEM NUMBER	DESCRIPTION	44th Ave. East Braden River Segment QTY.	44th Ave. East- 44th Ave. Plaza East to I-75 QTY	TOTAL PROJECT QTY.	UNITS	BID PRICE PER UNIT (\$)	TOTAL BID PRICE (\$)
172.	0711 16131	THERMOPLASTIC, OTHER SURFACES, WHITE, SKIP, 6",10-30 SKIP OR 3-9 LANE DROP	2.687	1.772	4.459	GM		
173.	0711 16201	THERMOPLASTIC, STANDARD-OTHER SURFACES, YELLOW, SOLID, 6"	4.168	1.831	5.999	GM		
174.	0711 17	THERMOPLASTIC, REMOVE EXISTING THERMOPLASTIC PAVEMENT MARKINGS	44.00		44.00	SF		
175.	0713103101	PERMANENT TAPE, WHITE, SOLID, 6" FOR CONCRETE BRIDGES	1.182		1.182	GM		
176.	0713103131	PERMENENT TAPE, WHITE, SKIP/DOTTED, 6" FOR CONCRETE SURFACES	0.591		0.591	GM		
177.	0713103201	PERMANENT TAPE, YELLOW, SOLID, 6" FOR CONCRETE BRIDGES	0.591		0.591	GM		
178.	0713103331	PERMANENT TAPE, BLACK, SKIP/DOTTED, 6" FOR CONCRETE SURFACES	0.591		0.591	GM		
SUBTOTAL (SIGNING & PAVEMENT MARKING ONLY)								
CONTRACT CONTINGENCY WORK FOR SIGNING & PAVEMENT MARKING (USED ONLY WITH COUNTY APPROVAL)							10%	
SIGNALIZATION & LIGHTING								
179.	0630 2 11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	23,394.00	11,611.00	35,005.00	LF		
180.	0630 2 12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	3,697.00	2,544.00	6,241.00	LF		
181.	0630-2-14	CONDUIT, FURNISH & INSTALL, ABOVE GROUND		30.00	30.00	LF		
182.	0632 7 1	SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION, FURNISH & INSTALL	2.00	1.00	3.00	PI		
183.	0633 1121	FIBER OPTIC CABLE, F&I, UNDERGROUND,2-12 FIBERS	210.00	220.00	430.00	LF		
184.	633 1 122	FIBER OPTIC CABLE, F&I, UNDERGROUND,13-48 FIBERS		3,994.00	3,994.00	LF		
185.	0633 1123	FIBER OPTIC CABLE, F&I, UNDERGROUND,49-96 FIBERS	10,926.00		10,926.00	LF		
186.	0633 2 31	FIBER OPTIC CONNECTION, INSTALL, SPLICE	56.00	8.00	64.00	EA		
187.	0633 3 11	FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE ENCLOSURE	4.00	2.00	6.00	EA		
188.	0633 3 12	FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE TRAY	7.00	2.00	9.00	EA		
189.	0633 3 13	FIBER OPTIC CONNECTION HARDWARE, F&I, PRETERMINATED CONNECTOR ASSEMBLY	36.00		36.00	EA		

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**44th Avenue East Extension Project - from 45th Street East to I-75
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PAY ITEM NO.	FDOT ITEM NUMBER	DESCRIPTION	44th Ave. East Braden River Segment QTY.	44th Ave. East- 44th Ave. Plaza East to I-75 QTY	TOTAL PROJECT QTY.	UNITS	BID PRICE PER UNIT (\$)	TOTAL BID PRICE (\$)
190.	633 3 15	FIBER OPTIC CONNECTION HARDWARE, F&I, PRETERMINATED PATCH PANEL		2.00	2.00	EA		
191.	0633 3 16	FIBER OPTIC CONNECTION HARDWARE, F&I, PATCH PANEL- FIELD TERMINATED	3.00		3.00	EA		
192.	0633 3 17	FIBER OPTIC CONNECTION HARDWARE, F&I, CONNECTOR PANEL	3.00		3.00	EA		
193.	0633 3 51	FIBER OPTIC CONNECTION HARDWARE, ADJUST/MODIFY SPLICE ENCLOSURE	1.00		1.00	EA		
194.	0633 3 52	FIBER OPTIC CONNECTION HARDWARE, ADJUST/MODIFY SPLICE TRAY	1.00		1.00	EA		
195.	0633 8 1	MULTI-CONDUCTOR COMMUNICATION CABLE, FURNISH & INSTALL	414.00	460.00	874.00	LF		
196.	0643-620	Wood Strain Poles, Remove	1.00		1.00	EA		
197.	0635 2 11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	172.00	72.00	244.00	EA		
198.	0635 2 12	PULL & SPLICE BOX, F&I, 24" X 36" COVER SIZE	13.00	60.00	73.00	EA		
199.	0635 2 13	PULL & SPLICE BOX, F&I, 30" X 60" RECTANGULAR OR 36" ROUND COVER SIZE	5.00	2.00	7.00	EA		
200.	0639 1122	ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER PURCHASED BY CONTRACTOR	3.00	1.00	4.00	AS		
201.	0639 2 1	ELECTRICAL SERVICE WIRE	980.00	807.00	1,787.00	LF		
202.	0639 3 11	ELECTRICAL SERVICE DISCONNECT, F&I, POLE MOUNT	5.00	1.00	6.00	EA		
203.	639 4 6	EMERGENCY GENERATOR- PORTABLE, INSTALL HOUSING ONLY		1.00	1.00	EA		
204.	0641 2 12	PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE	4.00	1.00	5.00	EA		
205.	0641 2 13	PRESTRESSED CONCRETE POLE, F&I, TYPE P-III	4.00	1.00	5.00	EA		
206.	0646 1 11	ALUMINUM SIGNALS POLE, PEDESTAL	12.00	6.00	18.00	EA		
207.	649 21 6	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 50		3.00	3.00	EA		
208.	0649 31207	MAST ARM, F&I, WIND SPEED-130, SINGLE ARM, W/O LUMINAIRE-46	1.00		1.00	EA		
209.	0649 31203	MAST ARM, F&I, WIND SPEED-130, SINGLE ARM, W/O LUMINAIRE-60	1.00		1.00	EA		
210.	0649 31204	MAST ARM, F&I, WIND SPEED-130, SINGLE ARM, W/O LUMINAIRE, ARM LENGTH 70.5	1.00		1.00	EA		

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**44th Avenue East Extension Project - from 45th Street East to I-75
 Based on Completion Time of 900 Calendar Days**

PAY ITEM NO.	FDOT ITEM NUMBER	DESCRIPTION	44th Ave. East Braden River Segment QTY.	44th Ave. East- 44th Ave. Plaza East to I-75 QTY	TOTAL PROJECT QTY.	UNITS	BID PRICE PER UNIT (\$)	TOTAL BID PRICE (\$)
211.	0649 31205	MAST ARM,F&I, WIND SPEED-130,SINGLE ARM,W/O LUMINAIRE, ARM LENGTH 78	1.00		1.00	EA		
212.	0650 1 14	TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY	9.00	6.00	15.00	AS		
213.	0650 1 16	TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 4 SECTION, 1 WAY	5.00	2.00	7.00	AS		
214.	0650 1 19	TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 5 SECTION CLUSTER, 1 WAY	5.00		5.00	AS		
215.	0650 1 60	TRAFFIC SIGNAL, REMOVE- POLES TO REMAIN	3.00		3.00	AS		
216.	0650 1 70	TRAFFIC SIGNAL, RELOCATE	2.00		2.00	AS		
217.	0653 1 11	COUNTDOWN, 1 WAY	12.00	6.00	18.00	AS		
218.	0660 3 11	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL CABINET EQUIPMENT	4.00	2.00	6.00	EA		
219.	0660 3 12	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	7.00	4.00	11.00	EA		
220.	0660 4 11	VEHICLE DETECTION SYSTEM- VIDEO, FURNISH & INSTALL CABINET EQUIPMENT	1.00		1.00	EA		
221.	0660 4 12	VEHICLE DETECTION SYSTEM- VIDEO, FURNISH & INSTALL ABOVE GROUND EQUIPMENT	4.00		4.00	EA		
222.	0660 4 52	VEHICLE DETECTION SYSTEM- VIDEO, ADJUST/MODIFY ABOVE GROUND EQUIPMENT	1.00		1.00	EA		
223.	0660 6121	VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, CABINET EQUIPMENT	2.00	1.00	3.00	EA		
224.	0660 6122	VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	2.00	1.00	3.00	EA		
225.	0663 1 111	SIGNAL PRIORITY AND PREEMPTION SYSTEM, F&I, OPTICAL, CABINET ELECTRONICS		1.00	1.00	EA		
226.	0663 1 112	SIGNAL PRIORITY AND PREEMPTION SYSTEM, F&I, OPTICAL, DETECTOR		3.00	3.00	EA		
227.	0665 1 11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD	12.00	6.00	18.00	EA		
228.	0670 5112	TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA, 2 PREEMPTION	1.00	1.00	2.00	AS		
229.	0670 5400	TRAFFIC CONTROLLER ASSEMBLY, MODIFY	1.00		1.00	AS		
230.	0676 2122	ITS CABINET, FURNISH & INSTALL, POLE MOUNT WITH SUNSHIELD, 336S, 24" W X 46" H X 22" D	4.00	1.00	5.00	EA		

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**44th Avenue East Extension Project - from 45th Street East to I-75
 Based on Completion Time of 900 Calendar Days**

PAY ITEM NO.	FDOT ITEM NUMBER	DESCRIPTION	44th Ave. East Braden River Segment QTY.	44th Ave. East- 44th Ave. Plaza East to I-75 QTY	TOTAL PROJECT QTY.	UNITS	BID PRICE PER UNIT (\$)	TOTAL BID PRICE (\$)
231.	0682 1113	IT'S CCTV CAMERA, F&I, DOME PTZ ENCLOSURE - PRESSURIZED, IP, HIGH DEFINITION	4.00	1.00	5.00	EA		
232.	0684 1 1	MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL	3.00	2.00	5.00	EA		
233.	0684 2 1	DEVICE SERVER, FURNISH & INSTALL	2.00		2.00	EA		
234.	684 6 11	WIRELESS COMMUNICATION DEVICE, FURNISH & INSTALL ETHERNET ACCESS POINT		1.00	1.00	EA		
235.	684 6 12	WIRELESS COMMUNICATION DEVICE, FURNISH & INSTALL ETHERNET SUBSCRIBER UNIT		1.00	1.00	EA		
236.	685 1 11	UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, LINE INTERACTIVE		1.00	1.00	EA		
237.	0685112	UNINTERRUPTIBLE POWER SOURCE (F&I) ONLINE/DOUBLE CONVERSION	4.00	1.00	5.00	EA		
238.	0685113	UNINTERRUPTIBLE POWER SOURCE (F&I) LINE INTERACTIVE WITH CABINET	1.00		1.00	EA		
239.	0700 3201	SIGN PANEL, FURNISH & INSTALL OVERHEAD MOUNT, UP TO 12 SF	2.00	2.00	4.00	EA		
240.	0700 5 22	INTERNALLY ILLUMINATED SIGN, FURNISH & INSTALL, OVERHEAD MOUNT, 12-18 SF	4.00	3.00	7.00	EA		
241.	0700 5 50	INTERNALLY ILLUMINATED SIGN, RELOCATE	1.00		1.00	EA		
242.	0715 1 12	LIGHTING CONDUCTORS, F&I, INSULATED, NO.8 - 6	90,954.00	34,727.00	125,681.00	LF		
243.	0715 1 13	LIGHTING CONDUCTORS, F&I, INSULATED, NO 4 TO NO 2	987.00	500.00	1,487.00	LF		
244.	0715-4-13	LIGHT POLE COMPLETE, FURNISH & INSTALL STANDARD POLE STANDARD FOUNDATION, 40' MOUNTING HEIGHT		22.00	22.00	EA		
245.	0715 4121	LIGHT POLE COMPLETE, F&I, WIND SPEED 130, POLE HEIGHT 40'	55.00		55.00	EA		
246.	0715-4-23	LIGHT POLE COMPLETE, FURNISH & INSTALL STANDARD POLE SPECIAL FOUNDATION, 40' MOUNTING HEIGHT		31.00	31.00	EA		
247.	0715 5 12	LUMINAIRE & BRACKET ARM, F&I, GALVANIZED STEEL	1.00		1.00	EA		
248.	0715 7 11	LOAD CENTER, F&I, SECONDARY VOLTAGE	2.00	1.00	3.00	EA		
249.	0715-11-111	LUMINAIRE, F&I, ROADWAY, COBRAHEAD		2.00	2.00	EA		
250.	0715500 1	POLE CABLE DISTRIBUTION SYSTEM, CONVENTIONAL	100.00	53.00	153.00	EA		

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44th Avenue East Extension Project - from 45th Street East to I-75

Based on Completion Time of 900 Calendar Days

PAY ITEM NO.	FDOT ITEM NUMBER	DESCRIPTION	44th Ave. East Braden River Segment QTY.	44th Ave. East- 44th Ave. Plaza East to I-75 QTY	TOTAL PROJECT QTY.	UNITS	BID PRICE PER UNIT (\$)	TOTAL BID PRICE (\$)
251.	0715500 3	POLE CABLE DISTRIBUTION SYSTEM, WALL MOUNT	20.00		20.00	EA		
252.	0715512140	LIGHT POLE COMPLETE- SPECIAL DESIGN, F&I, DOUBLE ARM SHOULDER MOUNT, ALUMINUM, 40'	22.00		22.00	EA		
253.	0715515140	LIGHT POLE COMPLETE- SEPCIAL DESIGN, F&I, SINGLE ARM BRIDGE MOUNT, NON-STD ALUMINUM, 40'	20.00		20.00	EA		
SUBTOTAL (SIGNALIZATION & LIGHTING ONLY)								
CONTRACT CONTINGENCY WORK FOR SIGNALIZATION & LIGHTING (USED ONLY WITH COUNTY APPROVAL)							10%	
POTABLE WATER								
GENERAL								
254.	UG1	UG-1 Unsuitable Material Excavation Below Grade	500.00		500.00	CY		
255.	UG2	UG-2 Select Backfill Below Grade	500.00		500.00	CY		
256.	UG3	UG-3 Crushed Stone Pipe Bedding	250.00		250.00	CY		
257.	UG4	UG-4 Permanent Roadway Restoration	500.00		500.00	SY		
258.	UG5	UG-5 Temporary Roadway Restoration	500.00		500.00	SY		
259.	UG6	UG-6 Patch Roadway Impacted by Pipe Restraint Installation	200.00		200.00	SY		
260.	UG7	UG-7 Asphalt Overlay	2,000.00		2,000.00	SY		
261.	UG8	UG-8 Driveway Restoration	100.00		100.00	SY		
262.	UG9	UG-9 Sod Restoration	1,500.00		1,500.00	SY		
263.	UG10	UG-10 Tree Replacement	16.00		16.00	EA		
POTABLE WATER INSTALL								
UW-1 Water Main by Open Cut								
264.		UW-1A 36" DIP PO	1,957.00		1,957.00	LF		
265.		UW-1B 36" DIP RJ	2,838.00		2,838.00	LF		
266.		UW-1C 30" DIP PO	1,000.00		1,000.00	LF		
267.		UW-1D 30" DIP RJ	775.00		775.00	LF		
268.		UW-1E 24" DIP RJ	15.00		15.00	LF		
269.		UW-1F 12" DIP RJ	225.00		225.00	LF		
270.		UW-1G 8" DIP PO	40.00		40.00	LF		
271.		UW-1H 8" DIP RJ	320.00		320.00	LF		

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272.		UW-1I 6" DIP RJ	158.00		158.00	LF		
273.		UW-1J 4" DIP RJ	60.00		60.00	LF		
274.		UW-1K 8" PVC Pipe PO	3,477.00		3,477.00	LF		
275.		UW-1L 8" PVC Pipe RJ	552.00		552.00	LF		
276.		UW-1M 6" PVC Pipe RJ	80.00		80.00	LF		
		UW-2 Ductile Iron Water Main Fittings						
277.		UW-2A 36" 90 Degree Bend	3.00		3.00	EA		
278.		UW-2B 36" 45 Degree Bend	25.00		25.00	EA		
279.		UW-2C 36" 22.5 Degree Bend	19.00		19.00	EA		
280.		UW-2D 36" 11.25 Degree Bend	4.00		4.00	EA		
281.		UW-2E 36" x 36" Tee	2.00		2.00	EA		
282.		UW-2F 36" x 30" Tee	1.00		1.00	EA		
283.		UW-2G 36" x 24" Tee	1.00		1.00	EA		
284.		UW-2H 36" x 12" Tee	1.00		1.00	EA		
285.		UW-2I 36" x 8" Tee	2.00		2.00	EA		
286.		UW-2J 36" x 6" Tee	8.00		8.00	EA		
287.		UW-2K 36" Cap	2.00		2.00	EA		
288.		UW-2L 30" 45 Degree Bend	12.00		12.00	EA		
289.		UW-2M 30" 22.5 Degree Bend	2.00		2.00	EA		
290.		UW-2N 30" 11.25 Degree Bend	2.00		2.00	EA		
291.		UW-2O 30" x 8" Reducer	1.00		1.00	EA		
292.		UW-2P 30" x 30" Tee	1.00		1.00	EA		
293.		UW-2Q 30" Cap	2.00		2.00	EA		
294.		UW-2R 24" Cap	1.00		1.00	EA		
295.		UW-2S 12" 45 Degree Bend	4.00		4.00	EA		
296.		UW-2T 12" 11.25 Degree Bend	1.00		1.00	EA		
297.		UW-2U 12" x 6" Tee	1.00		1.00	EA		
298.		UW-2V 12" Cap	1.00		1.00	EA		
299.		UW-2W 10" x 8" Reducer	3.00		3.00	EA		

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300.		UW-2X 8" 90 Degree Bend	2.00		2.00	EA		
301.		UW-2Y 8" 45 Degree Bend	19.00		19.00	EA		
302.		UW-2Z 8" 22.5 Degree Bend	6.00		6.00	EA		
303.		UW-2AA 8" 11.25 Degree Bend	9.00		9.00	EA		
304.		UW-2AB 8" x 6" Reducer	1.00		1.00	EA		
305.		UW-2AC 8" x 8" Tee	5.00		5.00	EA		
306.		UW-2AD 8" x 6" Tee	8.00		8.00	EA		
307.		UW-2AE 8" x 4" Tee	1.00		1.00	EA		
308.		UW-2AF 8" Cap	3.00		3.00	EA		
309.		UW-2AG 6" 90 Degree Bend	5.00		5.00	EA		
310.		UW-2AH 6" 45 Degree Bend	2.00		2.00	EA		
311.		UW-2AI 6" x 2" Reducer	1.00		1.00	EA		
312.		UW-2AJ 6" x 6" Tee	5.00		5.00	EA		
313.		UW-2AK 6" Cap	3.00		3.00	EA		
314.		UW-2AL 4" Cap	1.00		1.00	EA		
315.		UW-2AM 30" x 6" Tee	1.00		1.00	EA		
316.		UW-3 2" PVC Water Main	170.00		170.00	LF		
		UW-4 36" DIP Water Main on New Bridge						
317.		UW-4A 36" DIP/RJ	1,600.00		1,600.00	LF		
318.		UW-4B 36" Expansion Joint	6.00		6.00	EA		
319.		UW-4C Combination Air Valve	1.00		1.00	EA		
320.		UW-4D 36" Pipe Supports	88.00		88.00	EA		
321.		UW-4E Concrete Piles	840.00		840.00	LF		
322.		UW-4F Gravity Thrust Block	125.00		125.00	CY		
323.		UW-4G Pile Cap	31.00		31.00	CY		
324.		UW-4H Concrete Slab	2.00		2.00	CY		
325.		UW-5 10" HDPE by Horizontal Directional Drill (HDD)	220.00		220.00	LF		
326.		UW-6 Temporary 6" Water Main	1.00		1.00	LS		
		UW-7 Butterfly Valve						

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327.		UW-7A 36" Butterfly Valve	7.00		7.00	EA		
328.		UW-7B 30" Butterfly Valve	3.00		3.00	EA		
329.		UW-7C 24" Butterfly Valve	1.00		1.00	EA		
		UW-8 Gate Valve						
330.		UW-8A 12" Gate Valve	2.00		2.00	EA		
331.		UW-8B 8" Gate Valve	11.00		11.00	EA		
332.		UW-8C 6" Gate Valve	9.00		9.00	EA		
333.		UW-8D 4" Gate Valve	1.00		1.00	EA		
334.		UW-8E 2" Gate Valve	1.00		1.00	EA		
335.		UW-9 8" Insertion Valve	3.00		3.00	EA		
336.		UW-10 Fire Hydrant Assembly	15.00		15.00	EA		
		UW-11 Air Release Valves						
337.		UW-11A Above Ground Air Release Valve Assembly	6.00		6.00	EA		
338.		UW-11B Manual Air Release Valve Connection	1.00		1.00	EA		
		UW-12 Water Services						
339.		UW-12A Long Side on 36" Water Main	2.00		2.00	EA		
340.		UW-12B Long Side on 36" Water Main w/ Meter Box Assembly	2.00		2.00	EA		
341.		UW-12C Short Side on 36" Water Main w/ Meter Box Assembly	4.00		4.00	EA		
342.		UW-12D Short Side on 30" Water Main	1.00		1.00	EA		
343.		UW-12E Long Side Service	10.00		10.00	EA		
344.		UW-12F Short Side Service	1.00		1.00	EA		
345.		UW-12G Short Side Service w/ Meter Box Assembly	7.00		7.00	EA		
346.		UW-12H New Short Side Service on 36" WM with Meter Box Assembly & Backflow Preventer (King Property, Sta 216+32)	1.00		1.00	EA		
347.		UW-12I New Short Side Service on 4" WM with Meter Box Assembly & Backflow Preventer (King Property, Sta 917+80)	1.00		1.00	EA		
348.		UW-13 Backflow Preventer	4.00		4.00	EA		

Bidder Name: _____

Authorized Signature: _____

BID FORM

(Submit in Triplicate)

**44th Avenue East Extension Project - from 45th Street East to I-75
 Based on Completion Time of 900 Calendar Days**

PAY ITEM NO.	FDOT ITEM NUMBER	DESCRIPTION	44th Ave. East Braden River Segment QTY.	44th Ave. East- 44th Ave. Plaza East to I-75 QTY	TOTAL PROJECT QTY.	UNITS	BID PRICE PER UNIT (\$)	TOTAL BID PRICE (\$)
349.		UW-14 Reconnect Water Services for King Property-Allowance	1.00		1.00	LS	\$ 20,000.00	
350.		UW-15 Jack & Bore with Steel Casing	75.00		75.00	LF		
351.		UW-16 Elwood I Pump Station Interconnection	1.00		1.00	LS		
		UW-17 Pipeline Interconnections						
352.		UW-17A 51st Street E 36" Interconnection	1.00		1.00	LS		
353.		UW-17B 51st Street E 30" Interconnection	1.00		1.00	LS		
354.		UW-17C Braden River Church Interconnection	1.00		1.00	LS		
		UW-18 Restrain Existing Pipe Joints						
355.		UW-18A Restrain Existing 36" PCCP Pipe Joints	16.00		16.00	EA		
356.		UW-18B Restrain Existing 30" DIP Pipe Joints	11.00		11.00	EA		
357.		UW-18C Restrain Existing 8" Pipe Joints	18.00		18.00	EA		
358.		UW-18D Restrain Existing 6" Pipe Joints	5.00		5.00	EA		
359.		UW-18E Restrain Existing 4" Pipe Joints	3.00		3.00	EA		
		POTABLE WATER REMOVE						
		UWR-1 Remove and Dispose of Existing Pipe						
360.		UWR-1A 36" PCCP	3,020.00		3,020.00	LF		
361.		UWR-1B 36" DIP	67.00		67.00	LF		
362.		UWR-1C 30" DIP	1,705.00		1,705.00	LF		
363.		UWR-1D 8" PVC	5,410.00		5,410.00	LF		
364.		UWR-1E 6" PVC	305.00		305.00	LF		
365.		UWR-1F 4" PVC	250.00		250.00	LF		
366.		UWR-2 Remove and Dispose of Existing Thrust Block at Sta 507+00	100.00		100.00	TON		
367.		UWR-3 Remove and Dispose of Temporary 6" Water Main	1.00		1.00	LS		
368.		UWR-4 Remove and Dispose of Existing Water Services	31.00		31.00	EA		
369.		UWR-5 Remove and Salvage Existing Fire Hydrant Assembly	6.00		6.00	EA		
SUBTOTAL (POTABLE WATER ONLY)								
CONTRACT CONTINGENCY WORK FOR POTABLE WATER (USED ONLY WITH COUNTY APPROVAL)							10%	

Bidder Name: _____

Authorized Signature: _____

BID FORM

(Submit in Triplicate)

44th Avenue East Extension Project - from 45th Street East to I-75
Based on Completion Time of 900 Calendar Days

PAY ITEM NO.	FDOT ITEM NUMBER	DESCRIPTION	44th Ave. East Braden River Segment QTY.	44th Ave. East- 44th Ave. Plaza East to I-75 QTY	TOTAL PROJECT QTY.	UNITS	BID PRICE PER UNIT (\$)	TOTAL BID PRICE (\$)
WASTEWATER								
WASTEWATER FORCE MAIN INSTALL								
UWW-1 DIP Force Main by Open Cut								
370.		UWW-1A 10" DIP PO	280.00		280.00	LF		
371.		UWW-1B 10" DIP RJ	113.00		113.00	LF		
372.		UWW-1C 8" DIP PO	1,508.00		1,508.00	LF		
373.		UWW-1D 8" DIP RJ	587.00		587.00	LF		
374.		UWW-1E 6" DIP PO	85.00		85.00	LF		
375.		UWW-1F 6" DIP RJ	230.00		230.00	LF		
376.		UWW-1G 4" DIP RJ	233.00		233.00	LF		
377.		UWW-1H 3" DIP RJ	10.00		10.00	LF		
378.		UWW-1I 10" PVC PO	790.00		790.00	LF		
379.		UWW-1J 10" PVC RJ	75.00		75.00	LF		
380.		UWW-1K 8" PVC PO	1,049.00		1,049.00	LF		
381.		UWW-1L 8" PVC RJ	626.00		626.00	LF		
382.		UWW-1M 2" PVC	125.00		125.00	LF		
UWW-2 Ductile Iron Force Main Fittings								
383.		UWW-2A 10" 45 Degree Bend	5.00		5.00	EA		
384.		UWW-2B 10" x 8" Reducer	1.00		1.00	EA		
385.		UWW-2C 10" x 8" Wye	1.00		1.00	EA		
386.		UWW-2D 10" x 4" Tee	1.00		1.00	EA		
387.		UWW-2E 8" 45 Degree Bend	37.00		37.00	EA		
388.		UWW-2F 8" 22.5 Degree Bend	2.00		2.00	EA		
389.		UWW-2G 8" 11.25 Degree Bend	1.00		1.00	EA		
390.		UWW-2H 8" x 8" Tee	1.00		1.00	EA		
391.		UWW-2I 8" x 6" Tee	1.00		1.00	EA		
392.		UWW-2J 8" Cap	2.00		2.00	EA		
393.		UWW-2K 6" 45 Degree Bend	9.00		9.00	EA		
394.		UWW-2L 6" 22.5 Degree Bend	1.00		1.00	EA		

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44th Avenue East Extension Project - from 45th Street East to I-75
Based on Completion Time of 900 Calendar Days

PAY ITEM NO.	FDOT ITEM NUMBER	DESCRIPTION	44th Ave. East Braden River Segment QTY.	44th Ave. East- 44th Ave. Plaza East to I-75 QTY	TOTAL PROJECT QTY.	UNITS	BID PRICE PER UNIT (\$)	TOTAL BID PRICE (\$)
395.		UWW-2M 6" 11.25 Degree Bend	1.00		1.00	EA		
396.		UWW-2N 6" Cap	2.00		2.00	EA		
397.		UWW-2O 4" 90 Degree Bend	2.00		2.00	EA		
398.		UWW-2P 4" 45 Degree Bend	8.00		8.00	EA		
399.		UWW-2Q 4" x 3" Reducer	1.00		1.00	EA		
400.		UWW-2R 4" Cap	2.00		2.00	EA		
401.		UWW-2S 3" 90 Degree Bend	2.00		2.00	EA		
		UWW-3 8" DIP Dry Force Main on New Bridge						
402.		UWW-3A 8" DIP/RJ	1,600.00		1,600.00	LF		
403.		UWW-3B 8" Expansion Joint	6.00		6.00	EA		
404.		UWW-3C Combination Air Valve	1.00		1.00	EA		
405.		UWW-3D 8" Pipe Supports	88.00		88.00	EA		
406.		UWW-4 2" HDPE Force Main by HDD	205.00		205.00	LF		
		UWW-5 Gate Valve						
407.		UWW-5A 8" Gate Valve	6.00		6.00	EA		
408.		UWW-5B 6" Gate Valve	1.00		1.00	EA		
409.		UWW-5C 4" Gate Valve	1.00		1.00	EA		
410.		UWW-6 8" Force Main Bypass Assembly	2.00		2.00	EA		
411.		UWW-7 8" Force Main Pigging Port Assembly	2.00		2.00	EA		
412.		UWW-8 8" Force Main Check Valve Assembly	1.00		1.00	EA		
		UWW-9 Air Release Valves						
413.		UWW-9A Above Ground Air Release Valve	2.00		2.00	EA		
414.		UWW-9B Below Grade Air Release Valve	1.00		1.00	EA		
		UWW-10 Tapping Sleeve and Valve						
415.		UWW-10A 20" x 10" Tapping Sleeve and Valve	1.00		1.00	EA		
416.		UWW-10B 20" x 4" Tapping Sleeve and Valve	2.00		2.00	EA		
417.		UWW-11 Cap 8" Force Main at Old Caruso Road	1.00		1.00	LS		
418.		UWW-12 Offset Existing 20" DIP Force Main	2.00		2.00	EA		
419.		UWW-13 Concrete Encasement of Existing 20" DIP Force	8.00		8.00	EA		

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44th Avenue East Extension Project - from 45th Street East to I-75
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PAY ITEM NO.	FDOT ITEM NUMBER	DESCRIPTION	44th Ave. East Braden River Segment QTY.	44th Ave. East- 44th Ave. Plaza East to I-75 QTY	TOTAL PROJECT QTY.	UNITS	BID PRICE PER UNIT (\$)	TOTAL BID PRICE (\$)
420.		UWW-14 Reset Manhole Frame and Cover	1.00		1.00	EA		
421.		UWW-15 Grinder Lift Station at Elwood I PS	1.00		1.00	LS		
		UWW-16 Restrain Existing Pipe Joints						
422.		UWW-16A Restrain Existing 8" Pipe Joints	2.00		2.00	EA		
423.		UWW-16B Restrain Existing 3" Pipe Joints	1.00		1.00	EA		
		WASTEWATER GRAVITY SEWER INSTALL						
		UWW-17 Connect to Existing Manhole						
424.		UWW-17A 8" Sanitary Connection	1.00		1.00	EA		
425.		UWW-17B 2" Force Main Connection	1.00		1.00	EA		
426.		UWW-18 8" PVC Gravity Sewer Pipe by Open Cut	565.00		565.00	LF		
427.		UWW-19 Sanitary Sewer Manhole & Cover	1.00		1.00	EA		
428.		UWW-20 Apply Spray Liner to Existing Manhole	3.00		3.00	EA		
		WASTEWATER REMOVE						
		UWWR-1 Remove and Dispose of Existing Force Main						
429.		UWWR-1A 8" PVC	1,320.00		1,320.00	LF		
430.		UWWR-1B 6" PVC	140.00		140.00	LF		
431.		UWWR-1C 3" PVC	10.00		10.00	LF		
432.		UWWR-2 Remove and Dispose of Manhole with CV & ARV	1.00		1.00	EA		
433.		UWWR-3 Remove and Dispose of Septic System at Elwoo	1.00		1.00	EA		
SUBTOTAL (WASTEWATER ONLY)								
CONTRACT CONTINGENCY WORK FOR WASTEWATER (USED ONLY WITH COUNTY APPROVAL)							10%	
RECLAIMED WATER								
		URW-1 Reclaimed Water Main by Open Cut						
434.		URW-1A 12" DIP RJ	80.00		80.00	LF		
435.		URW-1B 8" DIP RJ	130.00		130.00	LF		
436.		URW-1C 6" DIP RJ	90.00		90.00	LF		
		URW-2 Ductile Iron Reclaimed Water Main Fittings						
437.		URW-2A 12" 45 Degree Bend	3.00		3.00	EA		
438.		URW-2B 12" x 6" Reducer	1.00		1.00	EA		

Bidder Name: _____

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BID FORM

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44th Avenue East Extension Project - from 45th Street East to I-75
Based on Completion Time of 900 Calendar Days

PAY ITEM NO.	FDOT ITEM NUMBER	DESCRIPTION	44th Ave. East Braden River Segment QTY.	44th Ave. East- 44th Ave. Plaza East to I-75 QTY	TOTAL PROJECT QTY.	UNITS	BID PRICE PER UNIT (\$)	TOTAL BID PRICE (\$)
439.		URW-2C 12" x 12" Tee	1.00		1.00	EA		
440.		URW-2D 12" Cap	1.00		1.00	EA		
441.		URW-2E 8" 45 Degree Bend	6.00		6.00	EA		
442.		URW-2F 8" Cap	2.00		2.00	EA		
443.		URW-2G 6" 45 Degree Bend	4.00		4.00	EA		
444.		URW-2H 6" Cap	2.00		2.00	EA		
		URW-3 Gate Valve						
445.		URW-3A 12" Gate Valve	1.00		1.00	EA		
446.		URW-3B 6" Gate Valve	1.00		1.00	EA		
447.		URW-4 Reclaimed Water Fire Hydrant Assembly	5.00		5.00	EA		
		URW-5 Reclaimed Water Services						
448.		URW-5A Single RW Service - Replace Service Line	4.00		4.00	EA		
449.		URW-5B Single RW Service - Replace Service Line & Meter Box	4.00		4.00	EA		
450.		URW-5C Double RW Service - Replace Service Line	4.00		4.00	EA		
451.		URW-5D Double RW Service - Replace Service Line & Meter Box	1.00		1.00	EA		
		RECLAIMED WATER REMOVE						
452.		URWR-1 Remove and Dispose of Existing Reclaimed Water Services	13.00		13.00	EA		
453.		URWR-2 Remove and Salvage Existing Reclaimed water FHA	1.00		1.00	EA		
SUBTOTAL (RECLAIMED WATER ONLY)								
CONTRACT CONTINGENCY WORK FOR RECLAIMED WATER (USED ONLY WITH COUNTY APPROVAL)							10%	
TOTAL BASE BID - Based on Completion Time of 900 Calendar Days								
CONTRACT CONTINGENCY WORK (USED ONLY WITH COUNTY APPROVAL)							10%	
TOTAL OFFER FOR BID with Contract Contingency - Based on Completion Time of 900 Calendar Days								

Bidder Name: _____

Authorized Signature: _____

SPECIAL PROVISIONS

FOR

44th AVENUE EAST EXTENSION

COUNTY PROJECT Nos. 6086960 & 6045662

September 2019

PROJECT OWNER:

County of Manatee, Florida
c/o Manatee County Procurement Division
1112 Manatee Avenue West
Bradenton, Florida 34205
(941) 748-4501

PREPARED BY:

AECOM Technical Services, Inc., HDR Engineering, Inc. & Manatee County Public
Works Department

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SPECIAL PROVISIONS

GENERAL

This Section amends, enhances or otherwise revises the Technical Specifications.

CONTRACT PLANS

The Contract Plans will include the following plan sets:

44th Ave E – 45th St E to 44th Ave Plz E – Prepared by AECOM Technical Services, Inc.

1. Roadway Plans
2. Lighting Plans
3. Potable, Sanitary and Reclaimed Water Utility Work Plans
4. Signalization Plans
5. Signing & Pavement Marking Plans
6. Structure Plans for the bridge over the Braden River
7. Elwood 1 Pump Station Site Plans

44th Ave E – 44th Ave Plz E to Lakewood Ranch Blvd – Phase 1 – Prepared by HDR Engineering, Inc.

1. Roadway 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*, July 2019 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 2015).

The Contractor's work shall follow the Manatee County Public Works Utility Standards and Specifications (dated 2019) for all utility work, Bid Form pay items UG-1 thru UG-11, UW-1 thru UW-18, UWR-1 thru UWR-5, UWW-1 thru UWW-20, UWWR-1 thru UWWR-3, URW-1 thru URW-5 and URWR-1 thru URWR-2.

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.

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. Interpretation of these specifications shall be made upon that basis.

PRIORITY

In any instance where there is an apparent conflict between these technical specifications, special provisions and the corresponding terms of the "Standard Specifications", these special provisions followed by these technical specifications shall be controlling.

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.

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 Owner and/or its agents. 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 Owner and/or its agents. All concrete mix designs shall meet FDOT Concrete Class mix guidelines, except as follows: when approved, in writing by the Engineer, 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.

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 also be in accordance with the applicable portions of the *FDOT Standard Specifications* and these specifications.

MEASUREMENT AND PAYMENT

- 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 Engineer.
- 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 Owner.
- 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. 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 Owner 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.

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

- g. Bid Schedule Completion - the blank spaces in the bid schedule shall be filled in correctly where each and every item for which a description is given, as the bidder

must state the unit prices for which he proposes to do each part of the work contemplated, and the total price for all the parts included in any or all of the combinations of the work. In case of a discrepancy, the written words for "unit price", where stated, shall be considered as being the unit price. If the bid schedule does not use the written words for the unit price, then the numerically correct "total price", shall be considered as being the total price.

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 owners 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 Owner 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 Owner assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Owner. The Owner 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 Engineer or are expressly stated in the Contract and (2) the Contract expressly provides that the responsibility therefore is assumed by the Owner.

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.

PROJECT IDENTIFICATION SIGNS

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 Owner. 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 Engineer, and other supports as required, at a location mutually agreed by the Engineer and the Contractor.

The identification signs shall not be less than 32 square feet in area. The Contractor shall coordinate with the Owner 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 Owner
- 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 Engineer and Owner.

The signs shall be a minimum of 8 feet wide and 4 feet high. The signs shall be constructed of high density $\frac{3}{4}$ -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 Pay Item Number 1 (101-1) for Mobilization. The sign will remain the property of the Owner upon completion of the Project unless otherwise directed.



44TH AVENUE EXTENSION

Board of County Commissioners

STEPHEN JONSSON

CHAIRMAN

PRISCILLA TRACE

REGGIE BELLAMY

CAROL WHITMORE

VANESSA BAUGH

MISTY SERVIA

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 usage of temporary erosion control features. The plan shall include:

- **Synthetic Bales** designed, furnished and installed by the Contractor in accordance with the plans, and FDOT Specifications Section 104.
- **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 Specifications Section 104.

SHOP DRAWINGS

The Contractor shall submit to the Engineer for 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 working and shop drawings shall be certified by a Florida licensed Professional Engineer and state that the design is sufficient for the successful completion of the Work. The working drawings and shop drawings shall include, but not be limited to:

- Traffic Control Plan
- Erosion Control Plan
- Shop Drawings as required by FDOT Standard Specifications

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 time when 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, such as plastic/organic soil, rock, hard plane, debris and trash, within project limit, following FDOT Standard Plans Index 120-002. Payment for subsoil excavation shall be included in the subsoil excavation pay items.

DEWATERING, SHEETING AND BRACING

The contractor shall determine the need of dewatering, sheeting and bracing to facilitate the construction, conforming to current SWFWMD/FDEP rule and OSHA safety criteria. Payment for dewatering, sheeting and bracing shall be included in the applicable item for earthwork, 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 obtain the approval from SWFMWD, or FDEP (if water needs to be discharged offsite into the state surface water), and submit the permit with a detailed description of the proposed dewatering system to the Project Manager. The dewatering 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

The ownership of dirt excavated from the easement area shall be determined by Manatee County engineer.

TEMPORARY PAVEMENT

Temporary pavement shall consist of a minimum of Optional Base Group 4 and one (1) inch of Type SP structural course (Traffic C) 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 any damages to the exiting utilities during the construction at no additional cost to the County.

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

FABRIC FORMED CONCRETE REVETMENT MAT

Description

Furnish all materials, equipment, and labor and perform all operations for placing fabric formed concrete revetment mat (4" nominal thickness) as per manufacturer's specifications, as specified herein, in accordance with the lines, grades and dimensions shown on the Drawings. Provide a "filter point" type of fabric formed concrete revetment mat as provided by Armorform, Texicon, Hydrotex, Fabriform or approved equal. Prior to placing the fabric-formed concrete revetment mat, adjust the existing canal bank by removing all vegetation, cut/fill the canal bank as required, and use select fill material to achieve the proposed canal bank cross slopes. Provide an 18" deep trench at the begin/end limits of the fabric formed concrete revetment mat, parallel to the slope in order to anchor the revetment mat. Provide 1 row of anchors at a maximum 5' spacing for the entire length of revetment mat. Use 1" diameter ASTM A36 threaded anchor rods placed midway along the slope between the point where the water surface (El.+3.0) intercepts the revetment mat and the bottom of retaining wall footing. Place the 1" diameter threaded anchor into a 3" diameter hole prior to grouting. Anchor embedment shall be a minimum of 24" into the soil. Position the woven fabric envelope in a mat configuration over the slope surface and fill with a pumpable sand/cement grout in a way that forms a stable mat of suitable weight, thickness and configuration.

Submittals

Submit for the Engineer's approval - method of installation details for the entire system along with shop and layout drawings. Submit manufacturer's product literature and specifications for installation.

Each panel shall be labeled and numbered in the submitted drawings. Clearly mark on each panel shop drawing the baffle locations and the edges of the panel which are to be sewn or closed and which are unsewn or left open, for joining to adjacent panels. Dimension the fabric forms to include all aprons, overlaps, and anchor, flank or toe trenches and contraction factors. Over dimension the forms, in both length and width, to make allowance for form contraction as they are filled with fine aggregate concrete.

Layout drawings shall show the field assembly of the fabric form panels for the entire project. The drawings shall identify each panel number, its location and sequence of installation, pertinent elevations and coordinates, direction of flow, anticipated water levels, and structures such as retaining walls, storm drain discharge pipes and other existing and future structures that may affect the placement of the fabric formed concrete linings. In addition, show lap joint locations as well as notes regarding special field splicing operations.

Materials

The structural grout (used to fill the fabric envelope) shall consist of a mixture of Portland cement, fine aggregate, and water so proportioned and mixed as to provide a pumpable slurry. Pozzolan and grout fluidifier conforming to these specifications may be used. Submit the proposed mix design for approval with substantiating tests as follows:

- (1) Portland cement conforming to FDOT Standard Specifications Section 921, Type I and Type II.
- (2) Aggregate shall meet the requirements of the FDOT Specifications for concrete aggregate, except as to grading. Aggregate grading is reasonably consistent and well graded from the maximum size which can be conveniently handled with available pumping equipment.
- (3) Water conforms to FDOT Standard Specifications Section 923.
- (4) Pozzolan conforms to FDOT Standard Specifications Section 929 and is used in amounts of 10 to 30% by weight of the cement content.
- (5) Grout fluidifier conforms to FDOT Standard Specifications Section 924 for Water Reducing and Retarding Admixtures. The admixtures may be used to reduce segregation, increase workability and pumpability, and improve strength and water-tightness.
- (6) Air Entraining Admixtures conform to FDOT Standard Specifications Section 924. The air content does not exceed 7% of the volume of the grout.
- (7) Demonstrate the suitability of fabric design by injecting the proposed grout into 6-inch diameter sleeves under a pressure of 10 to 15 psi maintained by means of air pressure or a stand pipe for 10 minutes. Construct the sleeves of the same fabric used in the individual layers of fabric. A 6 by 12 in. test cylinder shall be cut from each specimen and tested in accordance with ASTM C39.

Ensure that the average compressive strength of the test cylinder is at least 20% higher at 7 days than that of companion test cylinders made in accordance with ASTM C 31, and not less than 2,500 psi at 28 days.

Use fabric-forming material consisting of specifically woven, double layer, open selvage fabric jointed in mat configuration. The fabric shall consist of uncoated synthetic yarns (nylon or polyester) with sufficient tensile strength and porosity to withstand the pressure of the grout injection pump without breaking the layers of fabric. Forms shall be woven with a minimum of 50% textured yarns (by weight) to improve adhesion to fine aggregate concrete and to improve filtration.

The fabric (double layer) mass per unit area shall not weigh less than 12 ounces/yard² and shall measure at least 25 mils in thickness. Fabric of equal or greater strength and porosity may be used with the approval of the Engineer. Fabric containing film type polypropylene fiber will not be considered as an acceptable alternate.

Cut individual mill width panels to suitable length and separately join the two layers of fabric, by means of a sewn seam, edge to edge using nylon thread. The tensile strength of stitched joints shall be not less than 90 lbs/in. when tested in accordance with ASTM D4884. All sewn seams and zipper attachments shall be made using a double line of U.S. Federal Standard Type 401 stitch. Label the fabric forms in accordance with ASTM D 4873, Guide for Identifying, Storage and Handling of Geosynthetics Rolls.

Provide hydrostatic uplift relief by installing filter points in the forms, woven in a way that permits passage of water through the filter points spaced at approximately 8 inch centers as indicated on the plans. Use select fill material where fill is required to achieve the proposed canal bank cross slopes, under the fabric envelope.

Anchor rods shall consist of ASTM A36 material or stronger. Anchor rods shall be threaded. Provide matching hex nut and a 6" square plate washer, 3/8" thick, for each anchor rod. Estimated length of anchor rods is 31" which includes 24" embedment into soil.

The Contractor shall submit a manufacturer's certification that the supplied fabric forms meet the criteria of the specifications.

Equipment

Mixing and pumping equipment used in preparation and handling of the grout shall be approved by the Engineer. Remove all oil or other rust inhibitors from the mixing drums, stirring mechanisms, and other portions of the equipment in contact with the grout before the mixers are used. The pumping equipment shall have a variable flow rate to provide enough pressure for pumping without breaking the fabric.

Accurately measure all materials by volume or weight as they are fed into the mixer. The quantity of water shall be such as to produce a grout having a pumpable consistency. Mix

for no less than one minute. If agitated continuously, the grout may be held in the mixer or agitator for a period not exceeding 2.5 hours in temperatures below 70°F, and for a period not exceeding two hours at higher temperatures. If there is a lapse in a pumping operation, recirculate the grout through the pump or through the mixer drum (or agitator) and pump.

Construction Methods

Prior to trenching at the begin/end revetment mat slope protection limits, contractor shall verify/locate all existing utilities. Hand dig trench at locations of potential conflict to prevent damage of utilities during construction of the fabric formed concrete revetment mat.

Prepare 3" diameter anchor holes using acceptable methods. Prevent surrounding soil from reentering the hole prior to grouting and inserting anchor. Grout entire depth of hole prior to placing anchor at proper embedment depth of 24".

Before injecting grout into revetment mat, position the fabric at its design location. Each panel shall be a continuous or monolithic unit for its full width, including the trench portion. Each panel shall consist of a number of mill widths of open selvage construction per manufacturer's requirements; join the double layer fabric together by sewing the two upper layers together and the two bottom layers together, at the edges per manufacturer's requirements. Where adjacent panels cannot be joined in this manner, lap them a minimum of 2 feet or per manufacturer's requirements. Simple butt joint, either sewn or unsewn, will not be allowed. Place the ends and upper limits of the fabric mat in a trench of suitable width as shown on the plans and per manufacturer's requirements. Fabric forms should be tailored in the field to fit around pipes and other appurtenances. Cut opening in fabric form that is slightly smaller than the object and sew the perimeter of the form closed.

Make small cuts in the top layer of the fabric forms to allow for the insertion of the grout hose or grout nozzle. Introduce grout into the space between the top and bottom layers of fabric and inject in a way that excessive pressure on the fabric envelope is avoided. Starting at the lowest elevation and working up the slope, inject the grout in a way that the distance from the point of injection to the end of the panel is not greater than 30 feet. After grouting has been completed and the fine aggregate concrete has set, backfill the void between trench wall and filled fabric.

Holes in the fabric left by the removal of the grout hose or inserts shall be temporarily closed by inserting a piece of burlap or similar material. Remove the burlap when the concrete is no longer fluid and the surface is firm to hand pressure. Limit foot traffic on the freshly pumped fine aggregate concrete lining of the fabric formed concrete revetment mat to a minimum of one hour after pumping in order to reduce indentation.

Acceptance Sampling and Testing

Acceptance tests will be by compressive strength. For each 500 yd² or less of placement, the Engineer will make two concrete cylinders and test at 28 days.

Method of Measurement

The quantity to be paid for under this Section will be paid for at the Contract unit price per square yard. Measurements will include portion of the fabric formed concrete revetment mat in trenches and no allowance will be made for overlaps.

Basis of Payment

The quantity to be paid for as provided above will be at the Contract unit price per square yard for Fabric Formed Concrete Revetment Mat measured as specified above and adjusted as specified herein. The cost of furnishing and installing 1 row of 1" diameter threaded anchors, placed at 5' centers and embedded and grouted 24" deep in 3" diameter holes, shall be included in the unit price for Fabric Formed Concrete Revetment Mat.

The unit price to be paid will be reduced when the average of all acceptable lot strengths of concrete is less than the specified minimum compressive strength. The unit price reduction will be in accordance with the following schedule:

Average strength less than specified strength by:	Percentage reduction in base unit price
100 psi to 199 psi	1
200 psi to 299 psi	3
300 psi to 399 psi	5
400 psi to 499 psi	10
over 500 psi	25

Price and payment includes full compensation for all work, labor, equipment and materials required.

MAINTENANCE OF TRAFFIC

The Contractor shall provide access to local businesses and residents at all times. No road closures will be allowed between the hours of 6AM to 7PM. Temporary by-pass lanes may be constructed at all tie-in locations during the MOT phasing. The payment for temporary by-pass lanes shall be included in Maintenance of Traffic. Business Entrance signs per FDOT Standard Plans Index 102-600 shall be placed at all business entrance points and maintained during all phases of construction. Payment for these items shall be included under the pay item for Maintenance of Traffic.

Temporary pavement marking shall be paid under Maintenance of Traffic. Temporary Striping and Marking during 30 day cure time of the asphalt shall be part of the pay item for Maintenance of Traffic, in accordance with FDOT Standard Specifications Section 102-1.

The Contractor shall prepare a Maintenance of Traffic plan and submit it to the Project Manager for review prior to implementation. It must comply with all FDOT safety criteria, FDOT Standard Plans Index 102-series, FHWA and MUTCD standards, and allow for traffic to operate in daytime or nighttime. 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 Standard Plans Index 102-series. No road closures will be allowed without approval from the Project Manager.

STORMWATER DRAINAGE PIPES AND STRUCTURES

All proposed storm structure shall have a wall thickness no less than 6 inch. Metal storm pipe or metal mitered end section shall not be used in the road right of way or carry right of way runoff.

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 alternate forms of stormwater removal adequate 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 for new storm systems.

POST-CONSTRUCTION STORM PIPE TESTING

The Contractor shall inspect and televise all newly constructed storm pipes on the project. Video DVD and report shall be provided for those pipes whose diameters are equal or smaller than 48 in, with Laser profile data included for non-RCP pipes, following FDOT Specifications latest version. The purpose is to assure the pipes are properly constructed and do not leak at the joints. 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 Engineer. Temporary sidewalk shall be constructed as shown in the plans or as required to maintain pedestrian movement. Payment for these items shall be included under the lump sum pay item for Maintenance of Traffic.

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.

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 Engineer. Contractor shall provide dust control measures using water sources as needed and maintaining dust control throughout duration of the project. Payment for Dust Control shall be made under Maintenance of Traffic unless separate pay item for Dust Control is specified.

UNDERGROUND UTILITY LOCATIONS

The Contractor shall field verify existing underground utility locations by means of subsurface locating or other approved method. All existing utilities shall remain unless otherwise noted on the plans. 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 as 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 Owner.

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 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.

UTILITY CONFLICTS

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

The contractor's equipment shall maintain a minimum clearance distance to the power line (10 feet for voltage up to 50kv, 15 feet for voltage over 50kv to 200kv, 20 feet for voltage over 200kv to 350kv, 25 feet for voltage over 350kv to 500kv, 35 feet for voltage over 500kv to 750kv, 45 feet for voltage over 750kv to 1,000kv.), following new OSHA Rule (29 CFR Part 1926) and FDOT Roadway Design Bulletin 11-03 DCE Memorandum 02-11.

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.

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: Mowing as necessary to prevent grass and other vegetation within the work area from exceeding 24 inches in height or causing unsafe conditions; 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 housekeeping 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 housekeeping and restoration 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 Owner 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.

NOTICE AND SERVICE THEREOF

All notices, which shall include demands, instructions, requests, approvals, and claims shall be in writing. Any notice to or demand upon the Contractor shall be sufficiently given if delivered to the office of the Contractor specified in the bid (or to such other office as the Contractor may, from time to time, designate to the Owner in writing), or if deposited in the United States mail in a sealed, postage prepaid envelope, or delivered, with charges prepaid, sent via fax transmission, or to any telegraph company for transmission, in each case addressed to such office.

All notices required to be hand delivered to the Owner, unless otherwise specified in writing to the Contractor, shall be delivered to the Project Manager, and any notice to or demand upon the Owner shall be sufficiently given as delivered to the office of the Project Manager, or if deposited in the United States mail in a sealed, postage prepaid envelope, sent via fax transmission, or delivered with charges prepaid to any telegraph company for transmission, in each case addressed to said Project Manager or to such other representative of the Owner or to such other address as the Owner may subsequently specify in writing to the Contractor for such purposes.

Any such notice or demand shall be deemed to have been given or made as of the time of actual delivery or (in the case of mailing) when the same should have been received in due course of post or in the case of a fax transmission or telegram at the time of actual receipt, as the case may be.

REQUIREMENTS FOR CONTROL OF THE WORK

Prior to the start of the Work described in this contract, a pre-construction conference may 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.

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 Owner 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 Owner'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 Owner will coordinate with the Contractor to identify possible storage sites.

CONSTRUCTION PHOTOGRAPHY

General

The Contractor shall employ a competent photographer to take construction record photographs and perform videotaping, including providing all labor, materials, equipment and incidentals necessary to obtain photographs and/or videotapes of all areas specified in the Contract specifications.

The word "Photograph" includes standard photographic methods involving negatives, prints and slides and it also includes digital photographic methods involving computer technology items such as 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 videotape 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.

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 clarity 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 $\frac{1}{4}$ of the image being the roadway fronting of property and $\frac{3}{4}$ 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.

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 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.

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 Project Manager 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 Project Manager or his authorized representatives. The superintendent shall have full authority to execute the orders or directions of the Project Manager 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, and wherever work is being done by the contractor.
- 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 Owner 48 hours in advance.

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.

THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS

Do not place thermoplastic traffic stripes and markings on newly constructed final surface courses prior to 30 calendar days after placement of the final surface course. The Engineer may require longer cure periods. 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 Maintenance of Traffic.

RECORD DRAWINGS AND PROJECT CERTIFICATION

The County 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 Engineer and shall be delivered to the Engineer 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. All Record Drawings shall be in accordance with current Manatee County Standards.

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. 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.

- D. Elevations on all drainage control structures, verifying all plan dimensions.
- E. Stormwater ponds with cross sections [25-foot maximum interval] (sufficient to calculate volumes).
- F. Flow line elevations on all ditch breaks (vertical and horizontal).
- G. Field changes of dimensions and details.
- H. Details not on original contract drawings.
- I. Equipment and piping relocations.
- J. The locations of all headwalls, pipes and any other structures shall be located by station and offset.
- K. Benchmarks and elevation datum shall be indicated.
- L. Additional elevations or dimensions as required by the Engineer
- 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 Owner 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 subject to a field review in the presence of the Engineer or his designated 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 Owner and/or Engineer and shall submit two write-only CD-ROMs, one set of 11-inch by 17-inch mylar record drawings and four sets of 11-inch by 17-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.

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. 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.

CRUSHED CONCRETE BASE

Crushed Concrete Base shall follow FDOT Standard Specifications 2019 (July), Section 911. The layer coefficient of 0.18 with Limerock Bearing Ratio (LBR) minimum 150 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.
- B) Gradation conforms to FDOT Specifications 2019 (July), Section 911.
- C) Deleterious materials conform to FDOT Specifications 2019 (July), Section 911.

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 Specifications 2019 (July), Section 911, 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 shall achieve 98% of AASHTO T-180 compaction.

CLARIFICATION OF SPECIFIC LINE ITEMS

Clarification of the County's expectations of work to be performed as it relates to specific line items and/or Item No. listed on the Bid Form is included in the FDOT Basis of Estimate Manual. Where such item number is not available, the description shows herein will prevail.

Line Item #1, [FDOT 101-1] – Mobilization, 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 is 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 the 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

Payments for this line item will be subject to the standard retainage provided in the Contract. Payment for the retainage will be made after completion of the work and demobilization.

Line Item #2, [FDOT 102-1] – Maintenance of Traffic, shall include the cost of all maintenance of traffic operations unless a separate pay item is provided.

Line Item #3, [FDOT 102-14] – Traffic Control Officer, shall be used only with County approval prior to the TCO being scheduled.

Line Item #24, [FDOT 0120 6] – Embankment. The Embankment quantity includes 1700 CY that will be required to fill and grade the existing pond on the north side of 44th Avenue East extending from approximately Sta 235+20 to Sta 236+90. The final grade of the pond area is to be consistent with the surrounding area and shall be restored with sod, to be paid for under separate pay item. Work elements to be included in this pay item for this operation include dewatering/pumping the pond utilizing a sump to facilitate this process and backfilling the pond in 12" layers to a 90% Modified Proctor density. Removal of any vegetation in the bottom and sides of the pond are to be paid for separately under the Clearing and Grubbing pay item. This work shall be completed no later than February 16, 2021 per the License Agreement with the property owner.

Line Item # 110, [FDOT 520-2] - Type AB Curb & Gutter, shall follow Manatee County's Highway, Traffic & Stormwater Standards 2007.

Line Item # 117, [FDOT 522-1] – Concrete sidewalk and driveways, 4" thick, shall follow Manatee County's Highway, Traffic & Stormwater Standards dated 2007. The payment shall include ramps.

Line Item # 118 [FDOT 522-2] - Concrete sidewalk and driveways, 6" thick, shall follow Manatee County's Highway, Traffic & Stormwater Standards dated 2007. The payment shall include reinforcement and ramps.

Line Item # 138, Fencing, Florida Fence (FL 382), Barbwire, shall follow United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS) Barbwire Construction Specifications Code 382 and Conservation Practice Job sheet RI-382(a). The fence shall be 5-strand with wooden posts and double H-braces for changes in direction of more than 20 degrees. This pay item shall also include all costs associated with the removal of and connection to the existing fencing that that was constructed along the Right of Entry Areas as shown on Exhibit G – Right of Entry in Bid Attachment 13, and the relocation of existing gates. Due to active livestock operations on the property where the fencing is proposed, the new fencing shall be constructed and connected to

the existing fencing, as necessary, prior to the removal of the existing fencing. The Contractor shall notify and coordinate with the County and Owner a minimum of two weeks in advance of the fence construction.

Line Item # 197, [FDOT 635-2-11] – Pull & Splice Box, F&I, 17”x30” cover size, shall follow Manatee County Traffic Standard sizing requirements.

CONTRACT CONTINGENCY

The discretionary work (Contingency) pay item shall cover the cost for various contingencies and contract amendments authorized by the Owner. Any amount of extra work and/or alterations to the proposed work charged to the allowance shall be fully documented and authorized by the Project Manager before the start of the work. No payment shall be made for work completed without written authorization from the Owner or Engineer.

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]

SHOP DRAWING REVIEW								
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="text-align: center; padding: 2px;">RESPONSE NOT REQUIRED</th></tr></thead><tbody><tr><td style="padding: 2px;"><input type="checkbox"/> NO EXCEPTIONS TAKEN</td></tr><tr><td style="padding: 2px;"><input type="checkbox"/> NOTE MARKINGS</td></tr></tbody></table>	RESPONSE NOT REQUIRED	<input type="checkbox"/> NO EXCEPTIONS TAKEN	<input type="checkbox"/> NOTE MARKINGS	<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="text-align: center; padding: 2px;">RESPONSE REQUIRED</th></tr></thead><tbody><tr><td style="padding: 2px;"><input type="checkbox"/> NOTE MARKINGS, CONFIRM</td></tr><tr><td style="padding: 2px;"><input type="checkbox"/> NOTE MARKINGS, RESUBMIT</td></tr><tr><td style="padding: 2px;"><input type="checkbox"/> REJECTED, RESUBMIT</td></tr></tbody></table>	RESPONSE REQUIRED	<input type="checkbox"/> NOTE MARKINGS, CONFIRM	<input type="checkbox"/> NOTE MARKINGS, RESUBMIT	<input type="checkbox"/> REJECTED, RESUBMIT
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<input type="checkbox"/> NOTE MARKINGS, RESUBMIT								
<input type="checkbox"/> REJECTED, RESUBMIT								
<p>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.</p>								
<p>MANATEE COUNTY PUBLIC WORKS DEPARTMENT</p>								
<p>By: _____ Date: _____</p>								

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: ___/___/____]

AGREEMENT REQUIREMENTS

INDEMNITY

The contractor/consultant shall indemnify, defend, save, and hold harmless the DEPARTMENT and all of its officers, agents or employees from all suits, actions, claims, demands, liability of any nature whatsoever arising out of, because of, or due to any negligent act or occurrence of omission or commission of the contractor/consultant, its officers, agents, or employees.

INSPECTOR GENERAL

The contractor/consultant/vendor agrees to comply with s. 20.055(5), Florida Statutes, and to incorporate in all subcontracts the obligation to comply with s. 20.055(5), Florida Statutes.

INSURANCE

The contractor shall name the Florida Department of Transportation (FDOT) as additional insured for Commercial General Liability.

E-BUILDER ENTERPRISE™

e-Builder Enterprise™: PROJECT MANAGEMENT TOOL

The successful bidder shall be required to use the Internet web-based project management tool, e-Builder Enterprise™ (e-Builder), and protocols included in that software during this project; and shall take any training courses required by the Owner, at no additional cost to the Owner. The use of this project management system does not replace or change any contractual responsibilities of the participants.

User registration, electronic and computer equipment, and Internet connections required for e-Builder are the responsibility of the successful Bidder and its subcontractors. The sharing of user accounts is prohibited. Individuals who are granted log-in access to the County e-Builder platform shall be responsible for the proper use of their passwords and access to data as agents of the successful Bidder. For documents requiring original signature such as Contracts, Change Orders, Application and Certification for Payment, and Field Directives, paper documents may be required in addition to submittal via e-Builder.

COUNTY RESPONSIBILITIES

User licenses for e-Builder Enterprise™ will be provided and paid for by the Owner based on assigned roles for the project including Project Manager, Project Fiscal, Project Superintendent, and others as may be required.

NW 1/4, Section 10, Township 35 South, Range 18 East
Manatee County, Florida

44TH AVENUE EAST PER MANATEE COUNTY
PUBLIC WORKS PROJECT NUMBER 6086960
(NOT A SURVEY)

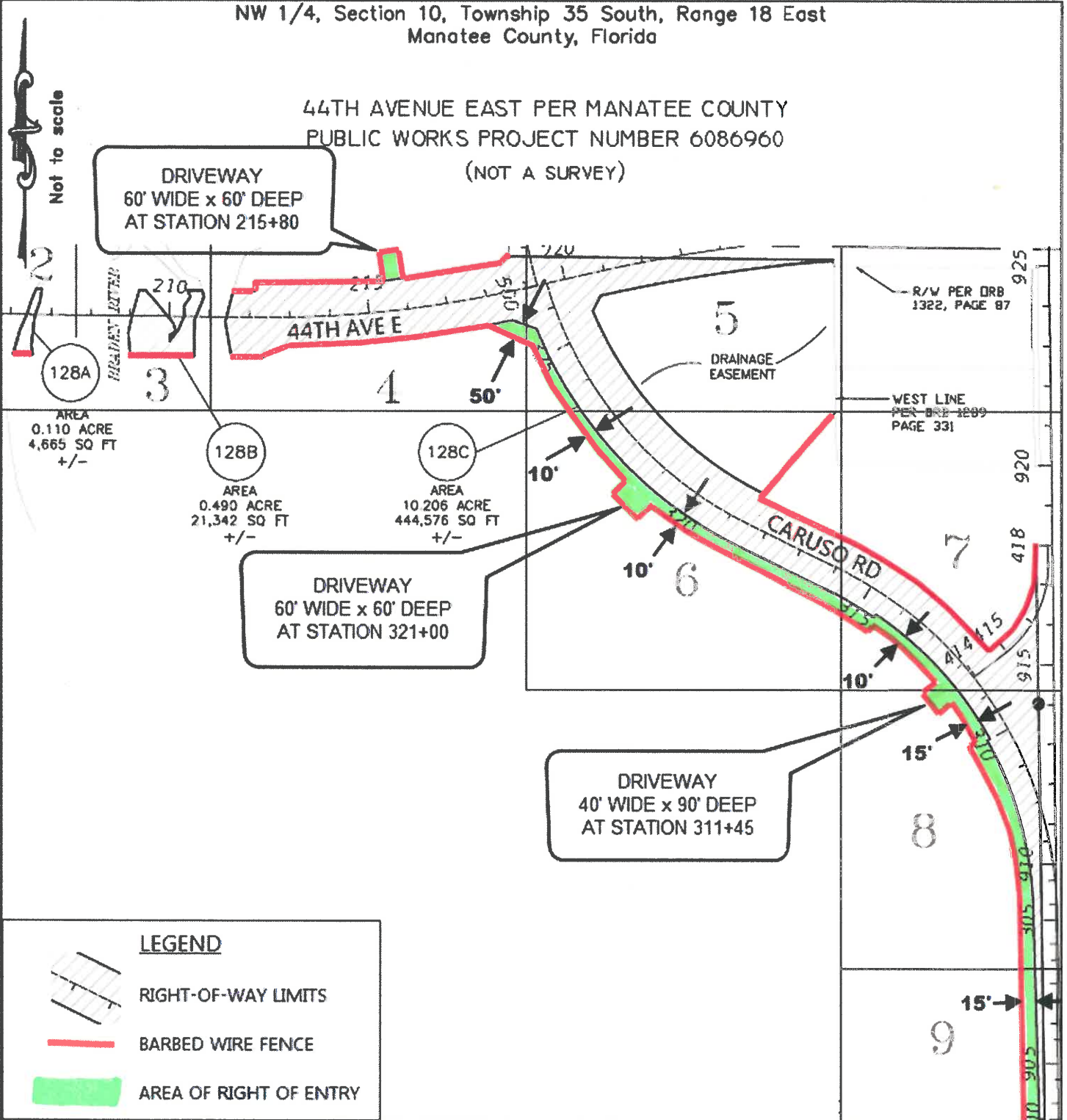


EXHIBIT
G

Section 10, Township 35
South, Range 18 East

**NATURAL RESOURCES CONSERVATION SERVICE
 BARBWIRE CONSTRUCTION SPECIFICATIONS
 CODE 382**

This sheet lists the minimum requirements to meet Florida Fence Standard (FL 382) for barbwire fence. Variances in fence design may be allowed if requested. All variances requests shall be submitted to the State Rangeland Management Specialist or an individual with proper job approval authority for approval. All barbed wire fences will be installed using braces that meet Florida NRCS specifications for braces.

Wire and Spacing

Use only new wire composed of two twisted strands of minimum class 3 galvanized 15.5 gauge high tensile steel barbwire.

Number of Wires-

Interior cross fence - 3 wires (minimum) to manage movement of larger livestock such as cattle and horses.

Boundary fence - 4 wire (minimum) are required for boundary fences and next to highways. 3 Strand fences are not acceptable boundary fences.

Fence and Wire Height and Placement-

Cattle and Horses-

- The minimum top wire height for 4 and 5 wire fences is 42 inches above ground level.
- The minimum top wire height for 3 wire fences is 38 inches above ground level.
- Install wires with a minimum of 10-12 inches spacing between the top 2 wires.

Sheep and Goats-

- Top wire at minimum 38 in. above ground level.
- Bottom wire 4 to 6 in. above ground level.
- When more than 4 wires are used, it is not necessary to maintain equal spacing as long as top and bottom wire positions are as above and no spacing is > 12 inches.
- For sheep and goats it is recommended to use at least five strands of barbed wire.

Refer to table below for additional information. **Note:** The inline fence wire spacing shown below are recommendations and are not minimum specifications.

WIRE HEIGHT AND SPACING			
Number of line wires →	<u>5 Strand</u>	<u>4 Strand</u>	<u>3 Strand</u>
Boundary Fence Top Wire Height (minimum)	46 inches	46 inches	Not Acceptable
Boundary Fence Bottom Wire Height (minimum)	6 inches	12 inches	Not Acceptable
<i>Recommended</i> Inline Fence Wire Spacing (inches)			
- Cattle and horses	6, 16, 26, 36, 46	16, 26, 32, 44	16, 26, 38
- Goats and Sheep	6, 14, 22, 30, 38	10, 16, 24, 32	Not Recommended
- To allow for wildlife movement	Not Recommended	18, 24, 30, 42	18, 26, 38

LINE POSTS MATERIALS, POST SPACING AND INSTALATION DEPTH

- **Steel-** Use only new, painted or galvanized T or U posts.
- **Wood-**Treated with 0.4 lbs/ft³ of chromate copper arsenate (CCA type A, B or C or equivalent)
 - Minimum 3in.x6.5ft.
- **Post Spacing-**The maximum distance between line posts is 16 ft. without the use of stays, or 30 ft. with a minimum of 1 stay between the posts.
- **Installation-** Drive or bury wood posts at least 24 inches into the ground in sandy or loamy soils. Install posts to a 42 inch depth in muck soils. If post holes are dug, backfill by tamping the soil around the post at every 4 in. depth.

Fastening- Attach wires to the side of the post receiving the most livestock pressure. Drive staple diagonally to the wood's grain and at a slight downward angle (upward if the pull is up) such as in low places to avoid splitting posts and loosening of staples. Space should be left between staple and post to permit free movement of wire.

- **Wood posts-** Use 1.5 inch (minimum), 9 gauge (minimum), class 3 galvanized staples.
- **Steel posts-** Use manufactured clips or wire posts.



United States Department of Agriculture
Natural Resources Conservation Service

Fence

Barbed Wire

Conservation Practice Job Sheet

RI-382(a)



Definition

A constructed barrier to livestock, wildlife, or people.

Purpose

This job sheet is provided as a component of a resource conservation plan. This practice may be applied to contain and control livestock and wildlife movement, facilitate a prescribed grazing system, protect sensitive areas from grazing livestock, and to eliminate access to unsafe areas.

Conditions where Practice Applies

This practice may be used on any area where a fence is needed to control access, movement and containment of livestock and wildlife and where people safety and movement is of

concern. Conservation plan maps showing the approximate fence location, complementary conservation practices, grazing schedule, other relevant information, and additional specifications may be included.

Barbed wire fence is not recommended for horses.

General Criteria and Specifications

All fence construction shall comply with federal, state, and local fencing codes. Practice Lifespan is 20 years.

Fence Line Clearing

Fence lines will be cleared of brush and trees; gullies and steep banks may require grading. Clearing along stream banks will be held to a minimum and no vegetation may be removed within the buffer area, except as required for stream crossings.

Fencing materials shall be of a quality and durability that meets the intended management objectives. Construction shall be performed in a manner that meets the intended management objective. Wire and hardware will be new, galvanized material.

Line Post

Maximum spacing between line posts is 16.5 feet. All wooden line posts shall be set at least 30" into the ground.

Suitable line posts

3½" in diameter wooden posts of black locust, red cedar (mostly heartwood), redwood, and pressure treated pine or other wood of equal life and strength. Pressure treatment shall meet the requirements for ground contact.

Steel posts must be new, and be painted or galvanized and weigh a minimum of 1.25 pounds per one foot of length. Post will be driven 18" in the ground or as specified by manufacturer. **Every 50 feet or 4th post will be wooden.**

The following steel posts are acceptable for line posts:

Style 1 – "T" Section 1-3/8" x 1-3/8" x 1/8" thick

Style 2 – "U" Section 2" x 1-1/4" x 3/32"

Style 3 – "L" Section 2" x 2" x 1/4"

Lightweight stamped-steel posts are not allowed.

Brace Posts

Posts shall be set and maintained in a vertical position. All wooden brace posts are to be 5" minimum diameter and set 3 feet into the ground. Horizontal rail brace posts are to be 4" minimum diameter by 8 feet long and be installed 8"-12" below the top of the vertical brace post.

Corners and Braces

Refer to drawings on pages 7 through 9 for fence brace configurations and spacing.

Single H Braces

Single H Brace corners and end braces may only be installed at the ends of straight fence spans of 165 feet or less.

Double H Braces

All corners, fence line ends and gate openings require Double H Brace assemblies, except that Single H Braces may be substituted in straight fence spans of 165 feet or less.

Double H Brace Pull Assemblies

Double H Brace pull assemblies are required in straight fence spans at a maximum spacing of 660 feet. Brace wire shall be high tensile, galvanized steel, or 9 gauge soft wire.

Adjoining Fences

A fence adjoining an existing fence must terminate in a brace assembly as required above.

Corners

A bend in the fence tighter than 20 degrees is considered a corner and not a "straight" pull brace. (In an 8-foot long brace section, 20 degrees is approximately 3 feet off the straight line. Refer to drawings). The above H brace rules apply to corners considering each wire-pull direction from the corner post. Combination single and double H corners are permitted.

If hand set, all backfilled material shall be thoroughly tamped in 4" layers. Post holes shall be at least 6" larger than the diameter or side dimension of the posts. Synthetic posts are to be installed as specified by the manufacturer. If concrete backfill is used, the concrete must be pre-mixed, and worked into place up to the ground surface. No stress shall be applied to posts set in concrete for at least 24 hours after the concrete has set.

Wire

All barbed wire shall consist of class 3 galvanized 4-point barbs spaced not more than 5" apart. Galvanized barbed wire shall be fabricated from 12-1/2 gauge class 1 galvanized or better or 15-1/2 gauge class 3 galvanized strand wire and shall meet the requirements of ASTM A121. HT Class 3 barbed 15 1/2 gauge wire meeting the requirement of ASTM A121 may also be used.

Wire Placement - see table 1 at end of job sheet for placement.

Wires may be equally spaced or spaced according to figure 3.

Stretching Wire

Barbed Wire – Should be pulled taut. In warm weather, a stretch of 100 feet (prior to attaching to posts) should sag no more than 4” in the middle and no more than 2” in cold weather.

Attaching Fencing to Post

The fencing wire shall be placed on the livestock side of line posts and on the outside of corners and posts in bends and braces in bends.

Each strand of barbed wire shall be attached to each wooden post using 9-gauge galvanized 1½” staples, driven diagonally with the grain of the wood and at a slight downward angle (except in dips). Staples shall not be driven tight to the post.

Wire splices shall be crimped or spliced with 8 wraps around the other (“Western Union Splice”).

The fencing shall be fastened to steel line posts with either 2 turns of 14 gauge galvanized steel wire or the post manufacturer’s special wire clips.

Stays and Battens

If used, stays may be made of rot-resistant wood, plastic, fiberglass, or heavy galvanized twisted wire. Stays should be properly fastened to each fence wire. Stay length shall be sufficient for attachment to all fence wires while maintaining correct wire spacing.

Other Considerations

Approved alternative fence systems include “Common Sense Fence” or other equivalent fencing systems, approved by an NRCS Resource Conservationist (RC), and installed to manufacturer’s recommendation as approved by RC.

Alternative fencing and bracing systems: Alternative fencing and bracing systems must be pre-approved by an NRCS Resource Conservationist (RC), and must be installed according to manufacturer’s recommendations as approved by the RC.

Fences across gullies or streams require special braces and design. Breakaway fences or swinging water gaps allow debris and water to flow past the fence line without destroying the adjacent fence.

Any permanent fencing for grazing livestock should allow flexibility to facilitate implementation of the grazing plan and permit land management activities such as nutrient application, pest control, forage harvest, and other appropriate practices.

Follow all manufacturers’ safety precautions for handling and installing fencing materials.

Locate fences to facilitate maintenance. Where applicable, clear right of ways should be established and maintained to facilitate fence construction and maintenance.

When possible, install fences across slopes to improve grazing distribution, rainfall infiltration, and reduce soil erosion.

Locate fences to facilitate livestock management, handling, watering, and feeding.

Consider placing permanent riparian stream fencing at the edge of the protected buffer or at least 2 times the active channel width from the top of the stream bank but never less than 10 feet. It is recommended that the stream fence have a maintenance gate installed.

Specifications Worksheet

Site-specific requirements are listed on the specifications sheet. Additional provisions are entered on the job sketch sheet. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See Conservation Practice Standard *Fence* (382).

Client:	Farm #:
Field(s):	Tract #:
Planned By:	Location:
Date:	Length of Fence:
Landowner Objectives:	

Purpose (check all that apply)	
<input type="checkbox"/> Reduce erosion and improve water quality by controlling livestock access to streams, springs, wetlands, and ponds.	<input type="checkbox"/> Protect sensitive environmental areas and the flora from vehicular, pedestrian, or animal traffic use.
<input type="checkbox"/> Protect newly planted areas from disturbance until established.	<input type="checkbox"/> Protect the safety of people, livestock, and wildlife by limiting or denying access to hazardous areas.
<input type="checkbox"/> Facilitate handling, movement, and feeding of livestock in the pasture environment.	<input type="checkbox"/> Improve distribution and timing of livestock grazing.
<input type="checkbox"/> Other (specify)	

Type of Fence (Check all that apply)		
<input type="checkbox"/> 3-strand barbed wire	<input type="checkbox"/> 4-strand barbed wire	<input type="checkbox"/> 5-strand barbed wire
<input type="checkbox"/> 6-strand barbed wire	<input type="checkbox"/> 8-strand barbed wire	<input type="checkbox"/>

Posts		
Type Black Locust, Eastern red cedar <div style="text-align: center;">OR</div> pressure treated pine or other preservative treated wood <div style="text-align: center;">OR</div> standard steel line posts every 50 feet or 4 th post will be wooden	Size Line posts are wood 8 feet or longer 3½" minimum diameter <div style="text-align: center;">OR</div> Standard steel line post 1 ³ / ₈ " x 1 ³ / ₈ " x 1 ¹ / ₈ " , with anchor plate	Spacing Wood line posts spaced a maximum of 16½ feet apart set 2.5 feet deep minimum <div style="text-align: center;">OR</div> Steel line posts spaced a maximum of 16½ feet apart set to top of anchor plate or 18" w/wooden post every 50 feet on 4 th post.

Braces	
Wooden Braces (8 feet minimum length) 4" diameter at small end	Brace Wire High Tensile, Galvanized Steel, 9 Gauge OR 12½ Gauge High Tensile, Galvanized, Double Wrapped

Operation and Maintenance
Inspections and maintenance are required to achieve the intended function, benefits, and life of the practice. The landowner/operator is responsible to establish and implement an inspection and maintenance program. Regular inspection of fences should be part of an ongoing maintenance program. Items to inspect and maintain during the 20-year design life of the practice include, but are not limited to, the following: <ol style="list-style-type: none">1. Inspection of fences after storm events is necessary to ensure the continued proper function of the fence. Promptly repair or replace damaged or broken fencing.2. Retain and properly discard all broken fencing material and hardware to prevent ingestion by animals or injury to equipment, people, or animals.3. Remove debris collected in the fencing.4. Clear the brush from fence lines to reduce voltage loss. Vegetative control can be achieved by herbicides applied per the manufacturer's label.5. Remove fallen limbs and maintain proper tension on the fence wires. Overhanging trees and limbs should be trimmed or removed as needed.6. Maintain proper tension on the fence wires.7. Follow your grazing plan, where appropriate.8. All necessary precautions should be taken to ensure the safety of construction and maintenance crews.
Other:

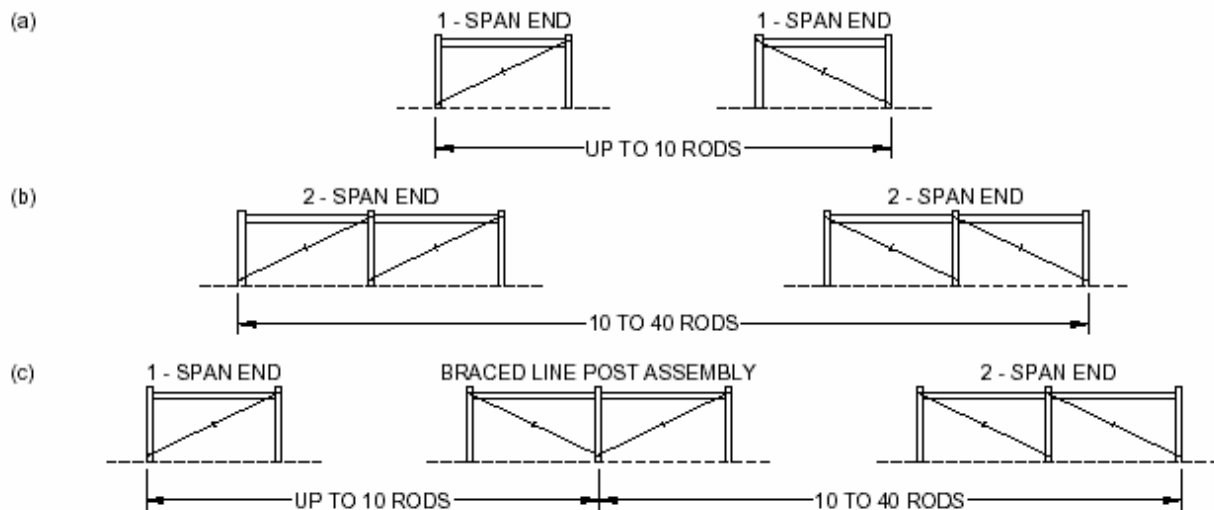
For information regarding this practice contact:

_____ at _____.

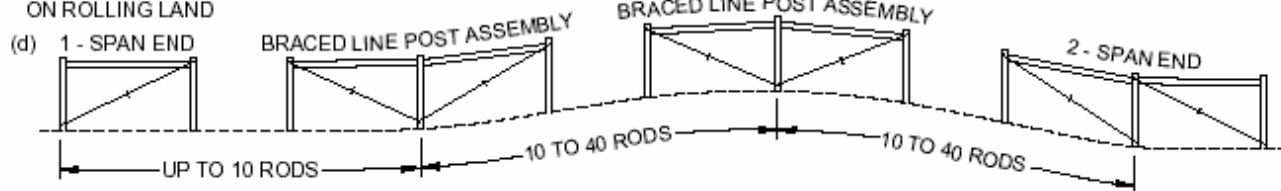
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Specification Guidesheet for fencing 382 (a)

STRAIGHT FENCES ON FLAT LAND



STRAIGHT FENCES ON ROLLING LAND

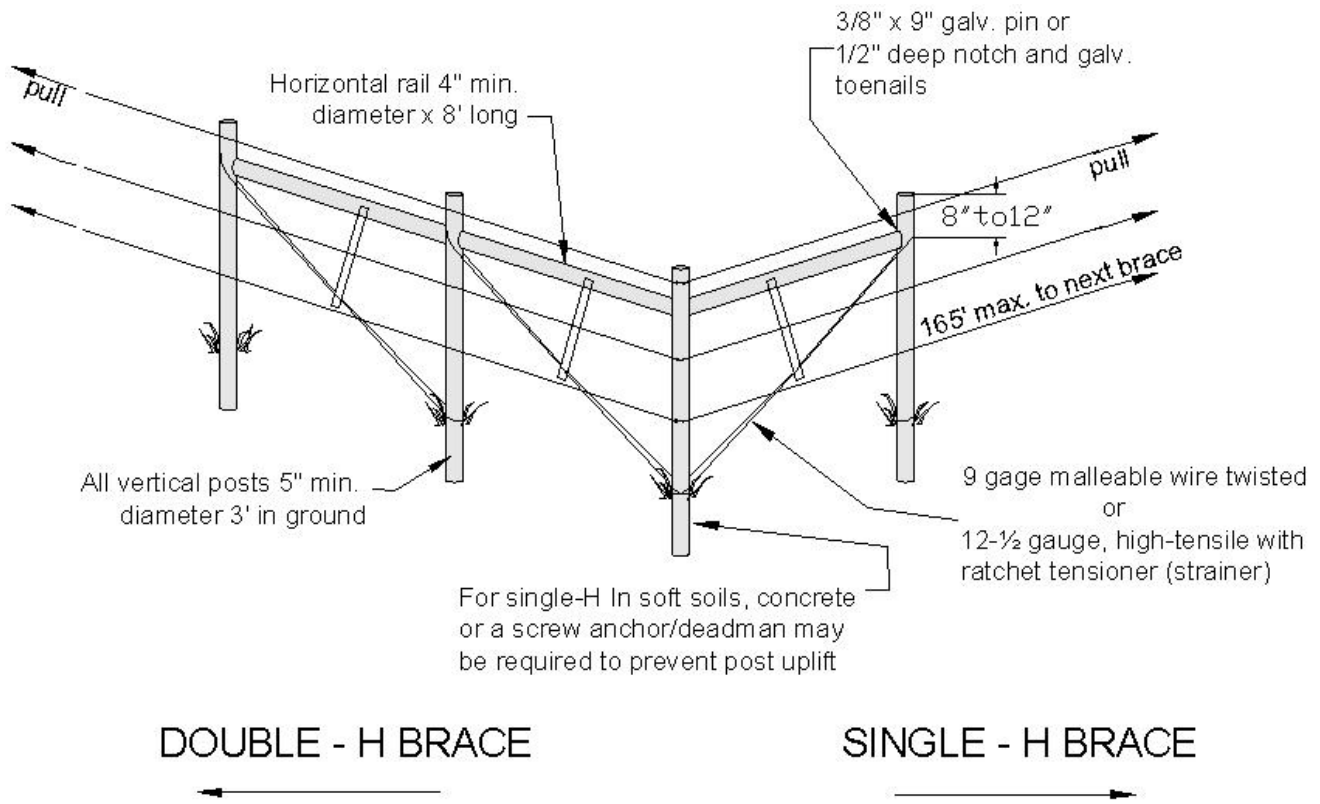


CURVED FENCES



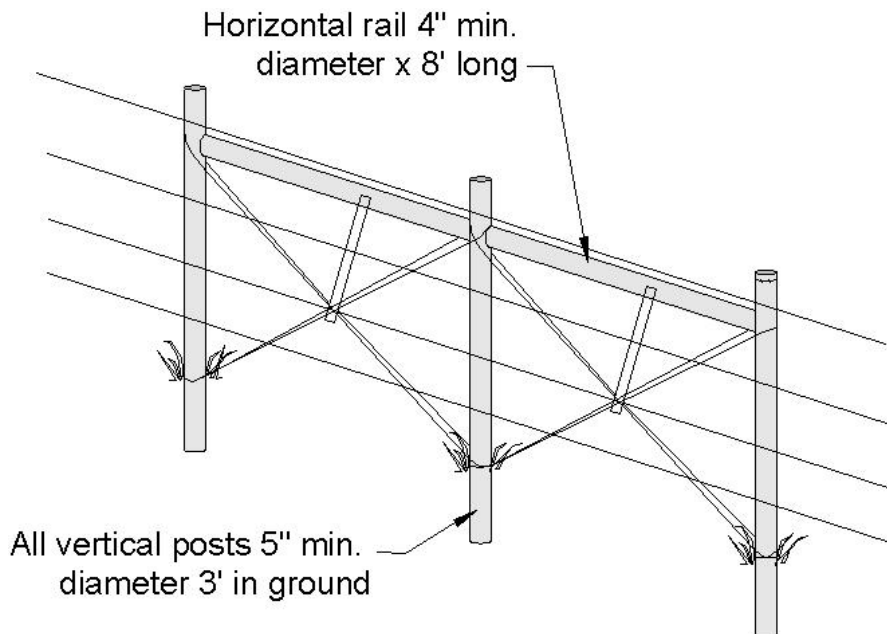
Types of anchor-and brace assemblies and where to locate them: (a) For fence lengths of 10 rods (165 feet) or less, use single-span end construction. (b) For fence lengths of 10 to 40 rods (165 to 660 feet), use double span end construction. (c) For fences more than 40 rods (660 feet) long use a braced-line-post assembly to divide the fence lengths. (d) On rolling land, fence stretching is easier if braced line-post assemblies are located at the foot and top of each hill. (e) Contour fences, more than 20 rods (330 feet) long, should have a braced-line-post assembly installed to keep the stretches to 20 rods (330 feet) or less. Install in straight section at least one post span away from a curve. Do not install on a curve.

Note: One rod equals 16 ½ feet.



Typical Combination Corner Brace Assembly

Figure 1



Double - H Brace Pull Assembly

Figure 2

SUGGESTED SPACING FOR BARBED WIRE

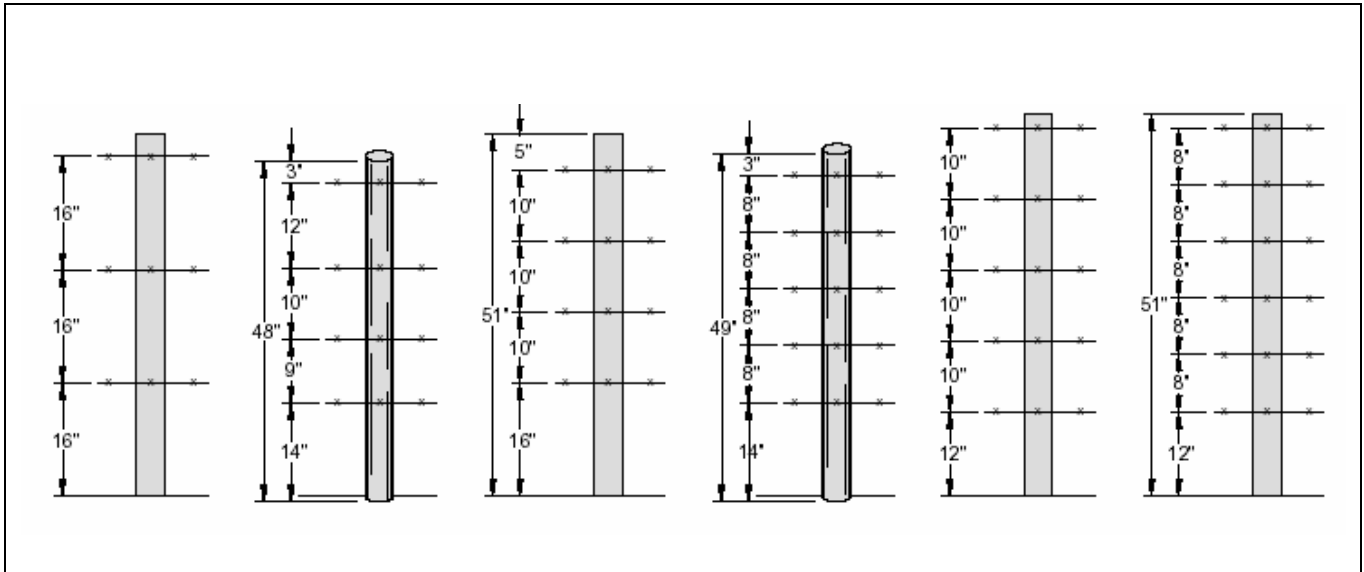
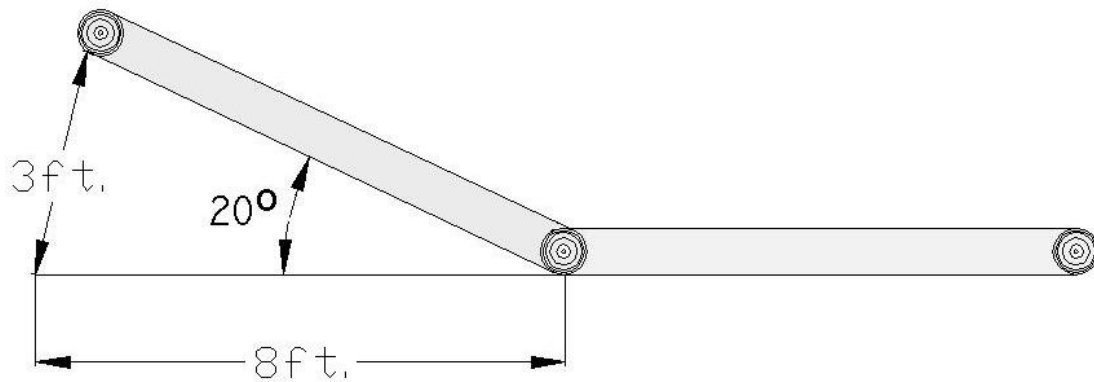


Figure 3



**Top View of Fence Brace Showing
Minimum Angle to be Considered a Corner**

Figure 4

RI NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE STANDARD FENCE (382)

Table 1. Fence Selection Criteria

Fence design and construction must meet the minimum requirements for controlling specific animal types.

Animal type to control	Fence type	Purpose of Fence				Spacing Inches above ground level ww fences start 2-3 " above the ground
		Perimeter (boundary) prohibited areas	Access lanes & stream crossings	Interior subdivision	Stream exclusion	
		Minimum Criteria				Inches
Cattle	Barbed 3-wire	NO	NO	Meets	Meets	18, 30, 42
Cattle	Barbed 4-wire	NO	Meets	Exceeds	Exceeds	16 to 48 evenly spaced
Cattle	Barbed 5-wire	Meets	Exceeds	Exceeds	Exceeds	14 to 48 evenly spaced
Cattle	Non-Electric 4-wire high tensile smooth			Exceeds	Meets	12 to 42 evenly spaced
Cattle	Non-Electric 6-wire high tensile smooth	No	Meets	Exceeds	Exceeds	12 to 44 evenly spaced
Cattle	Non-Electric 8-wire high tensile smooth	Meets	Exceeds	Exceeds	Exceeds	12 to 44 evenly spaced
Cattle	Electric 1-wire high tensile smooth	NO	NO	Meets	NO	32
Cattle	Electric 2-wire high tensile smooth	NO	Meets	Exceeds	Meets	20, 32
Cattle	Electric 3-wire high tensile smooth	NO	Exceeds	Exceeds	Exceeds	18, 30, 42
Cattle	Electric 4-wire high tensile smooth	Meets	Exceeds	Exceeds	Exceeds	12 to 42 evenly spaced
Cattle	Electric 5-wire high tensile smooth	Exceeds	Exceeds	Exceeds	Exceeds	12 to 44 evenly spaced
Cattle	Electric 1-wire Polywire or Polytape (1hot wire)	NO	NO	Meets	NO	32
Cattle	Electric 2-wire Polywire or Polytape (2 hot wires)	NO	Meets	Exceeds	Meets	20, 32
Cattle	Woven wire plus one or more top wire	Exceeds	Exceeds	Exceeds	Exceeds	47 min, 6 max between top wires
Cattle	Wood or Composition boards (6" wide)	Exceeds	Exceeds	Exceeds	Exceeds	6, 6, 8, 10 between boards
Cattle	HT Woven wire plus one or more top wires	Exceeds	Exceeds	Exceeds	Exceeds	47 min, 6 max between top wires
Goats & sheep	Barbed 5-wire	NO	NO	Meets	Meets	6 to 32 evenly spaced
Goats & sheep	Barbed 6-wire	NO	Meets	Exceeds	Exceeds	6 to 36 evenly spaced
Goats & sheep	Barbed 8-wire	Meets	Exceeds	Exceeds	Exceeds	6 to 48 evenly spaced
Goats & sheep	Non-Electric 5-wire high tensile smooth	NO	NO	Meets	Meets	6 to 32 evenly spaced
Goats & sheep	Non-Electric 6-wire high tensile smooth	NO	Meets	Exceeds	Exceeds	6 to 36 evenly spaced
Goats & sheep	Non-Electric 7-wire high tensile smooth	Meets	Exceeds	Exceeds	Exceeds	6 to 42 evenly spaced
Goats & sheep	Electric 3-wire high tensile smooth	NO	NO	Meets	Meets	8, 18, 30
Goats & sheep	Electric 4-wire high tensile smooth	NO	Meets	Exceeds	Exceeds	6 to 36 evenly spaced
Goats & sheep	Electric 5-wire high tensile smooth	Meets	Exceeds	Exceeds	Exceeds	6 to 38 evenly spaced
Goats & sheep	Woven wire plus one or more top wire	Exceeds	Exceeds	Exceeds	Exceeds	32 min, 6" max between top wires
Goats & sheep	Wood or Composition boards (6" wide)	Exceeds	Exceeds	Exceeds	Exceeds	6, 6, 8, 10 between boards
Goats & sheep	HT Woven wire plus one or more top wires	Exceeds	Exceeds	Exceeds	Exceeds	35 min, 6" max between top wires

Animal type to control	Fence type	Purpose of Fence				Spacing Inches above ground level ww fences start 2-3 " above the ground
		Perimeter (boundary prohibited areas)	Access lanes & stream crossings	Interior subdivision	Stream exclusion	
		Minimum Criteria				Inches
Horses	Electric 2-wire high tensile smooth	NO	Meets	Meets	Meets	28, 38
Horses	Electric 3-wire high tensile smooth	NO	Exceeds	Exceeds	Exceeds	28, 38, 48
Horses	Electric 4-wire high tensile smooth	Meets	Exceeds	Exceeds	Exceeds	18 to 54 evenly spaced
Horses	Electric 5-wire high tensile smooth	Exceeds	Exceeds	Exceeds	Exceeds	18 to 54 evenly spaced
Horses	Electric 1-wire Polywire or Polytape	NO	NO	Meets	NO	34
Horses	Electric 2-wire Polywire or Polytape	NO	Meets	Meets	Meets	28, 48
Horses	Woven wire w/1 wire HT on top	Exceeds	Exceeds	Exceeds	Exceeds	48 + HT at 54
Horses	Mesh "No climb" 2"x4" spacing	Exceeds	Exceeds	Exceeds	Exceeds	48 + HT at 54"
Horses	Wood or Composition boards (6" wide)	Exceeds	Exceeds	Exceeds	Exceeds	18 min. 12 max. between boards
Hogs	Electric 2-wire high tensile smooth	NO	NO	Meets	Meets	8, 16
Hogs	Electric 3-wire high tensile smooth	NO	Meets	Exceeds	Exceeds	8, 16, 24
Hogs	Woven wire 32" w/ 1 wire barb or HT	Exceeds	Exceeds	Exceeds	Exceeds	32 + barb or HT at 38
Hogs	Woven wire 32" w/ 1 Ht electric inside	Meets	Meets	Meets	Meets	32 + 1 electric wire 8 off ground, 8 inside of fence.
Deer	Woven wire 96" tall w/2 strands of smooth wire	Meets	Meets	Meets	Meets	96" w/smooth wire at 9' and 10'
Buffalo	Electric 4-wire high tensile smooth	NO	NO	Meets	Meets	16 to 42 evenly spaced
Buffalo	Electric 5-wire high tensile smooth	NO	Meets	Exceeds	Exceeds	16 to 48 evenly spaced
Buffalo	Electric 6-wire high tensile smooth	Meets	Exceeds	Exceeds	Exceeds	12 to 52 evenly spaced
Chickens/turkey	Woven wire 2"x4" 1 wire HT or barb above	Exceeds	Exceeds	Exceeds	Exceeds	72
Emu and ostrich	Woven wire 6"x6" 1 wire HT or barb above	Exceeds	Exceeds	Exceeds	Exceeds	72
Chickens/turkey	HT Woven wire 2"x4" 1 wire HT or barb above	Exceeds	Exceeds	Exceeds	Exceeds	72
Emu and ostrich	HT Woven wire 6"x6" 1 wire HT or barb above	Exceeds	Exceeds	Exceeds	Exceeds	72
People	Chain link	Meets	Preferred option			60 with 1 barb above
People	Electric 5-wire	Meets				12 to 60 evenly spaced
People	Woven wire 47 inch plus 1 or 2 barbed wires or HT elec	Meets				47 min. HT or barb at 6 spacing to 48. HT may be electrified

Alternative fencing and bracing systems may be approved by the Resource Conservationist, i.e. *common sense fence, horseguard or equivalent.*



Fencing – Job sheet

RI - JS 382

Practice Installation Guidelines

It shall be the responsibility of the landowner to obtain all necessary permits and/or rights, and to comply with all ordinances and laws pertaining to this installation.

Practice designs and specifications shall be reviewed by NRCS planner with the landowner prior to start of work for practice installation.

Contact the NRCS planner _____ at 401- _____ prior to installation. Keep NRCS planner updated throughout the installation process.

Contact the NRCS planner _____ at 401- _____ upon completion of practice.

Practice specifications and special requirements

Installation shall be in accordance with the following specifications and special requirements.
NO CHANGES ARE TO BE MADE IN THE DRAWINGS OR SPECIFICATIONS WITHOUT PRIOR APPROVAL OF THE NRCS.

1. Use Practice Specifications: **Fencing specifications worksheet**
Specification Guide Sheet for Fencing (382)

The landowner/operator acknowledges that:

A) He/she has received a copy of the practice specifications, and Operation and Maintenance plan, and that he/she has an understanding of the contents and the requirements.

B) He/she has or will obtain all of the necessary permits prior to construction.

C) No changes will be made in the installation of the job without prior concurrence of the NRCS technician.

D) This practice has a lifespan of 20 years.

E) Adherence to the Operation and Maintenance plan of the installed work is necessary for proper performance during the practice lifespan.

F) NRCS planner shall be contacted prior to installation for a review of the practice installation and at completion for practice certification.

Accepted by :

Date:

Address :

Practice design approval

Lead Discipline for this practice: **Biological Conservation Sciences Division**

Job Classification:

_____ No design changes were made. _____ Design changes were approved and are included

Design approved by:

Date:

Practice certification

I have made an on-site inspection and have determined that the practice has been installed according to practice standard and specifications.

Certified by:

Date: