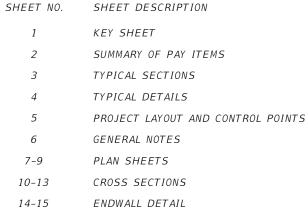
VILLAGE OF ESTERO

CONTRACT PLANS

TRAILSIDE DRIVE AND POINCIANA AVENUE RESURFACING/REBUILD PROJECT

INDEX OF ROADWAY PLANS



Beginning of Project Ending of Project

GOVERNING DESIGN STANDARD PLANS: MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS ("FLORIDA GREENBOOK"), 2016

FLORIDA DEPARTMENT OF TRANSPORTATION, FY 2019-20 STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION AND APPLICABLE INTERIM REVISIONS (IRS).

STANDARD PLANS FOR ROAD CONSTRUCTION AND ASSOCIATED IRS ARE AVAILABLE AT THE FOLLOWING WEBSITE: http://www.fdot.gov/design/Standardplans.shtm

APPLICABLE IRS: IR536-001-01, IR521-001-01

GOVERNING STANDARD SPECIFICATIONS: FLORIDA DEPARTMENT OF TRANSPORTATION, JULY, 2018 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AT THE FOLLOWING WEBSITE:

http://www.fdot.gov/programmanagement/Implemented/SpecBooks

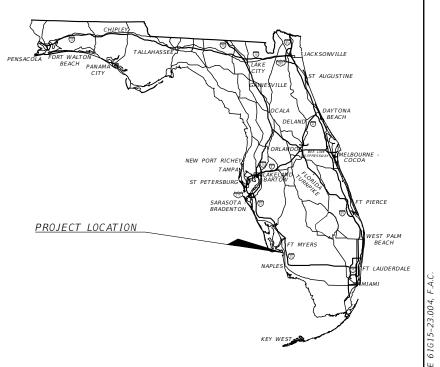


THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY:

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

AIM ENGINEERING & SURVEYING, INC. 2161 FOWLER ST., STE. 100 FORT MYERS, FL. 33901 CERTIFICATE OF AUTHORIZATION NO.: 3114 DANIEL W. SCHROEDER, P.E. NO. 78646



ROADWAY PLANS ENGINEER OF RECORD:

DANIEL SCHROEDER P.E. NO.: 78646 AIM ENGINEERING & SURVEYING 2161 FOWLER ST FORT MYERS, FL. 33901

CERTIFICATE OF AUTHORIZATION NO.: 3114

PROJECT MANAGER: DAVID WILLEMS, PE

FISCAL YEAR	SHEET NO.
2020	1

SUMMARY OF QUANTITIES

PAY ITEM NO.	PAY ITEM DESCRIPTION	UNIT	QUANT ITY
101-1	Mobilization / Surveying / Pre-Construction Video	LS	1
102 - 1	Maintenance of Traffic	LS	1
104-10-3	Sediment Barrier (Silt Fence) (Including N.P.D.E.S. Permit, Plan & Program)	LF	160
110-1-1	Clearing and Grubbing (Including Endwall Removal)	LS	1
110-4-10	Removal of Existing Concrete (Concrete Driveways)	SY	175
110-7-1	Mailbox, Furnish and Install (Single) (Relocate Existing Where Possible)	EA	26
120-6	Earthwork, Embankment (Shoulder/Swale Regrading)	CY	125
285-709 (1)	E.O.P. Repair (Trailside) (18" wide x 6" thick Millings Base, Includes Excavation)	SY	652
285-709 (2)	Type S-I AC Surface Course, 6" (Poinciana) (Asphalt Base Course)	TN	515
285-709 (3)	Type S-I AC Surface Course, 6" (Driveway Base for Dirt/Shell Driveway Constr.)	TN	75
300 - 1	Roadway Preparation for Restoration (Crack Sealing Preparation)	LS	1
305 - 1	Bituminous Crack and Joint Seal (Trailside)	GAL	300
327-70-6 (1)	Milling Exist. Asph. Pavt. 1.5" (Trailside)	SY	4602
327-70-6 (2)	Pavement and Base Removal (Poinciana)	SY	1412
R - 1	Type S-I AC Surface Course 1.5" (Includes Driveway Base & +/- 10 TN of Overbuild)	TN	600
400 - 1 - 2	Endwalls, 15", Concrete Class I	CY	2.46
430 - 174 - 115	Pipe Culvert, 15", Reinforced Concrete Pipe, SD	LF	44
522-2	Concrete Driveway, 6" (Remove and Replace)	SY	175
570 - 1 - 2	Performance Turf (Average Width of 5-feet from EOP)	SY	2900
700 - 1 - 40	Single Post Sign, Install	AS	4
705-10-2	Object Marker, Type 2 (at Endwalls)	EA	4

PAY ITEM NOTES:

570-1-2 SOD QUANTITY IS ASSUMED TO BE 5-FOOT OFFSET AVERAGE WIDTH FROM PROPOSED E.O.P. FOR BOTH SIDES OF ROADWAYS. ALL DISTURBED AND/OR RE-GRADED AREAS SHALL BE SODDED.

110-7-1 RELOCATE EXISTING MAILBOXES WITHOUT DAMAGING WHERE POSSIBLE; OTHERWISE, INSTALL NEW MAILBOX.

NO DATE DESCRIPTION

706 - 3

710-11-101

710-11-125

710-11-231

711-11-101

711-11-125

711-11-231

Retro-Reflective Pavement Markers

Paint, Std., Yellow Skip (10-30)

Thermo, Std., White, Solid 6"

Thermo, Std. White, Solid 24"

Paint Pave. Marking, Std. White, Solid 24"

Thermo, Std., Yellow, Skip, 6" (10-30)

Paint, Std., White, Solid 6"

AIM Engineering & Surveying, Inc.

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EA

NM

LF

NM

LF

GM

PUBLIC WORKS DEPARTMENT

93

0.97

30

0.49

0.97

30

0.49

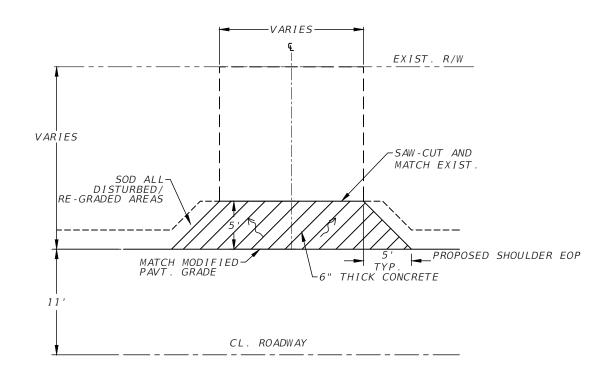
VILLAGE OF ESTERO 9401 CORKSCREW PALMS CIR. ESTERO FL., 33928

DATE: OCTOBER, 2019	
DRAWN BY:	
JW	DANIEL SCHROEDER
CHECKED BY:	PROFESSIONAL ENGINEER
DS	DE No. 78646

TRAILSIDE DRIVE AND POINCIANA AVENUE | 19-0872 RESURFACING/REBUILD PROJECT SUMMARY OF PAY ITEMS

2

TYPICAL TURN OUT FOR AC DRIVEWAYS NTS



TYPICAL TURN OUT FOR CONCRETE DRIVEWAYS

O DATE DESCRIPTION

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PUBLIC WORKS DEPARTMENT **VILLAGE OF ESTERO** 9401 CORKSCREW PALMS CIR. ESTERO FL., 33928

OCTOBER, 2019 DANIEL SCHROEDER PROFESSIONAL ENGINEER P.E. No. 78646

TRAILSIDE DRIVE AND POINCIANA AVENUE RESURFACING/REBUILD PROJECT

TYPICAL DETAILS

19-0872 SHEET NO.: 4

TYPICAL TURN OUT SHELL/DIRT DRIVEWAYS

CL. ROADWAY

-S-1 PAVEMENT 1.5" THICK

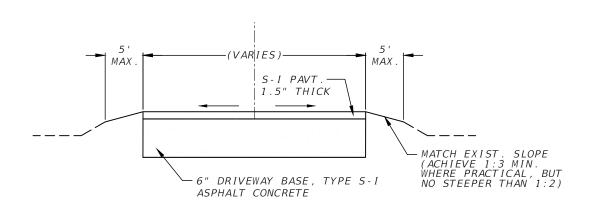
-VARIES-

EXIST. R/W

-MATCH EXIST.

-MATCH EXIST. DRIVEWAY RADIUS 5' (TYP.)

PROPOSED SHOULDER EOP



TYPICAL TURNOUT CROSS-SECTION FOR DIRT & SHELL DRIVEWAYS NTS

NOTE: SLOPE DRIVEWAY TURN OUTS TO PROVIDE POSITIVE DRAINAGE TO AVOID STORMWATER PONDINIG

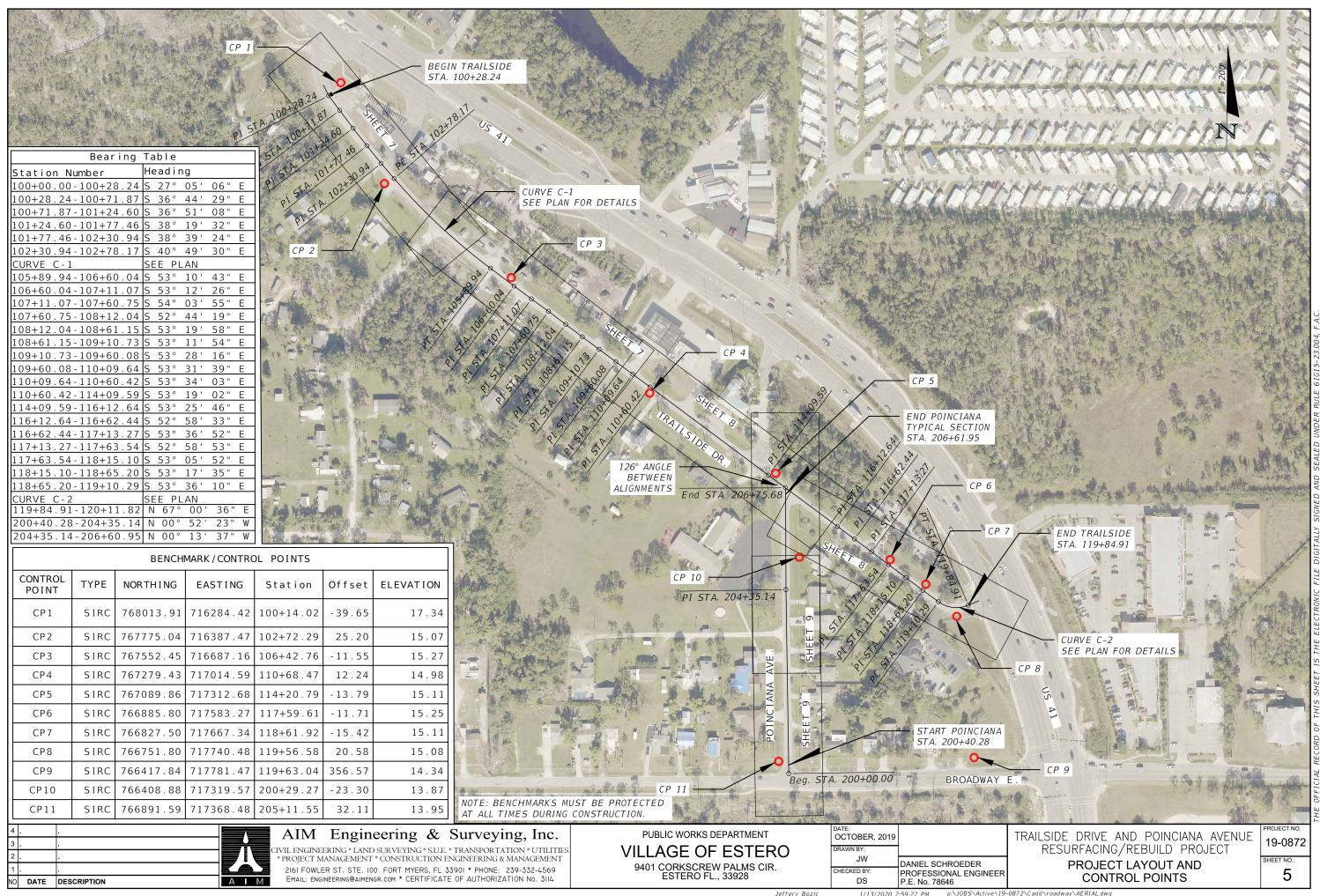
VARIES

11'

MATCH EXIST.-DRIVEWAY RADIUS

SOD ALL: DISTURBED/ RE-GRADED AREAS

MATCH MODIFIED PAVT. GRADE



PROJECT NOTES

- 1. BENCHMARK ELEVATIONS SHOWN ON THE PLANS ARE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). ANY MONUMENT WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE PROTECTED.
- 2. THE ROAD CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE APPROPRIATE ROADWAY AND TRAFFIC DESIGN STANDARDS LISTED ON THE KEY SHEET.
- 3. COPIES OF THESE PLANS AS DESIGNED BY THE E.O.R. HAVE BEEN RETAINED BY THE E.O.R. . SAID E.O.R. WILL NOT BE RESPONSIBLE FOR ANY SUBSEQUENT CHANGES TO THE REPRODUCIBLE ORIGINAL DOCUMENTS.
- 4. ROADWAY IS AS SHOWN ON THE PLAN AND CROSS SECTIONS. THE STATIONS AND OFFSETS ARE FROM THE SURVEY BASELINE UNLESS OTHERWISE NOTED ON THE PLANS.
- 5. THE CONTRACTOR SHALL NOT USE A VIBRATORY ROLLER, AT THE DISCRETION OF THE E.O.R., NEAR ALL CROSS DRAINS DURING RESURFACING ACTIVITIES.
- 6. EXISTING DRIVEWAYS WITHIN THE LIMITS OF THIS PROJECT ARE TO REMAIN AT THE SAME LOCATION AND WIDTH UNLESS OTHERWISE SHOWN IN THE PLANS OR DIRECTED BY THE E.O.R.
- 7. A STORM WATER POLLUTION PREVENTION PLAN SHALL BE PREPARED BY THE CONTRACTOR, IN ACCORDANCE WITH SECTION 104. THE NOTICE OF INTENT SHALL BE PREPARED FOR THE N.P.D.E.S. STORM WATER PERMIT AND SUBMITTED TO OBTAIN PERMIT COVERAGE.
- 8. APPROPRIATE TURBIDITY AND EROSION CONTROL FEATURES SHALL BE PLACED AT ALL MODIFIED CROSS DRAINS PER FDOT STANDARDS PRIOR TO CONSTRUCTION.
- 9. IN THE EVENT OF EXCAVATION OF UNSUITABLE MATERIAL IS REQUIRED, IT MAY BE USED TO FLATTEN SLOPES IN AREAS IN ACCORDANCE WITH FDOT INDEX NO. 120-002.
- 10. THE CONTRACTOR SHALL PROVIDE BORROW MATERIAL FROM BORROW PITS APPROVED BY THE E.O.R. AND INCORPORATE IT INTO THE WORK IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
- 11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION OF A SIGNED AND SEALED TRAFFIC CONTROL PLAN (TTC) BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.
- 12. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE STAKEOUT OF THE PROJECT, I.E., LINE GRADE, STATION BOARDS, SLOPE STAKE, UTILITY RELOCATIONS OR ANY OTHER STAKEOUT THAT MAY BE REQUIRED TO COMPLETE THE PROJECT IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.
- 13. OVERALL CLEAN UP SHALL BE ACCOMPLISHED BY THE CONTRACTOR IN ACCORDANCE WITH VILLAGE STANDARDS OR AS DIRECTED BY THE E.O.R. ANY AND ALL EXPENSE INCURRED FOR THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR THE RELATED ITEM.
- 14. THE CONTRACTOR SHALL ENDEAVOR TO PROTECT PRIVATE PROPERTY, ANY DAMAGE CAUSED BY THE CONTRACTOR IN THE PERFORMANCE OF HIS WORK SHALL BE CORRECTED TO THE SATISFACTION OF THE E.O.R. AND PROPERTY OWNER, AT THE CONTRACTOR'S EXPENSE.
- 15. ANY DAMAGE TO STATE, COUNTY OR LOCAL ROADS CAUSED BY THE CONTRACTOR'S HAULING OR EXCAVATION EQUIPMENT SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE E.O.R.
- 16. ANY SURVEY MARKER, INCLUDING BUT NOT LIMITED TO SECTION MARKERS, BENCHMARKS, LOT CORNER, ETC., WHICH ARE DISTURBED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE PRIOR TO FINAL PAYMENT. RESETTING OF MONUMENTS AND MARKERS SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR, LICENSED TO PRACTICE IN THE STATE OF FLORIDA AND SHOWN ON THE AS-BUILT PLANS AS RESET. CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS TO THE E.O.R. UPON COMPLETION.
- 17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF EXCAVATED MATERIAL, DEBRIS, VEGETATION AND CONCRETE AT A LEGAL DISPOSAL SITE OR BY OTHER MANNER APPROVED BY THE E.O.R. DO NOT DEPOSIT MATERIALS CLEARED FROM SITE ONTO ADJACENT PROPERTY WITHOUT WRITTEN APPROVAL FROM THE E.O.R. AND LANDOWNER. CONTRACTOR IS RESPONSIBLE FOR MATERIALS REMOVED FROM SITE.
- 18. THE CONTRACTOR SHALL FURNISH THE E.O.R., PRIOR TO INCORPORATION INTO THE PROJECT, A CERTIFICATE FROM THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES DIVISION OF PLANT INDUSTRY, STATING THAT THE SOD, HAY AND MULCH MATERIALS ARE FREE OF NOXIOUS WEED, INCLUDING TROPICAL SODA APPLE.
- 19. ANY DAMAGE BY THE CONTRACTOR TO ANY DRIVE OR TURNOUT DURING THE CONSTRUCTION OF THE PROJECT SHALL BE REPAIRED TO THE SATISFACTION OF THE E.O.R. AT THE CONTRACTOR'S EXPENSE.

- 20.THE CONTRACTOR SHALL NOTIFY ALL REQUIRED UTILITIES AND GOVERNMENT AGENCIES AT LEAST 48
 BUSINESS HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION (48 HOURS BEFORE DIGGING CALL
 TOLL FREE 1-800-432-4770 SUNSHINE ONE CALL)
- 21.CONSTRUCTION DEWATERING IS NOT ANTICIPATED FOR THE PROJECT AND HAS NOT BEEN AUTHORIZED. IF DEWATERING IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A WATER USE PERMIT FROM THE WATER MANAGEMENT DISTRICT.
- 22. PRIOR TO COMMENCEMENT, THE CONTRACTOR SHALL OBTAIN A COPY OF AND FOLLOW FLORIDA DEPARTMENT OF HISTORICAL RESOURCES (FDHR) DIRECTIVE FOR CONSTRUCTION WORK AND REPORTING OF HISTORICAL OR ARCHAEOLOGICAL ARTIFACTS DISCOVERED DURING GROUND DISTURBING ACTIVITIES FOR THE PROPOSED RESURFACING, INCLUDING REMOVAL OF THE PREVIOUS ROAD SURFACE, INSTALLATION OF SIGNAGE, AND TEMPORARY ACCESS AND STAGING AREAS.
- 23. CONTRACTOR SHALL PROVIDE A SUPERINTENDENT ON SITE AT ALL TIMES DURING ACTIVE CONSTRUCTION.
- 24.TEMPORARY DETOURS OF TRAFFIC SHALL BE PERMITTED ONLY UPON PRIOR WRITTEN APPROVAL BY THE VILLAGE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE EMS, FIRE & SHERIFFS, SCHOOL BOARD OFFICES PRIOR AND DURING ROAD CLOSURE.
- 25.THE PROPOSED RESTORATION/RESURFACING WIDTH SHALL BE 22 FOOT ROADWAY WIDTH.
- 26. PIPE EXTENSION RESTORATION SHALL MATCH EXIST. INVERTS AND ALIGNMENTS UNLESS OTHERWISE NOTED ON THE PLANS.
- 27.CLEAR AND RECOVERY ZONE IS MAINTAINED AT 6 FEET FROM E.O.P. BASED ON EXISTING CONDITION, LOW SPEED ROADWAY, LIMITED NUMBER OF ACCIDENTS REPORTED AND DESIGN CONSTRAINTS.
- 28. PREPARATION FOR ROADWAY RESTORATION SHALL INCLUDE SWEEPING TO CLEAR ROAD OF DEBRIS OR LOOSE AGGREGATE TO ALLOW FOR PROPER BONDING AT RESURFACING AC LAYERS.
- 29. EXIST. DRIVEWAY CULVERT DRAINS, IF ANY, ARE TO REMAIN.

COMPANY TELEPHONE NUMBERS UTILITY / AGENCY OWNERS. FLORIDA POWER & LIGHT 239 - 334 - 7754 LEE COUNTY UTILITIES 239 - 533 - 8845 COMCAST CABLE 800 - 391 - 3000 CENTURYLINK 877 - 862 - 9343 SUMMIT BROADBAND 239 - 444 - 0400 FRONTIER 855-223-6283 ESTERO FIRE DISTRICT (STATION 41) 239 - 390 - 8000

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VILLAGE OF ESTERO
9401 CORKSCREW PALMS CIR.

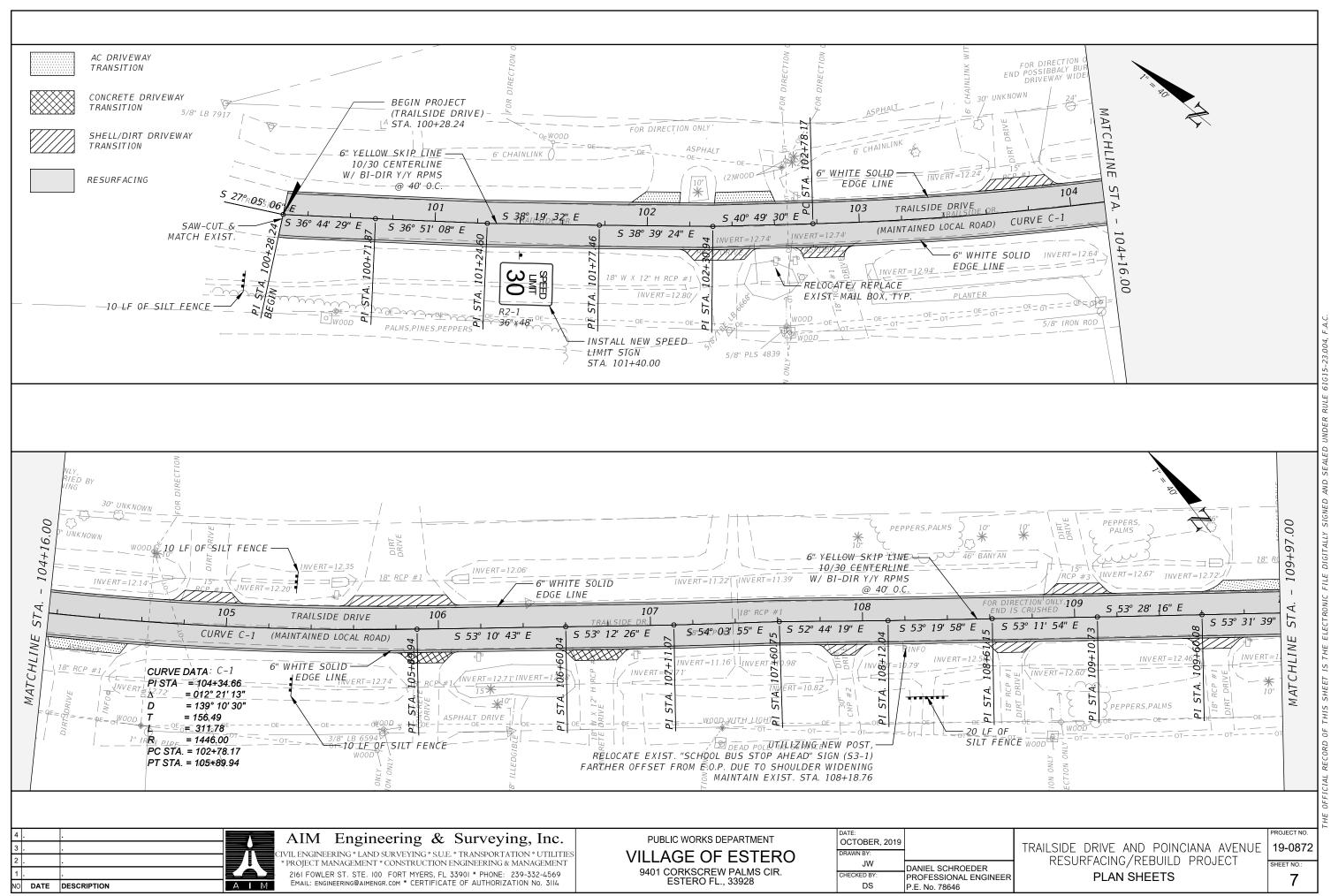
ESTERO FL., 33928

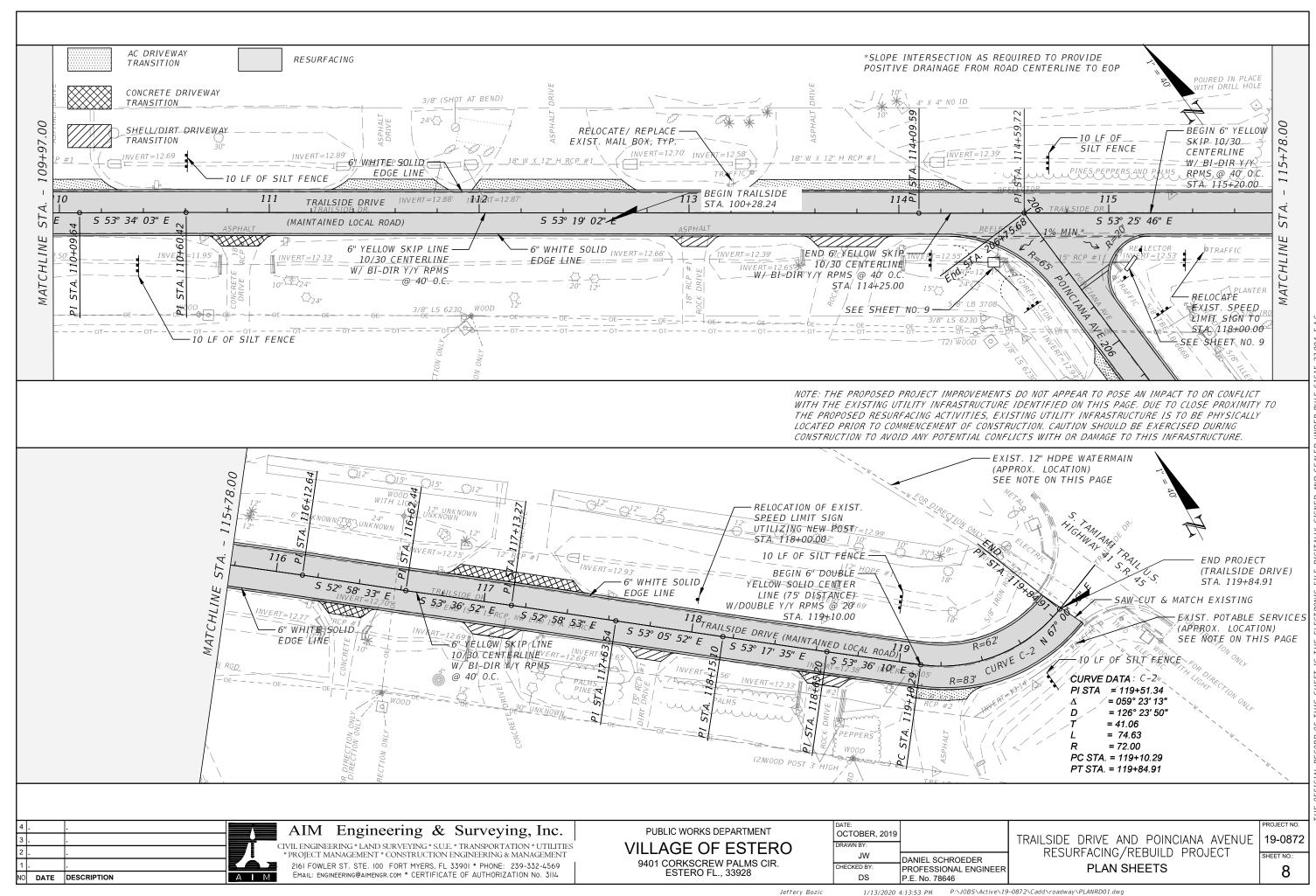
DATE:
OCTOBER, 2019
DRAWN BY:
JW
DANIEL SCHROEDER
PROFESSIONAL ENGINEER
P.E. No. 78646

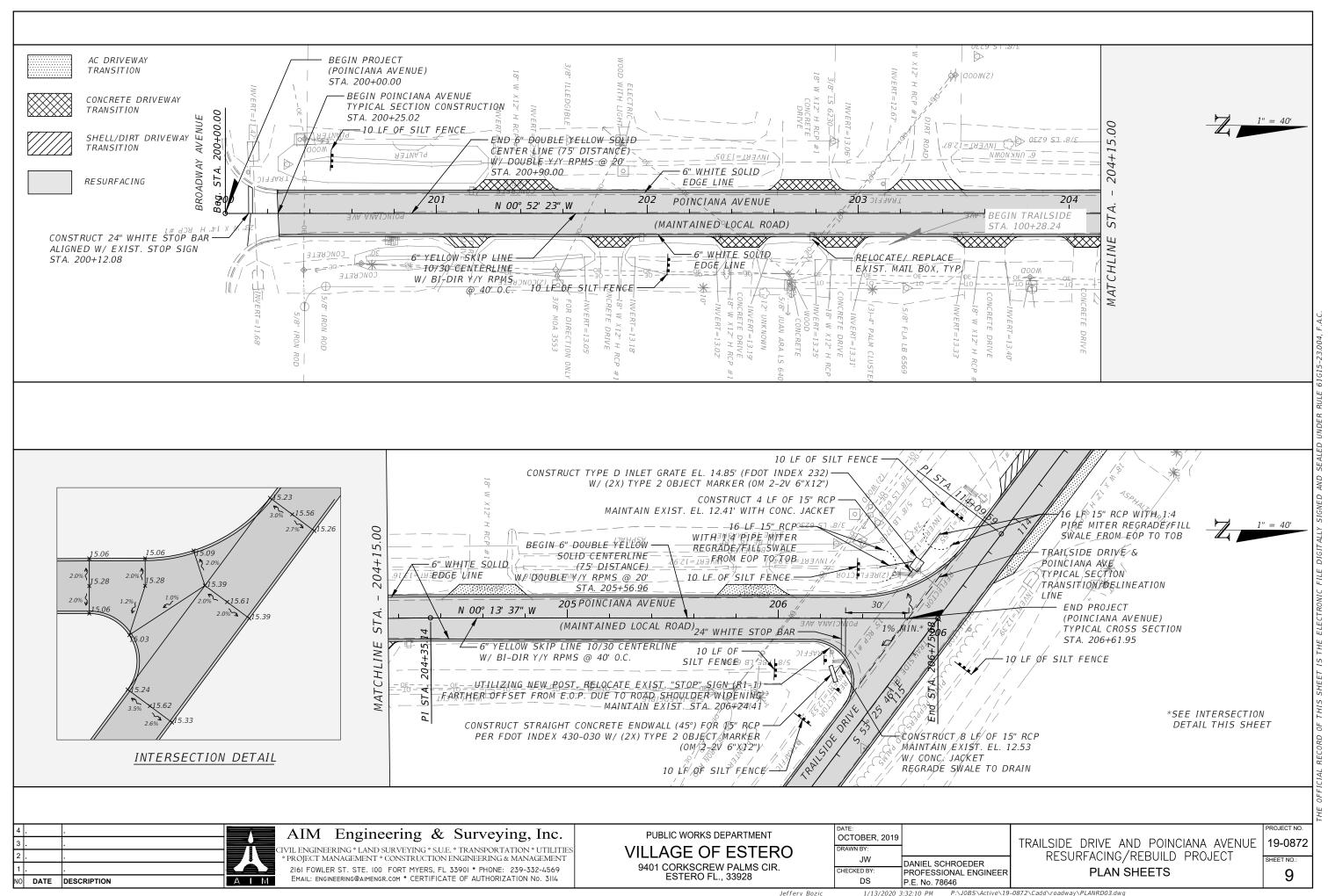
TRAILSIDE DRIVE AND POINCIANA AVENUE RESURFACING/REBUILD PROJECT

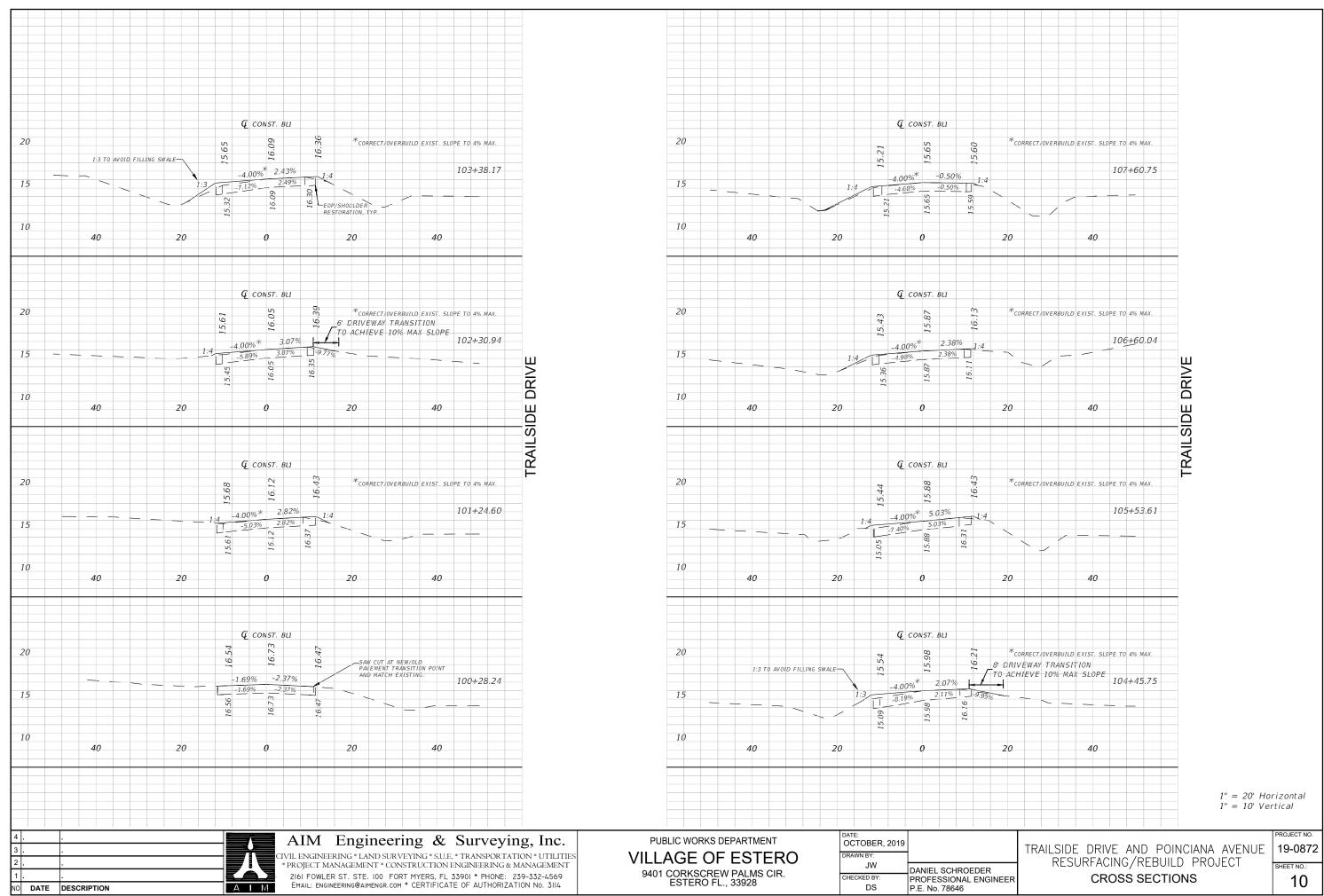
IUE 19-0872

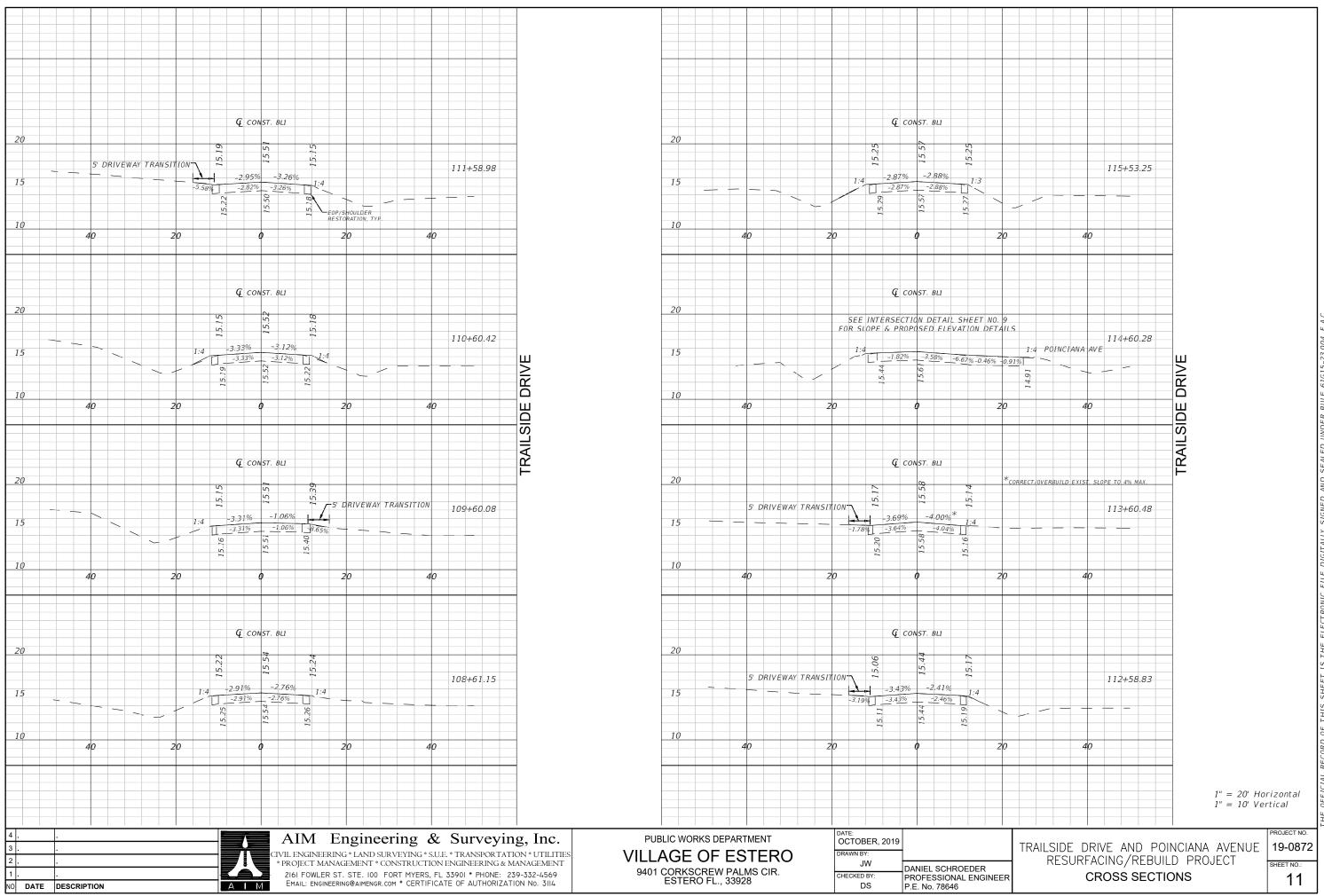
GENERAL NOTES

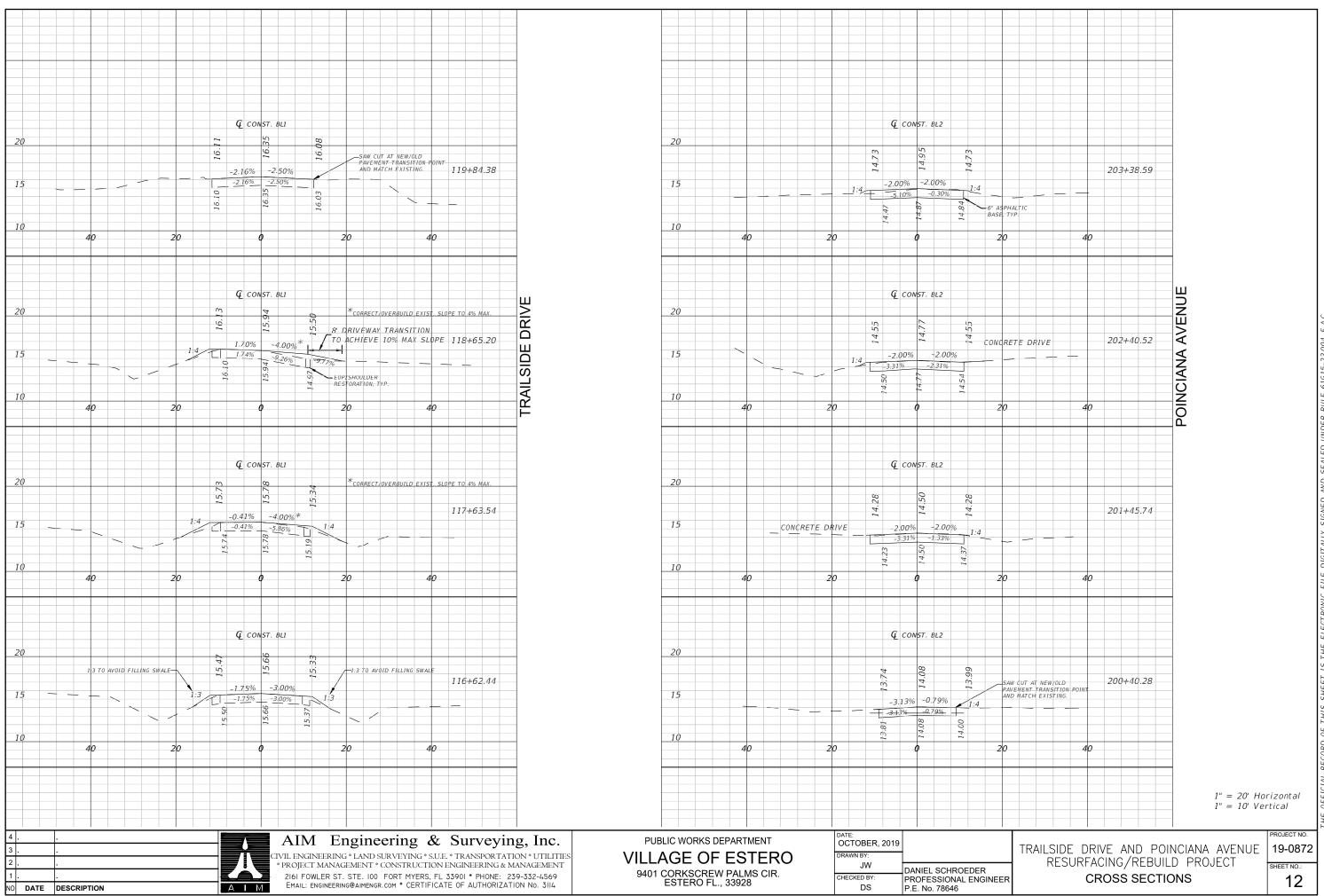


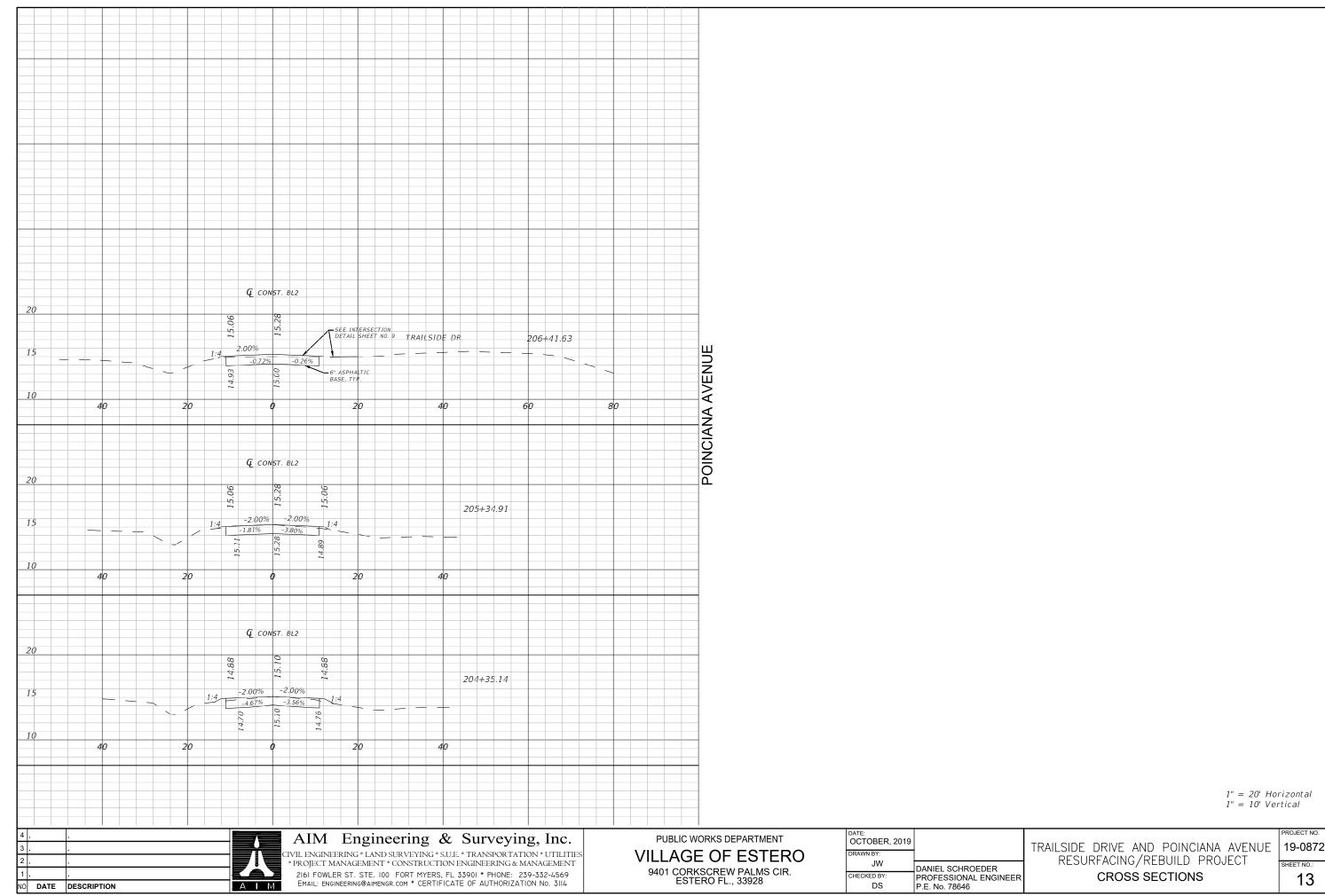


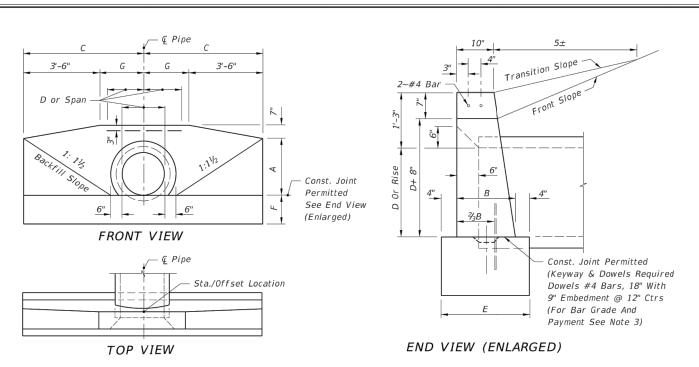












STANDARD LOCATION CONTROL

Sta./Offset Location (Lateral Offset Measured To This Point) End Of Pipe (See Note 9) Front Point A

END VIEW

- Position is set by the intersection of the front slope and Point A where this intersection falls outside the clear zone.
- 2. Where the front slope and Point A intersects inside the clear zone, the endwall is positioned so the Station/Offset Location is at the clear zone limit. The front slope is transitioned to the endwall as shown in Index 430-001.

GENERAL NOTES

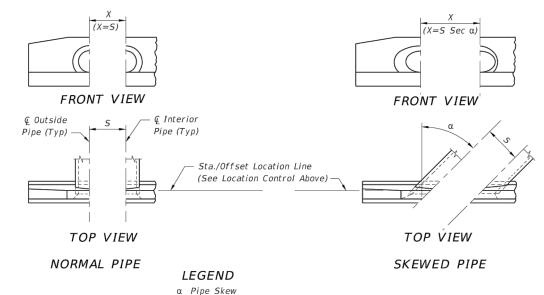
- Endwall dimensions, locations and positions are for round and elliptical co⇒crete pipe and for round and pipe-arch corrugated metal pipe. Round concrete pipe shown.
- Front slope and ditch transitions shall be in accordance with Index 430-001.
- 3. Endwalls may be cast in place or precast concrete.

 Reinforcing steel shall be Grades 40 or 60. Additional reinforcement necessary for handling precast units shall be determined by the Contractor or the supplier. Cost of reinforcement shall be included in the contract unit price for Concrete, (Endwalls).
- All exposed corners and edges of concrete are to be chamfered ¾".
- Concrete shall be Class I, except ASTM C478 (4000 psi) concrete may be substituted for precast items manufactured in plants meeting the requirements of Section 449 of the Specifications.
- On outfall ditches with side slopes flatter than 1:1½ provide 20' transitions from the endwall to the flatter side slopes, right of way permitting.
- 7. For sodding around endwalls see Index 524-001.
- 8. Payment for concrete quantities for endwalls skewed to the pipe shall be made on the following basis:

Endwall Skew to Pipe Use Tabulated Value 0° to 5° 0° 6° 15° 30° 31° or over 45°

- Pipe length plan quantities shall be based on the pipe end locations shown in the standard location control end view, or lengths based on special endwall locations called for in the plans.
- Payment for pipe in pipe culverts shall be based on plan quantities, adjusted for endwall locations subsequently established by the Engineer.
- 11. Endwalls to be paid for under the contract unit price for Class I Concrete (Endwalls), CY.

ENDWALL DIMENSIONS (EXCLUSIVE OF MULTIPLE PIPE SPACING)



- S Center To Center Pipe Spacing
- X Centerline To Centerline Dimension At Face Of Headwall

PIPE AND SPACING FOR MULTIPLE PIPE ENDWALL POSITIONS FOR SINGLE AND MULTIPLE

STRAIGHT CONCRETE ENDWALLS SINGLE AND MULTIPLE PIPE

430-030

INDEX

_{SHEET} 1 of 2

DATE DESCRIPTION A I M

LAST

REVISION

11/01/17

≥ DESCRIPTION:

AIM Engineering & Surveying, Inc.

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VILLAGE OF ESTERO

9401 CORKSCREW PALMS CIR. ESTERO FL., 33928 OCTOBER, 2019

DRAWN BY:

JW

DANIEL SCHROEDER

PROFESSIONAL ENGINEEF

P.E. No. 78646

TRAILSIDE DRIVE AND POINCIANA AVENUE RESURFACING/REBUILD PROJECT ENDWALL DETAIL

19-0872 SHEET NO.:

14

Jeffery Bozic

11																																										
		0		_																							Clas	s I C	oncret	e (CY)												
		Ope	_	a					Г	Dimens	ions													1	Vumbe	r And	Туре	Of Pip	e And	Skew	Angle	Of Pip	pe					- 1				
18" 1.77 3.54 5.31 7.08 2'-2" 1'-3" 4'-6' 21" 2.41 4.82 7.23 9.64 2'-5" 1'-4" 5'-6'										Single					Do	uble							Tri	ple							Quac	druple				D						
		Numb	er Of Pip	oes		R		E	E	G	6			Χ		Conc	Metal		Con	crete			Ме	tal			Cond	rete			Ме	tal			Cone	crete			Met	:al		
	1	2	3	4	1 ^_				,			0°	15°	30°	45°	0°	0°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	
13	" 1.2	23 2.4	6 3.69	4.92	1'-11"	1'-2"	4'-0"	1'-10"	1'-2"	0'-6"	2'-7"	2'-7"	2'-8"	3'-0"	3'-8"	1.23	1.24	1.59	1.60	1.65	1.74	1.62	1.63	1.68	1.78	1.94	1.96	2.05	2.23	1.99	2.02	2.11	2.30	2.30	2.34	2.47	2.74	2.37	2.41	2.75	2.84	15"
18	1.7	77 3.5	4 5.31	7.08	2'-2"	1'-3"	4'-6"	1'-11"	1'-3"	1'-0"	2'-10"	2'-10"	2'-11"	3'-3"	4'-0"	1.56	1.59	1.99	2.01	2.06	2.17	2.04	2.06	2.11	2.23	2.43	2.46	2.56	2.79	2.51	2.54	2.65	2.89	2.86	2.91	3.06	3.40	2.96	3.01	3.17	3.53	18"
2	" 2,4	41 4.8	2 7.23	9.64	2'-5"	1'-4"	5'-0"	2'-0"	1'-4"	1'-6"	3'-2"	3'-2"	3'-3"	3'-8"	4'-6"	1.97																										21"
24	" 3.	14 6.2	8 9.42	12.56	2'-8"	1'-4"	5'-6"	2'-0"	1'-4"	2'-0"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"	2.24	2.29	2.82	2.84	2.91	3.06	2.91	2.93	3.01	3.17	3.39	3.43	3.57	3.87	3.52	3.56	3.71	4.03	3.97	4.03	4.24	4.69	4.14	4.20	4.43	4.91	24"
27	" 3.9	98 7.9	6 11.94	15.92	2'-11"	1'-5"	6'-0"	2'-1"	1'-5"	2'-6"	3'-10"	3'-10"	4'-0"	4'-5"	5'-5"	2.73																										27"
30)" 4.9	91 9.8	2 14.73	19.64	3'-2"	1'-6"	6'-6"	2'-2"	1'-6"	3'-0"	4'-3"	4'-3"	4'-5"	4'-11"	6'-0"	3.26	3.34	4.13	4.16	4.26	4.49	4.28	4.31	4.43	4.67	4.98	5.04	5.25	5.69	5.20	5.27	5.49	5.97	5.84	5.93	6.24	6.91	6.13	6.23	6.56	7.29	30"
36	7.0	07 14.	4 21.21	28.28	3'-8"	1'-8"	7'-6"	2'-4"	1'-8"	4'-0"	5'-1"	5'-1"	5'-3"	5'-10"	7'-2"	4.53	4.64	5.73	5.77	5.92	6.23	5.95	6.00	6.15	6.49	6.92	7.00	7.29	7.91	7.25	7.34	7.65	8.33	8.13	8.26	8.69	9.62	8.57	8.71	9.18 1	10.20	36"
42	9.6	52 19	24 28.86	38.48	4'-2"	1'-10"	8'-6"	2'-6"	2'-0"	5'-0"	6'-0"	6'-0"	6'-3"	6'-11"	8'-6"	6.33	6.49	8.11	8.17	8.39	8.85	8.43	8.50	8.73	9.23	9.90	10.02	10.45	11.38	10.38	10.52	10.98	11.99	11.68	11.87	12.51	13.89	12.32	12.52	13.22 1	14.73	42"
48	" 12.	57 25.	4 37.71	50.28	4'-8"	2'-1"	9'-6"	2'-9"	2'-0"	6'-0"	6'-9"	6'-9"	7'-0"	7'-10"	9'-7"	8.15	8.38	10.40	10.48	10.75	11.33	10.85	10.94	11.23	11.87	12.64	12.80	13.34	14.50	13.34	13.51	14.11	15.39	14.89	15.13	15.93	17.68	15.82	16.08	16.97 1	18.90	48"
54	" 15.	90 31.	80 47.70	63.60	5'-2"	2'-6"	10'-6"	3'-2"	2'-3"	7'-0"	7'-8"	7'-8"	7'-11"	8'-10"	10'-10"	11.71	11.77	15.23	15.35	15.78	16.69	15.35	15.48	15.90	16.83	18.77	19.02	19.86	21.69	18.93	19.18	20.04	21.89	22.29	22.66	23.93	26.67	22.51	22.89	24.17 2	26.96	54"

													CORF	RUGA	TED I	METAL	PIPE	ARCI	4													
		(ng Are SF)	a					E	Dimension	ıs										ss I C		-								Approx.
Span	Rise		(~	,,																Numbe	r Of P	ipe An	d Ske	w Angl	e Of F	Pipe				Span	Rise	Equiv. Round
		Nu	mber	Of Pip	oes				F	_					X		Single		Dou	ıble			Tri	ple			Quad	ruple		1		Pipe
		1	2	3	4	A	В	(E	F	G	5	0°	15°	30°	45°	0°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	1		
17"	13"	1.1	2.2	3.3	4.4	1'-9"	1'-2"	3'-10"	1'-10"	1'-2"	0'-4"	2'-6"	2'-6"	2'-7"	2'-11"	3'-6"	1.16	1.47	1.48	1.52	1.60	1.78	1.80	1.88	2.04	2.09	2.12	2.23	2.48	17"	13"	15"
21"	15"	1.6	3.2	4.8	6.4	1'-11"	1'-2"	4'-3"	1'-10"	1'-2"	0'-9"	2'-10"	2'-10"	2'-11"	3'-3"	4'-0"	1.33	1.69	1.70	1.75	1.84	2.04	2.06	2.15	2.33	2.40	2.44	2.57	2.84	21"	15"	18"
28"	20"	2.8	5.6	8.4	11.2	2'-4"	1'-3"	5'-2"	1'-11"	1'-3"	1'-8"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"	1.78	2.31	2.33	2.39	2.53	2.83	2.87	2.99	3.26	3.36	3.42	3.60	4.01	28"	20"	24"
35"	24"	4.3	8.6	12.9	17.2	2'-8"	1'-4"	5'-11½"	2'-0"	1'-4"	2'-51/2"	4'-0"	4'-0"	4'-2"	4'-7"	5'-8"	2.34	3.03	3.05	3.14	3.32	3.72	3.77	3.93	4.29	4.40	4.47	4.72	5.25	35"	24"	30"
42"	29"	5.9	11.8	17.7	23.6	3'-1"	1'-5"	6'-10½"	2'-1"	1'-5"	3'-41/2"	4'-9"	4'-9"	4'-11"	5'-6"	6'-9"	3.13	4.06	4.09	4.20	4.45	4.99	5.06	5.28	5.76	5.93	6.03	6.36	7.09	42"	29"	36"
49"	33"	8.4	16.8	25.2	33.6	3'-5"	1'-6"	7'-8"	2'-2"	1'-6"	4'-2"	5'-6"	5'-6"	5'-8"	6'-4"	7'-9"	3.83	5.00	5.04	5.18	5.48	6.16	6.24	6.52	7.12	7.32	7.44	7.86	8.76	49"	33"	42"
57"	38"	10.6	21.2	31.8	42.4	3'-10"	1'-7"	8'-71/2"	2'-3"	1'-7"	5'-11/2"	6'-4"	6'-4"	6'-7"	7'-4"	8'-11"	4.87	6.31	6.36	6.53	6.91	7.74	7.84	8.18	8.93	9.18	9.33	9.85	10.96	57"	38"	48"
64"	43"	13.2	26.4	39.6	52.8	4'-3"	1'-8"	9'-61/2"	2'-4"	1'-8"	6'-0 ¹ / ₂ "	7'-1"	7'-1"	7'-4"	8'-2"	10'-0"	5.88	7.64	7.70	7.91	8.37	9.40	9.52	9.94	10.86	11.15	11.33	11.97	13.33	64"	43"	54"
71"	47"	16.9	33.8	50.7	67.6	4'-7"	1'-10"	10'-4"	2'-6"	2'-0"	6'-10"	7'-10"	7'-10"	8'-1"	9'-1"	11'-1"	7.80	10.15	10.23	10.51	11.12	12.49	12.65	13.22	14.43	14.85	15.10	15.94	17.77	71"	47"	60"

Note: Use the guidelines of General Note 8 for selecting tabular quantities.

													СС	NCRE	TE E	LLIPT	ICAL P	IPE														
		(Openin	_	a		Dimensions												Class I Concrete (CY)													
Rise	Span		(5	F)						2,									•	Numl	ber Of	Pipe A	nd Ske	w Angl	e Of Pi	ipe				Rise	Span	Equiv.
		Number Of Pipes					_	_	_	_		_			X		Single		Do	uble			Tri	iple			Quad	ruple		1		Round Pipe
		1	2	3	4	A	В		E	<i>-</i>	G	5	0°	15°	30°	45°	0°	0°	15°	30°	45°	0°	15°	30°	45°	O°	15°	30°	45°	1		
12"	18"	1.3	2.6	3.9	5.2	1'-8"	1'-2"	3'-9"	1'-10"	1'-2"	0'-3"	2'-10"	2'-10"	2'-11"	3'-3"	4'-0"	1.09	1.45	1.46	1.51	1.60	1.80	1.82	1.91	2.09	2.16	2.20	2.33	2.60	12"	18"	15"
14"	23"	1.8	3.6	5.4	7.2	1'-10"	1'-3"	4'-21/2"	1'-11"	1'-3"	81/2"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"	1.36	1.82	1.84	1.89	2.01	2.29	2.32	2.43	2.68	2.75	2.80	2.97	3.33	14"	23"	18"
19"	30"	3.3	6.6	9.9	13.2	2'-3"	1'-4"	5'-11/2"	2'-0"	1'-4"	1'-71/2"	4'-2"	4'-2"	4'-4"	4'-10"	5'-11"	1.89	2.55	2.57	2.65	2.82	3.22	3.27	3.43	3.77	3.88	3.95	4.19	4.70	19"	30"	24"
24"	38"	5.1	10.2	15.3	20.4	2'-8"	1'-5"	6'-3"	2'-1"	1'-5"	2'-9"	5'-2"	5'-2"	5'-4"	6'-0"	7'-4"	2.64	3.55	3.58	3.69	3.93	4.48	4.54	4.77	5.24	5.39	5.49	5.82	6.53	24"	38"	30"
29"	45"	7.4	14.8	22.2	29.6	3'-1"	1'-6"	7'-0"	2'-2"	1'-6"	3'-6"	6'-0"	6'-0"	6'-3"	6'-11"	8'-6"	3.32	4.48	4.52	4.66	4.96	5.64	5.72	6.00	6.60	6.80	6.92	7.34	8.24	29"	45"	36"
34"	53"	10.2	20.4	30.6	40.8	3'-6"	1'-7"	7'-111/2"	2'-3"	1'-7"	4'-5½"	7'-1"	7'-1"	7'-4"	8'-2"	10'-0"	4.24	5.76	5.81	6.00	6.39	7.29	7.40	7.76	8.55	8.81	8.97	9.52	10.70	34"	53"	42"
38"	60"	12.9	25.8	38.7	51.6	3'-10"	1'-8"	8'-9"	2'-4"	1'-8"	5'-3"	7'-11"	7'-11"	8'-2"	9'-2"	11'-2"	5.22	7.16	7.23	7.46	7.96	9.10	9.24	9.70	10.71	11.05	11.25	11.95	13.46	38"	60"	48"
43"	68"	16.6	33.2	49.8	66.4	4'-3"	1'-10"	9'-81/2"	2'-6"	1'-10"	6'-21/2"	8'-10"	8'-10"	9'-2"	10'-2"	12'-6"	6.63	9.01	9.09	9.38	10.00	11.39	11.56	12.13	13.36	13.77	14.02	14.88	16.73	43"	68"	54"
48"	76"	20.5	41.0	61.5	82.0	4'-8"	2'-1"	10'-8"	2'-9"	2'-0"	7'-2"	9'-9"	9'-9"	10'-1"	11'-3"	13'-9"	8.66	11.74	11.85	12.22	13.02	14.82	15.04	15.77	17.37	17.91	18.23	19.34	21.74	48"	76"	60"
53"	83"	24.8	49.6	74.4	99.2	5'-1"	2'-6"	11'-7"	3'-2"	2'-6"	8'-1"	10'-7"	10'-7"	10'-11"	12'-3"	15'-0"	12.50	16.98	16.98	17.67	18.83	21.47	21.78	22.86	25.18	25.97	26.44	28.06	31.55	53"	83"	66"
58"	91"	29.5	59.0	88.5	118.0	5'-6"	2'-10"	12'-6½"	3'-6"	2'-10"	9'-01/2"	11'-4"	11'-4"	11'-9"	13'-1"	16'-0"	16.46	22.26	22.46	23.16	24.66	28.05	28.46	29.85	32.85	33.85	34.46	36.55	41.05	58"	91"	72"
																																i

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LAST O DESCRIPTION:
REVISION 11/01/17

STRAIGHT CONCRETE ENDWALLS SINGLE AND MULTIPLE PIPE

430-030

INDEX

_{SHEET} 2 of 2

AIM Engineering & Surveying, Inc.

CIVIL ENGINEERING * LAND SURVEYING * S.U.E. * TRANSPORTATION * UTILITIES
* PROJECT MANAGEMENT * CONSTRUCTION ENGINEERING & MANAGEMENT
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EMAIL: ENGINEERING@AIMENGR.COM * CERTIFICATE OF AUTHORIZATION NO. 3114

PUBLIC WORKS DEPARTMENT

VILLAGE OF ESTERO

9401 CORKSCREW PALMS CIR.
ESTERO FL., 33928

DATE:
OCTOBER, 2019
DRAWN BY:
JW
DANIEL SCHROEDER
PROFESSIONAL ENGINEER
P.E. No. 78646

TRAILSIDE DRIVE AND POINCIANA AVENUE RESURFACING/REBUILD PROJECT ENDWALL DETAIL

PROJECT NO.
19-0872
SHEET NO.:
15

Jeffery Bozic

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