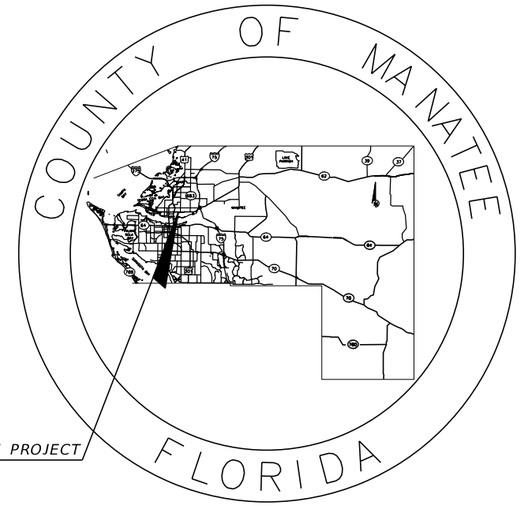
MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

CONTRACT PLANS

MANATEE COUNTY
PROJECT NUMBER 6094360
CANAL ROAD (16TH AVENUE EAST)
SEGMENT 1 - US 301 TO 17TH STREET EAST



CONTRACT PLANS COMPONENTS

ROADWAY PLANS
SIGNALIZATION PLANS
SIGNING AND PAVEMENT MARKING PLANS
LIGHTING PLANS
UTILITY RELOCATION PLANS

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TW-2 - TW-7	TEMPORARY CRITICAL WALL TCW1
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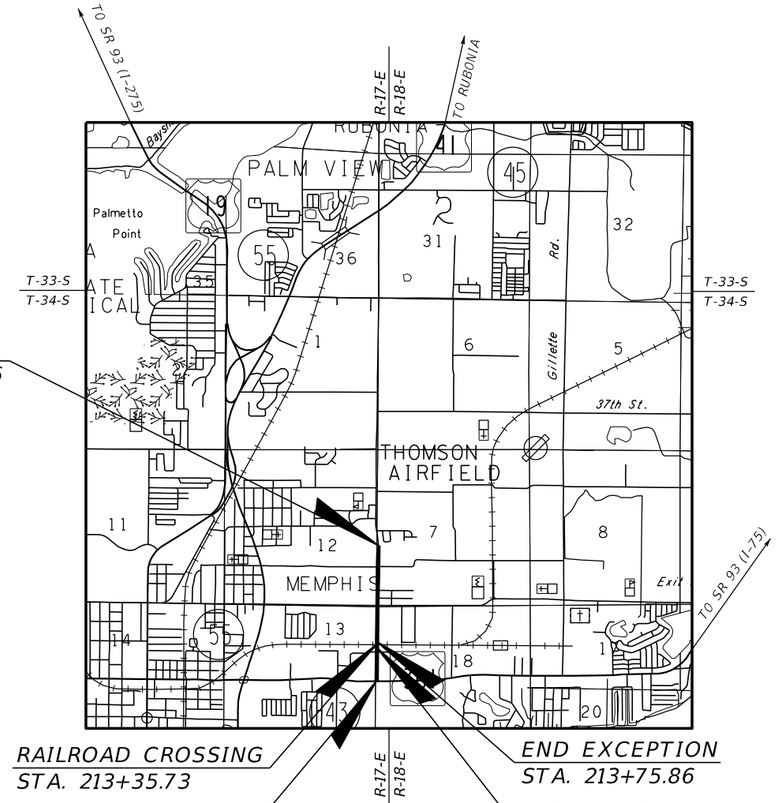
TW-12 - TW-15	TEMPORARY WALL TW4
TW-16 - TW-18	TEMPORARY WALL TW5 & TW6

* This sheet is included for information only.

** This sheet is included in the Index of Roadway Plans only to indicate that it is part of the Roadway Plans. This sheet is contained in a separate digitally signed and sealed document.



90% SUBMITTAL
12/2021

GOVERNING STANDARD PLANS:

Florida Department of Transportation, FY2022-23 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

APPLICABLE IRs:

Standard Plans for Bridge Construction are included in the Structures Plans Component

GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, January 2022 Standard Specifications for Road and Bridge Construction at the following website: http://www.fdot.gov/programmanagement/Implemented/SpecBooks

KEY SHEET REVISIONS	
DATE	DESCRIPTION

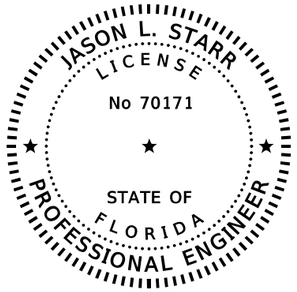
ROADWAY PLANS
ENGINEER OF RECORD:
JASON L. STARR, P.E.
P.E. NO.: 70171
HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232
VENDOR NO. 47-0680568
CONTRACT NO.: 15-0909JE

MANATEE CO. PROJECT MANAGER:
MICHAEL L. STURM, P.E.

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

FISCAL YEAR	SHEET NO.
22	1

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



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HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232-6212
JASON L. STARR, PE NO. 70171

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

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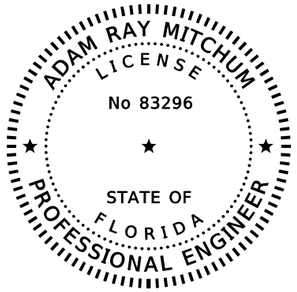

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HDR ENGINEERING, INC.
4830 W. KENNEDY BLVD., SUITE 400
TAMPA, FL 33609-2548
ADAM RAY MITCHUM, P.E. NO. 83296

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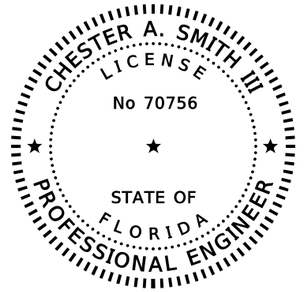

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HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232-6212
CHESTER A. SMITH, PE NO. 70756

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

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TW-10 - TW-11	TEMPORARY WALL TW3
TW-12 - TW-15	TEMPORARY WALL TW4
TW-16 - TW-18	TEMPORARY WALL TW5 & TW6

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

SIGNATURE SHEET

SHEET NO.: 2

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ROADWAY PLANS			
ITEM NO.	ITEM	UNIT	QUANTITY
101-1	MOBILIZATION	LS	1
102-1	MAINTENANCE OF TRAFFIC	LS	1
104-10-3	SEDIMENT BARRIER	LF	11000
104-15	SOIL TRACKING PREVENTION DEVICE	EA	2
104-18	INLET PROTECTION SYSTEM	EA	66
110-1-1	CLEARING AND GRUBBING (17.5 AC)	LS	1
110-4-10	REMOVAL OF EXISTING CONCRETE	SY	3850
120-1	REGULAR EXCAVATION	CY	82049
120-6	EMBANKMENT	CY	66942
160-4	TYPE B STABILIZATION	SY	35245
285-701	OPTIONAL BASE (BASE GROUP 01)	SY	234
285-709	OPTIONAL BASE (BASE GROUP 09)	SY	35915
327-70-6	MILLING EXISTING ASPHALT PAVEMENT, 1 1/2" AVG DEPTH	SY	5073
334-1-13	SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC C	TN	5105
337-7-83	ASPHALT FRICTION COURSE, TRAFFIC C, FC-12.5, PG 76-22	TN	2972
400-0-11	CONCRETE CLASS NS, GRAVITY WALL	CY	84.0
400-2-10	CONCRETE CLASS II, BRIDGE APPROACH SLABS	CY	178.1
400-4-1	CONCRETE CLASS IV, CULVERTS	CY	2929.9
415-1-1	REINFORCING STEEL - ROADWAY	LB	581159
415-1-9	REINFORCING STEEL - APPROACH SLABS	LB	38658
425-1-201	INLETS, CURB, TYPE 9, <10'	EA	1
425-1-311	INLETS, CURB, TYPE P-1, <10'	EA	1
425-1-315	INLETS, CURB, TYPE P-1, PARTIAL	EA	4
425-1-325	INLETS, CURB, TYPE P-2, PARTIAL	EA	1
425-1-331	INLETS, CURB, TYPE P-3, <10'	EA	1
425-1-351	INLETS, CURB, TYPE P-5, <10'	EA	20
425-1-361	INLETS, CURB, TYPE P-6, <10'	EA	3
425-1-451	INLETS, CURB, TYPE J-5, <10'	EA	4
425-1-461	INLETS, CURB, TYPE J-6, <10'	EA	2
425-1-515	INLETS, DT BOT, TYPE B, PARTIAL	EA	1
425-1-541	INLETS, DT BOT, TYPE D, <10'	EA	9
425-1-549	INLETS, DT BOT, TYPE D, MODIFY	EA	2
425-2-43	MANHOLES, P-7, PARTIAL	EA	7
425-2-61	MANHOLES, P-8, <10'	EA	1
425-2-71	MANHOLES, J-7, <10'	EA	2
425-2-91	MANHOLES, J-8, <10'	EA	1
430-175-115	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 15"S/CD	LF	23
430-175-118	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 18"S/CD	LF	3691
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24"S/CD	LF	591
430-175-130	PIPE CULVERT, OPT MATERIAL, ROUND, 30"S/CD	LF	567
430-175-136	PIPE CULVERT, OPT MATERIAL, ROUND, 36"S/CD	LF	136
430-175-142	PIPE CULVERT, OPT MATERIAL, ROUND, 42"S/CD	LF	7
430-175-218	PIPE CULVERT, OPTIONAL MATERIAL, OTHER-ELIP/ARCH, 18"S/CD	LF	193
430 175 224	PIPE CULVERT, OPTIONAL MATERILA, OTHER SHAPE-ELIP/ARCH, 24"S/CD	LF	102
430-536-100	STRAIGHT CONCRETE ENDWALLS, 36", SINGLE, 0 DEGREES, ROUND	EA	1
430-982-123	MITERED END SECTION, OPTIONAL ROUND, 15" CD	EA	1
430-982-125	MITERED END SECTION, OPTIONAL ROUND, 18" CD	EA	1
430-982-625	MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 18" CD	EA	1
430-982-629	MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 24" CD	EA	1
440-73-3	UNDERDRAIN OUTLET PIPE, 8"	LF	4
455-35-15	STEEL PILING, HP 16 X 183 [TCW1]	LF	5621
455-35-15	STEEL PILING, HP 16 X 183 [TW1 - TW6]	LF	11381
470-1	TREATED STRUCTURAL TIMBER [TCW1]	MB	46.1
470-1	TREATED STRUCTURAL TIMBER [TW1 - TW6]	MB	109.8
MC-R01	LINER IMPERMEABLE PVC	SY	15000
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	LF	261
520-1-10	CONCRETE CURB & GUTTER, TYPE F	LF	7877
520-2-4	CONCRETE CURB & GUTTER, TYPE D	LF	138
MC-R02	CONCRETE CURB & GUTTER, TYPE AB	LF	6341
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4615
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	740
527-2	DETECTABLE WARNINGS	SF	430
536-73	GUARDRAIL REMOVAL	LF	2525
570-1-2	PERFORMANCE TURF (SOD)	SY	67500

SIGNALIZATION PLANS			
ITEM NO.	ITEM	UNIT	QUANTITY
630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	5101
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	1100
632-7-1	SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION, FURNISH & INSTALL	PI	2
633-1-121	FIBER OPTIC CABLE, F&I, UNDERGROUND,2-12 FIBERS	LF	835
633-1-123	FIBER OPTIC CABLE, F&I, UNDERGROUND,49-96 FIBERS	LF	200
633-1-420	FIBER OPTIC CABLE, RELOCATE, UNDERGROUND	LF	2386
633-2-31	FIBER OPTIC CONNECTION, INSTALL, SPLICE	EA	20
633-3-11	FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE ENCLOSURE	EA	2
633-3-12	FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE TRAY	EA	2
633-3-15	FIBER OPTIC CONNECTION HARDWARE, F&I, PRETERMINATED PATCH PANEL	EA	2
635-2-11	PULL & SPLICE BOX, F&I, 17" x 30" COVER SIZE	EA	32
635-2-12	PULL & SPLICE BOX, F&I, 24" x 36" COVER SIZE	EA	9
635-2-13	PULL & SPLICE BOX, F&I, 30" X 60" RECTANGULAR OR 36" ROUND COVER SIZE	EA	3
639-1-122	ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER PURCHASED BY CONTRACTOR	AS	2
639-1-620	ELECTRICAL POWER SERVICE, REMOVE UNDERGROUND	AS	1
639-2-1	ELECTRICAL SERVICE WIRE, FURNISH & INSTALL	LF	130
639-4-6	EMERGENCY GENERATOR - PORTABLE, INSTALL HOUSING ONLY	EA	2
641-2-12	PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE	EA	2
641-2-60	PRESTRESSED CONCRETE POLE, COMPLETE POLE REMOVAL- PEDESTAL/SERVICE POLE	EA	1
646-1-11	ALUMINUM SIGNALS POLE, FURNISH & INSTALL PEDESTAL	EA	14
646-1-60	ALUMINUM SIGNALS POLE, REMOVE	EA	4
649-21-3	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 40'	EA	1
649-21-6	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 50'	EA	3
649-21-10	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 60'	EA	1
649-21-15	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 70'	EA	1
649-21-18	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, DOUBLE ARM 70'-50'	EA	1
649-26-5	STEEL MAST ARM ASSEMBLY, REMOVE, DEEP FOUNDATION- BOLT ON ATTACHMENT	EA	4
650-1-14	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY	AS	16
650-1-16	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 4 SECTION, 1 WAY	AS	10
650-1-19	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 5 SECTION CLUSTER, 1 WAY	AS	5
653-1-11	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY	AS	14
660-3-11	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL CABINET EQUIPMENT	EA	2
660-3-12	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA	12
660-6-121	VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, CABINET EQUIPMENT	EA	2
660-6-122	VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA	2
665-1-11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD	EA	14
670-5-111	TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA, 1 PREEMPTION	AS	2
670-5-600	TRAFFIC CONTROLLER ASSEMBLY, REMOVE CONTROLLER WITH CABINET	AS	1
682-1-113	ITS CCTV CAMERA, F&I, DOME PTZ ENCLOSURE - PRESSURIZED, IP, HIGH DEFINITION	EA	2
684-1-1	MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL	EA	2
685-1-12	UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, ONLINE/DOUBLE CONVERSION	EA	2
700-3-201	SIGN PANEL, FURNISH & INSTALL OVERHEAD MOUNT, UP TO 12 SF	EA	10
700-5-22	INTERNALLY ILLUMINATED SIGN, FURNISH & INSTALL, OVERHEAD MOUNT, 12-18 SF	EA	8
700-11-391	ELECTRONIC DISPLAY SIGN, FURNISH & INSTALL OVERHEAD MOUNT- AC POWERED, BLANK OUT SIGN, UP TO 12 SF	AS	5

LIGHTING PLANS			
ITEM NO.	ITEM	UNIT	QUANTITY
630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	25500
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	11000
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	215
639-1-122	ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER PURCHASED BY CONTRACTOR	AS	2
715-1-13	LIGHTING CONDUCTORS, F&I, INSULATED, NO 4 TO NO 2	LF	124788
715-4-13	LIGHT POLE COMPLETE, FURNISH & INSTALL STANDARD POLE STANDARD FOUNDATION, 40' MOUNTING HEIGHT	EA	207
715-7-11	LOAD CENTER, F&I, SECONDARY VOLTAGE	EA	2
715-500-1	POLE CABLE DISTRIBUTION SYSTEM, CONVENTIONAL	EA	207

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

SUMMARY OF PAY ITEMS (1)

SHEET NO.: 3

SIGNING & PAVEMENT MARKING PLANS			
ITEM NO.	ITEM	UNIT	QUANTITY
700-1-11	SINGLE POST SIGN, F&I GROUND MOUNT, UP TO 12 SF	AS	38
700-1-12	SINGLE POST SIGN, F&I GROUND MOUNT, 12-20 SF	AS	5
700-1-50	SINGLE POST SIGN, RELOCATE	AS	1
700-1-74	SINGLE POST SIGN, F&I CUSTOM, 31+ SF	AS	3
700-2-15	MULTI- POST SIGN, F&I GROUND MOUNT, 51-100 SF	AS	2
704-1-2	TUBULAR MARKER, DURABLE, 36" YELLOW POST	EA	8
705-10-1	OBJECT MARKER, TYPE 1	EA	7
706-1-1	RETRO-REFLECTIVE PAVEMENT MARKERS	EA	647
710-11-290	PAINTED PAVEMENT MARKINGS, STANDARD, YELLOW, ISLAND NOSE	SF	85
710-90	PAINTED PAVEMENT MARKINGS, FINAL SURFACE	LS	1
711-11-123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK AND ROUNDABOUT	LF	2644
711-11-124	THERMOPLASTIC, STANDARD, WHITE, SOLID, 18" FOR DIAGONAL OR CHEVRON	LF	35
711-11-125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE	LF	685
711-11-141	THERMOPLASTIC, STANDARD, WHITE, 2-4 DOTTED GUIDELINE/ 6-10 GAP EXTENSION, 6"	GM	0.119
711-11-160	THERMOPLASTIC, STANDARD, WHITE, MESSAGE OR SYMBOL	EA	8
711-11-170	THERMOPLASTIC, STANDARD, WHITE, ARROW	EA	29
711-11-224	THERMOPLASTIC, STANDARD, YELLOW, SOLID, 18" FOR DIAGONAL OR CHEVRON	LF	1382
711-11-241	THERMOPLASTIC, STANDARD, YELLOW, 2-4 DOTTED GUIDE LINE /6-10 DOTTED EXTENSION LINE, 6"	GM	0.228
711-14-125	THERMOPLASTIC, PREFORMED, WHITE, SOLID, 24" FOR CROSSWALK	LF	968
711-14-160	THERMOPLASTIC, PREFORMED, WHITE, MESSAGE	EA	19
711-14-170	THERMOPLASTIC, PREFORMED, WHITE, ARROW	EA	17
711-16-101	THERMOPLASTIC, STANDARD-OTHER SURFACES, WHITE, SOLID, 6"	GM	2.104
711-16-131	THERMOPLASTIC, STANDARD-OTHER SURFACES, WHITE, SKIP, 6",10-30 SKIP OR 3-9 LANE DROP	GM	1.116
711-16-201	THERMOPLASTIC, STANDARD-OTHER SURFACES, YELLOW, SOLID, 6"	GM	1.892

UTILITY RELOCATION PLANS			
ITEM NO.	ITEM	UNIT	QUANTITY
MC-01-01	MOBILIZATION, POTABLE WATER	LS	1
MC-01-02	6" DUCTILE IRON PIPE (RESTRAINED JOINT), POTABLE WATER	LF	170
MC-01-03	8" DUCTILE IRON PIPE (RESTRAINED JOINT), POTABLE WATER	LF	389
MC-01-04	10" DUCTILE IRON PIPE (RESTRAINED JOINT), POTABLE WATER	LF	3973
MC-01-05	12" DUCTILE IRON PIPE (RESTRAINED JOINT), POTABLE WATER	LF	41
MC-01-06	20" STEEL CASING, POTABLE WATER	LF	156
MC-01-07	REMOVE 6" PIPE, POTABLE WATER	LF	218
MC-01-08	REMOVE 8" PIPE, POTABLE WATER	LF	281
MC-01-09	REMOVE 10" PIPE, POTABLE WATER	LF	4012
MC-01-10	REMOVE 12" PIPE, POTABLE WATER	LF	41
MC-01-11	6" DUCTILE IRON ELBOW (RESTRAINED JOINT), POTABLE WATER	EA	10
MC-01-12	8" DUCTILE IRON ELBOW (RESTRAINED JOINT), POTABLE WATER	EA	20
MC-01-13	10" DUCTILE IRON ELBOW (RESTRAINED JOINT), POTABLE WATER	EA	26
MC-01-14	12" DUCTILE IRON ELBOW (RESTRAINED JOINT), POTABLE WATER	EA	4
MC-01-15	6" DUCTILE IRON UNION (RESTRAINED JOINT), POTABLE WATER	EA	4
MC-01-16	8" DUCTILE IRON UNION (RESTRAINED JOINT), POTABLE WATER	EA	4
MC-01-17	10" DUCTILE IRON UNION (RESTRAINED JOINT), POTABLE WATER	EA	2
MC-01-18	12" DUCTILE IRON UNION (RESTRAINED JOINT), POTABLE WATER	EA	1
MC-01-19	6" GATE VALVE (RESTRAINED JOINT), POTABLE WATER	EA	8
MC-01-20	8" GATE VALVE (RESTRAINED JOINT), POTABLE WATER	EA	6
MC-01-21	10" GATE VALVE (RESTRAINED JOINT), POTABLE WATER	EA	10
MC-01-22	12" GATE VALVE (RESTRAINED JOINT), POTABLE WATER	EA	1
MC-01-23	8" X 6" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA	1
MC-01-24	10" X 6" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA	7
MC-01-25	10" X 8" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA	4
MC-01-26	10" X 10" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA	1
MC-01-27	12" X 6" DUCTILE IRON TEE (RESTRAINED JOINT), POTABLE WATER	EA	1
MC-01-28	12" X 10" DUCTILE IRON REDUCER (RESTRAINED JOINT), POTABLE WATER	EA	1
MC-01-29	SAMPLE POINT, 6", POTABLE WATER	EA	4
MC-01-30	SAMPLE POINT, 8", POTABLE WATER	EA	4
MC-01-31	SAMPLE POINT, 10", POTABLE WATER	EA	2
MC-01-32	SAMPLE POINT, 12", POTABLE WATER	EA	1
MC-01-33	FIRE HYDRANT ASSEMBLY RELOCATION, POTABLE WATER	EA	4
MC-01-34	BLOWOFF REMOVAL, POTABLE WATER	EA	1
MC-01-35	METER / BACKFLOW PREVENTER RELOCATION, POTABLE WATER	EA	7
MC-01-36	METER / BACKFLOW TO REMAIN/CONNECT TO PROP. WM, POTABLE WATER	EA	4
MC-01-37	RECORD DRAWINGS, POTABLE WATER	LS	1
MC-02-01	MOBILIZATION, WASTEWATER	LS	1
MC-02-02	MANHOLE (ADJ.)	EA	5
MC-02-03	VALVE (ADJ./MODIFY)	EA	1
MC-02-04	SEWER SERVICE (REPLACE/ADJ.)	EA	2

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

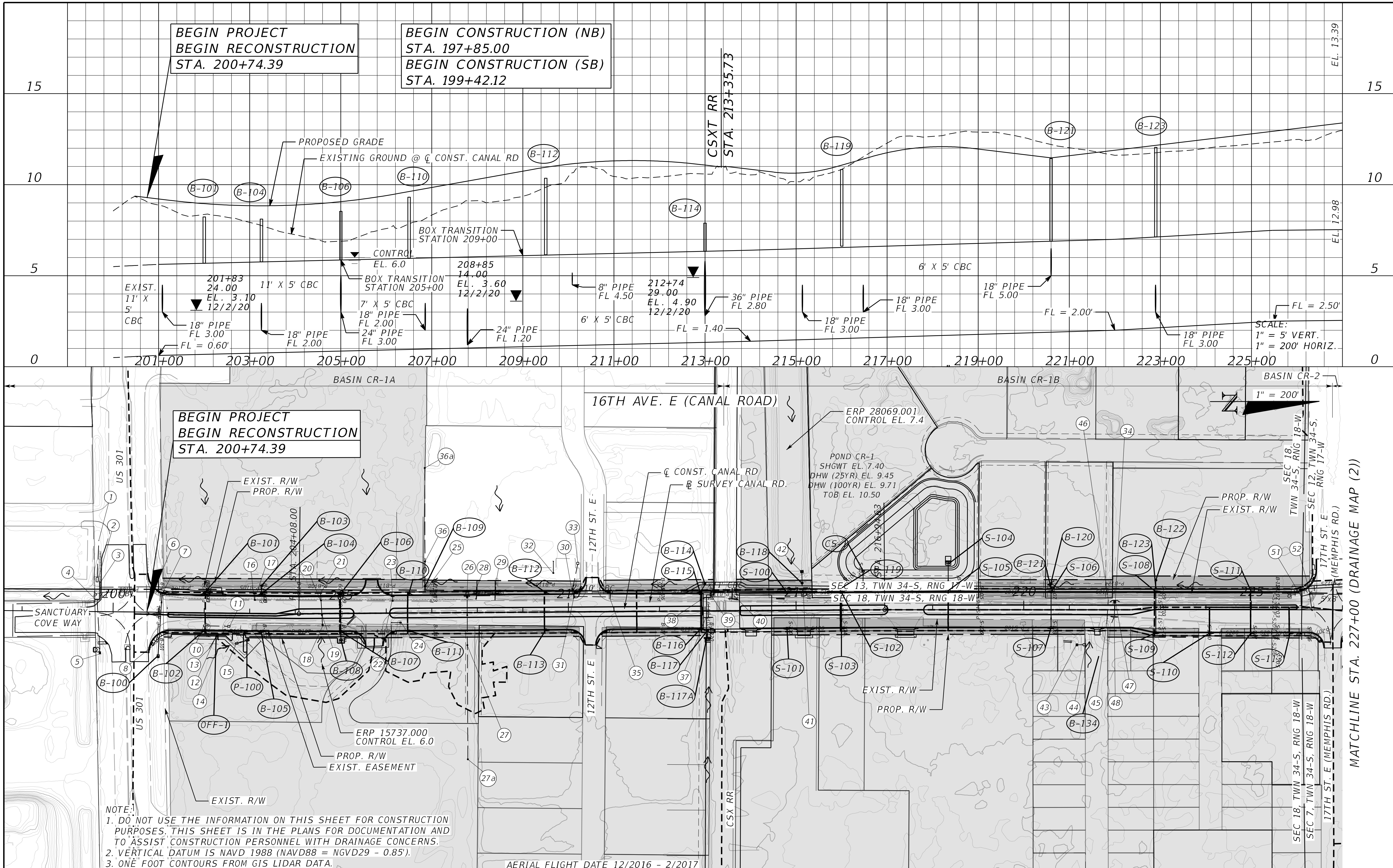
DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

SUMMARY OF PAY ITEMS (2)

SHEET NO.: 4


BEGIN PROJECT
BEGIN RECONSTRUCTION
STA. 200+74.39
BEGIN CONSTRUCTION (NB)
STA. 197+85.00
BEGIN CONSTRUCTION (SB)
STA. 199+42.12
CSXT RR
STA. 213+35.73
EL. 13.39
EL. 12.98
PROPOSED GRADE
EXISTING GROUND @ ℄ CONST. CANAL RD
BOX TRANSITION
STATION 209+00
CONTROL
EL. 6.0
BOX TRANSITION
STATION 205+00
6' X 5' CBC
11' X 5' CBC
7' X 5' CBC
EXIST.
11' X
5'
CBC
201+83
24.00
EL. 3.10
12/2/20
208+85
14.00
EL. 3.60
12/2/20
212+74
29.00
EL. 4.90
12/2/20
18" PIPE
FL 3.00
18" PIPE
FL 2.00
18" PIPE
FL 2.00
24" PIPE
FL 3.00
24" PIPE
FL 1.20
8" PIPE
FL 4.50
36" PIPE
FL 2.80
18" PIPE
FL 3.00
18" PIPE
FL 3.00
18" PIPE
FL 5.00
18" PIPE
FL 3.00
FL = 0.60'
FL = 1.40
FL = 2.00'
FL = 2.50'
SCALE:
1" = 5' VERT.
1" = 200' HORIZ.
201+00
203+00
205+00
207+00
209+00
211+00
213+00
215+00
217+00
219+00
221+00
223+00
225+00
BASIN CR-1A
BASIN CR-1B
BASIN CR-2
16TH AVE. E (CANAL ROAD)
1" = 200'
ERP 28069.001
CONTROL EL. 7.4
POND CR-1
SHGWT EL. 7.40
DHW (25YR) EL. 9.45
DHW (100YR) EL. 9.71
TOB EL. 10.50
℄ CONST. CANAL RD
℗ SURVEY CANAL RD.
EXIST. R/W
PROP. R/W
US 301
12TH ST. E
SANCTUARY
COVE WAY
SEC 13, TWN 34-S, RNG 17-W
SEC 18, TWN 34-S, RNG 18-W
SEC 18, TWN 34-S, RNG 18-W
SEC 12, TWN 34-S, RNG 17-W
17TH ST. E (MEMPHIS RD.)
SEC 7, TWN 34-S, RNG 18-W
MATCHLINE STA. 227+00 (DRAINAGE MAP (2))
ERP 15737.000
CONTROL EL. 6.0
EXIST. EASEMENT
CSX RR
OFF-1
P-100
AERIAL FLIGHT DATE 12/2016 - 2/2017

NOTE:
1. DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. THIS SHEET IS IN THE PLANS FOR DOCUMENTATION AND TO ASSIST CONSTRUCTION PERSONNEL WITH DRAINAGE CONCERNS.
2. VERTICAL DATUM IS NAVD 1988 (NAVD88 = NGVD29 - 0.85').
3. ONE FOOT CONTOURS FROM GIS LIDAR DATA.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO. 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO. 83296

DRAINAGE MAP (1)

SHEET NO. 5

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

3:29:06 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\DRMPRD03.DGN.dgn

END RECONSTRUCTION
BEGIN WIDENING
STA. 240+26.47

END PROJECT
END WIDENING
STA. 244+52.56

END CONSTRUCTION (NB & SB)
STA. 245+85.00

PROPOSED GRADE

EXISTING GROUND @ ℄ CONST. CANAL RD

B-124 B-126 B-128 B-131 B-133

DBL 60" RCP

DBL 14"X23" PIPE
FL 9.00

227+71
46.00
EL. 6.70
12/2/20

6' X 5' CBC

233+80
47.00
EL. 8.80
12/2/20

6' X 5' CBC

18" PIPE
FL 7.00

24" PIPE
FL 7.50

239+78
38.00
EL. 6.80
12/2/20

14"X23" PIPE
FL 8.50

6' X 5' CBC

18" PIPE
FL 8.40

42" PIPE
FL 5.60

243+77
37.00
EL 5.40
12/2/20

18" PIPE
FL 5.50

18" PIPE
FL 5.20

36" PIPE
FL 4.00

FL = 2.60'

FL = 2.70'

FL = 4.50'

FL = 4.80'

FL = 5.50'

FL = 8.65'

FL = 8.32'

FL 9.13

EL. 13.39

EL. 12.98

EL. 15.32

SCALE:
1" = 5' VERT.
1" = 200' HORIZ.

229+00 231+00 233+00 235+00 237+00 239+00 241+00 243+00 245+00 247+00 249+00 251+00 253+00

MATCHLINE STA. 227+00 (DRAINAGE MAP (1))

BASIN CR-2

16TH AVE. E (CANAL ROAD)

POND CR-2
CONTROL EL. 9.00
DHW (25YR) EL. 10.54
DHW (100YR) EL. 10.83
TOB EL. 11.00

EXIST. R/W
PROP. R/W

21ST ST. E

21ST ST. CT. E

20TH ST. E

18TH ST. E

CRESTWOOD DR

ERP 27352.000
CONTROL EL. 8.2

ERP 44028096.000
PALMETTO ESTATES
NWL = 11.58
DHW 25YR 14.00

BASIN CR-3

1" = 200'

22ND LANE E

24TH ST. E

STA. 238+68.07

STA. 245+50.85

STA. 250+50.85

STA. 251+63.63

S-200 S-201 S-202 S-203 S-204 S-205 S-206 S-206A S-207 S-208 S-209 S-210 S-211 S-212 CS-2

SEC 12, TWN 34-S, RNG 17-W

SEC 7, TWN 34-S, RNG 18-W

END RECONSTRUCTION
BEGIN WIDENING
STA. 240+26.47

END CONSTRUCTION (NB & SB)
STA. 245+85.00

END PROJECT
STA. 244+52.56

NOTE:
1. DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. THIS SHEET IS IN THE PLANS FOR DOCUMENTATION AND TO ASSIST CONSTRUCTION PERSONNEL WITH DRAINAGE CONCERNS.
2. VERTICAL DATUM IS NAVD 1988 (NAVD88 = NGVD29 - 0.85').
3. ONE FOOT CONTOURS FROM GIS LIDAR DATA.

AERIAL FLIGHT DATE 12/2016 - 2/2017

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

DRAINAGE MAP (2)

SHEET NO.: 6

3:29:11 PM 12/11/2021

PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\DRMPRD03.DGN.dgn

2.1

STORM ASBUILTS

1 INV 18"RCP (E)=3.65'

2 MITERED END SECTION
INV 18"RCP (W)=3.47'

3 HEADWALL
INV 5'x11' BOX CULVERT (N)=0.46'

4 HEADWALL
INV 18"RCP (E)=4.08'

5 CONTROL STRUCTURE
GRATE INLET EL=7.36'
INV 18"RCP (W)=4.31'
INV WEIR (N)=6.16'

6 HEADWALL
INV 5'x11' BOX CULVERT (S)=0.62'

7 HEADWALL
INV 18"RCP (E)=4.66'

8 MITERED END SECTION
INV 18"RCP (W)=4.60'

9 INTENTIONALLY LEFT BLANK

10 MITERED END SECTION
INV 12"x18"ERCP (N)=6.50'

11 MITERED END SECTION
INV 12"x18"ERCP (S)=6.17'

12 GRATE INLET
TOP EL=8.20'
INV 18"RCP (SW)=5.40'

13 INV 18"RCP (NW)=5.04'

14 INV 15"RCP (N)=5.97'

15 MITERED END SECTION
INV 15"RCP (S)=5.91'

16 CURB INLET
GRATE EL=7.36'
INV 15"RCP (W)=1.27'

17 HEADWALL
INV 15"RCP (E)=0.86'

18 CONTROL STRUCTURE
GRATE EL=5.87'
INV 12"x18"ERCP (W)=1.79'
INV 5"x11" BOX CUT (E)=3.43'
INV WEIR (E)=4.96'

19 STORM MANHOLE
NRIM EL=6.53'
INV 18"RCP (E)=1.87'
INV 18"RCP (W)=1.88'

20 CURB INLET
GRATE EL=6.30'
INV 18"RCP (E)=1.62'
INV 18"RCP (W)=1.61'

21 INV 18"RCP (E)=1.38'

22 CURB INLET
GRATE EL=7.15'
INV 15"RCP (W)=1.07'

23 HEADWALL
INV 15"RCP (E)=0.91'

24 GRATE INLET
INV 12"x18"ERCP (S)=2.07'
(PIPE DESTINATION UNKN)

25 HEADWALL
INV 12"PVC (W)=2.22'

26 HEADWALL
INV 24"RCP (E)=1.34'

27 STORM MANHOLE
NRIM EL=7.75'
INV 24"RCP (W)=1.35'

27a STORM MANHOLE
NRIM EL=UNKNOWN'
INV 24"RCP=UNKNOWN

28 HEADWALL
INV 6'x10' BOX CULVERT (N)=1.65'

29 HEADWALL
INV 6'x10' BOX CULVERT (S)=1.55'

30 INV 8"PVC (W)=4.57'

31 HEADWALL
INV 7'x10' BOX CULVERT (N)=1.33'

32 GRATE INLET
INV 4"PVC (W)=7.19'

33 CONTROL STRUCTURE
INV 8"PVC (E)=5.05'
W 4'x0.4' WEIR CUT INV=6.79'

34 HEADWALL
INV 24"RCP (E)=3.84'

35 HEADWALL
INV 7'x10' BOX CULVERT (S)=2.30'

36 STORM MANHOLE
NRIM EL=6.34'
INV 12"PVC (E)=2.64'

36a STORM MANHOLE
NRIM EL=UNKNOWN
INV 12"PVC =UNKNOWN

37 HEADWALL
INV 36"RCP (W)=3.21'

38 HEADWALL
INV 36"RCP (E)=2.71'

39 HEADWALL
INV 5'x12' BOX CULVERT (N)=2.62'

40 HEADWALL
INV 5'x12' BOX CULVERT (S)=2.68'

41 MITERED END SECTION
INV 18"ADS (W)=3.15'

42 CONTROL STRUCTURE
GRATE EL=9.67'
INV 18"ADS (E)=3.30'
INV WEIR (W)=7.51'

43 CONTROL STRUCTURE
GRATE EL=10.09'
INV 18"ADS (N)=7.63'
INV WEIR (S)=9.13'

44 MITERED END SECTION
INV 18"ADS (S)=7.56'

45 INV 15"RCP (W)=4.62'

46 INV 15"RCP (E)=3.67'

47 STORM MANHOLE (CURB INLET)
NRIM EL=11.80'
INV 24"RCP (E)=3.88'
INV 24"RCP (W)=3.84'

48 CURB INLET
EP EL=11.24'
INV 24"RCP (W)=3.99'
INV 8"PVC (SE)=6.34'

49 MITERED END SECTION
INV 12"x18"ERCP (E)=10.78'

50 INV 12"x18"ERCP (W)=10.62'

51 HEADWALL
INV 84"RCP (N)=4.14'

52 BOX CULVERT
INV 5'x8' BOX CULVERT (N)=4.18'
INV 30"RCP (E)=4.78'
INV 84"RCP (S)=4.05'

53 STORM MANHOLE
NRIM EL=13.75'
INV 84"RCP (N)=4.32'
INV 24"RCP (E)=4.48'
INV 5'x8' BOX CULVERT (S)=4.61'

54 HEADWALL
INV 84"RCP (S)=4.95'

55 STORM MANHOLE
NRIM EL=14.02'
INV 24"RCP (NE)=5.29'
INV 18"RCP (E)=4.63'
INV 24"RCP (W)=4.74'

56 CURB INLET
GRATE EL=13.77'
INV 24"RCP (SW)=5.66'

57 CURB INLET
GRATE EL=13.18'
INV 18"RCP (W)=4.93'

58 MITERED END SECTION
INV 18"RCP (E)=6.78'

59 CONTROL STRUCTURE
GRATE INLET=11.57'
INV 18"RCP (W)=8.27'
INV 12"PVC (SE)=10.38'

60 MITERED END SECTION
INV 12"PVC (NW)=10.76'

61 MITERED END SECTION
INV 12"x18"ERCP (E)=10.80'

62 END OF PIPE
INV 6"PVC (E)=11.80'

63 END OF PIPE
INV 6"PVC (W)=11.65'

64 MITERED END SECTION
INV 12"x18"ERCP (W)=10.70'

65 MITERED END SECTION
INV 12"x18"ERCP (S)=10.73'

66 MITERED END SECTION
INV 12"x18"ERCP (N)=10.98'

67 MITERED END SECTION
INV 12"x18"ERCP (W)=10.90'

68 MITERED END SECTION
INV 12"x18"ERCP (E)=11.03'

69 MITERED END SECTION
INV 18"RCP (E)=5.23'

70 CONTROL STRUCTURE
GRATE INLET=11.95'
INV 18"RCP (W)=6.98'

71 MITERED END SECTION
INV 12"x18"ERCP (E)=11.09'

72 MITERED END SECTION
INV 12"x18"ERCP (W)=11.17'

73 MITERED END SECTION
INV 12"x18"ERCP (W)=10.99'

74 MITERED END SECTION
INV 12"x18"ERCP (E)=10.37'

75 MITERED END SECTION
INV 36"RCP (W)=5.93'

76 MITERED END SECTION
INV 36"RCP (E)=5.72'

77 MITERED END SECTION
INV W 48"RCP (N)=7.45'
INV E 48"RCP (N)=7.40'

78 STORM MANHOLE
NRIM EL=16.36'
INV 48"RCP (N)=7.27'
INV 48"RCP (S)=7.40'
INV 24"RCP (W)=7.52'

79 STORM MANHOLE
NRIM EL=16.01'
INV 48"RCP (N)=7.35'
INV 48"RCP (S)=7.43'
INV 18"RCP (W)=8.47'

80 CONTROL STRUCTURE
GRATE INLET EL=
INV 24"RCP (E)=9.00'

81 CONTROL STRUCTURE
GRATE INLET EL=
INV 18"RCP (E)=9.15'

82 MITERED END SECTION
INV W 48"RCP (S)=7.34'
INV E 48"RCP (S)=7.41'

83 HEADWALL
INV 42"ADS (W)=8.38'

84 STORM MANHOLE
NRIM EL=15.55'
INV 42"ADS (E)=8.62'

84a STORM MANHOLE
NRIM EL=UNKNOWN
INV 42"ADS =UNKNOWN

85 MITERED END SECTION
INV 24"RCP (E)=9.63'

86 MITERED END SECTION
INV 24"RCP (W)=11.30'

87 MITERED END SECTION
INV W 60"RCP (N)=8.30'
INV E 60"RCP (N)=8.34'

88 MITERED END SECTION
INV W 60"RCP (S)=8.65'
INV E 60"RCP (S)=8.64'

89 STORM MANHOLE
NRIM EL=14.69'
INV 15"RCP (W)=9.11'

90 HEADWALL
INV 15"RCP (E)=8.46'

91 END OF PIPE
INV 18"RCP (E)=6.69'

92 MITERED END SECTION
INV 18"RCP (W)=7.81'

93 CONTROL STRUCTURE
GRATE INLET EL=12.72'
INV 15"RCP (E)=10.23'

94 STORM MANHOLE
NRIM EL=15.34'
INV 15"RCP (W)=10.16'

95 MITERED END SECTION
INV W 48"RCP (N)=8.10'
INV E 48"RCP (N)=8.06'

96 STORM MANHOLE
NRIM EL=14.38'
INV W 38"x60"ERCP (N)=8.73'
INV E 38"x60"ERCP (N)=8.70'
INV W 48"RCP (S)=8.54'
INV E 48"RCP (S)=8.41'
INV 42"RCP (W)=8.51'

97 MITERED END SECTION
INV 42"RCP (E)=9.13'

98 CONTROL STRUCTURE
STORM MANHOLE NRIM EL=13.89'
INV W 38"x60"ERCP (N)=8.85'
INV E 38"x60"ERCP (N)=8.85'
INV W 38"x60"ERCP (S)=8.81'
INV E 38"x60"ERCP (S)=8.75'
INV 24"RCP (E)=9.01'

99 HEADWALL
INV 18"RCP (W)=9.43'

100 CONTROL STRUCTURE
GRATE INLET EL=13.97'
INV W 38"x60"ERCP (N)=9.18'
INV E 38"x60"ERCP (N)=9.13'
INV W 38"x60"ERCP (S)=9.04'
INV E 38"x60"ERCP (S)=9.00'

STR.	ACREAGE
S-100	0.32 Ac.
S-101	0.33 Ac.
S-102	0.25 Ac.
S-103	0.25 Ac.
S-104	- -
S-105	- -
S-106	0.48 Ac.
S-107	0.49 Ac.
S-108	0.20 Ac.
S-109	0.17 Ac.
S-110	0.13 Ac.
S-111	0.34 Ac.
S-112	0.12 Ac.
S-113	0.15 Ac.
S-200	0.16 Ac.
S-201	0.20 Ac.
S-202	0.15 Ac.
S-203	0.14 Ac.
S-204	0.29 Ac.
S-205	0.17 Ac.
S-206	0.26 Ac.
S-206A	- -
S-207	0.26 Ac.
S-208	- -
S-209	0.32 Ac.
S-210	0.36 Ac.
S-211	0.23 Ac.
S-212	0.23 Ac.

STR.	ACREAGE
CS-1	- -
CS-2	- -
B-100	- -
B-101	0.21 Ac.
B-102	0.18 Ac.
B-103	0.36 Ac.
B-104	0.33 Ac.
B-105	0.28 Ac.
B-106	0.15 Ac.
B-107	0.15 Ac.
B-108	- -
B-109	0.37 Ac.
B-110	0.32 Ac.
B-111	0.32 Ac.
B-112	0.24 Ac.
B-113	0.24 Ac.
B-114	0.13 Ac.
B-115	0.17 Ac.
B-116	0.17 Ac.
B-117	- -
B-118	0.21 Ac.
B-119	- -
B-120	0.29 Ac.
B-121	- -
B-122	0.13 Ac.
B-123	- -
B-124	- -
B-125	0.29 Ac.
B-126	- -
B-127	0.29 Ac.
B-128	- -
B-129	0.21 Ac.
B-130	0.15 Ac.
B-131	- -
B-132	0.34 Ac.
B-133	- -
B-134	- -

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

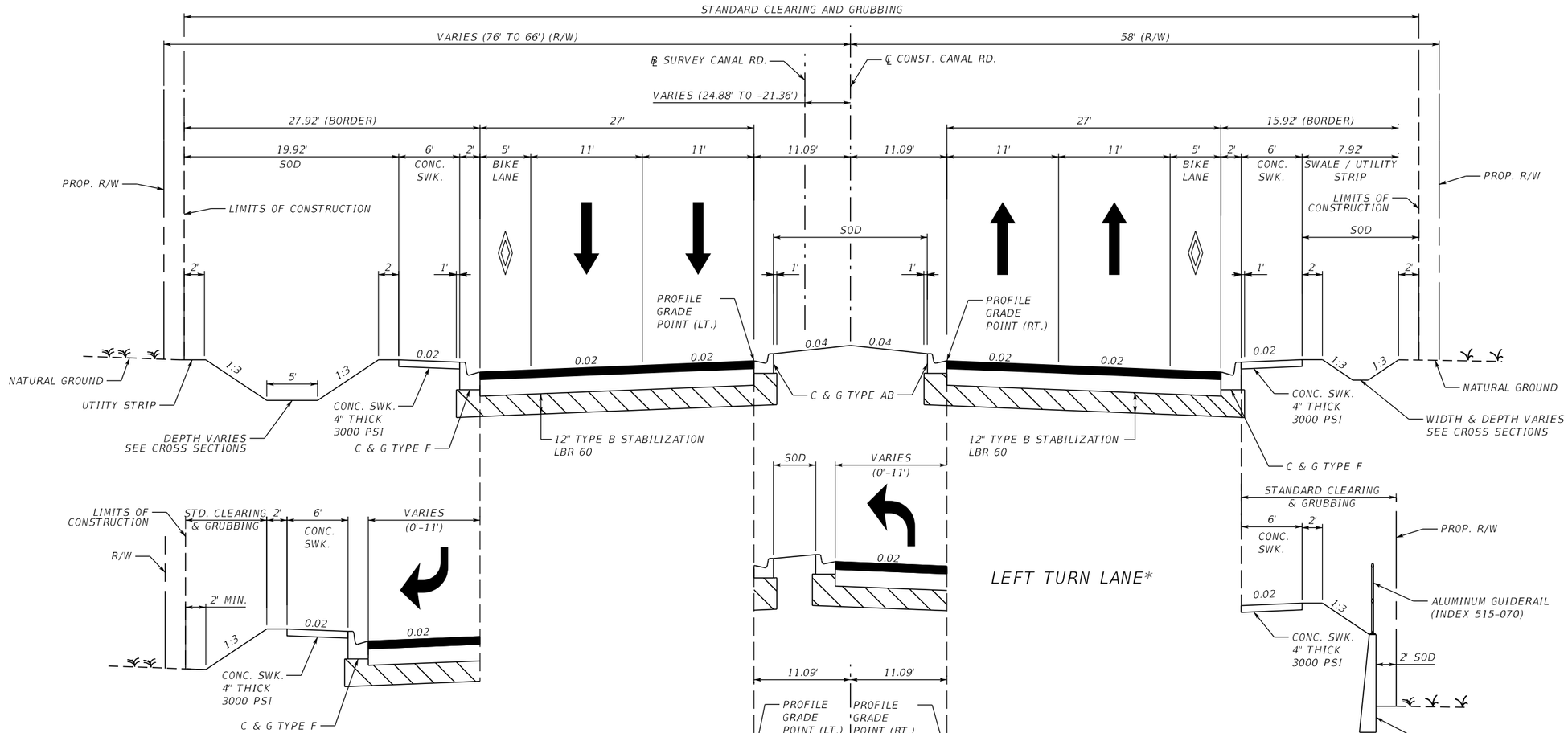
DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

EXISTING DRAINAGE STRUCTURES (1)

SHEET NO.: 7



RIGHT TURN LANE
STA. 222+37.13 TO STA. 226+25.68 (RT.)
STA. 227+61.69 TO STA. 230+43.66 (LT.)

LEFT TURN LANE*
STA. 201+23.00 TO STA. 204+08.14 (LT.)
STA. 223+31.13 TO STA. 225+98.26 (RT.)
STA. 227+58.53 TO STA. 230+43.66 (LT.)

MEDIAN CROSSOVER**
STA. 205+18.35 TO STA. 206+18.00
STA. 216+90.99 TO STA. 217+90.92
STA. 225+98.26 TO STA. 227+58.53
STA. 235+95.00 TO STA. 240+26.47

MEDIAN CROSSOVER**

GRAVITY WALL
STA. 203+00.00 TO STA. 205+51.23 (RT.)

TRAFFIC DATA

CURRENT YEAR = 2019 AADT = 5,800
ESTIMATED OPENING YEAR = 2025 AADT = 8,200
ESTIMATED DESIGN YEAR = 2045 AADT = 16,400
K = 9% D = 56.3%T= 11.2% (24 HOUR)
DESIGN SPEED = 45 MPH
POSTED SPEED = 40 MPH

TYPICAL SECTION (1)
CANAL ROAD (16TH AVENUE EAST)

STA. 200+74.39 TO STA. 212+96.43
STA. 212+96.43 TO STA. 213+75.86 (EXCEPTION)
STA. 213+75.86 TO STA. 240+26.47

NEW CONSTRUCTION

OPTIONAL BASE GROUP 9 (10") WITH
3" STRUCTURAL COURSE TYPE SP 12.5 (TRAFFIC C) AND
1-1/2" FRICTION COURSE FC-12.5 (TRAFFIC C, PG 76-22)

US 301 INTERSECTION MILLING AND RESURFACING
STA. 199+42.12 TO STA. 200+74.39 (SB)
STA. 197+85.00 TP STA. 200+74.39 (NB)

MILLING AND RESURFACING

MILL EXISTING ASPHALT PAVEMENT (1-1/2" AVG. DEPTH)
1-1/2" FRICTION COURSE FC-12.5 (TRAFFIC C, PG 76-22)

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

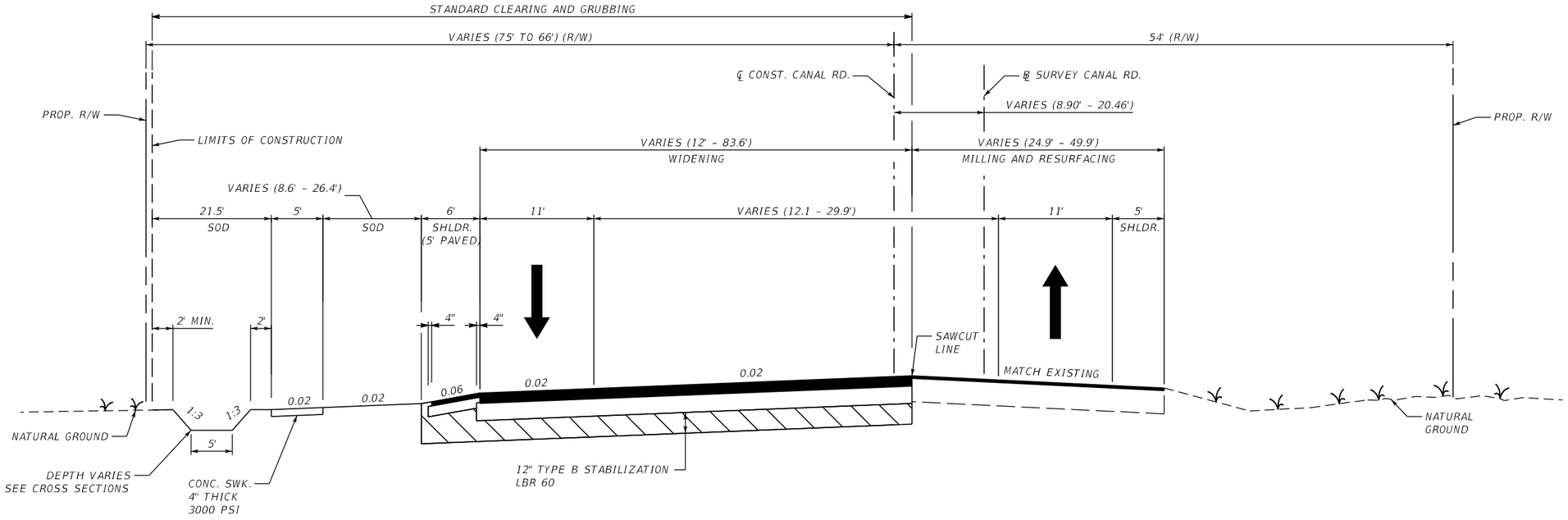
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

TYPICAL SECTION (1)

SHEET NO.: 8

6:58:06 PM 12/11/2021
PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\typsrd01.dgn



TYPICAL SECTION (2)
CANAL ROAD (16TH AVENUE EAST)

STA. 240+26.47 TO STA. 244+52.56

MILLING AND RESURFACING

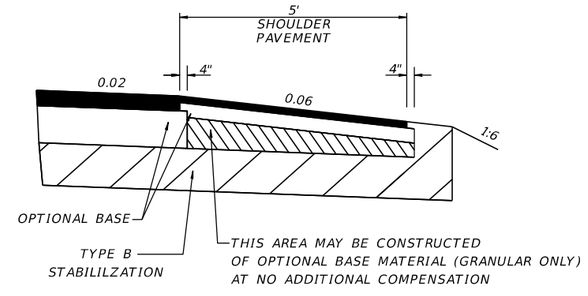
MILL EXISTING ASPHALT PAVEMENT (1-1/2" AVG. DEPTH)
1-1/2" FRICTION COURSE FC-12.5 (TRAFFIC C, PG 76-22)

WIDENING

OPTIONAL BASE GROUP 9 (10") WITH
3" STRUCTURAL COURSE TYPE SP 12.5 (TRAFFIC C) AND
1-1/2" FRICTION COURSE FC-12.5 (TRAFFIC C, PG 76-22)

SHOULDER PAVEMENT

OPTIONAL BASE GROUP 1 WITH
1-1/2" FRICTION COURSE FC-12.5 (TRAFFIC C, PG 76-22)



SHOULDER PAVEMENT DETAIL

TRAFFIC DATA

CURRENT YEAR = 2019 AADT = 5,800
ESTIMATED OPENING YEAR = 2025 AADT = 8,200
ESTIMATED DESIGN YEAR = 2045 AADT = 16,400
K = 9% D = 56.3%T= 11.2% (24 HOUR)
DESIGN SPEED = 45 MPH
POSTED SPEED = 40 MPH

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

TYPICAL SECTION (2)

SHEET NO.: 9

QUANTITY	STR. NO.	STATION	SIDE	DESCRIPTION	BARRELS	STORM DRAIN OPTIONAL MATERIAL									CURB INLETS									MANHOLES				DITCH BOTTOM INLETS			CROSS DRAIN MITERED END SECTION				STRAIGHT CONCRETE ENDWALL	REMARKS
						ROUND							ELLIPSE		P-1	P-1	P-2	P-3	P-5	J-5	P-6	J-6	P-9	P-7	J-7	P-8	J-8	B	D	D	ROUND		ELLIPSE			
						8"	15"	18"	24"	30"	36"	42"	14"x23"	19"x30"	<10'	PART.	PART.	<10'	<10'	<10'	<10'	<10'	<10'	<10'	PART.	<10'	<10'	<10'	PART.	<10'	MOD.	15"	18"	14"x23"	19"x30"	EA	
P	B-100	201+00.00	RT.	MES, PIPE	1			136																								1				
F																																				
P	B-101	202+00.00	LT.	INLET												1																					
F																																				
P	B-102	202+00.00	RT.	INLET, PIPE	1			122											1																		
F																																				
P	OFF-1	202+27.04	RT.	INLET																			1														
F																																				
P	P-100	202+94.64	RT.	MES, PIPE	1		23																								1					W/ CONC. JACKET
F																																				
P	B-103	203+25.52	LT.	INLET, PIPE	1			12																					1								
F																																				
P	B-104	203+25.52	LT.	INLET													1																				
F																																				
P	B-105	203+25.52	RT.	INLET, PIPE	1			172													1																
F																																				
P	B-106	205+00.00	LT.	INLET												1																					
F																																				
P	B-107	205+00.00	RT.	INLET, PIPE	1				76										1																		
F																																				
P	B-108	205+00.00	RT.	INLET, PIPE	1			17																					1								
F																																				
P	B-110	206+50.00	LT.	INLET												1																					
F																																				
P	B-111	206+50.00	RT.	INLET, PIPE	1			147											1																		
F																																				
P	B-109	206+85.57	LT.	INLET, PIPE	1			12																					1								
F																																				
P	P-101	207+77.96	LT.	PIPE	1				4																												W/ CONC. JACKET
F																																				
P	B-112	209+50.00	LT.	INLET												1																					
F																																				
P	B-113	209+50.00	RT.	INLET, PIPE	1			297											1																		
F																																				
P	P-102	210+08.56	LT.	PIPE	1	4																															W/ CONC. JACKET
F																																				
P	B-115	212+90.00	LT.	INLET, PIPE	1						19									1																	
F																																				
P	B-116	212+90.00	RT.	INLET, PIPE	1						75									1																	
F																																				
P	B-114	213+00.00	LT.	INLET																									1								
F																																				
P	B-117	213+05.00	RT.	MANHOLE, PIPE	1						11																	1									
F																																				
P	B-117A	213+05.00	RT.	ENDWALL, PIPE	1						6																										1	
F																																				
P	S-100	214+80.00	LT.	INLET, PIPE	1					117												1															
F																																				
P	S-101	214+80.00	RT.	INLET, PIPE	1				117												1																
F																																				
P	B-118	215+13.62	LT.	INLET, PIPE	1			9																					1								
F																																				
P	B-119	216+00.03	LT.	MANHOLE																				1													
F																																				
P	S-102	216+00.00	LT.	INLET, PIPE	1					229										1																	
F																																				
P	S-103	216+00.00	RT.	INLET, PIPE	1				76										1																		
F																																				
P	CS-1	216+47.91	LT.	INLET, PIPE	1			33																							1						
F																																				
P	S-104	218+34.00	LT.	MES	2																															1	
F																																				
P	S-105	218+34.00	LT.	MANHOLE, PIPE	2									102											1												
F																																				
P	B-120	220+60.00	LT.	INLET, PIPE	1			6																					1								
F																																				
P	B-121	220+60.00	LT.	MANHOLE																				1													
F																																				
SHEET TOTALS				PLAN QUANTITY		4	23	963	273	346	111			102		4	1		5	3	2	1	1	2	1		1	1	5	1	1	1		1	1		
				FINAL QUANTITY																																	

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

SUMMARY OF DRAINAGE STRUCTURES (1 OF 3)

SHEET NO.: 10

3:30:12 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\SUMDRD01.DGN

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

QUANTITY	STR. NO.	STATION	SIDE	DESCRIPTION	BARRELS	STORM DRAIN OPTIONAL MATERIAL									CURB INLETS									MANHOLES				DITCH BOTTOM INLETS			CROSS DRAIN MITERED END SECTION				STRAIGHT CONCRETE ENDWALL	REMARKS
						ROUND							ELLIPSE		P-1	P-1	P-2	P-3	P-5	J-5	P-6	J-6	P-9	P-7	J-7	P-8	J-8	B	D	D	ROUND		ELLIPSE			
						8"	15"	18"	24"	30"	36"	42"	14"x23"	19"x30"	<10'	PART.	PART.	<10'	<10'	<10'	<10'	<10'	<10'	<10'	PART.	<10'	<10'	<10'	PART.	<10'	MOD.	15"	18"	14"x23"	19"x30"	EA	
P	S-106	220+60.00	LT.	INLET, PIPE	1					221												1														
F																																				
P	S-107	220+60.00	RT.	INLET, PIPE	1			76													1															
F																																				
P	S-108	222+90.00	LT.	INLET, PIPE	1				227										1																	
F																																				
P	S-109	222+90.00	RT.	INLET, PIPE	1				87										1																	
F																																				
P	S-110	224+10.00	RT.	INLET, PIPE	1			117											1																	
F																																				
P	S-111	225+00.00	LT.	INLET, PIPE	1			207											1																	
F																																				
P	S-112	225+00.00	RT.	INLET, PIPE	1			97											1																	
F																																				
P	B-122	222+90.00	LT.	INLET, PIPE	1			14																					1							
F																																				
P	B-123	222+90.00	LT.	MANHOLE																				1												
F																																				
P	S-113	225+85.00	RT.	INLET, PIPE	1			82											1																	
F																																				
P	S-200	227+70.00	LT.	INLET, PIPE	1			127											1																	
F																																				
P	S-201	227+70.00	RT.	INLET, PIPE	1			211							1																					
F																																				
P	CS-2	228+00.00	LT.	INLET, PIPE	1			47																						1						
F																																				
P	B-124	229+85.00	LT.	MANHOLE																				1												
F																																				
P	S-202	229+00.00	LT.	INLET, PIPE	1			83											1																	
F																																				
P	P-103	229+50.76	LT.	PIPE	1			17																												W/ CONC. JACKET
F																																				
P	B-125	229+85.00	LT.	INLET, PIPE	1			8																						1						
F																																				
P	S-203	229+85.00	LT.	INLET, PIPE	1			112											1																	
F																																				
P	S-204	229+85.00	RT.	INLET, PIPE	1			272										1																		
F																																				
P	S-205	231+00.00	LT.	INLET, PIPE	1			157											1																	
F																																				
P	P-104	231+80.29	LT.	PIPE	1			11																												W/ CONC. JACKET
F																																				
P	S-206A	232+60.00	LT.	MES	2																													1		
F																																				
P	S-206	232+60.00	LT.	INLET, PIPE	2								114							1																
F																																				
P	S-207	232+60.00	RT.	INLET, PIPE	1								75						1																	
F																																				
P	S-208	232+60.00	RT.	MANHOLE, PIPE	1			9																			1									
F																																				
P	P-105	233+44.44	LT.	PIPE	1						25																									W/ CONC. JACKET
F																																				
P	B-126	234+00.00	LT.	MANHOLE																				1												
F																																				
P	S-209	235+00.00	LT.	INLET, PIPE	1			237											1																	
F																																				
P	S-210	235+00.00	RT.	INLET, PIPE	1			237											1																	
F																																				
P	B-127	237+00.00	LT.	INLET, PIPE	1			9																						1						
F																																				
P	S-211	238+00.00	LT.	INLET, PIPE	1			297											1																	
F																																				
P	S-212	238+00.00	RT.	INLET, PIPE	1			297											1																	
F																																				
P	B-128	239+00.00	LT.	MANHOLE																				1												
F																																				
P	P-106	239+90.95	LT.	PIPE	1				4																											W/ CONC. JACKET
F																																				
SHEET TOTALS		PLAN QUANTITY						2724	318	221	25		189		1			1	15	1	1	1		4		1			3	1			1			
		FINAL QUANTITY																																		

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

SUMMARY OF DRAINAGE STRUCTURES (2 OF 3)

SHEET NO.: 11

3:30:13 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\SUMDRD01.DGN

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

QUANTITY	STR. NO.	STATION	SIDE	DESCRIPTION	BARRELS	STORM DRAIN OPTIONAL MATERIAL									CURB INLETS									MANHOLES				DITCH BOTTOM INLETS			CROSS DRAIN MITERED END SECTION				STRAIGHT CONCRETE ENDWALL	REMARKS
						ROUND							ELLIPSE		P-1	P-1	P-2	P-3	P-5	J-5	P-6	J-6	P-9	P-7	J-7	P-8	J-8	B	D	D	ROUND		ELLIPSE			
						8"	15"	18"	24"	30"	36"	42"	14"x23"	19"x30"	<10'	PART.	PART.	<10'	<10'	<10'	<10'	<10'	<10'	PART.	<10'	<10'	<10'	PART.	<10'	MOD.	15"	18"	14"x23"	19"x30"	EA	
P	P-07	240+32.61	LT.	PIPE	1								4																							W/ CONC. JACKET
F																																				
P	B-129	241+68.00	LT.	MANHOLE, PIPE	1							7													1												
F																																				
P	B-130	244+00.00	LT.	INLE, PIPE	1			4																					1							
F																																				
P	B-131	244+00.00	LT.	MANHOLE																				1												
F																																				
P	B-132	244+48.24	LT.	ENDWALL																																1	SEE STR. PLANS
F																																				
SHEET TOTALS				PLAN QUANTITY				4				7	4											1	1				1						1	
				FINAL QUANTITY																																	
GRAND TOTALS				PLAN QUANTITY	4	23	3691	591	567	136	7	193	102	1	4	1	1	20	4	3	2	1	7	2	1	1	1	9	2	1	1	1	1	2	
				FINAL QUANTITY																																	

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

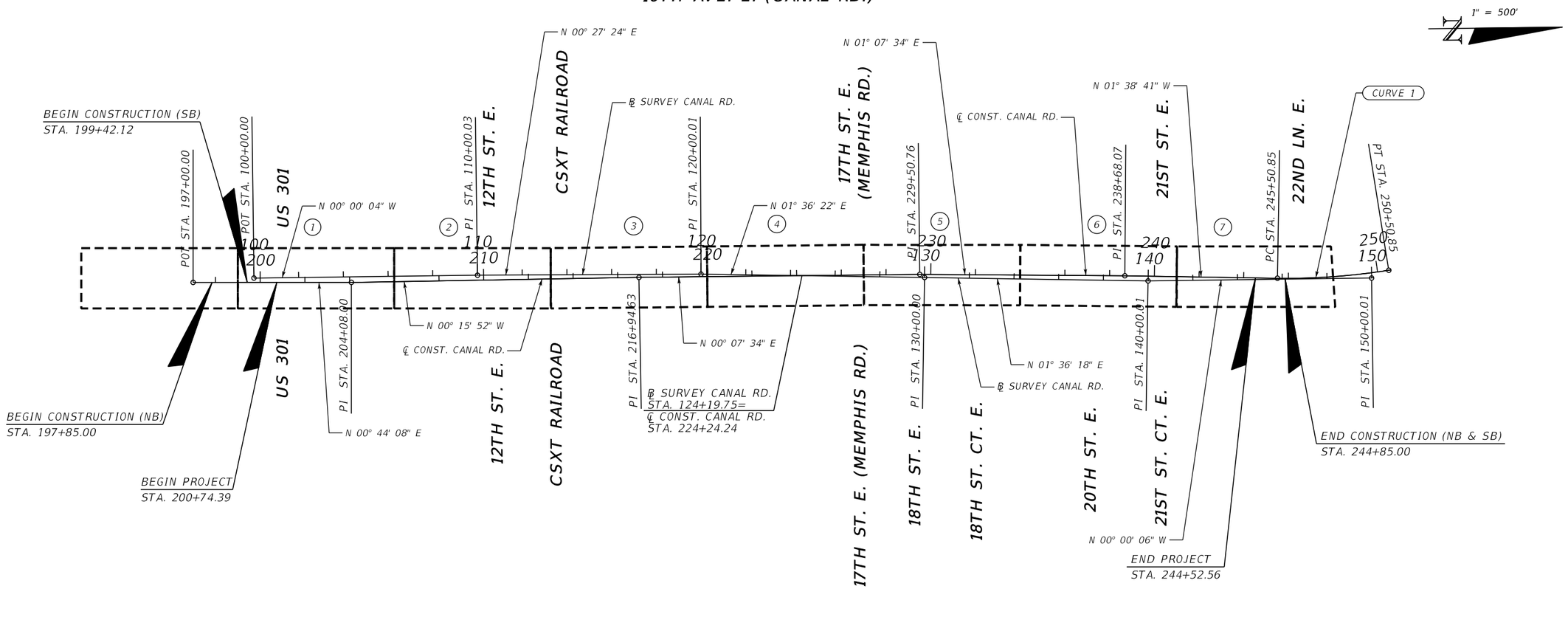
SUMMARY OF DRAINAGE STRUCTURES (3 OF 3)

SHEET NO.: 12

3:30:17 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\SUMDRD01.DGN

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

16TH AVE. E. (CANAL RD.)



COORDINATE DATA

ALIGNMENT	STATION	NORTHING	EASTING	BACK BEARING	AHEAD BEARING
℄ SURVEY CANAL RD.	100+00.00	1,158,943.949	478,475.901		N 0° 00' 04" W
	110+00.03	1,159,943.981	478,475.882	N 0° 00' 04" W	N 0° 27' 24" E
	120+00.01	1,160,943.925	478,483.851	N 0° 27' 24" E	N 1° 36' 22" E
	130+00.00	1,161,943.529	478,511.877	N 1° 36' 22" E	N 1° 36' 18" E
	140+00.01	1,162,943.142	478,539.887	N 1° 36' 18" E	N 0° 00' 06" W
	150+00.01	1,163,943.142	478,539.589	N 0° 00' 06" W	N 8° 58' 52" W
℄ CONST. CANAL RD.	199+00.00	1,158,871.548	478,494.328		N 0° 44' 08" E
	204+08.00	1,159,379.504	478,500.850	N 0° 44' 08" E	N 0° 15' 52" W
	216+94.63	1,160,666.124	478,494.913	N 0° 15' 52" W	N 0° 07' 34" E
	229+50.76	1,161,922.250	478,497.677	N 0° 07' 34" E	N 1° 07' 34" E
	238+68.07	1,162,839.387	478,515.704	N 1° 07' 34" E	N 1° 38' 41" E

CURVE 1

CURVE DATA CLCANAL1
PI STA. = 248+01.49
Δ = 9° 59' 57" (LT.)
D = 1° 59' 59"
T = 250.64
L = 500.00
R = 2,865.00
PC STA. = 245+50.85
PT STA. = 250+50.85
e = N.A

(X) ROADWAY PLAN SHEET

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

PROJECT LAYOUT

SHEET NO.: 13

1. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED.

2. THE REMOVAL OF ANY DRAINAGE STRUCTURE OR PIPE WITHIN 5.0 FEET OF ANY UTILITY THAT IS IN SERVICE SHALL BE ACCOMPLISHED SO AS NOT TO DAMAGE THE UTILITY.

3. ANY PORTION OF THE EXISTING RIGHT OF WAY THAT IS DISTURBED OUTSIDE THE LIMITS OF CONSTRUCTION SHALL BE REDRESSED AND SODDED AT THE CONTRACTOR'S EXPENSE.

4. NO STOCKPILE OF MATERIAL IS PERMITTED WITHIN THE PROJECT LIMITS WITHOUT PRIOR APPROVAL OF THE ENGINEER.

5. ALL BOTTOM PROFILE ELEVATIONS AND CROSS SECTIONS FOR TREATMENT/ATTENUATION SWALES SHALL BE CONSTRUCTED TO WITHIN ±0.1 FEET OF THE VALUES SHOWN ON THE PLANS.

6. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXISTING DRAINAGE INVERT ELEVATIONS THAT WILL REMAIN PART OF THE PROPOSED DRAINAGE SYSTEM. ANY DIFFERENCE FROM PLAN ELEVATION SHALL BE REPORTED TO THE ENGINEER.

7. EXISTING DRAINAGE STRUCTURES AND PIPES WITHIN CONSTRUCTION LIMITS SHALL REMAIN, UNLESS OTHERWISE NOTED.

8. ALL STATIONS AND OFFSETS REFER TO THE ℄ OF CONSTRUCTION UNLESS OTHERWISE NOTED.

9. THE COUNTY RESERVES THE RIGHT TO PERFORM QUALITY ASSURANCE TESTING ON ALL MATERIAL DELIVERED TO THE PROJECT AND TO REJECT ALL MATERIALS NOT MEETING ACCEPTABLE STANDARDS.

10. ANY DAMAGE TO COUNTY, OR LOCAL ROADS CAUSED BY THE CONTRACTOR'S HAULING OR EXCAVATION EQUIPMENT SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE COUNTY, PAYMENT SHALL NOT BE MADE FOR THIS WORK.

11. OVERALL CLEANUP SHALL BE ACCOMPLISHED BY THE CONTRACTOR TO THE SATISFACTION OF THE COUNTY. ANY AND ALL EXPENSES INCURRED FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE FOR MOBILIZATION.

12. SEE COUNTY HIGHWAY & TRAFFIC STANDARD MANUAL ROAD CONNECTION DETAIL 403.3 AT ALL WIDENING AND CONNECTIONS TO EXISTING PAVEMENT.

13. FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF ALL DRAINAGE STRUCTURES AND PIPES PRIOR TO ORDERING, CASTING OR PLACING PROPOSED DRAINAGE STRUCTURES AND PIPES.

14. ALL CONSTRUCTION ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF MANATEE COUNTY UTILITY AND TRANSPORTATION STANDARDS AND/OR FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" UNLESS OTHERWISE INDICATED ON THE PLANS.

15. PROJECT DATUM

BEARINGS AND COORDINATES (IN U.S. SURVEY FEET) ARE BASED ON NATIONAL GEODETIC SURVEY (NGS), STATE PLANE COORDINATES, FLORIDA WEST ZONE, NORTH AMERICAN DATUM 1983/2011 ADJUSTMENT.

CONTINUOUSLY OPERATING REFERENCE STATIONS (CORS) UTILIZED:

(A) MANATEE (GSPS): RECEIVER TYPE / SERIAL #: LEICA GR10 / 1702551; ANTENNA TYPE / SERICAL #: LEIAR20 / 16034016; (NORTHING = 1,145,619.696, EASTING = 542,303.546)

(B) ANNA MARIA ISLE (FLAI): RECIEVER TYPE / SERIAL #: LEICA GR10 / 1701977; ANTENNA TYPE / SERIAL #: LEICA AR20 / 16268009; (NORTHING = 1,133,278.398, EASTING = 432,312.165)

BOTH AS PUBLISHED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION WEBSITE. (https://www.dot.state.fl.us57.224).

VERTICAL:

ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM, 1988 ADJUSTMENT (NAVD 88).

CONTROL BENCHMARK UTILIZED:

(A) A FOUND 3.5" SURVEY DISK STAMPED "X 565 2002", DESIGNATED "X 565" BY NGS, PID = DE8849, ELEVATION = 7.89 FEET (NAVD 88)

(B) A FOUND ALUMINUM ALLOY ROD WITH 3.5" MANATEE COUNTY DISK STAMPED "SANTA ROSA 2011", ELEVATION = 15.52 (NAVD 88)

BOTH AS PUBLISHED BY THE NATIONAL GEODETIC SURVEY WEB SITE. (http://www.ngs.noaa.gov)

CONVERSION FACTOR:

ADD 0.98 FEET TO CONVERT TO NATIONAL GEODETIC VERTICAL DATUM, 1929 ADJUSTMENT (NGVD 29). CONVERSION CALCULATED UTILIZING VERTCON (VERSION 2.0).

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL CONDITIONS AND REQUIREMENTS OF ALL PERMITS AND ALL GOVERNING FEDERAL, STATE, AND LOCAL AGENCIES. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS THAT ARE NOT PROVIDED IN THE BID DOCUMENTS, AT NO ADDITIONAL COST TO THE OWNER.

17. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION.

18. AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL OF FLORIDA AT 1-800-432-4770 OR THE NATIONAL 811 ONE CALL NUMBER WHEN APPLICABLE FOR UTILITY LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITIES FOR THE POSSIBLE RELOCATION OR THE TEMPORARY MOVEMENT OF ANY EXISTING UTILITIES WITHIN THE RIGHTS-OF-WAY.

19. THE CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND UTILITIES, POWER LINES, ETC.

20. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THIS EXCLUSION DOES NOT ALLEVIATE THE CONTRACTOR FOR PROVIDING A CONTINUOUS SAFE WORKSPACE.

21. NO MATERIAL SHALL BE STOCKPILED IN ROADWAYS. ALL DIRT AND DEBRIS SHALL BE REMOVED FROM THE JOB SITE DAILY. ROADS SHALL BE SWEPT DAILY AS PART OF DAILY CLEAN UP.

22. THE CONTRACTOR IS TO CONTROL ALL FUGITIVE DUST ORIGINATING ON THIS PROJECT BY WATERING OR OTHER METHODS AS REQUIRED.

23. INGRESS AND EGRESS TO ALL THE PROPERTIES IN THE CONSTRUCTION AREA SHALL BE MAINTAINED AT ALL TIMES.

24. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC. WHICH ARE WITHIN THE PROJECT AREA AND WHICH HAVE NOT BEEN LOCATED OR IDENTIFIED, MAY NOT BE IN THE EXACT LOCATION SHOWN OR RELOCATED SINCE THE PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES STRUCTURES AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) THAT MAY EFFECT HIS WORK. ALL EXISTING UTILITIES TO BE EXTENDED, CROSSED OR CONNECTION POINTS SHALL BE EXPOSED PRIOR TO CONSTRUCTION TO VERIFY LOCATION AND ELEVATION. ANY DISCREPANCIES OR CONFLICTS FOUND SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR RESOLUTION.

25. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, WATER AND SEWER LINES, STORM DRAINS, UTILITIES, DRIVEWAYS, SIDEWALKS, SIGNS, MAIL BOXES, FENCES, TREES, LANDSCAPING, AND ANY OTHER IMPROVEMENT OR FACILITY IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DAMAGED ITEM DUE TO HIS CONSTRUCTION ACTIVITIES TO EQUAL OR BETTER THAN PRE-CONSTRUCTION CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.

26. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED.

UTILITY CONTACTS:

CHARTER
ALEX FLEMMING
5413 E. STATE ROAD 64
BRADENTON, FL. 34208-5535
(941 748-3816
James.Fleming@mybrighthouse.com

FRONTIER COMMUNICATIONS
DENISE HUTTON
1701 RINGLING BLVD.
SARASOTA, FL. 34236
(941) 906-6722
denise.hutton@ftr.com

TECO PEOPLES GAS
ALEX MCFARLANE
8261 VICO COURT
SARASOTA, FL 34240
(813) 275-3762
amcfarlane@tecoenergy.com

FLORIDA POWER & LIGHT
TODD BOLKEMA, PE
5657 MCINTOSH ROAD
SARASOTA, FL. 34233
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MANATEE COUNTY PUBLIC WORKS
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1022 26TH AVENUE EAST
BRADENTON, FL. 34208
(941) 708-7450 EXT. 7373
lorenzo.duarte@mymanatee.org

UNITI FIBER, LLC
DAVID WOODS
805 EXECUTIVE CENTER DRIVE W, SUITE 101
ST. PETERSBURG, FL 33702
(813) 539-1180
david.woods@uniti.com

ZAYO GROUP LLC
TESS BENTAYOU
1805 29TH STREET, SUITE 2050
BOULDER, CO 80301
(813) 363-6797
tess.bentayou@zayo.com

CITY OF PALMETTO
ALLEN TUSING
516 8TH AVENUE WEST
PALMETTO, FL 34221
(941) 723-4580 x2110
allen.tusing@palmettofl.org

MCI
ANDREW COLE
7701 E TELECOM PKWY
TEMPLE TERRACE, FL 33637
(813) 847-4037
andrew.cole2@verizon.com

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

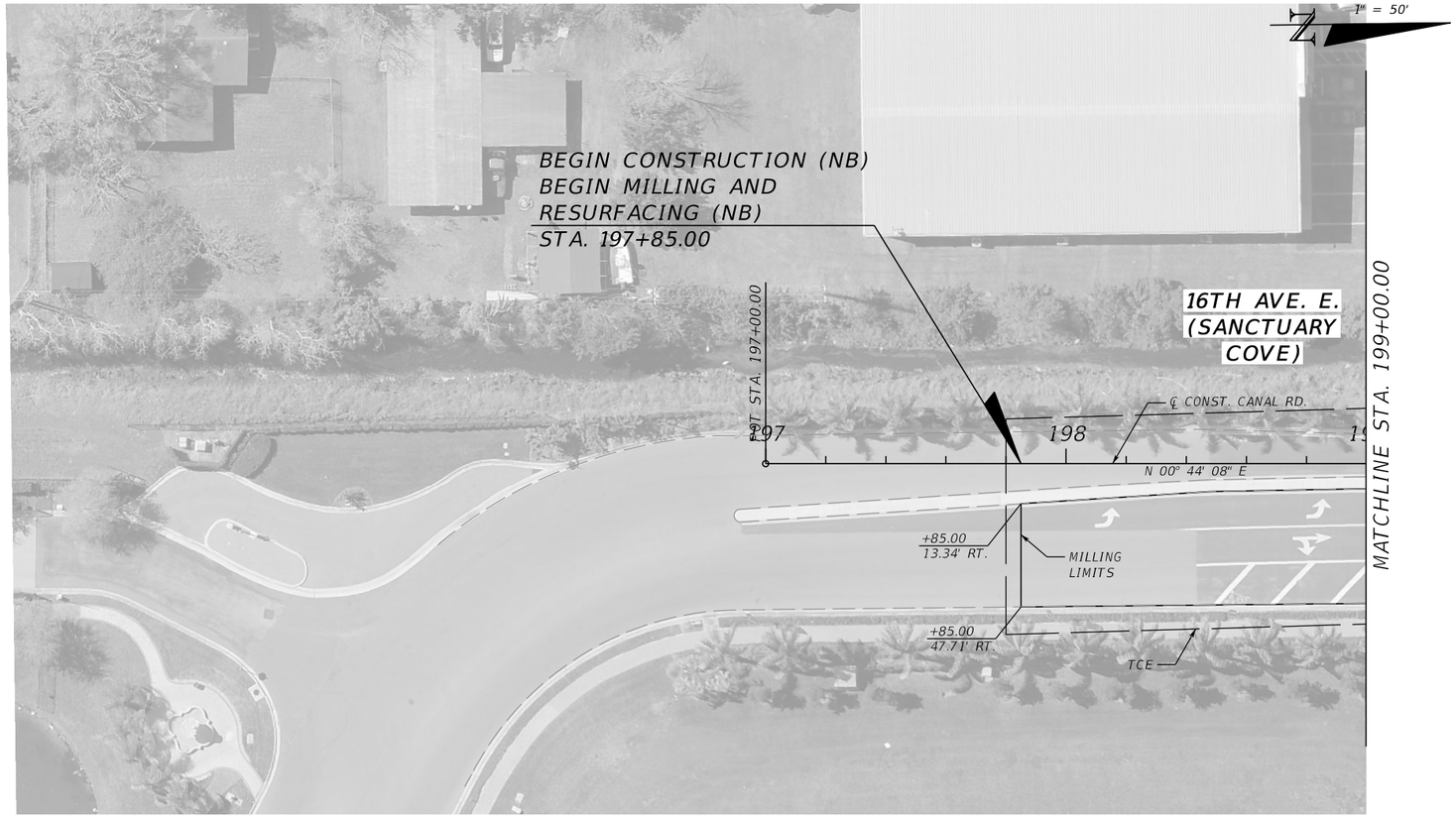
DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

GENERAL NOTES

SHEET NO.: 14



NO PROFILE ON THIS SHEET

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

197 198 199

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

ROADWAY PLAN & PROFILE (1)

SHEET NO.: 15

3:31:18 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\plprrd01.dgn

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

16TH AVE. E. (CANAL RD.)

1" = 50'

LEGEND
- PROPOSED R/W TAKE
- DETECTABLE WARNINGS

MATCHLINE STA. 199+00.00

16TH AVE. E. (SANCTUARY COVE)

US 301

BEGIN PROJECT
END MILLING AND RESURFACING
BEGIN RECONSTRUCTION
STA. 200+74.39

BEGIN CONSTRUCTION (SB)
BEGIN MILLING AND RESURFACING (SB)
STA. 199+42.12

MATCHLINE STA. 206+00.00

ROYAL PALM CAR WASH

DETWILER'S

BEGIN GRAVITY WALL SCHEME 1, 4' HEIGHT (INDEX 400-011) W/ ALUMINUM GUIDERAIL (INDEX 515-070) STA. 203+00.00, 51.17' RT.

END GRAVITY WALL SCHEME 1, 4' HEIGHT (INDEX 400-011) W/ ALUMINUM GUIDERAIL (INDEX 515-070) STA. 205+51.23, 67.62' RT.

1	BEGIN TYPE AB CURB STA. 200+27.87, 82.89' RT.	4	202+48.12 51.08' RT.
2	END TYPE AB CURB STA. 200+27.79, 79.89' RT.	5	202+57.65 59.89' RT.
3	200+33.36 79.76' RT.	6	202+62.69 57.68' RT.
7	202+86.69 82.28' RT.	8	202+93.52 85.11' RT.

15

500' V.C.

MILLING AND RESURFACING LIMITS

BEGIN PROJECT
END MILLING AND RESURFACING
BEGIN RECONSTRUCTION
STA. 200+74.39

BEGIN PGL
STA. 239+47.00

(-) 0.300%

(-) 0.300%

(+) 0.448%

(+) 0.320%

Exist. ground @ ℄ Const. Canal Rd.

PGL

BEGIN SP. GUTTER PROFILE (LT. & RT.) STA. 201+25.00, EL. 8.60

MATCH EXIST. CBC. REFER TO STRUCTURES PLANS FOR DETAILS

EXIST. 11' X 5' CBC

201+83 24.00 EL. 5.50 12/2/20

18" PIPE FL 3.00

BEGIN SP. DITCH PROFILE (LT.) STA. 202+00.00, EL. 6.20

11' X 5' CBC

PI +00.00 EL. 5.36

PI +25.52 EL. 8.00

PI +25.52 EL. 5.35

18" PIPE FL 2.00

PI +75.00 EL. 8.39

11' X 5' CBC

END SP. DITCH PROFILE (LT.) STA. 205+00.00, EL. 5.38

24" PIPE FL 3.00

7' X 5' CBC

FL = 0.46'

FL = 0.62'

FL = 0.60'

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

200 301 201 202 203 204 205 206

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

ROADWAY PLAN & PROFILE (2)

SHEET NO.: 16

3:31:24 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\plprrd01.dgn

16TH AVE. E. (CANAL RD.)

BEACON ROOFING

12TH ST. E.

1" = 50'

MATCHLINE STA. 206+00.00

MATCHLINE STA. 213+00.00

206+80.10 73.00' LT.

206+80.09 72.00' LT.

CONST. 7' X 5' CBC

PROP. R/W

40' DRIVEWAY +19.58

6' CONC. SWK.

C & G TYPE F

EXIST. R/W

CONST. 4' OF 8" PIPE W/ CONC. JACKET

+40.35 75.06' LT.

210+27.68 67.51' LT.

110+54.52 28.84' LT.

+05.22 38.08' LT.

+65.94 75.06' LT.

210+77.59 69.08' LT.

111+04.46 17.22' LT.

CONST. 6' X 5' CBC

CONST. 19' OF 36" PIPE

B-114

107+07.14 31.31' LT.

B-109

TO BE REMOVED

BOX TRANSITION SEE STRUCTURE PLANS

+15.53 38.08' LT.

CONST. 12" OF 18" PIPE

CONST. 4' OF 24" PIPE W/ CONC. JACKET

6'x10' BOX CULVERT

PI STA. 209+00.03

7'x10' BOX CULVERT

B-110

P-101

B-112

P-102

CR-G

110+54.52 28.84' LT.

+00.88 38.08' LT.

B-115

+90.43 11.08' LT.

TO BE REMOVED

REMOVE EXIST SHLDR. GUTTER & GUARDRAIL

N 00° 00' 04" W

℄ SURVEY CANAL RD.

N 00° 27' 24" E

+18.00 11.08' LT.

N 00° 15' 52" W

CONST. 75' OF 36" PIPE

C & G TYPE AB

+90.43 11.08' RT.

+18.00 11.08' RT.

B-111

12"x18" ERCP

108+22.03 54.59' RT.

CONST. 297' OF 18" PIPE

℄ CONST. CANAL RD.

B-113

+01.99 38.08' RT.

110+51.68 55.89' RT.

+94.09 38.08' RT.

TO BE REMOVED

+26.22 38.08' RT.

CONST. 18" PIPE

EXIST. 10' UTILITY EASEMENT

PROP. R/W

C & G TYPE F

6' CONC. SWK.

EXIST. R/W

210+23.29 54.00' RT.

111+01.69 55.90' RT.

C & G TYPE F

6' CONC. SWK.

PROP. R/W

EXIST. 10' UTILITY EASEMENT

CONST. 11' OF 36" PIPE

B-116

210+73.29 54.00' RT.

+72.95 80.84' RT.

REBUILD DRIVEWAY APRON

+36.98 72.84' RT.

+59.09 73.31' RT.

106+29.27 52.95' RT.

TCE

1 206+18.00 0.00' RT.

2 PI STA. 210+50.72 12TH ST. E

3 212+95.43 6.08' LT.

4 212+95.43 6.08' RT.

B BEGIN EXCEPTION STA. 212+96.43

LEGEND

PROPOSED R/W TAKE

DETECTABLE WARNINGS

126'

89'

34'

4'

31'

27'

22'

27'

16'

123'

15

10

5

0

500' V.C.

9.49

+25.00 EL. 9.51

9.40

B-110

END SP. GUTTER PROFILE (LT. & RT.) STA. 206+25.00, EL. 8.97

(+) 0.448%

PI +00.00 EL. 7.15

(+) 0.000%

(+) 0.485%

(+) 0.170%

END SP. DITCH PROFILE (LT.) STA. 208+00.00, EL. 7.32

PI +85.57 EL. 7.08

BEGIN SP. DITCH PROFILE (LT.) STA. 206+50.00, EL. 7.08

7.45

18" PIPE FL 2.00

24" PIPE FL 1.20

7' X 5' CBC

208+85 14.00 EL. 6.30 12/2/20

+17.38 EL. 10.82

10.85 10.92 10.99 11.06 11.12 11.18 11.22 11.26 11.29 11.31 11.32 11.32 11.32 11.31 11.29 11.26 11.23 11.18

B-112

6' X 5' CBC

8" PIPE FL 4.50

12TH ST. E.

PGL

PI +04.88 EL. 11.66

(+) 0.448%

(+) 0.300%

Exist. ground @ ℄ Const. Canal Rd.

375' V.C.

BEGIN SP. DITCH PROFILE (LT.) STA. 211+00.00, EL. 8.52

PI +00.00 EL. 8.27

(-) 0.250%

(-) 0.380%

6' X 5' CBC

212+74 29.00 EL. 6.90 12/2/20

B-114

11.13

+92.38 EL. 11.10

11.08

END SP. DITCH PROFILE (LT.) STA. 213+00.00, EL. 7.89

36" PIPE FL 2.80

10.64

PI +98.47 EL. 11.08

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

206 207 208 209 210 211 212 213

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

ROADWAY PLAN & PROFILE (3)

SHEET NO.: 17

3:31:30 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\plprrd01.dgn

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1" = 50'

16TH AVE. E. (CANAL RD.)

POND CR-1

CSXT RAILROAD

CSXT RAILROAD

MATCHLINE STA. 213+00.00

MATCHLINE STA. 220+00.00

SEE RAILROAD DETAIL SHEET

EXIST. CSXT R/W LIMIT

213+19.08 69.08' LT.

113+45.58 28.78' LT.

113+95.55 28.78' LT.

5'x11' BOX CULVERT

CONST. 6' X 5' CBC

213+69.08 69.08' LT.

214+40.27 69.08' LT.

PROP. R/W

CONST. 9' OF 18" PIPE

CONST. 6' X 5' CBC

214+40.31 66.00' LT.

115+61.38 80.59' LT.

EXIST. R/W

CONNECT EXIST. 18" PIPE TO B-118

B-118

215+35.19 66.00' LT.

114+67.94 17.04' LT.

114+73.94 17.04' LT.

115+62.89 17.03' LT.

B-119

CONST. 51' OF DBL 19"X30" PIPE

S-104

CS-1

CONST. 33' OF 18" PIPE

EXIST. 15' UTILITY EASEMENT

6' CONC. SWK.

C & G TYPE F

EXIST. R/W

EXIST. R/W

219+01.02 66.00' LT.

PROP. R/W

119+28.24 16.97' LT.

CONST. 221' OF 30" PIPE

S-105

PI STA. 120+00.01

TO BE REMOVED

TO BE REMOVED

CONST. 117' OF 30" PIPE

TO BE REMOVED

S-100

S-102

℄ SURVEY CANAL RD.

CONST. 229' OF 30" PIPE

PI STA. 216+91.63

114

115

116

117

118

119

120

113

214

215

216

217

218

219

CONST. 76' OF 24" PIPE

N 00° 15' 52" W

+90.99 11.08' LT.

11.08' R

N 00° 27' 24" E

+90.92 11.08' LT.

C & G TYPE AB

N 00° 07' 34" E

+90.98 0.02' RT.

+90.92 0.00' LT.

N 01° 36' 22" E

℄ CONST. CANAL RD.

TO BE REMOVED

C & G TYPE AB

CONST. 117' OF 24" PIPE

115+73.68 32.97' RT.

S-101

S-103

EXIST. R/W

116+73.52 32.99' RT.

+90.99 11.08' RT.

+90.92 11.08' RT.

B-117

113+30.82 55.81' RT.

114+73.97 32.96' RT.

CONST. 6' OF 36" PIPE

213+02.45 54.00' RT.

24' DRIVEWAY +00.86

TCE

214+45.62 54.00' RT.

28' DRIVEWAY +17.20

TCE

C & G TYPE F

6' CONC. SWK.

TCE

36' DRIVEWAY +40.92

PROP. R/W

B-117A

EXIST. CSXT R/W LIMIT

EXIST. CSXT R/W LIMIT

WASTE CONNECTIONS

℄ END EXCEPTION STA. 213+75.86

1 PI STA. 213+35.73 RAILROAD CROSSING

2 213+81.86 11.08' LT.

3 213+76.86 6.08' LT.

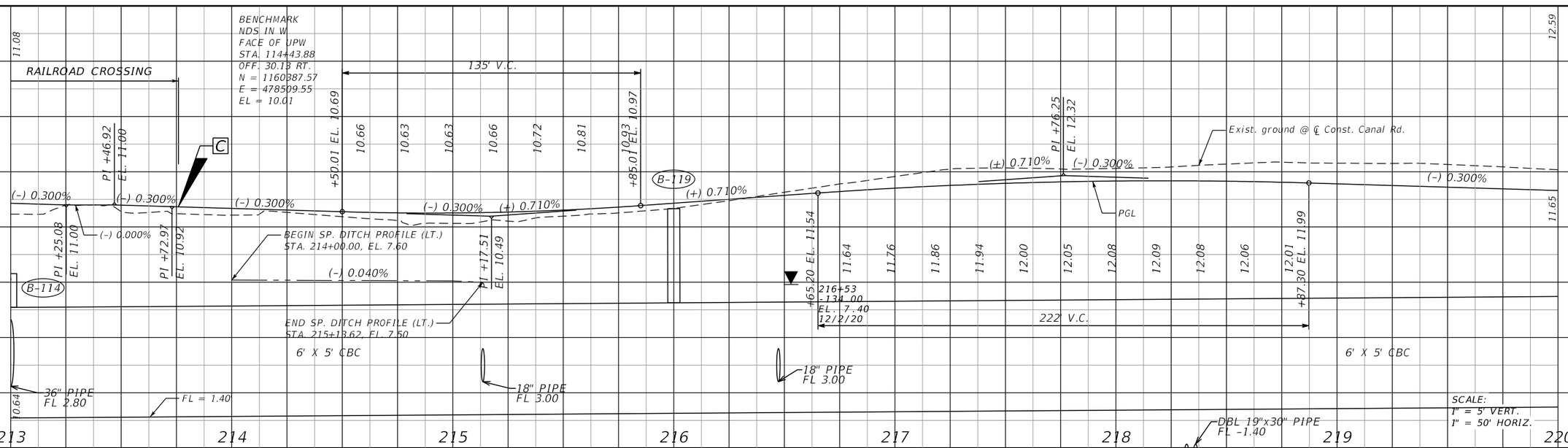
4 213+76.86 6.08' RT.

5 213+81.86 11.08' RT.

LEGEND

PROPOSED R/W TAKE

DETECTABLE WARNINGS



No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

ROADWAY PLAN & PROFILE (4)

SHEET NO.: 18

3:31:36 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\plprrd01.dgn

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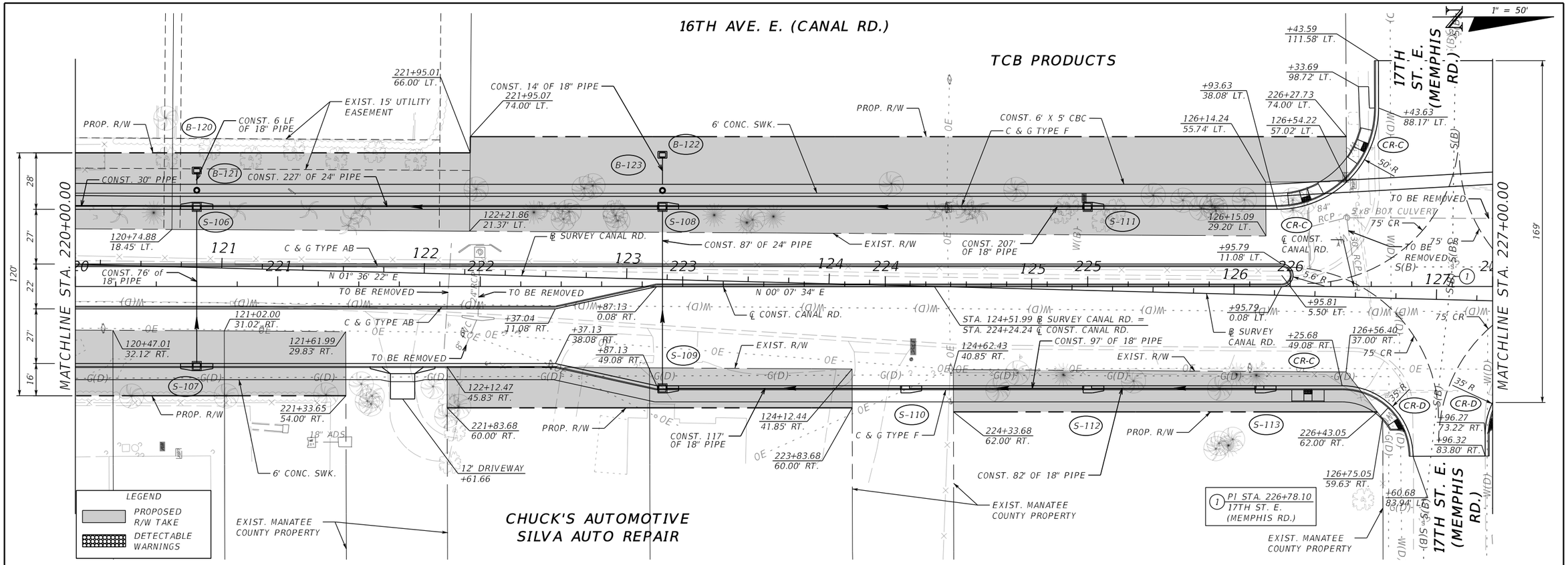

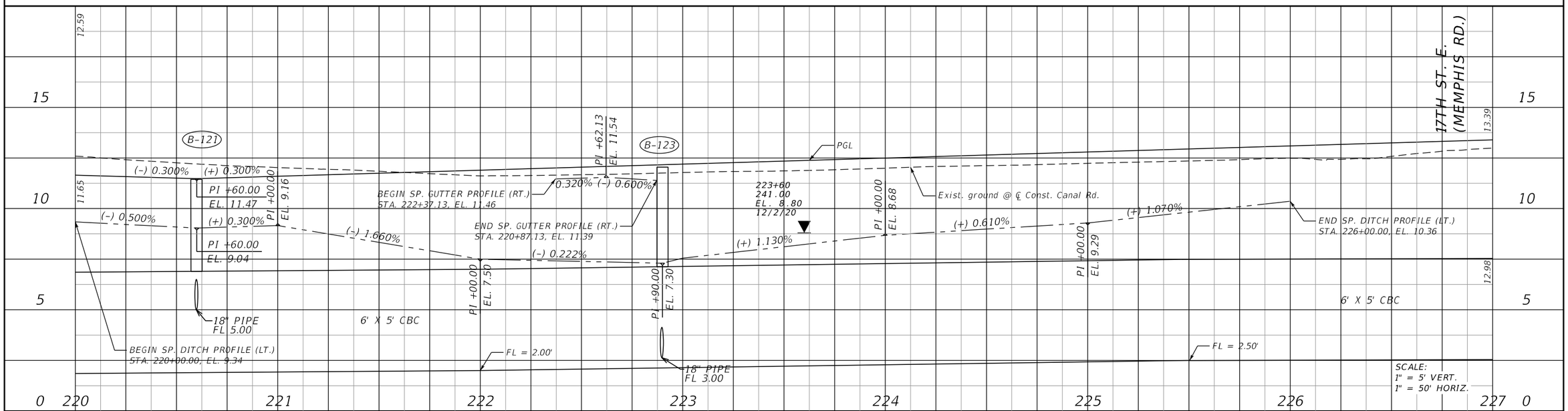

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

ROADWAY PLAN & PROFILE (5)

SHEET NO.: 19

3:31:42 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\plprrd01.dgn

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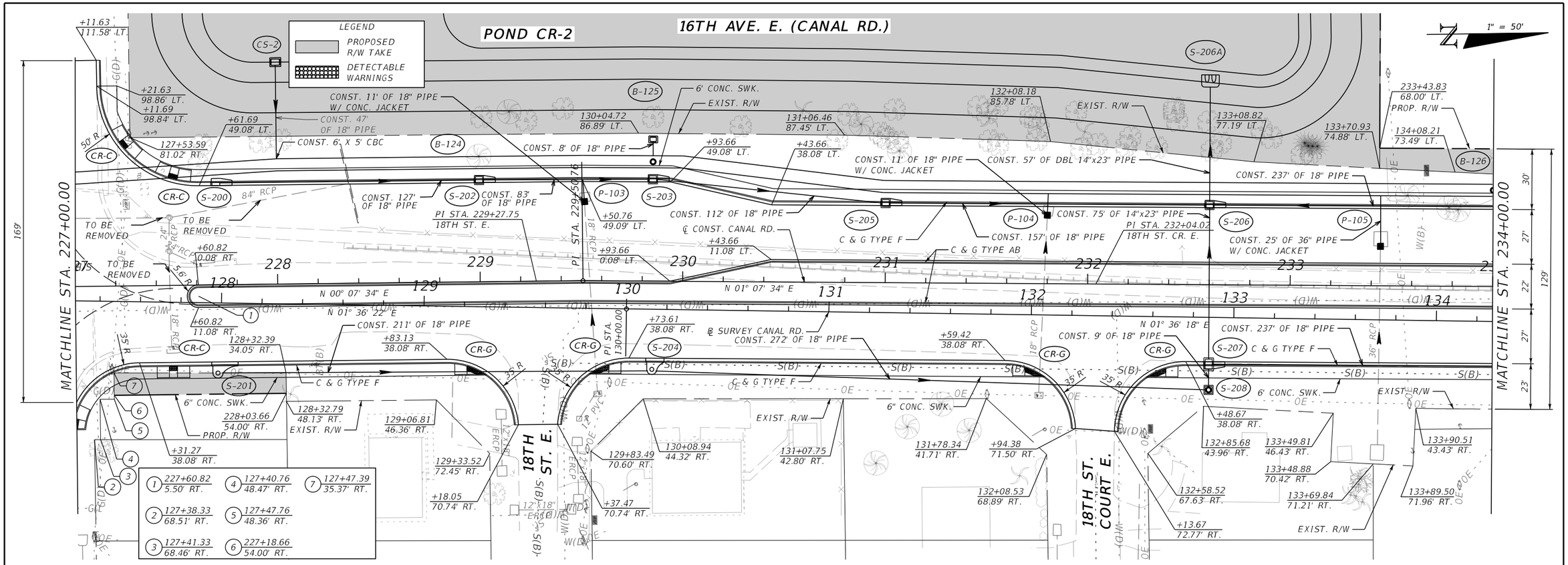

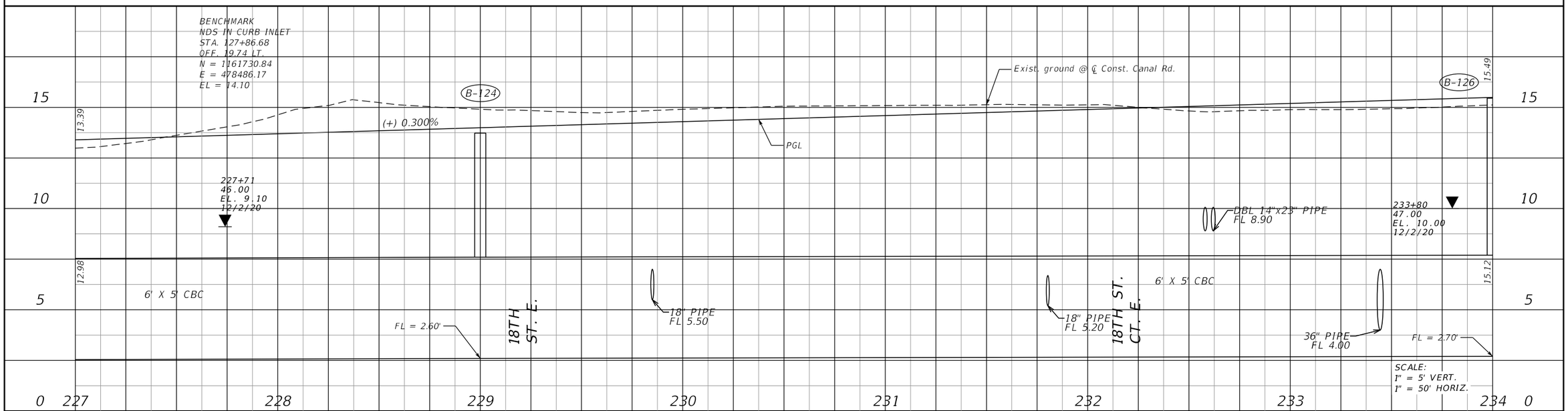

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

ROADWAY PLAN & PROFILE (6)

SHEET NO.: 20

3:31:48 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\plprrd01.dgn

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16TH AVE. E. (CANAL RD.)

END RECONSTRUCTION
END PGL
BEGIN WIDENING
BEGIN MILLING AND RESURFACING
STA. 240+26.47

MATCHLINE STA. 234+00.00

MATCHLINE STA. 241+00.00

21ST ST. E.

21ST ST. CT. E.

20TH ST. E.

CONST. 9' OF 18" PIPE
6' CONC. SWK.
C & G TYPE F
CONST. 6' X 5' CBC
PROP. R/W
EXIST. R/W
CONST. 4' OF 14"x23" PIPE W/ CONC. JACKET
CONST. 4' OF 24" PIPE W/ CONC. JACKET
24" RCP
48" RCP
5' CONC. SWK.
5' SHLDR. PAVT.
SAWCUT LINE
MILLING LIMITS
TO BE REMOVED
CONST. 18" PIPE
CONST. 297' OF 18" PIPE
C & G TYPE AB
6' CONC. SWK
EXIST. SWK. TO BE REMOVED
TCE
PI STA. 237+10.50
20TH ST. E.
PI STA. 239+68.07
PI STA. 140+00.01
℄ CONST. CANAL RD.
℄ SURVEY CANAL RD.
N 01° 07' 34" E
N 01° 36' 18" E
N 01° 38' 41" E
N 00° 00' 06" W
50' R
35' R

B-126 B-127 B-128 P-106 P-107
S-209 S-210 S-211 S-212
CR-G

134+45.57 72.49' LT.
134+77.50 59.34' LT.
+95.00 11.08' LT.
+95.00 0.00' LT.
+95.00 11.08' RT.
135+00.52 42.13' RT.
+30.19 38.08' RT.
136+65.16 38.19' RT.
+01.13 69.86' RT.
+11.23 70.09' RT.
+80.13 85.56' RT.
+80.45 91.98' RT.
+01.48 91.71' RT.
+40.85 89.13' RT.
+11.47 90.06' RT.
138+12.55 34.66' RT.
137+90.28 35.19' RT.
+90.82 38.08' RT.
+67.89 38.08' RT.
+88.03 38.08' RT.
139+97.73 30.23' RT.
140+24.67 55.20' RT.
+99.12 81.67' LT.
140+05.28 96.79' LT.
239+68.50 68.91' LT.
139+78.18 71.32' LT.
+49.53 38.08' LT.
+24.36 80.09' LT.
+25.95 67.62' LT.
240+55.99 65.92' LT.
+73.52 24.14' LT.
+58.67 38.61' RT.
+53.57 44.61' RT.
+27.91 54.97' RT.
+18.14 55.23' RT.
140+94.59 52.67' RT.
140+96.79 105.56' RT.

LEGEND
DETECTABLE WARNINGS
PROPOSED R/W TAKE
SHLDR. PAVT.
PROP. WIDENING

9 EXIST. GUARDRAIL TO BE REMOVED

ANTHONY'S COOLING-HEATING-ELECTRICAL

1	140+82.27 88.43' LT.	3	141+16.76 30.67' RT.	5	PI STA. 240+34.16 21ST ST. CT. E.	7	240+50.93 68.33' LT.
2	141+00.35 70.62' LT.	4	PI STA. 240+11.48 21ST ST. E.	6	240+45.93 68.20' LT.	8	240+35.24 44.50' LT.

1" = 50'

129' 30' 27' 22' 27' 23'

44' 115' 52' 19'

(+) 0.300% (+) 0.138% (+) 0.138% (-) 0.351%
(-) 0.210% (-) 0.360% (+) 0.350%

PI +85.00 EL. 16.65
PI +50.00 EL. 16.88
PI +00.00 EL. 13.21
PI +00.00 EL. 12.85

Exist. ground @ ℄ Const. Canal Rd.
PGL
BEGIN SP. DITCH PROFILE (LT.) STA. 235+00.00, EL. 13.42
END SP. DITCH PROFILE (LT.) STA. 238+00.00, EL. 13.20
239+78 38.00 EL. 11.50 12/2/20

15.49 15.12 16.61 16.55

6' X 5' CBC
6' X 5' CBC
18" PIPE FL 7.00
24" PIPE FL 7.50
14"x23" PIPE FL 8.50
FL = 2.70'
FL = 4.50'
FL = 4.80'

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

15 10 5 0 234 235 236 237 238 239 240 241

No.	REVISIONS	DATE	BY

SCALE AS NOTED
DESIGNED BY JLS
DRAWN BY TME
CHECKED BY TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE 12/2021
PROJECT NO. 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER JASON L. STARR
FL. LICENSE NO. 70171

ROADWAY PLAN & PROFILE (7)

SHEET NO. 21

3:31:54 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\plprrd01.dgn

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

16TH AVE. E. (CANAL RD.)

PALMETTO ESTATES

1" = 50'

MATCHLINE STA. 241+00.00

115' 44' 52' 19'

42" ADS

EXIST. R/W

EXIST. EASEMENT

PROP. R/W

CONST. 6' X 5' CBC

B-129

CONST. 7' OF 42" PIPE

B-130

CONST. 4' OF 18" PIPE

B-131

5' CONC. SWK.

5' SHLDR. PAVT.

℄ CONST. CANAL RD.

(D)S.B/S S(ES(D)

S(D)

SAWCUT LINE

N 01° 38' 41" E

℄ SURVEY CANAL RD.

W(D)

OE

EXIST. R/W

MILLING LIMITS

+16.03
22.32' LT.

9

+75.74
3.01' LT.

+29.48
44.50' LT.

+47.27
26.72' LT.

145+96.97
68.24' LT.

+51.58
6.99' LT.

+76.44
12.57' LT.

+51.90
5.03' LT.

+77.55
29.18' RT.

144+75.76
32.15' RT.

144+75.71
42.15' RT.

145+25.76
32.36' RT.

145+25.71
42.35' RT.

1 PI STA. 246+30.66
22ND LN. E.

245+96.36
78.81' LT.

146+32.13
103.09' LT.

22ND LN. E.

146+82.12
102.86' LT.

EXIST. 10' R/W EASEMENT

147+16.97
67.71' LT.

147+87.50
67.40' LT.

EXIST. R/W

147+87.48
63.41' LT.

147+91.68
33.45' RT.

B-132

EXIST. SIDEWALK TO REMAIN

60" RCP

60" RCP

24" RCP

15" RCP

PC STA. 245+50.85

REMOVE EXIST. GUARDRAIL

CURVE 1

N 00° 00' 06" W

E

F

END CONSTRUCTION (NB & SB)
STA. 245+85.00

241 242 243 244 245 246 247 248

LEGEND

PROPOSED R/W TAKE

SHLDR. PAVT.

PROP. WIDENING

END PROJECT

E END WIDENING
STA. 244+52.56

F END MILLING & RESURFACING
STA. 244+77.55

SEE PROJECT LAYOUT FOR CURVE DATA

Exist. ground @ ℄ Const. Canal Rd.

B-131

B-133

BEGIN SP. DITCH PROFILE (LT.)
STA. 241+00.00, EL. 13.75

(-) 0.260%

PI +00.00
EL. 13.49

(-) 0.310%

END SP. DITCH PROFILE (LT.)
STA. 244+00.00, EL. 12.87

243+77
37.00
EL. 11.50
12/2/20

6' X 5' CBC

16.55

42" PIPE
FL 5.60

18" PIPE
FL 8.40

FL = 5.50'

BEGIN SP. DITCH PROFILE (LT.)
STA. 244+52.56, EL. 5.32

(+) 2.300%

END SP. DITCH PROFILE (LT.)
STA. 245+82.25, EL. 8.30

DBL 60" RCP

FL = 8.32

FL = 8.65'

14.70

22ND LN. E.

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

15 10 5 0

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA

MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

ROADWAY PLAN & PROFILE (8)

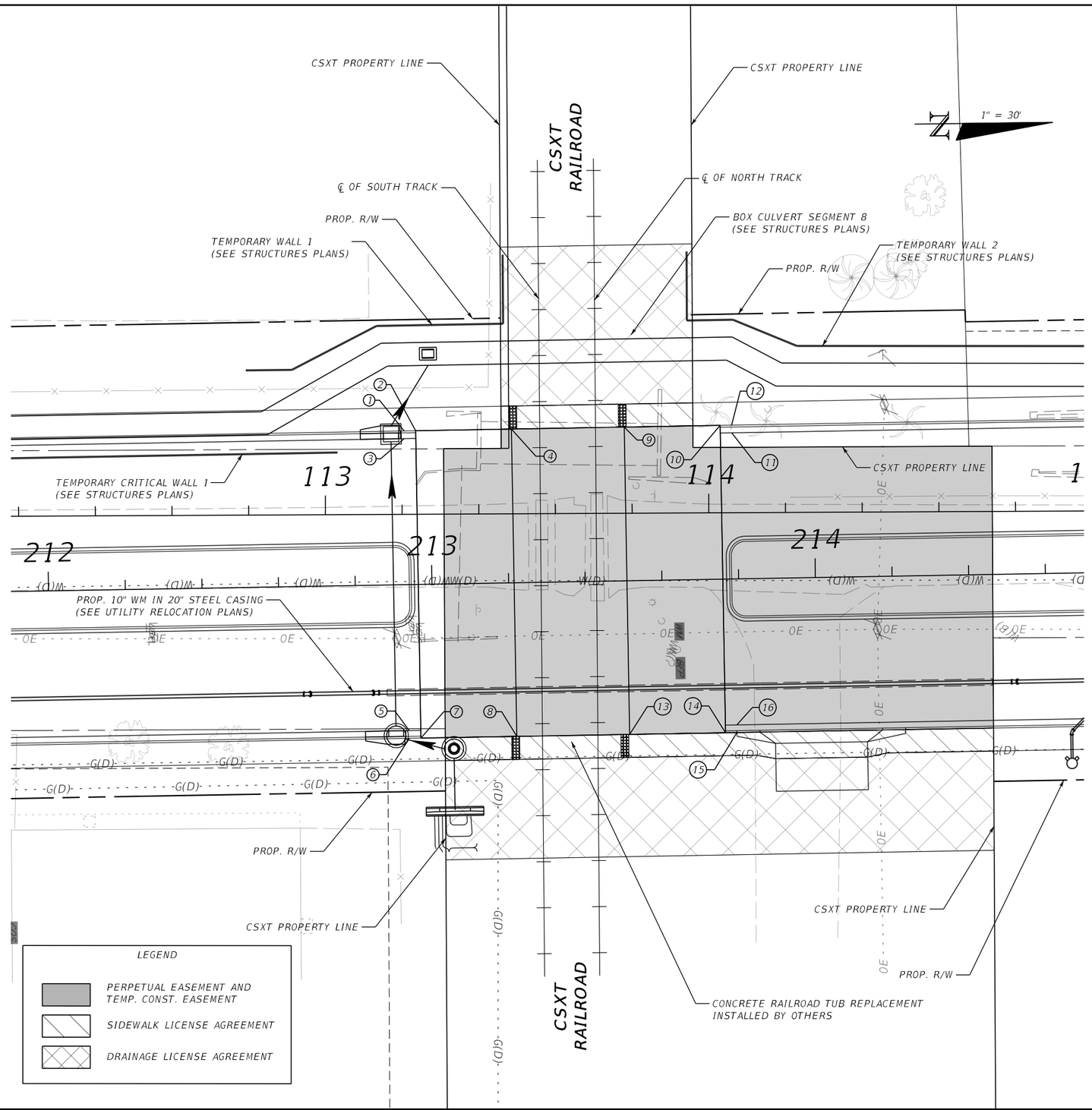
SHEET NO.: 22

3:31:59 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\plprrd01.dgn

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

NOTES:

1. CONCRETE TUB REPLACEMENT TO BE CONSTRUCTED BY OTHERS IN COORDINATION WITH CONTRACTOR. APPROACH SLABS TO BE COORDINATED WITH CONCRETE TUB VENDOR FOR DIMENSIONS.
2. EXISTING BOX CULVERT TO BE REMOVED.
3. TEMPORARY WALLS 1 AND 2 ARE SHOWN PER STRUCTURES PLANS. CONTRACTOR TO COORDINATE WITH CSXT REGARDING PROPOSED BOX CULVERT CONSTRUCTION.
4. PROPOSED 10" WM IN 20" STEEL CASING TO BE INSTALLED BY JACK AND BORE. SEE UTILITY RELOCATION PLANS FOR DETAILS.
5. OVERHEAD GATES FOR ROADWAY CROSSING AND PEDESTRIAN CROSSING SHALL BE CONSTRUCTED BY OTHERS.



1. 212+93.43, 40.08' LT. BEGIN SIDEWALK TRANSITION
2. 212+96.43, 40.08' LT. BEGIN APPROACH SLAB
3. 212+93.43, 38.08' LT. BEGIN CURB AND GUTTER TRANSITION
4. 213+21.43, 40.08' LT. END APPROACH SLAB
5. 212+93.43, 38.08' RT. BEGIN CURB AND GUTTER TRANSITION
6. 212+93.43, 40.08' RT. BEGIN SIDEWALK TRANSITION
7. 212+96.43, 40.08' RT. BEGIN APPROACH SLAB
8. 213+21.43, 40.08' RT. END APPROACH SLAB
9. 213+50.86, 40.08' LT. BEGIN APPROACH SLAB
10. 213+75.86, 40.08' LT. END APPROACH SLAB
11. 213+78.86, 38.08' LT. END CURB AND GUTTER TRANSITION
12. 213+78.86, 40.08' LT. END SIDEWALK TRANSITION
13. 213+50.86, 40.08' RT. BEGIN APPROACH SLAB
14. 213+75.86, 40.08' RT. END APPROACH SLAB
15. 213+78.86, 38.08' RT. END SIDEWALK TRANSITION
16. 213+78.86, 38.08' RT. END CURB AND GUTTER TRANSITION

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

RAILROAD CROSSING DETAIL (1)

SHEET NO.: 23

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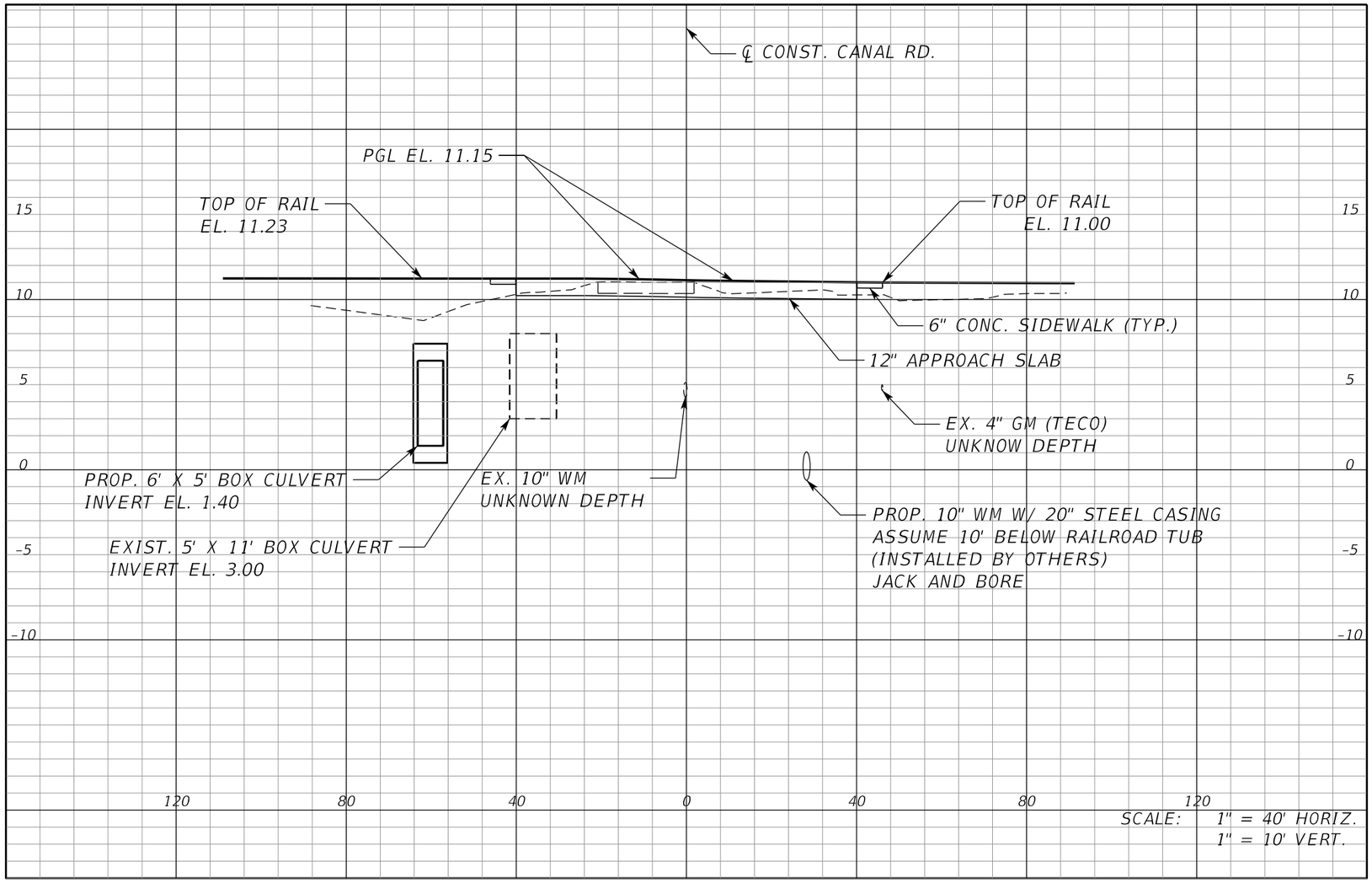

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

RAILROAD CROSSING DETAIL (2)

SHEET NO.: 24

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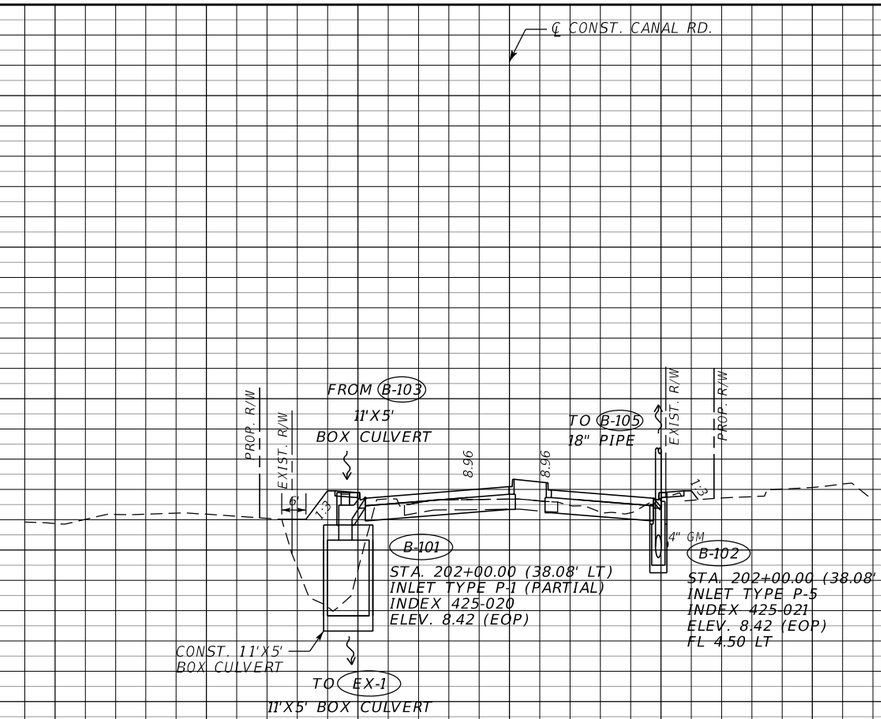

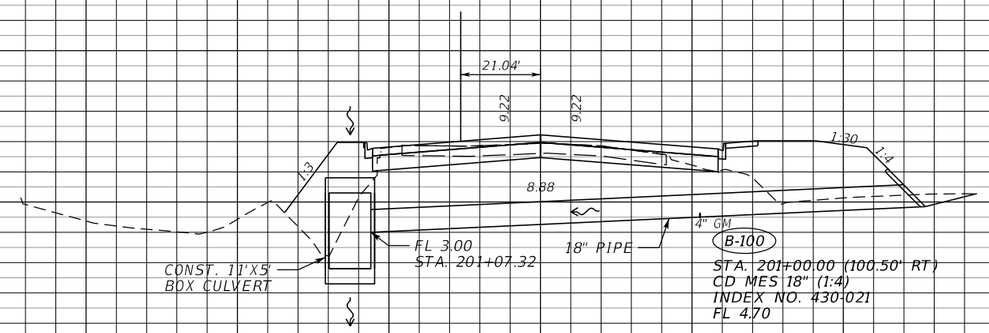

B-102
B-101
202+00.00

B-100
201+00.00

℄ CONST. CANAL RD.

280 240 200 160 120 80 40 0 40 80 120 160 200 240

SCALE:
1" = 40' HORIZ.
1" = 10' VERT

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
ADAM RAY MITCHUM
FL. LICENSE NO.
83296

DRAINAGE STRUCTURES

SHEET NO.
25

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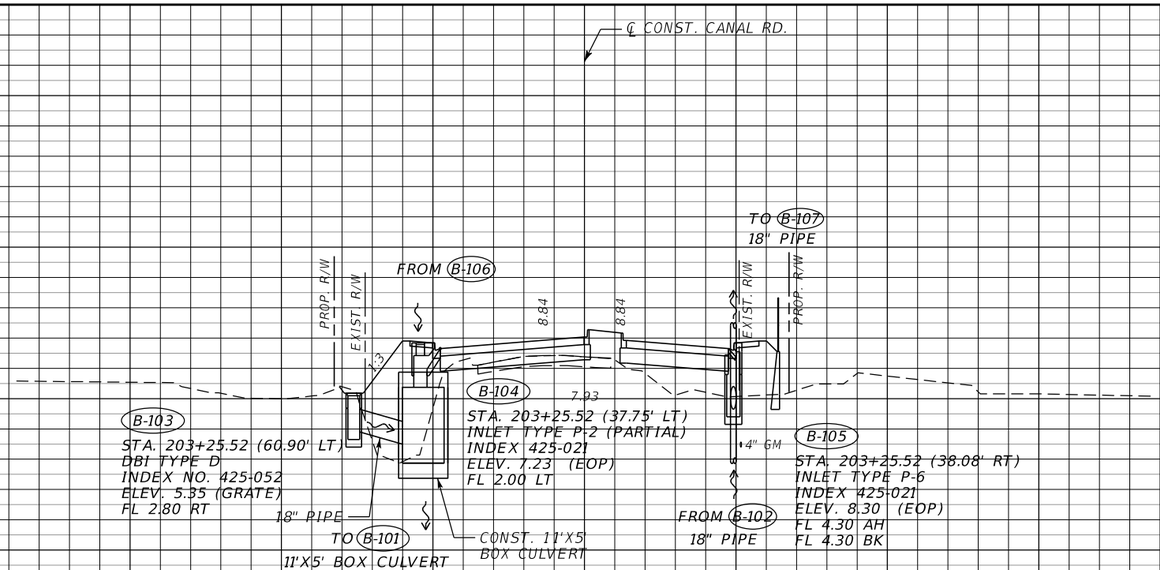

SCALE: 1" = 40' HORIZ. 1" = 10' VERT

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SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

DRAINAGE STRUCTURES

SHEET NO.: 26

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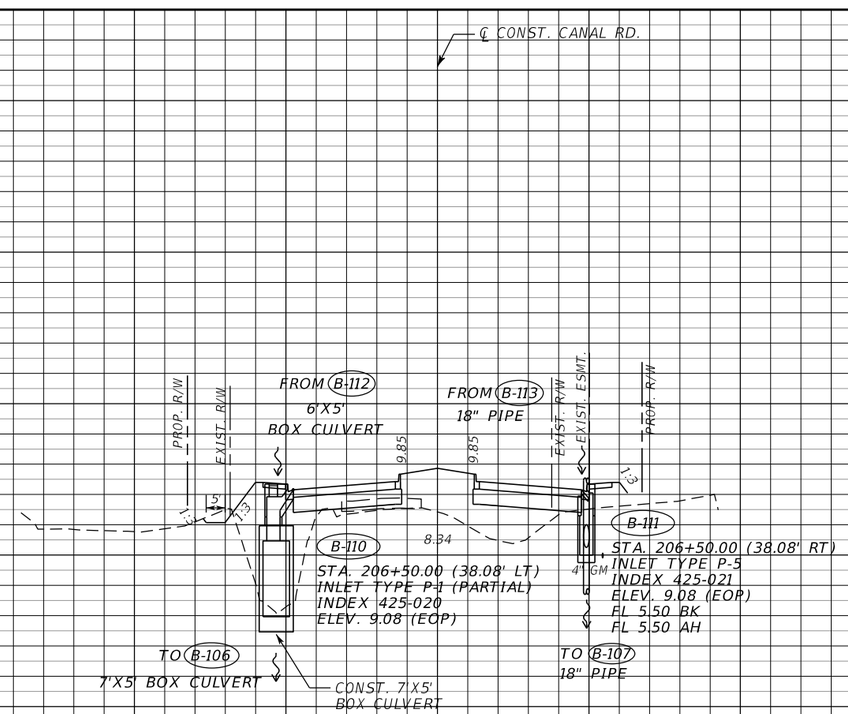

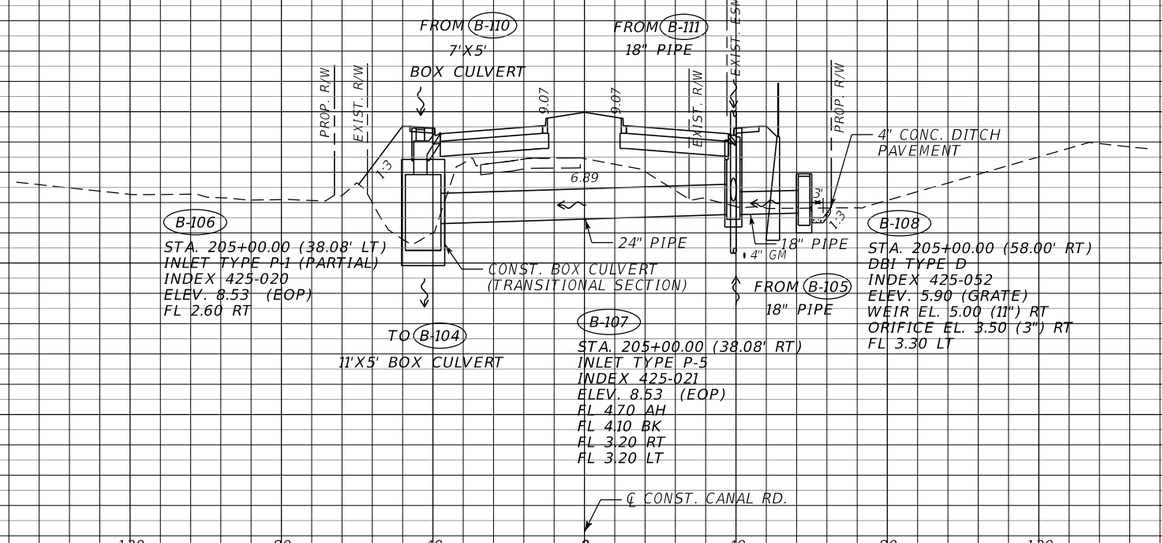

B-111
B-110
206+50.00

B-108
B-107
B-106
205+00.00

SCALE:
1" = 40' HORIZ.
1" = 10' VERT

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

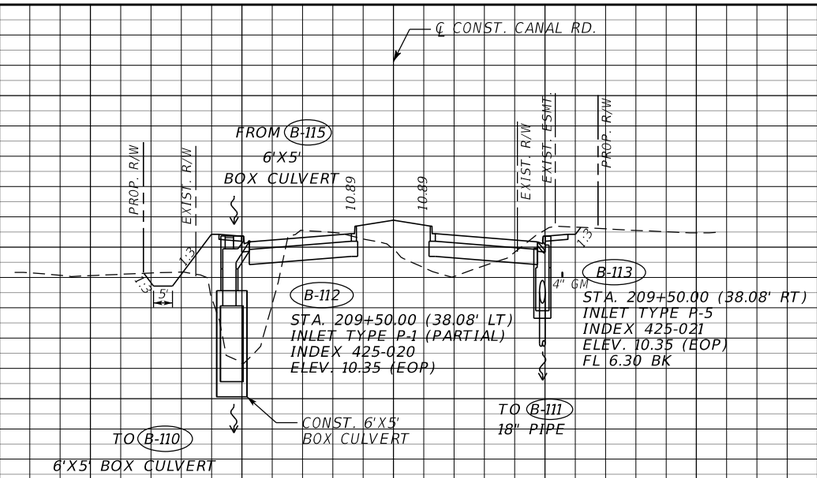
Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
ADAM RAY
MITCHUM
FL. LICENSE NO.
83296

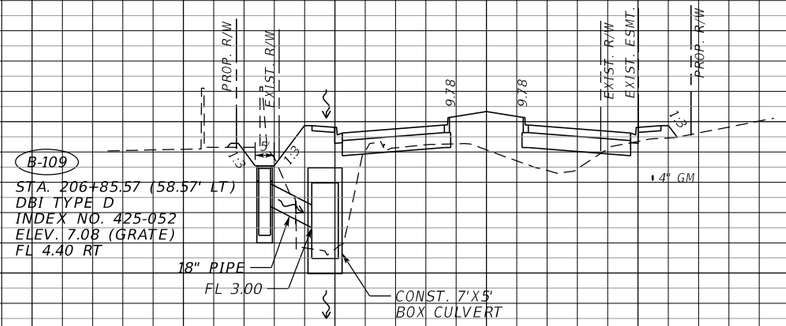
DRAINAGE STRUCTURES

SHEET NO.
27

3:33:00 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\drxsrd01_new.DGN



B-113
B-112
209+50.00



B-109
206+85.57

SCALE:
1" = 40' HORIZ.
1" = 10' VERT

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HDR Engineering, Inc.
4830 W Kennedy Blvd.
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Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
ADAM RAY MITCHUM
FL. LICENSE NO.
83296

DRAINAGE STRUCTURES

SHEET NO.
28

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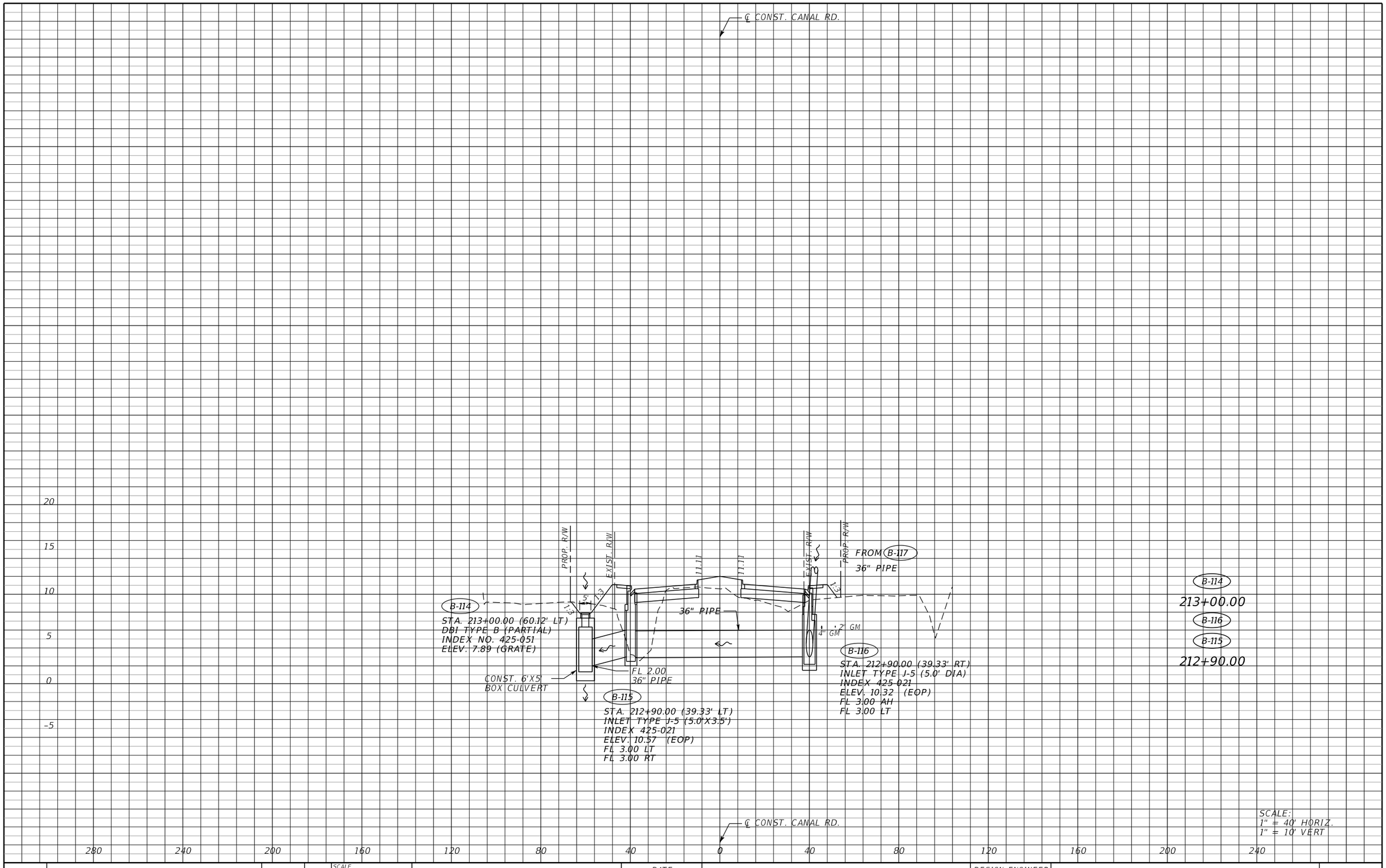

SCALE:
1" = 40' HORIZ.
1" = 10' VERT

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd,
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER
ADAM RAY MITCHUM
FL. LICENSE NO.
83296

DRAINAGE STRUCTURES

SHEET NO.
29

3:33:04 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\drxsrd01_new.DGN

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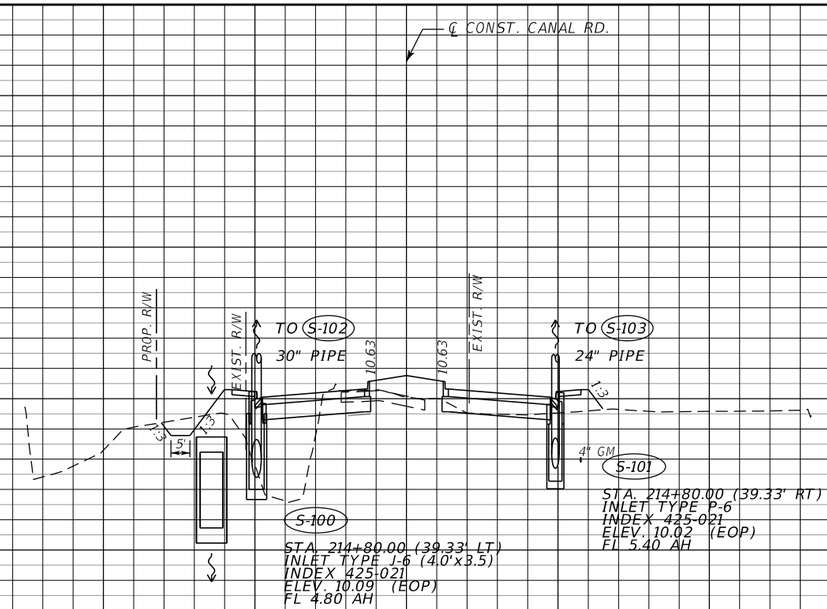

SCALE:
1" = 40' HORIZ.
1" = 10' VERT

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
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Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

DRAINAGE STRUCTURES

SHEET NO.: 30

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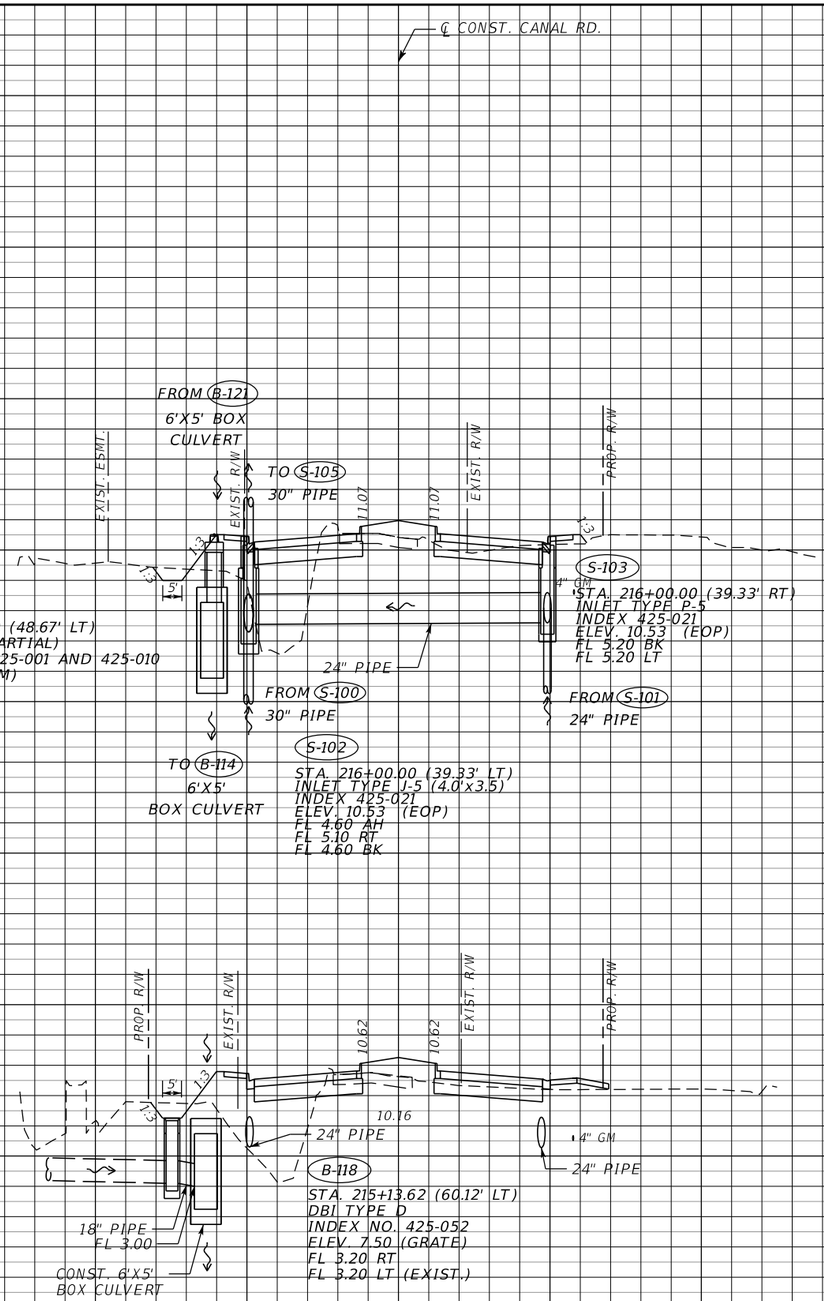

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

DRAINAGE STRUCTURES

SHEET NO.: 31

3:33:07 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\drxsrd01_new.DGN

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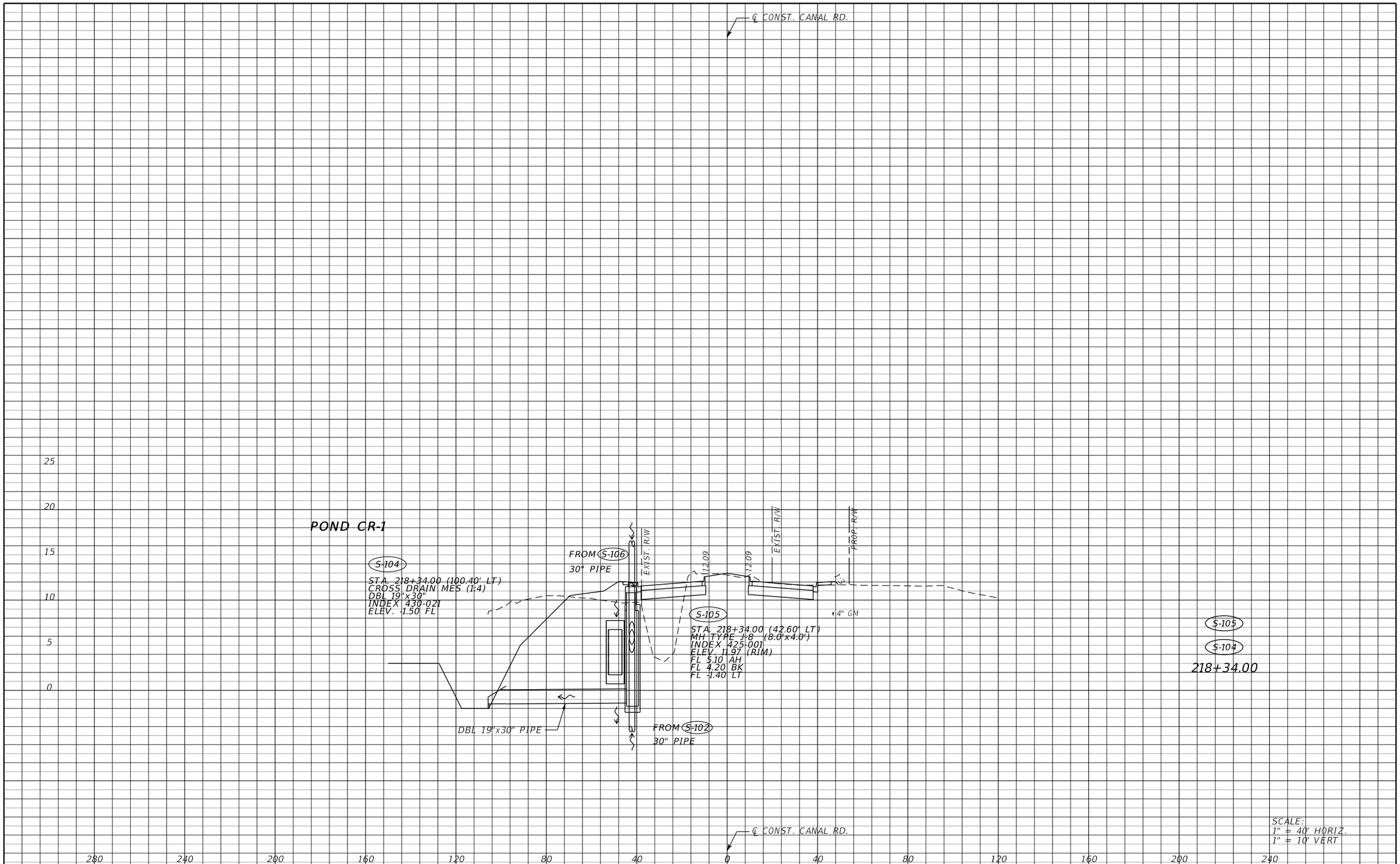

SCALE:
1" = 40' HORIZ.
1" = 10' VERT

				SCALE: AS NOTED	HDR Engineering, Inc. 4830 W Kennedy Blvd. Suite 400 Tampa, FL 33609-2548	DATE: 12/2021	MANATEE COUNTY PUBLIC WORKS	DESIGN ENGINEER: ADAM RAY MITCHUM
				DESIGNED BY: AJM		PROJECT NO.: 6094360		FL. LICENSE NO.: 83296
				DRAWN BY: AMS				
No.	REVISIONS	DATE	BY	CHECKED BY: PH				

DRAINAGE STRUCTURES

SHEET NO. 32

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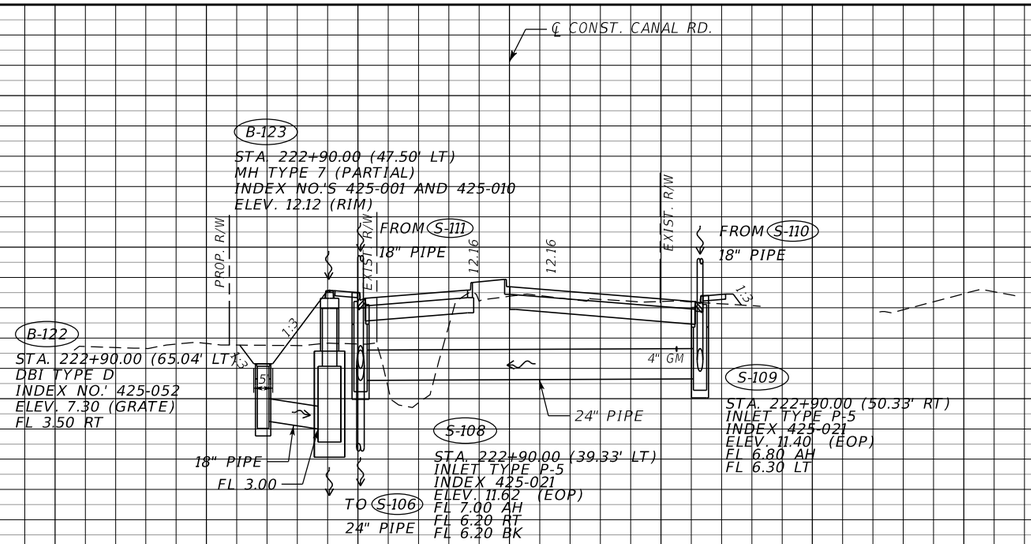
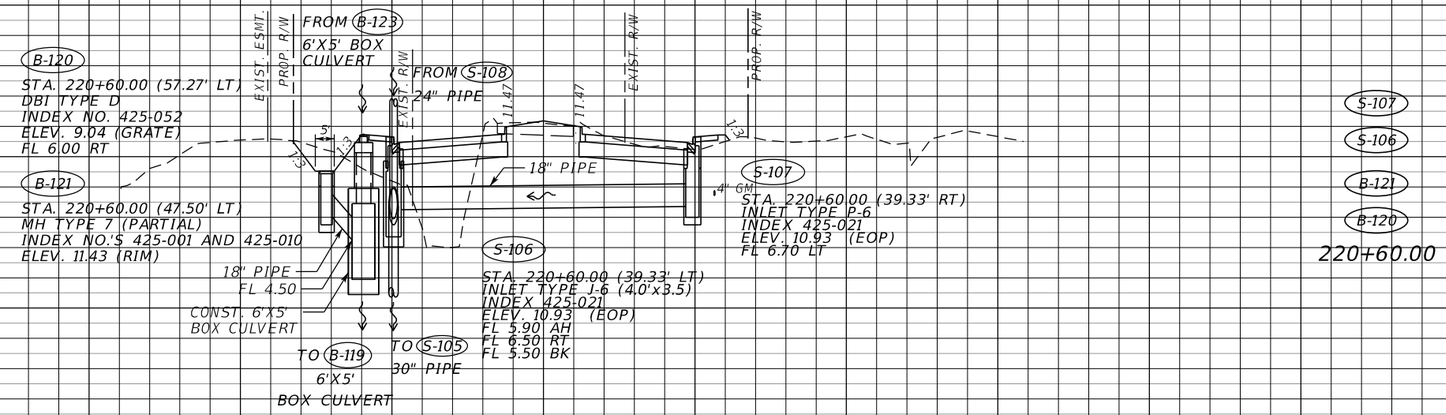
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.





SCALE:
1" = 40' HORIZ.
1" = 10' VERT

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd,
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

DRAINAGE STRUCTURES

SHEET NO.: 33

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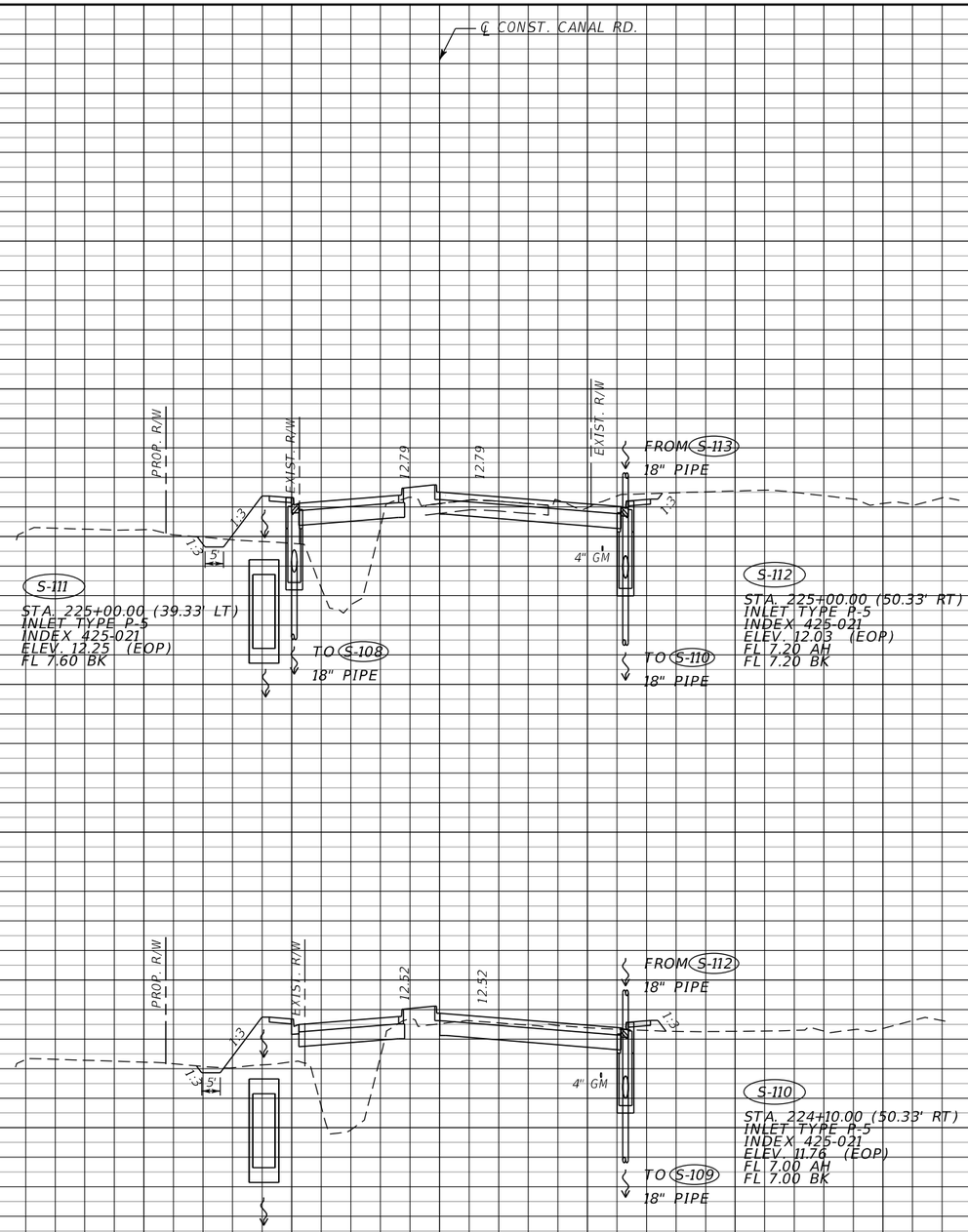

S-112

S-111

225+00.00

S-110

224+10.00

SCALE:
1" = 40' HORIZ.
1" = 10' VERT

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA

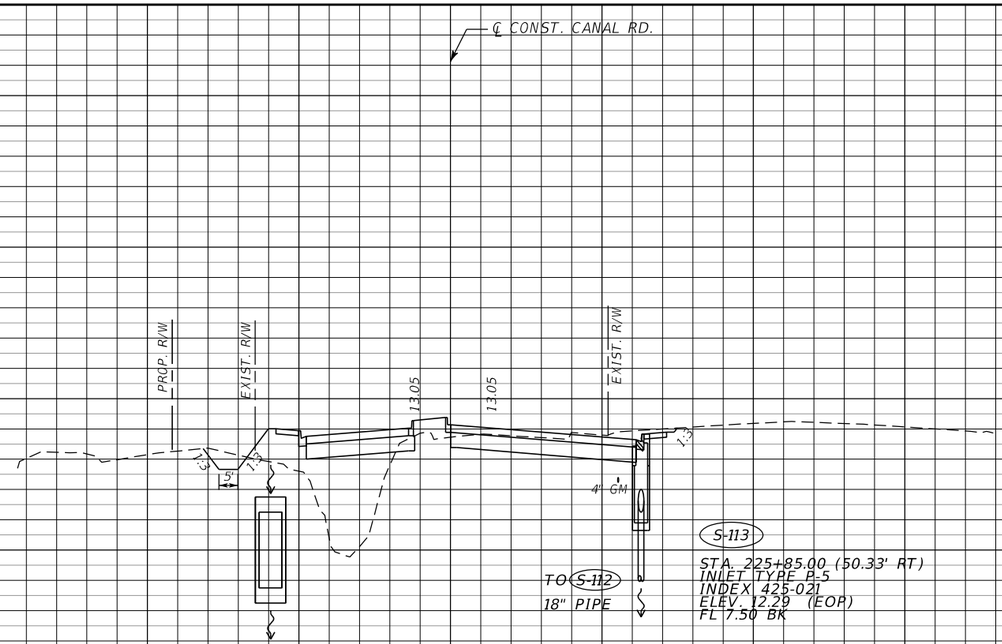
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
ADAM RAY MITCHUM
FL. LICENSE NO.
83296

DRAINAGE STRUCTURES

SHEET NO.
34

3:33:12 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\drxsrd01_new.DGN



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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
ADAM RAY
MITCHUM
FL. LICENSE NO.
83296

DRAINAGE STRUCTURES

SHEET NO.
35

3:33:13 PM 12/11/2021
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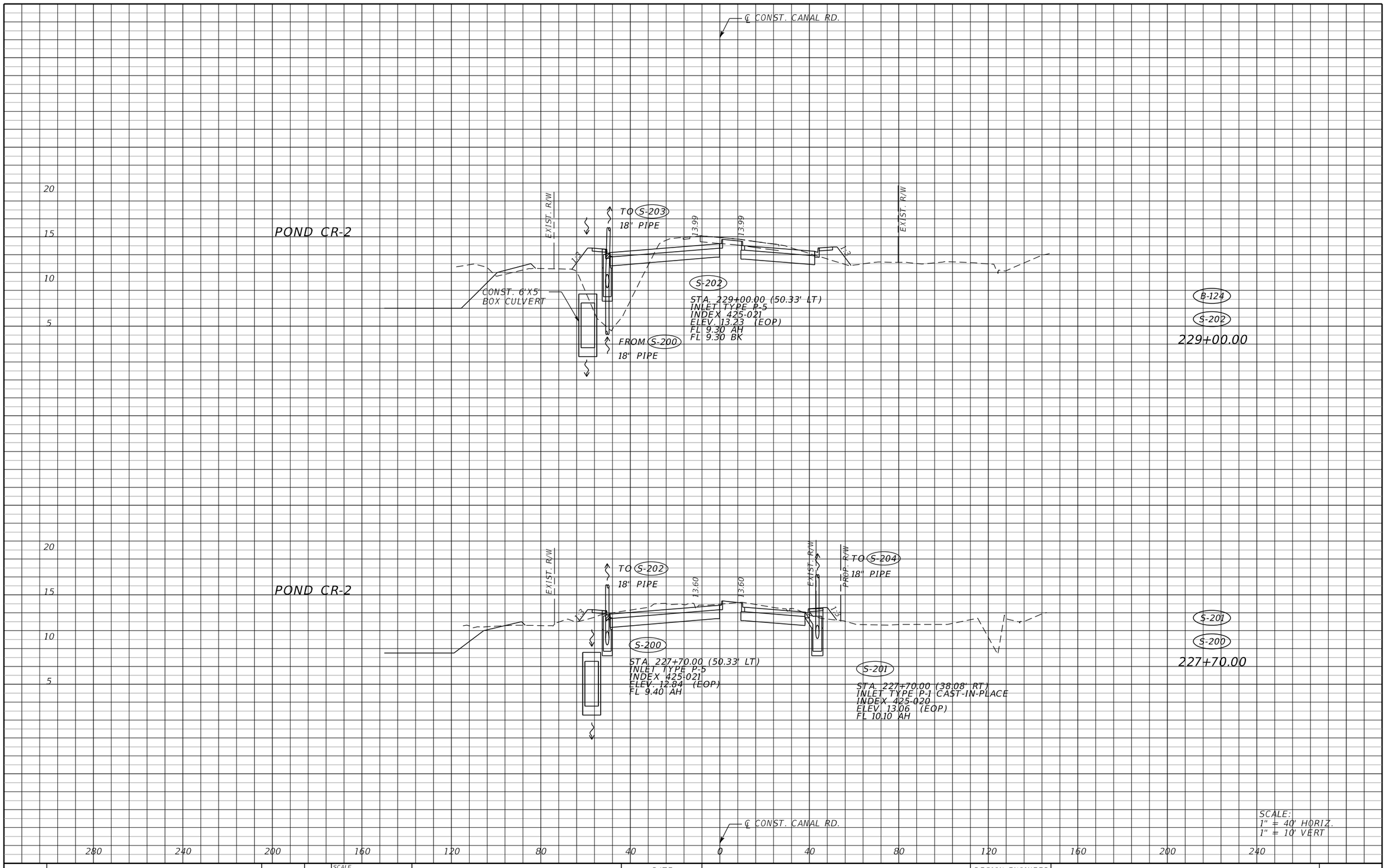


No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

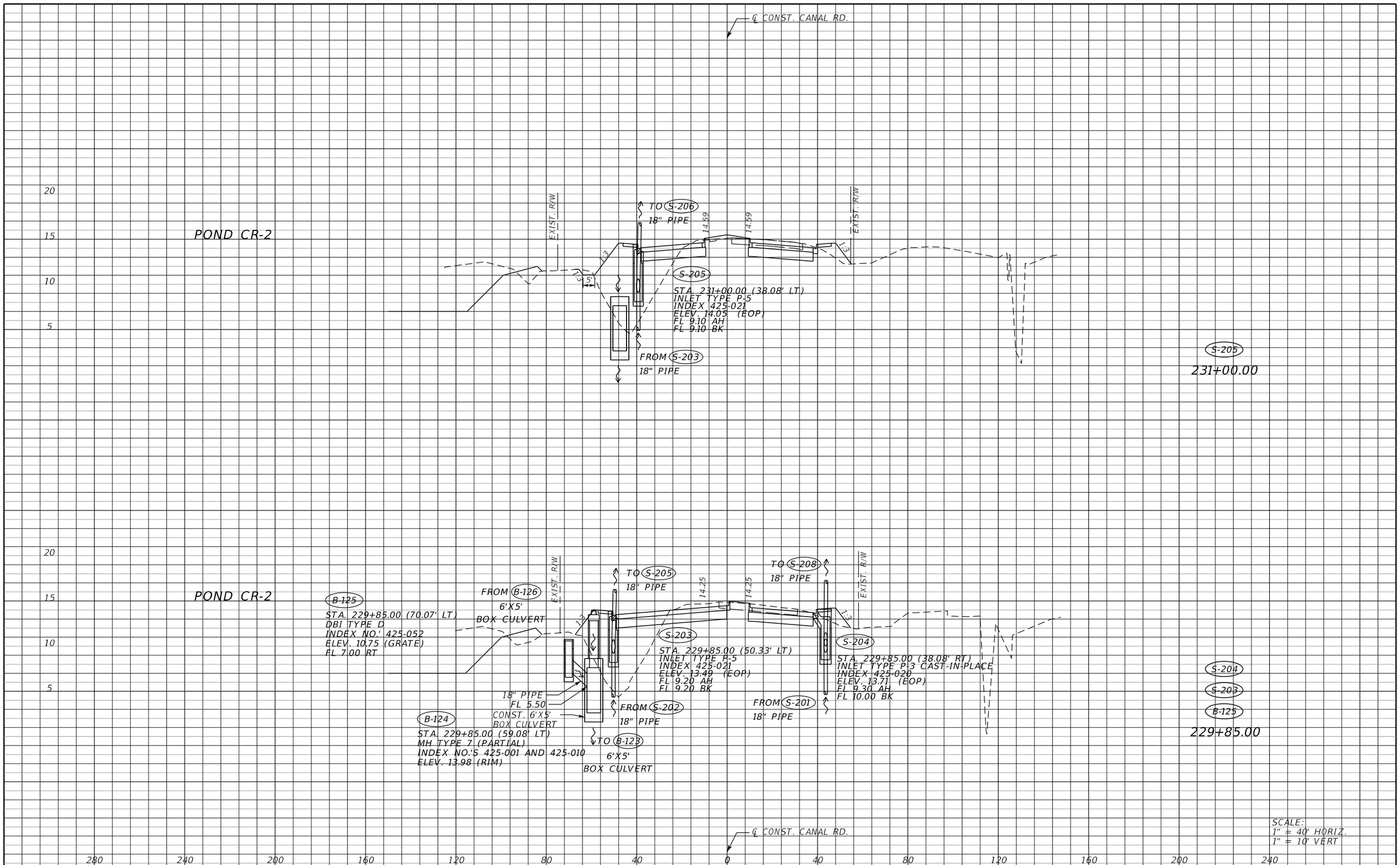
DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

DRAINAGE STRUCTURES

SHEET NO.: 36

3:33:15 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\drxsrd01_new.DGN

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



SCALE:
1" = 40' HORIZ.
1" = 10' VERT

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

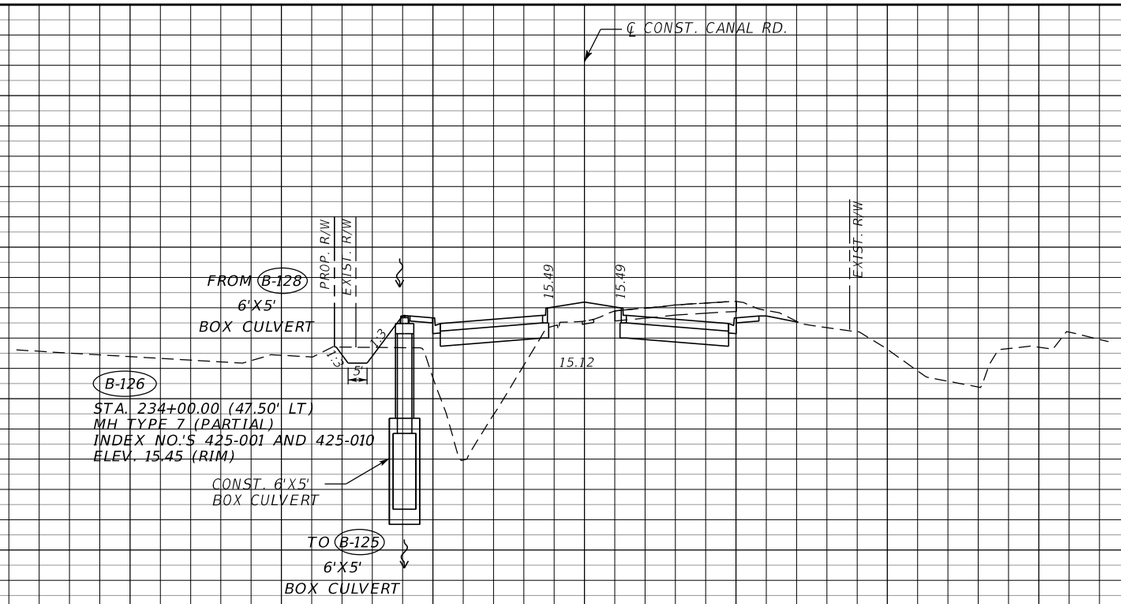
DESIGN ENGINEER
ADAM RAY MITCHUM
FL. LICENSE NO.
83296

DRAINAGE STRUCTURES

SHEET NO.
37

3:33:16 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\drxsrd01_new.DGN

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



No.	REVISIONS	DATE	BY

SCALE	AS NOTED
DESIGNED BY	AJM
DRAWN BY	AMS
CHECKED BY	PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE 12/2021

PROJECT NO. 6094360

Manatee County FLORIDA

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER ADAM RAY MITCHUM

FL. LICENSE NO. 83296

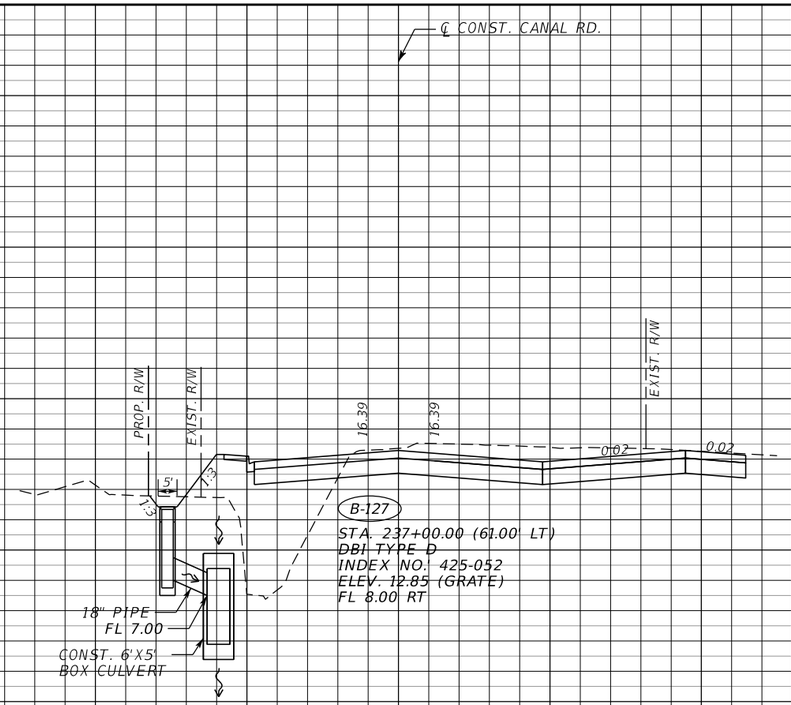
DRAINAGE STRUCTURES

SHEET NO. 38

3:33:18 PM 12/11/2021

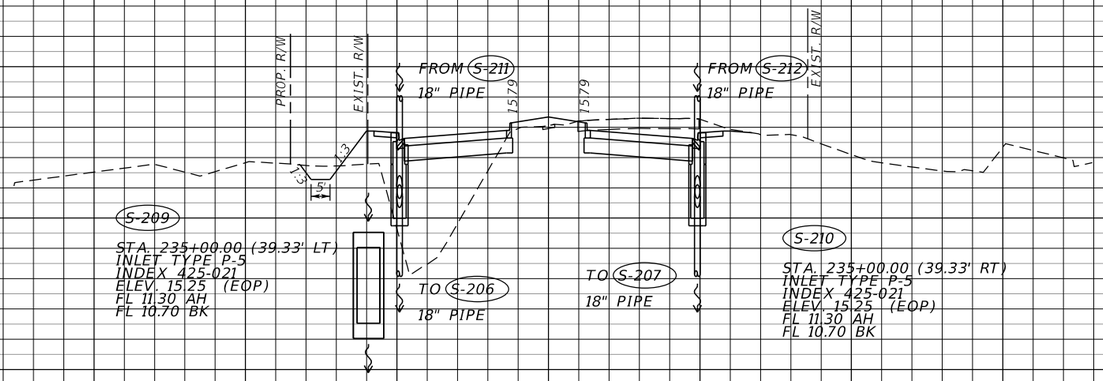
PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\drxsrd01_new.DGN

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



B-127

237+00.00



S-210

S-209

235+00.00

25 20 15 10 5

280 240 200 160 120 80 40 0 40 80 120 160 200 240

℄ CONST. CANAL RD.

SCALE:
1" = 40' HORIZ.
1" = 10' VERT

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA

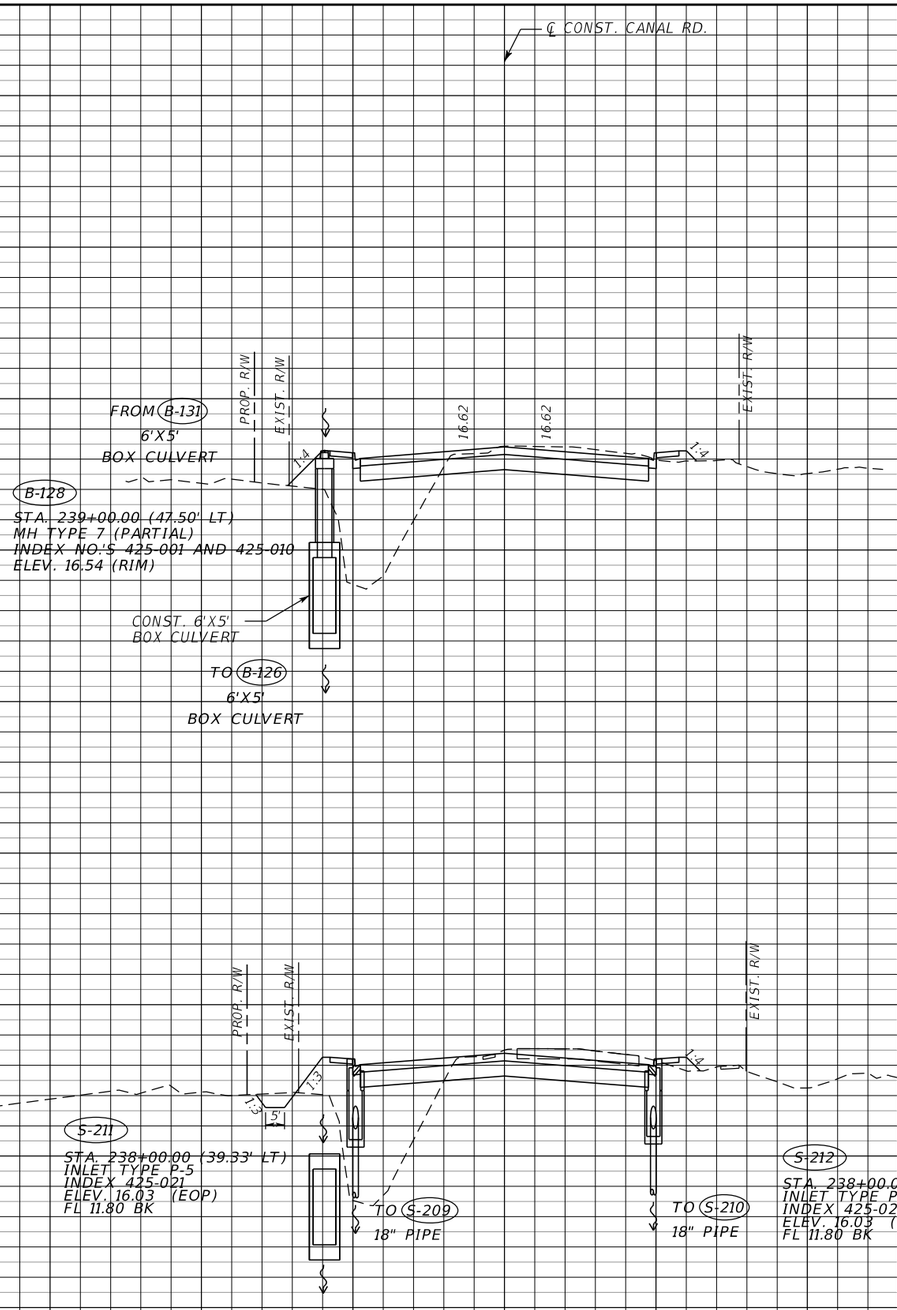
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
ADAM RAY MITCHUM
FL. LICENSE NO.
83296

DRAINAGE STRUCTURES

SHEET NO.
39

3:33:21 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\drxsrd01_new.DGN



B-128

239+00.00

S-212

S-211

238+00.00

SCALE:
1" = 40' HORIZ.
1" = 10' VERT

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

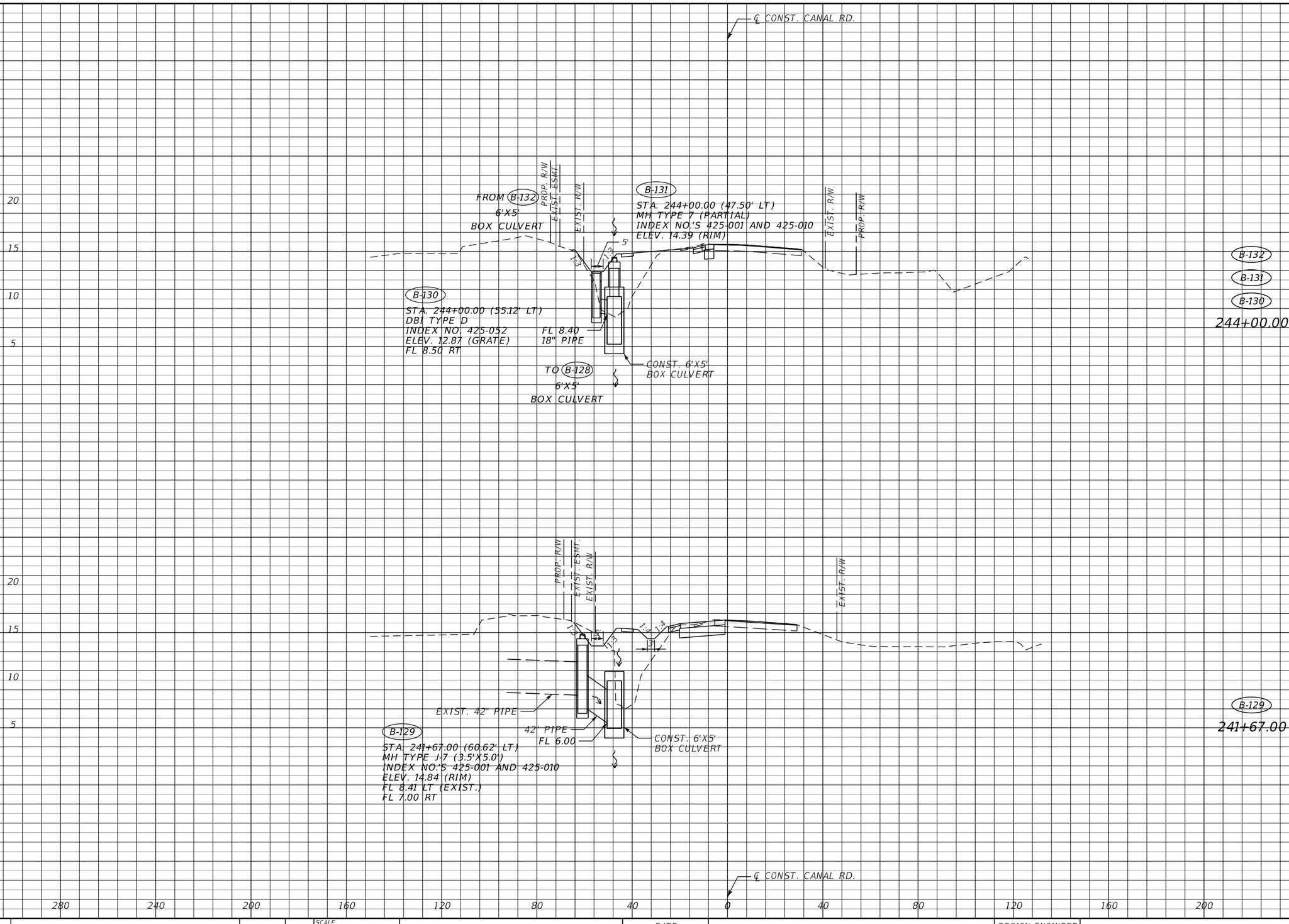
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

DRAINAGE STRUCTURES

SHEET NO.: 40

3:33:22 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\drxsrd01_new.DGN



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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

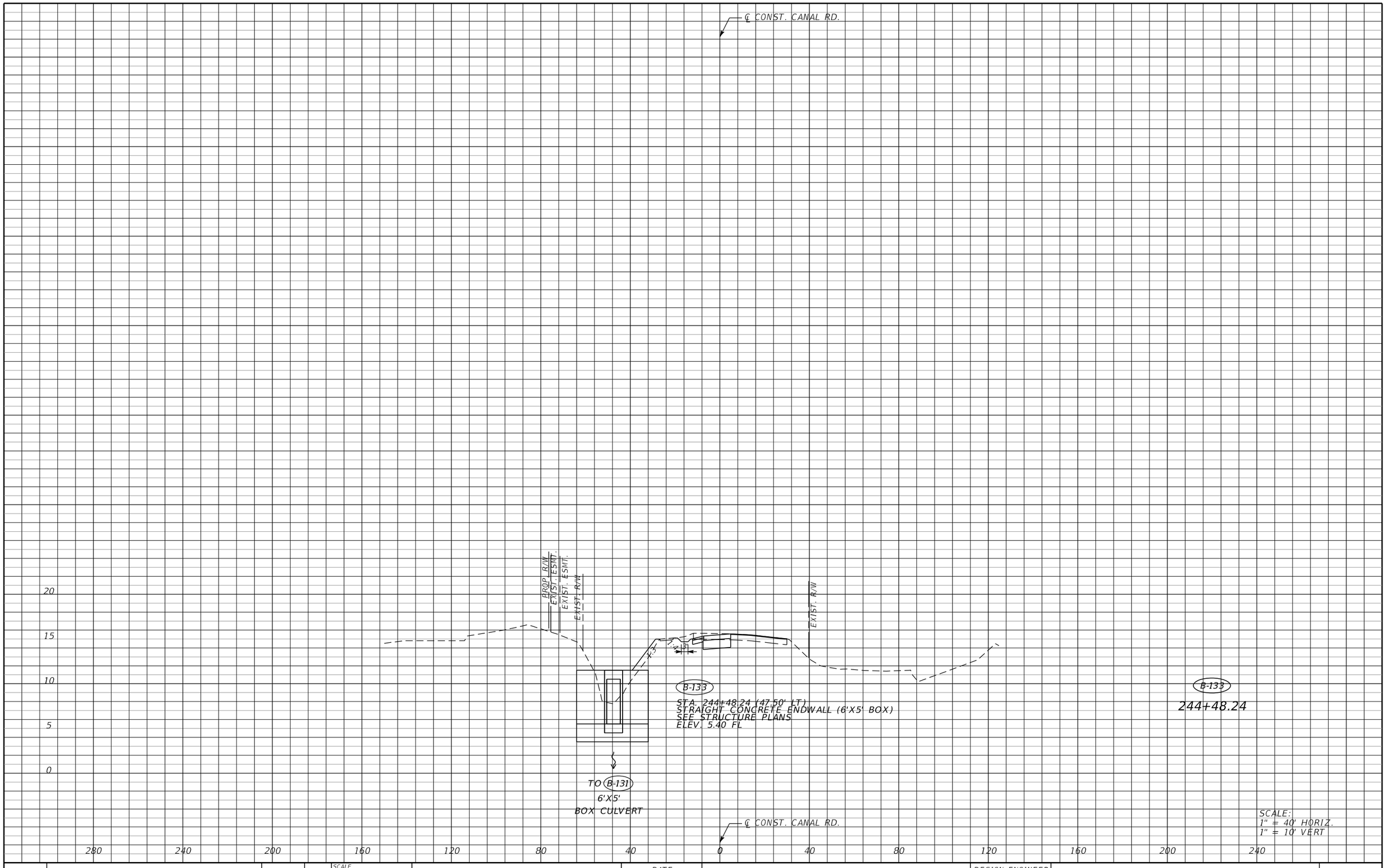
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

DRAINAGE STRUCTURES

SHEET NO.: 41

3:33:25 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\drainage\drxsrd01_new.DGN



No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA

MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
ADAM RAY MITCHUM
FL. LICENSE NO.
83296

DRAINAGE STRUCTURES

SHEET NO.
42

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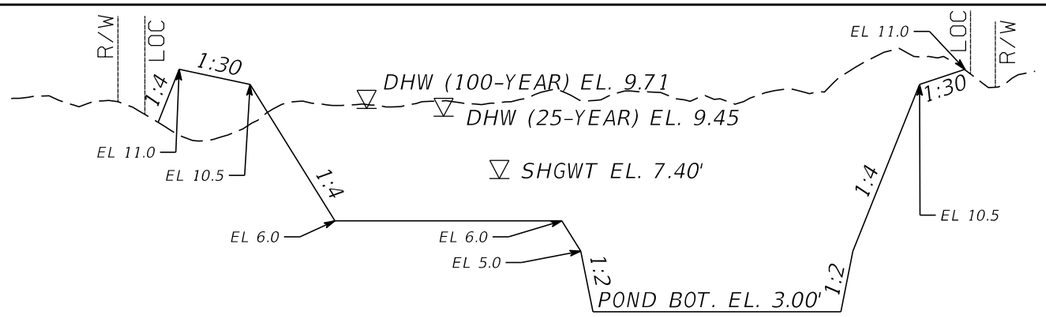
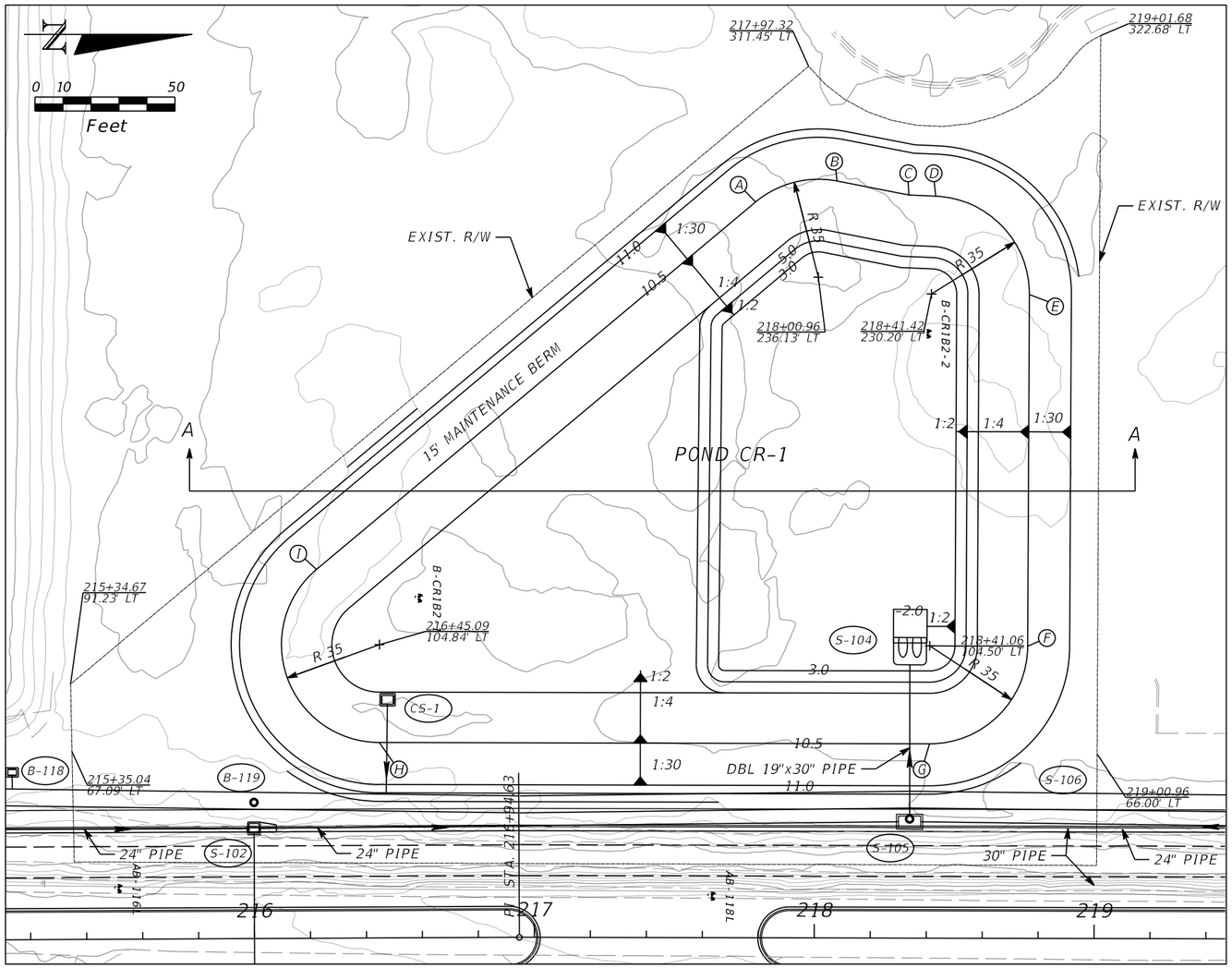
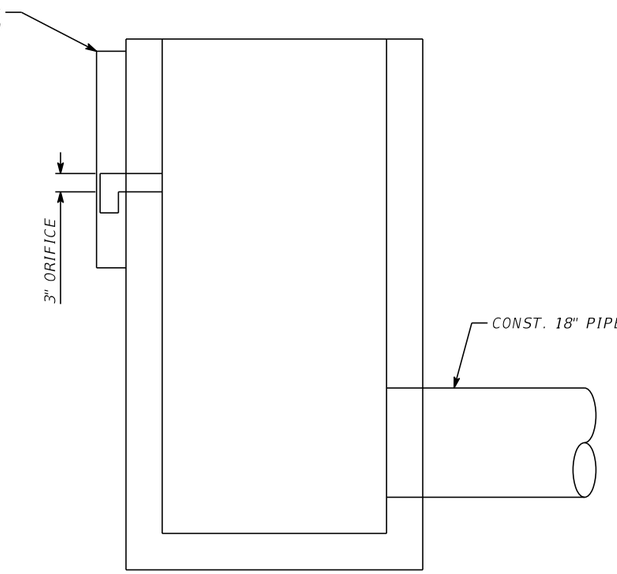


TYPICAL SECTION A-A
NTS



CS-1
STA. 216+48.00, 85.10' LT
CONST. DBI TYPE-D
GRATE EL. - 9.50
WEIR EL. - 7.9
ORIFICE EL. - 7.40
INDEX NO. - 425-052
FL 3.20

	STA.	OFFSET
A	217+78.43	262.92' LT
B	218+07.55	270.50' LT
C	218+33.27	265.56' LT
D	218+42.84	256.17' LT
E	218+76.42	230.10' LT
F	218+76.06	104.40' LT
G	218+41.06	69.50' LT
H	216+44.85	69.84' LT
I	216+22.75	131.78' LT



CS-1 VIEW 1
NTS

CS-1 VIEW 2
NTS

POND CR-1

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

POND DETAILS (1)

SHEET NO.: 43

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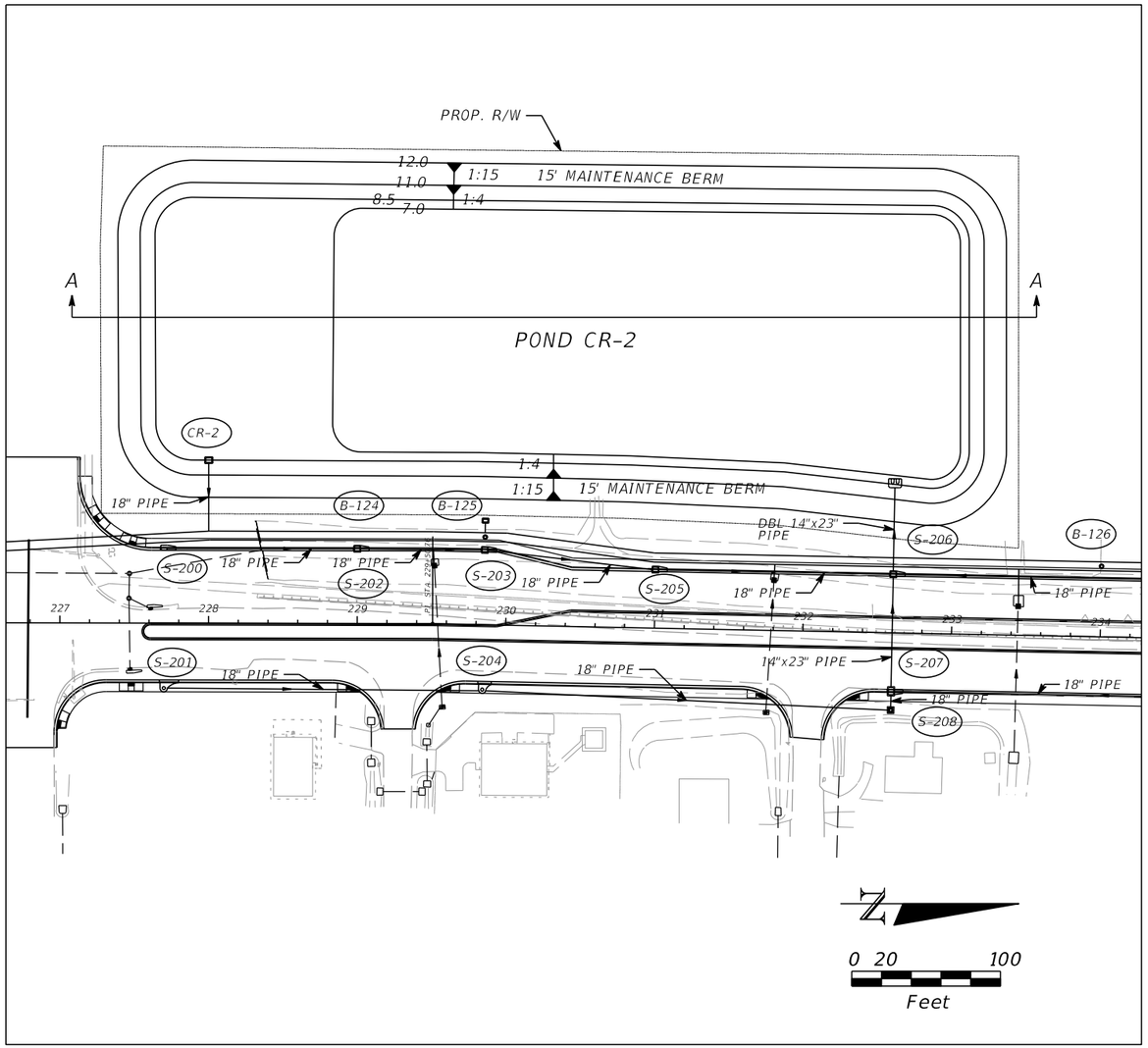
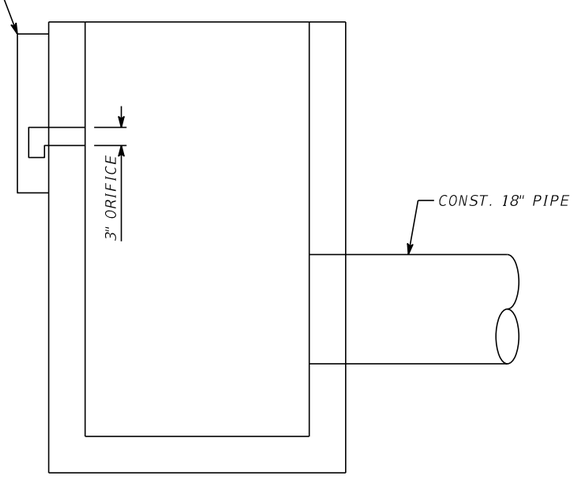


CS-2

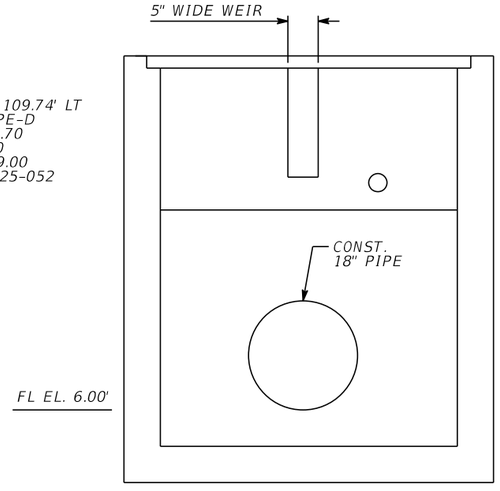
STA. 228+00.00, 109.74' LT
CONST. DBI TYPE-D
GRATE EL. - 10.70
WEIR EL. - 9.20
ORIFICE EL. - 9.00
INDEX NO. - 425-052
FL - 6.00 RT

TYPICAL SECTION A-A
NTS

CONST. 3.5' TALL SKIMMER PER FDOT INDEX 425-070



CS-2 VIEW 1
NTS



CS-2 VIEW 2
NTS

POND CR-2

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

POND DETAILS (2)

SHEET NO.: 44

3:33:49 PM 12/11/2021
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
MATERIALS AND RESEARCH

DATE OF SURVEY: OCTOBER–NOVEMBER 2020
SURVEY MADE BY: TERRACON CONSULTANTS, INC.
SUBMITTED BY: JAMES M. JACKSON, P.E.

FINANCIAL PROJECT NO.: –

DISTRICT: ONE
ROAD NO.: SR
COUNTY: MANATEE

CROSS SECTION SOIL SURVEY FOR THE DESIGN OF ROADS

SURVEY BEGINS STA.: 102+10 SURVEY ENDS STA.: 147+14

REFERENCE: CANAL ROAD

	ORGANIC CONTENT		MOISTURE CONTENT		SIEVE ANALYSIS RESULTS % PASS						ATTERBERG LIMITS (%)					CORROSION TEST RESULTS				
STRATUM NO.	NO. OF TESTS	% ORGANIC	NO. OF TESTS	MOISTURE CONTENT	NO. OF TESTS	10 MESH	40 MESH	60 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTIC INDEX	AASHTO GROUP	MATERIAL DESCRIPTION	NO. OF TESTS	RESISTIVITY ohm–cm	CHLORIDES ppm	SULFATES ppm	pH
1	2	8.4–8.5	2	25–28	2	–	–	–	–	18–26	–	–	–	A–8	ORGANIC MATERIAL – DARK BROWN, BLACK SLIGHTLY SILTY FINE SAND WITH ORGANICS	–	–	–	–	–
2	–	–	2	20–56	2	67	63	57	36	10–11	–	–	–	A–2–4	LIGHT BROWN, BROWN SILTY FINE SAND WITH LIMESTONE FRAGMENTS	3	724–4,580	15–75	360–12,600	7.45–8.32
3	1	4.4	7	16–31	7	75–90	68–85	61–78	42–57	10–30	–	–	–	A–2–6	BROWN, DARK BROWN, GRAY CLAYEY FINE SAND WITH LIMESTONE FRAGMENTS	–	–	–	–	–
4	–	–	4	23–34	4	77–90	66–80	61–76	52–70	37–54	2	43–44	24	A–7–6	DARK BROWN, DARK GRAY SANDY CLAY WITH LIMESTONE FRAGMENTS	2	5,300–13,400	30–75	6–201	8.27–8.41
5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	LIGHT BROWN, LIGHT GRAY LIMESTONE FORMATION WITH CALCAREOUS SILT AND OCCASIONAL SEAMS OF GRAY CLAY OR SAND–SIZED PHOSPHATE GRAINS	5	1,530–6,890	60–105	228–510	8.04–8.64

EMBANKMENT AND SUBGRADE MATERIAL

STRATA BOUNDARIES ARE APPROXIMATE MAKE FINAL CHECK AFTER GRADING

▼ = WATER TABLE ENCOUNTERED
▽ = SEASONAL HIGH WATER TABLE
GNE = GROUNDWATER NOT ENCOUNTERED

NOTES:

1) SOIL BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH BORING LOCATION ONLY.
2) SOIL ANALYSIS INCLUDES DATA FROM ROADWAY AND STORMWATER RETENTION, AND BOX CULVERT AREAS ONLY.
3) THE SYMBOL "–" REPRESENTS AN UNMEASURED PARAMETER.
4) THE MATERIAL FROM STRATUM NUMBER 1 IS ORGANIC MATERIAL AND SHALL BE REMOVED IN ACCORDANCE WITH STANDARD PLANS INDEX 120–002.
5) THE MATERIAL FROM STRATUM NUMBER 2 IS SELECT MATERIAL AND APPEARS SATISFACTORY FOR USE IN THE EMBANKMENT WHEN UTILIZED IN ACCORDANCE WITH STANDARD PLANS INDEX 120–001. HOWEVER, THIS MATERIAL IS LIKELY TO RETAIN EXCESS MOISTURE AND BE DIFFICULT TO DRY AND COMPACT. IT SHOULD BE USED IN THE EMBANKMENT ABOVE THE WATER LEVEL EXISTING AT THE TIME OF CONSTRUCTION.
6) THE MATERIAL FROM STRATA NUMBERS 3 AND 4 IS PLASTIC MATERIAL AND SHALL BE REMOVED IN ACCORDANCE WITH STANDARD PLANS INDEX 120–002. IT MAY BE PLACED ABOVE THE EXISTING WATER LEVEL (AT THE TIME OF CONSTRUCTION) TO WITHIN 4 FEET OF THE PROPOSED BASE. IT SHOULD BE PLACED UNIFORMLY IN THE LOWER PORTION OF THE EMBANKMENT FOR SOME DISTANCE ALONG THE PROJECT RATHER THAN FULL DEPTH FOR SHORTER DISTANCES.
7) THE MATERIAL FROM STRATUM NUMBER 5 A LIMESTONE MATERIAL. THE LIMESTONE IS GENERALLY HARD AND WOULD REQUIRE MORE THAN NORMAL EFFORT DURING ECAVATION. WHEN FOUND, THE EXCAVATED MATERIAL SHOULD NOT BE USED FOR FILL.

Dec28, 2020–11:35am

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JAMES JACKSON, P.E.
P.E. LICENSE NUMBER 77733
TERRACON
8260 VICO COURT
SARASOTA, FLORIDA 34240

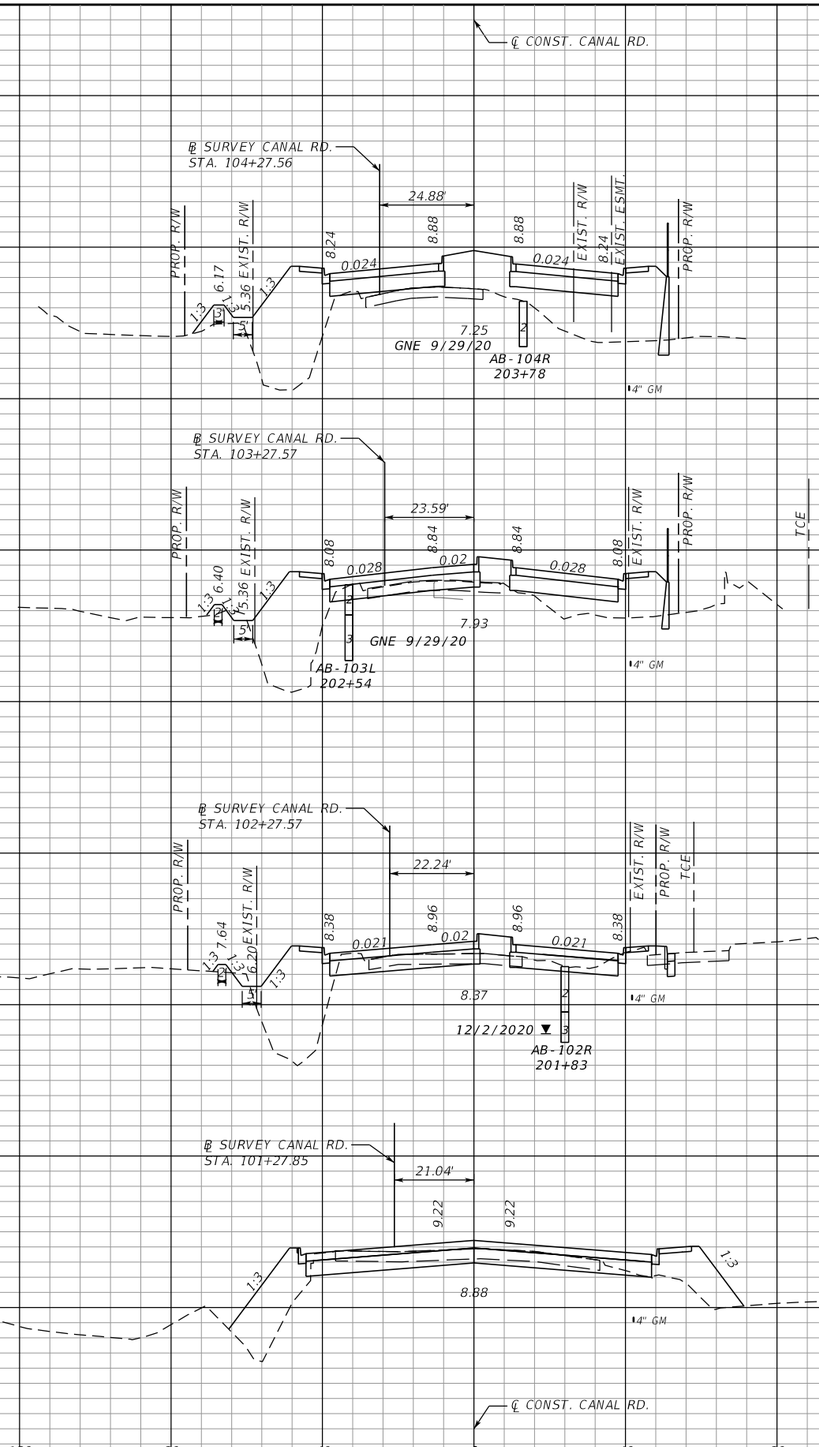
DRAWN BY: MG 12–16–20
CHECKED BY: JJ 12–16–20
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CANAL	MANATEE	–

SHEET TITLE: SOIL SURVEY
REF. DWG. NO.:
PROJECT NAME: CANAL ROAD – PHASE 1 FROM US 301 TO 22ND LANE EAST
SHEET NO.: GR-1

TERRACON No. HC185036 EXHIBIT: A–5



Regular Exc.		Embankment	
A	V	A	V
3	58	299	897
28	165	185	576
61	278	126	450
89	43	117	56

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

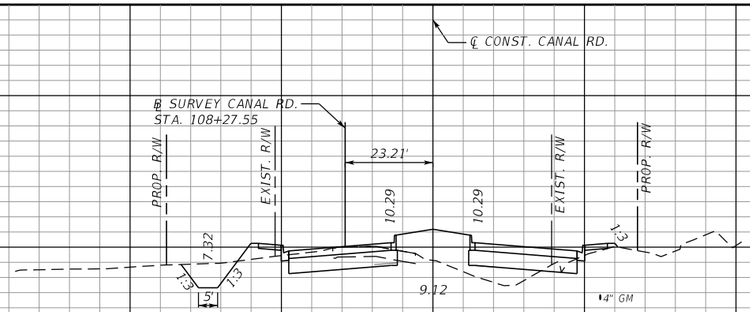
MANATEE COUNTY PUBLIC WORKS

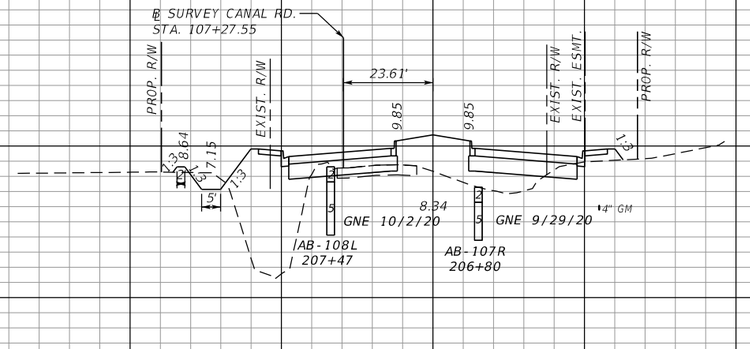
DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

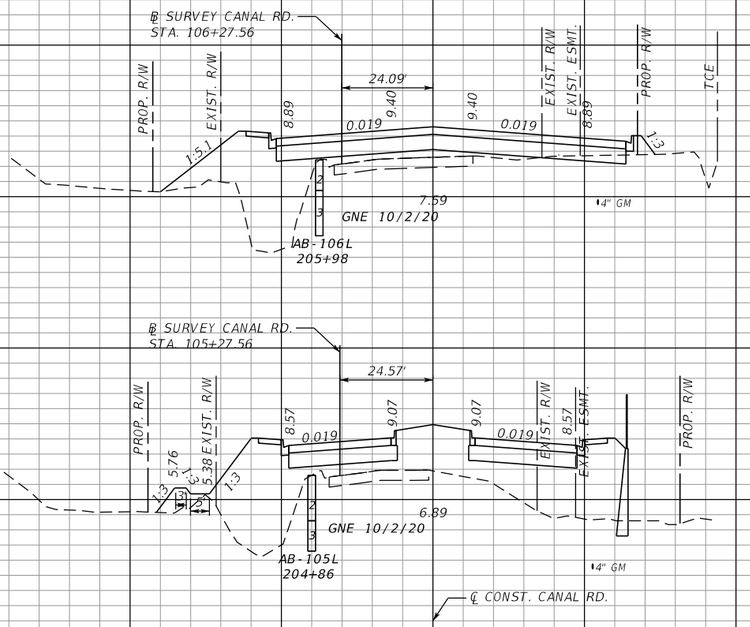
CANAL ROAD CROSS SECTIONS

SHEET NO.: 45

3:34:05 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\rdxsrd01.dgn







Regular Exc.		Embankment	
A	V	A	V
60	160	61	460
26	63	187	656
8	21	167	928
3	12	334	1173

208+00.00

207+00.00

206+00.00

205+00.00

SCALE: 1" = 40' HORIZ.
1" = 10' VERT.

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No.	REVISIONS	DATE	BY

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DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

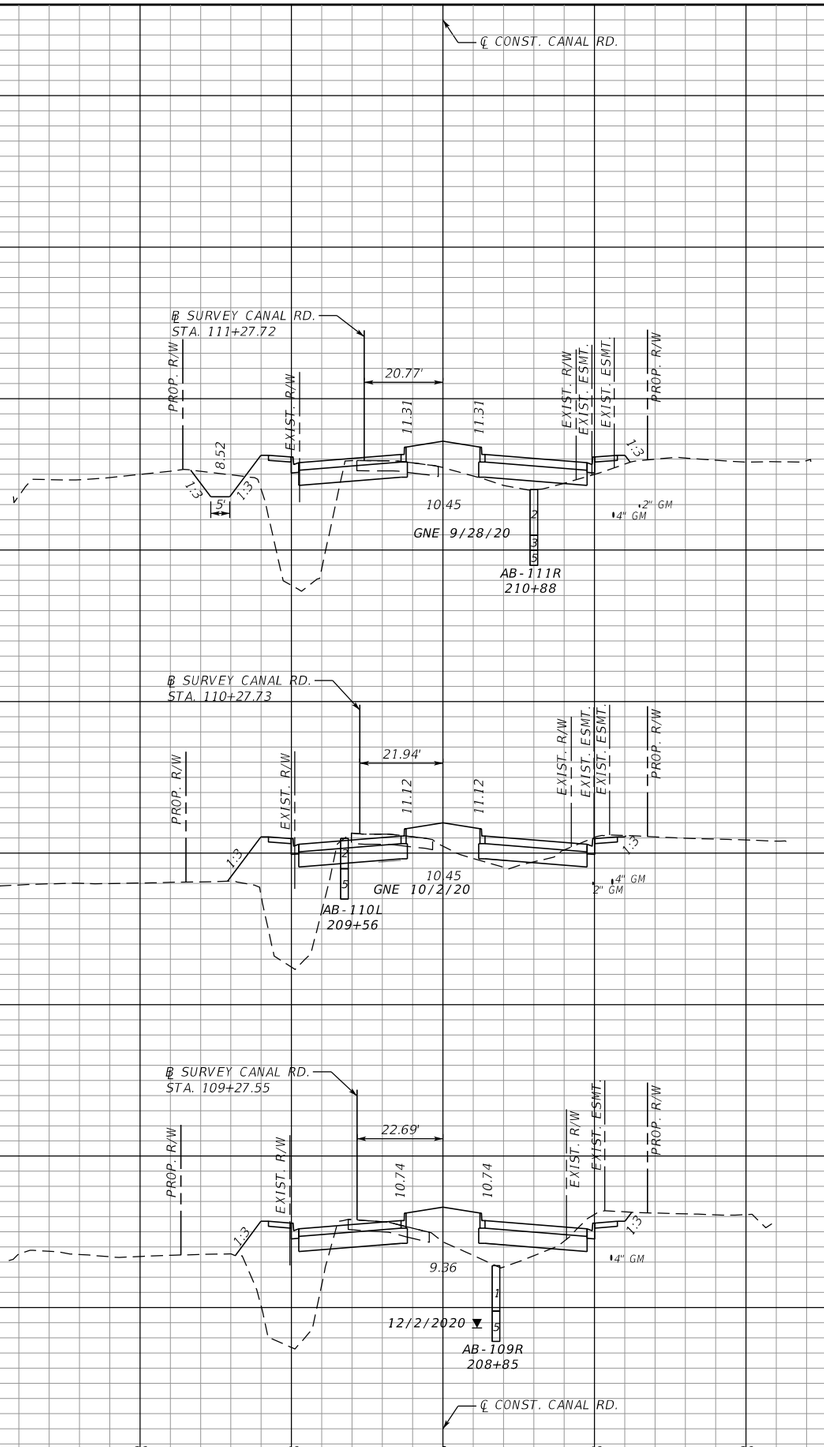
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

CANAL ROAD CROSS SECTIONS

SHEET NO.: 46

3:34:07 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\rdxsrd01.dgn



Station	Regular Exc. A	Regular Exc. V	Embankment A	Embankment V
211+00.00	38	163	163	586
210+00.00	50	188	153	613
209+00.00	51	206	178	443

SCALE: 1" = 40' HORIZ.
1" = 10' VERT.

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No.	REVISIONS	DATE	BY

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DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

CANAL ROAD CROSS SECTIONS

SHEET NO.: 47

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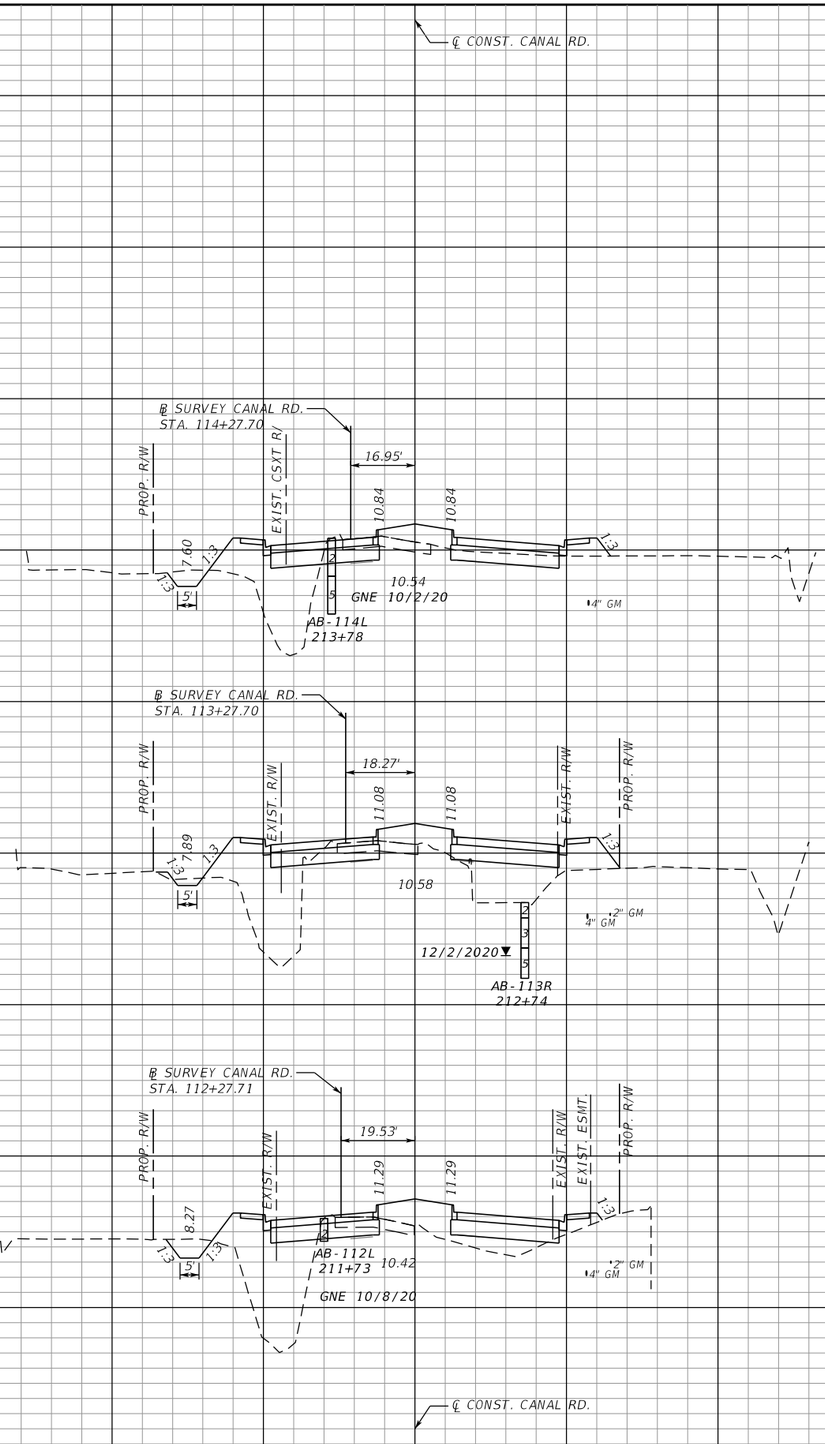

214+00.00

END EXCEPTION
STA. 213+75.86

213+00.00

BEGIN EXCEPTION
STA. 212+96.43

212+00.00

SCALE: 1" = 40' HORIZ.
1" = 10' VERT.

Regular Exc.		Embankment	
A	V	A	V
52	143	125	628
25	106	214	738
32	130	184	643

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MANATEE COUNTY PUBLIC WORKS

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CANAL ROAD CROSS SECTIONS

SHEET NO.: 48

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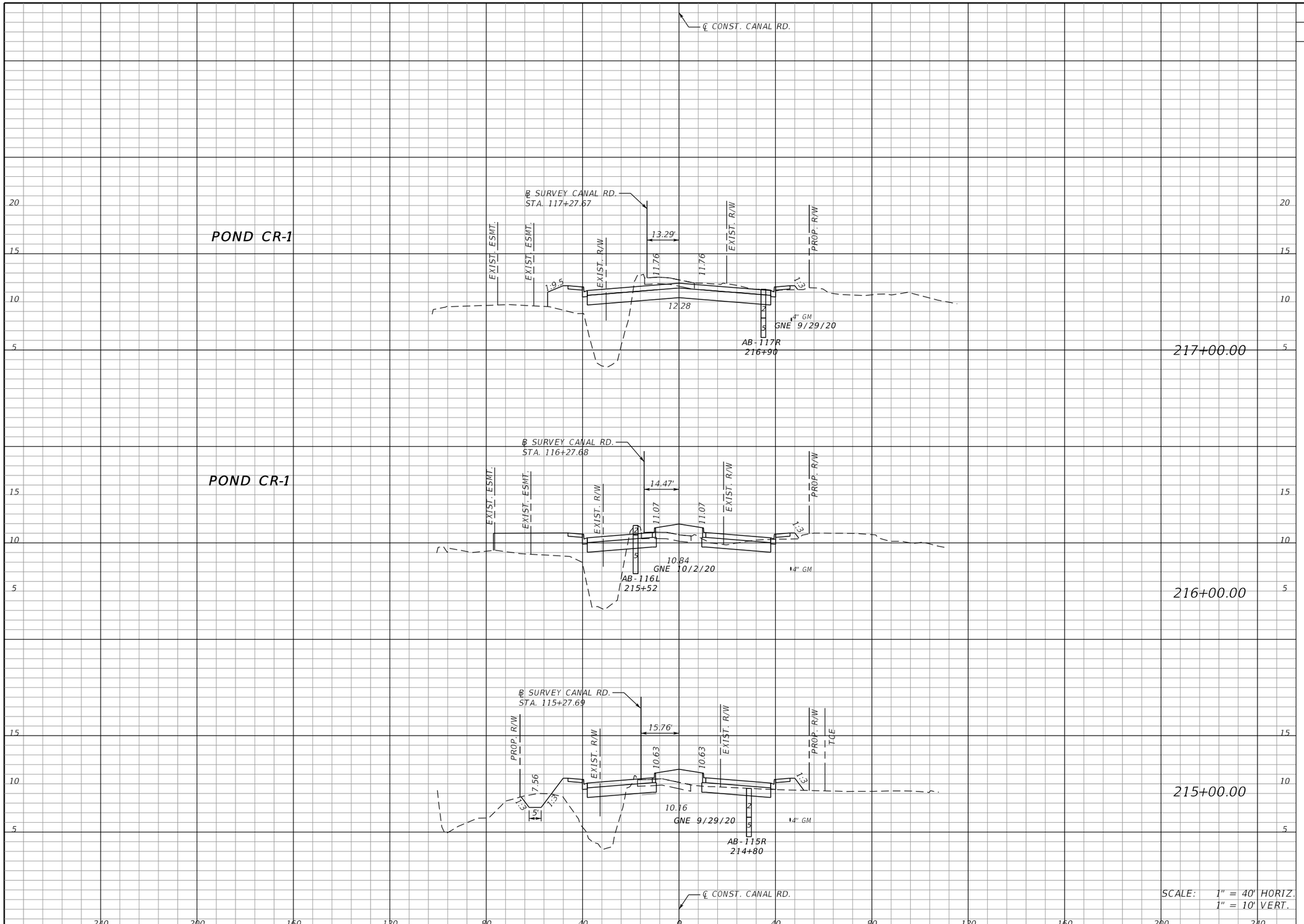

Regular Exc.		Embankment	
A	V	A	V
109	284	130	586
44	173	186	600
49	188	138	488

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Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

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FL. LICENSE NO.: 70171

CANAL ROAD CROSS SECTIONS

SHEET NO.: 49

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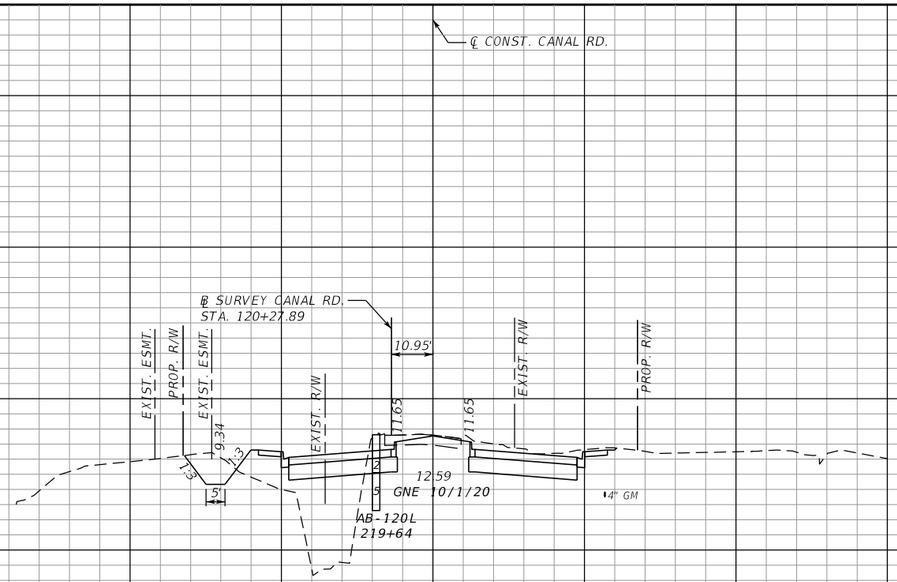

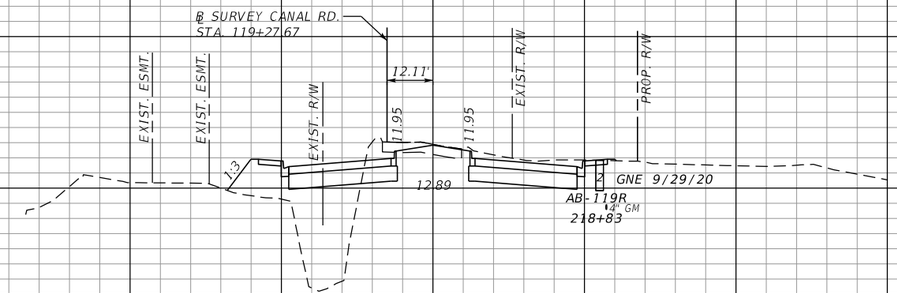

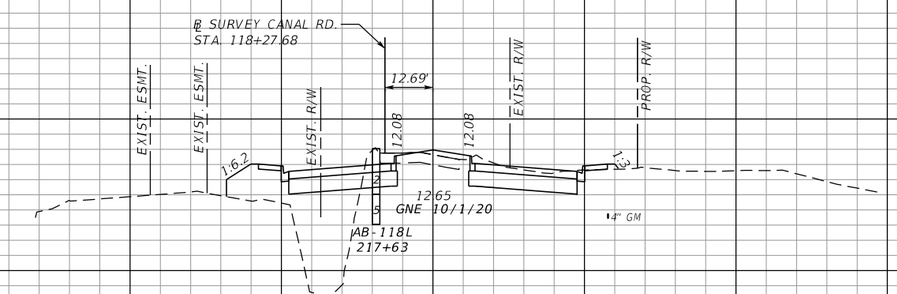

SCALE: 1" = 40' HORIZ.
1" = 10' VERT.

240 200 160 120 80 40 0 40 80 120 160 200 240

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

CANAL ROAD CROSS SECTIONS

SHEET NO.: 50

3:34:16 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\rdxsrd01.dgn

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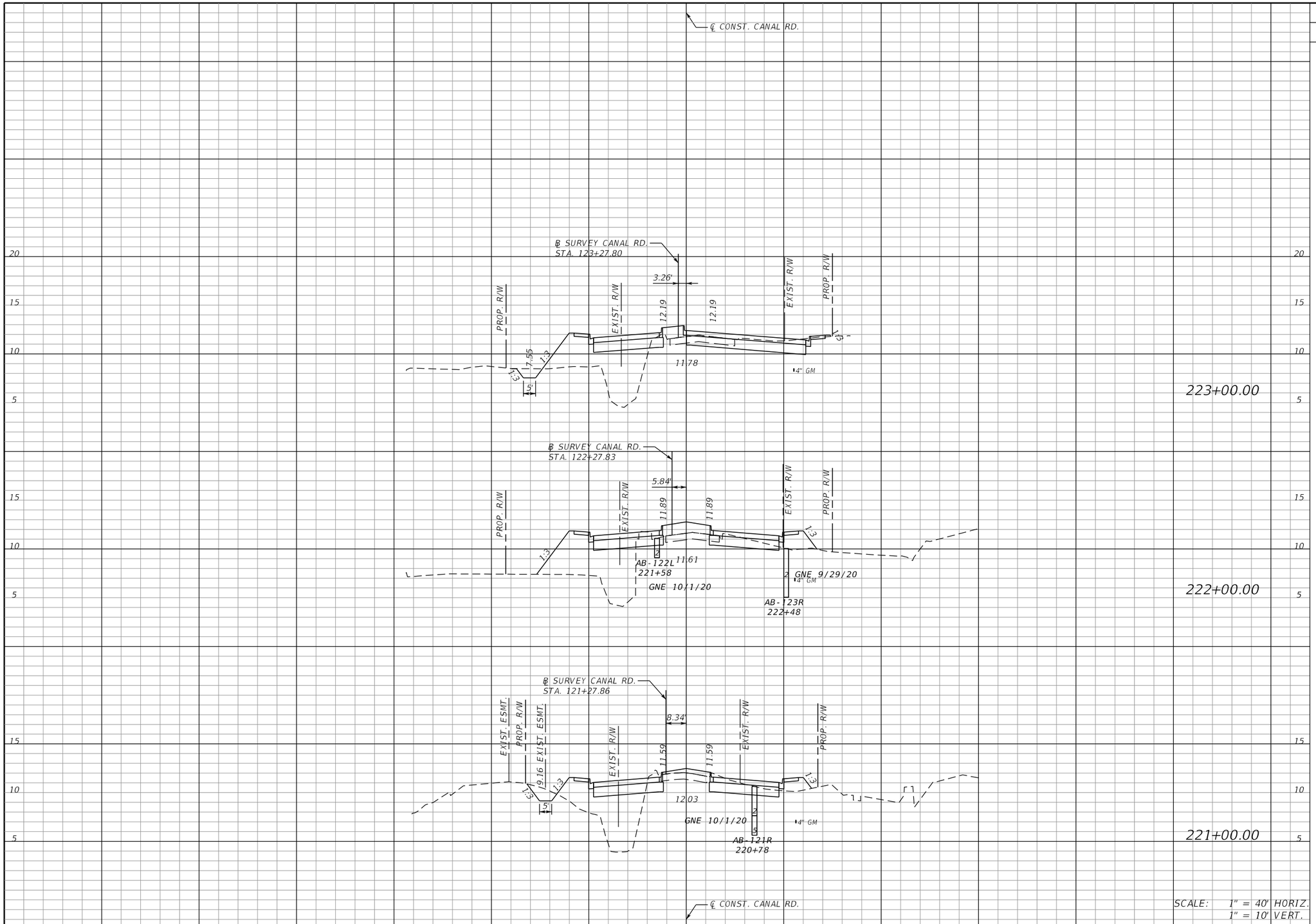

Regular Exc.		Embankment	
A	V	A	V
71	200	148	634
37	171	194	623
55	284	142	463

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DATE: 12/2021
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Manatee County FLORIDA

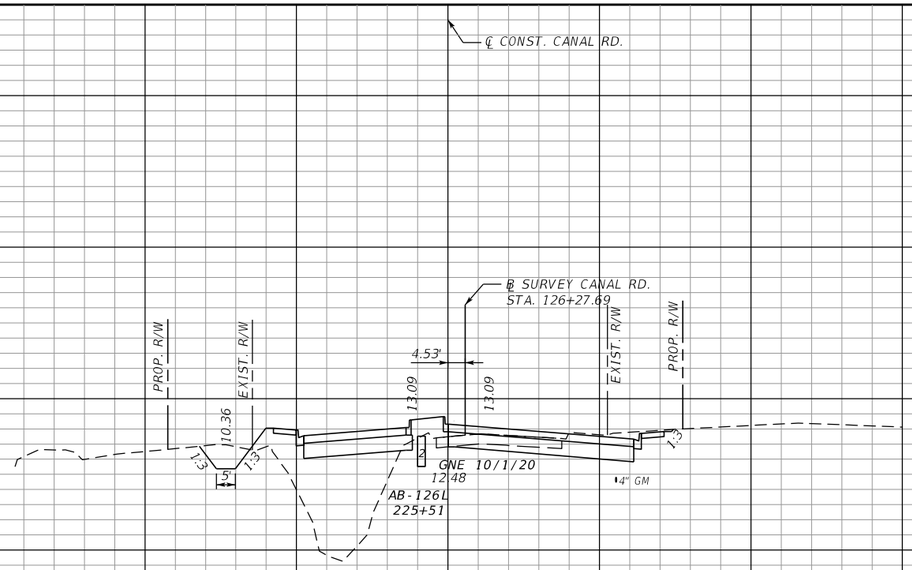
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

CANAL ROAD
CROSS SECTIONS

SHEET NO.: 51

3:34:18 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\rdxsrd01.dgn



Station	Regular Exc. A	Regular Exc. V	Embankment A	Embankment V
226+00.00	82	302	158	556
225+00.00	81	275	142	538
224+00.00	67	256	148	549

SCALE: 1" = 40' HORIZ.
1" = 10' VERT.

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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HDR Engineering, Inc.
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DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA

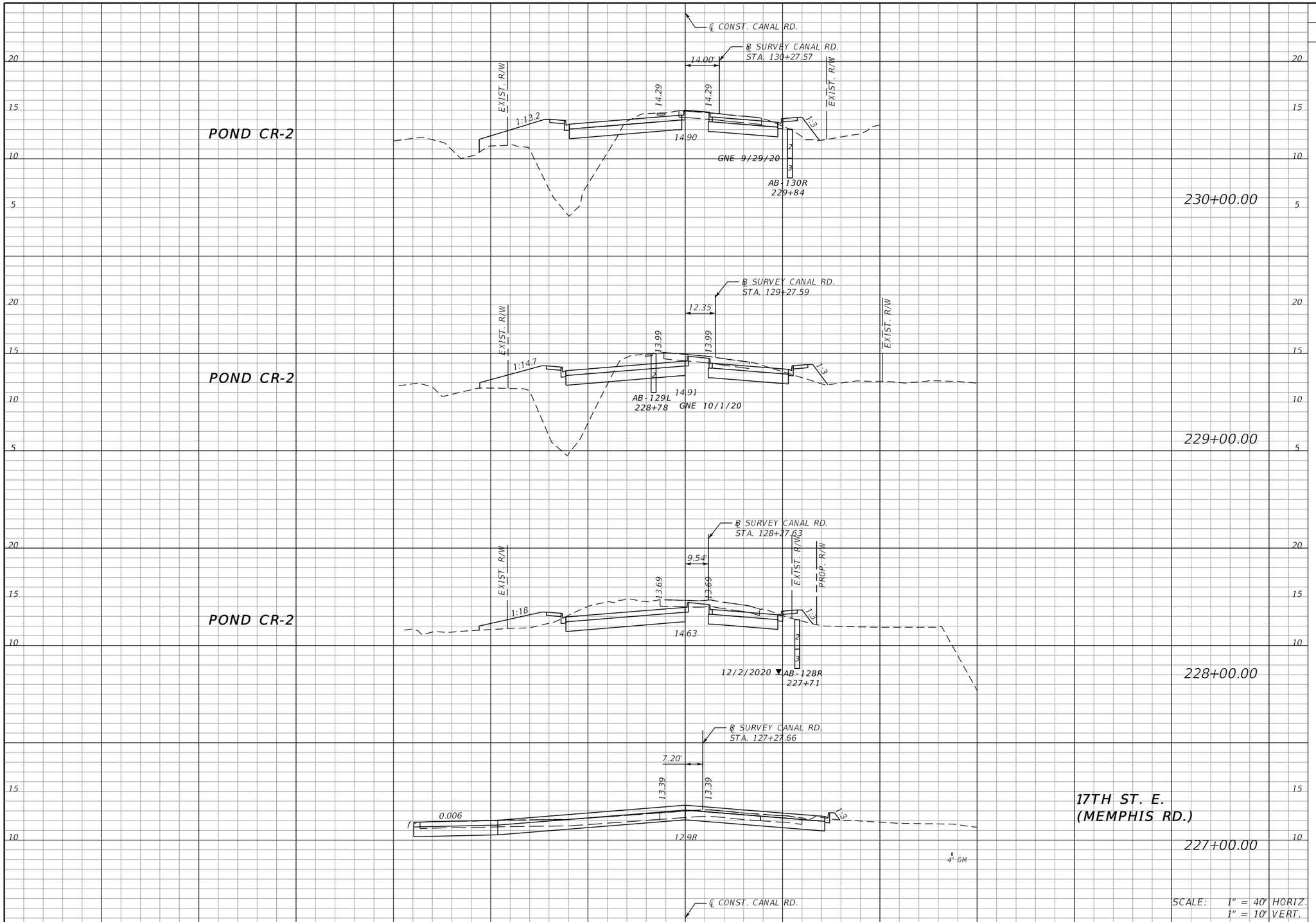
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

CANAL ROAD
CROSS SECTIONS

SHEET NO.: 52

3:34:21 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\rdxsrd01.dgn



Regular Exc.		Embankment	
A	V	A	V
96	423	238	817
132	589	203	447
186	721	38	75
203	528	2	297

SCALE: 1" = 40' HORIZ.
1" = 10' VERT.

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DATE: 12/2021
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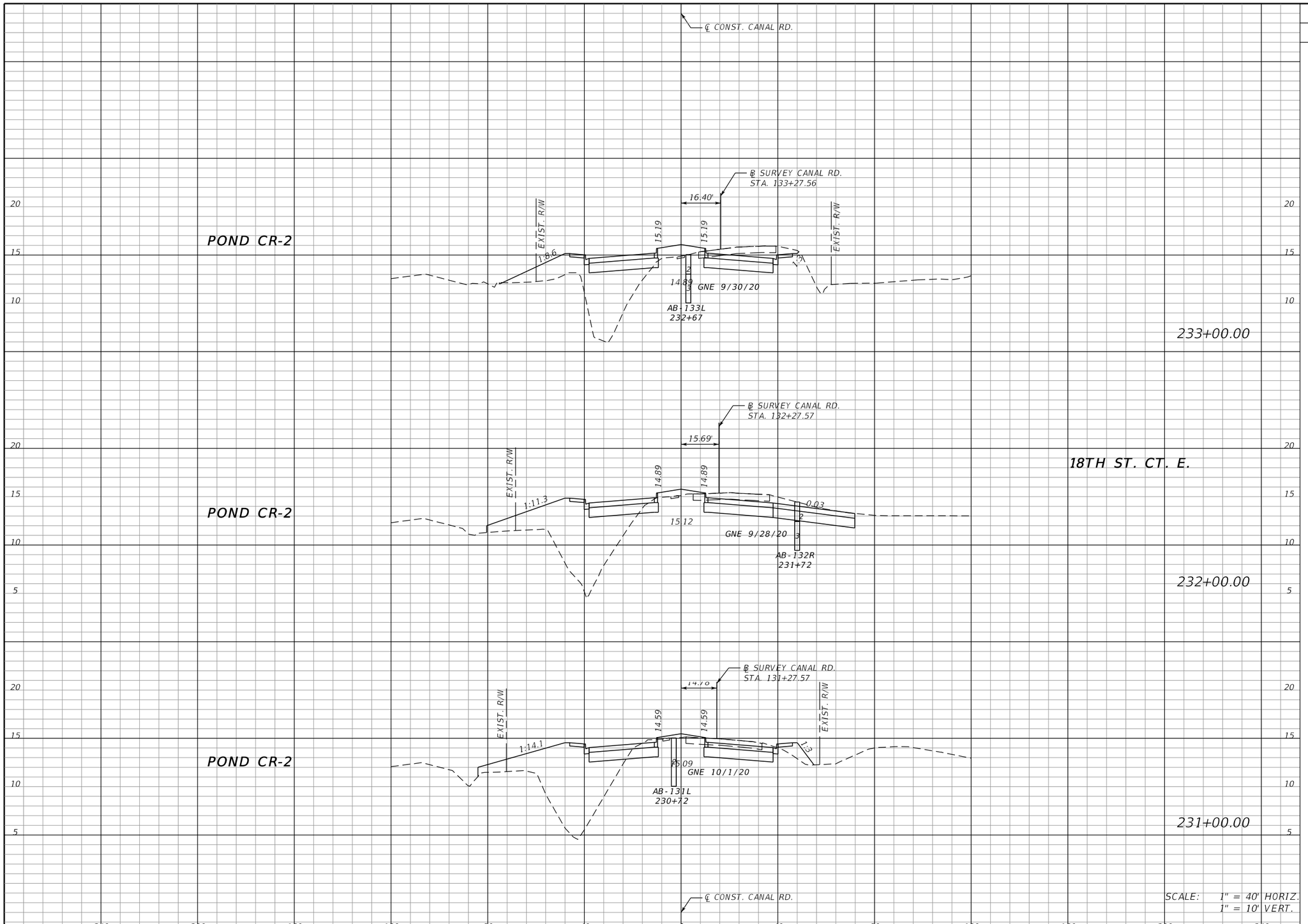
Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

CANAL ROAD CROSS SECTIONS

SHEET NO.: 53

3:34:23 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\rdxsrd01.dgn



	Regular Exc.		Embankment	
	A	V	A	V
233+00.00	78	384	190	795
232+00.00	129	376	239	912
231+00.00	74	315	253	910

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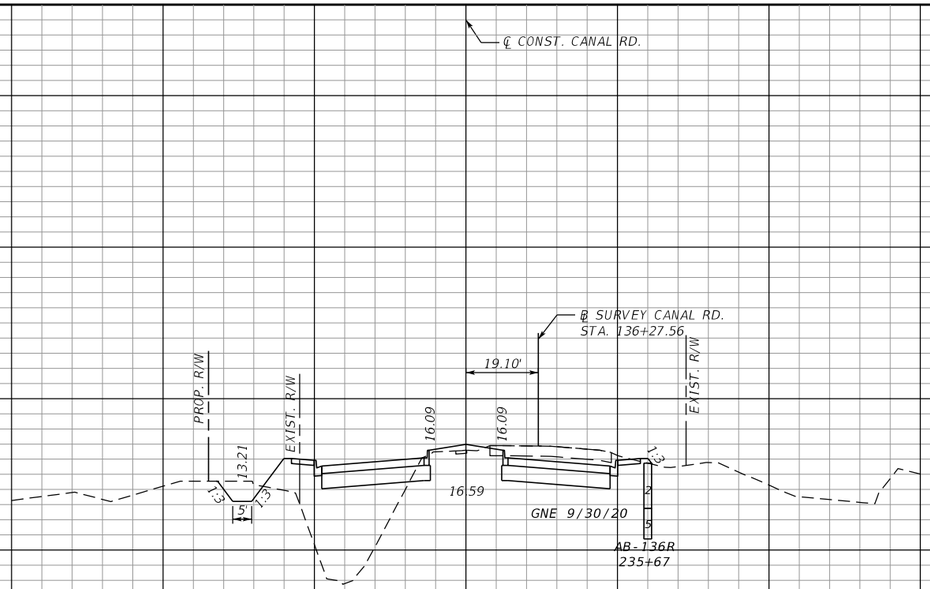
Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

CANAL ROAD
CROSS SECTIONS

SHEET NO.: 54

3:34:25 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\rdxsrd01.dgn



	Regular Exc.		Embankment	
	A	V	A	V
236+00.00	92	328	144	575
235+00.00	85	315	166	612
234+00.00	85	302	164	656

SCALE: 1" = 40' HORIZ.
1" = 10' VERT.

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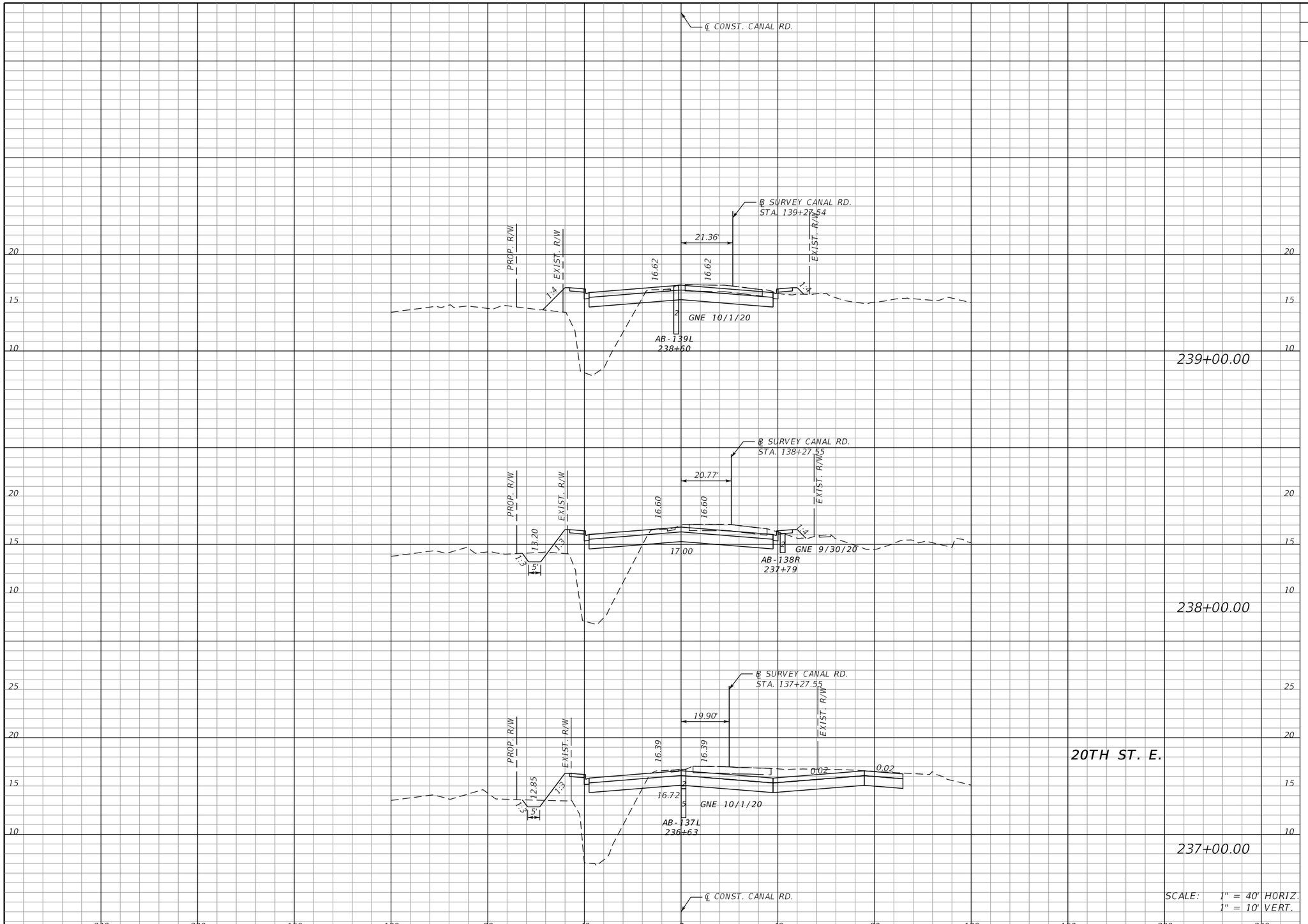
Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

CANAL ROAD CROSS SECTIONS

SHEET NO.: 55

3:34:28 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\rdxsrd01.dgn



Regular Exc.		Embankment	
A	V	A	V
88	363	159	615
108	599	173	619
215	569	161	565

SCALE: 1" = 40' HORIZ.
1" = 10' VERT.

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Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

CANAL ROAD CROSS SECTIONS

SHEET NO.: 56

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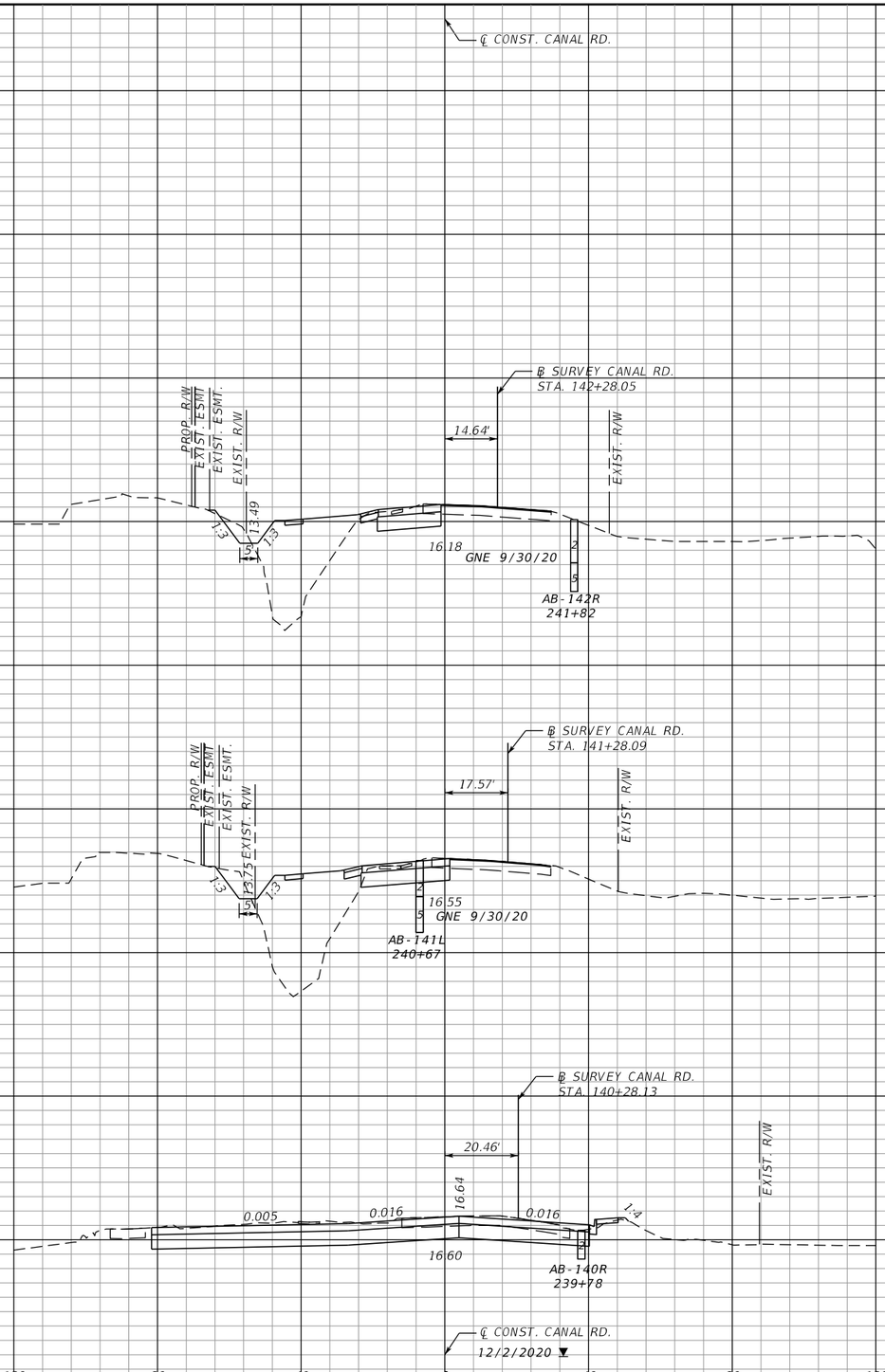

Regular Exc.		Embankment	
A	V	A	V
34	143	119	506
43	428	154	288
188	512	1	297

SCALE: 1" = 40' HORIZ.
1" = 10' VERT.

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Manatee County FLORIDA

MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
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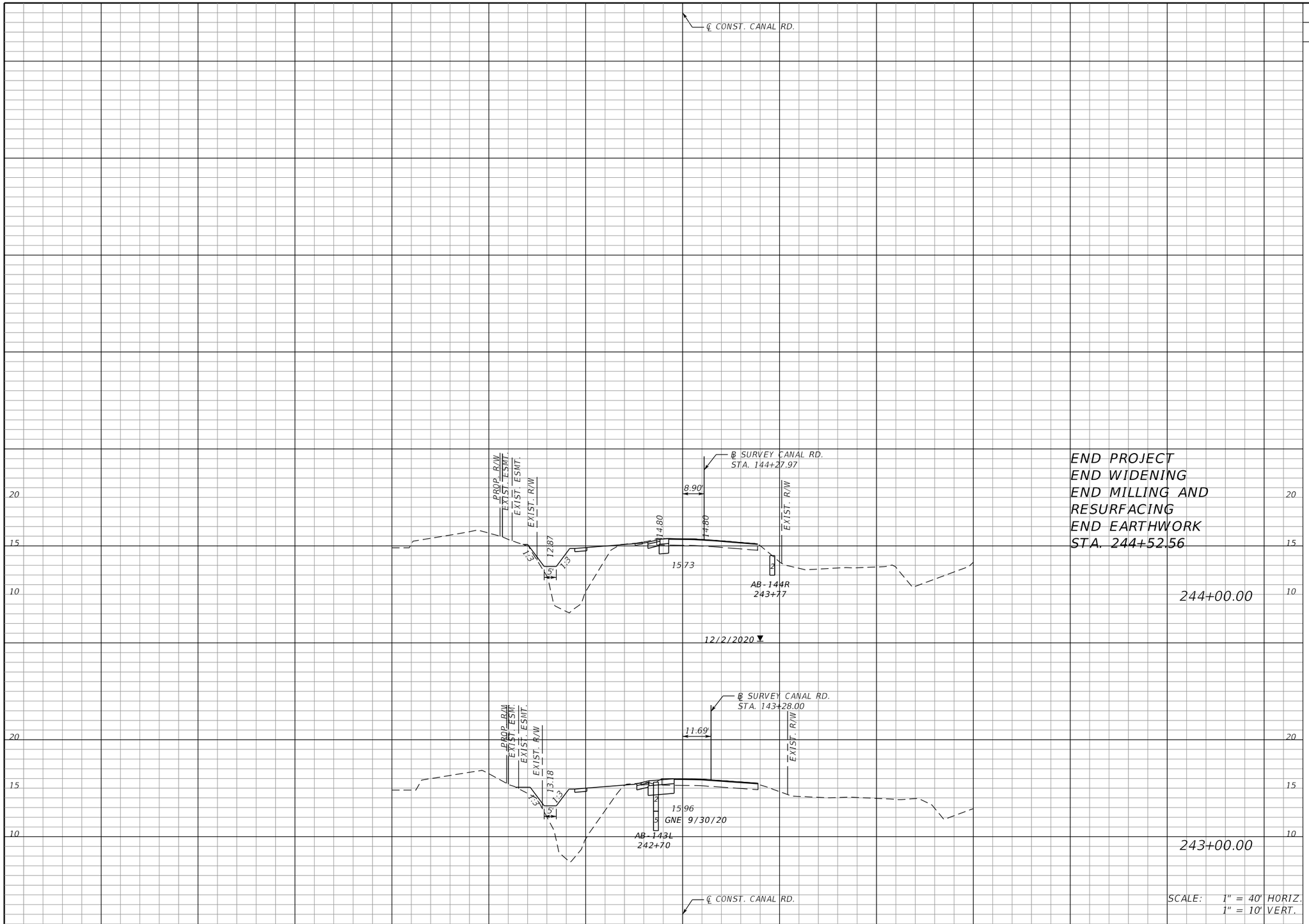
CANAL ROAD
CROSS SECTIONS

SHEET NO.: 57

3:34:32 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\rdxsrd01.dgn



END PROJECT
END WIDENING
END MILLING AND RESURFACING
END EARTHWORK
STA. 244+52.56

Regular Exc.		Embankment	
A	V	A	V
0	0	0	0
	10		106
10	10	108	108
	52		439
18	18	129	129
	97		460

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CANAL ROAD CROSS SECTIONS

SHEET NO.: 58

3:34:34 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\rdxsrd01.dgn

I. SITE DESCRIPTION:

(1) NATURE OF CONSTRUCTION ACTIVITY
MANATEE COUNTY PROPOSES TO IMPROVE A 0.82-MILE SEGMENT OF CANAL ROAD (16TH AVENUE EAST) FROM US HWY 301 TO NORTH OF 21ST STREET EAST. IMPROVEMENTS INVOLVE WIDENING FROM A TWO-LANE RURAL TYPICAL SECTION TO A FOUR-LANE URBAN SECTION WITH CURB AND GUTTER. ADDITIONAL IMPROVEMENTS INCLUDE ENCLOSING THE DRAINAGE CANAL ON THE WEST SIDE OF CANAL ROAD WITH A VARIABLE-SIZE BOX CULVERT, EXTENDING FROM THE EXISTING BOX CULVERT UNDERNEATH US 301 TO THE EXISTING DOUBLE 48" PIPES UNDER CANAL ROAD NORTH OF 21ST STREET EAST. TWO STORMWATER MANAGEMENT FACILITIES (SMFS) ARE PROPOSED WITHIN THE PROJECT LIMITS. BOTH SMFS ARE WET DETENTION PONDS

(2) SEQUENCE OF MAJOR SOIL DISTURBING ACTIVITIES:
- (a) THE CONTRACTOR SHALL BE REQUIRED TO PREPARE A SITE SPECIFIC EROSION AND SEDIMENT CONTROL PLAN ALONG WITH A DETAILED CONSTRUCTION SCHEDULE TO INDICATE DATES OF MAJOR GRADING ACTIVITIES AND DETERMINE SEQUENCES OF TEMPORARY AND PERMANENT SOIL DISTURBING ACTIVITIES ON ALL PORTIONS OF THE PROJECT.
- (b) THE CONTRACTOR WILL BE REQUIRED TO MODIFY THE PLAN OR MATERIALS TO ADAPT TO SEASONAL VARIATIONS, CONSTRUCTION ACTIVITY VARIATIONS, OR AS DIRECTED BY THE ENGINEER.
- (c) APPLICABLE EROSION AND SEDIMENT CONTROL DEVICES AND IMPLEMENTATION PROCEDURES ARE SUPPLIED IN THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEW MANUAL (E&SC MANUAL).
- (d) THE ENGINEER IS RESPONSIBLE FOR DETERMINING IF ANY MODIFICATIONS OR ADDITIONAL CONTROLS ARE REQUIRED AND TO OBTAIN DEPLOYMENT SCHEDULES FOR THE IMPLEMENTATION OF ALL ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES FROM THE CONTRACTOR.

(3) GENERAL NOTES:
- (a) ALL EROSION AND SEDIMENT CONTROL DEVICES FOR EACH PHASE OF WORK ARE TO BE INSTALLED PRIOR TO BEGINNING WORK ON THAT PHASE.
- (b) INSTALL EROSION AND SEDIMENT CONTROL DEVICES WHERE LISTED IN THE CONTRACTOR'S APPROVED EROSION AND SEDIMENT CONTROL PLAN FOR PERIMETER CONTROLS BEFORE THE LAND IS DISTURBED.
- (c) PROVIDE SEDIMENT BARRIERS WHERE LISTED IN THE CONTRACTOR'S APPROVED EROSION AND SEDIMENT CONTROL PLAN FOR DITCH/SWALE CHECK DAMS DURING CONSTRUCTION.
- (d) PROVIDE INLET PROTECTION SYSTEMS AT INLET OPENINGS.
- (e) COVER OR STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE.
- (f) DO NOT DISTURB AN AREA UNTIL IT IS NECESSARY FOR CONSTRUCTION TO PROCEED.
- (g) TIME CONSTRUCTION ACTIVITIES TO LIMIT IMPACT FROM SEASONAL CLIMATE CHANGES OR WEATHER EVENTS.
- (h) DO NOT REMOVE PERIMETER CONTROLS UNTIL ALL UPSTREAM AREAS ARE FULLY STABILIZED AND PERMANENT VEGETATION IS ESTABLISHED.

(4) PROJECT AREAS:
THE ESTIMATED TOTAL PROJECT AREA IS 18.4 ACRES (INCLUDING SMF SITES). THE ESTIMATED AREA TO BE DISTURBED DURING CONSTRUCTION ACTIVITIES IS 18.4 ACRES.

(5) RUNOFF COEFFICIENTS BEFORE Cw (B), DURING Cw (D) AND AFTER Cw (A) CONSTRUCTION:
RUNOFF COEFFICIENT FOR: GRASSED SHOULDERS ADJACENT TO ROADWAY: C=0.35
IMPERVIOUS ROADWAYS AND PAVED SHOULDER: C=0.95
DISTURBED AREAS, EXPOSED SOIL, ETC., DURING CONSTRUCTION: C=0.50
WEIGHTED RUNOFF COEFFICIENT:
BEFORE: Cw (B) = 0.55 DURING: Cw (D) = VARIES FROM 0.55 TO 0.75 AFTER: Cw (A) = 0.68
THE RUNOFF COEFFICIENT DURING CONSTRUCTION, Cw (D), IS CALCULATED ASSUMING THAT THE MAXIMUM ALLOWABLE AREA OF SOIL IS DISTURBED DURING CONSTRUCTION AND THE REMAINING AMOUNT IS THE EXISTING IMPERVIOUS AND GRASSED SHOULDER AREAS.

(6) DESCRIPTION OF SOIL OR QUALITY OF DISCHARGE:
THE SOILS WITHIN THE PROJECT AREA ARE SHOWN IN THE ROADWAY SOIL SURVEY CONTAINED IN THE CONSTRUCTION PLANS.

SOIL TYPE	HYDROLOGIC GROUP	DEPTH TO SHWT
5 - BRADENTON FINE SAND, LIMESTONE SUBSTRATUM	B/D	0.5'
13 - CHOBEE LOAMY FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES	C/D	~ 0.0'
14 - CHOBEE VARIANT SANDY CLAY LOAM	C/D	0.5'

REFERENCE: USDA SOIL SURVEY OF MANATEE COUNTY

(7) ESTIMATED DRAINAGE FLOW DIRECTION AND AVERAGE SLOPE OF DRAINAGE AREA FOR EACH OUTFALL:
(a) SEE DRAINAGE MAPS IN THESE PLANS.

(8) RECEIVING WATERS:
WBID 1848A - MANATEE RIVER BELOW BRADEN RIVER

(9) WBID 1848A - MANATEE RIVER BELOW BRADEN RIVER IS NO CURRENTLY IMPARIED.

(10) OUTFALL LOCATIONS: (TEMPORARY AND PERMANENT)

	DESCRIPTION	LATITUDE	LONGITUDE	STATION
(a)	POND CR-1	N 27° 31' 32.50"	W 82° 32' 55.40"	217+50.00
(b)	POND CR-2	N 27° 31' 39.40"	W 82° 32' 53.00"	224+00.00

(11) WETLAND AND/OR SURFACE WATER IMPACTS ARE LIMITED TO THE AREAS DESCRIBED IN THE APPROVED PERMITS FOR THE PROJECT.

(12) DESCRIPTION OF STORMWATER MANAGEMENT: (EXISTING/PROPOSED)
- (a) EXISTING DRAINAGE FLOWS ARE TYPICALLY THROUGH ROADSIDE DITCHES AND STORM SEWER TO SMFS.
- (b) OFF-SITE RUNOFF SHOULD BE DIVERTED AWAY OR THROUGH THE CONSTRUCTION AREA, IF POSSIBLE. THIS ADDITIONAL FLOW, IF NOT DIVERTED, CAN ADD VOLUME AND SIZE TO STRUCTURAL PRACTICES, REQUIRING MORE FREQUENT MAINTENANCE AND LIMITING EFFECTIVENESS OF EROSION AND SEDIMENT CONTROLS.
- (c) THE CONTRACTOR WILL PROVIDE POLLUTION CONTROL BY IMPLEMENTING DUST CONTROL DURING ALL PHASES OF CONSTRUCTION. SEDIMENT CONTROL WILL BE ACCOMPLISHED BY USING STREET OR VACUUM SWEEPERS.
- (d) STORMWATER RUNOFF SHALL BE CONVEYED TO EITHER TEMPORARY SEDIMENT BASINS, CONTAINMENT SYSTEMS AND/OR TO PERMANENT STORMWATER MANAGEMENT FACILITIES (TREATMENT AND ATTENUATION PONDS). THE PROPOSED SEDIMENT BASINS, CONTAINMENT SYSTEMS AND/OR STORMWATER MANAGEMENT FACILITIES SHALL BE CONSTRUCTED DURING THE INITIAL PHASE OF CONSTRUCTION AND USED DURING CONSTRUCTION OF THE ROADWAY. THE OUTFALL STRUCTURES ARE TO BE PLUGGED WHEN TEMPORARY SEDIMENT BASINS, CONTAINMENT SYSTEMS OR PERMANENT STORMWATER MANAGEMENT FACILITIES ARE USED FOR EROSION AND SEDIMENT CONTROL.
- (e) THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO PREVENT UNAUTHORIZED MATERIALS FROM ENTERING WETLANDS, WATERWAYS, OTHER SURFACE WATERS OR WATERS OF THE U.S.

II. CONTROLS:
SEDIMENT AND EROSION CONTROLS

(1) WATER QUALITY MONITORING:
- (a) WATER QUALITY MONITORING SHALL BE CONDUCTED IN ACCORDANCE WITH THE SPECIAL CONDITIONS OF ANY ENVIRONMENTAL PERMIT OR BY THE CONTRACTOR UPON THE OBSERVATION THAT WATER QUALITY STANDARDS MAY BE VIOLATED BY THE CONTRACTOR'S ACTIVITIES. MONITORING LOCATIONS MAY BE SPECIFIED IN THE ENVIRONMENTAL PERMIT OR MAY BE DESIGNATED BY THE CONTRACTOR AND APPROVED BY THE PROJECT ADMINISTRATOR.
- (b) THE PROJECT ADMINISTRATOR WILL BE RESPONSIBLE FOR MONITORING ANY ACTIVITIES FOR VIOLATION OF WATER QUALITY STANDARDS AS THEY RELATE TO TURBIDITY (29 NEPHELOMETRIC TURBIDITY UNIT (NTU)'S ABOVE BACKGROUND OR 1 NTU ABOVE BACKGROUND FOR DIRECT DISCHARGES TO OUTSTANDING FLORIDA WATERS (OFW)'S).
- (c) IF WATER QUALITY STANDARDS ARE VIOLATED, CONSTRUCTION SHALL BE STOPPED IMMEDIATELY, THE ENVIROMENTAL PERMIT CONDITIONS FOLLOWED AND EROSION AND SEDIMENT CONTROL DEVICES REEVALUATED AND APPROVED BY THE ENGINEER PRIOR TO ANY CONTINUATION OF ACTIVITY. MONITORING ACTIVITIES AND TURBIDITY READINGS SHALL BE RECORDED ON THE CONSTRUCTION INSPECTION REPORT AND CONTINUED UNTIL TURBIDITY READINGS FALL BELOW AN ACCEPTABLE LEVEL (29 NTU'S ABOVE BACKGROUND OR 1 NTU ABOVE BACKGROUND FOR DIRECT DISCHARGES TO OFW'S).
- (d) WATER QUALITY MONITORING MAY BE CONDUCTED DURING ANY PHASE OF CONSTRUCTION AS DIRECTED BY THE PROJECT ENGINEER.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

STORMWATER POLLUTION PREVENTION PLAN (1)

SHEET NO.: 59

(2) STABILIZATION PRACTICES:

(a) STABILIZATION MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO MAINTAINING, ESTABLISHING AND USING VEGETATION, APPLYING MULCHES, SODDING, SEEDING, BEST MANAGEMENT PRACTICE (BMP)'S AND THE USE OF ROLLED EROSION CONTROLLED PRODUCTS. WHEN CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, SIDE SLOPES SHALL BE STABILIZED WITH PERFORMANCE SODDING OR SEEDING OR ANY OTHER APPROVED METHOD OF STABILIZATION INCLUDED IN THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEW MANUAL (E&SC MANUAL).

(b) STABILIZATION SHALL TAKE PLACE AS SOON AS PRACTICAL IN PORTIONS OF THE PROJECT WHERE CONSTRUCTION ACTIVITIES HAVE CEASED, BUT NO LATER THAN 7 DAYS AFTER ANY CONSTRUCTION ACTIVITY CEASES EITHER TEMPORARILY OR PERMANENTLY.

(c) ALL EROSION CONTROL DEVICES SHALL BE INSTALLED ACCORDING TO THE CONTRACT DOCUMENTS, AND THE CONTRACTOR'S APPROVED EROSION CONTROL PLAN.

(d) ANY TEMPORARY MATERIAL USED FOR POLLUTION OR EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT AND FINAL STABILIZATION OF THE PROJECT HAS BEEN ACHIEVED.

(e) SEDIMENT BARRIERS SHOULD BE USED ALONG THE LENGTH OF THE PROJECT WHERE THE GROUND SLOPES AWAY FROM THE RIGHT OF WAY OR WHERE THERE IS POTENTIAL FOR SEDIMENT TO BE DIRECTED OFF-SITE. PARTICULAR CARE SHOULD BE USED WHEN THERE ARE WETLANDS OR WATERS OF THE U.S. ARE INVOLVED. SEDIMENT BARRIERS SHOULD BE USED AROUND THE PERIMETER OF STOCKPILE AREAS.

(f) SPACING OF SEDIMENT BARRIERS USED AS DITCH OR SWALE CHECKS/DAMS SHOULD BE BASED UPON THE HEIGHT OF THE BARRIER AND THE SLOPE OF THE DITCH OR SWALE.

(g) THE CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFYING SOIL TRACKING PREVENTION SYSTEMS OR PROCEDURES AS NEEDED.

(3) STRUCTURAL PRACTICES FOR EROSION AND SEDIMENT CONTROL

(a) ROLLED EROSION CONTROL PRODUCTS (ARTIFICIAL COVERINGS)

PURPOSE: TO PROTECT DISTURBED SLOPE SURFACES AGAINST EROSION DUE TO RAINFALL OR FLOWING WATER.

(1) USED FOR PAUSES IN CONSTRUCTION DUE TO INCLEMENT WEATHER OR OTHER CIRCUMSTANCES. COULD INCLUDE NATURAL OR SYNTHETIC FIBER MATS, PLASTIC SHEETING OR NETS.
(2) USED FOR EROSION CONTROL THAT FACILITATES PLANT GROWTH WHILE PERMANENT GRASS IS ESTABLISHED. COULD INCLUDE BIODEGRADABLE EROSION CONTROL BLANKETS INSTALLED ON A SEEDED AREA, ON FILL SLOPES OR IN DITCHES.
(3) USED TO STABILIZE DRAINAGE CHANNELS. CONSULT E&SC MANUAL TO DETERMINE CORRECT PRODUCT TYPE FOR CHANNEL STABILIZATION.

(b) RUNOFF CONTROL STRUCTURE (TEMPORARY SLOPE DRAIN)

PURPOSE: TO PROTECT HILLSIDE SURFACES AGAINST EROSION DUE TO CONCENTRATED FLOW OF RUNOFF WATER.

(1) USED ON FILL SLOPES AND CUT SLOPES TO REDUCE SEDIMENT TRANSPORT AND COULD INCLUDE TEMPORARY SLOPE DRAINS, GRASS-LINED CHANNELS, ROCK-LINED CHANNELS AND CHECK DAMS.
(2) RUNOFF CONTROL STRUCTURES TYPICALLY DISCHARGE TO A SEDIMENT BASIN.

(c) SEDIMENT BASIN (CONTAINMENT SYSTEM)

PURPOSE: A CONTAINMENT SYSTEM IS DESIGNED TO DETAIN AN ADEQUATE VOLUME OF RUNOFF, REDUCE THE VELOCITY OF FLOW THROUGH THE SYSTEM, ALLOW FOR SETTLEMENT OF SUSPENDED SOLIDS AND REGULATE THE DISCHARGE RATE FROM THE SEDIMENT BASIN.

(1) SEDIMENT BASINS MUST BE PLACED IN STRATEGIC LOCATIONS WITHIN THE ACTIVE AREAS OF CONSTRUCTION. CONTRIBUTING AREA AND SIZE OF TARGET SOIL PARTICLE WILL DICTATE WHETHER THE SEDIMENT BASIN WILL BE TYPE 1, TYPE 2 OR TYPE 3 SYSTEM.
(2) THE USE OF SMALLER PRE-SEDIMENTATION BASINS USED IN CONJUNCTION WITH LARGER PERMANENT RETENTION/DETENTION PONDS ARE EFFECTIVE IN CAPTURING LARGER VOLUMES OF SEDIMENTS. THIS TECHNIQUE REQUIRES PERIODICALLY SCHEDULED REMOVAL OF THE ACCUMULATED SEDIMENTS.

(d) SEDIMENT BARRIERS (TEMPORARY CONSTRUCTION SITE BMP'S)

PURPOSE: SEDIMENT BARRIERS EITHER OBSTRUCT FLOW OR PREVENT THE PASSAGE OF WATER WHILE CONSTRUCTION ACTIVITIES OCCUR. SMALLER SEDIMENT BARRIERS MAY FUNCTION AS A SMALL SEDIMENT CONTAINMENT SYSTEM OR AS A METHOD TO REDUCE FLOW VELOCITY.

(1) THESE CONSTUCTION BMP'S CAN INCLUDE SYNTHETIC BALES, STAKED SILT FENCE, TURBIDITY BARRIER, STORM SEWER INLET BARRIERS, ROCK BARRIERS, GEOSYNTHETIC BARRIERS, ETC.
(2) APPROPRIATE LOCATIONS INCLUDE SITE PERIMETER, BELOW DISTURBED AREAS SUBJECT TO SHEET AND RILL EROSION, BELOW THE TOE OF EXPOSED AND ERODIBLE SLOPES, ALONG THE TOE OF STREAM AND CHANNEL BANKS, AROUND DRAINS AND INLETS LOCATED IN LOWPOINTS OR THE DOWNSTREAM EDGE OF AREAS UNDERGOING VERTICAL OR BOX CULVERT CONSTRUCTION ACTIVITIES.
(3) INAPPROPRIATE LOCATIONS FOR THESE SAME MEASURES INCLUDE PARALLEL TO A HILLSIDE CONTOUR, IN CHANNELS WITH CONCENTRATED FLOW (UNLESS PROPERLY REINFORCED), UPSTREAM OR DOWNSTREAM OF CULVERTS WITH CONCENTRATED FLOW, IN FRONT OF OR AROUND INLETS ON A GRADE WITH CONCENTRATED FLOW OR IN FLOWING STREAMS.

(e) FLOATING TURBIDITY BARRIER

PURPOSE: USED IN PERMANENT BODIES OF WATER TO RETAIN SEDIMENT AND FLOATING DEBRIS FROM A CONSTRUCTION AREA SO THAT REMOVAL OR CONTAINMENT OF THE MATERIAL IS POSSIBLE. THEY ARE ALSO USED TO CONTROL MIGRATION OF SUSPENDED SEDIMENTS.

(1) TYPE I, LIGHT DUTY, IS USED WHERE THERE IS LITTLE OR NO CURRENT, NO WIND AND NO WAVE ACTION.
(2) TYPE II, MODERATE DUTY, IS USED WITH SOME CURRENT (<3.5 FT. PER SECOND) AND SOME EXPOSURE TO WIND.
(3) TYPE III, HEAVY DUTY, IS USED WITH GREATER CURRENT (3.5-5.0 FT. PER SECOND), MODERATE WIND AND WAVE ACTION
(4) BARRIER MUST BE ATTACHED AT BOTH ENDS AND WEIGHTED ON THE BOTTOM.
(5) MULTIPLE LINES OF BARRIER MAY BE USED IN SOME CIRCUMSTANCES FOR ADDITIONAL PROTECTION.
(6) STANDARD PANELS FOR WATER DEPTHS ARE 5.0'. ADDITIONAL PANELS CAN BE USED FOR WATER DEPTHS > 5.0'.

(f) STAKED TURBIDITY BARRIER

PURPOSE: THIS ITEM IS COMMONLY USED IN AREAS WHERE CONTINUOUS CONSTRUCTION ACTIVITIES CHANGE THE NATURAL CONTOURS AND DRAINAGE RUNOFF PATTERNS.

(1) COMMONLY USED IN LAKES AND STREAMS AS A SEDIMENT CONTAINMENT SYSTEM. SHOULD NOT BE USED WHERE WATER CURRENTS MOVE THE CURTAIN AND DISLODGE COLLECTED SEDIMENTS.
(2) MAXIMUM DEPTH OF PANEL IS 3'-8".
(3) POST MUST BE A MINIMUM LENGTH OF 5.0' AND A MINIMUM OF 10" OF FABRIC MUST BE EMBEDDED IN THE GROUND.

(g) INLET PROTECTION SYSTEM

PURPOSE: ANY OF A NUMBER OF SEDIMENT BARRIERS THAT EITHER PREVENT SEDIMENT FROM ENTERING AN INLET OR TRAP THE SEDIMENTS ONCE THEY ENTER THE INLET.

(1) TYPICAL APPLICATIONS INCLUDE ROCK BARRIERS, FRAME AND FILTER BARRIERS, CURB INLET "SUMP" BARRIER, CURB INLET DIVERSION BERM, CURB AND GUTTER SEDIMENT CONTAINMENT SYSTEM OR CURB INLET INSET.
(2) SHOULD BE INSTALLED ONLY WHEN CONSTRUCTION ACTIVITIES ARE ON-GOING AND ONLY WHERE SUMP CONDITIONS EXIST.
(3) SHOULD NOT BE USED WHEN CONSTRUCTION IS COMPLETE AND SHOULD NOT BE USED IN AREAS WHERE FLOODING COULD ENCROACH INTO THE TRAVEL LANES.

(h) SOIL TRACKING PREVENTION DEVICE

PURPOSE: TEMPORARY STRUCTURES TO ASSIST WITH THE REMOVAL OF SOIL MATERIAL CAPTURED ON VEHICLE TIRES BEFORE THE VEHICLES ENTER THE ROADWAY.

(1) USE ONE DEVICE PER MILE WITH A MINIMUM OF TWO PER PROJECT.
(2) USE ADDITIONAL DEVICES FOR CONSRUCTION AREAS THAT ARE NOT ADJACENT TO THE ROAD RIGHT OF WAY AND NO ACCESS IS PROVIDED THROUGH A SOIL TRACKING PREVENTION DEVICE.
(3) RRR PROJECTS SHOULD BE HANDLED ON A CASE BY CASE BASIS.
(4) PROVIDING SOIL TRACKING PREVENTION DEVICES AT ALL INGRESS / EGRESS LOCATIONS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
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HDR Engineering, Inc.
4830 W Kennedy Blvd.
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Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

STORMWATER POLLUTION PREVENTION PLAN (2)

SHEET NO.: 60

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(4) CHEMICAL TREATMENTS FOR EROSION AND SEDIMENT CONTROL

(a) CHEMICAL TREATMENT – POLYACRYLAMIDES (PAM AND PAM BLENDS)

PURPOSE: REDUCE SOIL EROSION THROUGH SOIL BINDING, USED AS A WATER TREATMENT ADDITIVE TO REMOVE SUSPENDED SOLIDS FROM RUNOFF, PROVIDES APPROPRIATE MEDIUM FOR GROWTH OF VEGETATION FOR STABILIZATION AND INCREASES INFILTRATION BY INCREASING SIZE OF SOIL PARTICLE.

(1) CAN BE USED ON DISTURBED SOILS. CAN BE USED IN CONJUNCTION WITH OTHER BMP'S TO ENHANCE PERFORMANCE. CAN BE APPLIED IN DISSOLVED FORM WITH WATER, CAN BE USED AS A DRY POWDER, CAN BE USED IN GRANULAR FORM OR MAY BE USED IN THE FORM OF FLOC LOGS.
(2) HIGHER CONCENTRATIONS OF PAM'S DON'T INCREASE THE EFFECTIVENESS OF THE PRODUCT.
(3) ACTIVELY WORKED AREAS WILL REQUIRE REAPPLICATION TO REMAIN EFFECTIVE.
(4) PAM SHOULD NOT BE USED WHERE THE IS A POTENTIAL FOR EQUIPMENT CLOGGING OR TOXICITY IS A CONCERN.
(5) AS AN ADDITIONAL EROSION CONTROL MEASURE, CHEMICAL ADHESIVE STABILIZER (POLYACRYLAMIDE) CAN BE USED WHERE SOIL RUNOFF WILL DRAIN TO WETLANDS OR SURFACE WATERS. SUCH USAGE SHALL BE LIMITED TO AREAS WHERE VEHICLE TRAFFIC AND OTHER DISTURBANCES WILL NOT OCCUR FOR MORE THAN 7 DAYS. POLYACTYLAMIDE CAN BE APPLIED TO EXPOSED SOILS PRIOR TO PLACEMENT OF ARTIFICIAL COVERINGS AND ROLLED EROSION CONTROL PRODUCTS. POLYACRYLAMIDE SHALL BE USED TO STABILIZE SOIL STOCKPILES WHEN THE STOCKPILE WILL REMAIN UNDISTURBED FOR MORE THAN 7 DAYS. POLYACRYLAMIDE SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS.

(b) CHEMICAL TREATMENT – ALUM

PURPOSE: REMOVE SUSPENDED SOLIDS AND POLLUTANTS BY ENMESHMENT AND ABSORPTION INTO ALUM. COLLECT FLOCS OF SUSPENDED SEDIMENTS IN RUNOFF AND STORE THEM IN SEDIMENT BASINS OR STORMWATER MANAGEMENT FACILITIES.

(1) ALUM IS INJECTED INTO THE FLOW STREAM CONTAINING TURBID WATER. INJECTION IS CONTROLLED BY VARIABLE SPEED CHEMICAL PUMP TO FEED ALUM AT MULTIPLE TREATMENT POINTS. ALUM TREATMENT IS EFFECTIVE IN TREATMENT OF RUNOFF THAT CONTAINS LIMEROCK FROM UNPAVED SURFACES.
(2) ALUM TREATMENT REQUIRES CLOSE MONITORING OF DOSAGE. COMBINATION WITH OTHER COMPOUNDS MAY VIOLATE TOXICITY REQUIREMENTS AND THE USE OF ALUM MAY LOWER Ph LEVELS.

NOTE: THIS PAY ITEM IS CONSIDERED A CONTRACTOR'S OPTION FOR SEDIMENT CONTROL ISSUES THAT ARE PROJECT/SITE SPECIFIC. NOT TO BE USED IN THE DESIGN PROCESS WITHOUT CONTACTING LARRY RITCHIE IN THE STATE CONSTRUCTION OFFICE.

(5) DEWATERING OPERATIONS (OPTIONAL – BASED ON PROJECT APPLICABILITY)

DESCRIPTION: DEWATERING OPERATIONS ARE PRACTICES THAT MANAGE THE DISCHARGE OF TURBID WATER WHEN WATERS OTHER THAN STORMWATER AND ACCUMULATED SURFACE WATERS MUST BE REMOVED FROM A LOCATION SO THAT CONSTRUCTION WORK MAY BE ACCOMPLISHED. THESE WATERS CAN INCLUDE GROUNDWATER, WATER FROM COFFERDAMS, WATER DIVERSIONS AND WATERS USED DURING CONSTRUCTION THAT MUST BE REMOVED FROM A WORK AREA.

(a) ENVIRONMENTAL AGENCIES ARE ESPECIALLY CONCERNED WITH THE PROTECTION OF WETLANDS FROM DRAWDOWN EFFECTS, PROTECTING RECEIVING BODIES FROM SEDIMENTATION AND POSSIBLE CAPACITY LIMITATIONS.
(b) THREE PRIMARY METHODS OF DEWATERING COMMONLY USED IN FLORIDA ARE RIM-DITCHING, SOCK/PIPE/HORIZONTAL WELLS AND WELL-POINT SYSTEMS.
(c) METHODS FOR CONTAINING SEDIMENTATION CAN INCLUDE A COMBINATION OF BMP'S AND SEDIMENT TRAPS, SEDIMENT BASINS, GRAVITY BAG FILTERS, WEIR TANKS, DEWATERING TANKS, SAND MEDIA/PRESSURIZED BAGS AND CHEMICAL TREATMENTS.

(6) COASTAL OPERATIONS (OPTIONAL – BASED UPON PROJECT LOCATION):

DESCRIPTION: CONSTRUCTION SITES IN COASTAL AREAS PRESENT UNIQUE CHALLENGES DUE TO HIGHER WIND SPEEDS, SALINE LADEN AIR MOISTURE AND WAVE ACTION THAT REQUIRE USING APPROPRIATE EROSION CONTROL TECHNIQUES THAT CAN WITHSTAND THESE ELEMENTS.

(a) PARTICULAR CONCERNS DURING THE DEVELOPMENT OF EROSION CONTROL PLANS IN COASTAL OPERATIONS CAN INCLUDE THE RESISTANCE OF EROSION CONTROL MATERIALS TO SALT WATER, HIGH WATER TABLES, SOIL COMPACTION AND SITE DEVELOPMENT DUE TO THE TYPICAL SANDY SOILS LOCATED IN THESE AREAS AND SOIL STABILIZING VEGETATION MUST BE SALT TOLERANT.
(b) HIGH ENERGY ENVIRONMENT SHOULD BE CONSIDERED WHEN SELECTING EROSION CONTROL DEVICES. FREQUENT MAINTENANCE IS NORMALLY REQUIRED FOR EROSION CONTROL DEVICES AND TIDAL FLUCTUATIONS MUST BE CONSIDERED WHEN SELECTING THE METHODS OF EROSION CONTROL.
(c) TEMPORARY CONTROL TECHNOLOGIES FOR THE COASTAL ENVIRONMENT COULD INCLUDE THE USE OF COMPOST/WOOD MULCHING, HYDRAULIC MULCHING, SOIL BINDERS AND TEMPORARY HYDROSEEDING.
(d) PERMANENT CONTROLS COULD INCLUDE THE USE OF POLYMER-ENHANCED ARMORING, PRESERVING EXISTING VEGETATION WHEN POSSIBLE, ESTABLISHING PERMANENT SALT-TOLERANT VEGETATION, CONSTRUCTION SITE BARRIERS (SHEET PILES/CONCRETE WALLS/EARTHERN BERMS), NATURAL/ SYNTHETIC GEOTEXTILES, MATS, OR GEOGRIDS.

III. OTHER CONTROLS:

(1) WASTE DISPOSAL
(a) THE CONTRACTOR WILL PROVIDE LITTER CONTROL AND COLLECTION WITHIN THE PROJECT BOUNDARIES DURING CONSTRUCTION ACTIVITIES.
(b) ALL FERTILIZER AND CHEMICAL CONTAINERS SHALL BE DISPOSED OF BY THE CONTRACTOR ACCORDING TO EPA'S STANDARD PRACTICES AS DETAILED BY THE MANUFACTURER.
(c) NO SOLID MATERIALS, INCLUDING BUILDING AND CONSTRUCTION MATERIALS, SHALL BE DISCHARGED TO WETLANDS OR BURIED ON SITE.
(d) ALL SANITARY WASTE WILL BE COLLECTED FROM PORTABLE UNITS BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR AS REQUIRED BY STATE REGULATIONS.

(2) OFF-SITE VEHICLE TRACKING – WILL BE CONTROLLED BY THE FOLLOWING METHODS:
(a) LOADED HAUL TRUCKS ARE TO BE COVERED BY A TARPAULIN AT ALL TIMES.
(b) EXCESS DIRT ON ROAD WILL BE REMOVED DAILY.
(c) USING WATER TRUCKS DURING DUST GENERATING ACTIVITIES.

(3) STATE AND FEDERAL REGULATIONS: PERMITS WILL BE OBTAINED FROM THE FOLLOWING AGENCIES:

SWFWMD ENVIRONMENTAL RESOURCE PERMIT MODIFICATION NO. (PENDING)
USACE NATIONWIDE PERMIT NO. (PENDING) ISSUED ON (PENDING)

PERMITS WILL BE REQUIRED BY THE CONTRACTOR FROM THE FOLLOWING AGENCY: FDEP NPDES PERMIT

(4) NON-STORMWATER (INCLUDING SPILL REPORTING)
THE CONTRACTOR WILL PROVIDE MANATEE COUNTY WITH AN EROSION AND SEDIMENT CONTROL PLAN THAT WILL INCLUDE SPILL CONTAINMENT, REPORTING, AND RESPONSES. THE PLAN SHALL SPECIFY WHAT MANAGEMENT PRACTICES AND CONTAINMENT METHODS WILL BE USED TO PREVENT POTENTIAL POLLUTANTS (FUEL, LUBRICANTS, HERBICIDES, ETC.) FROM SPILLING ONTO THE SOIL OR INTO THE SURFACE WATERS. IF A SPILL DOES OCCUR, OR IF CONTAMINATED SOIL OR GROUNDWATER IS ENCOUNTERED, CONTACT SIA MOLLANAZAR, MANATEE COUNTY PUBLIC WORKS AT (941) 708-7487.

IV. MAINTENANCE:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIRS OF ALL EROSION AND SEDIMENT CONTROL DEVICES AND REMOVAL OF EROSION AND SEDIMENT CONTROL DEVICES WHEN NOTICE OF TERMINATION IS MAILED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND PROPER DISPOSAL OF SEDIMENT BUILDUP THROUGH THE LIFE OF THE INSTALLED EROSION AND SEDIMENT CONTROL DEVICES.

(1) ALL CONTROL MEASURES WILL BE MAINTAINED DAILY BY THE CONTRACTOR AND ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF NOTICE.
(2) SODDING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.
(3) SYNTHETIC BALES SHALL BE MAINTAINED TO ENSURE THEIR USEFULNESS AND NOT BLOCK OR IMPEDE STORMWATER FLOW OR DRAINAGE.
(4) STAKED SILT FENCES SHALL BE REPLACED EVERY TWELVE (12) MONTHS OR WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORMWATER FLOW OR DRAINAGE.
(5) STABILIZED CONSTRUCTION ENTRANCES SHALL BE MAINTAINED TO PREVENT CLOGGING OF ROCK BEDDING WHICH MAY IMPEDE THE USEFULNESS OF THE STRUCTURE.

V. INSPECTION:

(1) THE CONTRACTOR SHALL INSTALL AND MAINTAIN RAIN GAUGES ON THE PROJECT SITE AND RECORD WEEKLY RAINFALL IN ACCORDANCE WITH THE NPDES PERMIT.
(2) ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED DAILY BY CONTRACTOR'S PERSONNEL WHO ARE F.D.E.P. CERTIFIED STORMWATER MANAGEMENT INSPECTORS.
(3) THE CONTRACTOR SHALL COMPLETE ALL SWPPP INSPECTION REPORT FORMS REQUIRED FOR THE NPDES PERMIT.

VI. TRACKING AND REPORTING:
(1) THE CONTRACTOR SHALL SUBMIT A WEEKLY REPORT TO THE COUNTY DOCUMENTING THE DAILY INSPECTIONS AND MAINTENANCE OR REPAIRS TO THE EROSION AND SEDIMENT CONTROL DEVICES. THE CONTRACTOR SHALL MAINTAIN ALL REQUIRED REPORTS AND COMPLETE ALL SWPPP INSPECTION FORMS.
(2) PREPARATION OF ALL THE CONTRACTOR'S REPORTS OF INSPECTION, MAINTENANCE AND REPAIRS REQUIRED FOR THE CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION, SHALL BE INCLUDED IN THE INDIVIDUAL COSTS OF THE EROSION AND SEDIMENT CONTROL DEVICES.
(3) THE CONTRACTOR SHALL USE THE FDOT'S STANDARD SWPPP CONSTRUCTION INSPECTION REPORT FORM # 650-040-03, FOR DAILY INSPECTIONS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

STORMWATER POLLUTION PREVENTION PLAN (3)

SHEET NO.: 61

1" = 50'

16TH AVE. E. (CANAL RD.)

BEGIN PROJECT
END MILLING AND RESURFACING
BEGIN RECONSTRUCTION
STA. 200+74.39

BEGIN CONSTRUCTION (SB)
BEGIN MILLING AND
RESURFACING (SB)
A STA. 199+42.12

16TH AVE. E.
(SANCTUARY
COVE)

MILLING LIMITS

MILLING LIMITS

18" RCP

5'x11' CONC. BOX CULVERT

POT STA. 100+00.00

18" RCP

OE

PROP. R/W

EXIST. R/W

TCE

B-101

B-103

B-106

CR-D

CR-G

N 00° 00' 04" W

℄ SURVEY CANAL RD.

℄ CONST. CANAL RD.

N 00° 44' 08" E

STA. 204+08.00

N 00° 15' 52" W

MATCHLINE STA. 206+00.00

99 100 101 200 201 202 203 204 205 206

18" RCP

18" RCP

18" RCP

B-104

B-102

B-105

B-107

EXIST. R/W

12"x18" ERCP

EXIST. 10' UTILITY EASEMENT

EXIST. R/W

12"x18" RCP

CR-C

CR-G

MILLING LIMITS

SAWCUT LINE

US 301

SAWCUT LINE

PROP. R/W

TCE

OFF-1

18" RCP

15" RCP

P-100

B-108

SIGNAL EASEMENT

MILLING LIMITS

MILLING LIMITS

CR-D

B-100

ROYAL PALM
CAR WASH

TCE

DETWILER'S

LEGEND

SEDIMENT BARRIER

INLET PROTECTION

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
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DATE: 12/2021
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Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
ADAM RAY
MITCHUM
FL. LICENSE NO.
83296

EROSION CONTROL (1)

SHEET NO.
62

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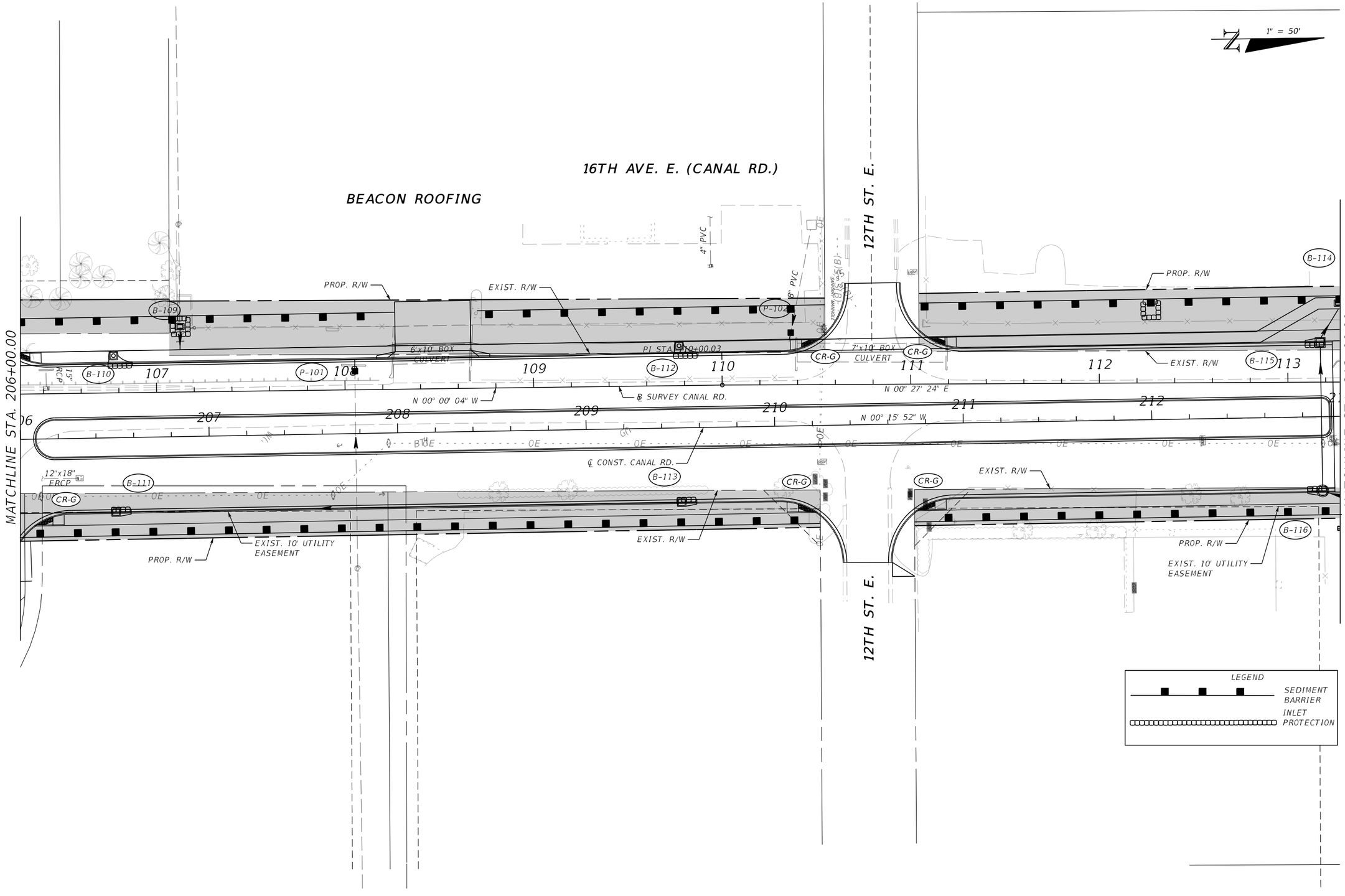

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HDR Engineering, Inc.
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Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

EROSION CONTROL (2)

SHEET NO.: 63

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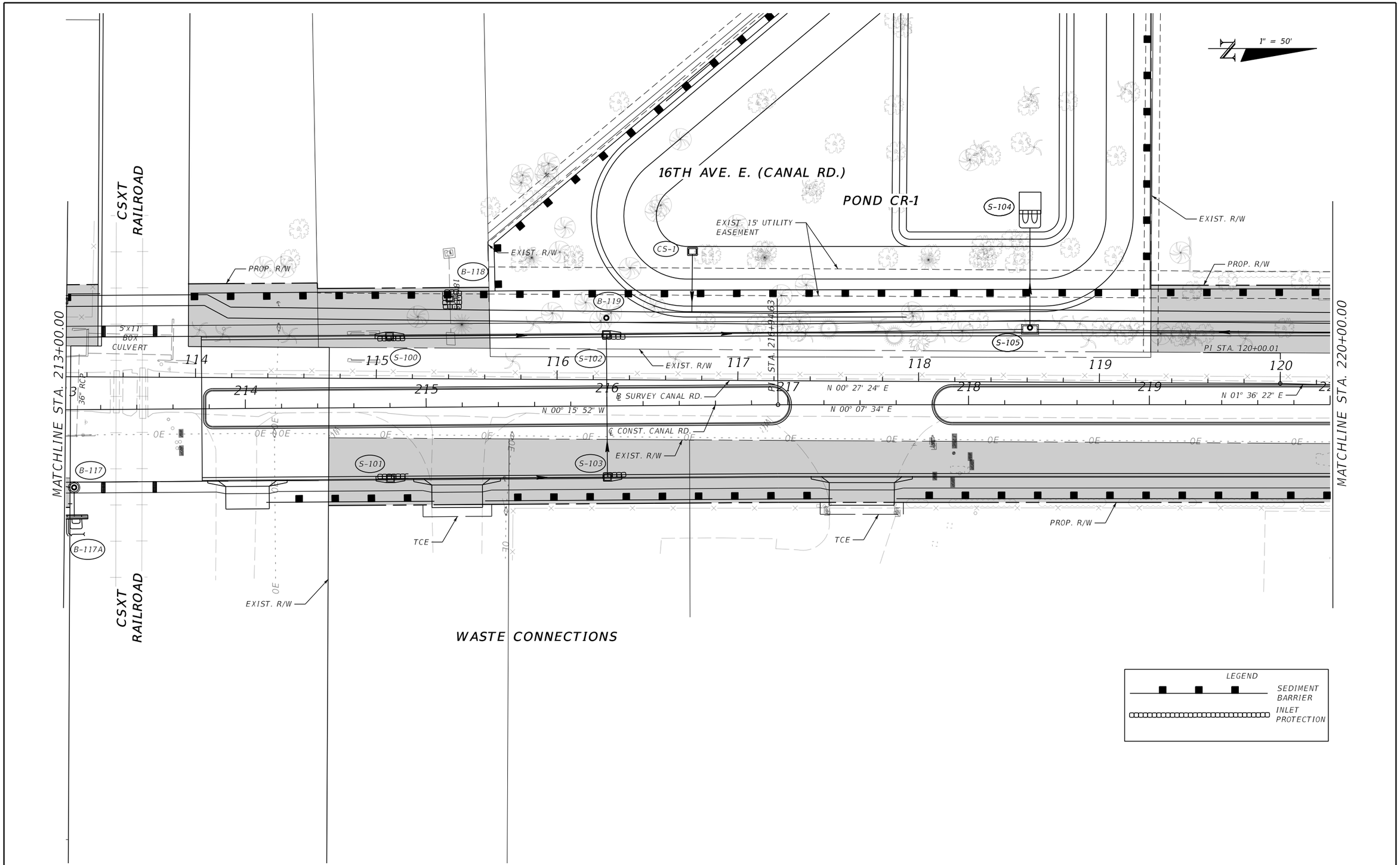

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

EROSION CONTROL (3)

SHEET NO.: 64

3:35:25 PM 12/11/2021
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1" = 50'

16TH AVE. E. (CANAL RD.)

TCB PRODUCTS

17TH ST, E. (MEMPHIS RD.)

MATCHLINE STA. 220+00.00

MATCHLINE STA. 227+00.00

17TH ST. E. (MEMPHIS RD.)

EXIST. 15' UTILITY EASEMENT

PROP. R/W

EXIST. R/W

B-120 B-121 B-122 B-123

S-106 S-107 S-108 S-109 S-110 S-111 S-112 S-113

CR-C CR-D

84" RCP

5'x8' BOX CULVERT

30" RCP

24" RCP

8" PVC

18" ADS

℄ SURVEY CANAL RD.

℄ CONST. CANAL RD.

℄ SURVEY CANAL RD.

℄ CONST. CANAL RD.

N 01° 36' 22" E

N 00° 07' 34" E

W(B)

S(B)

OE

121 122 123 124 125 126 127

221 222 223 224 225 226

CHUCK'S AUTOMOTIVE
SILVA AUTO REPAIR

LEGEND

SEDIMENT BARRIER

INLET PROTECTION

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

EROSION CONTROL (4)

SHEET NO.: 65

3:35:31 PM 12/11/2021

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1" = 50'

POND CR-2

16TH AVE. E. (CANAL RD.)

17TH ST. E. (MEMPHIS RD.)

MATCHLINE STA. 227+00.00

MATCHLINE STA. 234+00.00

CS-2 B-124 B-125 S-206A B-126

PROP. R/W

EXIST. R/W

CR-C S-200 84" RCP S-202 P-103 S-203 S-205 P-104 S-206 P-105

24" RCP 4" RCP

PI STA. 229+50.76

℄ CONST. CANAL RD.

227 228 229 230 231 232 233 234

128 129 130 131 132 133 134

N 00° 07' 34" E N 01° 07' 34" E

N 01° 36' 22" E N 01° 36' 18" E

18" RCP

℄ SURVEY CANAL RD.

PI STA. 130+00.00

CR-C CR-G S-204 S-207

36" RCP

201 S-208

PROP. R/W EXIST. R/W EXIST. R/W EXIST. R/W

12"x18" ERCP 12"x18" ERCP 12"x18" ERCP

18TH ST. E.

18TH ST. COURT E.

S(B) OE W(B)

LEGEND

SEDIMENT BARRIER

INLET PROTECTION

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

EROSION CONTROL (5)

SHEET NO.: 66

3:35:35 PM 12/11/2021

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1" = 50'

16TH AVE. E. (CANAL RD.)

END RECONSTRUCTION
BEGIN WIDENING
D BEGIN MILLING AND RESURFACING
STA. 240+26.47

21ST ST. E.

PROP. R/W

EXIST. R/W

24" RCP

48" RCP

48" RCP

PROP. R/W

B-127

S-209

S-211

B-128

P-106

P-107

CR-G

D

MATCHLINE STA. 234+00.00

MATCHLINE STA. 241+00.00

PI STA. 239+38.07

234 235 236 237 238 239 240 241

N 01° 07' 34" E

℄ CONST. CANAL RD.

N 01° 38' 41" E

SAWCUT LINE

135 136 137 138 139 140 141

N 01° 36' 18" E

℄ SURVEY CANAL RD.

PI STA. 140+00.01

N 00° 00' 06" W

S-210

CR-G

CR-G

S-212

CR-G

S(B)

OE

EXIST. R/W

EXIST. R/W

MILLING LIMITS

TCE

20TH ST. E.

21ST ST. CT. E.

ANTHONY'S COOLING-HEATING-ELECTRICAL

LEGEND

SEDIMENT BARRIER

INLET PROTECTION

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
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CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

EROSION CONTROL (6)

SHEET NO.: 67

3:35:40 PM 12/11/2021

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1" = 50'

16TH AVE. E. (CANAL RD.)

PALMETTO ESTATES

22ND LN. E.

42" ADS

EXIST. R/W

EXIST. EASEMENT

PROP. R/W

B-129

B-130

B-131

B-132

EXIST. 10' R/W EASEMENT

EXIST. R/W

60" RCP

60" RCP

15" RCP

EXIST. SIDEWALK TO REMAIN

℄ CONST. CANAL RD.

24" RCP

PC STA. 245+50.85

N 01° 38' 41" E

N 00° 00' 06" W

SAWCUT LINE

℄ SURVEY CANAL RD.

MILLING LIMITS

E

F

END CONSTRUCTION
STA. 245+85.00

PI STA. 248+01.49

MATCHLINE STA. 241+00.00

EXIST. R/W

241 242 243 244 245 246 247 248

142 143 144 145 146 147 148

E END PROJECT
END WIDENING
STA. 244+52.56

F END MILLING & RESURFACING
STA. 244+77.55

LEGEND

SEDIMENT BARRIER

INLET PROTECTION

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

EROSION CONTROL (7)

SHEET NO.: 68

3:35:45 PM 12/11/2021

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TRAFFIC CONTROL GENERAL NOTES

1. THE EXISTING POSTED SPEED SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT.
2. MAINTENANCE OF TRAFFIC SHALL FOLLOW FDOT STANDARD PLANS NOS. 102-600, 120-601, 102-602, 102-604, 102-615, 102-616, AND 102-660, AS SPECIFIED IN THE CONSTRUCTION PHASING NOTES AND OTHER TRAFFIC CONTROL INDEXES AS APPLICABLE.
3. ACCESS TO ADJACENT PROPERTIES AND SIDE STREETS SHALL BE MAINTAINED BY THE CONTRACTOR DURING ALL PHASES OF CONSTRUCTION.
4. THE COST OF MAINTENANCE OF TRAFFIC OPERATIONS SHALL BE INCLUDED UNDER THE LUMP SUM PAY ITEM, UNLESS A SEPARATE PAY ITEM IS PROVIDED.
5. CONTRACTOR SHALL MAINTAIN SUFFICIENT TRAVEL WAYS TO PROVIDE INGRESS AND EGRESS AS WELL AS SAFE BARRICADES TO ALL PROPERTIES WITHIN THE PROJECT AREA AT ALL TIMES.
6. TRAFFIC CONDITIONS, ACCIDENTS, AND OTHER UNFORESEEN EMERGENCY CONDITIONS MAY REQUIRE THE COUNTY TO RESTRICT OR REMOVE LANE CLOSURES OR CHANNELIZATIONS SHOWN IN THE PLANS. THE CONTRACTOR SHALL RESPOND AND PROVIDE ADJUSTMENTS AS DIRECTED BY THE COUNTY WITHOUT DELAY UNDER THESE CONDITIONS. THE CONTRACTOR SHALL ALSO RESPOND WITHIN TIME CONSTRAINTS OUTLINED IN THE STANDARD SPECIFICATIONS UPON NOTIFICATION BY THE COUNTY TO ANY REQUESTS FOR CORRECTION, IMPROVEMENT, OR MODIFICATION TO THE TRAFFIC CONTROL PLAN AND/OR DEVICES. ALL COSTS SHALL BE INCLUDED IN THE BID PRICE FOR MAINTENANCE OF TRAFFIC.
7. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO INSTALL AND MAINTAIN TEMPORARY DRAINAGE AND EROSION CONTROL FACILITIES AS SHOWN ON THE PLANS OR AS DIRECTED BY THE COUNTY. POSITIVE DRAINAGE OFF OF THE TRAVELED ROADWAY SHALL BE MAINTAINED AT ALL TIMES.
8. FOR SIDE STREET INTERSECTIONS, LANE CLOSURE SHALL BE LIMITED TO ONE LANE AT ALL TIMES, EXCEPT FOR SPECIFIED DETOURS. AT A MINIMUM, ONE-LANE, TWO-WAY OPERATION SHALL BE MAINTAINED THROUGH THE USE OF FLAGGERS. TWO-LANE, TWO-WAY OPERATION SHALL BE MAINTAINED DURING PERIODS OF LANE CLOSURE RESTRICTIONS AND WHEN CONSTRUCTION ACTIVITIES ARE BEYOND THE LIMITS OF THE INTERSECTIONS.
9. COORDINATION WITH CSXT RAILROAD IS REQUIRED FOR WORK ACTIVITES AND TRAFFIC SHIFTS IN THE VICINITY OF THE RAILROAD CROSSING.

TRAFFIC CONTROL PHASING NOTES

THE TEMPORARY TRAFFIC CONTROL PLAN PHASING SHALL BE DIVIDED AT 17TH STREET EAST DUE TO THE LOCATION OF THE EXISTING CANAL RD. PAVEMENT RELATIVE TO THE PROPOSED CANAL RD. PAVEMENT.

PHASE 1
US 301 TO 17TH STREET EAST - RIGHT SIDE RECONSTRUCTION
17TH STREET EAST TO 22ND LANE EAST - LEFT SIDE WIDENING (BOX CULVERT)

1. INSTALL ALL ADVANCED WARNING DEVICES FOR MAINLINE AND SIDE STREETS.
2. EXISTING TRAFFIC SHALL REMAIN ON EXISTING PAVEMENT WITH CHANNELIZING DEVICES / BARRIER PROTECTION FROM WORK ZONE. CONSTRUCT RIGHT SIDE NEW PAVEMENT AND LEFT SIDE BOX CULVERT. CONSTRUCT TEMPORARY DRAINAGE CONNECTIONS.
3. BEGIN CONSTRUCTION OF THE US 301/CANAL RD. AND THE 17TH ST. E./CANAL RD. SIGNALS.
4. INSTALL TEMPORARY PAVEMENT FOR LANE SHIFTS NEEDED FOR PHASE 2.

PHASE 2
US 301 TO 17TH STREET EAST - LEFT SIDE RECONSTRUCTION
17TH STREET EAST TO 22ND LANE EAST - RIGHT SIDE WIDENING

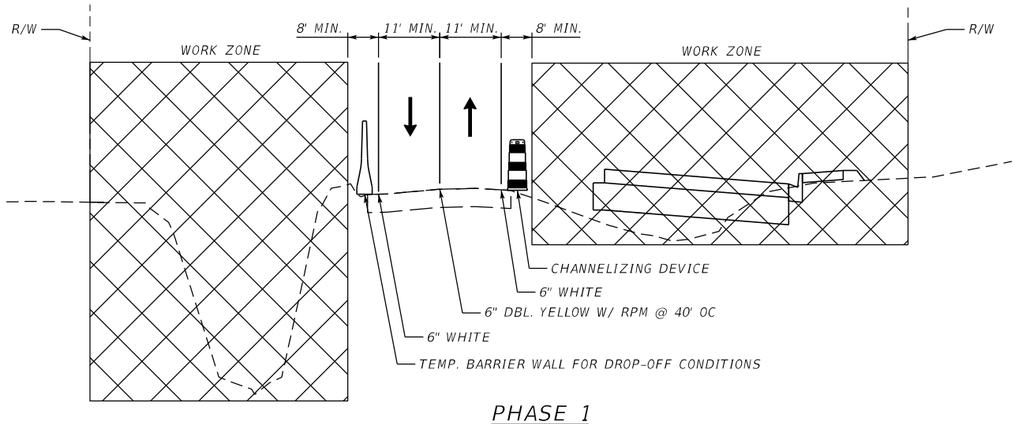
1. MAINTAIN ALL ADVANCED WARNING DEVICES FOR MAINLINE AND SIDE STREETS.
2. SHIFT TRAFFIC TO NEW TRAVEL LANES CONSTRUCTED IN PHASE 1. CONSTRUCT LEFT SIDE NEW PAVEMENT WITH CHANNELIZING DEVICES / BARRIER PROTECTION FROM WORK ZONE.
3. COMPLETE CONSTRUCTION OF US 301 AND 17TH STREET EAST SIGNALS.

PHASE 3
US 301 TO 17TH STREET EAST - MEDIAN CONSTRUCTION

1. MAINTAIN ALL ADVANCED WARNING DEVICES FOR MAINLINE AND SIDE STREETS.
2. SHIFT TRAFFIC TO NEW TRAVEL LANES CONSTRUCTED IN PHASE 1 AND PHASE 2. CONSTRUCT MEDIAN CURBING AND LEFT-TURN LANES. USE CHANNELIZING DEVICES TO BARRIER PROTECT TRAVEL LANES FROM WORK ZONE.

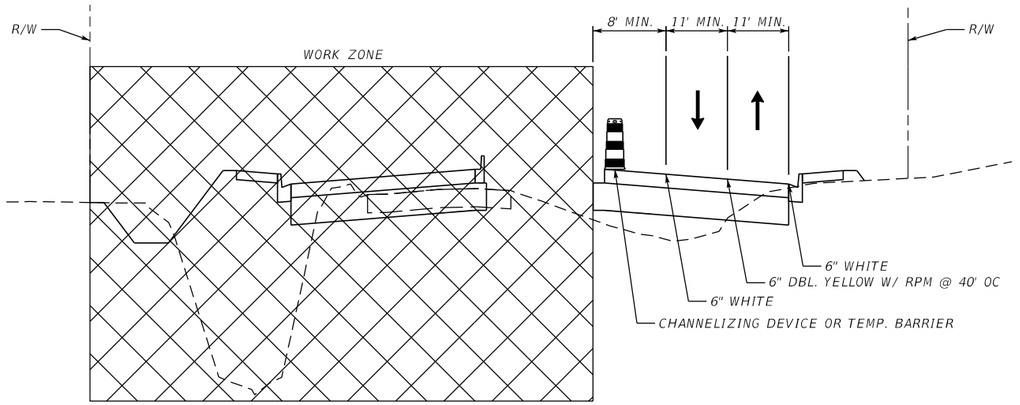
PHASE 4
MILLING AND RESURFACING

1. COMPLETE MILLING OF MAINLINE AND US 301 USING STANDARD MILLING PRACTICES AND WORK ZONE CONTROL.
2. RESURFACE AND ADD FINAL LIFT OF PAVEMENT FOR MAINLINE AND SIDE STREETS USING STANDARD PRACTICES AND WORK ZONE CONTROL.



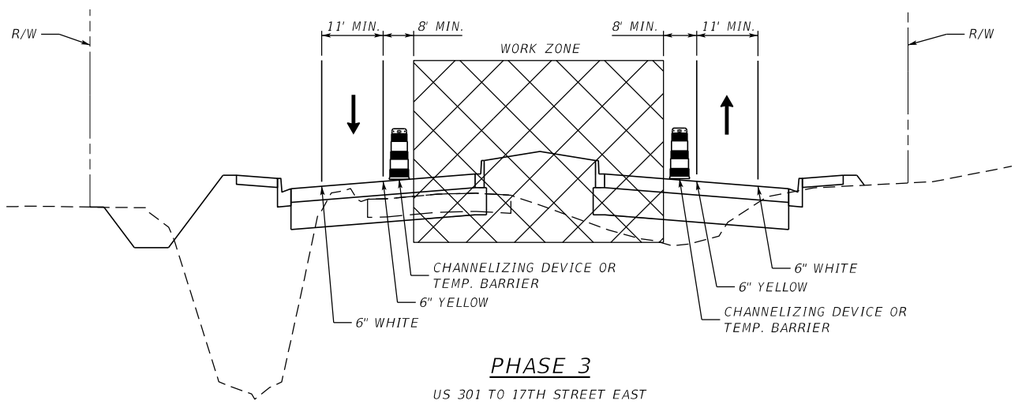
PHASE 1

US 301 TO 17TH STREET EAST



PHASE 2

US 301 TO 17TH STREET EAST



PHASE 3

US 301 TO 17TH STREET EAST

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

TEMPORARY TRAFFIC CONTROL PLAN (1)

SHEET NO.: 69

3:36:02 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\tcgnrd01.dgn

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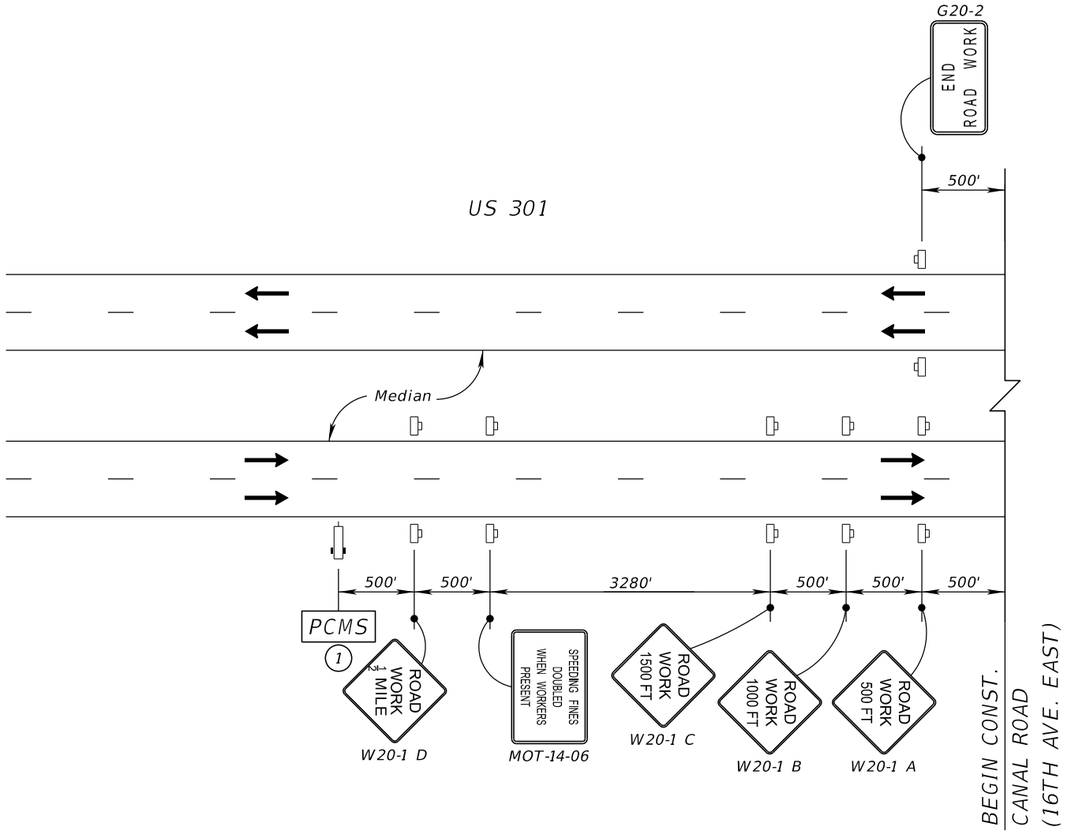
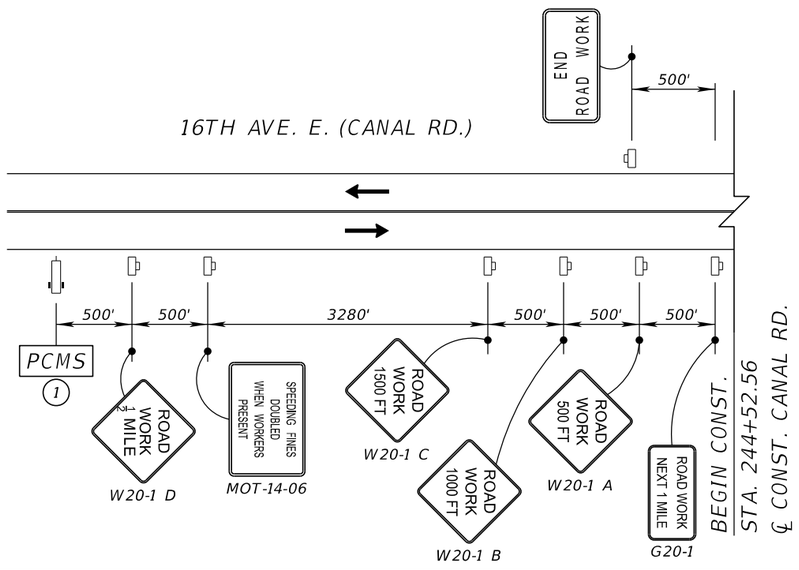


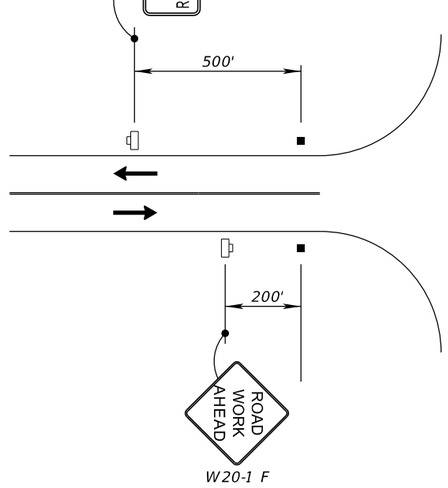
PCMS:

	ADVANCED WARNING MESSAGE 1	MESSAGE 2
1	CANAL RD CONST BEGINS	XX/XX/XX CONST BEGINS



SIDE STREET (TYP.)

12TH STREET EAST
17TH STREET EAST
18TH STREET EAST
18TH STREET COURT EAST
20TH STREET EAST
21ST STREET EAST
21ST STREET COURT EAST
22ND LANE EAST



ADVANCED WARNING SIGNS

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

TEMPORARY TRAFFIC CONTROL PLAN (2)

SHEET NO.: 70

16TH AVE. E. (CANAL RD.)

1" = 50'

4" GM / TO REMAIN
TECO

US 301

BEGIN PROJECT
END MILLING AND RESURFACING
BEGIN RECONSTRUCTION
STA. 200+74.39

BEGIN CONSTRUCTION (SB)
BEGIN MILLING AND
RESURFACING (SB)
STA. 199+42.12

TCE

PROP. R/W

EXIST. R/W

4" PVC FM / TO REMAIN
MANATEE COUNTY

16TH AVE. E.
(SANCTUARY
COVE)

B-101 B-103 B-106

100 101 102 103 104 105 106

STA. 204+08.00

99 200 201 202 203 204 205

℄ CONST. CANAL RD.

℄ SURVEY CANAL RD.

10" WM / TO BE REMOVED
MANATEE COUNTY

MATCHLINE STA. 206+00.00

POT STA. 200+00.00

10" WM / TO REMAIN
MANATEE COUNTY

B-102 B-105 B-107

PROP. 10" DI WM

EXIST. R/W

4" GM / TO REMAIN
TECO

12" WM / TO REMAIN
MANATEE COUNTY

OFF-1

P-100

TCE

PROP. R/W

B-108

4" GM / TO REMAIN
TECO

TCE

US 301

OE (23 KV) / TO BE ADJUSTED
FPL

OE (23 KV) / TO BE RELOCATED
FPL

ROYAL PALM
CAR WASH

DETWILER'S

15

10

5

0

500' V.C.

MILLING AND RESURFACING LIMITS

BEGIN PROJECT
END MILLING AND RESURFACING
BEGIN RECONSTRUCTION
STA. 200+74.39

9.37

+25.00 EL. 9.14

9.10 9.04 9.00 8.96 8.92 8.89 8.87 8.86 8.84 8.84 8.84 8.85 8.86 8.88 8.91 8.94 8.97 9.02 9.07 9.12 9.18 9.25 9.32 9.40

9.40

B-101 B-104 B-106

(-) 0.300%

PGL

(-) 0.300% (-) 0.300% (+) 0.448%

(+) 0.320%

Exist. ground @ ℄ Const. Canal Rd.

BEGIN PGL
STA. 239+47.00

BEGIN SP. GUTTER PROFILE (LT. & RT.)
STA. 201+25.00, EL. 8.60

P1 +25.52
EL. 8.00

P1 +75.00
EL. 8.39

MATCH EXIST. CBC. REFER TO
STRUCTURES PLANS FOR DETAILS

201+83
24.00
EL. 5.50
12/2/20

18" PIPE
FL 3.00

EXIST. 11' X 5' CBC

11' X 5' CBC

P1 +00.00
EL. 5.36

P1 +25.52
EL. 5.35

P1 +75.00
EL. 8.39

11' X 5' CBC

7' X 5' CBC

END SP. DITCH PROFILE (LT.)
STA. 205+00.00, EL. 5.38

24" PIPE
FL 3.00

BEGIN SP. DITCH PROFILE (LT.)
STA. 202+00.00, EL. 6.20

18" PIPE
FL 2.00

FL = 0.46'

FL = 0.62'

FL = 0.60'

8.55 9.37 7.45

301

200 201 202 203 204 205 206

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

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA

MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

UTILITY ADJUSTMENTS (1)

SHEET NO.: 71

3:36:26 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\utadrd01.dgn

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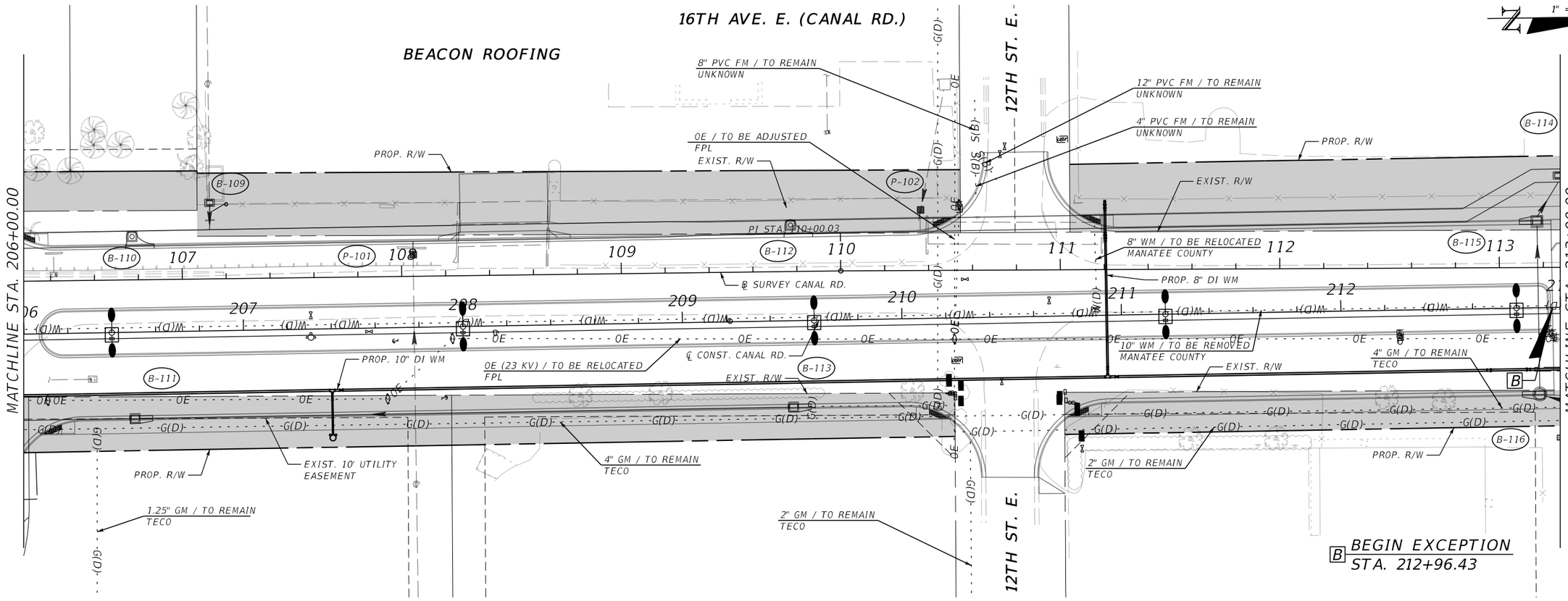

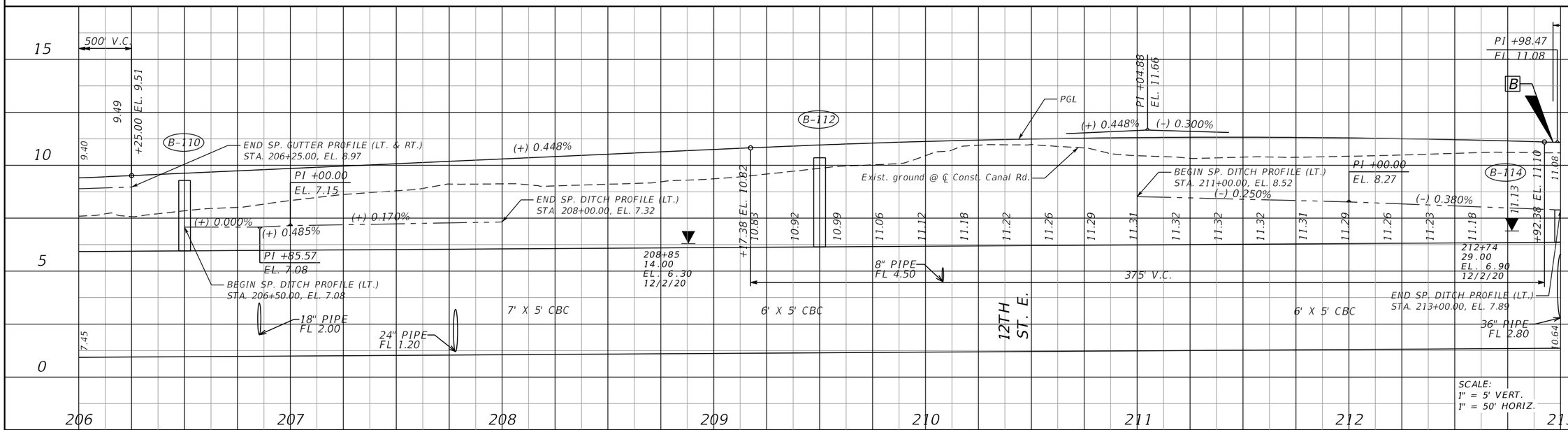

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Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

UTILITY ADJUSTMENTS (2)

SHEET NO.: 72

3:36:32 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\utadrd01.dgn

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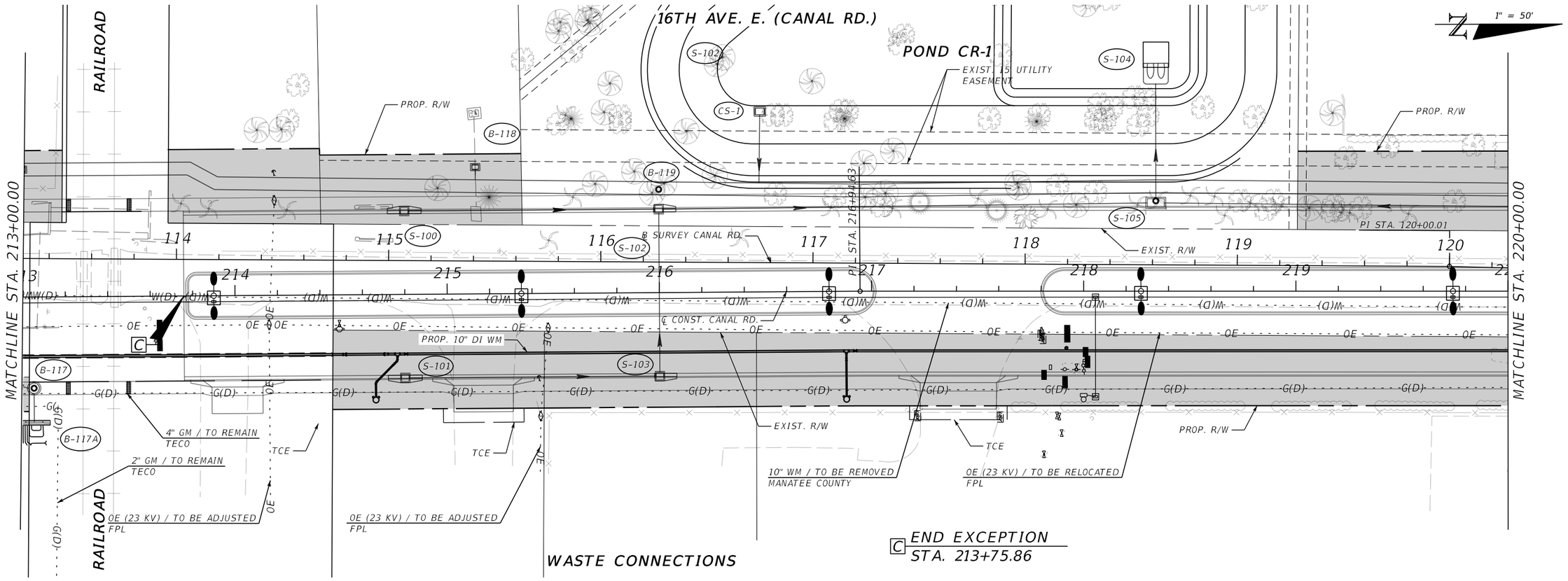

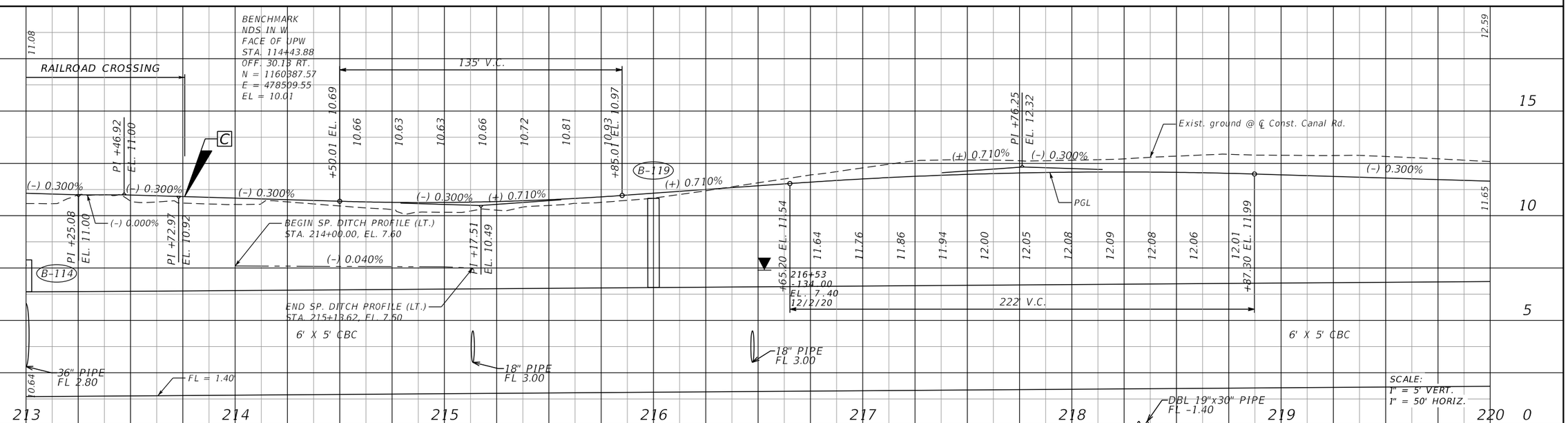

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

UTILITY ADJUSTMENTS (3)

SHEET NO.: 73

3:36:38 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\utadrd01.dgn

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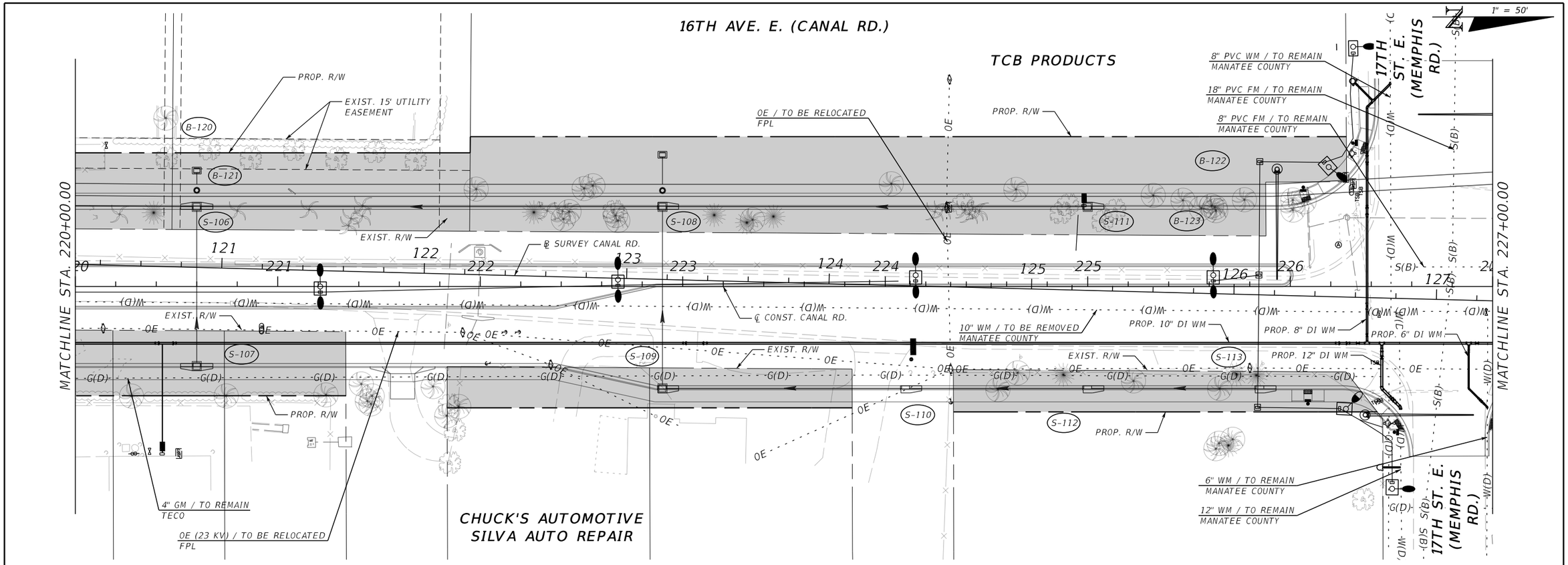

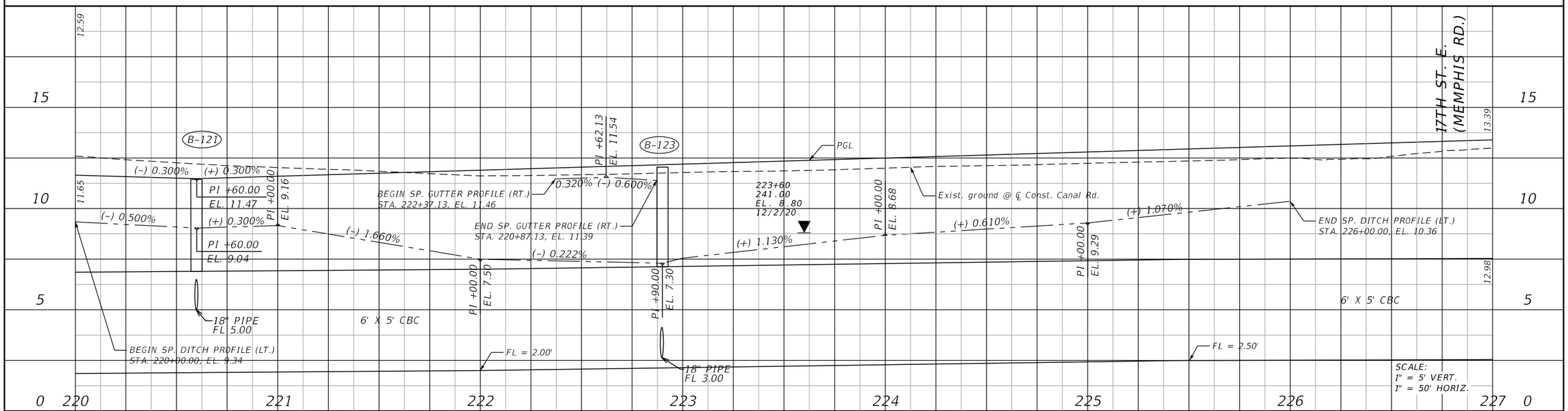

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

UTILITY ADJUSTMENTS (4)

SHEET NO.: 74

3:36:44 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\utadrd01.dgn

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

POND CR-2

16TH AVE. E. (CANAL RD.)

1" = 50'

17TH ST. E. (MEMPHIS RD.)

MATCHLINE STA. 227+00.00

MATCHLINE STA. 234+00.00

CS-2 S-206A B-125 B-124 B-126 P-103 S-200 S-202 S-203 S-205 P-104 S-206 P-105 S-201 S-204 S-207 S-208

EXIST. R/W

PROP. R/W

STA. 229+50.76

PI STA. 130+00.00

℄ CONST. CANAL RD.

℄ SURVEY CANAL RD.

4" GM / TO REMAIN
TECO

10" WM / TO BE REMOVED
MANATEE COUNTY

PROP. 10" DI WM

PROP. 6" DI WM

OE (23 KV) / TO REMAIN
FPL

OE (23 KV) / TO BE RELOCATED
FPL

12" PVC FM / TO REMAIN
MANATEE COUNTY

6" PVC WM / TO REMAIN
MANATEE COUNTY

18TH ST. CT. E.

128 129 130 131 132 133 134

227 228 229 230 231 232 233 234

BENCHMARK
NDS IN CURB INLET
STA. 127+86.68
OFF. 19.74 LT.
N = 1161730.84
E = 478486.17
EL = 14.10

(+) 0.300%

PGL

Exist. ground @ ℄ Const. Canal Rd.

227+71
46.00
EL. 9.10
12/2/20

233+80
47.00
EL. 10.00
12/2/20

6' X 5' CBC

18" PIPE
FL 5.50

18" PIPE
FL 5.20

DBL 14"x23" PIPE
FL 8.90

36" PIPE
FL 4.00

FL = 2.60'

FL = 2.70'

13.39 12.98 15.49 15.12

15 10 5 0

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

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA

MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

UTILITY ADJUSTMENTS (5)

SHEET NO.: 75

3:36:50 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\utadrd01.dgn

16TH AVE. E. (CANAL RD.)

1" = 50'

END RECONSTRUCTION
BEGIN WIDENING
BEGIN MILLING AND RESURFACING
D STA. 240+26.47

MATCHLINE STA. 234+00.00

MATCHLINE STA. 241+00.00

PROP. R/W

EXIST. R/W

6" PVC FM / TO REMAIN
MANATEE COUNTY

8" PVC WM / TO BE RELOCATED
MANATEE COUNTY

21ST ST. E.

PROP. R/W

B-126 B-127 B-128 P-106 P-107

S-209 S-210 S-211 S-212

OE (23 KV) / TO BE ADJUSTED
FPL

℄ CONST. CANAL RD.

PI STA. 239+68.07

10" WM / TO BE REMOVED
MANATEE COUNTY

℄ SURVEY CANAL RD.

PI STA. 140+01.01

PROP. 10" DI WM

PROP. 8" DI WM

PROP. 8" DI WM W(D)

EXIST. R/W

8" PVC FM / TO REMAIN
MANATEE COUNTY

OE (23 KV) / TO REMAIN
FPL

TCE

12" PVC FM / TO REMAIN
MANATEE COUNTY

OE (23 KV) / TO REMAIN
FPL

ANTHONY'S COOLING-HEATING-ELECTRICAL

8" PVC WM / TO REMAIN
PRIVATE

8" PVC WM / TO REMAIN
MANATEE COUNTY

EXIST. R/W

21ST ST. CT. E.

234 235 236 237 238 239 240 241

135 136 137 138 139 140 141

D

15.49 B-126

PI +00.00 EL. 13.21

PI +85.00 EL. 16.65

Exist. ground @ ℄ Const. Canal Rd.

B-126 (+) 0.138%

PI +50.00 EL. 16.88

16.61

15

(-) 0.210%

(+) 0.300%

(+) 0.138%

(-) 0.351%

PGL

(-) 0.360%

(+) 0.350%

BEGIN SP. DITCH PROFILE (LT.)
STA. 235+00.00, EL. 13.42

PI +00.00 EL. 12.85

END SP. DITCH PROFILE (LT.)
STA. 238+00.00, EL. 13.20

239+78
38.00
EL. 11.50
12/2/20

10

15.12

6' X 5' CBC

18" PIPE
FL 7.00

6' X 5' CBC

24" PIPE
FL 7.50

14"x23" PIPE
FL 8.50

16.55

5

FL = 2.70'

FL = 4.50'

FL = 4.80'

20TH ST. E.

21ST ST. CT. E.

0 234 235 236 237 238 239 240 241 0

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

No.	REVISIONS	DATE	BY

SCALE AS NOTED
DESIGNED BY JLS
DRAWN BY TME
CHECKED BY TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE 12/2021
PROJECT NO. 6094360

Manatee County FLORIDA

MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
JASON L. STARR
FL. LICENSE NO.
70171

UTILITY ADJUSTMENTS (6)

SHEET NO.
76

3:36:56 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\utadrd01.dgn

16TH AVE. E. (CANAL RD.)

PALMETTO ESTATES

22ND LN. E.

1" = 50'

MATCHLINE STA. 241+00.00

MATCHLINE STA. 248+00.00

6" PVC FM / TO REMAIN
MANATEE COUNTY

8" PVC WM / TO REMAIN
MANATEE COUNTY

EXIST. EASEMENT

PROP. R/W

EXIST. R/W

B-129

B-130

B-131

B-132

℄ CONST. CANAL RD.

℄ SURVEY CANAL RD.

PC STA. 245+50.85

E

F

END CONSTRUCTION
STA. 245+85.00

10" DIP WM / TO REMAIN
MANATEE COUNTY

OE (23 KV) / TO REMAIN
FPL

E END PROJECT
END WIDENING
STA. 244+52.56

F END MILLING & RESURFACING
STA. 244+77.55

END CONSTRUCTION (NB & SB)
STA. 245+85.00

Exist. ground @ ℄ Const. Canal Rd.

BEGIN SP. DITCH PROFILE (LT.)
STA. 241+00.00, EL. 13.75

(–) 0.260%

PI +00.00
EL. 13.49

(–) 0.310%

END SP. DITCH PROFILE (LT.)
STA. 244+00.00, EL. 12.87

243+77
37.00
EL. 11.50
12/2/20

6' X 5' CBC

16.55

42" PIPE
FL 5.60

18" PIPE
FL 8.40

FL = 5.50'

BEGIN SP. DITCH PROFILE (LT.)
STA. 244+52.56, EL. 5.32

(+) 2.300%

DBL 60" RCP

END SP. DITCH PROFILE (LT.)
STA. 245+82.25, EL. 8.30

FL = 8.32

FL = 8.65'

14.70

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

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA

MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

UTILITY ADJUSTMENTS (7)

SHEET NO.: 77

3:37:02 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\roadway\utadrd01.dgn

16TH AVE. E. (CANAL RD.)

1" = 50'

MILLING LIMITS

MILLING LIMITS

BEGIN PROJECT
END MILLING AND RESURFACING
BEGIN RECONSTRUCTION
STA. 200+74.39

BEGIN CONSTRUCTION (SB)
BEGIN MILLING AND
RESURFACING (SB)
A STA. 199+42.12

SW-1
PERMANENT IMPACT = 0.39 AC

TCE

PROP. R/W

EXIST. R/W

16TH AVE. E.
(SANCTUARY
COVE)

100 101 102 103 104 105 106

N 00° 00' 04" W

℄ SURVEY CANAL RD.

STA. 203+08.00

99 TCE

POT STA. 100+00.00

200 201 202 ℄ CONST. CANAL RD. 203 204 205 20

N 00° 44' 08" E

N 00° 15' 52" W

MATCHLINE STA. 206+00.00

EXIST. R/W

EXIST. 10' UTILITY
EASEMENT

EXIST. R/W

SAWCUT
LINE

US 301

TCE

PROP. R/W

TCE

TCE

SIGNAL
EASEMENT

MILLING
LIMITS

MILLING LIMITS

ROYAL PALM
CAR WASH

WETLAND W-1
PERMANENT IMPACT = 0.15 AC
TEMPORARY IMPACT = 0.07 AC

DETWILER'S

LEGEND

TEMPORARY WETLAND IMPACT

PERMANENT WETLAND IMPACT

SURFACE WATER IMPACT

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

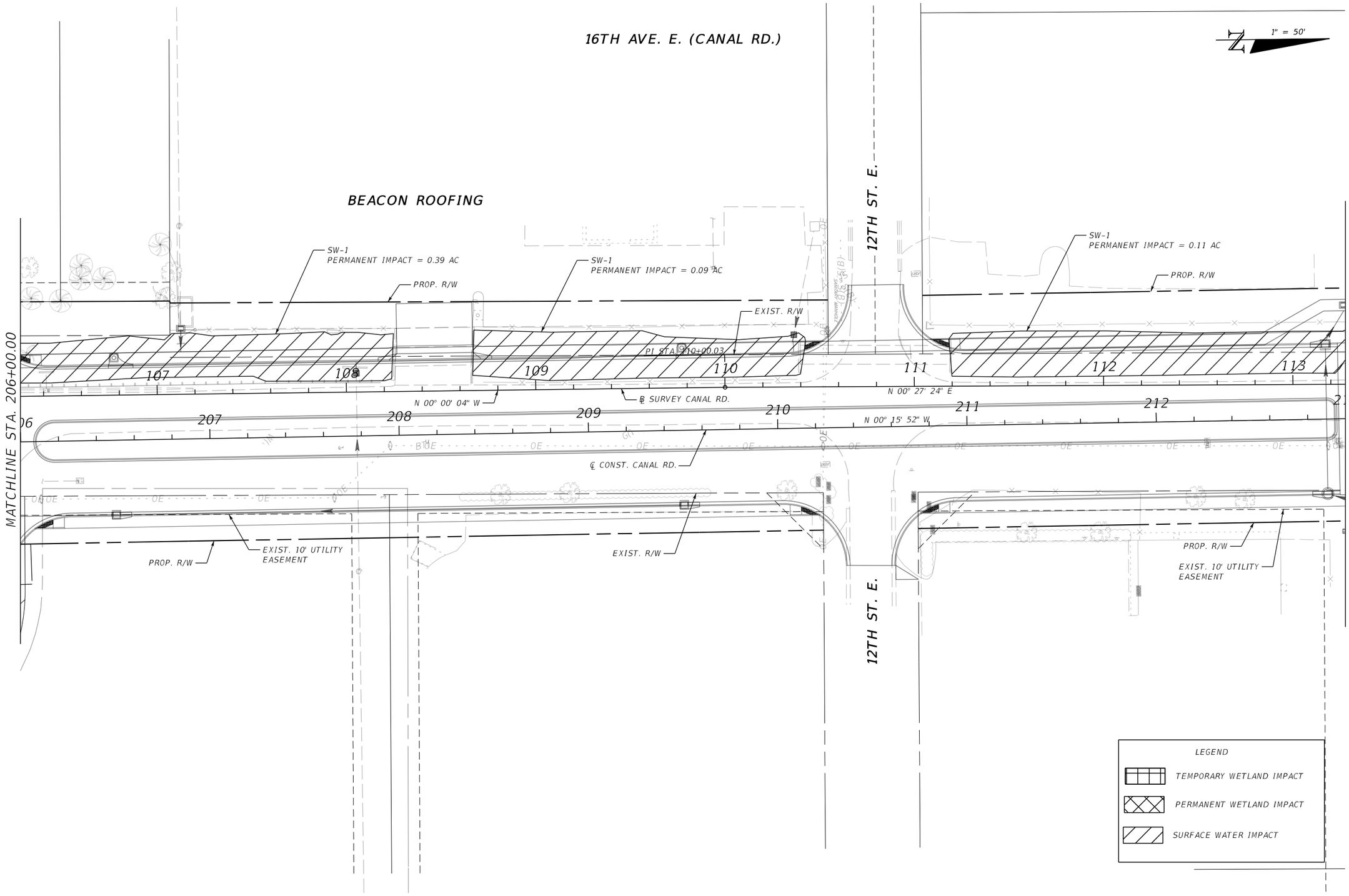
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

WETLAND IMPACTS (1)

SHEET NO.: 78

3:37:23 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\emo\Wetland Impacts\PLANWM01.dgn



No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

WETLAND IMPACTS (2)

SHEET NO.: 79

16TH AVE. E. (CANAL RD.)

1" = 50'

POND CR-1

CSXT RAILROAD

EXIST. R/W

SW-1
PERMANENT
IMPACT = 0.60 AC

TCE

PROP. R/W

EXIST. 15' UTILITY EASEMENT

EXIST. R/W

PROP. R/W

MATCHLINE STA. 213+00.00

MATCHLINE STA. 220+00.00

114 115 116 117 118 119 120

214 215 216 217 218 219

STA. 218+94.63

PI STA. 120+00.01

℄ SURVEY CANAL RD.

N 00° 15' 52" W

N 00° 27' 24" E

N 00° 07' 34" E

N 01° 36' 22" E

℄ CONST. CANAL RD.

EXIST. R/W

TCE

TCE

TCE

PROP. R/W

CSXT RAILROAD

EXIST. R/W

WASTE CONNECTIONS

LEGEND

TEMPORARY WETLAND IMPACT

PERMANENT WETLAND IMPACT

SURFACE WATER IMPACT

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER
ADAM RAY MITCHUM
FL. LICENSE NO.
83296

WETLAND IMPACTS (3)

SHEET NO.
80

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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16TH AVE. E. (CANAL RD.)

1" = 50'

TCB PRODUCTS

17TH ST. E. (MEMPHIS RD.)

MATCHLINE STA. 220+00.00

MATCHLINE STA. 227+00.00

EXIST. 15' UTILITY EASEMENT

SW-1
PERMANENT IMPACT = 0.60 AC

PROP. R/W

EXIST. R/W

℄ SURVEY CANAL RD.

℄ CONST. CANAL RD.

N 01° 36' 22" E

N 00° 07' 34" E

121 122 123 124 125 126 127

220 221 222 223 224 225 226

CHUCK'S AUTOMOTIVE
SILVA AUTO REPAIR

LEGEND

TEMPORARY WETLAND IMPACT

PERMANENT WETLAND IMPACT

SURFACE WATER IMPACT

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER
ADAM RAY MITCHUM
FL. LICENSE NO.
83296

WETLAND IMPACTS (4)

SHEET NO.
81

3:37:39 PM 12/11/2021

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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

16TH AVE. E. (CANAL RD.)

POND CR-2

17TH ST. E. (MEMPHIS RD.)

SW-1
PERMANENT IMPACT = 0.92 AC

EXIST. R/W

PROP. R/W

EXIST. R/W

℄ CONST. CANAL RD.

PI STA. 229+50.76

MATCHLINE STA. 227+00.00

MATCHLINE STA. 234+00.00

128 129 130 131 132 133 134

N 00° 07' 34" E

N 01° 36' 22" E

N 01° 07' 34" E

N 01° 36' 18" E

℄ SURVEY CANAL RD.

PI STA. 130+00.00

PROP. R/W

EXIST. R/W

EXIST. R/W

18TH ST. E.

EXIST. R/W

18TH ST. COURT E.

EXIST. R/W

1" = 50'

LEGEND

TEMPORARY WETLAND IMPACT

PERMANENT WETLAND IMPACT

SURFACE WATER IMPACT

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

WETLAND IMPACTS (5)

SHEET NO.: 82

3:37:43 PM 12/11/2021

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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

16TH AVE. E. (CANAL RD.)

1" = 50'

END RECONSTRUCTION
BEGIN WIDENING
[D] BEGIN MILLING AND RESURFACING
STA. 240+26.47

SW-1
PERMANENT IMPACT = 0.92 AC

PROP. R/W

EXIST. R/W

21ST ST. E.

PROP. R/W

MATCHLINE STA. 234+00.00

MATCHLINE STA. 241+00.00

234 235 236 237 238 239 240 241

PI STA. 238+08.07

N 01° 07' 34" E

℄ CONST. CANAL RD.

N 01° 38' 41" E

SAWCUT LINE

135 136 137 138 139 140 141

N 01° 36' 18" E

℄ SURVEY CANAL RD.

PI STA. 140+00.01

N 00° 00' 06" W

S(B) S(B) S(B) S(B) S(B) S(B) S(B) S(B) S(B) S(B) S(B) S(B) S(B) S(B) S(B)

OE OE OE OE OE OE OE OE OE OE OE OE OE OE OE

EXIST. R/W

EXIST. R/W

MILLING LIMITS

TCE

20TH ST. E.

21ST ST. CT. E.

ANTHONY'S COOLING-HEATING-ELECTRICAL

LEGEND

TEMPORARY WETLAND IMPACT

PERMANENT WETLAND IMPACT

SURFACE WATER IMPACT

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ADAM RAY MITCHUM
FL. LICENSE NO.: 83296

WETLAND IMPACTS (6)

SHEET NO.: 83

3:37:48 PM 12/11/2021

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16TH AVE. E. (CANAL RD.)

PALMETTO ESTATES

22ND LN. E.

1" = 50'

SW-1
PERMANENT IMPACT = 0.41 AC

EXIST. R/W

EXIST. EASEMENT

PROP. R/W

EXIST. 10' R/W
EASEMENT

EXIST. R/W

MATCHLINE STA. 241+00.00

℄ CONST. CANAL RD.

EXIST. SIDEWALK
TO REMAIN

PC STA. 245+50.85

241 242 243 244 245 246 247 248

SAWCUT LINE

142 143 144 145 146 147 148

N 01° 38' 41" E

N 00° 00' 06" W

℄ SURVEY CANAL RD.

MILLING LIMITS

E

F

END CONSTRUCTION
STA. 245+85.00

PI STA. 248+01.49

EXIST. R/W

E END PROJECT
END WIDENING
STA. 244+52.56

F END MILLING & RESURFACING
STA. 244+77.55

LEGEND

TEMPORARY WETLAND IMPACT

PERMANENT WETLAND IMPACT

SURFACE WATER IMPACT

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: AJM
DRAWN BY: AMS
CHECKED BY: PH

HDR Engineering, Inc.
4830 W Kennedy Blvd.
Suite 400
Tampa, FL 33609-2548

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA

MANATEE COUNTY
PUBLIC WORKS

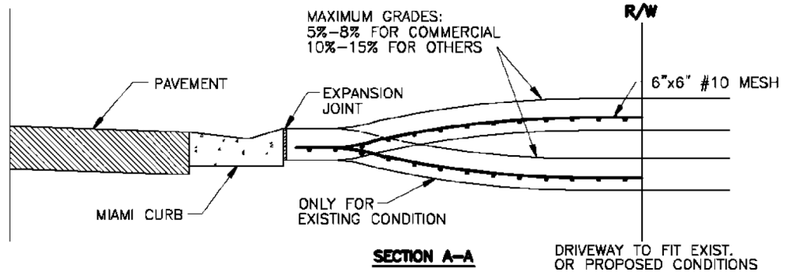
DESIGN ENGINEER
ADAM RAY
MITCHUM

FL. LICENSE NO.
83296

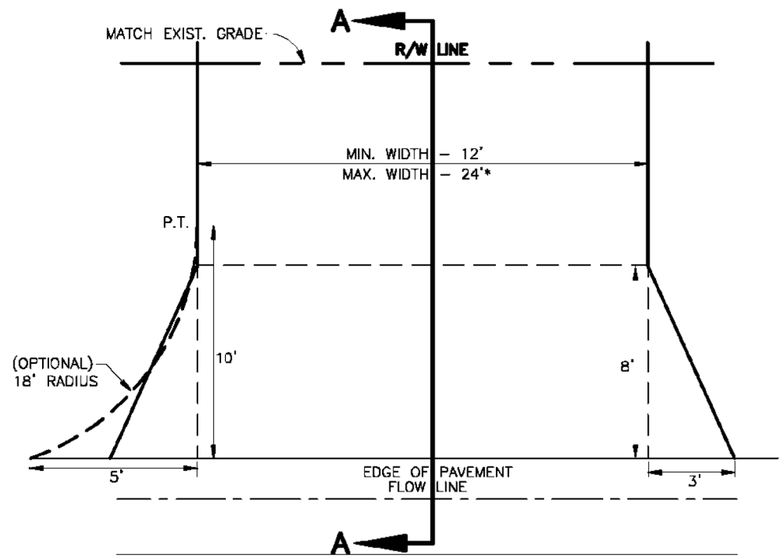
WETLAND IMPACTS (7)

SHEET NO.
84

3:37:52 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\emo\Wetland Impacts\PLANWM01.dgn



SECTION A–A



PLAN VIEW

* For driveways that can demonstrate the need for additional width, the width may not be greater than the LESSER of:

a.) 30' total at the R/W line

b.) 30% of the front footage as defined on the survey (or field measurement, 36' max.)

(A) CONSTRUCT WITH 6" REINFORCED CONCRETE 3000 PSI @ 28 DAYS, 6"x6" #10 WIRE MESH FROM BACK OF CURB– TO R/W LINE.

(B) DRIVEWAYS ADJACENT TO A PAVED ROADWAY MUST HAVE THE APRON CONSTRUCTED IN COMPLIANCE WITH THE NOTE (A) ON PREVIOUS PAGE (STD. 101.0)

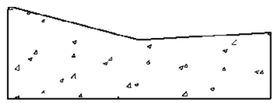
(C) MAINTAIN EXISTING DRAINAGE FLOWLINE. FOR PIPING SPECIFICATIONS REFER TO F.D.O.T. STANDARD SPECIFICATIONS SECTION 430. SEE NOTE 4, PAGE 100.1. SEE SECTION 200– DRAINAGE (STD. 200.0, 202.5).

(D) 3'x8' FLARE OR 18' RADIUS WITH CURB TRANSITION (TRANSITION FROM TYPE "F" CURB TO MIAMI CURB) SEE STD. 102.2 NO CHANGE WITH 3' VALLEY CROSSINGS – SEE STDS. 201.0, 201.1, 201.2, 201.4, 201.5, 201.6.

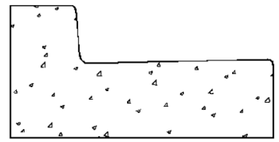
(E) EXPANSION JOINT 0.50" PREFORMED JOINT FILLER OR APPROVED ALTERNATE, DRIVES WIDER THAN 12' (BEYOND FLARE) PLACE JOINT ON 10' CENTER.

(F) LATERAL ALIGNMENT 45 DEGREES FOR DOUBLE DRIVE PER LOT, 90 DEGREES FOR SINGLE DRIVE, OFF CENTER LINE.

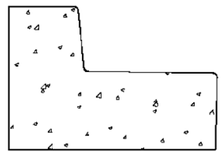
MANATEE COUNTY TRANSPORTATION DEPARTMENT				
REV.BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	URBAN DRIVES	101.1



TYPE "A"
MIAMI CURB & GUTTER
STD. 201.1

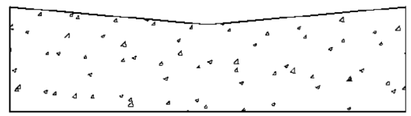


TYPE "F"
CURB & GUTTER
STD. 201.2



TYPE "AB"
MODIFIED CURB & GUTTER
STD. 201.3

TYPE "D"
CURB
STD. 201.4



INVERTED CROWN
CURB & GUTTER
STD. 201.5

1. ALL CURB & GUTTER SHALL PROVIDE A 0.125" TO 0.25" CONTRACTION JOINT AT 10' CENTERS.
2. ALL CURB & GUTTER SHALL BE CONSTRUCTED IN COMPLIANCE WITH FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.
3. TOP OF FINISHED PAVEMENT SHALL BE 0.25" ABOVE LIP OF GUTTER, LOW SIDE.

MANATEE COUNTY TRANSPORTATION DEPARTMENT				
REV.BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	CURB & GUTTER CONTROL SHEET	201.0

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

ROADWAY DETAILS (1)

SHEET NO.: DET-1

3:38:08 PM 12/11/2021
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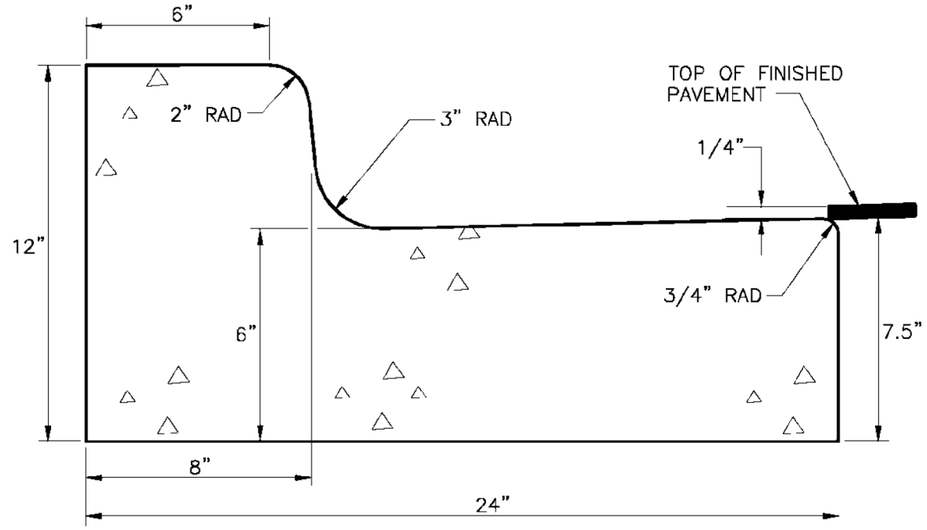
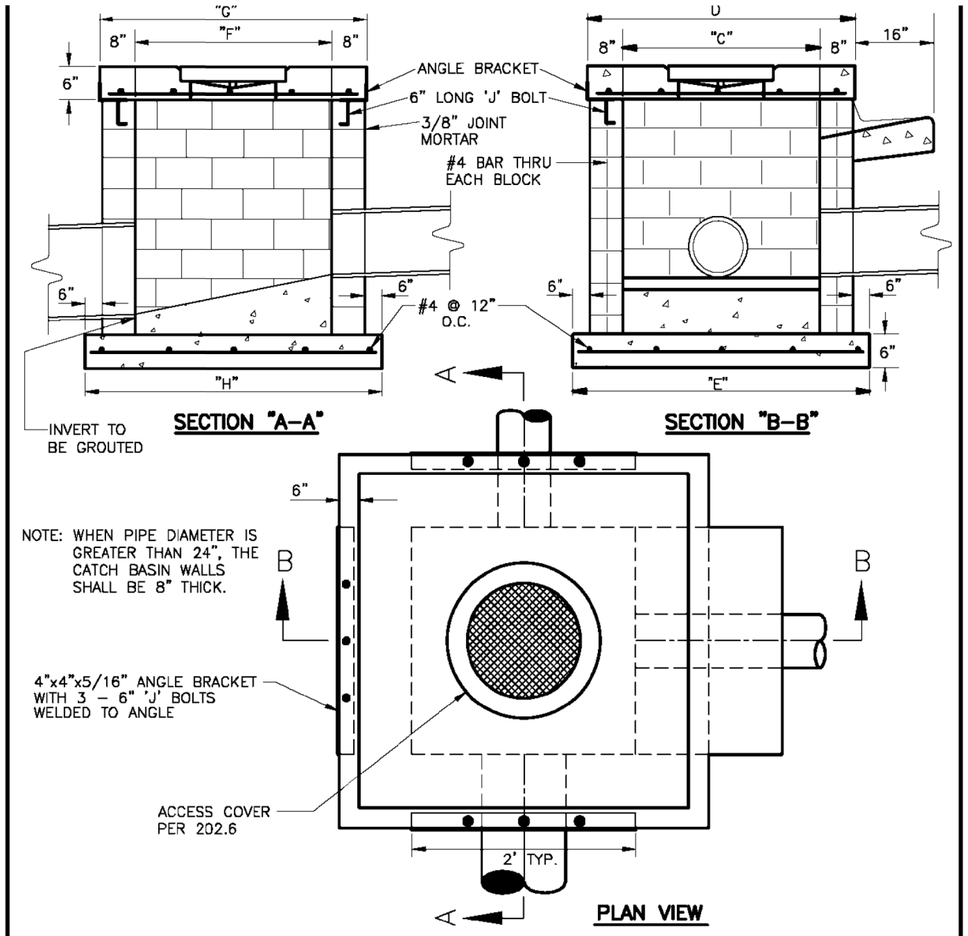


TYPE "F" BARRIER CURB & GUTTER

A) CLASS 1 CONCRETE 3,000 P.S.I. AT 28 DAYS.

B) CURB AND GUTTER SHALL MEET THE SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.

MANATEE COUNTY TRANSPORTATION DEPARTMENT			TYPE F CURB & GUTTER	201.2
REV.BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL		



NOTE: DIMENSIONS PER SECTION 202.0

A) THE FOLLOWING MATERIALS TO BE AS SPECIFIED IN THE FLORIDA D.O.T. SPEC'S. 1991, SECTION 346 CONCRETE, SECT. 962-B IRON CASTING, SECT. 931-1 REINFORCEMENT STEEL, SECT. 425 INLETS, MANHOLES & JUNCTION BOXES.

B) FILL BLOCKS WITH 3,000 psi CONCRETE, USE #4 ROD IN EACH BLOCK, 16" O/C.

C) 2" MINIMUM COVER ON ALL REBAR.

D) USE #4 REBARS ON 6" CENTERS BOTH WAYS ON LID; NO.4 REBARS ON 12" CENTERS BOTH WAYS ON FLOOR SLAB.

E) SEE SHEET 202.0 FOR GENERAL NOTES AND DIMENSION INDEX.

F) ALL EXPOSED CORNERS AND EDGES TO BE CHAMFERED 3/4".

G) PRECAST BOXES AS SPECIFIED IN F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS (2000) ARE AN ACCEPTABLE ALTERNATIVE AS APPROVED BY THE TRANSPORTATION DIRECTOR OR HIS DESIGNEE.

H) ALL PIPE ENTRIES TO CATCH BASIN TO BE GROUTED AND SEALED.

MANATEE COUNTY TRANSPORTATION DEPARTMENT			TYPICAL CONC. BLOCK BOX	202.1
REV.BY	DATE	6/12/07		

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

ROADWAY DETAILS (2)

SHEET NO.: DET-2

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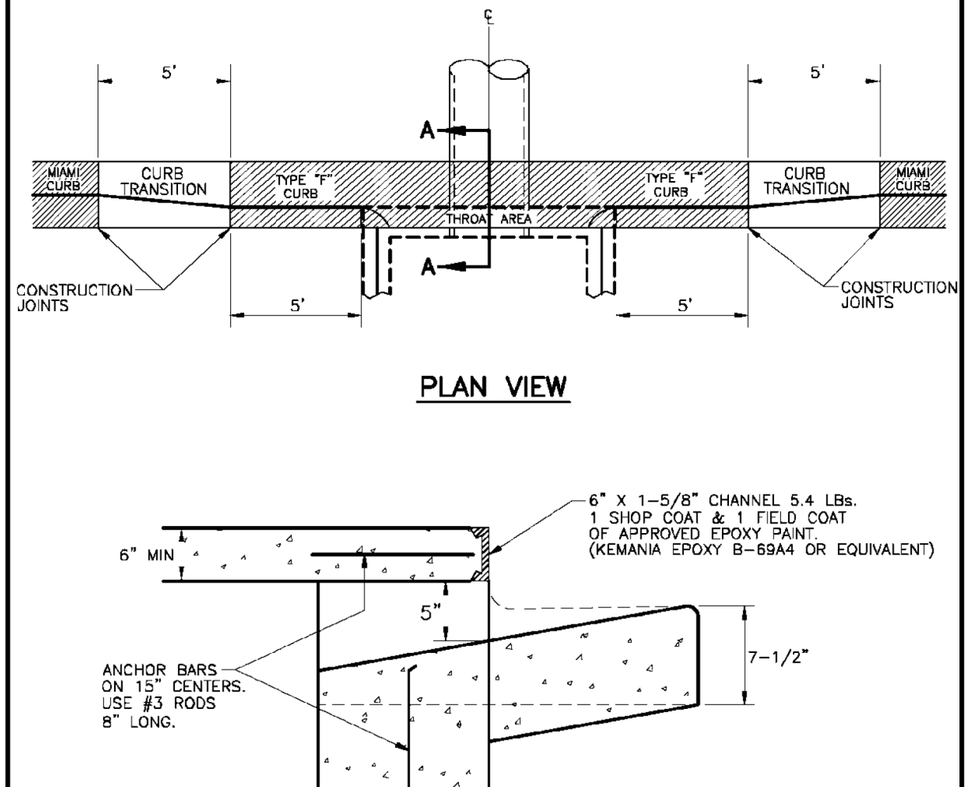


PLAN VIEW

SECTION A–A

A) USE STANDARD CATCH BASIN & JUNCTION BOX DIMENSION INDEX (SHEET # 202.0) DETAILS AND COVER (SHEET # 202.6).

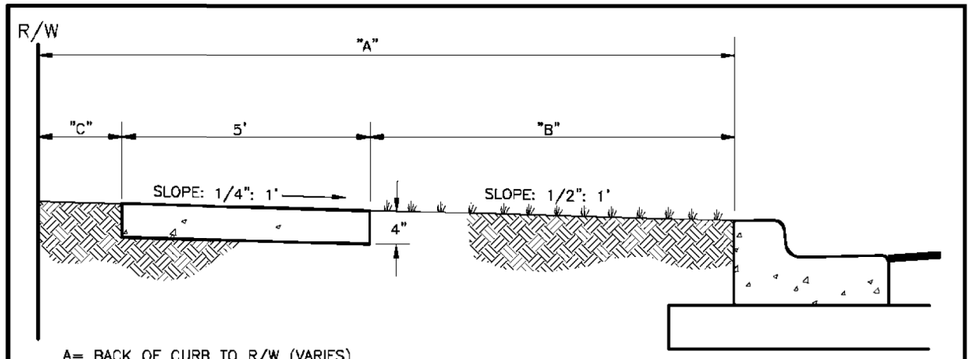
B) SEE CURB & GUTTER INDEX (SHEET # 201.0) FOR APPLICABLE CURB TYPE.

C) SEE SHEET # 202.0 "GENERAL NOTES" FOR APPLICABLE INFORMATION.

D) PRECAST BOXES AS SPECIFIED IN F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS (2006) ARE AN ACCEPTABLE ALTERNATIVE AS APPROVED BY THE DIRECTOR OR HIS DESIGNEE.

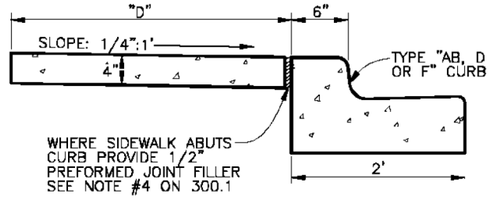
E) ANGLE BRACKETS SHOWN ON 202.1 NOT REQUIRED.

MANATEE COUNTY TRANSPORTATION DEPARTMENT				
REV.BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	CURB INLET	202.2



A= BACK OF CURB TO R/W (VARIES)
B= UNPAVED AREA (VARIES). REFER TO F.D.O.T. GREEN BOOK, TABLE 3-12, LATEST REVISION.
C= VARIES, SEE 401 SERIES

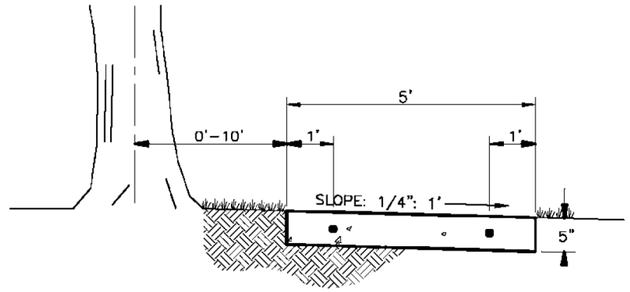
TYPICAL SIDEWALK LOCATION



D= SIDEWALK WIDTH SHALL BE 6' STANDARD, WHERE WALK ABUTS TYPE "AB, D OR F" CURB. WHERE SPEED LIMIT IS 25 MPH OR LESS, WIDTH CAN BE 5'-6".

* SEE SHEET 300.1 "GENERAL NOTES" FOR FURTHER INFORMATION

ALTERNATE SIDEWALK LOCATION



SIDEWALK LOCATION CLOSE TO TREES

MANATEE COUNTY TRANSPORTATION DEPARTMENT				
REV.BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	SIDEWALK REQUIREMENTS	301.1

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

ROADWAY DETAILS (3)

SHEET NO.: DET-3

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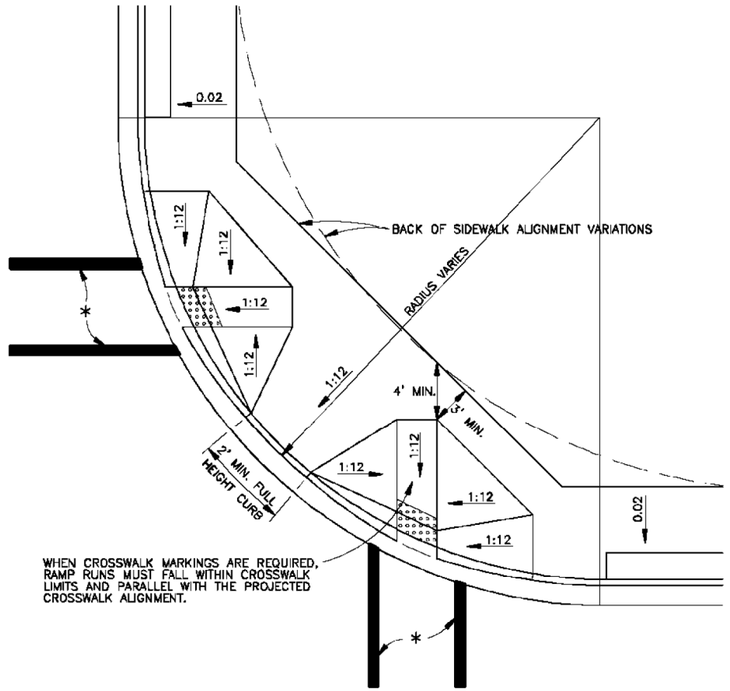
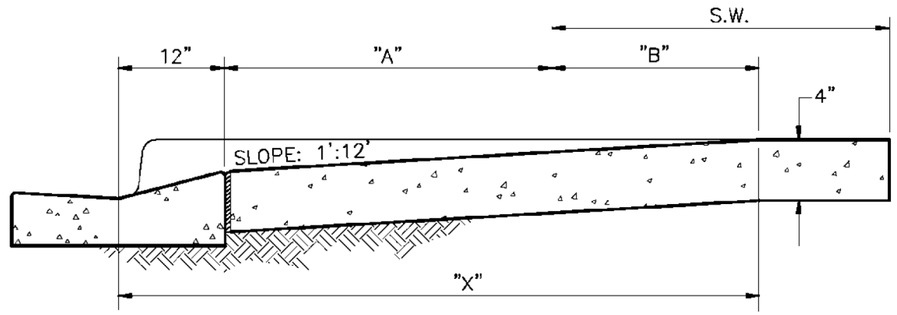


* CROSSWALK WIDTHS AND CONFIGURATION VARY; MUST CONFORM TO FDOT INDEX NO. 17344 AND 17346.

1) CURB CUT RAMPS ARE TO BE LOCATED AS SHOWN ON PLANS.
2) SEE SHEETS # 300.1 "GENERAL NOTES" & # 301.2 "HANDICAPPED RAMP" SHT 2 FOR FURTHER REQUIREMENTS.
3) RADIUS OF CURB VARIES AS FOLLOWS:
   A) 25' RAD. LOCAL STREET WITH ALLEY.
   B) 25' RAD. LOCAL STREET WITH LOCAL STREET.
   C) 35' RAD. LOCAL STREET WITH THOROUGHFARE OR COLLECTOR.
   D) 50' RAD. THOROUGHFARE WITH THOROUGHFARE
4) CURB RADIUS SHOULD BE A MINIMUM OF 50' WHERE INDUSTRIAL AND BUS TRAFFIC (5% OR MORE) IS ANTICIPATED ON LOWER CLASSIFICATION ROADWAYS.
5) BOTH LOCATION OPTIONS FOR HANDICAPPED RAMP ARE SHOWN. ENGINEER MAY SELECT EITHER, WHICHEVER FITS THE SITUATION.

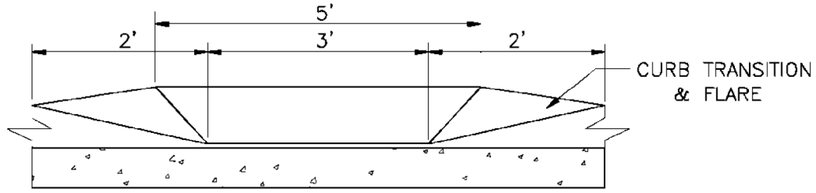
NOTE: FOR COMPLETE HANDICAP, PUBLIC SIDEWALK AND CURB RAMP DETAILS, SEE F.D.O.T. DESIGN STANDARDS, 2006 EDITION, INDEX 304, SHEETS 1 THROUGH 6.

MANATEE COUNTY TRANSPORTATION DEPARTMENT			
REV.BY	DATE		
		6/12/07 DATE OF B.O.C.C. APPROVAL	HANDICAPPED RAMP SHEET 1
			302.1



SECTION A–A
(SEE SHEET 301.0)

S.W.= SIDEWALK	"A"	S.W.+ A + 10"	"X"	"B"
5'	0	5.8'	5.8'	5'
6'	0	6.8'	6.8'	6'
7'	0	7.8'	7.3'	6.5'
8'	0	8.8'	7.3'	6.5'
5'	2'	7.8'	7.8'	5'
5'	2.5'	8.3'	8.1'	4.8'
5'	3'	8.8'	8.2'	4.4'
5'	3.5'	9.3'	8.4'	4.1'
5'	4'	9.8'	8.6'	3.8'
5'	4.5'	10.3'	8.7'	3.4'
5'	5'	10.8'	9.1'	3.1'



SECTION B–B
(SEE SHEET 301.0)

NOTE: FOR COMPLETE HANDICAP, PUBLIC SIDEWALK AND CURB RAMP DETAILS, SEE F.D.O.T. DESIGN STANDARDS, 2006 EDITION, INDEX 304, SHEETS 1 THROUGH 6.

MANATEE COUNTY TRANSPORTATION DEPARTMENT			
REV.BY	DATE		
		6/12/07 DATE OF B.O.C.C. APPROVAL	HANDICAPPED RAMP SHEET 2
			302.2

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

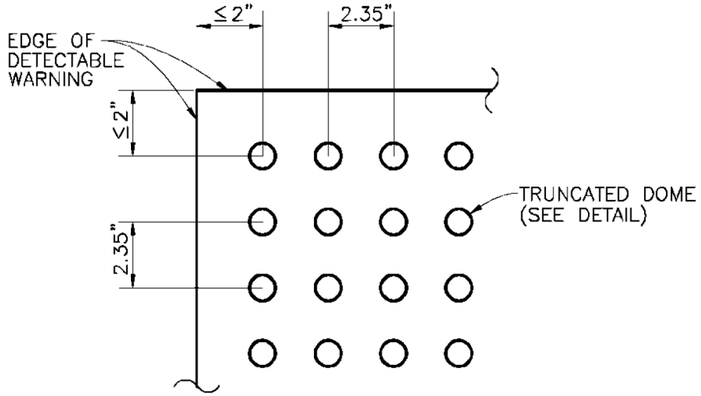
DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

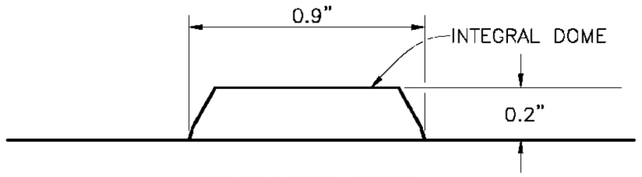
DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

ROADWAY DETAILS (4)

SHEET NO.: DET-4



PLAN VIEW



TRUNCATED DOME

CURB RAMP DETECTABLE WARNING DETAIL

NOTES:

DETECTABLE WARNINGS ON WALKING SURFACES

THE DETECTABLE WARNING SHALL EXTEND THE FULL WIDTH AND DEPTH OF THE CURB RAMP.

DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 INCH, A HEIGHT OF NOMINAL 0.2 INCH AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCH AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT.

THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT.

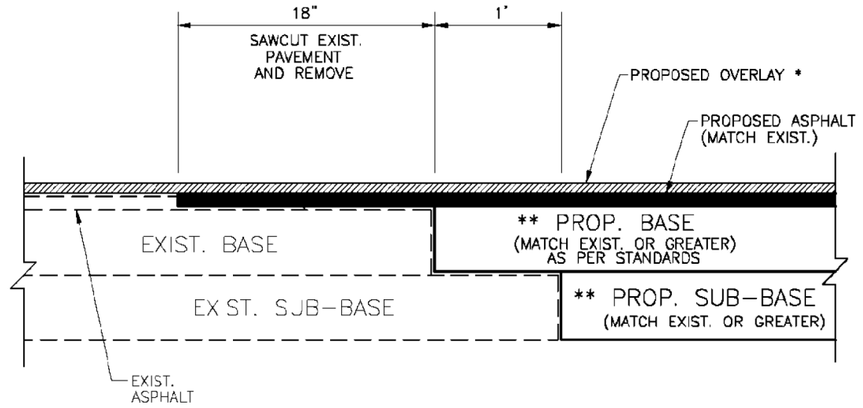
THE MATERIAL USED TO PROVIDE CONTRAST SHOULD CONTRAST BY AT LEAST 70%. CONTRAST IN PERCENT IS DETERMINED BY:

$$\text{CONTRAST} = [(B1-B2)/B1] \times 100$$

WHERE B1 = LIGHT REFLECTANCE VALUE (LRV) OF THE LIGHTER AREA AND B2 = LIGHT REFLECTANCE VALUE (LRV) OF THE DARKER AREA.

NOTE THAT IN ANY APPLICATION BOTH WHITE AND BLACK ARE NEVER ABSOLUTE; THUS, B1 NEVER EQUALS 100 AND B2 IS ALWAYS GREATER THAN 0.

MANATEE COUNTY TRANSPORTATION DEPARTMENT			CURB RAMP DETECTABLE WARNINGS	302.3
REV.BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL		



* NOTE: LIMITS OF OVERLAY – EDGE OF PAVEMENT TO EDGE OF PAVEMENT AND 25' BEYOND LIMITS OF CONSTRUCTION.

** NOTE: CONNECTION TO OLDER (SUBSTANDARD THICKNESS) ROADS MAY REQUIRE THICKER PROPOSED BASE AND SUB-BASE TO MEET CURRENT STANDARDS.

SIGNAGE AND MARKING PLAN SHALL ACCOMPANY CONSTRUCTION PLAN.

ROAD CONNECTION DETAIL

N.T.S.

MANATEE COUNTY TRANSPORTATION DEPARTMENT			ROAD CONNECTION DETAIL	403.3
REV.BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL		

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JLS
DRAWN BY: TME
CHECKED BY: TTT

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: JASON L. STARR
FL. LICENSE NO.: 70171

ROADWAY DETAILS (5)

SHEET NO.: DET-5

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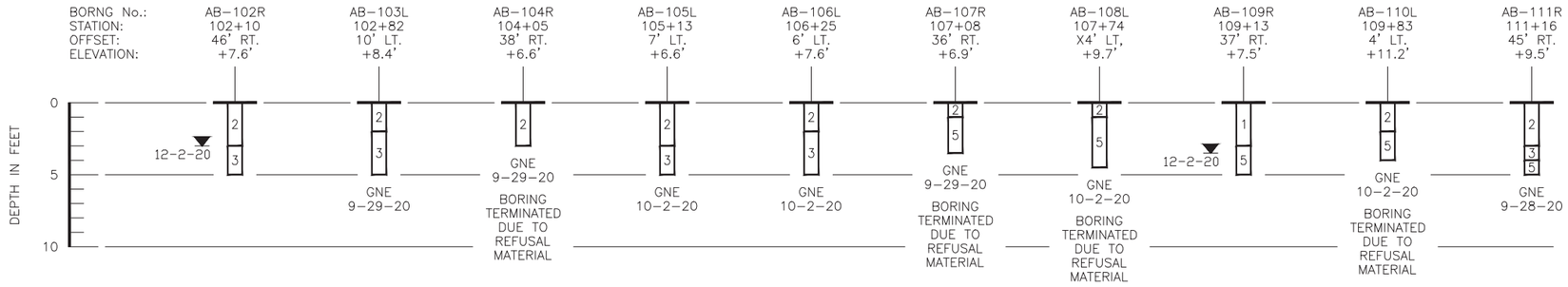
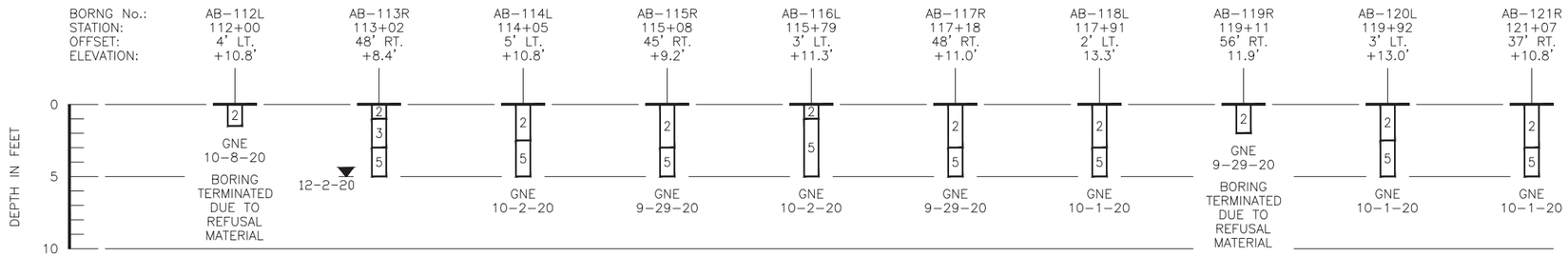
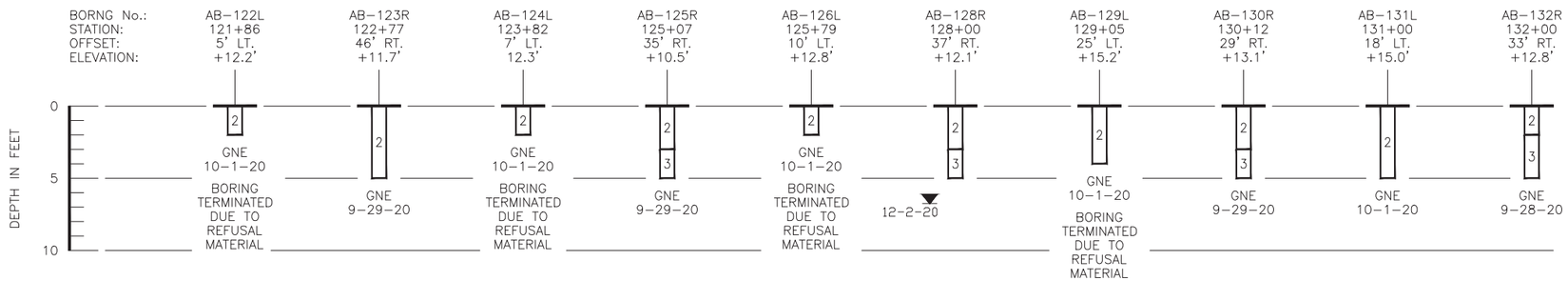






LEGEND

1	ORGANIC MATERIAL – DARK BROWN, BLACK SLIGHTLY SILTY FINE SAND WITH ORGANICS (A-8)
2	LIGHT BROWN, BROWN SILTY FINE SAND WITH LIMESTONE FRAGMENTS (A-2-4)
3	BROWN, DARK BROWN, GRAY CLAYEY FINE SAND WITH LIMESTONE FRAGMENTS (A-2-6)
4	DARK BROWN, DARK GRAY SANDY CLAY WITH LIMESTONE FRAGMENTS (A-7-6)
5	LIGHT BROWN, LIGHT GRAY LIMESTONE FORMATION WITH CALCAREOUS SILT AND OCCASIONAL SEAMS OF GRAY CLAY OR SAND-SIZED PHOSPHATE GRAINS
(A-2-4)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
12-2-20 ▼	ENCOUNTERED GROUNDWATER LEVEL WITH OF READING
GNE	GROUNDWATER NOT OBSERVED TO DEPTH OF BORING

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JAMES JACKSON, P.E.
P.E. LICENSE NUMBER 77733
TERRACON
8260 VICO COURT
SARASOTA, FLORIDA 34240

DRAWN BY: MG 12-16-20
CHECKED BY: JJ 12-16-20
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CANAL	MANATEE	–

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

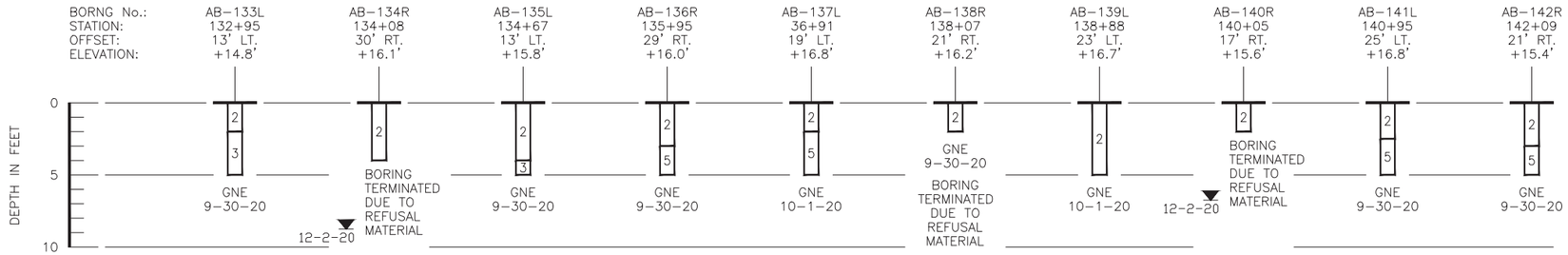
PROJECT NAME: CANAL ROAD – PHASE 1
FROM US 301 TO 22ND LANE EAST

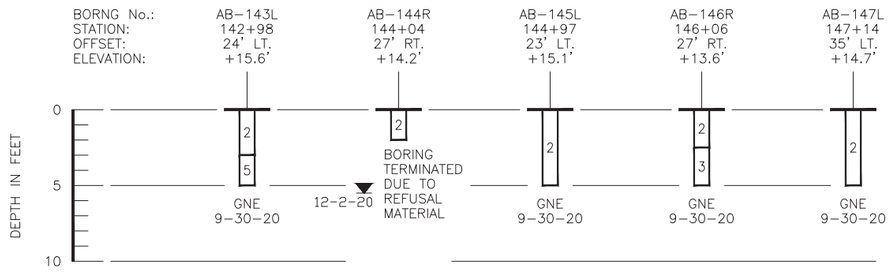
REF. DWG. NO.

SHEET NO. GR-2

TERRACON No. HC185036 EXHIBIT: A-6

Dec28, 2020-11:45am





LEGEND

1	ORGANIC MATERIAL – DARK BROWN, BLACK SLIGHTLY SILTY FINE SAND WITH ORGANICS (A-8)
2	LIGHT BROWN, BROWN SILTY FINE SAND WITH LIMESTONE FRAGMENTS (A-2-4)
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4	DARK BROWN, DARK GRAY SANDY CLAY WITH LIMESTONE FRAGMENTS (A-7-6)
5	LIGHT BROWN, LIGHT GRAY LIMESTONE FORMATION WITH CALCAREOUS SILT AND OCCASIONAL SEAMS OF GRAY CLAY OR SAND-SIZED PHOSPHATE GRAINS
(A-2-4)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
12-2-20 ▼	ENCOUNTERED GROUNDWATER LEVEL WITH OF READING
GNE	GROUNDWATER NOT OBSERVED TO DEPTH OF BORING

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JAMES JACKSON, P.E.
P.E. LICENSE NUMBER 77733
TERRACON
8260 VICO COURT
SARASOTA, FLORIDA 34240

DRAWN BY: MG 12-16-20
CHECKED BY: JJ 12-16-20
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CANAL	MANATEE	–

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

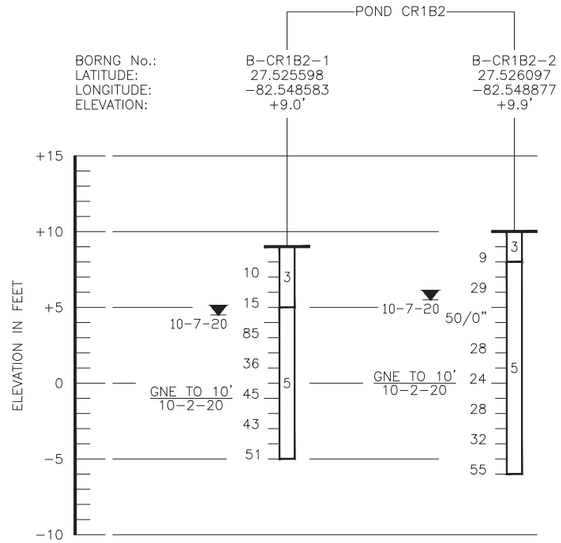
PROJECT NAME: CANAL ROAD – PHASE 1
FROM US 301 TO 22ND LANE EAST

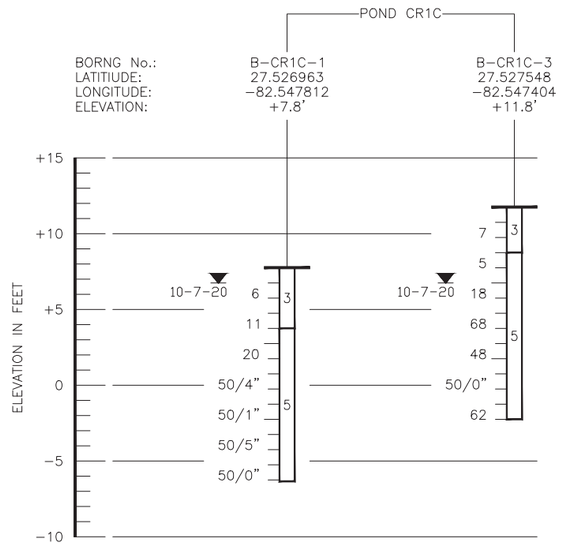
REF. DWG. NO.

SHEET NO. GR-3

TERRACON No. HC185036 EXHIBIT: A-7

Dec28, 2020-11:49am N:\Projects-Other Offices\Sarasota\2018\HC185036\Cad\HC185036 Roadway Borings 2.dwg





LEGEND

1	ORGANIC MATERIAL – DARK BROWN, BLACK SLIGHTLY SILTY FINE SAND WITH ORGANICS (A-8)
2	LIGHT BROWN, BROWN SILTY FINE SAND WITH LIMESTONE FRAGMENTS (A-2-4)
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(A-2-4)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
12-2-20 ▼	ENCOUNTERED GROUNDWATER LEVEL WITH OF READING
GNE	GROUNDWATER NOT OBSERVED TO DEPTH OF BORING

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JAMES JACKSON, P.E.
P.E. LICENSE NUMBER 77733
TERRACON
8260 VICO COURT
SARASOTA, FLORIDA 34240

DRAWN BY: MG 12-16-20	
CHECKED BY: JJ 12-16-20	
DESIGNED BY:	
CHECKED BY:	

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CANAL	MANATEE	-

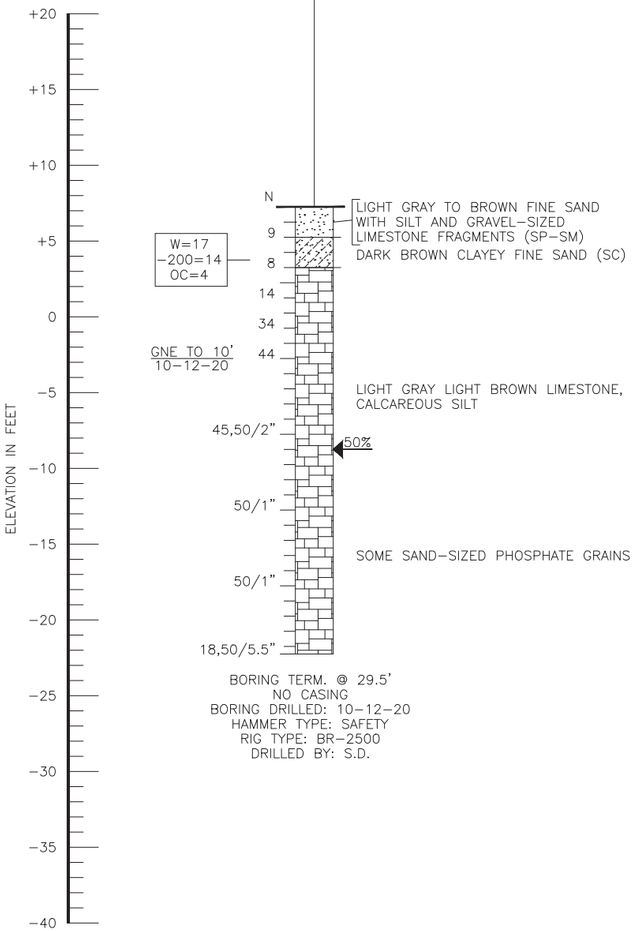
SHEET TITLE: REPORT OF SPT BORINGS FOR PONDS

PROJECT NAME: CANAL ROAD – PHASE 1
FROM US 301 TO 22ND LANE EAST

REF. DWG. NO.

SHEET NO. GR-4

BORING No.: BC-1
STATION: 102+95
OFFSET: 41' RT.
LATITUDE: 27.521786
LONGITUDE: -82.548143
ELEVATION: +7.3'



LIGHT GRAY TO BROWN FINE SAND WITH SILT AND GRAVEL-SIZED LIMESTONE FRAGMENTS (SP-SM)

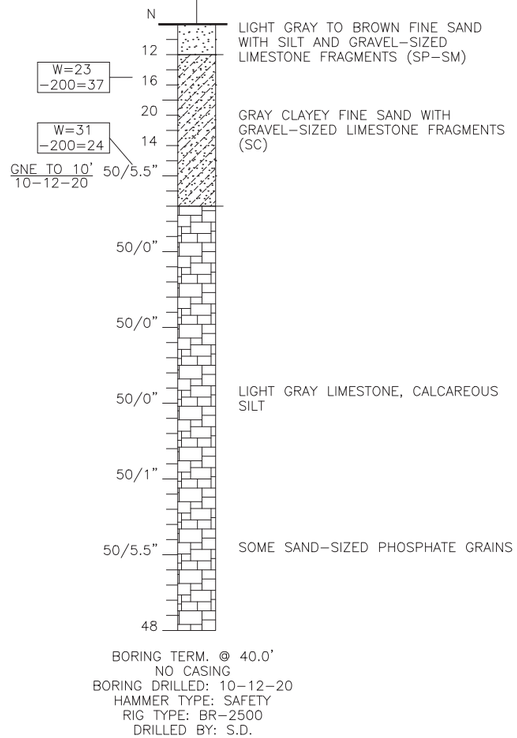
DARK BROWN CLAYEY FINE SAND (SC)

LIGHT GRAY LIGHT BROWN LIMESTONE, CALCAREOUS SILT

SOME SAND-SIZED PHOSPHATE GRAINS

BORING TERM. @ 29.5'
NO CASING
BORING DRILLED: 10-12-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-2
STATION: 104+97
OFFSET: 37' RT.
LATITUDE: 27.522317
LONGITUDE: -82.548164
ELEVATION: +6.4'



LIGHT GRAY TO BROWN FINE SAND WITH SILT AND GRAVEL-SIZED LIMESTONE FRAGMENTS (SP-SM)

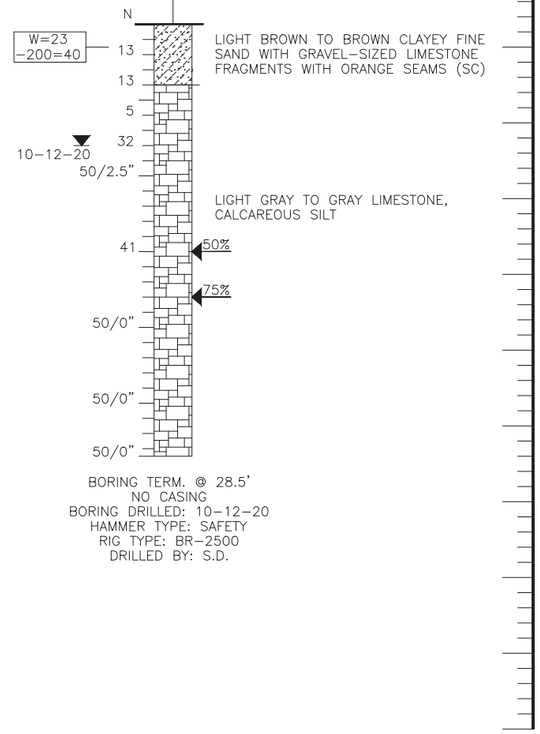
GRAY CLAYEY FINE SAND WITH GRAVEL-SIZED LIMESTONE FRAGMENTS (SC)

LIGHT GRAY LIMESTONE, CALCAREOUS SILT

SOME SAND-SIZED PHOSPHATE GRAINS

BORING TERM. @ 40.0'
NO CASING
BORING DRILLED: 10-12-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-3
STATION: 106+45
OFFSET: 40' RT.
LATITUDE: 27.522738
LONGITUDE: -82.548146
ELEVATION: +6.6'



LIGHT BROWN TO BROWN CLAYEY FINE SAND WITH GRAVEL-SIZED LIMESTONE FRAGMENTS WITH ORANGE SEAMS (SC)

LIGHT GRAY TO GRAY LIMESTONE, CALCAREOUS SILT

BORING TERM. @ 28.5'
NO CASING
BORING DRILLED: 10-12-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

LEGEND

SAND	LIMESTONE
CLAYEY SAND	
(SP)	UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
10-12-20 ▼	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
GNE TO 10'	GROUNDWATER NOT ENCOUNTERED TO THE DEPTH OF 10.0 FEET
W=0 -200=0 OC=0	NATURAL MOISTURE CONTENT (%) FINES PASSING No. 200 SIEVE (%) ORGANIC CONTENT (%)
N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED
50/6"	NUMBER OF BLOWS REQUIRED (50) TO DRIVE SAMPLING SPOON (6) INCHES
←	DRILLING FLUID CIRCULATION LOSS

MANUAL HAMMER

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD DROP SAFETY HAMMER (ROPE-CATHEAD)	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	GREATER THAN 50

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 2
SOFT	2-4
FIRM	4-8
STIFF	8-15
VERY STIFF	15-30
HARD	GREATER THAN 30

NOTES:

1) LAYER BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL LAYERS AT EACH TEST HOLE LOCATION ONLY. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.

ENVIRONMENTAL CLASSIFICATION:

SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE
SUBSTRUCTURE:
STEEL: SLIGHTLY AGGRESSIVE
CONCRETE: SLIGHTLY AGGRESSIVE

Dec28, 2020-11:59am N:\Projects-Other Offices\Sarasota\2018\HC185036\Cad\HC185036 Culvert Borings 1.dwg

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JAMES JACKSON, P.E.
P.E. LICENSE NUMBER 77733
TERRACON
8260 VICO COURT
SARASOTA, FLORIDA 34240

DRAWN BY: MG 12-16-20
CHECKED BY: JJ 12-16-20
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CANAL	MANATEE	-

SHEET TITLE: REPORT OF CORE BORINGS FOR CULVERTS

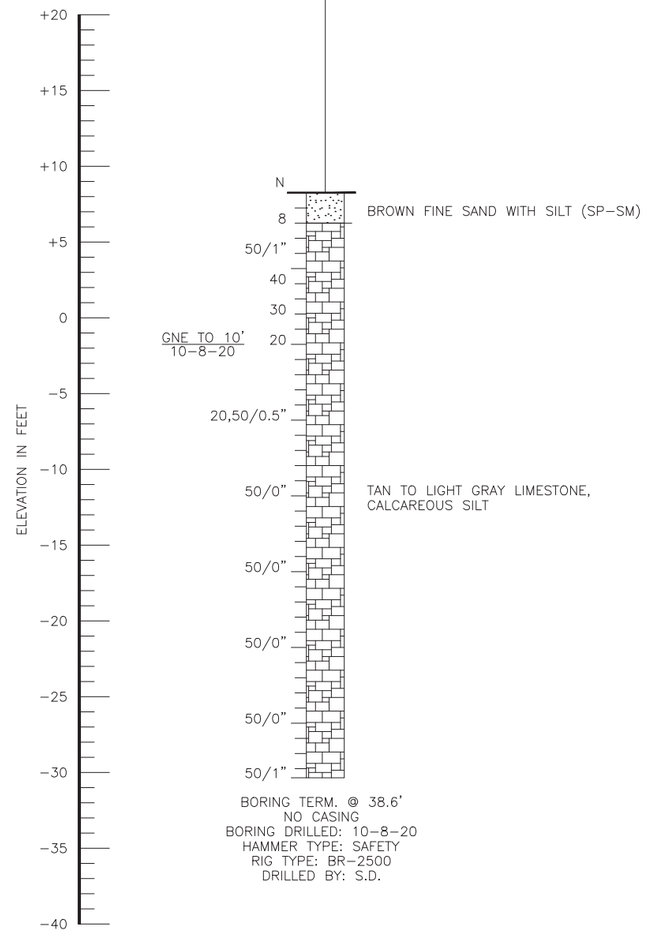
PROJECT NAME: CANAL ROAD - PHASE 1
FROM US 301 TO 22ND LANE EAST

REF. DWG. NO.

SHEET NO. GR-5

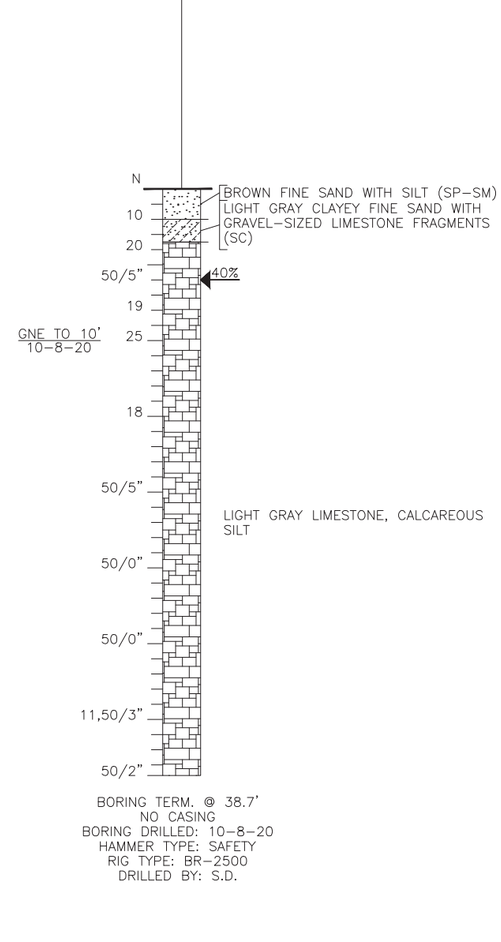
TERRACON No. HC185036 EXHIBIT: A-9

BORING No.: BC-4
STATION: 107+86
OFFSET: 38' RT.
LATITUDE: 27.523189
LONGITUDE: -82.548145
ELEVATION: +8.3'



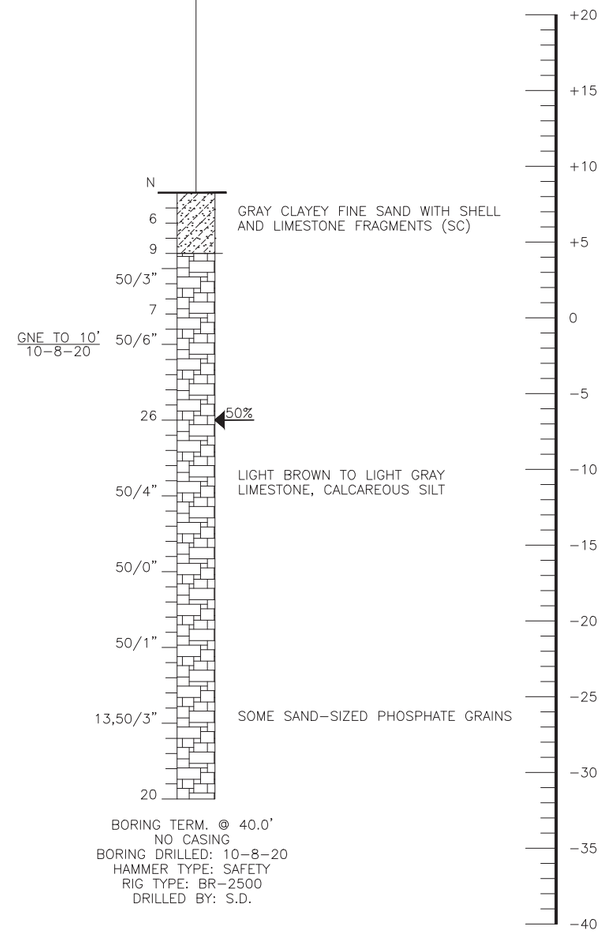
BORING TERM. @ 38.6'
NO CASING
BORING DRILLED: 10-8-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-5
STATION: 110+15
OFFSET: 43' RT.
LATITUDE: 27.523742
LONGITUDE: -82.548174
ELEVATION: +8.6'



BORING TERM. @ 38.7'
NO CASING
BORING DRILLED: 10-8-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-6
STATION: 112+05
OFFSET: 48' RT.
LATITUDE: 27.524258
LONGITUDE: -82.548172
ELEVATION: +8.2'



BORING TERM. @ 40.0'
NO CASING
BORING DRILLED: 10-8-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

LEGEND

- SAND
- LIMESTONE
- CLAYEY SAND
- (SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
- 10-12-20 ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
- GNE TO 10' GROUNDWATER NOT ENCOUNTERED TO THE DEPTH OF 10.0 FEET
- W=0 / -200=0 / OC=0 NATURAL MOISTURE CONTENT (%) / FINES PASSING No. 200 SIEVE (%) / ORGANIC CONTENT (%)
- N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED
- 50/6" NUMBER OF BLOWS REQUIRED (50) TO DRIVE SAMPLING SPOON (6) INCHES
- ← DRILLING FLUID CIRCULATION LOSS

MANUAL HAMMER

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD DROP SAFETY HAMMER (ROPE-CATHEAD)	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	GREATER THAN 50

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 2
SOFT	2-4
FIRM	4-8
STIFF	8-15
VERY STIFF	15-30
HARD	GREATER THAN 30

NOTES:

1) LAYER BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL LAYERS AT EACH TEST HOLE LOCATION ONLY. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.

ENVIRONMENTAL CLASSIFICATION:

SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE
SUBSTRUCTURE:
STEEL: MODERATELY AGGRESSIVE
CONCRETE: MODERATELY AGGRESSIVE

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JAMES JACKSON, P.E.
P.E. LICENSE NUMBER 77733
TERRACON
8260 VICO COURT
SARASOTA, FLORIDA 34240

DRAWN BY: MG 12-16-20	
CHECKED BY: JJ 12-16-20	
DESIGNED BY:	
CHECKED BY:	

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CANAL	MANATEE	-

SHEET TITLE: REPORT OF CORE BORINGS FOR CULVERTS

PROJECT NAME: CANAL ROAD - PHASE 1
FROM US 301 TO 22ND LANE EAST

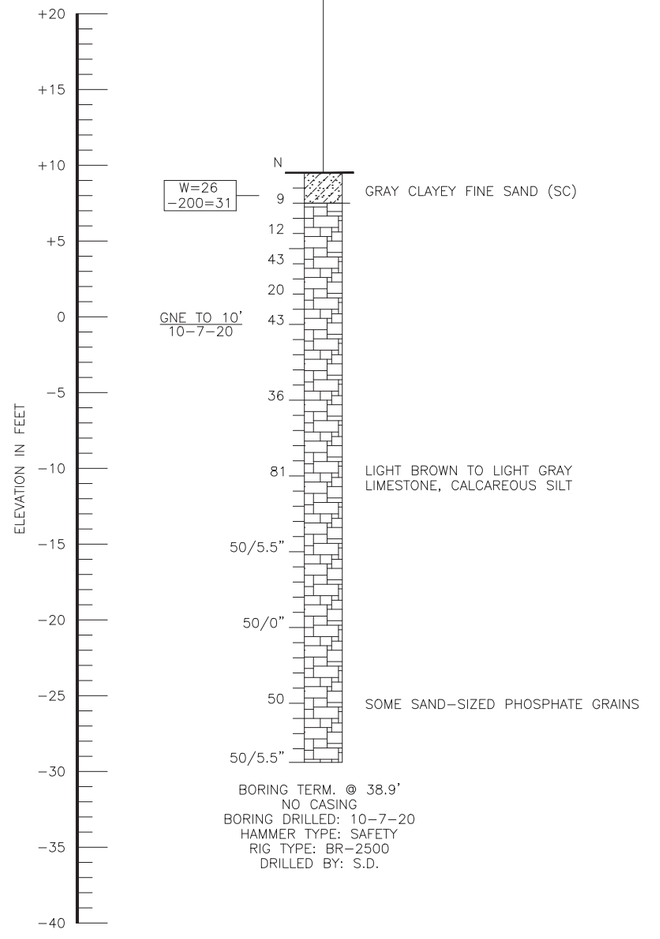
REF. DWG. NO.

SHEET NO. GR-6

TERRACON No. HC185036 EXHIBIT: A-10

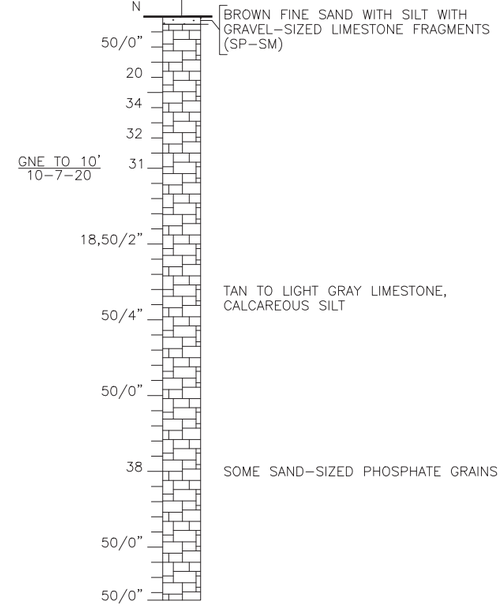
Dec28, 2020-12:01pm N:\Projects-Other Offices\Sarasota\2018\HC185036\Cad\HC185036 Culvert Borings 2.dwg

BORING No.: BC-7
STATION: 114+59
OFFSET: 49' RT.
LATITUDE: 27.524943
LONGITUDE: -82.548172
ELEVATION: +9.4'



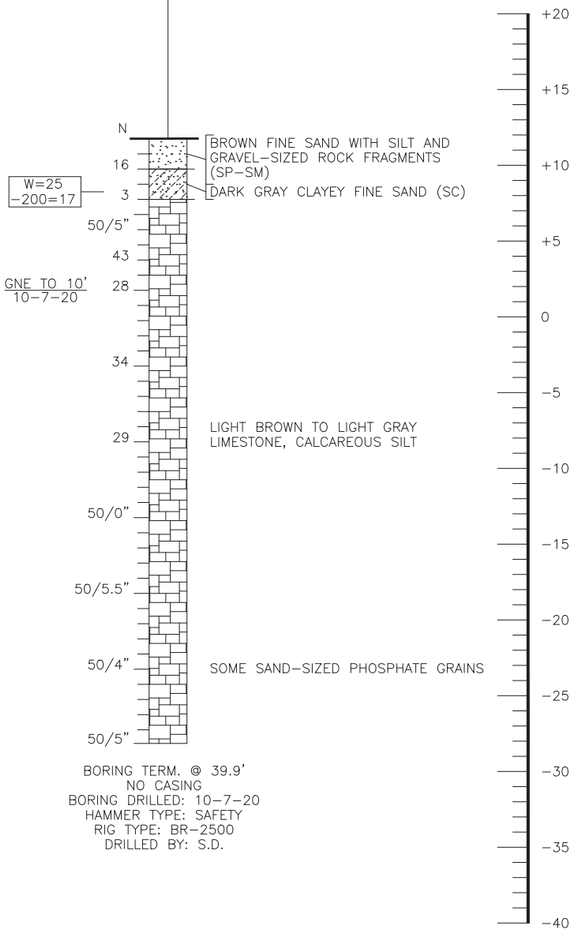
BORING TERM. @ 38.9'
NO CASING
BORING DRILLED: 10-7-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-8
STATION: 116+39
OFFSET: 48'RT.
LATITUDE: 27.525476
LONGITUDE: -82.548175
ELEVATION: +10.4'



BORING TERM. @ 38.5'
NO CASING
BORING DRILLED: 10-7-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-9
STATION: 118+38
OFFSET: 58' RT.
LATITUDE: 27.525983
LONGITUDE: -82.548166
ELEVATION: +11.8'



BORING TERM. @ 39.9'
NO CASING
BORING DRILLED: 10-7-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

LEGEND

- SAND
- CLAYEY SAND
- LIMESTONE
- (SP) — UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
- 10-12-20 — ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
- GNE TO 10' — GROUNDWATER NOT ENCOUNTERED TO THE DEPTH OF 10.0 FEET
- W=0 / -200=0 / OC=0 — NATURAL MOISTURE CONTENT (%) / FINES PASSING No. 200 SIEVE (%) / ORGANIC CONTENT (%)
- N — STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED
- 50/6" — NUMBER OF BLOWS REQUIRED (50) TO DRIVE SAMPLING SPOON (6) INCHES
- ← DRILLING FLUID CIRCULATION LOSS

MANUAL HAMMER

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD DROP SAFETY HAMMER (ROPE-CATHEAD)	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	GREATER THAN 50

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 2
SOFT	2-4
FIRM	4-8
STIFF	8-15
VERY STIFF	15-30
HARD	GREATER THAN 30

NOTES:

1) LAYER BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL LAYERS AT EACH TEST HOLE LOCATION ONLY. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.

ENVIRONMENTAL CLASSIFICATION:

SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE
SUBSTRUCTURE:
STEEL: MODERATELY AGGRESSIVE
CONCRETE: MODERATELY AGGRESSIVE

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JAMES JACKSON, P.E.
P.E. LICENSE NUMBER 77733
TERRACON
8260 VICO COURT
SARASOTA, FLORIDA 34240

DRAWN BY: MG 12-16-20
CHECKED BY: JJ 12-16-20
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

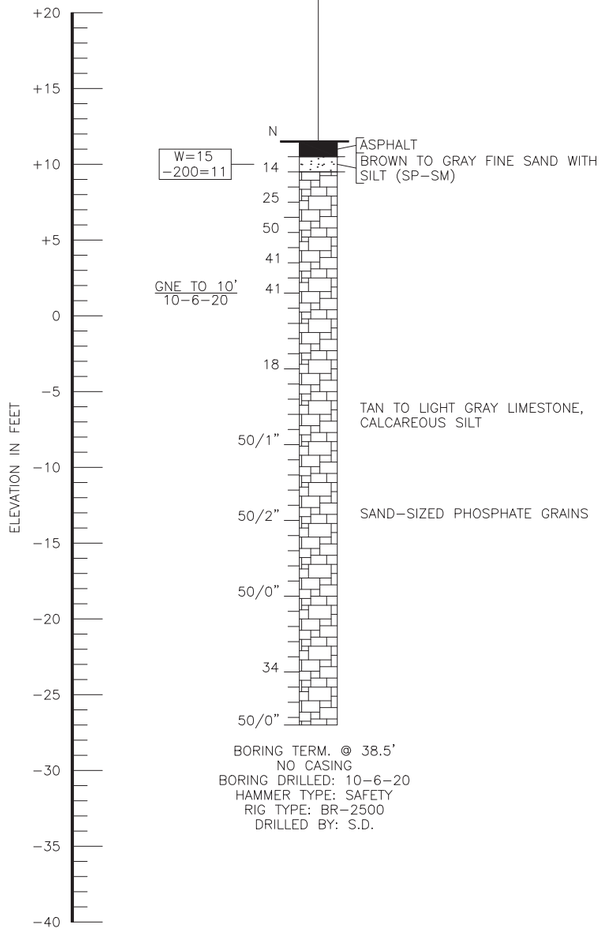
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CANAL	MANATEE	-

SHEET TITLE: REPORT OF CORE BORINGS CULVERTS
REF. DWG. NO.:
PROJECT NAME: CANAL ROAD - PHASE 1
FROM US 301 TO 22ND LANE EAST
SHEET NO.: GR-7

TERRACON No. HC185036 EXHIBIT: A-11

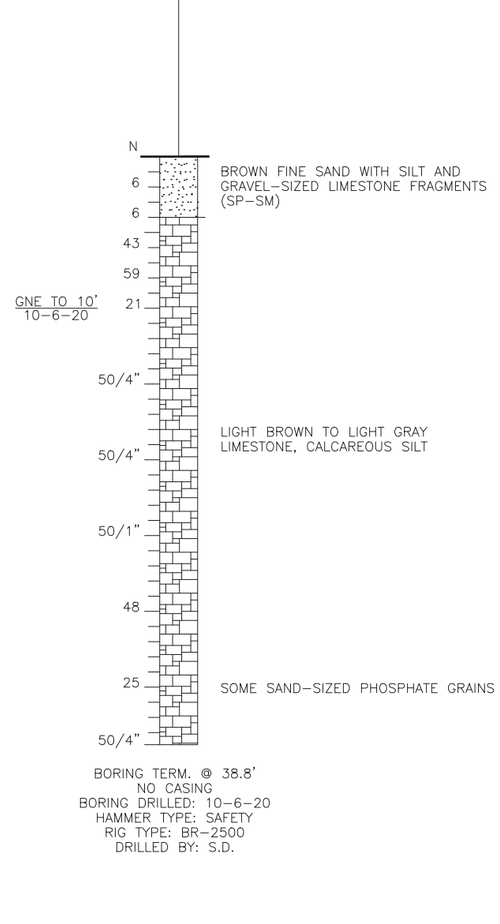
Dec28, 2020-12:02pm N:\Projects-Other Offices\Sarasota\2018\HC185036\Cad\HC185036 Culvert Borings 3.dwg

BORING No.: BC–10
STATION: 120+14
OFFSET: 55' RT.
LATITUDE: 27.526473
LONGITUDE: –82.548173
ELEVATION: +11.4'



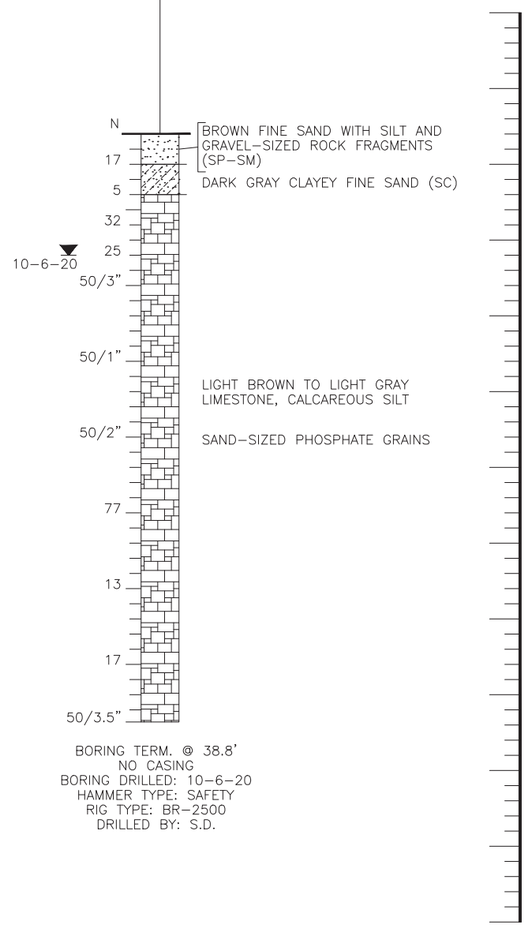
BORING TERM. @ 38.5'
NO CASING
BORING DRILLED: 10–6–20
HAMMER TYPE: SAFETY
RIG TYPE: BR–2500
DRILLED BY: S.D.

BORING No.: BC–11
STATION: 121+72
OFFSET: 38' RT.
LATITUDE: 27.527017
LONGITUDE: –82.548141
ELEVATION: +10.3'



BORING TERM. @ 38.8'
NO CASING
BORING DRILLED: 10–6–20
HAMMER TYPE: SAFETY
RIG TYPE: BR–2500
DRILLED BY: S.D.

BORING No.: BC–12
STATION: 123+84
OFFSET: 32' RT.
LATITUDE: 27.527550
LONGITUDE: –82.548122
ELEVATION: +11.9'



BORING TERM. @ 38.8'
NO CASING
BORING DRILLED: 10–6–20
HAMMER TYPE: SAFETY
RIG TYPE: BR–2500
DRILLED BY: S.D.

LEGEND

- SAND
- CLAYEY SAND
- LIMESTONE
- (SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
- 10–12–20 ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
- GNE TO 10' GROUNDWATER NOT ENCOUNTERED TO THE DEPTH OF 10.0 FEET
- W=0 –200=0 OC=0 NATURAL MOISTURE CONTENT (%) FINES PASSING No. 200 SIEVE (%) ORGANIC CONTENT (%)
- N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED
- 50/6" NUMBER OF BLOWS REQUIRED (50) TO DRIVE SAMPLING SPOON (6) INCHES
- DRILLING FLUID CIRCULATION LOSS

MANUAL HAMMER

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD DROP SAFETY HAMMER (ROPE–CATHEAD)	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 4
LOOSE	4–10
MEDIUM DENSE	10–30
DENSE	30–50
VERY DENSE	GREATER THAN 50

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 2
SOFT	2–4
FIRM	4–8
STIFF	8–15
VERY STIFF	15–30
HARD	GREATER THAN 30

NOTES:

1) LAYER BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL LAYERS AT EACH TEST HOLE LOCATION ONLY. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.

ENVIRONMENTAL CLASSIFICATION:

SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE
SUBSTRUCTURE:
STEEL: MODERATELY AGGRESSIVE
CONCRETE: MODERATELY AGGRESSIVE

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JAMES JACKSON, P.E.
P.E. LICENSE NUMBER 77733
TERRACON
8260 VICO COURT
SARASOTA, FLORIDA 34240

DRAWN BY: MG 12–16–20
CHECKED BY: JJ 12–16–20
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CANAL	MANATEE	–

SHEET TITLE: REPORT OF CORE BORINGS FOR CULVERTS
REF. DWG. NO.
PROJECT NAME: CANAL ROAD – PHASE 1
FROM US 301 TO 22ND LANE EAST
SHEET NO. GR-8

TERRACON No. HC185036 EXHIBIT: A–12

Dec28, 2020–12:04pm N:\Projects–Other Offices\Sarasota\2018\HC185036\Cad\HC185036 Culvert Borings 4.dwg

BORING No.: BC-13
STATION: 125+84
OFFSET: 30' RT.
LATITUDE: 27.528060
LONGITUDE: -82.548121
ELEVATION: +12.5'

AUGERED N — DARK BROWN FINE SAND WITH SILT (SP-SM)
GRAY CLAYEY FINE SAND (SC)
44
GNE TO 10' 10-16-20 — 50/0" 50/0"
35 — LIGHT GRAY TO LIGHT BROWN LIMESTONE, CALCAREOUS SILT
37
50/5.5"
50/0.5"

BORING TERM. @ 28.5'
NO CASING
BORING DRILLED: 10-16-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-14
STATION: 128+16
OFFSET: 28' LT.
LATITUDE: 27.528624
LONGITUDE: -82.548285
ELEVATION: +14.3'

N — BROWN FINE SAND WITH SILT AND GRAVEL-SIZED LIMESTONE FRAGMENTS (SP-SM)
25
16 — BROWN CLAYEY FINE SAND WITH ORANGE SEAMS (SC)
5
50/4"
GNE TO 10' 10-16-20 — 20
39
50/0" — LIGHT BROWN TO LIGHT GRAY LIMESTONE, CALCAREOUS SILT
SOME SAND-SIZED PHOSPHATE GRAINS
50/4" — 20%
50/3"
50/0"
50/0.5"

BORING TERM. @ 38.5'
NO CASING
BORING DRILLED: 10-16-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-15
STATION: 129+21
OFFSET: 22' RT.
LATITUDE: 27.528992
LONGITUDE: -82.548111
ELEVATION: +13.5'

N — BROWN CLAYEY FINE SAND WITH ORANGE SEAMS (SC)
16
13
50/0" — 20%
50/1"
GNE TO 10' 10-12-20 — 40
CLAY SEAM
28
GRAY TO LIGHT GRAY LIMESTONE, CALCAREOUS SILT
50/0"
50/0"
50/3"

BORING TERM. @ 28.8'
NO CASING
BORING DRILLED: 10-12-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

ELEVATION IN FEET: +20, +15, +10, +5, 0, -5, -10, -15, -20, -25, -30, -35, -40

LEGEND

- SAND
- CLAYEY SAND
- LIMESTONE
- (SP) — UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
- 10-12-20 — ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
- GNE TO 10' — GROUNDWATER NOT ENCOUNTERED TO THE DEPTH OF 10.0 FEET
- W=0 / -200=0 / OC=0 — NATURAL MOISTURE CONTENT (%) / FINES PASSING No. 200 SIEVE (%) / ORGANIC CONTENT (%)
- N — STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED
- 50/6" — NUMBER OF BLOWS REQUIRED (50) TO DRIVE SAMPLING SPOON (6) INCHES
- DRILLING FLUID CIRCULATION LOSS

MANUAL HAMMER

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD DROP SAFETY HAMMER (ROPE-CATHEAD)	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	GREATER THAN 50

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 2
SOFT	2-4
FIRM	4-8
STIFF	8-15
VERY STIFF	15-30
HARD	GREATER THAN 30

NOTES:

1) LAYER BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL LAYERS AT EACH TEST HOLE LOCATION ONLY. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.

ENVIRONMENTAL CLASSIFICATION:

SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE
SUBSTRUCTURE:
STEEL: SLIGHTLY AGGRESSIVE
CONCRETE: SLIGHTLY AGGRESSIVE

Dec28, 2020-12:05pm N:\Projects-Other Offices\Sarasota\2018\HC185036\Cad\HC185036 Culvert Borings 5.dwg

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JAMES JACKSON, P.E.
P.E. LICENSE NUMBER 77733
TERRACON
8260 VICO COURT
SARASOTA, FLORIDA 34240

DRAWN BY: MG 12-16-20
CHECKED BY: JJ 12-16-20
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CANAL	MANATEE	-

SHEET TITLE: REPORT OF CORE BORINGS FOR CULVERTS
REF. DWG. NO.
PROJECT NAME: CANAL ROAD - PHASE 1 FROM US 301 TO 22ND LANE EAST
SHEET NO. GR-9

TERRACON No. HC185036 EXHIBIT: A-13

BORING No.: BC-16
STATION: 131+10
OFFSET: 28' LT.
LATITUDE: 27.529522
LONGITUDE: -82.548089
ELEVATION: +13.8'

N
9
10
10
14
10-13-20
2
30%
28
50/0"
50/5.5"
50/0"
50/5"
50/5.5"

BROWN TO LIGHT BROWN FINE SAND WITH SILT AND GRAVEL-SIZED LIMESTONE FRAGMENTS (SP-SM)

LIGHT BROWN TO LIGHT GRAY LIMESTONE, CALCAREOUS SILT

SOME SAND-SIZED PHOSPHATE GRAINS

BORING TERM. @ 39.0'
NO CASING
BORING DRILLED: 10-13-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-17
STATION: 133+10
OFFSET: 28' RT.
LATITUDE: 27.530051
LONGITUDE: -82.548071
ELEVATION: +15.4'

N
11
W=26
-200=25
7
13
11
GNE TO 10'
10-13-20
3
100%
4
50/5.5"
50/1"
80%
50/0"

BROWN FINE SAND WITH SILT AND GRAVEL-SIZED LIMESTONE FRAGMENTS (SP-SM)

DARK BROWN TO BROWN CLAYEY FINE SAND WITH GRAVEL-SIZED LIMESTONE FRAGMENTS (SC)

CLAY SEAM

LIGHT GRAY TO LIGHT BROWN LIMESTONE, CALCAREOUS SILT

BORING TERM. @ 28.5'
NO CASING
BORING DRILLED: 10-13-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-18
STATION: 135+25
OFFSET: 30' RT.
LATITUDE: 27.530595
LONGITUDE: -82.548060
ELEVATION: +15.9'

N
10
30
13
30%
18
GNE TO 10'
10-13-20
2
60%
33
20%
29
50/5.5"
50/5.5"
50/0.5"
50/5"

BROWN FINE SAND WITH SILT AND GRAVEL-SIZED LIMESTONE FRAGMENTS (SP-SM)

BROWN TO LIGHT BROWN CLAYEY FINE SAND WITH GRAVEL-SIZED LIMESTONE FRAGMENTS (SC)

LIGHT BROWN TO LIGHT GRAY LIMESTONE, CALCAREOUS SILT

BORING TERM. @ 39.9'
NO CASING
BORING DRILLED: 10-13-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

ELEVATION IN FEET

+20 +15 +10 +5 0 -5 -10 -15 -20 -25 -30 -35 -40

LEGEND

- SAND
- CLAYEY SAND
- LIMESTONE
- (SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
- 10-12-20 ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
- GNE TO 10' GROUNDWATER NOT ENCOUNTERED TO THE DEPTH OF 10.0 FEET
- W=0 -200=0 OC=0 NATURAL MOISTURE CONTENT (%) FINES PASSING No. 200 SIEVE (%) ORGANIC CONTENT (%)
- N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED
- 50/6" NUMBER OF BLOWS REQUIRED (50) TO DRIVE SAMPLING SPOON (6) INCHES
- DRILLING FLUID CIRCULATION LOSS

MANUAL HAMMER

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD DROP SAFETY HAMMER (ROPE-CATHEAD)	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	GREATER THAN 50

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 2
SOFT	2-4
FIRM	4-8
STIFF	8-15
VERY STIFF	15-30
HARD	GREATER THAN 30

NOTES:

1) LAYER BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL LAYERS AT EACH TEST HOLE LOCATION ONLY. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.

ENVIRONMENTAL CLASSIFICATION:

SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE
SUBSTRUCTURE:
STEEL: N/A
CONCRETE: N/A

Dec28, 2020-12:06pm N:\Projects-Other Offices\Sarasota\2018\HC185036\Cad\HC185036 Culvert Borings 6.dwg

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JAMES JACKSON, P.E.
P.E. LICENSE NUMBER 77733
TERRACON
8260 VICO COURT
SARASOTA, FLORIDA 34240

DRAWN BY: MG 12-16-20
CHECKED BY: JJ 12-16-20
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CANAL	MANATEE	-

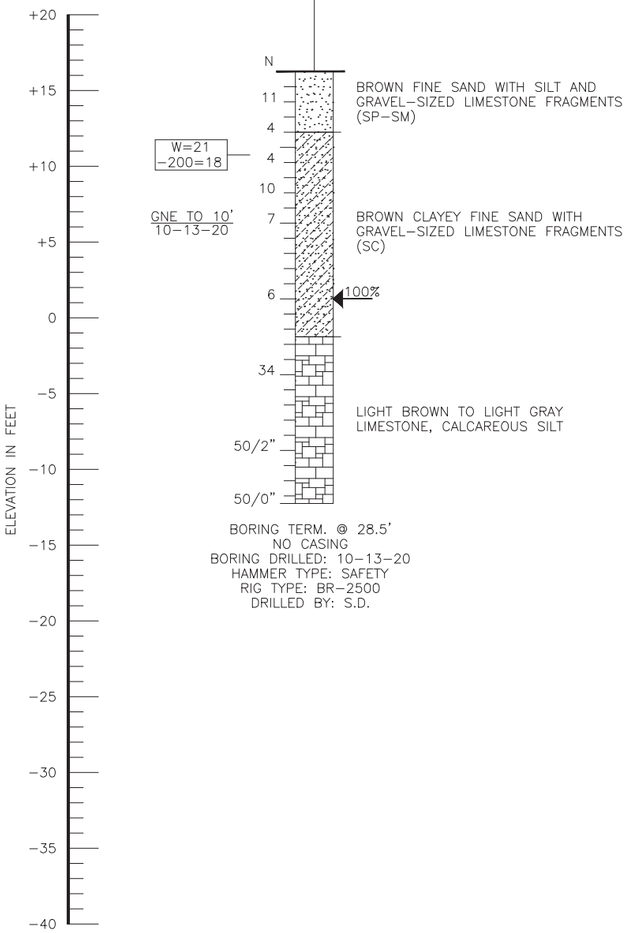
SHEET TITLE: REPORT OF CORE BORINGS FOR CULVERTS

PROJECT NAME: CANAL ROAD - PHASE 1
FROM US 301 TO 22ND LANE EAST

REF. DWG. NO.

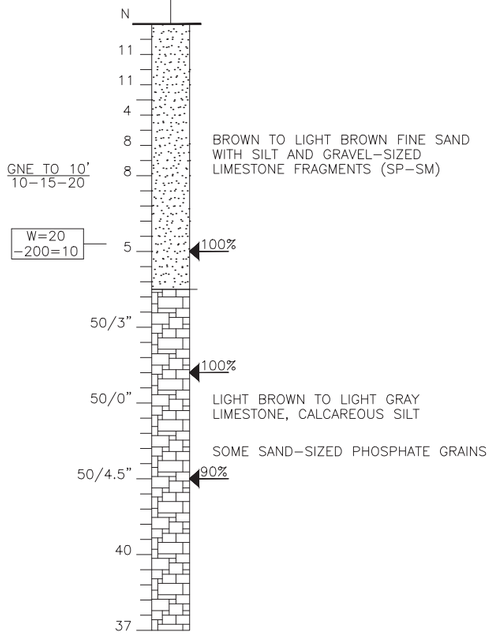
SHEET NO. GR-10

BORING No.: BC-19
STATION: 136+64
OFFSET: 22' RT.
LATITUDE: 27.531065
LONGITUDE: -82.548045
ELEVATION: +16.2'



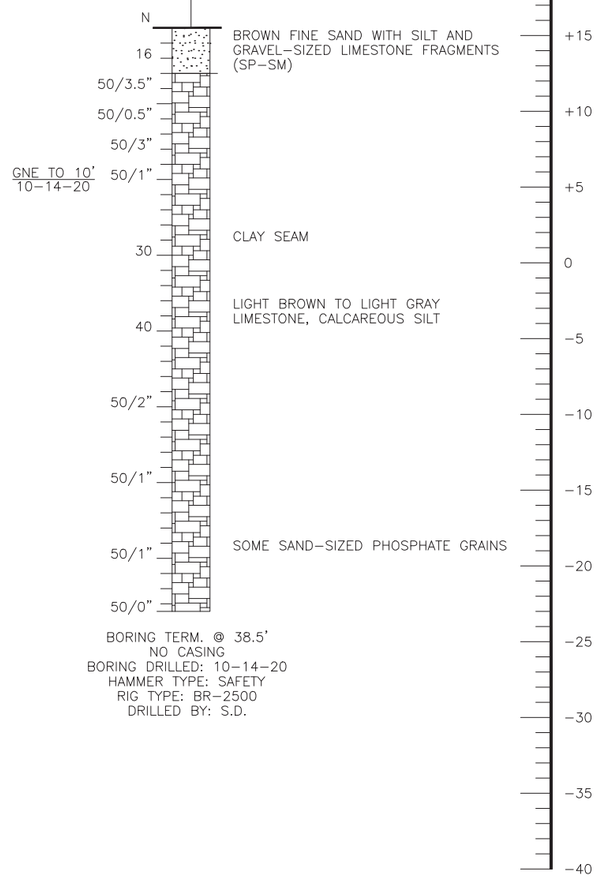
BORING TERM. @ 28.5'
NO CASING
BORING DRILLED: 10-13-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-20
STATION: 139+20
OFFSET: 21' RT.
LATITUDE: 27.531698
LONGITUDE: -82.548062
ELEVATION: +15.7'



BORING TERM. @ 40.0'
NO CASING
BORING DRILLED: 10-15-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-21
STATION: 141+11
OFFSET: 19' RT.
LATITUDE: 27.532255
LONGITUDE: -82.548049
ELEVATION: +15.5'



BORING TERM. @ 38.5'
NO CASING
BORING DRILLED: 10-14-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

LEGEND

- SAND
- LIMESTONE
- CLAYEY SAND
- (SP) — UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
- 10-12-20 — ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
- GNE TO 10' — GROUNDWATER NOT ENCOUNTERED TO THE DEPTH OF 10.0 FEET
- W=0 / -200=0 / OC=0 — NATURAL MOISTURE CONTENT (%) / FINES PASSING No. 200 SIEVE (%) / ORGANIC CONTENT (%)
- N — STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED
- 50/6" — NUMBER OF BLOWS REQUIRED (50) TO DRIVE SAMPLING SPOON (6) INCHES
- DRILLING FLUID CIRCULATION LOSS

MANUAL HAMMER

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD DROP SAFETY HAMMER (ROPE-CATHEAD)	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	GREATER THAN 50

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 2
SOFT	2-4
FIRM	4-8
STIFF	8-15
VERY STIFF	15-30
HARD	GREATER THAN 30

NOTES:

1) LAYER BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL LAYERS AT EACH TEST HOLE LOCATION ONLY. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.

ENVIRONMENTAL CLASSIFICATION:

SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE
SUBSTRUCTURE:
STEEL: N/A
CONCRETE: N/A

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JAMES JACKSON, P.E.
P.E. LICENSE NUMBER 77733
TERRACON
8260 VICO COURT
SARASOTA, FLORIDA 34240

DRAWN BY: MG 12-16-20
CHECKED BY: JJ 12-16-20
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CANAL	MANATEE	-

SHEET TITLE: REPORT OF CORE BORINGS FOR CULVERTS

PROJECT NAME: CANAL ROAD - PHASE 1
FROM US 301 TO 22ND LANE EAST

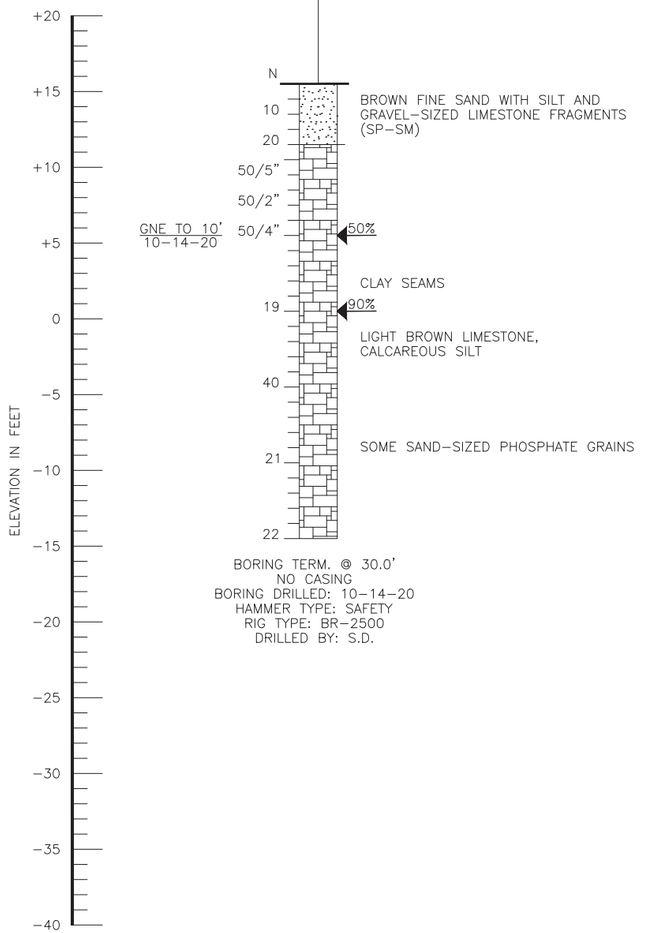
REF. DWG. NO.

SHEET NO. GR-11

TERRACON No. HC185036 EXHIBIT: A-15

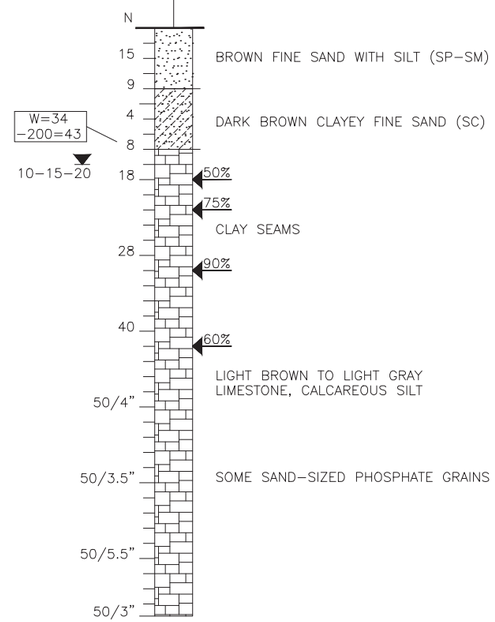
Dec28, 2020 - 12:07pm N:\Projects - Other Offices\Sarasota\2018\HC185036\Cad\HC185036 Culvert Borings 7.dwg

BORING No.: BC-22
STATION: 143+0
OFFSET: 23' RT.
LATITUDE: 27.532769
LONGITUDE: -82.548043
ELEVATION: +15.6'



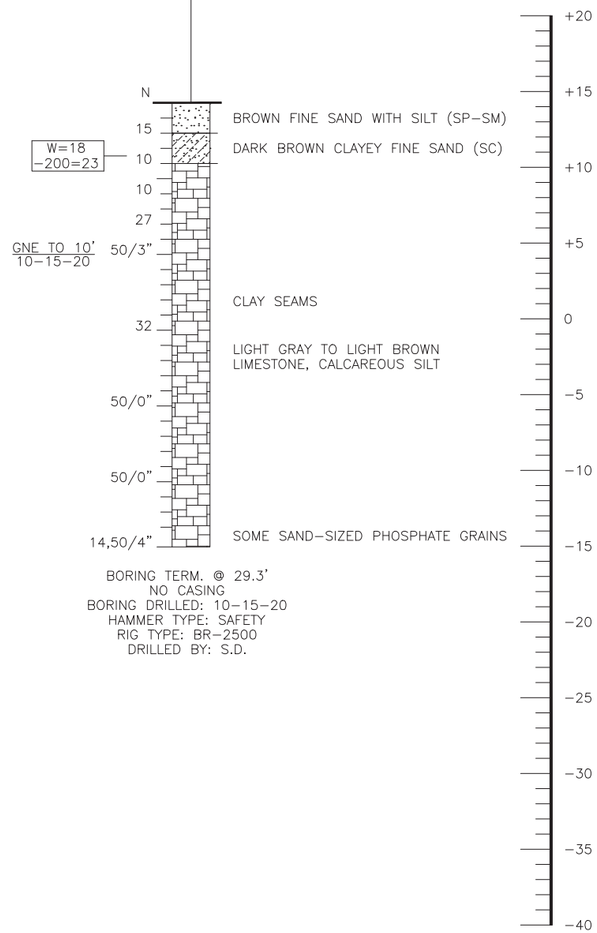
BORING TERM. @ 30.0'
NO CASING
BORING DRILLED: 10-14-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-23
STATION: 144+86
OFFSET: 25' RT.
LATITUDE: 27.533315
LONGITUDE: -82.548031
ELEVATION: +14.5'



BORING TERM. @ 38.8'
NO CASING
BORING DRILLED: 10-15-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

BORING No.: BC-24
STATION: 147+20
OFFSET: 24' RT.
LATITUDE: 27.533845
LONGITUDE: -82.548032
ELEVATION: +14.3'



BORING TERM. @ 29.3'
NO CASING
BORING DRILLED: 10-15-20
HAMMER TYPE: SAFETY
RIG TYPE: BR-2500
DRILLED BY: S.D.

LEGEND

- SAND
- CLAYEY SAND
- LIMESTONE
- (SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL
- 10-12-20 ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
- GNE TO 10' GROUNDWATER NOT ENCOUNTERED TO THE DEPTH OF 10.0 FEET
- W=0 -200=0 OC=0 NATURAL MOISTURE CONTENT (%) FINES PASSING No. 200 SIEVE (%) ORGANIC CONTENT (%)
- N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED
- 50/6" NUMBER OF BLOWS REQUIRED (50) TO DRIVE SAMPLING SPOON (6) INCHES
- DRILLING FLUID CIRCULATION LOSS

MANUAL HAMMER

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD DROP SAFETY HAMMER (ROPE-CATHEAD)	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	GREATER THAN 50

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 2
SOFT	2-4
FIRM	4-8
STIFF	8-15
VERY STIFF	15-30
HARD	GREATER THAN 30

NOTES:

1) LAYER BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL LAYERS AT EACH TEST HOLE LOCATION ONLY. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.

ENVIRONMENTAL CLASSIFICATION:

SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE
SUBSTRUCTURE:
STEEL: N/A
CONCRETE: N/A

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JAMES JACKSON, P.E.
P.E. LICENSE NUMBER 77733
TERRACON
8260 VICO COURT
SARASOTA, FLORIDA 34240

DRAWN BY: MG 12-16-20
CHECKED BY: JJ 12-16-20
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

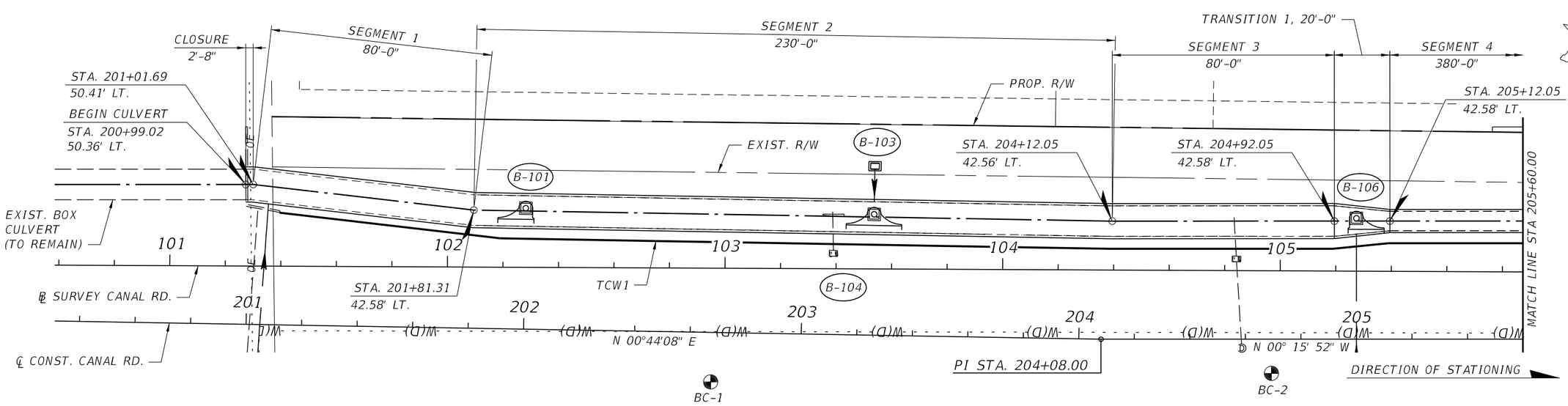
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CANAL	MANATEE	-

SHEET TITLE: REPORT OF CORE BORINGS FOR CULVERTS
PROJECT NAME: CANAL ROAD - PHASE 1
FROM US 301 TO 22ND LANE EAST

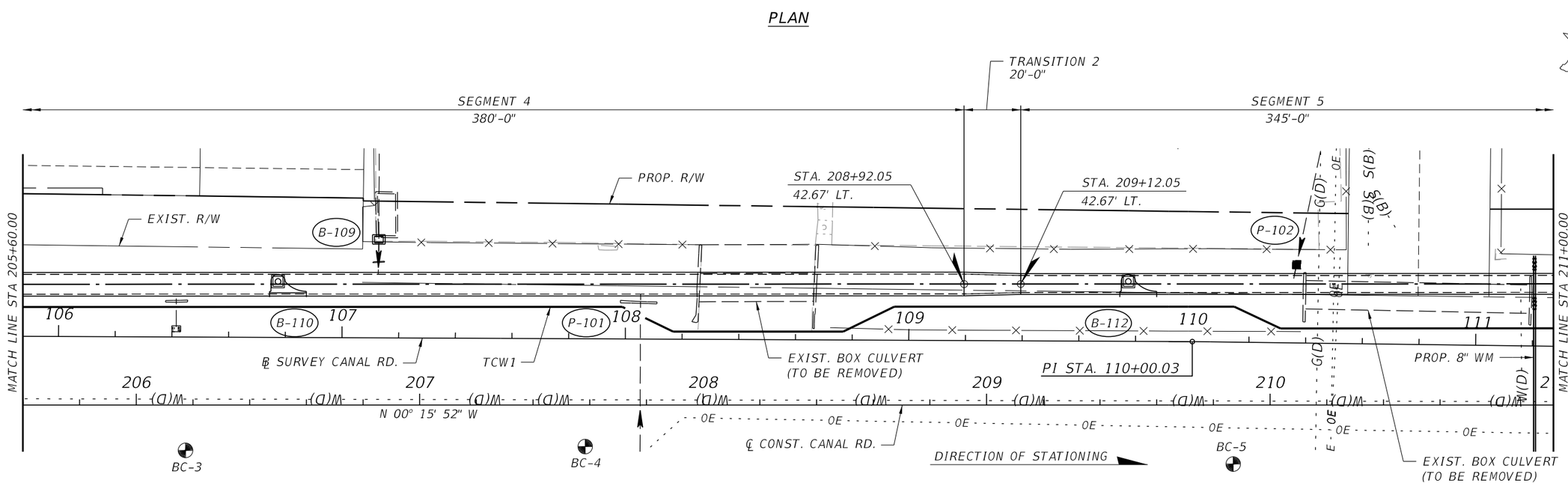
REF. DWG. NO.:
SHEET NO.: GR-12

TERRACON No. HC185036 EXHIBIT: A-16

Dec28, 2020-12:08pm N:\Projects-Other Offices\Sarasota\2018\HC185036\Cad\HC185036 Culvert Borings 8.dwg



PLAN



PLAN

NOTES:

1. FOR DISPOSITION OF UTILITIES SEE UTILITY RELOCATION PLANS.
2. FOR ANGLES BETWEEN CULVERT SEGMENTS, SEE BOX CULVERT DETAILS (SHEET 1 OF 3), VARIABLE TABLE – REINFORCING
3. FOR TEMPORARY CRITICAL AND TEMPORARY WALLS, SEE WALL SHEETS.
4. FOR SUBSURFACE INFORMATION, SEE GEOTECHNICAL ENGINEERING REPORT – CANAL ROAD – PHASE 1 PALMETTO, MANATEE COUNTY, FLORIDA BY TERRACON CONSULTANTS, INC. DATED 06/01/2021 (TERRACON PROJECT NO. HC185036)
5. FOR SEGMENT 8 SEE BOX CULVERT PLAN – SEGMENT 8 SHEET.
6. FOR BORING SHEETS, SEE ROADWAY PLANS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

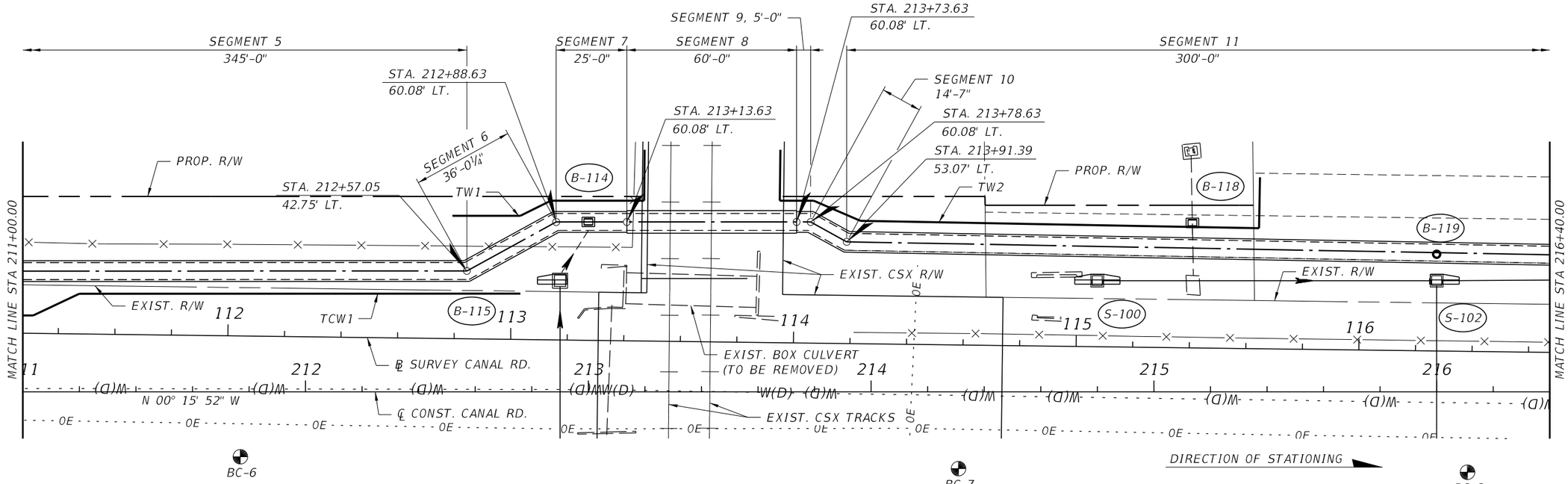
DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

BOX CULVERT PLAN (1 OF 4)

SHEET NO.: BC-1



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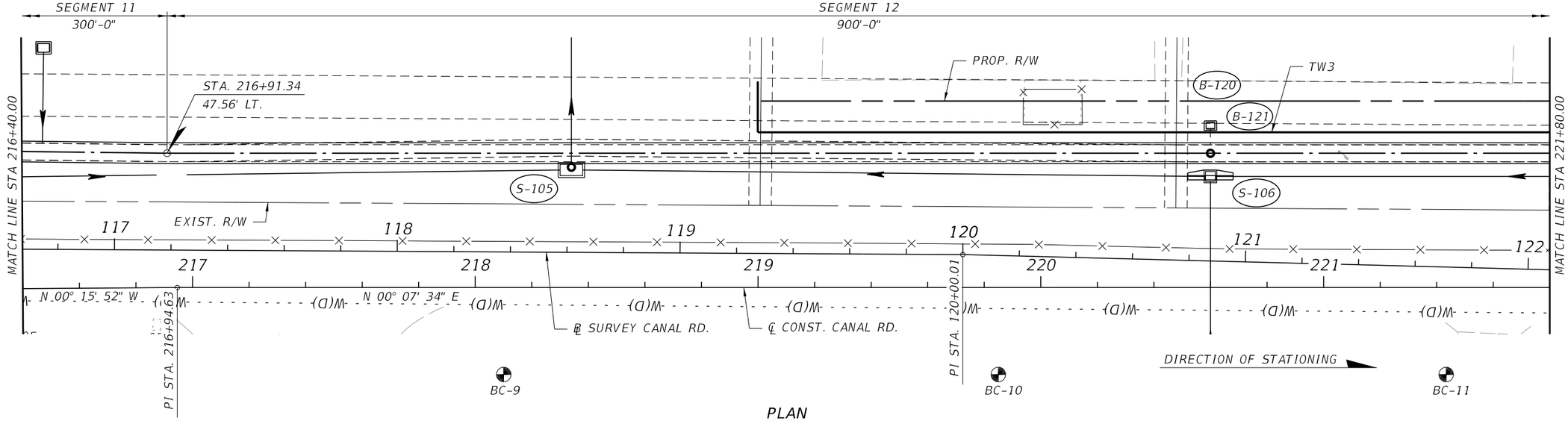


PLAN

NOTE:

1. FOR NOTES SEE BOX CULVERT PLAN (1 OF 4) SHEET.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

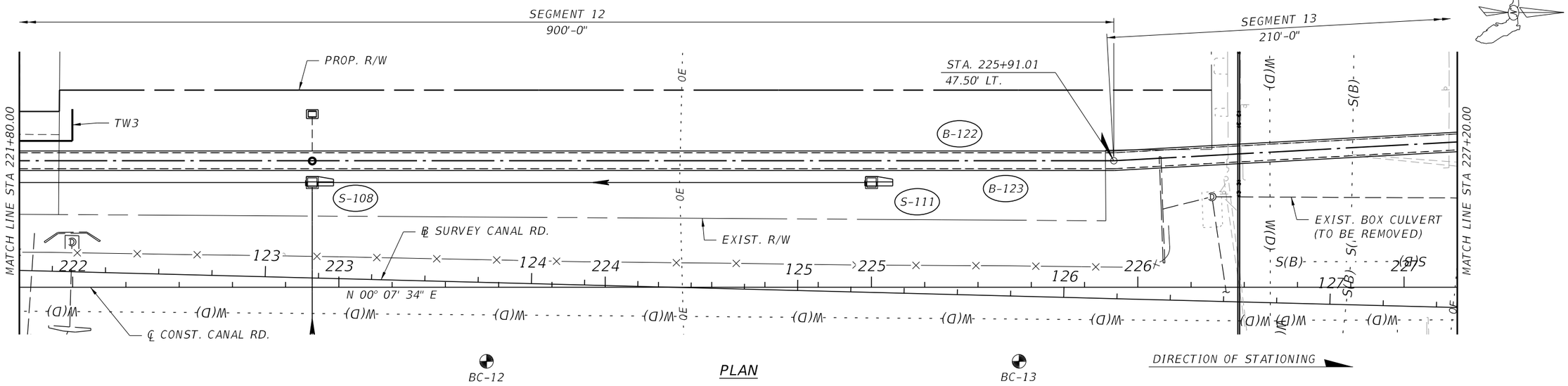
DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

BOX CULVERT PLAN (2 OF 4)

SHEET NO.: BC-2

3:39:17 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\struct\PlanElev02.dgn

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



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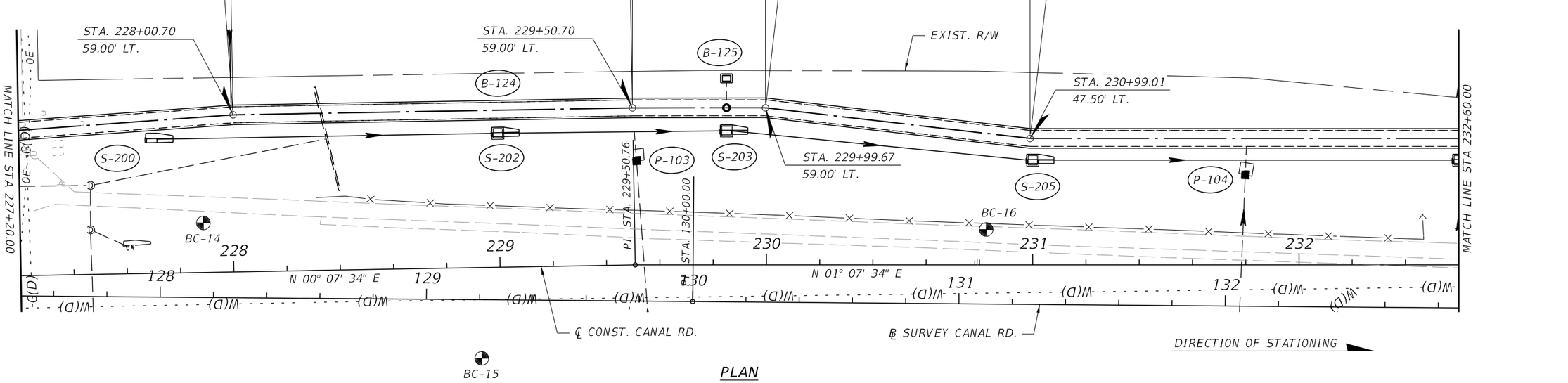

PLAN

NOTE:

1. FOR NOTES SEE BOX CULVERT PLAN (1 OF 4) SHEET.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

BOX CULVERT PLAN (3 OF 4)

SHEET NO.: BC-3

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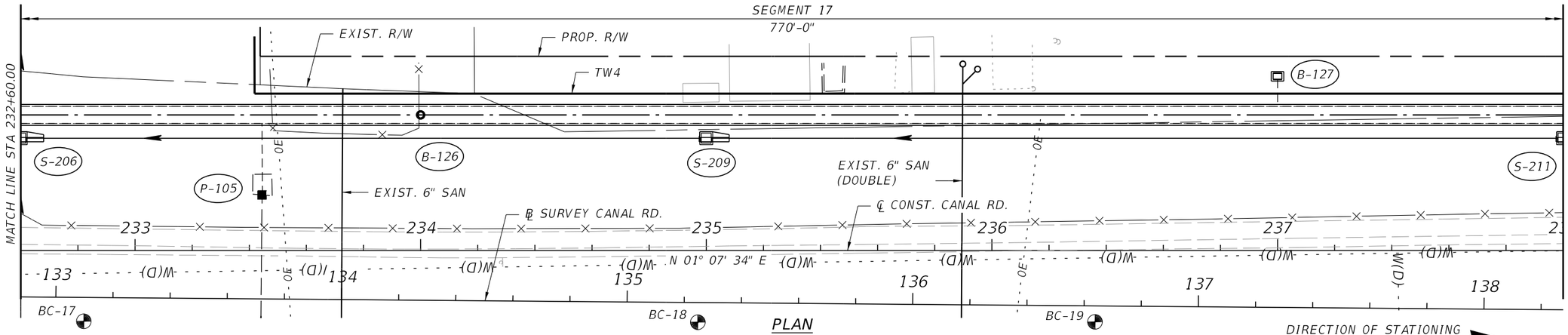
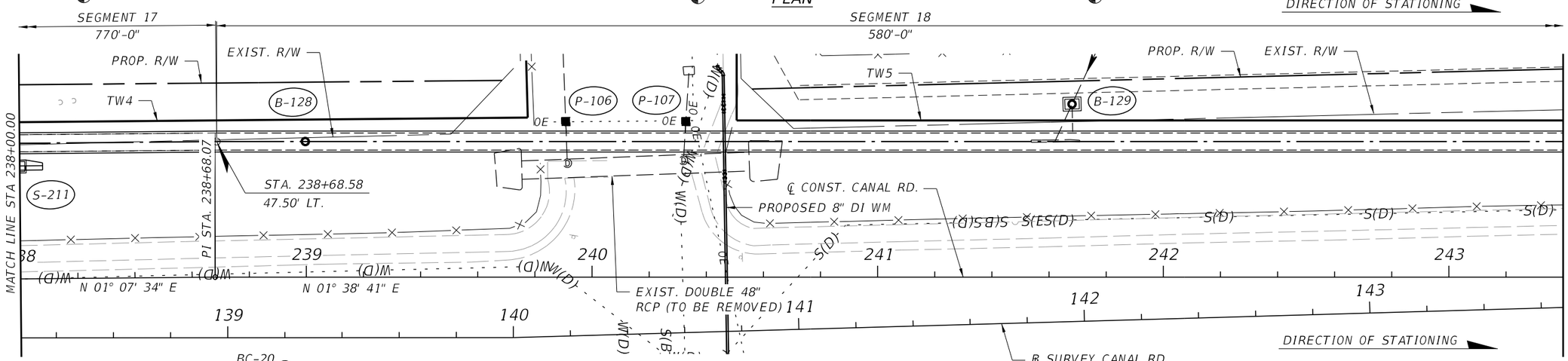
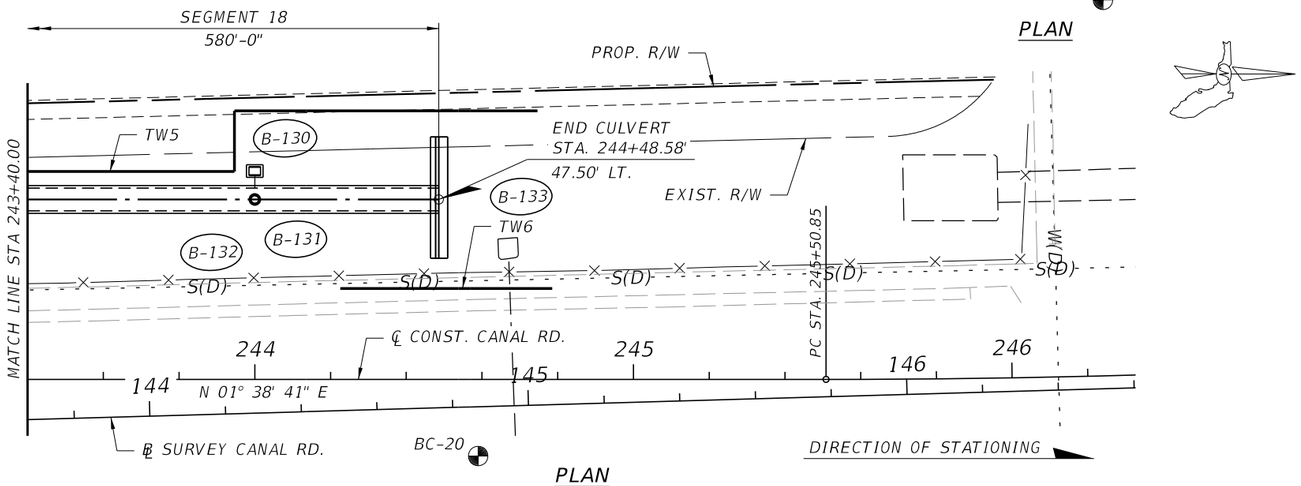






NOTE:

1. FOR NOTES SEE BOX CULVERT PLAN (1 OF 4) SHEET.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

BOX CULVERT PLAN (4 OF 4)

SHEET NO.: BC-4

3:39:45 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\struct\PlanElev04.dgn

BOX CULVERT DATA TABLES

BOX, HEADWALL AND CUTOFF WALL DATA TABLE (inches unless shown otherwise) — Table Date 7-01-09

LOCATION	SEGMENT NUMBER	BOX									HEADWALL AND CUTOFF WALL									
		Wc(ft)	Hc(ft)	Tt	Tw	Tb	Ti	#cells	Lc(ft)	Cover	Blhw	Hlhw	Brhw	Hrhw	Blcw	Hlcw	Brcw	Hrcw	SL(deg)	SR(deg)
STA. 201+01.69 TO STA. 204+92.45	1 THRU 3	11	5	10	10	10	-	1	390	2	-	-	-	-	-	-	-	-	-	-
STA. 205+12.05 TO STA. 208+92.05	4	7	5	9	9	9	-	1	380	2	-	-	-	-	-	-	-	-	-	-

ESTIMATED CONCRETE QUANTITIES (CY) — Table Date 7-01-13

SEGMENT NUMBER	BOX								LEFT END WINGWALL			LEFT BEGIN WINGWALL			RIGHT END WINGWALL			RIGHT BEGIN WINGWALL		
	Left Cutoff Wall	Right Cutoff Wall	Bottom Slab	Walls	Top Slab	Left Head Wall	Right Head Wall	Sub Total	Footing	Wall	Sub Total	Footing	Wall	Sub Total	Footing	Wall	Sub Total	Footing	Wall	Sub Total
1 THRU 3	-	-	152.84	120.63	152.84	-	-	427.10	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	89.72	105.56	89.72	-	-	285.78	-	-	-	-	-	-	-	-	-	-	-	-

MAIN STEEL REINFORCEMENT SPACING (inches) — Table Date 7-01-09

SEGMENT NUMBER	BOX														HEADWALLS		CUTOFF WALLS	
	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115, 116...	803	806	809	812
1 THRU 3	6	6	6	6	6	6	-	6	12	12	12	12	12	12	-	-	-	-	-
4	8	8	8	8	8	8	-	8	12	12	12	12	12	12	-	-	-	-	-

NOTES:

1. Environmental Class Moderately Aggressive
2. Reinforcing Steel, ASTM A615 Grade 60
3. Concrete Class IV f'c = 5.5 ksi
4. Soil Properties:
   Friction Angle 35 Deg
   Modulus of Subgrade Reaction 260 PCI
   Nominal Bearing Resistance 10,000 PSF
5. Work this Drawing with Standard Plans Index 400-289 and Sheets "Box Culvert Details" Sheets.
6. Connection Types permitted for Box Culvert Extensions:
   Type II
7. Quantities for Type I and Type II Connections include 2 ft. additional payment length beyond Lc for connection to existing box culvert. (See Summary of Box Culvert Quantities box in Plans)
8. For Transition 1 and Transition 2, see "BOX CULVERT DETAILS (2 OF 3)"
9. For CSX Culvert (Segment 8), see "BOX CULVERT PLAN - SEGMENT 8"

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

BOX CULVERT DATA TABLE (1 OF 2)

SHEET NO.: BC-5

BOX CULVERT DATA TABLES

BOX, HEADWALL AND CUTOFF WALL DATA TABLE (inches unless shown otherwise) — Table Date 7-01-09

LOCATION	SEGMENT NUMBER	BOX									HEADWALL AND CUTOFF WALL									
		Wc(ft)	Hc(ft)	Tt	Tw	Tb	Ti	#cells	Lc(ft)	Cover	Blhw	Hlhw	Brhw	Hrhw	Blcw	Hlcw	Brcw	Hrcw	SL(deg)	SR(deg)
STA. 209+12.05 TO STA. 244+48.57	5 THRU 7 & 9 THRU 18	6	5	8	8	8	–	1	3485.6	2	12	24	–	–	12	24	–	–	–	0

LEFT SIDE WINGWALLS DATA TABLE (inches unless shown otherwise) — Table Date 01-01-11

SEGMENT NUMBER	LEFT END WINGWALL									LEFT BEGIN WINGWALL								
	Rt	Rw	Rh	Rd	SW(deg)	β (deg)	He(ft)	Hs(ft)	Lw(ft)	Rt	Rw	Rh	Rd	SW(deg)	β (deg)	He(ft)	Hs(ft)	Lw(ft)
5 THRU 7 & 9 THRU 18	12	10	36	12	90	26.57	7	7	17	12	10	36	12	90	26.57	7	7	17

RIGHT SIDE WINGWALLS DATA TABLE (inches unless shown otherwise) — Table Date 01-01-11

SEGMENT NUMBER	RIGHT END WINGWALL									RIGHT BEGIN WINGWALL								
	Rt	Rw	Rh	Rd	SW(deg)	β (deg)	He(ft)	Hs(ft)	Lw(ft)	Rt	Rw	Rh	Rd	SW(deg)	β (deg)	He(ft)	Hs(ft)	Lw(ft)
5 THRU 7 & 9 THRU 18	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

ESTIMATED CONCRETE QUANTITIES (CY) — Table Date 7-01-13

SEGMENT NUMBER	BOX								LEFT END WINGWALL			LEFT BEGIN WINGWALL			RIGHT END WINGWALL			RIGHT BEGIN WINGWALL		
	Left Cutoff Wall	Right Cutoff Wall	Bottom Slab	Walls	Top Slab	Left Head Wall	Right Head Wall	Sub Total	Footing	Wall	Sub Total	Footing	Wall	Sub Total	Footing	Wall	Sub Total	Footing	Wall	Sub Total
5 THRU 7 & 9 THRU 18	0.36	–	630.88	860.68	630.88	0.36	–	2130.33	3.04	3.67	7.35	3.04	3.67	7.35	–	–	–	–	–	–

MAIN STEEL REINFORCEMENT SPACING (inches) — Table Date 7-01-09

SEGMENT NUMBER	BOX														HEADWALLS		CUTOFF WALLS	
	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115, 116...	803	806	809	812
5 THRU 7 & 9 THRU 18	10	10	10	10	10	10	–	10	12	12	12	12	12	12	–	12	–	12	–

WINGWALL STEEL REINFORCEMENT SPACING (inches) — Table Date 7-01-09

SEGMENT NUMBER	LEFT END WINGWALL							LEFT BEGIN WINGWALL							RIGHT END WINGWALL							RIGHT BEGIN WINGWALL						
	401 407(8)	402 (403)	404 (405)	406	409	410	411	501 507(8)	502 (503)	504 (505)	506	509	510	511	601 607(8)	602 (603)	604 (605)	606	609	610	611	701 707(8)	702 (703)	704 (705)	706	709	710	711
5 THRU 7 & 9 THRU 18	10	12	12	10	12	12	12	10	12	12	10	12	12	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–

WINGWALL NOTE: Bar designations in "( )" are only required for variable height wingwalls.

NOTES:

1. Environmental Class Moderately Aggressive
2. Reinforcing Steel, ASTM A615 Grade 60
3. Concrete Class IV f'c = 5.5 ksi
4. Soil Properties:
   Friction Angle 35 Deg
   Modulus of Subgrade Reaction 260 PCI
   Nominal Bearing Resistance 10,000 PSF
5. Work this Drawing with Standard Plans Index 400-289 and Sheets "Box Culvert Details" Sheets.
6. For Transition 2, see "BOX CULVERT DETAILS (2 OF 3)"
7. For CSX Culvert (Segment 8), see "BOX CULVERT PLAN – SEGMENT 8"
8. Provide chamfer transitions at Segment 7 – End and Segment 9 – Begin to match chamfer size in Segment 8. For Segment 8 details, See "BOX CULVERT DETAILS – SEGMENT 8".
9. Construct wingwall, headwall, and cutoff wall at the end of Segment 18 only.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

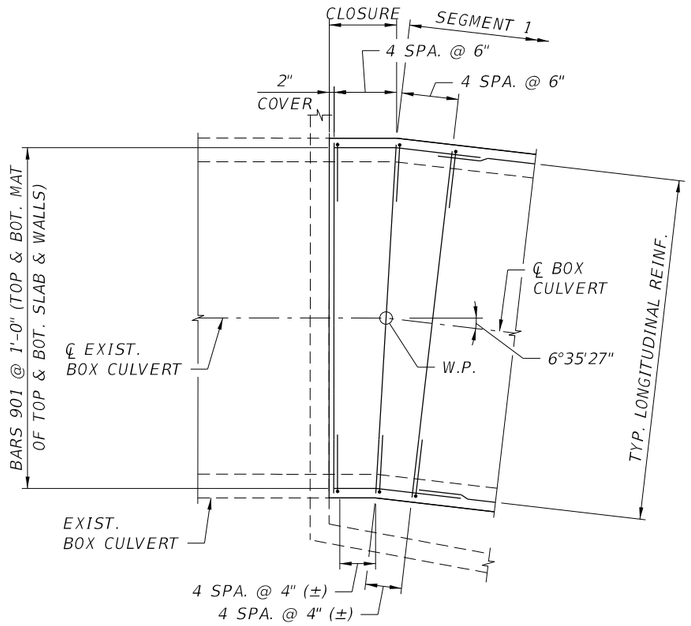
DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

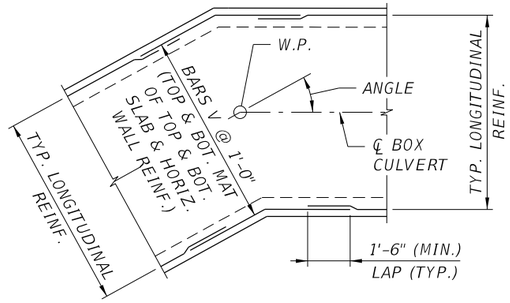
BOX CULVERT DATA TABLE (2 OF 2)

SHEET NO.: BC-6

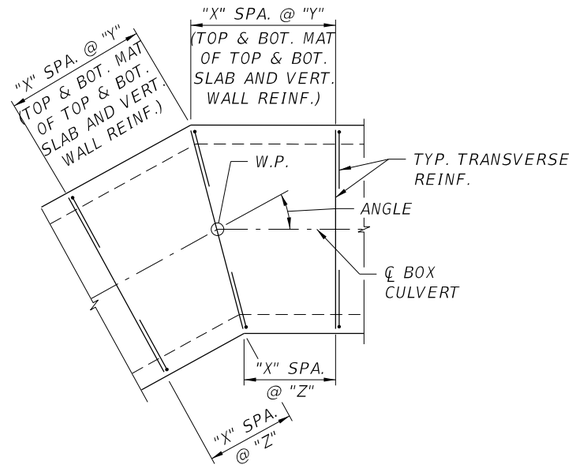


DETAIL 1
(BEGIN CULVERT REINFORCING PLAN)

(FOR CONNECTION TO EXIST. BOX CULVERT, SEE STANDARD PLANS INDEX 400-289)



DETAIL 2
(LONGITUDINAL REINFORCING PLAN)



DETAIL 2
(TRANSVERSE REINFORCING PLAN)

VARIABLE TABLE - REINFORCING					
STATION	ANGLE	X SPA.	Y (in.)	Z (in.)	BAR V
201+81.31	5°37'38"	3	6	3.5	902
204+12.05	1°0'14"	*	*	*	
212+57.05	28°44'41"	5	10	6	903
212+88.63	28°45'29"	5	10	6	
213+78.61	28°45'29"	5	10	6	
213+91.39	26°42'21"	5	10	6	
216+91.34	0°39'33"	*	*	*	902
225+91.01	3°8'29"	*	*	*	
228+00.70	3°8'21"	*	*	*	
229+50.70	0°59'18"	*	*	*	
229+99.67	6°36'55"	*	*	*	
230+99.01	6°36'11"	*	*	*	
238+68.58	0°31'5"	*	*	*	

* FOR REINF. BAR SPACINGS, SEE BOX CULVERT DATA TABLE SHEETS

NOTES:

1. REFER TO STANDARD PLANS INDEX 400-289 FOR BOX CULVERT DETAILS UNLESS NOTED OTHERWISE.
2. BARS V ARE LAPPED WITH STANDARD LONGITUDINAL REINFORCING BARS 109, 110, 111, 112, 113 AND 114,
3. FIELD BEND BARS V TO ACHIEVE REQUIRED ANGLE.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

BOX CULVERT DETAILS (1 OF 3)

SHEET NO.: BC-7

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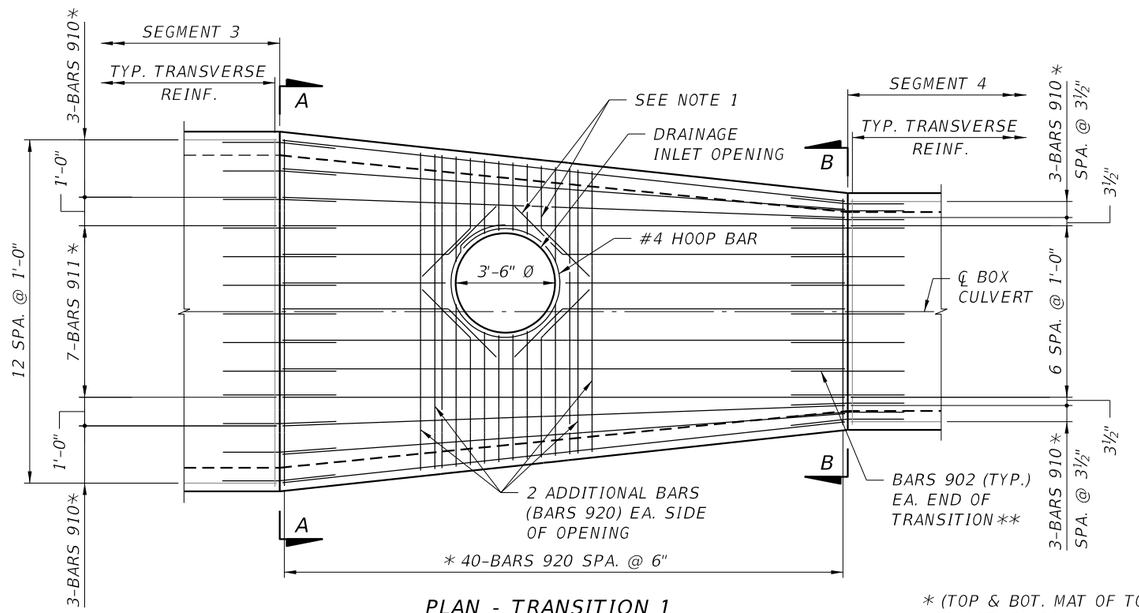
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

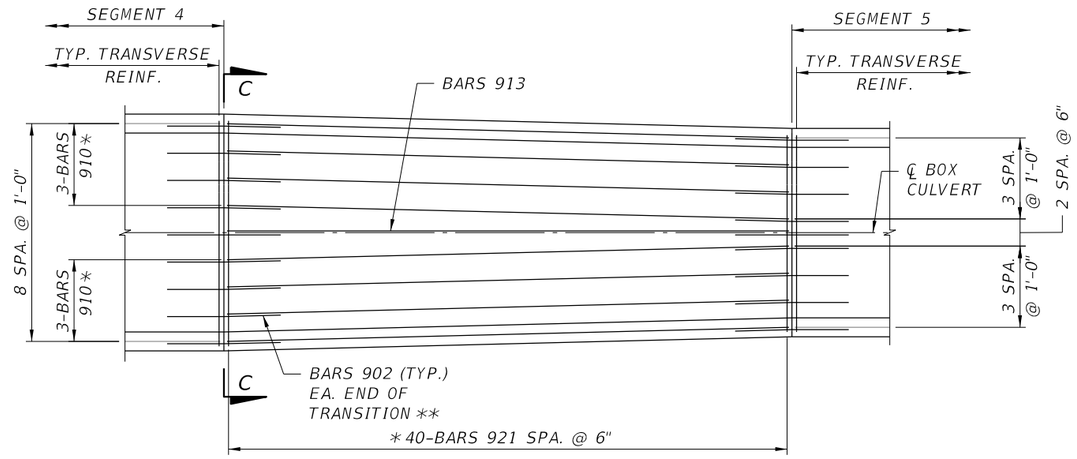


PLAN - TRANSITION 1

(TYP. VERTICAL REINF. LOCATED IN WALLS NOT SHOWN FOR CLARITY, SEE STANDARD INDEX 400-289)

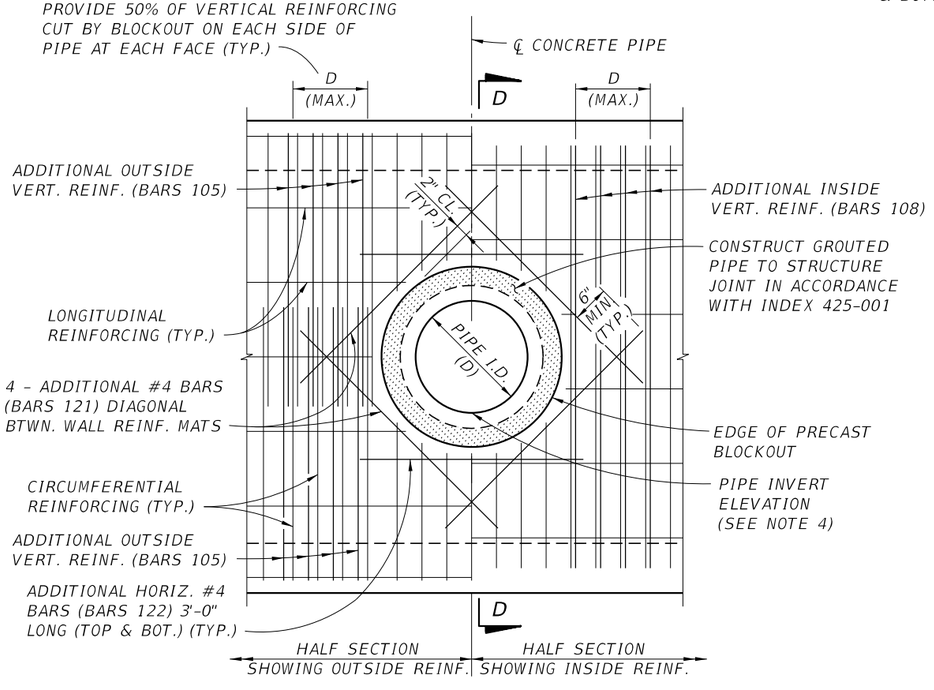
* (TOP & BOT. MAT OF TOP & BOT. SLAB)

** (TOP & BOT. MAT OF TOP & BOT. SLAB AND WALLS)

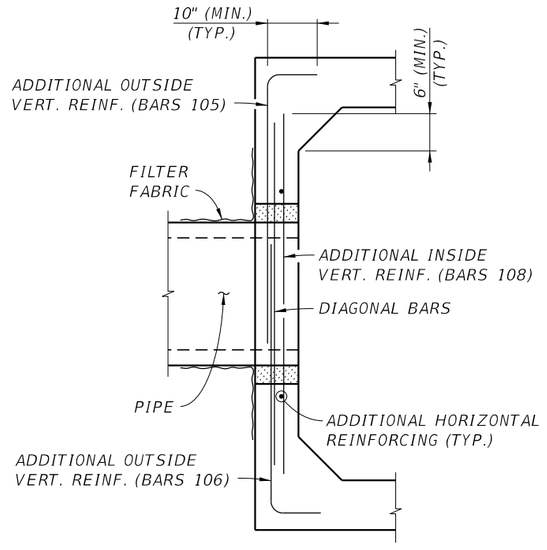


PLAN - TRANSITION 2

(TYP. VERTICAL REINF. NOT SHOWN, FOR CLARITY, SEE STANDARD INDEX 400-289)



ELEVATION



SECTION D-D

(SHOWING ADDITIONAL BLOCKOUT REINF. ONLY)

NOTES:

1. FIELD CUT AND BEND TYPICAL TOP SLAB REINFORCING STEEL AS REQUIRED. PROVIDE 2" (MIN.) COVER TO DRAINAGE INLET OPENING.
2. FOR SECTIONS A-A, B-B, AND C-C, SEE BOX CULVERT DETAILS (3 OF 3) SHEET.

PIPE BLOCKOUT NOTES:

1. CUT BOX CULVERT REINFORCEMENT AS REQUIRED TO MAINTAIN 2" COVER.
2. FOR PRECAST SECTIONS CONSTRUCT OPENING A MINIMUM OF 1'-6" AWAY FROM ANY BOX TO BOX JOINT, EXCEPT OPENING MAY BE A MINIMUM OF 1'-0" AWAY FROM JOINT WHEN AT LEAST 2'-0" OF CLEARANCE TO THE BOX TO BOX JOINT IS PROVIDED ON THE OPPOSITE SIDE OF THE PIPE OPENING.
3. PIPE BLOCKOUT DIAMETER TO BE 6" GREATER THAN PIPE OUTSIDE DIAMETER.
4. SEE DRAINAGE PLANS FOR SIZE, PLACEMENT, AND INVERT ELEVATION.

PIPE BLOCKOUT DETAILS

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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Sarasota, FL 34232-6233

DATE: 12/2021
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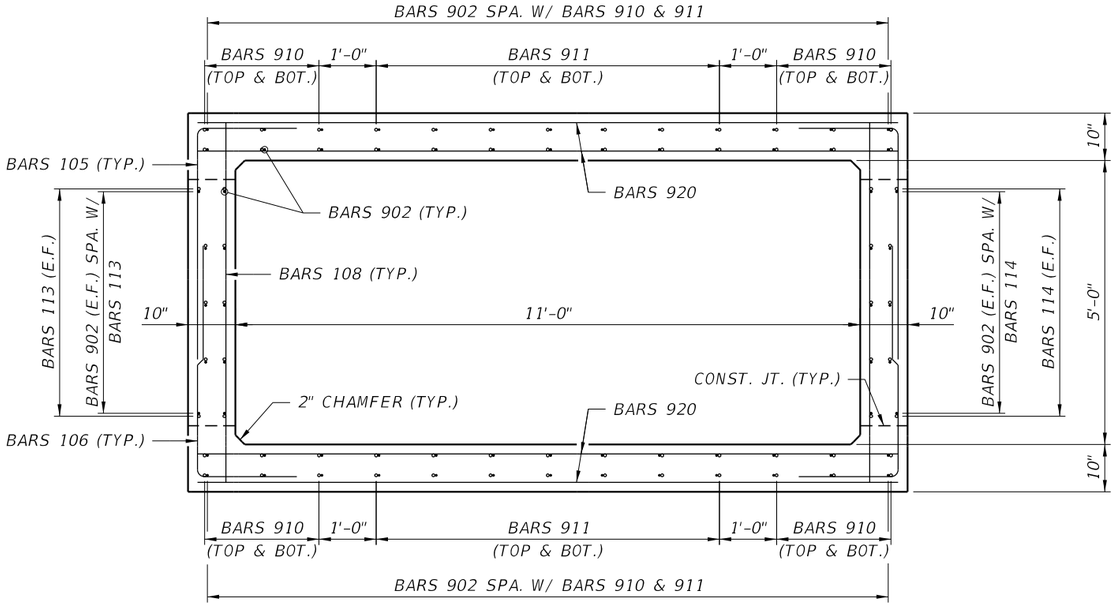
Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

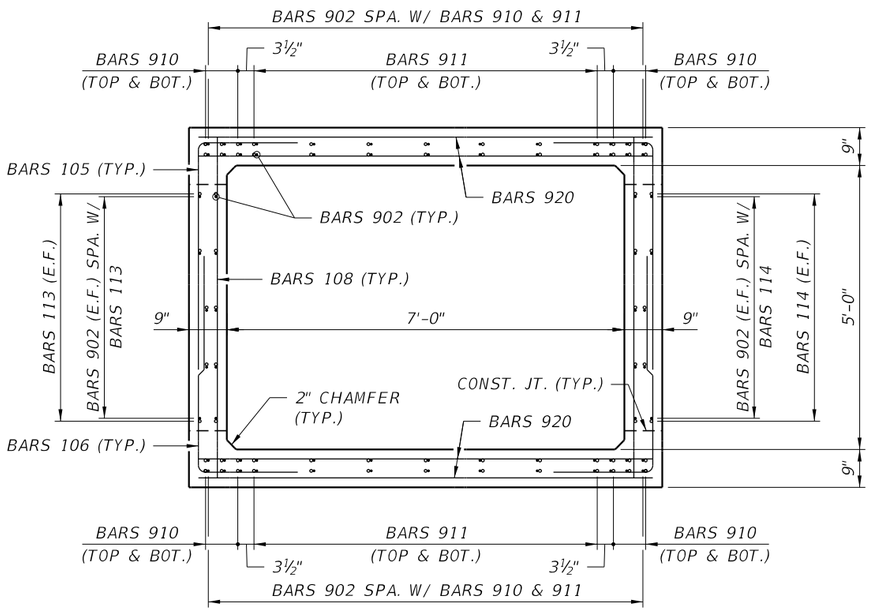
DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

BOX CULVERT DETAILS (2 OF 3)

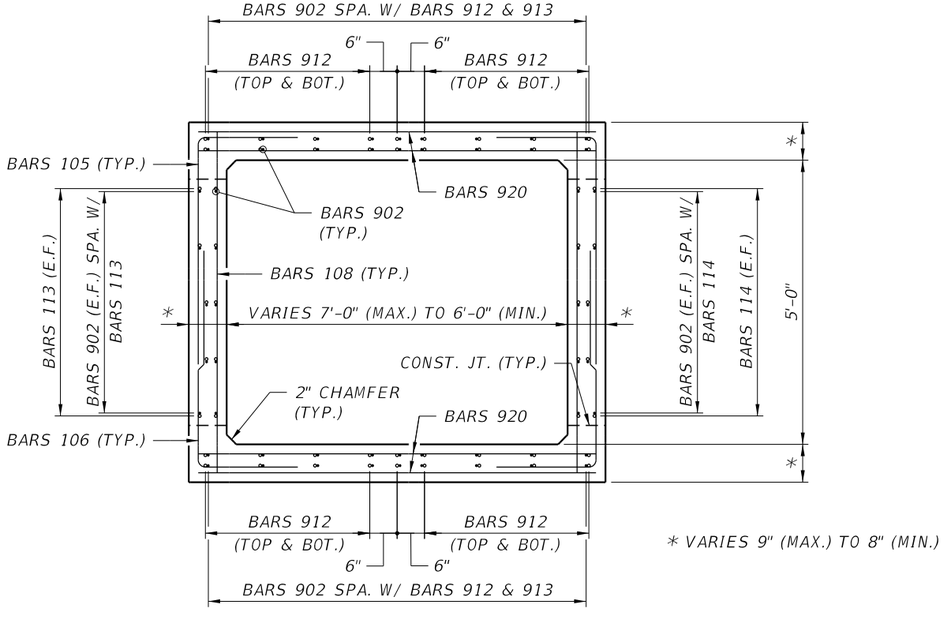
SHEET NO.: BC-8



SECTION A-A



SECTION B-B



* VARIES 9" (MAX.) TO 8" (MIN.)

SECTION C-C

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
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HDR Engineering, Inc.
2601 Cattlemen Road
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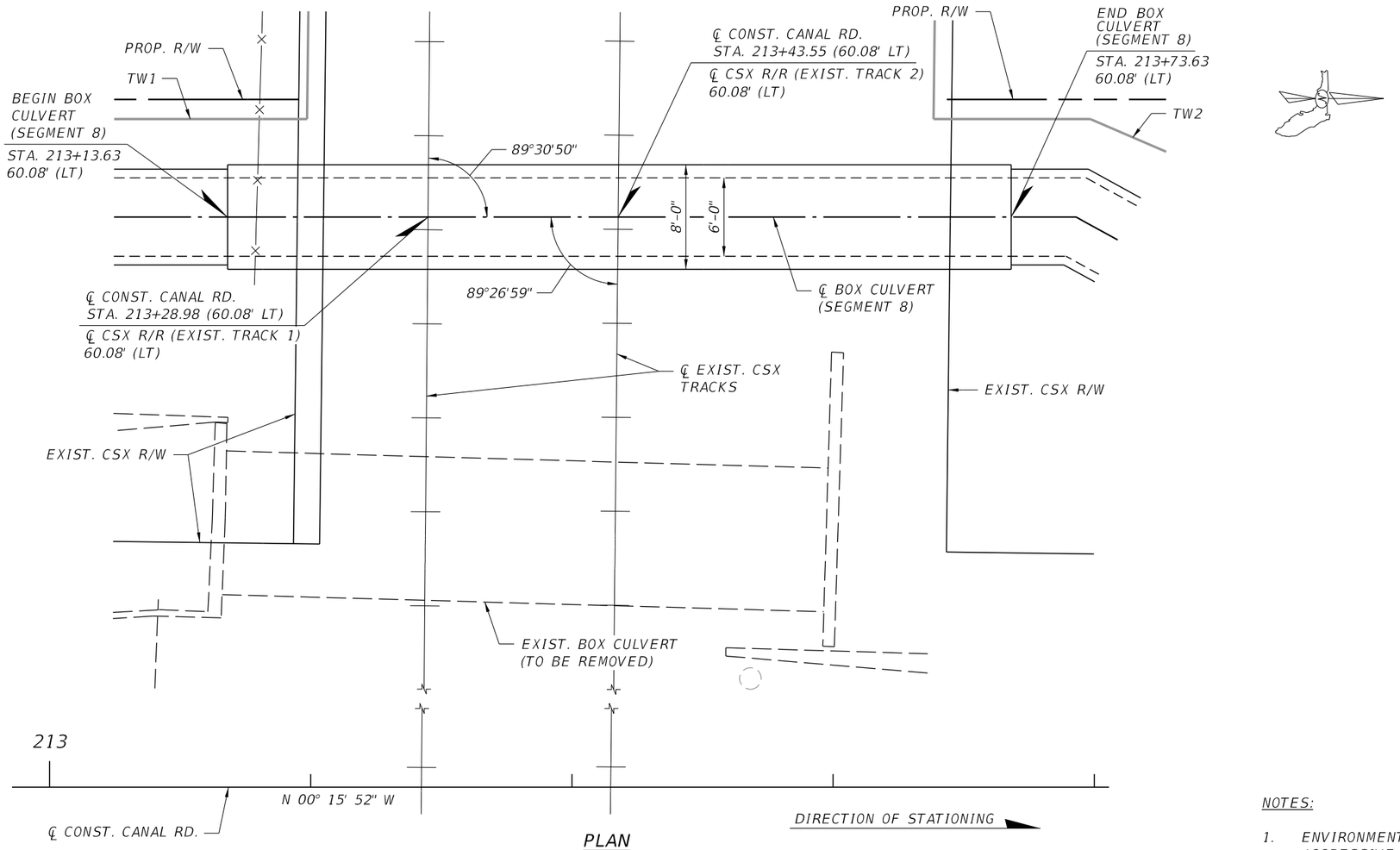
DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

BOX CULVERT DETAILS (3 OF 3)

SHEET NO.: BC-9



PLAN
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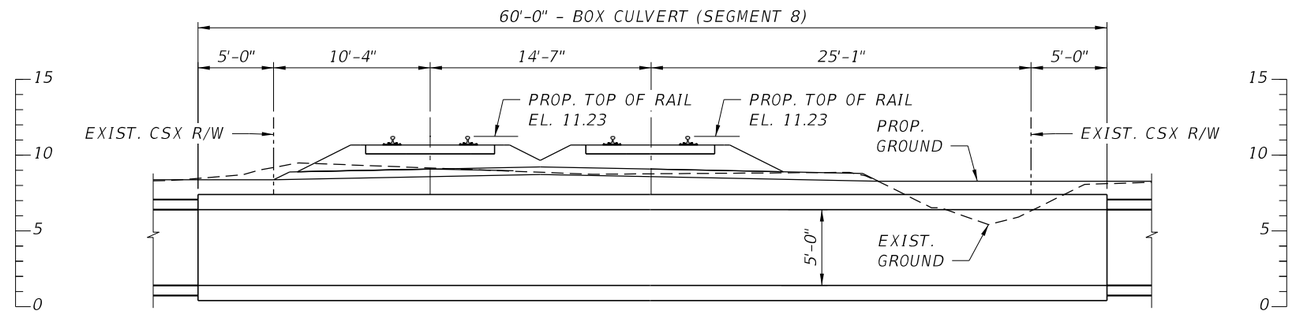

ELEVATION

NOTES:

1. ENVIRONMENTAL CLASS, MODERATELY AGGRESSIVE.
2. REINFORCING STEEL, ASTM A615 GRADE 60
3. CONCRETE CLASS IV f'c = 5.5 KSI
4. SOIL PARAMETERS:
   FRICTION ANGLE 35°
   MODULUS OF SUBGRADE REACTION 260 PCI
   NOMINAL BEARING RESISTANCE 10,000 PSF
5. FOR FLOWLINE ELEVATIONS SEE ROADWAY PLANS.
6. FOR SEGMENTS 1 THRU 7 AND 9 THRU 18, SEE "BOX CULVERT DATA TABLE SHEETS"
7. FOR TEMPORARY WALLS TW1 AND TW2, SEE TEMPORARY WALLS TW1 & TW2 SHEETS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

BOX CULVERT PLAN SEGMENT 8

SHEET NO.: BC-10

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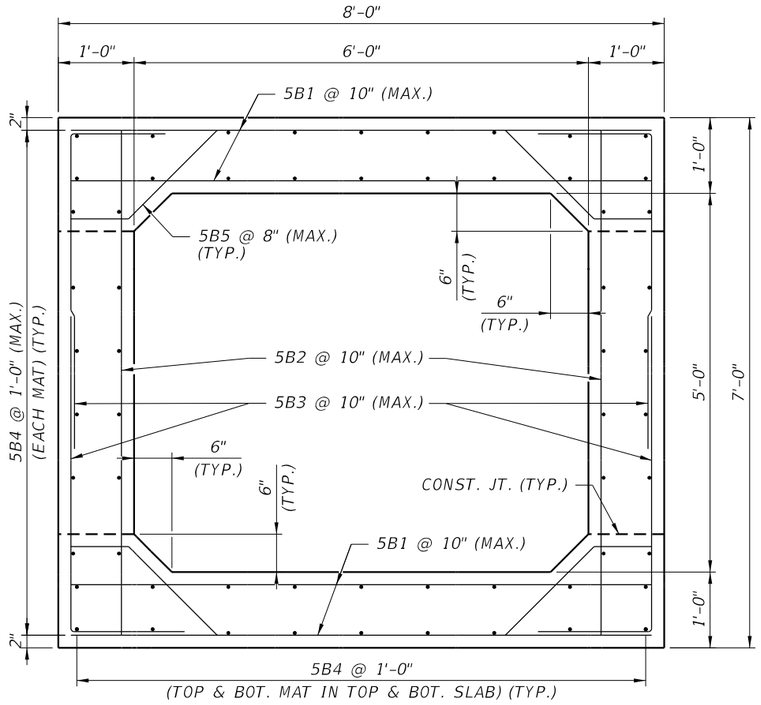
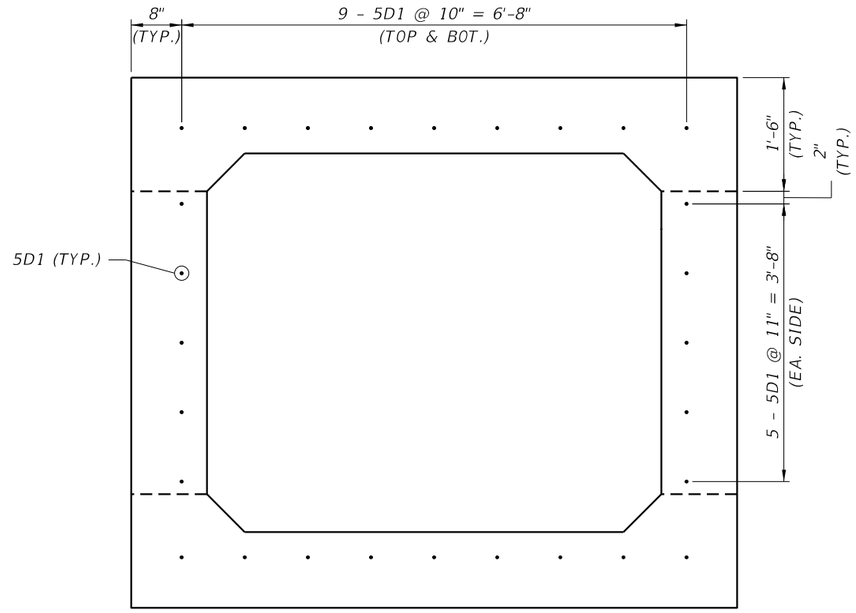
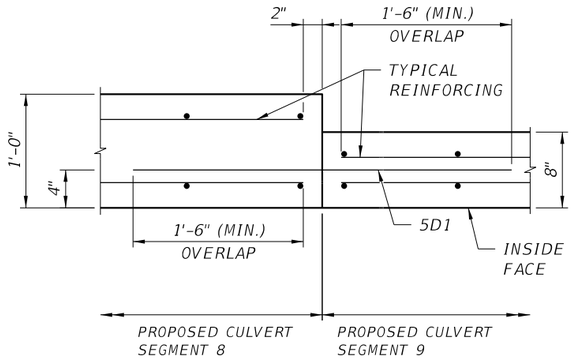


TYPICAL CULVERT SECTION

(PROVIDE CHAMFER TRANSITIONS IN ADJOINING SEGMENTS)



END CULVERT SECTION



CONNECTION DETAIL

(SEGMENT 9 SHOWN, SEGMENT 7 SIMILAR)

NOTES:

1. CONSTRUCTION OF THE BOX CULVERT EXTENSIONS SHALL MEET THE REQUIREMENTS OF FDOT STANDARD SPECIFICATION 400, THE 2020 AREMA MANUAL FOR RAILWAY ENGINEERS, AND CSX PUBLIC PROJECTS MANUAL, REVISED AUGUST 2020.
2. THE TRACK EMBANKMENTS SHALL BE SUPPORTED AGAINST LATERAL AND VERTICAL MOVEMENT THROUGHOUT CONSTRUCTION. A SHORING PLAN DESIGNED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA (SEALED CALCULATIONS, PHASING PLANS, DRAWINGS, AND ALL PERTINENT DETAILS) SHALL BE SUBMITTED AND APPROVED PRIOR TO CONSTRUCTION.
3. DOWEL BARS SHOWN ARE INCLUDED WITH SEGMENT 8 REINFORCING BAR LISTS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

BOX CULVERT DETAILS SEGMENT 8

SHEET NO.: BC-11

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GENERAL NOTES - TEMPORARY SOLDIER PILE WALLS:

GENERAL SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION FY2022/23 STANDARD PLANS AND JANUARY 2022 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND SUPPLEMENTS THERETO.

DESIGN SPECIFICATIONS:
AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), LRFD BRIDGE DESIGN SPECIFICATIONS, (9th EDITION).

FDOT STRUCTURES MANUAL DATED JANUARY 2021.

FDOT DESIGN MANUAL DATED JANUARY 2021.

WELDING DETAILS AND OPERATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE AWS D1.1 STRUCTURE WELDING CODE AND FDOT SPECIFICATION SECTION 460.

DESIGN METHOD:
LOAD AND RESISTANCE FACTOR DESIGN METHOD (LRFD) USING STRENGTH AND SERVICE.

TEMPORARY WALLS HAVE BEEN DESIGNED BASED ON THE RETAINED HEIGHT AS SHOWN IN THE PLANS AND WITH A 380 PSF LIVE LOAD SURCHARGE AT THE UPPER GROUND SURFACE WHEN TRAFFIC IS ADJACENT TO THE TOP OF THE WALL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE ADEQUACY OF THE WALL WITH RESPECT TO ANY OTHER LOADS RESULTING FROM THE CONTRACTOR'S CONSTRUCTION PROCEDURES, EQUIPMENT OR OPERATIONS. LIVE LOAD SURCHARGES IN EXCESS OF 380 PSF WILL REQUIRE A REVISED DESIGN SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.

WATER ELEVATIONS ARE ASSUMED AT THE BOTTOM OF EXCAVATION FOR THE DESIGN OF TEMPORARY WALLS. IF CONDITIONS ENCOUNTERED DURING CONSTRUCTION OPERATIONS SIGNIFICANTLY DIFFER FROM THOSE SHOWN, THE ENGINEER SHALL BE NOTIFIED AND WALL REDESIGN CONSIDERED.

WALL DEFLECTIONS WILL CAUSE DISTRESS OF ADJACENT PAVEMENT DURING CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN PAVEMENT CONDITIONS BEHIND THE WALLS AS LONG AS WALLS REMAIN IN USE.

SOLDIER PILE WALL TIP ELEVATIONS ARE COMPUTED BASED ON SERVICE LOAD FACTORS OF 1.0 AND RESISTANCE FACTORS OF 0.75 APPLIED TO PASSIVE SOIL PRESSURE. THE REQUIRED PILE EMBEDMENT IS THEN INCREASED BY 20% FOR CANTILEVER ONLY PER FDOT GUIDELINES.

THE CONTRACTOR MAY ELECT TO ABANDON THE TEMPORARY SOLDIER PILE WALL AS APPROVED BY THE OWNER. ANY REMAINING WALL COMPONENT SHALL THAN BE CUT OFF A MINIMUM OF 1 FOOT BELOW THE BOTTOM OF THE ROADWAY SUBBASE.

THE DESIGN OF THE TEMPORARY CRITICAL WALLS ASSUMES ACTIVE AND PASSIVE EARTH PRESSURES ARE ACTING ON THE WALL.

TIMBER LAGGING SHALL BE SELECT STRUCTURAL GRADE WITH MOISTURE CONTENT LESS THAN 19%. SELECT TIMBER LAGGING WITH 6 INCH MINIMUM THICKNESS AND Fb min = 1000 PSI

IF THE CONTRACTOR PLANS OPERATIONS WHICH EXCEED THE DESIGN PARAMETERS SHOWN, THE CONTRACTOR'S SPECIALTY ENGINEER WILL REDESIGN THE WALL TO RESIST CONSTRUCTION LOADS AT A MAXIMUM DEFLECTION FOR THE SOLDIER PILE OF 1½ INCHES WHEN SUPPORTING ROADWAY OR 3 INCHES WHEN NOT SUPPORTING ROADWAY.

CRITICAL TEMPORARY WALLS SHOWN IN THESE PLANS ARE PROVIDED ADJANCENT TO TRAFFIC. ADDITIONAL TEMPORARY WALLS ARE REQUIRED IN OTHER AREAS TO STAY WITHIN THE RIGHT-OF-LIMITS.

GENERAL NOTES - TEMPORARY SOLDIER PILE WALLS (CONT.):

STRUCTURAL STEEL FOR SOLDIER PILING SHALL BE A572, GRADE 50 (Fy = 50 KSI).

ALL WALL LENGTHS AND OFFSETS ARE TO THE FRONT FACE OF WALL, UNLESS NOTED OTHERWISE.

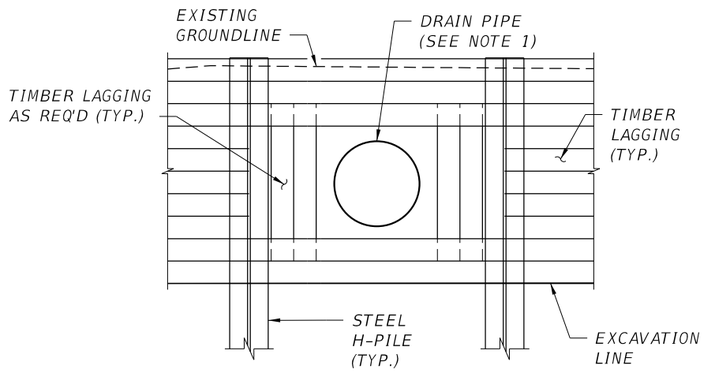
WORK PHASING AND PROGRESSION OF WORK SHALL CONFORM WITH THE TRAFFIC CONTROL PLANS.

THE CONTRACTOR MAY PROPOSE ALTERNATE EXCAVATION SUPPORT DETAILS OR SYSTEMS. SUCH ALTERNATES SHALL REQUIRE SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA AND SUBMITTED FOR APPROVAL PRIOR TO CONSTRUCTION.

FOR EXISTING AND PROPOSED UTILITY LOCATIONS, SEE ROADWAY AND UTILITY PLANS. THE CONTRACTOR SHALL FIELD LOCATE THE HORIZONTAL AND VERTICAL POSITIONS OF EXISTING PIPES, UTILITIES OR OTHER FEATURES WHICH ARE IN THE VICINITY OF OR ARE TO BE SPANNED BY THE TEMPORARY CRITICAL WALLS AS INDICATED ON THE TEMPORARY CRITICAL WALL PLAN AND ELEVATION SHEETS OR IN THE ROADWAY AND UTILITY PLANS. THE CONTRACTOR SHALL ADJUST THE TEMPORARY WALL LIMITS ACCORDINGLY PRIOR TO COMMENCING WITH CONSTRUCTION OF THE TEMPORARY CRITICAL WALLS.

SHOP DRAWINGS FOR TEMPORARY CRITICAL WALLS ARE NOT REQUIRED IF CONSTRUCTED AS PER THE DETAILS OF THIS PLAN SET. IF THE TEMPORARY WALLS ARE NOT CONSTRUCTED AS PER THE DETAILS OF THIS PLAN SET, THEN SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO CONSTRUCTION. SHOP DRAWINGS SHALL INCLUDE SHAPES AND SIZES OF MEMBERS USED ALONG WITH MATERIAL PROPERTIES.

CONTRACTOR MAY ELECT TO USE TRENCH BOX IN LIUE OF TEMPORARY CRITICAL WALL AND TEMPORARY WALLS. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL.



TIMBER LAGGING DETAIL

TIMBER LAGGING NOTES:

1. FOR DRAIN PIPE LOCATIONS AND DIAMETERS SEE DRAINAGE PLANS.
2. ADJUST LIMITS OF BOTTOM EXCAVATION BY A MAXIMUM OF 4" TO ALLOW PROPOSED PIPE INVERT ELEVATION TO BE ACHIEVED DURING CONSTRUCTION.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

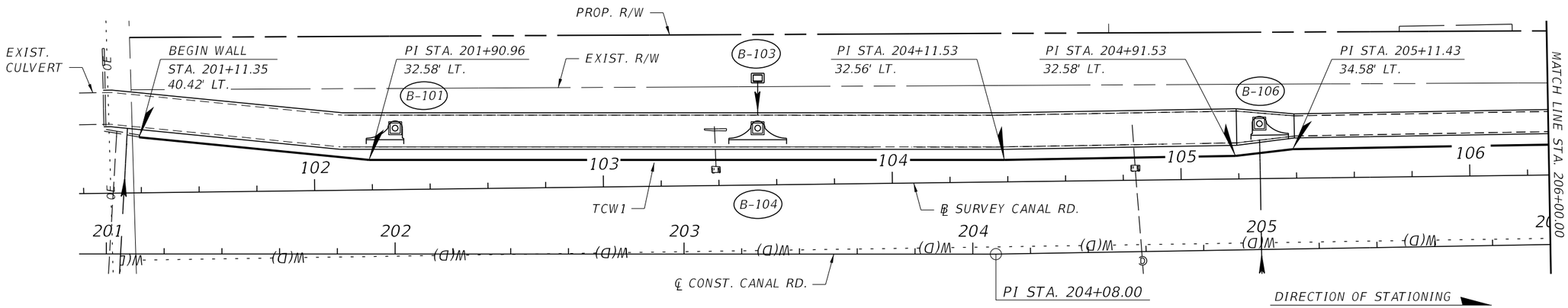
DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

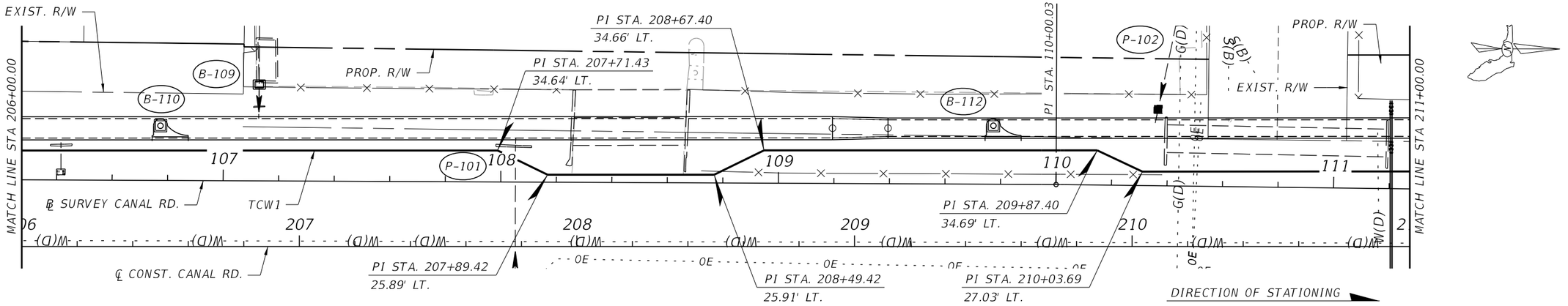
DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMP. SOLDIER PILE GENERAL NOTES

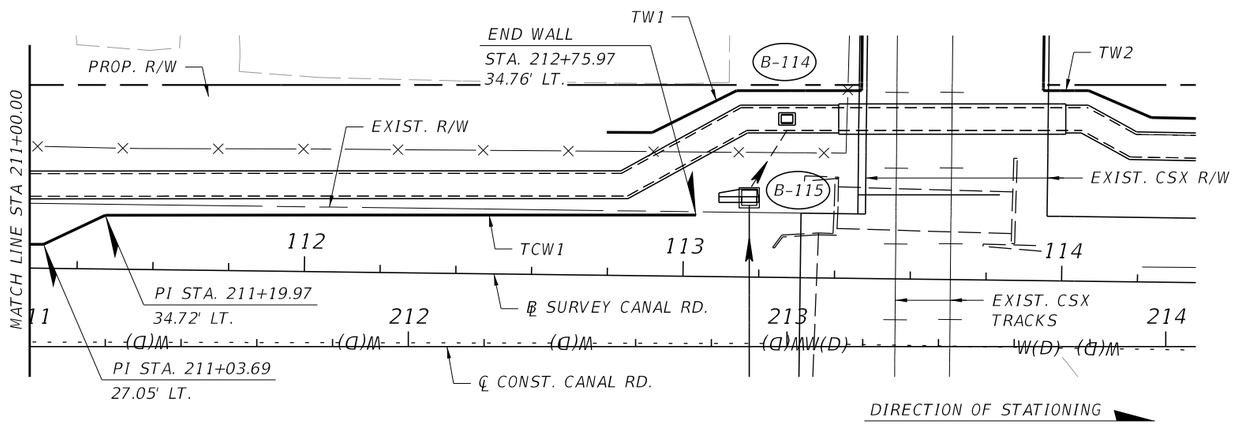
SHEET NO.: TW-1



PLAN



PLAN



PLAN

NOTES:

1. FOR WALL ELEVATIONS, SEE TEMPORARY CRITICAL WALL TCW1 (2 OF 6) THRU (6 OF 6) SHEETS.
2. FOR BORING LOCATIONS, SEE BOX CULVERT PLAN SHEETS.
3. FOR HORIZONTAL ALIGNMENT DATA, SEE ROADWAY PLANS.
4. FOR DRAINAGE DETAILS, SEE DRAINAGE PLANS.
5. FOR DISPOSITION OF UTILITIES, SEE UTILITY RELOCATION PLANS.

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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HDR Engineering, Inc.
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DATE: 12/2021
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Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMP. CRITICAL WALL TCW1 (1 OF 6)

SHEET NO.: TW-2

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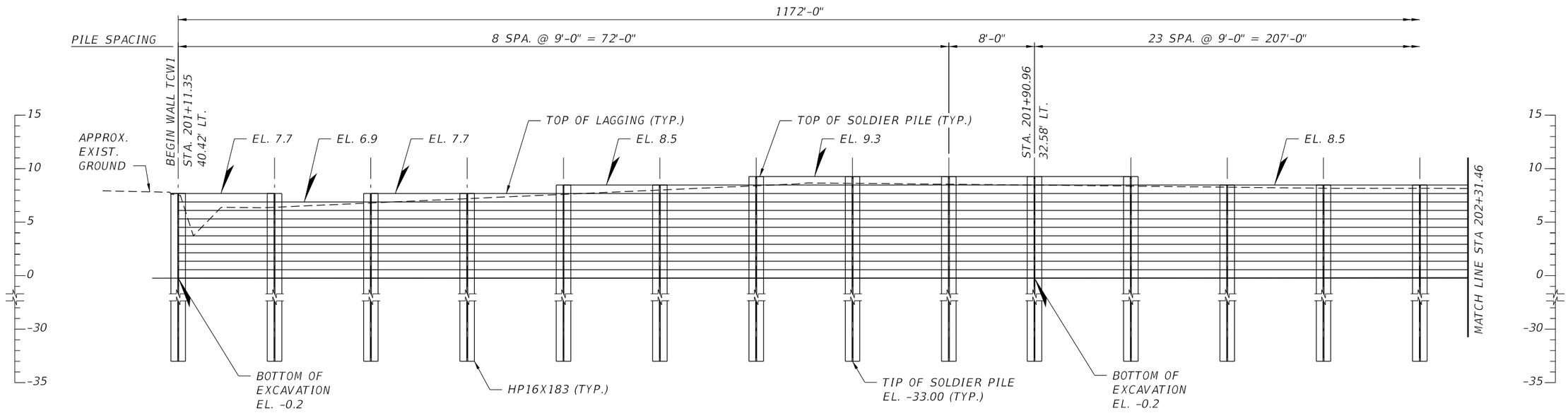
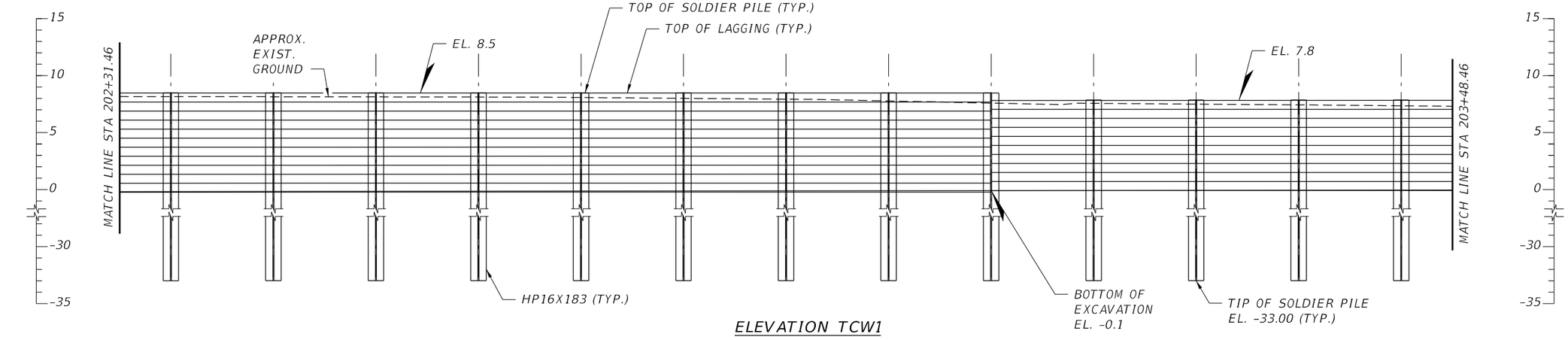


ELEVATION TCW1



ELEVATION TCW1

NOTE:

FOR NOTES, SEE TEMPORARY CRITICAL WALL TCW1 (1 OF 6) SHEET.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMP. CRITICAL WALL TCW1 (2 OF 6)

SHEET NO.: TW-3

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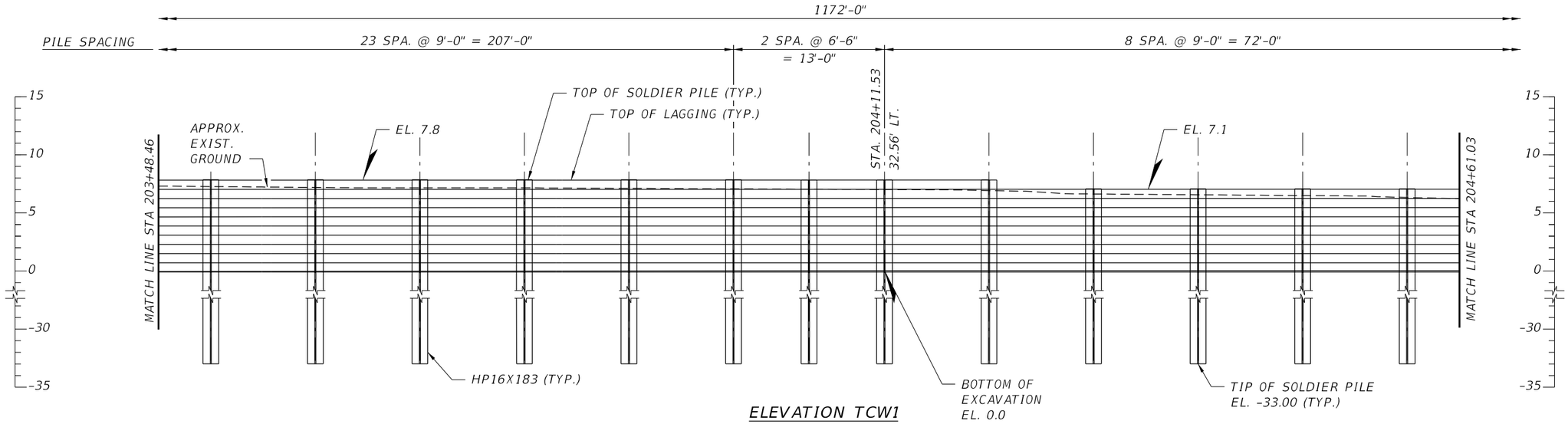
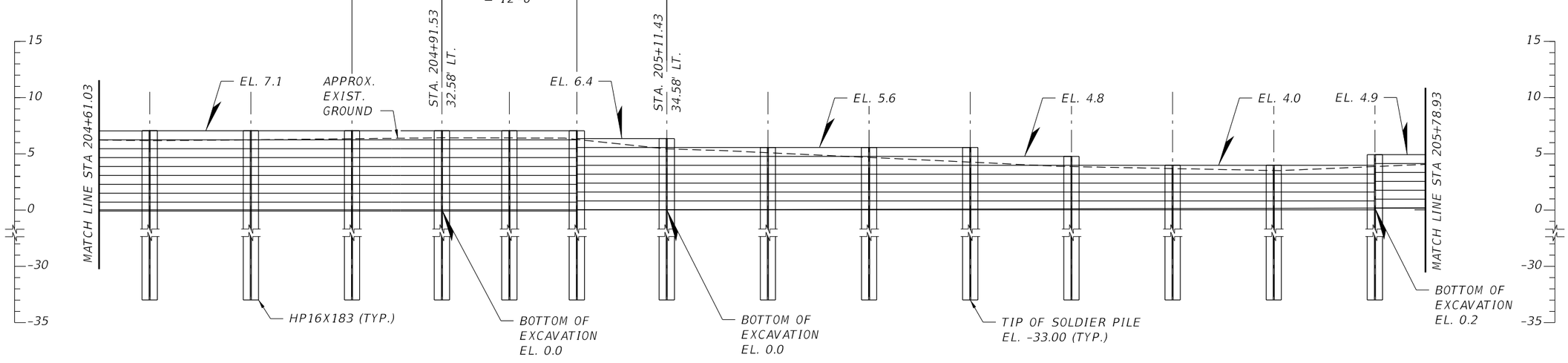


ELEVATION TCW1



ELEVATION TCW1

NOTE:

FOR NOTES, SEE TEMPORARY CRITICAL WALL TCW1 (1 OF 6) SHEET.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
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HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
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DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMP. CRITICAL WALL TCW1 (3 OF 6)

SHEET NO.: TW-4

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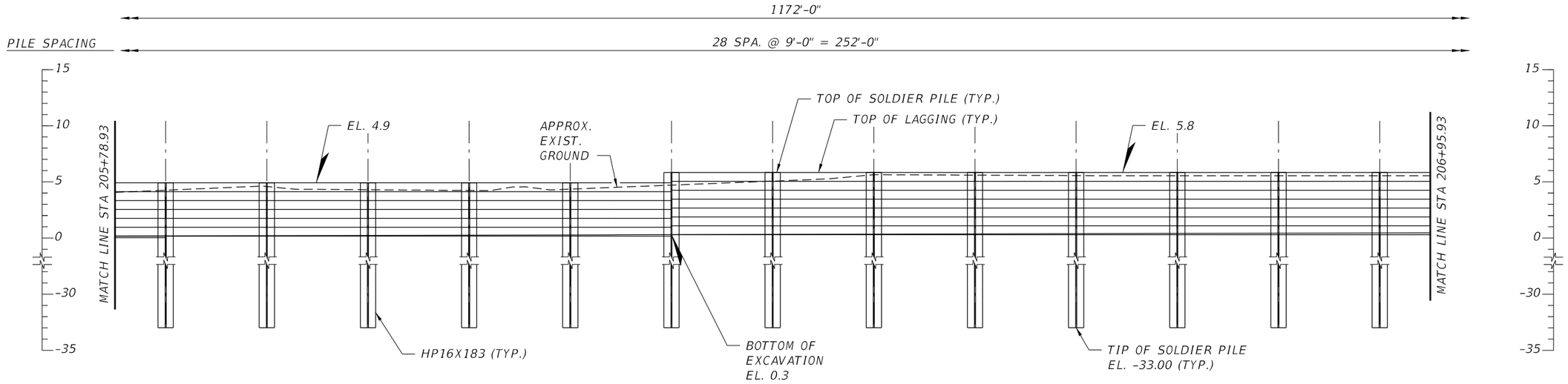
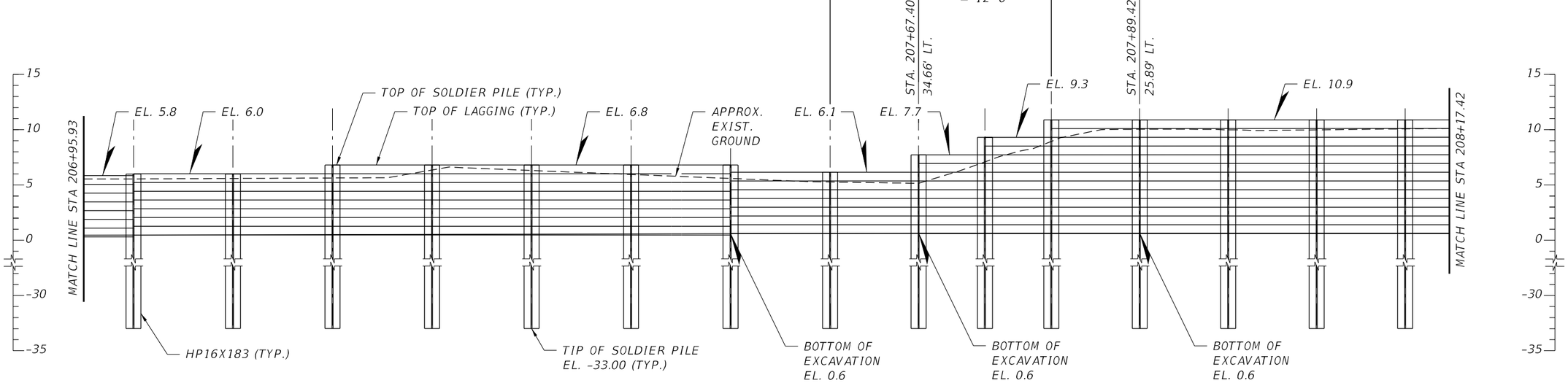


ELEVATION TCW1



ELEVATION TCW1

NOTE:

FOR NOTES, SEE TEMPORARY CRITICAL WALL TCW1 (1 OF 6) SHEET.

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
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DATE: 12/2021
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Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMP. CRITICAL WALL TCW1 (4 OF 6)

SHEET NO.: TW-5

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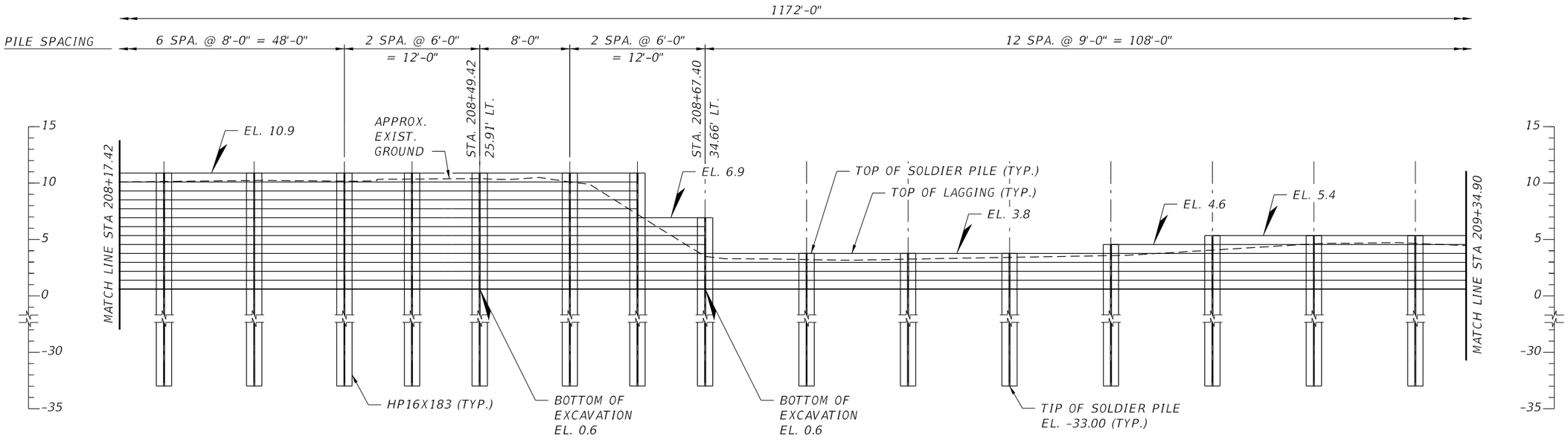
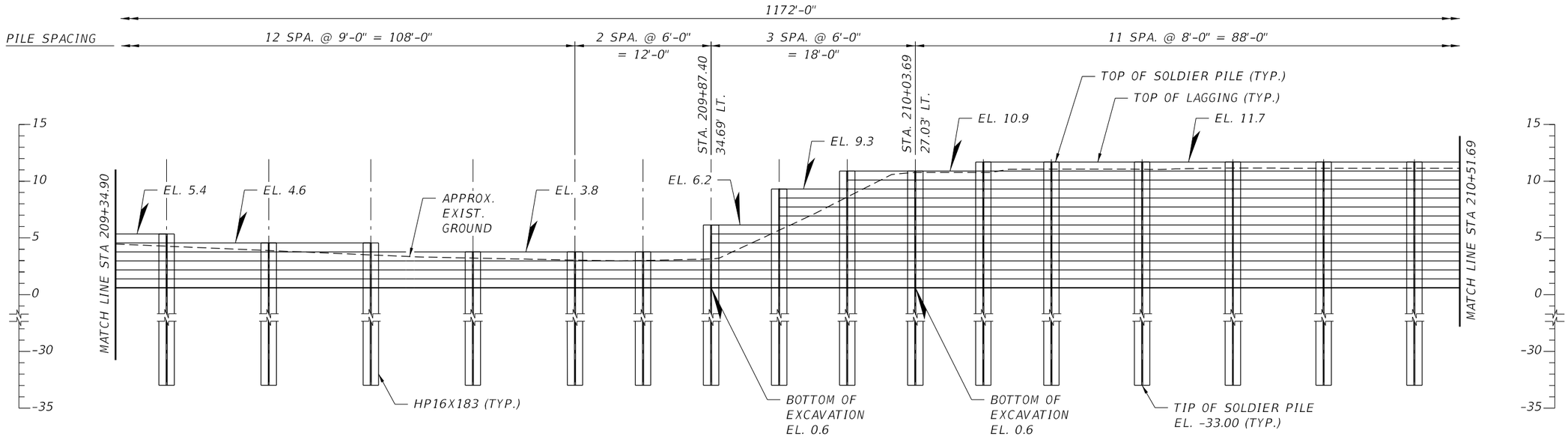


ELEVATION TCW1



ELEVATION TCW1

NOTE:

FOR NOTES, SEE TEMPORARY CRITICAL WALL TCW1 (1 OF 6) SHEET.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMP. CRITICAL WALL TCW1 (5 OF 6)

SHEET NO.: TW-6

3:43:42 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\struct\RetainingWall05.dgn

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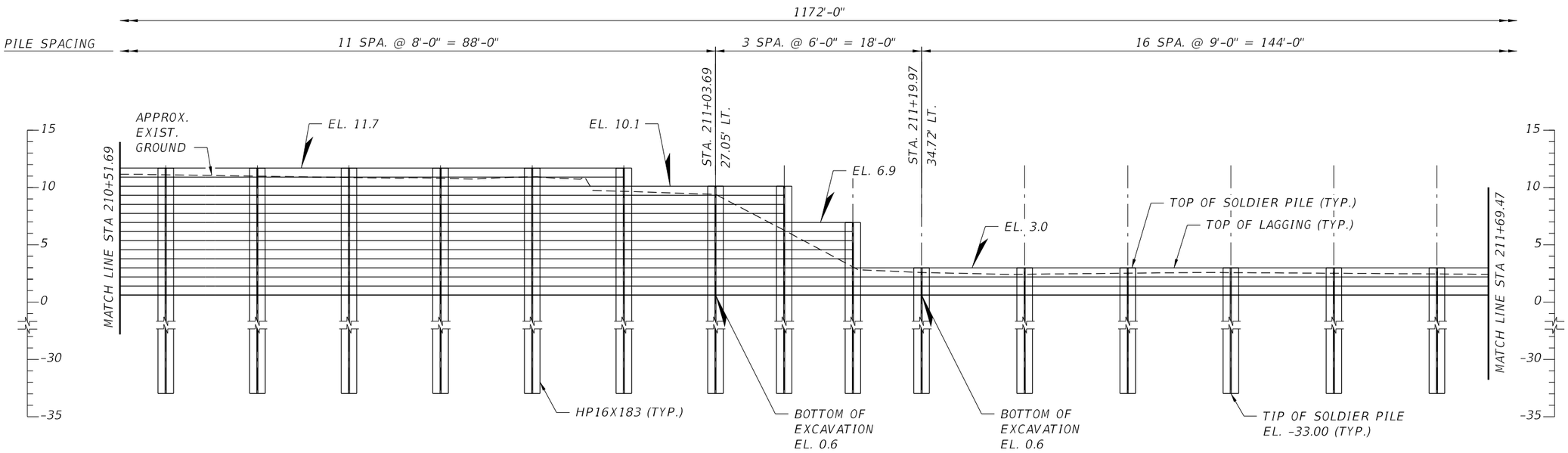
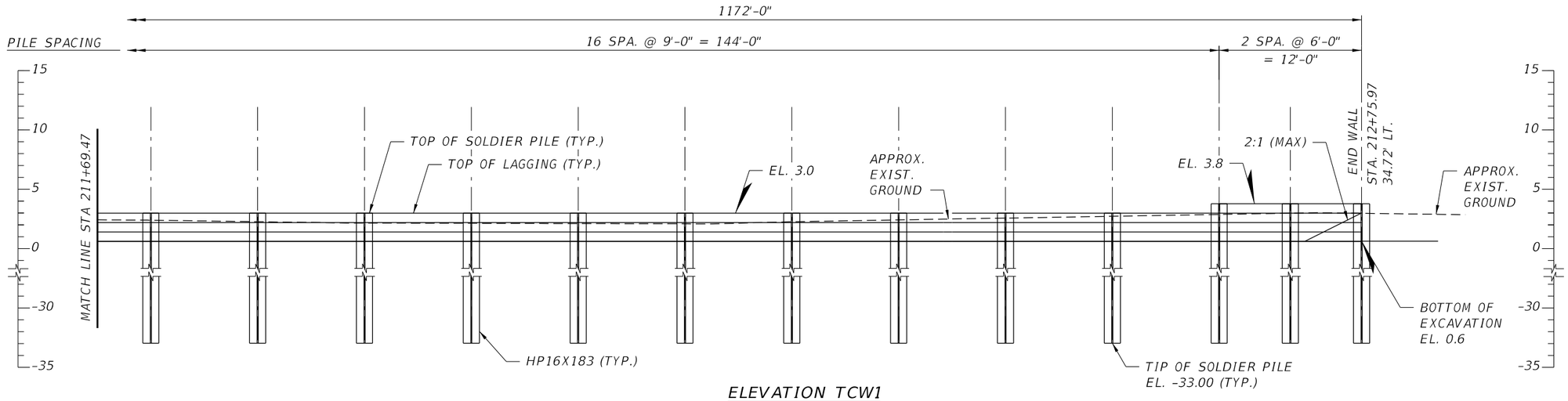


ELEVATION TCW1



ELEVATION TCW1

NOTE:

FOR NOTES, SEE TEMPORARY CRITICAL WALL TCW1 (1 OF 6) SHEET.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
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HDR Engineering, Inc.
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DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMP. CRITICAL WALL TCW1 (6 OF 6)

SHEET NO.: TW-7

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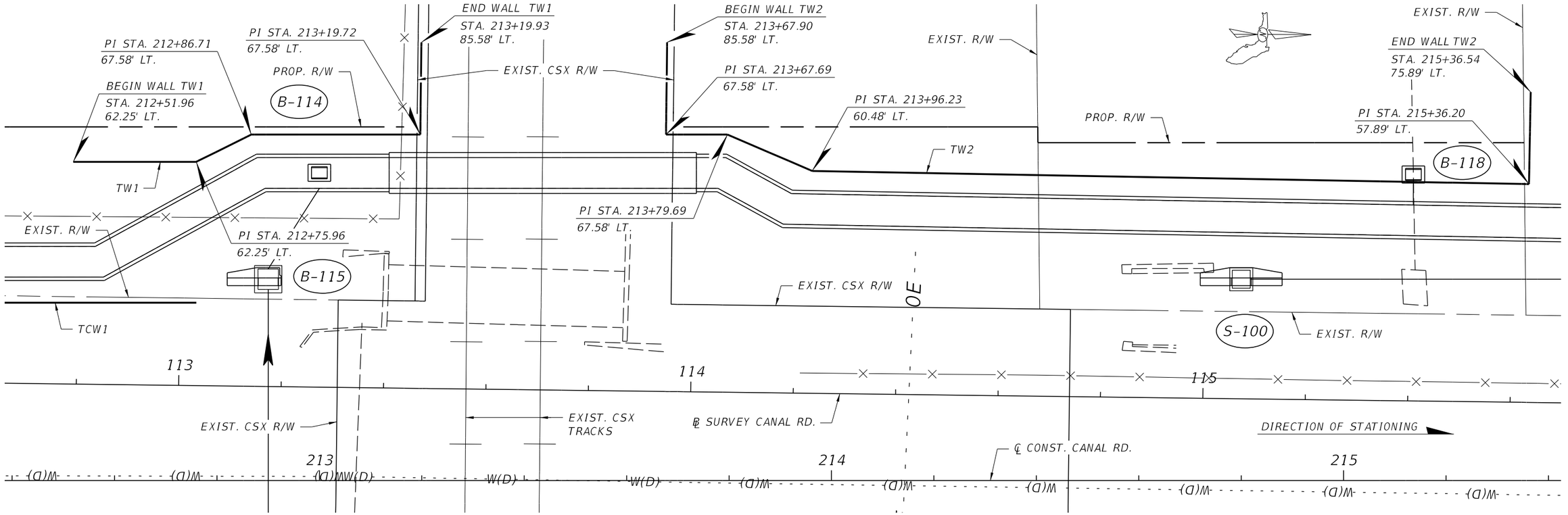
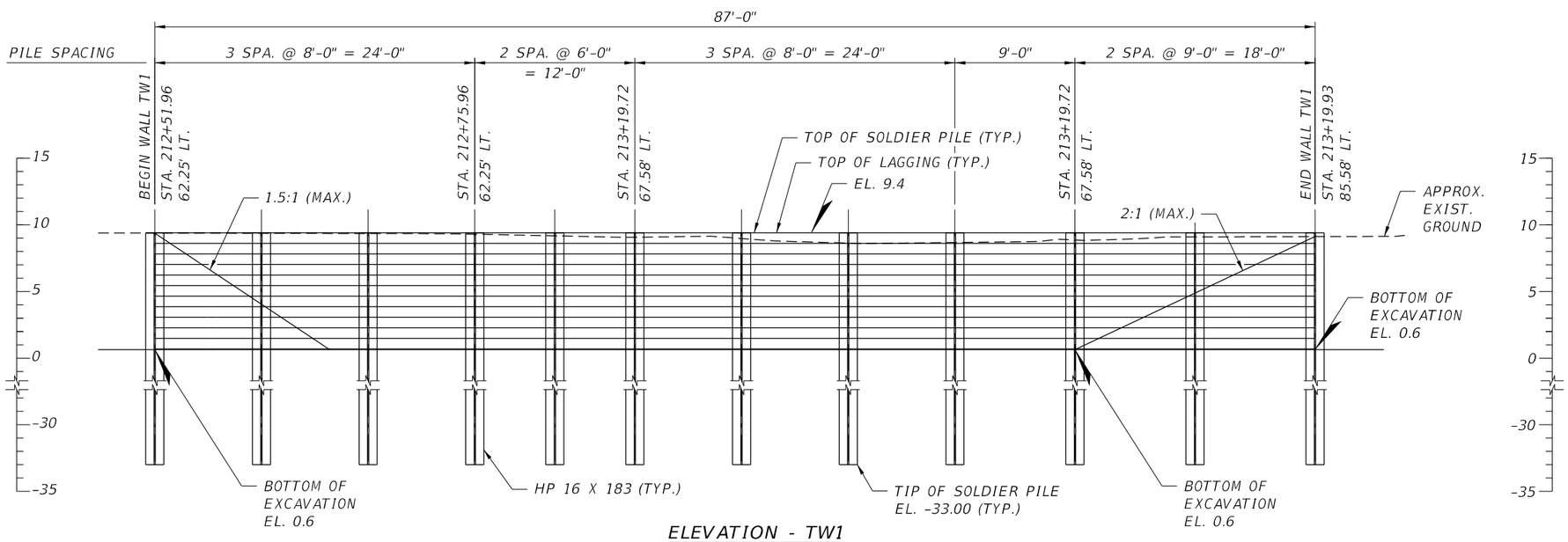


PLAN



ELEVATION - TW1

NOTES:

1. SEE ROADWAY PLANS FOR HORIZONTAL ALIGNMENT DATA.
2. FOR BORING LOCATIONS, SEE BOX CULVERT PLAN SHEETS.
3. SEE DRAINAGE PLANS FOR DRAINAGE DETAILS.
4. FOR DISPOSITION OF UTILITIES, SEE UTILITY RELOCATION PLANS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMPORARY WALLS TW1 & TW2 (1 OF 2)

SHEET NO.: TW-8

3:44:16 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\struct\RetainingWall07.dgn

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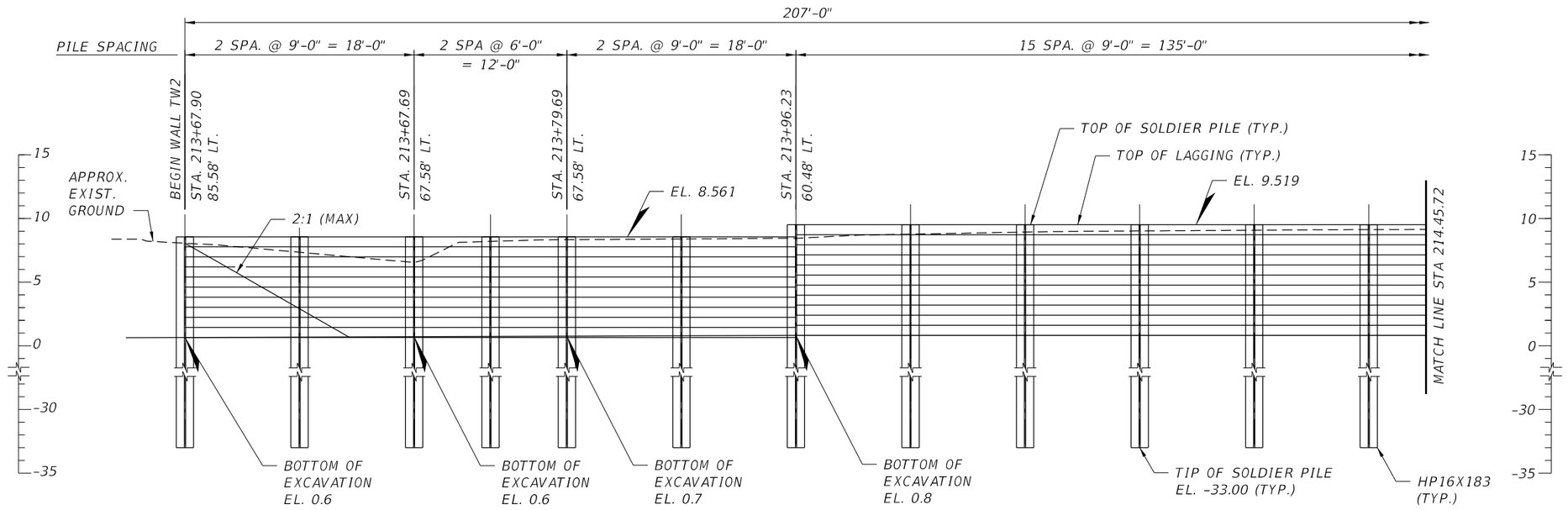
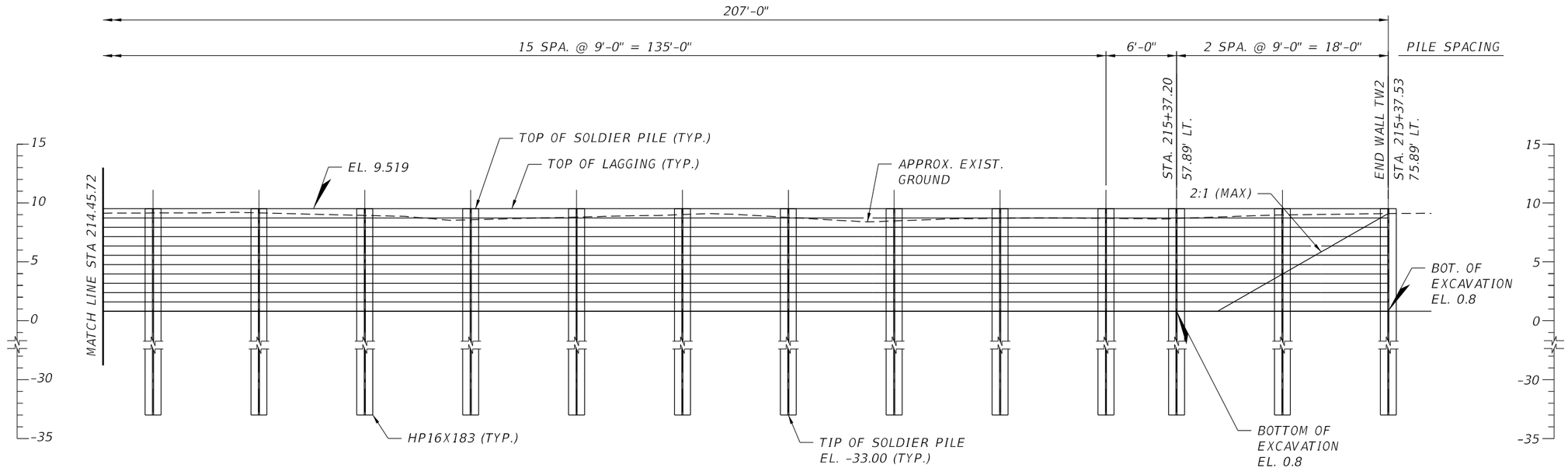


ELEVATION - TW2



ELEVATION - TW2

NOTE:

FOR NOTES, SEE TEMPORARY WALL3 TW1 & TW2 (1 OF 2) SHEET.

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

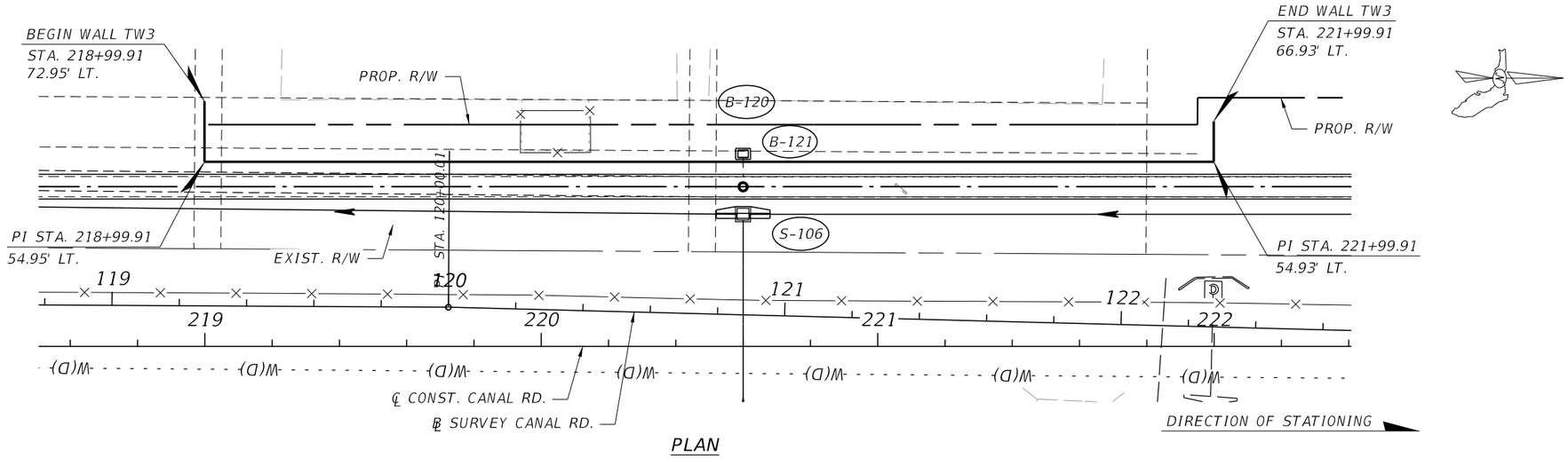
DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

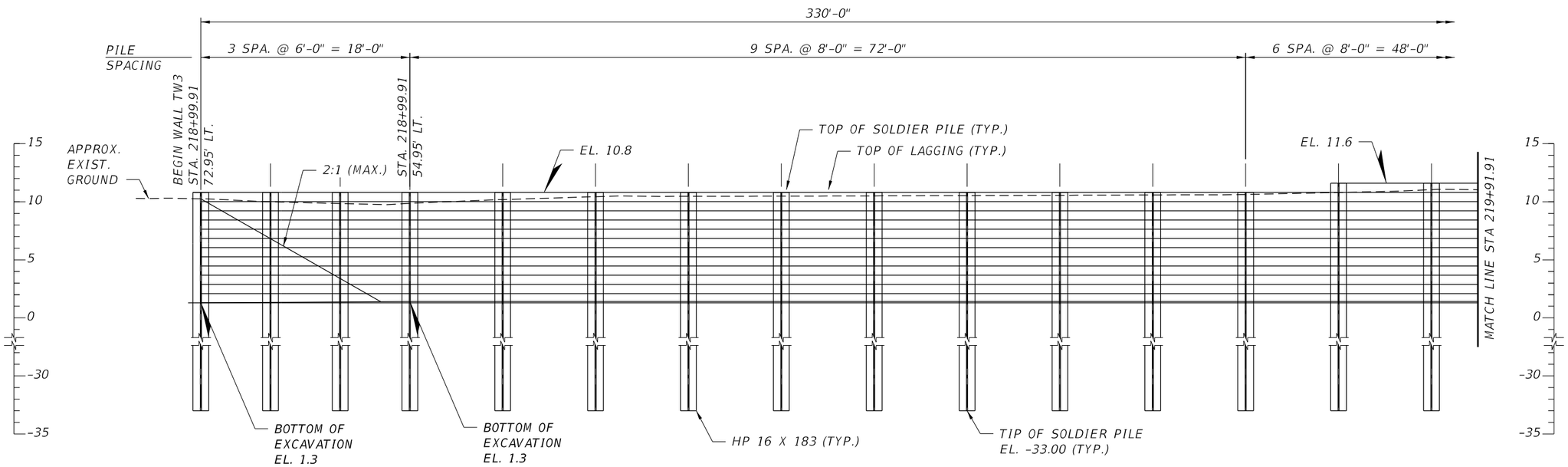
DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMPORARY WALLS TW1 & TW2 (2 OF 2)

SHEET NO.: TW-9



PLAN



ELEVATION - TW3

NOTES:

1. FOR WALL ELEVATIONS, SEE TEMPORARY WALL TW3 (2 OF 2) SHEET.
2. FOR BORING LOCATIONS, SEE BOX CULVERT PLAN SHEETS.
3. FOR HORIZONTAL ALIGNMENT DATA, SEE ROADWAY PLANS.
4. FOR DRAINAGE DETAILS, SEE DRAINAGE PLANS.
5. FOR DISPOSITION OF UTILITIES, SEE UTILITY RELOCATION PLANS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMPORARY WALL TW3 (1 OF 2)

SHEET NO.: TW-10

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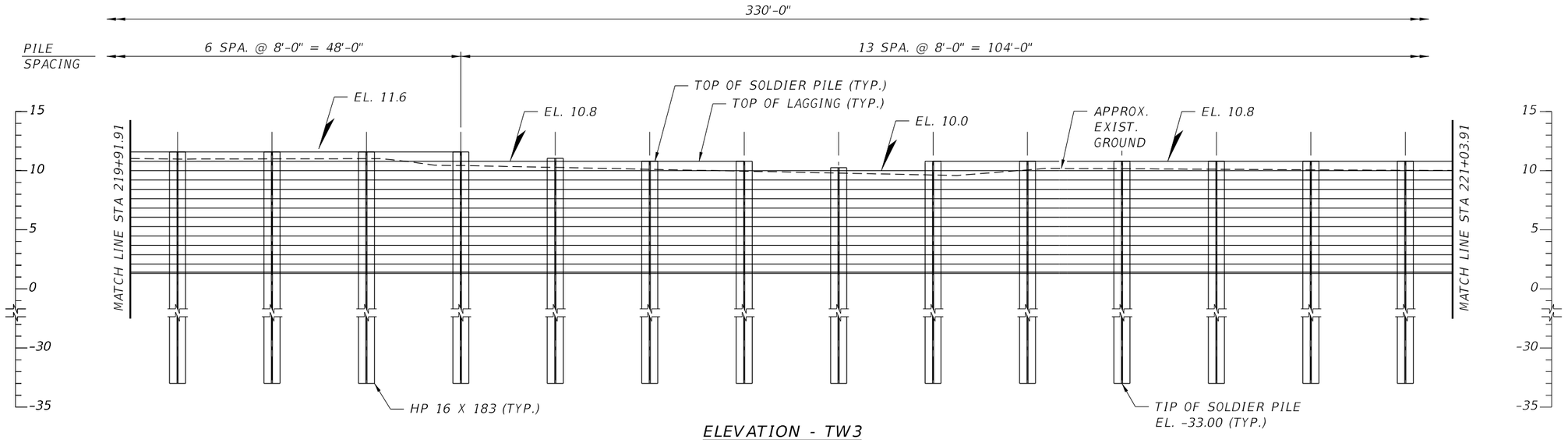
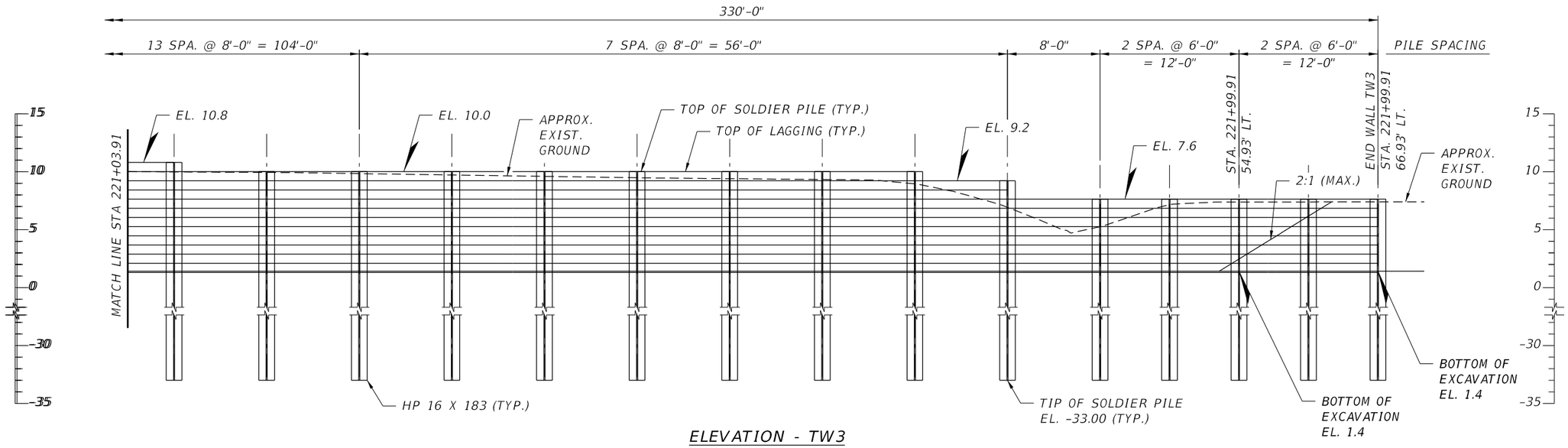


ELEVATION - TW3



ELEVATION - TW3

NOTE:

FOR NOTES, SEE TEMPORARY WALL TW3 (1 OF 2) SHEET.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMPORARY WALL TW3 (2 OF 2)

SHEET NO.: TW-11

3:45:12 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\struct\RetainingWall10.dgn

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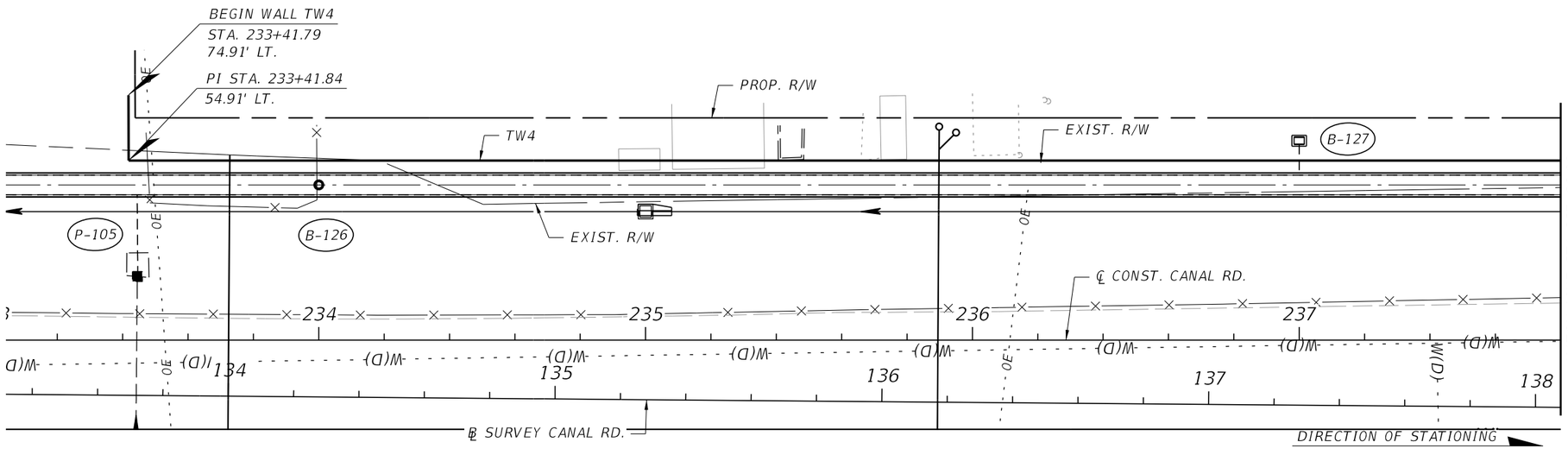
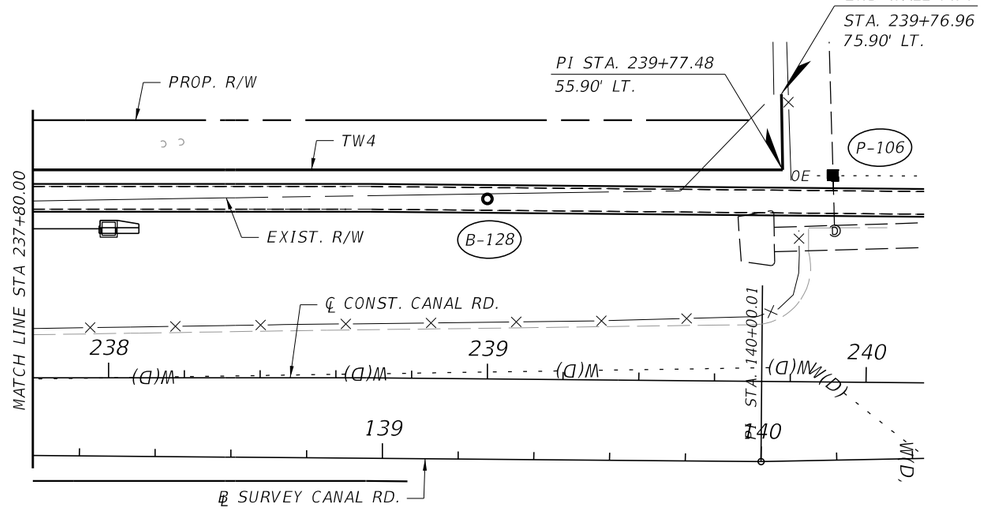


PLAN



PLAN

NOTES:

1. FOR WALL ELEVATIONS, SEE TEMPORARY WALL TW4 (2 OF 4) THRU (4 OF 4) SHEETS.
2. FOR BORING LOCATIONS, SEE BOX CULVERT PLAN SHEETS.
3. FOR HORIZONTAL ALIGNMENT DATA, SEE ROADWAY PLANS.
4. FOR DRAINAGE DETAILS, SEE DRAINAGE PLANS.
5. FOR DISPOSITION OF UTILITIES, SEE UTILITY RELOCATION PLANS.

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

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2601 Cattlemen Road
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Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMPORARY WALL TW4 (1 OF 4)

SHEET NO.: TW-12

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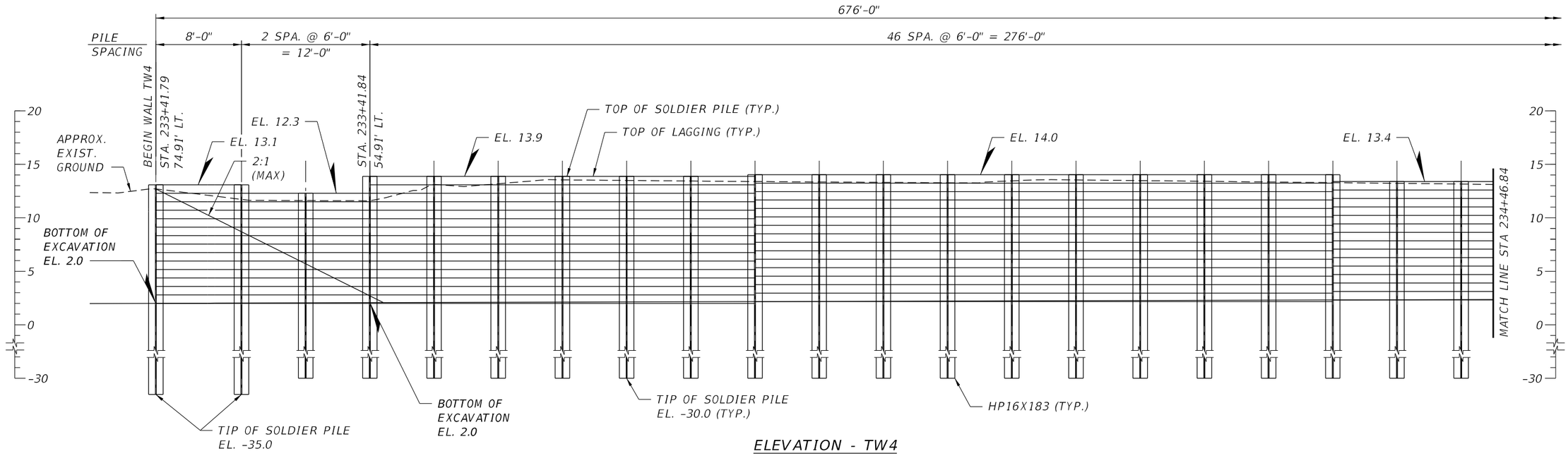
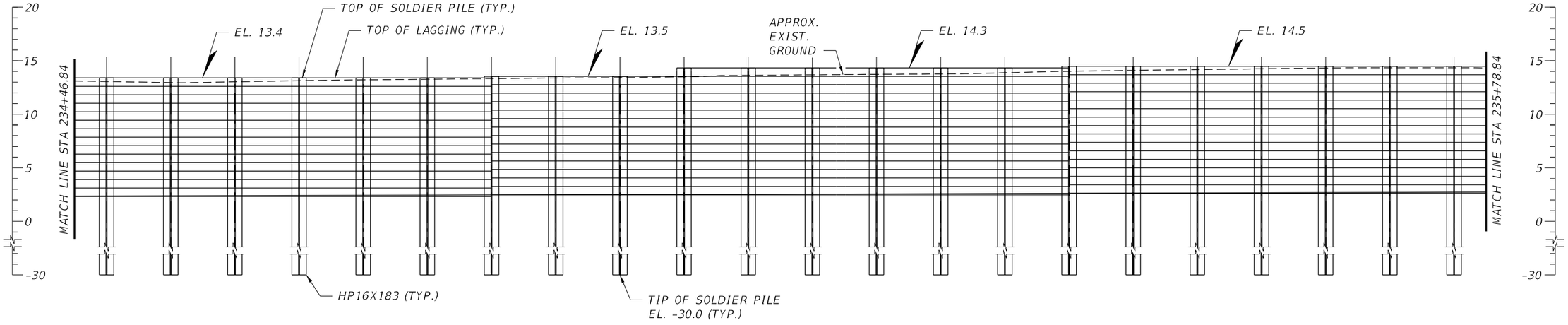


ELEVATION - TW4



ELEVATION - TW4

NOTE:

FOR NOTES, SEE TEMPORARY WALL TW4 (1 OF 4) SHEET.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

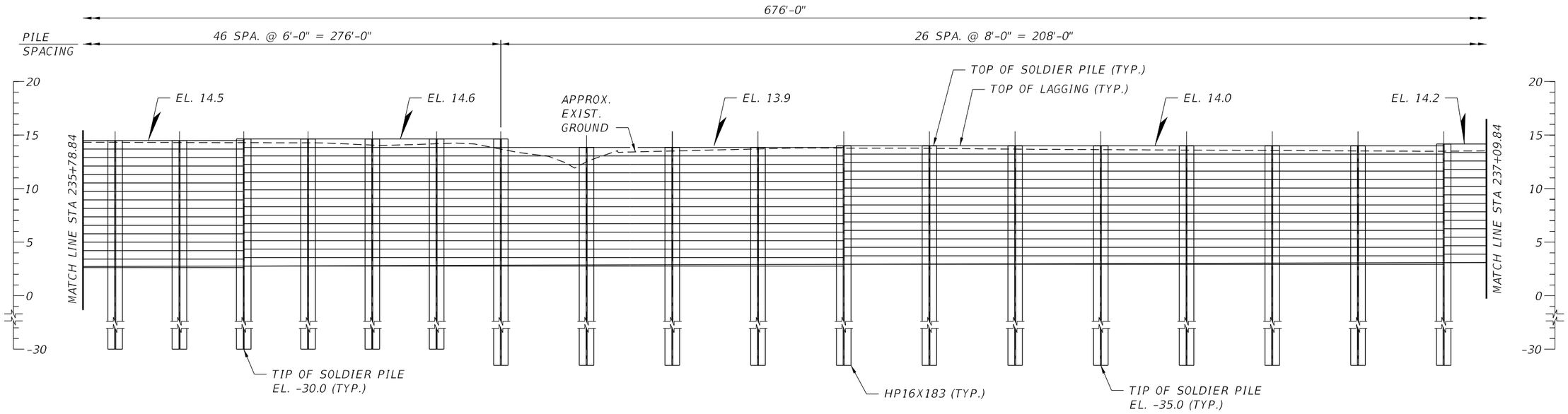
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

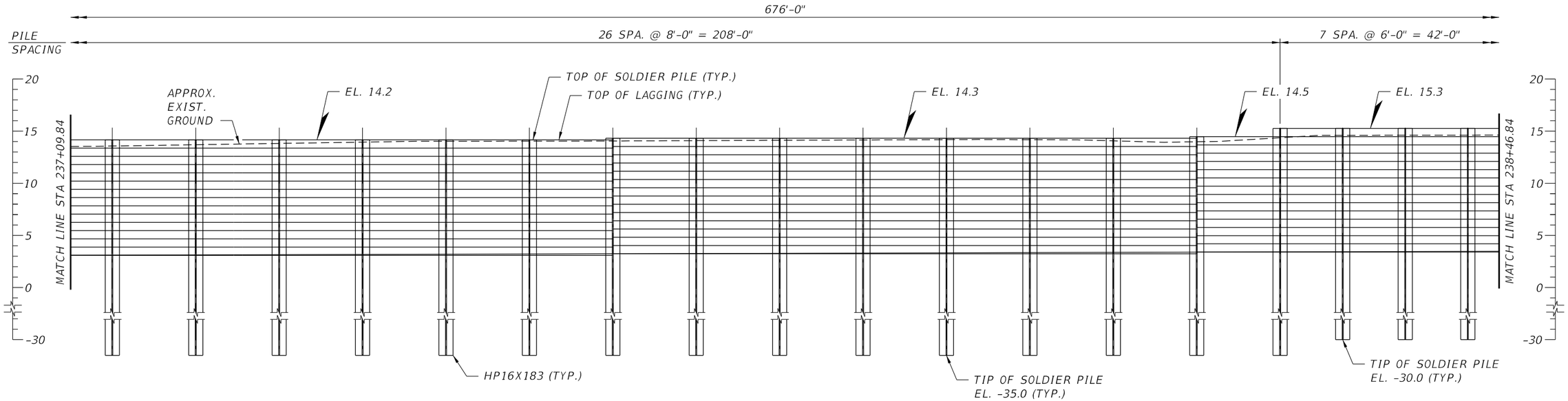
TEMPORARY WALL TW4 (2 OF 4)

SHEET NO.: TW-13

3:45:51 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\struct\RetainingWall15.dgn



ELEVATION - TW4



ELEVATION - TW4

NOTE:

FOR NOTES, SEE TEMPORARY WALL TW4 (1 OF 4) SHEET.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

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MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMPORARY WALL TW4 (3 OF 4)

SHEET NO.: TW-14

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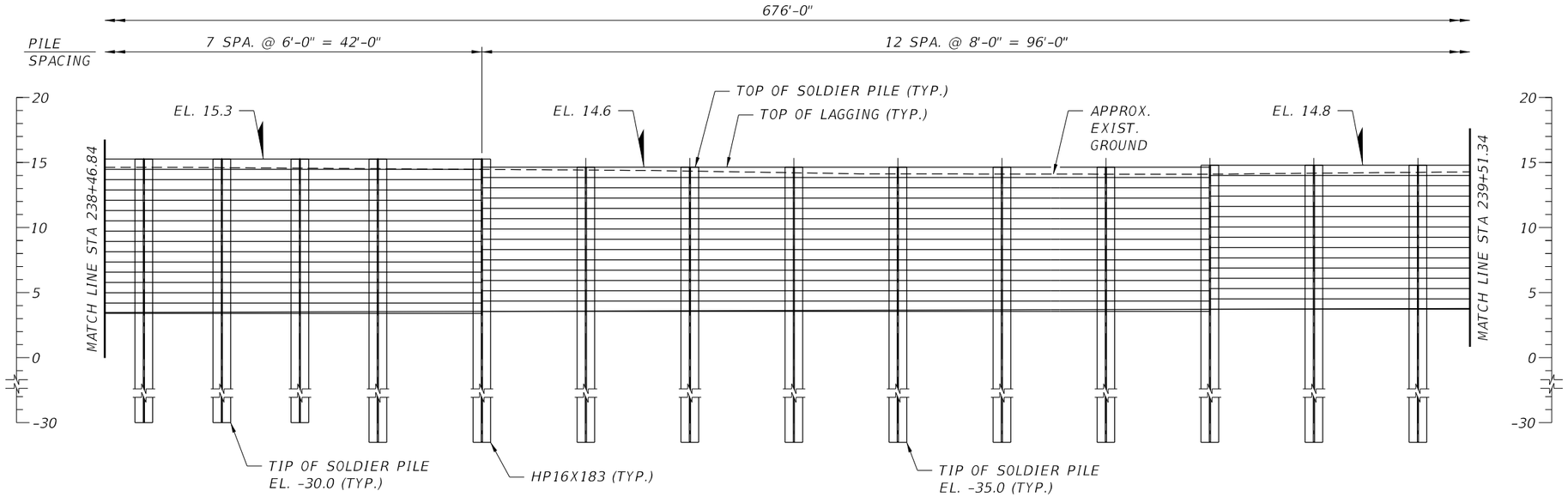
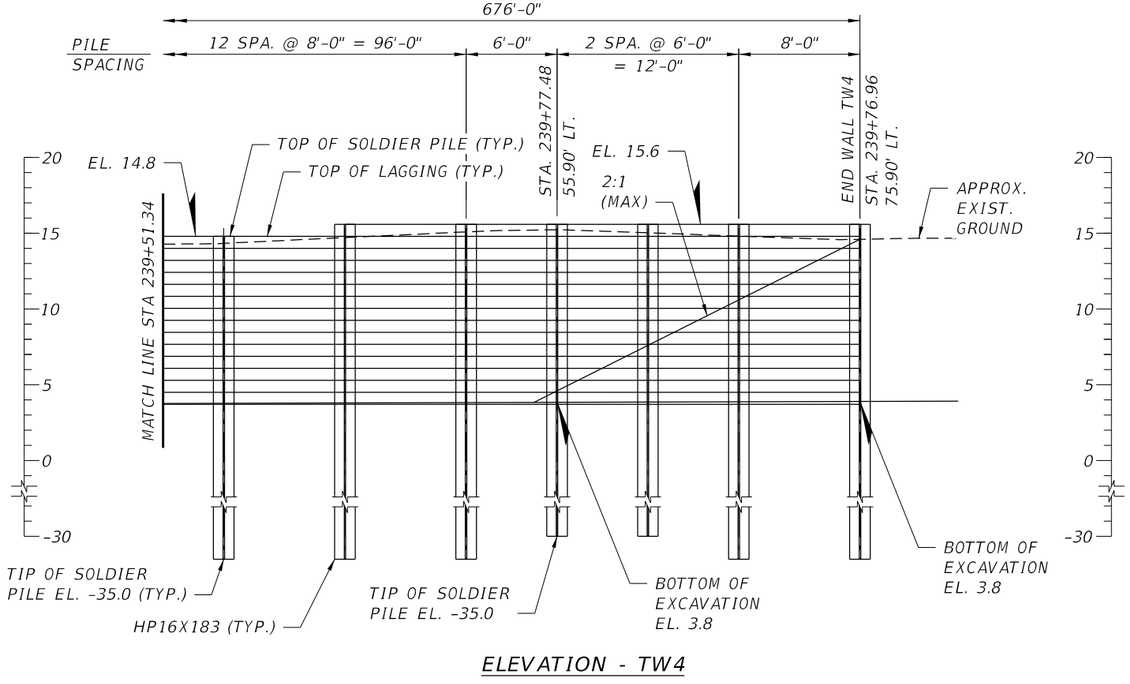


ELEVATION - TW4



ELEVATION - TW4

NOTE:

FOR NOTES, SEE TEMPORARY WALL TW4 (1 OF 4) SHEET.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

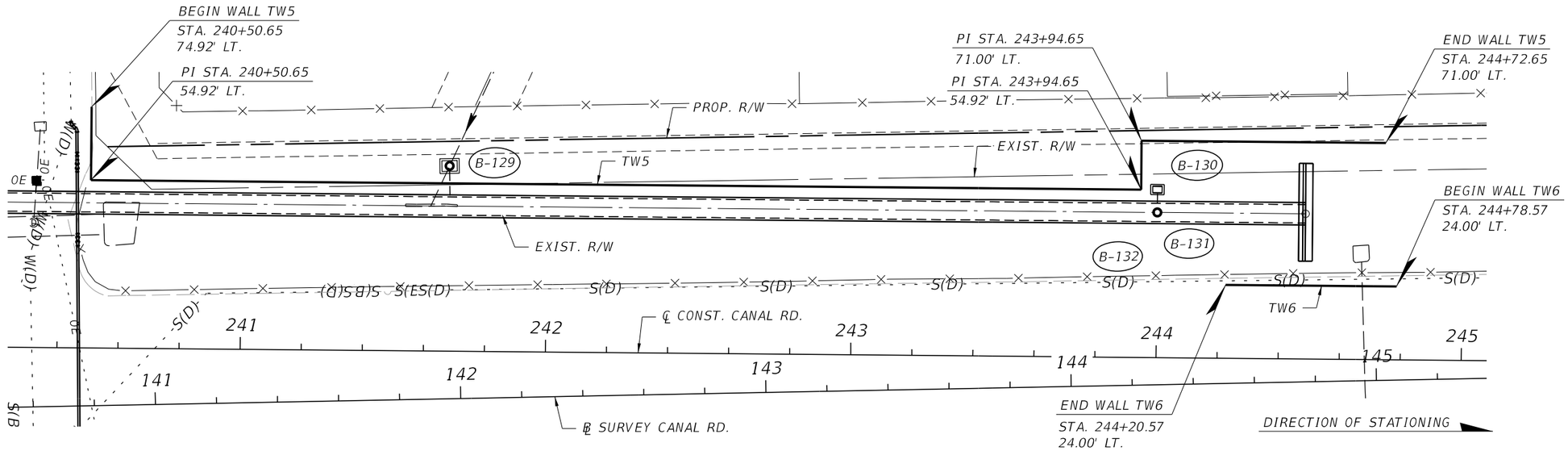
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

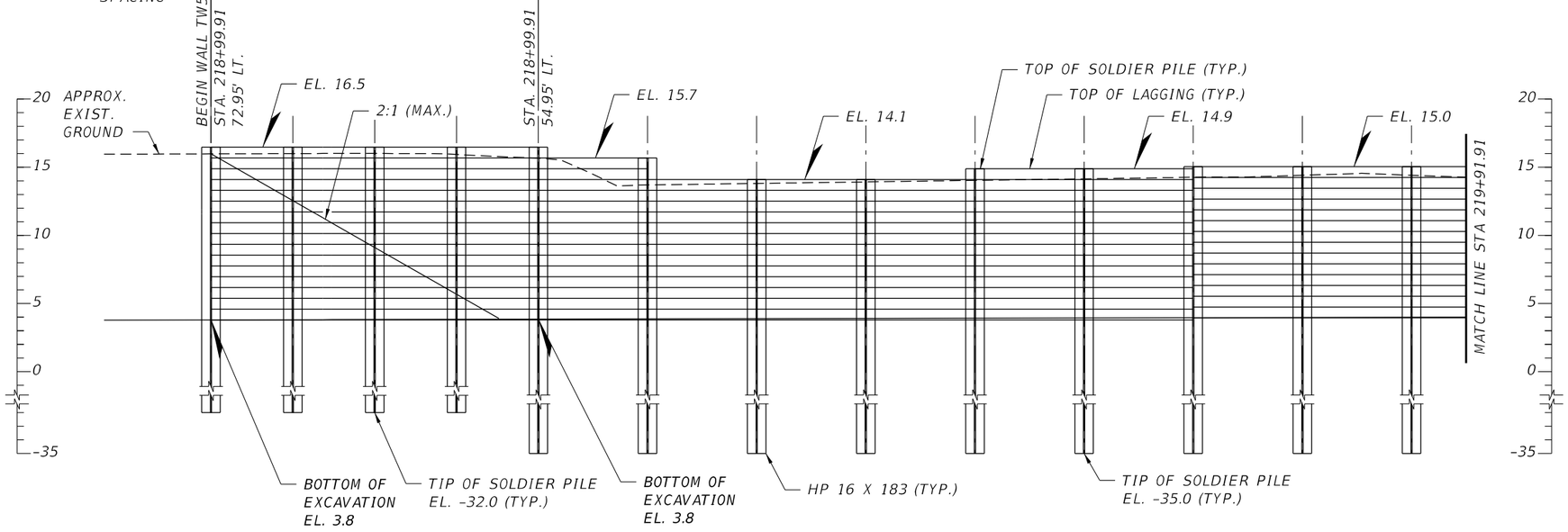
TEMPORARY WALL TW4 (4 OF 4)

SHEET NO.: TW-15

3:46:30 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\struct\RetainingWall17.dgn



PLAN



ELEVATION - TW5

NOTES:

1. FOR WALL ELEVATIONS, SEE TEMPORARY WALLS TW5 & TW6 (2 OF 3) AND (3 OF 3) SHEETS.
2. FOR BORING LOCATIONS, SEE BOX CULVERT PLAN SHEETS.
3. FOR HORIZONTAL ALIGNMENT DATA, SEE ROADWAY PLANS.
4. FOR DRAINAGE DETAILS, SEE DRAINAGE PLANS.
5. FOR DISPOSITION OF UTILITIES, SEE UTILITY RELOCATION PLANS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMPORARY WALLS TW5 & TW6 (1 OF 3)

SHEET NO.: TW-16

3:46:49 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\struct\RetainingWall18.dgn

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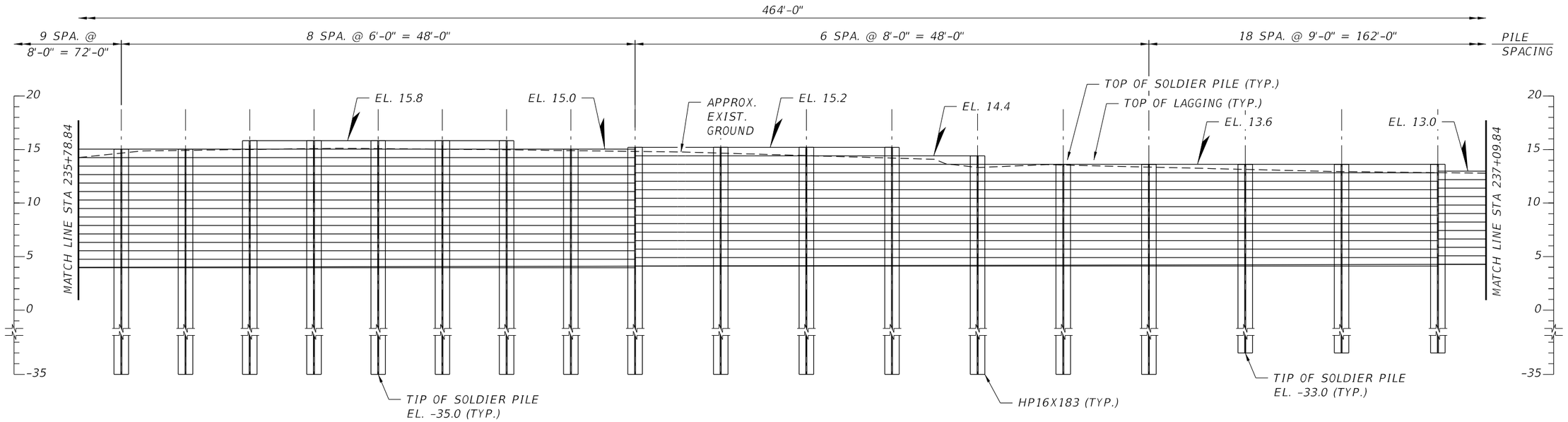
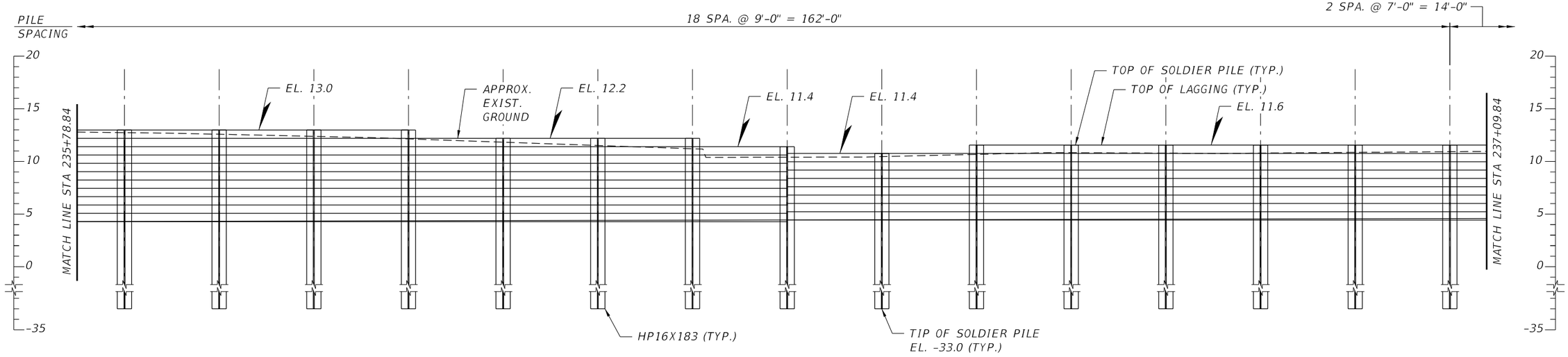


ELEVATION - TW5



ELEVATION - TW5

NOTE:

FOR NOTES, SEE TEMPORARY WALLS TW5 & TW6 (1 OF 3) SHEET.

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No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

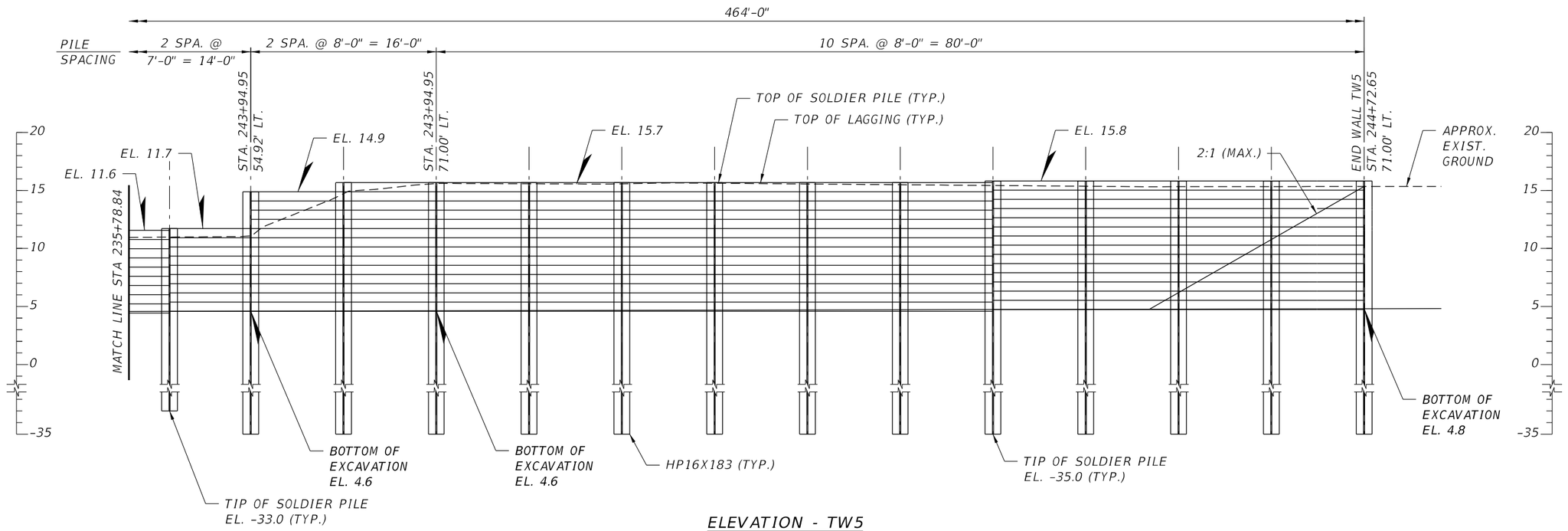
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

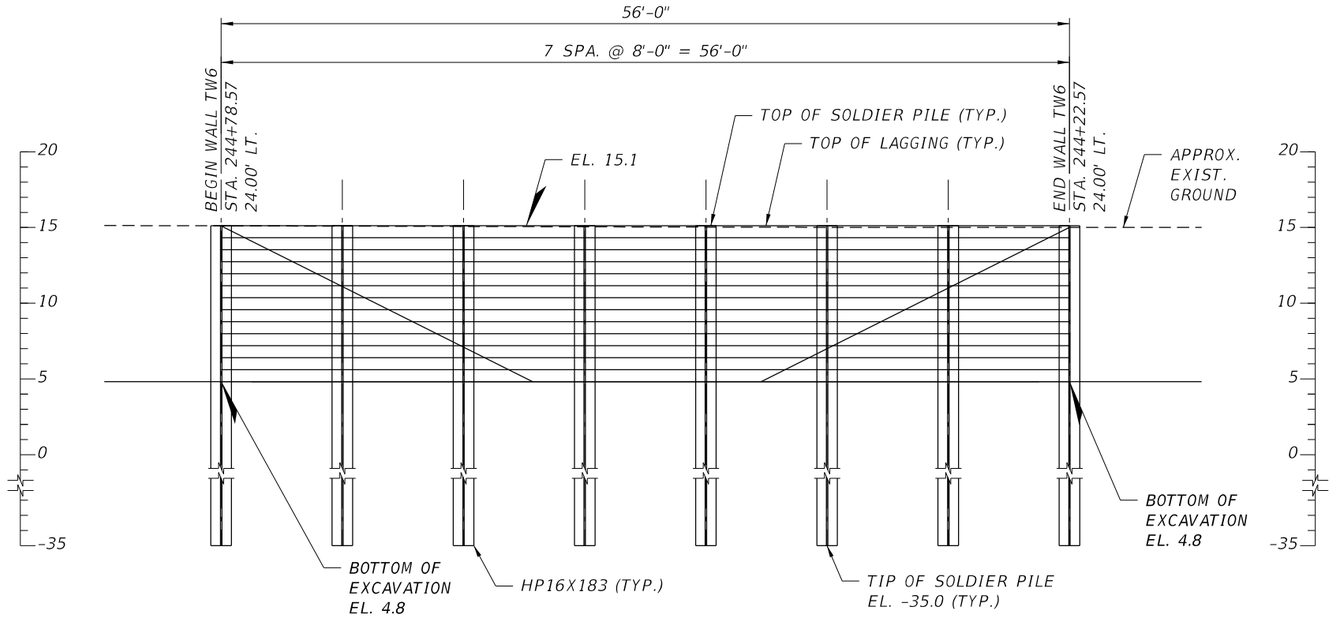
TEMPORARY WALLS TW5 & TW6 (2 OF 3)

SHEET NO.: TW-17

3:47:07 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\struct\RetainingWall19.dgn



ELEVATION - TW5



ELEVATION - TW6

NOTE:

FOR NOTES, SEE TEMPORARY WALLS TW5 & TW6 (1 OF 3) SHEET.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: RT
DRAWN BY: DRA
CHECKED BY: SK

HDR Engineering, Inc.
2601 Cattlemen Road
Suite 400
Sarasota, FL 34232-6233

DATE: 12/2021
PROJECT NO.: 6094360

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

TEMPORARY WALLS TW5 & TW6 (3 OF 3)

SHEET NO.: TW-18

3:47:24 PM 12/11/2021 PW:\3658\10001573\10131245\6.0_CAD_BIM\6.2_WIP\12345615201\struct\RetainingWall20.dgn