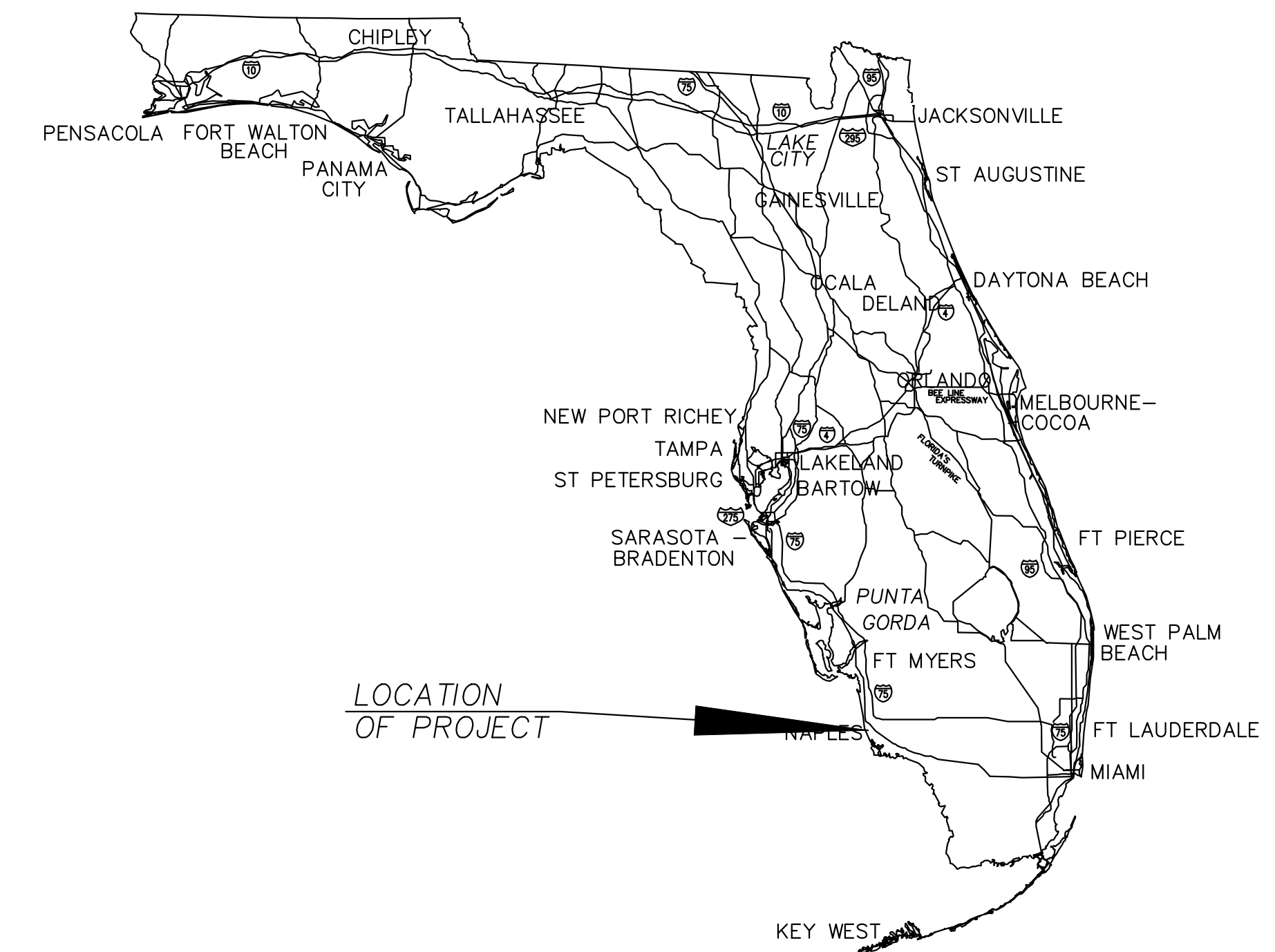


COLLIER COUNTY CRA BAYSHORE AREA 1 STORMWATER IMPROVEMENTS

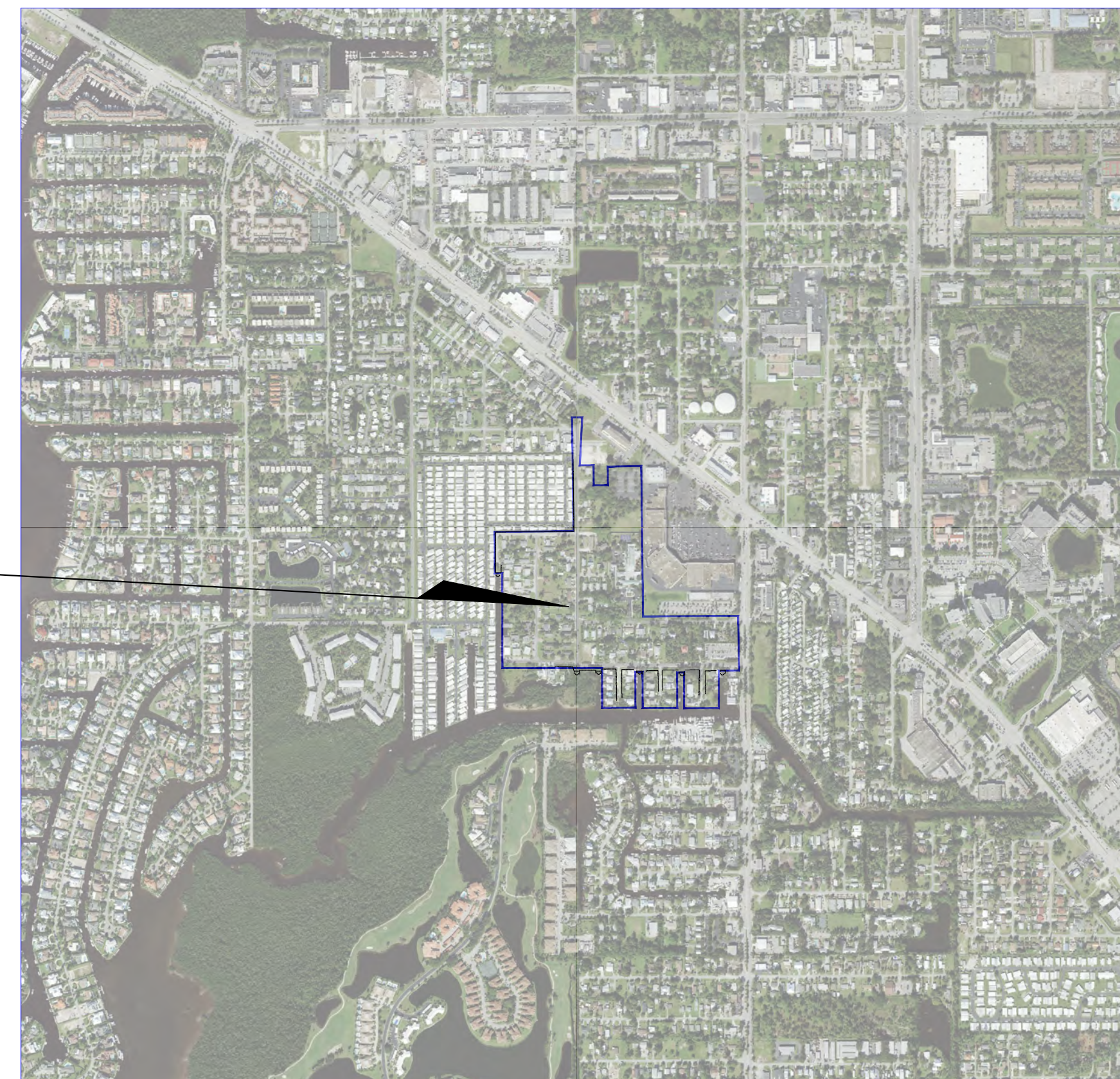
COLLIER COUNTY, FLORIDA

INDEX OF PLANS

SHEET NO.	SHEET DESCRIPTION
101	KEY SHEET
102	AERIAL
103	GENERAL NOTES
104	KEY MAP
105-108	PINE STREET PLAN & PROFILE
109-110	MANGROVE STREET PLAN & PROFILE
111-112	ARBUTUS STREET PLAN & PROFILE
113	PINE STREET PLAN & PROFILE
114-116	WEEKS AVENUE PLAN & PROFILE
117-120	BECCA AVENUE PLAN & PROFILE
121	POPLAR STREET PLAN & PROFILE
122	ORANGE STREET PLAN & PROFILE
123	CYPRESS STREET PLAN & PROFILE
124	TYPICAL SECTION WEEKS
125-126	WEEKS ROADWAY IMPROVEMENTS
127-132	DETAILS
133	WATERWAY OUTFALL DETAILS
134-138	PINE STREET SECTIONS
139-140	MANGROVE STREET SECTIONS
141-142	ARBUTUS STREET SECTIONS
143-145	WEEKS STREET SECTIONS
146-149	BECCA AVENUE SECTIONS
150	POPLAR STREET SECTIONS
151	ORANGE STREET SECTIONS
152	CYPRESS STREET SECTIONS
153	PINE STREET SECTIONS
154	EROSION & SEDIMENTATION CONTROL PLAN



Project Location



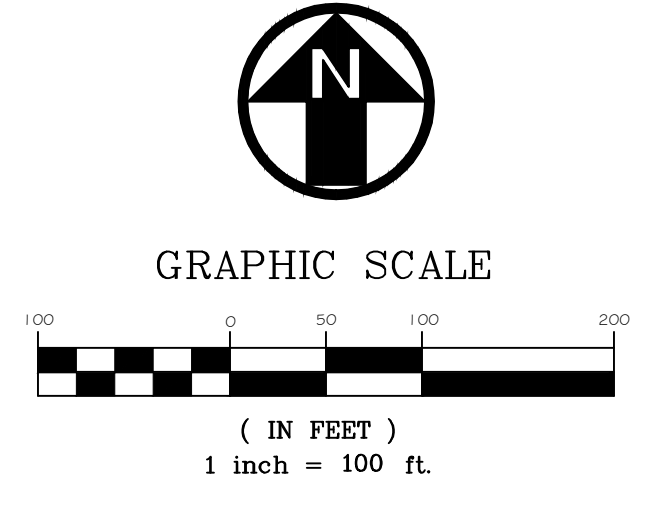
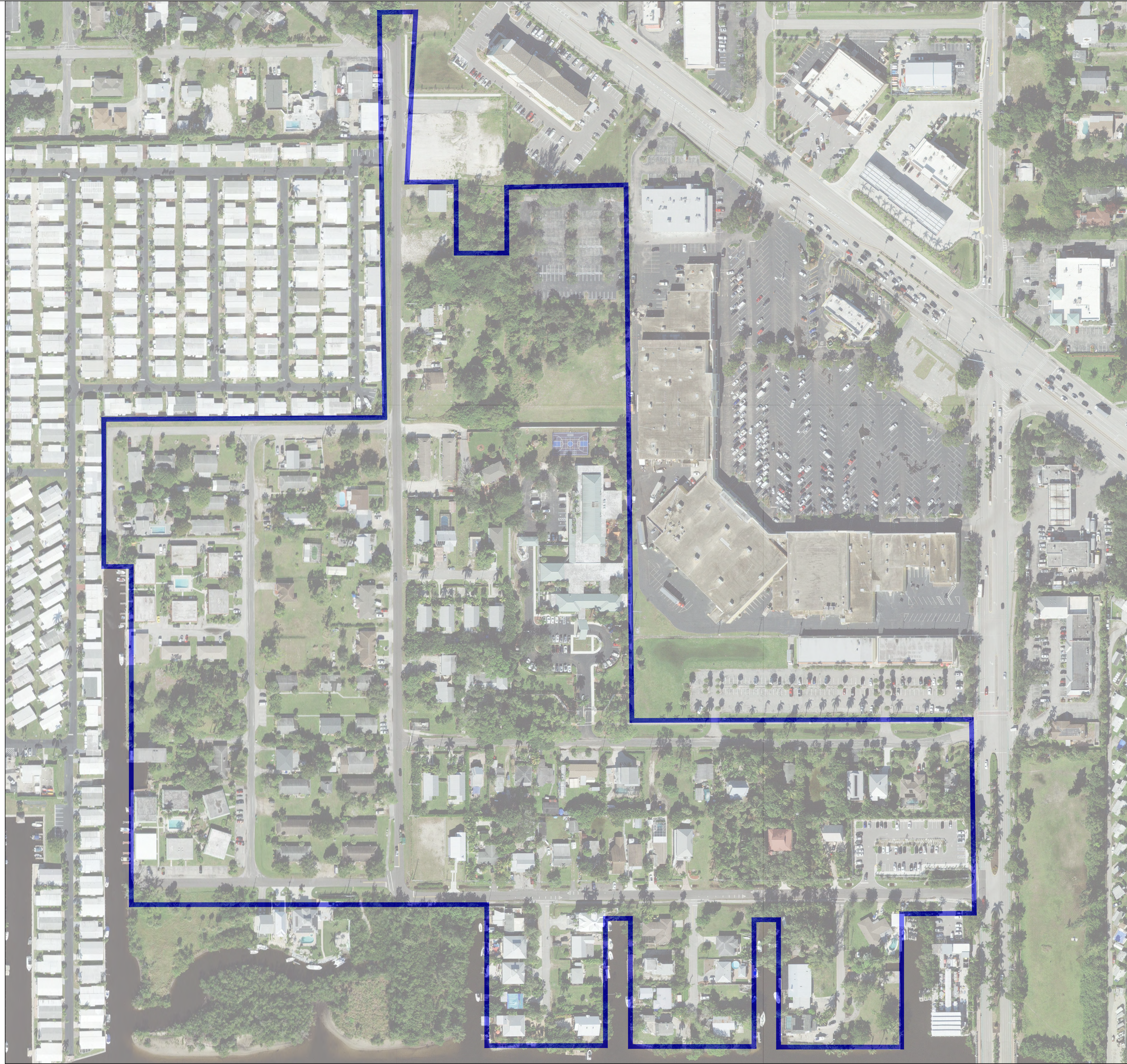
REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

**COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS**

KEY SHEET

Blot Engineering, Inc
 Structural - Civil - Consulting
 Edward M. Blot
 Professional Engineer
 FL No. 72816
 Florida State
 Certificate of Authority #29553

2804 E Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com



BLOT ENGINEERING, INC EXPRESSLY RESERVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS MAY NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLOT ENGINEERING, INC © 2022

REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS

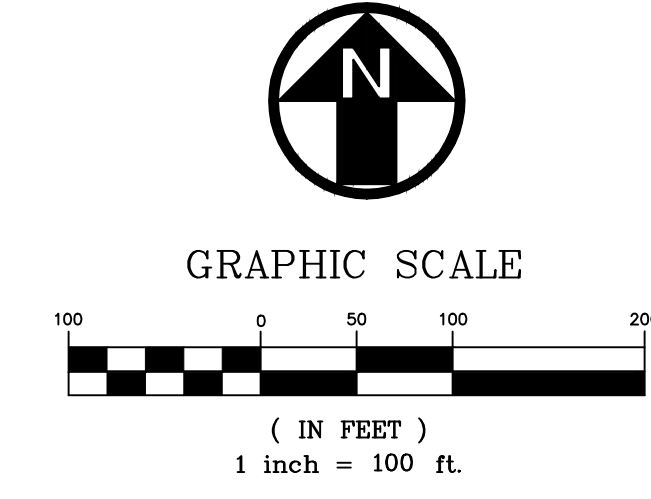
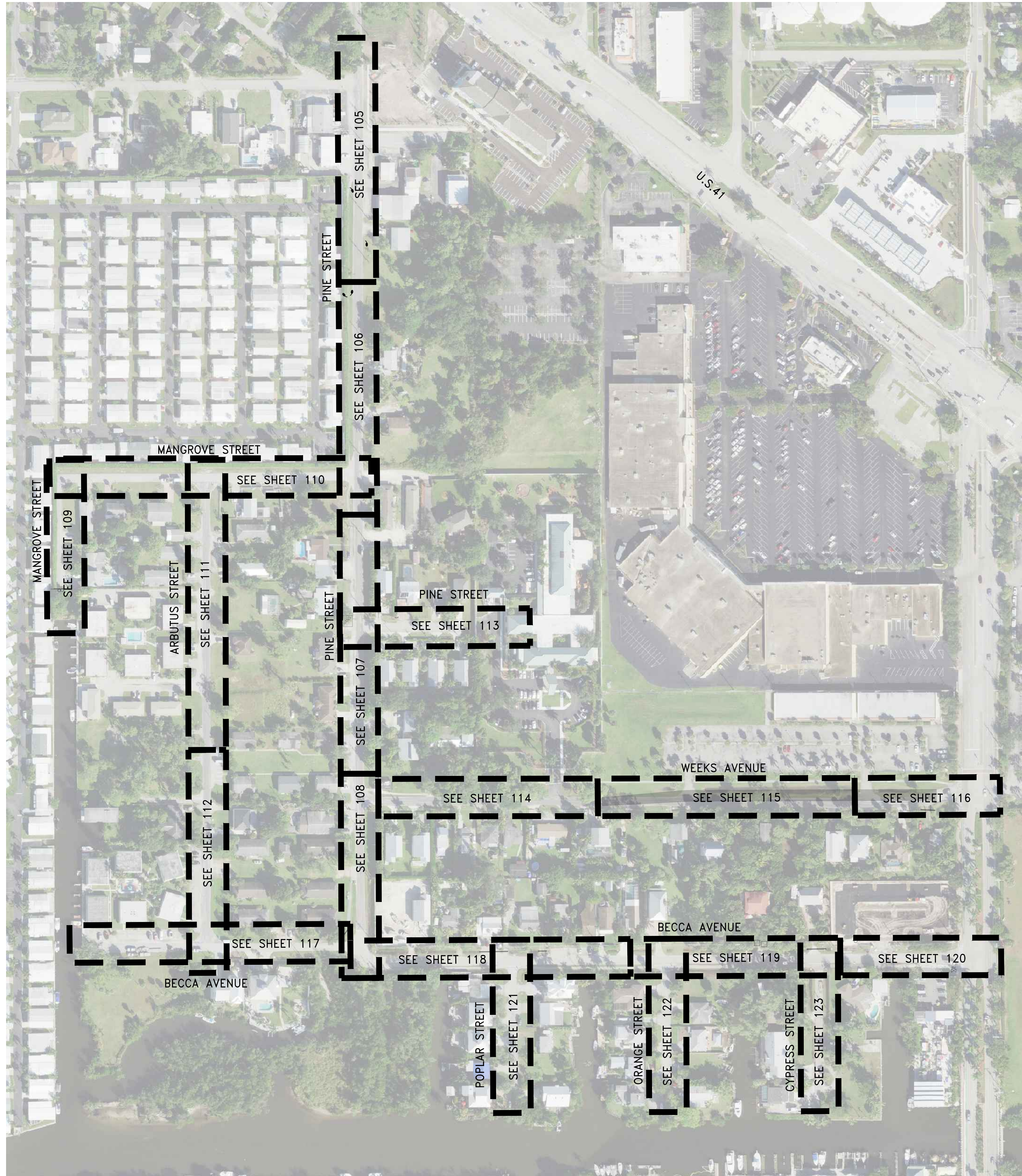
AERIAL

Blot Engineering, Inc
 Structural - Civil - Consulting
 Edward M Blot
 Professional Engineer
 FL No 72816

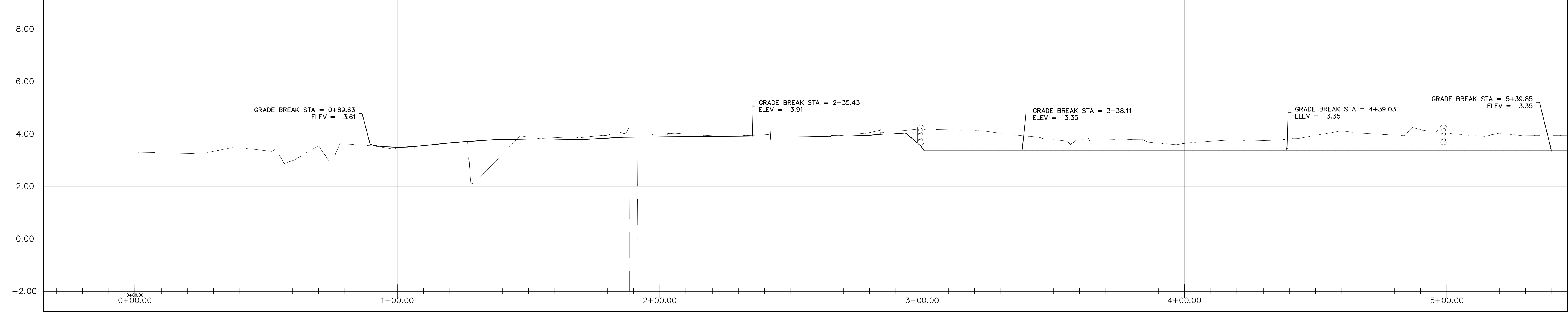
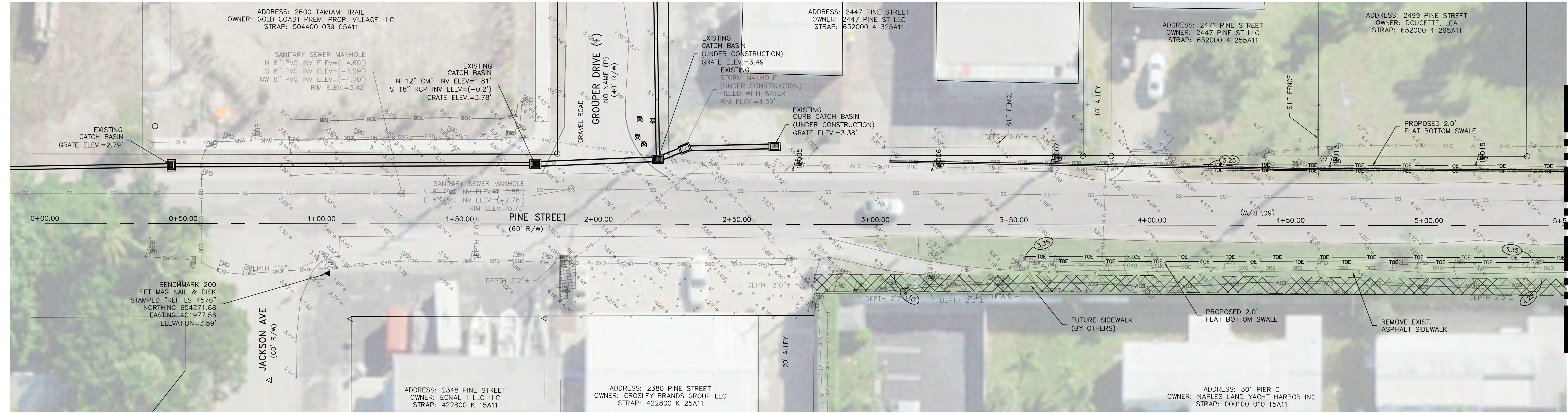
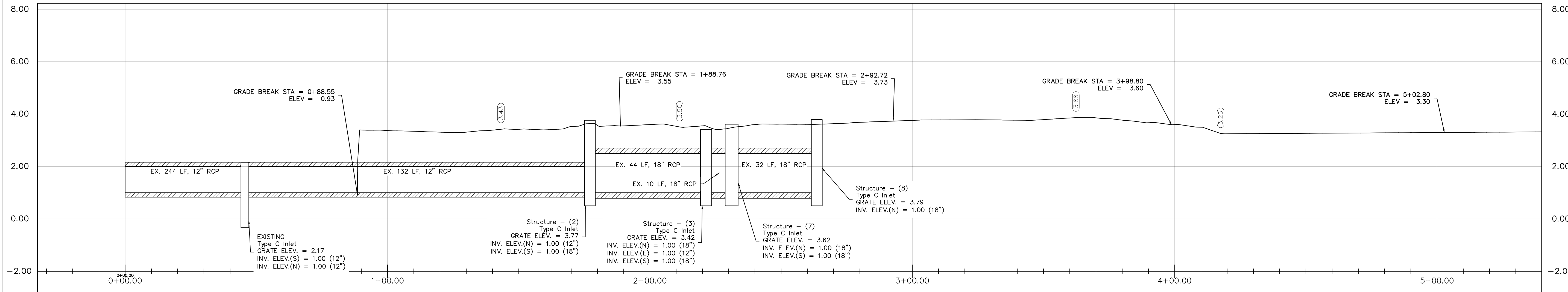
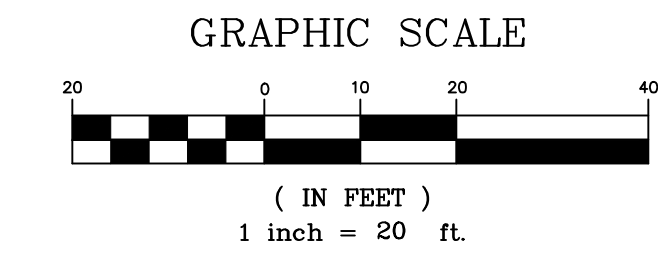
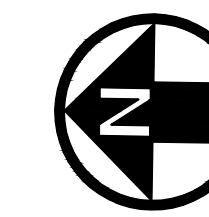
2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com

Florida State
 Certificate of Authority #29553

PROJECT	22-005
ENGINEER	EMB
DATE	05/16/2022
DRAWING NUMBER	102
REV	B



REV	DATE	DESCRIPTION	CHK
B	04/10/23	ISSUED FOR 60% REVIEW	EMB
A	06/27/22	ISSUED FOR 30% REVIEW	EMB
			BWN



MATCH LINE SEE SHEET 106

REV	DATE	DESCRIPTION
B	06/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

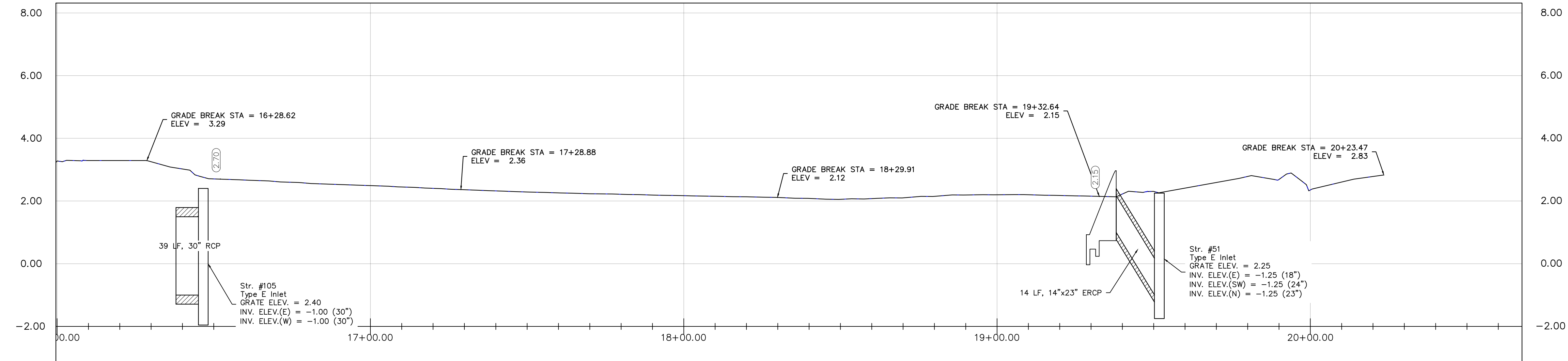
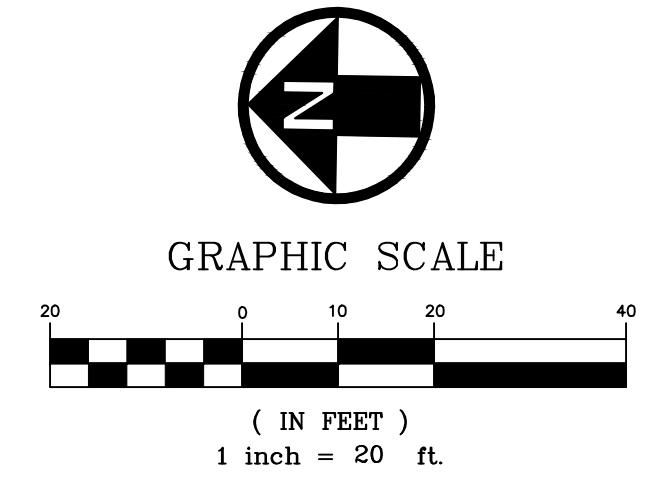
COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
PINE STREET (SHEET 1 OF 4)

Blot Engineering, Inc
 Structural - Civil - Consulting
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com

Florida State
 Certificate of Authority #29553

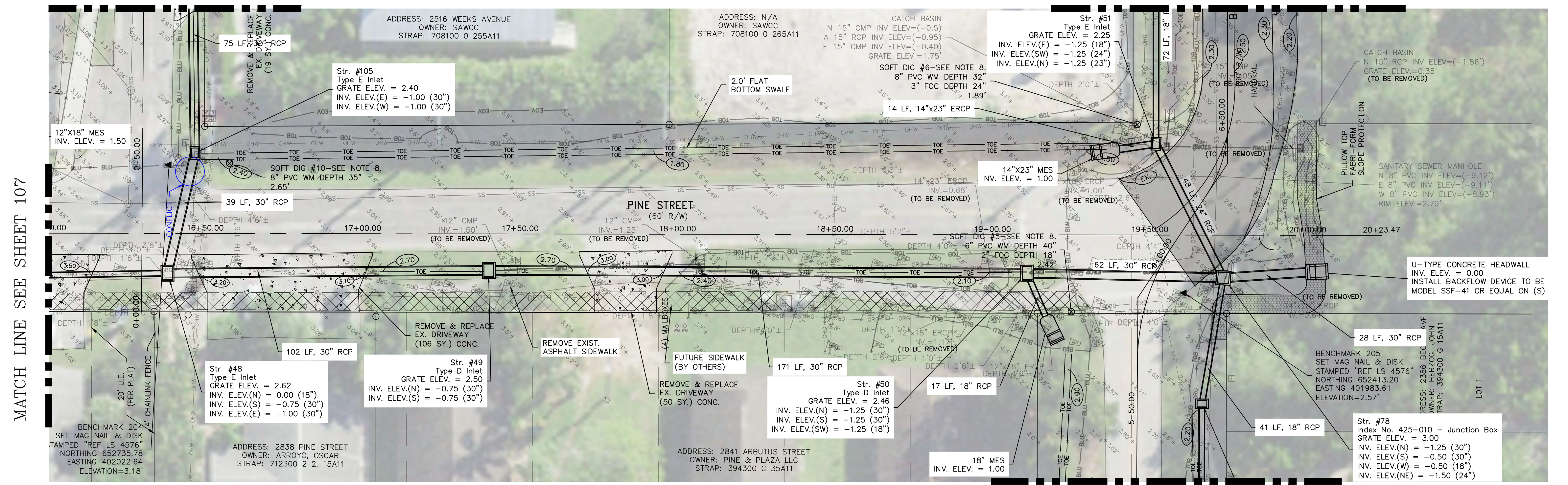
PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	105 B

BLot ENGINEERING, INC EXPRESSLY RESERVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS MAY NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLot ENGINEERING, INC. © 2022



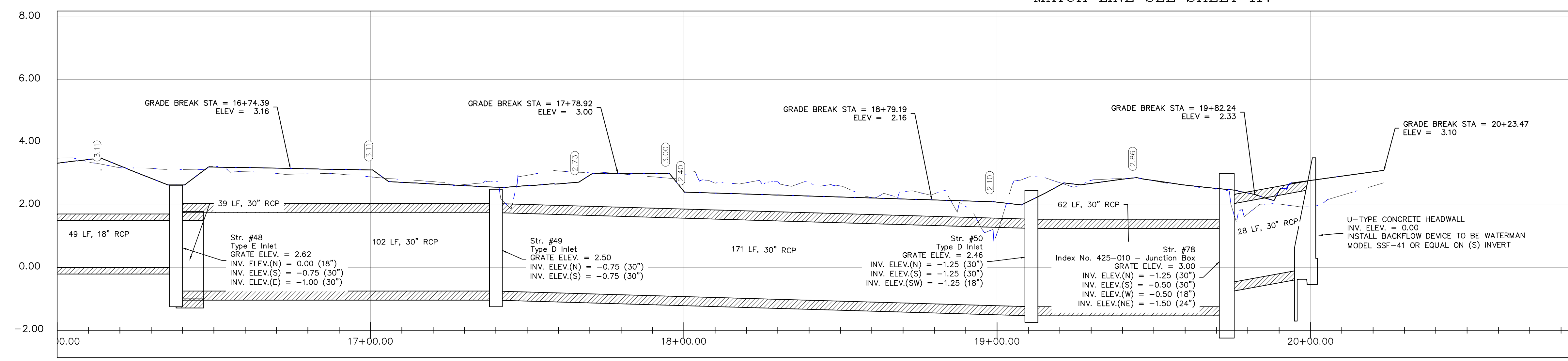
MATCH LINE SEE SHEET 114

MATCH LINE SEE SHEET 118



MATCH LINE SEE SHEET 107

MATCH LINE SEE SHEET 117



NOTE: MANGROVE TRIMMING/REMOVAL REQUIRED FOR CONSTRUCTION. CONTRACTOR TO PREPARE REQUIRED TREE MITIGATION PLANS AND SUBMIT FOR PERMIT AS REQUIRED.

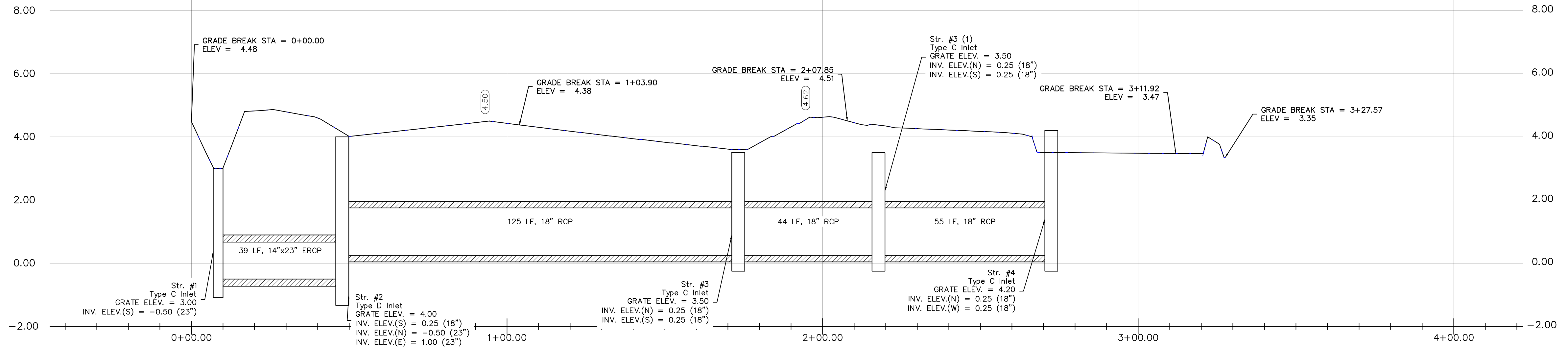
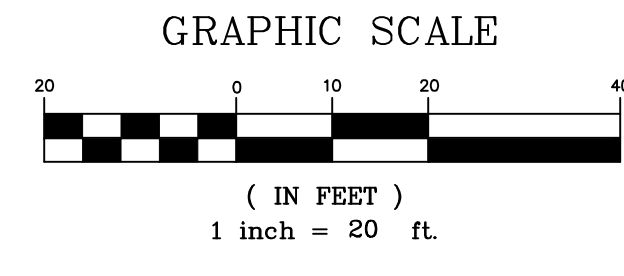
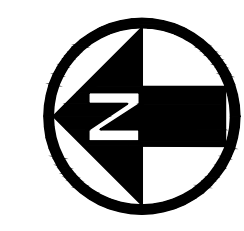
BLot ENGINEERING, INC EXPRESSLY RESERVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS MAY NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLot ENGINEERING, INC © 2022

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
PINE STREET (SHEET 4 OF 4)
PLAN AND PROFILE

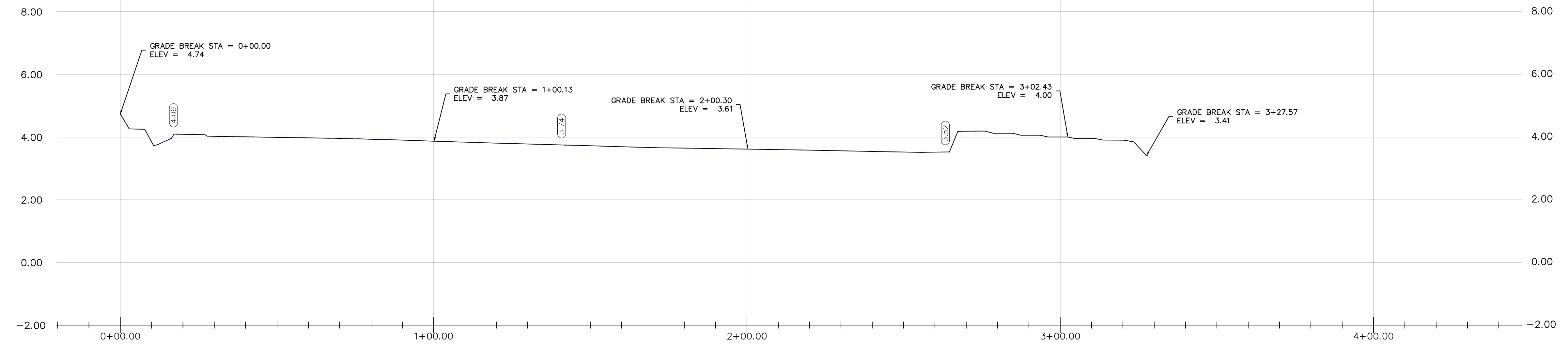
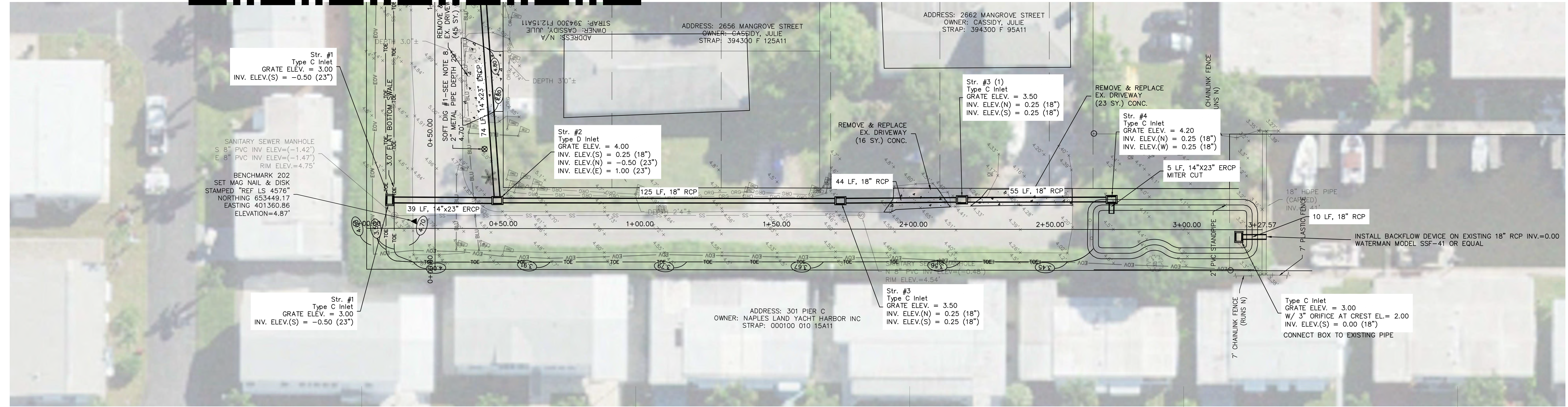
Blot Engineering, Inc
Structural - Civil - Consulting
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com



PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	



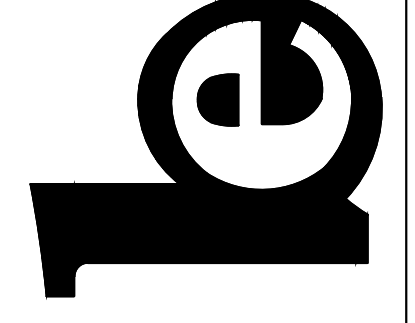
MATCH LINE SEE SHEET 110



REV	DATE	DESCRIPTION
B	06/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
MANGROVE STREET (SHEET 1 OF 2)
PLAN AND PROFILE

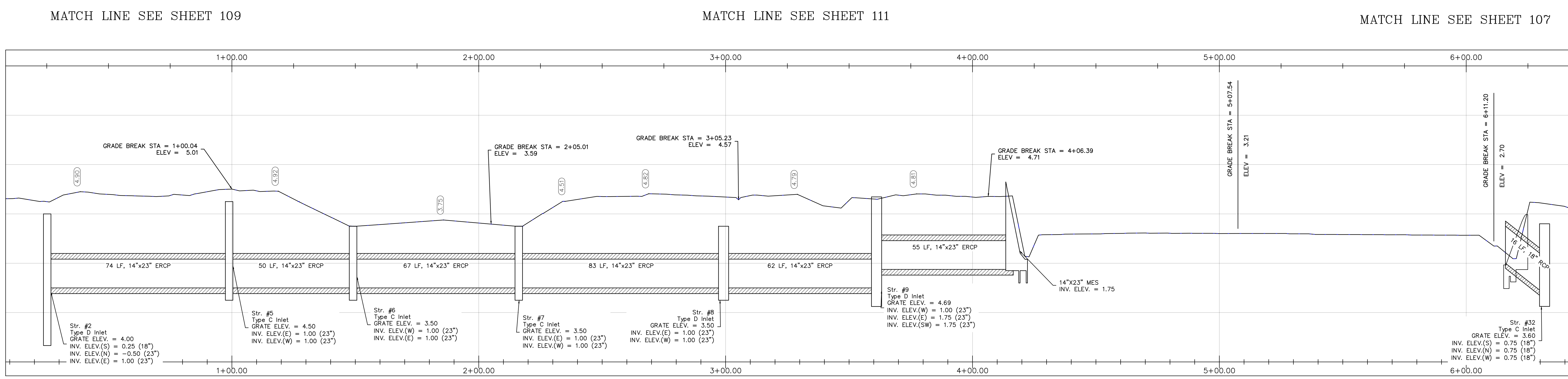
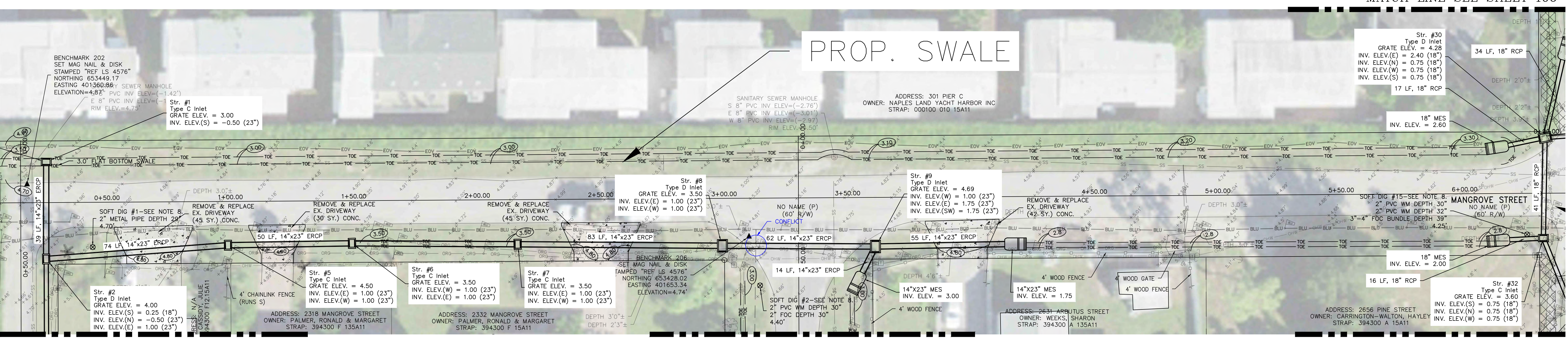
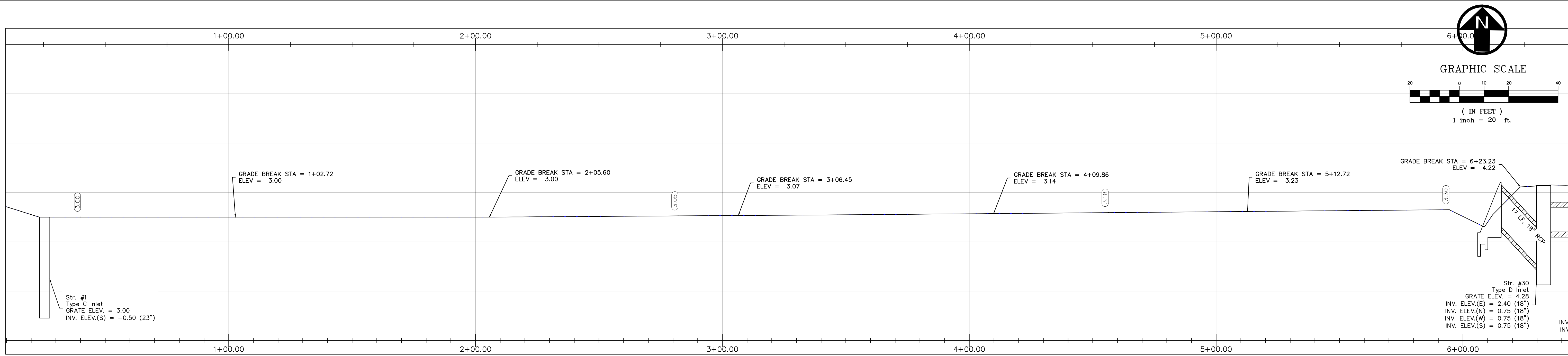
Blot Engineering, Inc
 Structural - Civil - Consulting
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com



PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	109 B

BLot ENGINEERING, INC EXPRESSLY RESERVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS MAY NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLot ENGINEERING, INC © 2022

Florida State
 Certificate of Authority #29553



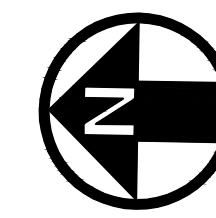
REV	DATE	DESCRIPTION
B	06/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
MANGROVE STREET (SHEET 2 OF 2)

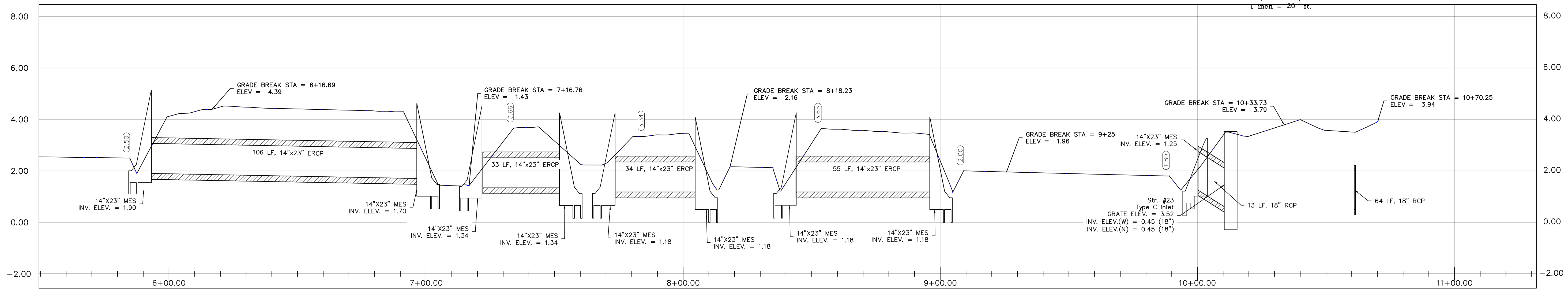
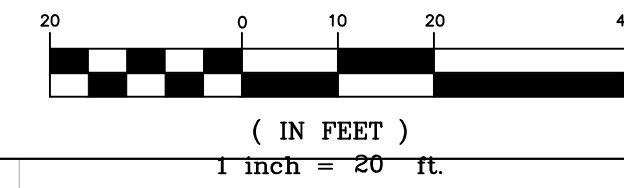
Blot Engineering, Inc
 Structural - Civil - Consulting
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com

PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWN	KP
CHECKED	BWN
SCALE	AS SHOWN
SHEET	110

BLot ENGINEERING, INC EXPRESSLY RESERVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS MAY NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLot ENGINEERING, INC © 2022

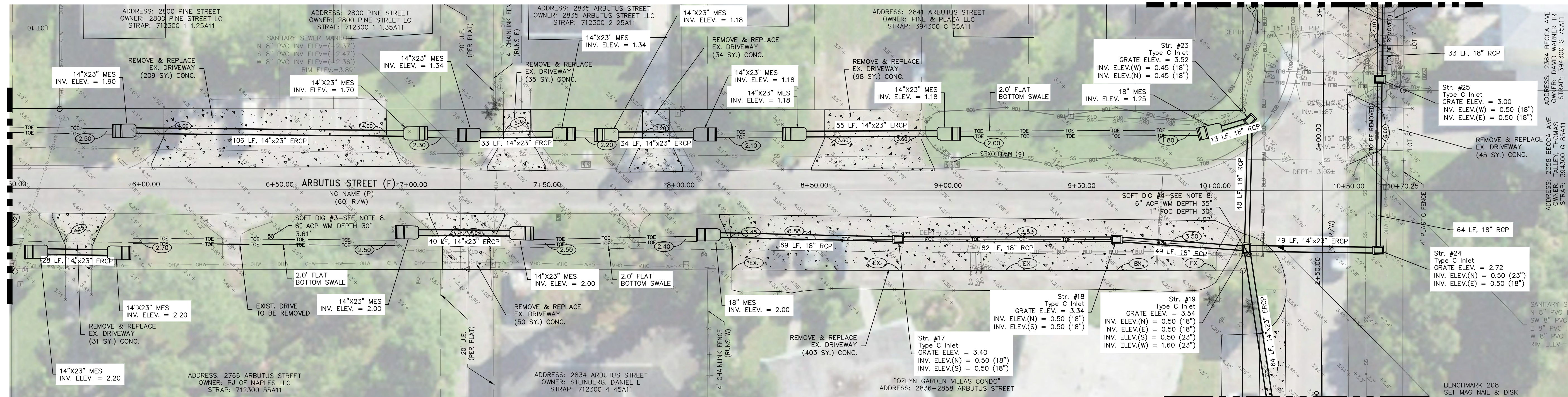


GRAPHIC SCALE

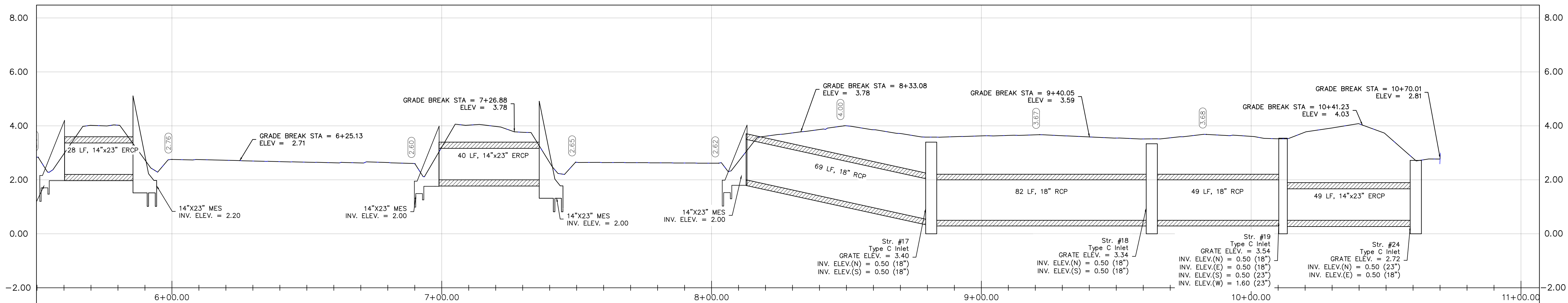


MATCH LINE SEE SHEET 111

MATCH LINE SEE SHEET 117

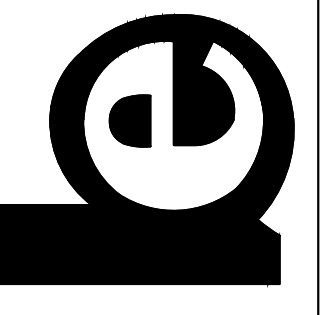


MATCH LINE SEE SHEET 117



COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
ARBUS STREET (SHEET 2 OF 2)

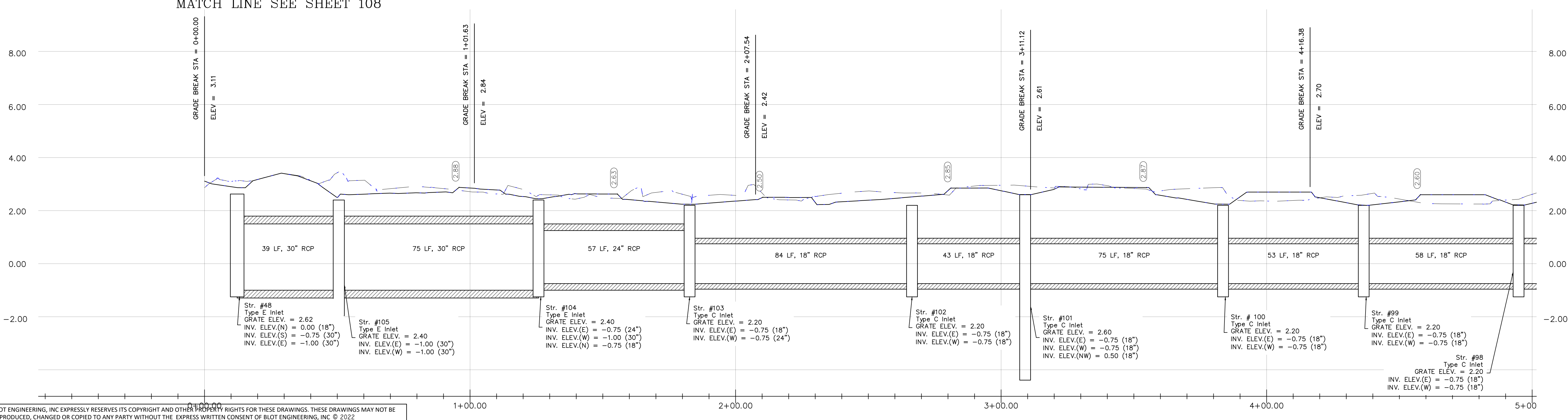
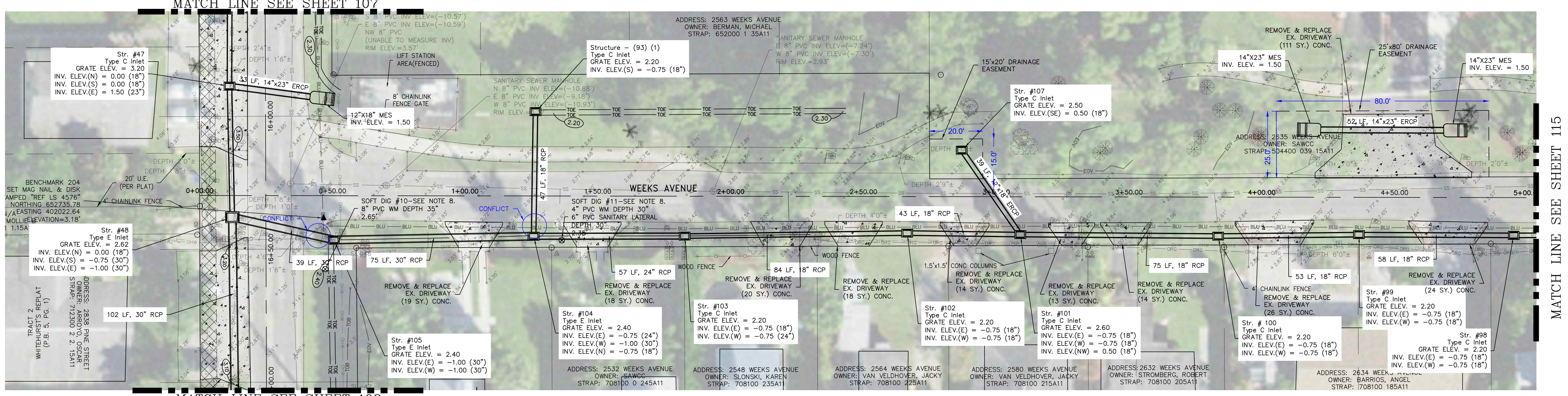
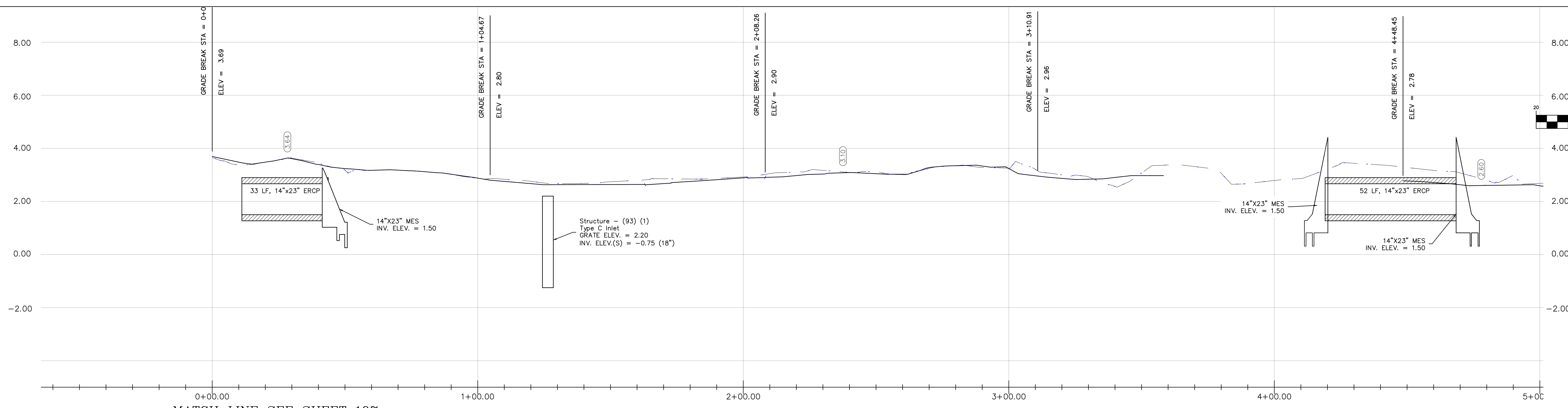
Blot Engineering, Inc
Structural - Civil - Consulting
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com



PROJ: 22-005
ENGR: EMB
DATE: 05/16/2022
DRAWING NUMBER: 112

REV	DATE	DESCRIPTION
B	06/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

Florida State
Certificate of Authority #29553



REV	DATE	DESCRIPTION
B	06/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
WEEKS AVENUE (SHEET 1 OF 3)
PLAN AND PROFILE

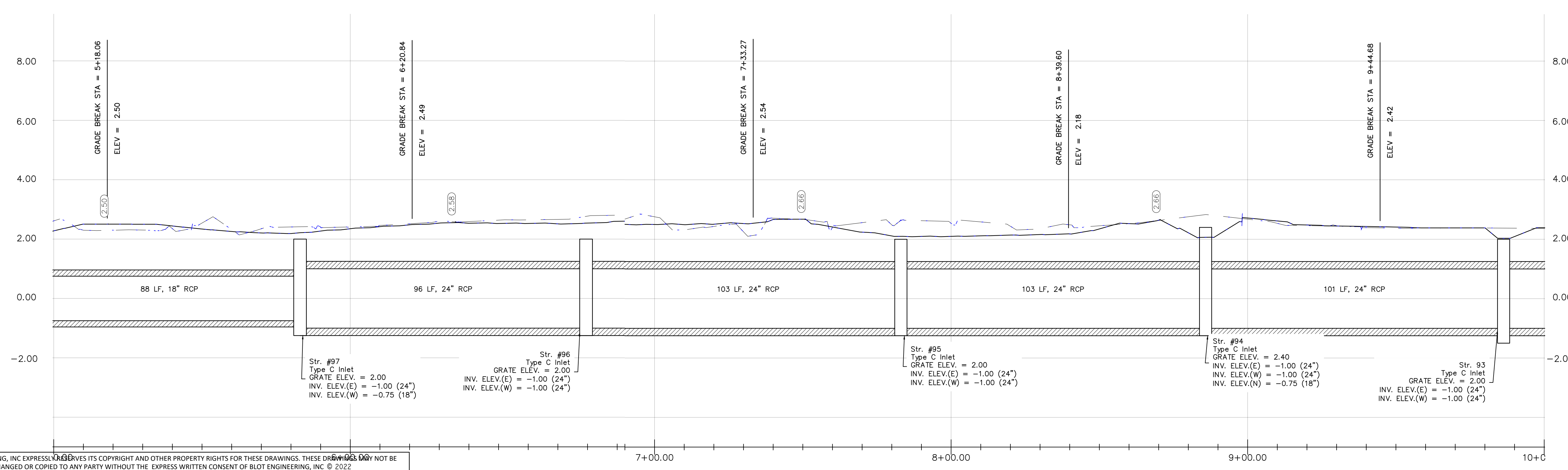
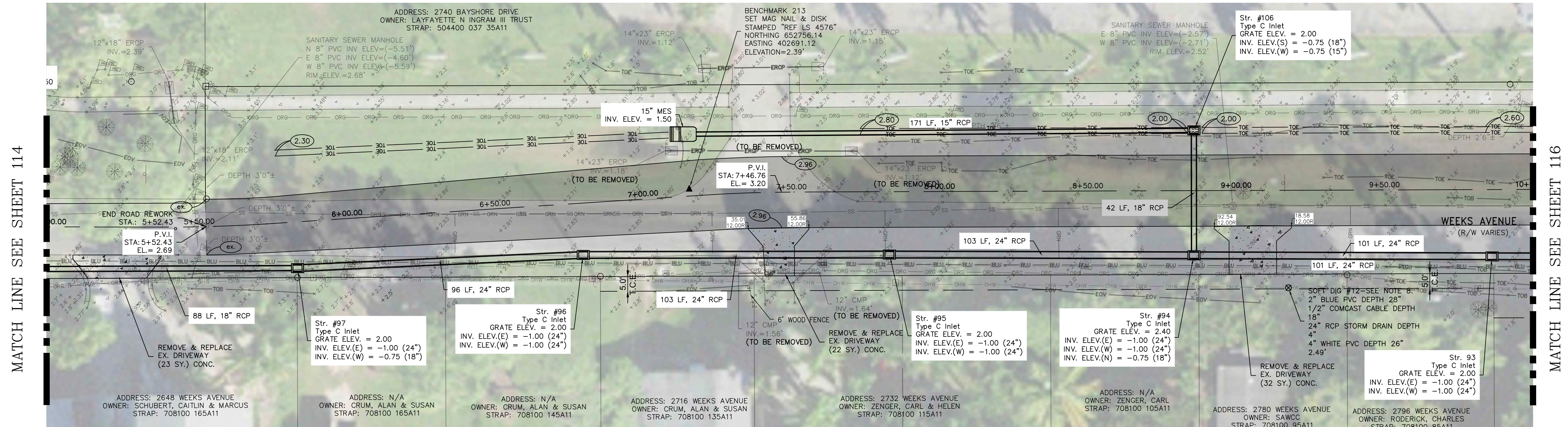
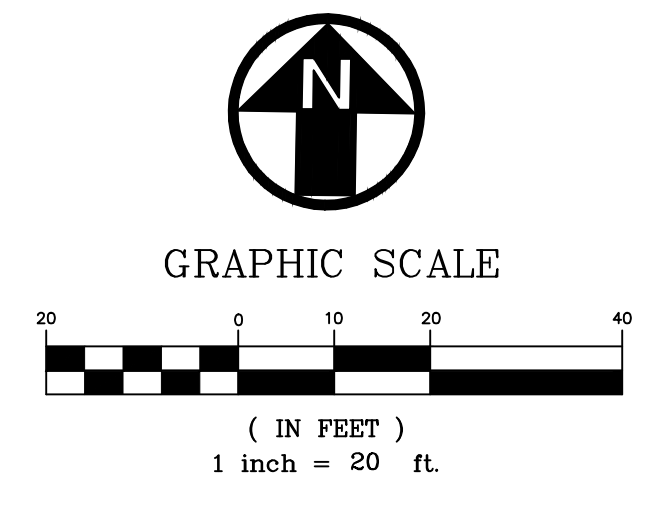
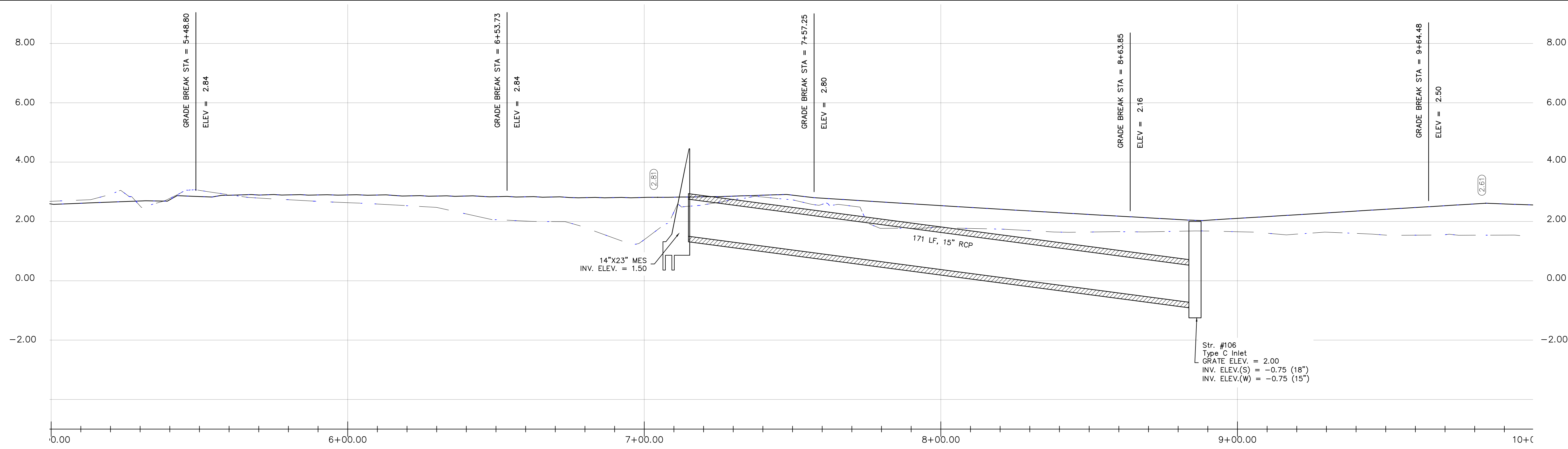
Blot Engineering, Inc
 Structural - Civil - Consulting
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com



PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	114 B

BLot ENGINEERING, INC EXPRESSLY RESERVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS MAY NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLot ENGINEERING, INC © 2022

Florida State
 Certificate of Authority #29553



MATCH LINE SEE SHEET 114

MATCH LINE SEE SHEET 116

REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	12/23/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
 BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
 WEEKS AVENUE (SHEET 2 OF 3)
 PLAN AND PROFILE

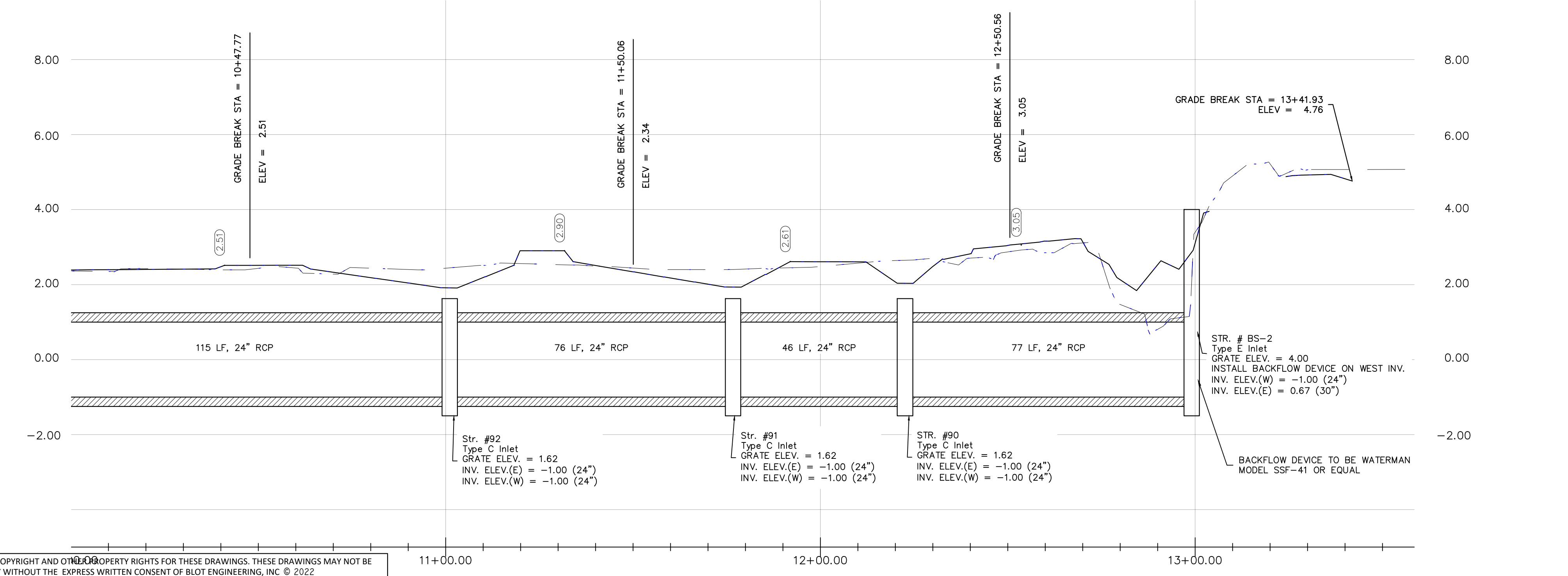
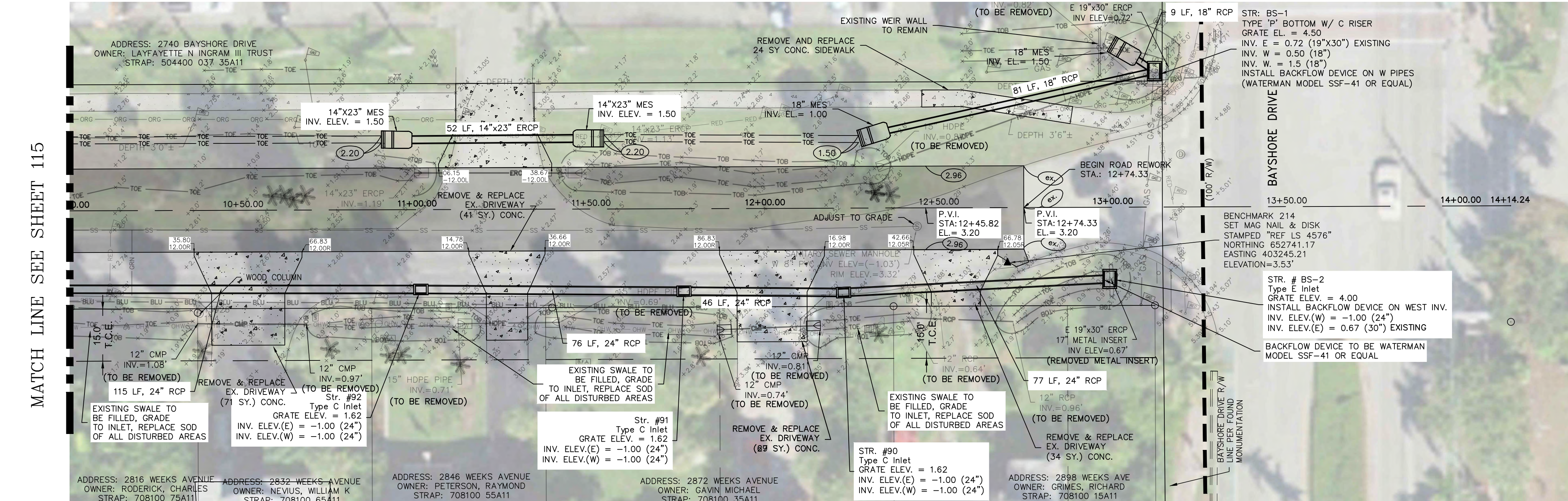
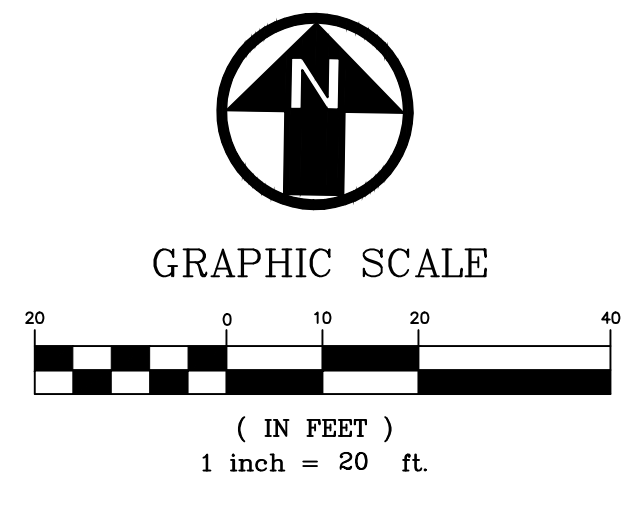
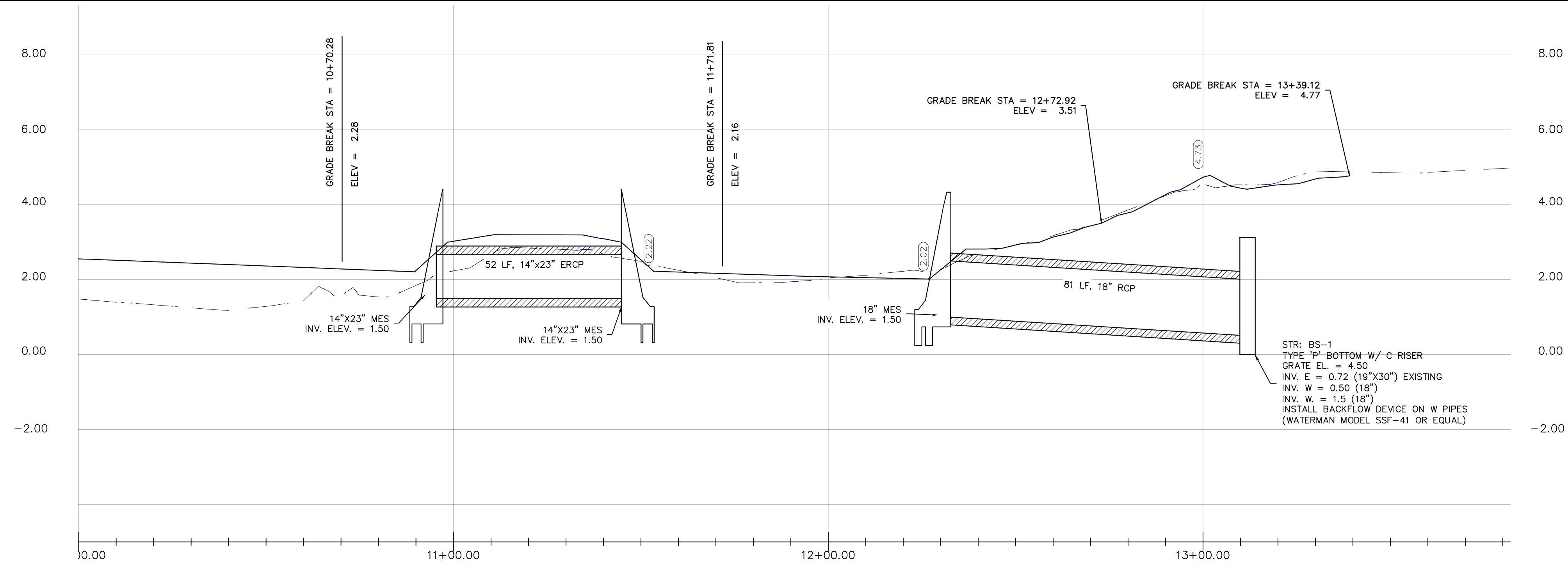
Blot Engineering, Inc
 Structural - Civil - Consulting
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com

Florida State
 Certificate of Authority #29553

PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWN	KP
CHK	BWN

115

BLOT ENGINEERING, INC EXPRESSLY WAIVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS SHALL NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLOT ENGINEERING, INC. © 2022



MATCH LINE SEE SHEET 115

REV	DATE	DESCRIPTION
B	04/10/22	ISSUED FOR 60% REVIEW
A	12/23/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
 BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
 WEEKS AVENUE (SHEET 3 OF 3)
 PLAN AND PROFILE

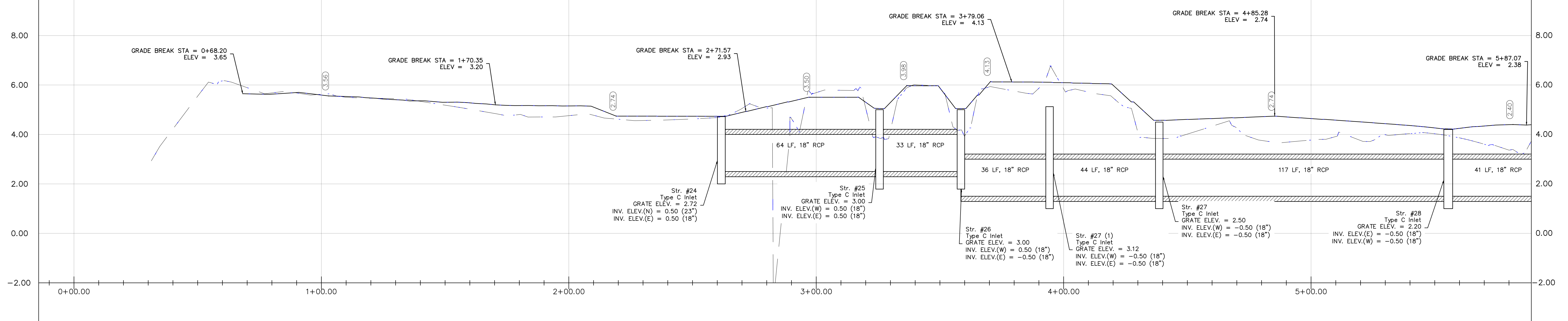
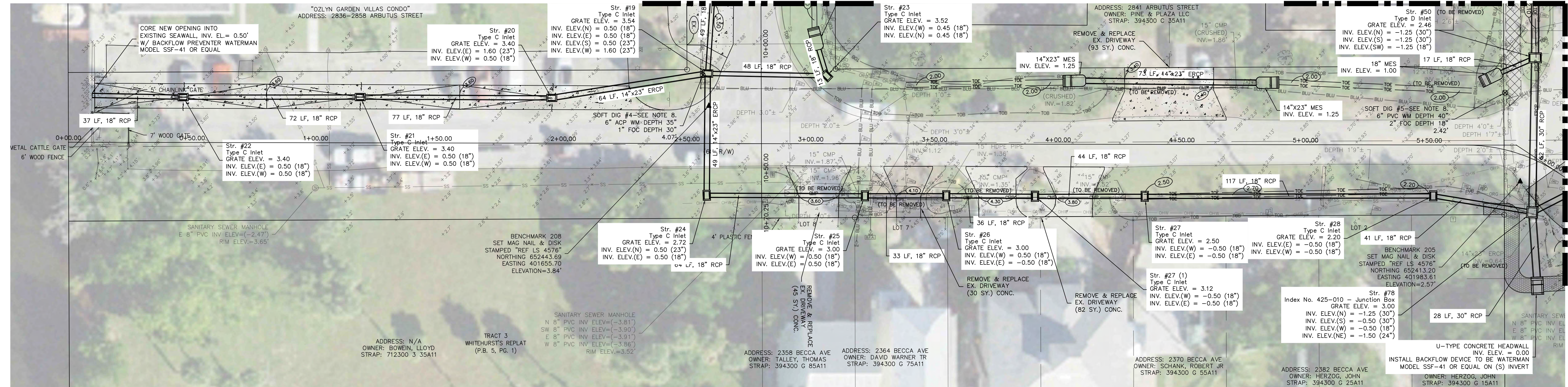
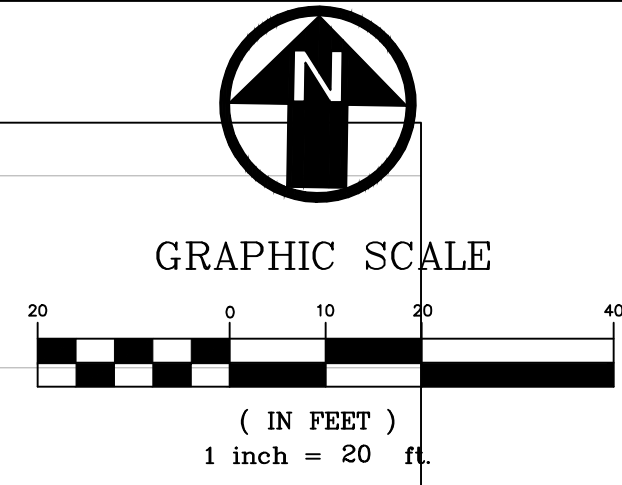
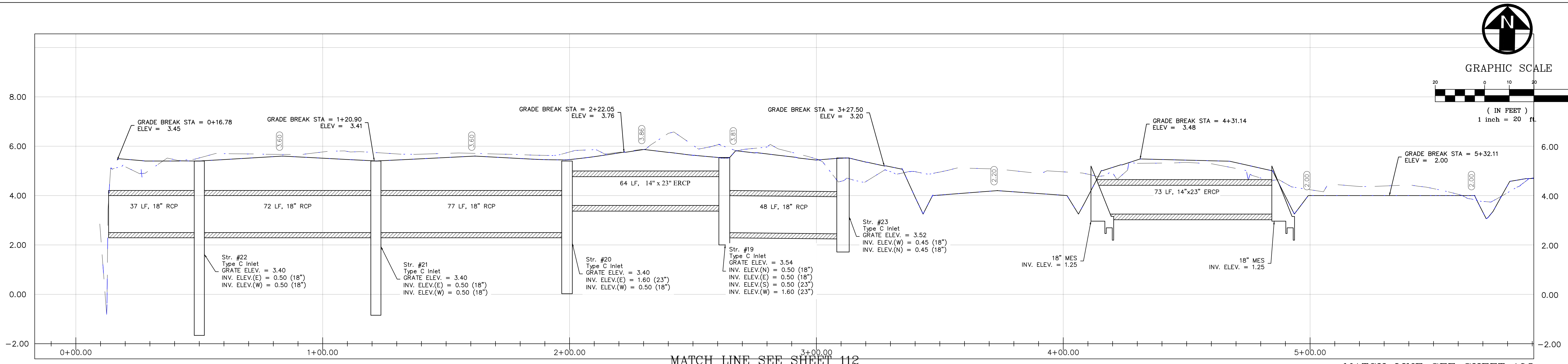
Blot Engineering, Inc
 Structural - Civil - Consulting
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com



PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	116

BLOT ENGINEERING, INC EXPRESSLY RESERVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS MAY NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLOT ENGINEERING, INC. © 2022

Florida State
 Certificate of Authority #29553



NOTE:
MANGROVE TRIMMING/REMOVAL REQUIRED FOR CONSTRUCTION. CONTRACTOR
TO PREPARE REQUIRED TREE MITIGATION PLANS AND SUBMIT FOR PERMIT AS REQUIRED.

BLot ENGINEERING, INC EXPRESSLY RESERVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS MAY NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLot ENGINEERING, INC © 2022

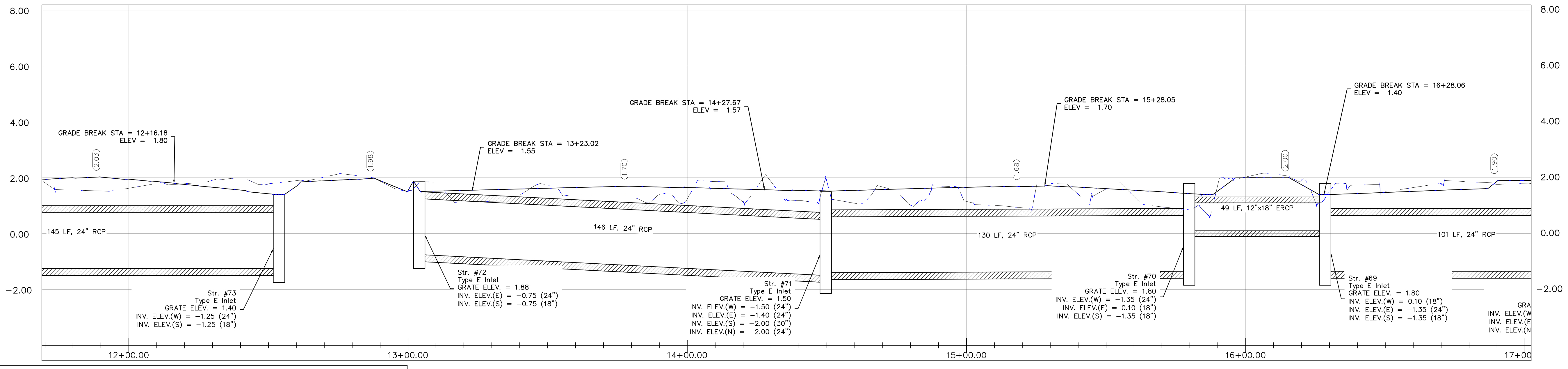
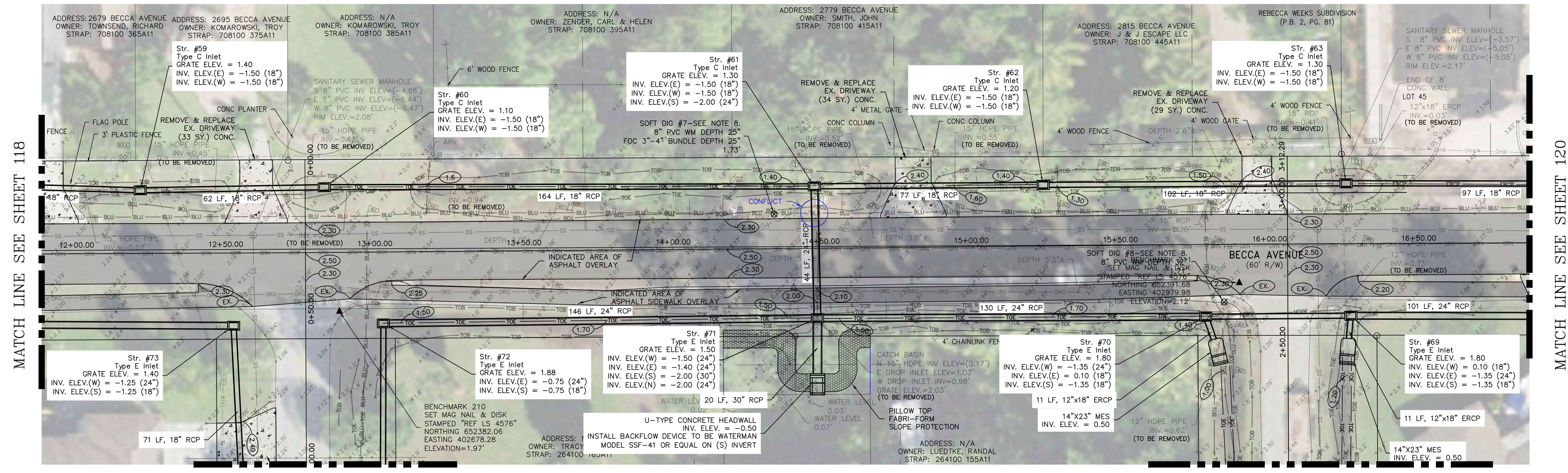
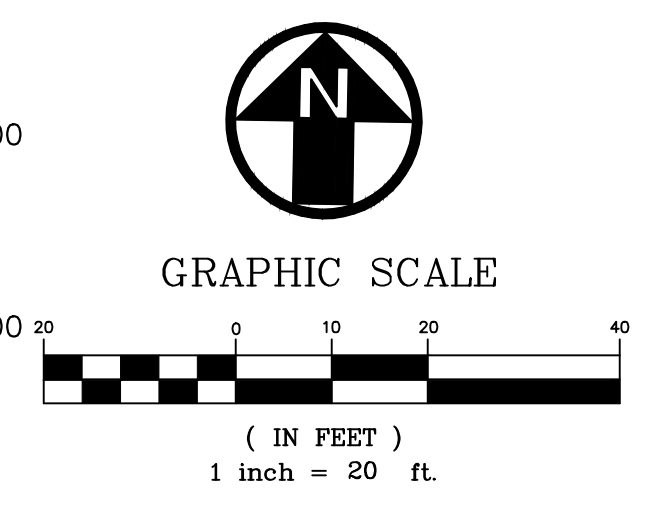
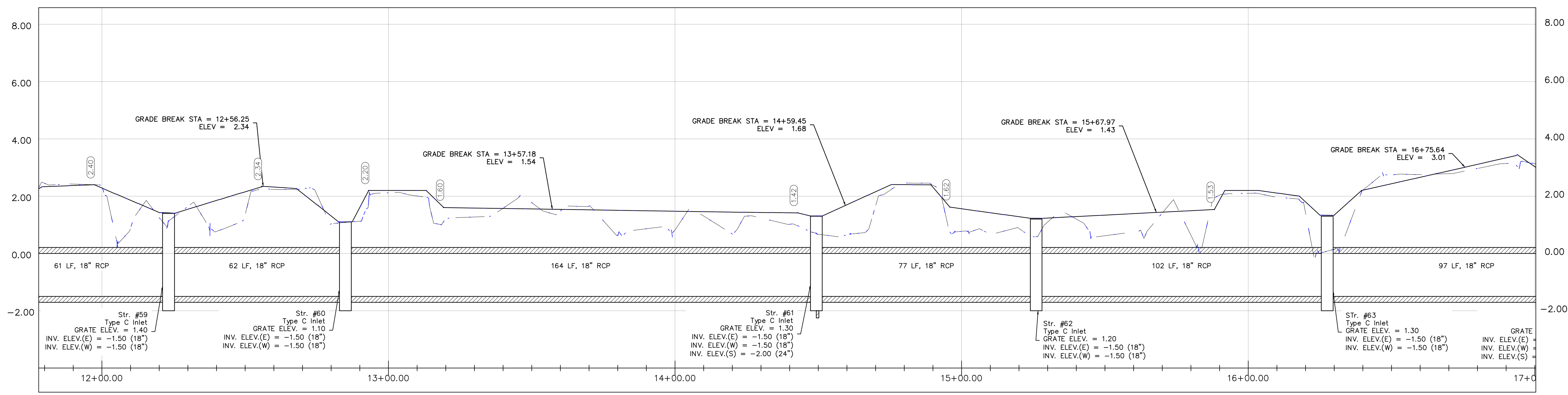
REV	DATE	DESCRIPTION
B	10/10/23	ISSUED FOR 60% REVIEW
A	10/27/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
BECCA AVENUE (SHEET 1 OF 4)

Blot Engineering, Inc
Structural - Civil - Consulting
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com

Florida State
Certificate of Authority #29553

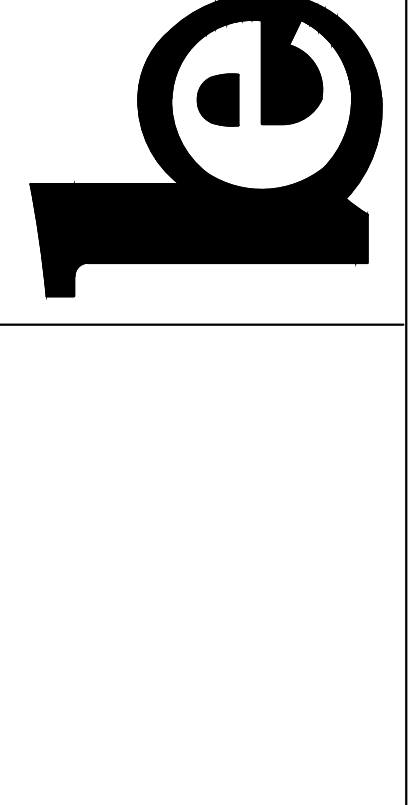
PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	117



REV	DATE	DESCRIPTION
B	06/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

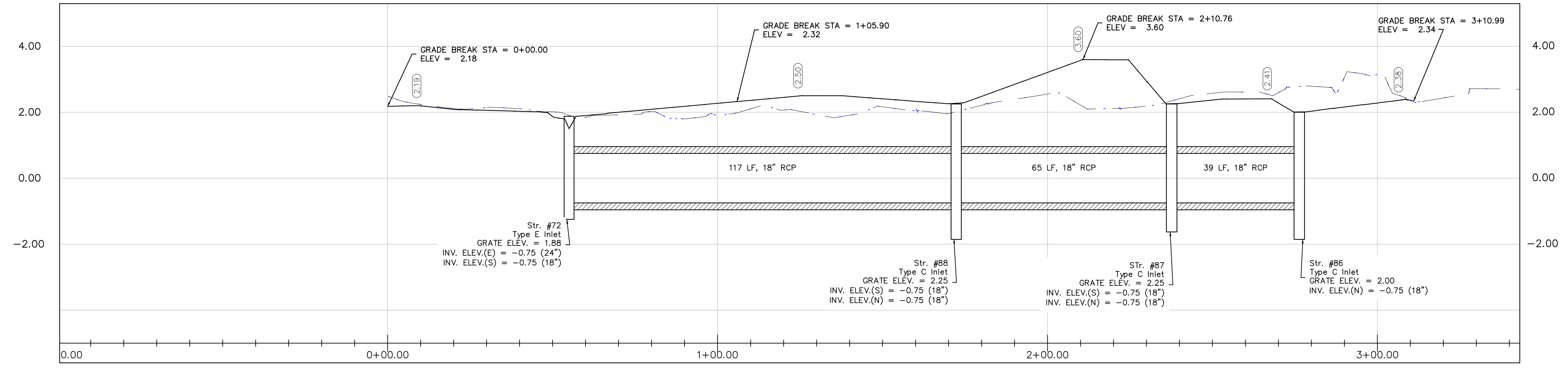
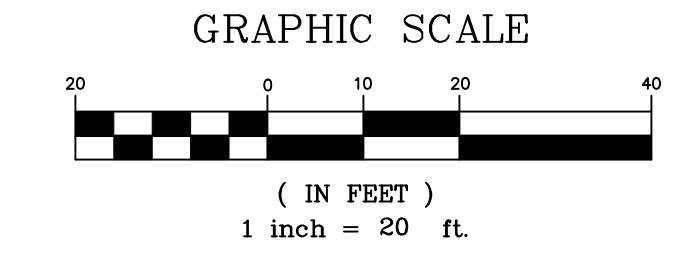
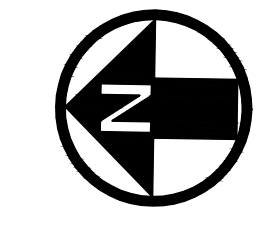
COLLIER COUNTY CRA
 BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
 BECCA AVENUE (SHEET 3 OF 4)

Blot Engineering, Inc
 Structural - Civil - Consulting
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com

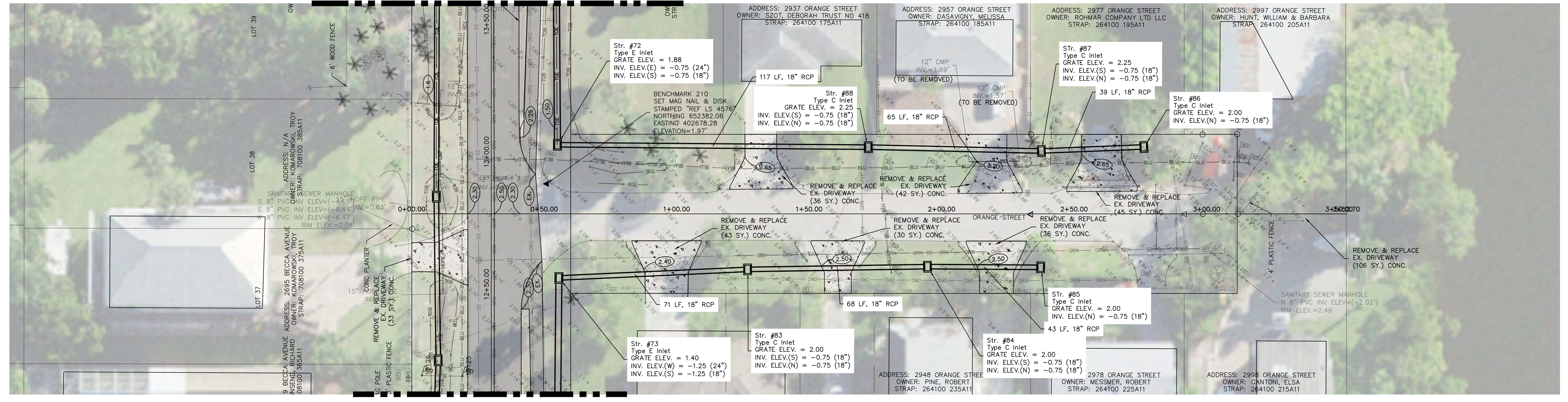


PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	119 B

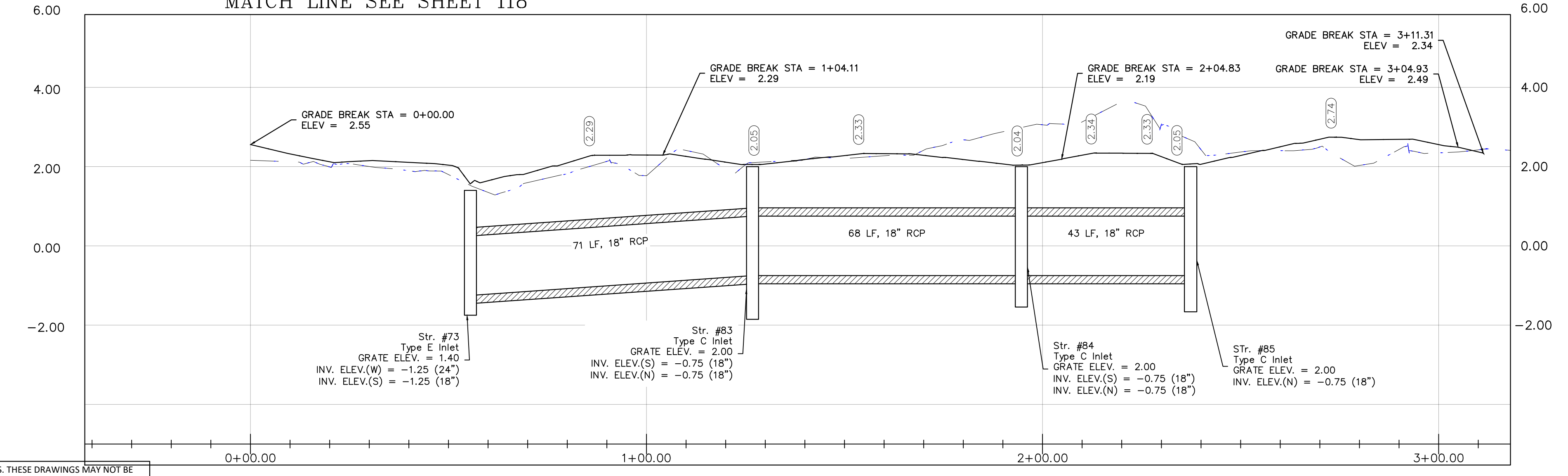
BLot ENGINEERING, INC EXPRESSLY RESERVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS MAY NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLot ENGINEERING, INC © 2022



MATCH LINE SEE SHEET 119



MATCH LINE SEE SHEET 118

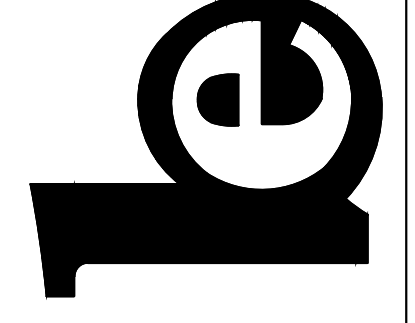


BLot ENGINEERING, INC EXPRESSLY RESERVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS MAY NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLot ENGINEERING, INC © 2022

REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	01/27/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
 BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
 ORANGE STREET
 PLAN AND PROFILE

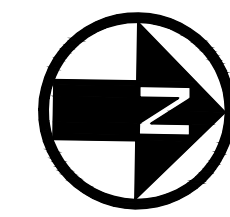
Blot Engineering, Inc
 Structural - Civil - Consulting
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com



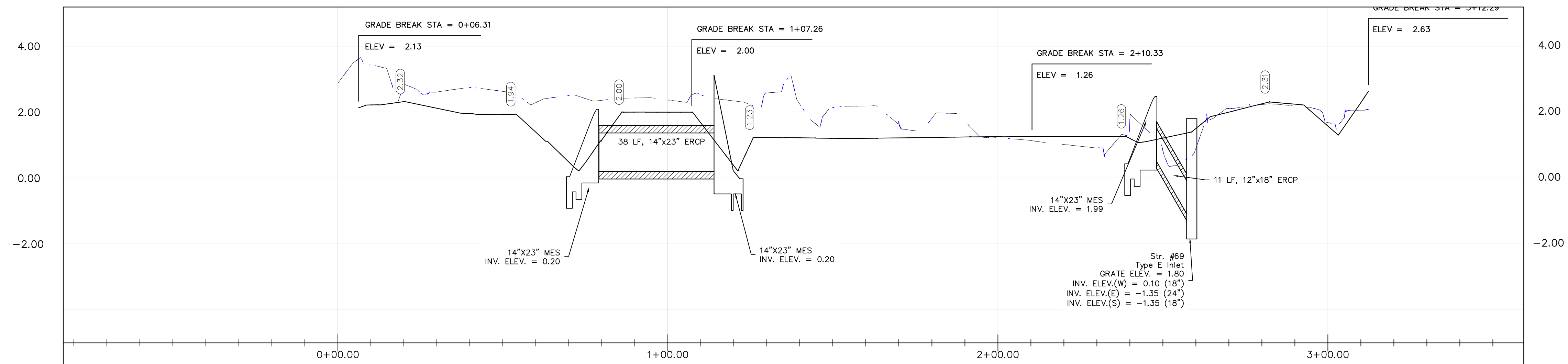
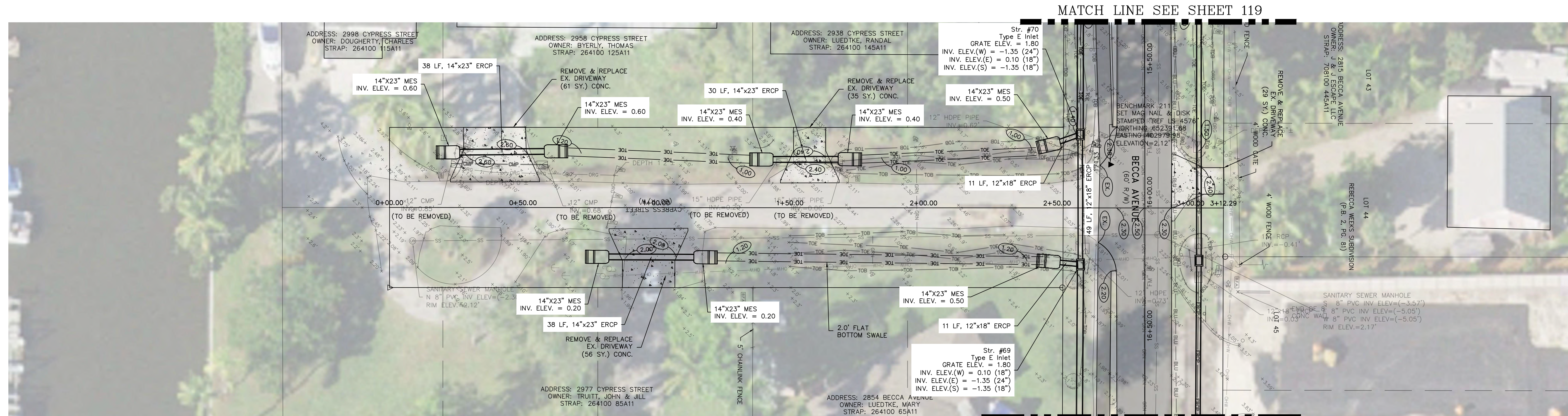
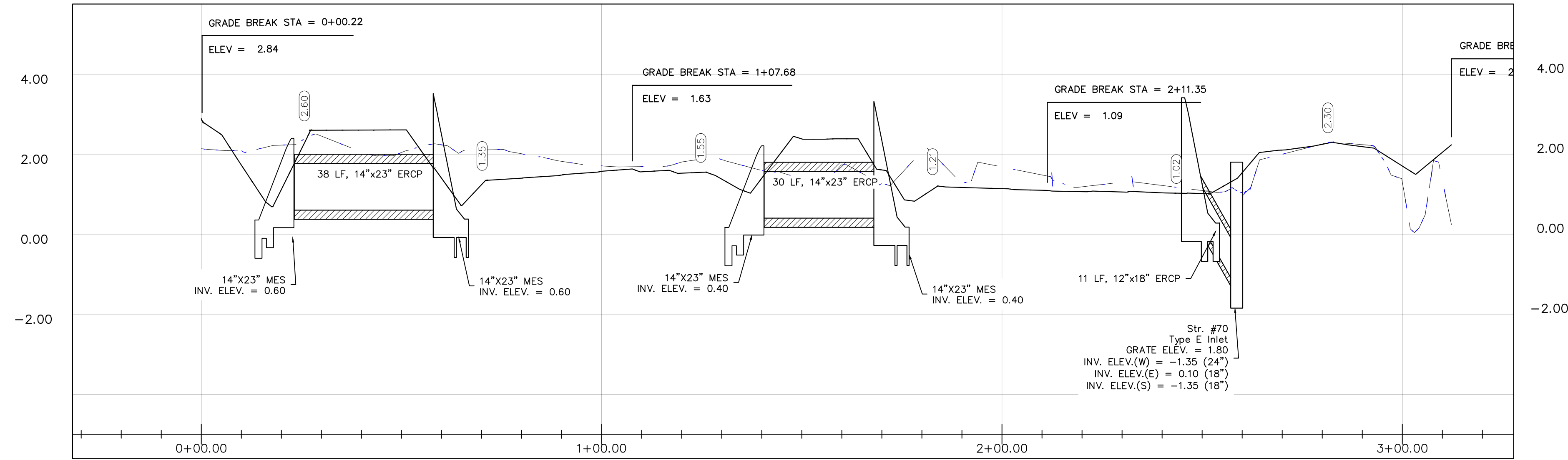
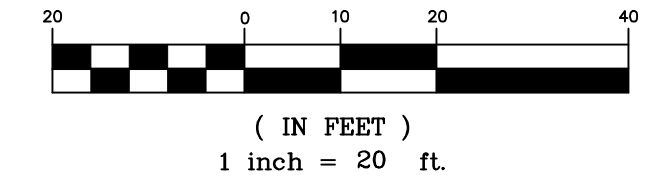
PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	122

Florida State
 Certificate of Authority #29553

CHK
 BWN
 REV

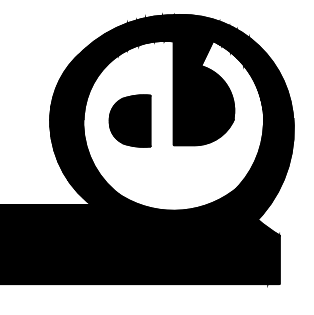


GRAPHIC SCALE



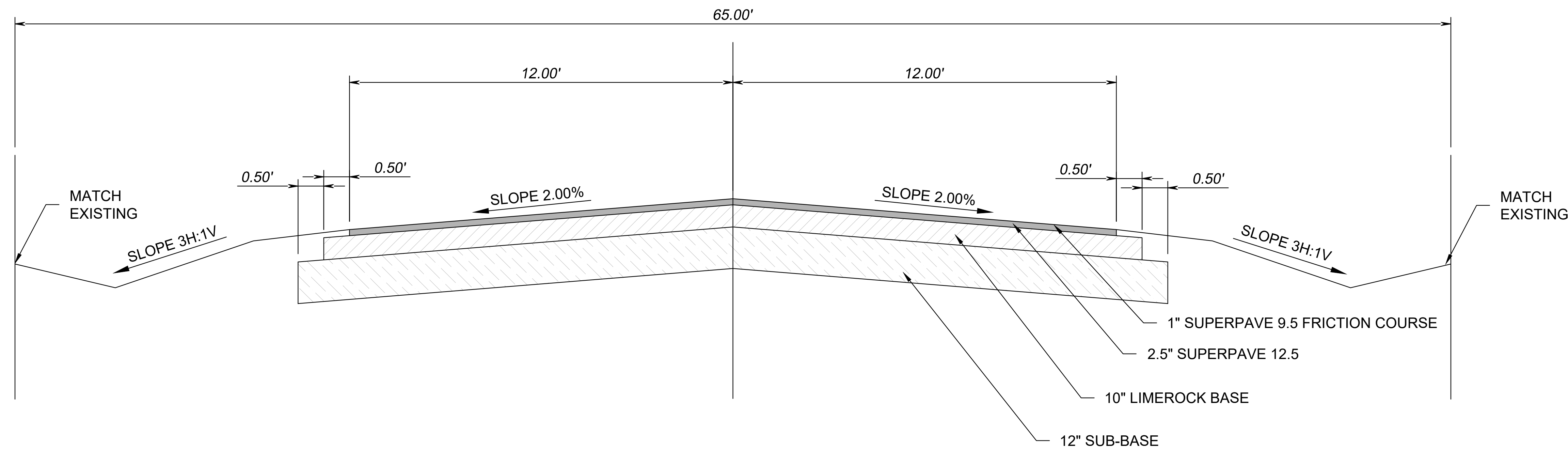
COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
CYPRESS STREET
PLAN AND PROFILE

Blot Engineering, Inc
Structural - Civil - Consulting
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com



Florida State
Certificate of Authority #29553

PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	123



TYPICAL SECTION
NTS

REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	05/27/22	ISSUED FOR 30% REVIEW

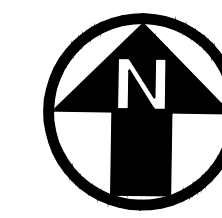
COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
TYPICAL SECTION WEEKS

Blot Engineering, Inc
Structural - Civil - Consulting
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com

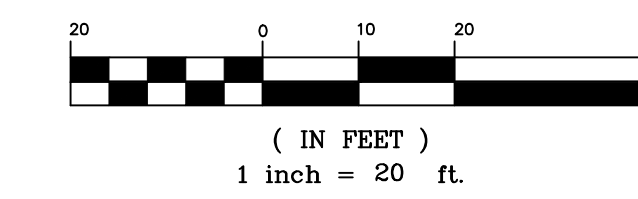
Edward M Blot
Professional Engineer
FL No 72816

Florida State
Certificate of Authority #29553

PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRWING NUMBER	124
REV	B

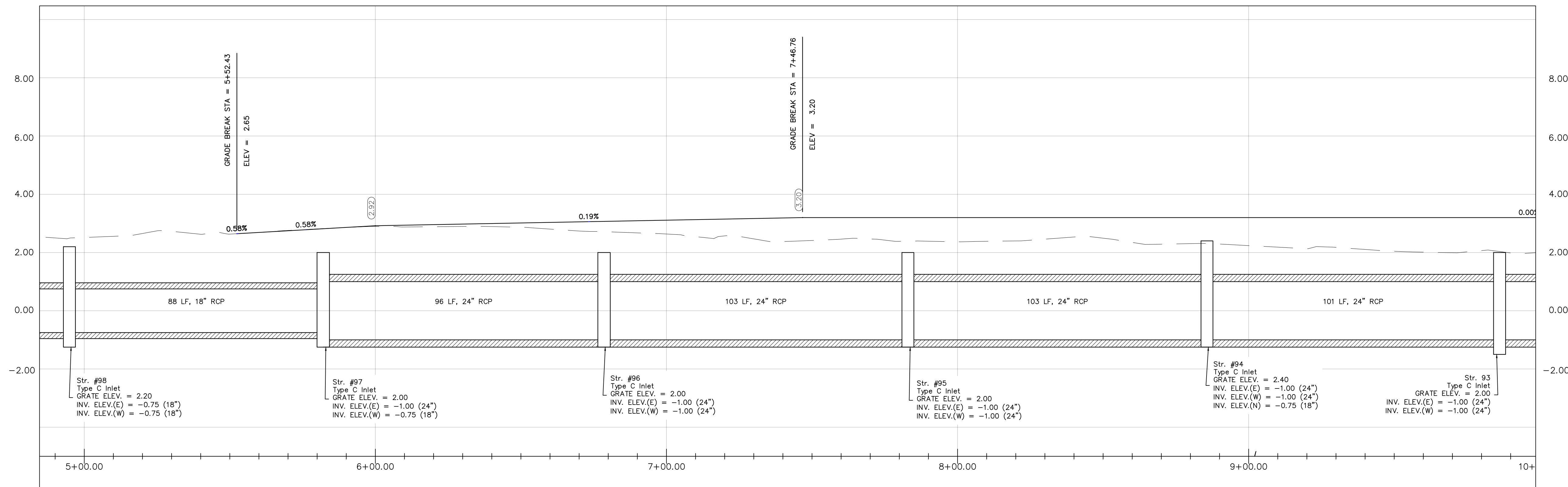
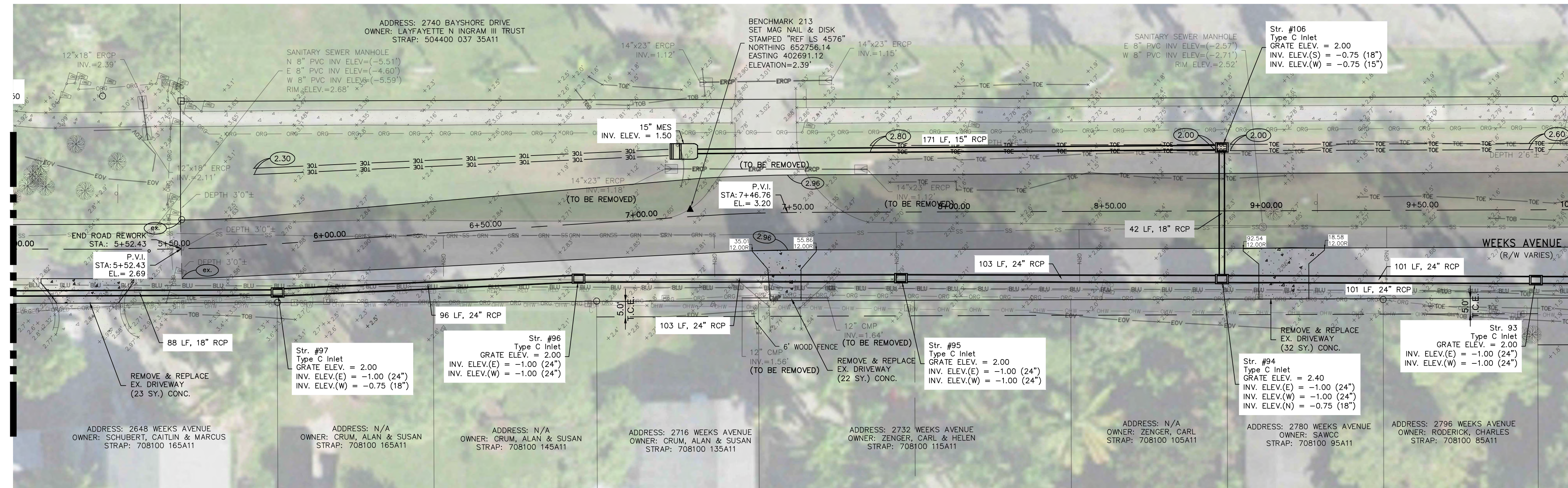


GRAPHIC SCALE



MATCH LINE SEE SHEET 114

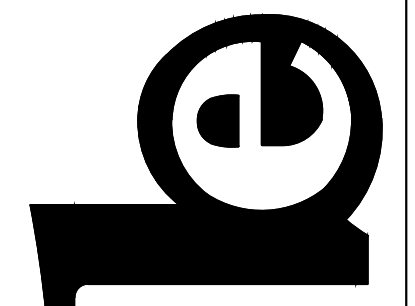
MATCH LINE SEE SHEET 116



REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	12/23/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
WEEKS AVENUE ROADWAY IMPROVEMENTS
PLAN AND PROFILE

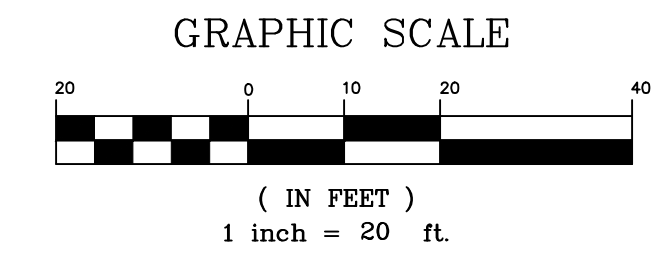
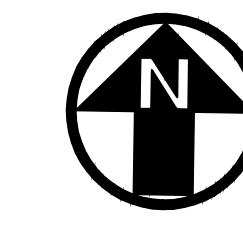
Blot Engineering, Inc
 Structural - Civil - Consulting
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com



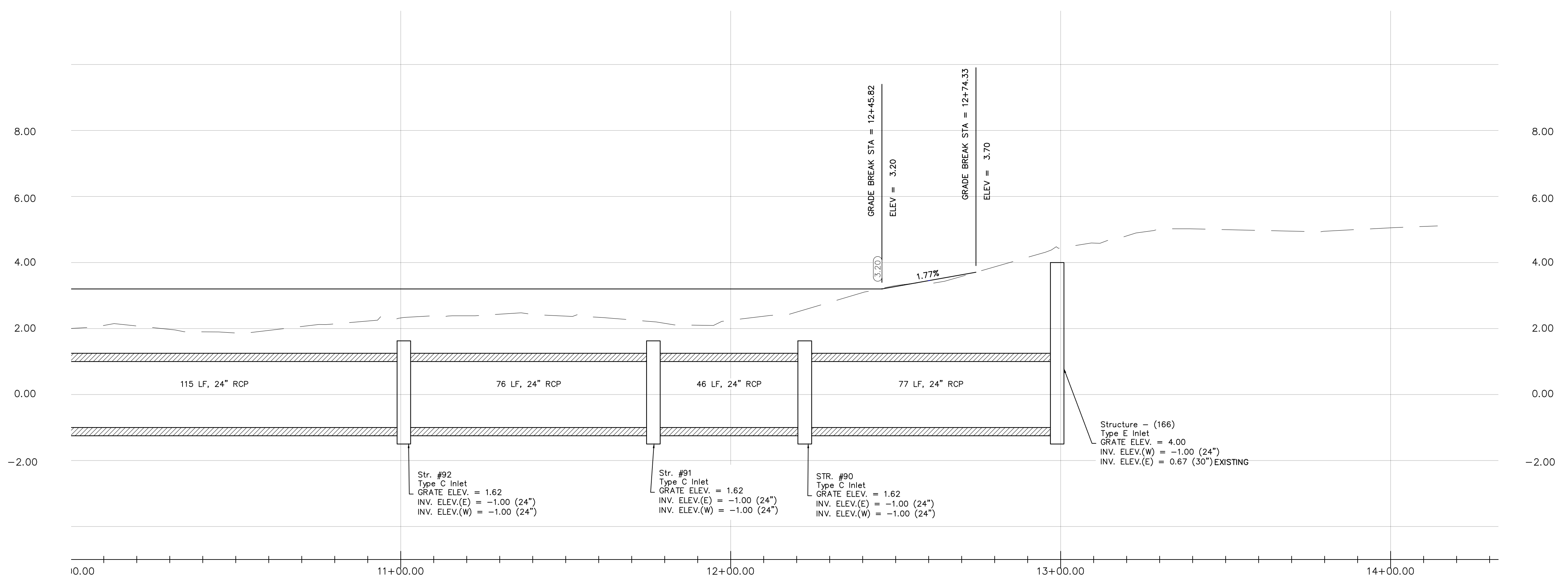
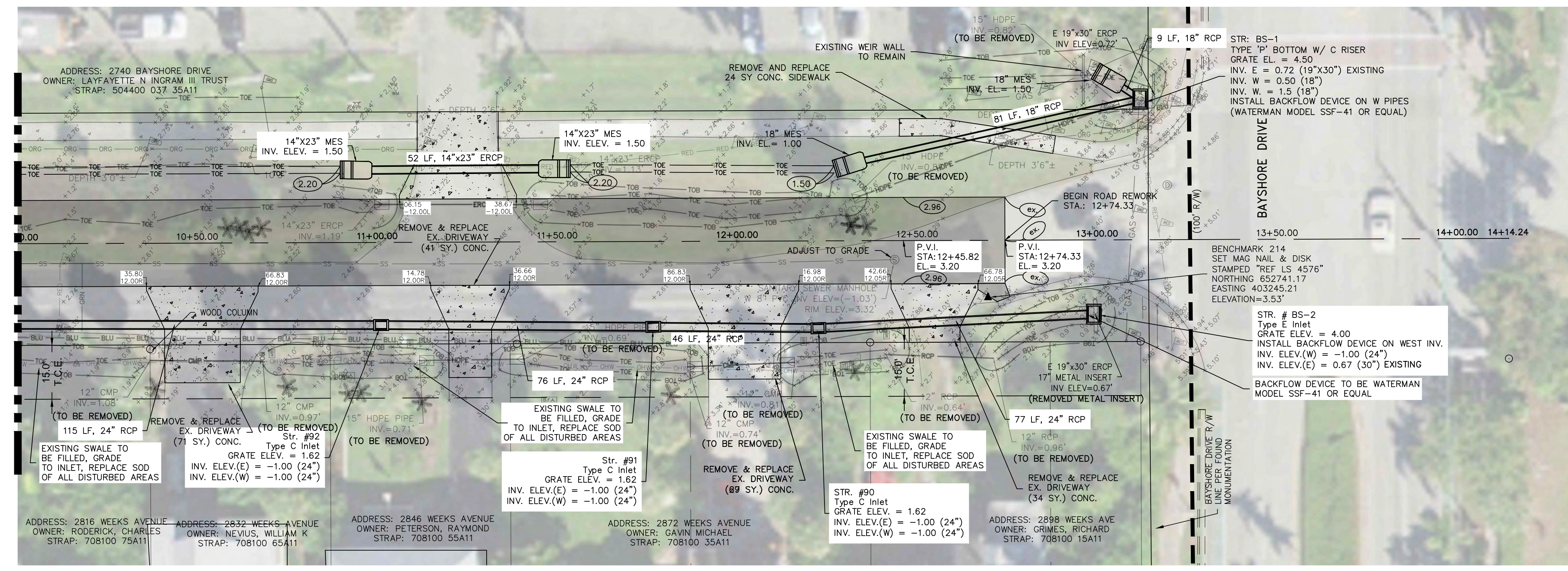
Florida State
Certificate of Authority #29553

PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	125

B



MATCH LINE SEE SHEET 115



REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	12/23/22	ISSUED FOR 30% REVIEW

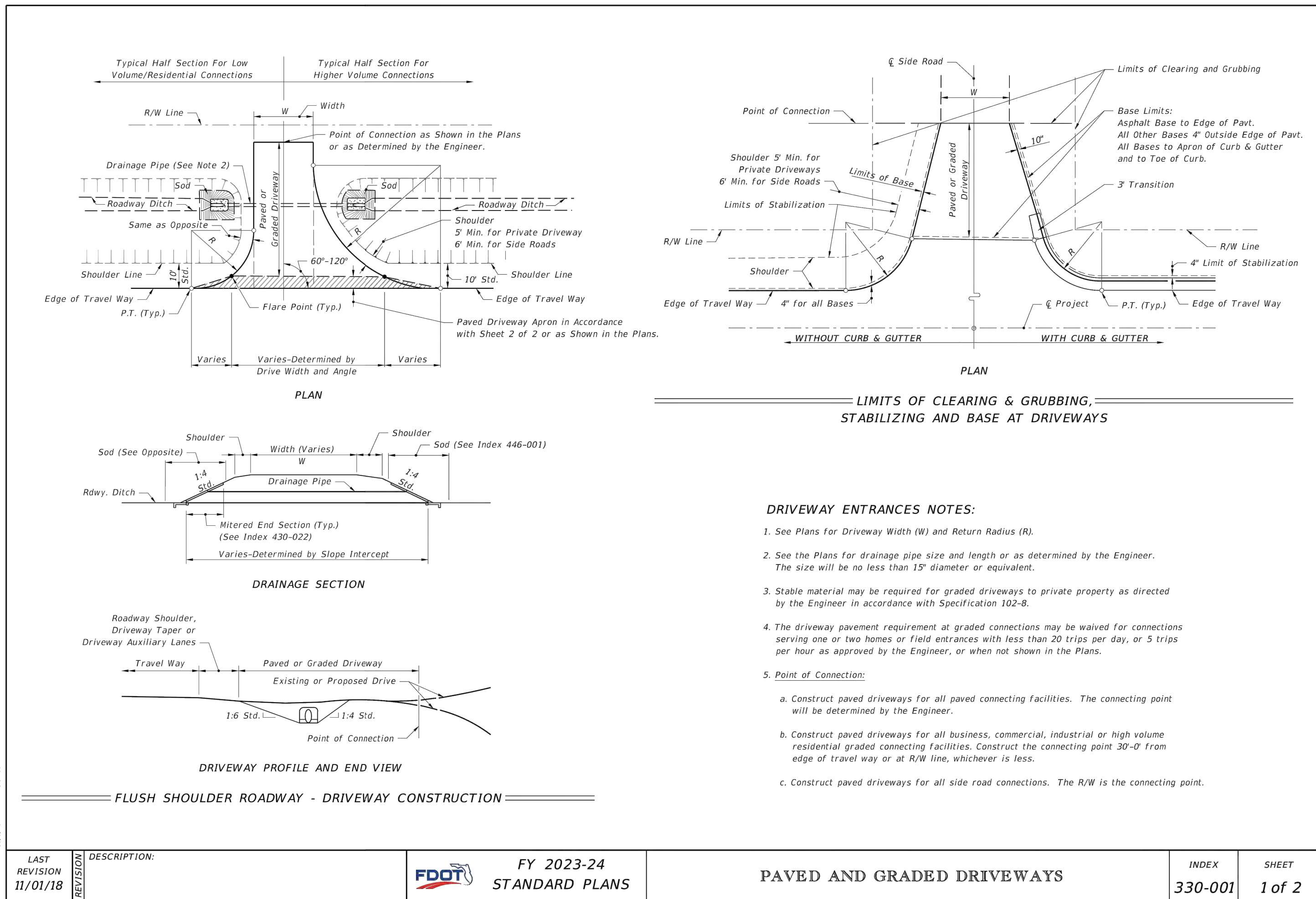
COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
WEEKS AVENUE ROADWAY IMPROVEMENTS
PLAN AND PROFILE

Blot Engineering, Inc
 Structural - Civil - Consulting
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com

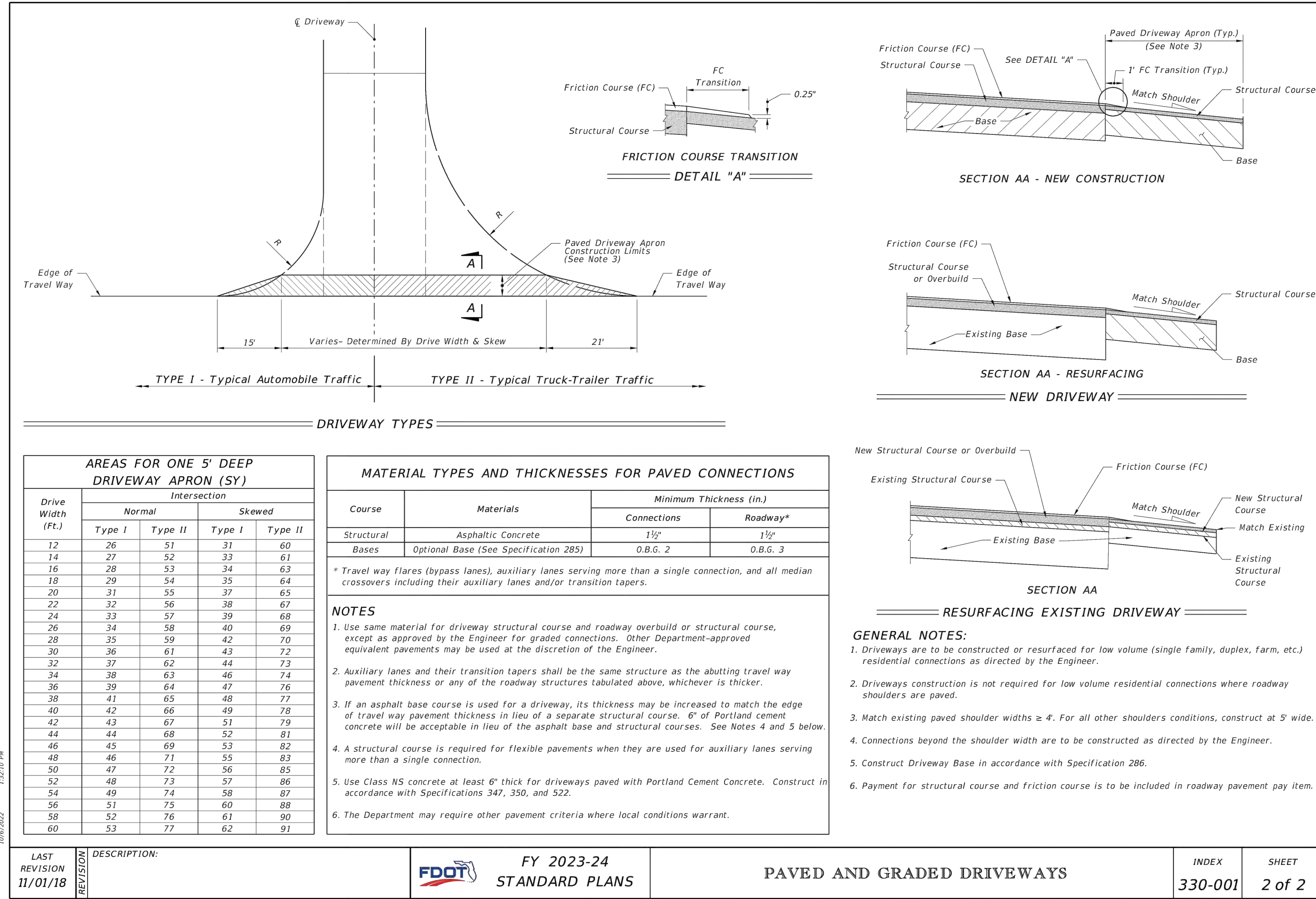
Florida State
 Certificate of Authority #29553

PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	126

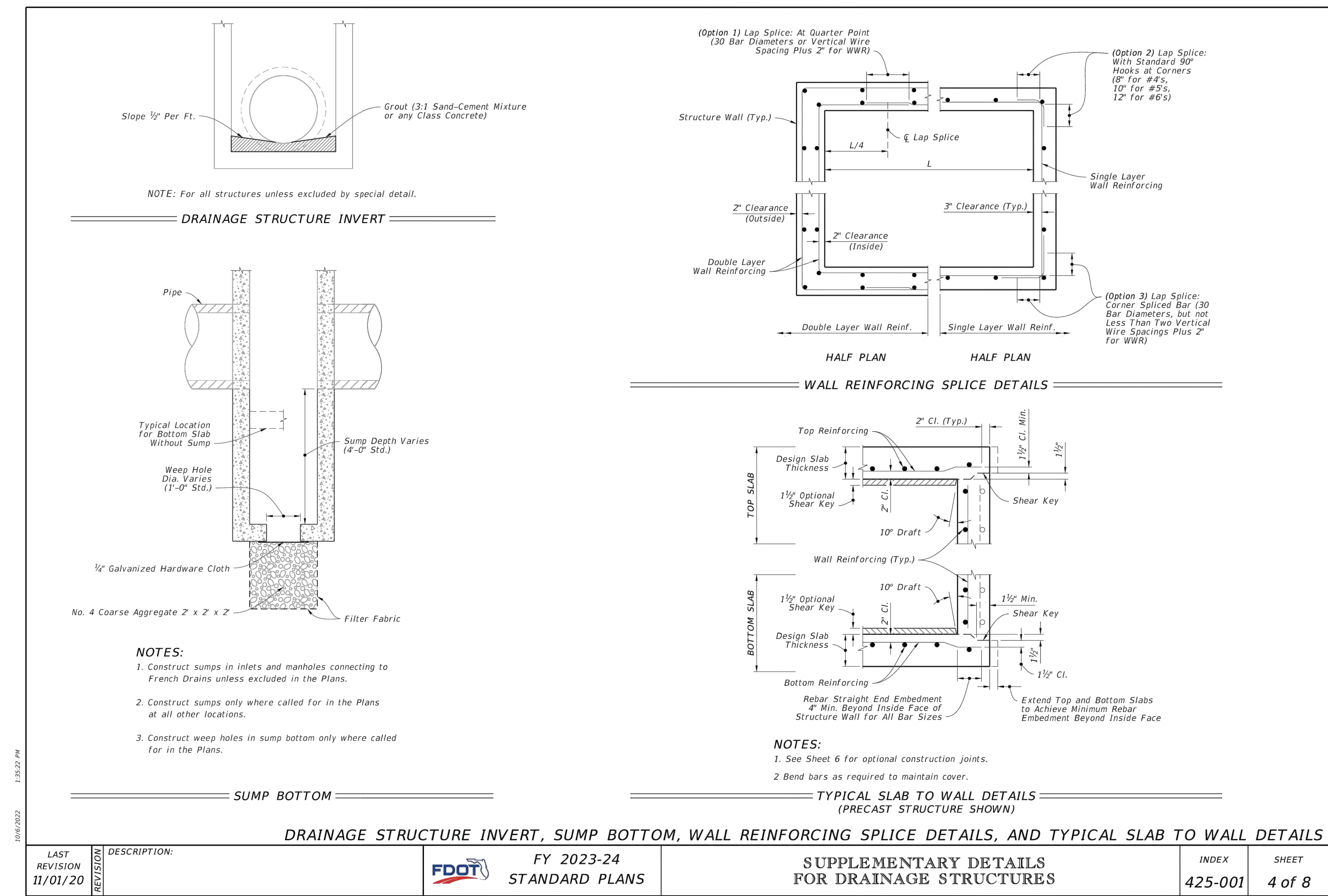
BLot ENGINEERING, INC EXPRESSLY RESERVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS MAY NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLot ENGINEERING, INC. © 2022



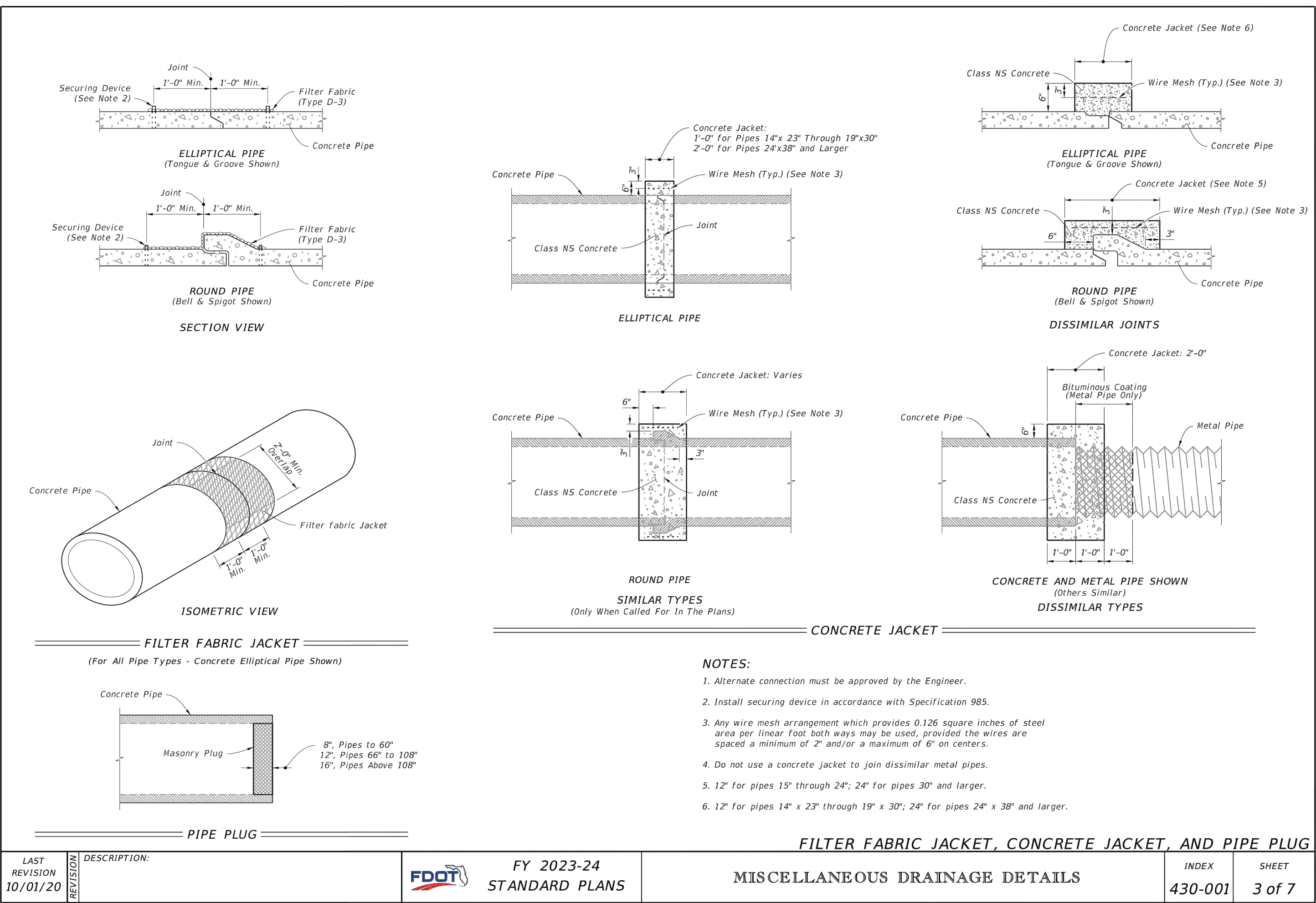
LAST REVISION 11/01/18	DESCRIPTION:	FY 2023-24 STANDARD PLANS	INDEX 330-001	SHEET 1 of 2
---------------------------	--------------	------------------------------	------------------	-----------------



LAST REVISION 11/01/18	DESCRIPTION:	FY 2023-24 STANDARD PLANS	INDEX 330-001	SHEET 2 of 2
---------------------------	--------------	------------------------------	------------------	-----------------



LAST REVISION 11/01/20	DESCRIPTION:	FY 2023-24 STANDARD PLANS	INDEX 425-001	SHEET 4 of 8
---------------------------	--------------	------------------------------	------------------	-----------------



LAST REVISION 10/01/20	DESCRIPTION:	FY 2023-24 STANDARD PLANS	INDEX 430-001	SHEET 3 of 7
---------------------------	--------------	------------------------------	------------------	-----------------

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS

DETAILS

Blot Engineering, Inc
Structural - Civil - Consulting
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com

Edward M Blot
Professional Engineer
FL No 72816

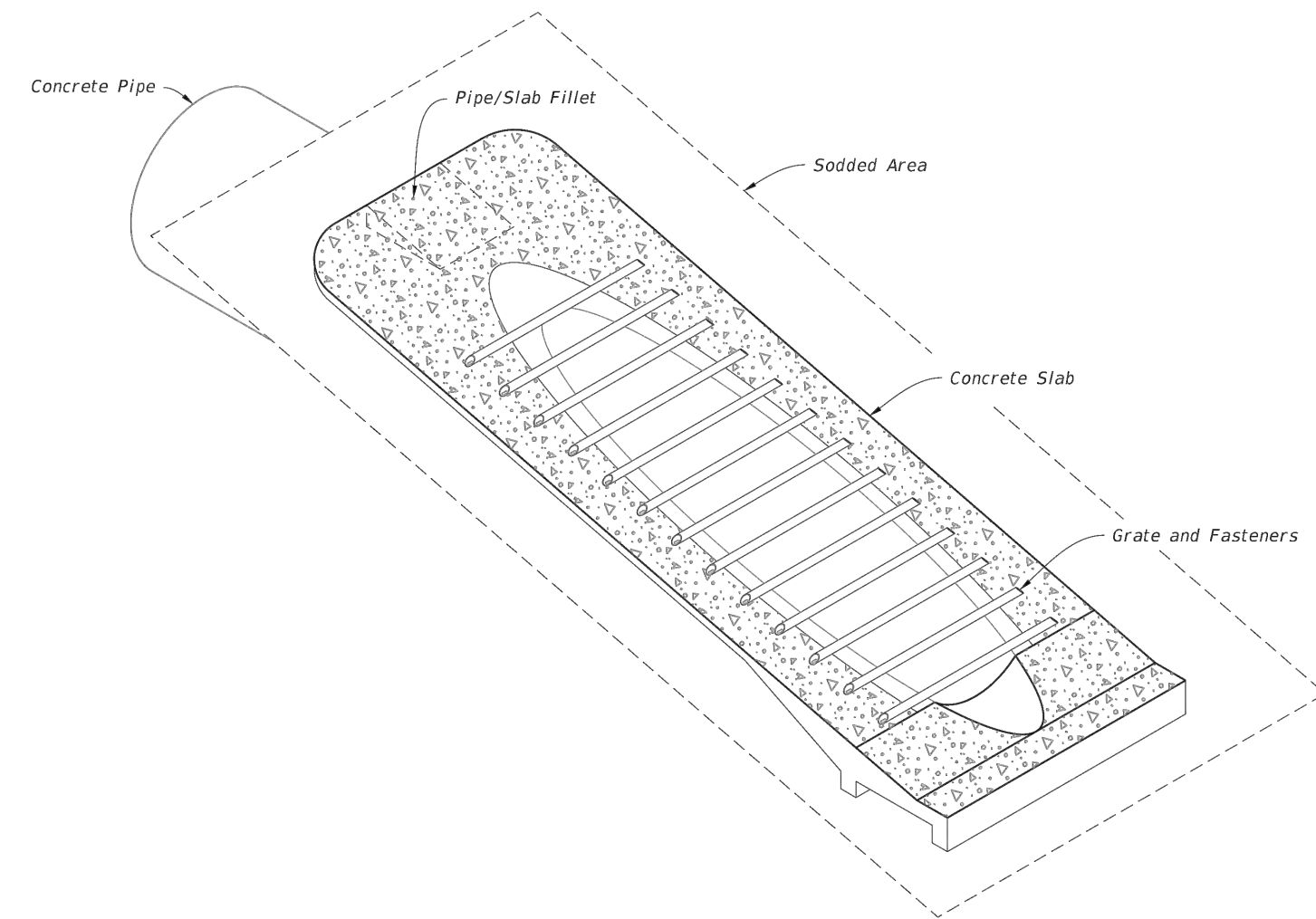
Florida State
Certificate of Authority #29553

NOI	22-005
ENR	EMB
DATE	05/16/2022
DRAWING NUMBER	127
REV	B

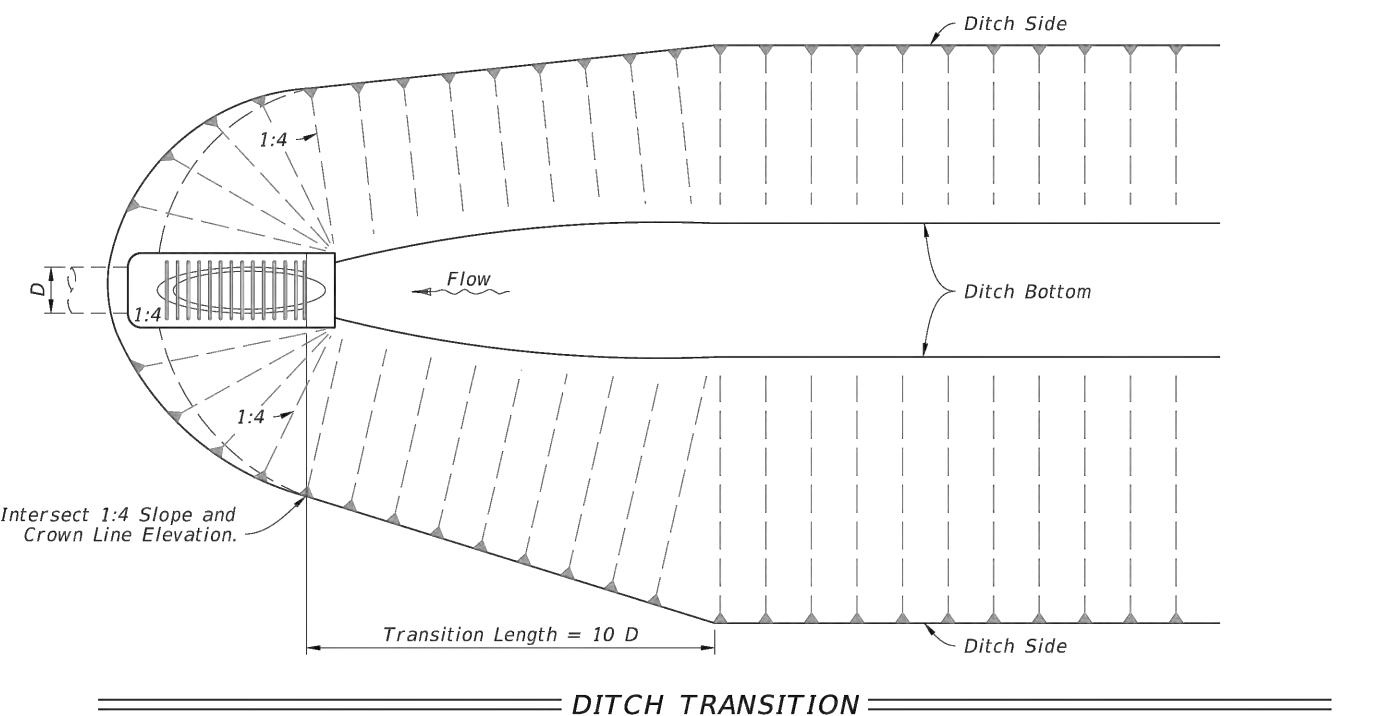
REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW
KP		EMB
KP		EMB
DWN		EMB

GENERAL NOTES:

- Unless otherwise designated in the plans, concrete pipe mitered end sections may be used with any type of side drain pipe; corrugated steel pipe mitered end sections may be used with any type of side drain pipe except aluminum pipe; and, corrugated aluminum mitered end sections may be used with any type of side drain pipe except steel pipe. When bituminous coated metal pipe is specified for side drain pipe, construct the mitered end sections with like pipe or concrete pipe. When the mitered end section pipe is dissimilar to the side drain pipe, construct a concrete jacket in accordance with Index 430-001.
- Use either corrugated metal or concrete mitered end sections for corrugated polyethylene pipe (HDPE), polyvinyl-chloride pipe (PVC), steel reinforced polyethylene pipe (SRPE), and polypropylene pipe (PP). When used in conjunction with corrugated mitered end sections, make connection using either a formed metal band specifically designated to join HDPE, PVC, SRPE, or PVC pipe. When used in conjunction with a concrete mitered end sections, construct concrete jacket in accordance with Index 430-001.
- Use class NS concrete cast-in-place reinforced slabs for all cross drain pipes.
- Select lengths of concrete pipe that avoid excessive connections in the assembly of the mitered end section.
- Repair corrugated metal pipe galvanizing that is damaged during beveling and perforating.
- When existing multiple side drain pipes are spaced other than the dimensions shown in this Index, have nonparallel axes, or non-uniform sections, either construct the mitered end sections separately as single pipe or collectively as multiple pipe end sections as directed by the Engineer.
- Saddle Slope:
 - 1:4 Miter - Slope to ϵ of pipe for round pipes less than or equal to 18" diameter and 1:1 for round pipes greater than or equal to 24" diameter.
 - Slope to the major axis for elliptical pipes 24"x38" or smaller and 1:2 for pipes 29"x45" or larger.
 - Slope to the span line for pipe arch 28"x20" or smaller and 1:2 for pipe arch 35"x24" or larger.
 - 1:2 Miter - Slope to ϵ of pipe for round pipes less than or equal to 18" diameter and 1:2 for round pipes greater than or equal to 24" diameter.
 - Slope to the major axis for elliptical pipes 29"x45" or smaller and 1:1 for pipes 34"x53" or larger.
 - Slope 1:1 for all pipe arch sizes.
- Quantities shown are for estimating purposes only.



SIDEDRAIN MITERED END SECTION
(Concrete Pipe Shown, Corrugated Metal Pipe Similar)



DITCH TRANSITION

TABLE OF CONTENTS:

Sheet	Description
1	General Notes and Contents
2	Single and Multiple Concrete Pipe
3	Concrete Pipe Dimensions and Quantities and Permissible Pavement Modifications
4	Single and Multiple Corrugated Metal Pipe
5	Corrugated Metal Dimensions and Quantities
6	Concrete Pipe Connection and Corrugated Metal Pipe Anchor Details
7	Fastener Unit and Grate Details

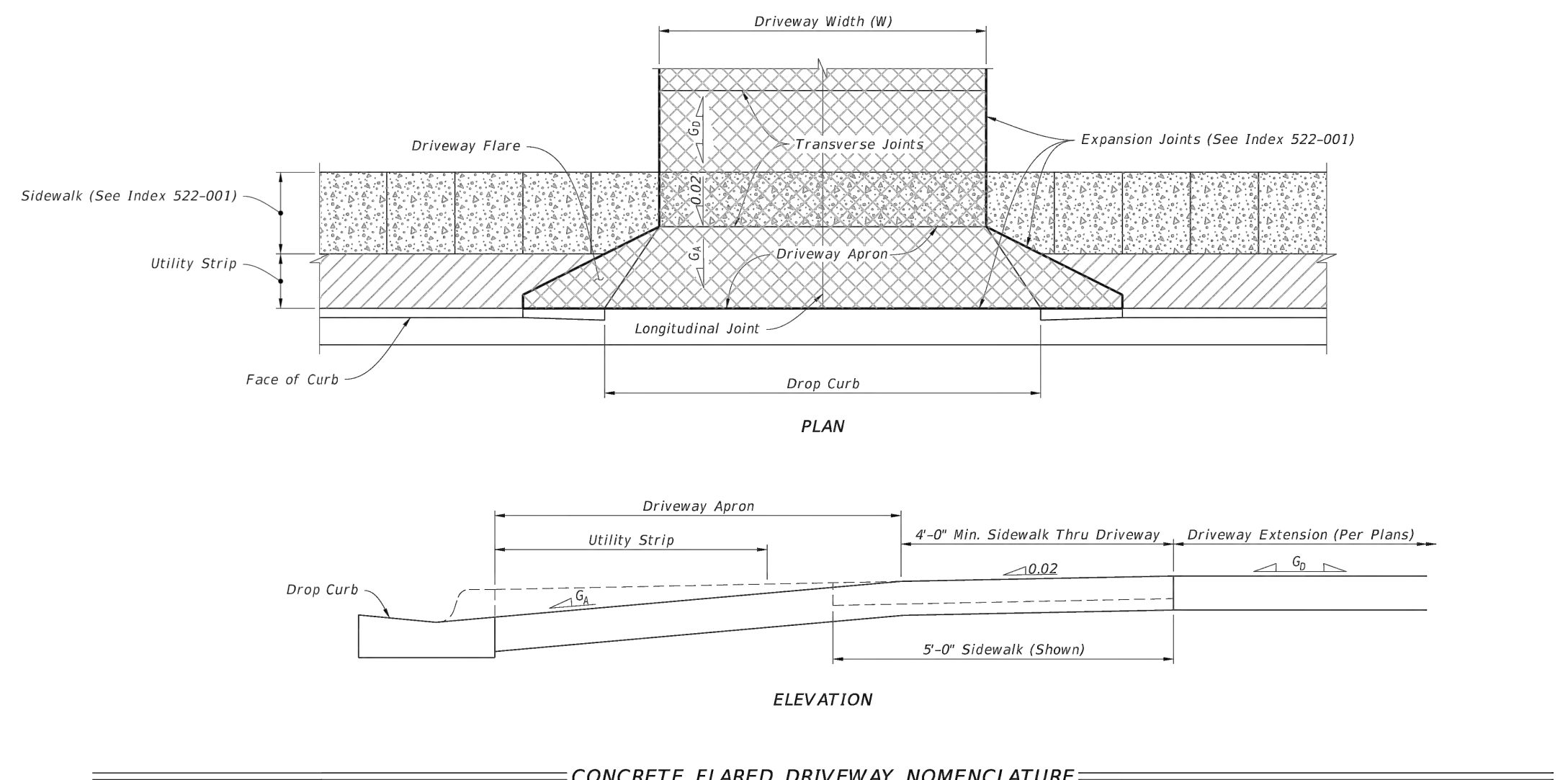
LAST REVISION 11/01/19	DESCRIPTION: FDOT FY 2023-24 STANDARD PLANS	SIDE DRAIN MITERED END SECTION	INDEX 430-022	SHEET 1 of 7
---------------------------	--	--------------------------------	------------------	-----------------

GENERAL NOTES:

- Work this Index with Specification 522.
- Refer to Index 520-001 for drop curb details and Index 522-001 for joints between driveway, sidewalks, and curb.
- Existing Curb and Gutter: Remove existing curb and gutter to either the nearest joint beyond the flared point or to where no remaining section is less than 5 feet long.
- Grades and cross slopes shown are maximums.
- Longitudinal Joints: Construct 1/2" open joints placed at equal (20' max.) intervals for driveways over 20' wide. Match joints in curb and gutter to match joints in driveways.
- Transverse Joints: Construct 1/2" open joints @ 10' Centers and 1/2" expansion joints with preformed joint filler every 5th joint.
- Construct driveways (6" thick concrete) to a uniform width (W) to the R/W line or the extent shown in the Plans.
- Width of Sidewalk Thru Driveway is 4'-0" minimum. Match sidewalk width when shown in Plans or when utility strip width is equal to or greater than the depth of the Driveway Apron.
- Alpha-Numeric Identification: Concrete Flared Driveway Alpha-Numeric Identifications (e.g. G4) are provided for reference purposes in the Plans.

LEGEND:

- Sidewalk
- Flared Driveway (6" Thick Concrete)
- Sidewalk Thru Driveway (6" Thick Concrete)
- Utility Strip
- G₁ Grade of Apron
- G₂ Grade of Driveway (Per Plans)



CONCRETE FLARED DRIVEWAY NOMENCLATURE

LAST REVISION 11/01/18	DESCRIPTION: FDOT FY 2023-24 STANDARD PLANS	CONCRETE FLARED DRIVEWAYS	INDEX 522-003	SHEET 1 of 4
---------------------------	--	---------------------------	------------------	-----------------

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS

DETAILS

Blot Engineering, Inc
Structural - Civil - Consulting
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com

Edward M Blot
Professional Engineer
FL No 72816

Florida State
Certificate of Authority #29553

PROJ 22-005	ENGR EMB	DRWN KP
DATE 05/16/2022	REV A	DESCRIPTION ISSUED FOR 60% REVIEW ISSUED FOR 30% REVIEW
128	B	

GENERAL NOTES:

1. Use Class II concrete.
2. Construct Baffles only when called for in Plans.
3. See Sheet 5 when steel grating is required on endwall.
4. All reinforcing #4 bars with 2" clearance except as noted.
5. Channel section C 3x6 may be substituted for C 4x5.4 channel.
6. Endwall may be cast in place or precast concrete. Construct precast units to dimensions shown, or as shown in approved shop drawings. Submit requests for shop drawing approvals to the Engineer. Use Index 425-001 for opening and grouting details.
7. Quantities shown are for estimating purposes only.

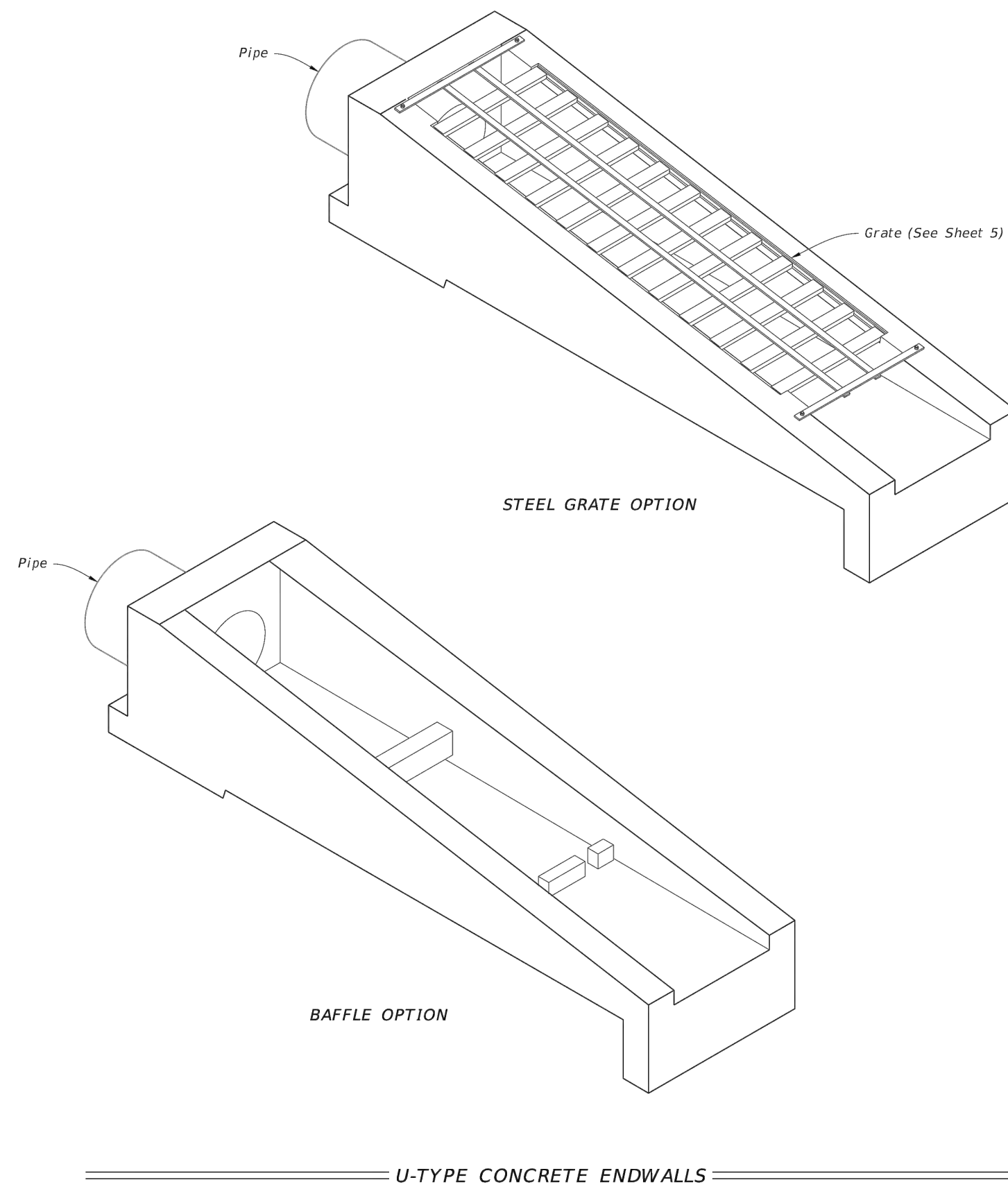
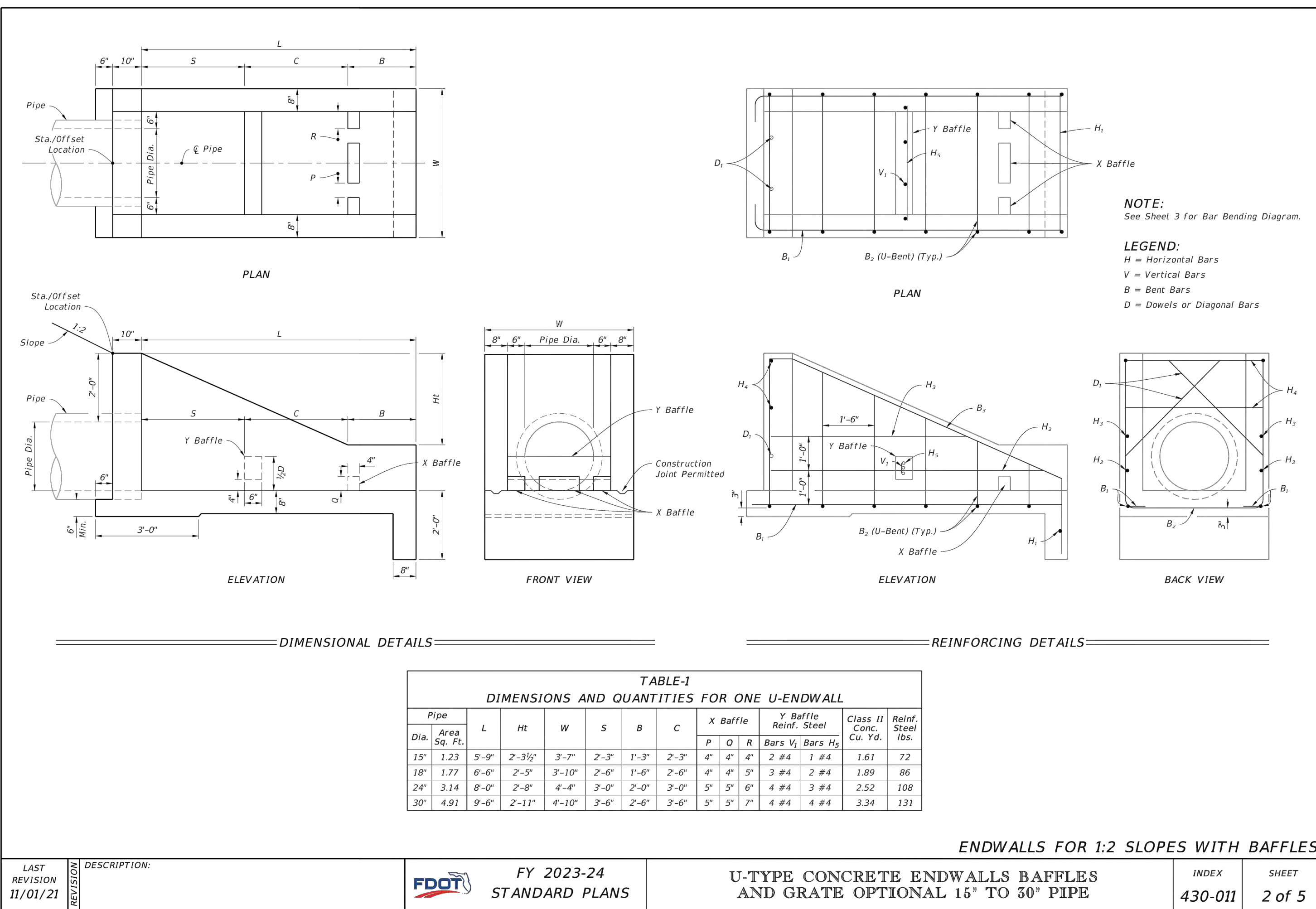


TABLE OF CONTENTS:

Sheet	Description
1	General Notes and Contents
2	Endwalls For 1:2 Slopes With Baffles
3	Endwalls For 1:2 Slopes Without Baffles and Bending Bar Diagram
4	Endwalls For 1:3, 1:4, and 1:6 Slopes
5	Steel Grate Option

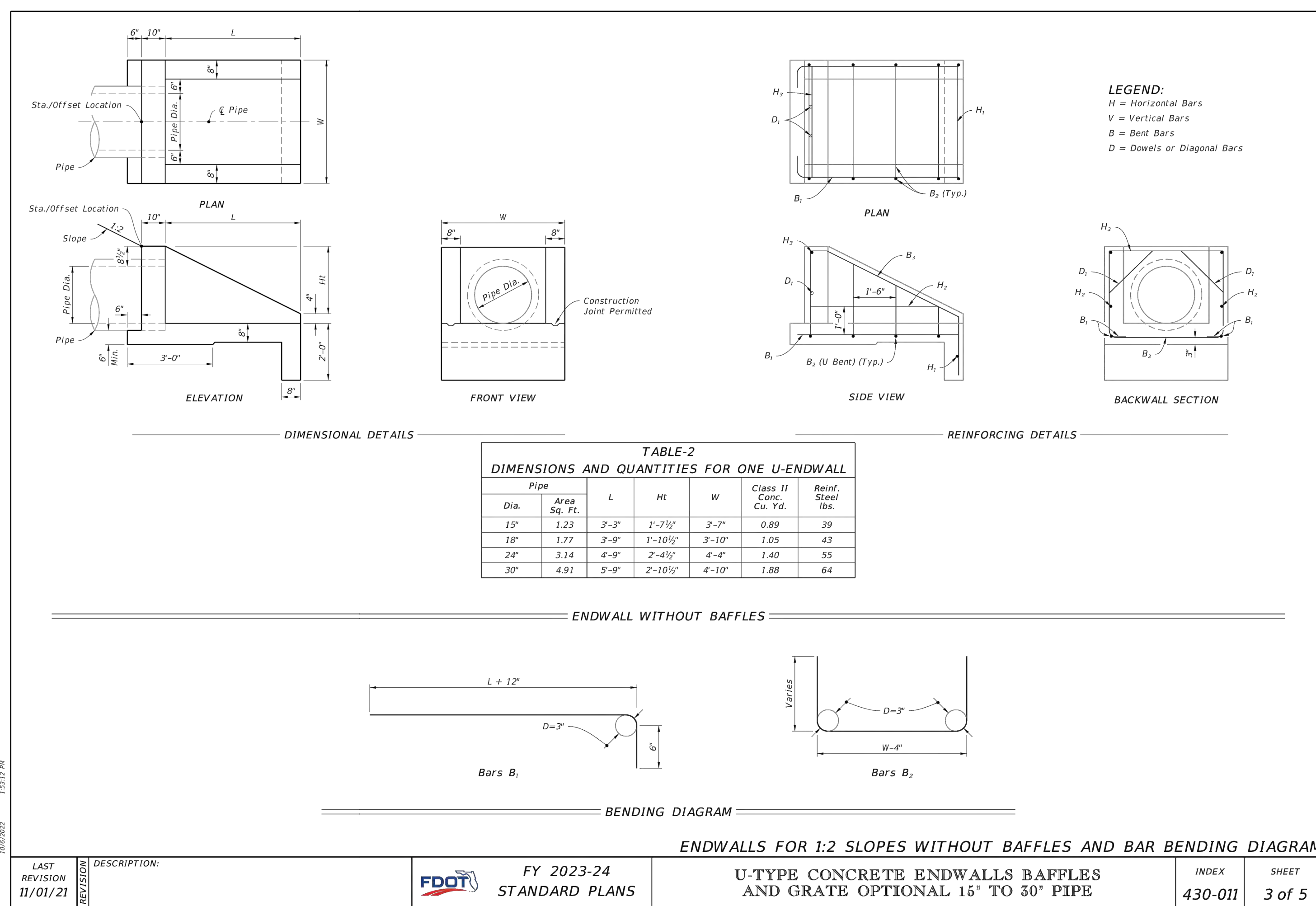
LAST REVISION 11/01/21	DESCRIPTION: FY 2023-24 STANDARD PLANS	FY 2023-24 STANDARD PLANS	U-TYPE CONCRETE ENDWALLS BAFFLES AND GRATE OPTIONAL 15" TO 30" PIPE	INDEX 430-011	SHEET 1 of 5
---------------------------	--	------------------------------	--	------------------	-----------------

10/6/2022 1:03:11 PM

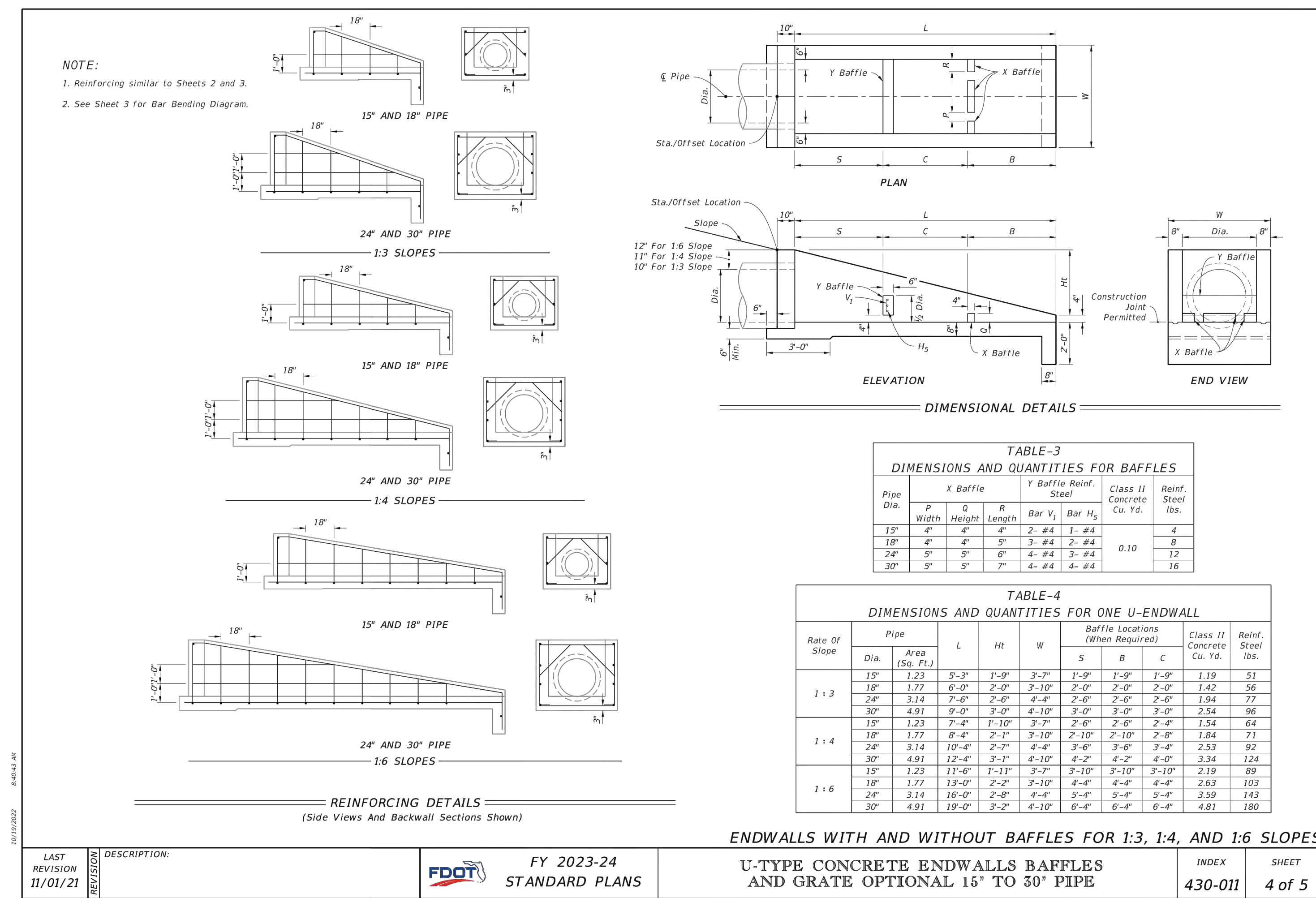


LAST REVISION 11/01/21	DESCRIPTION: FY 2023-24 STANDARD PLANS	FY 2023-24 STANDARD PLANS	U-TYPE CONCRETE ENDWALLS BAFFLES AND GRATE OPTIONAL 15" TO 30" PIPE	INDEX 430-011	SHEET 2 of 5
---------------------------	--	------------------------------	--	------------------	-----------------

10/6/2022 1:03:11 PM



LAST REVISION 11/01/21	DESCRIPTION: FY 2023-24 STANDARD PLANS	FY 2023-24 STANDARD PLANS	U-TYPE CONCRETE ENDWALLS BAFFLES AND GRATE OPTIONAL 15" TO 30" PIPE	INDEX 430-011	SHEET 3 of 5
---------------------------	--	------------------------------	--	------------------	-----------------



LAST REVISION 11/01/21	DESCRIPTION: FY 2023-24 STANDARD PLANS	FY 2023-24 STANDARD PLANS	U-TYPE CONCRETE ENDWALLS BAFFLES AND GRATE OPTIONAL 15" TO 30" PIPE	INDEX 430-011	SHEET 4 of 5
---------------------------	--	------------------------------	--	------------------	-----------------

10/6/2022 8:46:03 AM

REV	DATE	DESCRIPTION
B	10/10/23	ISSUED FOR 60% REVIEW
A	10/27/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
DETAILS

Blot Engineering, Inc
Structural - Civil - Consulting
Edward M Blot, Engineer
FL No 72816
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com
Florida State
Certificate of Authority #29553

PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRWING NUMBER	129
REV	B

- GENERAL NOTES:**
- Work this Index with Index 425-001 and Index 425-010.
 - Chamfer all exposed edges and corners $\frac{1}{4}$ " chamfer or tool to $\frac{1}{4}$ " radius.
 - All reinforcing is Grade 60 bars with 2" minimum cover unless otherwise noted. Cut or bend bars for $1\frac{1}{2}$ " clearance around pipe opening. Provide one additional #4 bar above and at each side of pipe opening.
 - Use Concrete Apron on inlets without slots and inlets with non-traversable slots only when called for in the Plans.
 - Quantities are for informational and estimating purposes only.

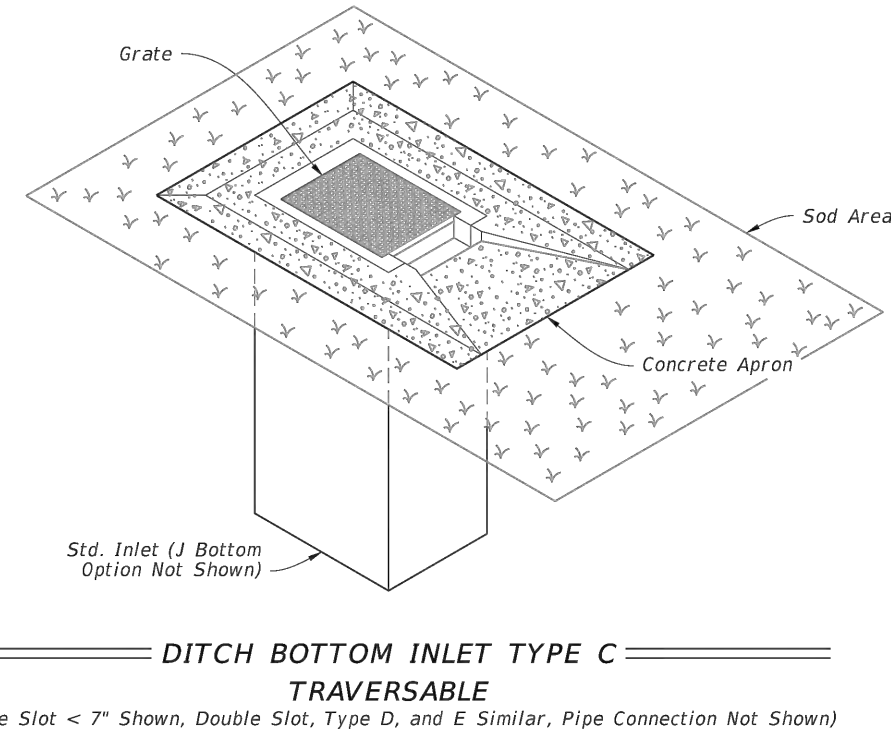
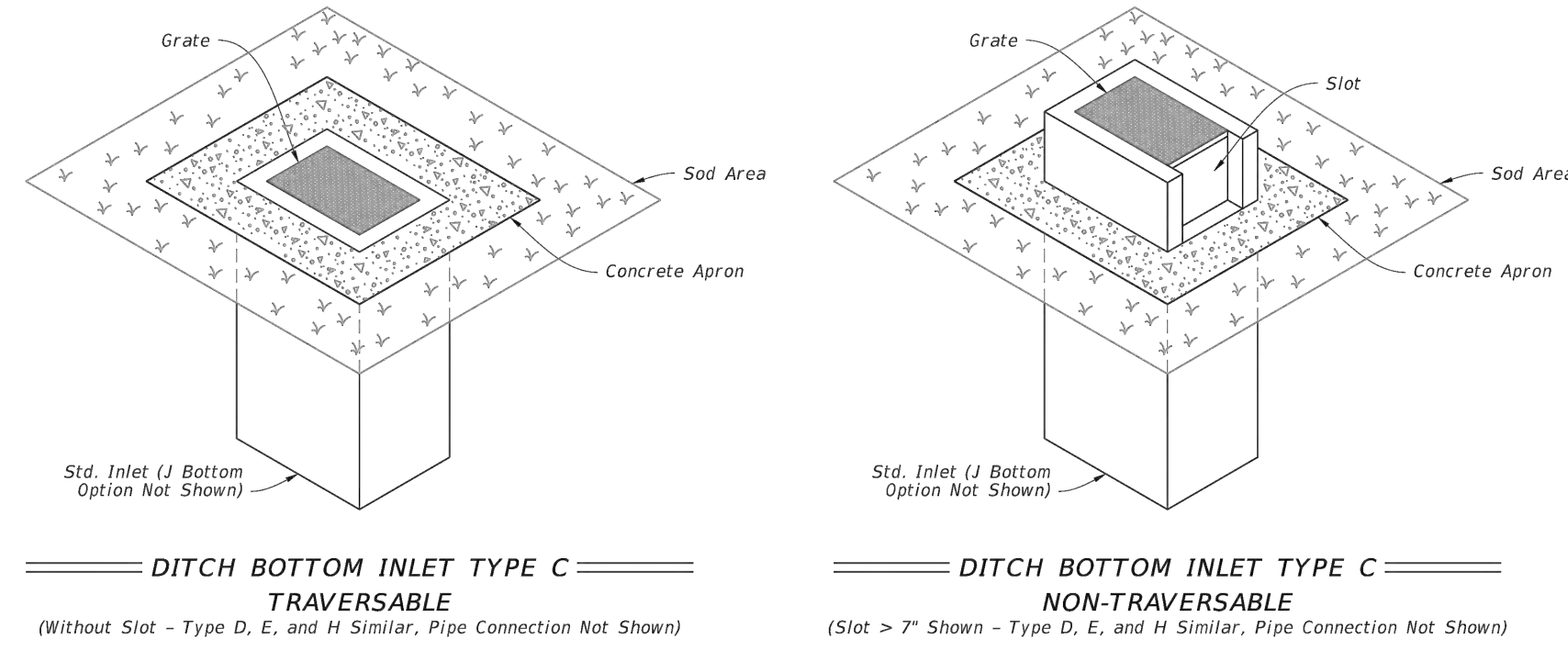
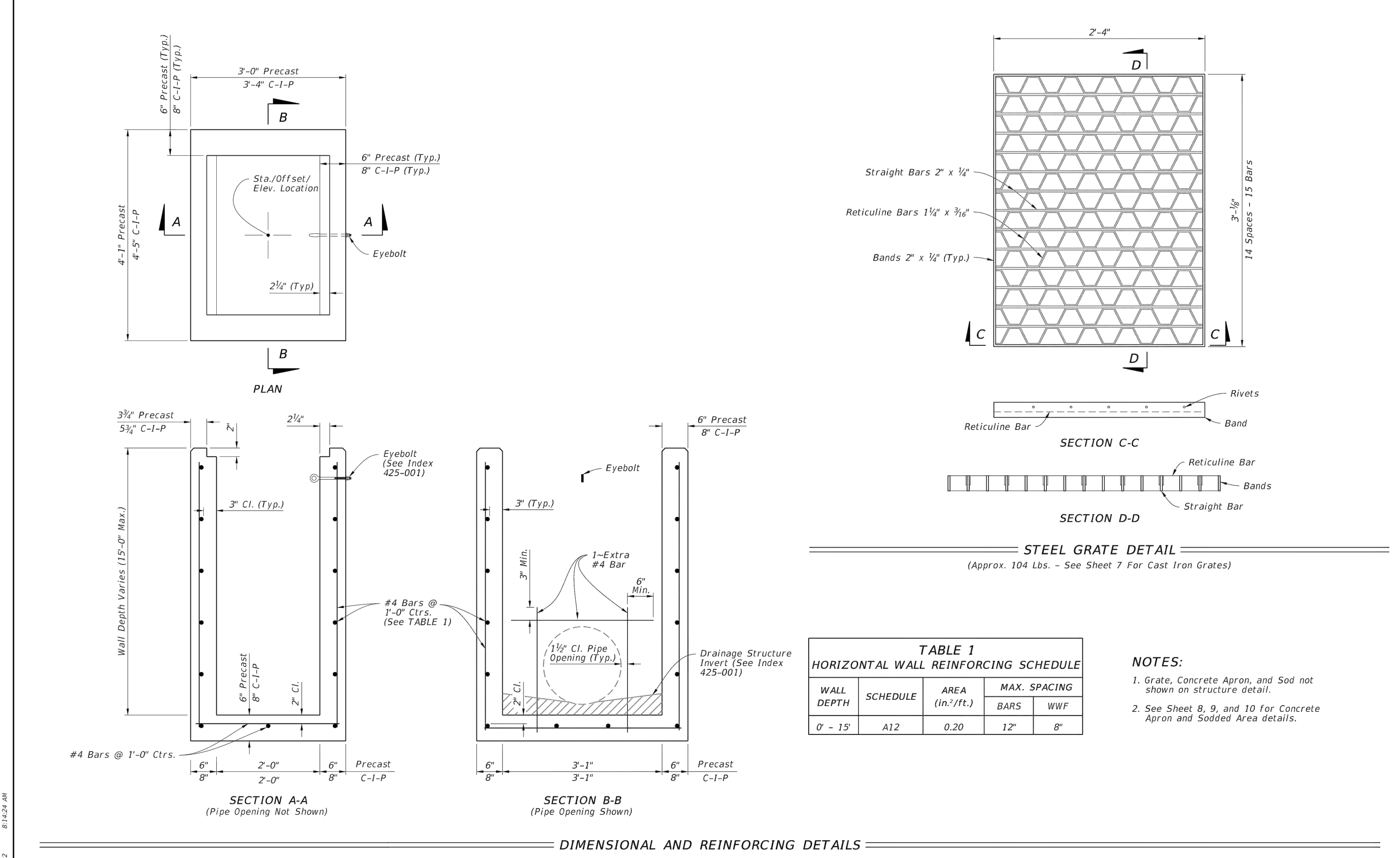


TABLE OF CONTENTS:

Sheet	Description
1	General Notes and Contents
2	Type C - Dimensional, Reinforcing, and Grate Details
3	Type D - Dimensional, Reinforcing, and Grate Details
4	Type E - Dimensional, Reinforcing, and Grate Details
5	Type H (2 & 3 Grate) - Dimensional, Reinforcing, and Steel Grate Details
6	Type H (4 Grate) - Dimensional, Reinforcing, and Steel Grate Details
7	Cast Iron Grate Details
8	Non-Traversable Inlet Details
9	Traversable Inlet Without Slot Details
10	Traversable Inlet With Slot Details
11	Case 1 - Add Traversable Slots to Existing Inlets
12	Case 2 - Add Traversable Slots (Partial) to Existing Inlets
13	Case 3 - Add Traversable Slots (Partial) to Existing Inlets and Ditch Block
14	Alternate A Structure Bottom - Top Slab Details

LAST REVISION 10/01/20	DESCRIPTION:	FY 2023-24 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX 425-052	SHEET 1 of 14
---------------------------	--------------	---------------------------	---	------------------	------------------

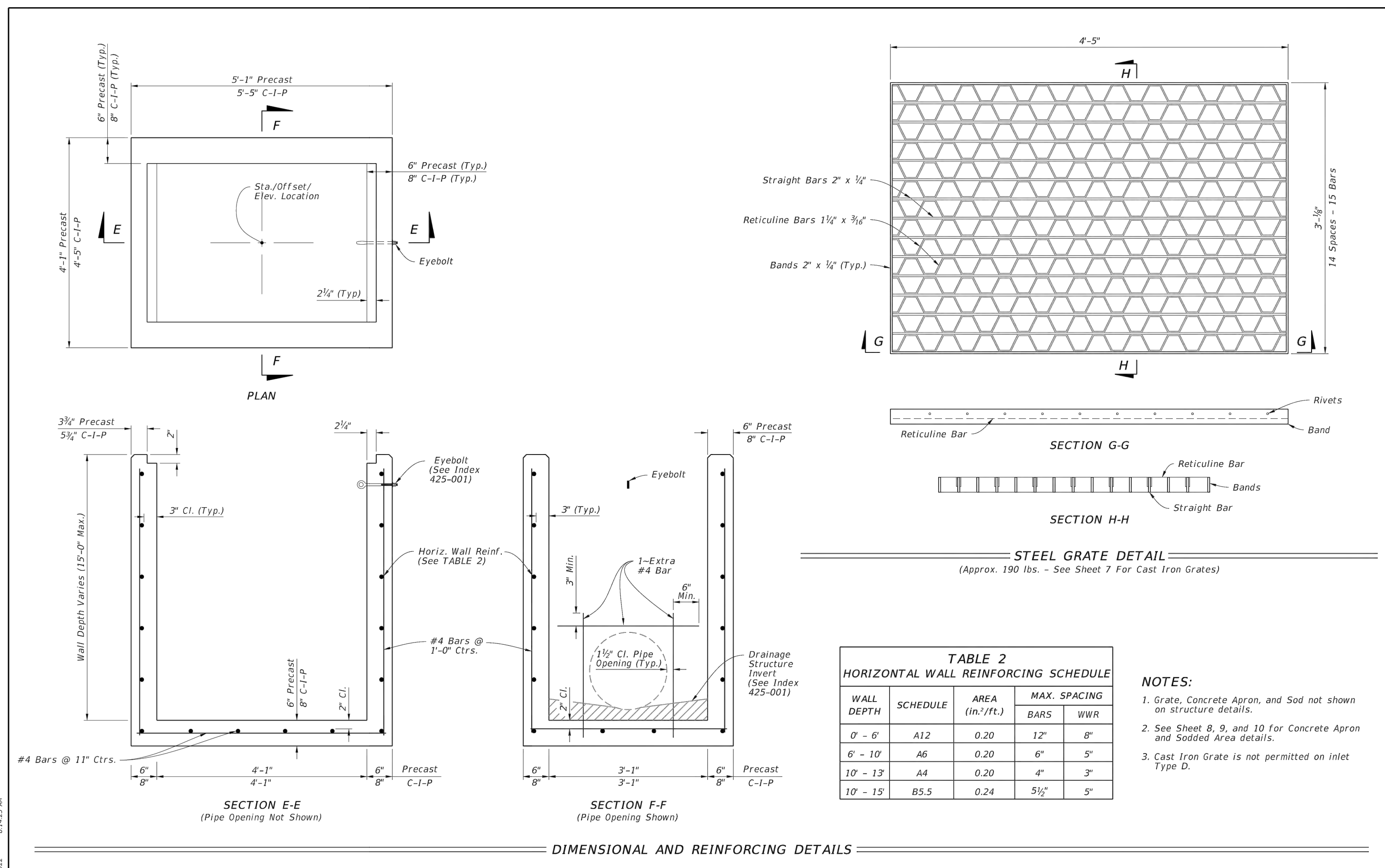


**TABLE 1
HORIZONTAL WALL REINFORCING SCHEDULE**

WALL DEPTH	SCHEDULE	AREA (in. ² /ft.)	MAX. SPACING BARS	WWF
0' - 15'	A12	0.20	12"	8"

- NOTES:**
- Grate, Concrete Apron, and Sod not shown on structure detail.
 - See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.

LAST REVISION 10/01/20	DESCRIPTION:	FY 2023-24 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX 425-052	SHEET 2 of 14
---------------------------	--------------	---------------------------	---	------------------	------------------

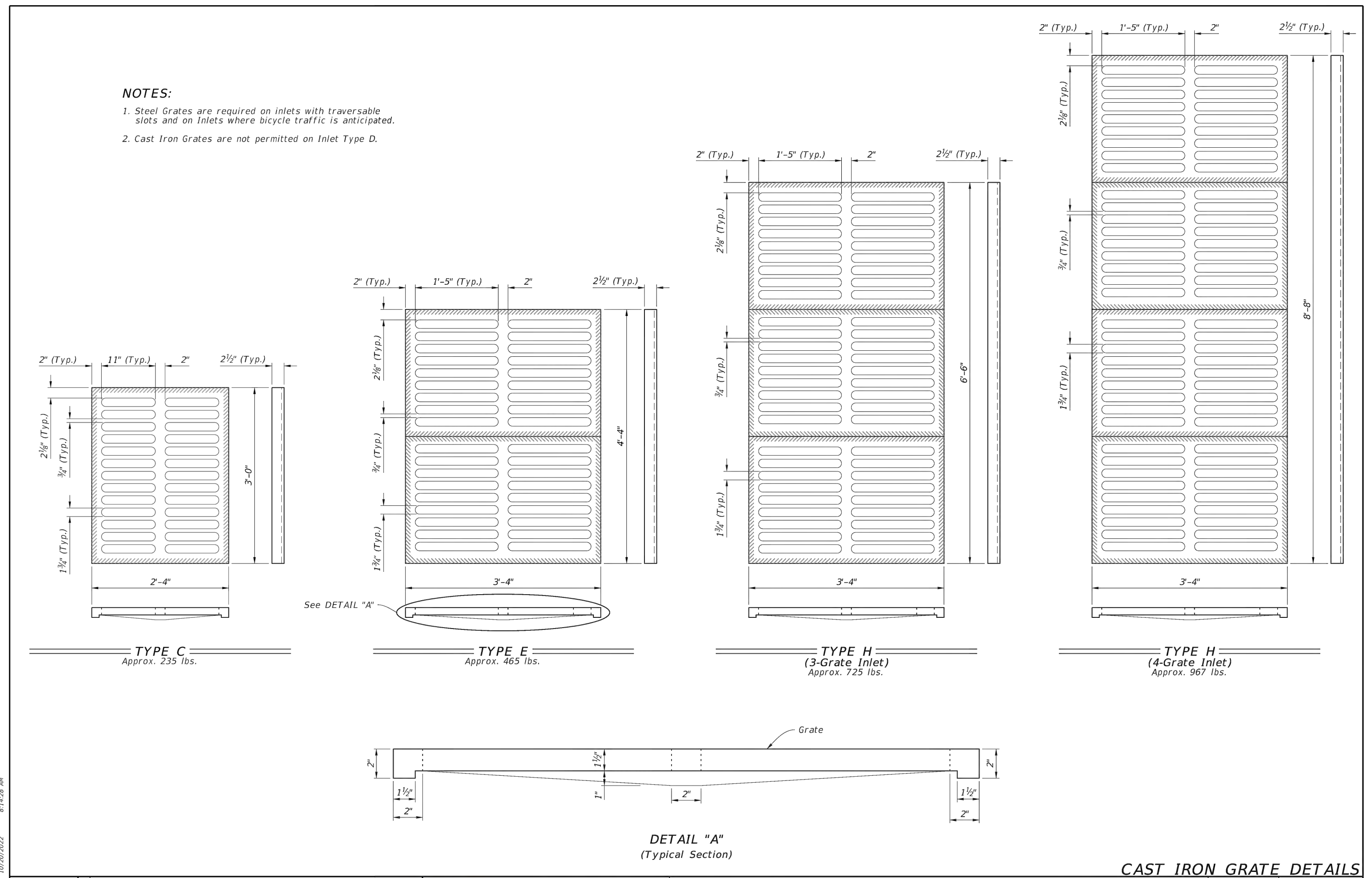


**TABLE 2
HORIZONTAL WALL REINFORCING SCHEDULE**

WALL DEPTH	SCHEDULE	AREA (in. ² /ft.)	MAX. SPACING BARS	WWF
0' - 6'	A12	0.20	12"	8"
6' - 10'	A6	0.20	6"	5"
10' - 13'	A4	0.20	4"	3"
10' - 15'	B5.5	0.24	5 1/2"	5"

- NOTES:**
- Grate, Concrete Apron, and Sod not shown on structure details.
 - See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.
 - Cast Iron Grate is not permitted on inlet Type D.

LAST REVISION 10/01/20	DESCRIPTION:	FY 2023-24 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX 425-052	SHEET 3 of 14
---------------------------	--------------	---------------------------	---	------------------	------------------



- NOTES:**
- Steel Grates are required on inlets with traversable slots and on inlets where bicycle traffic is anticipated.
 - Cast Iron Grates are not permitted on Inlet Type D.

LAST REVISION 10/01/20	DESCRIPTION:	FY 2023-24 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX 425-052	SHEET 7 of 14
---------------------------	--------------	---------------------------	---	------------------	------------------

REV	DATE	DESCRIPTION
A	06/27/22	ISSUED FOR 30% REVIEW
B	04/10/23	ISSUED FOR 60% REVIEW
KP		EMB
KP		EMB
DWN		EMB

**COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS**

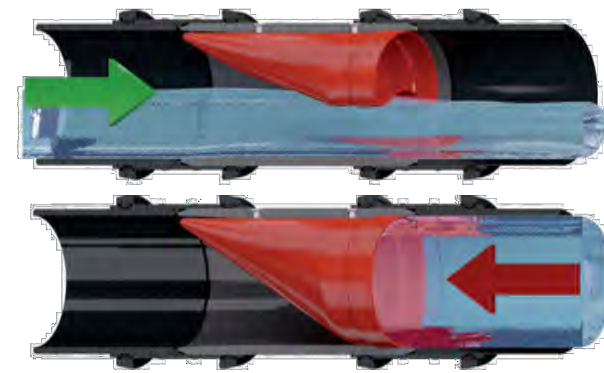
DETAILS

Blot Engineering, Inc
Structural - Civil - Consulting
Edward M Blot
Professional Engineer
FL No 72816
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com
Florida State
Certificate of Authority #29553

PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWN	KP
CHK	DWN
SCALE	
SHEET	130

WASTOP®

WASTOP® INLINE CHECK VALVE



We all know someone who has been affected by it. We see it, feel it and experience it. Climate change and rising sea levels are affecting us all. Through the innovation of WASTOP inline Check Valve, we at Wapro have prevented thousands of floods worldwide.

In order to protect against flooding, we at Wapro have engineered the WASTOP to ensure the lowest possible opening pressure whilst maintaining the best possible seal against backflow. This, combined with the lowest headloss available, gives the most efficient flow conditions, ensuring the fastest evacuation of water. An essential quality of check valves used to protect people and property. WASTOP protects.

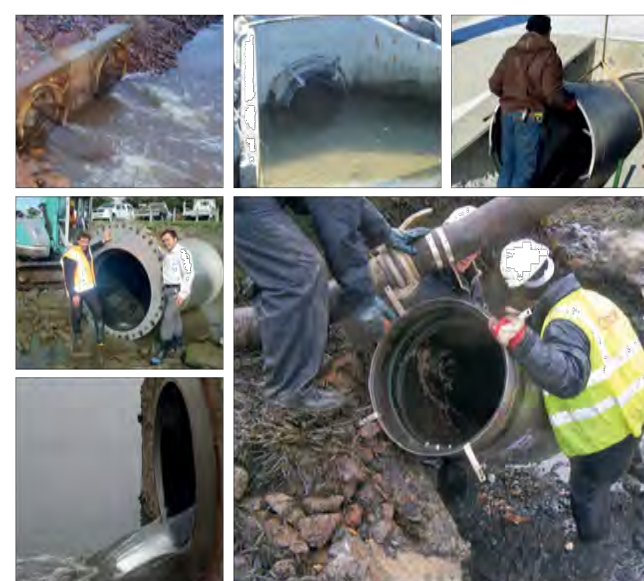
THE BENEFITS OF WASTOP®

- Easy installation saving on construction & installation costs
- Superior construction materials
- Lowest headloss amongst inline check valves

- Low life cycle cost
- No moving parts - virtually maintenance-free
- Many dimensions 3" - 80" std & non-standard pipes
- Stops liquids, gases, odors, insects and small animals

APPLICATIONS - WASTE WATER, SURFACE WATER, TIDAL AREAS

We at Wapro know that any solution for flood prevention or odor control needs to function. Simply, effectively. That's why, when we invented the WASTOP inline check valve in 2000 we had one thought in mind. Instant automatic protection. Working on differential pressure the WASTOP functions autonomously, without human interaction, without electricity, without constant maintenance. It just works.



To invent the best inline check valve on the market our engineers went one step further. We also thought about the different parts of the process and who would be affected by the design of the valve. With function at the forefront of their minds, our engineers developed a valve that works in stormwater, sewer, odor applications, as well as ensuring coverage of existing pipes sizes to enable retro-fitting with ease. We cover all sizes of pipes, all shapes, from 3" - 80". As standard. Off the shelf in most cases, for fast delivery. We keep a stock to ensure the contractor and end user can keep time and costs to a minimum.



WASTOP®

BENEFITS OF SUPERIOR CONSTRUCTION

WASTOP is designed to provide asset and property owners' peace of mind. Simply the most reliable, high quality inline check valve in existence.

HOUSING & SEAL

- Thin stainless housing
- Perfect function regardless of the existing pipe quality
- Peace of mind knowing the seal is 100% tight
- Low life-cycle cost
- Lower energy costs
- Quick, easy installation

DOUBLE COLLARS

- Fast deliveries
- Easy installation for inlet or outlet installation
- Reduces costs by having one product for multiple installations
- Helps you meet your budget

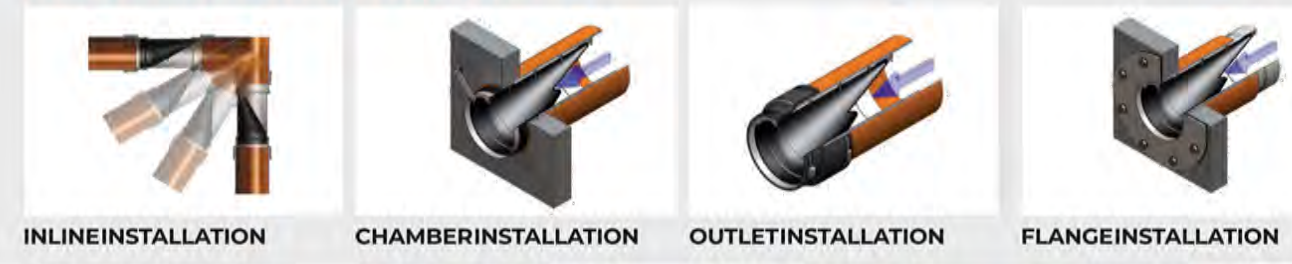
FIXATION MATERIAL

- Long life expectancy and low life-cycle cost with high quality materials
- Peace of mind - engineered product that exceeds expectations

MEMBRANE

- Stops backflow effectively even in low flow conditions
- Pulsating flow reduces sedimentation up and downstream
- Extremely low headloss
- Low maintenance costs
- Memory membrane - doesn't sag

THE VERSATILITY OF WASTOP®



INLINE INSTALLATION

CHAMBER INSTALLATION

OUTLET INSTALLATION

FLANGE INSTALLATION

WASTOP® PRE-INSTALLED IN AN ACCESS CHAMBER

The WAccess Chamber provides you with peace of mind. Once installed the WAccess chamber provides complete protection against backflow in the sewer or combined sewer network. One ingenious product protects your basement or property from flooding caused by an overload or surcharge in the sewer system.

- Easy access from ground level
- Easy to inspect - simply lift manhole cover and pull up the WASTOP module
- Delivered complete - inspection chamber and check valve in one



Rev	Note	Created By	Appr By	Issue Date
A	Initial release	HE		

Designed By: HE
 Approved By: HE
 Created Date: 2019-12-11
 Units: [inch]
 Project: WASTOP NPS 18"
 General Tolerance: ISO 1302DA
 Scale: 1:20
 Material: AISI 304 / AISI 316L
 Box Volume (ft³): 5.8
 Description: WASTOP NPS 18"
 Article Number: WS440-S
 Drawing Number: WS440-S-US
 Rev: A
 Sheet: 1 | 1

SSF-41 ROUND DRAINAGE FLAP GATES

FABRICATED STAINLESS STEEL

WATERMAN VALVE

KEY FEATURES

- Spigot back, flatback or flangeback
- Sizes 8" - 84" (Custom spigot sizes available)
- Seating heads to 30 feet
- A corrosion-resistant rust-proof automatic drainage gate designed for flange mounting or wall mounting
- J-Bulb neoprene adjustable seats provide excellent sealing against return flow
- Frame, cover, retainer ring, hinge arm, and pivot lug are of stainless steel. Gate hardware is stainless steel.
- Flatback for mounting to headwall.
- Flangeback to mate with 25# or 125# pipe flange.



SPECIFICATIONS

GENERAL

The flap gate shall be designed to allow free outflow and prevent backflow for maximum seating heads of 30 feet (see size chart below). Gates shall be Waterman Model SSF-41 or equal.

CONSTRUCTION

The frame shall be stainless steel of flatback, spigotback or flangeback design (or other specified design configuration as required) with seating surface inclined from vertical at a minimum of 2½° to assure positive closure. The stainless steel cover shall be attached to the frame in such a manner as to allow proper seating and full opening of cover. Built in stops shall be provided to prevent the cover from rotating sufficiently to become wedged in the open position. A resilient neoprene seal shall be attached to the inside of the frame opening and shall act as a seat for the cover to seal against. The seal shall be retained by a stainless steel ring bolted or welded to the frame. The linkage system shall be of the double pivoted type, attached to fixed pivot points on cover and frame. Hinge links shall be of structural stainless steel shapes. The heavily reinforced hinge arm of the Model SSF-41 is fastened to the pivot lug by means of heavy stainless steel hinge pins inserted through a durable non-metallic bushing. The hinge pin is arranged in a double shear configuration at extremely close tolerances thus severely limiting lateral movement. This, in conjunction with the protruding rubber seat (in lieu of a recessed seat) insures positive seating at all times regardless of the angle of tidal action.

FINISH

Mill finish on all surfaces.

MATERIALS

Frame and Cover and Hinge Link - Stainless Steel - ASTM A-276, Type 304 or 316 as specified. Assembly Hardware - Stainless Steel Type 18-8.

RECOMMENDED MAXIMUM SEATING HEADS:
 8" to 30" size: 30 feet of head
 36" to 42" size: 20 feet of head
 48" to 60" size: 15 feet of head
 66" to 84" size: 10 feet of head

Custom models with higher head ratings available, consult factory.

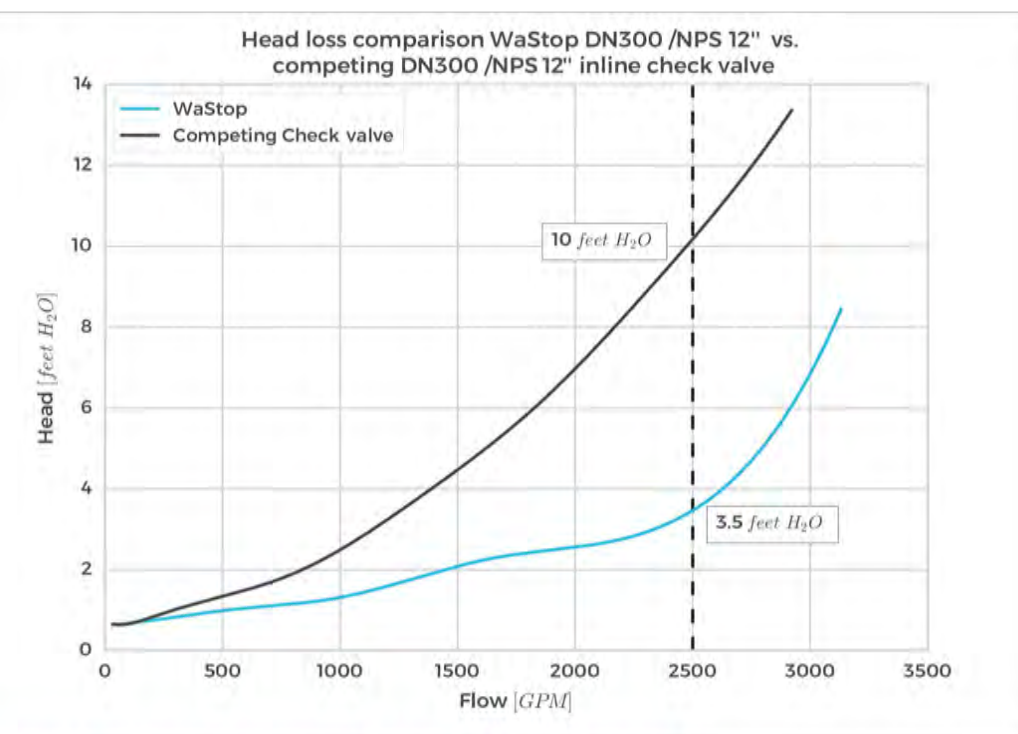


MPI - MCWANE PLANT & INDUSTRIAL
 1201 Vanderbilt Road Birmingham, AL 35204 www.mcwanepi.com sales@mcwanepi.com
 Kennedy Valve | Tyler Union | McWane Ductile | Waterman

MPIW-1006-1-10/20

LOW HEAD LOSS IS ESSENTIAL

Comparing head loss data is difficult as the test procedure is rarely presented and there are multiple ways of altering data. However, the test results shown below were conducted in the same facility with the same reference points etc. are comparable. The test result shows that the WASTOP has **65% lower head loss** than a competing inline check valve at flow 2500 GPM. Both valves were tested in the same open air scenario.



THE WIDEST RANGE OF SIZES TO SUIT ALL PIPES

We at Wapro know that there is a wide range of pipes available on the market, and that these pipes aren't always perfect. To ensure the valve we provide to you with fits perfectly and protects 100% we've engineered the guess work out of it.

Keeping in line with our customer promise of common sense and simplicity, we have developed a standard range of WASTOP from NPS 3" - 80". On top of this we have a Superior Fit Seal to ensure there is no leakage between the existing pipe and the WASTOP Inline Check Valve. We designed this seal to not only create the perfect fit, but also to ensure quick easy installation. Time is money.



All sizes are available in short versions or with flanges and can be customized to suit your needs. All WASTOP standard valves are reversible for inlet or outlet installation and are able to be used vertically as well as horizontally.



WASTOP STANDARD RANGE DIMENSIONS

Long life-cycle is part of our DNA. It's part of our values. With this in mind we use the right materials for the right application. Stainless steel AISI 304 (EN14301) and AISI 316L (EN14404), and PVC/PE, along with a membrane material suited to the application.

WASTOP STANDARD - 304/316 STAINLESS STEEL

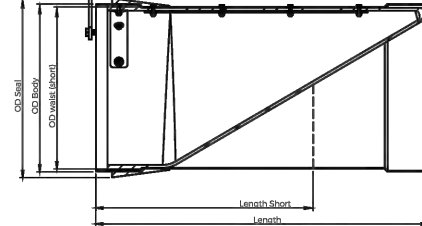
Model*	NPS	Length	Length (Short)**	OD seal	OD body	OD waist (OD Short)	Opening pressure (Standard)	Closing pressure (Standard)	Weight
	[in]	[in]	[in]	[in]	[in]	[in]	[in](kPa)	[in](kPa)	[lbs]
WS577	4	8.3	6.3	4.0	3.8	3.7	7	3	1.5
WS581	4	8.15	6.15	4.1	3.9	3.8	7	2	1.6
WS576	5	9.1	6.3	4.7	4.5	4.4	10	4	2.0
WS346	6	11.8	7.9	6.3	5.7	5.5	9	3	5.2
WS183	8	15.2	10.6	7.9	7.1	6.8	10	5	9.3
WS281	8	16.4	10.8	8.5	7.5	7.2	8	4	10
WS215	9	17.7	11.8	9.5	8.5	8.1	9	5	12
WS230	10	18.9	12.6	9.8	9.1	8.7	8	5	14
WS240	10	20.5	13.8	10.2	9.4	9.1	7	4	15
WS285	11	21.7	14.4	11.2	10.4	10.1	7	4	22
WS290	12	23.6	15.7	12.2	11.4	11.0	9	6	22
WS340	14	27.6	19.7	13.9	13.4	12.9	14	9	40
WS370	15	28.7	19.7	13.5	14.6	14.1	9	6	44
WS380	16	29.5	19.7	14.3	15.4	14.9	12	7	53
WS440	18	33.1	22.0	16.4	17.4	17.0	8	6	62
WS490	20	35.4	23.6	19.9	19.3	18.7	11	7	64
WS590	24	47.2	31.5	24.1	23.1	22.3	15	9	106
WS990	28	57.2	34.3	28.1	27.2	26.4	11	7	139
WS720	30	65.1	37.4	30.3	29.5	28.6	15	9	165
WS790	32	59.1	39.4	32.3	31.7	30.2	14	9	154
WS885	36	66.9	-	36.4	34.8	33.7	16	11	256
WS995	40	70.9	-	40.4	38.8	37.6	15	10	311
WS140	42	78.7	-	-	40.9	-	15.8	6.7	487
WS155	48	98.6	-	-	46.7	45.5	18	11	639
WS185	56	102.4	-	-	54.5	53.1	21	14	970
WS1485	60	110.2	-	-	58.5	56.7	24	15	1415
WS195	64	118.1	-	-	62.4	60.7	24	15	1543
WS285	72	129.1	-	-	70.3	68.6	26	17	2028
WS1980	80	133.85	-	-	77.9	-	29	19	2866

*We have a standard set of sizes which can be customized, easily to suit any application. Flanges on inlet, outlet or somewhere in between are all easily available. Quickly. **Customized extra short valves are available. ***Open air. Standard membrane. Lower and higher opening pressures available.

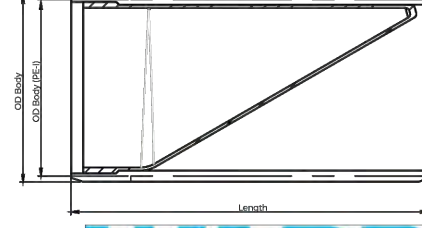
WASTOP STANDARD - PVC/PE

Model	NPS	L	OD body	Opening pressure (Standard)	Closing pressure (Standard)	Weight
	[in]	[in]	[in]	[in](kPa)	[in](kPa)	[lbs]
WS75PVC	3	4.9	3.0	7	3	0.6
WS75PE	3	4.3	2.1	8	3	1.0
WS25PVC	5	9.4	4.9	7	3	2.6
WS25PE	6	12.2	6.3	9	3	4.7
WS200PVC	8	15.7	7.9	7	4	9.0
WS200PE	10	18.9	9.6	9	5	14
WS250PE-L	10	38.9	9.3	9	6	10
WS250PE	12	33.6	12.4	9	6	28
WS250PE-L	12	23.6	11.6	9	7	18

WASTOP STANDARD - STAINLESS



WASTOP STANDARD - PVC/PE



WASTOP® Inline Check Valve Technical Specification Stainless Steel AISI 304/316

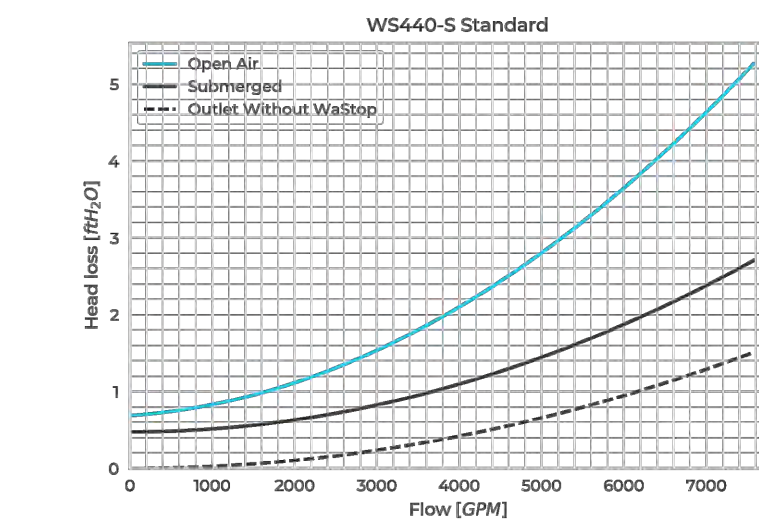
Model nos: WS440-S2-304/316 WS440-S3-304/316 WS440-S4-304/316
Nominal Size: 18
Material: Stainless Steel AISI 304/316
Membrane: Polyurethane
Fasteners: Marine grade stainless steel (AISI 316)

Technical data:	Soft (S2)	Standard (S3)	Hard (S4)
Max. back pressure*	9.8 ft H ₂ O	16.4 ft H ₂ O	26.2 ft H ₂ O
Horizontal opening pressure*	7.9 in H ₂ O	8.7" in H ₂ O	21.5" in H ₂ O
Horizontal closing pressure*	5.3 in H ₂ O	5.7" in H ₂ O	7.5" in H ₂ O
Submerged opening pressure*	4.9" in H ₂ O	5.7" in H ₂ O	6.5" in H ₂ O
Submerged closing pressure*	1.6" in H ₂ O	1.8" in H ₂ O	2.4" in H ₂ O
Vertical opening pressure*	13.6" in H ₂ O	15.2" in H ₂ O	16.6" in H ₂ O
Vertical closing pressure*	8.1" in H ₂ O	9.1" in H ₂ O	9.1" in H ₂ O

* +/- 10% ** Modeled value
 * Values measured from bottom of pipe.
 * Tests performed at room temperature (68-86°F).

Max Flow	ft/s	GPM
10	7580	

* Higher flows requires custom valve, contact Wapro
 * Flange installation is highly recommended at flows above 6.5 ft/s



In the submerged case opening pressure (mmH2O)/(inH2O) is the difference between the water level upstream and the water level downstream and in the open-air case to the inlet of the pipe. In vertical applications, the vertical opening pressure is measured from the outlet of the WASTOP.

Postal address: Wapro AB, Munkhussvägen 103, SE-374 21 Karlshamn, SWEDEN
 Tel: +46 454 185 10, Fax: +46 454 123 58, email: wapro@wapro.se, Website: www.wapro.se
 Reg. nr: 556352-1466, Registered office: Karlshamn, Sweden, VAT nr: SE 556 352 1466-04

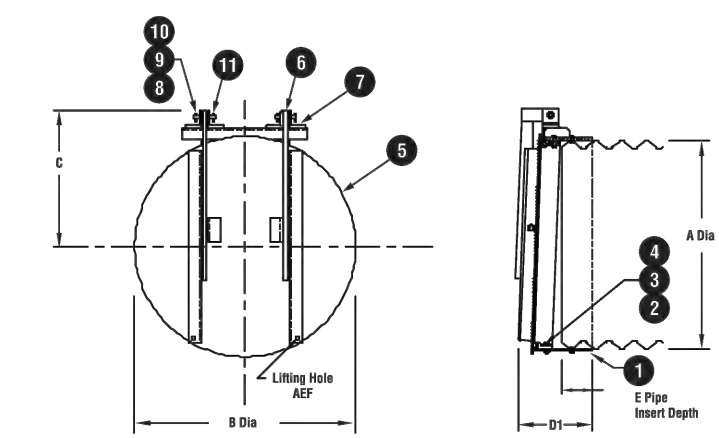
HOLDING BACK THE FLOOD

SSF-41 ROUND DRAINAGE FLAP GATES

FABRICATED STAINLESS STEEL

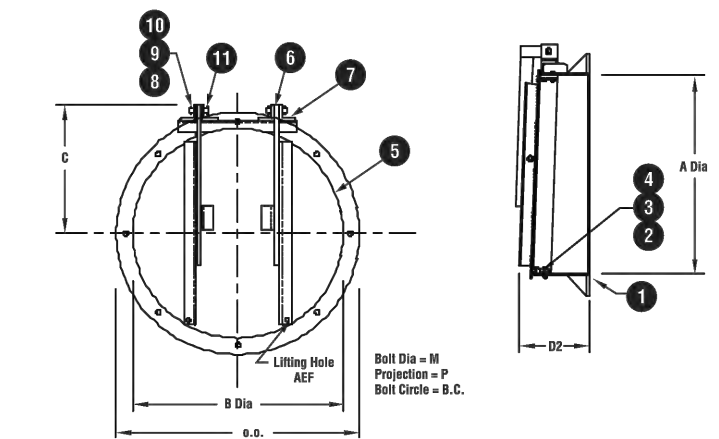
WATERMAN VALVE

SSF-41 STAINLESS STEEL DRAINAGE (FLAP) GATE - SPIGOTBACK RADIAL ARMS

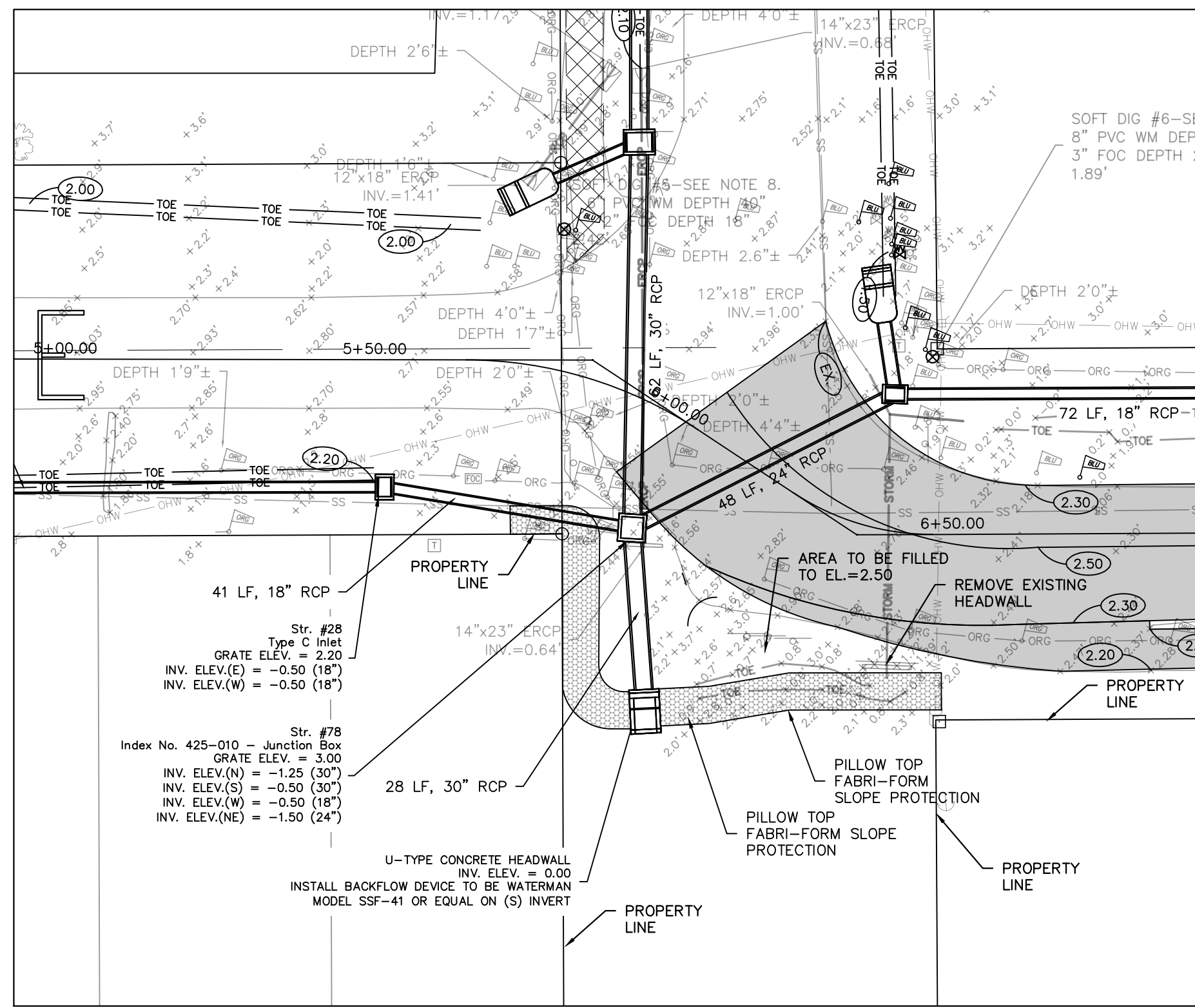


Number	Name
1	Frame
2	Seat
3	Retainer Ring
4	Hex Hd. Bolt / Nut
5	Cover
6	Hinge Arm
7	Pivot Lug
8	Hex Hd. Bolt / Nut
9	Hinge Pin
10	Bushing
11	Washer
12	Spring Pin

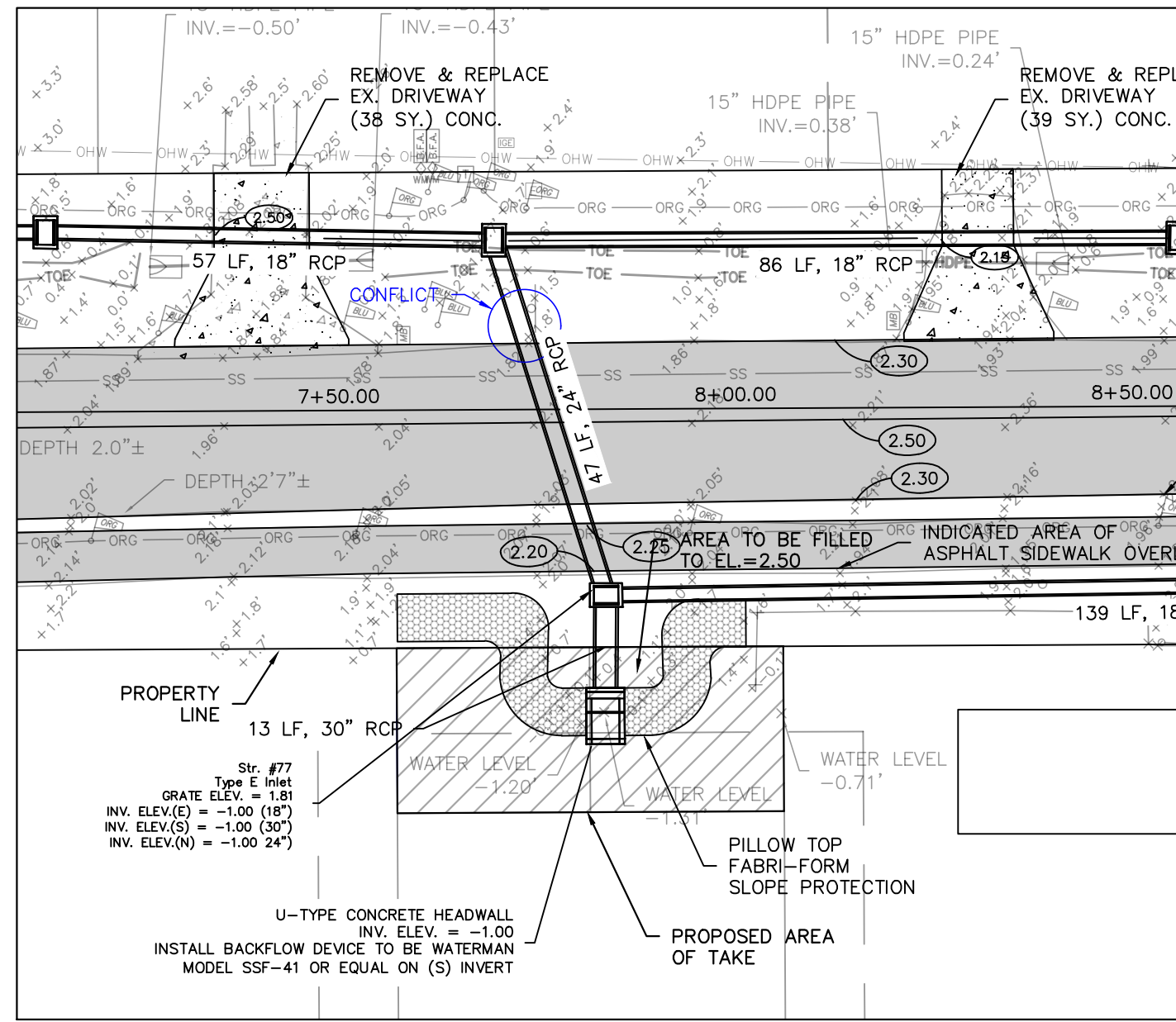
SSF-41 DRAINAGE (FLAP) GATE FLATBACK (FLANGEBACK SIMILAR BUT WITH ASA STANDARD FLANGE DIMENSIONS)



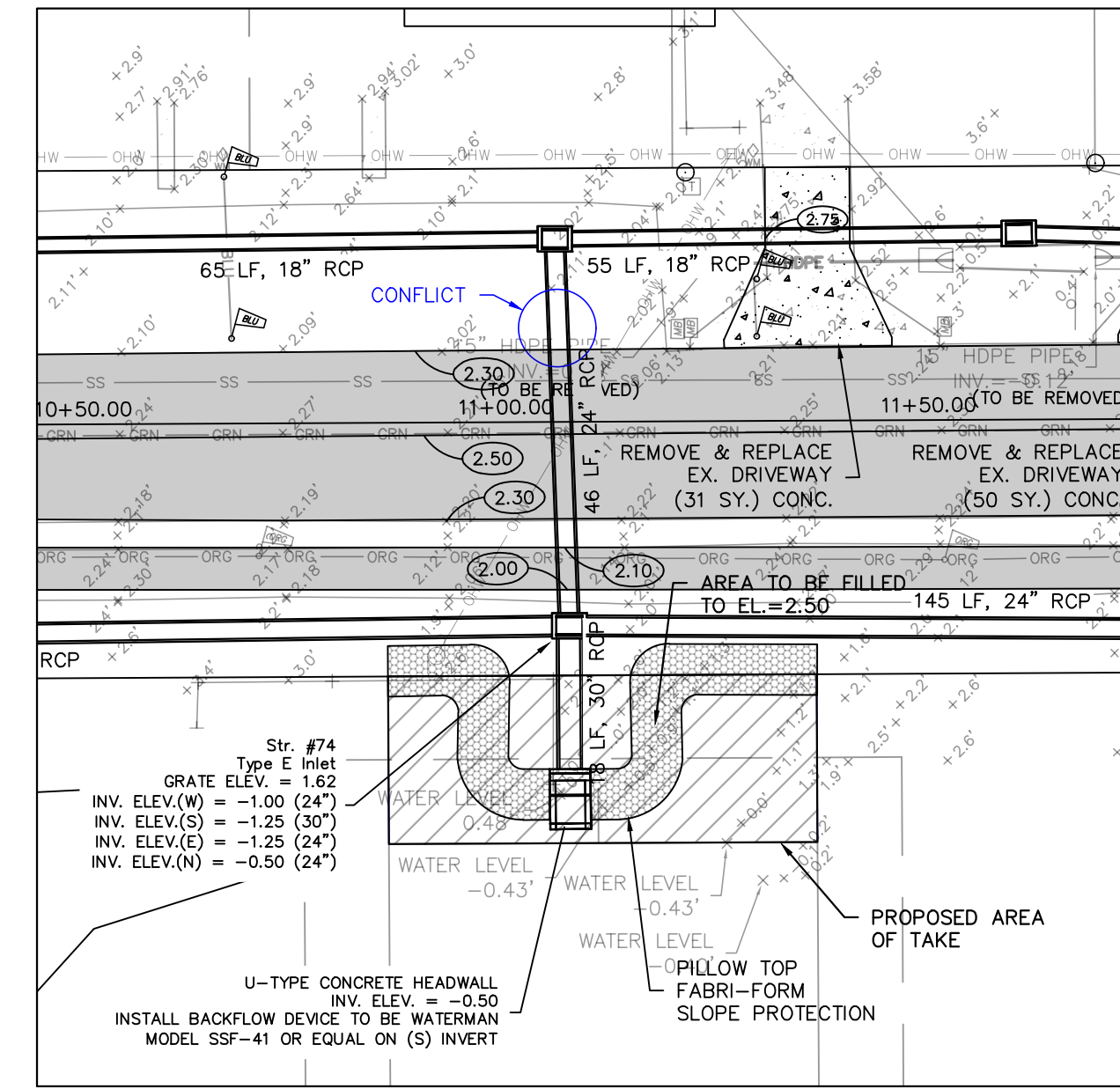
Gate Size	A	B	C	D2	E	O.D.	B.C.	M	P
8	9 1/4	10 1/4	8 1/4	8 1/4	4	13 1/2	11 1/4	1/2	2
10	11 1/4	12 1/4	9 1/4	9 1/4	4	15 1/2	13 1/4	1/2	2
14	15 1/4	16 1/4	12 1/4	12 1/4	4	19 1/2	17 1/4	1/2	2
16	17 1/4	18 1/4	14 1/4	14 1/4	4	21 1/2	19 1/4	1/2	2
20	21 1/4	22 1/4	18 1/4	18 1/4	4	26 1/2	24 1/4	1/2	2
12	13 1/4	14 1/4	10 1/4	10 1/4	4	17 1/2	15 1/4	1/2	1
15	16 1/4	17 1/4	12 1/4	12 1/4	4	20 1/2	18 1/4	1/2	1
18	19 1/4	20 1/4	14 1/4	14 1/4	4	23 1/2	21 1/4	1/2	1
24	25 1/4	26 1/4	18 1/4	18 1/4	4	30 1/2	28 1/4	1/2	1 1/2
30	31 1/4	32 1/4	19 1/4	19 1/4	4	36 1/2	34 1/4	1/2	1 1/2
36	37 1/4	38 1/4	24 1/4	24 1/4	4	42 1/2	40 1/4	1/2	1 1/2
42	43 1/4	44 1/4	28 1/4	28 1/4	4	48 1/2	46 1/4	1/2	1 1/2
48	49 1/4	50 1/4	31 1/4	31 1/4	4	54 1/2	52 1/4	1/2	1 1/2
54	55 1/4	56 1/4	35 1/4	35 1/4	4	60 1/2	58		



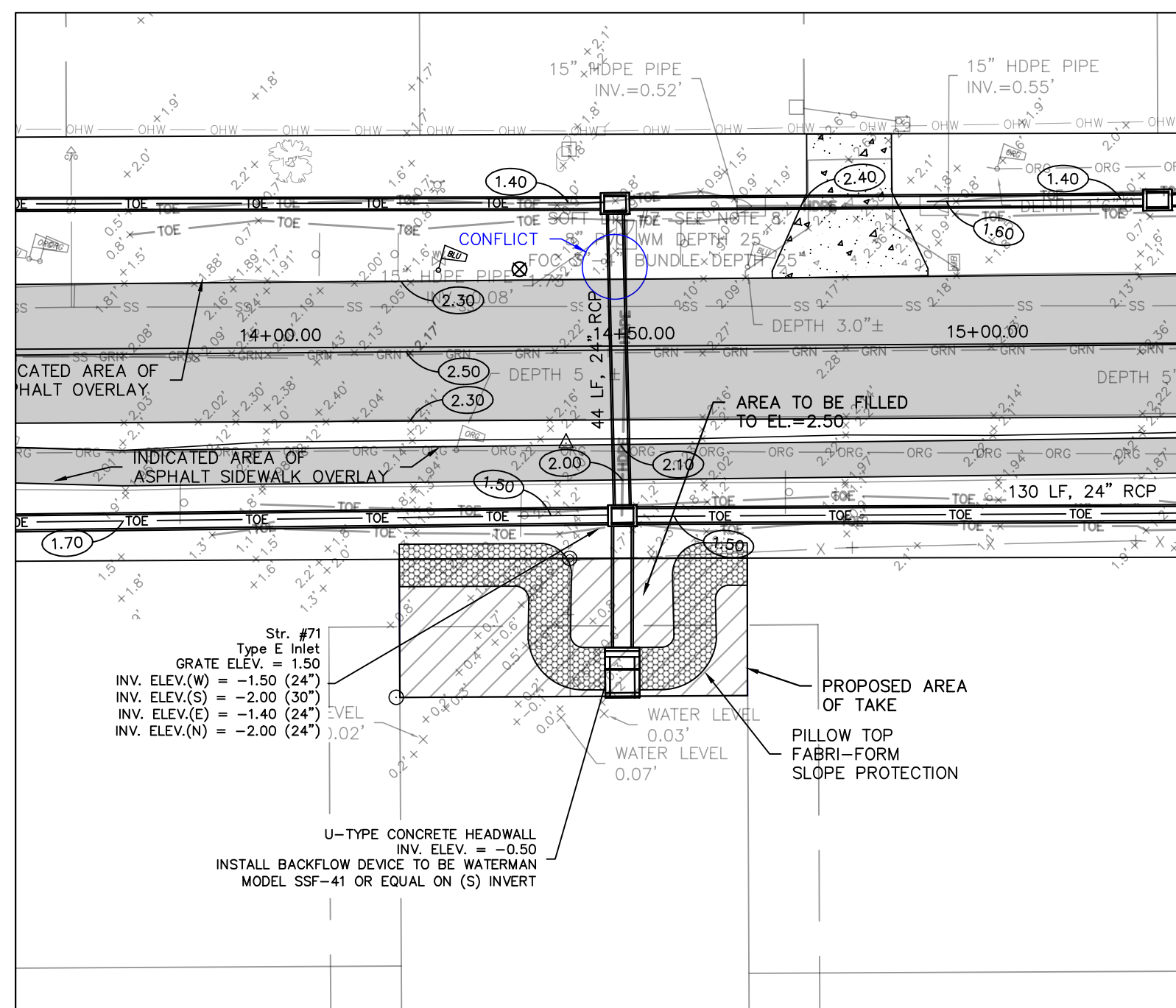
OUTFALL STRUCTURE #1
N.T.S.



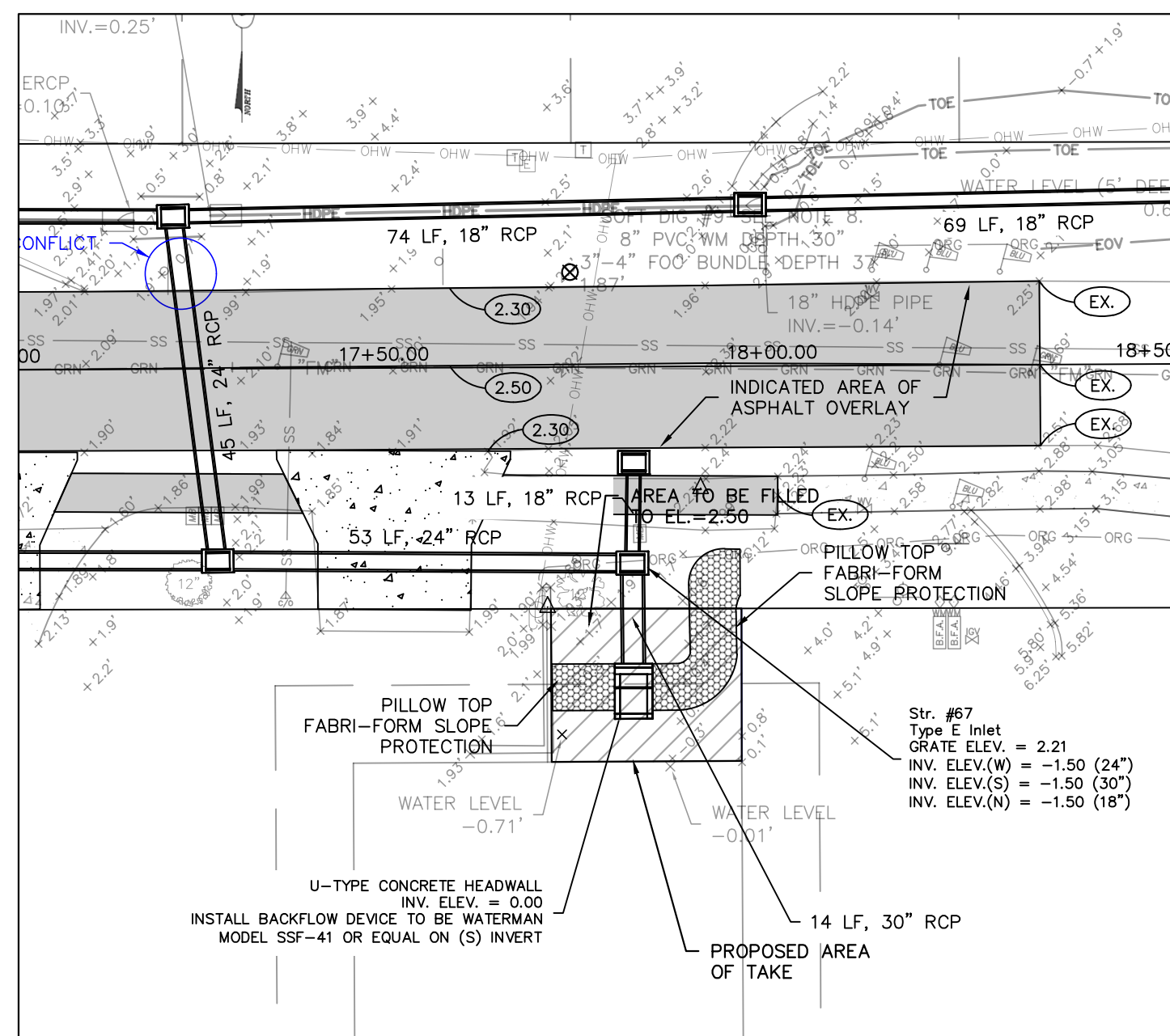
OUTFALL STRUCTURE #2
N.T.S.



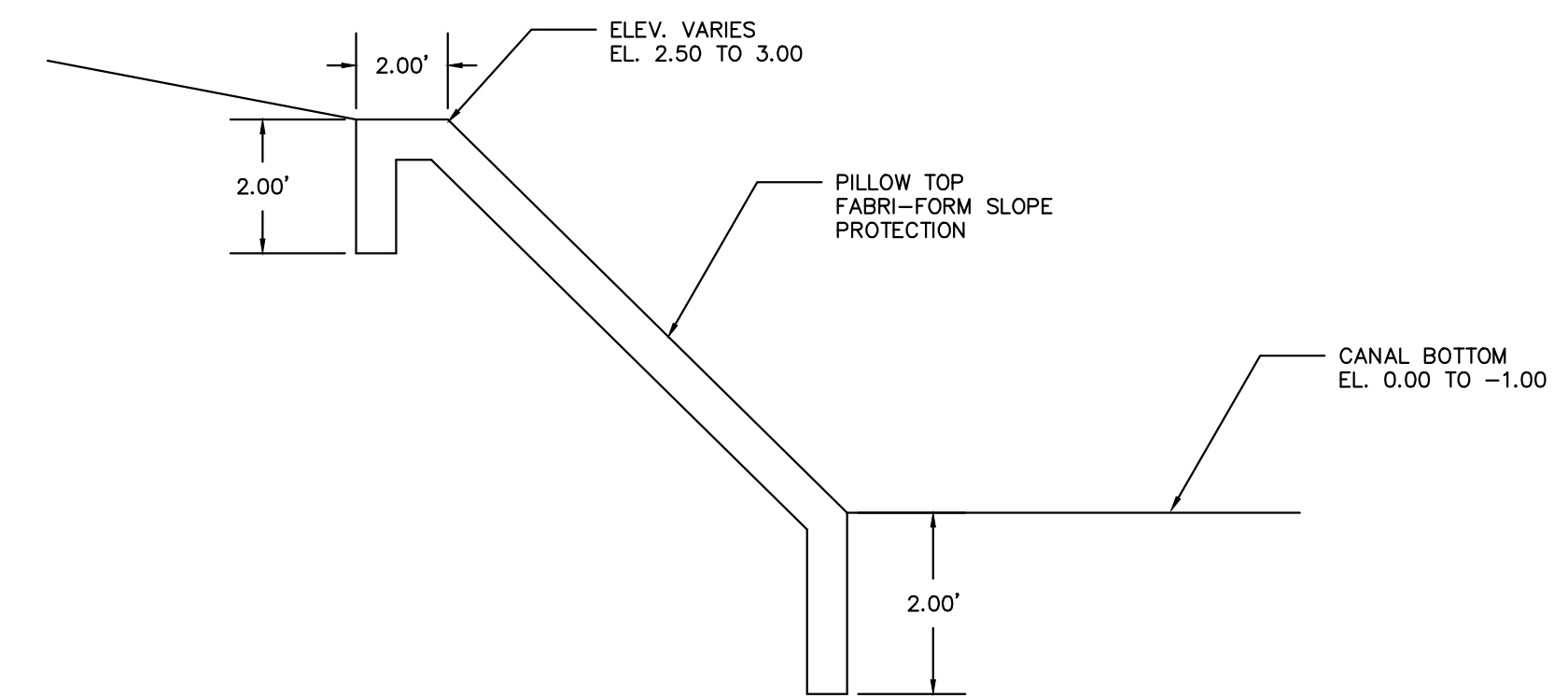
OUTFALL STRUCTURE #3
N.T.S.



OUTFALL STRUCTURE #4
N.T.S.



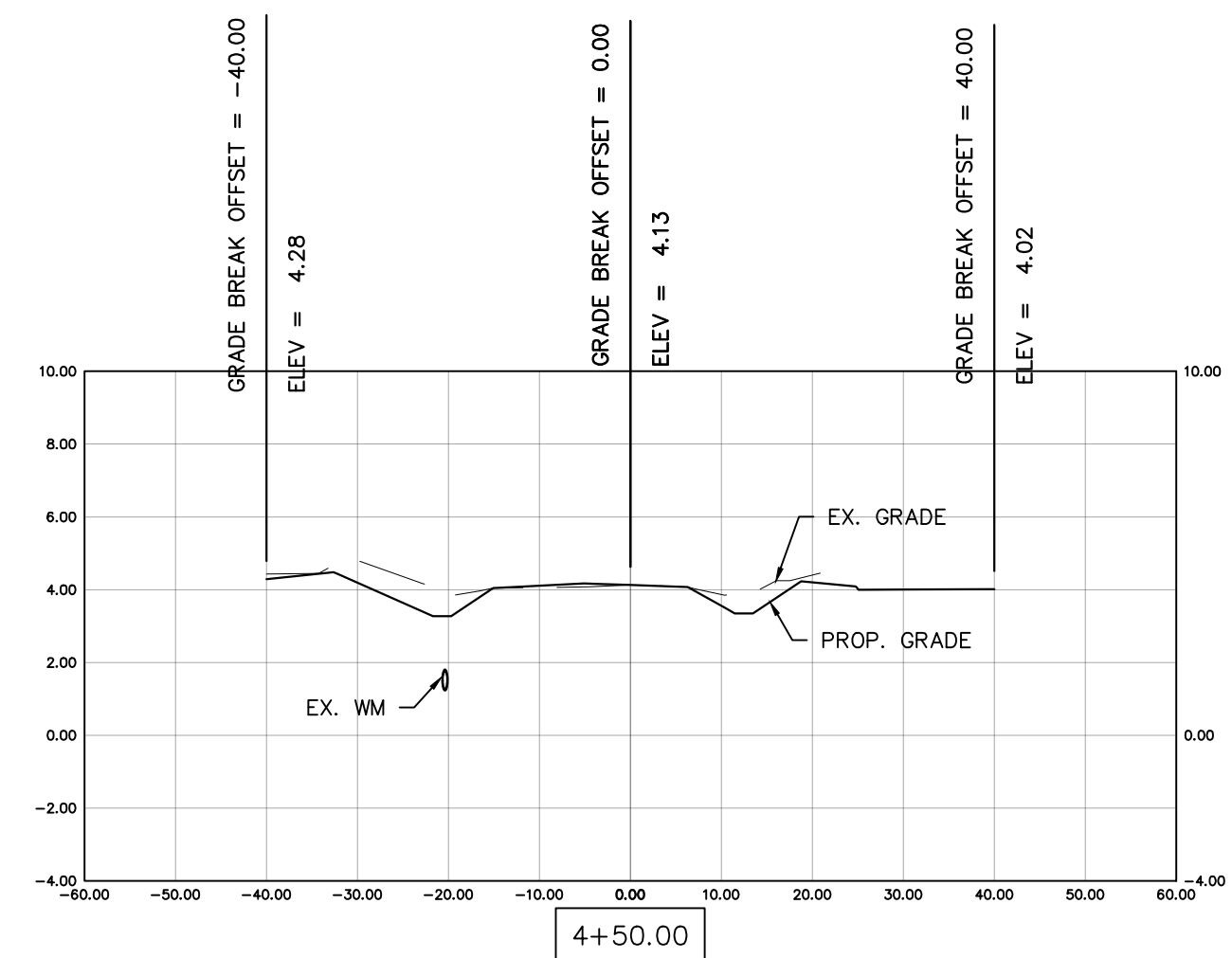
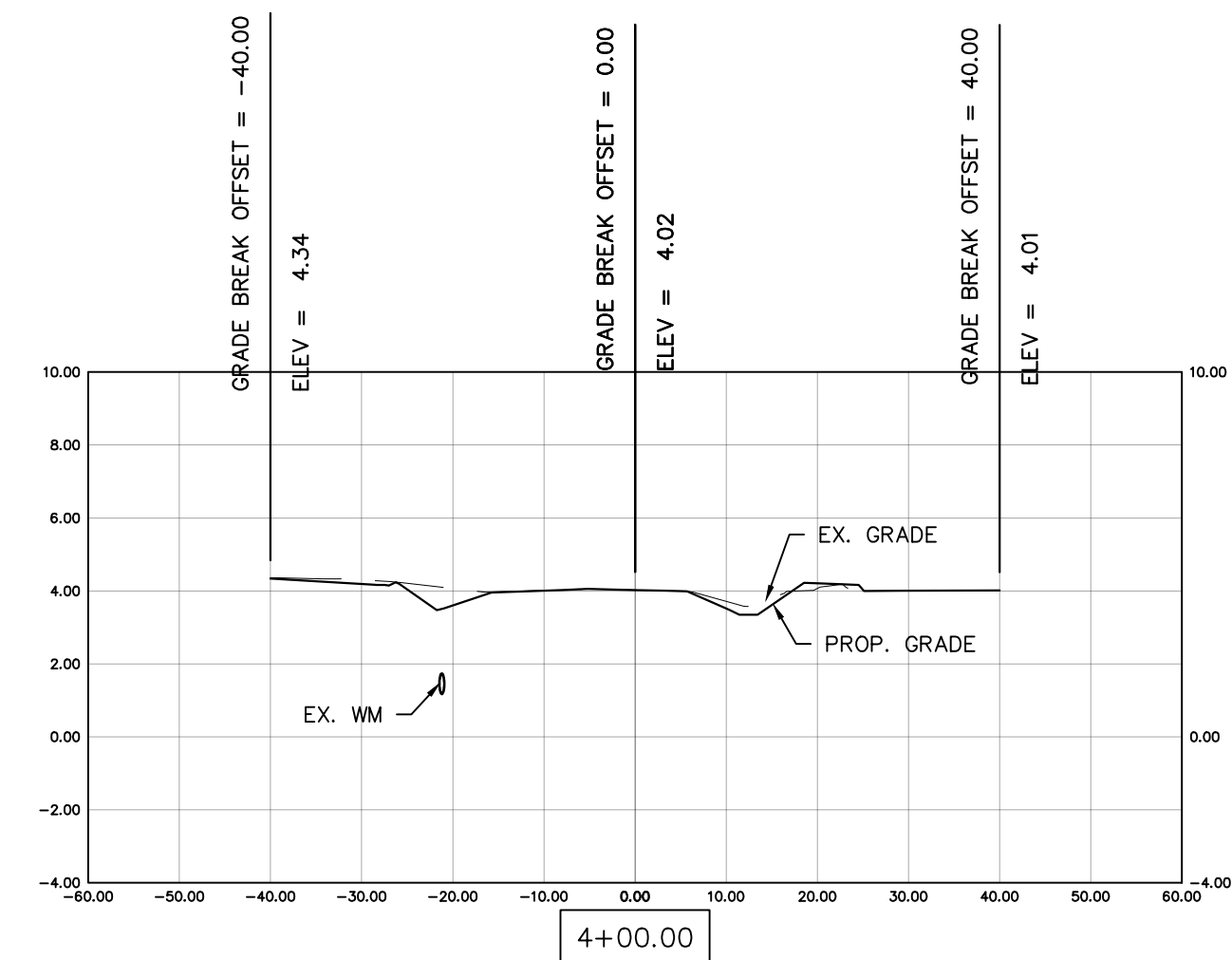
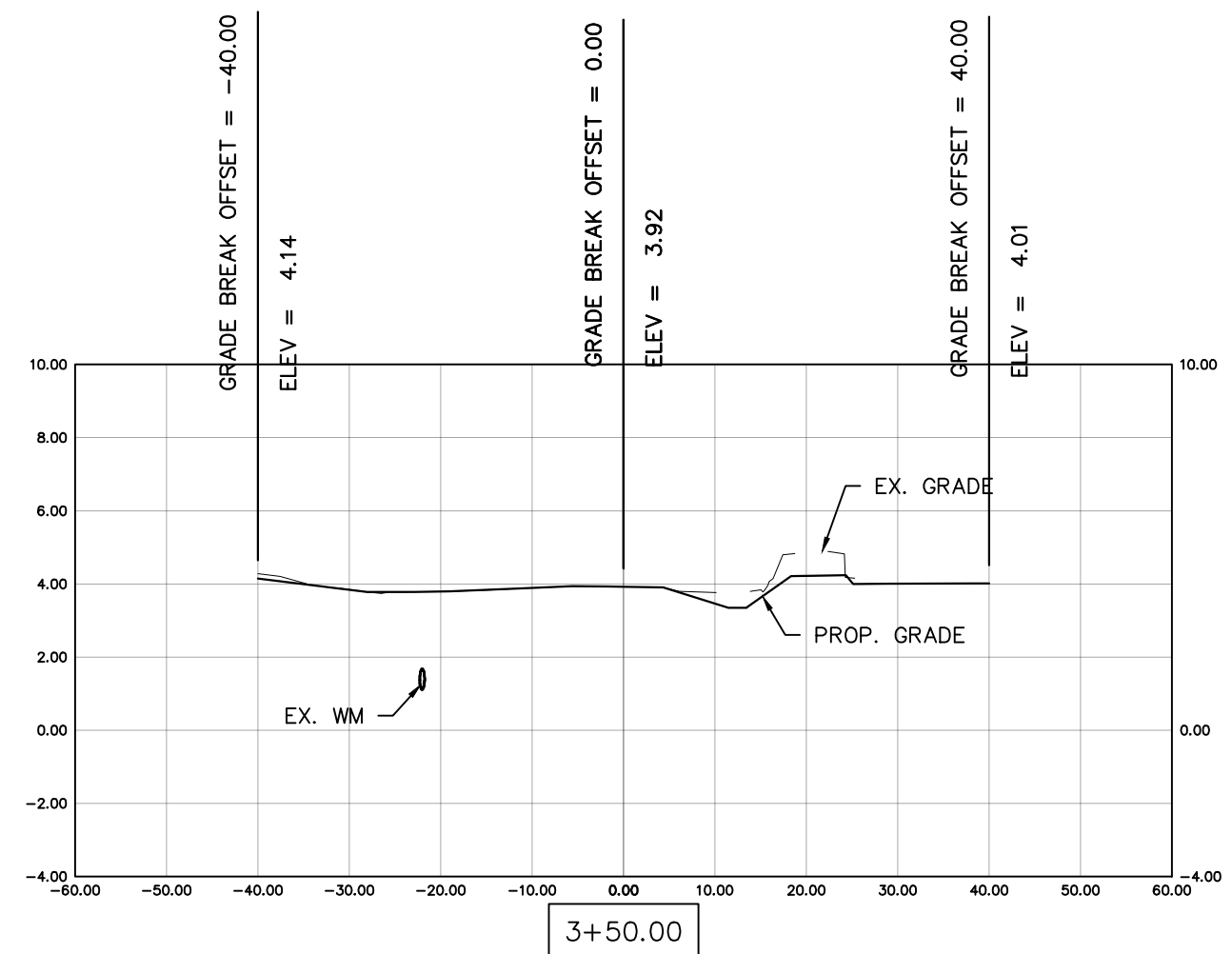
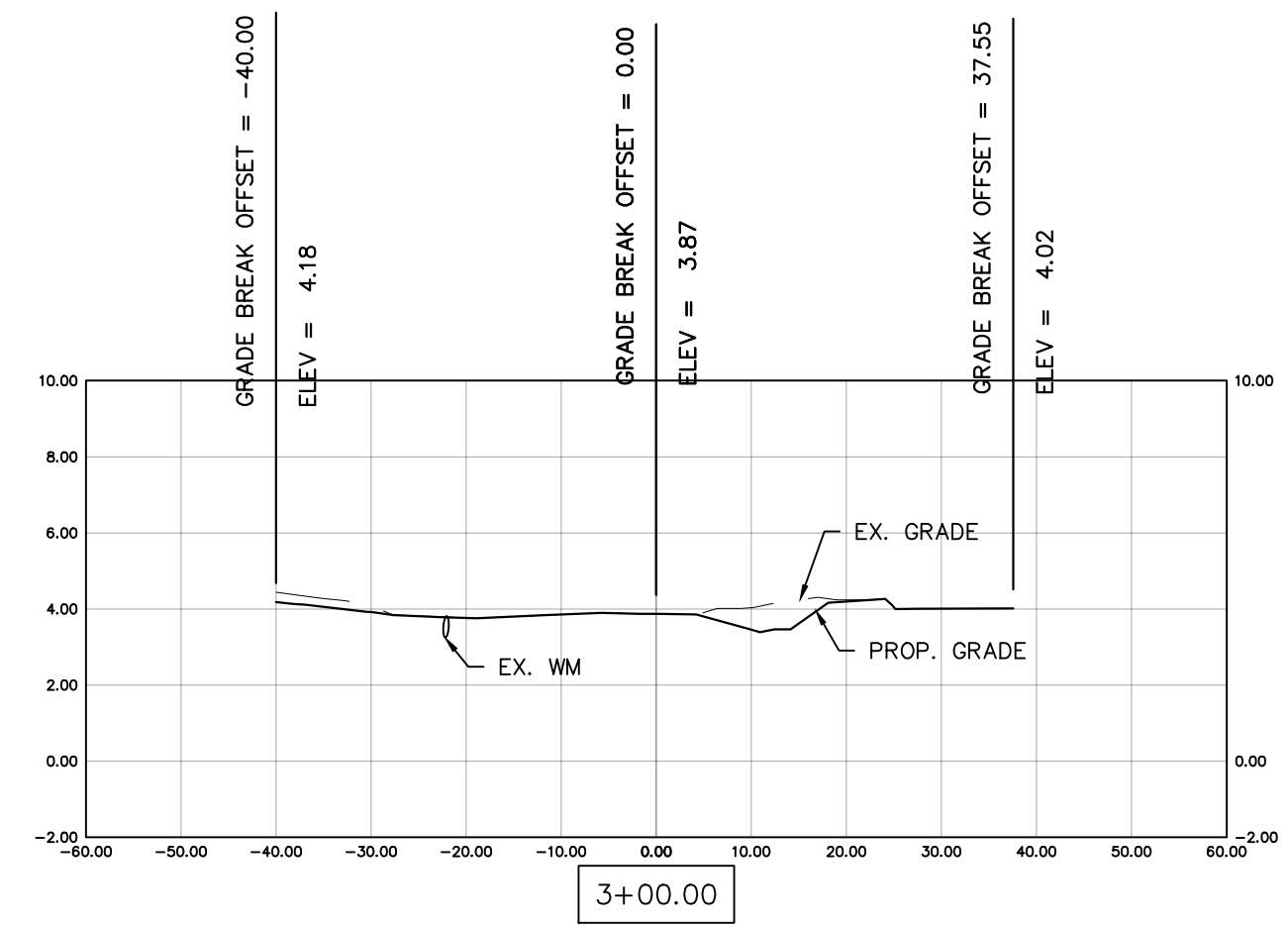
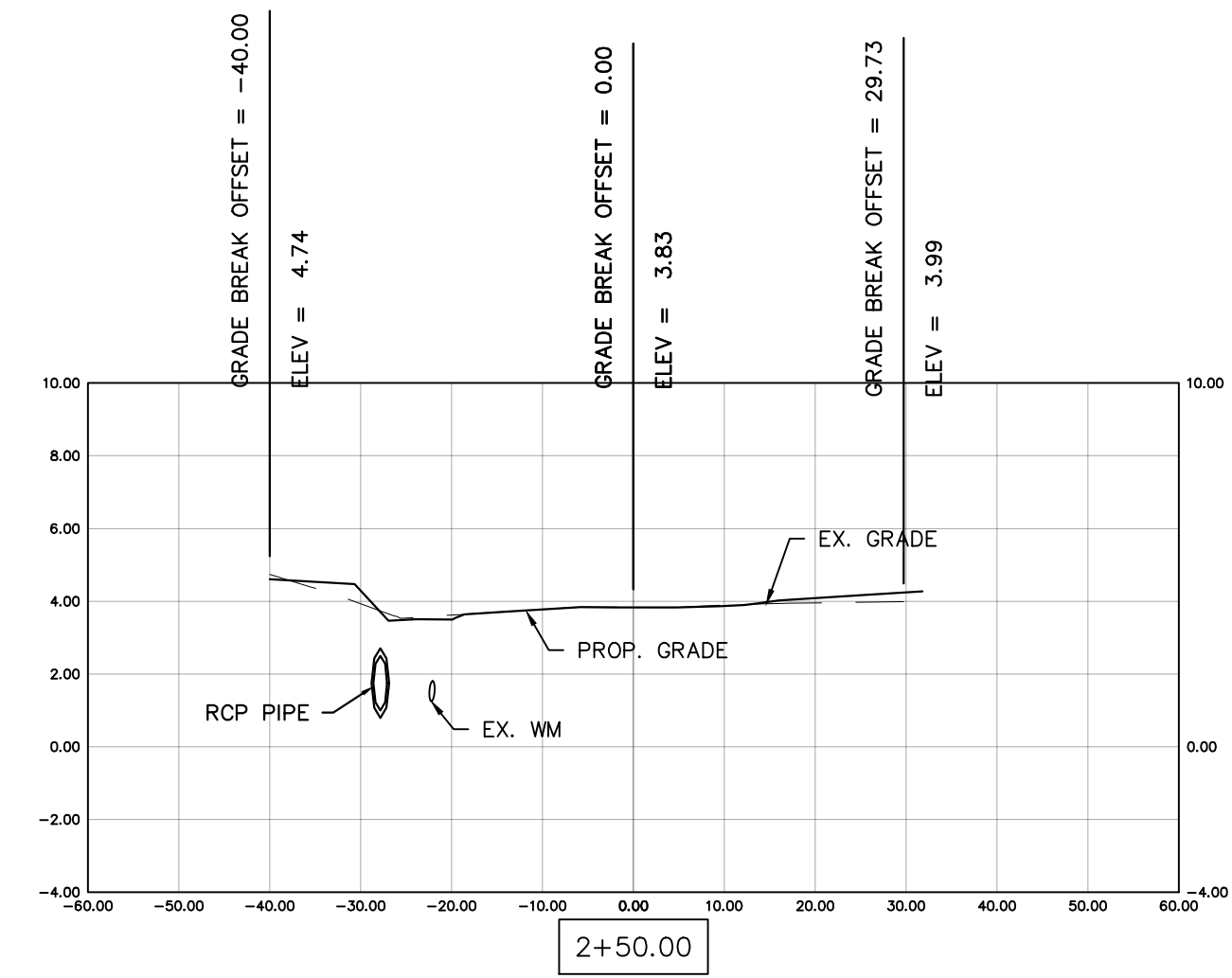
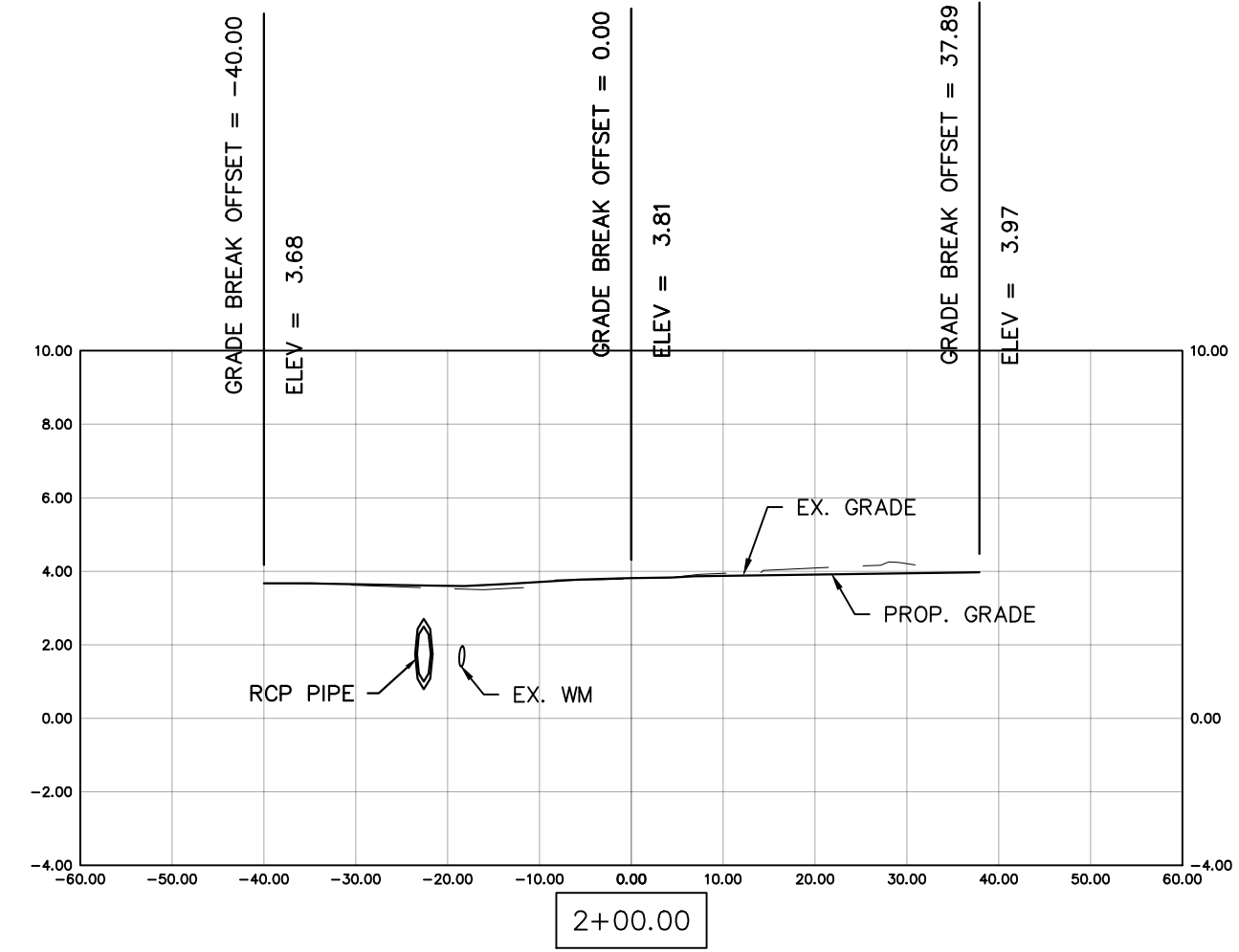
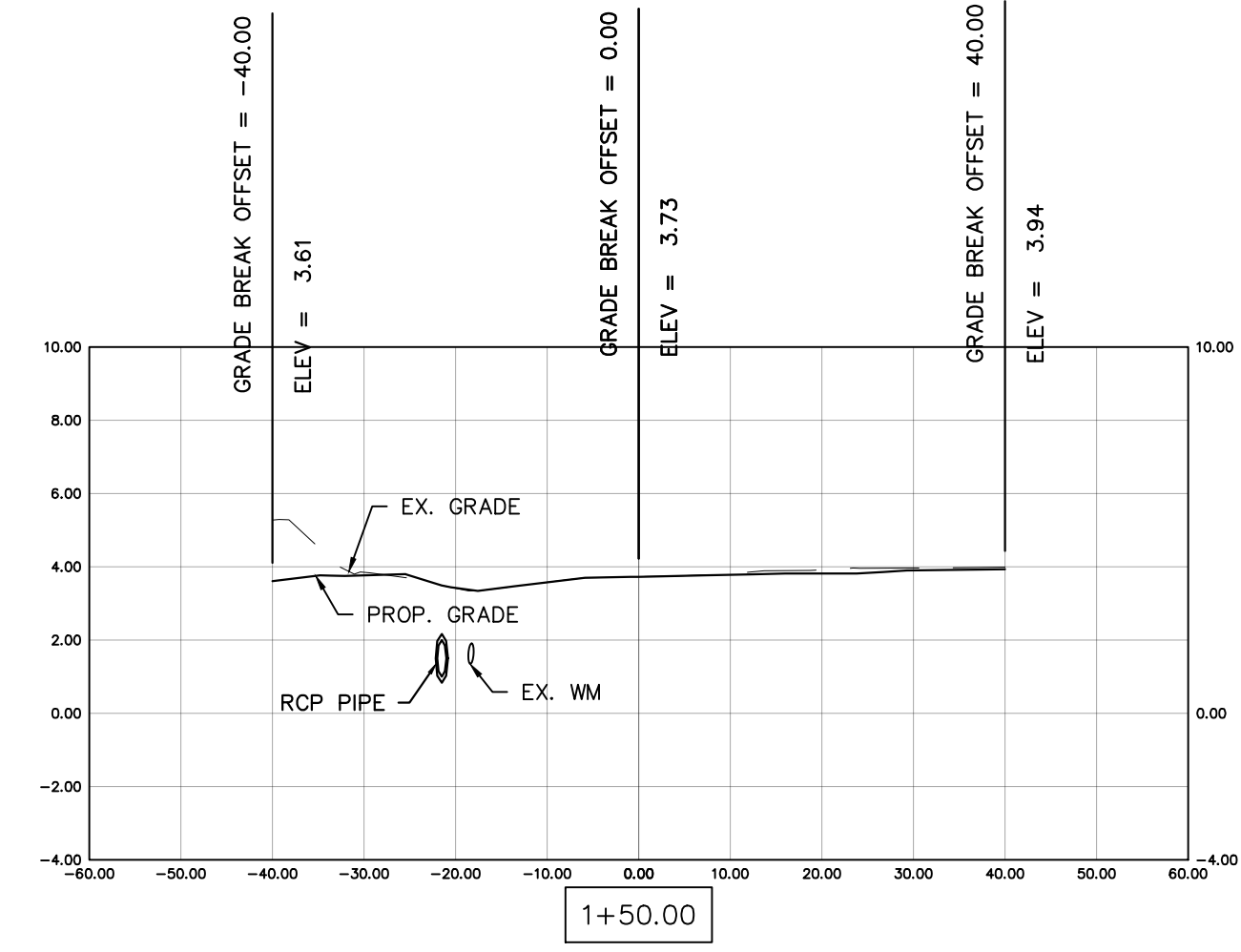
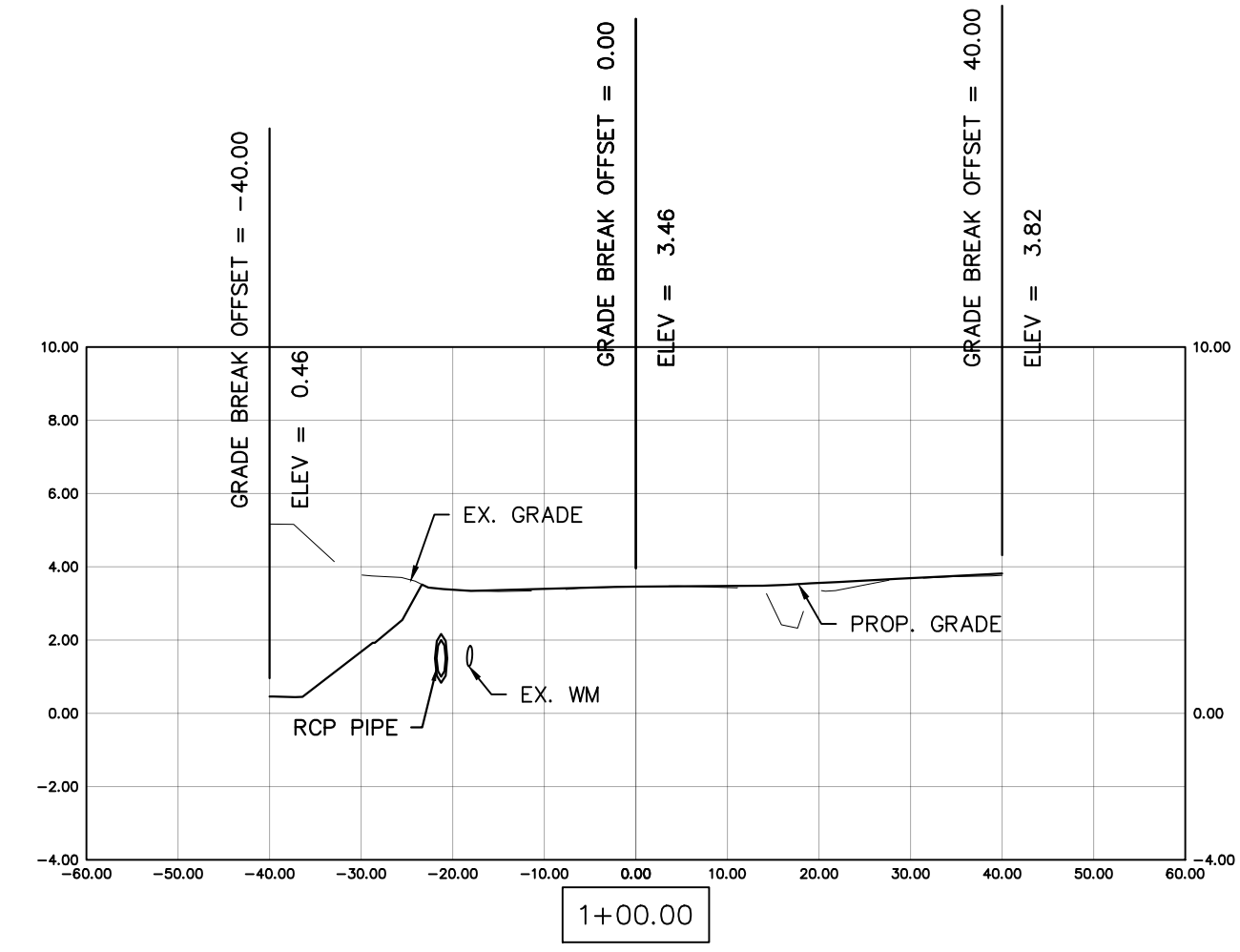
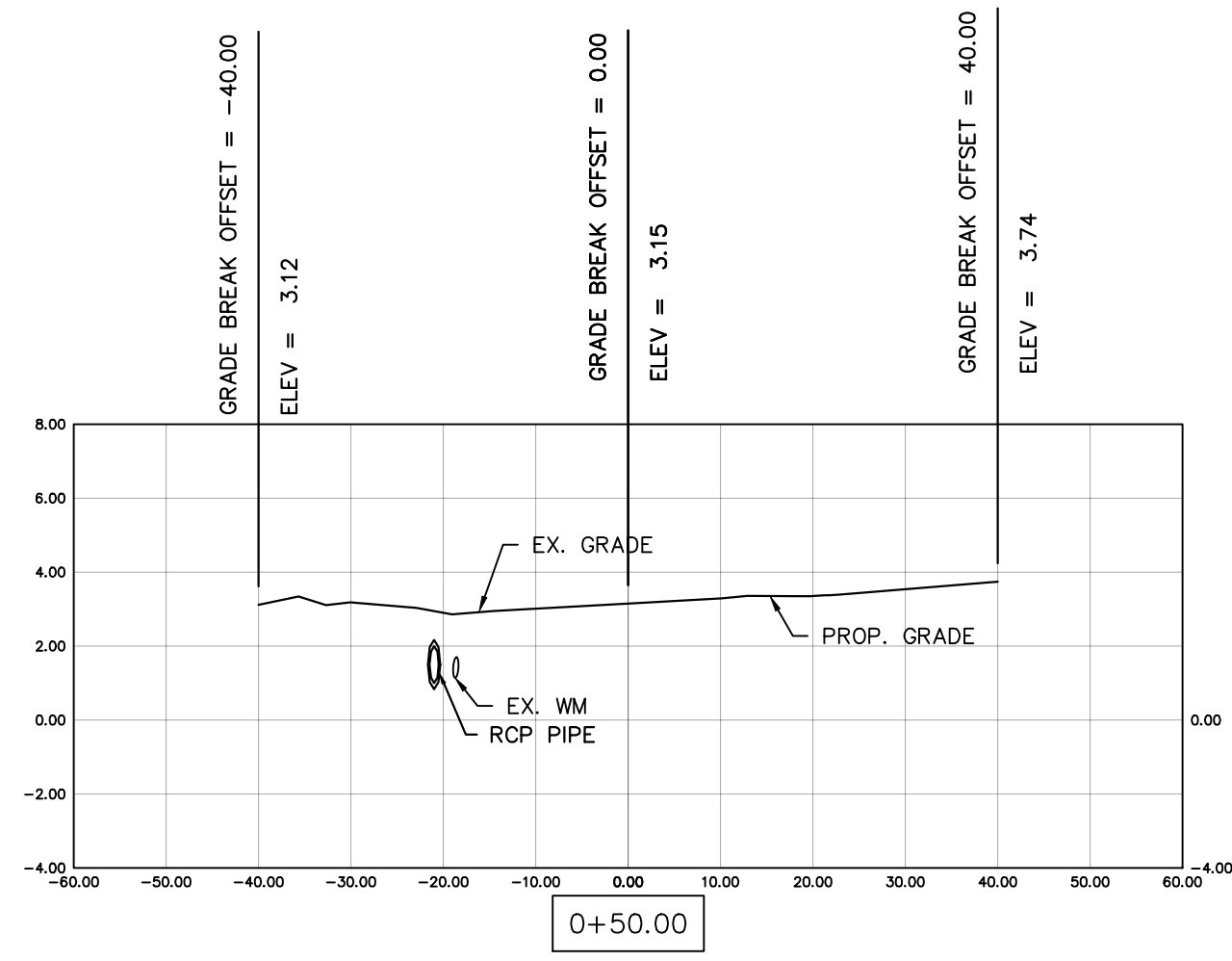
OUTFALL STRUCTURE #5
N.T.S.



FABRI-FORM DETAIL
N.T.S.

NOTE:
MANGROVE TRIMMING/REMOVAL REQUIRED FOR CONSTRUCTION. CONTRACTOR
TO PREPARE REQUIRED TREE MITIGATION PLANS AND SUBMIT FOR PERMIT AS REQUIRED.

REV	DATE	DESCRIPTION
A	06/27/22	ISSUED FOR 50% REVIEW
B	04/07/23	ISSUED FOR 60% REVIEW
KP		EMB
KP		EMB
DWN		CK

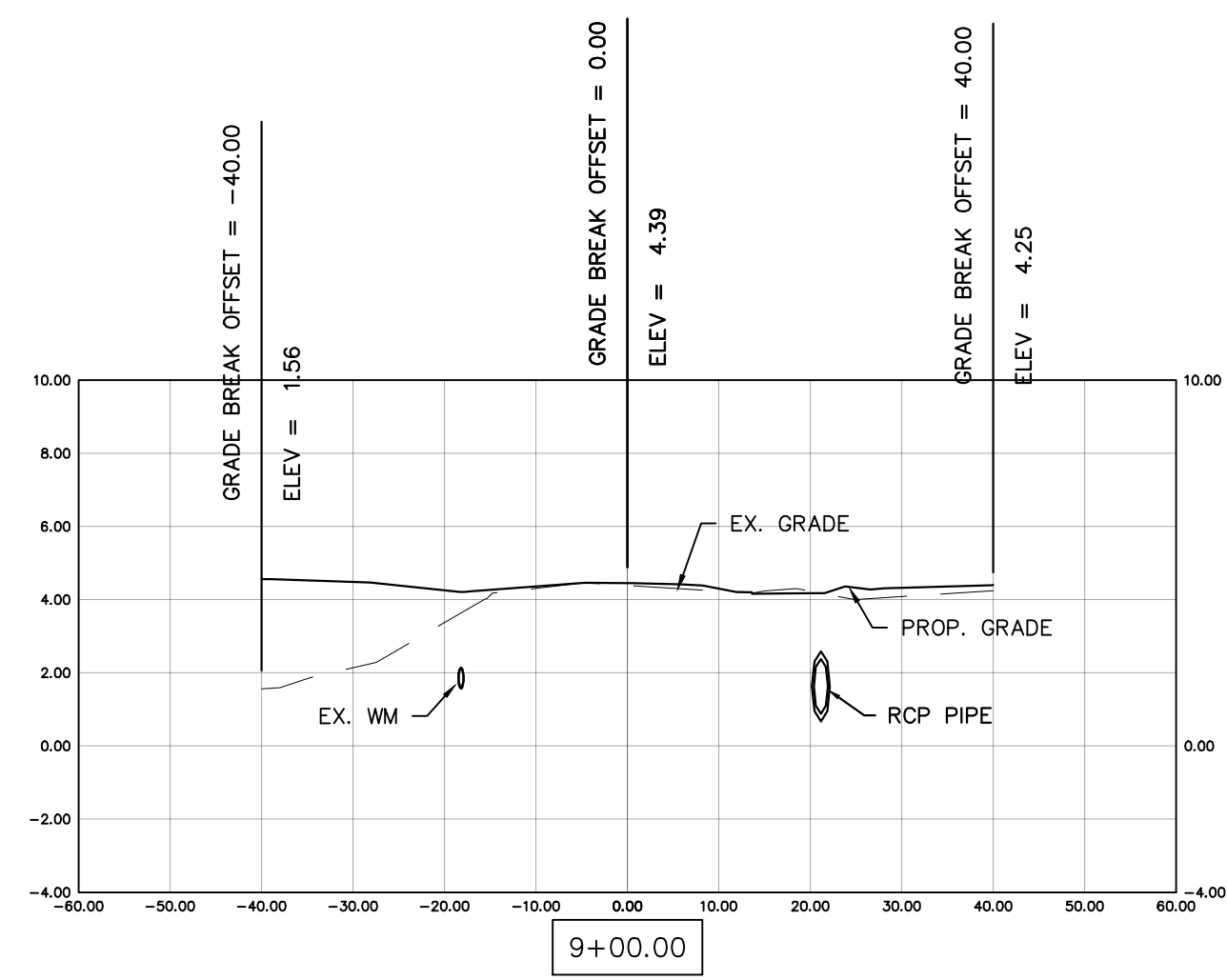
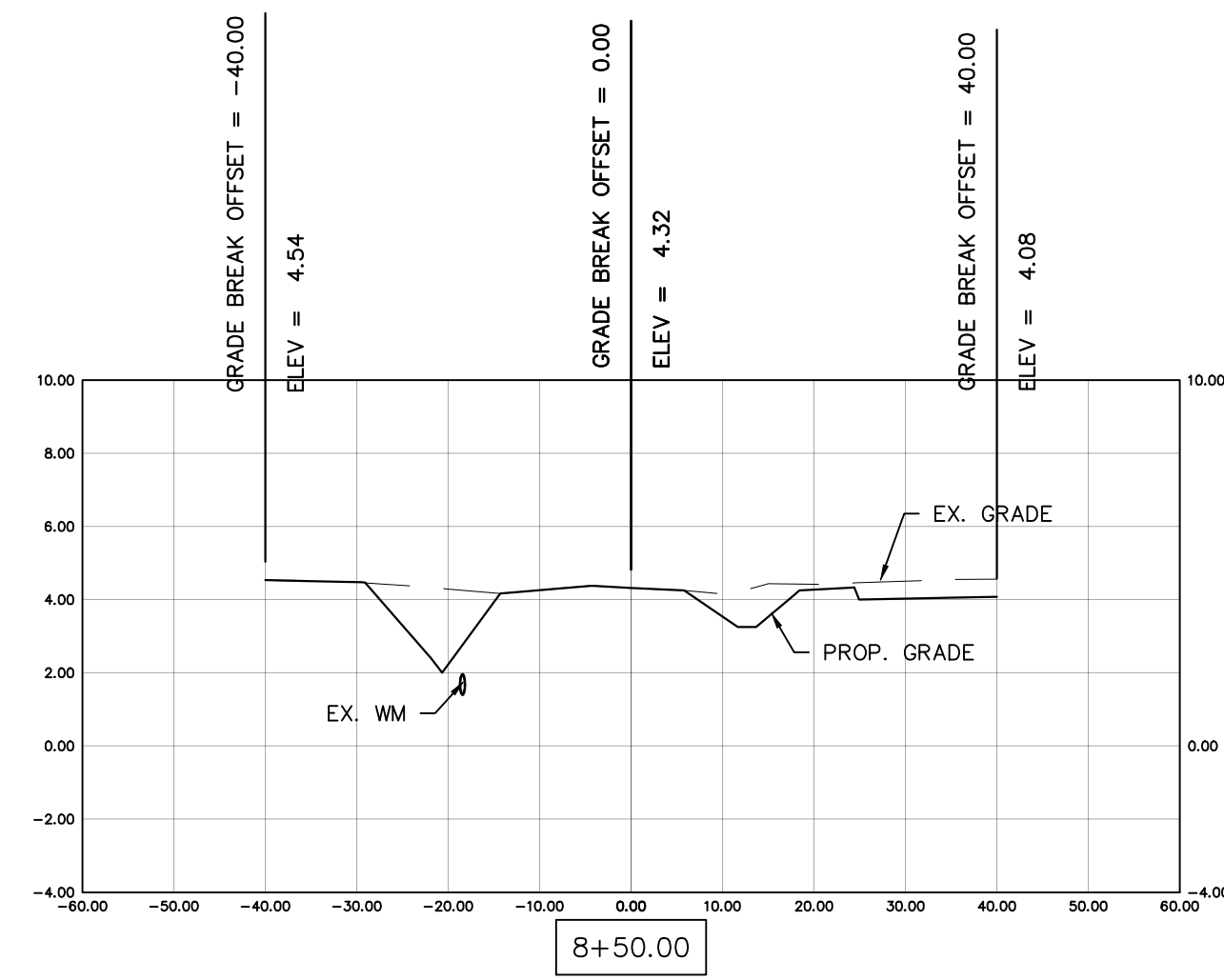
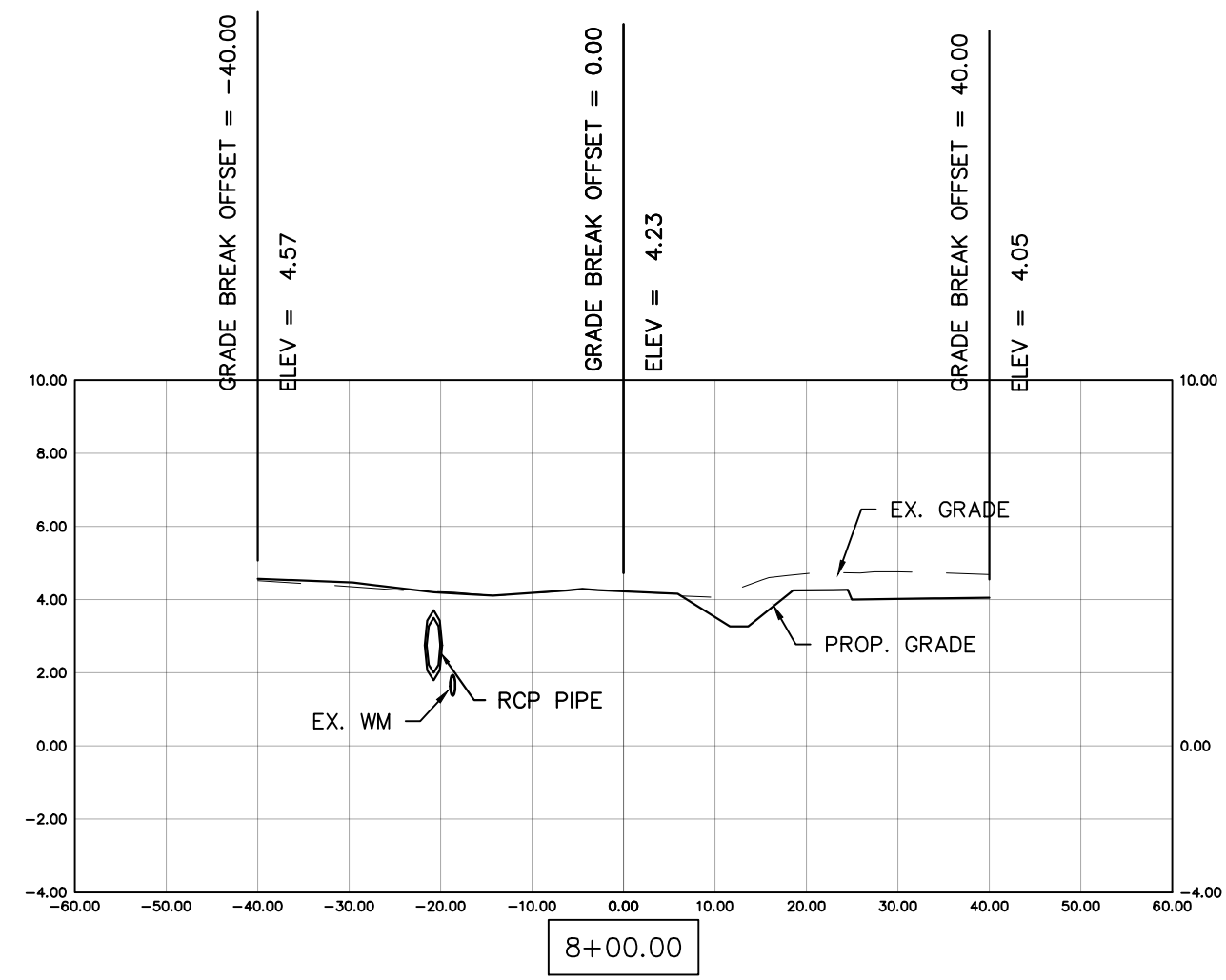
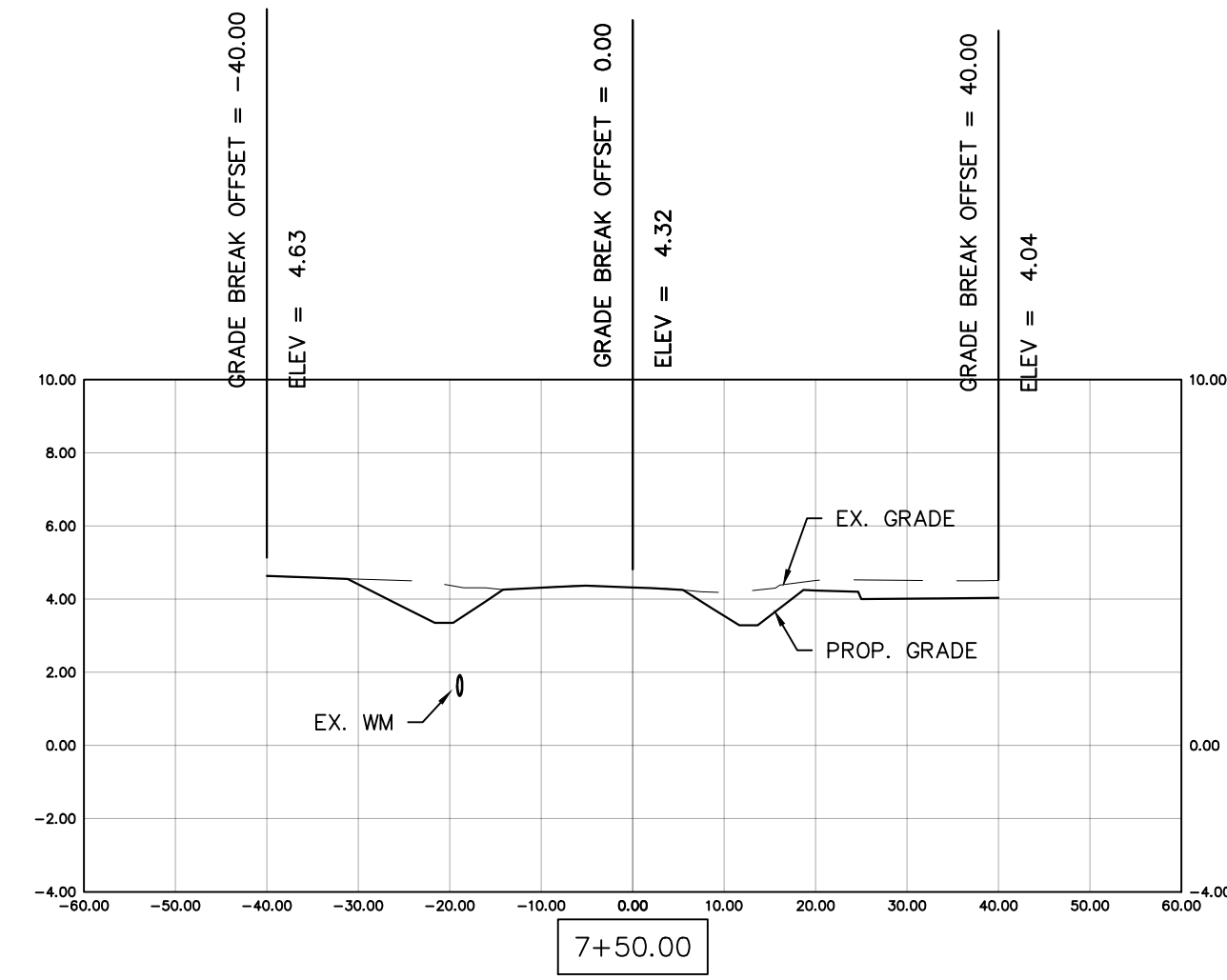
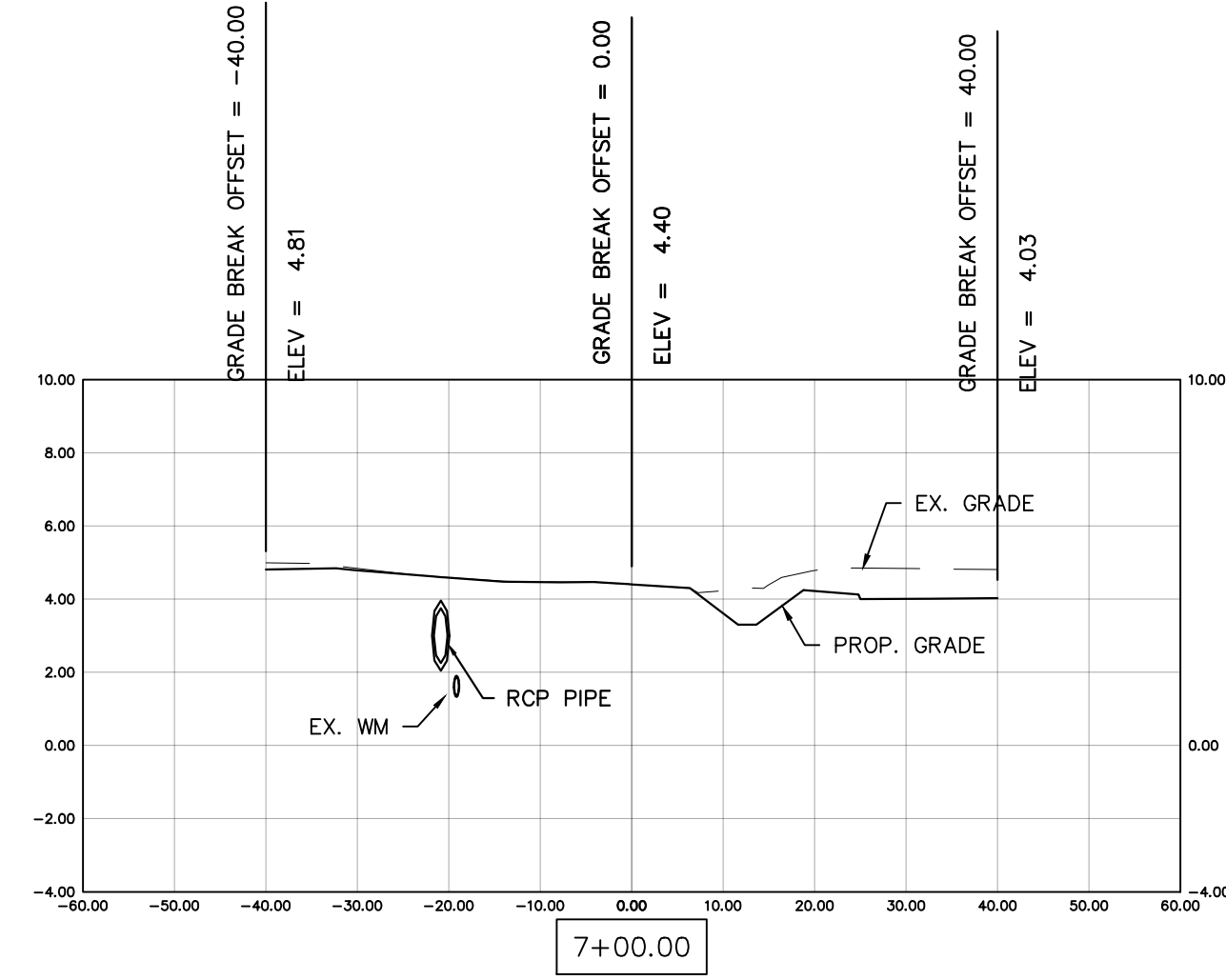
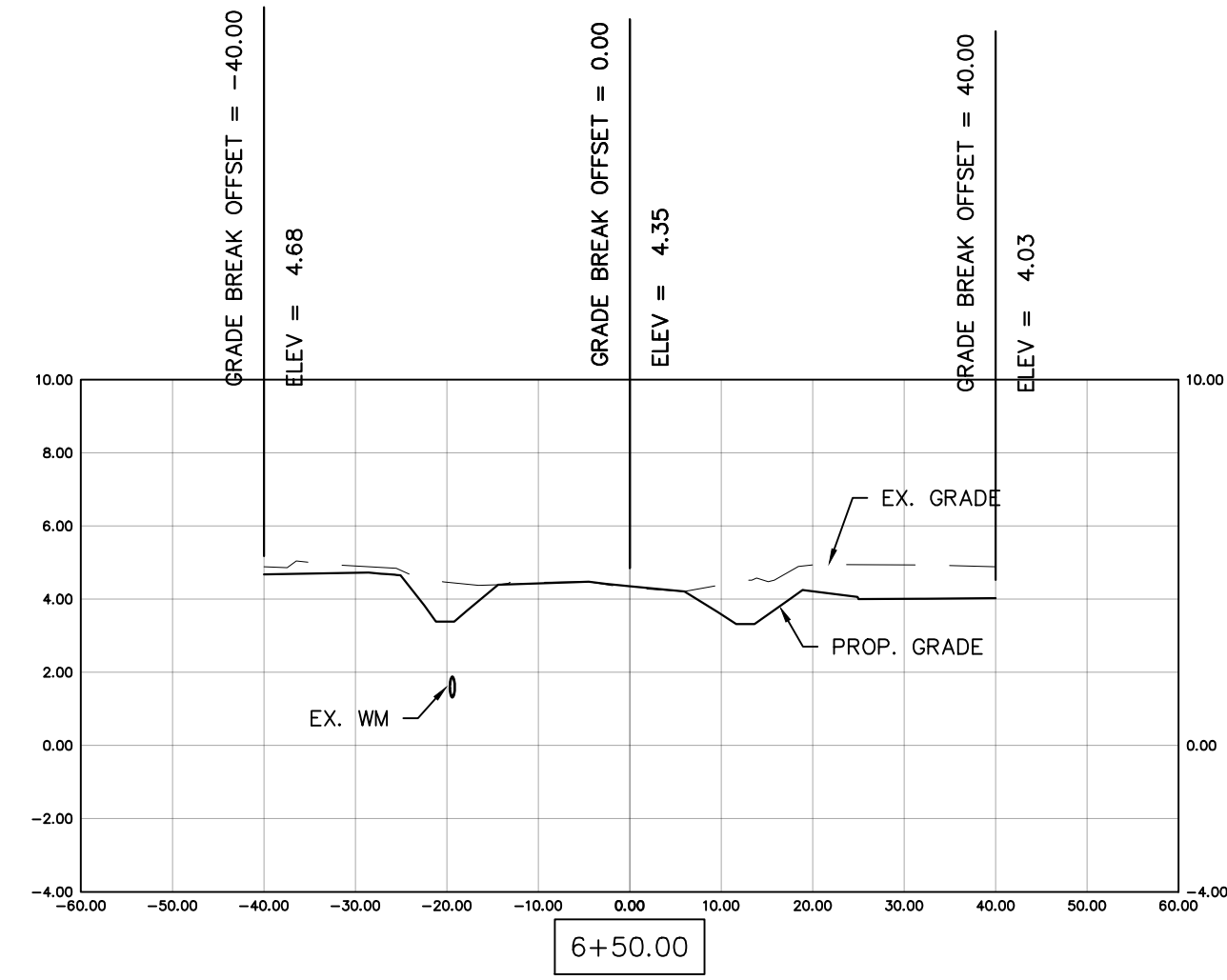
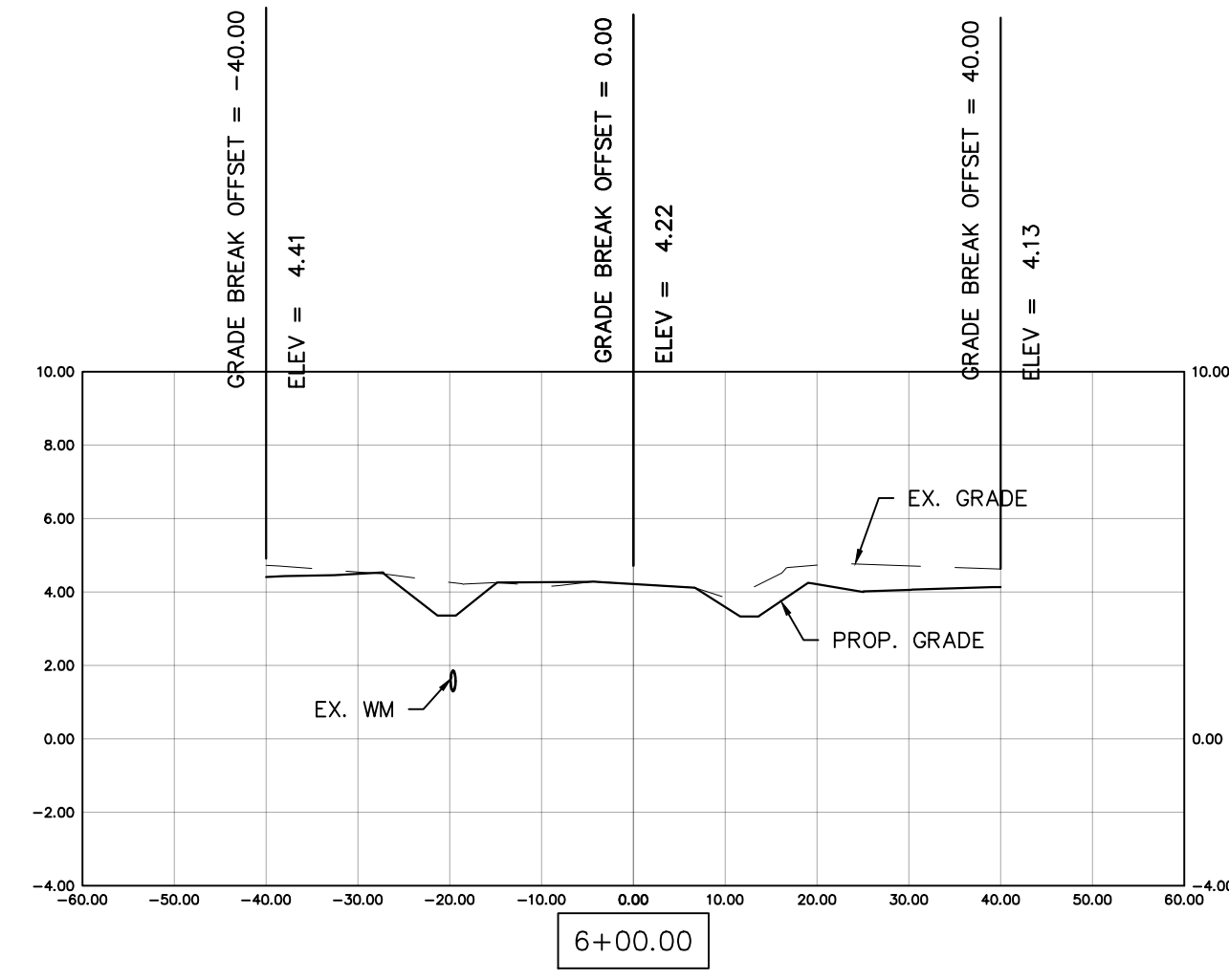
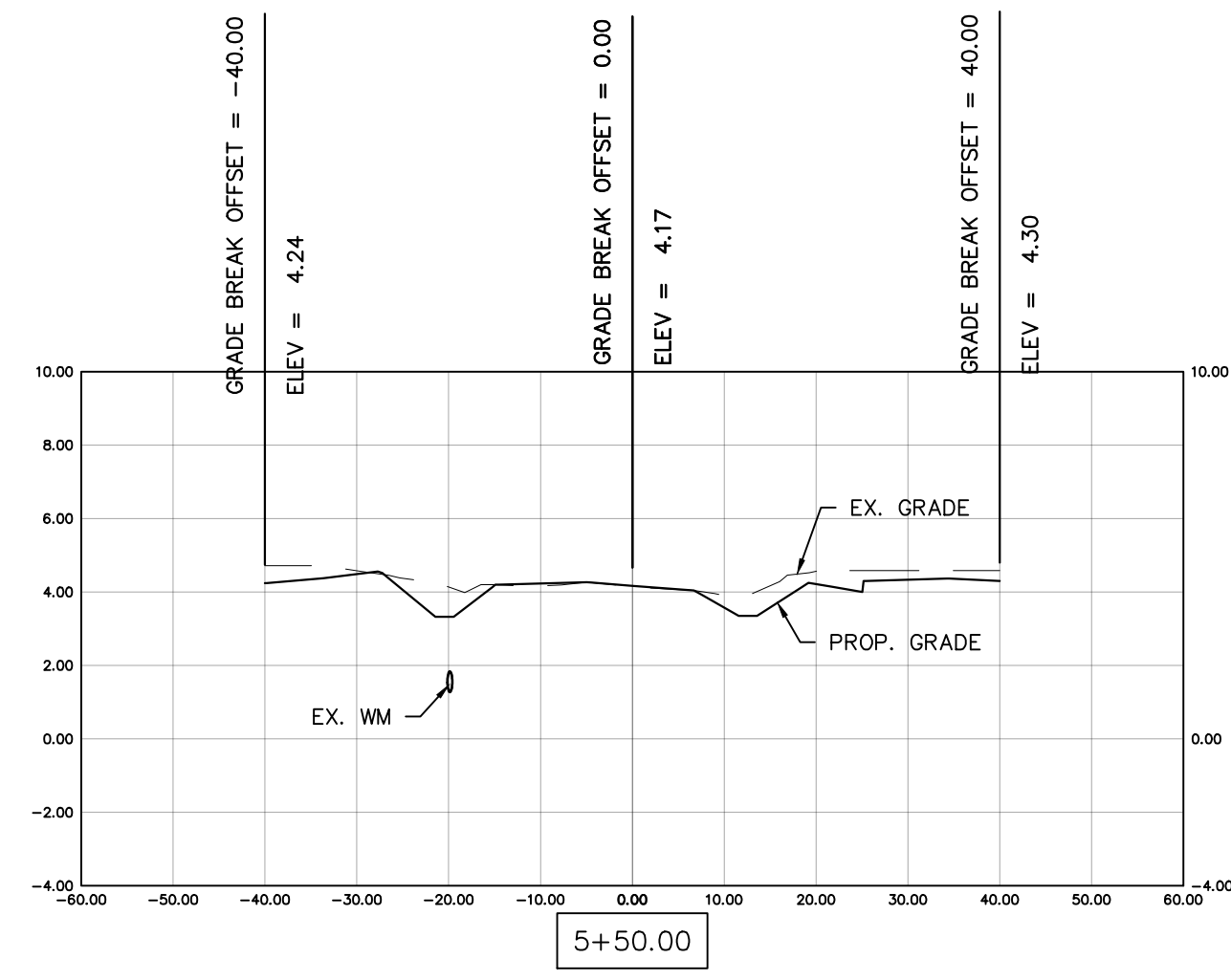
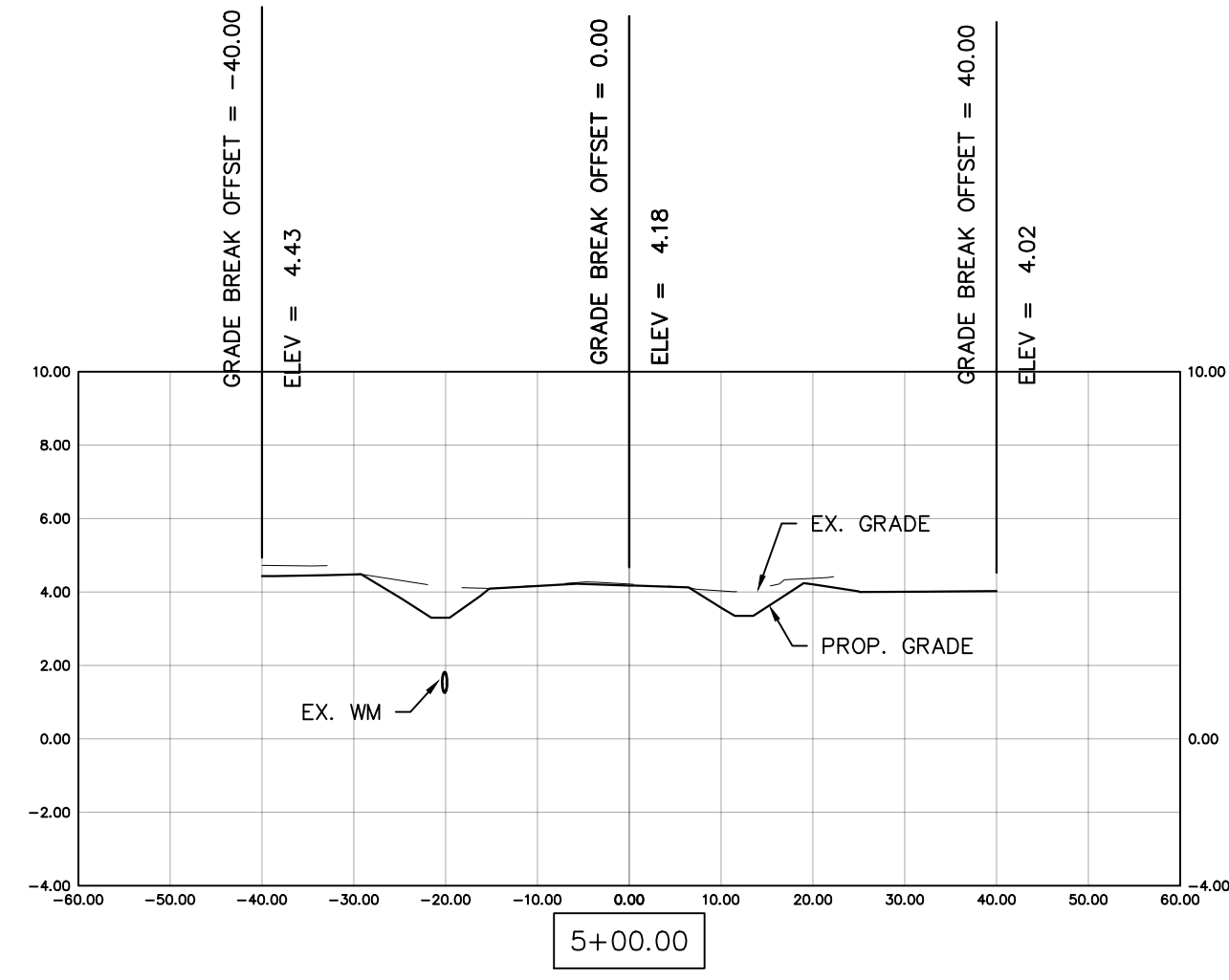


REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	05/17/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
PINE ST. SECTIONS

Blot Engineering, Inc
 Structural - Civil - Consulting
 Edward M Blot
 Professional Engineer
 FL No 72816
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com
 Florida State
 Certificate of Authority #29553

PROJECT	22-005
ENGINEER	EMB
DATE	05/16/2022
DRAWING NUMBER	134
REV	B

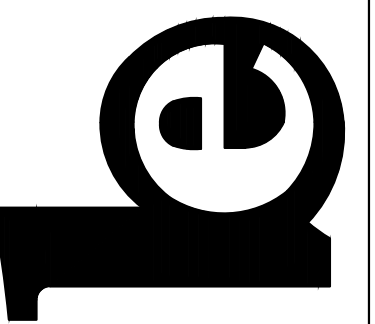


REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

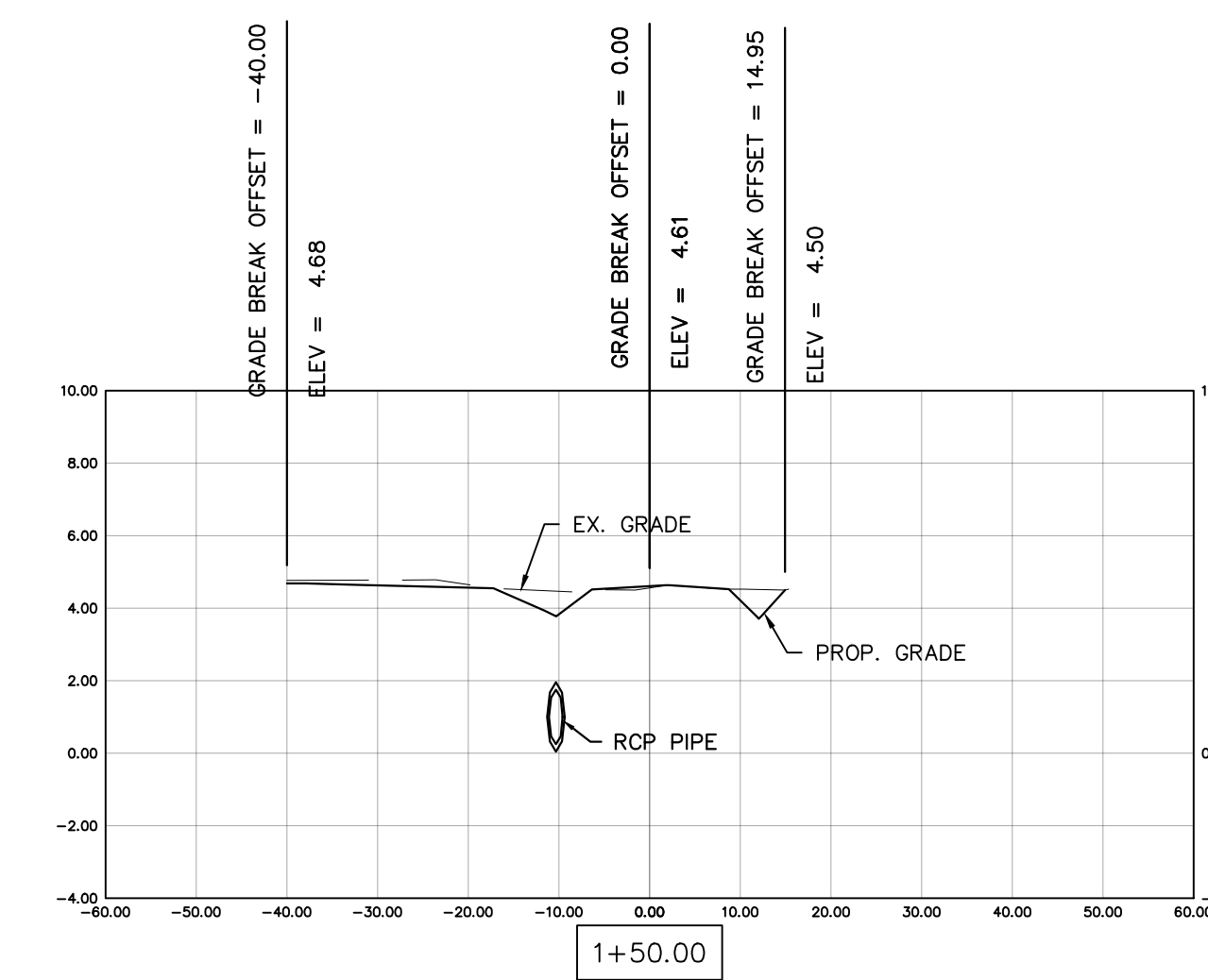
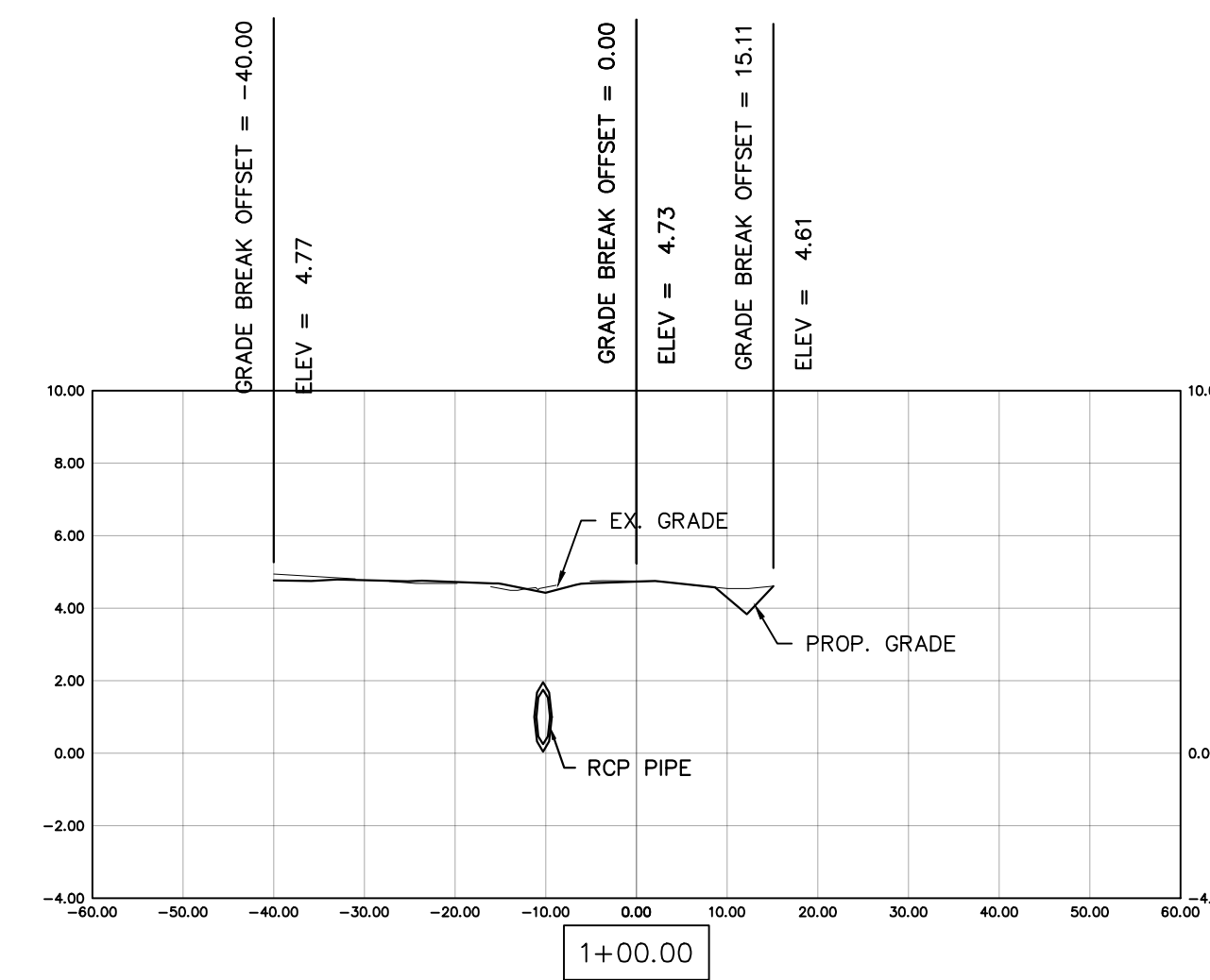
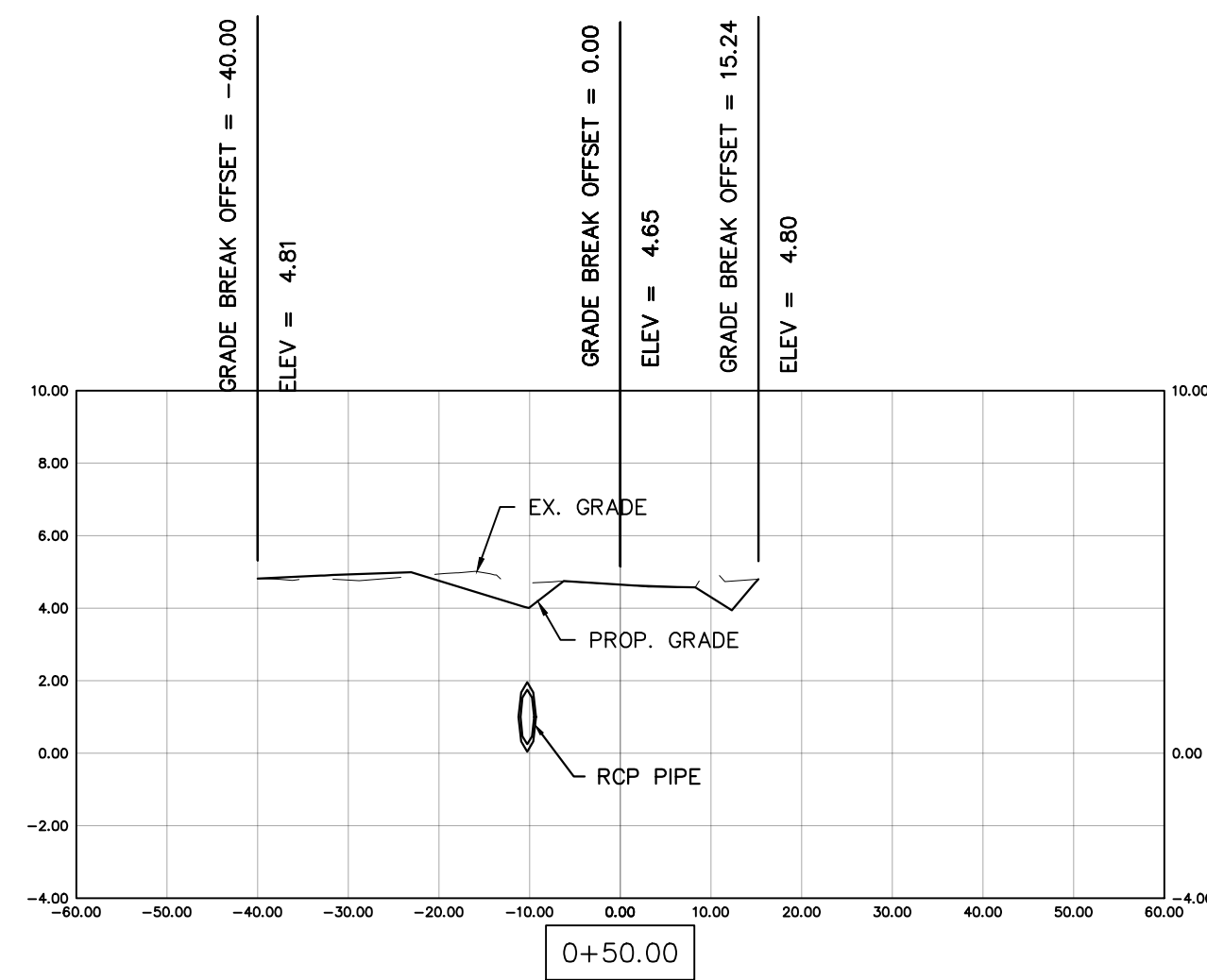
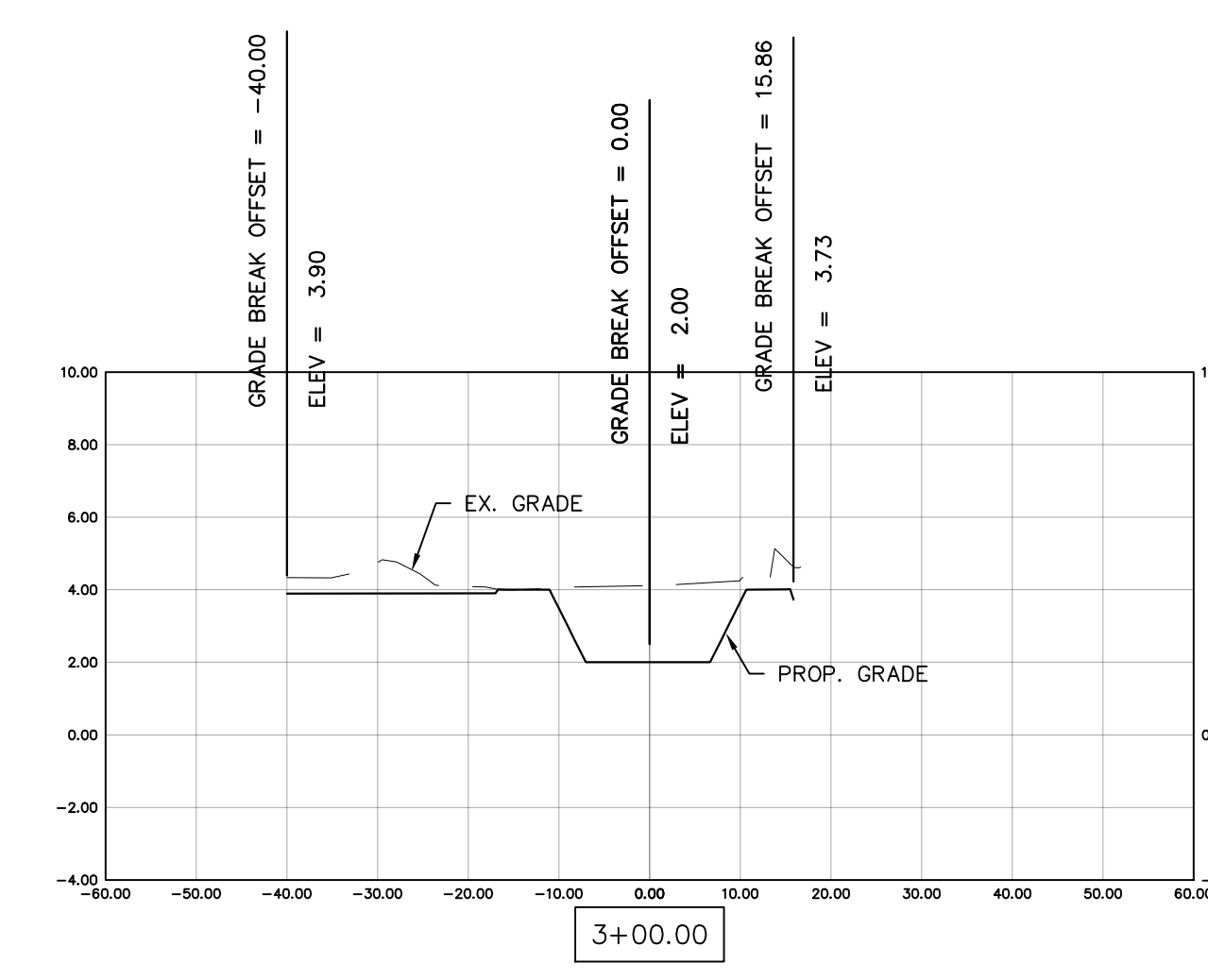
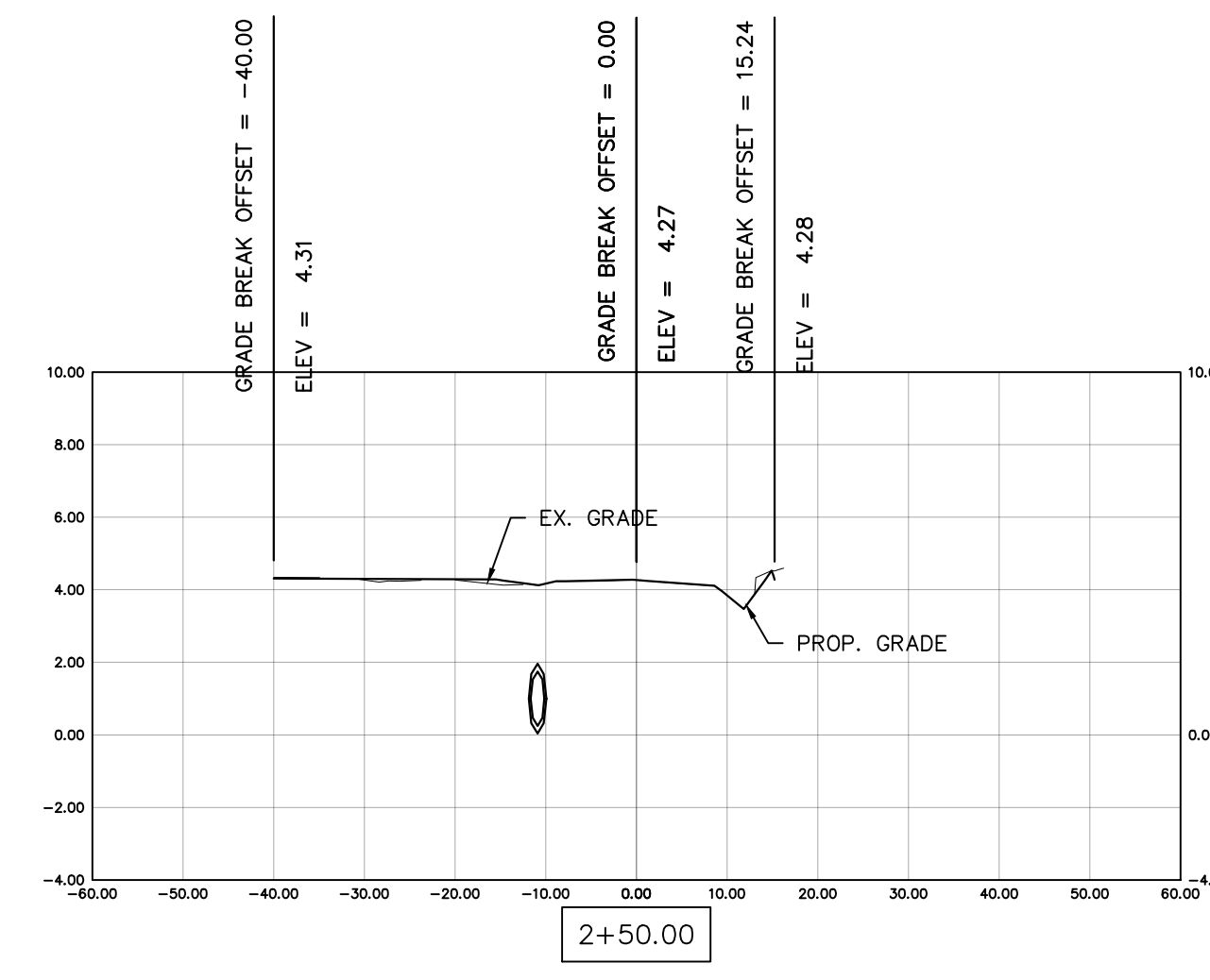
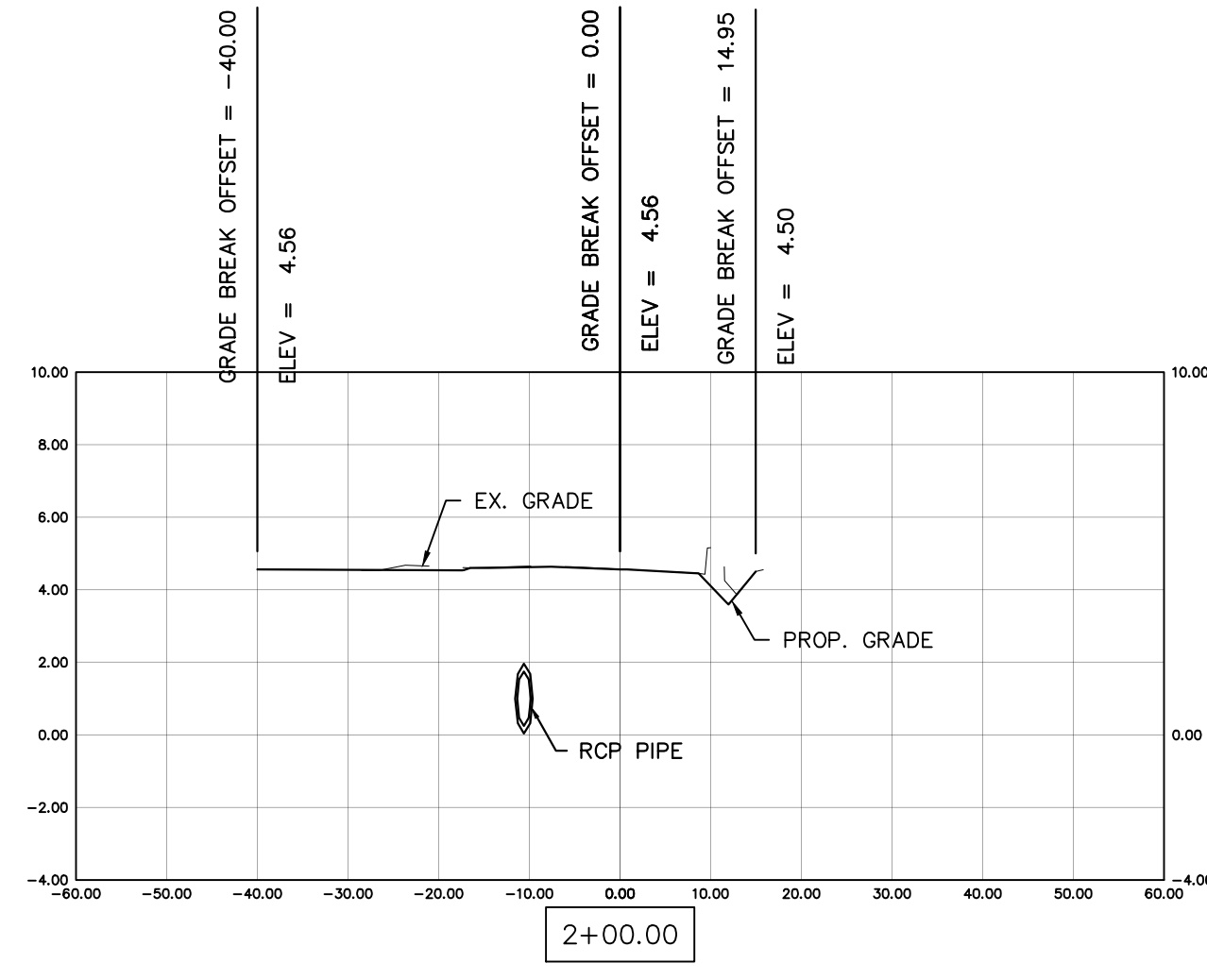
COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS

PINE ST. SECTIONS

Blot Engineering, Inc
Structural - Civil - Consulting
Edward M Blot
Professional Engineer
FL No 72816
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com
Florida State
Certificate of Authority #29553



PROJECT	22-005
ENGINEER	EMB
DATE	05/16/2022
DRAWING NUMBER	135
REV	B

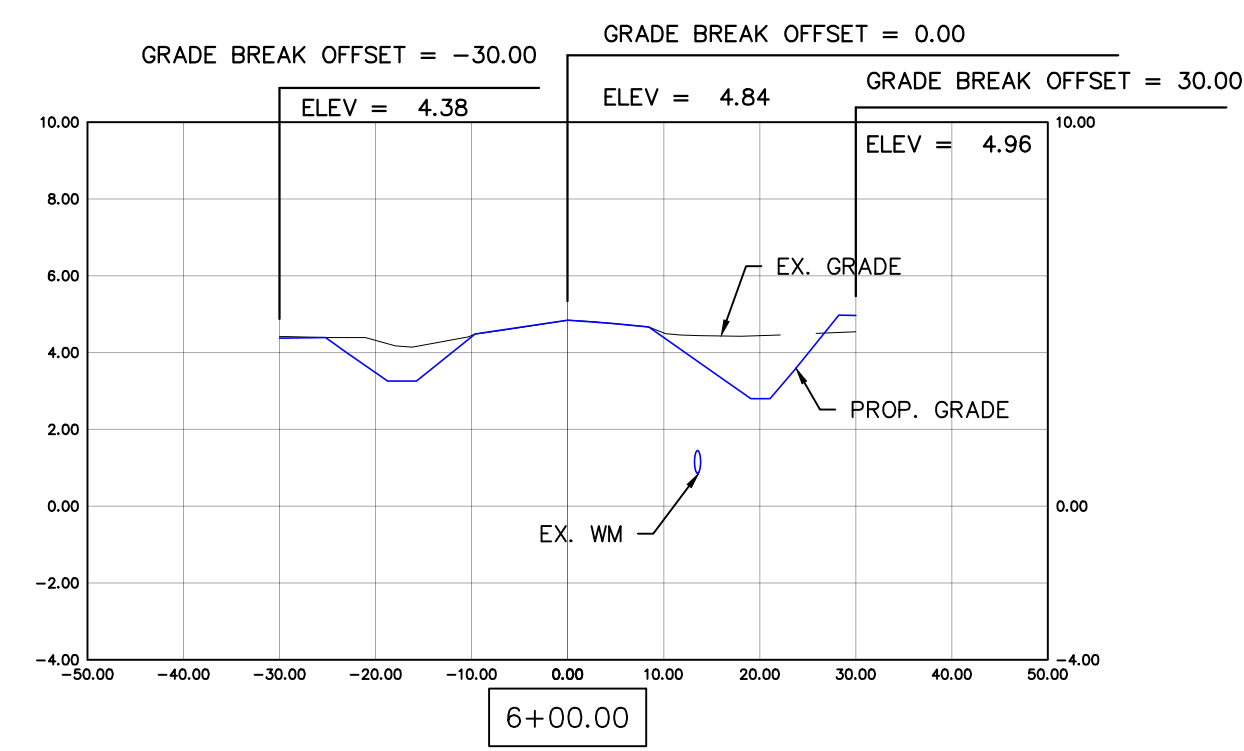
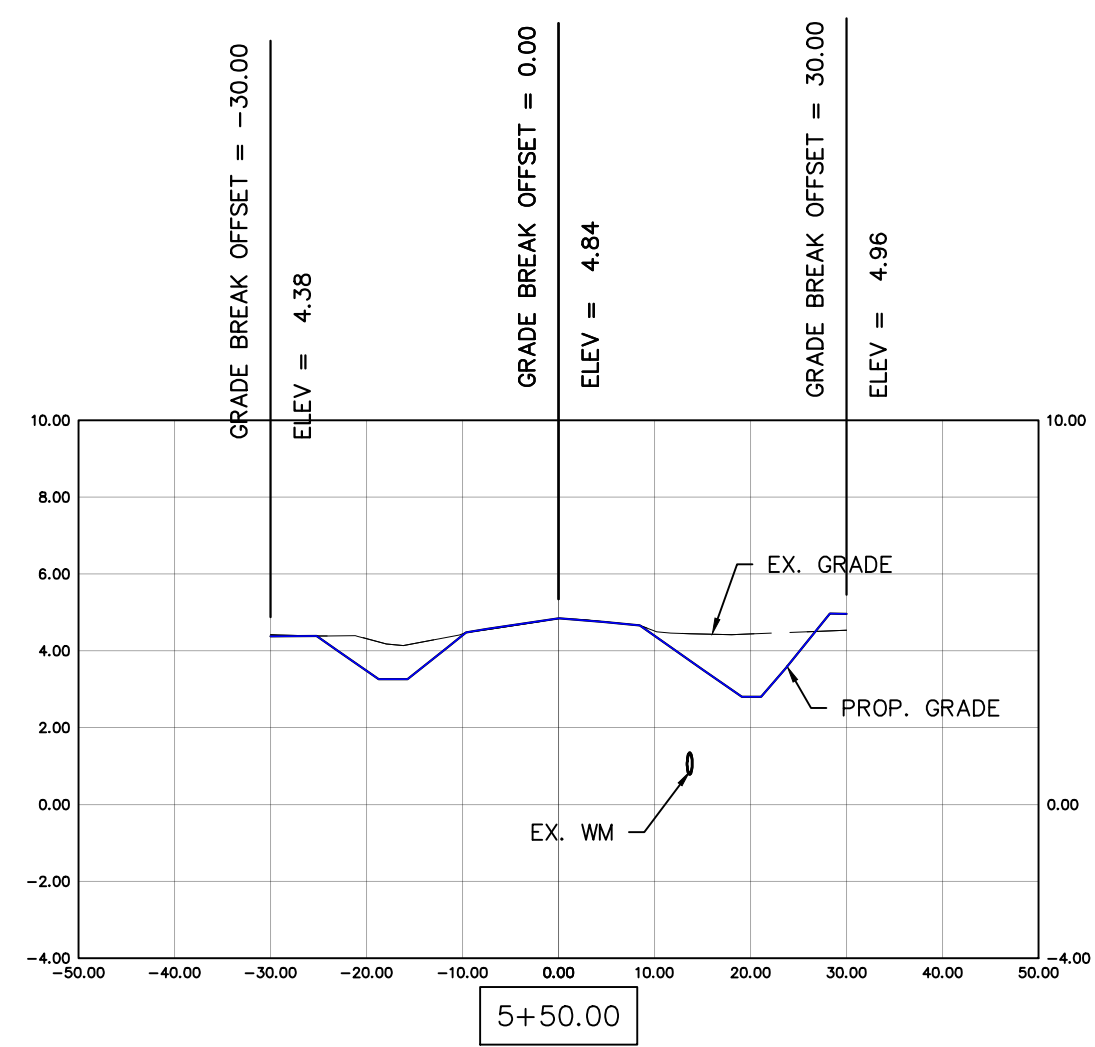
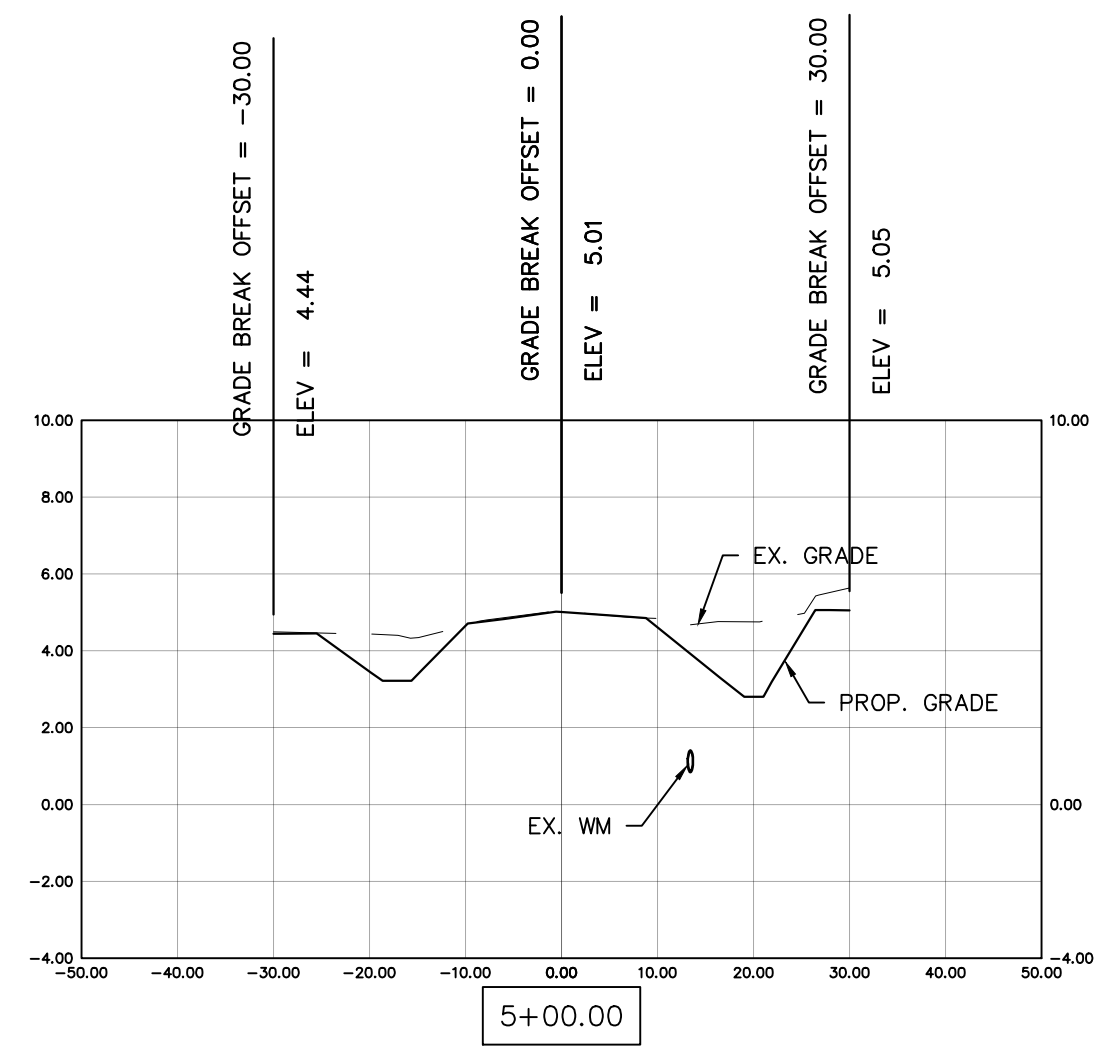
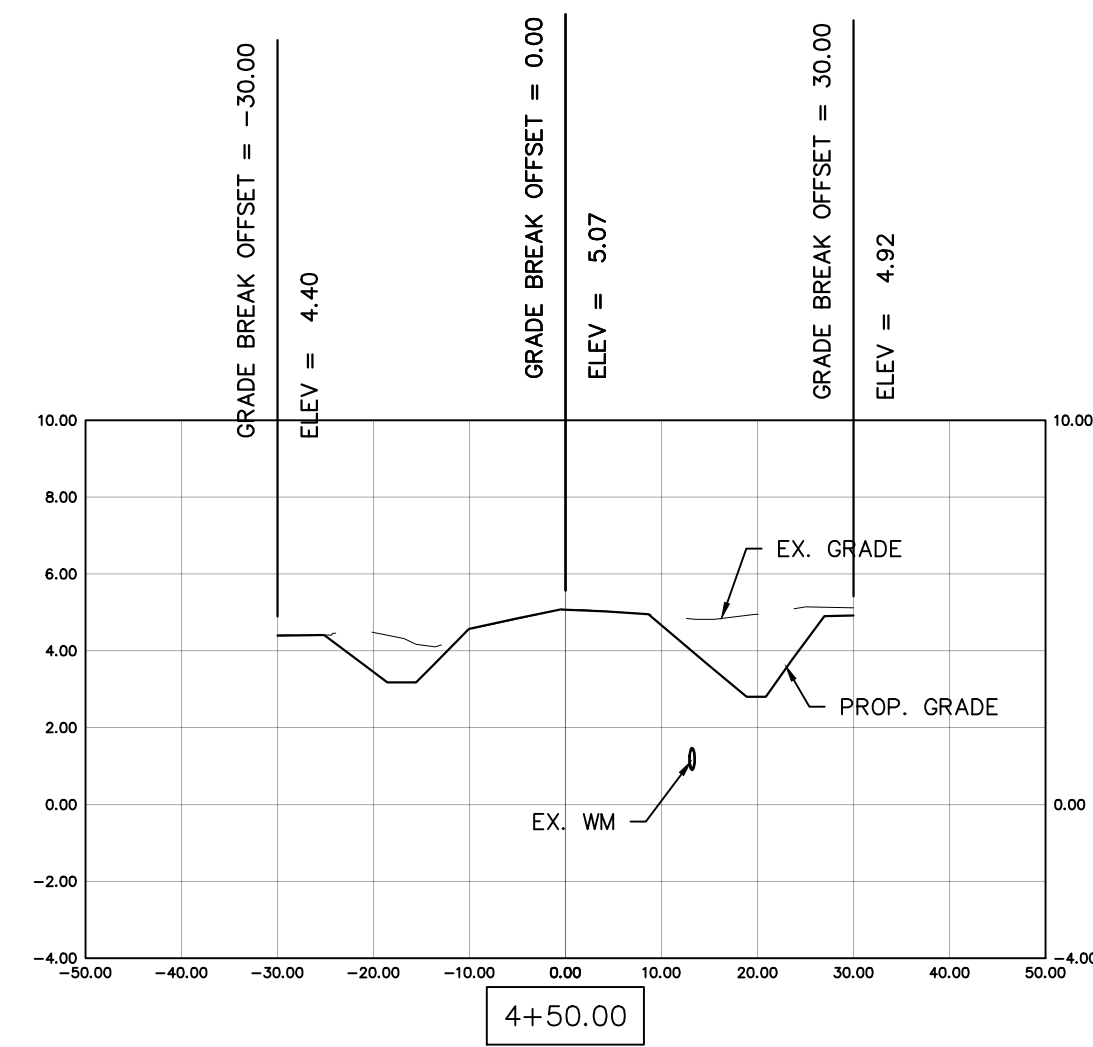
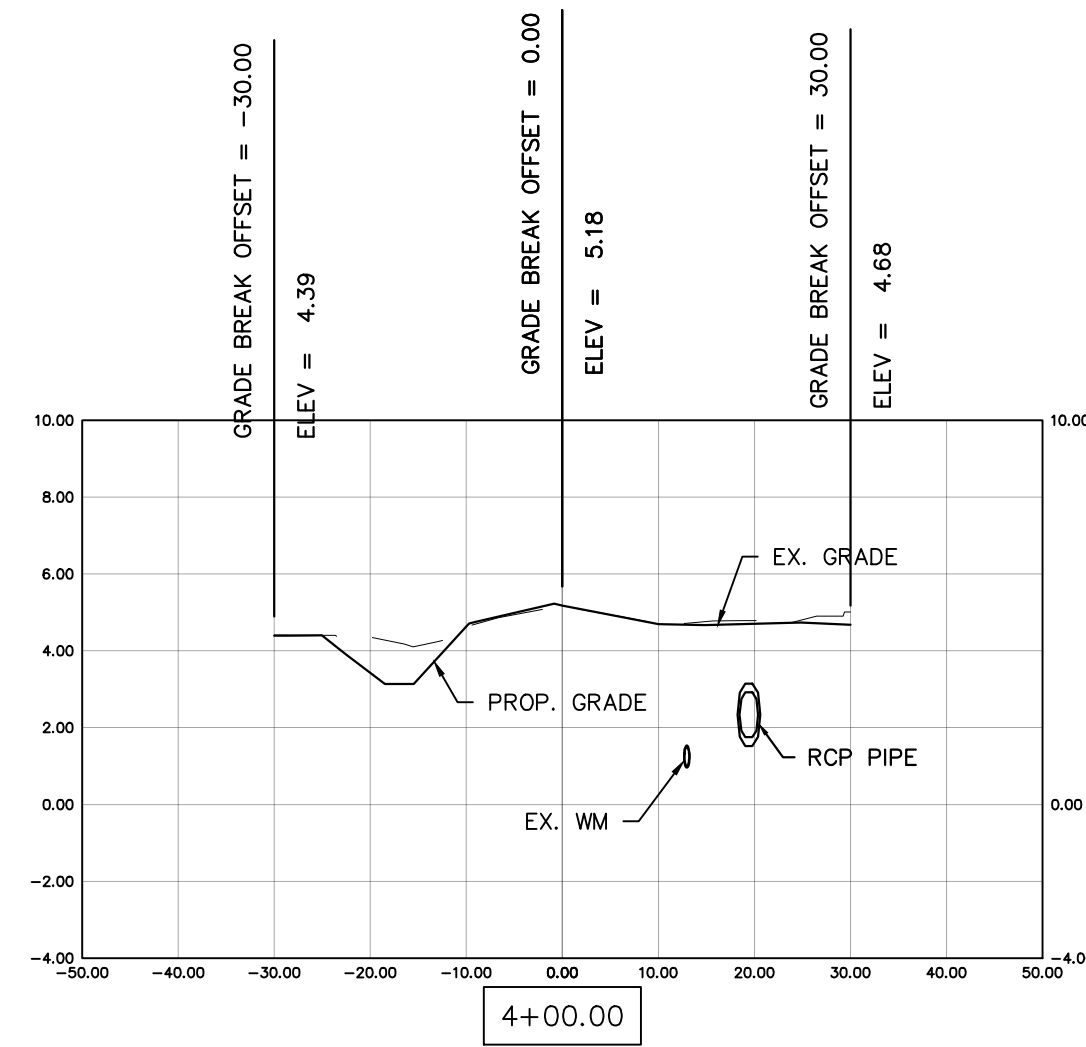
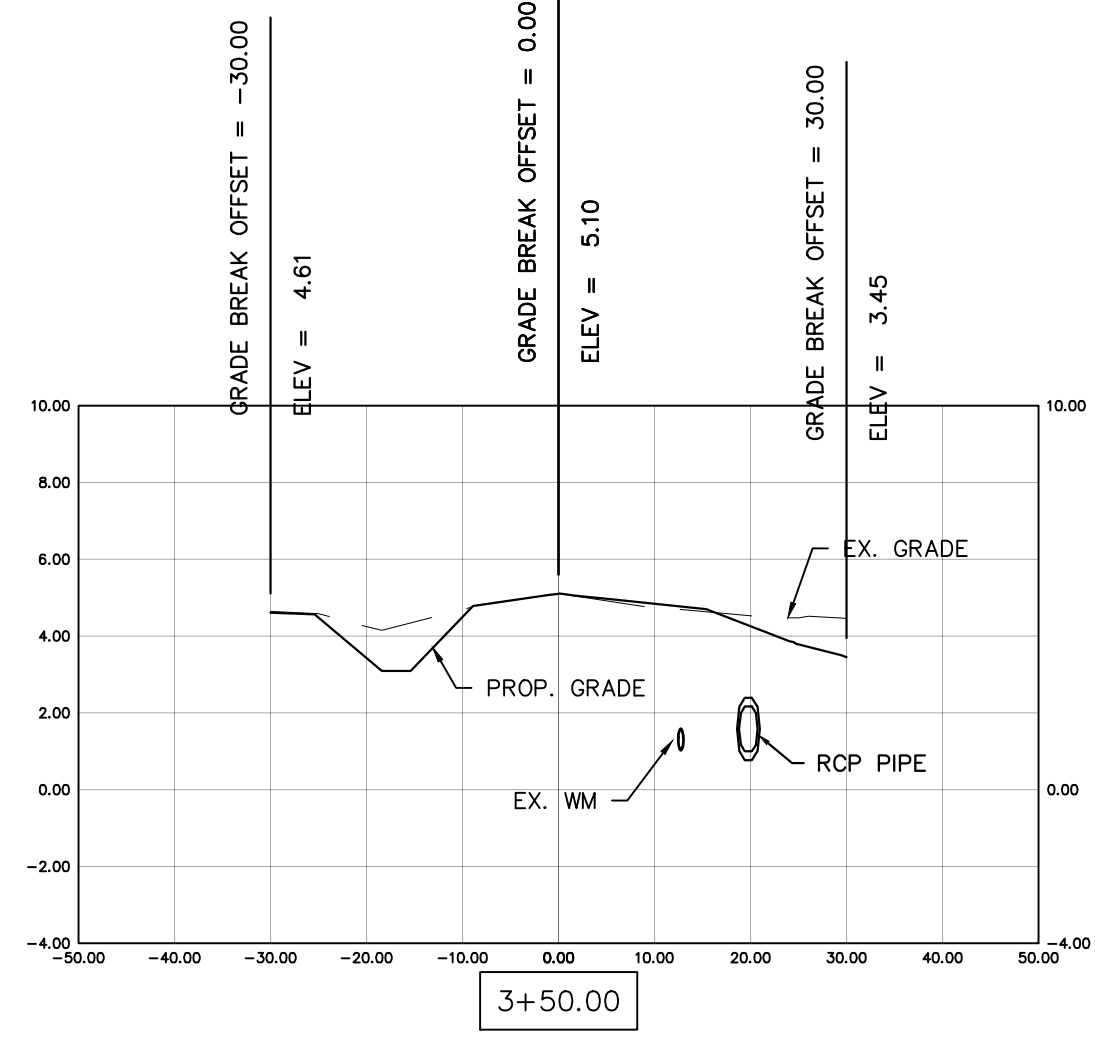
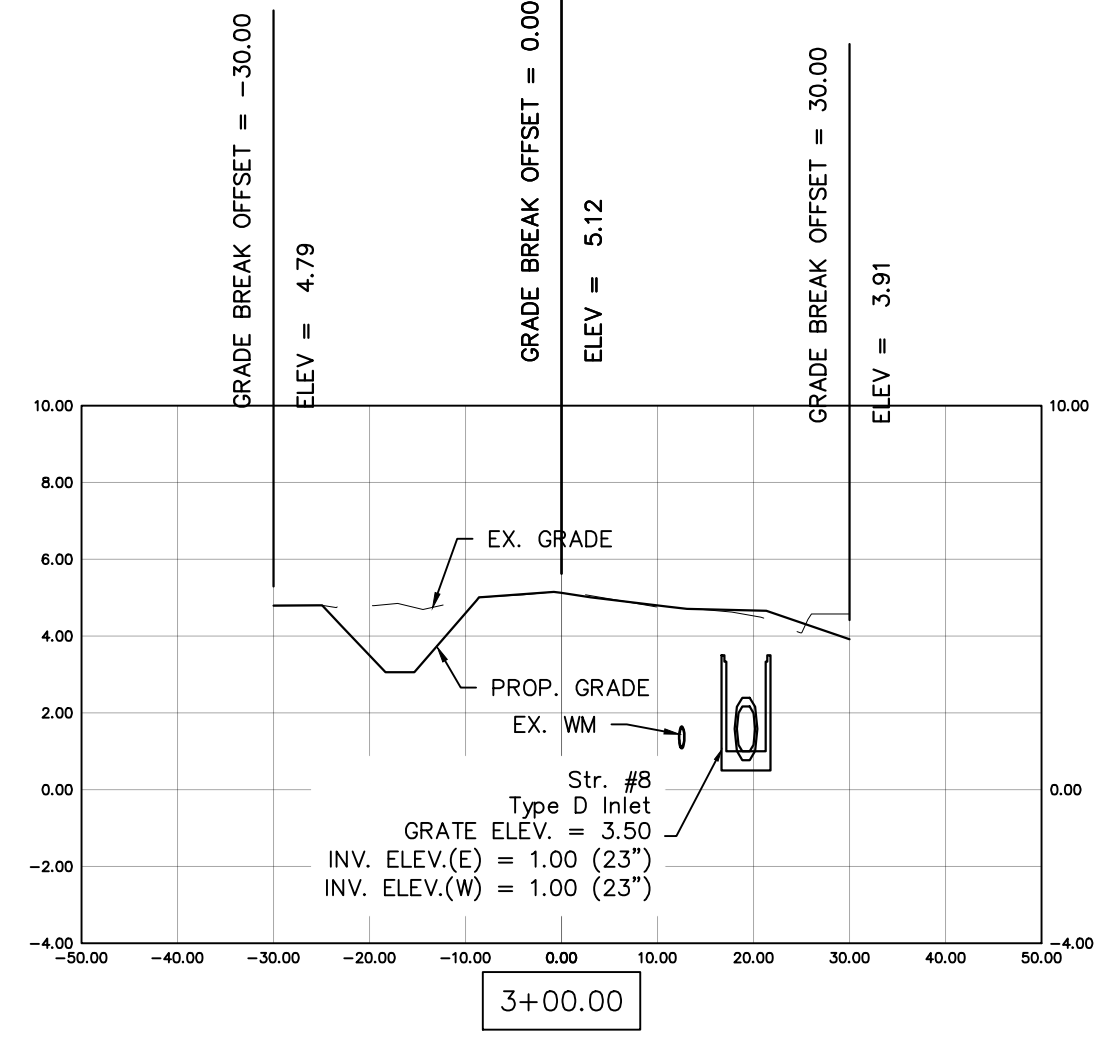
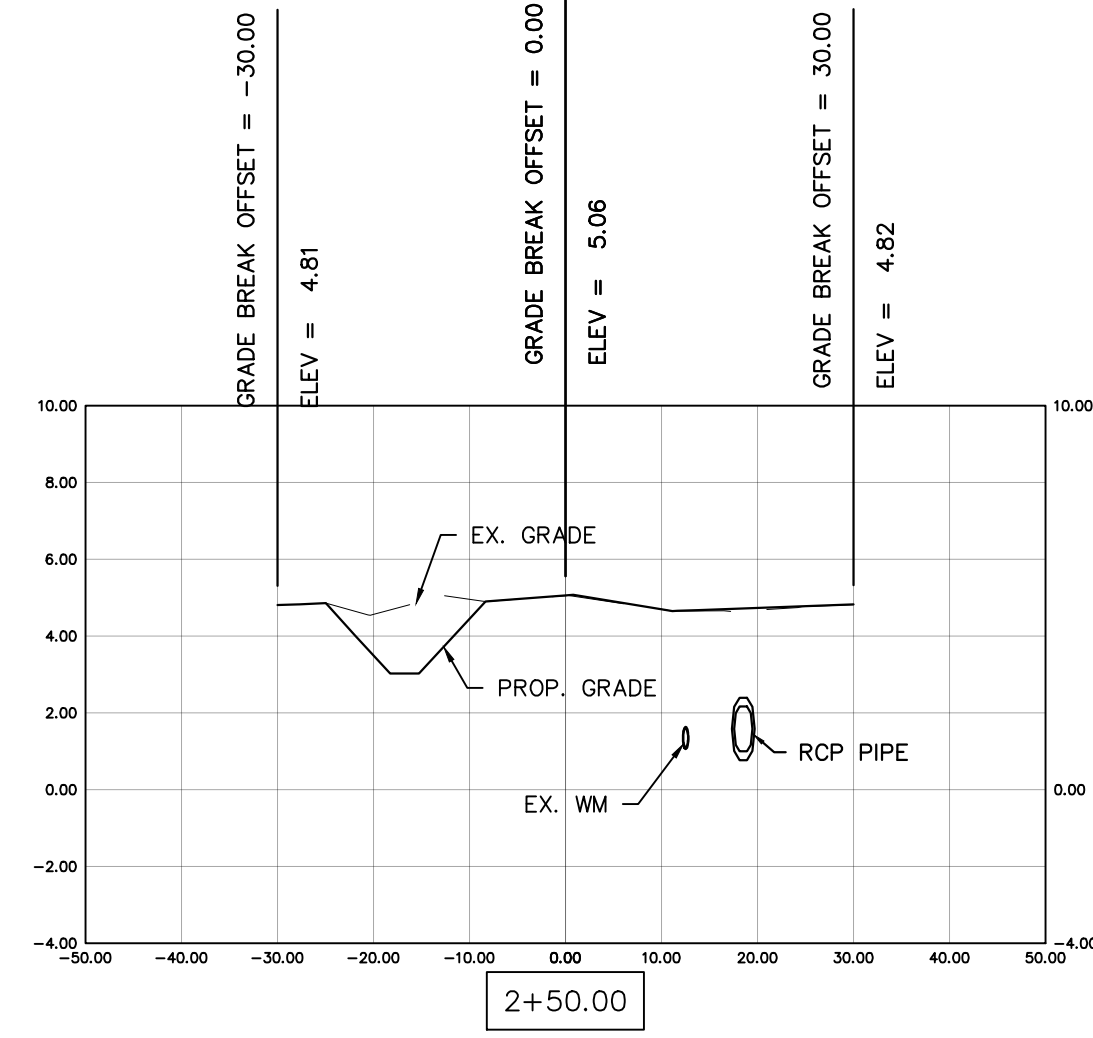
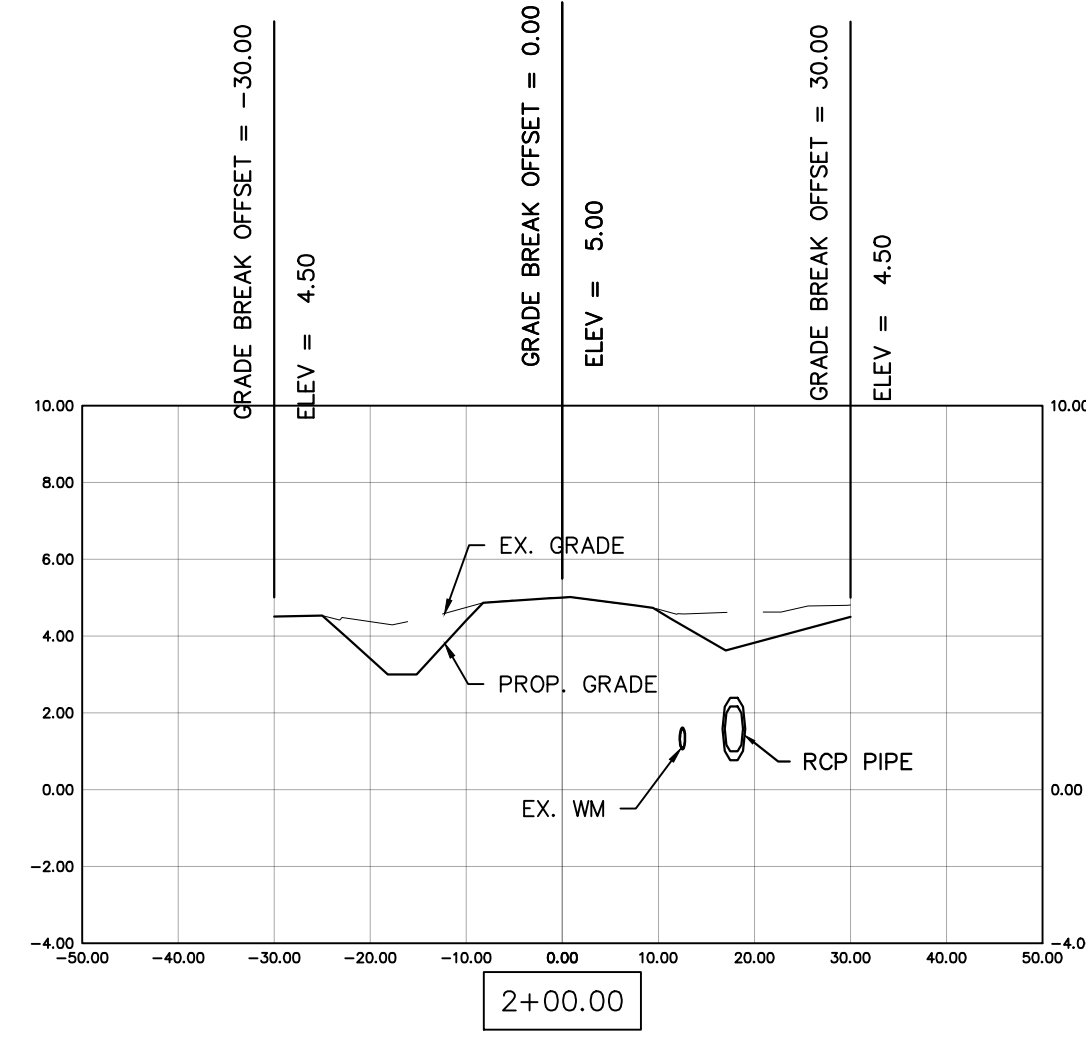
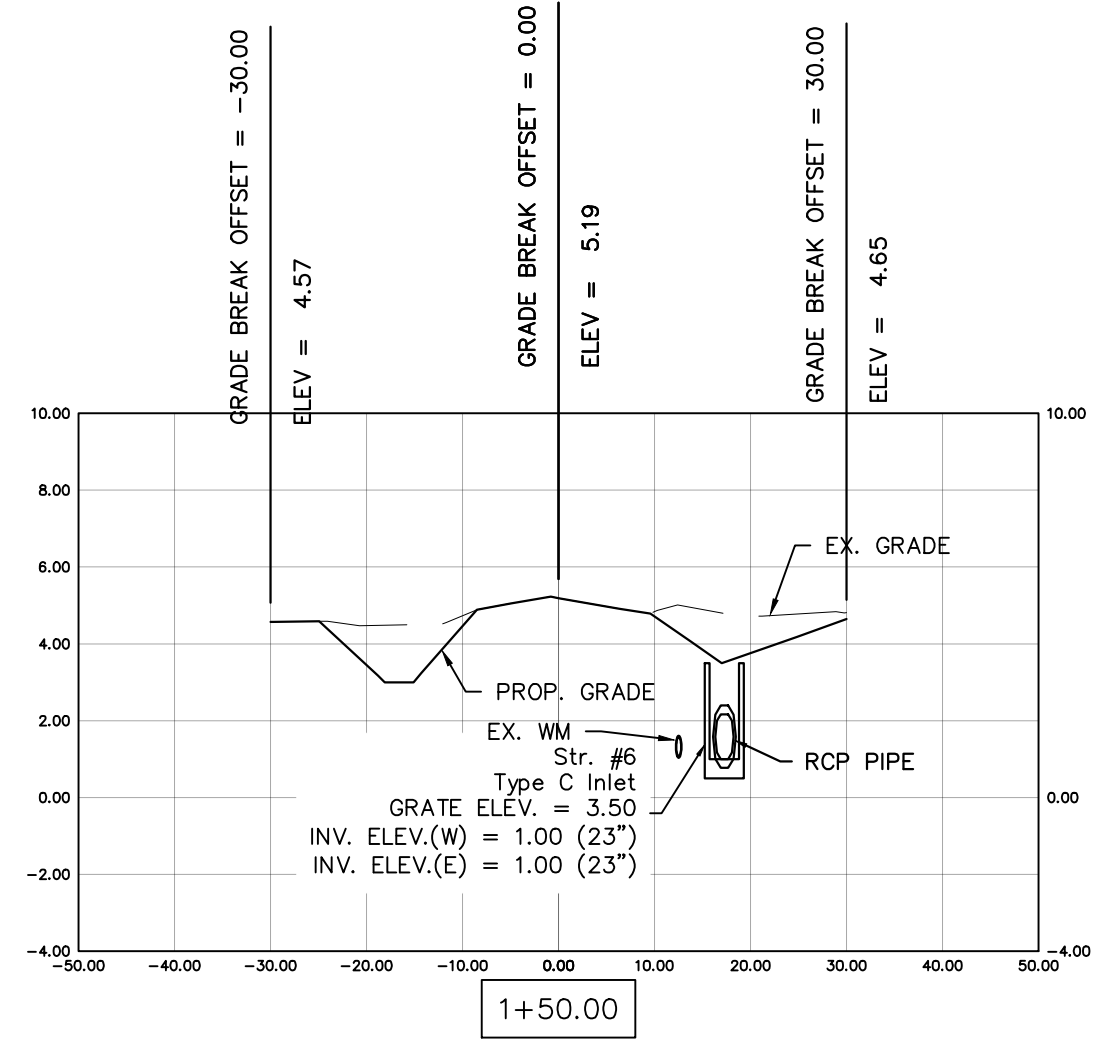
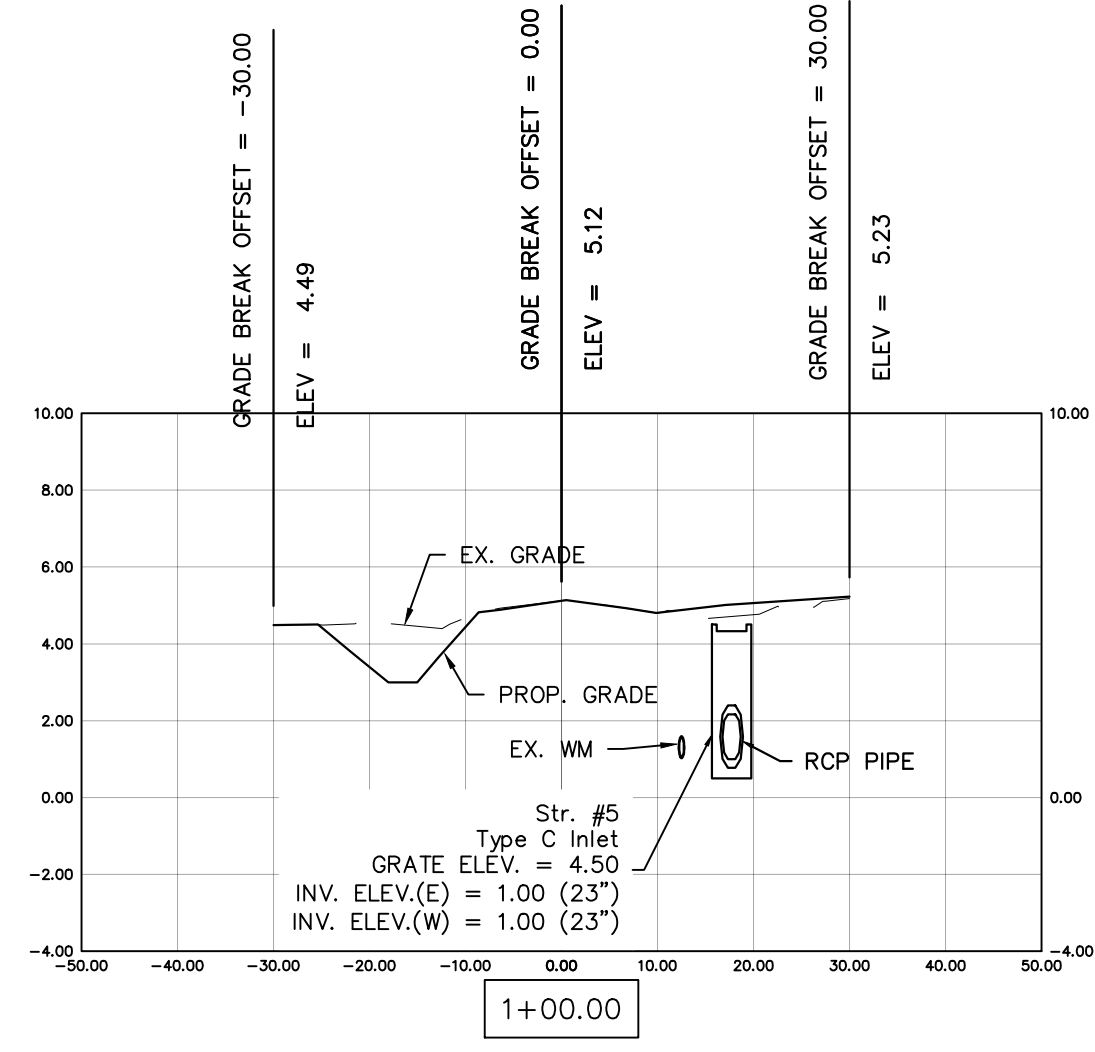
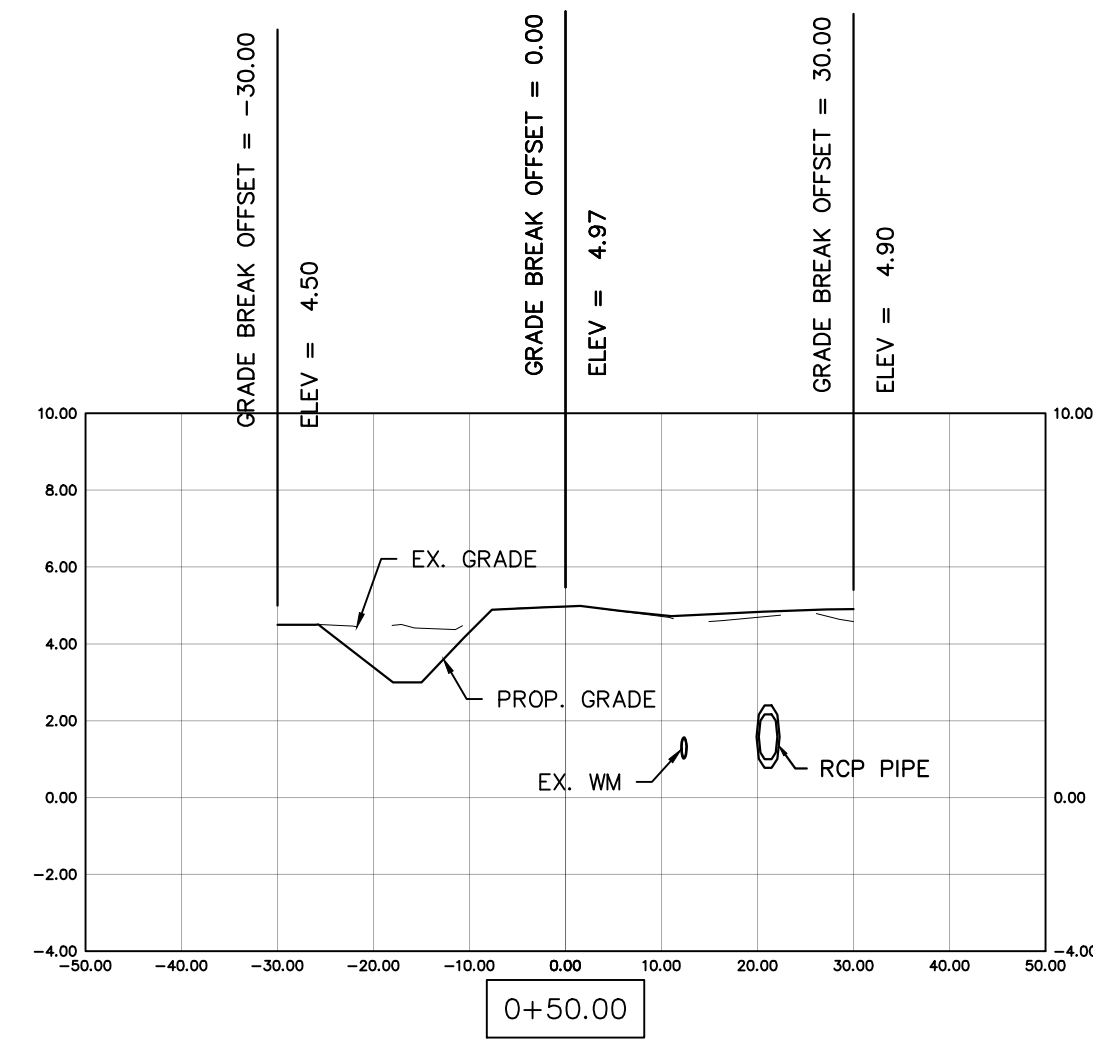
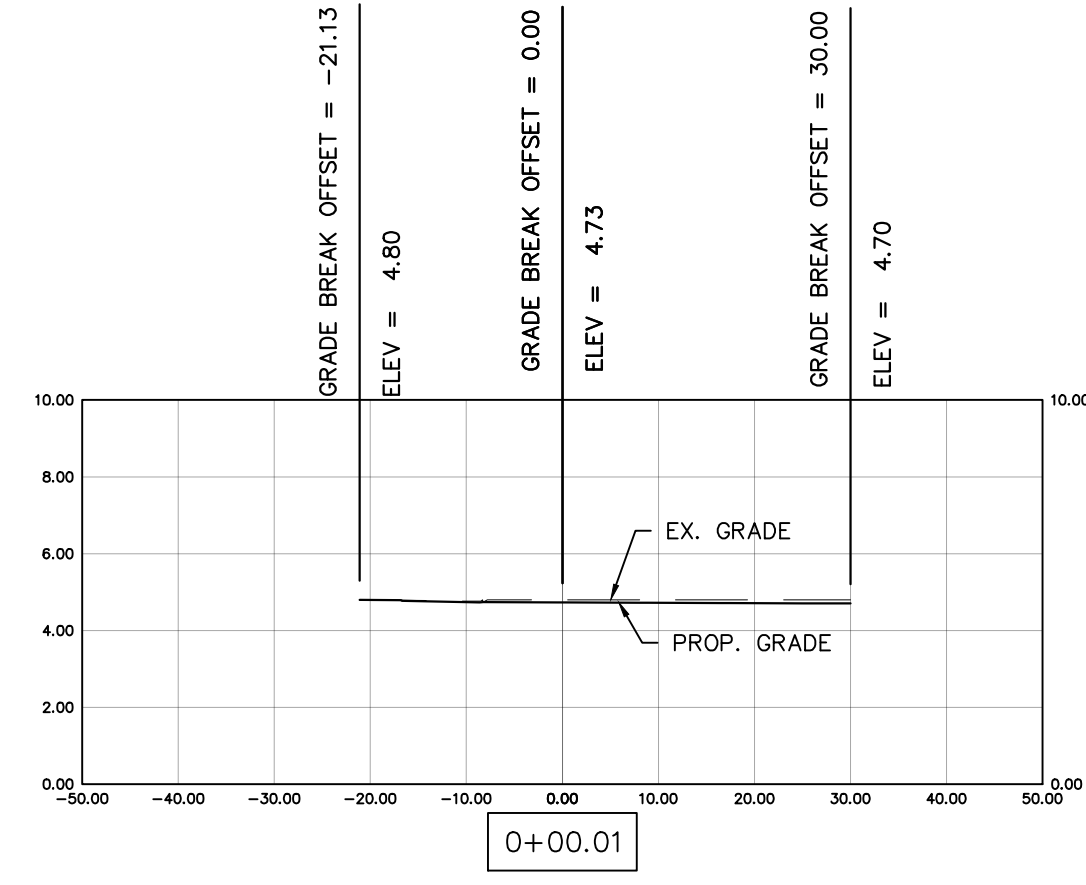


PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	139

Blot Engineering, Inc
 Structural - Civil - Consulting
 Edward M. Blot
 Professional Engineer
 FL No. 72816
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com
 Florida State
 Certificate of Authority #29553

COLLIER COUNTY CRA
 BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
 MANGROVE ST. SECTIONS

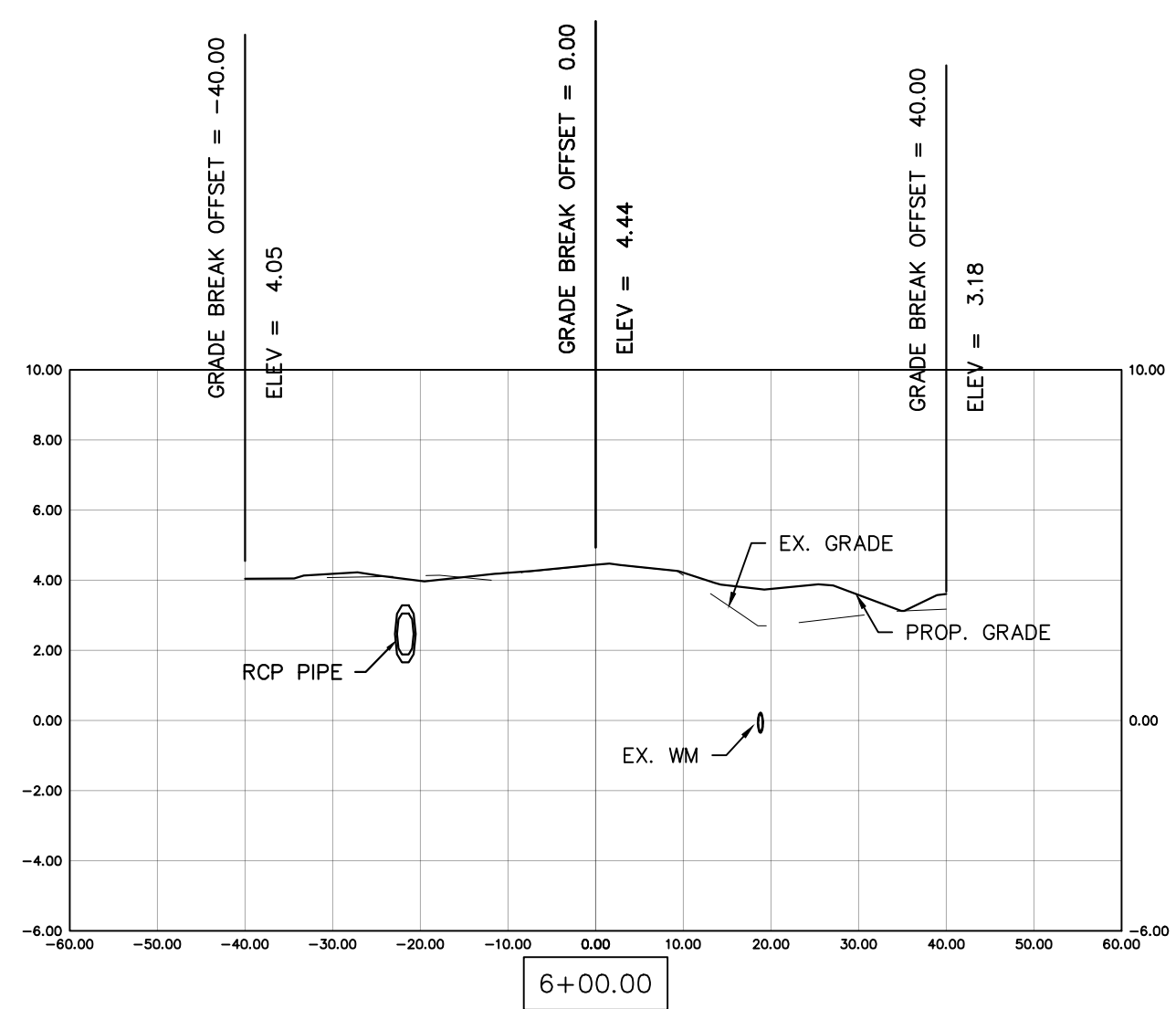
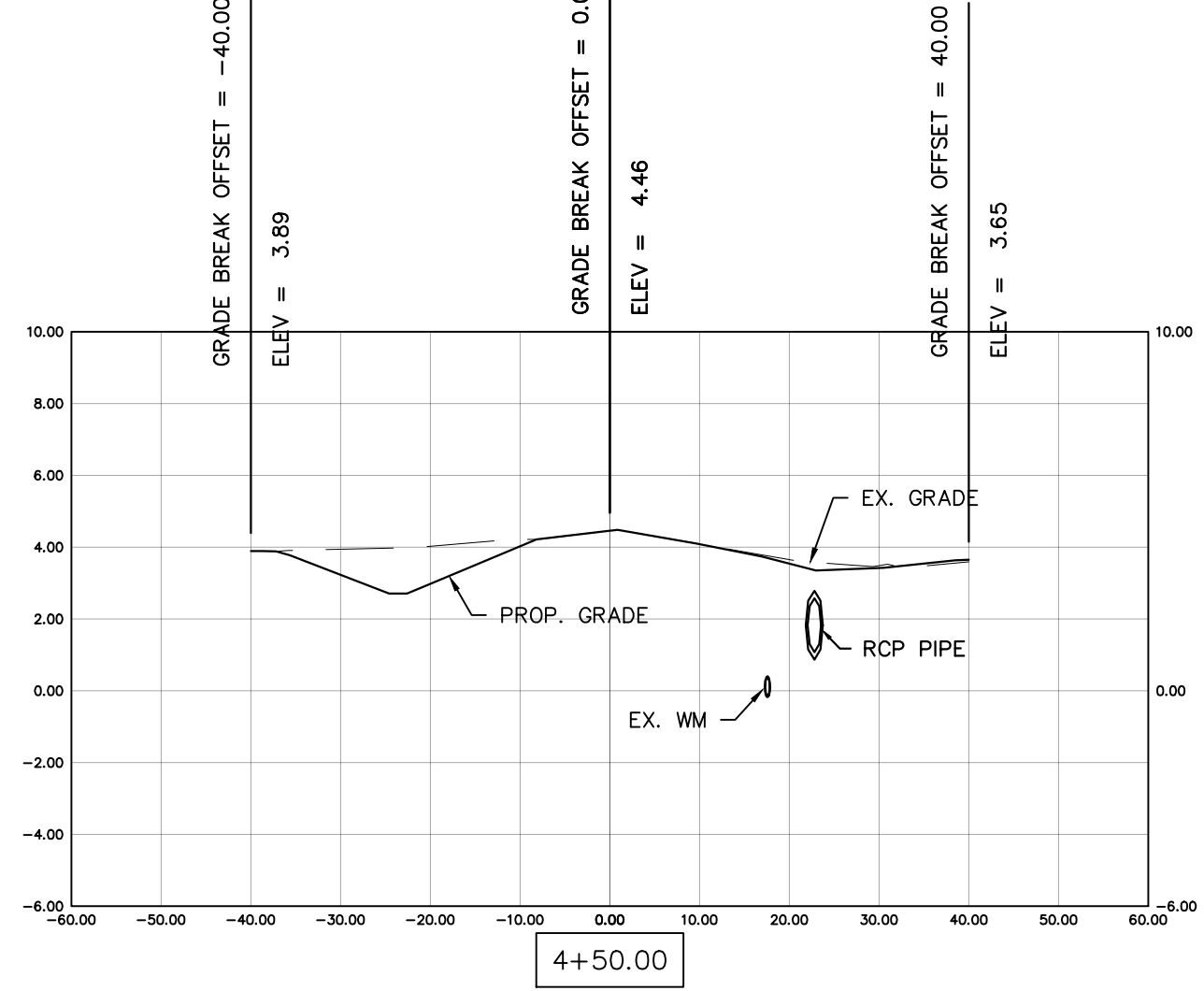
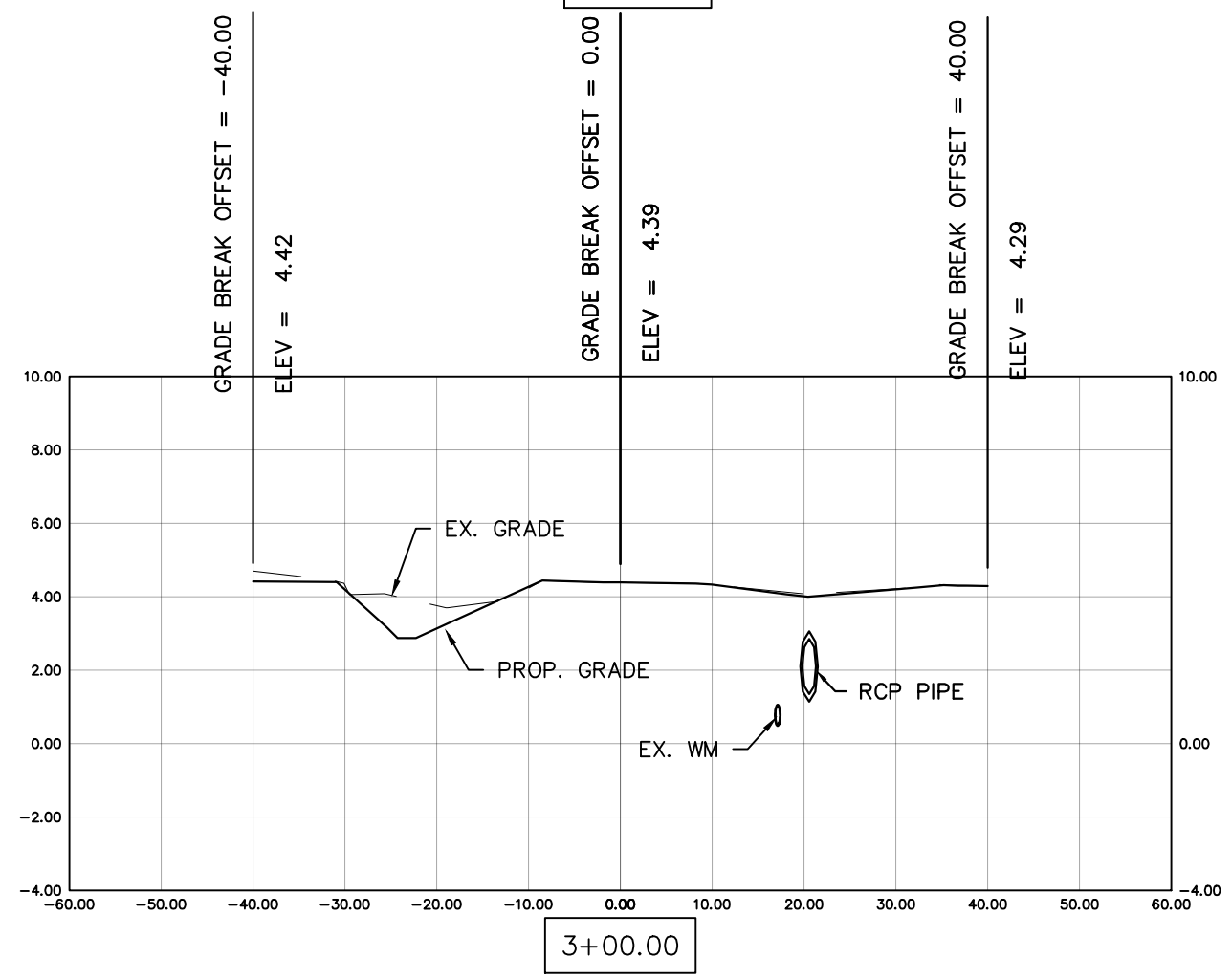
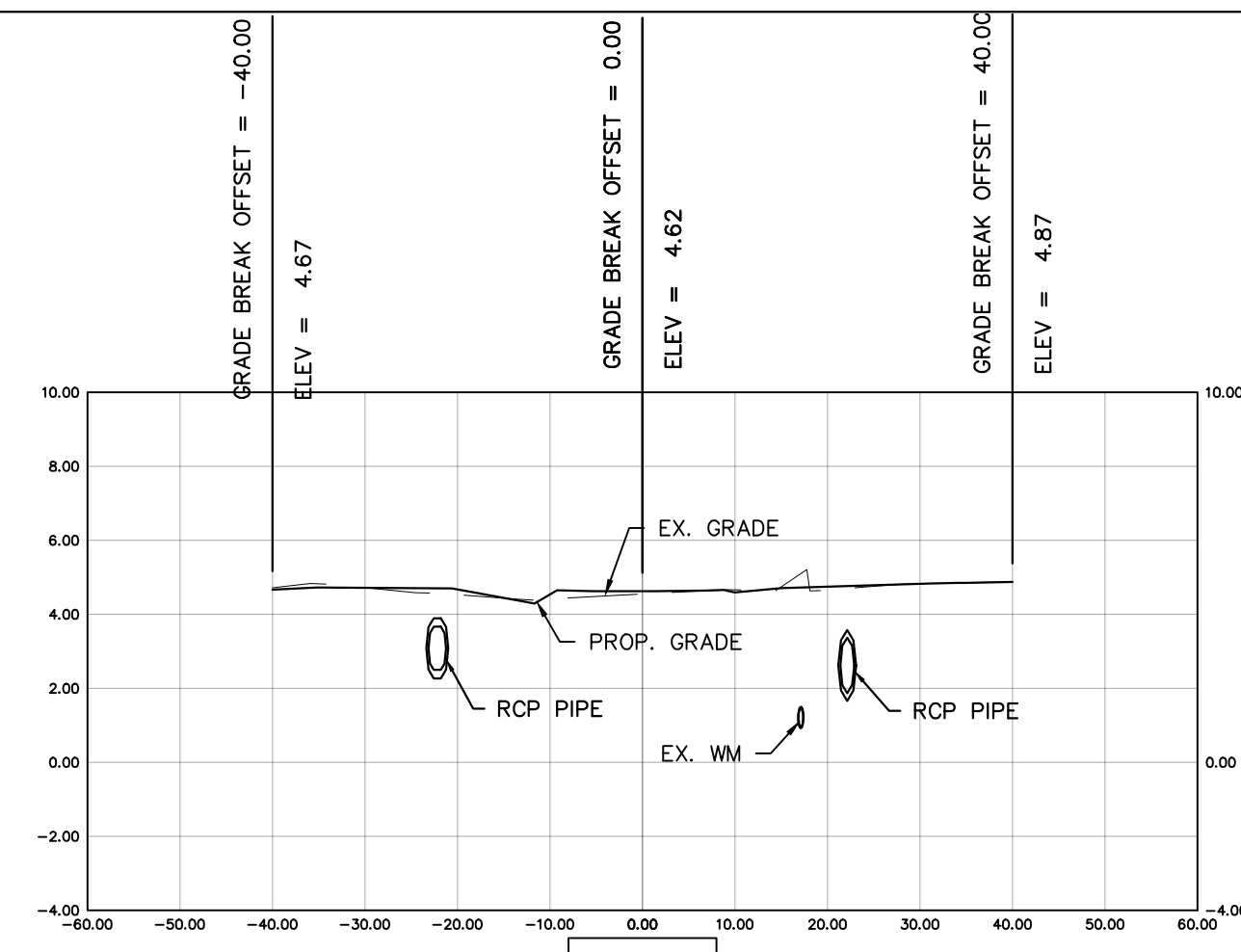
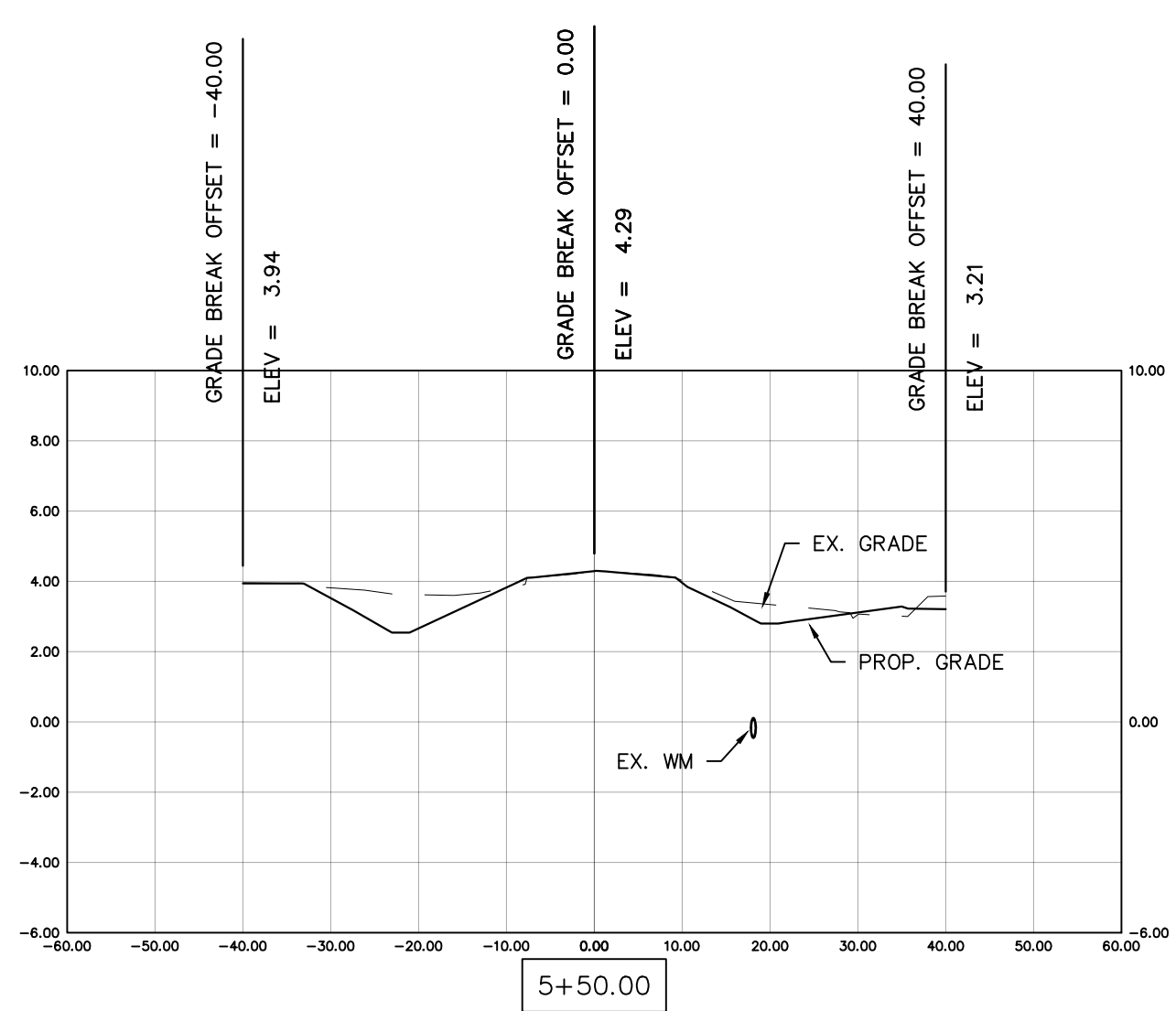
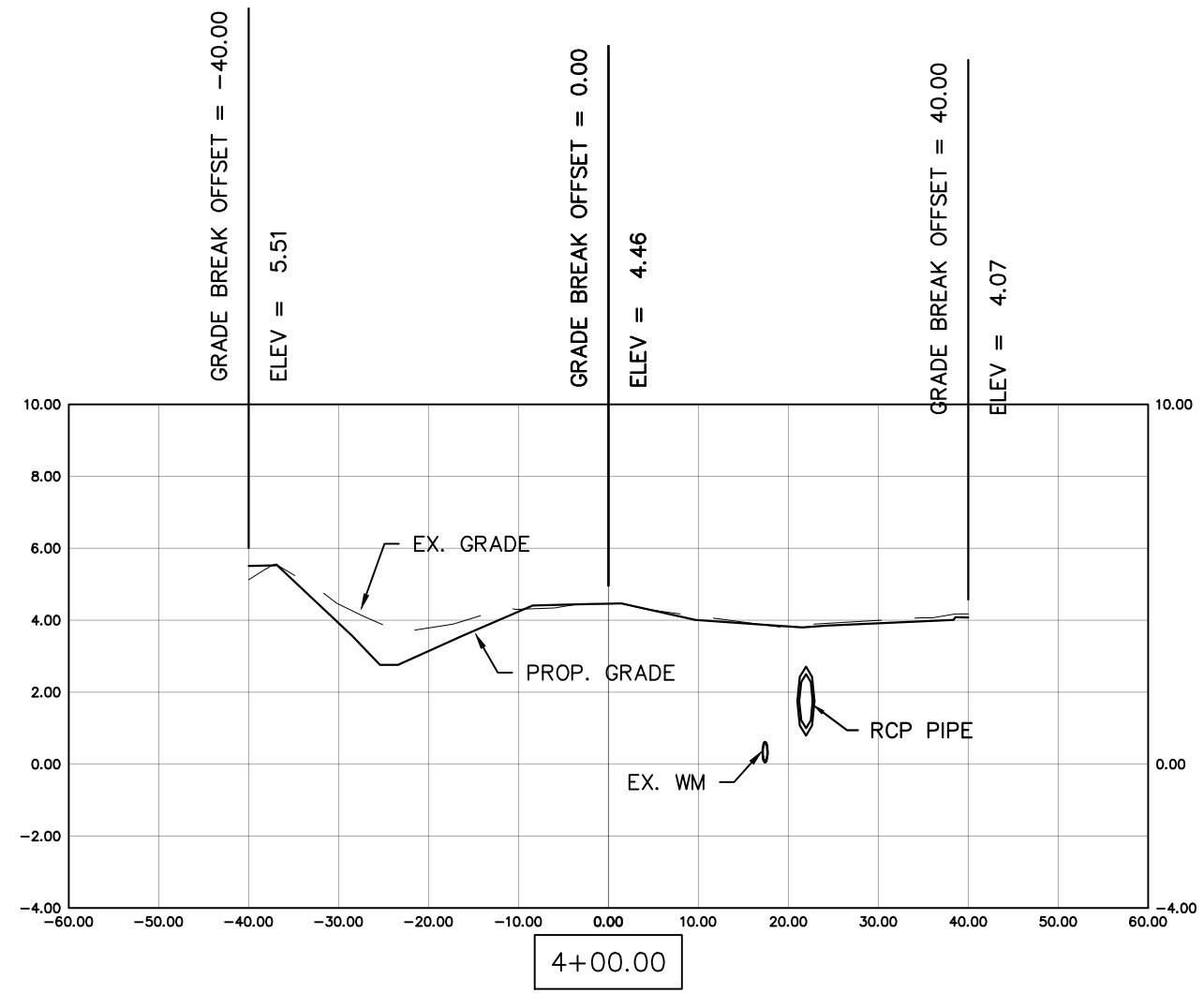
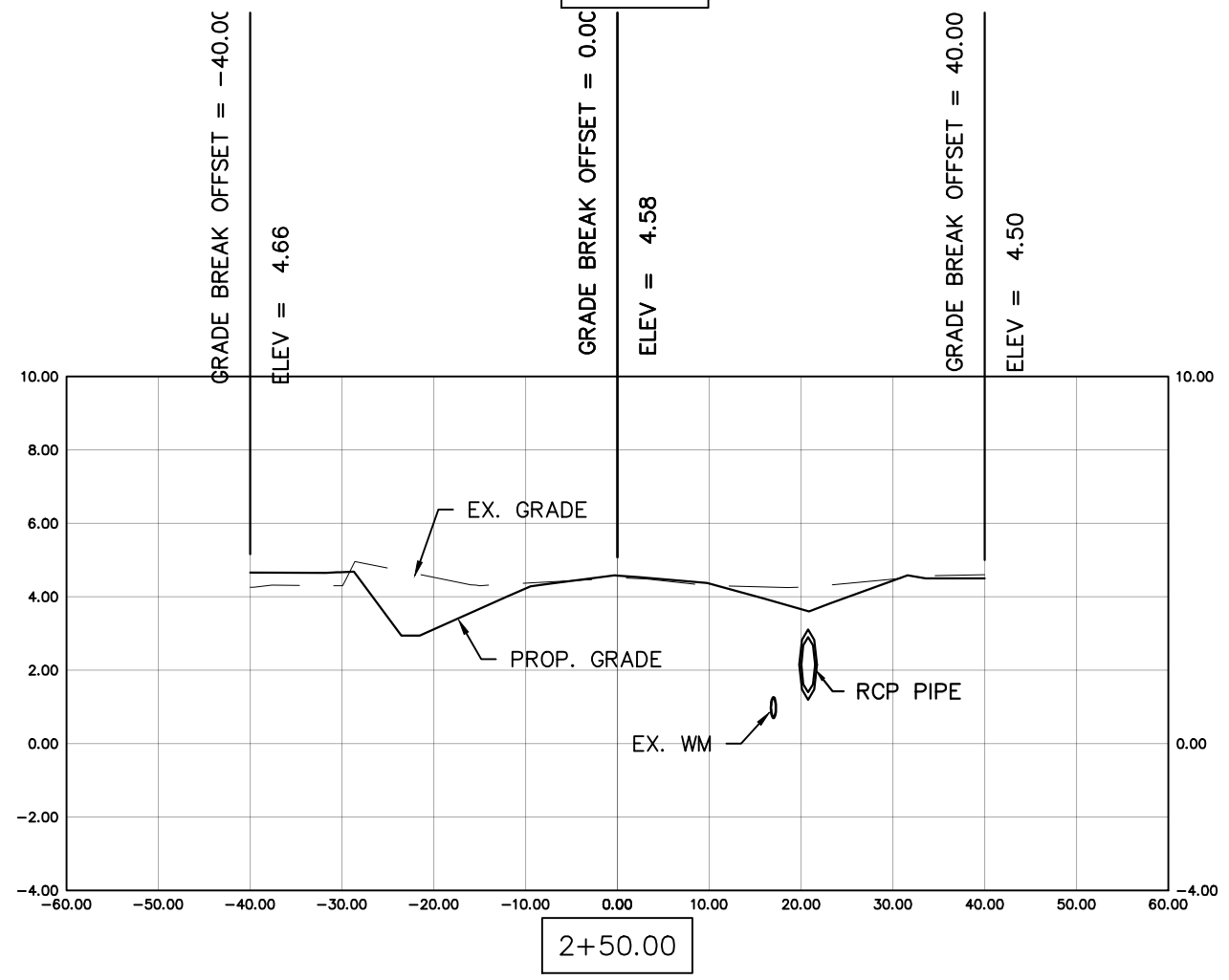
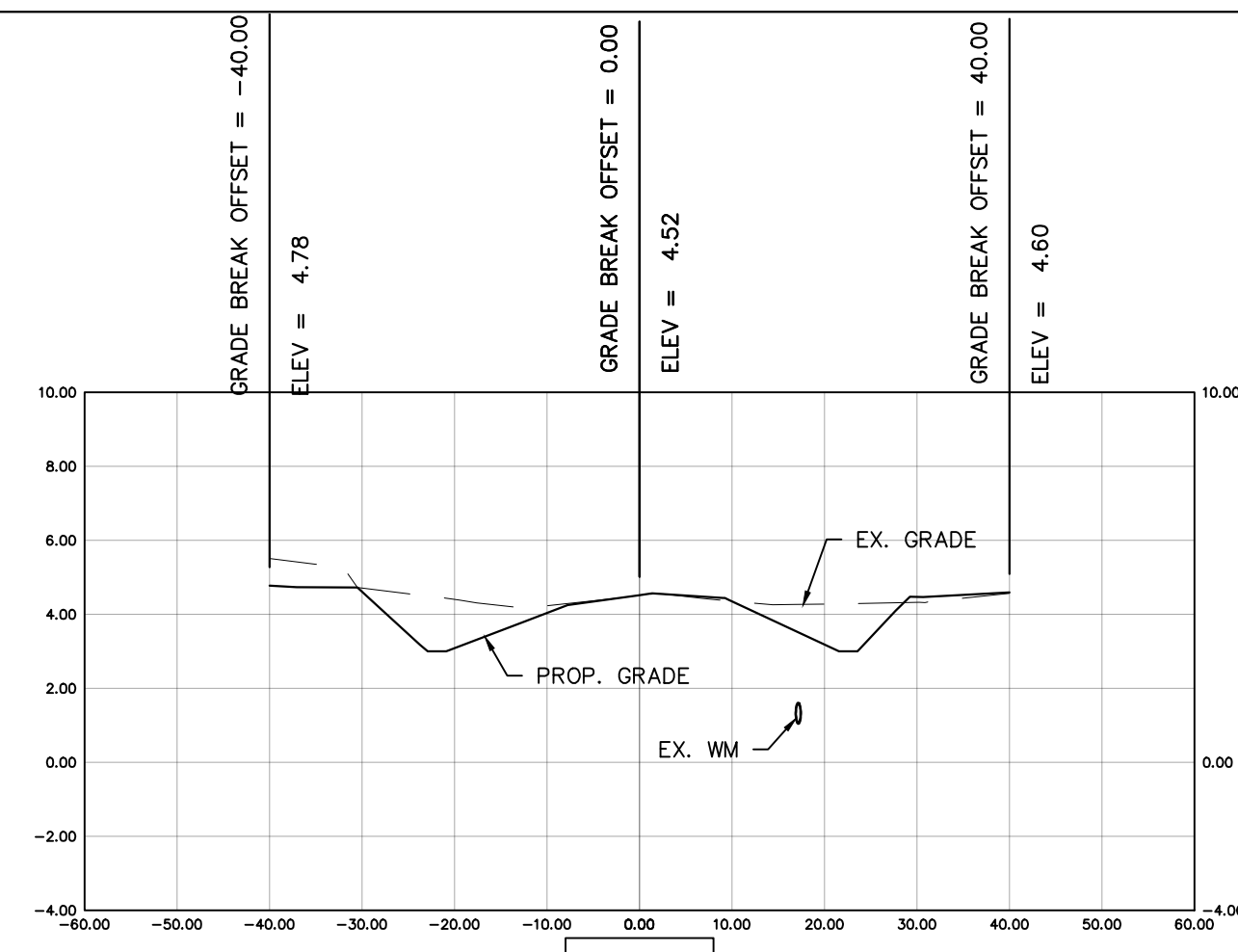
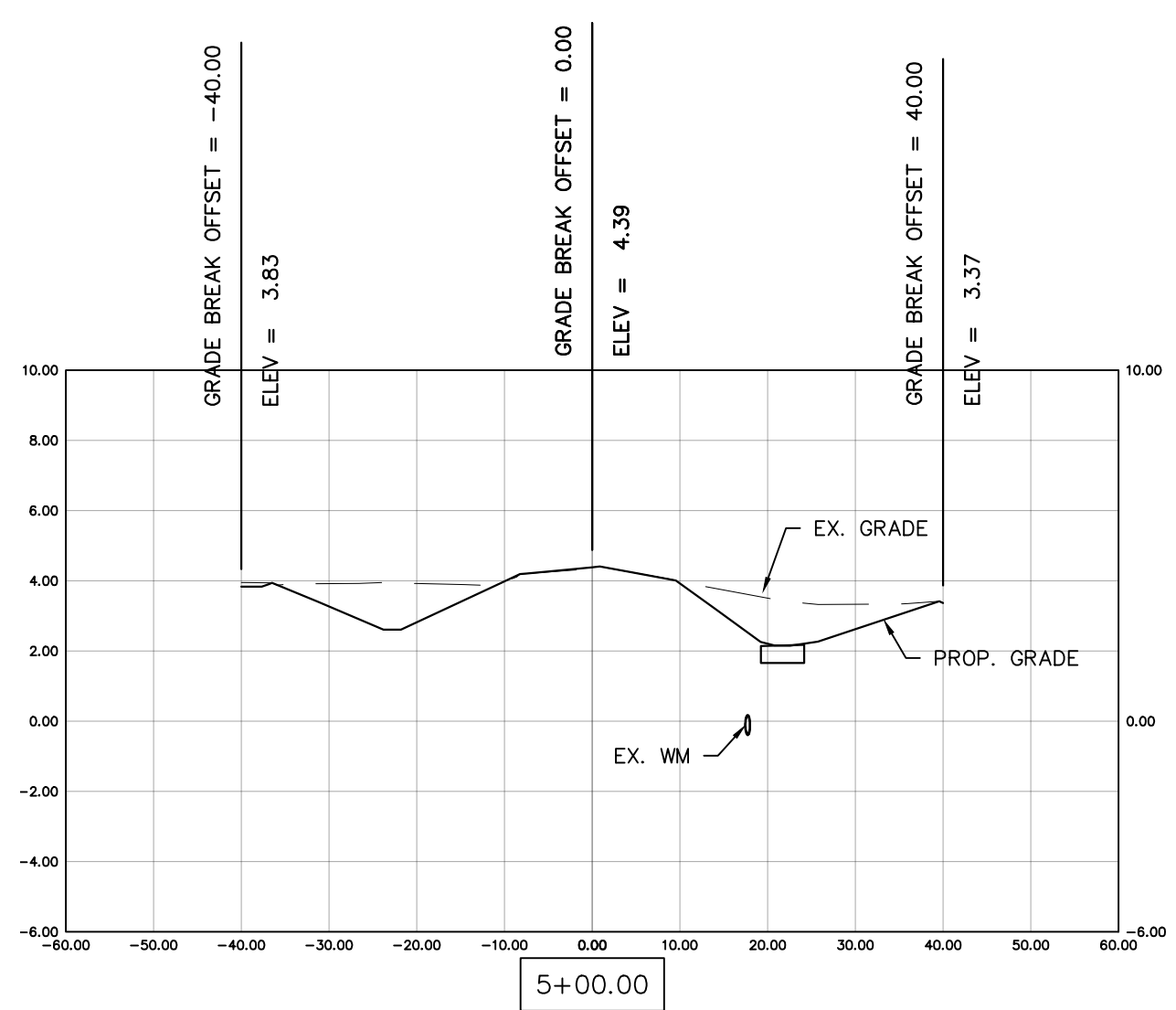
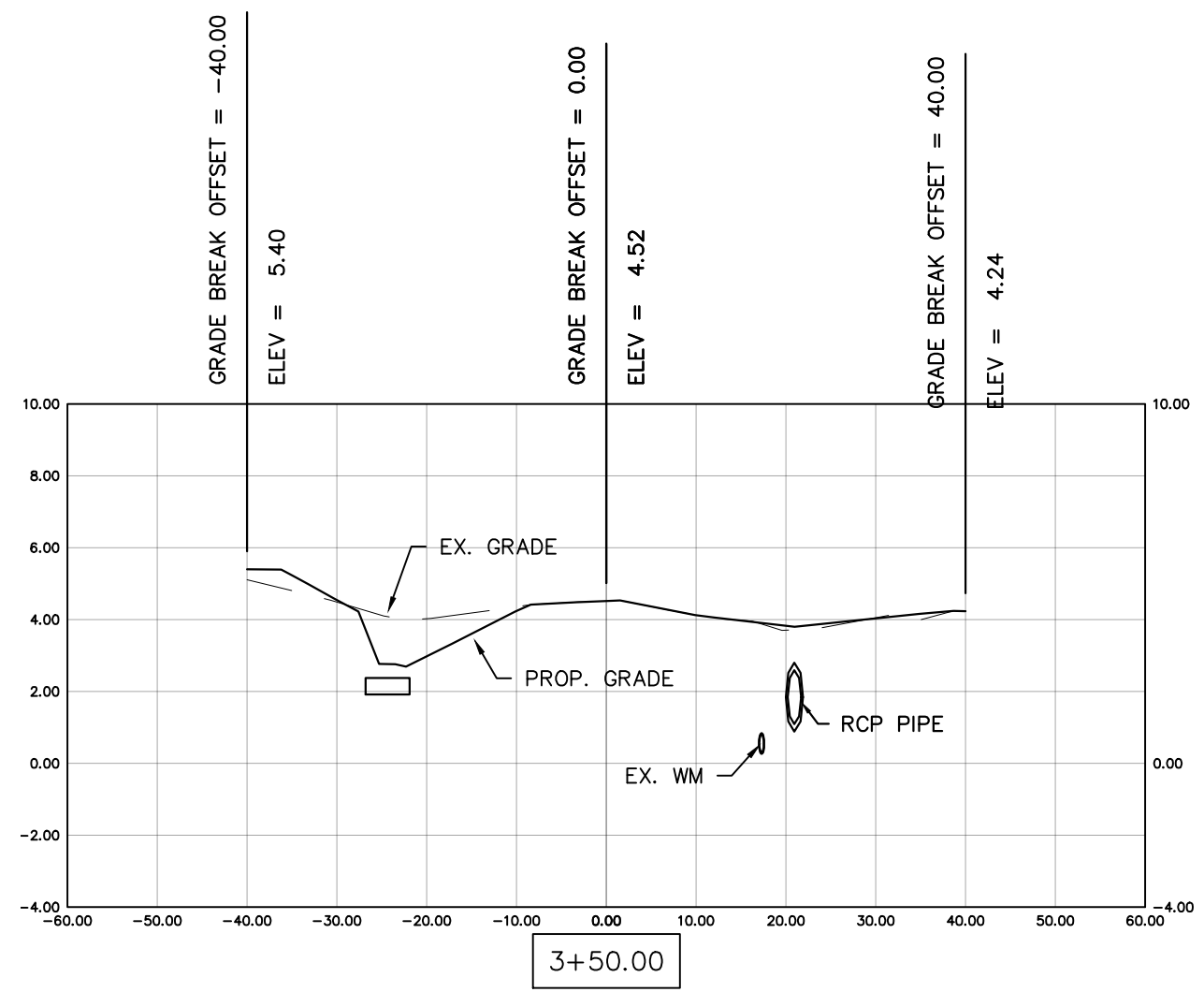
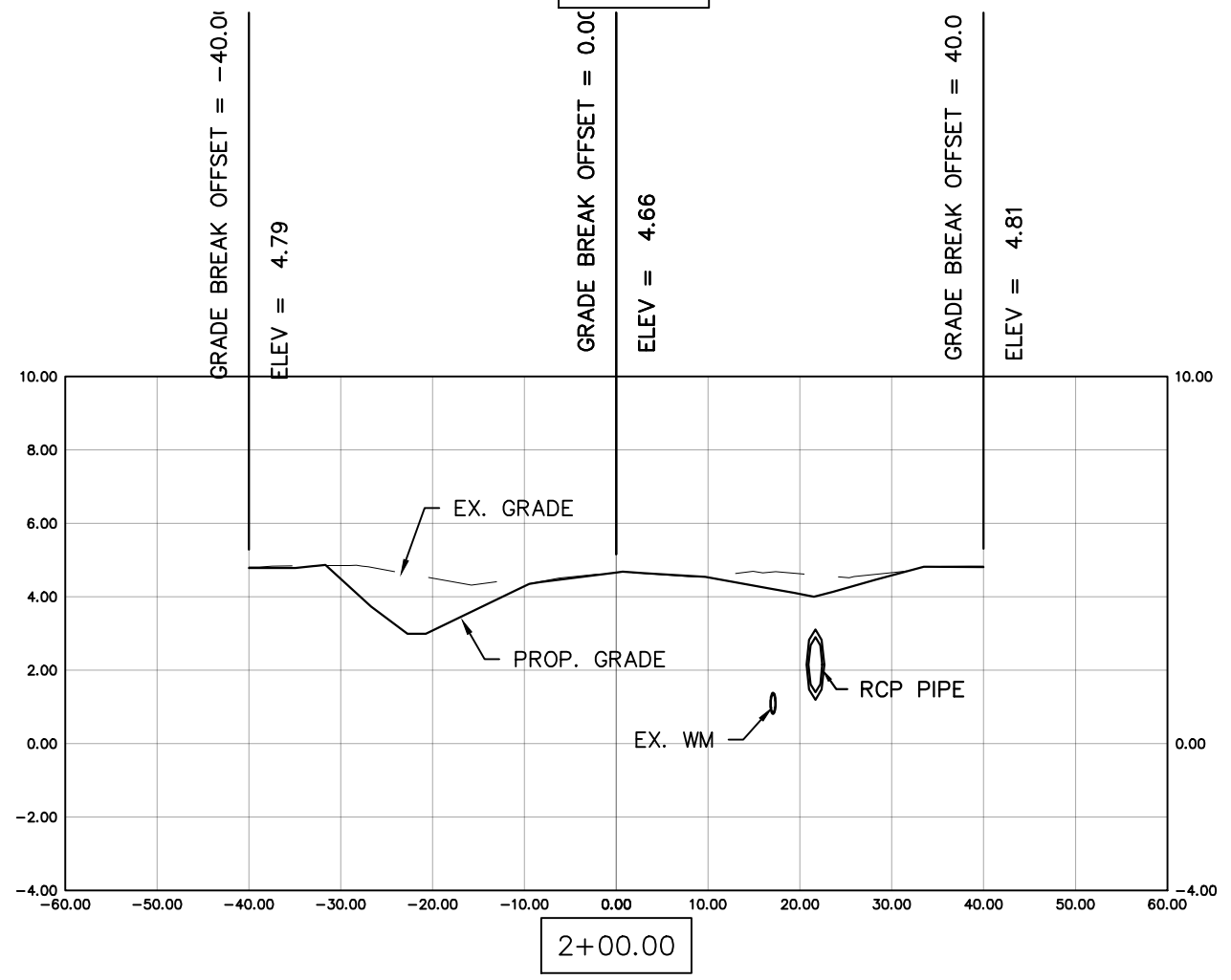
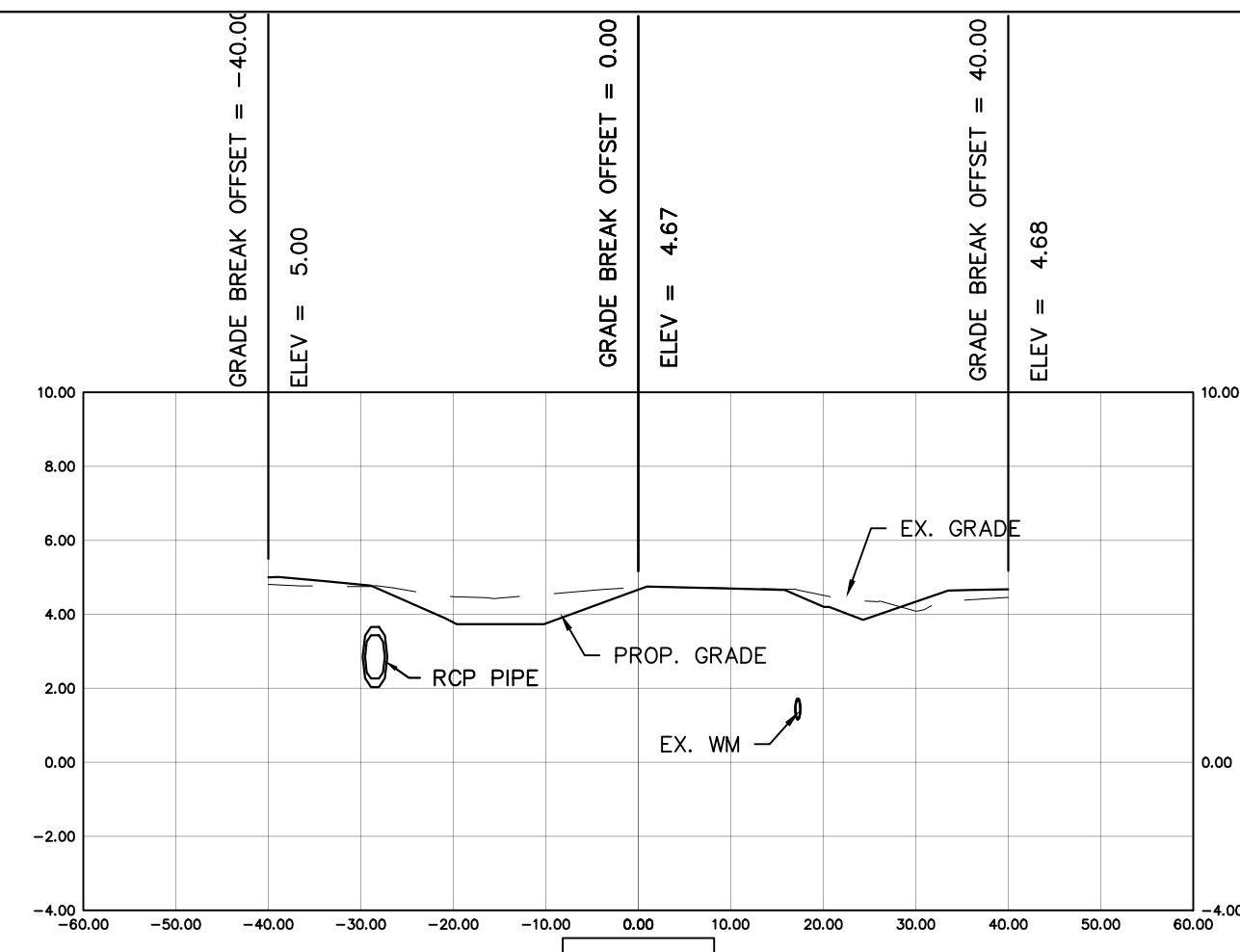
REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW
		EMB
		KP
		EMB
		KP
		DWN
		CKM



REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
MANGROVE ST. SECTIONS

Blot Engineering, Inc
Structural - Civil - Consulting
Edward M Blot
Professional Engineer
FL No 72816
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com
Florida State
Certificate of Authority #29553

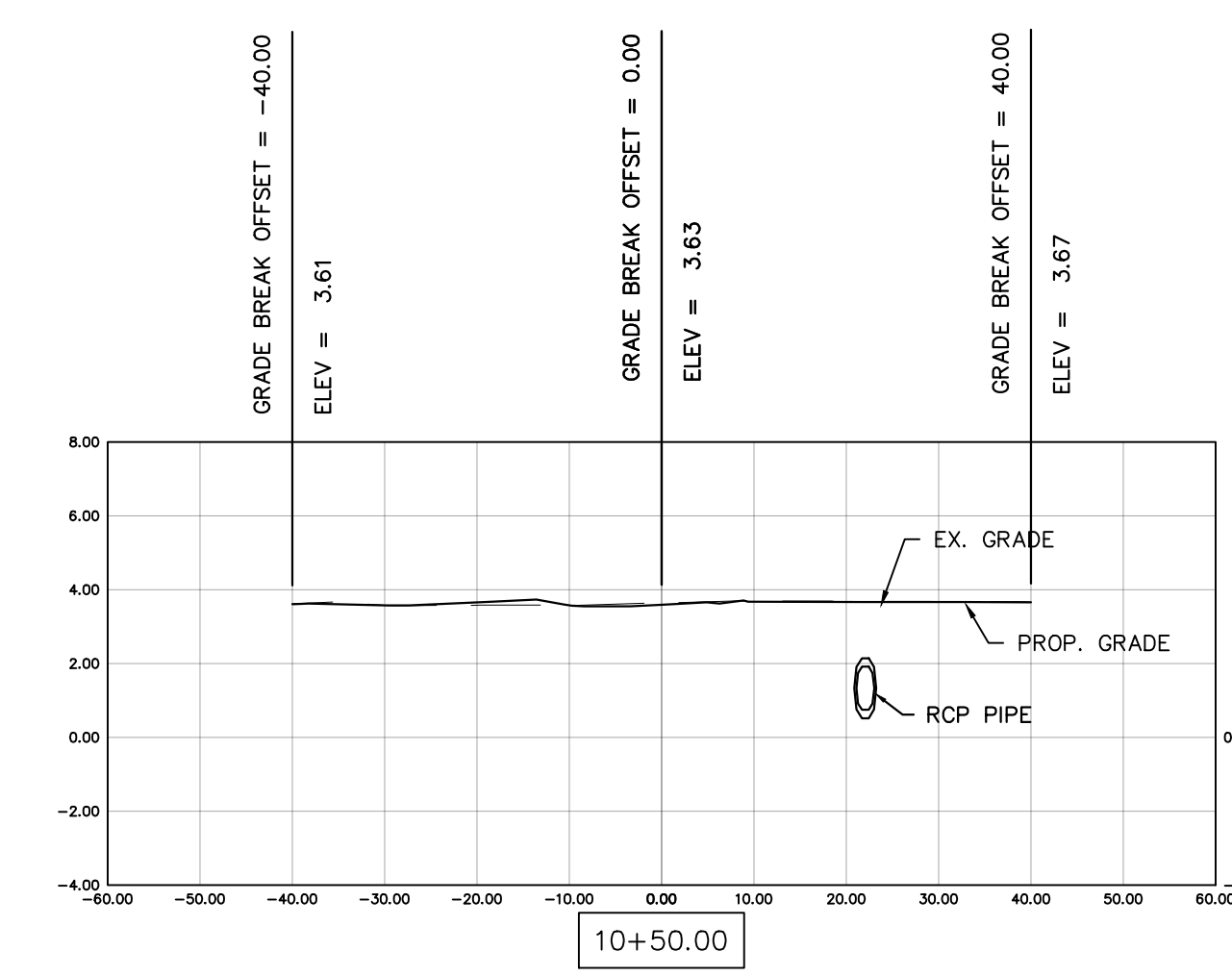
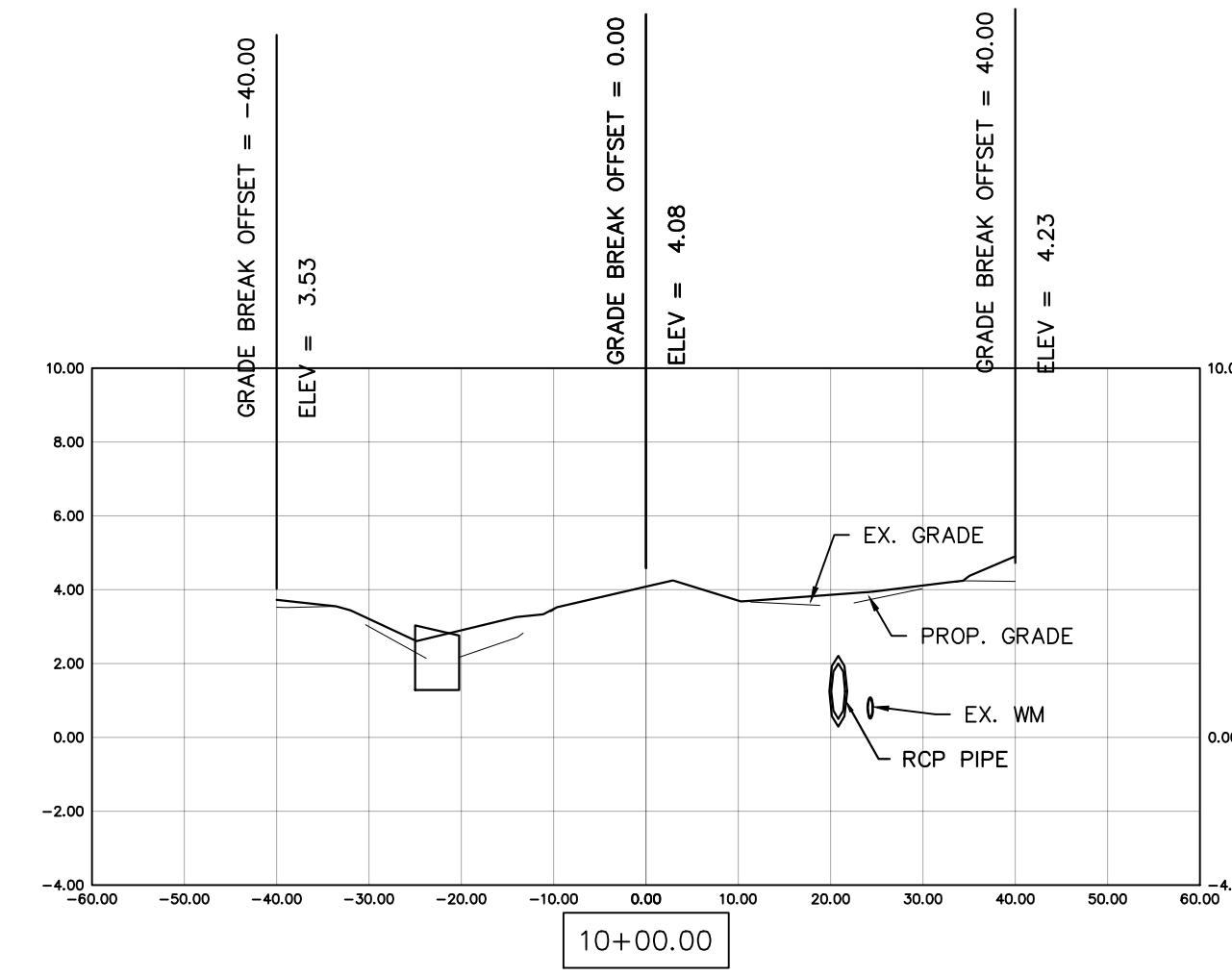
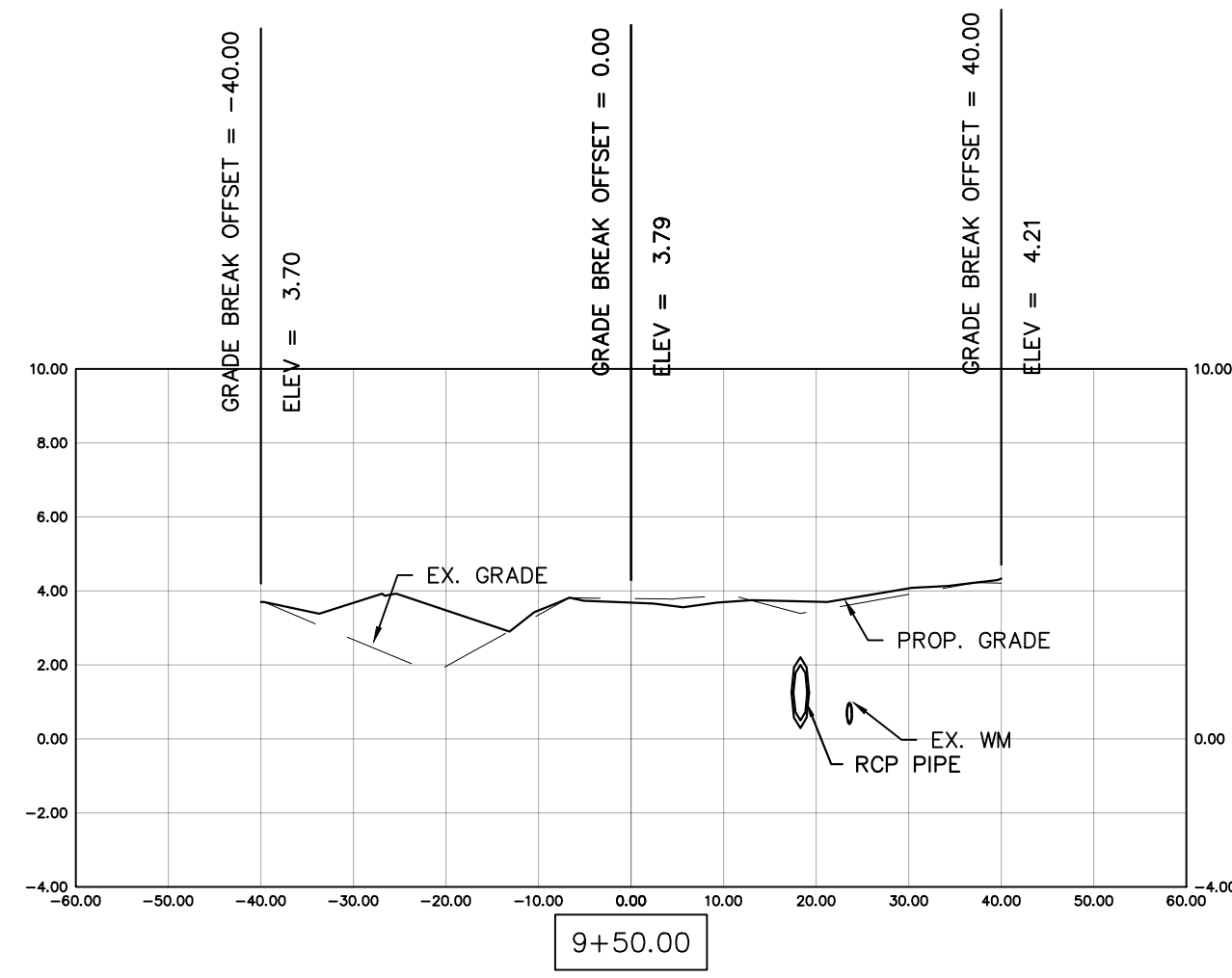
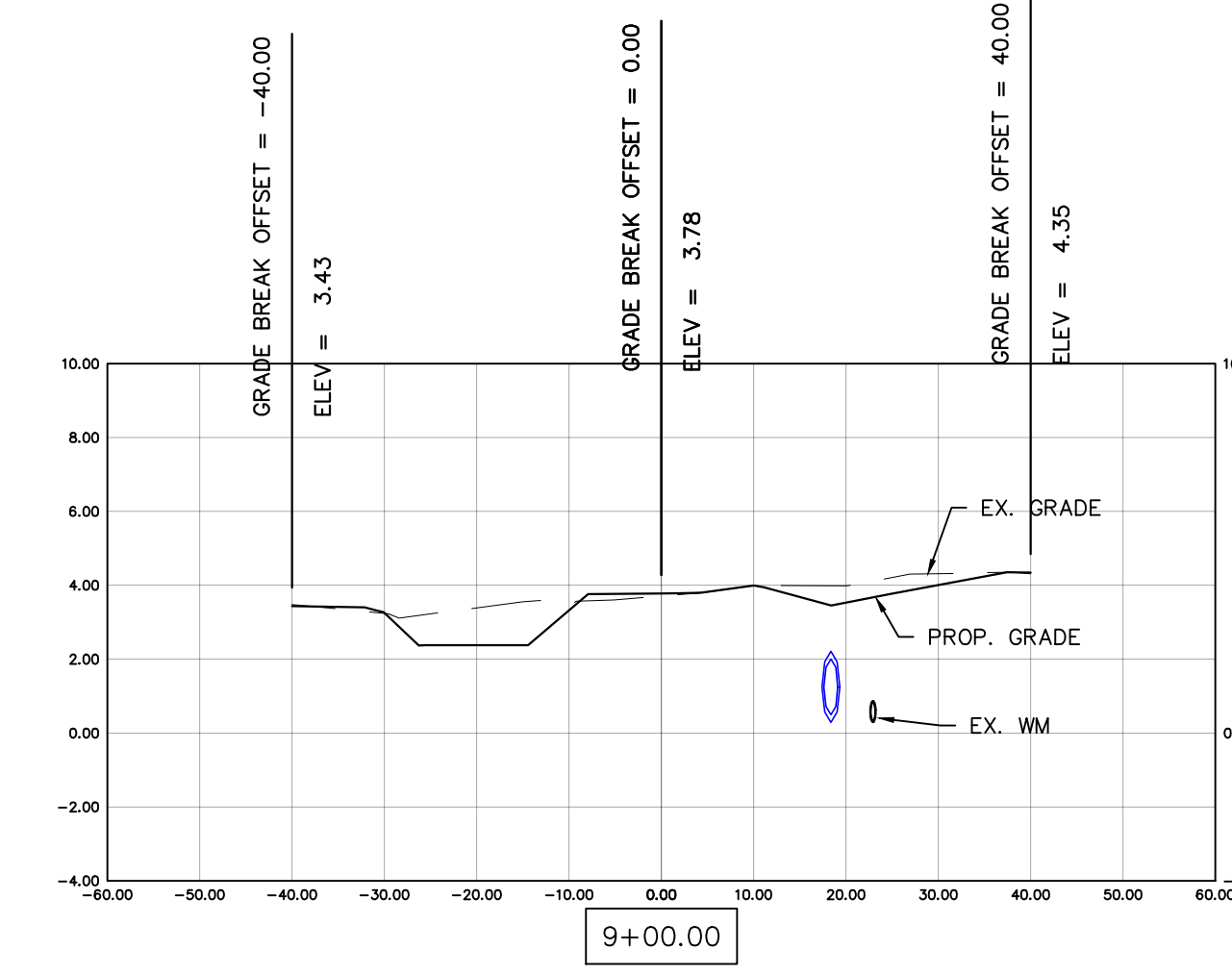
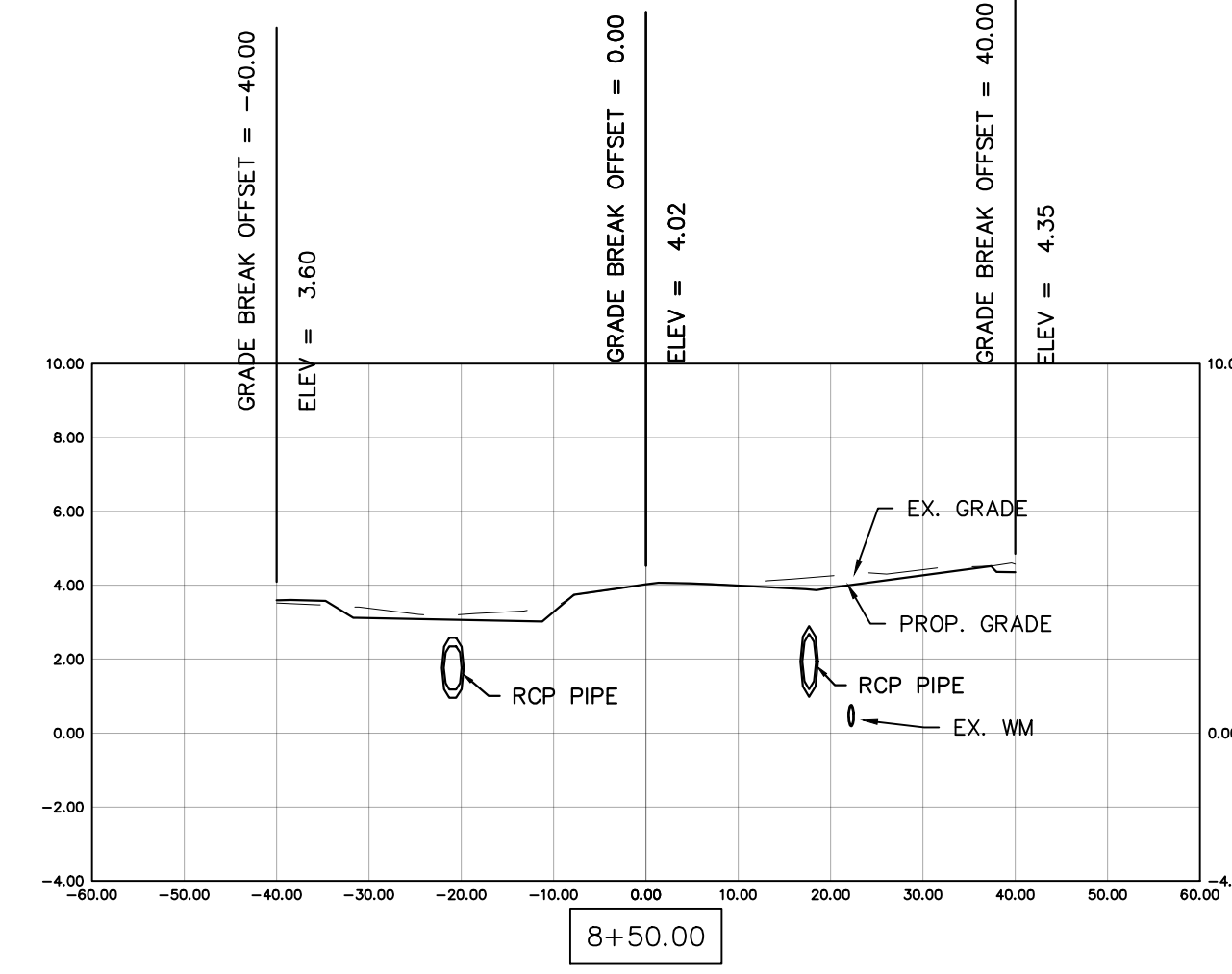
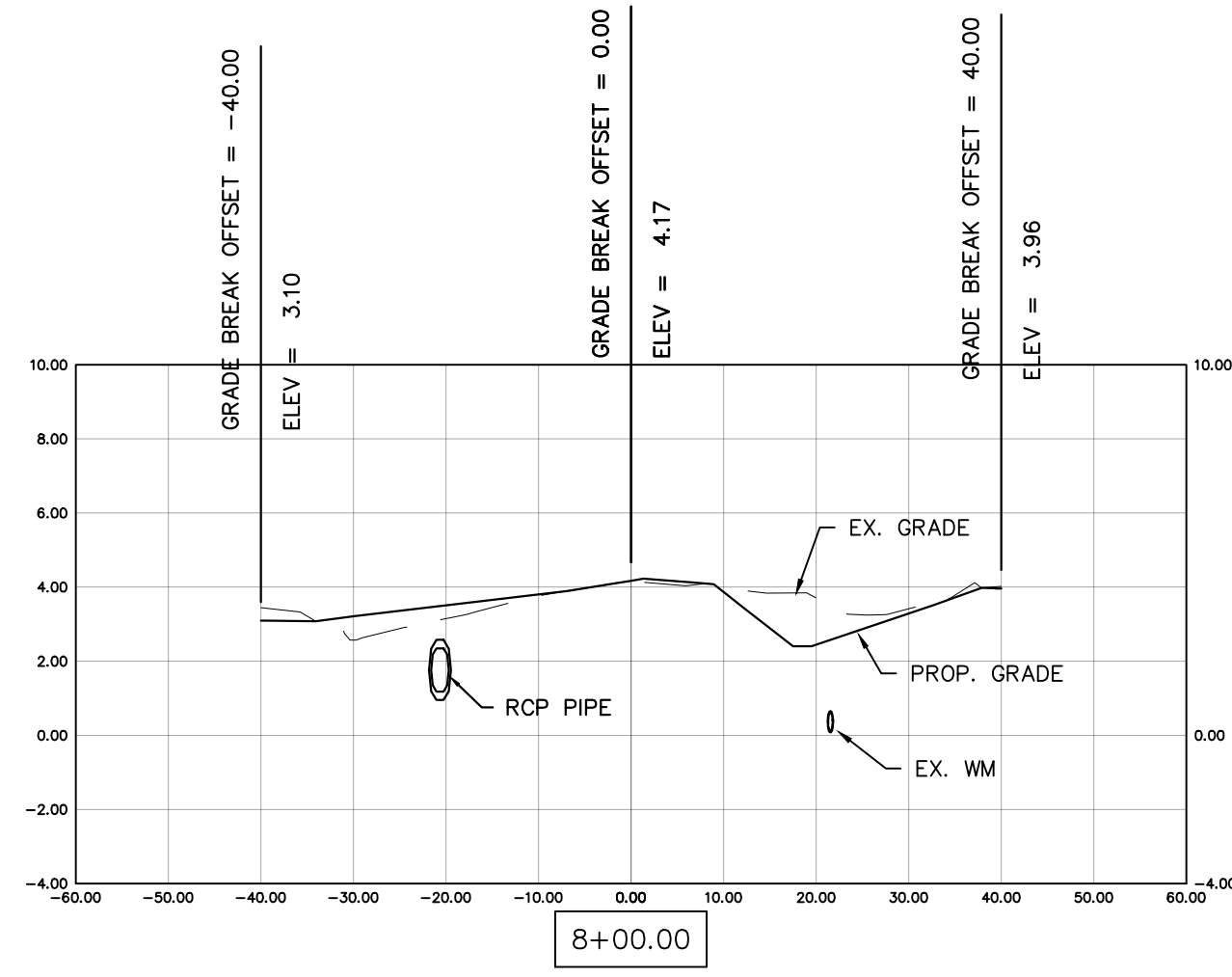
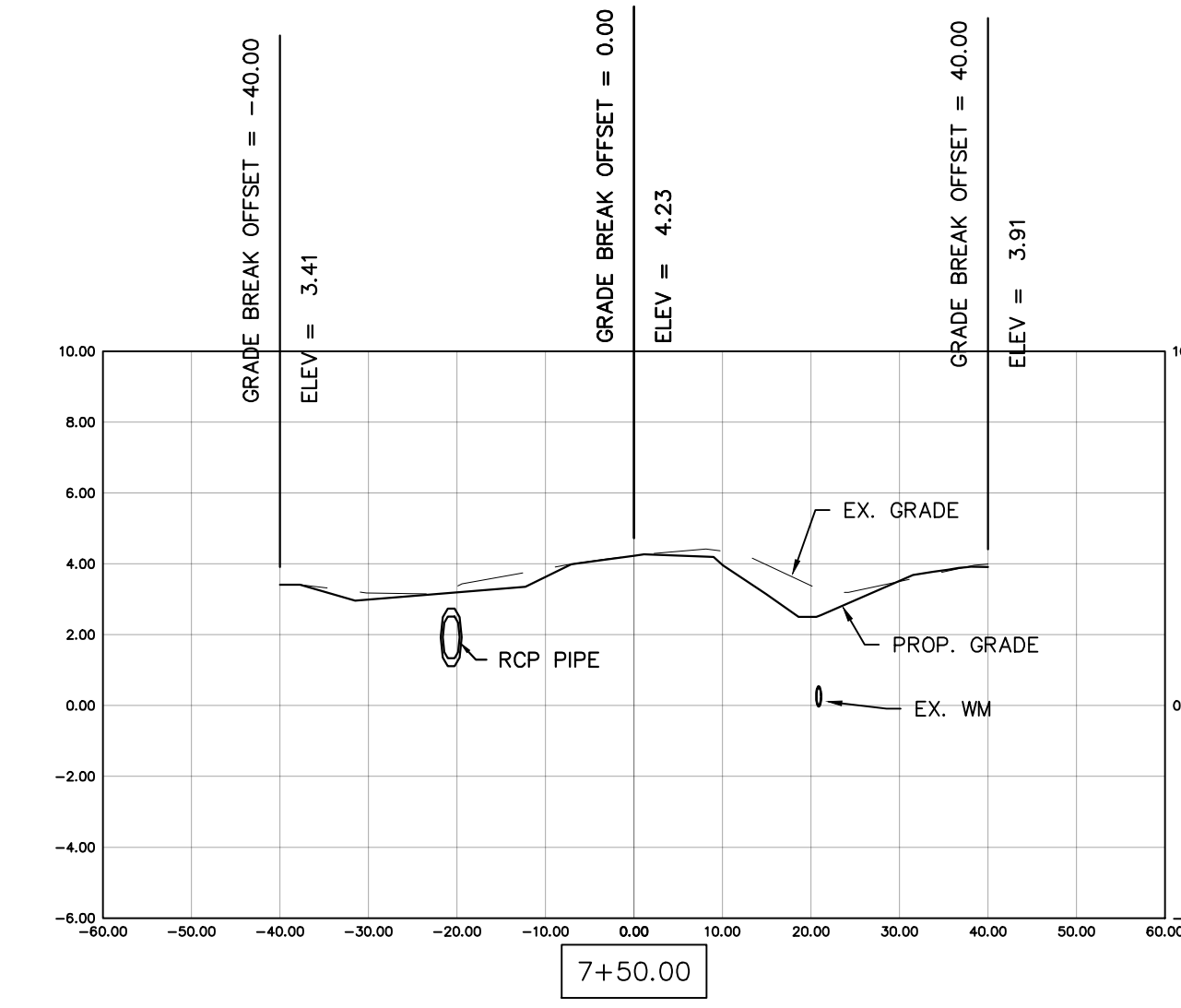
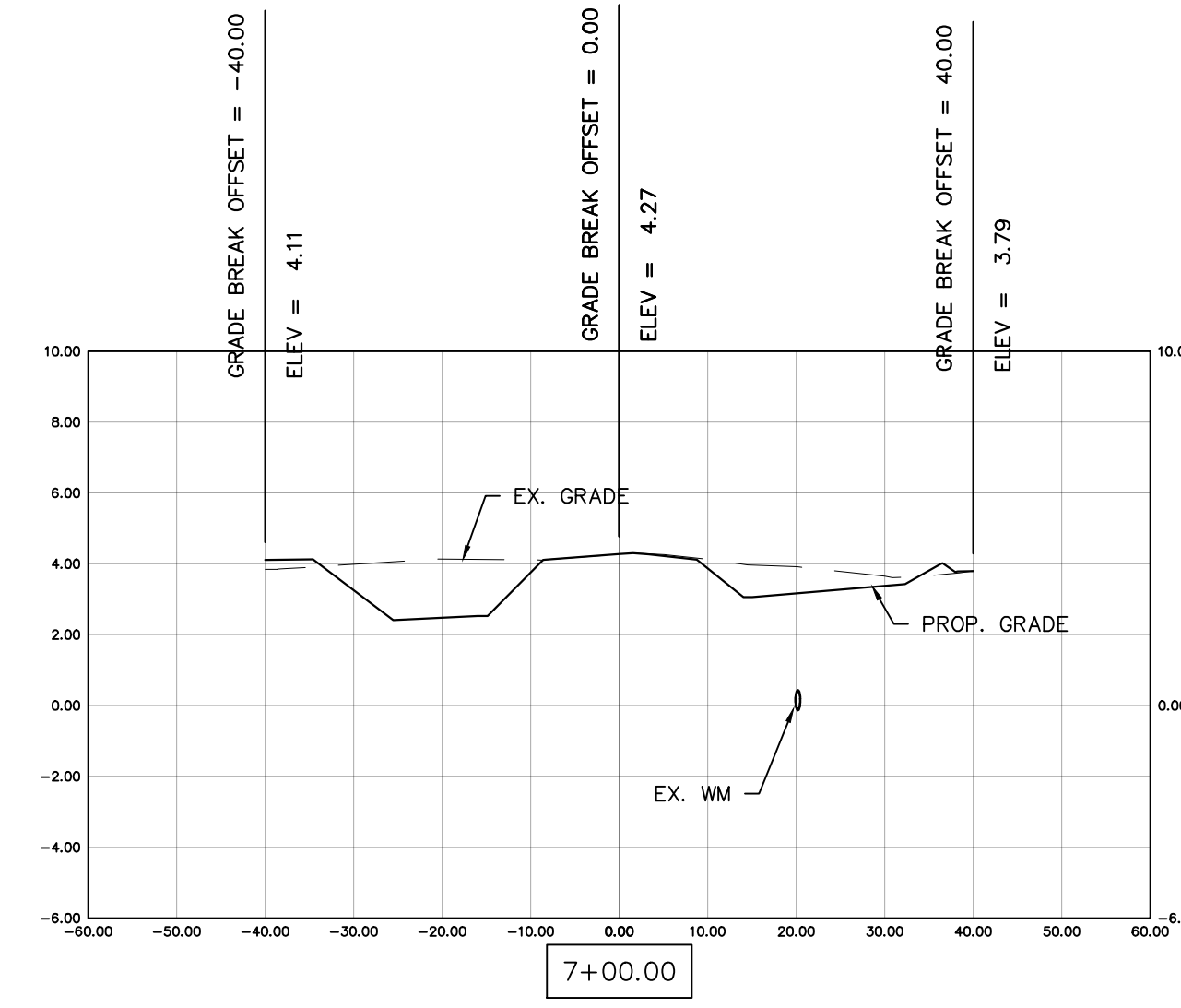
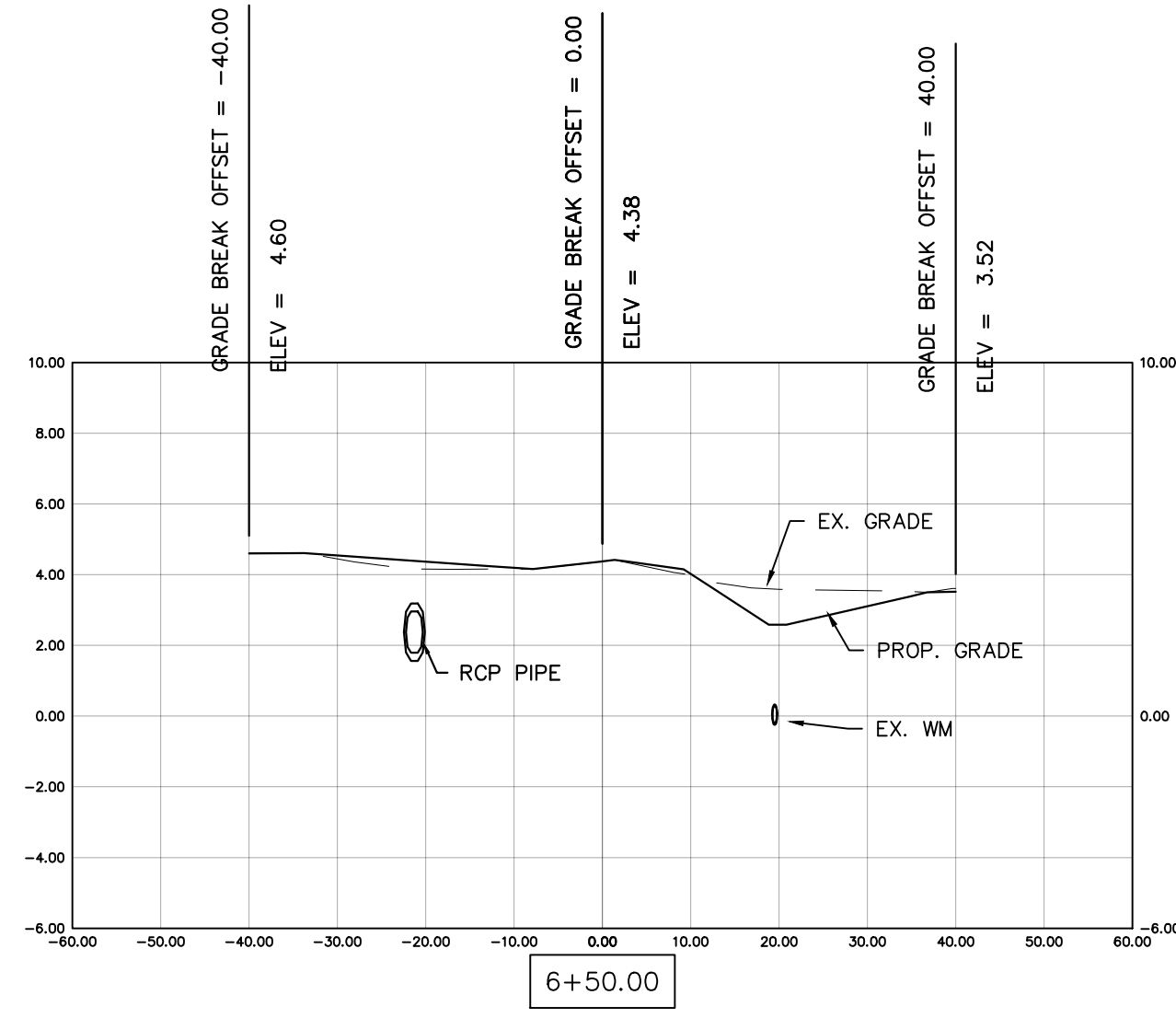


REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
ARBUTUS ST. SECTIONS

Blot Engineering, Inc
 Structural - Civil - Consulting
 Edward M Blot
 Professional Engineer
 FL No 72816
 Florida State
 Certificate of Authority #29553
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com

PROJECT	22-005
ENGINEER	EMB
DRAWN	KP
DATE	05/16/2022
DRAWING NUMBER	141
REV	B

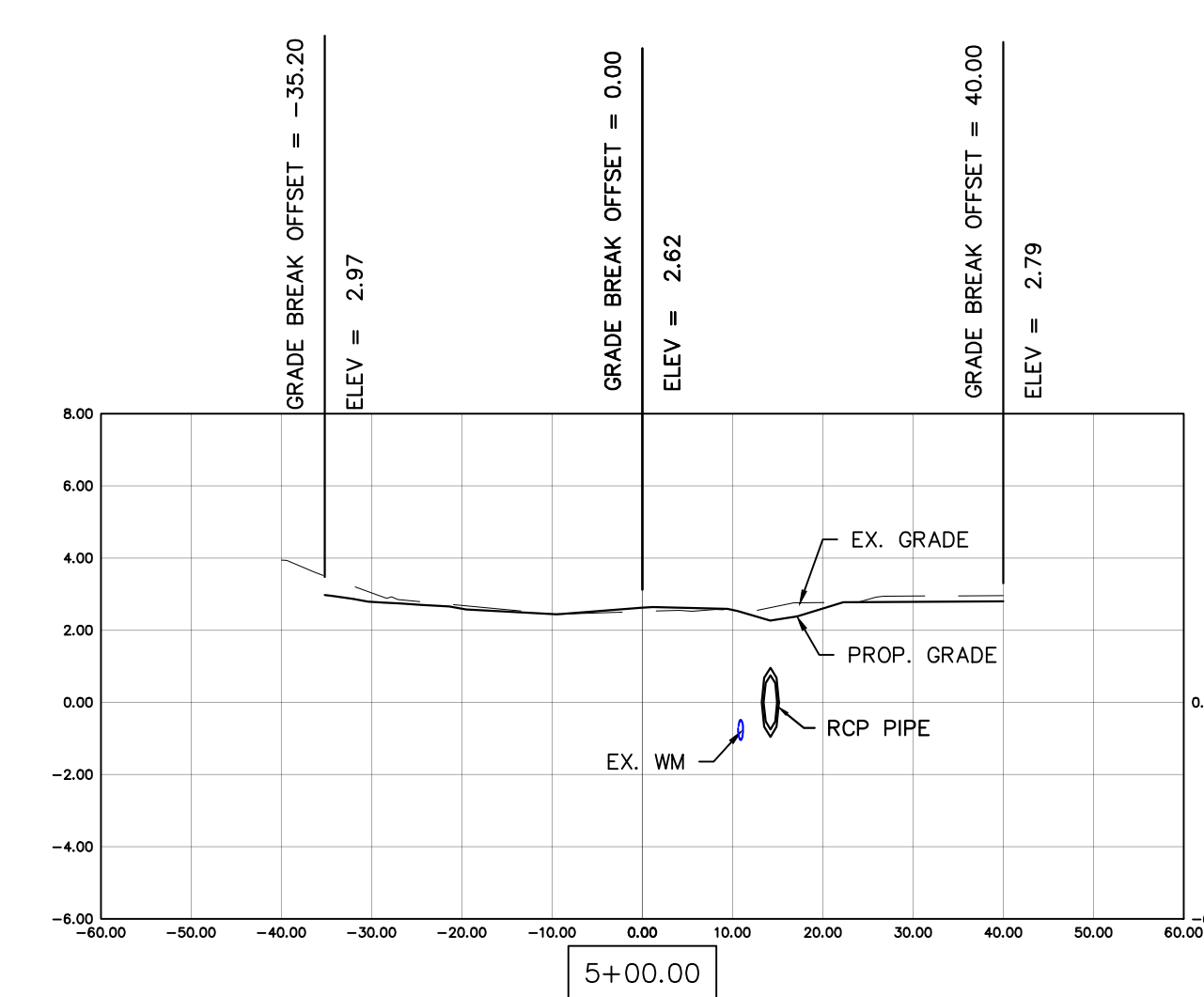
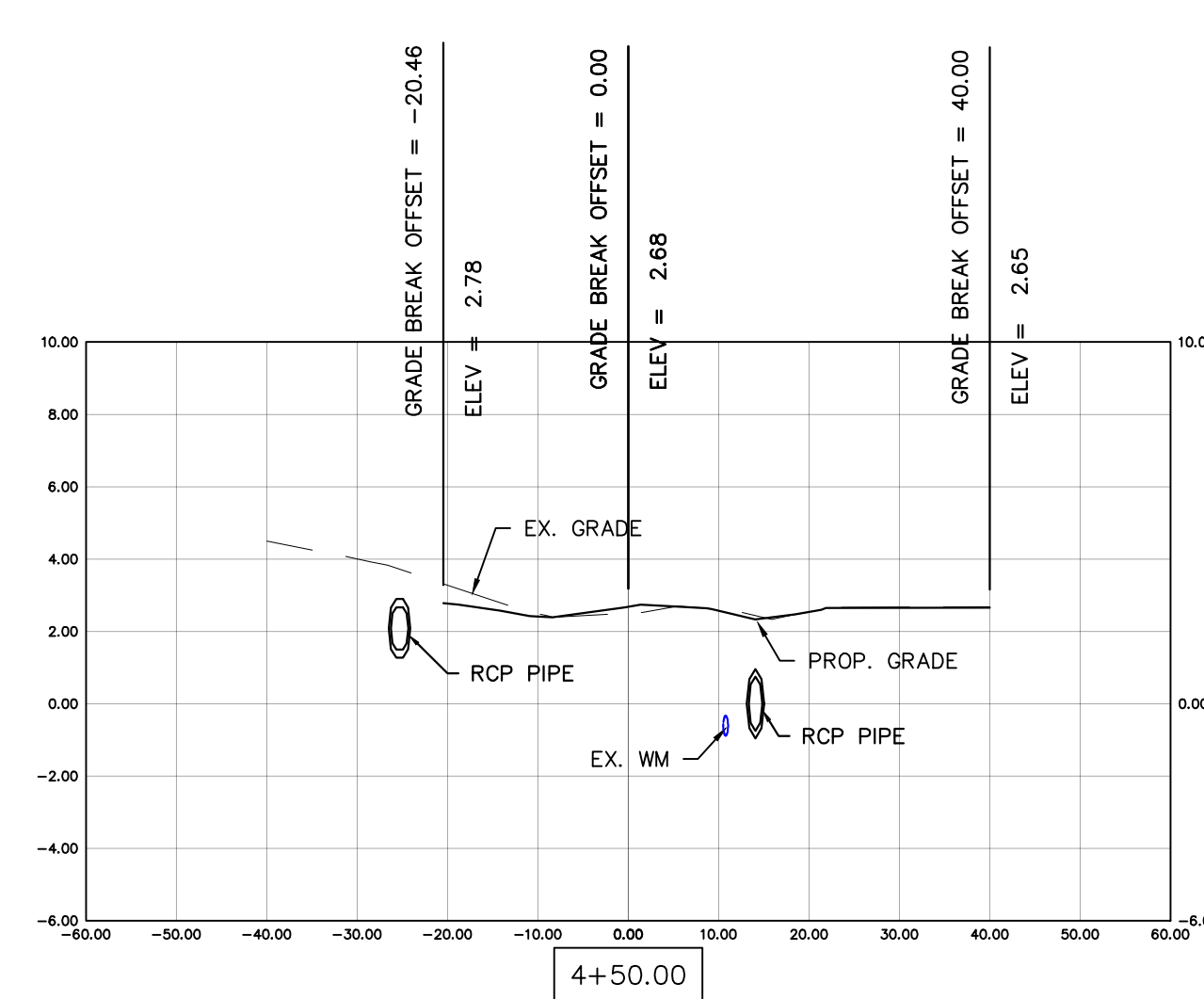
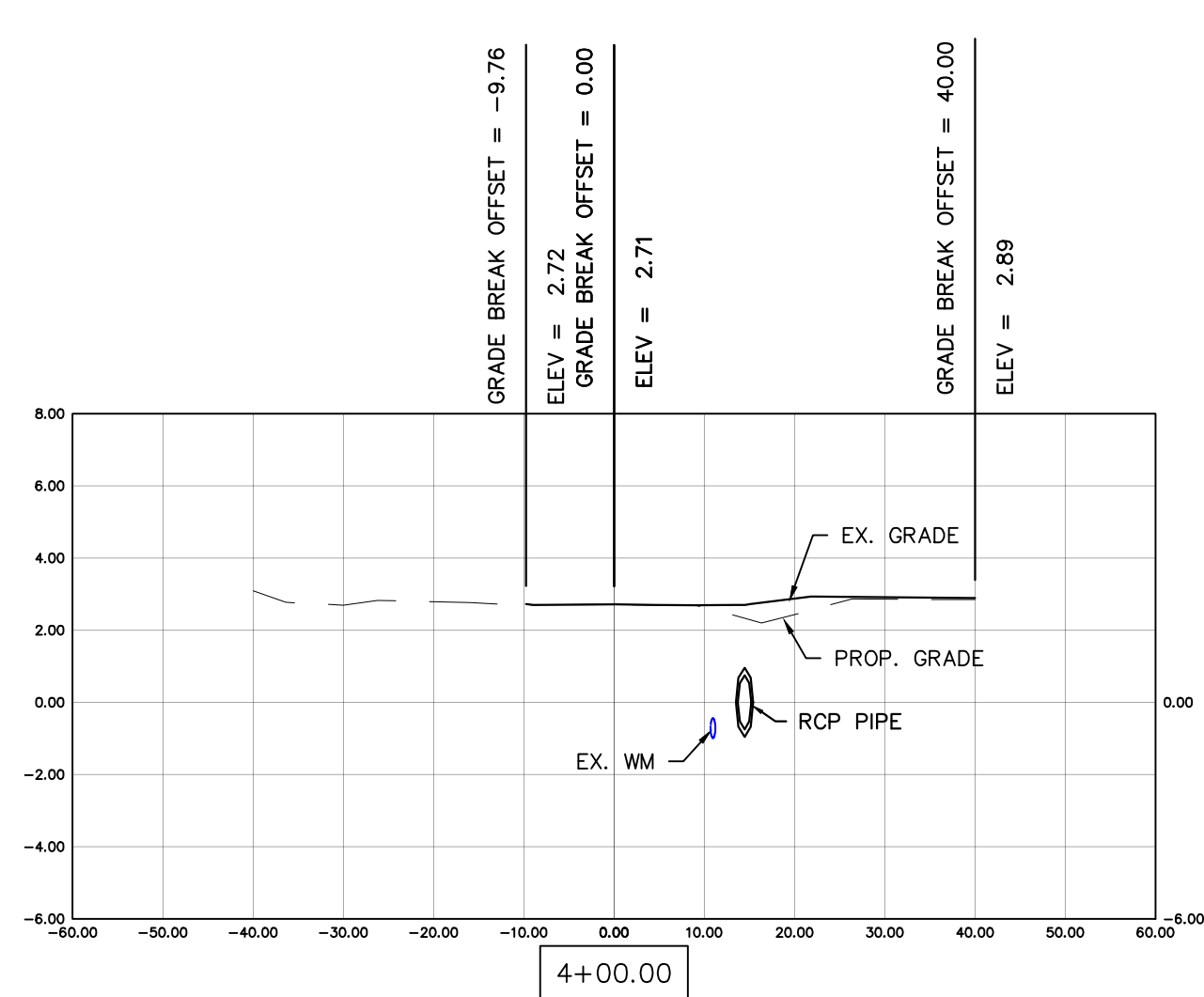
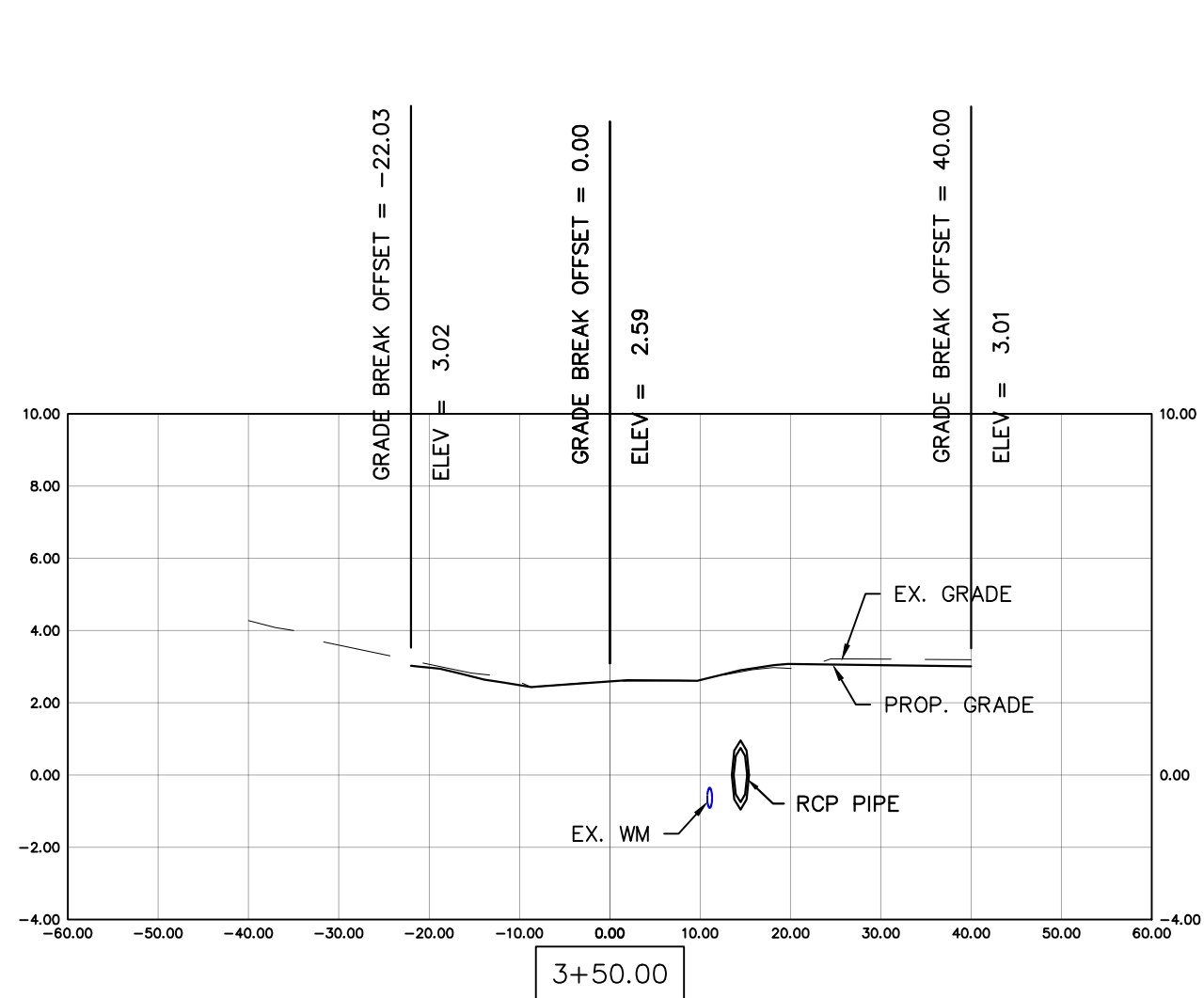
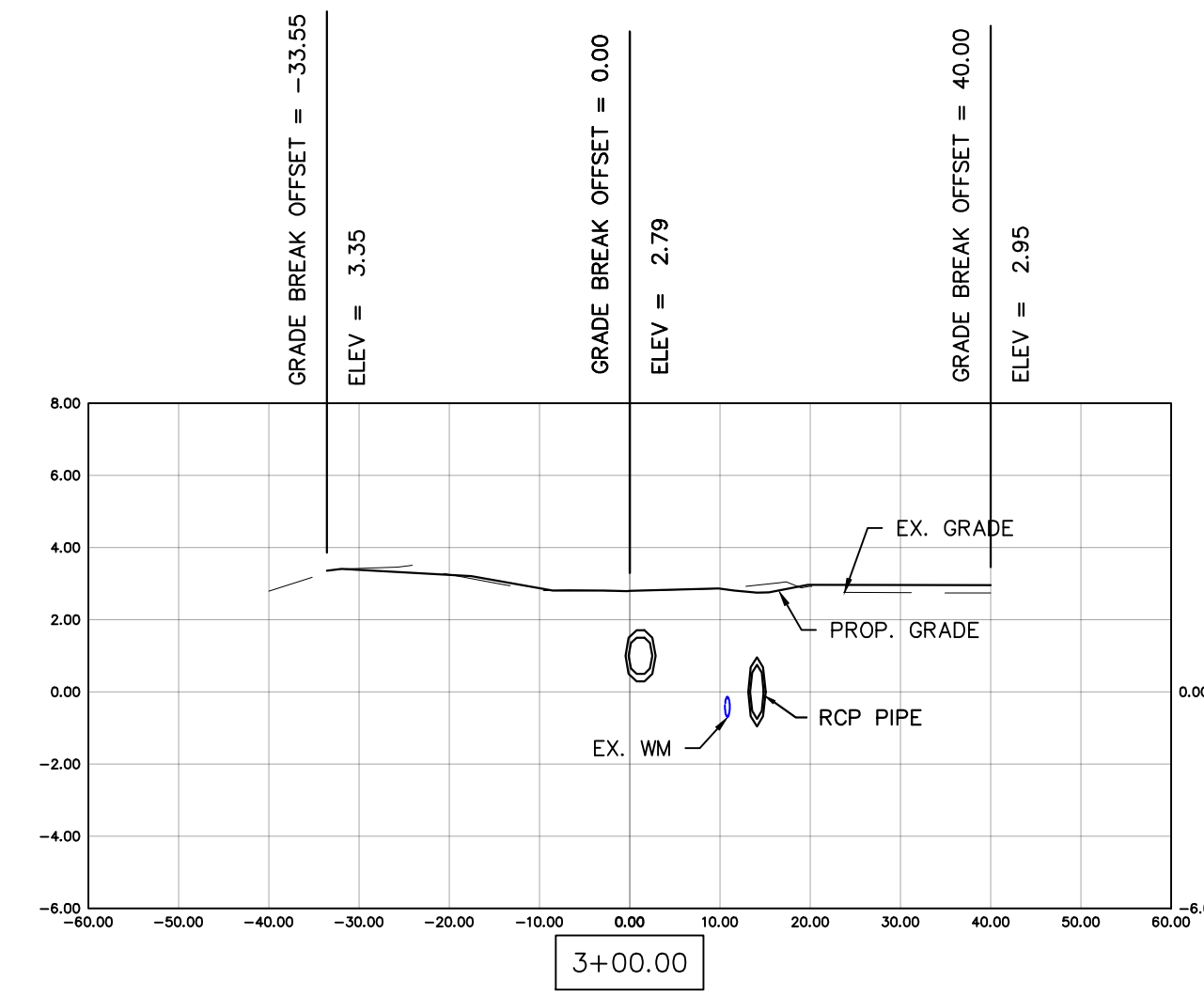
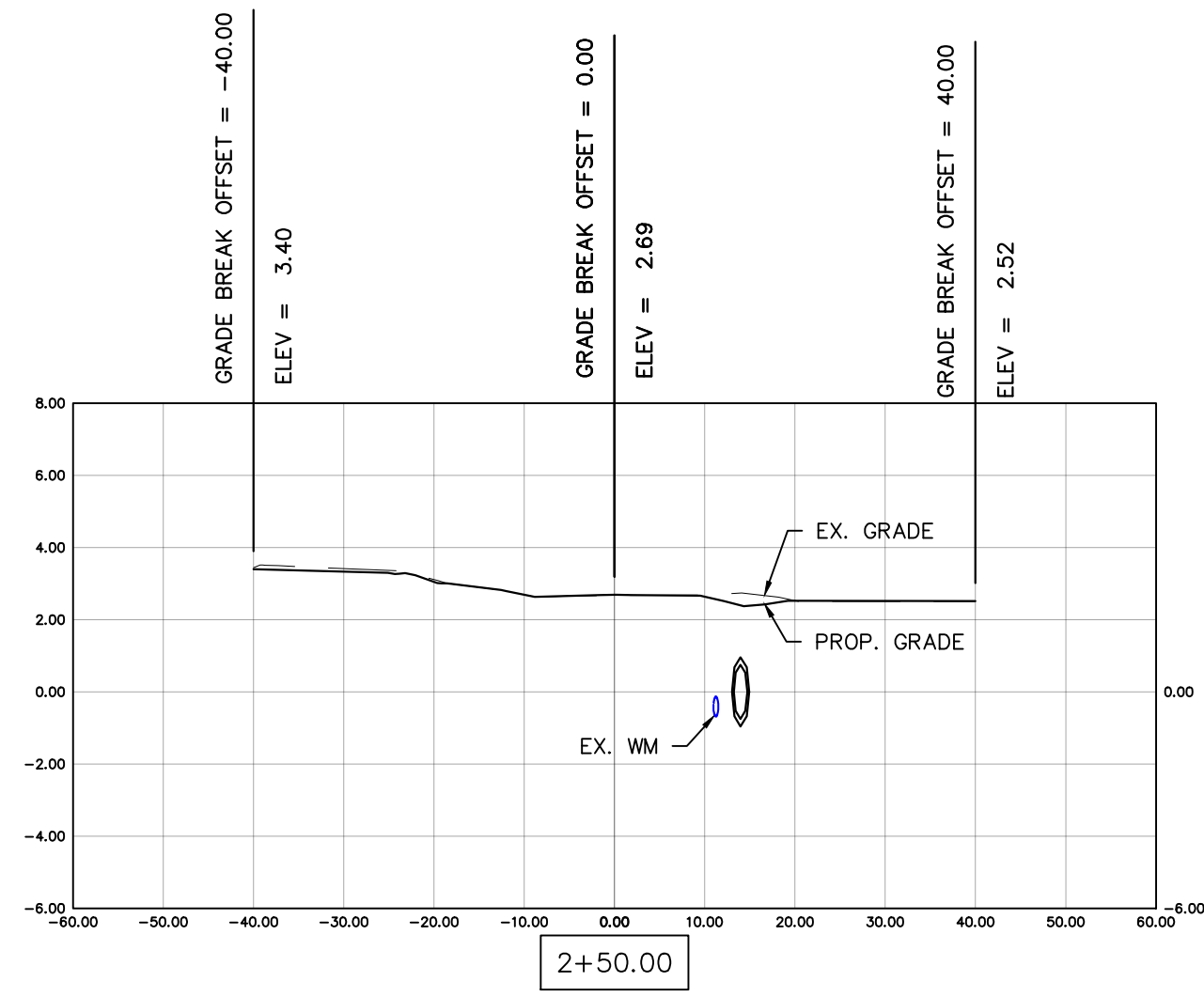
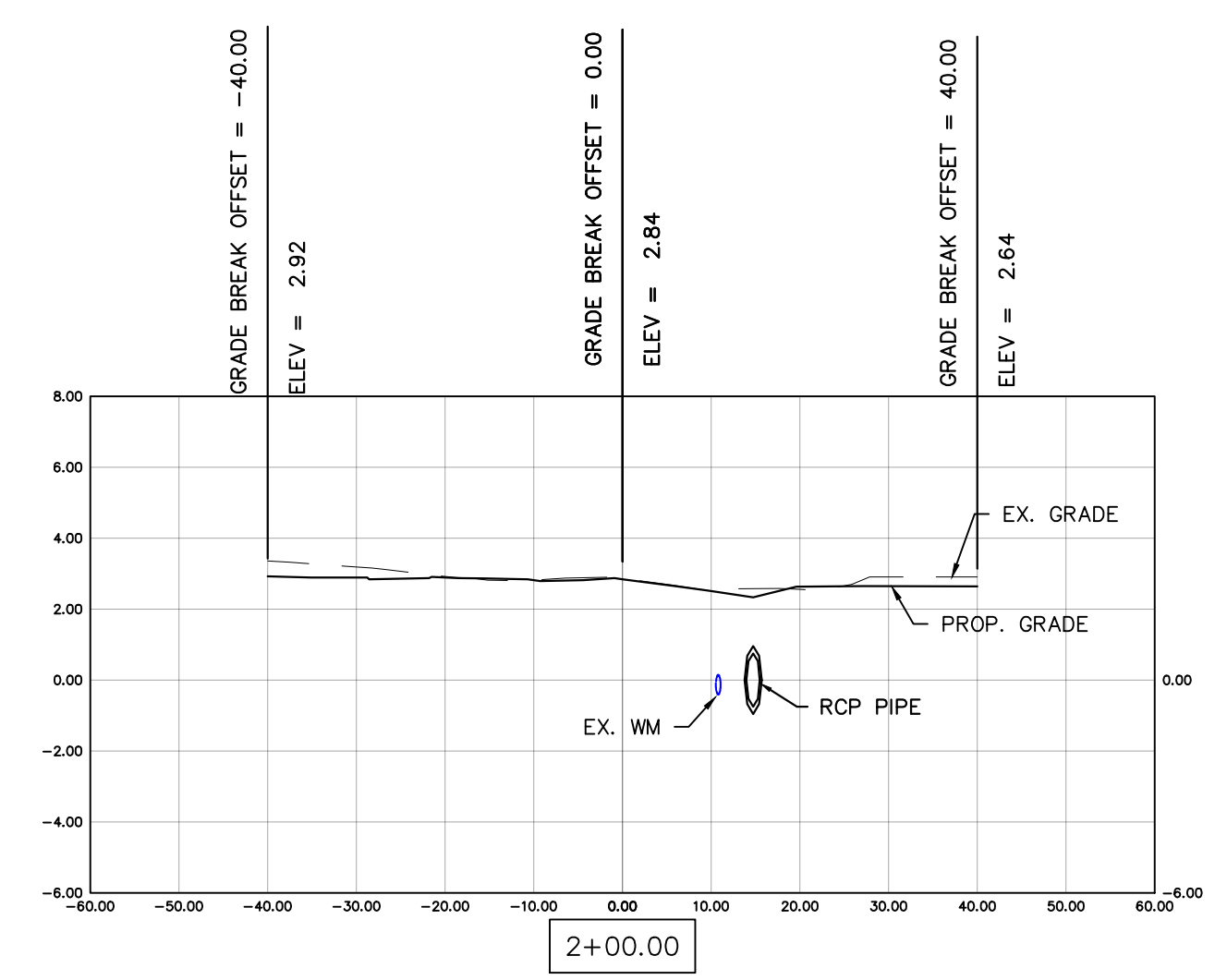
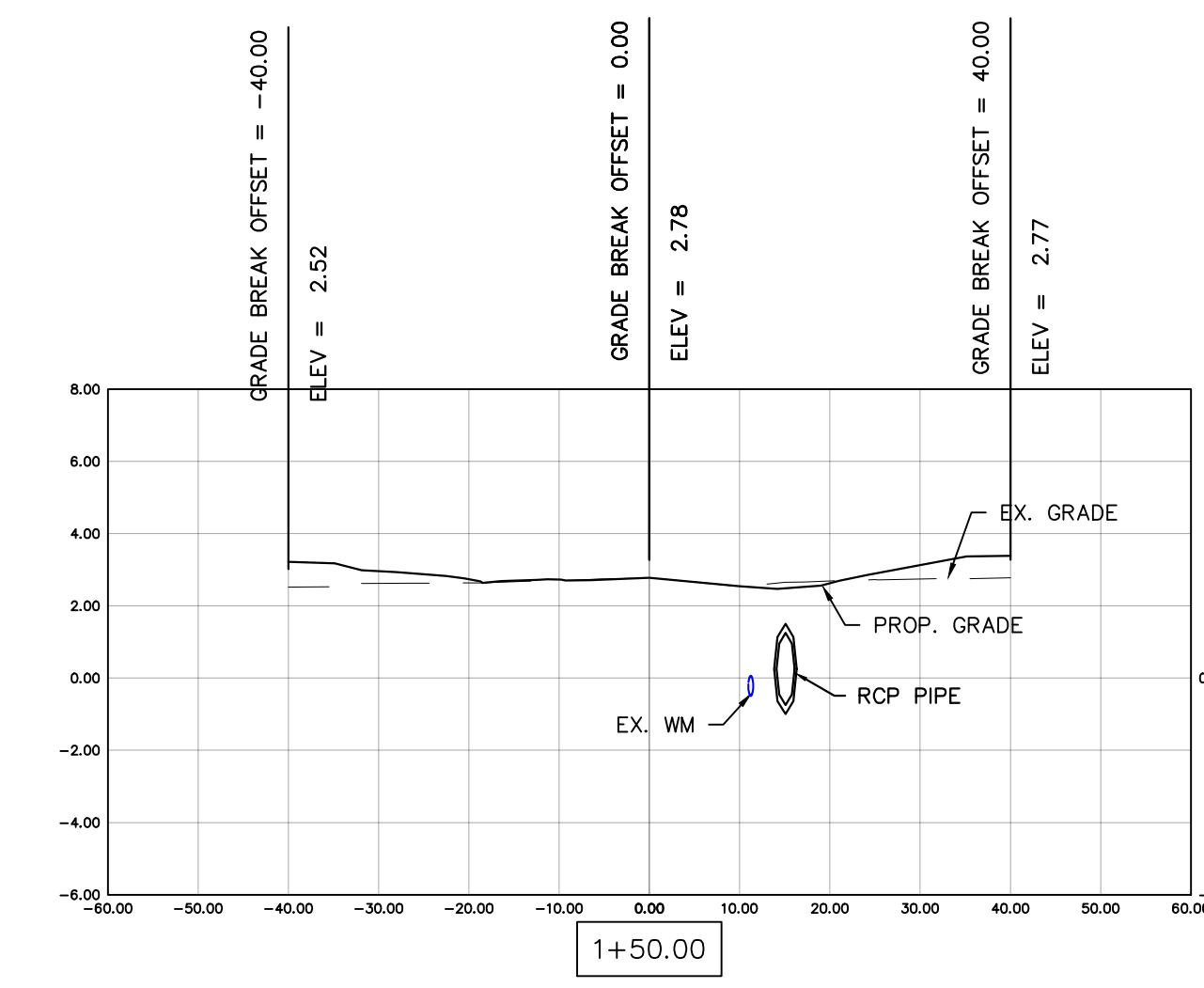
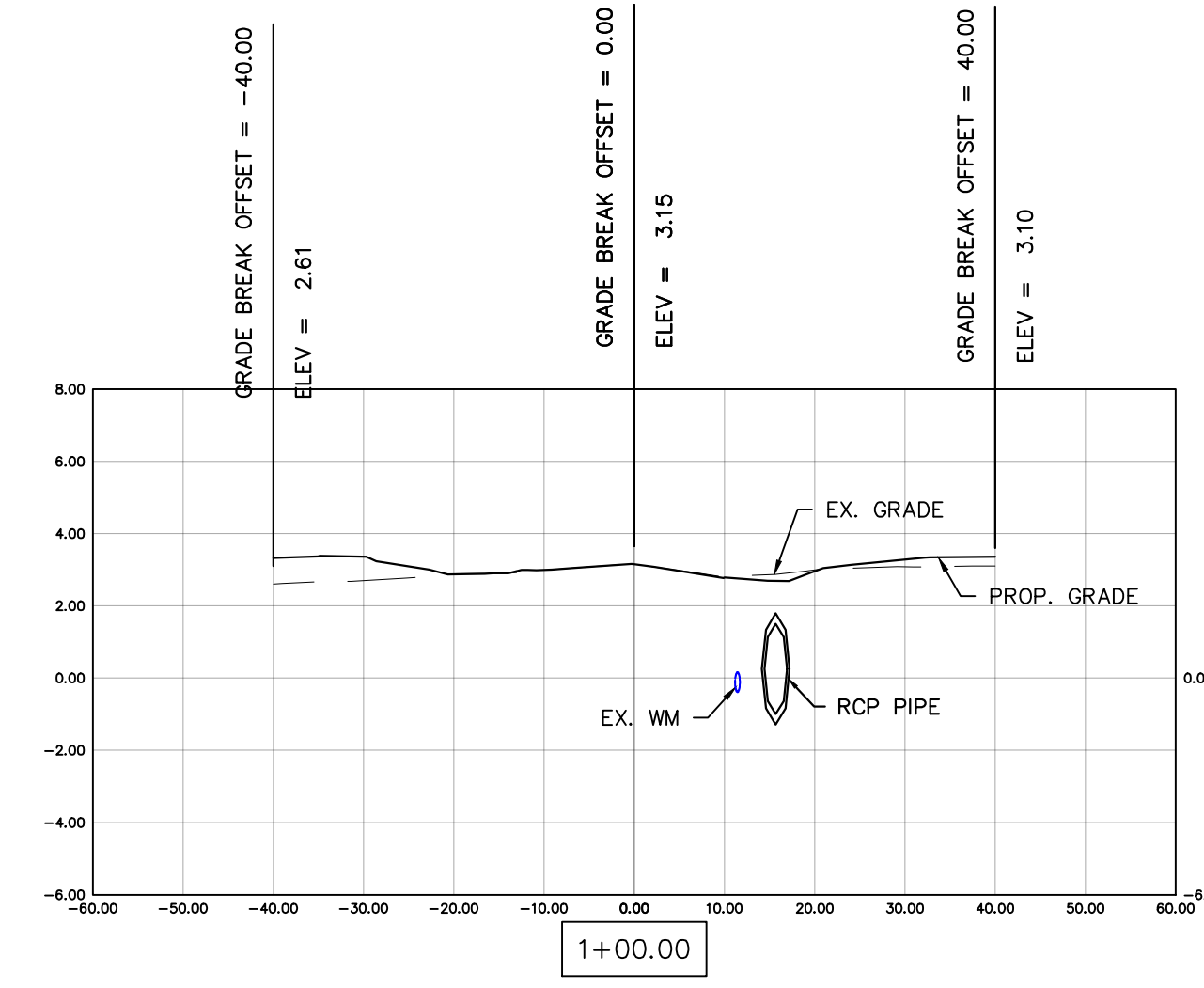
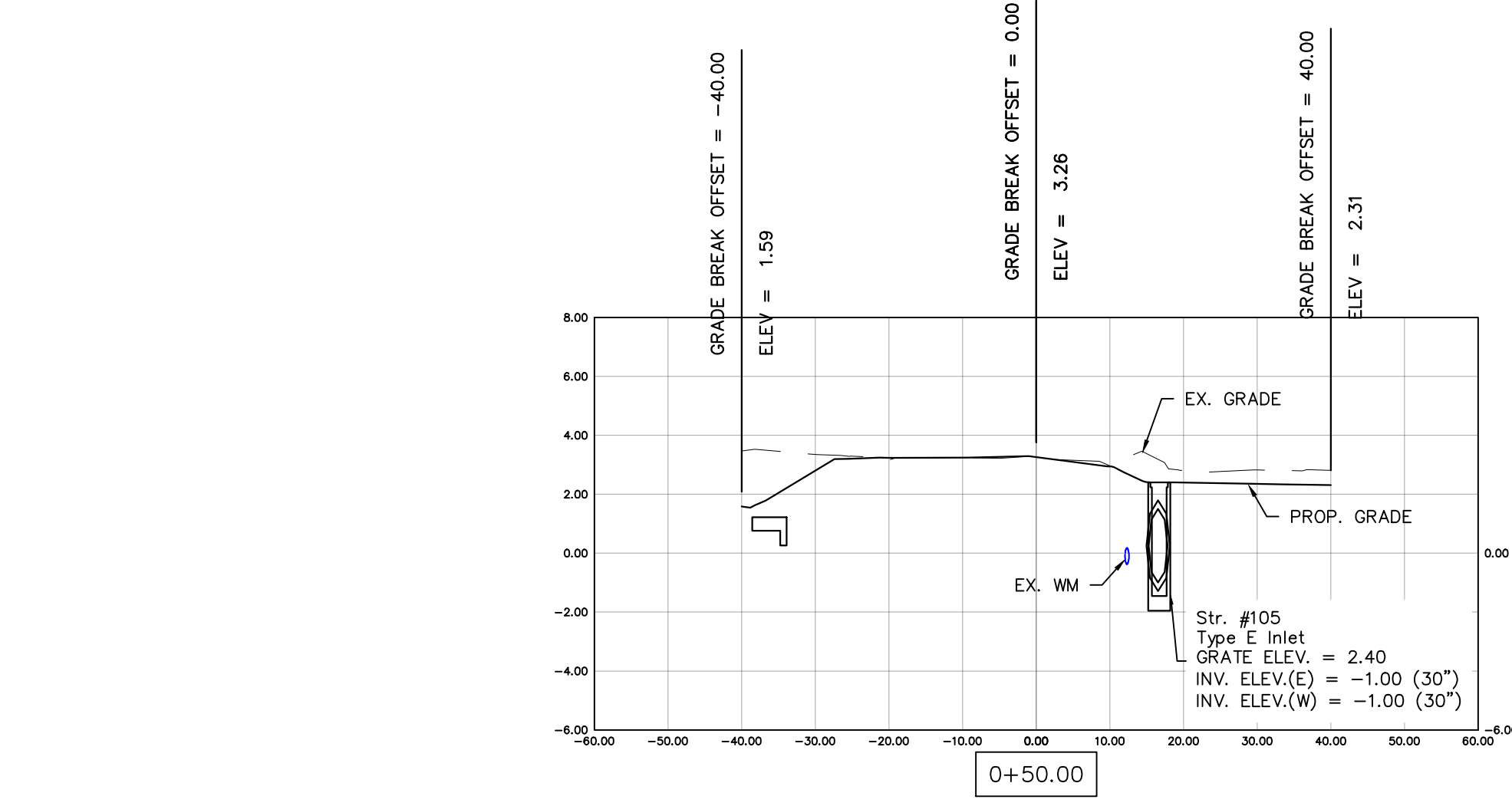


REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
ARBUTUS ST. SECTIONS

Blot Engineering, Inc
 Structural - Civil - Consulting
 Edward M. Blot
 Professional Engineer
 FL No. 72816
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com
 Florida State
 Certificate of Authority #29553

PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	142
REV	B



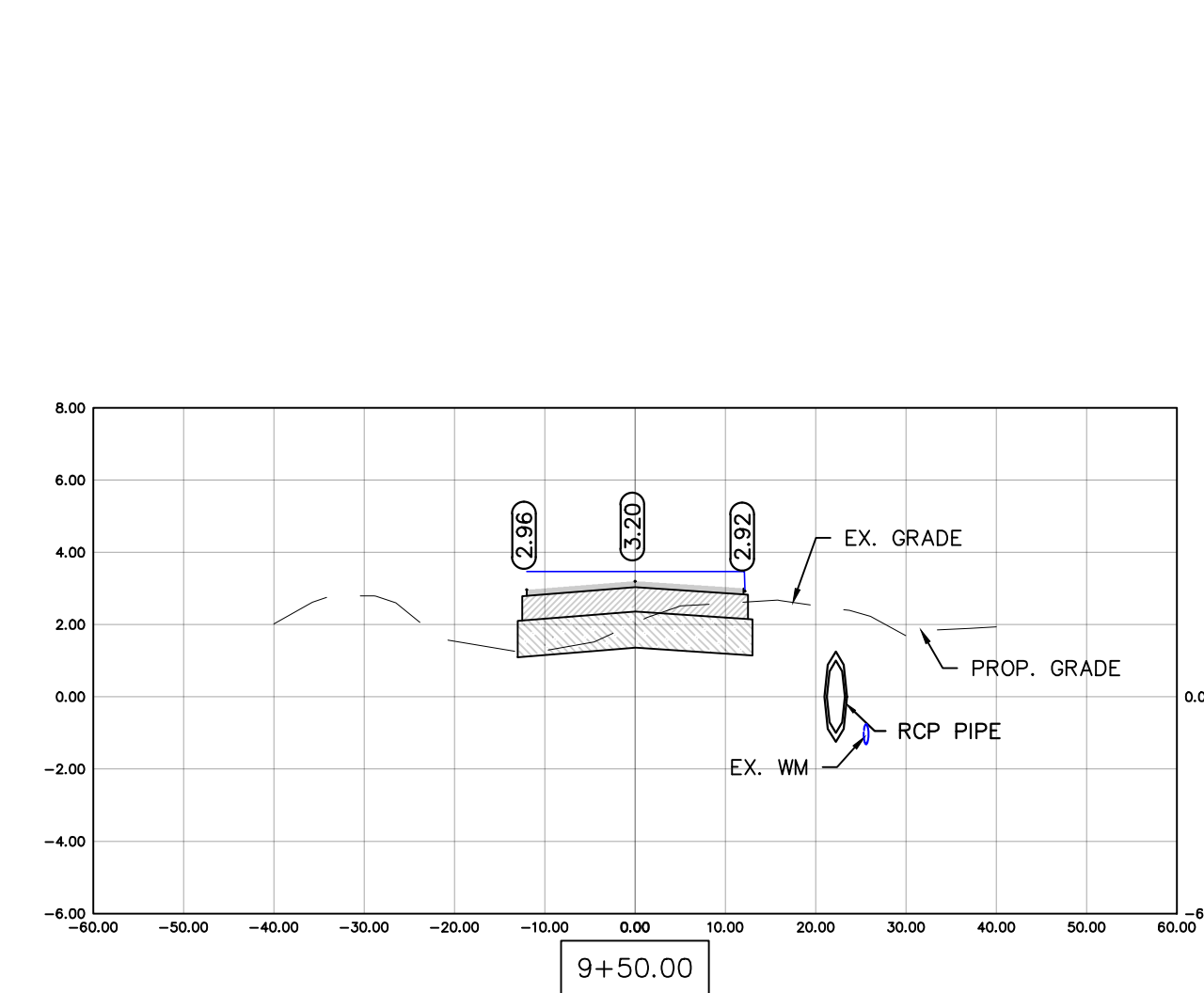
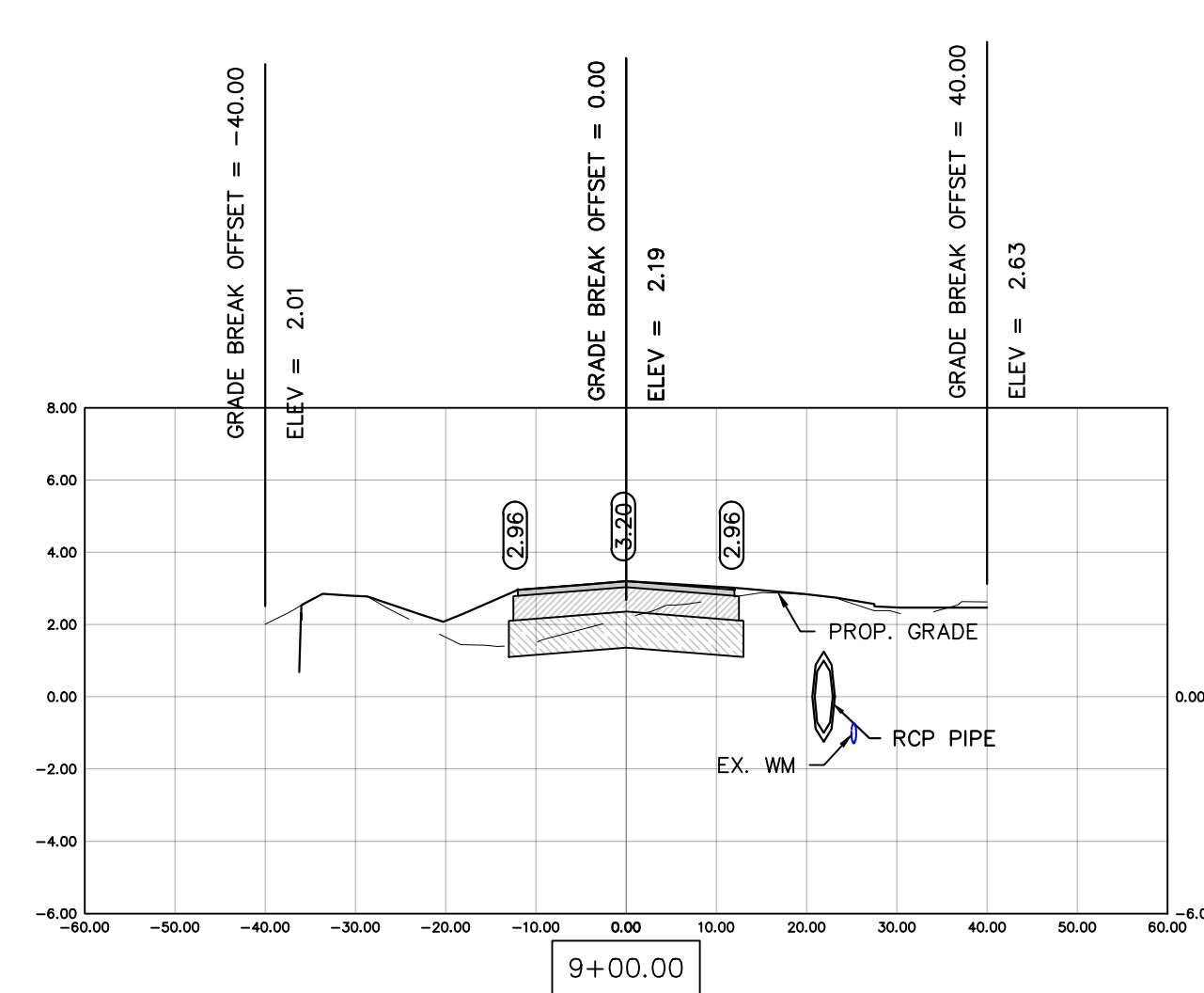
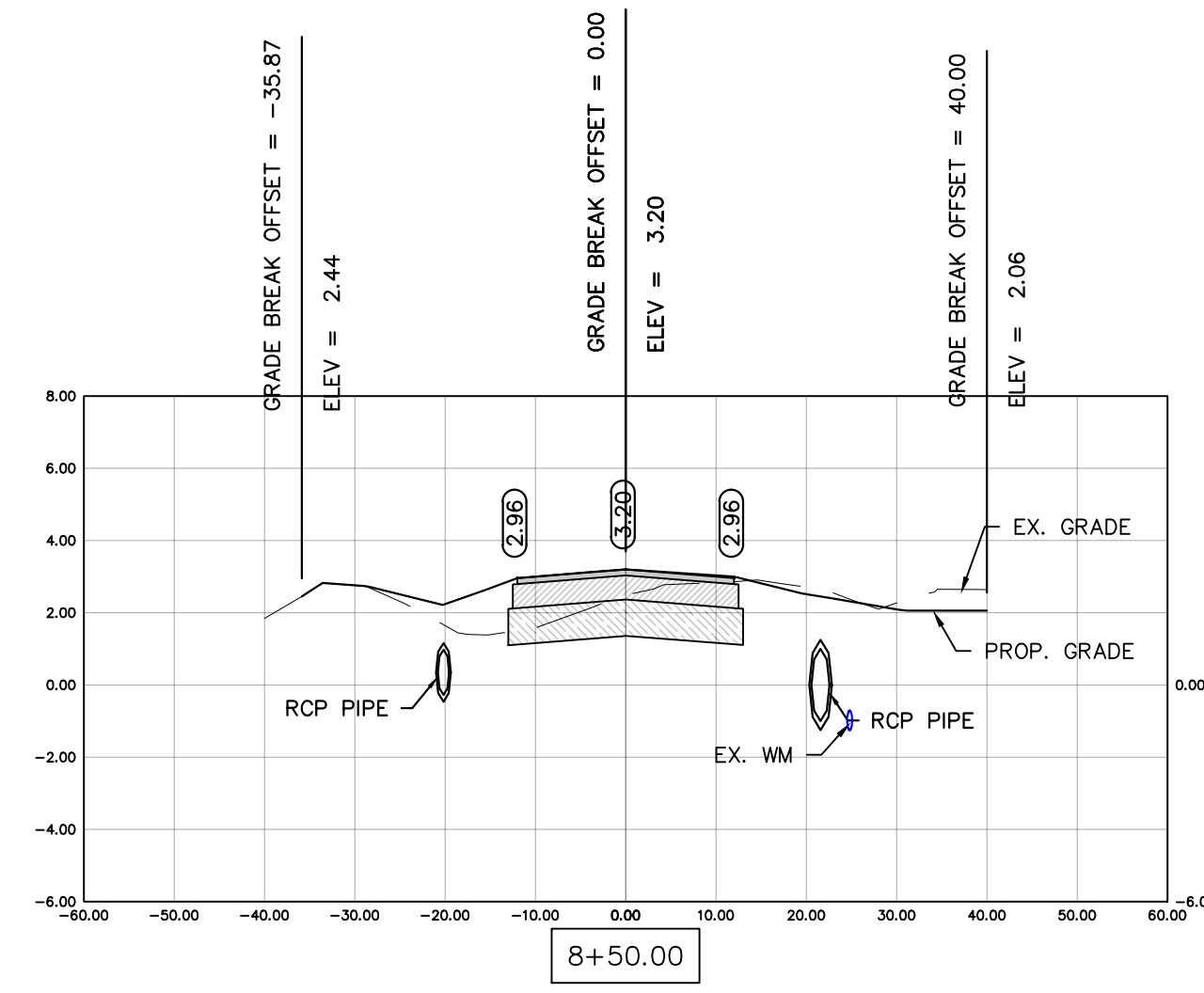
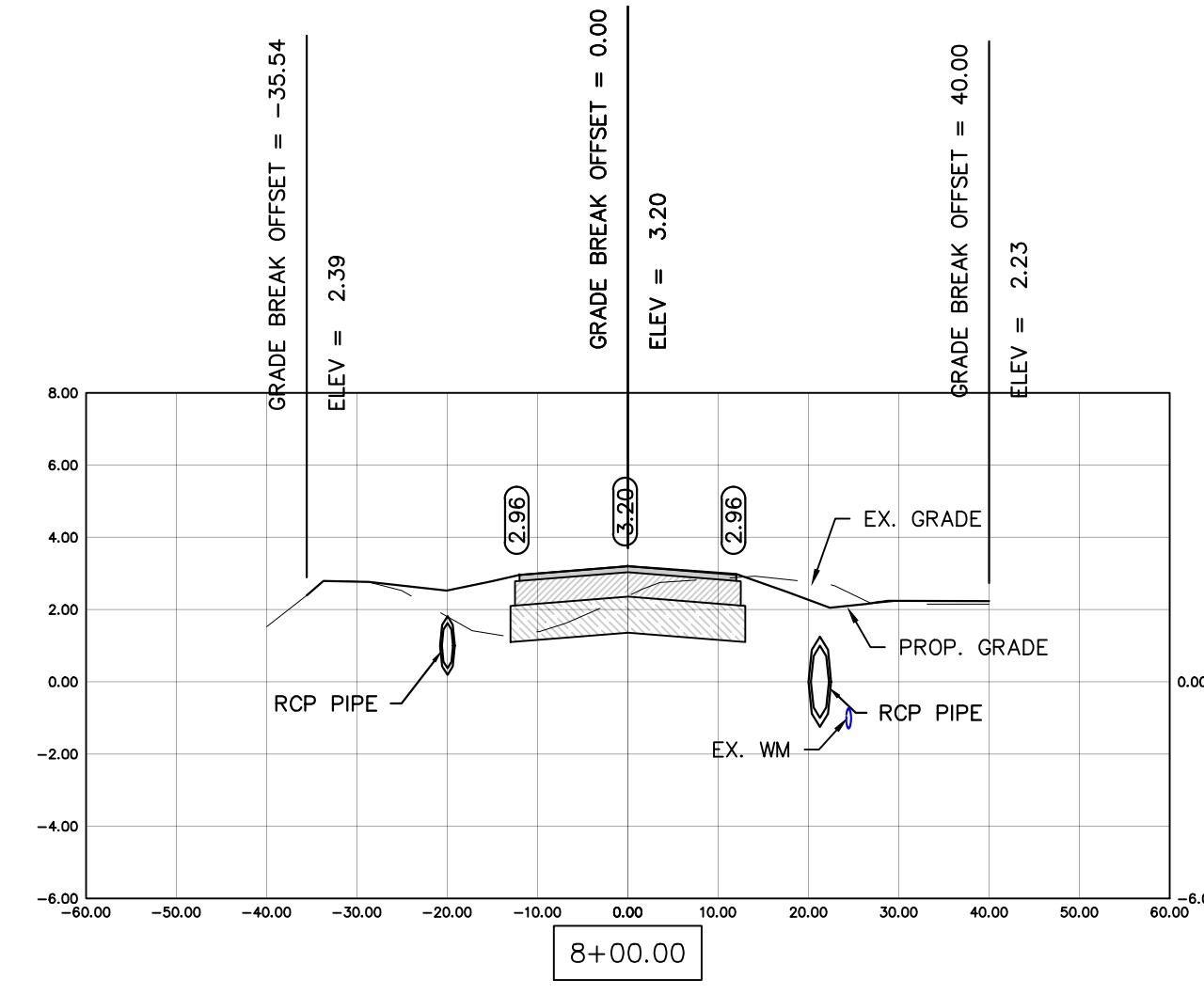
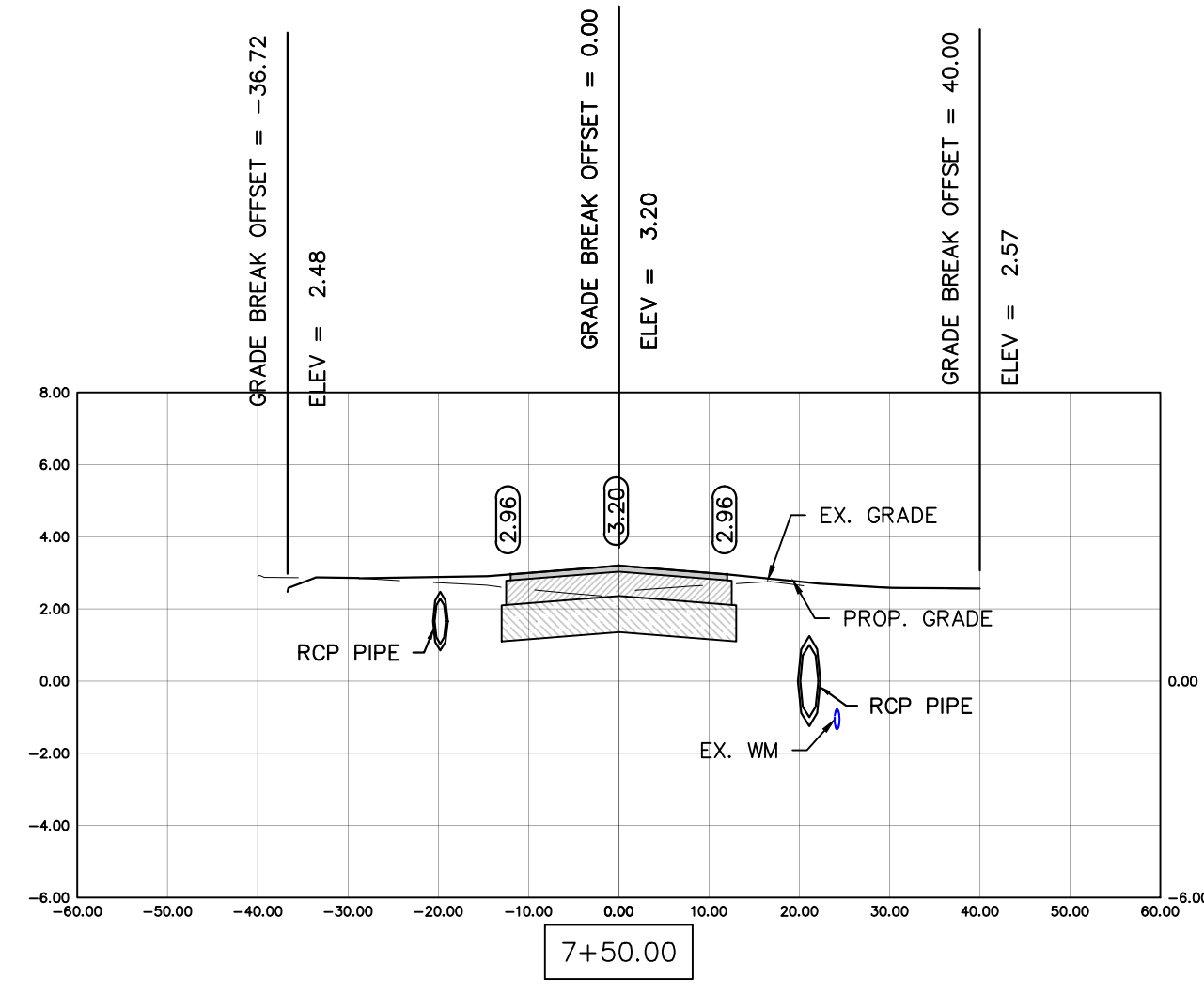
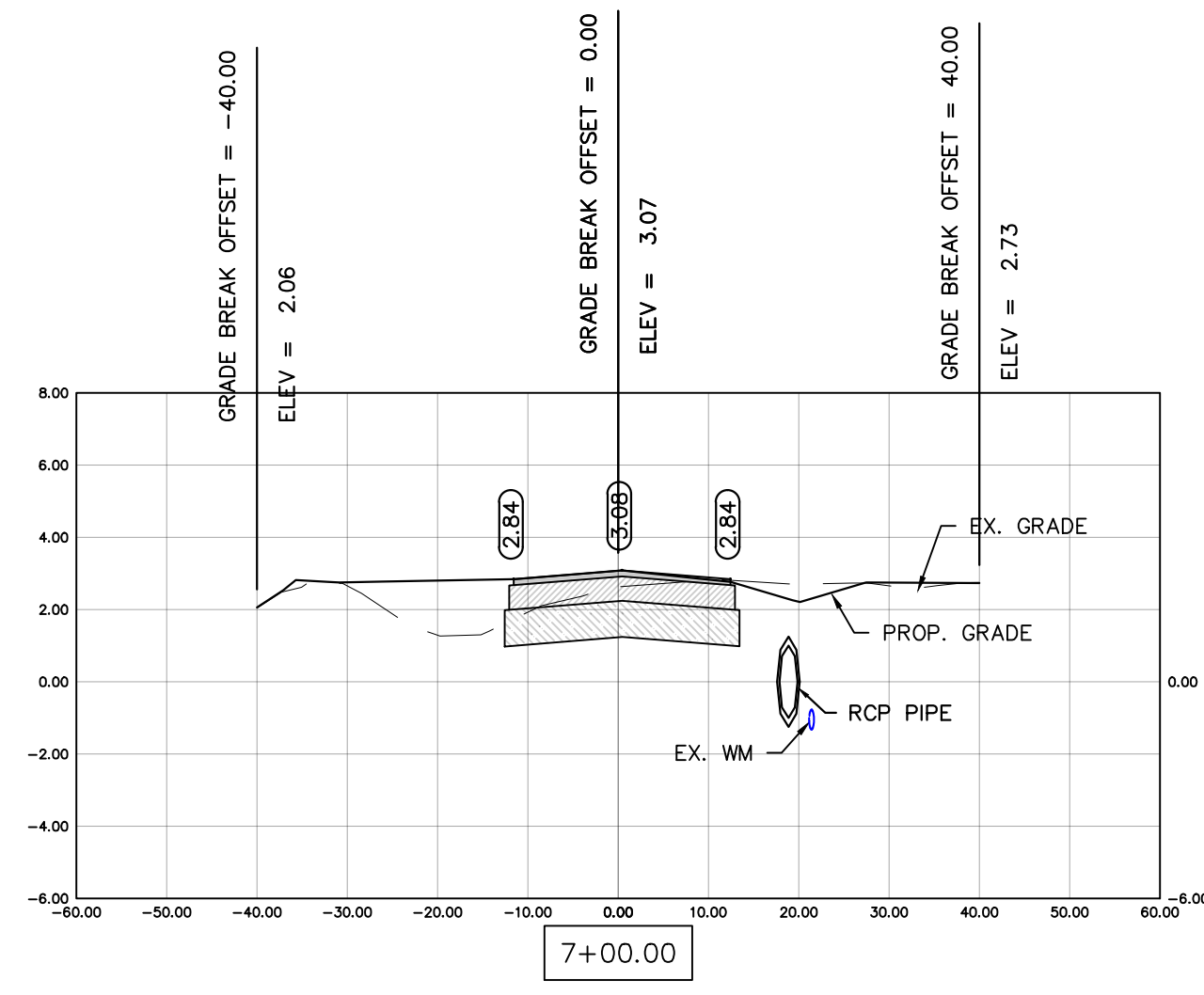
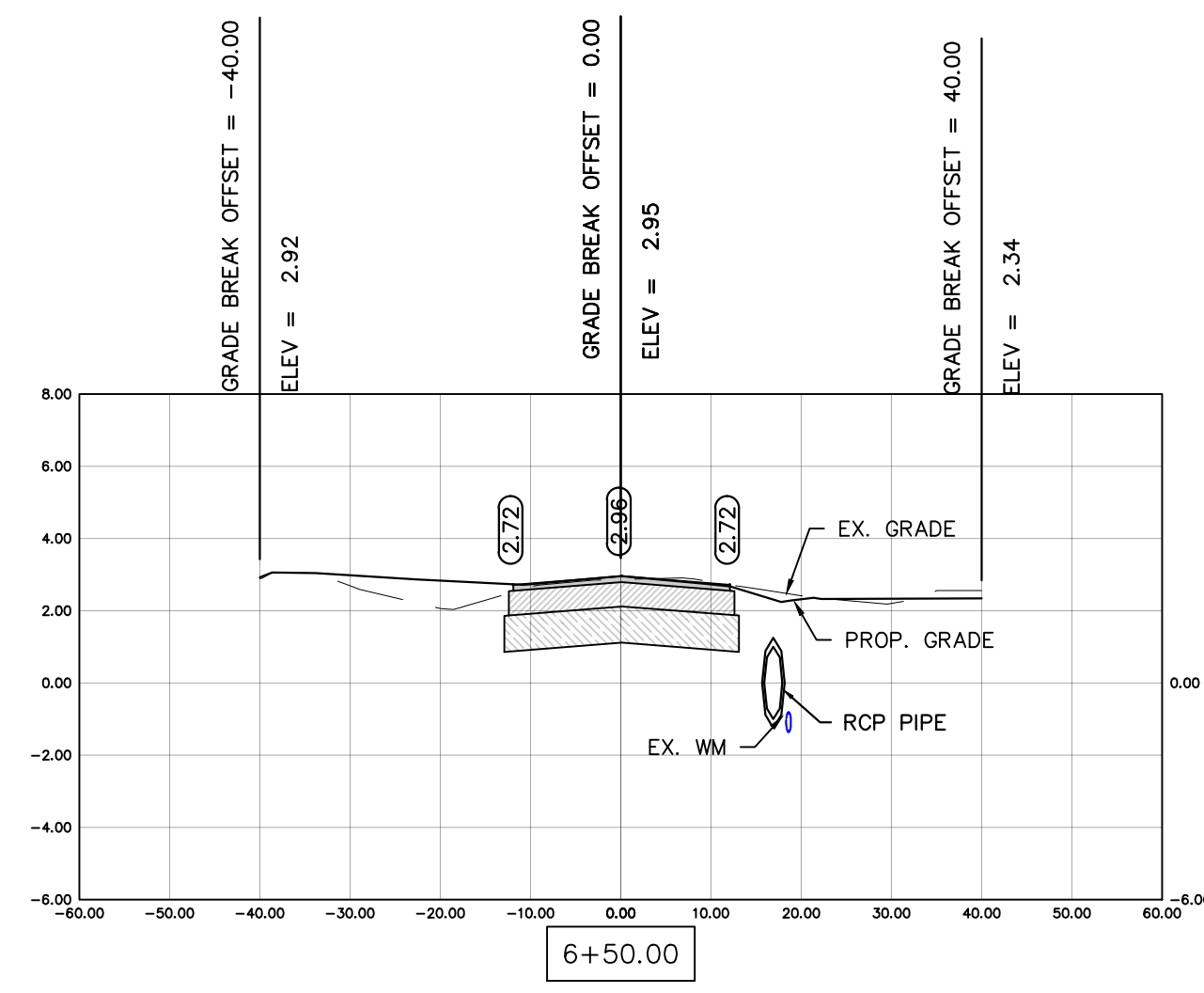
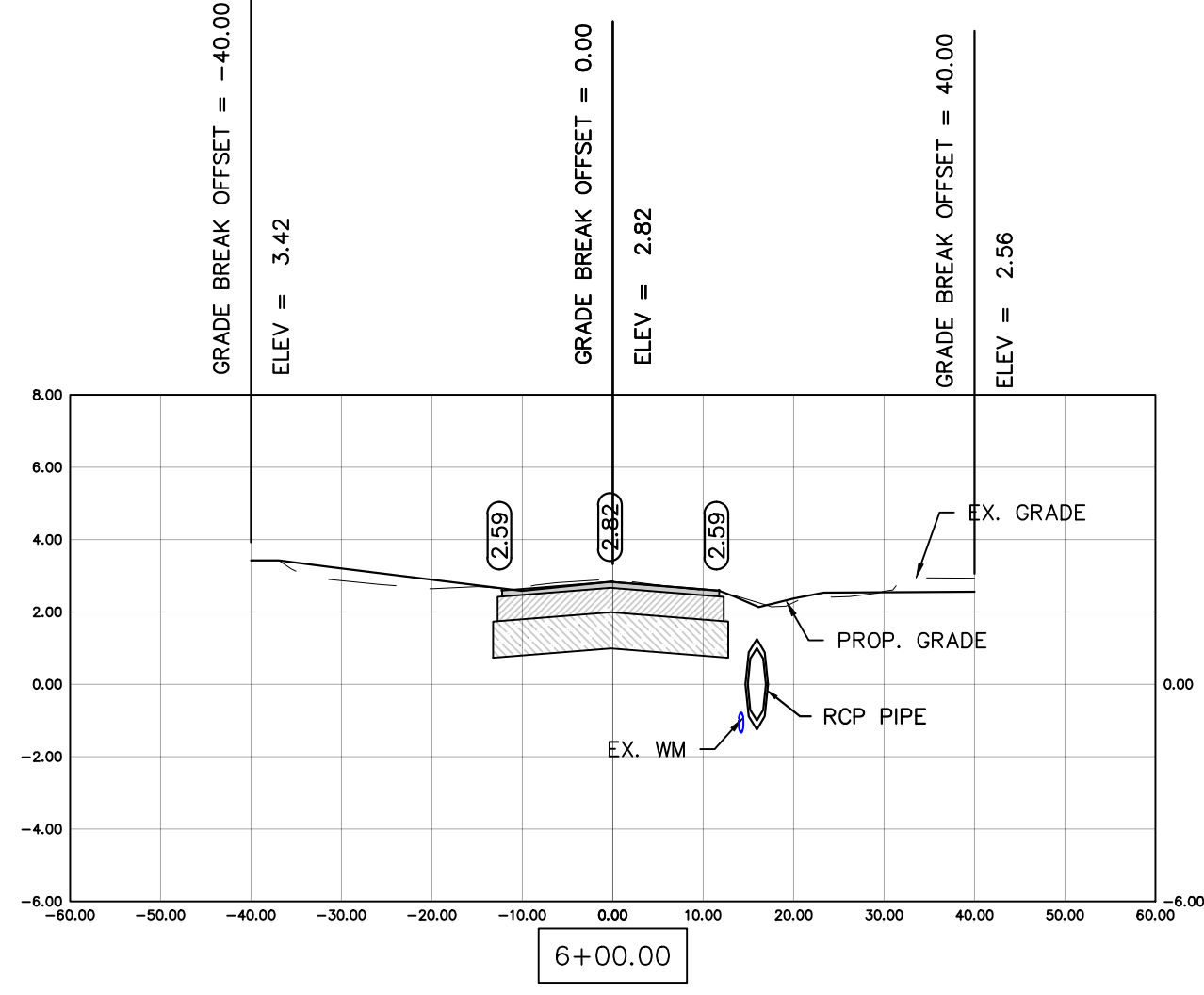
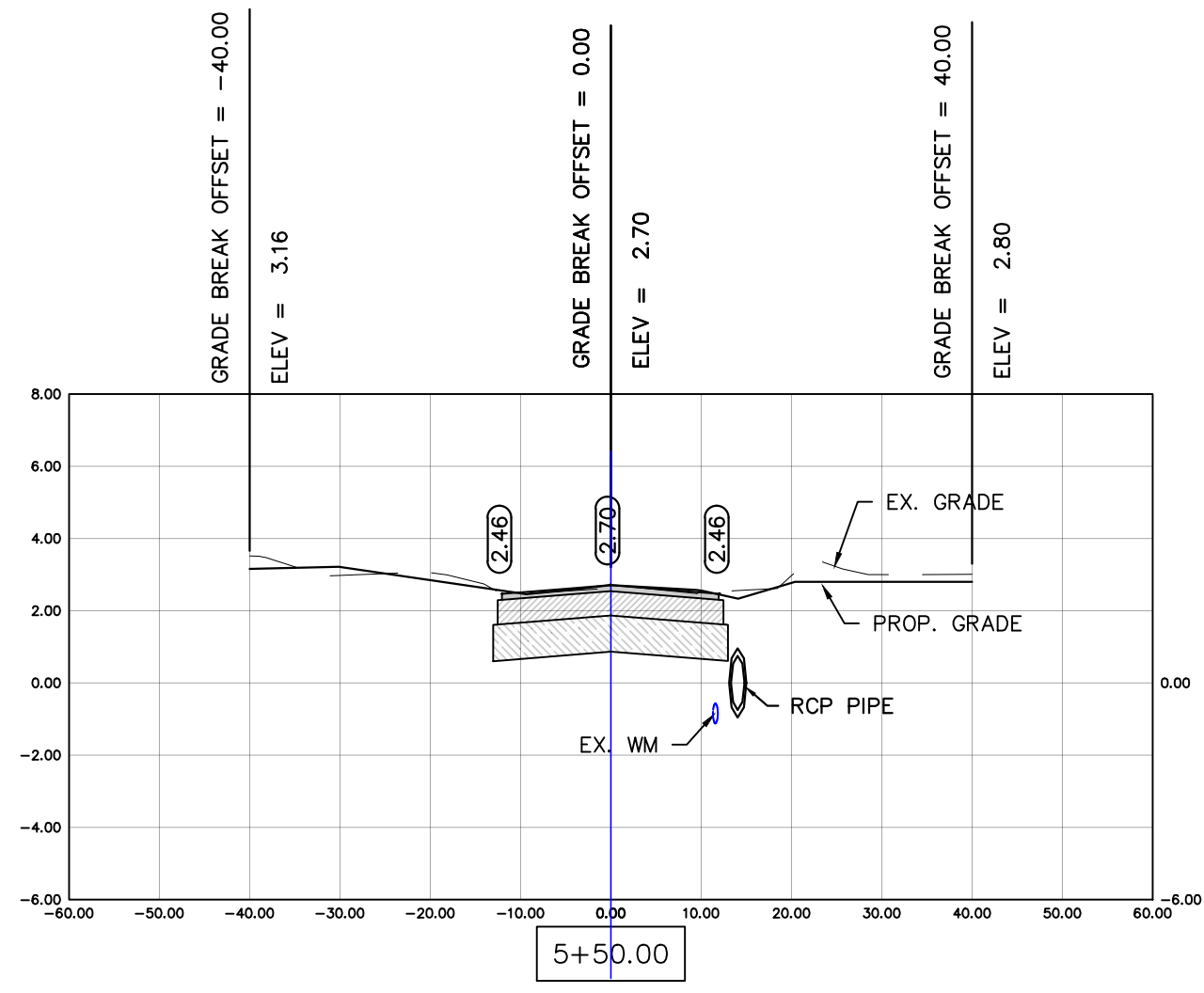
COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
WEEKS ST. SECTIONS

Blot Engineering, Inc
Structural - Civil - Consulting
Edward M Blot
Professional Engineer
FL No 72816
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com
Florida State
Certificate of Authority #29553

PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	143
REV	B

BLOT ENGINEERING, INC EXPRESSLY RESERVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS MAY NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLOT ENGINEERING, INC © 2022

REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

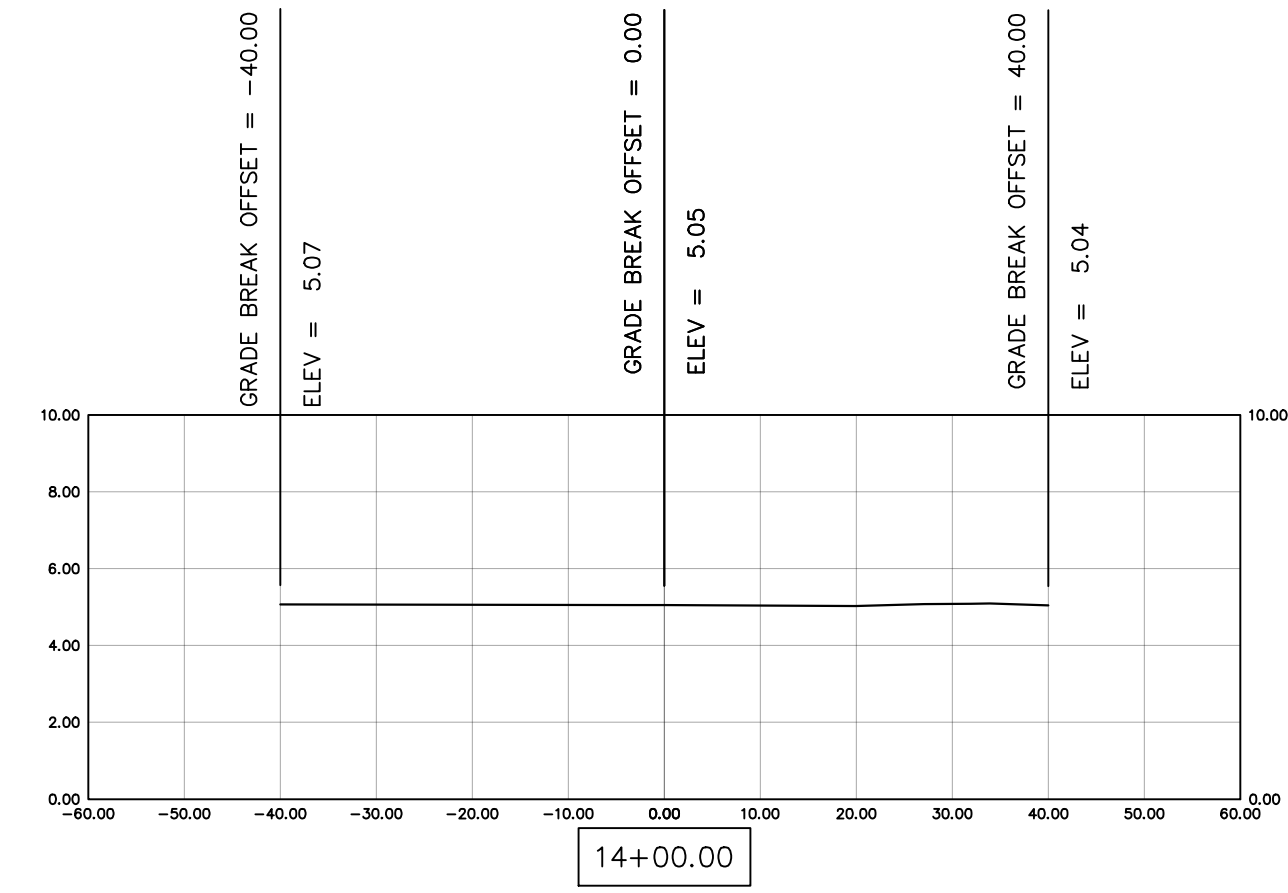
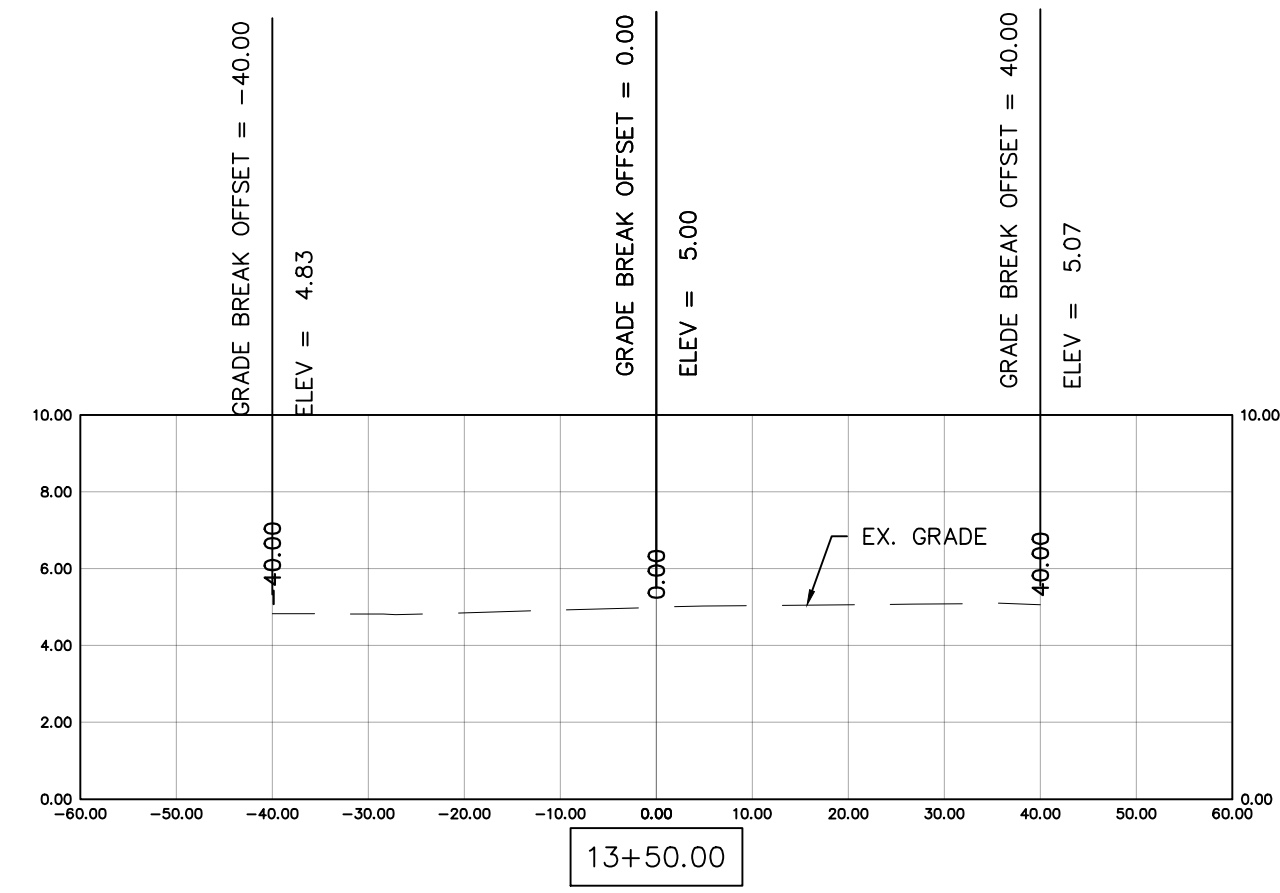
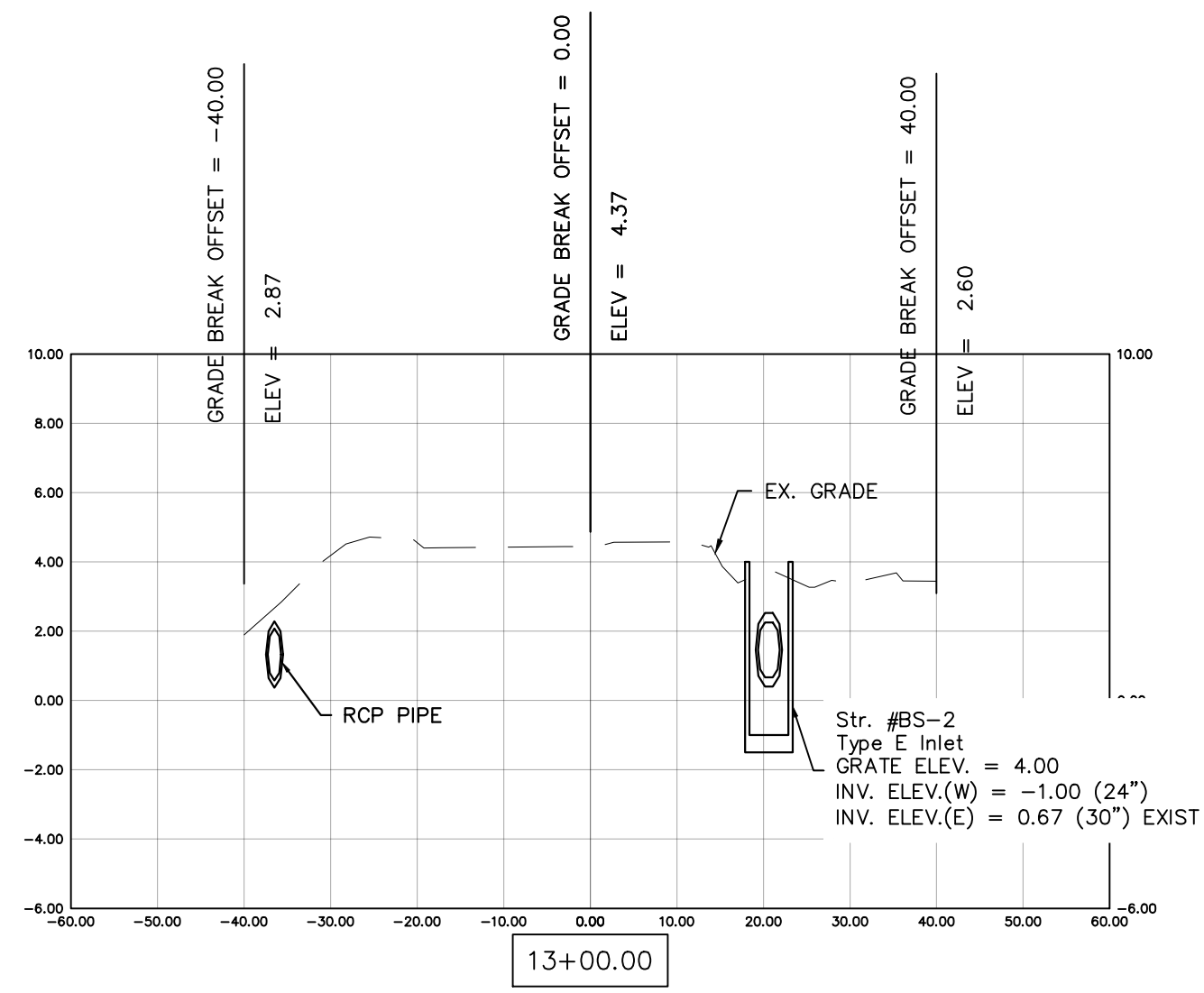
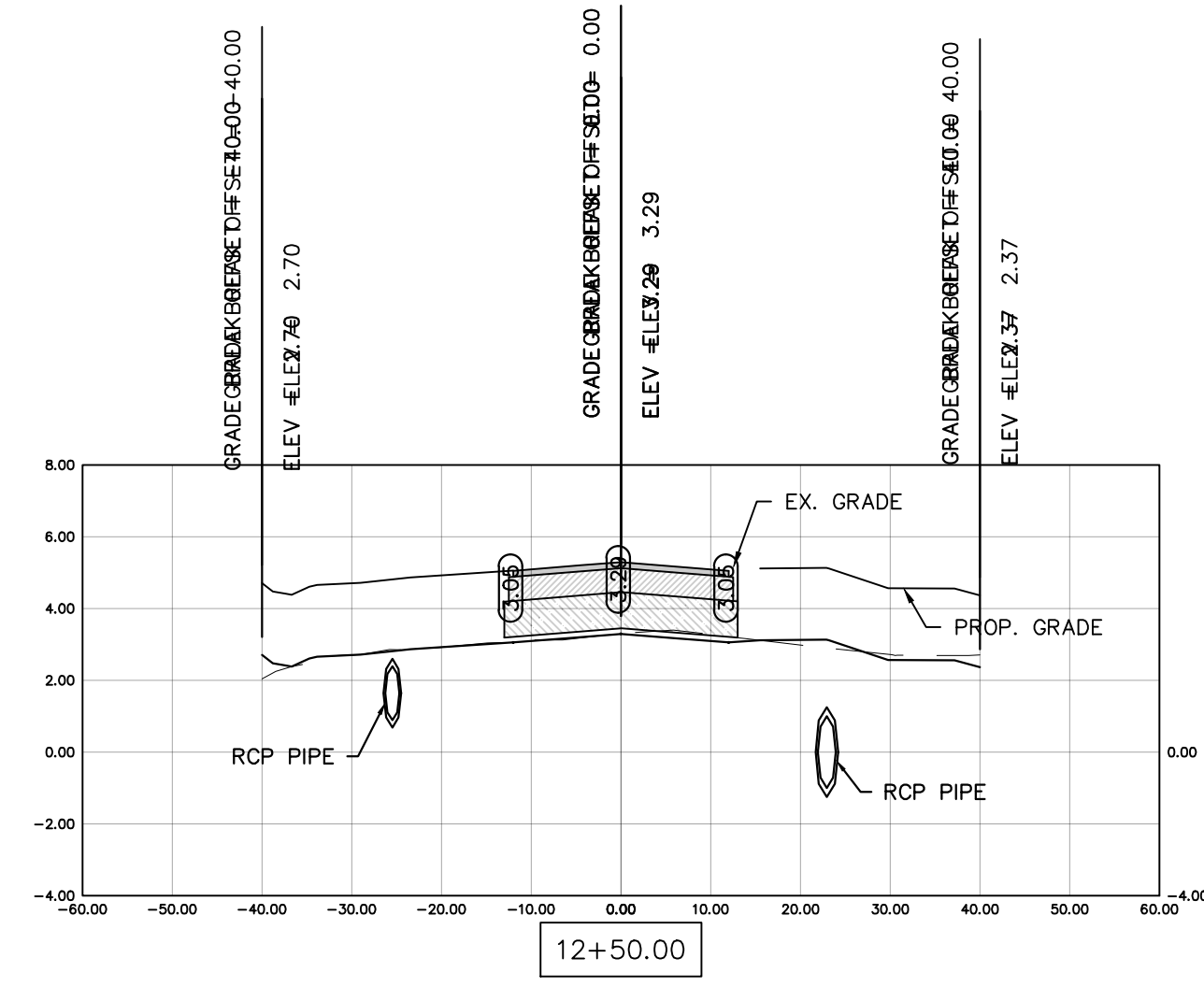
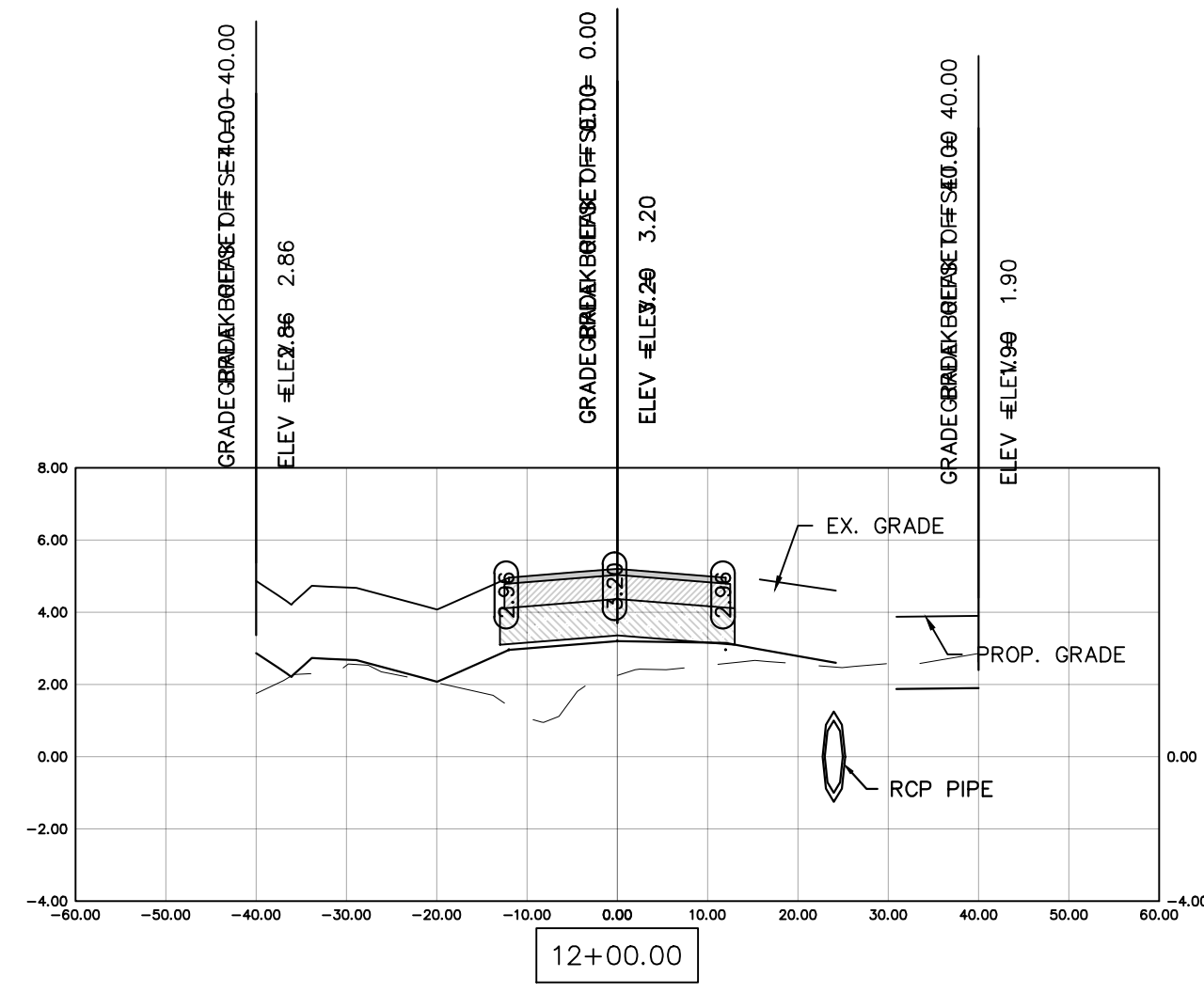
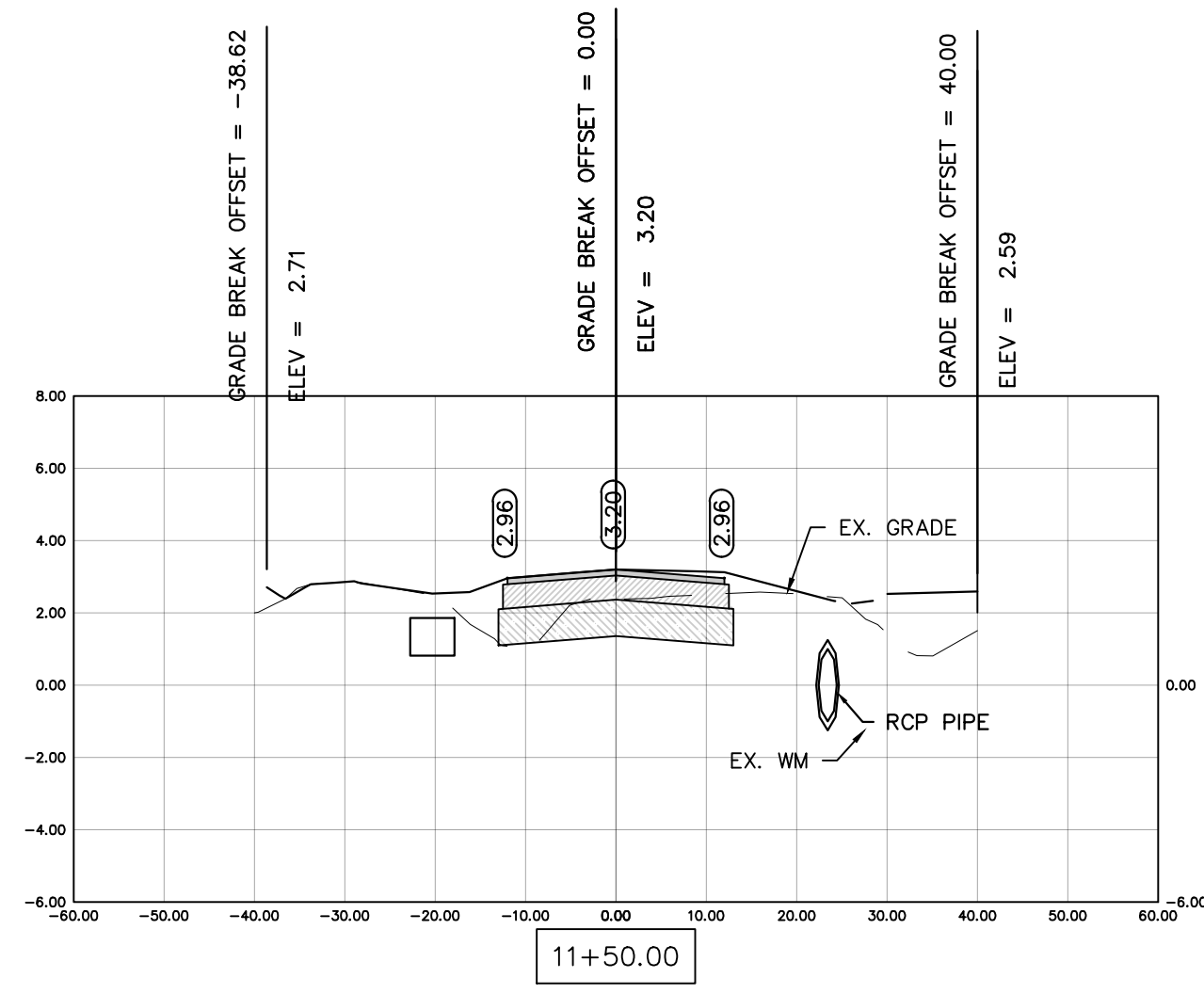
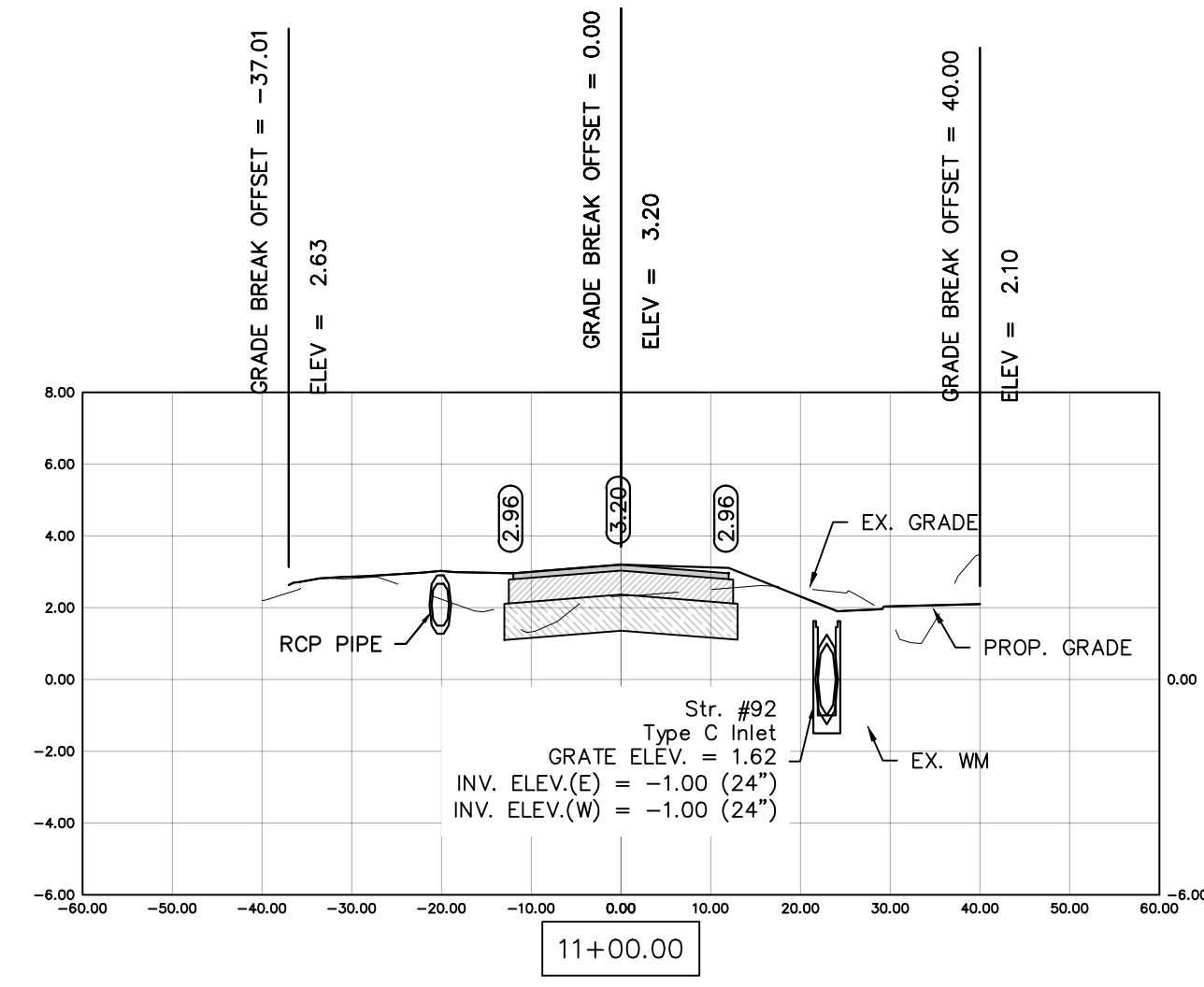
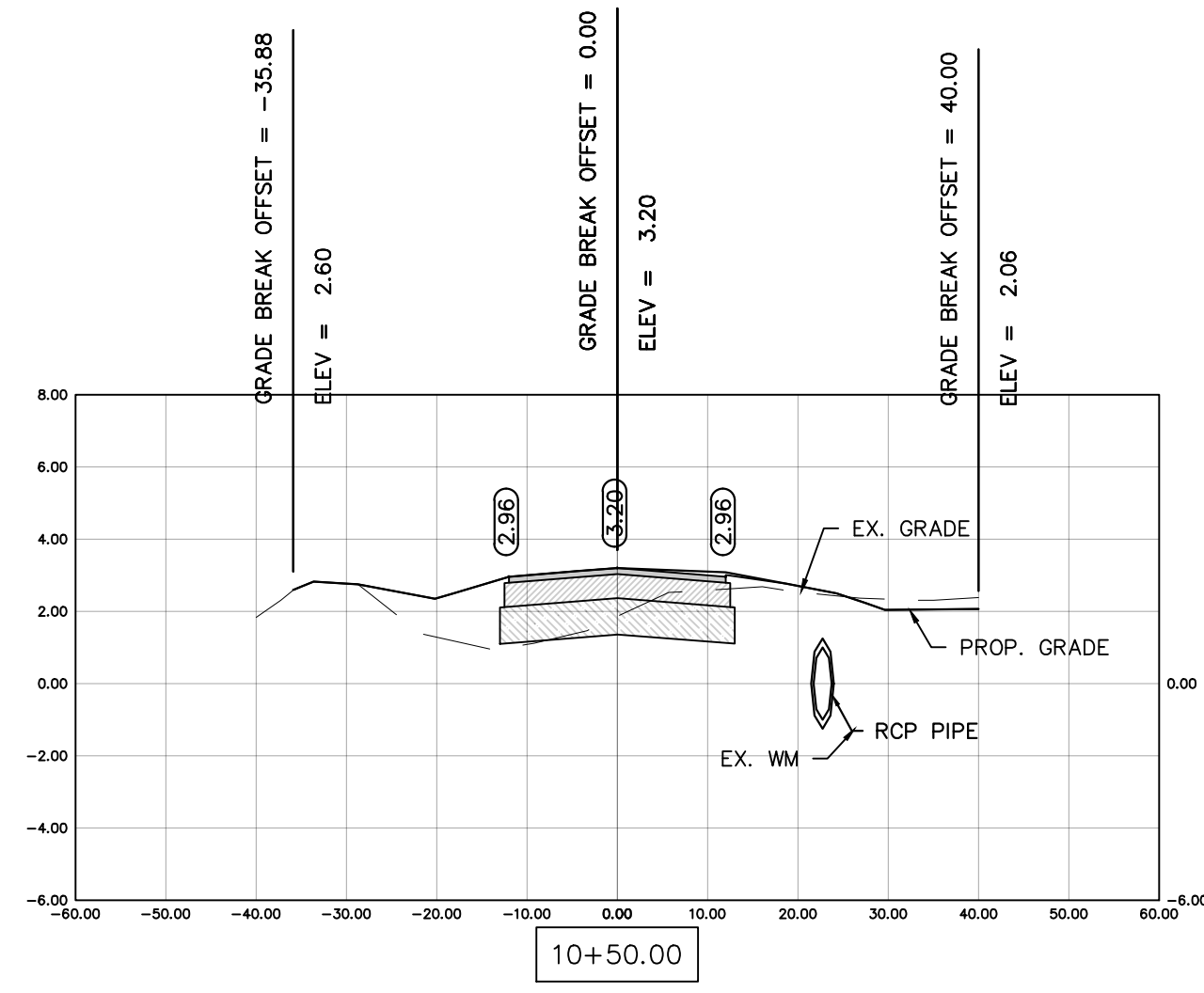
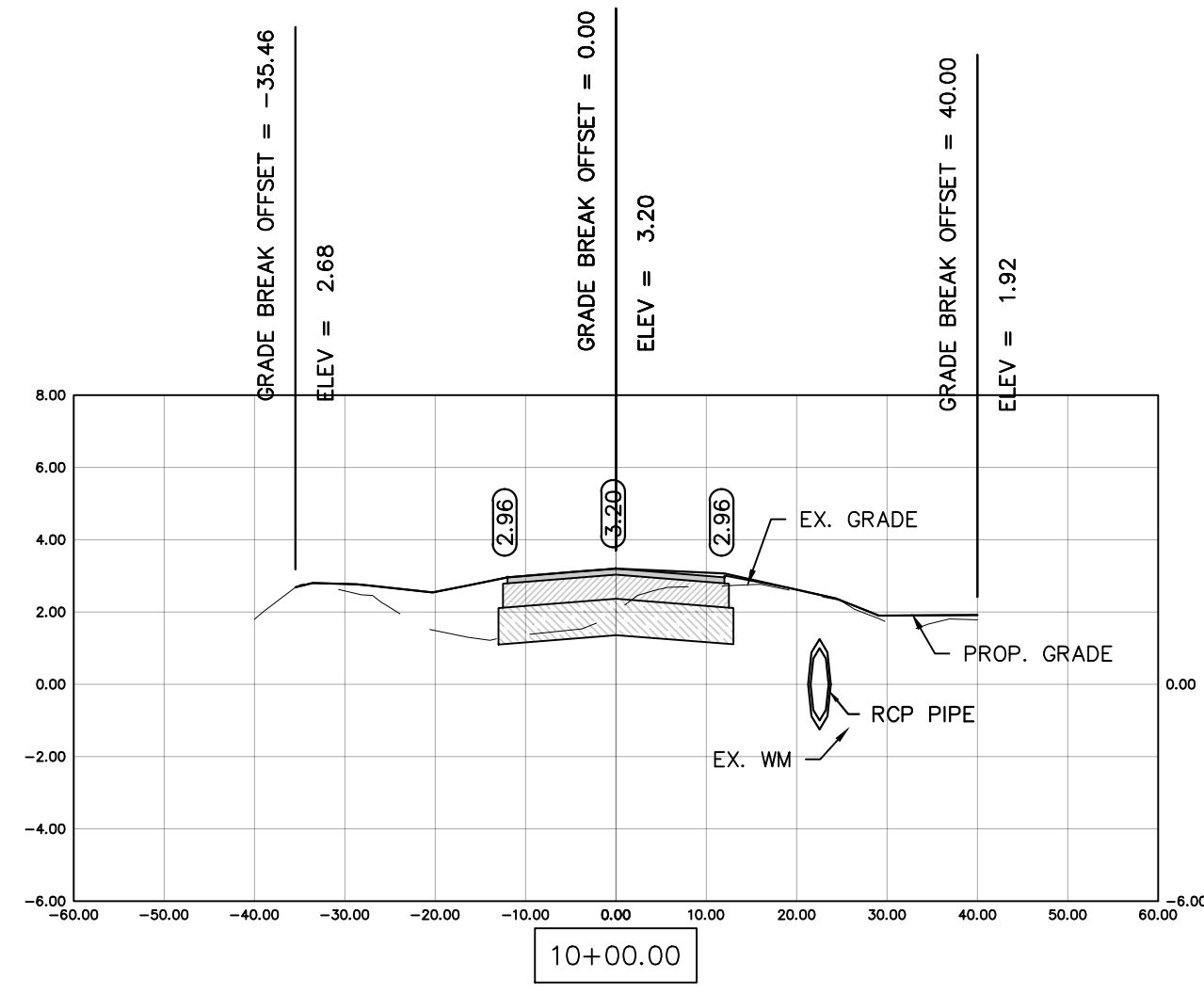


REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	05/27/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
WEEKS ST. SECTIONS

Blot Engineering, Inc
 Structural - Civil - Consulting
 Edward M Blot
 Professional Engineer
 FL No 72816
 Florida State
 Certificate of Authority #29553
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com

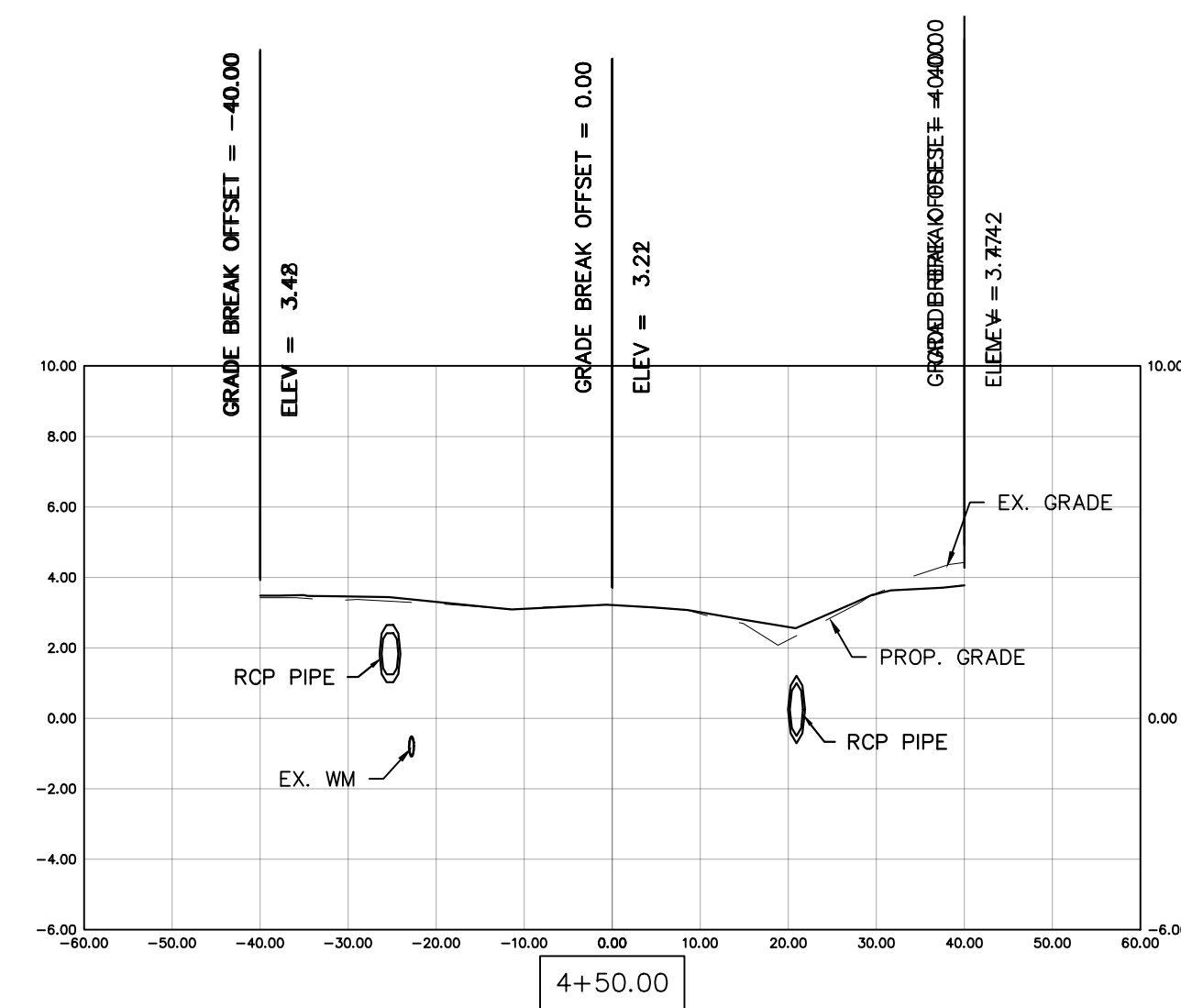
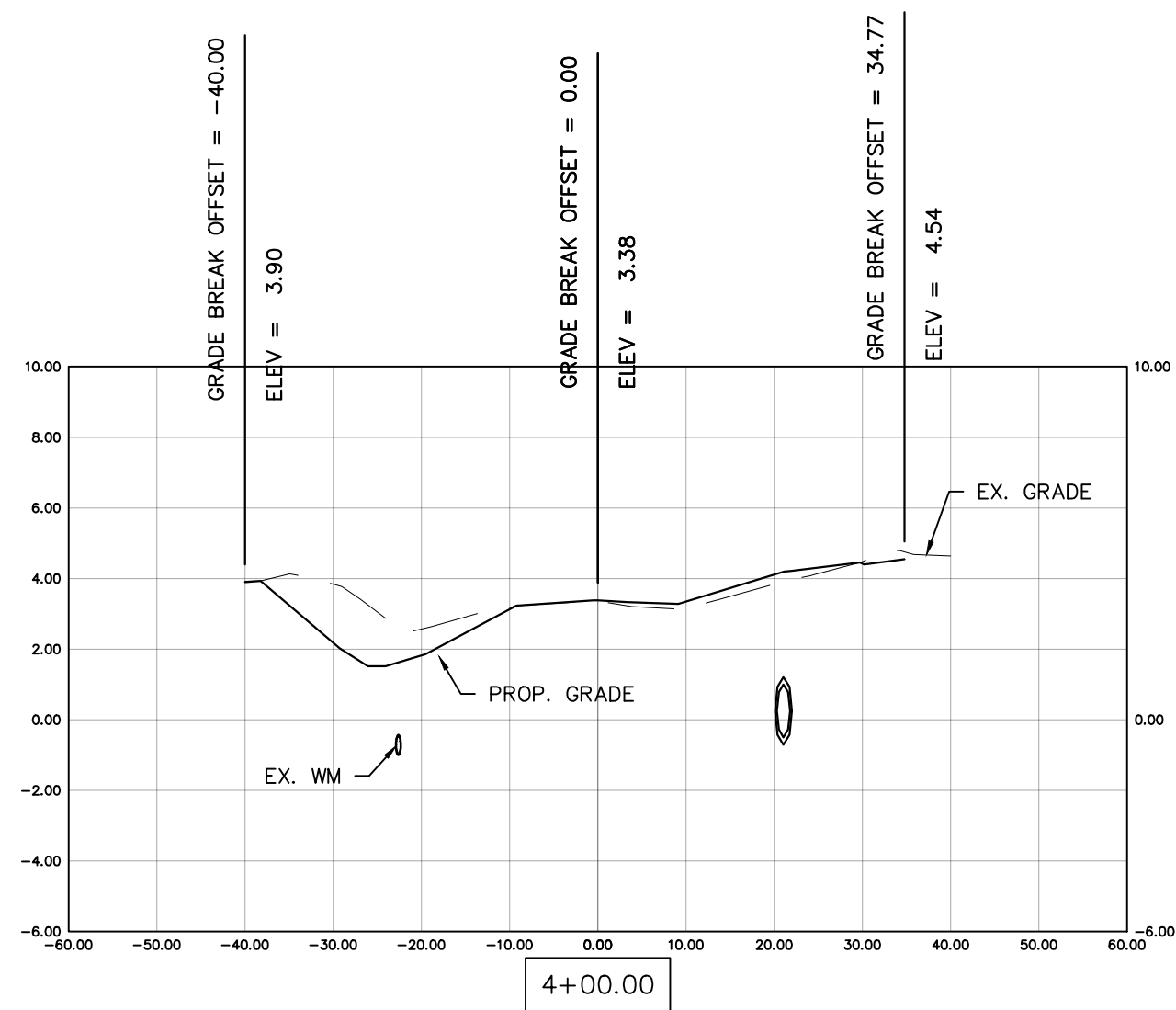
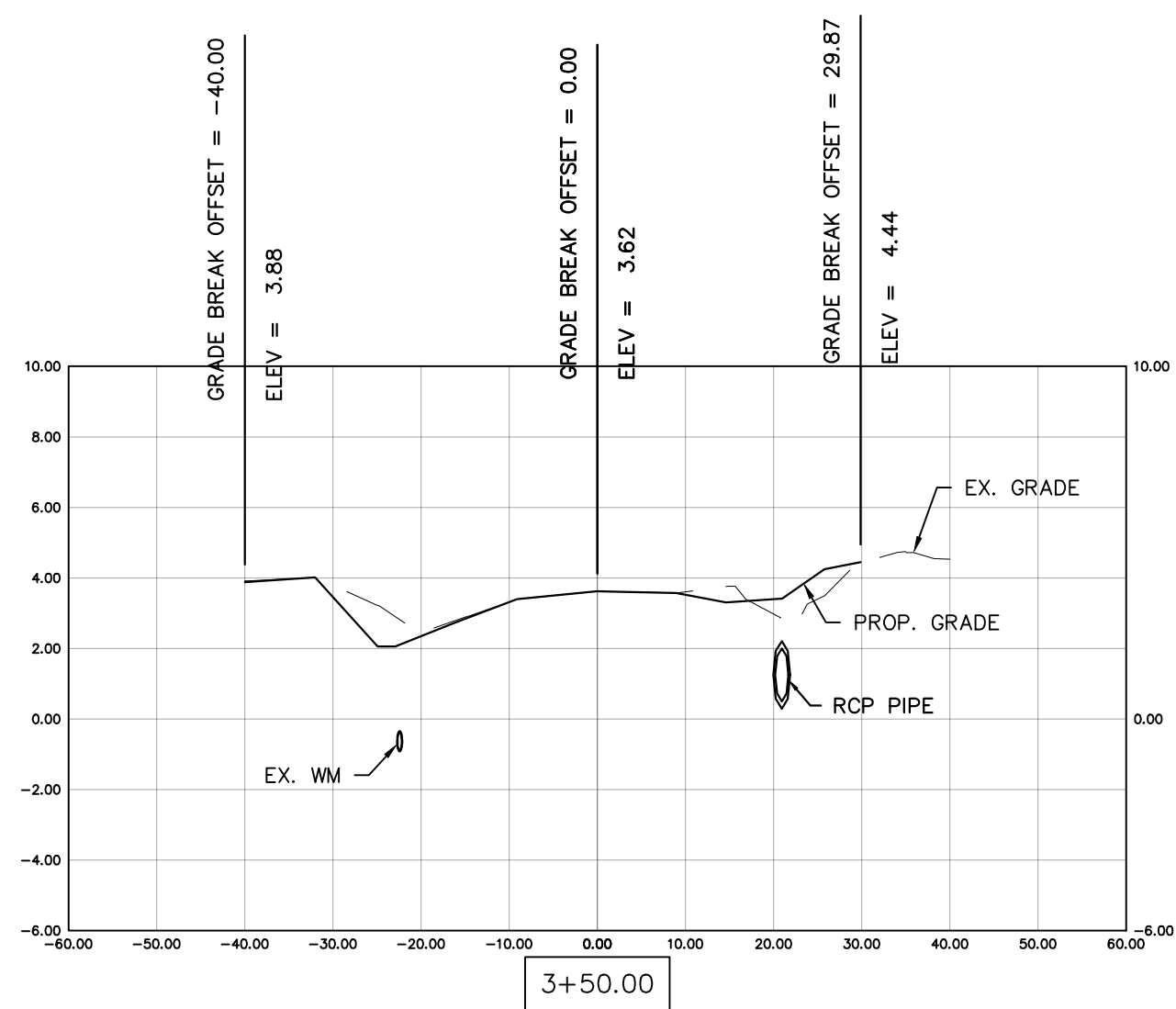
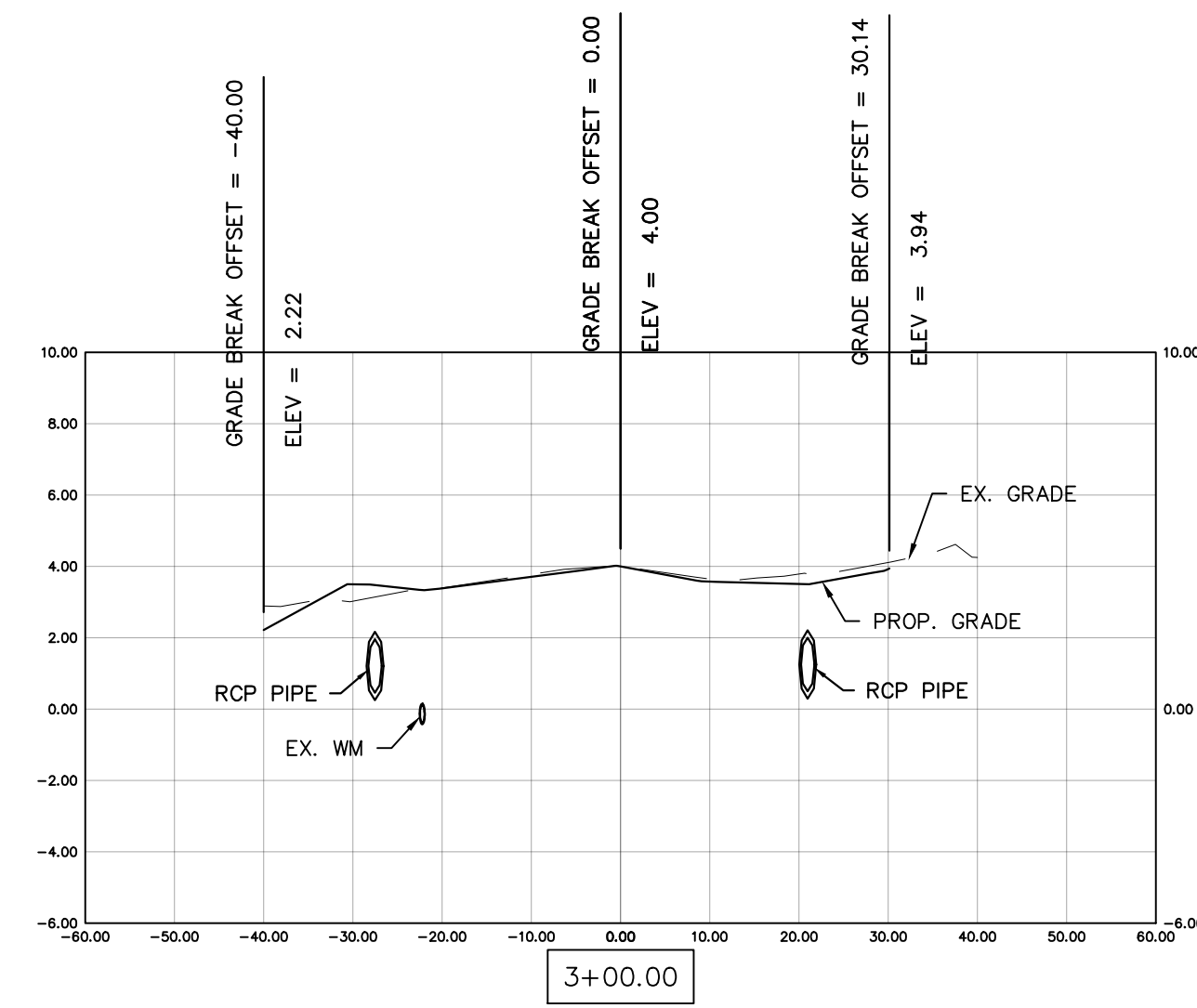
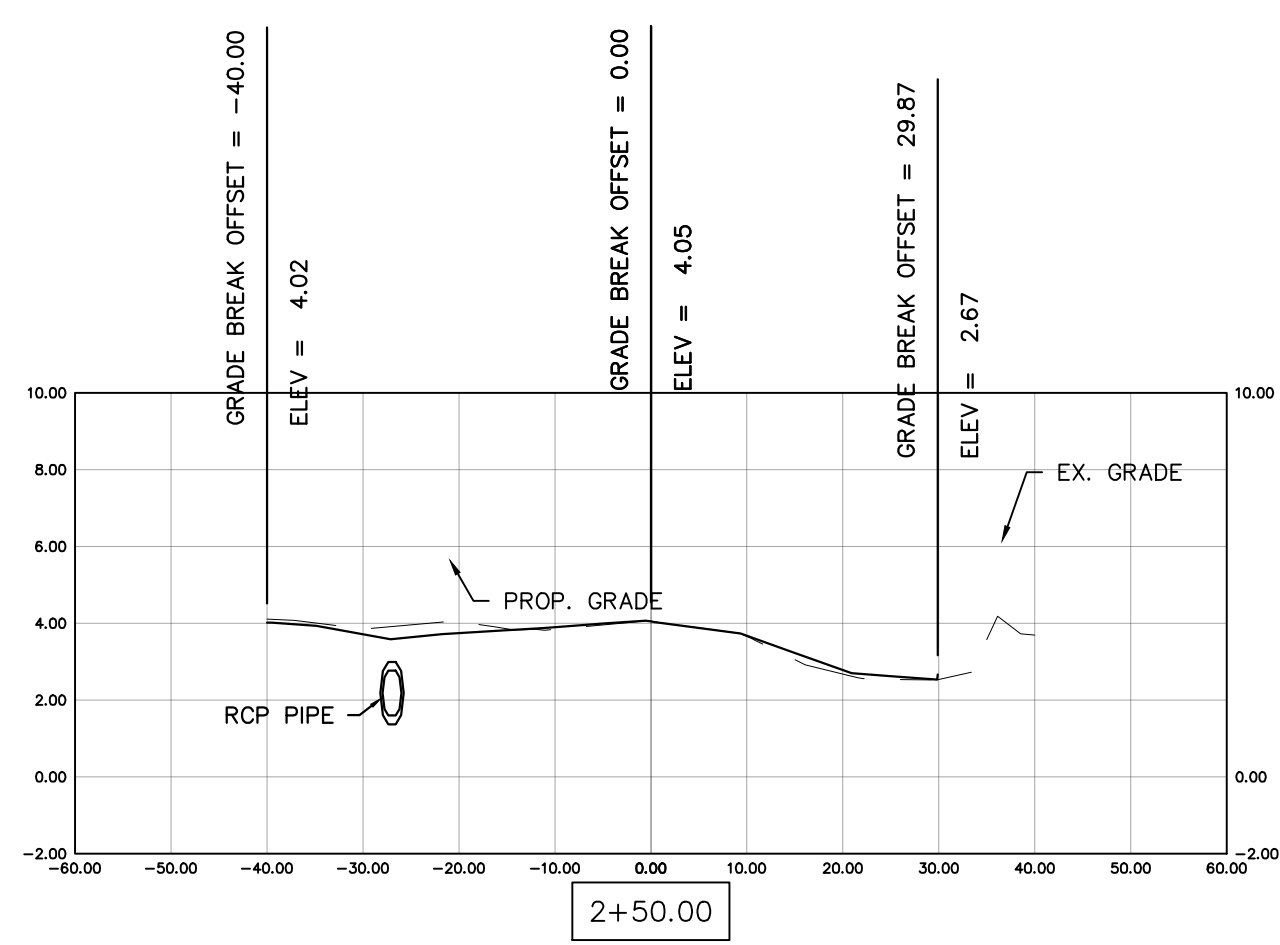
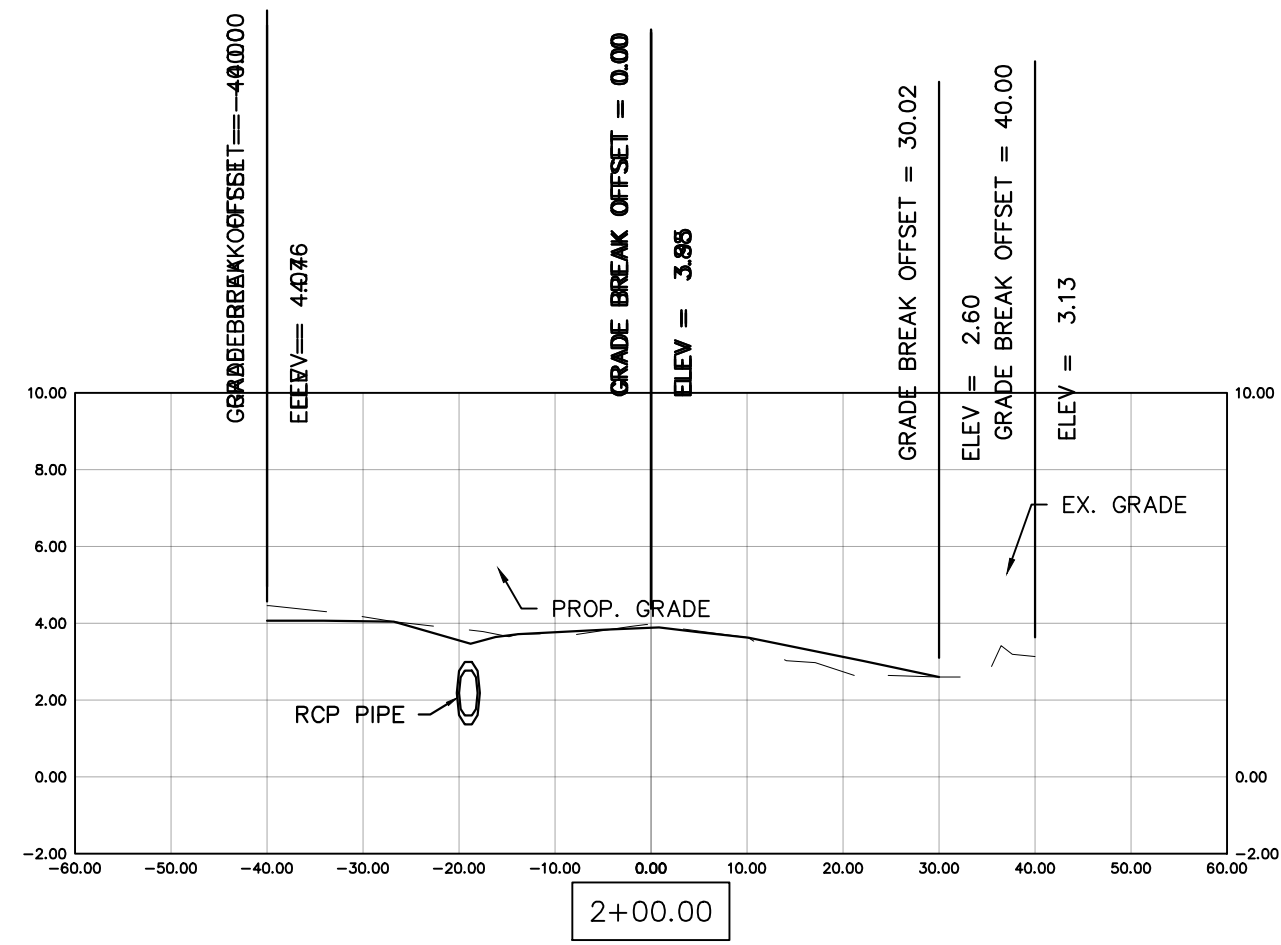
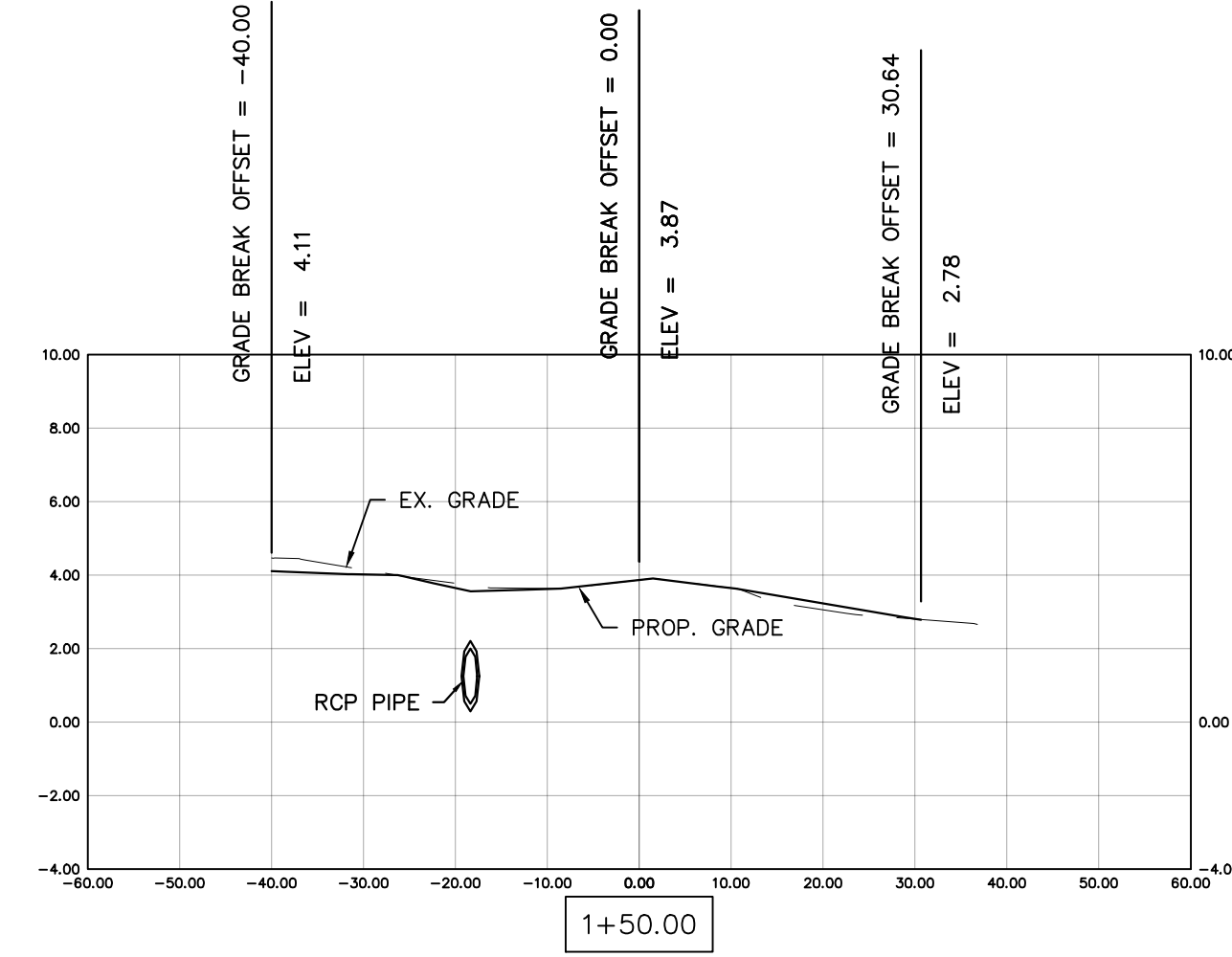
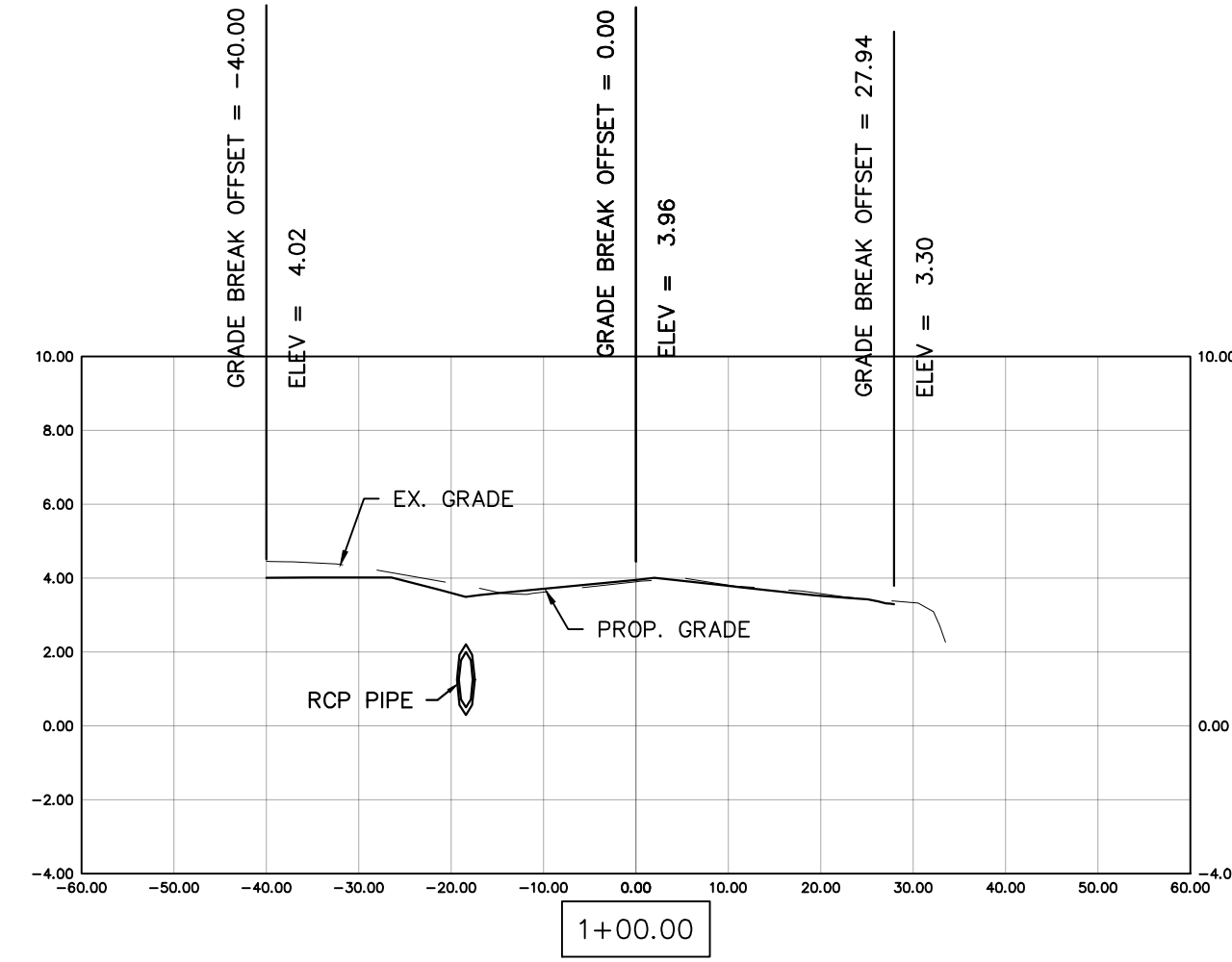
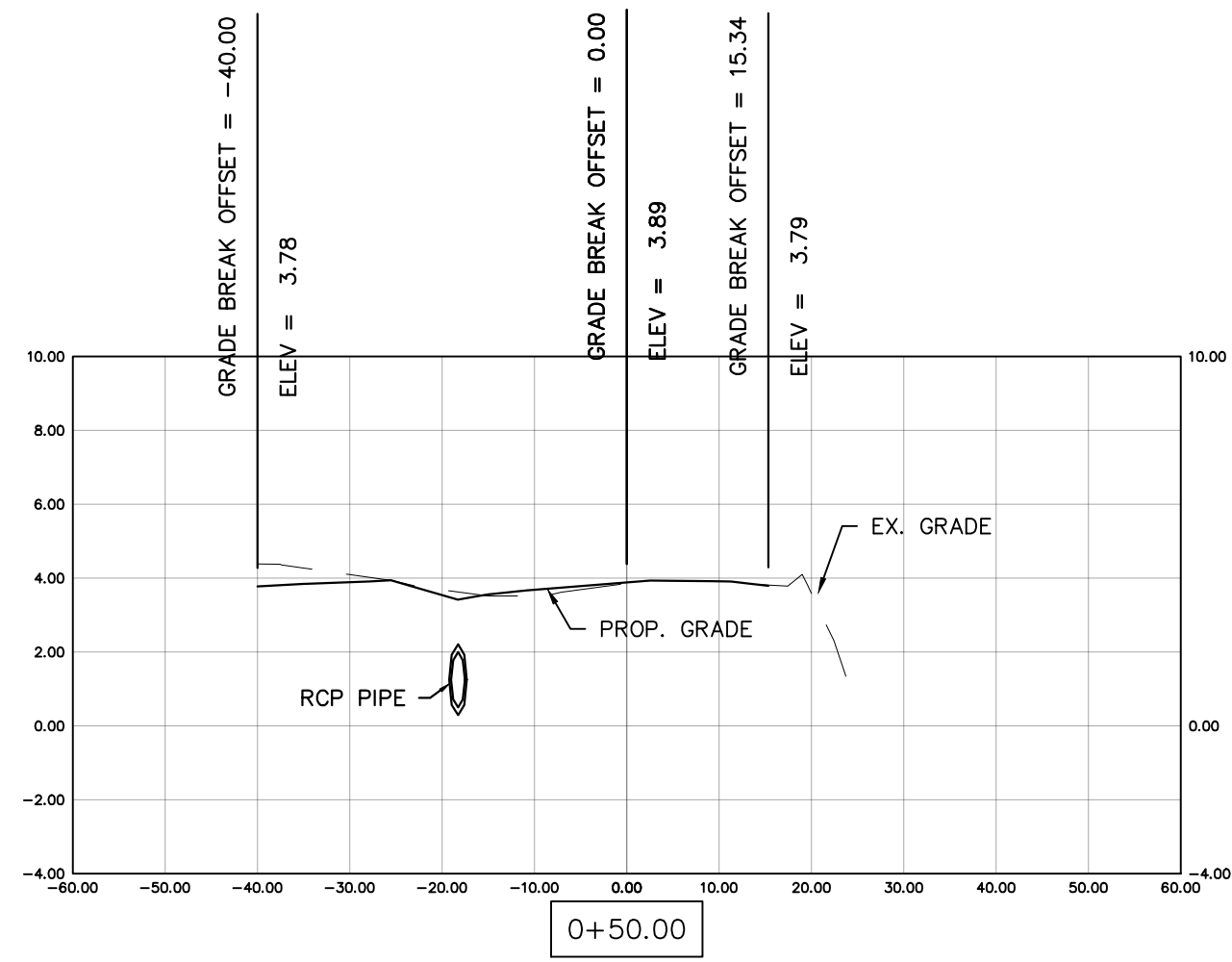
PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	144
REV	B



REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
 BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
 WEEKS ST. SECTIONS

Blot Engineering, Inc
 Structural - Civil - Consulting
 Edward M Blot
 Professional Engineer
 FL No 72816
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com
 Florida State
 Certificate of Authority #29553



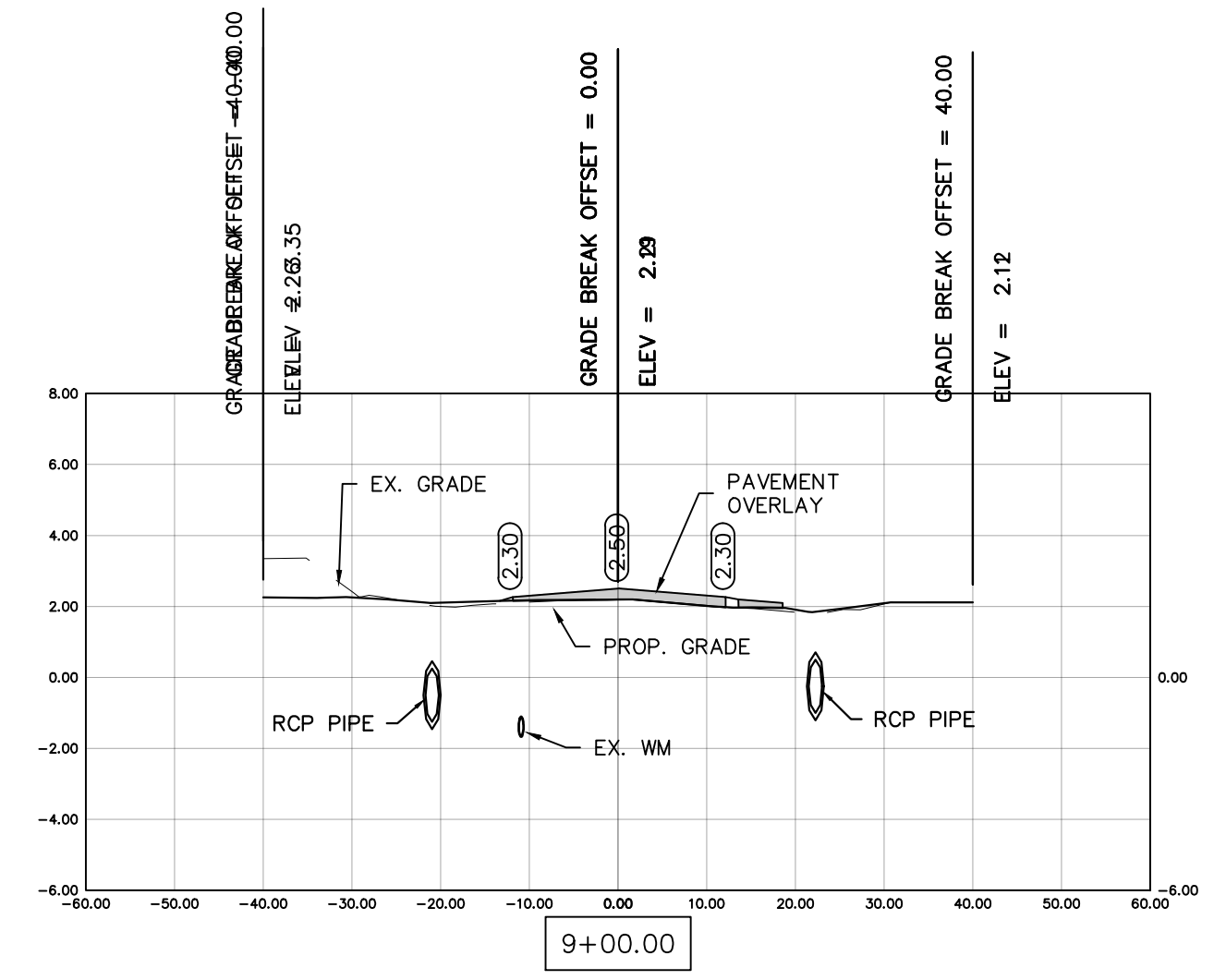
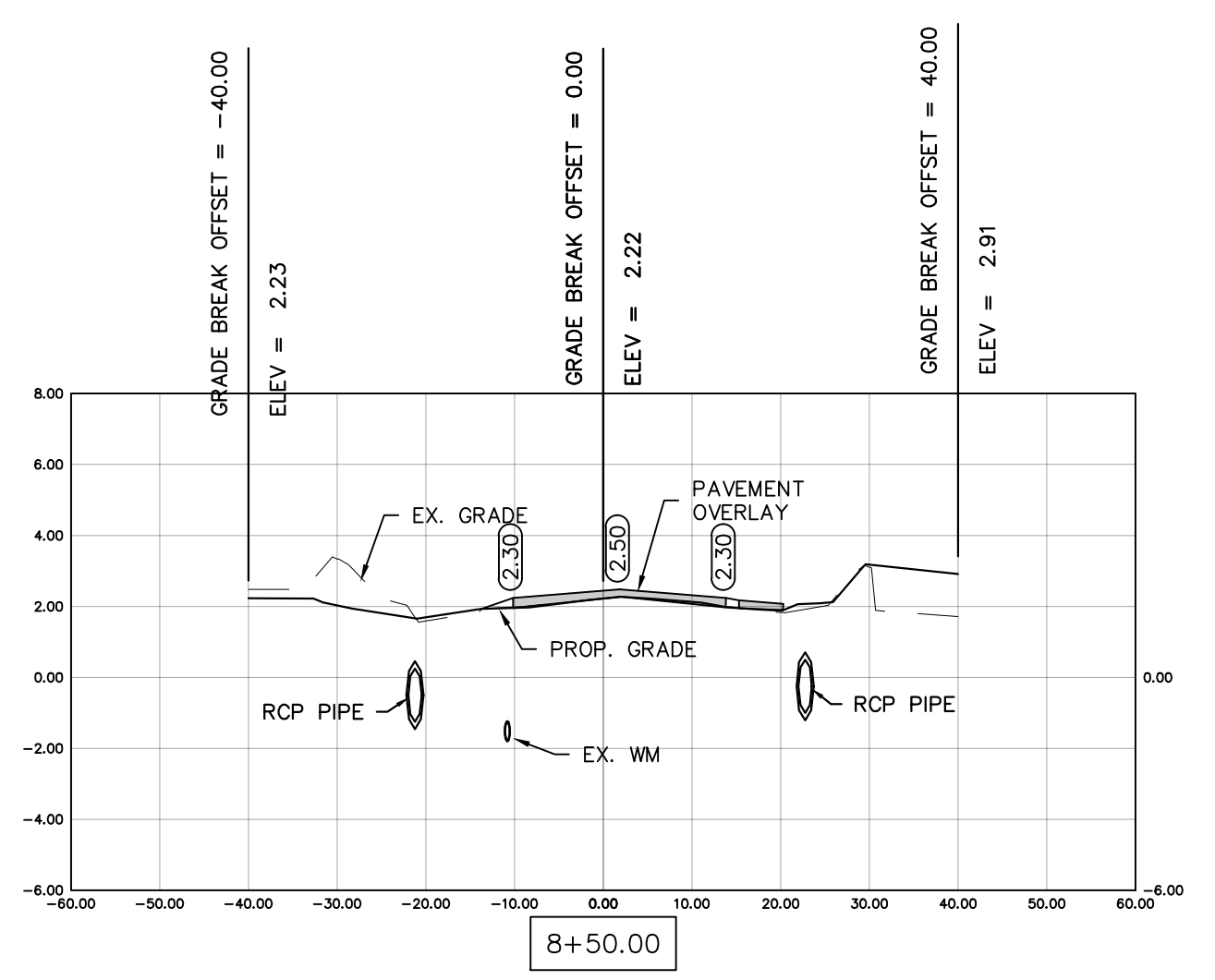
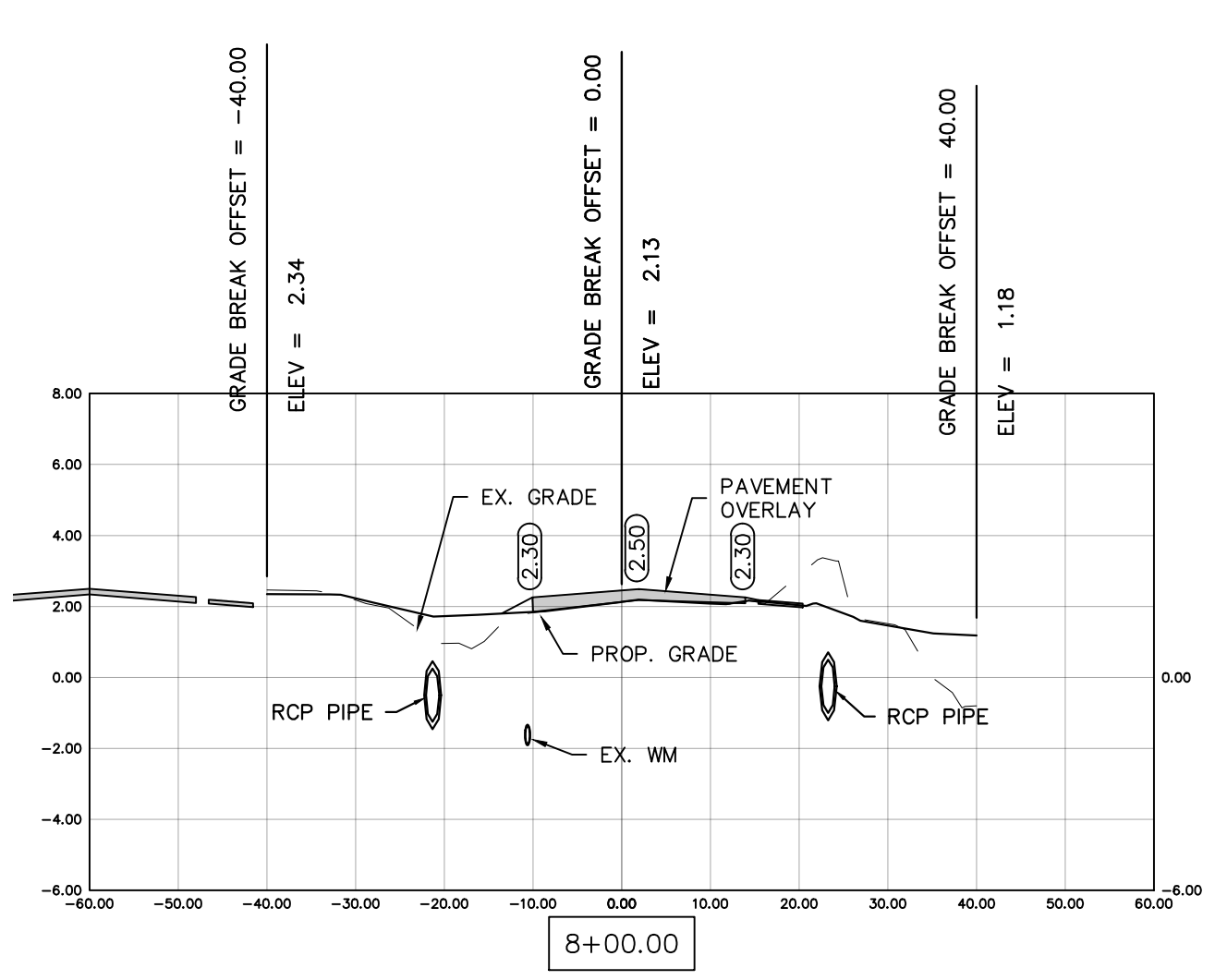
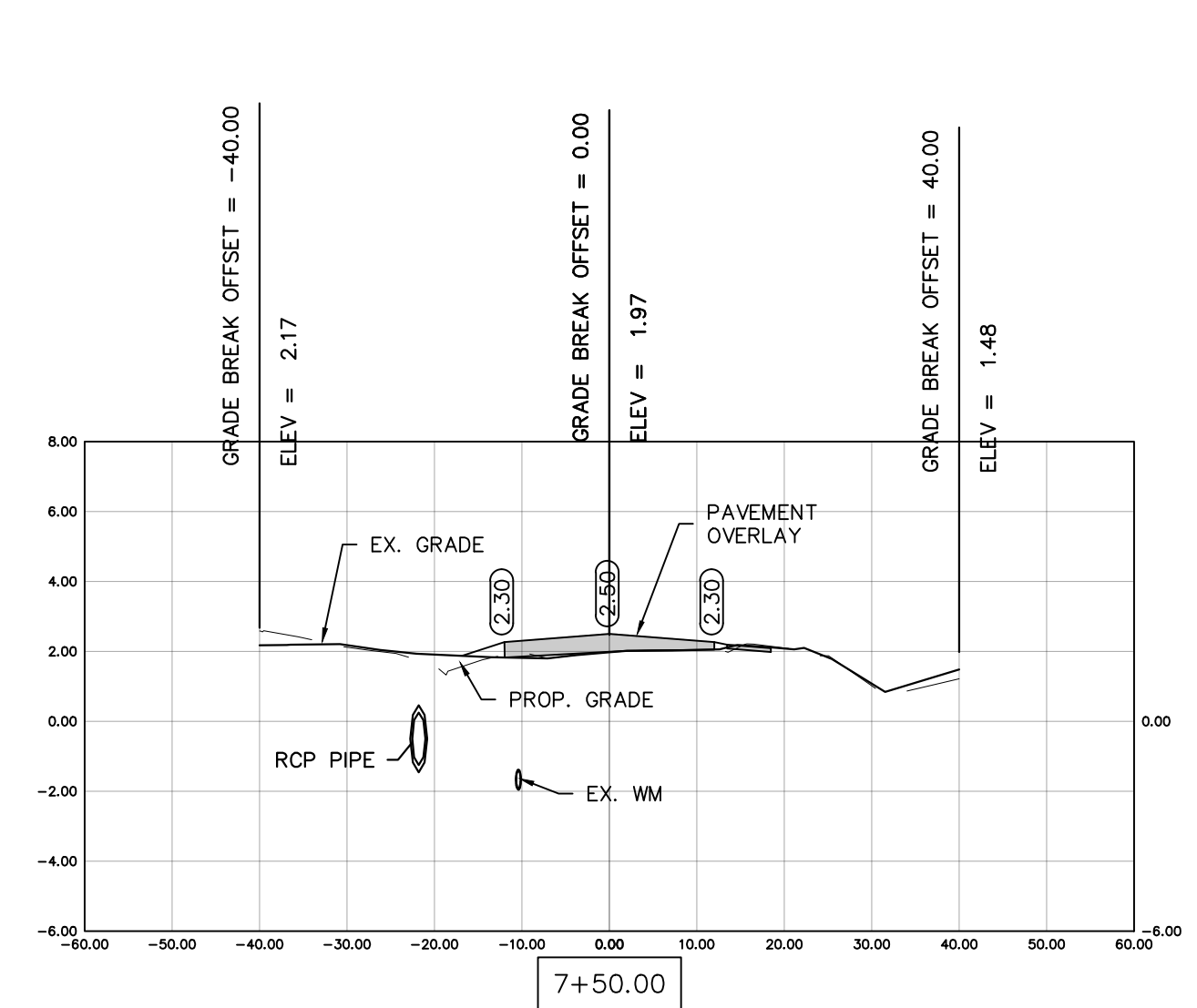
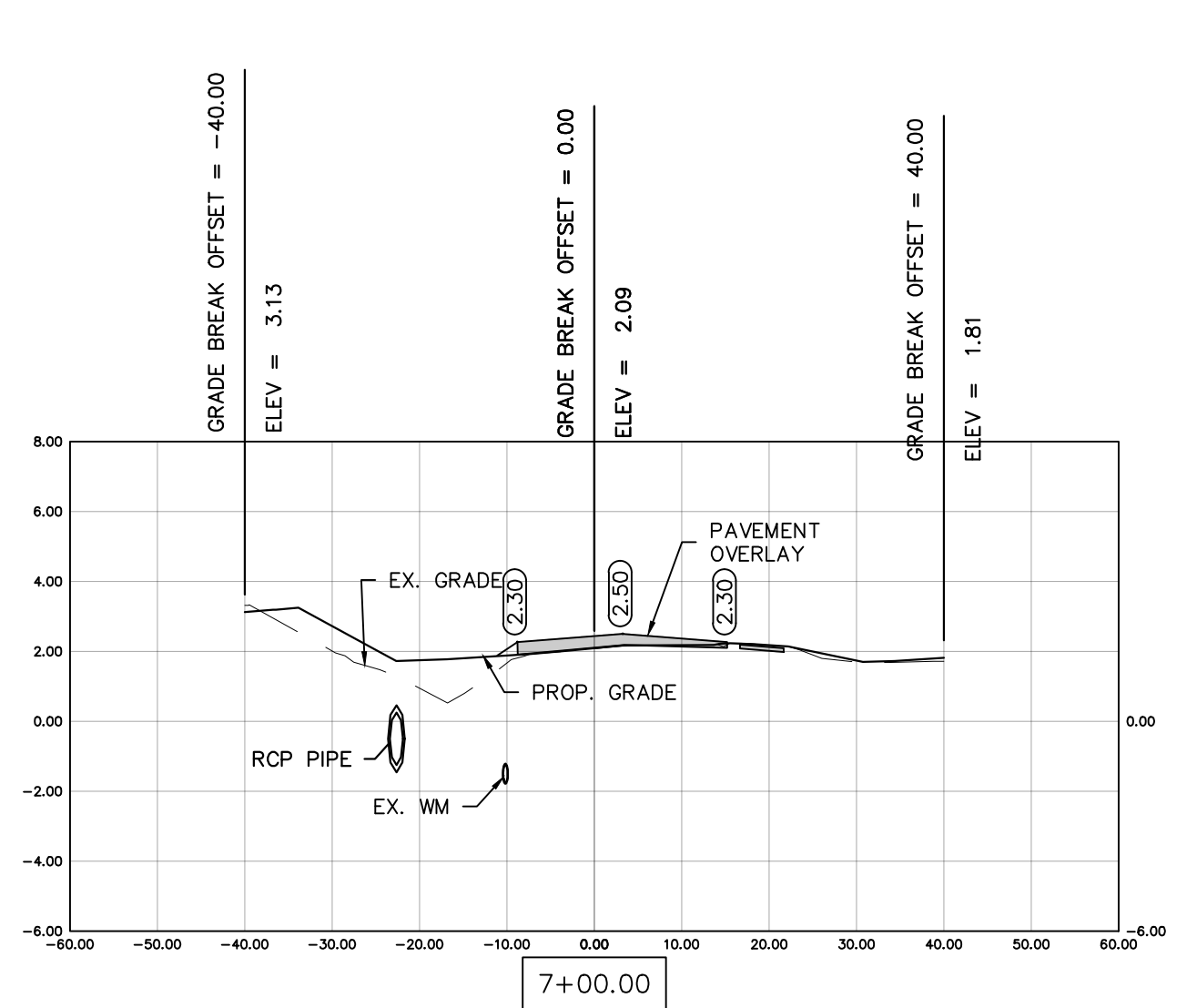
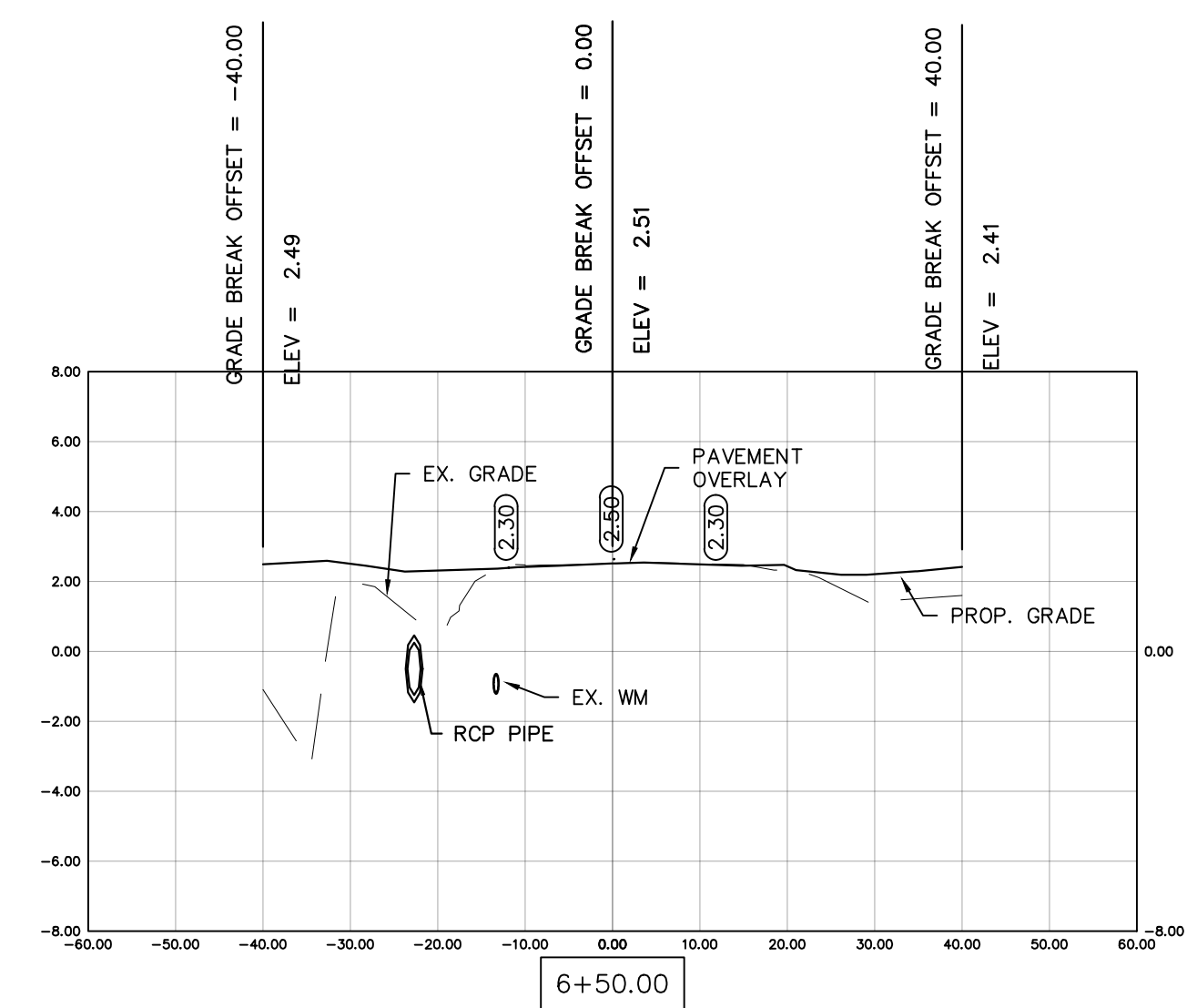
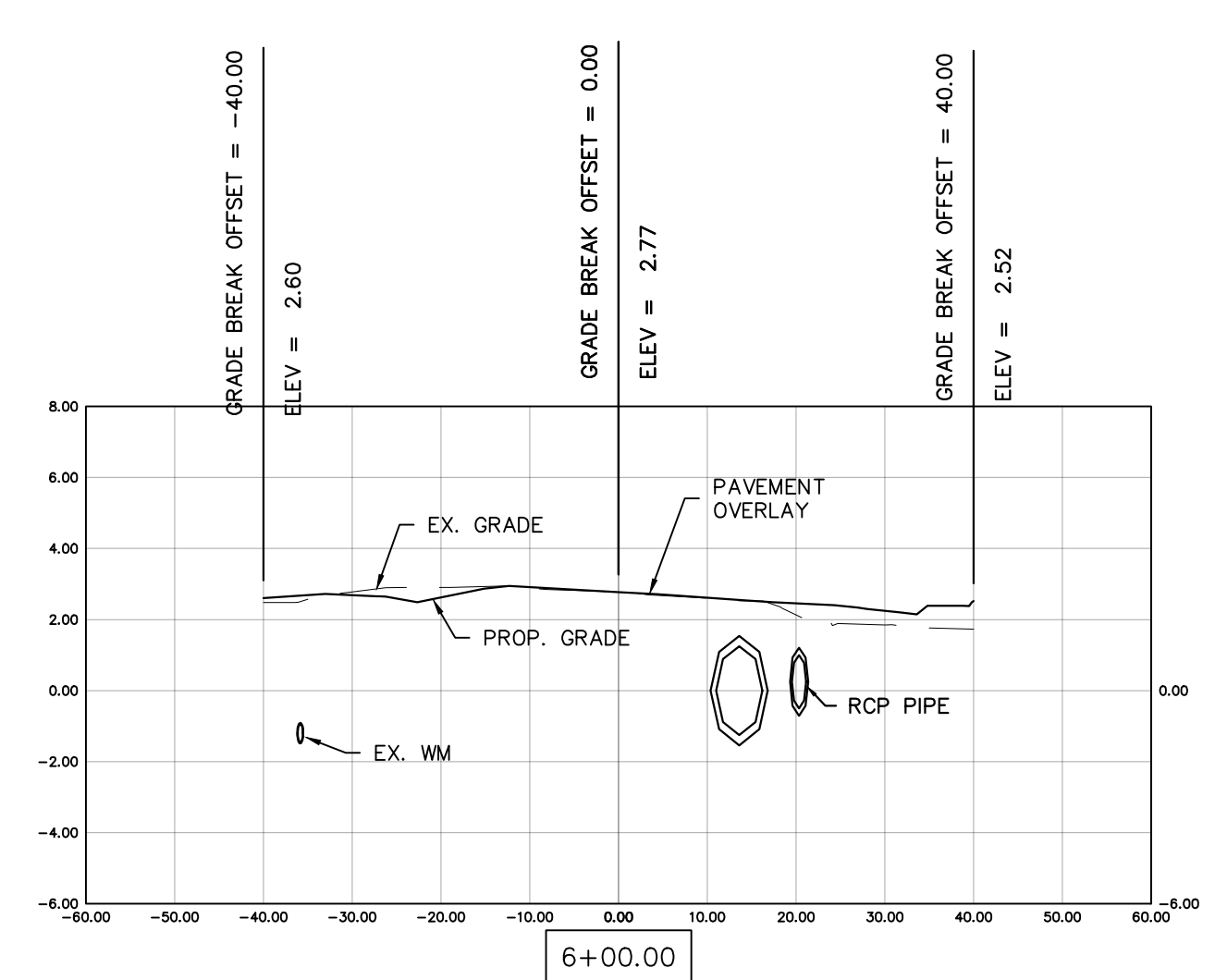
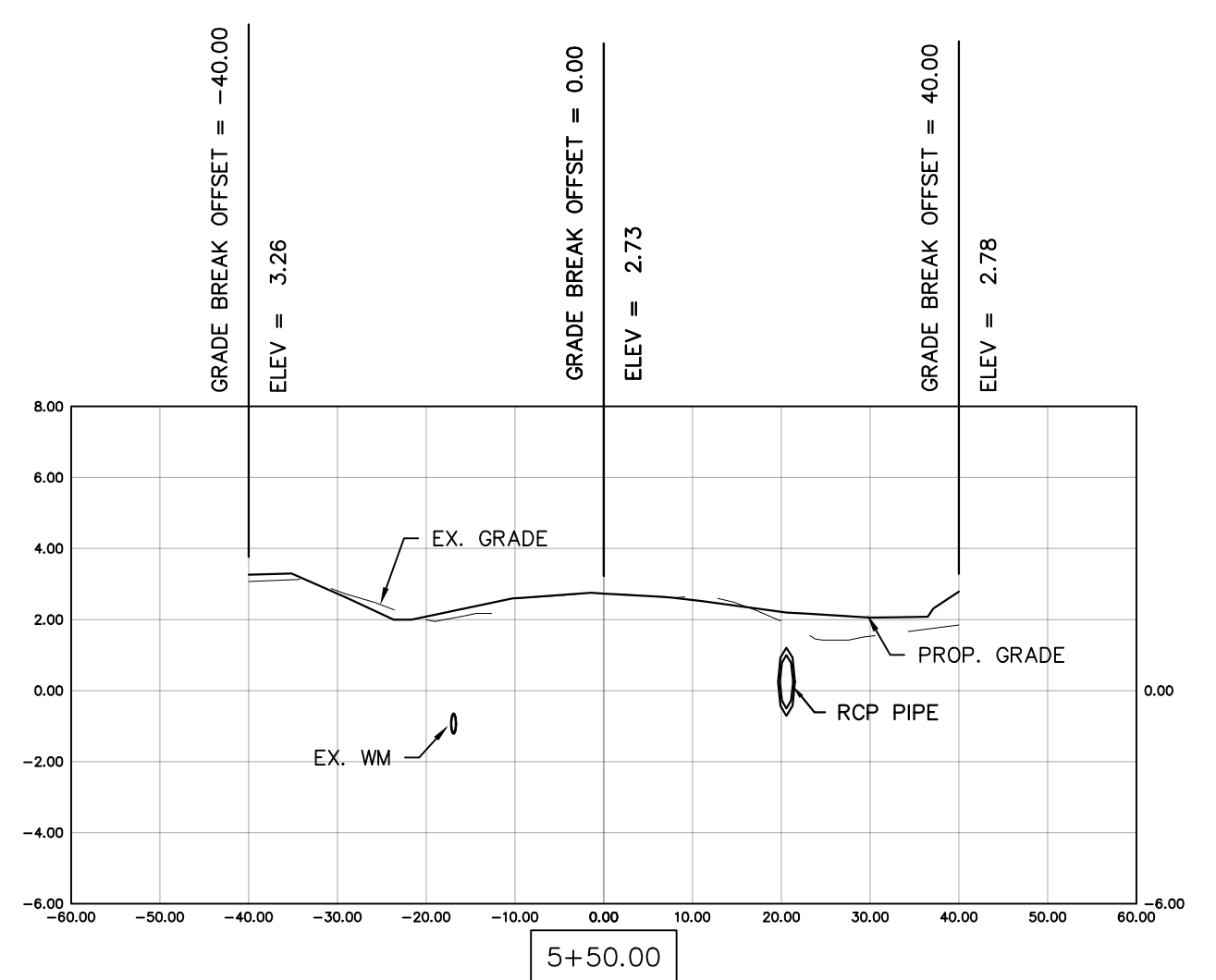
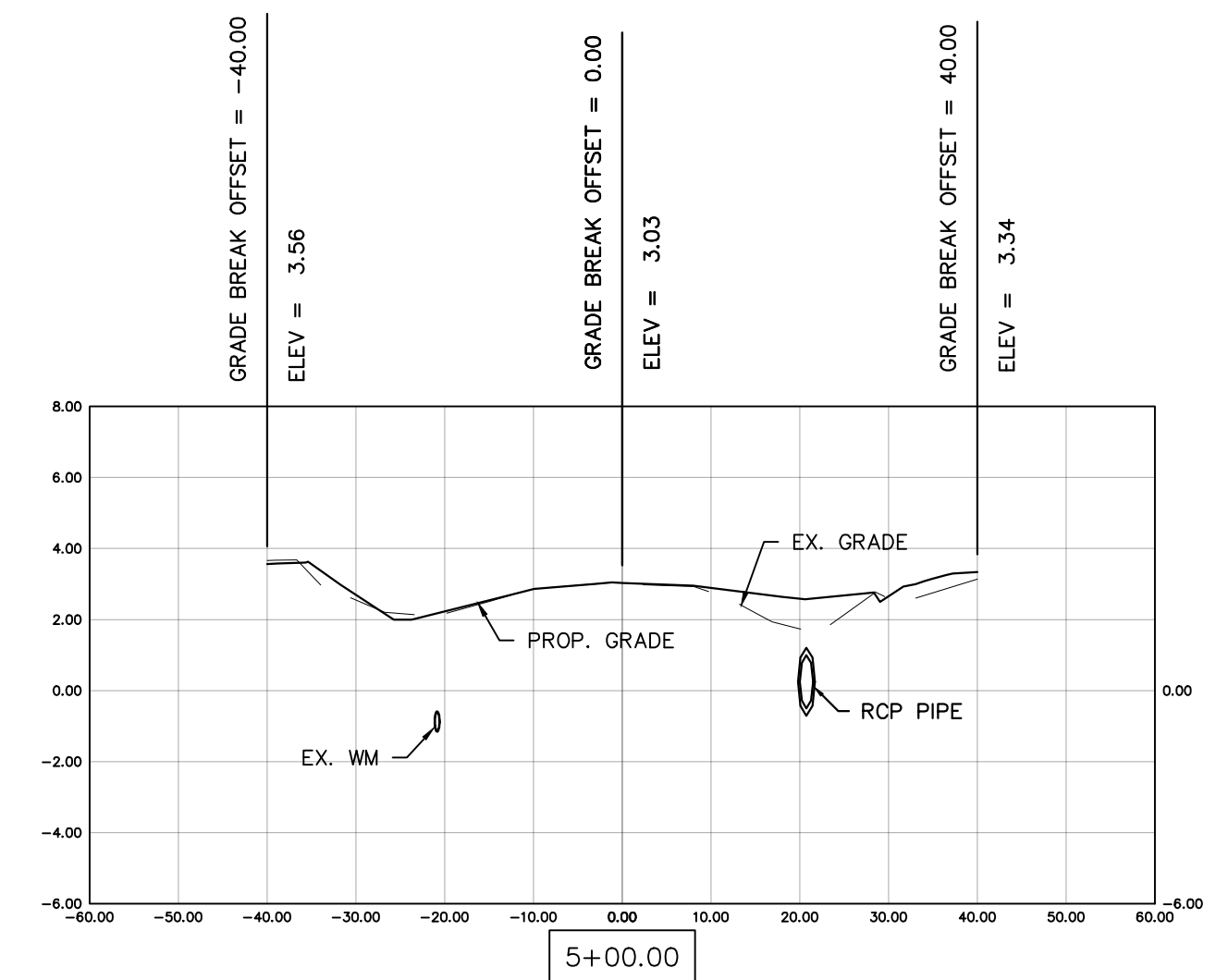
COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS

BECCA AVE. SECTIONS

Blot Engineering, Inc
Structural - Civil - Consulting
Edward M Blot
Professional Engineer
FL No 72816
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com
Florida State
Certificate of Authority #29553

PROJECT	22-005
ENGINEER	EMB
DATE	05/16/2022
DRAWING NUMBER	146
REVISION	B

REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	05/27/22	ISSUED FOR 30% REVIEW



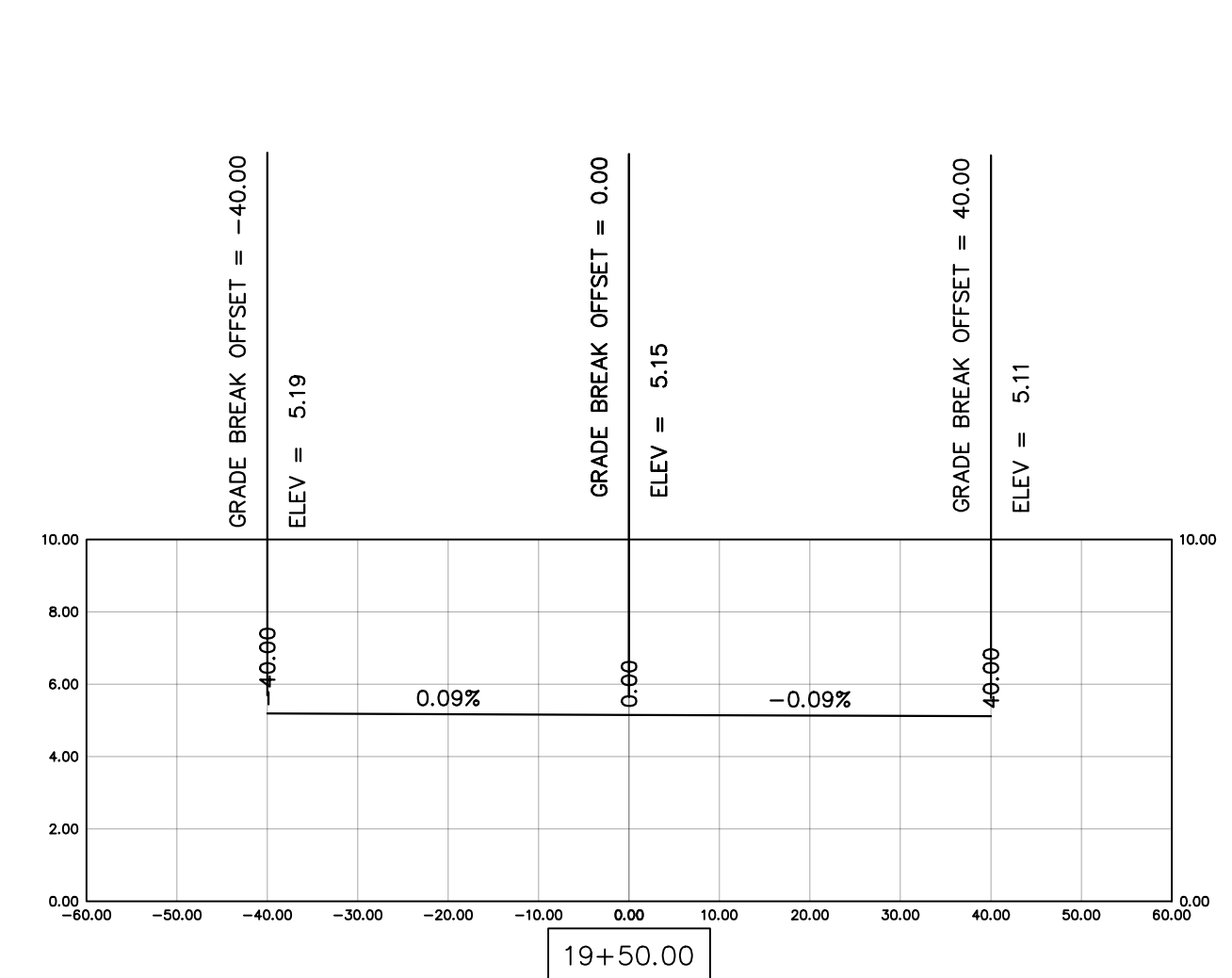
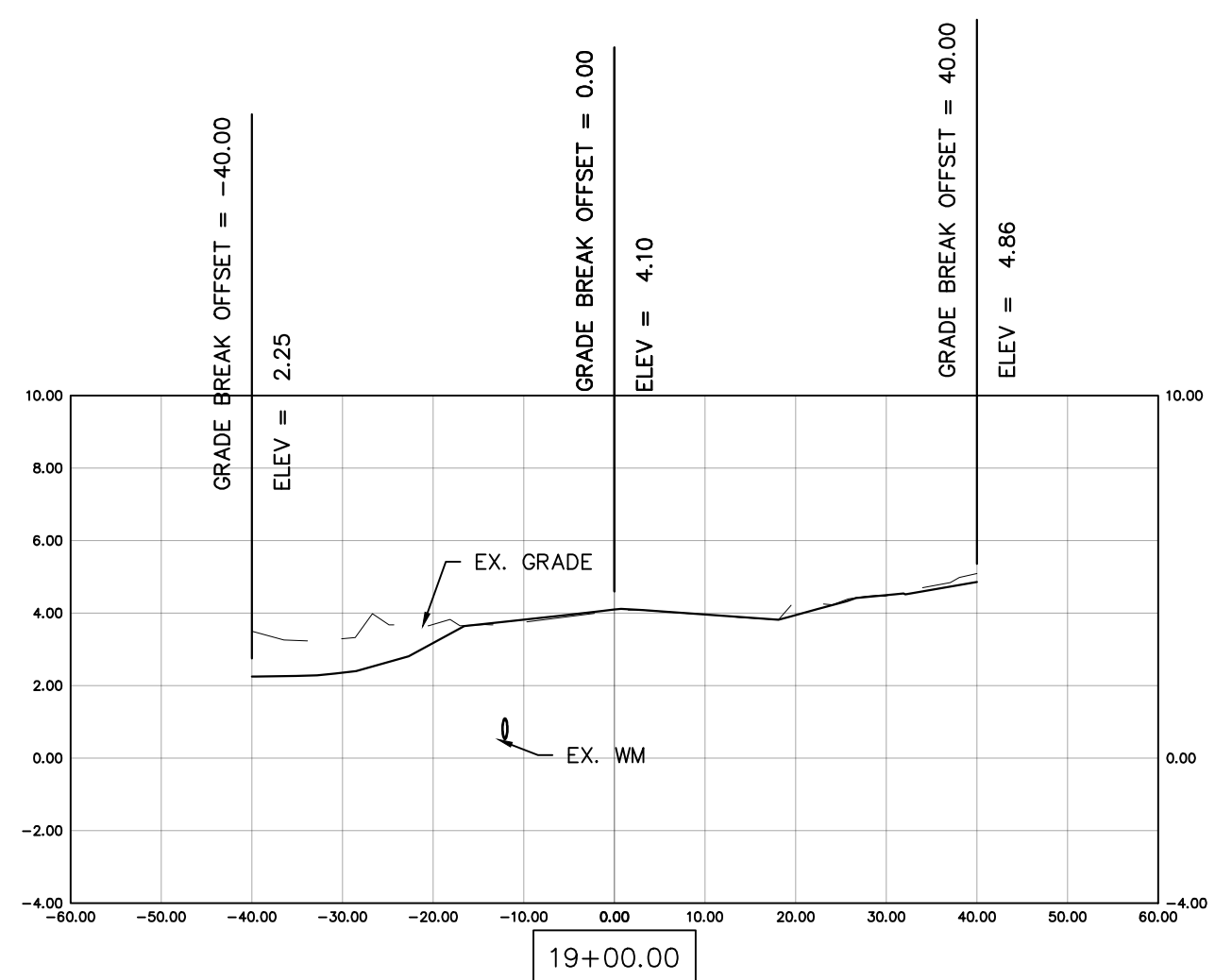
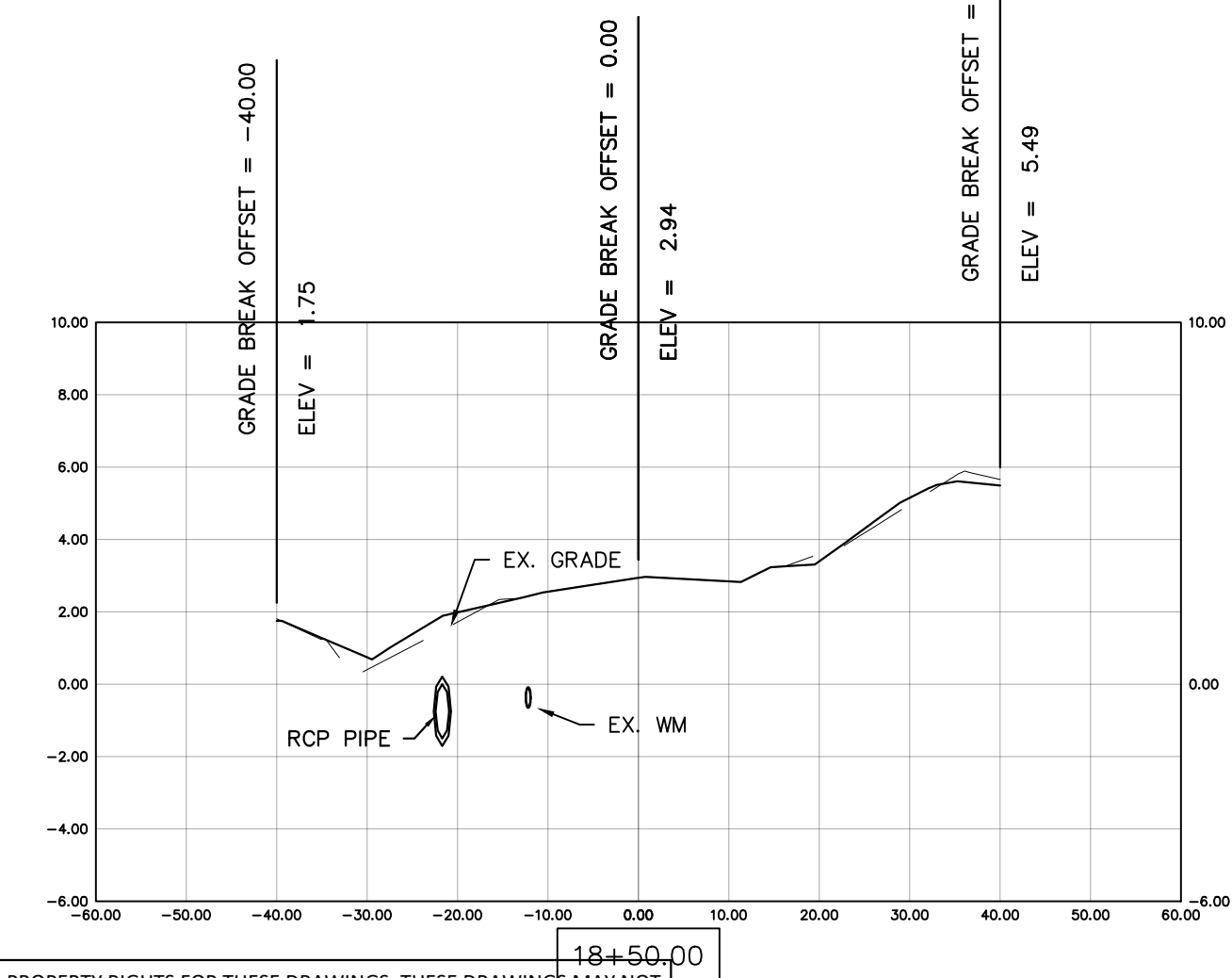
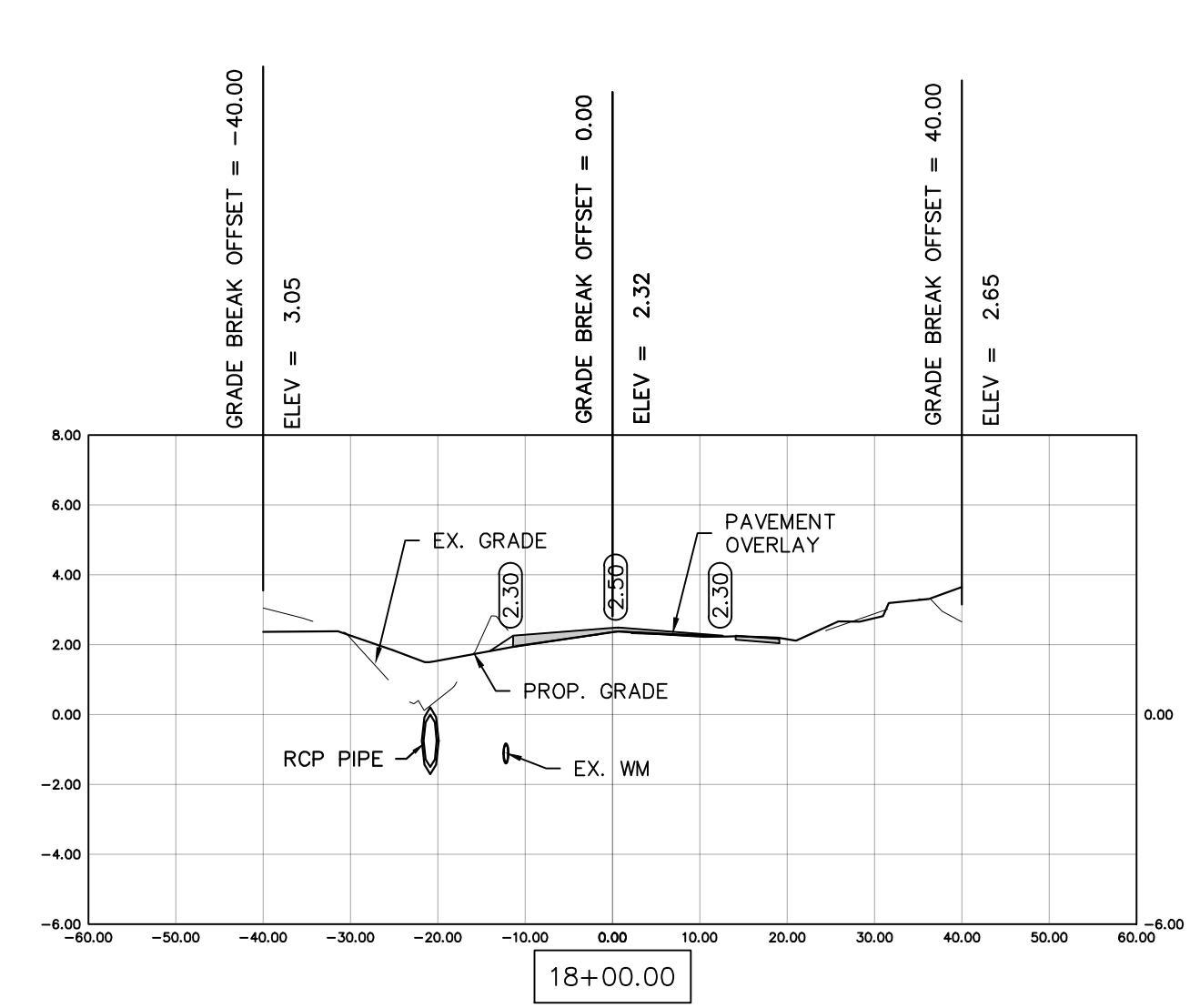
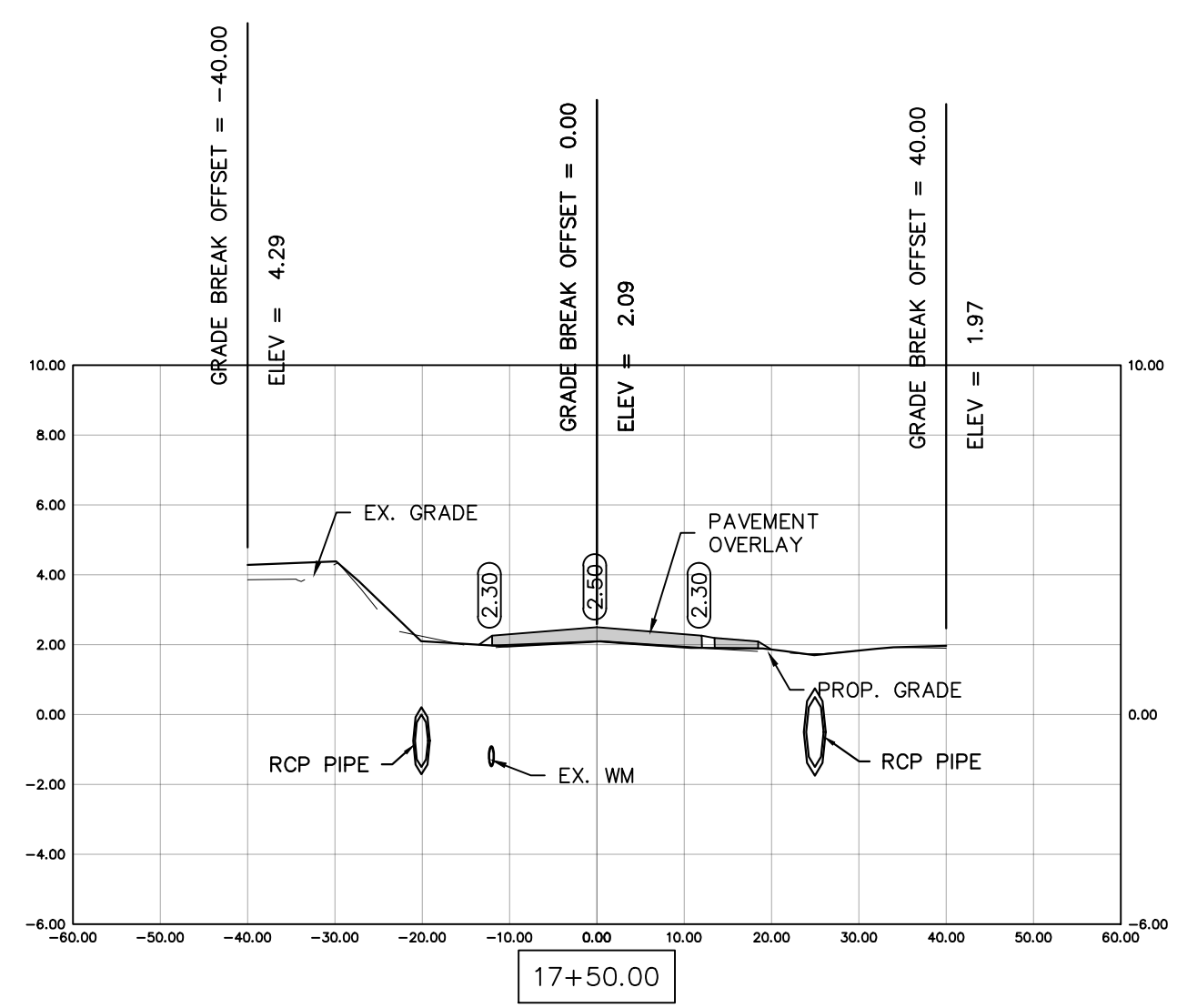
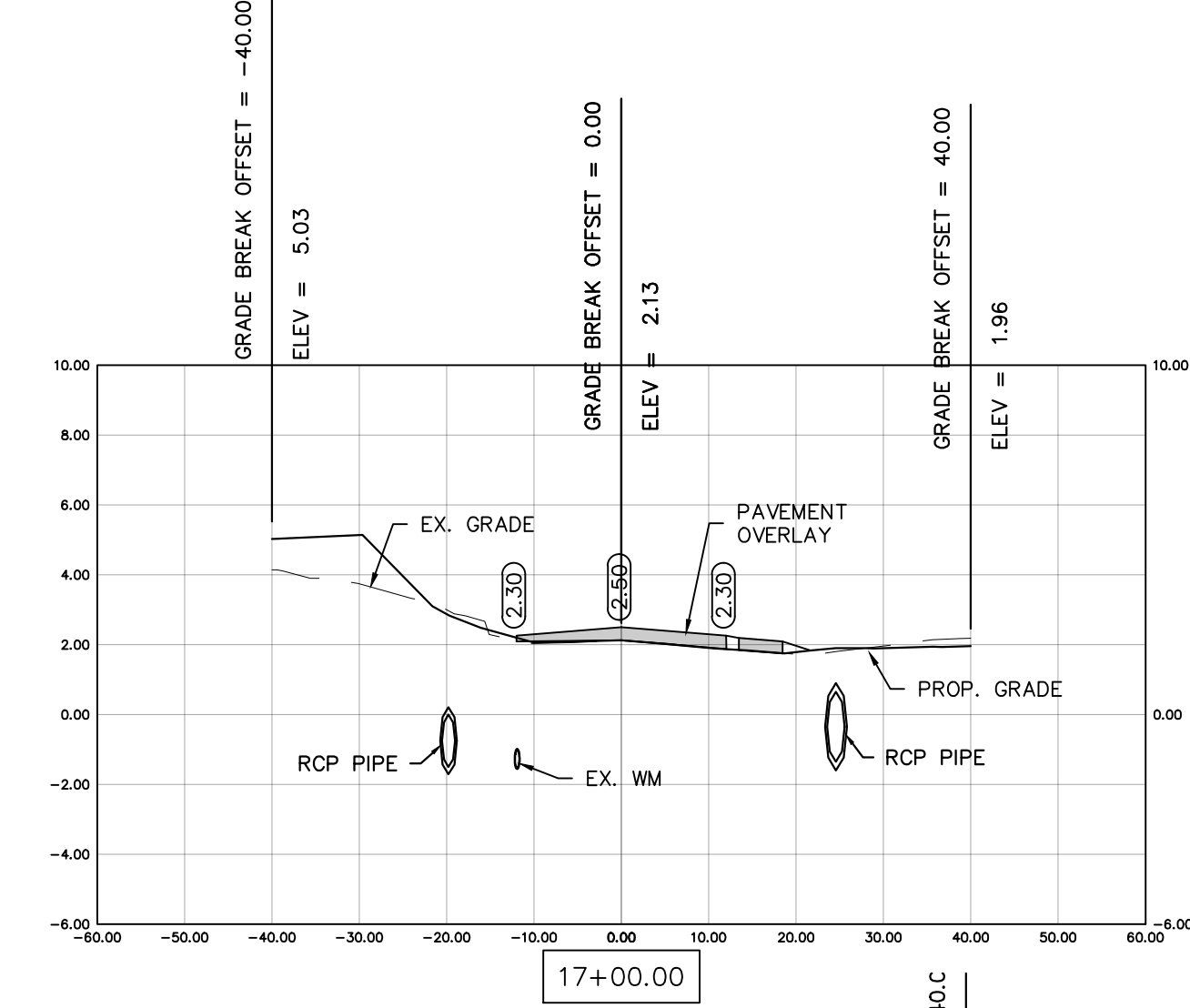
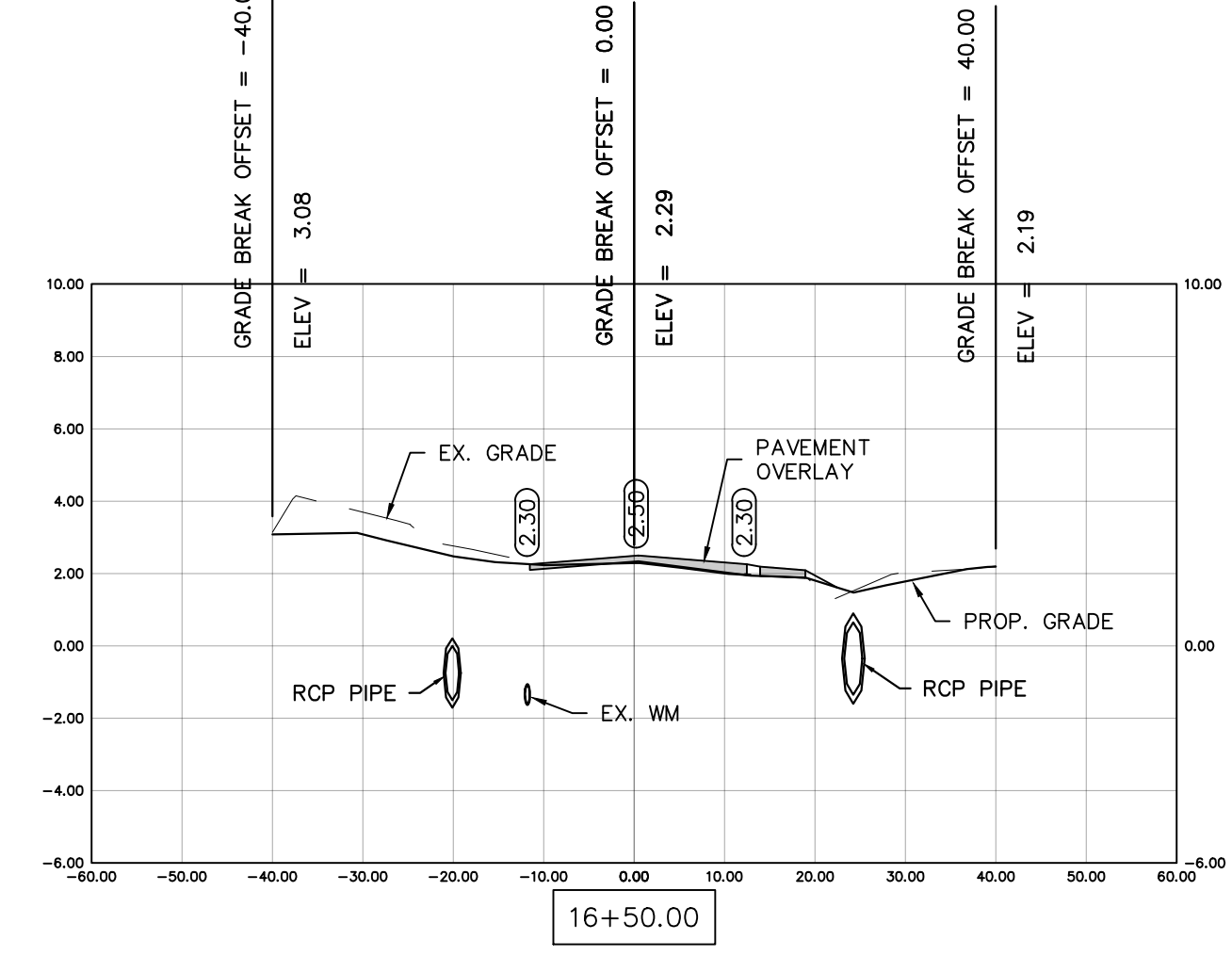
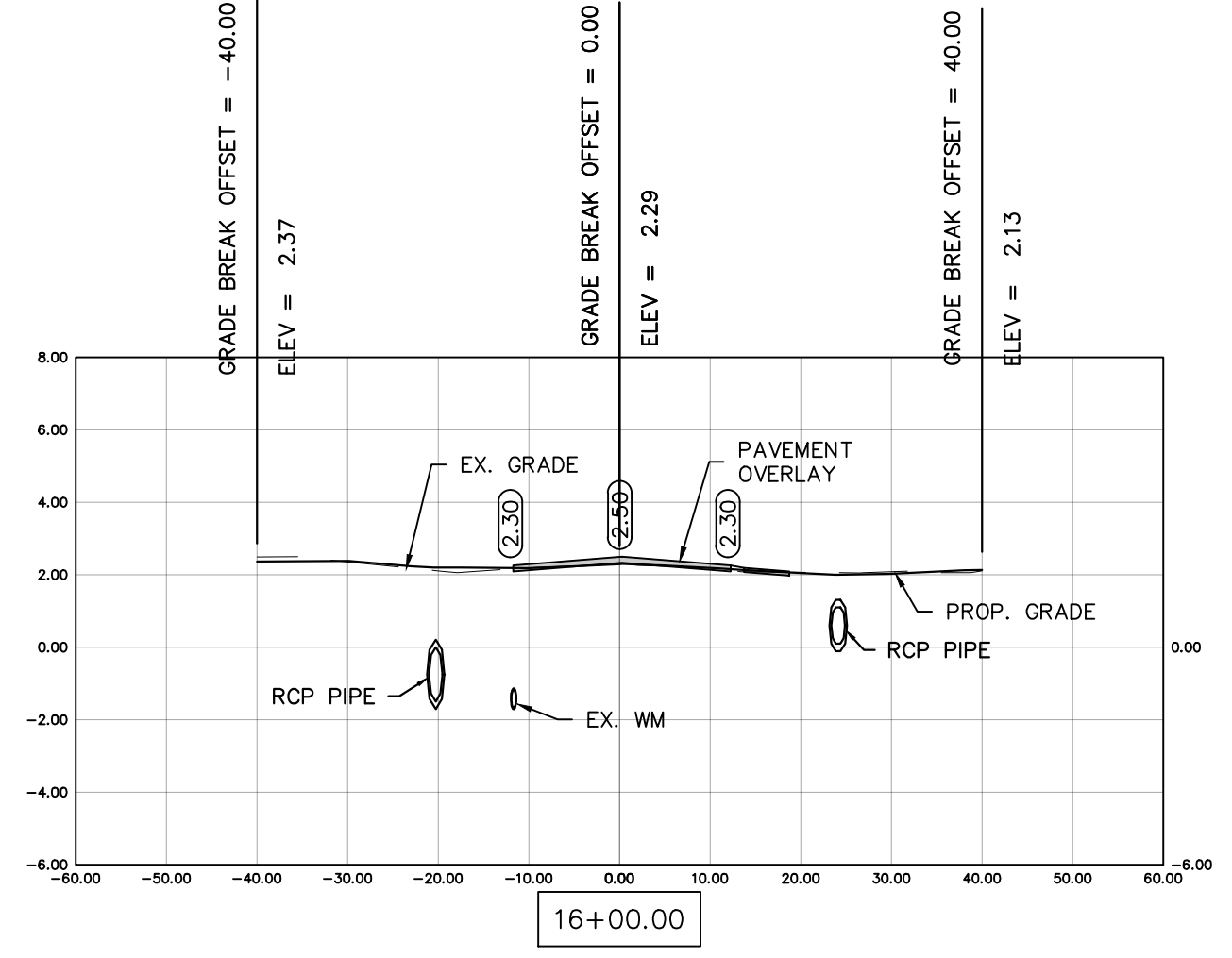
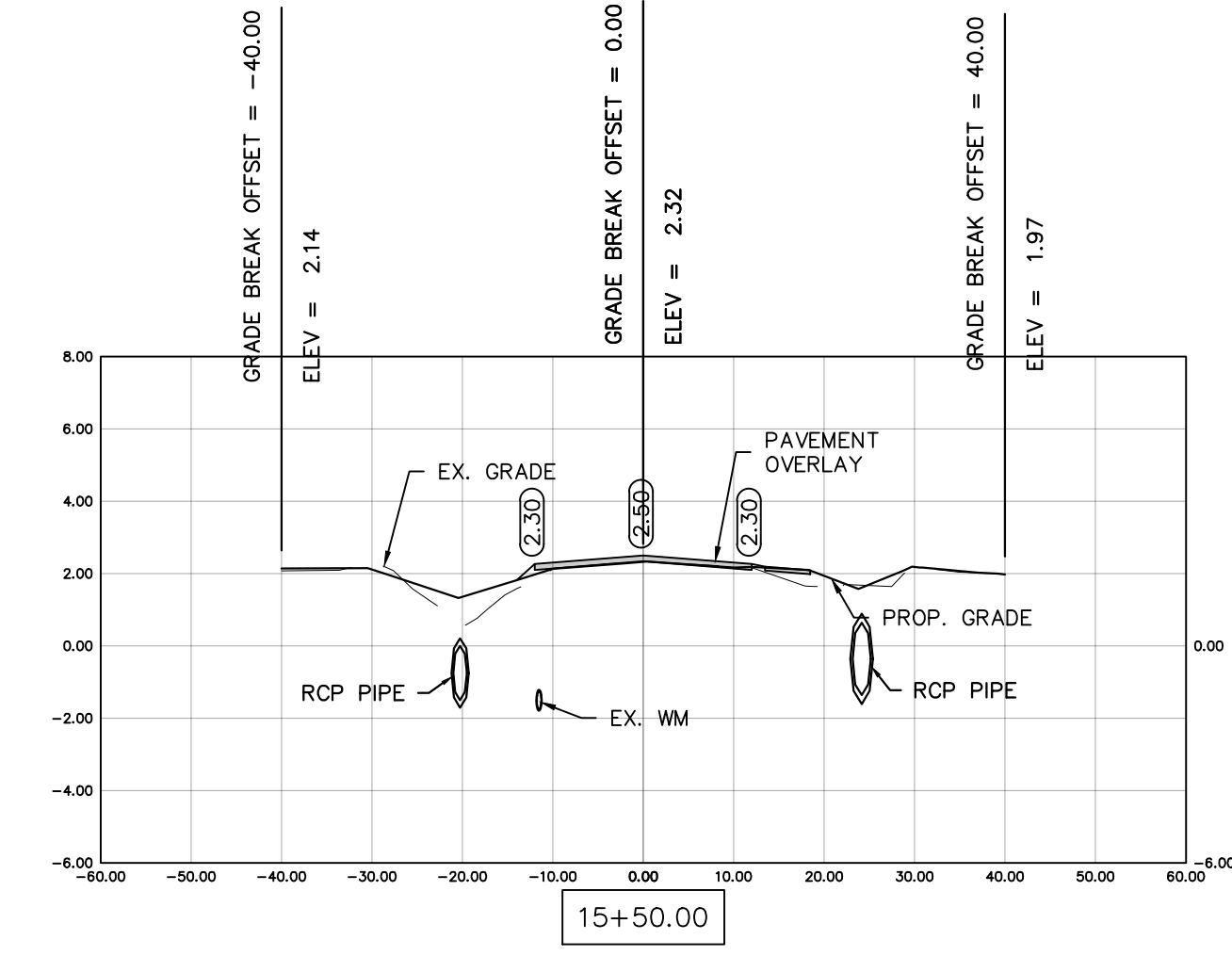
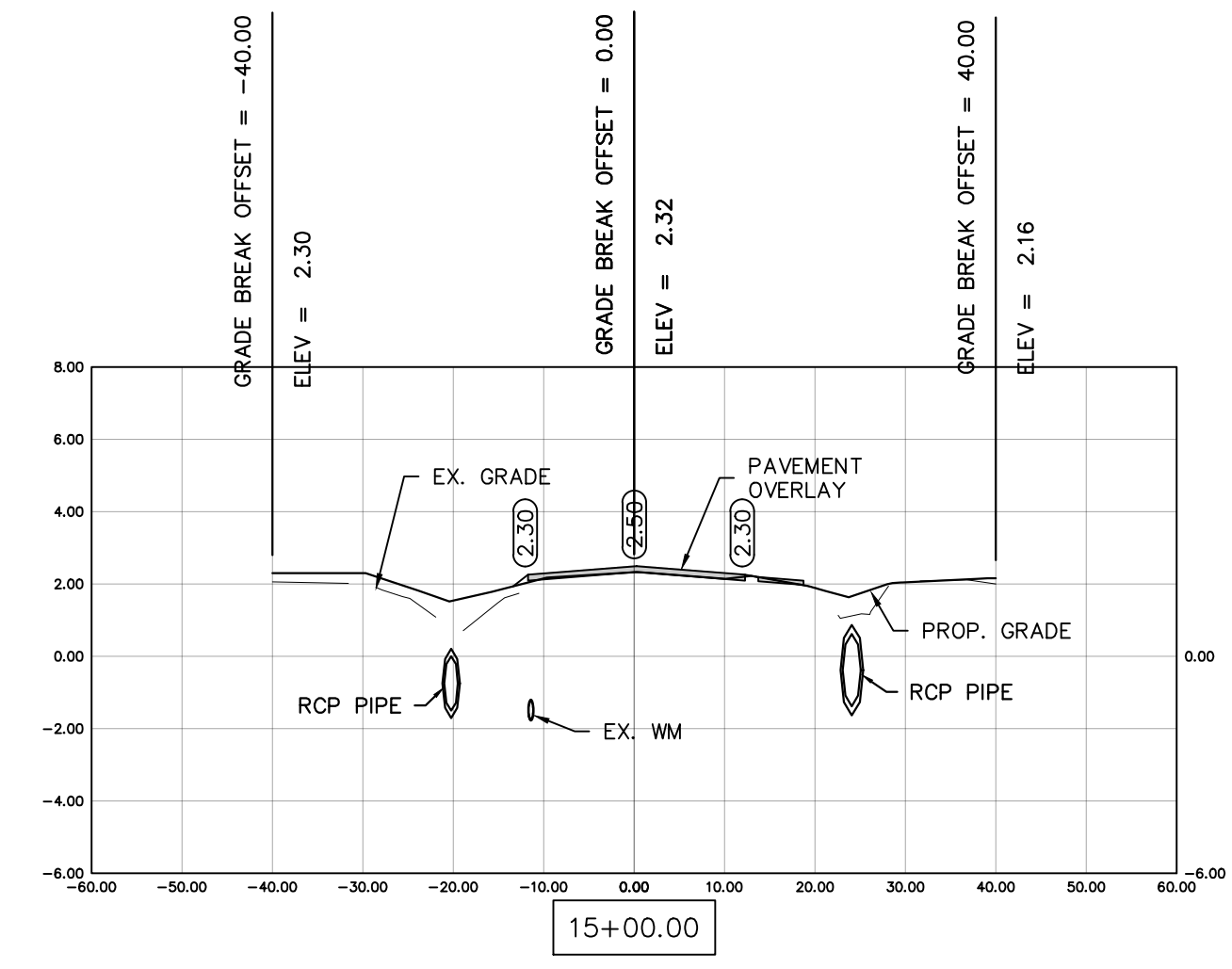
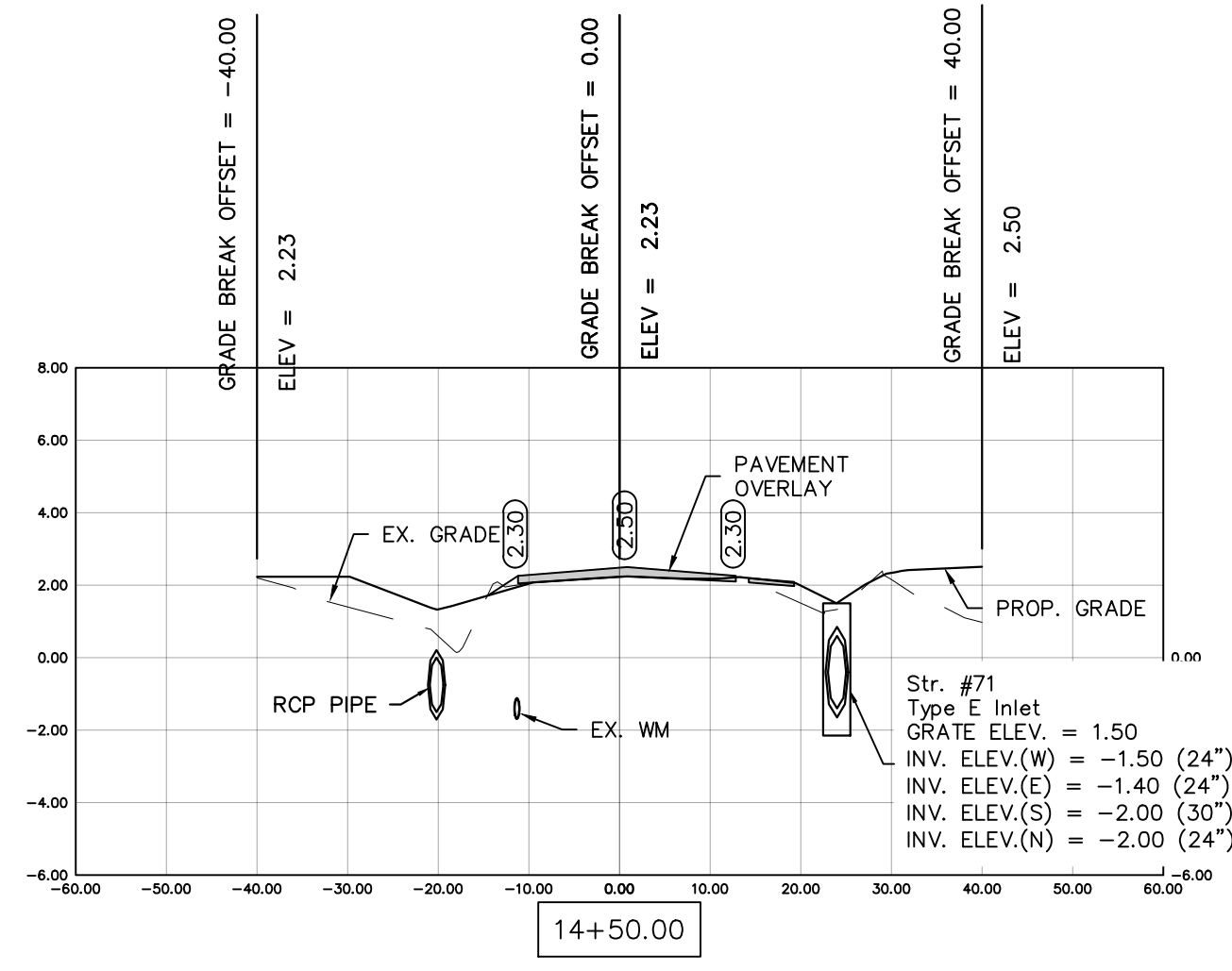
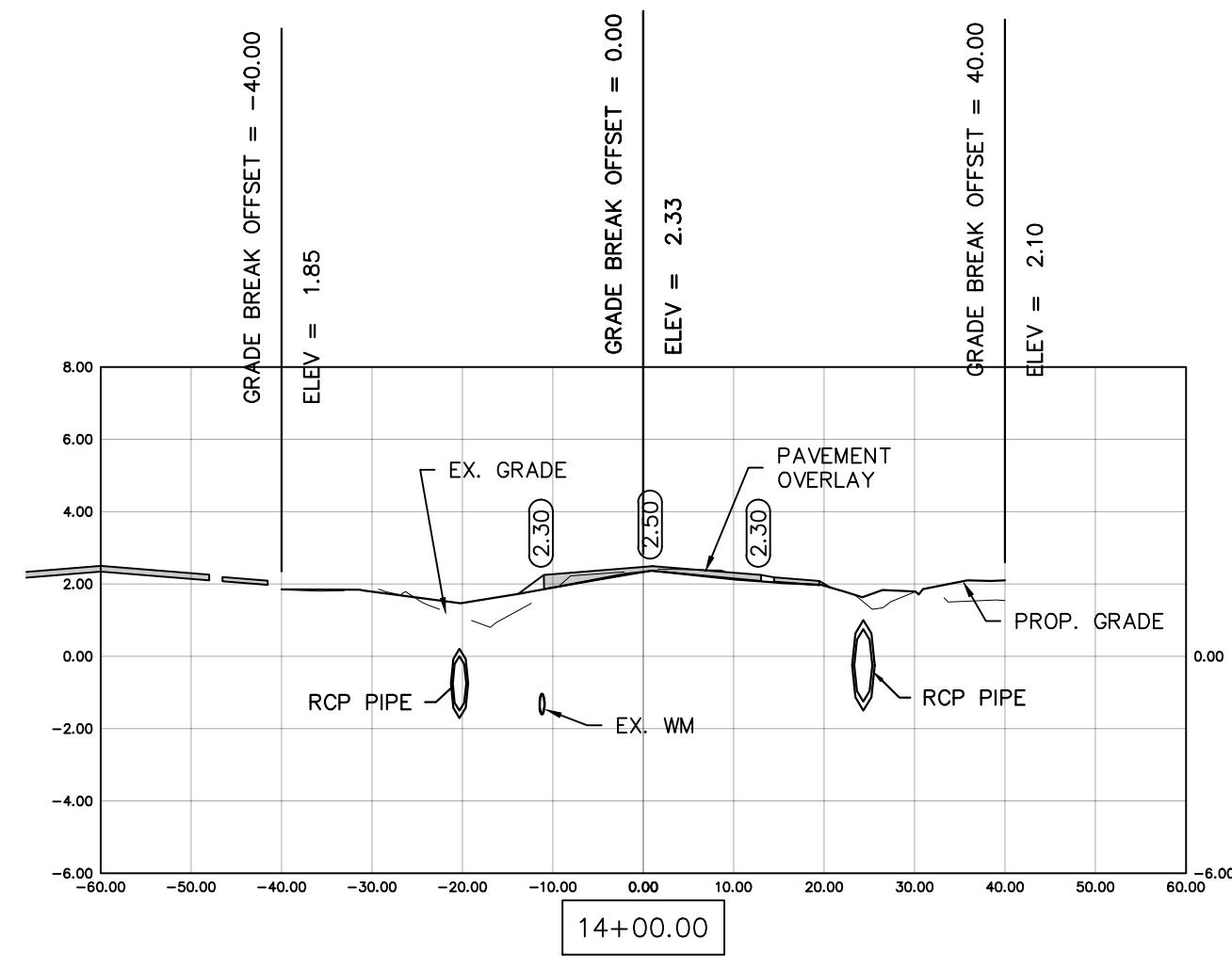
REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW

COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
BECCA AVE. SECTIONS

Blot Engineering, Inc
 Structural - Civil - Consulting
 Edward M. Blot
 Professional Engineer
 FL No 72816
 2804 S Del Prado Blvd Ste 101
 Cape Coral, FL 33904
 Office: (239) 257-1780
 www.blotengineering.com
 Florida State
 Certificate of Authority #29553

PROJ	22-005
ENGR	EMB
DATE	05/16/2022
DRAWING NUMBER	147
REV	B

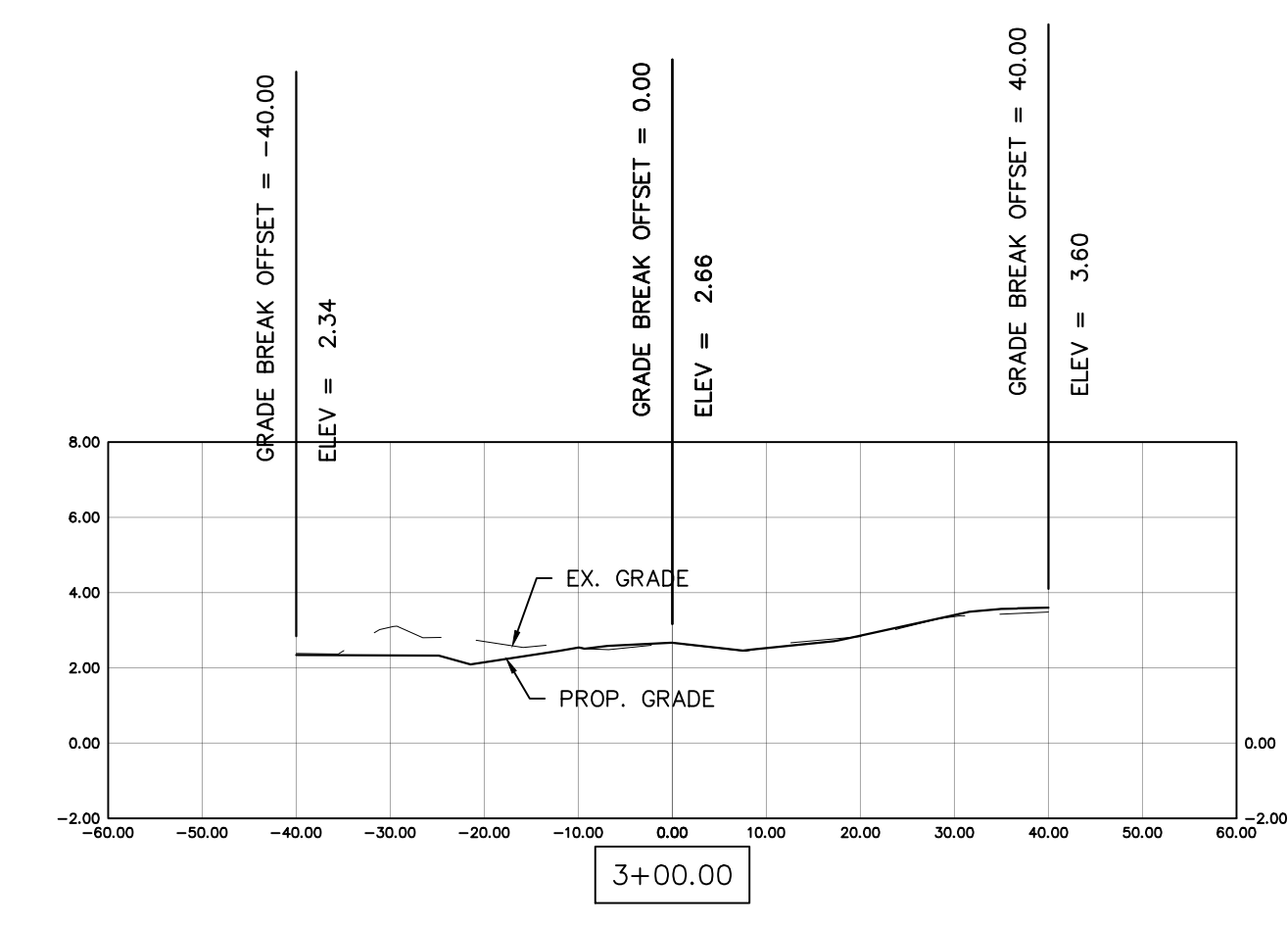
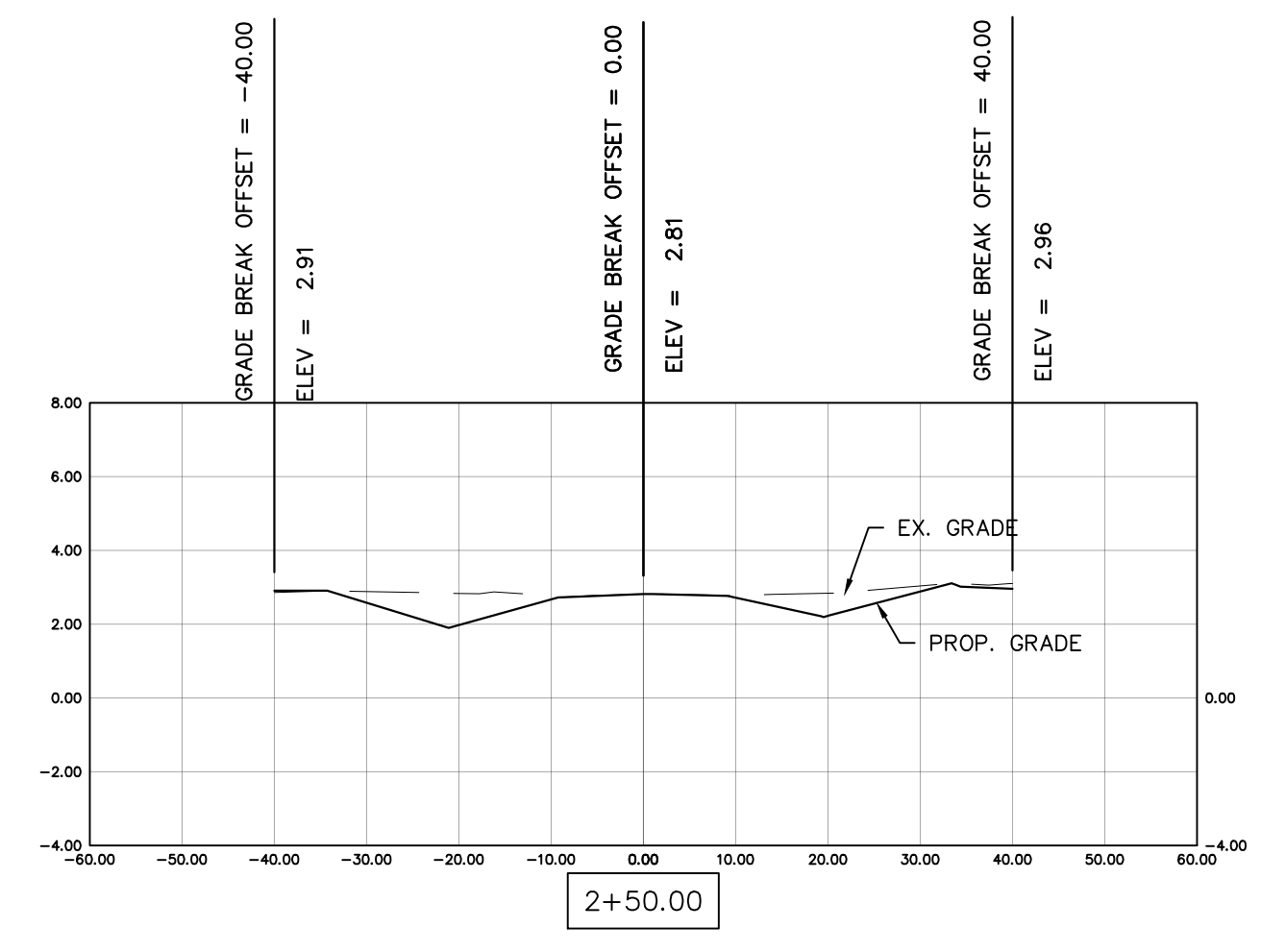
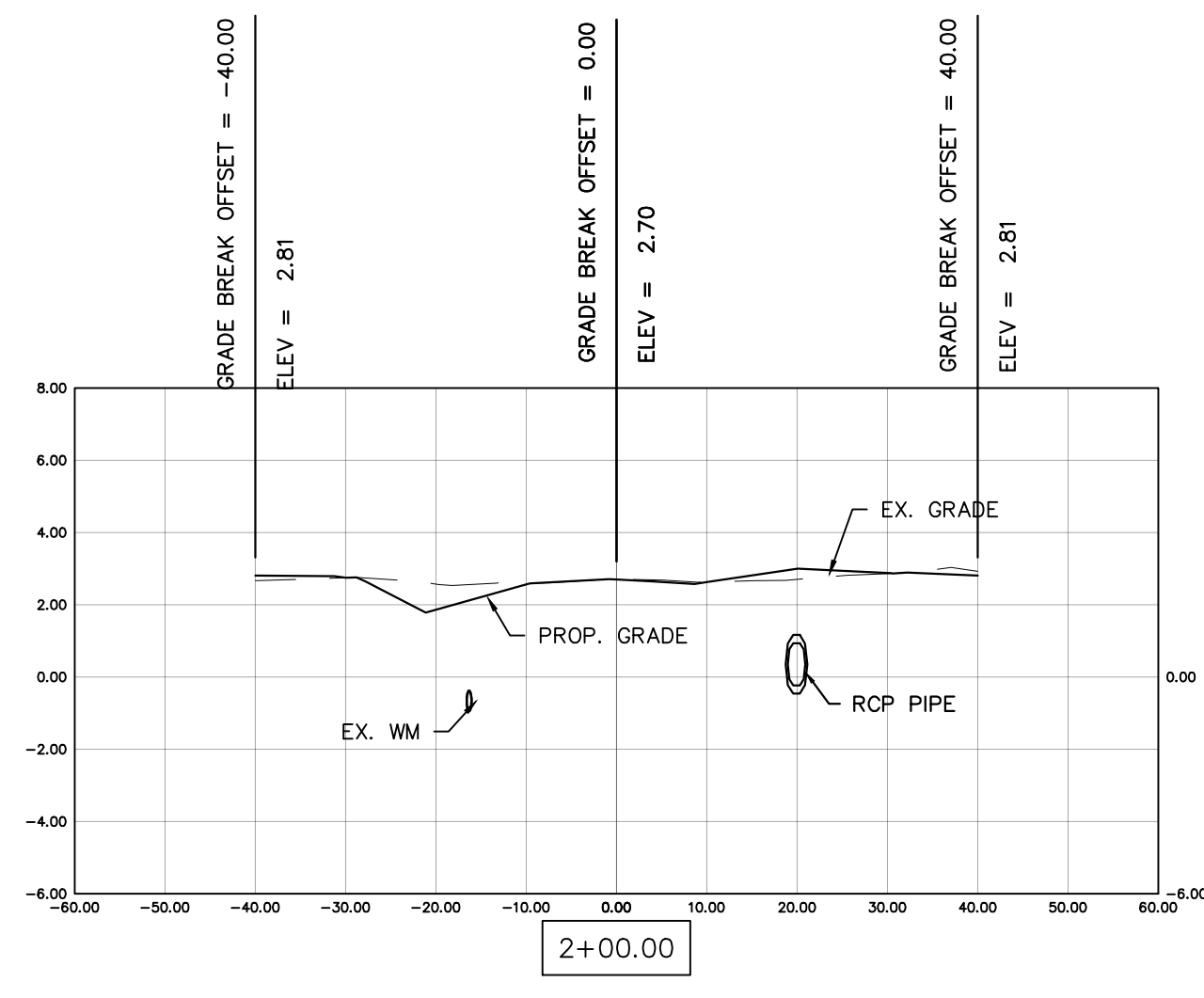
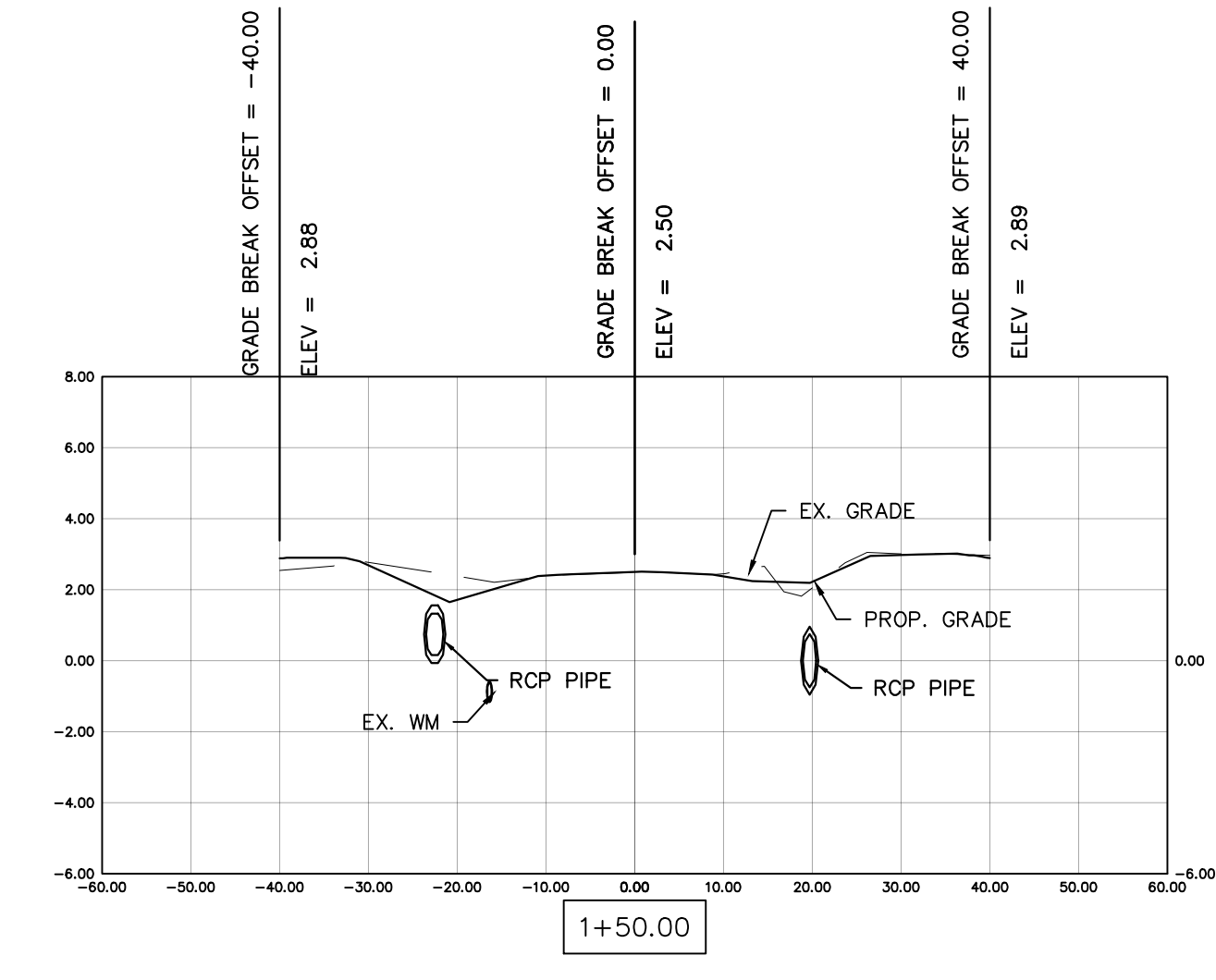
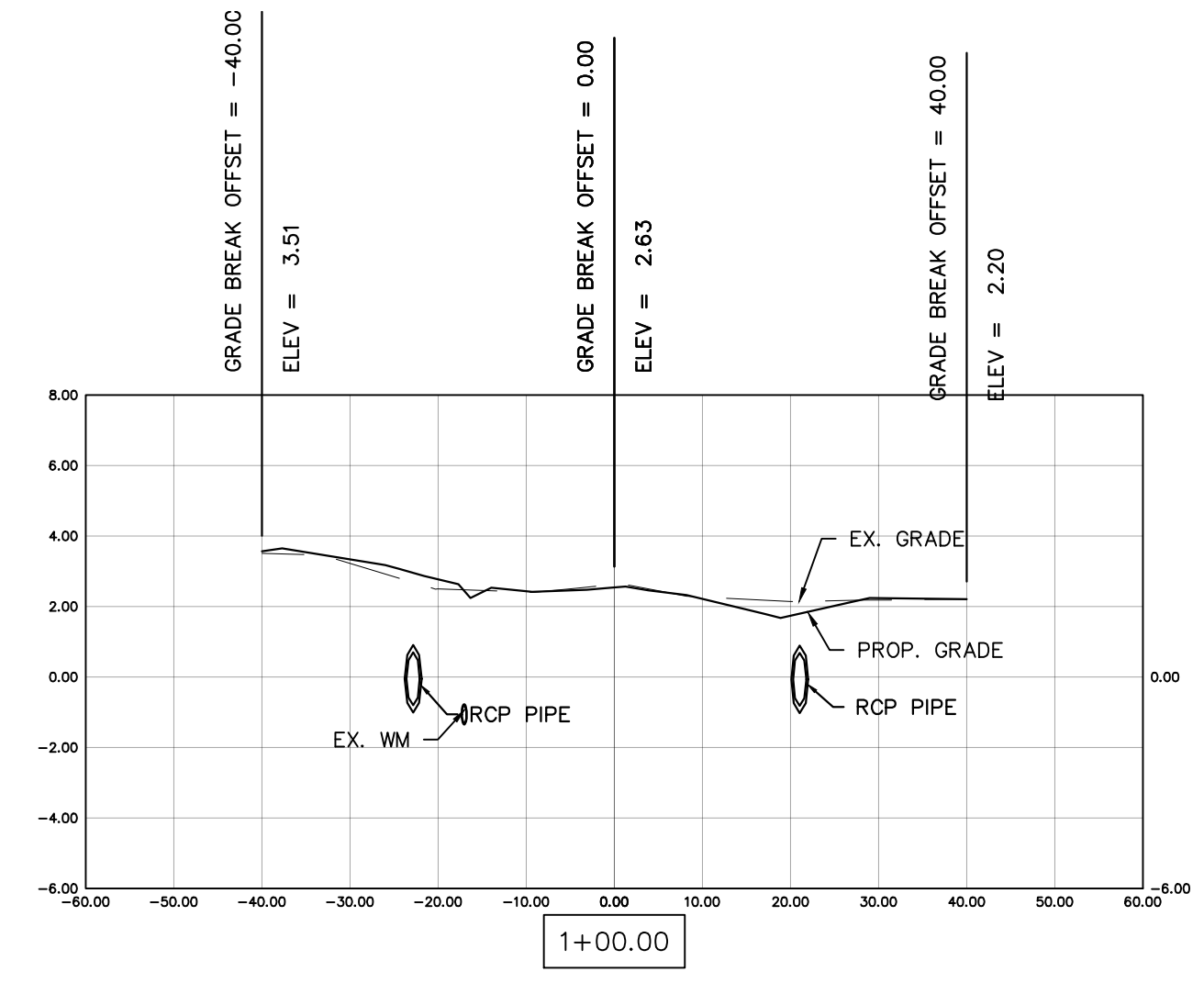
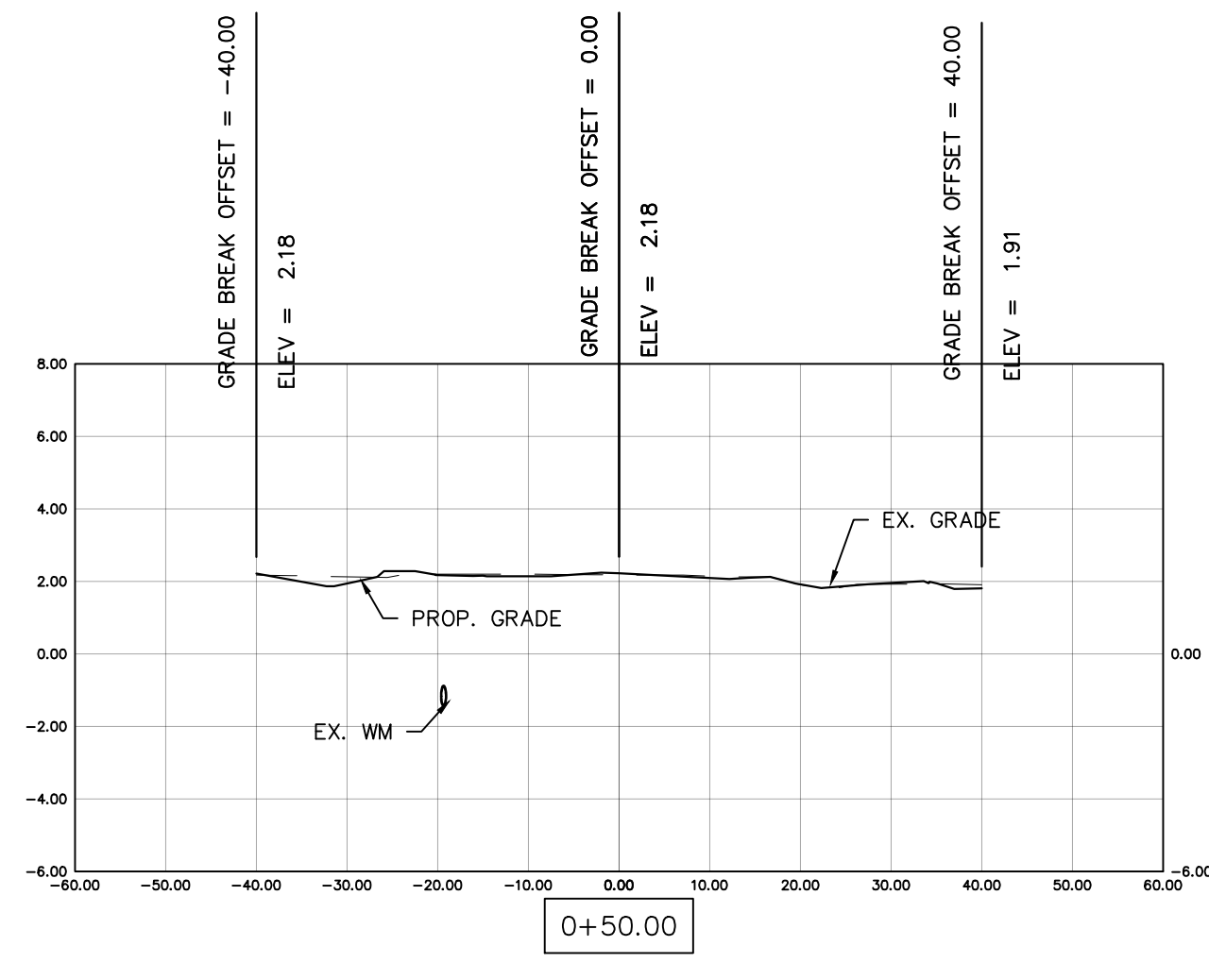
BLOT ENGINEERING, INC EXPRESSLY RESERVES ITS COPYRIGHT AND OTHER PROPERTY RIGHTS FOR THESE DRAWINGS. THESE DRAWINGS MAY NOT BE REPRODUCED, CHANGED OR COPIED TO ANY PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF BLOT ENGINEERING, INC © 2022



COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS
BECCA AVE. SECTIONS

Blot Engineering, Inc
Structural - Civil - Consulting
Edward M. Blot
Professional Engineer
FL No. 72816
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com
Florida State
Certificate of Authority #29553

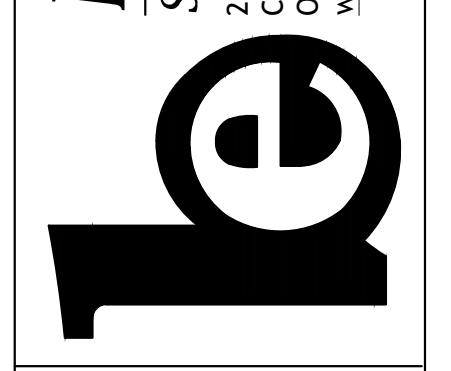
REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW



COLLIER COUNTY CRA
BAYSHORE AREA 1 STORMWATER IMPROVEMENTS

POPLAR ST. SECTIONS

Blot Engineering, Inc
Structural - Civil - Consulting
Edward M Blot
Professional Engineer
FL No 72816
2804 S Del Prado Blvd Ste 101
Cape Coral, FL 33904
Office: (239) 257-1780
www.blotengineering.com
Florida State
Certificate of Authority #29553



PROJ	22-005		
ENGR	EMB	DRWN	KP
DATE	05/16/2022		
DRAWING NUMBER	150	REV	B

REV	DATE	DESCRIPTION
B	04/10/23	ISSUED FOR 60% REVIEW
A	06/27/22	ISSUED FOR 30% REVIEW
		KP
		KP
		EMB
		EMB
		DWN
		CHK

