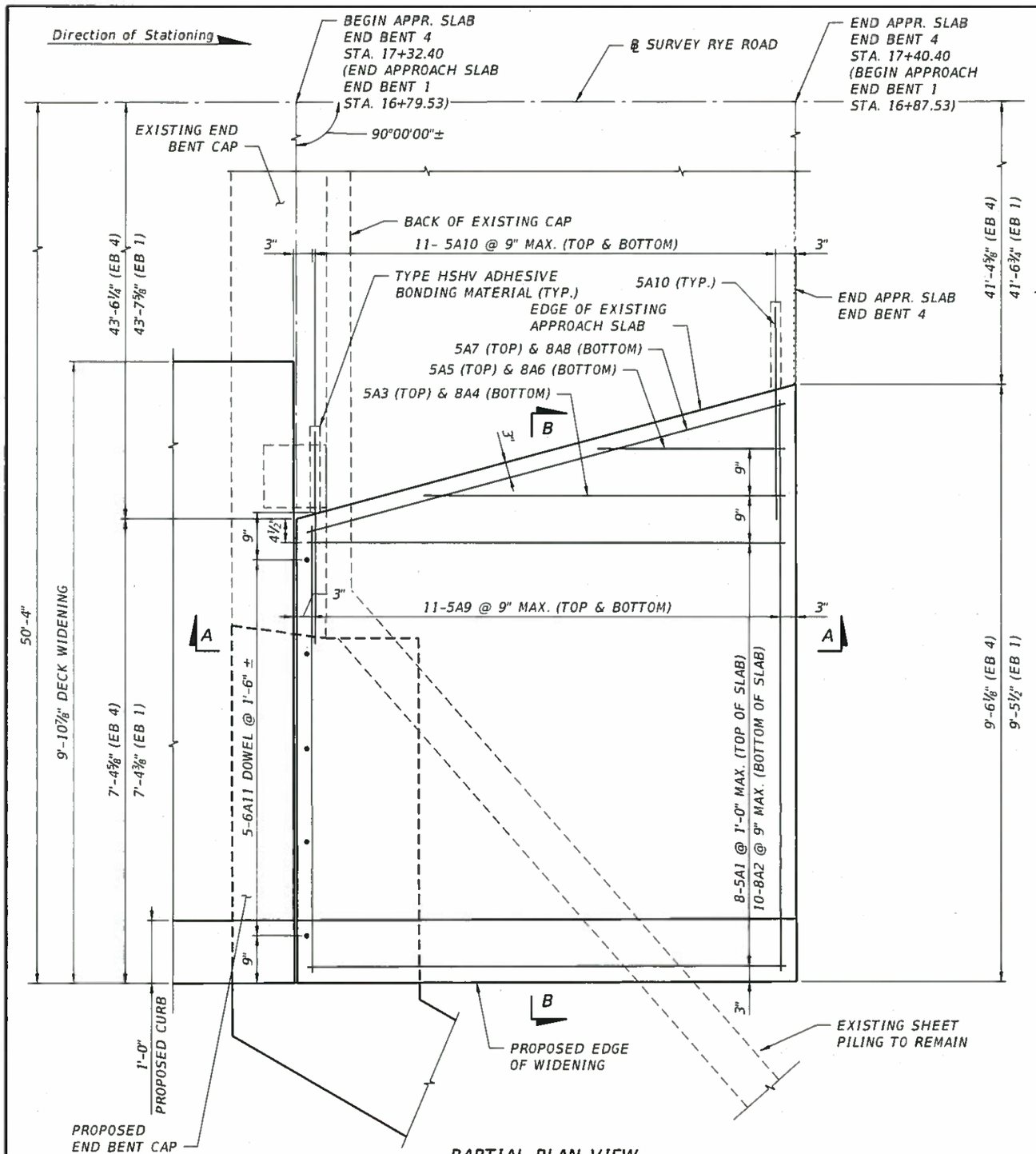
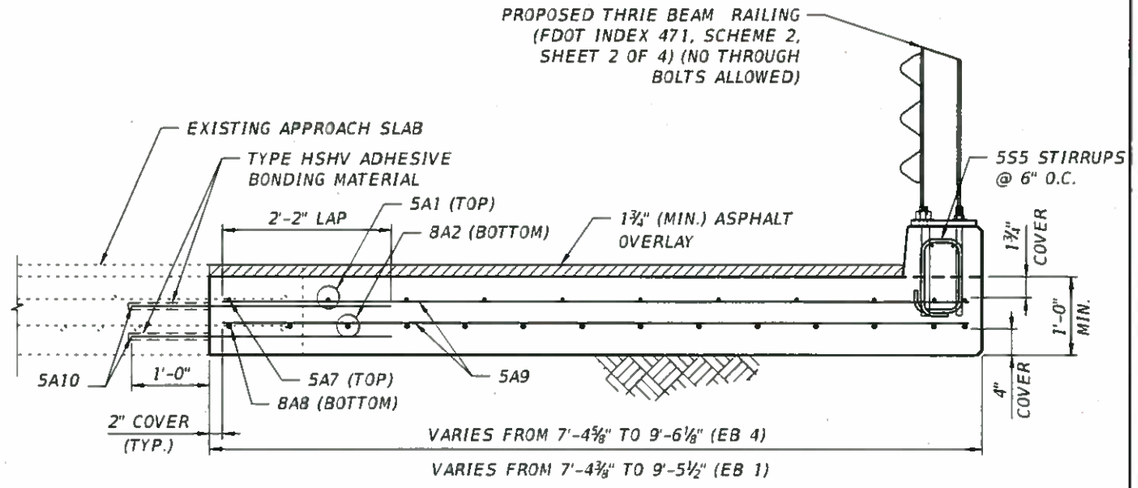


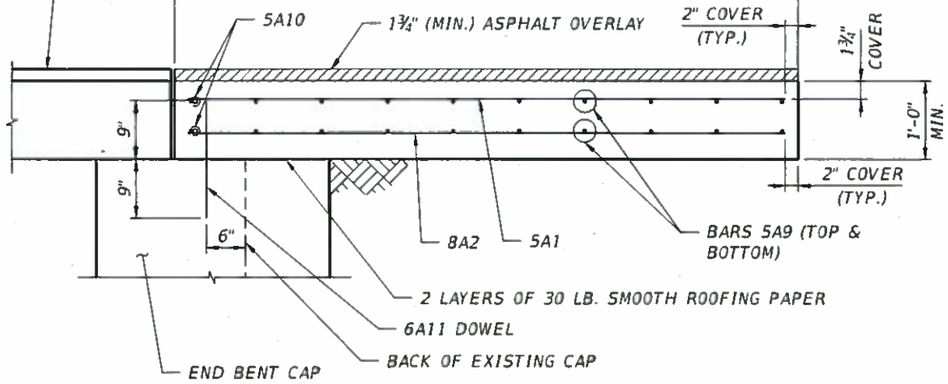
PARTIAL PLAN VIEW

END BENT (EB) 4 SHOWN, END BENT (EB) 1 SIMILAR



SECTION B-B

NOTE: ADJUST BARS 5A7 TO AVOID CONFLICT WITH EXISTING APPROACH SLAB REINFORCING.



SECTION A-A

ANANDA BERGERON KELLEY
LICENSE
NO 65632
STATE OF FLORIDA
PROFESSIONAL ENGINEER
11-23-16

BRIDGE NO. 134025

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MAV
DRAWN BY: APP
CHECKED BY:

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE: 4/2016
PROJECT NO.: 225338

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: ANANDA B. KELLEY
FL. LICENSE NO.: 65632

APPROACH SLAB

SHEET NO.: BI-13

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MARK		LENGTH	NO	TYP	STY		B	C	D	E	F	H	J	K	N	Ø
SIZE	DES	FT IN	BARS	BAR	A	G	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	NO	ANG
		LOCATION SUPERSTRUCTURE DECK SPAN 1									NO. REQUIRED = 1					
7	S1	14- 8	36	1			14- 8									
5	S4	8- 6	66	1			8- 6									
5	S5	3-10	33	4	4	4	0-11	0- 6								
5	S6	14- 8	4	1			14- 8									
5	S9	1- 6	65	10			1- 0	0- 6								
		LOCATION SUPERSTRUCTURE DECK SPAN 2									NO. REQUIRED = 1					
7	S2	14- 8	36	1			14- 7 ½									
5	S4	8- 6	66	1			8- 6									
5	S5	3-10	33	4	4	4	0-11	0- 6								
5	S7	14- 8	4	1			14- 7 ½									
5	S9	1- 6	65	10			1- 0	0- 6								
		LOCATION SUPERSTRUCTURE DECK SPAN 3									NO. REQUIRED = 1					
7	S3	14- 4	36	1			14- 3 ½									
5	S4	8- 6	60	1			8- 6									
5	S5	3-10	30	4	4	4	0-11	0- 6								
5	S8	14- 4	4	1			14- 3 ½									
5	S9	1- 6	59	10			1- 0	0- 6								
		LOCATION END BENT									NO. REQUIRED = 2					
8	P01	6- 0	5	1			6- 0									
4	P02	7- 3	4	12			2-11	4- 4								60
4	P03	8- 2	6	1			8- 2									
4	P04	3- 1	1	12			1- 2	1-11								60
4	P05	3-11	1	12			1-11	2- 0								19
4	P06	2- 9	1	12			0-10	1-11								63
4	P07	6- 9	6	37			2- 6	1- 5	1- 5	1- 5						
4	P08	5- 4	1	11			2- 6	1- 5	1- 5							
4	P09	5- 0	18	11			2- 0	1- 6	1- 6							
4	P10	4-11	2	11			1-11	1- 6	1- 6							
4	P11	6- 6	2	11			2- 6	2- 0	2- 0							
8	P12	3-10	4	10			2- 6	1- 4								
		LOCATION INT BENT									NO. REQUIRED = 2					
8	P01	5-10	5	1			5-10									
4	P02	7- 5	7	4	4	4	1- 8	1- 8								
4	P03	5- 0	1	11			1- 8	1- 8	1- 8							
4	P04	4-10	1	11			1- 8	1- 7	1- 7							
8	P05	3-10	4	10			2- 6	1- 4								
		LOCATION APPROACH SLAB EB1									NO. REQUIRED = 1					
5	A1	7- 8	8	1			7- 8									
8	A2	7- 8	10	1			7- 8									
5	A3	5- 8	1	1			5- 8									
8	A4	5- 8	1	1			5- 8									
5	A5	2-10	1	1			2-10									
8	A6	2-10	1	1			2-10									
5	A7	7-11	1	1			7-11									
8	A8	7-11	1	1			7-11									
5	A9	VARY	22	1			7- 1									
		8- 1	0	1			9- 0									
5	A10	3- 5	22	1			3- 5									
6	A11	1- 6	5	1			1- 6									

MARK		LENGTH	NO	TYP	STY		B	C	D	E	F	H	J	K	N	Ø
SIZE	DES	FT IN	BARS	BAR	A	G	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	NO	ANG
		LOCATION APPROACH SLAB EB4									NO. REQUIRED = 1					
5	A1	7- 8	8	1			7- 8									
8	A2	7- 8	10	1			7- 8									
5	A3	5- 9	1	1			5- 9									
8	A4	5- 9	1	1			5- 9									
5	A5	3- 0	1	1			2-11 ¼									
8	A6	3- 0	1	1			2-11 ¼									
5	A7	7-11	1	1			7-11									
8	A8	7-11	1	1			7-11									
5	A9	VARY	22	1			7- 1									
		8- 1	0	1			9- 1									
5	A10	3- 5	22	1			3- 5									
6	A11	1- 6	5	1			1- 6									

END OF LIST

BRIDGE NO. 134025

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: ABK
DRAWN BY: AAM
CHECKED BY:

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE: 4/2016
PROJECT NO.: 225338

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ANANDA B. KELLEY
FL. LICENSE NO.: 65632

REBAR LIST

SHEET NO.: BI-14

Direction of Stationing

BFO — BEGIN BRIDGE STA. 163+89.20 — BFO — 164+00 — BFO — END BRIDGE STA. 164+19.11 — BFO

℄ INT. BENT 2 STA. 164+04.14

℄ SURVEY RYE ROAD

N 50°11'43" E

89°16'30" | 89°30'59" | 89°29'46"

BEGIN APPR. SLAB STA. 163+81.20

END APPR. SLAB STA. 164+27.11

2'-6" VARIES 2'-6" SCUPPER SPACING (TYP.)

MODIFIED INDEX 470 THRIE BEAM RAILING

LEFT COPING

1'-0" CURB

GUARDRAIL INSTALLATION SHOWN IN ROADWAY COMPONENT SET.

4"Ø PVC SCUPPER (TYP.)

4'-0" MIN. SHLDR

± 28'-3"

± 47'-3"

℄ PILES END BENT 3

℄ PROPOSED BRIDGE

℄ EXISTING ROADWAY

36'-0" MIN. DECK WIDTH

12'-0" LANE

1'-0"

12'-0" LANE

± 19'-0"

B-1

B-2

2'-7"±

2'-4"±

9'-0"

6'-5"±

10⅜"±

8'-3½"±

1¼"±

6'-8"±

TRANSITION PANEL FDOT INDEX 400 SHEET 20A OF 26

6'-0" SHLDR

6'-3"

GUARDRAIL

EXISTING 30" RCP PROTECT AND MAINTAIN DRAINAGE PIPE AND ENDWALLS DURING CONSTRUCTION

VARIES (1:2 MAX.)

1'-3½"

1'-3½"

8"

RIGHT COPING

LIMITS OF MISC. ASPHALT PAVEMENT

6'-3"

6'-3"

6'-3"

7'-3½"

LIMITS OF MISC. ASPHALT PAVEMENT

MODIFIED INDEX 470 THRIE BEAM RAILING

EXISTING CONC. WINGWALL CAP TO BE REMOVED. WALLS TO REMAIN.

BT — BT — BT — BT — BT

RW

OE — OE — OE — OE

EXISTING VERIZON BT (TO BE RELOCATED BY OTHERS)

GUARDRAIL INSTALLATION SHOWN IN ROADWAY COMPONENT SET.

PLAN

LEGEND:

- EXISTING CONCRETE PIER
- PROPOSED HP14x73 STEELSPILE
- PROPOSED SHEET PILE
- EXISTING TO BE REMOVED
- SPT BORING LOCATION

ANANDA BERGERON KELLEY — LICENSE NO. 65632 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

11-23-16

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: ABK
DRAWN BY: RFN
CHECKED BY:

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE: 4/2016
PROJECT NO.: 225338

Manatee County FLORIDA — MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ANANDA B. KELLEY
FL. LICENSE NO.: 65632

PLAN

SHEET NO.: B2-1

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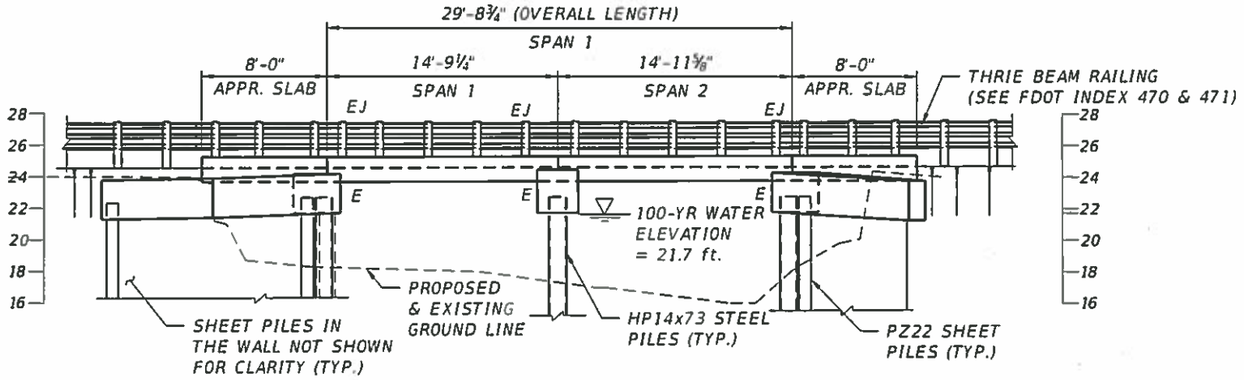

ELEVATION

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: ABK
DRAWN BY: RFN
CHECKED BY:

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE: 4/2016
PROJECT NO.: 225338

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: ANANDA B. KELLEY
FL. LICENSE NO.: 65632

ELEVATION

SHEET NO.: B2-2

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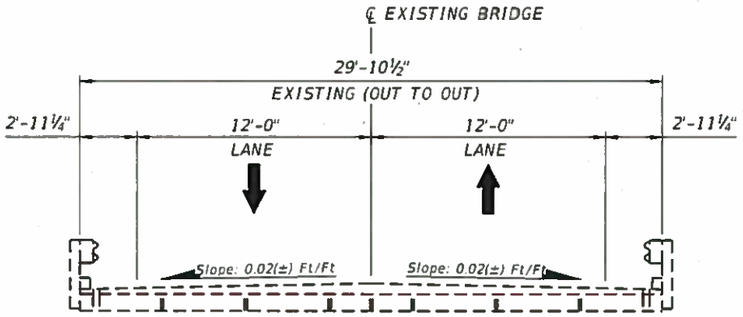
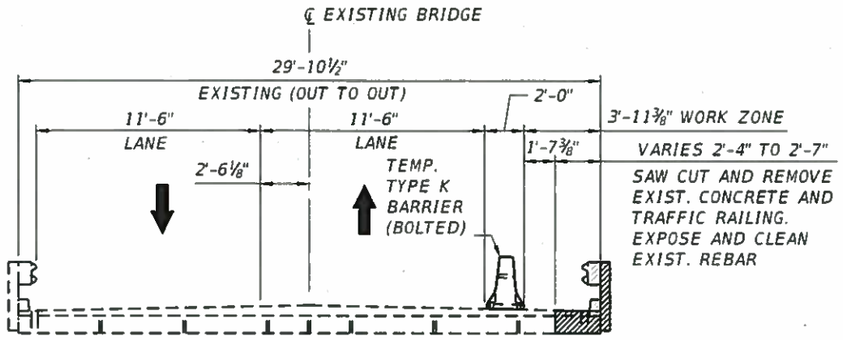


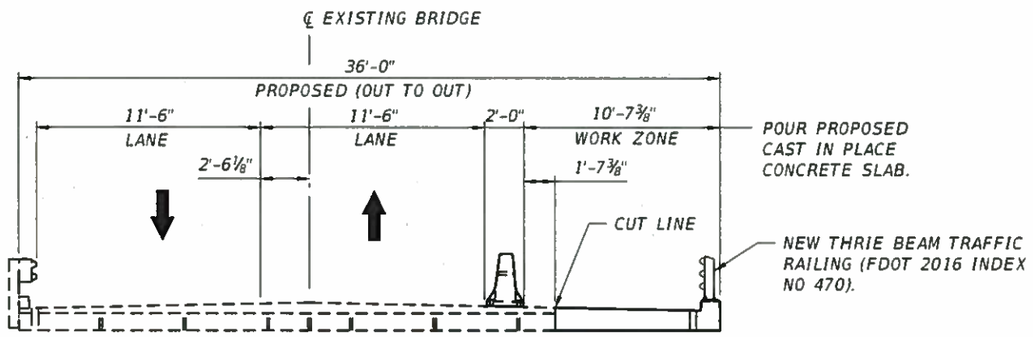
EXISTING CONDITION

NOTE: COMPLETE SUBSTRUCTURE WIDENING AND INSTALLATION OF TYPE K BARRIER PRIOR TO PHASE 1. TEMPORARY LANE CLOSURES PERMITTED.



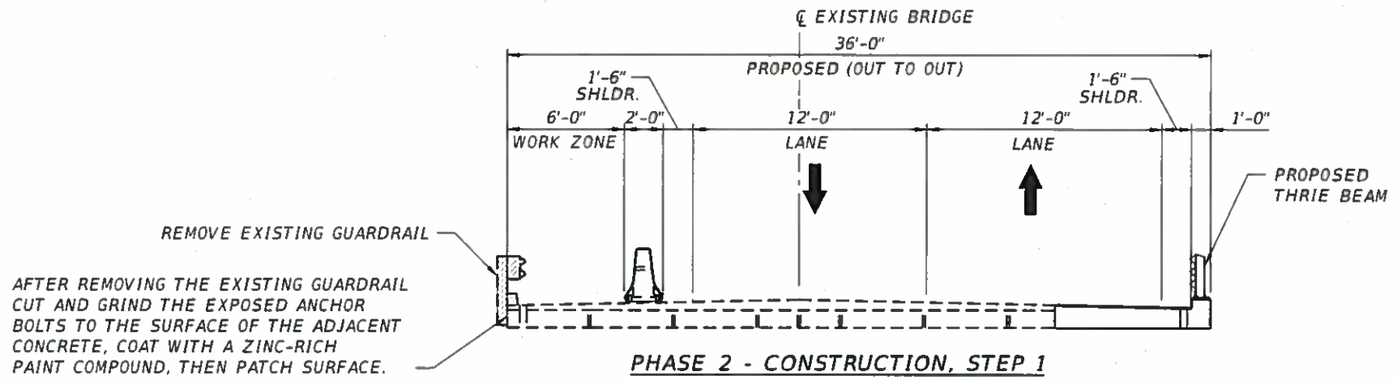
PHASE 1 - CONSTRUCTION, STEP 1

1. SHIFT TRAFFIC LANES TO THE WEST - MAKE EACH LANE 11'-6" WIDE.
2. INSTALL TEMPORARY K BARRIER.
3. REMOVE EAST SIDE EXISTING BARRIER.
4. SAW CUT AND REMOVE 2'-4" TO 2'-7" OF EXISTING CONCRETE.
5. EXPOSE AND CLEAN EXISTING REBAR.



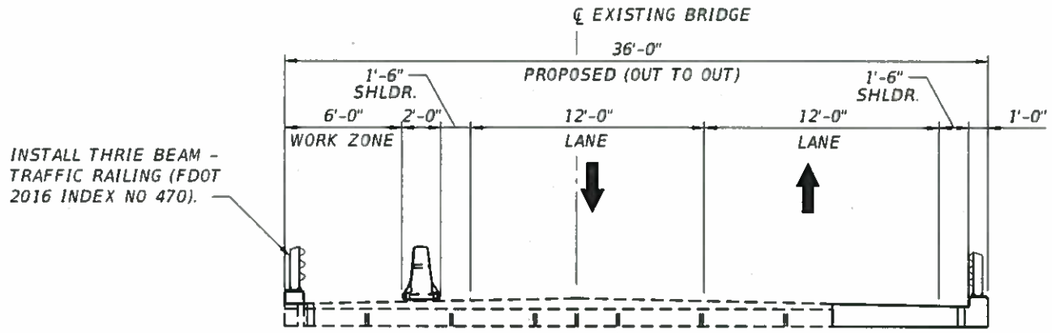
PHASE 1 - CONSTRUCTION, STEP 2

1. PLACE PROPOSED SLAB REINFORCEMENT.
2. POUR PROPOSED CAST IN PLACE CONCRETE SLAB UNIT.
3. INSTALL NEW THRIE BEAM TRAFFIC RAILING.



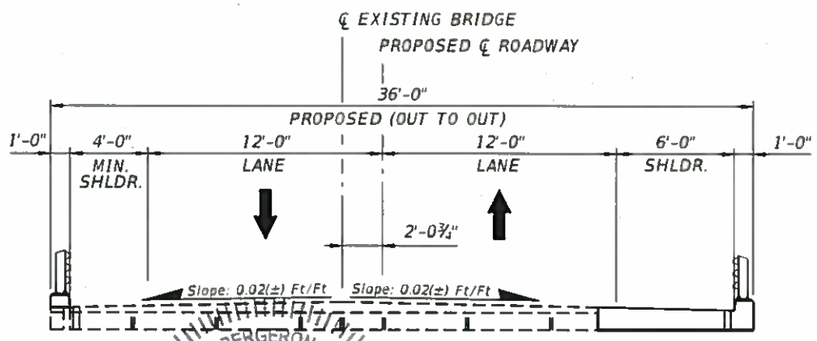
PHASE 2 - CONSTRUCTION, STEP 1

1. SHIFT TRAFFIC LANES TO THE EAST - MAKE EACH LANE 12 FEET WIDE.
2. MOVE TEMPORARY K BARRIER TO NEW LOCATION.
3. REMOVE WEST SIDE EXISTING GUARDRAIL.



PHASE 2 - CONSTRUCTION, STEP 2

1. INSTALL NEW THRIE BEAM TRAFFIC RAILING.
2. INSTALL NEW SCUPPER.
3. REMOVE TEMPORARY K BARRIER.
4. SHIFT TRAFFIC LANES TO FINAL LOCATION.



PROPOSED TYPICAL SECTION

LEGEND

EXISTING STRUCTURE TO BE REMOVED

ANANDA BERGERON KELLEY LICENSE No 65632 STATE OF FLORIDA PROFESSIONAL ENGINEER

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE	AS NOTED
DESIGNED BY	MAV
DRAWN BY	MAV
CHECKED BY	

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE 4/2016
PROJECT NO. 225338

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ANANDA B. KELLEY
FL LICENSE NO. 65632

CONSTRUCTION SEQUENCE

SHEET NO. B2-3

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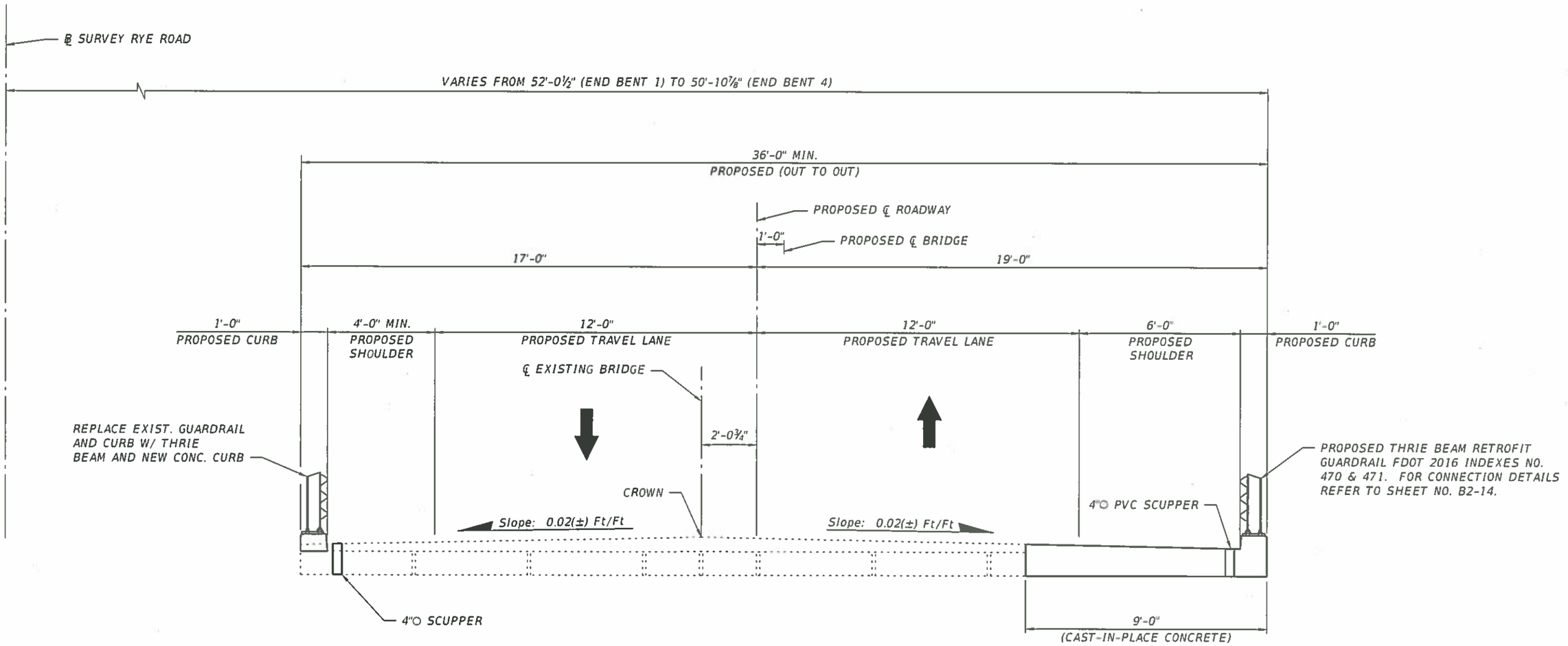

TYPICAL SECTION

NOTE: SCUPPER TO BE RELOCATED TO THE NEW CURB LINE ALONG THE ROADWAY. STATIONING TO MATCH THE EXISTING SCUPPER LOCATIONS.

ANANDA BERGERON KELLEY
LICENSE
No 65632
STATE OF FLORIDA
PROFESSIONAL ENGINEER
11-23-16

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: ABK
DRAWN BY: RFN
CHECKED BY:

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE: 4/2016
PROJECT NO.: 225338

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ANANDA B. KELLEY
FL. LICENSE NO.: 65632

TYPICAL SECTION

SHEET NO.: B2-4

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SOURCE: GOOGLE EARTH PRO

0' 10' 20' 40'

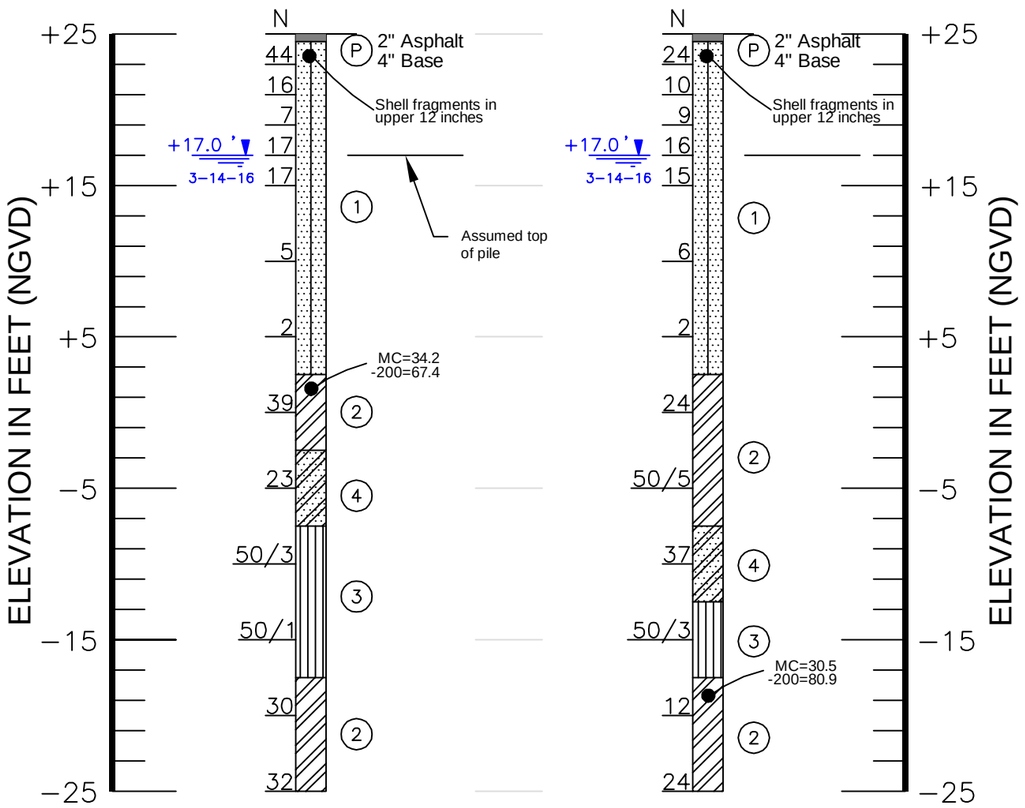
B-1 APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

CORROSION TEST RESULTS

Sample Location	RESISTIVITY ohm-cm	CHLORIDES ppm	SULFATES ppm	pH
B-1 (33.5'-35') & B-2 (23.5'-25' & 28.5'-30')	3,100	21.6	<1.6	7.1

	Steel	Concrete
Substructure Environment Classification:	Moderately Aggressive	Slightly Aggressive

BORING NO.	B-1	B-2
STATION:	163+80	164+30
OFFSET:	35' Rt.	35' Rt.
ELEVATION:	+25' +/-	+25' +/-



GENERAL LEGEND

- P — Asphaltic concrete over limestone gravel base
- 1 — Gray, dark gray, and brown fine SAND with trace to slight amounts of silt (SP, SP-SM)
- 2 — Light gray silty, sandy CLAY (CL)
- 3 — Light gray to gray sandy, clayey SILT (ML) (Weathered Limestone)
- 4 — Gray to brown clayey SAND (SC)
- 5 — Gray to dark gray silty SAND with sand size to gravel size limestone gravel fragments (SM)

N – Indicates the number of blows of a 140 pound hammer, freely falling a distance of 30 inches, required to drive a 2-inch diameter sampler 12 inches (ASTM D 1586)

B-1 – Standard Penetration Test (SPT) Boring and number

SP – Unified Soil Classification System Group Symbol (ASTM D 2487)

+17.0 ▼ 3-14-16 – Elevation of groundwater (feet-NGVD) & date measured

50/3 – Indicates fifty SPT hammer blows were required to drive the sampler 3 inches

MC – Moisture Content (%)

-200 – Amount Finer Than The U.S. Standard No. 200 Sieve (%)

ENGINEERING CLASSIFICATION (SAFTEY HAMMER)

GRANULAR MATERIALS

Relative Density	SPT BLOW-COUNTS
Very Loose	Less than 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

SILTS AND CLAYS

Consistency	BLOW-COUNTS
Very Soft	Less than 2
Soft	2 - 4
Firm	4 - 8
Stiff	8 - 15
Very Stiff	15 - 30
Hard	Greater than 30

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 inch
SPOON OUTSIDE DIA.	2.00 inches
AVG. HAMMER DROP	30 inches
HAMMER WEIGHT	140 pounds

James M. Jackson, P.E.
FL Reg. No. 77733

NOTES

(1) Borings were drilled on March 14, 2016 using a track-mounted BR-2500 drilling rig.

(2) Strata boundaries are approximate and represent soil strata at each test hole location only. Soil transitions may be more gradual than implied.

(3) Groundwater depths shown on the subsurface profiles represent the groundwater surfaces on the date shown. Groundwater level fluctuations should be anticipated throughout the year.

(4) Station, offset, and elevation were estimated based on the topographic survey provided by Cardno.

No.	REVISIONS	DATE	BY
1	ADD BORING ELEVATION	5-11-16	JMJ
2	ADD SIGNATURE BLOCK	11-28-16	JMJ

SCALE AS_NOTED
DESIGNED BY JMJ
DRAWN BY JMJ
CHECKED BY KEA

DUNKELBERGER ENGINEERING & TESTING
8260 VICO COURT, UNIT B
SARASOTA, FLORIDA 34240
CERTIFICATE OF AUTHORIZATION 6870

DATE 4/2016
PROJECT NO. 225338

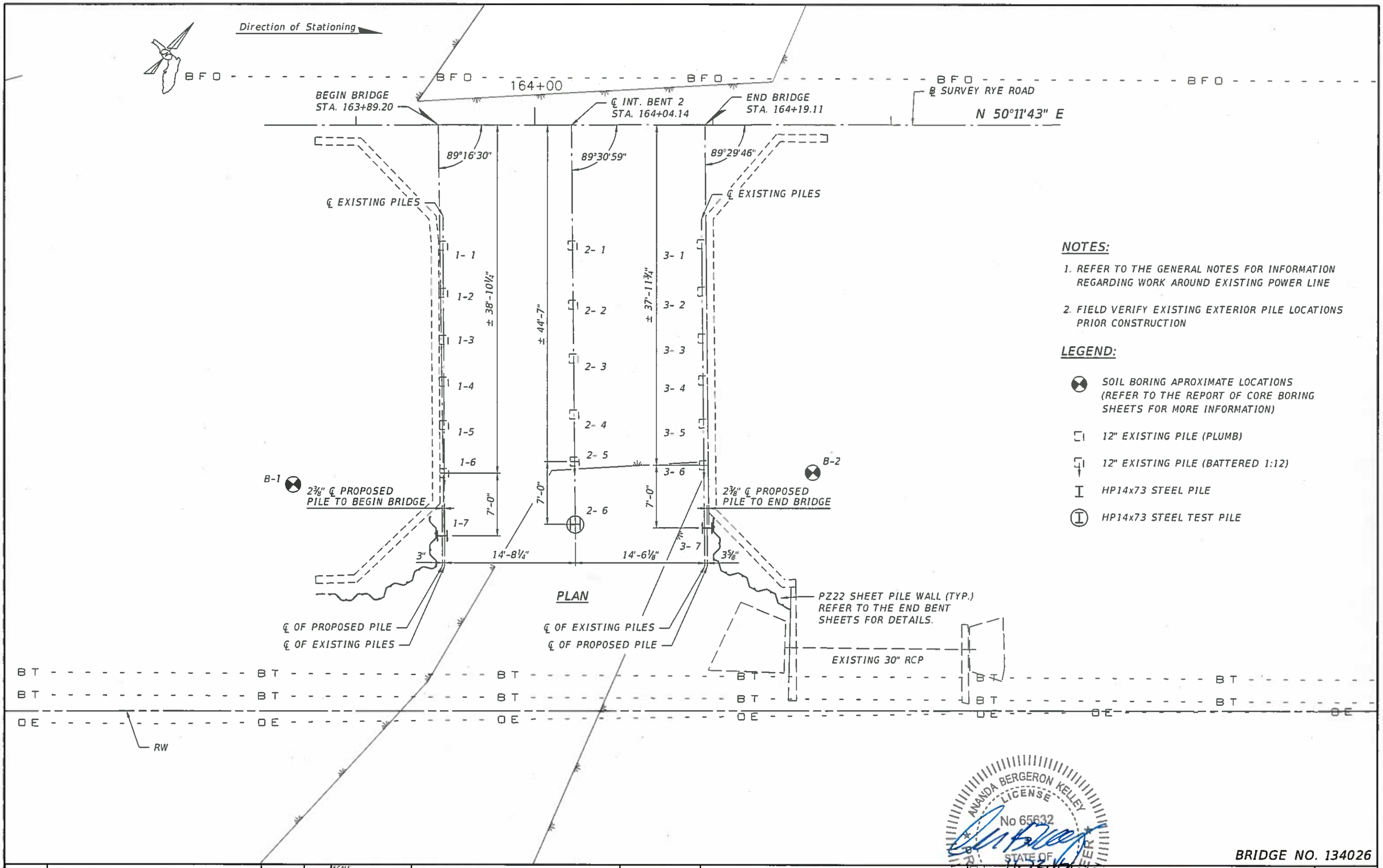
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER JAMES M. JACKSON
FL. LICENSE NO. 77733

REPORT OF CORE BORINGS FOR STRUCTURES

PROJECT NAME: RYE ROAD BRIDGE 134026
MANATEE COUNTY, FLORIDA

SHEET NO. B2-5



NOTES:

1. REFER TO THE GENERAL NOTES FOR INFORMATION REGARDING WORK AROUND EXISTING POWER LINE
2. FIELD VERIFY EXISTING EXTERIOR PILE LOCATIONS PRIOR CONSTRUCTION

LEGEND:

- SOIL BORING APROXIMATE LOCATIONS (REFER TO THE REPORT OF CORE BORING SHEETS FOR MORE INFORMATION)
- 12" EXISTING PILE (PLUMB)
- 12" EXISTING PILE (BATTERED 1:12)
- HP14x73 STEEL PILE
- HP14x73 STEEL TEST PILE

ANANDA BERGERON KELLEY
LICENSE
No 65632
STATE OF
FLORIDA
PROFESSIONAL
ENGINEER

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: FXH
DRAWN BY: AAM
CHECKED BY: FXH

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE: 4/2016
PROJECT NO.: 225338

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: ANANDA B. KELLEY
FL. LICENSE NO.: 65632

FOUNDATION LAYOUT

SHEET NO.: B2-6

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PILE DATA TABLE

INSTALLATION CRITERIA								DESIGN CRITERIA								
BENT NUMBER / PILE NUMBER	PILE SIZE (in.)	NOMINAL BEARING RESISTANCE (tons)	NOMINAL UPLIFT RESISTANCE (tons)	MINIMUM TIP ELEVATION (ft.)	TEST PILE LENGTH (ft.)	REQUIRED JET ELEVATION (ft.)	REQUIRED PREFORM ELEVATION (ft.)	FACTORED DESIGN LOAD (tons)	FACTORED DESIGN UPLIFT LOAD (tons)	DOWN DRAG (tons)	TOTAL SCOUR RESISTANCE (tons)	NET SCOUR RESISTANCE (tons)	100-YEAR SCOUR ELEVATION (ft.)	LONG TERM SCOUR ELEVATION (ft.)	Ø COMPRESSION	Ø UPLIFT
1-7	HP14x73	40	N/A	0.0	N/A	N/A	N/A	24	N/A	N/A	2	0	12.8	12.8	0.65	0.65
2-6	HP14x73	55	N/A	0.0	40	N/A	N/A	34	N/A	N/A	2	0	12.8	12.8	0.65	0.65
3-7	HP14x73	40	N/A	0.0	N/A	N/A	N/A	24	N/A	N/A	2	0	12.8	12.8	0.65	0.65

PILE CUT-OFF ELEVATIONS		
PIER or BENT NUMBER	PILE 6	PILE 7
1	NA	22.8
2	22.8	NA
3	NA	22.8

$$\frac{\text{Factored Design Load} + \text{Net Scour Resistance} + \text{Down Drag}}{0} \leq \text{Nominal Bearing Resistance}$$

TENSION RESISTANCE – The ultimate side friction capacity that must be obtained below the 100 year scour elevation to resist pullout of the pile (Specify only when design requires tension capacity).

TOTAL SCOUR RESISTANCE – An estimate of the ultimate static side friction resistance provided by the scourable soil.

NET SCOUR RESISTANCE – An estimate of the ultimate static side friction resistance provided by the soil from the required preformed or jetting elevation to the scour elevation.

100-YEAR SCOUR ELEVATION – Estimated elevation of scour due to the 100 year storm event.

LONG TERM SCOUR ELEVATION – Estimated elevation of scour used in design for extreme event loading.

PILE INSTALLATION NOTES:

Piles to be coated per FDOT Standard Specification 560.

Contractor to verify location of all utilities prior to any pile installation activities.

Minimum Tip Elevation is required for lateral stability.

When a required jetting elevation is shown, the jet shall be lowered to the elevation and continue to operate at this elevation until the pile driving is completed. If jetting or preforming elevations differ from those shown on the table, the Engineer shall be responsible for determination of the required driving resistance.

No jetting will be allowed without the approval of the Engineer.

The Contractor should not anticipate being allowed to jet piles below the 100-year scour elevation or required jet elevation, whichever is deeper.

At each Bent, pile driving is to commence at the center of the Bent and proceed outward.

PILE CUT-OFF NOTE:

Contractor shall verify the existing top-of-bent elevations on which the pile cut-off elevations are based. Refer to the End Bent plan sheet for more information.

ANANDA BERGERON KELLEY LICENSE No 65632 STATE OF FLORIDA PROFESSIONAL ENGINEER

11-23-16

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: ABK
DRAWN BY: AAM
CHECKED BY:

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE: 4/2016
PROJECT NO.: 225338

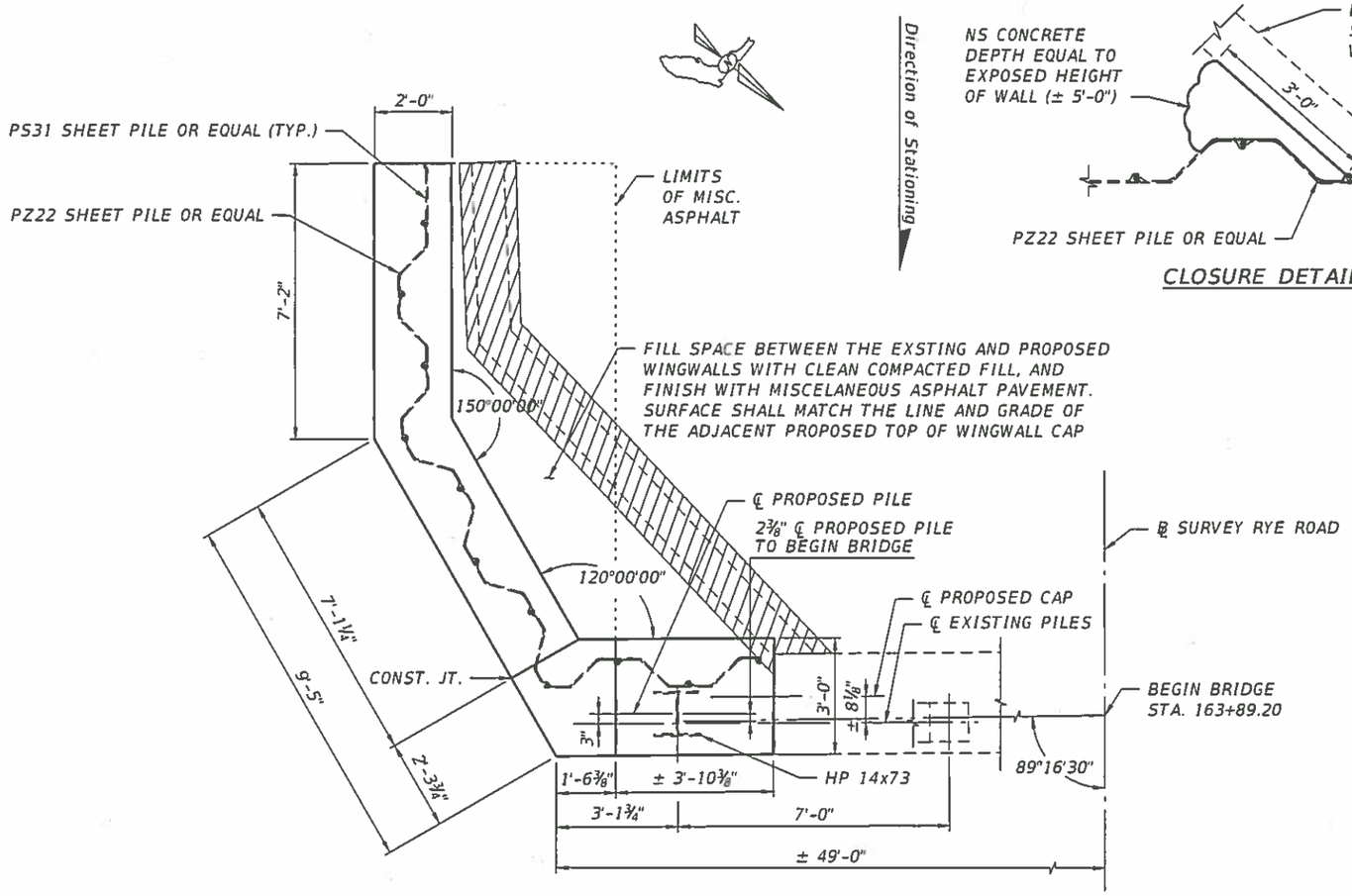
Manatee County FLORIDA — MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ANANDA B. KELLEY
FL. LICENSE NO.: 65632

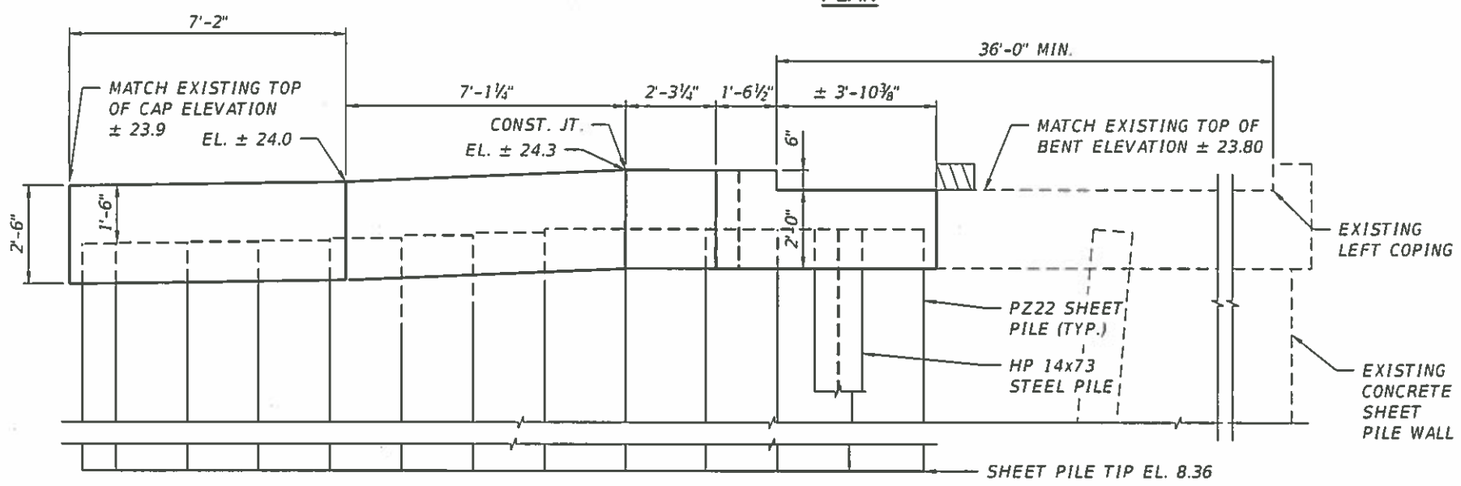
PILE DATA TABLE

SHEET NO.: B2-7

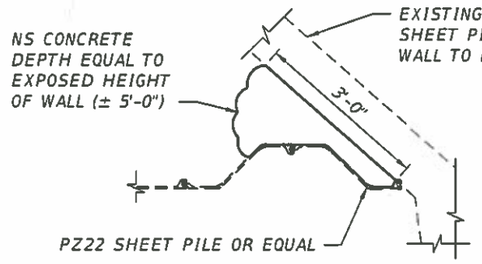
4:43:26 PM 11/23/2016 J:\00193\00193010.07\ms\struct\Br 134026\B02PileData01.dgn



PLAN



ELEVATION



CLOSURE DETAIL

LEGEND:

- EXISTING TO BE REMOVED
- EXISTING CONCRETE PILE
- PROPOSED PS31 SHEET PILE
- PROPOSED PZ22 SHEET PILE
- PROPOSED HP 14x73 STEEL PILE

NOTES:

1. WORK THIS SHEET WITH THE END BENT 1 DETAILS SHEET.
2. REMOVE THE EXISTING WINGWALL CAP TO PROVIDE FOR INSTALLATION OF THE PROPOSED STEEL SHEET PILE WALL. REMOVE THE TOP OF THE EXISTING WINGWALL SHEET PILES THAT ARE IN CONFLICT WITH THE PROPOSED WINGWALL CAP, AND ABANDON THE REMAINDER OF THE EXISTING SHEET PILES IN PLACE.
3. AFTER REMOVING THE EXISTING CHEEKWALL, GRIND THE EXPOSED REINFORCING STEEL TO THE SURFACE OF THE ADJACENT CONCRETE AND APPLY A ZINC-RICH PAINT. FINISH SURFACE TO MATCH THE LINE AND GRADE OF THE ADJACENT CONCRETE.
4. MINIMUM SHEET PILE SECTON PROPERTIES (HOT ROLL), USE PZ22 OR EQUAL:

   THICKNESS OF FLANGE: TF=0.375 IN
   THICKNESS OF WEB:TW=0.375 IN
   YIELD STRENGTH:FY=39,000 PSI
   SECTION MODULUS:S=18.1 IN3/FT
   MOMENT OF INERTIA:I=84.38 IN4/FT

   A PS31 SHEET PILE MAY BE USED ADJACENT TO THE EXISTING SHEET PILE WALL TO REMAIN. REFER TO THE CLOSURE DETAIL IN THIS SHEET FOR MORE INFORMATION.

   SHEET PILING TO BE COATED PER FDOT STANDARD SPECIFICATION 560
5. CONCRETE FOR CLOSURE DETAIL AND FILL BETWEEN THE EXISTING AND PROPOSED WINGWALLS SHALL BE INCIDENTAL TO THE COST OF THE SHEET PILE WALL. MISCELANEOUS ASPHALT PAVEMENT SHALL BE INCIDENTAL TO THE COST OF THE MODIFIED THRIE BEAM GUARDRAIL.
6. CONTRACTOR SHALL VERIFY DIMENSIONS AND ELEVATIONS SHOWN ± ON THIS SHEET INCLUDING BATTER OF EXISTING EXTERIOR PILES.

ANANDA BERGERON KELLEY LICENSE No 65632 STATE OF FLORIDA PROFESSIONAL ENGINEER
11/23/16

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE	AS NOTED
DESIGNED BY	ABK
DRAWN BY	AAM
CHECKED BY	FMH

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE 4/2016
PROJECT NO. 225338

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ANANDA B. KELLEY
FL. LICENSE NO.: 65632

END BENT 1

SHEET NO. B2-8

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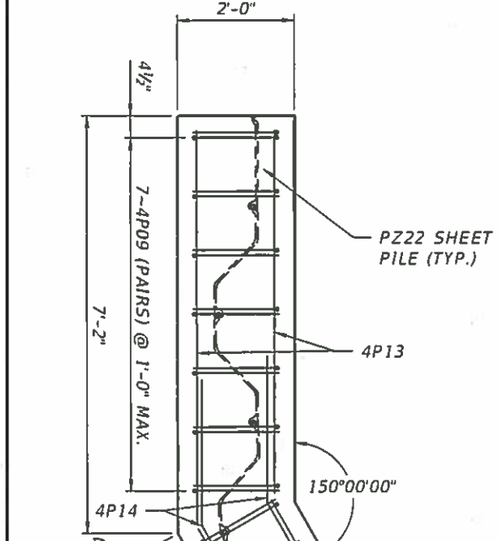
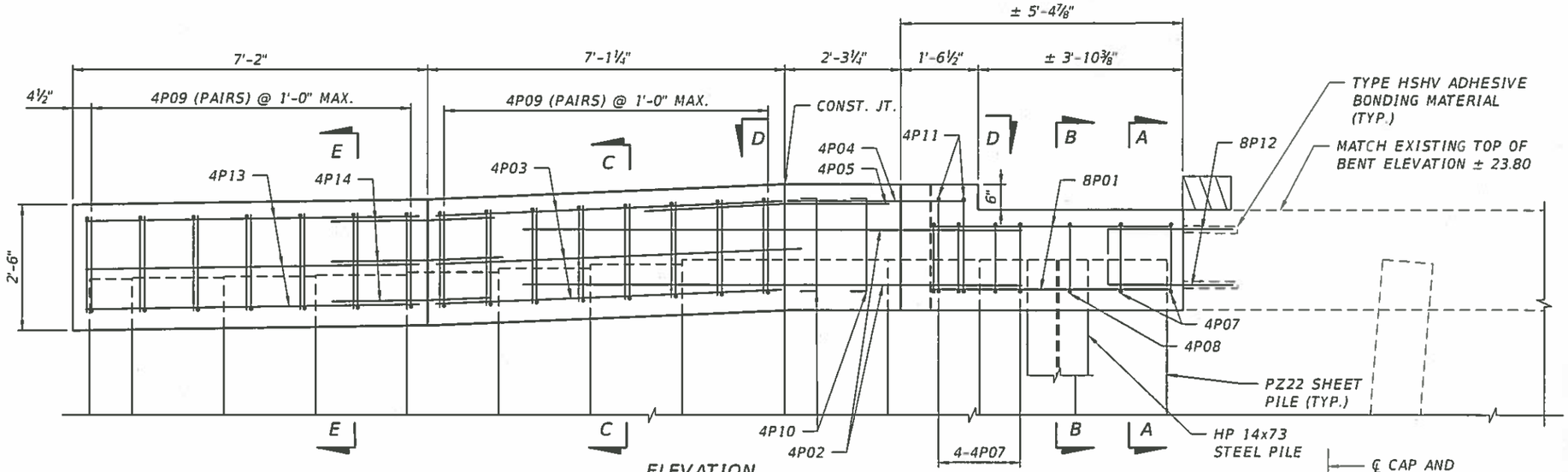
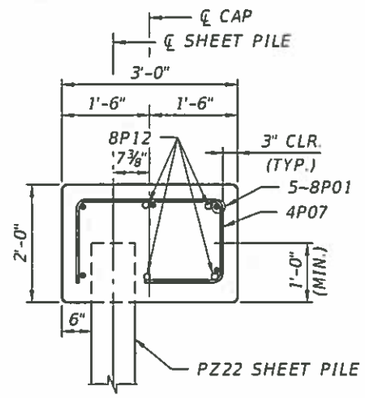


PLAN

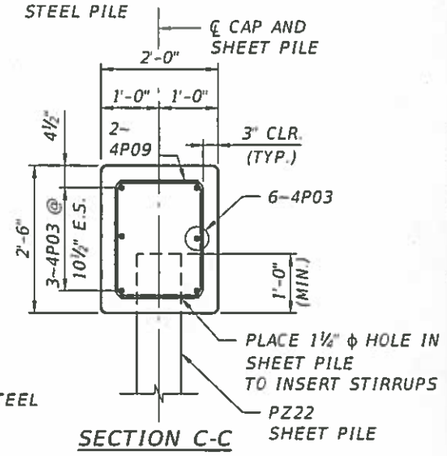
REFER TO VIEW D-D FOR TOP LAYER OF STEEL IN CORNER.



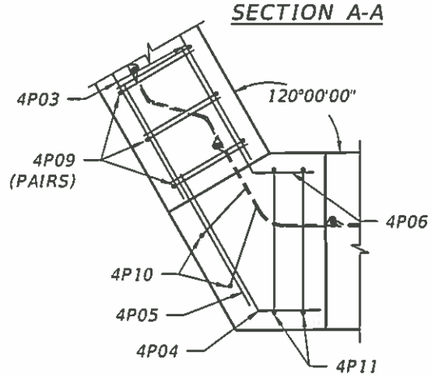
ELEVATION



SECTION A-A

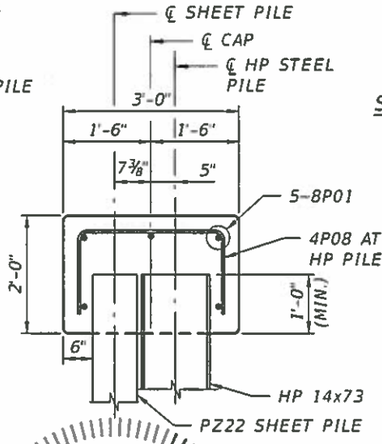


SECTION C-C



VIEW D-D

FOR CLARITY, ONLY TOP LAYER OF REINFORCING STEEL IS SHOWN



SECTION B-B

NOTES:

1. WORK THIS SHEET WITH THE END BENT 1 SHEET.

BRIDGE NO. 134026

ANANDA BENJAMIN KELLEY LICENSE No 65632 STATE OF FLORIDA PROFESSIONAL ENGINEER

No.	REVISIONS	DATE	BY

SCALE	AS NOTED
DESIGNED BY	FXH
DRAWN BY	AAM
CHECKED BY	FXH

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE 4/2016

PROJECT NO. 225338

Manatee County FLORIDA

MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER ANANDA B. KELLEY

FL. LICENSE NO. 65632

END BENT 1 DETAILS

SHEET NO. B2-9

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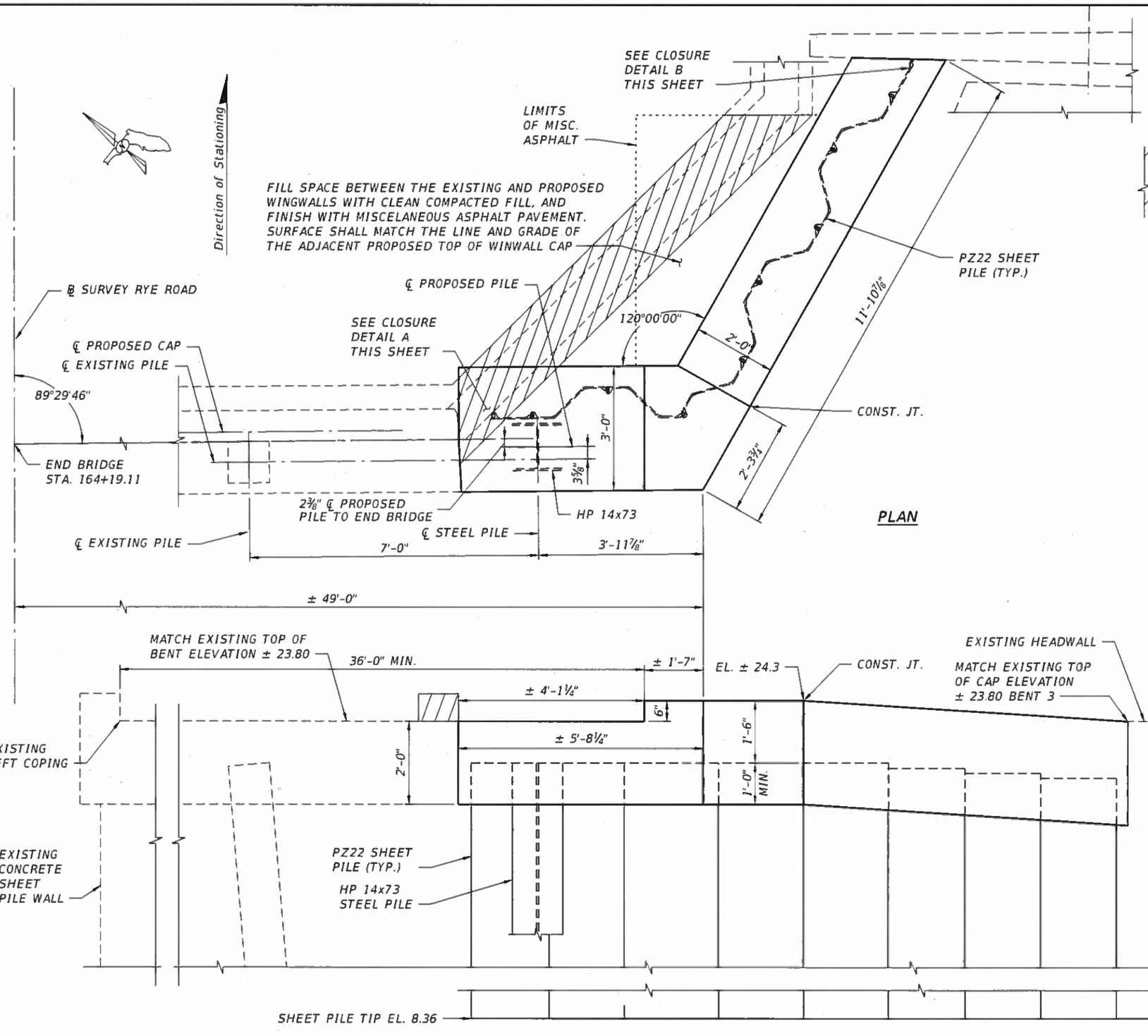

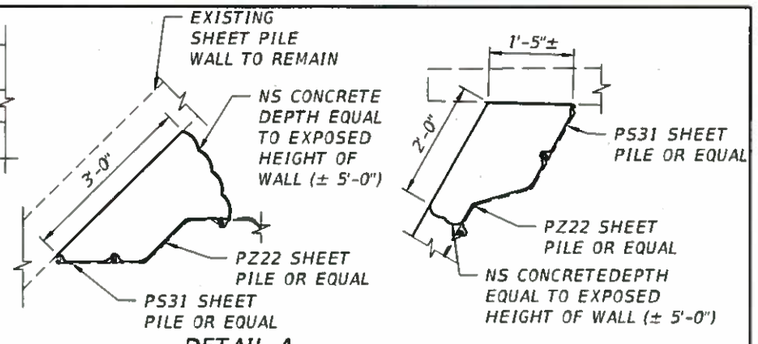

CLOSURE DETAILS

LEGEND

- EXISTING TO BE REMOVED
- EXISTING CONCRETE PILE
- PROPOSED PS31 SHEET PILE
- PROPOSED PZ22 SHEET PILE
- PROPOSED HP 14x73 STEEL PILE

NOTES:

1. WORK THIS SHEET WITH THE END BENT 3 DETAILS SHEET.
2. REMOVE THE EXISTING WINGWALL CAP TO PROVIDE FOR INSTALLATION OF THE PROPOSED STEEL SHEET PILE WALL. REMOVE THE TOP OF THE EXISTING WINGWALL SHEET PILES THAT ARE IN CONFLICT WITH THE PROPOSED WINGWALL CAP, AND ABANDON THE REMAINDER OF THE EXISTING SHEET PILES IN PLACE.
3. AFTER REMOVING THE EXISTING CHEEKWALL, GRIND THE EXPOSED REINFORCING STEEL TO THE SURFACE OF THE ADJACENT CONCRETE AND APPLY A ZINC-RICH PAINT. FINISH SURFACE TO MATCH THE LINE AND GRADE OF THE ADJACENT CONCRETE.
4. MINIMUM SHEET PILE SECTON PROPERTIES (HOT ROLLED), USE PZ22 OR EQUAL:

THICKNESS OF FLANGE:	TF=0.375 IN
THICKNESS OF WEB:	TW=0.375 IN
YIELD STRENGTH:	FY=39,000 PSI
SECTION MODULUS:	S=18.1 IN3/FT
MOMENT OF INERTIA:	I=84.38 IN4/FT

5. CONCRETE FOR CLOSURE DETAIL AND FILL BETWEEN THE EXISTING AND PROPOSED WINGWALLS SHALL BE INCIDENTAL TO THE COST OF THE STEEL SHEET PILING. MISCELANEOUS ASPHALT PAVEMENT SHALL BE INCIDENTAL TO THE COST OF THE MODIFIED THRIE BEAM GUARDRAIL.
6. CONTRACTOR SHALL VERIFY DIMENSIONS AND ELEVATIONS SHOWN ± ON THIS SHEET.

11-23-16

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: ABK
DRAWN BY: AAM
CHECKED BY: FMH

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE: 4/2016
PROJECT NO.: 225338

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ANANDA B. KELLEY
FL. LICENSE NO.: 65632

END BENT 3

SHEET NO.: B2-10

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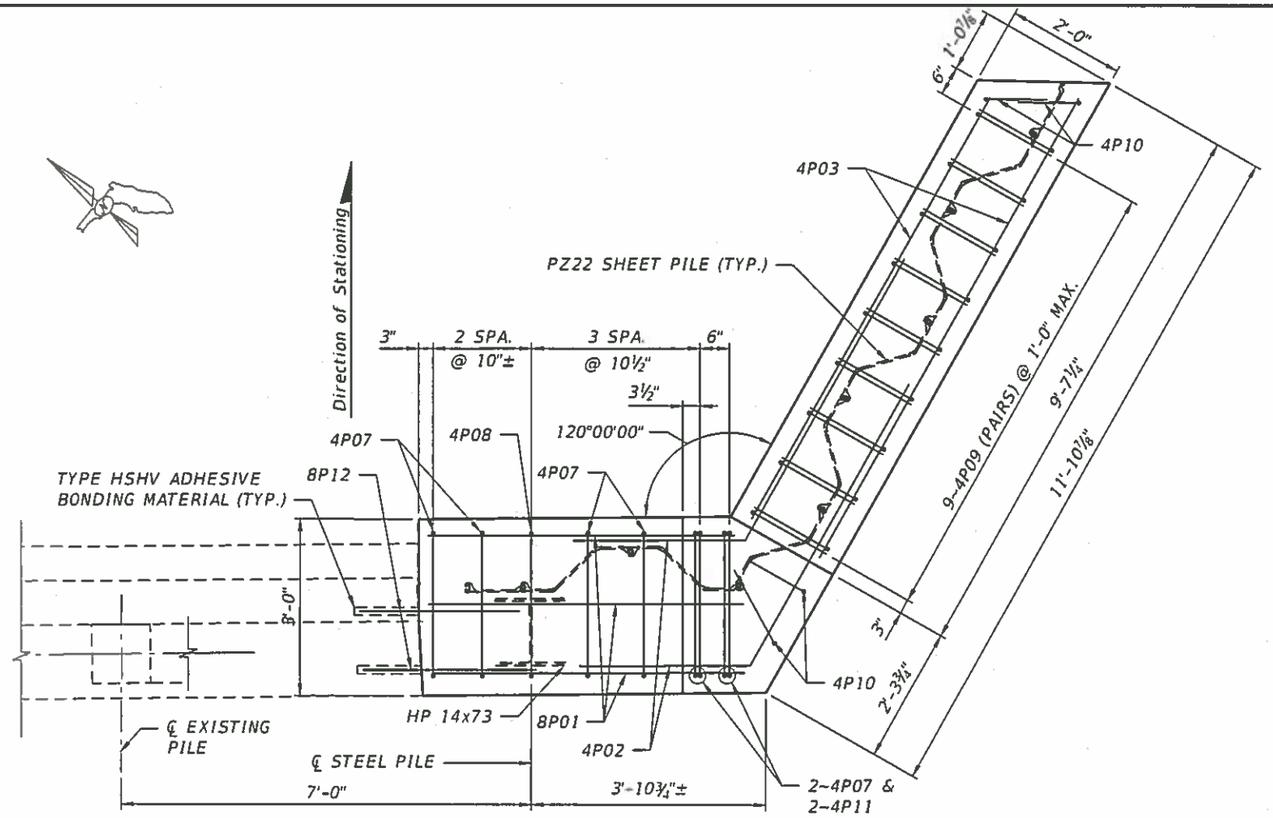
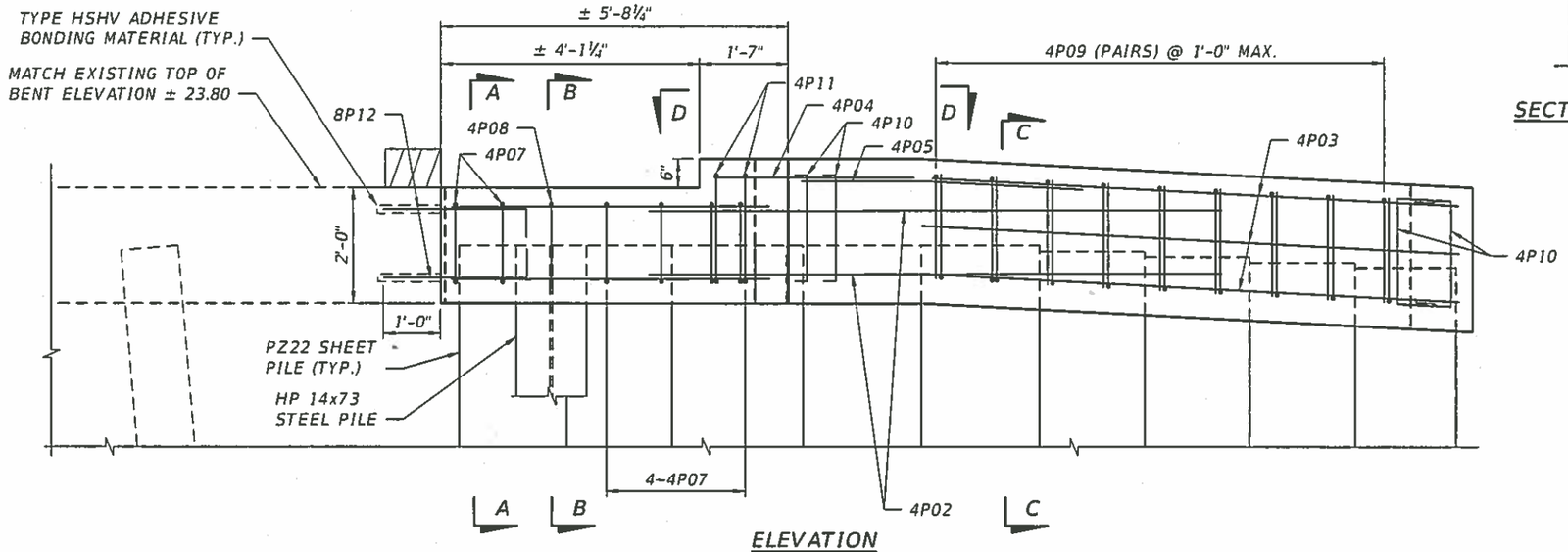
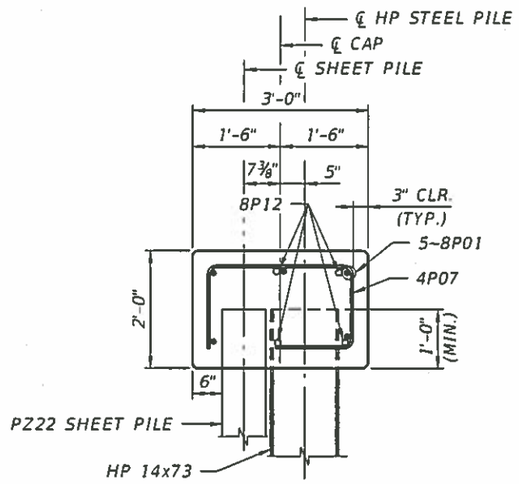


PLAN

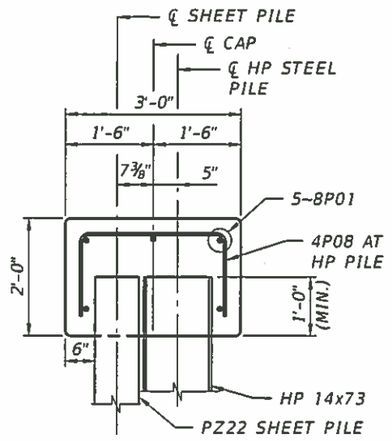
REFER TO VIEW D-D FOR TOP LAYER OF STEEL IN CORNER.



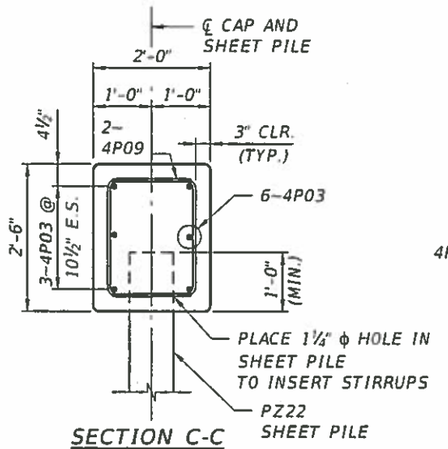
ELEVATION



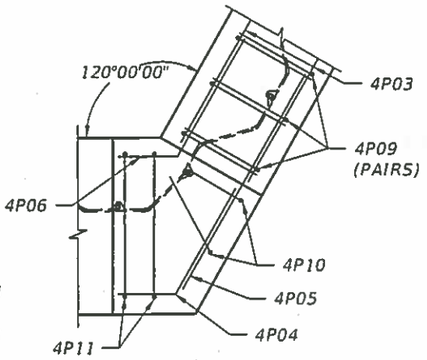
SECTION A-A



SECTION B-B



SECTION C-C



VIEW D-D

FOR CLARITY, ONLY TOP LAYER OF REINFORCING STEEL IS SHOWN

ANANDA BERGERON KELLEY LICENSE No 65632 STATE OF FLORIDA PROFESSIONAL ENGINEER 11-23-16

NOTES:

1. WORK THIS SHEET WITH SHEET THE END BENT 3 SHEET.

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE	AS NOTED
DESIGNED BY	ABK
DRAWN BY	AAM
CHECKED BY	FMH

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE 4/2016
PROJECT NO. 225338

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER ANANDA B. KELLEY
FL. LICENSE NO. 65632

END BENT 3 DETAILS

SHEET NO. B2-11

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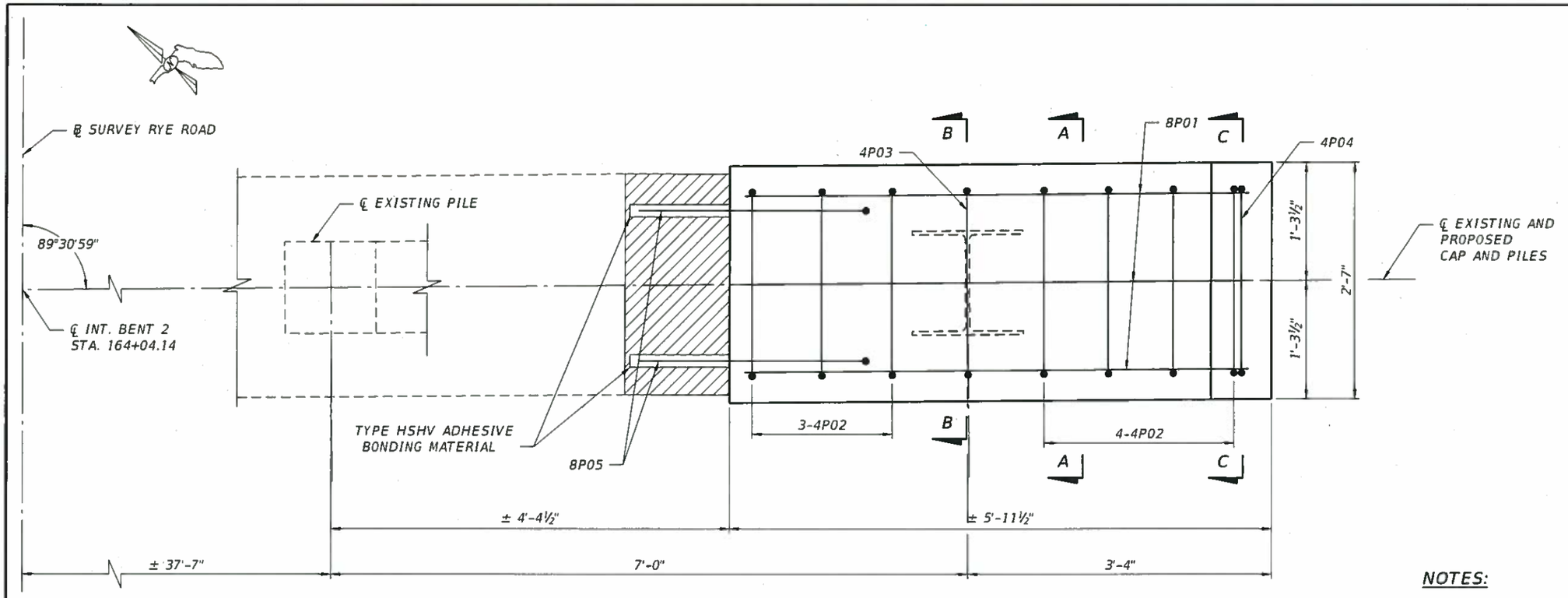
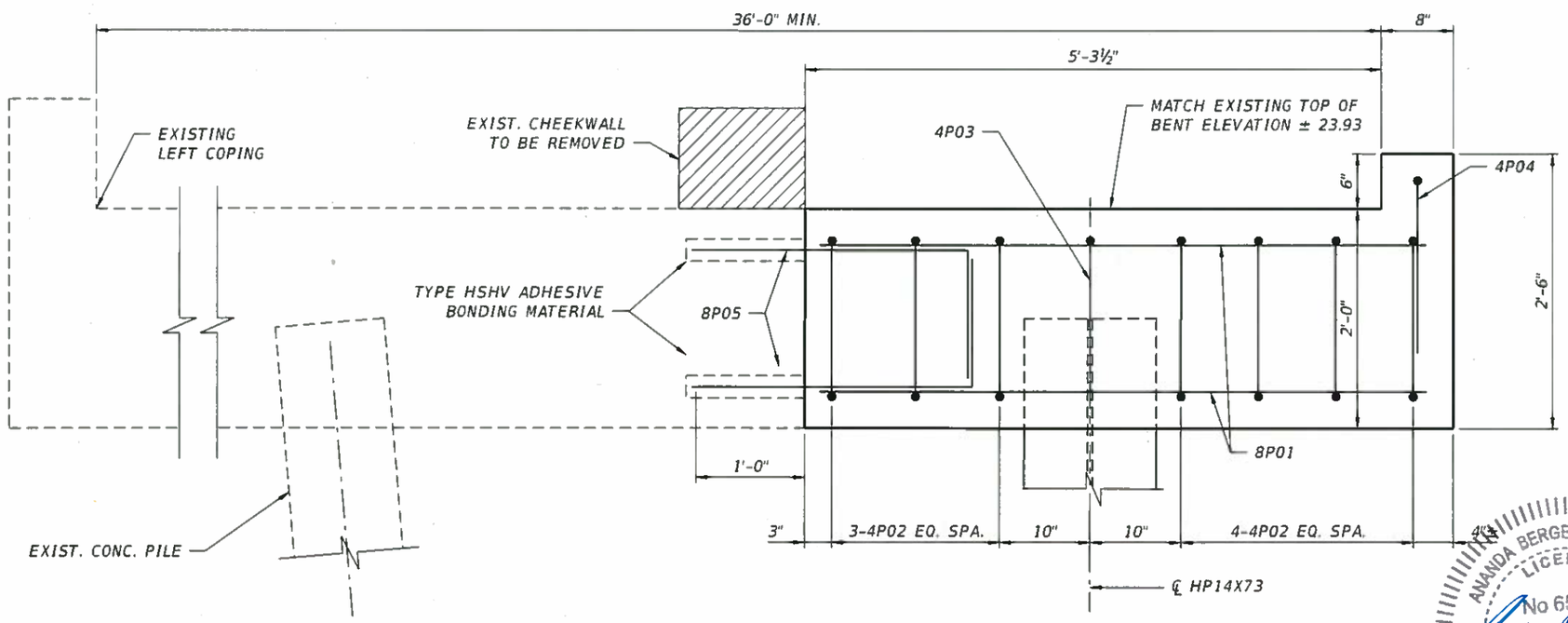


PLAN



ELEVATION

NOTES:

1. WORK THIS SHEET WITH THE INTERMEDIATE BENT DETAILS SHEET.
2. AFTER REMOVING THE EXISTING CHEEKWALL, GRIND THE EXPOSED REINFORCING STEEL TO THE SURFACE OF THE ADJACENT CONCRETE AND APPLY A ZINC-RICH PAINT FINISH SURFACE TO MATCH THE LINE AND GRADE OF THE ADJACENT CONCRETE.
3. CONTRACTOR SHALL VERIFY DIMENSIONS AND ELEVATIONS SHOWN ± ON THIS SHEET.

LEGEND:

EXISTING TO BE REMOVED

EXISTING CONCRETE PILE

PROPOSED HP14x73 STEEL PILE

ANANDA BERGERON KELLEY LICENSE No 65632 STATE OF FLORIDA PROFESSIONAL ENGINEER

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE	AS NOTED
DESIGNED BY	ABK
DRAWN BY	AAM
CHECKED BY	

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE 4/2016
PROJECT NO. 225338

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ANANDA B. KELLEY
FL LICENSE NO. 65632

INTERMEDIATE BENT

SHEET NO. B2-12

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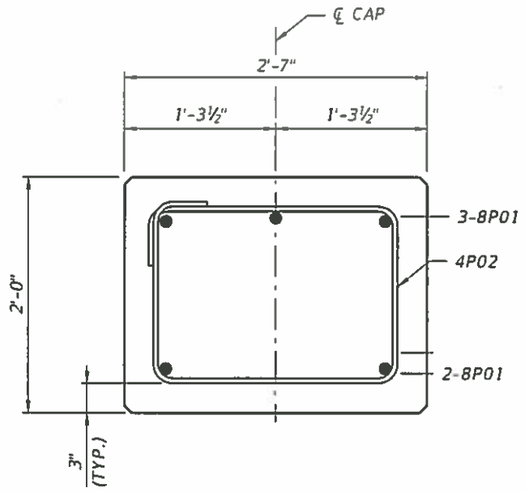
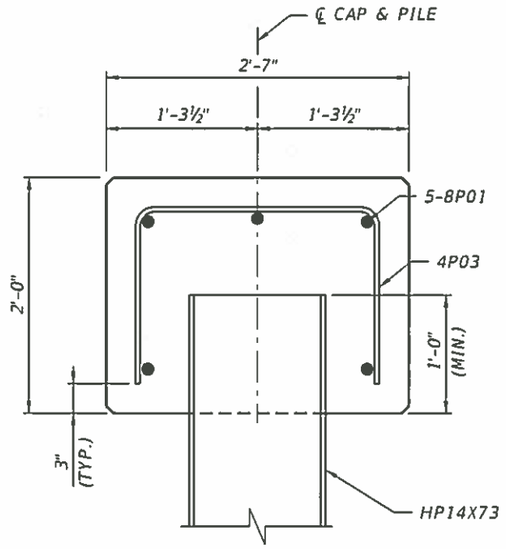
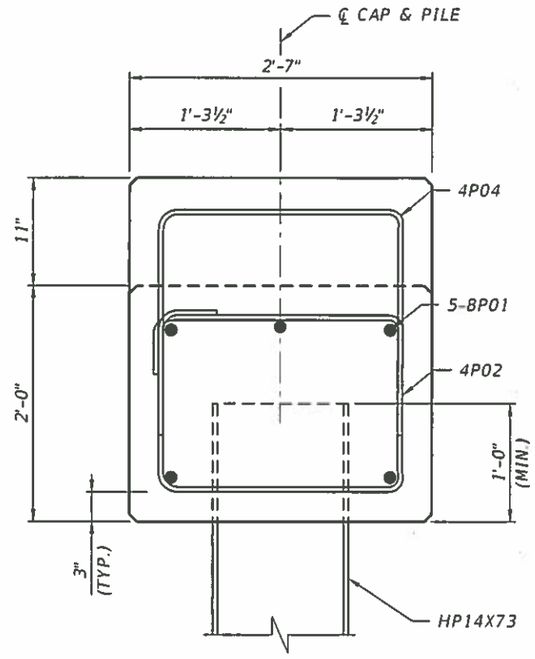


SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

1. WORK THIS SHEET WITH THE INTERMEDIATE BENT SHEET.

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: ABK
DRAWN BY: AAM
CHECKED BY:

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE: 4/2016
PROJECT NO.: 225338

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: AMANDA B. FLOYD
FL LICENSE NO.: 65632

AMANDA BERGERON KELLEY LICENSE No 65632 STATE OF FLORIDA PROFESSIONAL ENGINEER
11-23-16

INTERMEDIATE BENT DETAILS

SHEET NO.: B2-13

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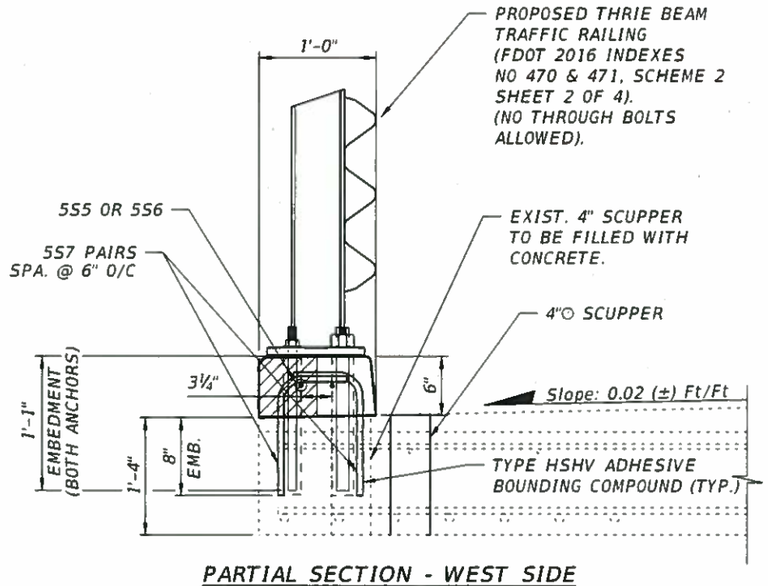
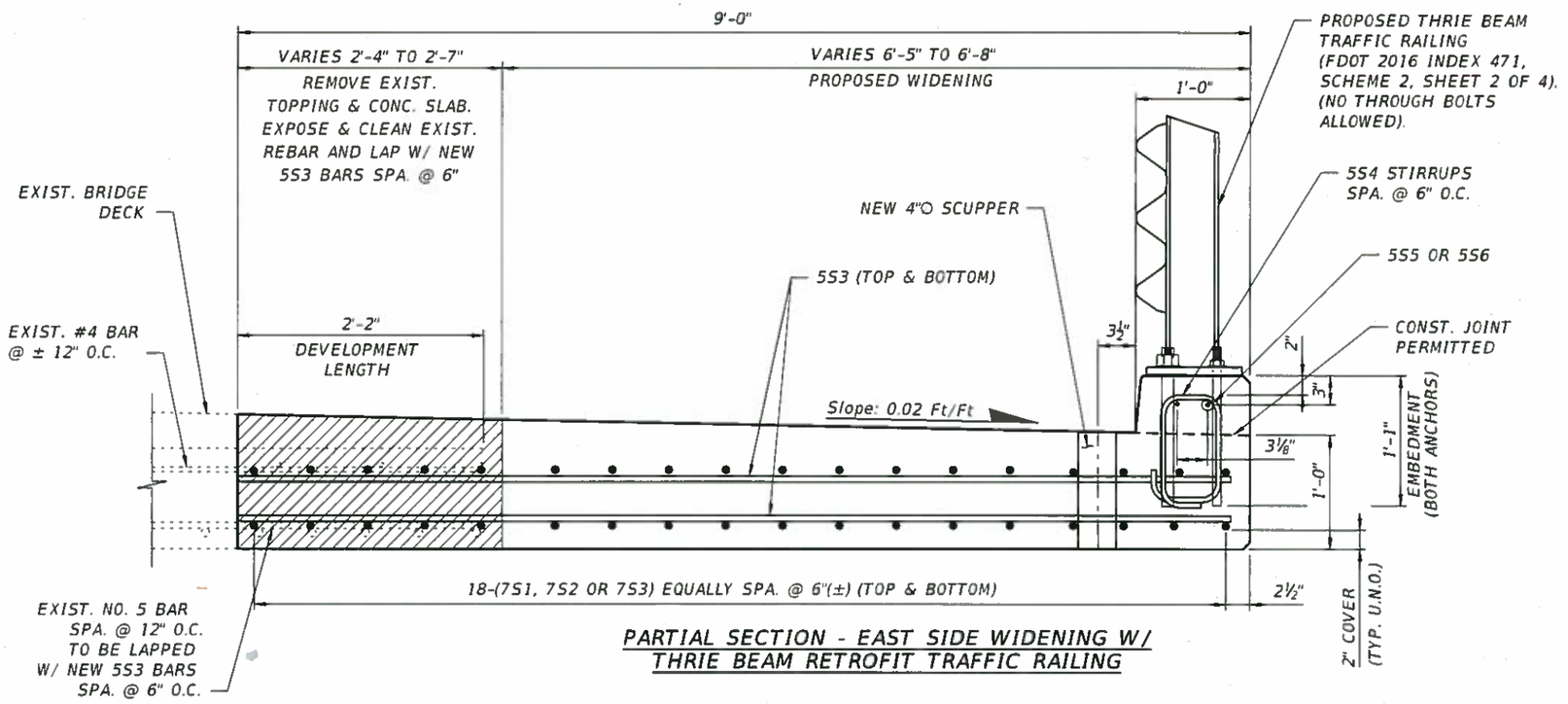
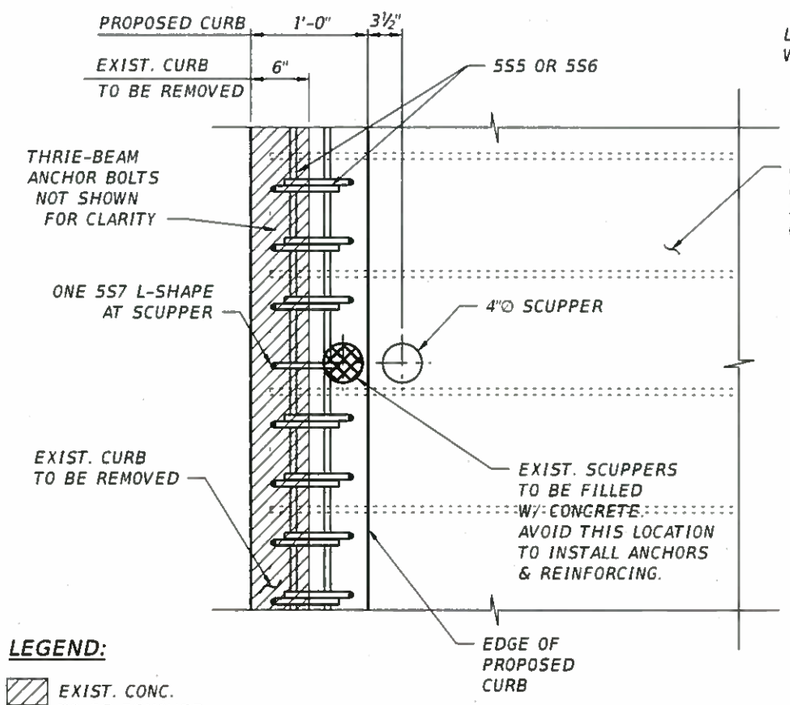


PARTIAL SECTION - WEST SIDE THRIE-BEAM RETROFIT TRAFFIC RAILING

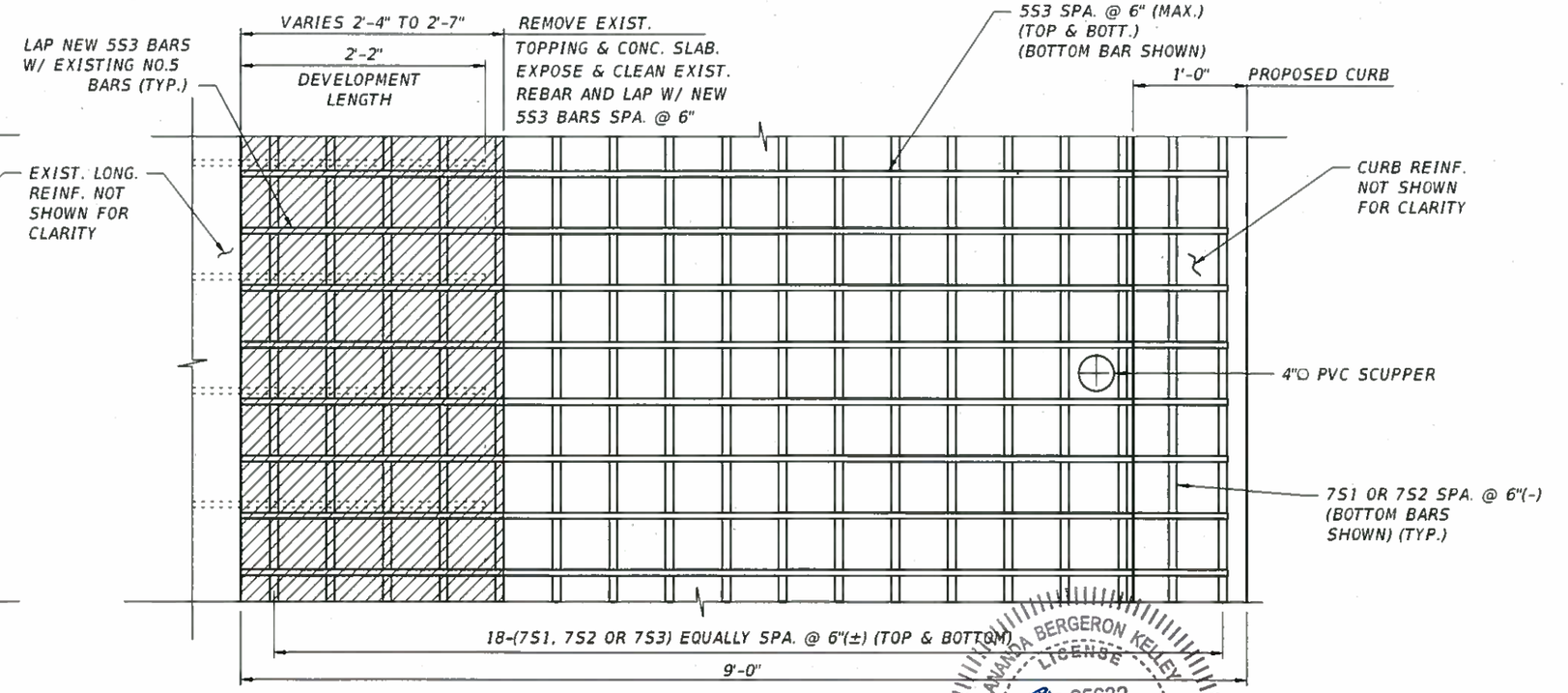
INSTALL ANCHORS USING TYPE HSHV ADHESIVE IN ACCORDANCE WITH THE REQUIREMENTS OF STANDARD SPECIFICATION 416.



PARTIAL SECTION - EAST SIDE WIDENING W/ THRIE BEAM RETROFIT TRAFFIC RAILING



PARTIAL PLAN - WEST SIDE



PARTIAL PLAN - EAST SIDE WIDENING

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MAV
DRAWN BY: MAV
CHECKED BY:

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE: 4/2016
PROJECT NO.: 225338

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: ANANDA B. KELLEY
FL. LICENSE NO.: 65632

STATE OF FLORIDA — ANANDA BERGERON KELLEY — LICENSE No 65632 — PROFESSIONAL ENGINEER — 11-23-16

SUPERSTRUCTURE DETAILS

SHEET NO.: B2-14

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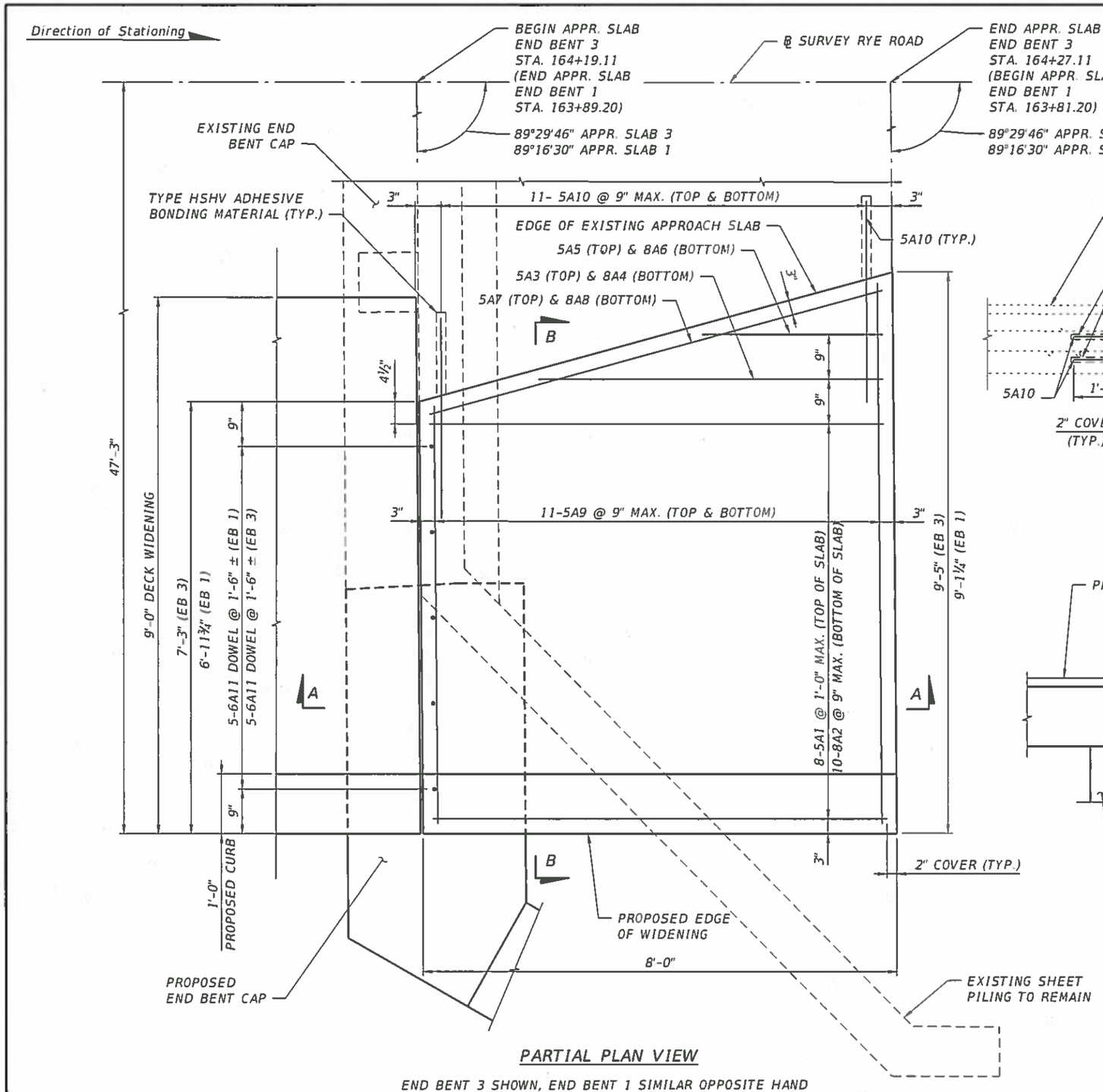
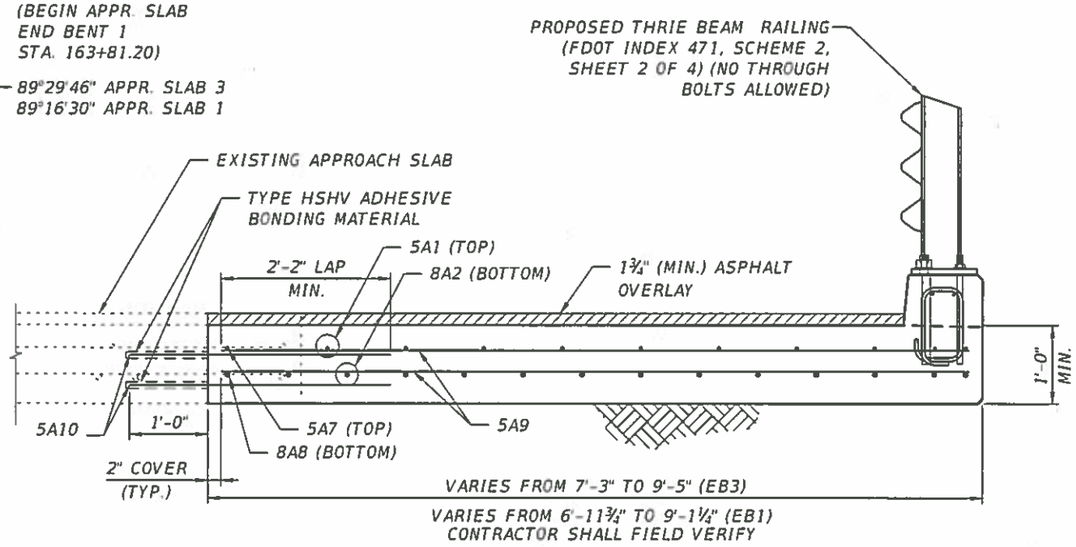


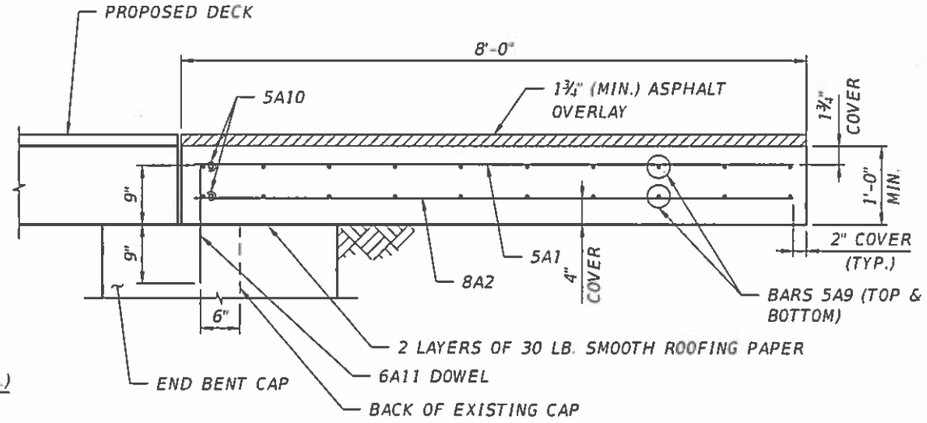
PARTIAL PLAN VIEW

END BENT 3 SHOWN, END BENT 1 SIMILAR OPPOSITE HAND



SECTION B-B

NOTE: ADJUST BARS 5A8 TO AVOID CONFLICT WITH EXISTING APPROACH SLAB REINFORCING.



SECTION A-A

ANANDA BERGERON KELLEY
LICENSE
No 65632
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

11-23-16

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: MAV
DRAWN BY: APP
CHECKED BY:

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE: 4/2016
PROJECT NO.: 225338

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER: ANANDA B. KELLEY
FL. LICENSE NO.: 65632

APPROACH SLAB

SHEET NO.: B2-15

1:43:21 PM 11/23/2016 J:\00193\00193010.07\ms\struct\Br 134026\B02ApproachSlab01.dgn

MARK		LENGTH	NO	TYP	STY		B	C	D	E	F	H	J	K	N	Ø
SIZE	DES	FT IN	BARS	BAR	A	G	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	NO	ANG
LOCATION SUPERSTRUCTURE DECK SPAN 1											NO. REQUIRED = 1					
7	S1	14- 5	36	1			14- 4 1/4									
5	S3	8- 6	60	1			8- 6									
5	S4	3-10	30	4	4	4	0-11	0- 6								
5	S5	14- 5	4	1			14- 4 1/4									
5	S7	1- 6	59	10			1- 0	0- 6								
LOCATION SUPERSTRUCTURE DECK SPAN 2											NO. REQUIRED = 1					
7	S2	14- 7	36	1			14- 6 1/2									
5	S3	8-10	60	1			8-10									
5	S4	3-10	30	4	4	4	0-11	0- 6								
5	S6	14- 7	4	1			14- 6 1/2									
5	S7	1- 6	59	10			1- 0	0- 6								
LOCATION END BENT 1											NO. REQUIRED = 1					
8	P01	4-10	5	1			4-10									
4	P02	4- 0	4	12			2- 0	2- 0								60
4	P03	6-10	6	1			6-10									
4	P04	3- 1	1	12			1- 2	1-11								60
4	P05	3-11	1	12			1-11	2- 0								19
4	P06	2- 9	1	12			0-10	1-11								63
4	P07	6- 9	5	37			2- 6	1- 5	1- 5	1- 5						
4	P08	5- 4	1	11			2- 6	1- 5	1- 5							
4	P09	5- 0	30	11			2- 0	1- 6	1- 6							
4	P10	4-11	2	11			1-11	1- 6	1- 6							
4	P11	6- 6	2	11			2- 6	2- 0	2- 0							
8	P12	3-10	4	10			2- 6	1- 4								
4	P13	6- 2	6	1			6- 2									
4	P14	5- 0	6	12			2- 6	2- 6								30
LOCATION INTERMEDIATE BENT 2											NO. REQUIRED = 1					
8	P01	5- 5	5	1			5- 5									
4	P02	7-11	7	4	4	4	1- 6	2- 1								
4	P03	5- 1	1	11			2- 1	1- 6	1- 6							
4	P04	5- 3	1	11			2- 1	1- 7	1- 7							
8	P05	3-10	4	10			2- 6	1- 4								
LOCATION END BENT 3											NO. REQUIRED = 1					
8	P01	5- 2	5	1			5- 2									
4	P02	8- 5	4	12			2-11	5- 6								60
4	P03	7- 0	6	1			7- 0									
4	P04	3- 1	1	12			1- 2	1-11								60
4	P05	3-11	1	12			1-11	2- 0								19
4	P06	2- 9	1	12			0-10	1-11								63
4	P07	6- 9	6	37			2- 6	1- 5	1- 5	1- 5						
4	P08	5- 4	1	11			2- 6	1- 5	1- 5							
4	P09	5- 0	18	11			2- 0	1- 6	1- 6							
4	P10	4-11	4	11			1-11	1- 6	1- 6							
4	P11	6- 6	2	11			2- 6	2- 0	2- 0							
8	P12	3-10	4	10			2- 6	1- 4								
LOCATION APPROACH SLAB END BENT 1											NO. REQUIRED = 1					
5	A1	7- 8	8	1			7- 8									
8	A2	7- 8	10	1			7- 8									
5	A3	5- 9	1	1			5- 9									
8	A4	5- 9	1	1			5- 9									
5	A5	3- 0	1	1			2-11 1/4									
8	A6	3- 0	1	1			2-11 1/4									
5	A7	8- 0	1	1			7-11 1/4									
8	A8	8- 0	1	1			7-11 1/4									
5	A9	VARY	22	1			6- 8 1/4									
		7- 9	0	1			8- 8 1/2									
5	A10	3- 5	22	1			3- 5									
6	A11	1- 6	5	1			1- 6									

MARK		LENGTH	NO	TYP	STY		B	C	D	E	F	H	J	K	N	Ø
SIZE	DES	FT IN	BARS	BAR	A	G	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	FT IN FR	NO	ANG
LOCATION APPROACH SLAB END BENT 3												NO. REQUIRED = 1				
5	A1	7- 8	8	1			7- 8									
8	A2	7- 8	10	1			7- 8									
5	A3	5-10	1	1			5- 9 3/4									
8	A4	5-10	1	1			5- 9 3/4									
5	A5	3- 1	1	1			3- 0 1/2									
8	A6	3- 1	1	1			3- 0 1/2									
5	A7	8- 0	1	1			7-11 1/4									
8	A8	8- 0	1	1			7-11 1/4									
5	A9	VARY	22	1			6-11 3/4									
		8- 0	0	1			9- 0 1/4									
5	A10	3- 5	22	1			3- 5									
6	A11	1- 6	5	1			1- 6									

END OF LIST

BRIDGE NO. 134026

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: ABK
DRAWN BY: AAM
CHECKED BY:

CARDNO, INC.
380 PARK PLACE BLVD, SUITE 300
CLEARWATER, FLORIDA 33759
CERTIFICATE OF AUTHORIZATION 29915

DATE: 4/2016
PROJECT NO.: 225338

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: AMANDA B. KELLEY
FL. LICENSE NO.: 65632

AMANDA BERGERON KELLEY LICENSE No 65632 STATE OF FLORIDA PROFESSIONAL ENGINEER

REBAR LIST

SHEET NO.: B2-16

4:43:28 PM 11/23/2016 J:\00193\00193010.07\ms\struct\Br 134026\B02RebarList01.dgn

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

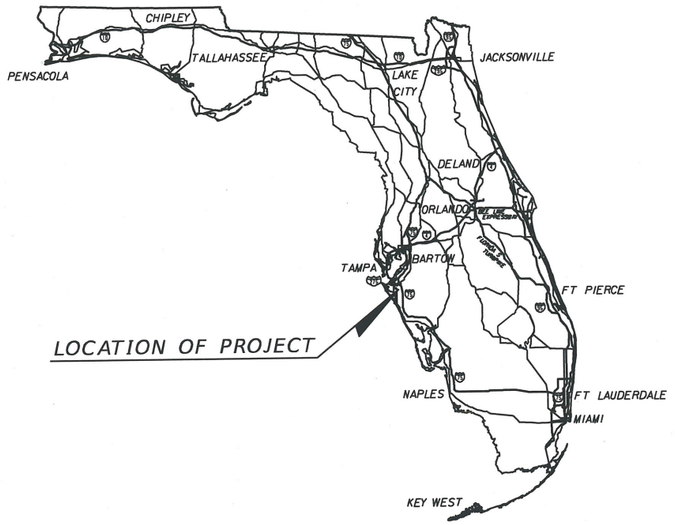
CONTRACT PLANS

MANATEE COUNTY
(6086160)

RYE ROAD
FROM SR 64 TO UPPER MANATEE RIVER ROAD

PEDESTRIAN BRIDGES

INDEX OF PEDESTRIAN BRIDGE PLANS



PEDESTRIAN BRIDGE SHOP DRAWINGS
TO BE SUBMITTED TO:
CHESTER A. SMITH III, P.E.
HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232

PLANS PREPARED BY:
HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232
(941) 342-2700
WWW.HDRINC.COM
FBPR CERTIFICATE OF AUTHORIZATION NO. 4213
VENDOR NO. 47-0680568
CONTRACT NO. C9480

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

CHESTER A. SMITH III
LICENSE
No. 70756
STATE OF FLORIDA
PROFESSIONAL ENGINEER
3/13/18

PEDESTRIAN BRIDGE PLANS
ENGINEER OF RECORD: CHESTER A. SMITH III

P.E. NO.: 70756

KEY SHEET REVISIONS	
DATE	DESCRIPTION

FISCAL YEAR	SHEET NO.
17	P-1

MANATEE COUNTY PROJECT MANAGER: MICHAEL L. STURM, PE

GENERAL NOTES

DESIGN SPECIFICATIONS:
AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), LRFD BRIDGE DESIGN SPECIFICATIONS, 7th EDITION WITH 2016 INTERIMS.
AASHTO LRFD, GUIDE SPECIFICATIONS FOR DESIGN OF PEDESTRIAN BRIDGES, 2ND EDITION WITH 2015 INTERIMS.
THE ALUMINUM ASSOCIATION, SPECIFICATIONS AND GUIDELINES FOR ALUMINUM STRUCTURES, LATEST EDITION

DESIGN METHODOLOGY:
LOAD AND RESISTANCE FACTOR DESIGN METHOD (LRFD) USING STRENGTH, SERVICE AND FATIGUE LIMIT STATES.

DESIGN LOADING:
LIVE LOAD
DESIGN TRUCK = H5 LOADING
PEDESTRIAN LOADING (PEDESTRIAN BRIDGE) = 90 PSF
DEAD LOADS:
REINFORCED CONCRETE UNIT WEIGHT = 150 PCF

FOUNDATION:
THE FOUNDATION FOR THE CONCRETE SPREAD FOOTING SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 455 OF THE SPECIFICATIONS.

SOIL BELOW FOOTING IS TO HAVE A MINIMUM ALLOWABLE BEARING CAPACITY OF 2.025 KIPS/SQ. FT. FOR LEVEL GROUND, THE BOTTOM OF THE FOOTING SHALL BE A MINIMUM OF 33 INCHES BELOW ADJACENT COMPACTED GRADE ON ALL SIDES.

THE FOUNDATIONS HAVE BEEN DESIGNED USING THE FOLLOWING ESTIMATED TOTAL LOADS FROM THE PEDESTRIAN BRIDGE WITH APPLICABLE STRENGTH AND SERVICE LIMITS APPLIED.

UNFACTORED LOADS PER BRIDGE (Υ = 1.0)
DEAD = 4,833 LBS
LIVE = 36,000 LBS (PEDESTRIAN LOADING)
HORIZONTAL WIND = 19,471 LBS
OVERTURNING WIND = 9,333 LBS

IF THE CONTRACTOR PROVIDES A PEDESTRIAN BRIDGE THAT EXCEEDS THESE LOADS, THEN THE CONTRACTOR MUST SUBMIT CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA TO THE COUNTY FOR REVIEW AND APPROVAL SHOWING THAT THE SPREAD FOOTING DIMENSIONS, REINFORCING STEEL SIZE, AND SPACING ARE ADEQUATE.

VERTICAL DATUM:
ALL ELEVATIONS REFER TO THE NATIONAL GEODETIC VERTICAL DATUM (NGVD) OF 1929.

DIMENSIONS:
ALL DIMENSIONS IN THE PLANS ARE MEASURED IN FEET AND INCHES.

CONCRETE:
ALL CONCRETE FOUNDATIONS SHALL BE FDOT CLASS IV AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH, f'c = 5500 PSI

CONCRETE COVER:
CONCRETE COVER IS 4" UNLESS NOTED OTHERWISE IN THE PLAN SET AND DO NOT INCLUDE PLACEMENT AND FABRICATION TOLERANCES. SEE SECTION 415 OF THE SPECIFICATIONS FOR ALLOWABLE TOLERANCES.

JOINTS IN CONCRETE:
CONSTRUCTION JOINTS WILL BE PERMITTED ONLY AT THE LOCATIONS INDICATED IN THE PLANS. ADDITIONAL CONSTRUCTION JOINTS OR ALTERATIONS TO THOSE SHOWN SHALL REQUIRE APPROVAL OF THE ENGINEER.

CHAMFERS:
PROVIDE ¾" CHAMFER ON ALL EXPOSED SURFACES.

REINFORCING STEEL:
MATERIAL:
REINFORCING STEEL SHALL BE ASTM A615, GRADE 60.
PLACEMENT:
ALL DIMENSIONS PERTAINING TO THE LOCATION OF REINFORCING ARE TO THE CENTERLINE OF BAR, EXCEPT WHERE THE CLEAR DIMENSION IS SHOWN TO THE FACE OF CONCRETE.

ENVIRONMENT:
SUBSTRUCTURE - CONCRETE: MODERATELY AGGRESIVE (PH = 5.7, RESISTIVITY = 1,800 OHM-CM)

PEDESTRIAN BRIDGE:
MATERIALS:
PRIMARY STRUCTURAL MEMBERS SHALL BE 6061-T6 ALUMINUM
SECONDARY STRUCTURAL MEMBERS SHALL BE 6000 SERIES ALUMINUM
BRIDGE DECKING SHALL BE ALUMINUM ALLOY 6061-T6 EXTRUDED

DEFLECTIONS REQUIREMENTS:
VERTICAL = SPAN / 400
HORIZONTAL = SPAN / 500

THE FUNDAMENTAL FREQUENCY OF THE UNLOADED PEDESTRIAN BRIDGE SHALL BE NO LESS THAN 3.0 HERTZ TO AVOID THE FIRST HARMONIC.

BRIDGE SHALL BE CAMBERED TO OFFSET THE DEAD LOAD.

DEPTH OF BRIDGE STRUCTURE FROM TOP OF DECK TO BOTTOM OF LOWEST CHORD IS ASSUMED TO BE 1'-5½" MAXIMUM. BRIDGE SUPPLIER TO PROVIDE 1'-5½" MAX DEPTH FROM TOP OF DECK TO BOTTOM OF LOWEST CHORD.

ANCHOR BOLTS:
THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ANCHOR BOLTS THAT MEET PREFABRICATED BRIDGE SUPPLIER REQUIREMENTS.

COVER PLATES:
PROVIDE ADA COMPLIANT COVER PLATE SYSTEM AT BEGIN AND END BRIDGE LOCATIONS WHERE PEDESTRIANS TRANSITION BETWEEN SURFACES. THE COVER PLATE SHALL BE RUBBER ENCAPSULATED STEEL COVER SYSTEM TO AVOID CORROSION BETWEEN DISSIMILAR MATERIALS.

UTILITIES:
LOCATION AND TYPE OF UTILITIES SHOWN IN THE BRIDGE PLANS ARE APPROXIMATE. FOR UTILITY DISPOSITIONS AND ADDITIONAL INFORMATION, REFER TO THE UTILITY ADJUSTMENTS PLANS.

BID ITEM NOTES:
PAYMENT FOR INCIDENTAL ITEMS NOT SPECIFICALLY COVERED IN THE INDIVIDUAL PAY ITEMS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE PAY ITEMS.

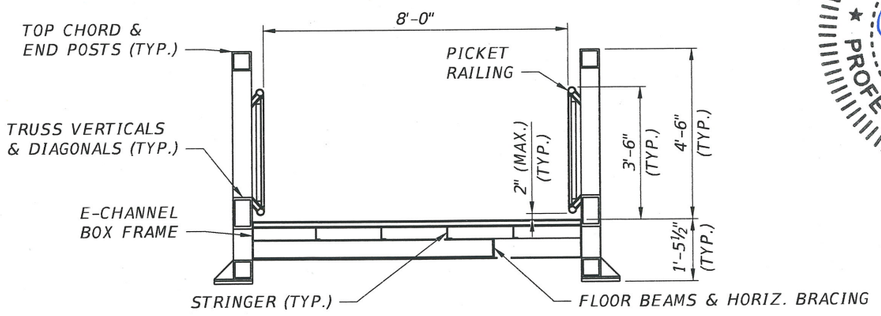
NO SEPARATE PAYMENT WILL BE MADE FOR EXCAVATIONS FOR CONSTRUCTION OF FOOTINGS. ALL COSTS FOR EXCAVATION SHALL BE INCIDENTIAL TO THE ELEMENT REQUIRING SUCH WORK.

THE COST OF THE COVER PLATES (4 TOTAL) SHALL BE INCLUDED WITH THE COST OF THE CLASS IV (SUBSTRUCTURE) CONCRETE, PAY ITEM 400-4-5.

ABBREVIATIONS:
E = EXPANSION BEARING
FFBW = FRONT FACE OF BACKWALL
E.F. = EACH FACE

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITY		
			LOC. 1	LOC. 2	TOTAL
400-4-5	CLASS IV (SUBSTRUCTURE)	C.Y.	15.82	15.82	31.64
415-1-5	REINFORCING STEEL (SUBSTRUCTURE)	LBS.	1506	1506	3012
530-3-4	RIPRAP-RUBBLE, DITCH LINING	TN.	20.76	22.62	43.38
PB 1	PEDESTRIAN BRIDGE	EA.	1	1	2



TYPICAL SECTION

CHESTER A. SMITH III LICENSE No. 70756 STATE OF FLORIDA PROFESSIONAL ENGINEER
3/13/18

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JA
DRAWN BY: DAR
CHECKED BY: AT

HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232
CERTIFICATE OF AUTHORIZATION 4213

DATE: 11/2017
PROJECT NO.: 225338

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

GENERAL NOTES

SHEET NO.: P-2

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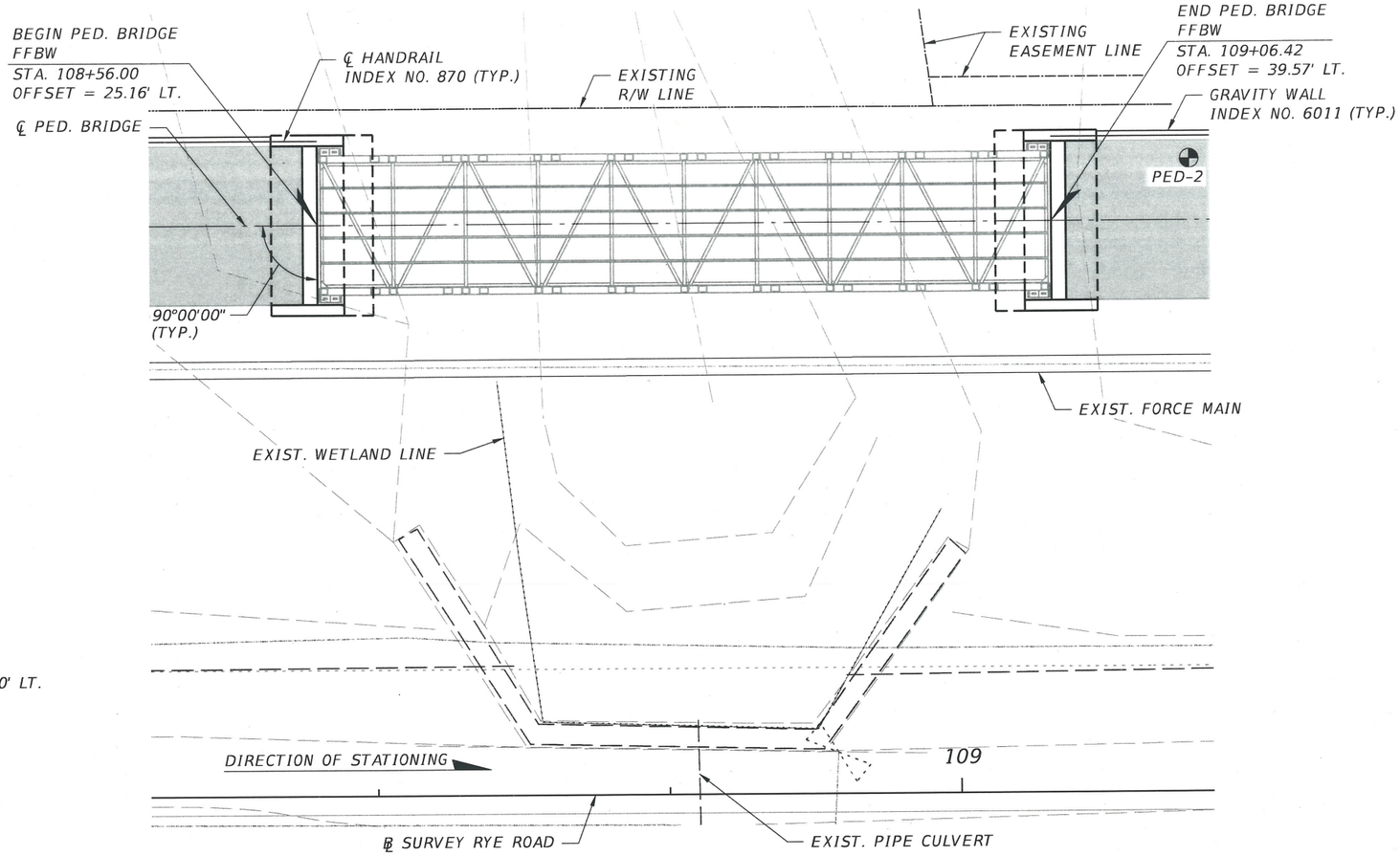
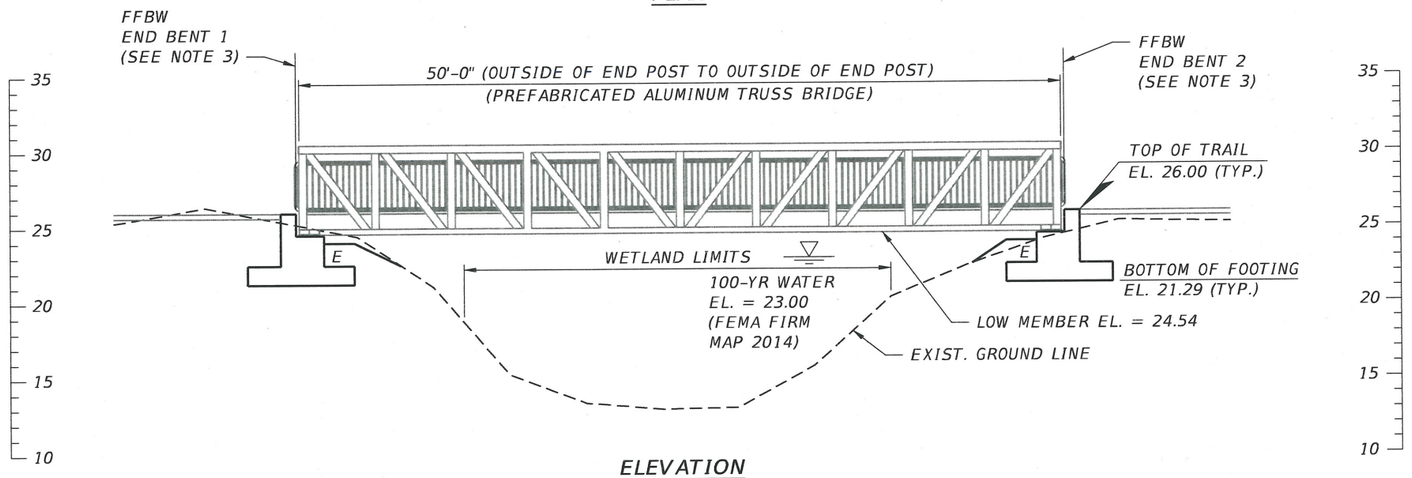


PLAN



ELEVATION
(ALONG ℄ PED. BRIDGE)

CHESTER A. SMITH III
LICENSE
No. 70756
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
3/13/18

NOTES:

1. PROVIDE COVER PLATE AT BEGIN / END BRIDGE FOR TRANSITION FROM BRIDGE SURFACE TO CONCRETE TRAIL.
2. THE FFBW IS LOCATED 2 1/2 INCHES BEYOND THE PEDESTRIAN BRIDGE END POST TO PROVIDE CLEARANCE FOR THE BASE PLATE.
3. FOR GRADING DETAILS, SEE END BENT DETAILS (2 OF 2).
4. ◓ DENOTES BORING LOCATIONS. FOR BORING DATA, SEE REPORT CORE OF BORINGS SHEETS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JA
DRAWN BY: DAR
CHECKED BY: AT

HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232
CERTIFICATE OF AUTHORIZATION 4213

DATE: 11/2017
PROJECT NO.: 225338

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

PEDESTRIAN BRIDGE LOCATION 1

SHEET NO.: P-3

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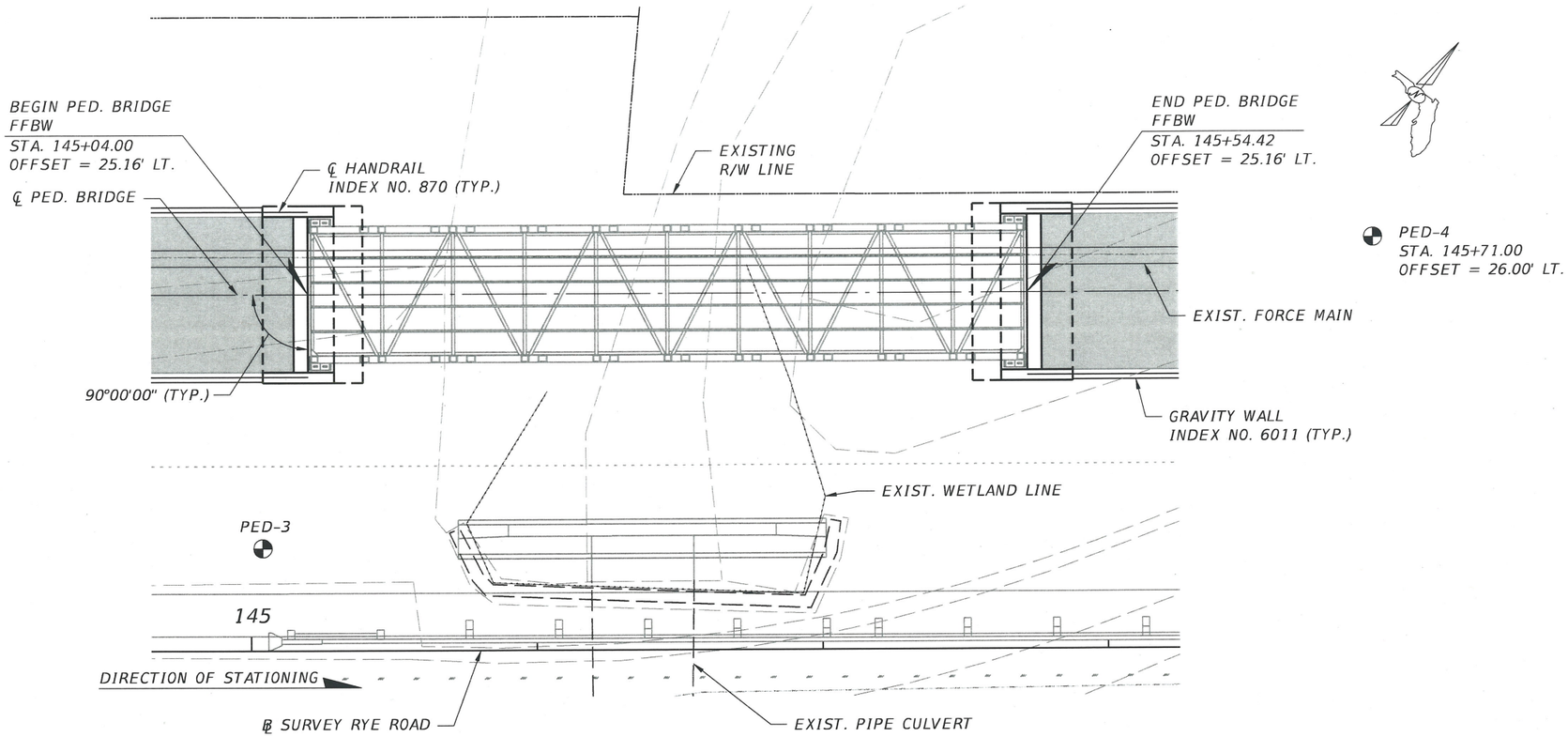
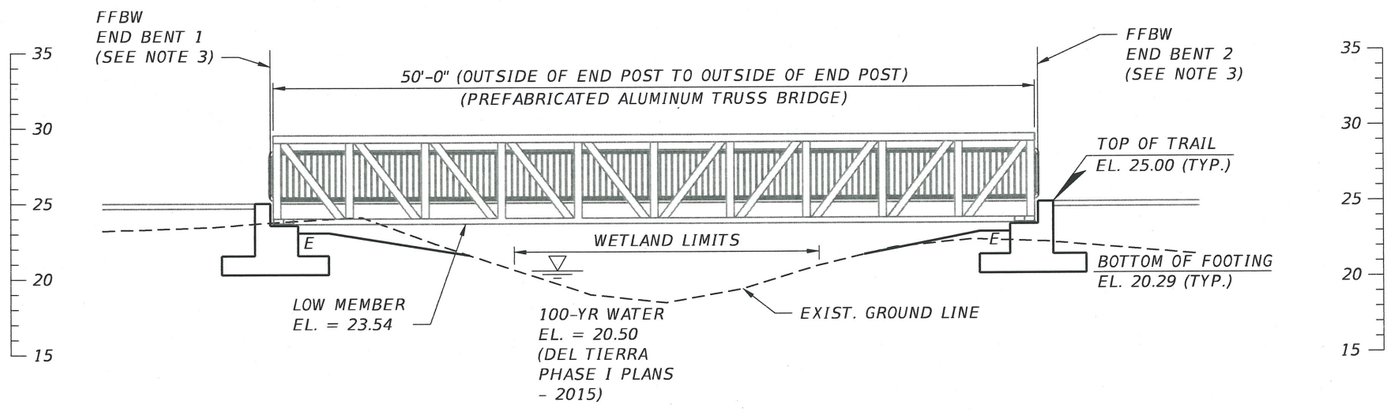


PLAN



ELEVATION
(ALONG ℄ PED. BRIDGE)

CHESTER A. SMITH III
LICENSE
No. 70756
STATE OF FLORIDA
PROFESSIONAL ENGINEER
3/13/18

NOTES:

1. PROVIDE COVER PLATE AT BEGIN / END BRIDGE FOR TRANSITION FROM BRIDGE SURFACE TO CONCRETE TRAIL.
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4. ◓ DENOTES BORING LOCATIONS. FOR BORING DATA, SEE REPORT CORE OF BORINGS SHEETS.

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JA
DRAWN BY: DAR
CHECKED BY: AT

HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232
CERTIFICATE OF AUTHORIZATION 4213

DATE: 11/2017
PROJECT NO.: 225338

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
CHESTER A. SMITH III
FL. LICENSE NO.
70756

PEDESTRIAN BRIDGE LOCATION 2

SHEET NO.
P-4

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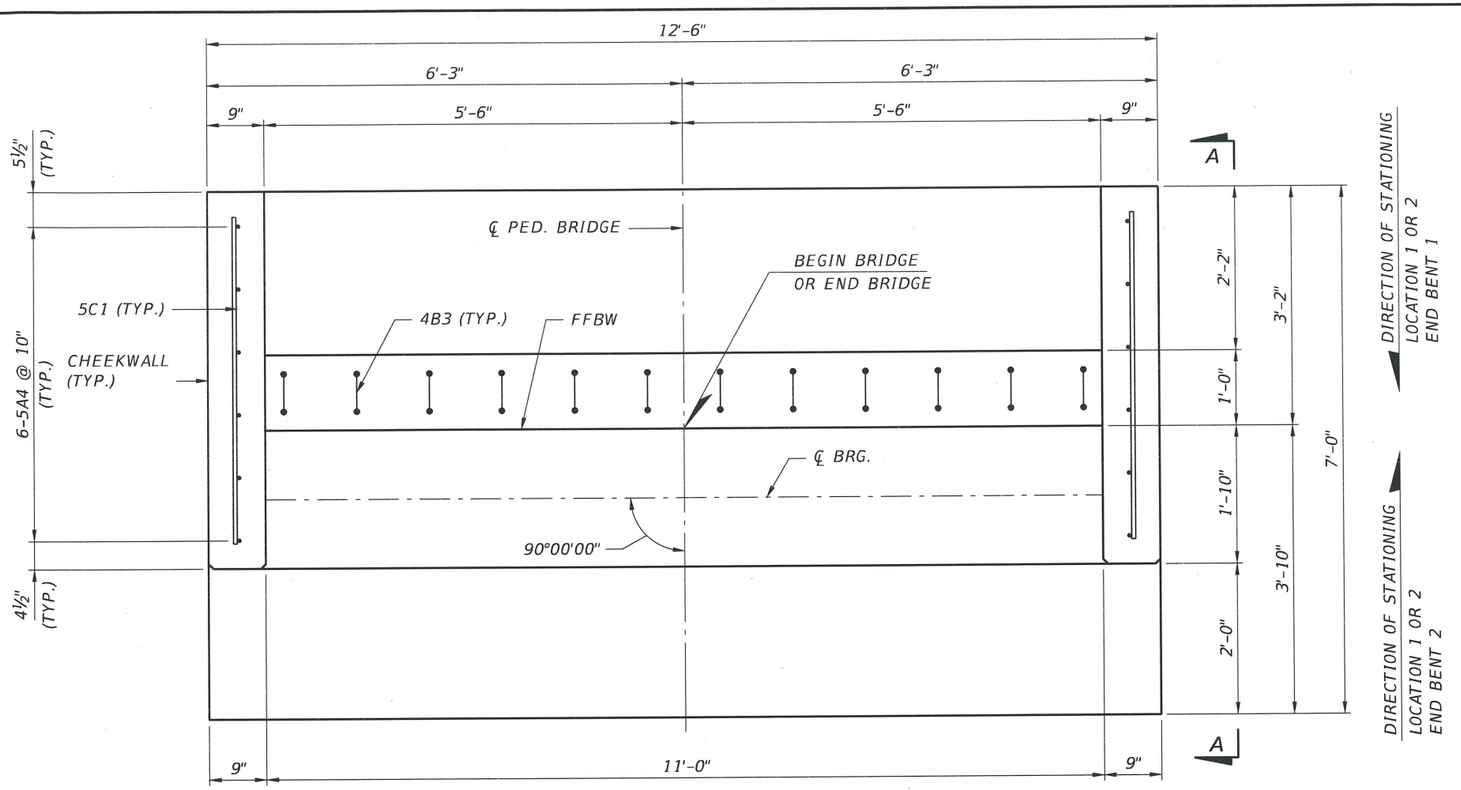
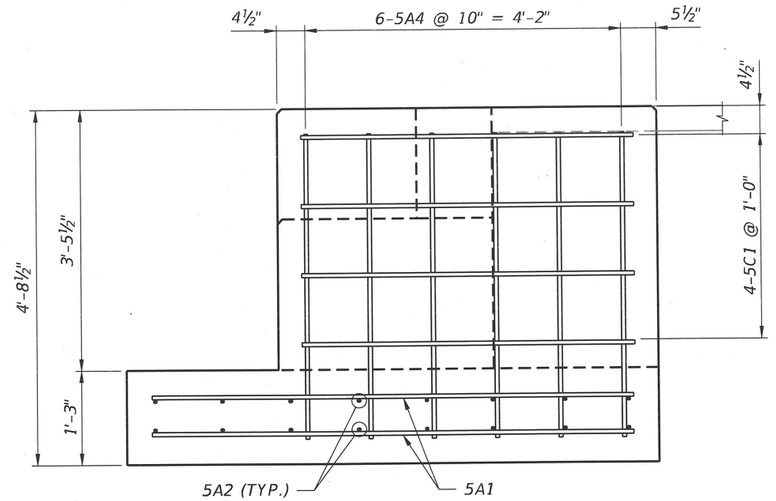


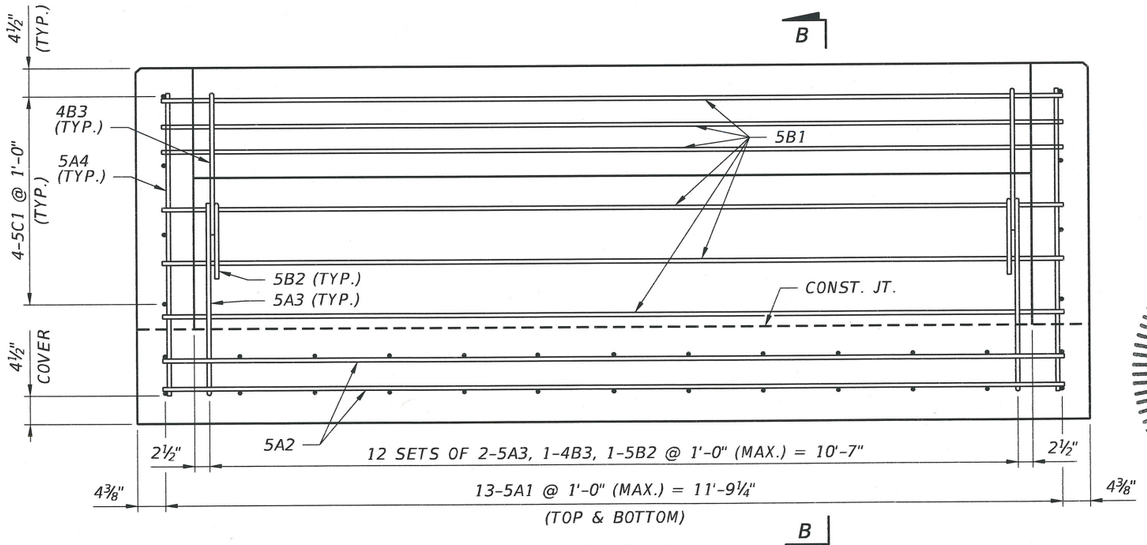
PLAN

DIRECTION OF STATIONING
LOCATION 1 OR 2
END BENT 1

DIRECTION OF STATIONING
LOCATION 1 OR 2
END BENT 2



VIEW A-A



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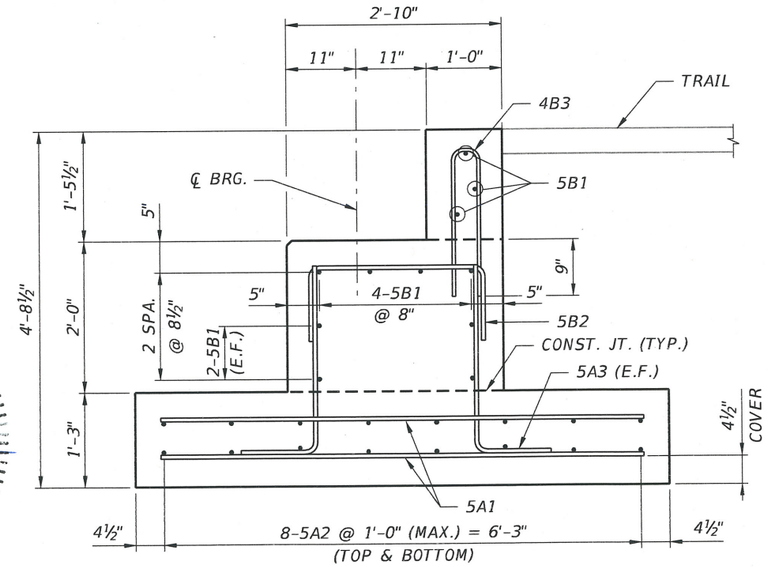

SECTION B-B

CHESTER A. SMITH III
LICENSE
No. 70756
STATE OF FLORIDA
PROFESSIONAL ENGINEER
3/13/18

No.	REVISIONS	DATE	BY

SCALE	AS NOTED
DESIGNED BY	JA
DRAWN BY	DAR
CHECKED BY	AT

HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232
CERTIFICATE OF AUTHORIZATION 4213

DATE 11/2017
PROJECT NO. 225338

Manatee County FLORIDA
MANATEE COUNTY
PUBLIC WORKS

DESIGN ENGINEER
CHESTER A. SMITH III
FL. LICENSE NO. 70756

END BENT DETAILS (1 OF 2)

SHEET NO. P-5

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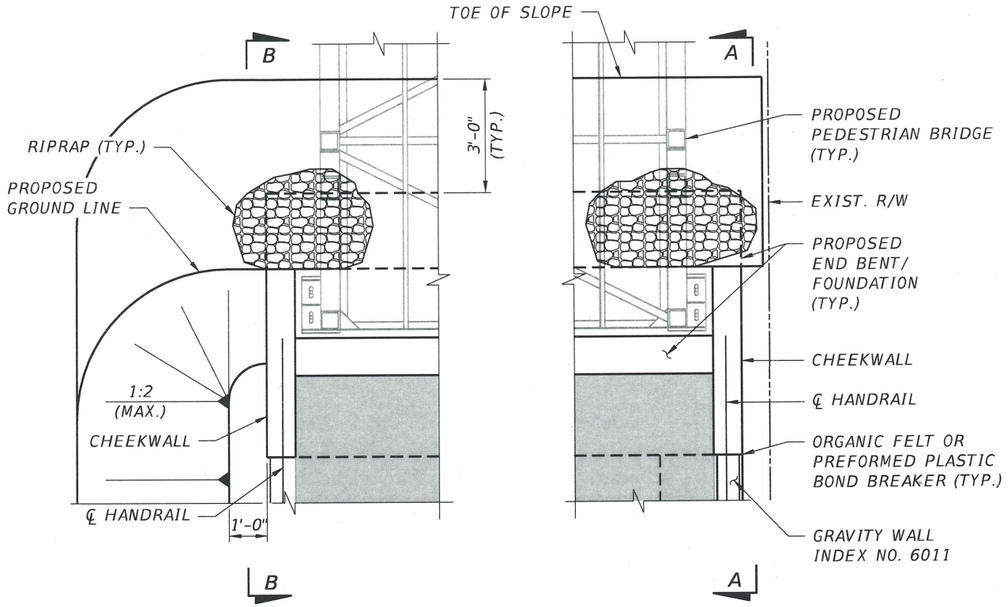
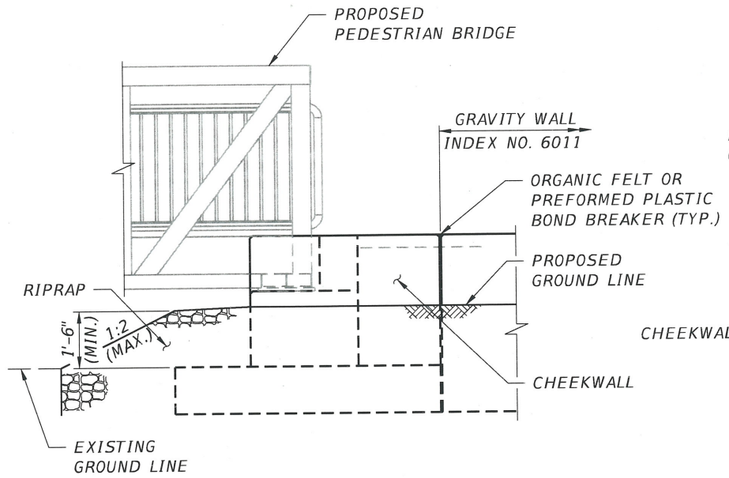


GRADING DETAILS - PLAN



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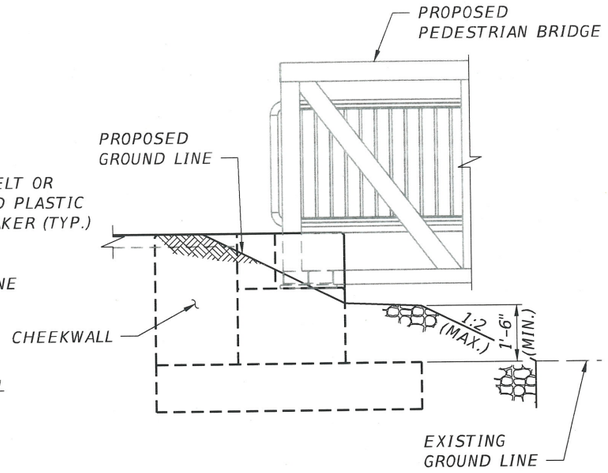
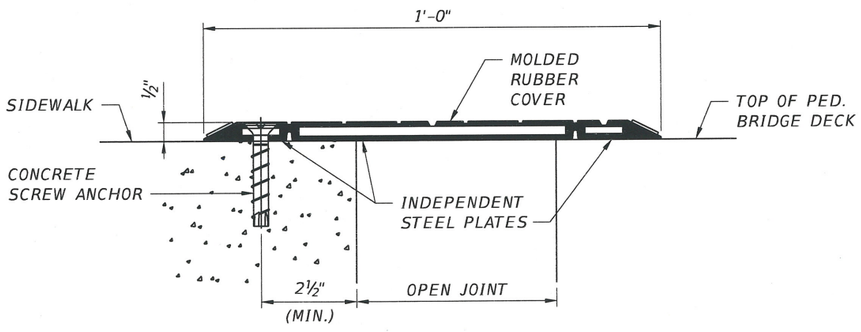


VIEW B-B

(HANDRAIL NOT SHOWN FOR CLARITY)

CHESTER A. SMITH III
LICENSE
No. 70756
STATE OF FLORIDA
PROFESSIONAL ENGINEER
3/13/18



COVER PLATE DETAIL

MARK		LENGTH		NO	TYP	STY		B			C			D			E			F			H			J			K			N	Ø
SIZE	DES	FT	IN	BARS	BAR	A	G	FT	IN	FR	FT	IN	FR	FT	IN	FR	FT	IN	FR	FT	IN	FR	FT	IN	FR	FT	IN	FR	FT	IN	FR	NO	ANG
END BENT 1 OR 2 (NO. REQUIRED = 4)																																	
5	A1	6-	4	26	1			6-	4																								
5	A2	11-	10	16	1			11-	10																								
5	A3	3-	3	24	10			2-	5		0-	10																					
5	A4	4-	0	12	1			4-	0																								
5	B1	11-	10	11	1			11-	10																								
5	B2	3-	10	12	11			2-	2		0-	10		0-	10																		
4	B3	4-	1	12	11			0-	4		1-	10 ½		1-	10 ½																		
5	C1	4-	4	8	1			4-	4																								

No.	REVISIONS	DATE	BY

SCALE: AS NOTED
DESIGNED BY: JA
DRAWN BY: DAR
CHECKED BY: AT

HDR ENGINEERING, INC.
2601 CATTLEMEN ROAD, SUITE 400
SARASOTA, FLORIDA 34232
CERTIFICATE OF AUTHORIZATION 4213

DATE: 11/2017
PROJECT NO.: 225338

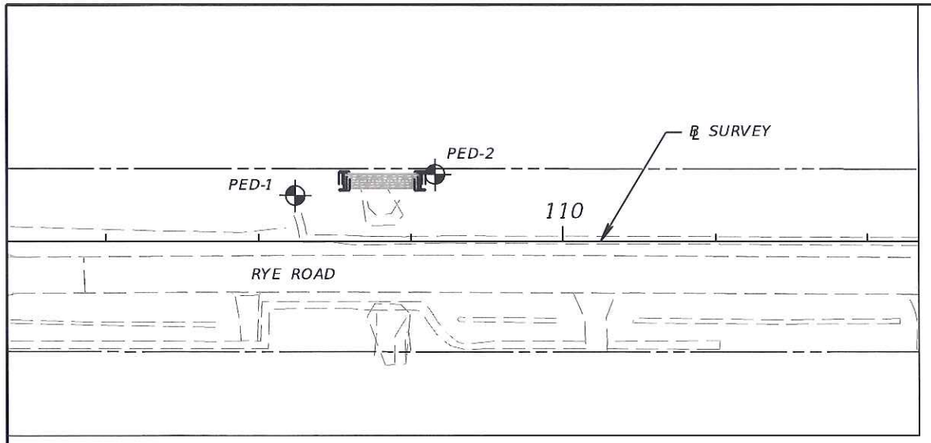
Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

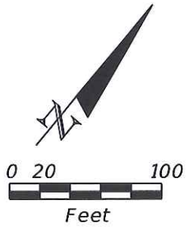
DESIGN ENGINEER: CHESTER A. SMITH III
FL. LICENSE NO.: 70756

END BENT DETAILS (2 OF 2)

SHEET NO.: P-6

1:36:00 PM 3/13/2018 PW:\007982\CON0086775\00000000225338\13.00_CAD\12345615201\struct\B1EndBent02.DGN





BORING LOCATION PLAN

NOTE:

THE LOCATIONS OF THE BORINGS WERE RECORDED IN THE FIELD BY TIERRA, INC. USING GARMIN ETREX HAND-HELD GPS EQUIPMENT WITH A REPORTED ACCURACY OF 10 FEET. THE GPS COORDINATES RECORDED BY TIERRA WERE UTILIZED IN CONJUNCTION WITH MICROSTATION DESIGN FILES TO OBTAIN STATION, OFFSET, AND ELEVATION. THEREFORE, THE LOCATIONS OF THE BORINGS SHOULD BE CONSIDERED APPROXIMATE.

ENVIRONMENTAL CLASSIFICATION:

SUBSTRUCTURE	CONCRETE: MODERATELY AGGRESSIVE (pH=5.7, RESISTIVITY=1,800 OHM-CM)
SUBSTRUCTURE	STEEL: EXTREMELY AGGRESSIVE (pH=5.7)

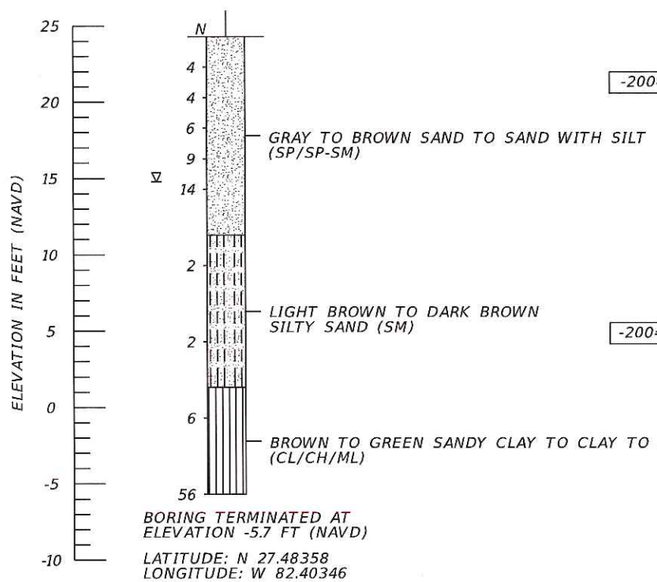
TEST RESULTS:

RESISTIVITY	1,800 TO 14,000 OHM-CM
CHLORIDES	30 TO 105 PPM
SULFATES	<4.8 TO 204.1 PPM
pH	5.7 TO 7.8

LEGEND

	GRAY TO BROWN SAND TO SAND WITH SILT (SP/SP-SM)
	LIGHT BROWN TO DARK BROWN SILTY SAND (SM)
	BROWN TO DARK BROWN CLAYEY SAND (SC)
	BROWN TO GREEN SANDY CLAY TO CLAY TO SILT (CL/CH/ML)
SP	UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487) GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND LABORATORY TESTING ON SELECTED SAMPLES FOR CONFIRMATION OF VISUAL REVIEW.
N	NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).
HA	HAND AUGERED TO VERIFY UTILITY CLEARANCE
-200	PERCENT PASSING #200 SIEVE
NMC	NATURAL MOISTURE CONTENT (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
NAVD	NORTH AMERICAN VERTICAL DATUM OF 1988
	APPROXIMATE SPT BORING LOCATION
▽	GROUNDWATER LEVEL ENCOUNTERED DURING FIELD EXPLORATIONS
GNA	GROUNDWATER NOT APPARENT DUE TO THE INTRODUCTION OF DRILLING FLUID.
℄ SURVEY	BASELINE SURVEY OF RYE ROAD

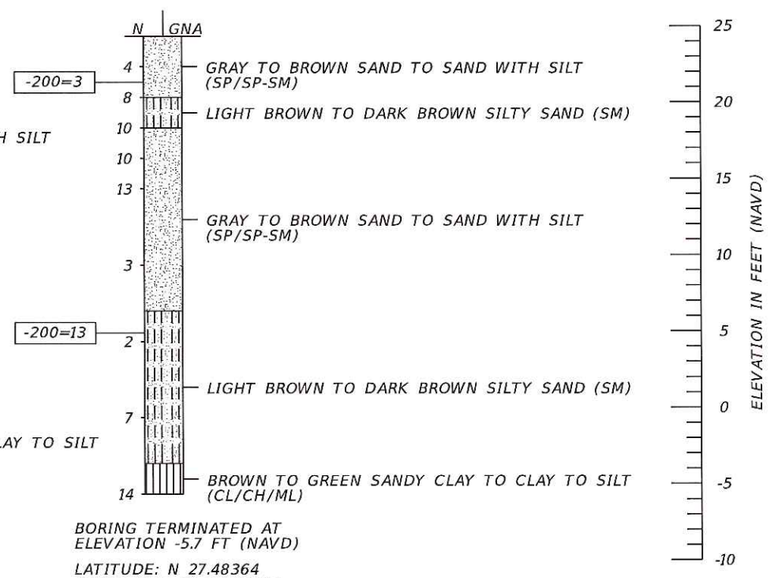
BOR # PED-1
STA. 108+24
REF. ℄ SURVEY
OFF. 30' LT.
ELEV. 24.3
DATE 2/27/2017
DRILLER J. SHAW
HAMMER AUTOMATIC
RIG D-25



BORING TERMINATED AT ELEVATION -5.7 FT (NAVD)

LATITUDE: N 27.48358
LONGITUDE: W 82.40346

BOR # PED-2
STA. 109+16
REF. ℄ SURVEY
OFF. 44' LT.
ELEV. 24.3
DATE 2/27/2017
DRILLER J. SHAW
HAMMER AUTOMATIC
RIG D-25



BORING TERMINATED AT ELEVATION -5.7 FT (NAVD)

LATITUDE: N 27.48364
LONGITUDE: W 82.40337

3/14/2018
Daniel R. Ruel

DANIEL R. RUEL LICENSE No 82404 STATE OF FLORIDA PROFESSIONAL ENGINEER

	SAFETY HAMMER	AUTOMATIC HAMMER
GRANULAR MATERIALS- RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT.)	SPT N-VALUE (BLOWS/FT.)
VERY LOOSE	LESS THAN 4	LESS THAN 3
LOOSE	4 to 10	3 to 8
MEDIUM DENSE	10 to 30	8 to 24
DENSE	30 to 50	24 to 40
VERY DENSE	GREATER THAN 50	GREATER THAN 40
SILTS AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT.)	SPT N-VALUE (BLOWS/FT.)
VERY SOFT	LESS THAN 2	LESS THAN 1
SOFT	2 to 4	1 to 3
FIRM	4 to 8	3 to 6
STIFF	8 to 15	6 to 12
VERY STIFF	15 to 30	12 to 24
HARD	GREATER THAN 30	GREATER THAN 24

PEDESTRIAN BRIDGE

No.	REVISIONS	DATE	BY

SCALE AS NOTED
DESIGNED BY SW
DRAWN BY SW
CHECKED BY DRR

TIERRA, INC.
7351 TEMPLE TERRACE HIGHWAY
TAMPA, FLORIDA 33637
CERTIFICATE OF AUTHORIZATION 6486

DATE 3/2017
PROJECT NO. 225338

Manatee County FLORIDA
MANATEE COUNTY PUBLIC WORKS

DESIGN ENGINEER DANIEL R. RUEL
FL. LICENSE NO. 82404

REPORT OF CORE BORINGS (1)

SHEET NO. P-7

8:48:53 AM 3/14/2018 J:\6511\2015 Files\6511-15-087 Rye Road\Microstation\B1boring01.dgn