

INDIAN RIVER COUNTY BOARD OF COUNTY COMMISSIONERS



PUBLIC WORKS DIRECTOR:
RICHARD B. SZPYRKA, P.E.

COUNTY ENGINEER:
JAMES W. ENNIS, P.E.

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66TH AVENUE OVER NORTH RELIEF CANAL



THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, DESIGN STANDARDS. (BOOKLET DATED JANUARY, 2016)

GOVERNING SPECIFICATIONS: THE FLORIDA DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DATED 2016, AND SPECIAL PROVISIONS THERETO IF IN NOTED IN THE CONTRACT SPECIFICATIONS FOR THIS PROJECT.

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

ENGINEER'S CERTIFICATION:
I HEREBY CERTIFY THAT THE ATTACHED PLANS AND DESIGN ARE IN GENERAL COMPLIANCE WITH THE DESIGN STANDARDS AND CRITERIA IN EFFECT ON THIS DATE FOR INDIAN RIVER COUNTY ENGINEERING DEPARTMENT AND THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION.

DATE _____ PROFESSIONAL ENGINEER # _____

F.D.O.T. Standard Sheets

Sheet Number	Sheet Title
410	CONCRETE BARRIER WALL (CANTILEVERED WALL), (SHEET 4 OF 25)
420	TRAFFIC RAILING BARRIER - (32" F SHAPE), (SHEETS 1 - 4)
423	TRAFFIC RAILING BARRIER - (32" VERTICAL SHAPE), (SHEETS 1 - 3)
821	ALUMINUM PEDESTRIAN/BICYCLE BULLET RAILING DETAILS FOR TRAFFIC RAILING BARRIER - (32" F SHAPE)
822	ALUMINUM PEDESTRIAN/BICYCLE BULLET RAILING DETAILS (SHEETS 1 - 3)
20600	GENERAL NOTES AND DETAILS FOR PRESTRESSED CONCRETE PILES
20614	14" SQUARE PRESTRESSED CONCRETE PILE
20618	18" SQUARE PRESTRESSED CONCRETE PILE
20910	APPROACH SLABS (RIGID PAVEMENT APPROACHES) (SHEETS 1 - 2)

VERIFY SCALE

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

BAR IS ONE INCH ON ORIGINAL DRAWINGS. ADJUST SCALES AS NECESSARY.



2035 Vista Parkway
West Palm Beach, FL 33411
Phone No. 561.687.2220
Fax No. 561.687.1110
Registry No. 33574

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DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

Scale: AS NOTED
Approved:
Drawn: C.A.B.
Checked: T.A.D.
Date: DECEMBER 2020
Field Book No:

PROJECT:
**PROPOSED BRIDGE MODIFICATIONS FOR:
66th AVENUE OVER THE NORTH RELIEF CANAL
IRC 1505
INDIAN RIVER COUNTY, FLORIDA**

SEAL
Timothy Alan DeLand-71588
FLORIDA P.E. NAME & NUMBER

SHEET
C-1
PROJECT NO.
16162296.00

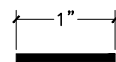
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Contractor shall verify all dimensions and quantities prior to construction and fabrication. Discrepancies shall be brought to the attention of the Engineer before construction.

SUMMARY OF QUANTITIES

ITEM NO.	ITEM	NO. REQUIRED	UNIT	QUANTITY	AS BUILT
	BRIDGE				
110-3	DEMOLITION AND REMOVAL OF EXISTING BRIDGE		L. S.	1	
	(SUPERSTRUCTURE)				
12450-88-15	PRESTRESSED PRECAST DECK UNITS				
	15" x 4'-5" x 14'-0"	48	L. F.	672'-0"	
	15" x 4'-8" x 14'-0"	4	L. F.	56'-0"	
	18" x 4'-5" x 34'-0"	24	L. F.	816'-0"	
	18" x 4'-8" x 34'-0"	2	L. F.	68'-0"	
400-2-4	CLASS II CONCRETE FOR CLOSURE POURS BETWEEN DECK UNITS		Cu. Yds.	59.0	
415-1-4	REINFORCING STEEL		Lbs.	3,546	
521-5-4	CONCRETE TRAFFIC RAILING BARRIER (32" VERTICAL SHAPE)		L. F.	125'-0"	
521-5-1	CONCRETE TRAFFIC RAILING BARRIER (32" F SHAPE)		L. F.	125'-0"	
460-70-2	ALUMINUM PEDESTRIAN BULLET BARRIER RAILING		L. F.	250'-0"	
	CONCRETE TRAFFIC RAILING BARRIER (SHOULDER) WITH SPREAD FOOTING (INDEX NO. 410, SHEET NO. 5 OF 22)			75'-4"	
	(SUBSTRUCTURE)				
400-2-5	CLASS II CONCRETE FOR PILES CAPS		Cu. Yds.	216.0	
415-1-5	REINFORCING STEEL		Lbs.	40,250	
455-34-3	PRESTRESSED PILES (ABUTMENT)				
	18" SQUARE x 75'-0" MINIMUM (TEST PILE - ABUTMENT)	1 EACH	L. F.	75'-0"	
	18" SQUARE x 60'-0" MINIMUM (ABUTMENT)	33 EACH	L. F.	1,980'-0"	
	14" SQUARE x 30'-0" MINIMUM (WING BENT)	12 EACH	L. F.	360'-0"	
	18" SQUARE x 100'-0" MINIMUM (TEST PILE - INTERMEDIATE BENT)	2 EACH	L. F.	200'-0"	
	18" SQUARE x 60'-0" MINIMUM (DEBRIS PILE - INTERMEDIATE BENT)	2 EACH	L. F.	120'-0"	
	18" SQUARE x 85'-0" MINIMUM (INTERMEDIATE BENT)	38 EACH	L. F.	3,230'-0"	
455-137	PILE DYNAMIC LOAD TESTING	1 EACH	L. S.	1	
455-133	8" x 8'-0" x 14'-0" Sheet Wall	40 EACH	L. F.	560'-0"	
	(SIDEWALKS & MEDIAN)				
400-2-4	CLASS II CONCRETE		Cu. Yds.	164.0	
415-1-4	REINFORCING STEEL		Lbs.	7,252	
	(APPROACH SLABS)		Each	2	
400-2-10	CLASS II CONCRETE		L. S.	1	
415-1-9	REINFORCING STEEL		L. S.	1	
715-2117	4"Ø PVC CONDUIT		L. F.	630'-0"	
339-1	MISCELLANEOUS ASPHALT		S. F.	524	
530-3-3	(ROCK RUBBLE) (CANAL EXCAVATION AS REQUIRED SHALL BE INCLUDED IN THE COST OF THE ROCK RUBBLE)		TN	1,800	

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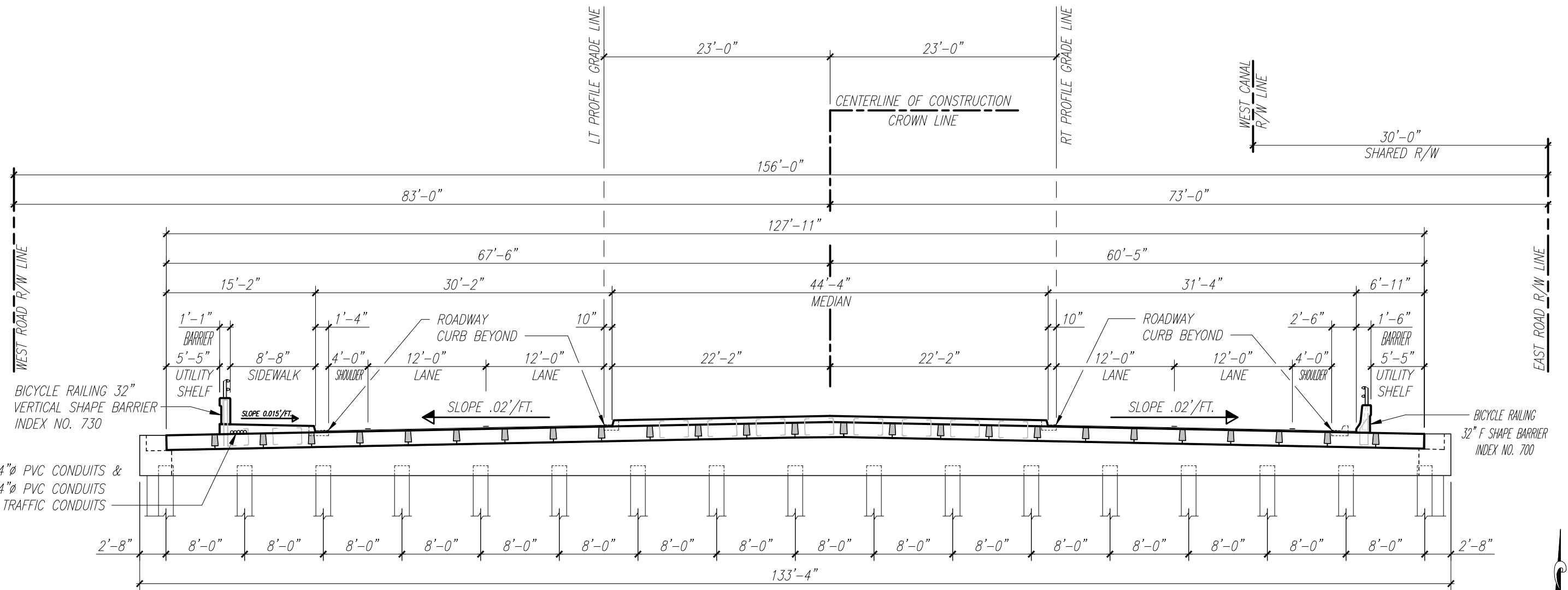
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PROPOSED BRIDGE CROSS SECTION at END BENT

$3/16" = 1'-0"$

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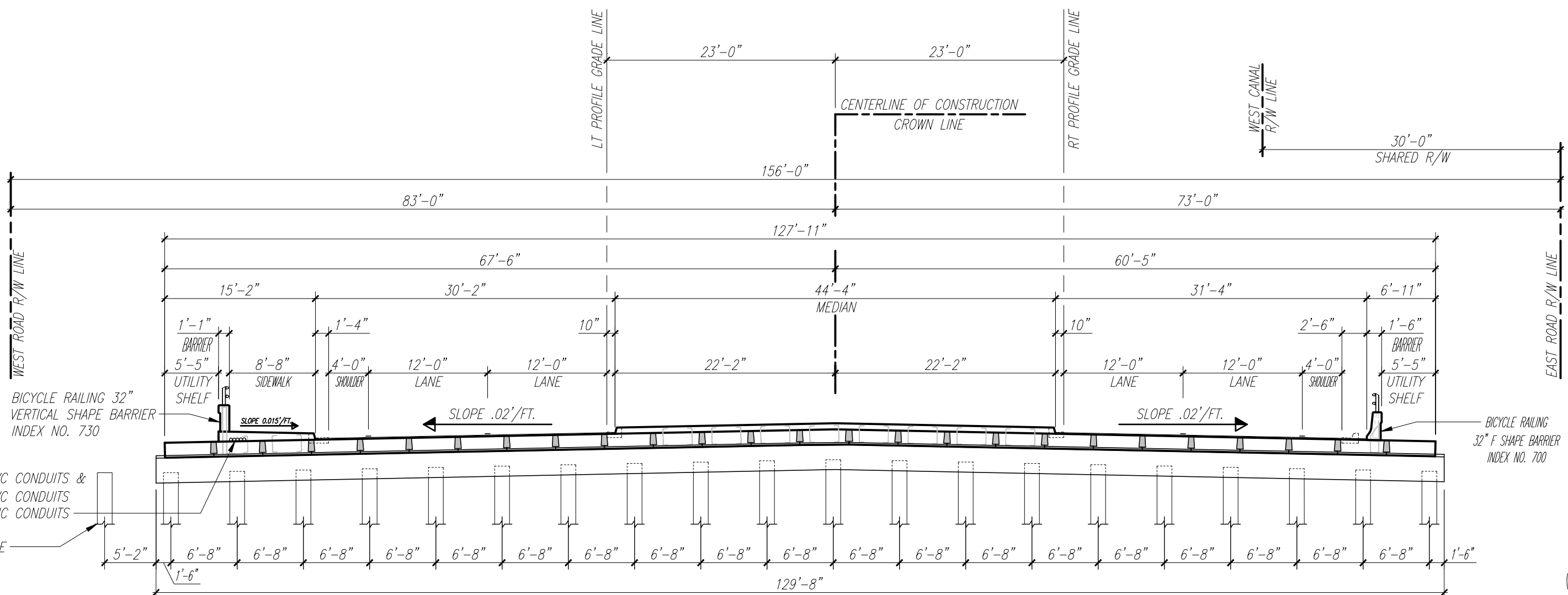
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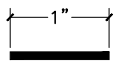
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PROPOSED BRIDGE CROSS SECTION at INTERMEDIATE BENT

$3/16" = 1'-0"$



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B-3
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GENERAL NOTES

GENERAL SPECIFICATIONS:

FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION (2015 EDITION).

DESIGN SPECIFICATION:

7TH EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 2014 WITH CURRENT INTERIMS. 2015 EDITION OF THE F.D.O.T. STRUCTURE DESIGN GUIDELINES WITH CURRENT INTERIMS.

DESIGN LOADING:

LIVE LOAD:	HL-93 WITH DYNAMIC LOAD ALLOWANCE	
DEAD LOAD:	FUTURE WEARING SURFACE	0.015 K.S.F.
	REINFORCED CONCRETE	0.15 K.C.F.
	WEST SIDEWALK	1.10 K/FT
	MEDIAN	4.99 K/FT
	32" VERTICAL SHAPE AND ALUMINUM RAILING	0.395 K/FT
UTILITY LOAD:	12" D.I.P. (2)	0.10 K.L.F.

CONCRETE:

NOTE: CONCRETE TO BE IN COMPLIANCE WITH F.D.O.T. SPECIFICATIONS 346.

CONCRETE CLASS	MINIMUM 28 DAY COMPRESSIVE STRESS (KSI)	LOCATION OF CONCRETE IN STRUCTURE
CLASS II (BRIDGE DECK)	FC' = 4.5	CAST-IN-PLACE APPROACH SLABS, CAST-IN-PLACE CLOSURE POURS
CLASS V (SPECIAL)	FC' = 6.0	PRESTRESSED PILES, PRESTRESSED SLABS
CLASS II	FC' = 3.4	CAST-IN-PLACE PILE CAPS, SHEET PILES AND BARRIER WALLS
		BRIDGE SIDEWALKS

CONCRETE:

- PROVIDE 3/4 INCH CHAMFERS ON ALL EXPOSED EDGES AND CORNERS EXCEPT AS OTHERWISE NOTED.
- CONSTRUCTION JOINTS WILL BE PERMITTED ONLY AT THE LOCATIONS INDICATED ON THE PLANS. ADDITIONAL CONSTRUCTION JOINTS OR ALTERATIONS TO THOSE SHOWN SHALL REQUIRE APPROVAL BY THE ENGINEER.

REINFORCEMENT:

- REINFORCEMENT SHALL BE ASTM A-615, GRADE 60. SPIRAL TIES FOR PRESTRESSED CONCRETE PILES SHALL BE MANUFACTURED FROM COLD DRAWN STEEL WIRE MEETING THE REQUIREMENTS OF ASTM A82.
- ALL DIMENSIONS PERTAINING TO LOCATION OF REINFORCING ARE TO CENTERLINE OF BARS EXCEPT WHERE THE CLEAR DIMENSION IS SHOWN TO FACE OF CONCRETE.
- REINFORCEMENT DETAIL DIMENSIONS ARE OUT-TO-OUT OF BARS.

MINIMUM CONCRETE COVER:

CIP SUPERSTRUCTURE = 2 IN. (TYPICAL EXCEPT AS NOTED).

CIP SUBSTRUCTURE/BENT CAP = 4 IN. FOR EXTERNAL SURFACES CAST AGAINST EARTH.
CIP SUBSTRUCTURE/BENT CAP = 3 IN. FOR OTHER EXTERNAL SURFACES.

PRECAST SUBSTRUCTURE/SHEET WALLS.

CONCRETE COVERS SHOWN IN THE PLANS DO NOT INCLUDE PLACEMENT AND FABRICATION TOLERANCES UNLESS SHOWN AS "MINIMUM COVER". SEE F.D.O.T. STANDARD SPECIFICATIONS SECTION 415 FOR ALLOWABLE TOLERANCES.

GENERAL NOTES (CONTINUED)

DESIGN METHOD:

ALL ELEMENTS WERE DESIGNED USING THE LRFD (LOAD AND RESISTANCE FACTOR DESIGN).

PILE LOAD:

SEE SHEET B-9 FOR PILE LOADS.

PILES:

14" SQUARE PRESTRESSED CONCRETE PILES.
18" SQUARE PRESTRESSED CONCRETE PILES.

SURFACE FINISH:

ALL EXPOSED SURFACES OF END BENT WING WALLS, BARRIERS AND SUPERSTRUCTURE FASCIA SHALL RECEIVE A "CLASS 5 APPLIED FINISH COATING". SEE CLASS 5 FINISH DETAIL.

ENVIRONMENT:

SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE
SUBSTRUCTURE: SLIGHTLY AGGRESSIVE
LOCATION: INLAND

DATUM:

ALL ELEVATIONS SHOWN ARE IN N.G.V.D., UNLESS NOTED OTHERWISE.

PRESTRESSED MEMBERS NOTES

FINISH:

THE TOP OF PRESTRESSED UNITS SHALL BE FINISHED TO A SMOOTH, DENSE SURFACE WITH A STEEL TROWEL, THEN COURSELY BROOMED OR RAKED TO PROVIDE A SURFACE SUITABLE FOR BONDING TO ASPHALT. ALL OTHER SURFACES OF THE UNIT SHALL RECEIVE A "CLASS 3" SURFACE FINISH. THE EDGE OF THE TOP OF THE SURFACE OF THE UNITS SHALL BE FINISHED BY USE OF A SMALL RADIUS TOOL.

CONCRETE STRENGTH:

AT TRANSFER OF THE PRESTRESSING LOAD, THE CYLINDER STRENGTH OF THE CONCRETE SHALL BE 4,500 PSI.
IT SHALL BE 6,000 PSI AT TWENTY-EIGHT (28) DAYS FOR SLAB UNITS.

HANDLING AND STORAGE:

DURING HANDLING AND STORAGE, THE PRESTRESSED UNITS MUST BE PICKED UP AT THE ENDS OF THE UNITS TO PREVENT DAMAGE. THE PRESTRESSED UNITS MUST BE STORED IN AN UP-RIGHT POSITION AT ALL TIMES.

FORMS AND PALLETS:

ALL PRESTRESSED UNITS SHALL BE CAST ON CONCRETE BASED PALLETS AND IN METAL FORMS. KEYWAY FORM MAY BE WOOD.

STRAND EXTENSION:

ALL STRANDS SHALL EXTEND 2-1/2 INCHES BEYOND THE ENDS OF THE PRESTRESSED UNITS.

SHOP DRAWINGS:

THE CONTRACTOR SHALL SUBMIT FIVE (5) SETS OF SHOP DRAWINGS, SHOWING COMPLETE DETAILS OF THE PROPOSED PRESTRESSED UNITS. THE DRAWINGS SHALL INCLUDE REINFORCING STEEL, PRESTRESSING BED LAYOUT, TENSIONING AND DETENSIONING SCHEDULES, AND ALL COMPUTATIONS REQUIRED TO CONTROL THE WORK.

BEARING PADS:

NEOPRENE BEARING PADS SHALL BE 1/2 INCH X 6 INCH STRIPS IN ACCORDANCE WITH SECTION 932-2 OF THE SPECIFICATIONS. THE PADS MAY BE CONTINUOUS STRIPS OR MULTIPLE LENGTHS OF 2 FEET AND 0 INCHES MINIMUM LENGTH. THE PADS MAY BE CUT FROM COMMERCIALY AVAILABLE SHEETS.

POST TENSIONING:

POST TENSION CABLES SHALL BE THREE (3) OR FOUR (4) .6 INCH DIAMETER 270K LO LAX STRANDS. CABLES SHOULD BE IN ACCORDANCE WITH ASTM SPECIFICATION A-416. THE CABLES SHALL BE STRESSED AND ANCHORED AT 126,000 POUNDS PER (3) STRAND OR 168,000 POUNDS PER (4) STRAND POST-TENSION CABLE. THE TRANSVERSE POST-TENSION CABLES SHALL NOT BE TENSIONED UNTIL THE CONCRETE IN THE JOINTS AND KEYWAYS HAS BEEN CURED FOR A MINIMUM OF SEVENTY-TWO (72) HOURS OR HAS ACHIEVED 75% OF DESIGN STRENGTH.

CABLE ANCHORAGES:

THE FABRICATOR SHALL SUBMIT DETAILS OF THE CABLE ANCHORAGE AND ANCHORAGE REINFORCEMENT DETAILS FOR APPROVAL WITH THE SHOP DRAWINGS.

CONSTRUCTION NOTES

EQUIPMENT ON UNITS:

BEFORE HEAVY CONSTRUCTION EQUIPMENT IS PERMITTED ON THE STRUCTURE DURING CONSTRUCTION, SKETCHES SHOWING THE AXLE SPACING AND ANTICIPATED LOADINGS SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER.

POST-TENSIONING SEQUENCE:

POST-TENSIONING SHALL BE DONE ACCORDING TO THE NUMBER SEQUENCE SHOWN ON THE PRECAST SLAB LAYOUT SHEET. SEE SHEET B-18.

FILLING CONCRETE JOINTS BETWEEN UNITS:

JOINTS BETWEEN SLAB UNITS SHALL BE POURED A MINIMUM OF SEVENTY-TWO (72) HOURS OR HAVE 75% OF THE DESIGN STRENGTH BEFORE ANY POST-TENSIONING OPERATIONS CAN BEGIN. CARE SHOULD BE TAKEN TO PREVENT INTRUSION OF MIX INTO DUCTS.

GROUTING POST-TENSION DUCTS:

THE POST-TENSIONED STRANDS SHALL BE GROUTED IN ACCORDANCE WITH SECTION 938 OF THE SPECIFICATIONS. THE GROUTED STRANDS SHALL NOT BE DISTURBED, NOR SHALL APPRECIABLE LOADS BE PLACED ON THE SPAN FOR A PERIOD OF SEVENTY-TWO (72) HOURS FOLLOWING GROUTING OPERATIONS.

FILLING ANCHORAGE BLOCKOUTS:

ALL ANCHORAGE BLOCKOUTS SHALL BE FILLED WITH CONCRETE AND FINISHED FLUSH WITH SURFACE OF DECK FACE.

PLACING BARRIER WALLS AND SURFACING:

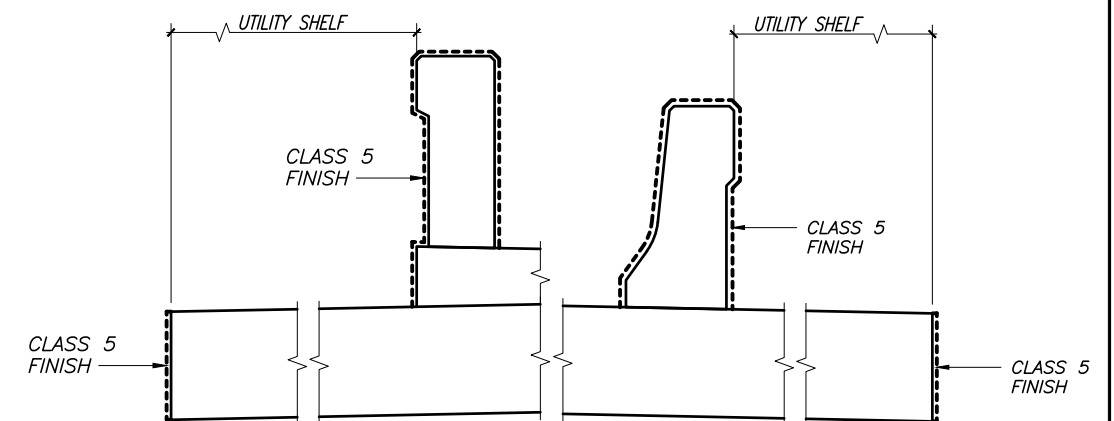
ALL POST-TENSIONING STRANDS SHALL HAVE BEEN GROUTED AND THE MINIMUM SEVENTY-TWO (72) HOURS HAVE PASSED BEFORE THE BARRIER WALLS AND WEARING COURSE CAN BE PLACED.

VIBRATION MONITORING:

THE SETTLEMENT OF STRUCTURES AND VIBRATION LEVELS SHALL BE MONITORED IN ACCORDANCE WITH F.D.O.T. SPECIFICATIONS 455-1.1. A PRE-CONSTRUCTION VIDEO RECORDING OF ALL STRUCTURES WITHIN THE DISTANCES SPECIFIED IN THE SPECIFICATIONS SHALL BE MADE.

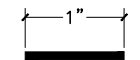
MISCELLANEOUS NOTES

- FLOATING TURBIDITY BARRIER WITH FINE MESH SHALL BE USED IN ACCORDANCE WITH F.D.O.T. STANDARD SPECIFICATIONS, SECTION 104.
- ALL DIMENSIONS IN THESE PLANS ARE MEASURED IN FEET EITHER HORIZONTALLY OR VERTICALLY. U.O.N.



CLASS 5 FINISH DETAIL CLASS 5 FINISH DETAIL
NO SCALE NO SCALE

VERIFY SCALE



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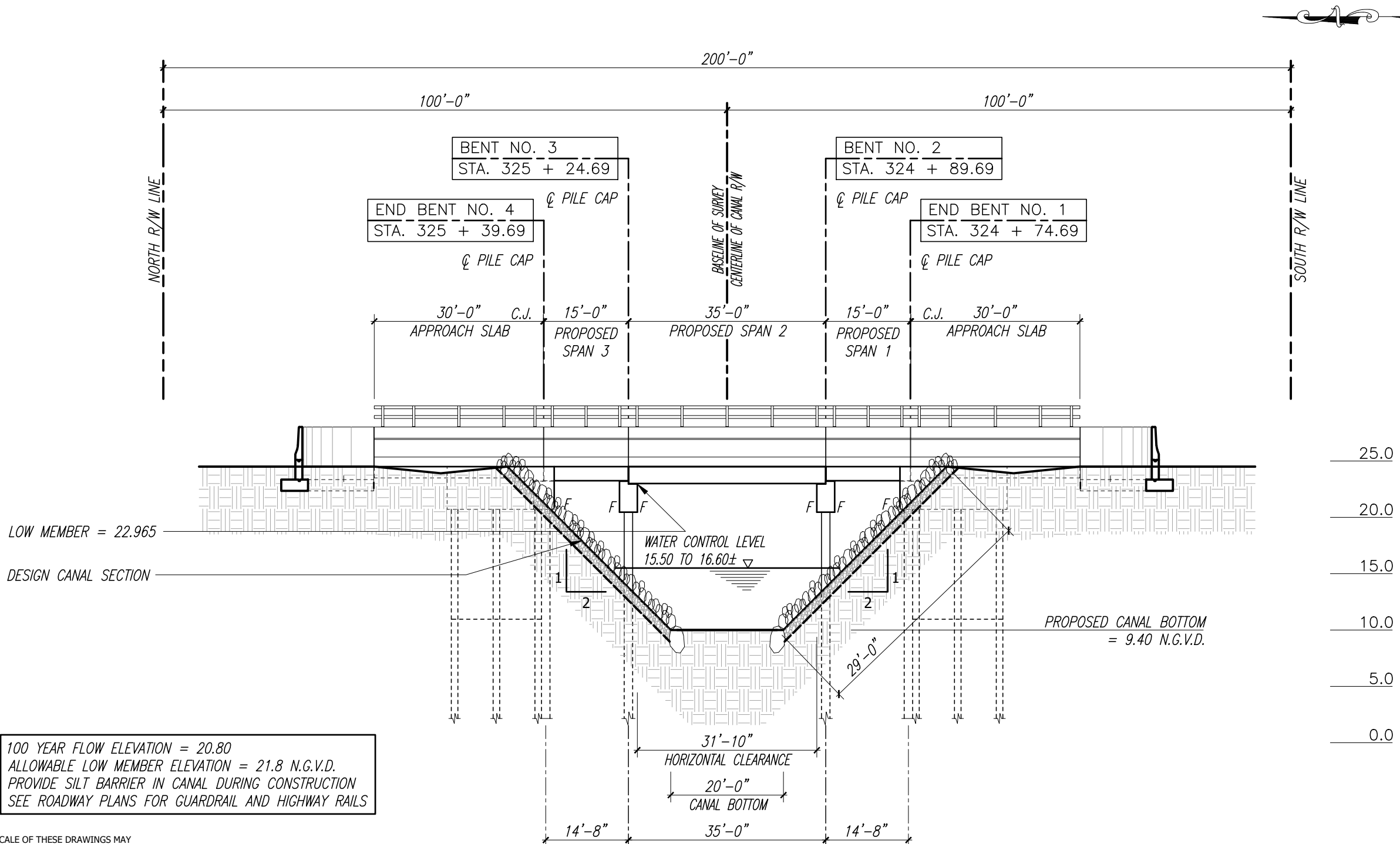
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100 YEAR FLOW ELEVATION = 20.80
 ALLOWABLE LOW MEMBER ELEVATION = 21.8 N.G.V.D.
 PROVIDE SILT BARRIER IN CANAL DURING CONSTRUCTION
 SEE ROADWAY PLANS FOR GUARDRAIL AND HIGHWAY RAILS

VERIFY SCALE
 1" = 10'-0" (HORIZONTAL)
 1" = 5'-0" (VERTICAL)
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A PROPOSED BRIDGE ELEVATION
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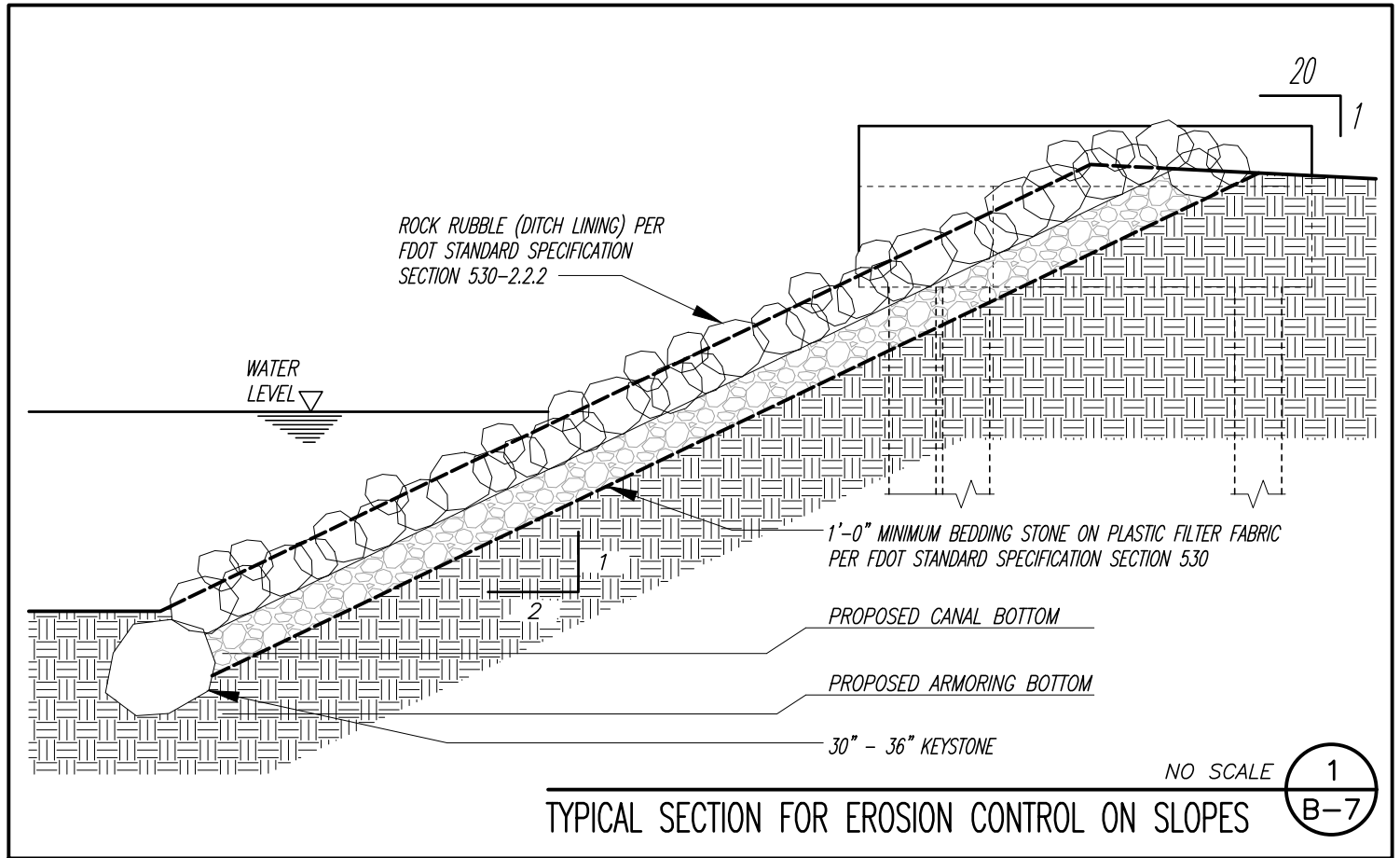
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TYPICAL SECTION FOR EROSION CONTROL ON SLOPES

NO SCALE 1
B-7

VERIFY SCALE

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Sunshine811

WGI

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INDIAN RIVER COUNTY, FLORIDA

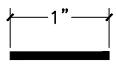
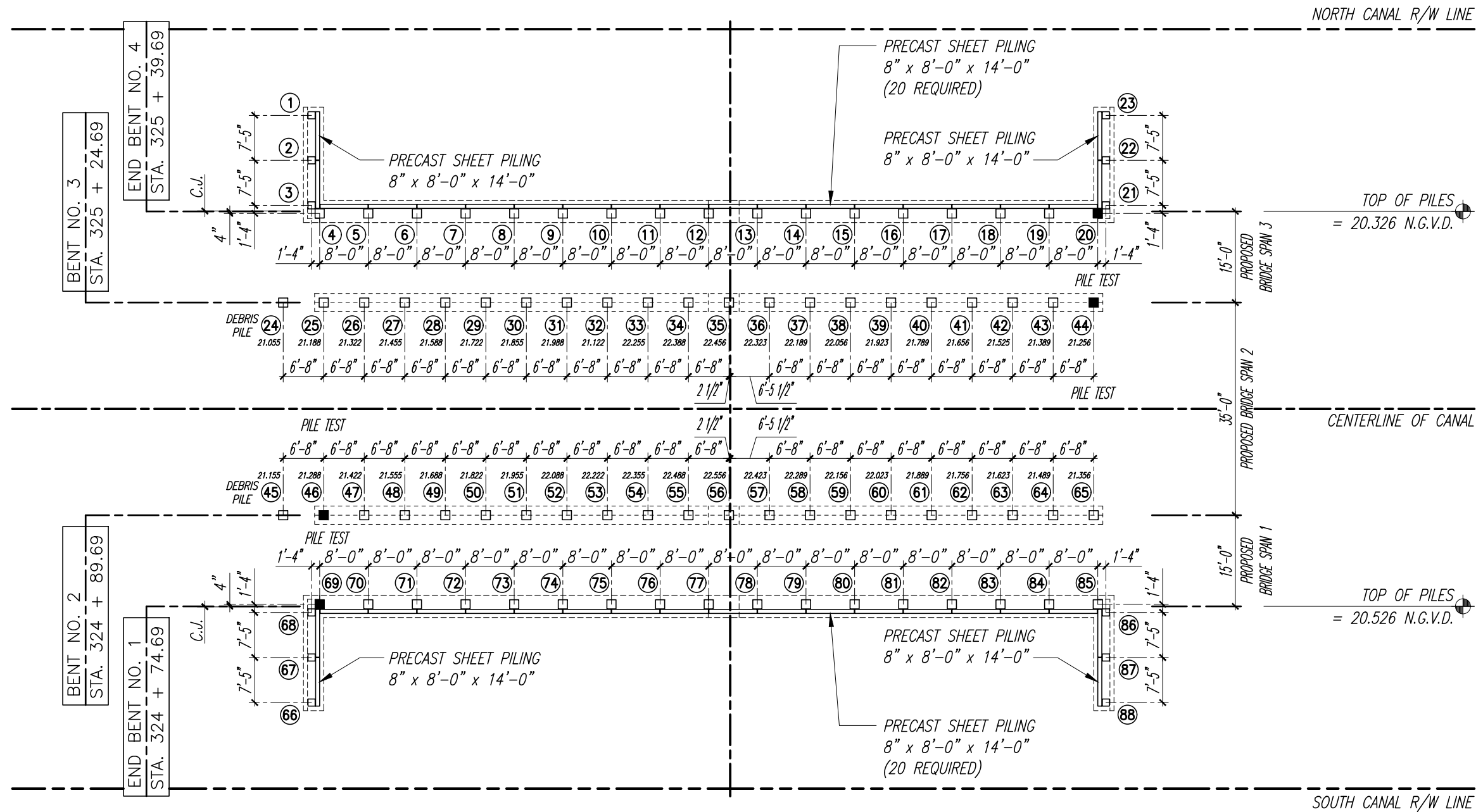
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Timothy Alan DeLand-71588
FLORIDA P.E. NAME & NUMBER

SHEET

B-7

PROJECT NO.
16162296.00



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

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A SUBSTRUCTURE PILES PLAN
Scale: 1" = 10'-0"

2035 Vista Parkway
West Palm Beach, FL 33411
Phone No. 561.687.2220
Fax No. 561.687.1110
Registry No. 33574

NO.	REVISION	DATE	BY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

Scale: AS NOTED
Approved:
Drawn: C.A.B.
Checked: T.A.D.
Date: DECEMBER 2020
Field Book No:

PROJECT:
PROPOSED BRIDGE MODIFICATIONS FOR:
66th AVENUE OVER THE NORTH RELIEF CANAL
IRC 1505
INDIAN RIVER COUNTY, FLORIDA

SEAL
Timothy Alan DeLand-71588
FLORIDA P.E. NAME & NUMBER

SHEET
B-8
PROJECT NO.
16162296.00

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Pile Data Table

Installation Criteria								Design Criteria						
Bent/Pier	Pile Size (in.)	Nominal Bearing Capacity (tons)	Tension Capacity (tons)	Minimum Tip Elevation (ft.,N.G.V.D.)	Test Pile Length (ft.)	Required Jet Elevation (ft.,N.G.V.D.)	Required Preform Elevation (ft.,N.G.V.D.)	Factored Design Load (tons)	Down Drag (tons)	Total Scour Resistance (tons)	Net Scour Resistance (tons)	Long Term Scour Elevation (ft.)	100 Year Scour Elevation (ft.)	Ø
Abutments														
Pile 20 AND 69	18	125	N/A	(-) 10.0	75	N/A	N/A	81	0	N/A	N/A	N/A	N/A	0.65
Pile 4 - 19	18	125	N/A	(-) 10.0		N/A	N/A	81	0	N/A	N/A	N/A	N/A	0.65
Pile 68 - 85	18	125	N/A	(-) 10.0		N/A	N/A	81	0	N/A	N/A	N/A	N/A	0.65
Intermediate Bents														
Pile 1 - 3 & 21 - 23	14	31	N/A	(-) 10.0		N/A	N/A	20	0	N/A	N/A	N/A	N/A	0.65
Pile 66 - 68 & 86 - 88	14	31	N/A	(-) 10.0		N/A	N/A	20	0	N/A	N/A	N/A	N/A	0.65
Pile 44 AND 46	18	158	N/A	(-) 10.0	100	N/A	N/A	102	0	N/A	N/A	N/A	N/A	0.65
Pile 25 - 43	18	158	N/A	(-) 10.0		N/A	N/A	102	0	N/A	N/A	N/A	N/A	0.65
Pile 47 - 65	18	158	N/A	(-) 10.0		N/A	N/A	102	0	N/A	N/A	N/A	N/A	0.65
Pile 24 AND 45	18	158	N/A	(-) 10.0		N/A	N/A	102	0	N/A	N/A	N/A	N/A	0.65

PILE DATA - ABUTMENTS

PILE (20) AND (69) TEST PILE (75'-0" LONG MIN.)
USE TEST PILE TO DETERMINE FINAL PILE LENGTHS.

PRECAST PRESTRESSED CONCRETE PILING
LOADING SHALL BE AS FOLLOWS:

PILES (1) - (3) & (21) - (23)
14" SQUARE PILES WITH 30'-0" LONG MINIMUM.

PILES (66) - (68) & (86) - (88)
14" SQUARE PILES WITH 30'-0" LONG MINIMUM.

PILES (4) - (19)
18" SQUARE PILES WITH 60'-0" LONG MINIMUM.

PILES (69) - (85)
18" SQUARE PILES WITH 60'-0" LONG MINIMUM.

PILE DATA - INTERMEDIATE BENTS

PILE (44) AND (46) TEST PILE WITH 92 TON CAPACITY (100'-0" LONG MIN.)
USE TEST PILE TO DETERMINE FINAL PILE LENGTHS.

PRECAST PRESTRESSED CONCRETE PILING
LOADING SHALL BE AS FOLLOWS:

PILES (25) - (43)
18" SQUARE PILES WITH 85'-0" LONG MINIMUM.

PILES (47) - (65)
18" SQUARE PILES WITH 85'-0" LONG MINIMUM.

PILES (24) - (45)
18" SQUARE PILES WITH 60'-0" LONG MINIMUM.

NOTES:

Nominal Bearing Capacity (NBC) = (Factored Design Load + Net Scour Resistance + Down Drag) / Ø

Test piles are to be monitored dynamically with the Pile Driving Analyzer (PDA).

Service Load: End Bent = 60 Tons
Service Load: Intermediate Bent = 71 Tons

PILE INSTALLATION NOTES:

Contractor to verify location of all utilities prior to any pile driving.

Minimum Tip Elevations required for lateral stability.

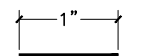
Soil Borings

SEE REPORT DATED 11/30/2005.
PREPARED BY TIERRA
FILE NO. 6611-05-417-2

C:\pwworking\wg\160399607\SOIL BORING 24.JPG

C:\pwworking\wg\160399607\SOIL BORING NOTES.JPG

VERIFY SCALE



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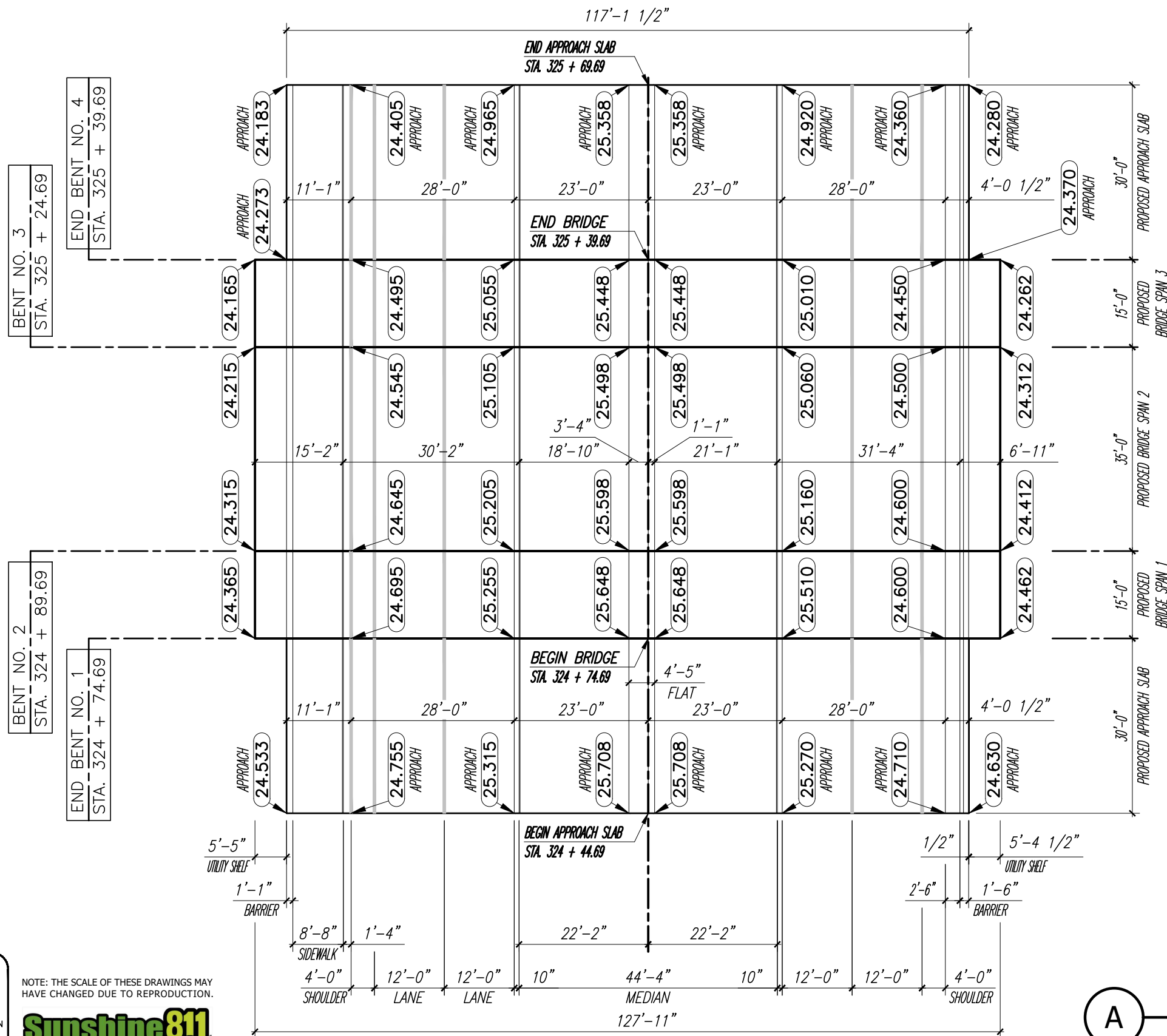
PROJECT:
PROPOSED BRIDGE MODIFICATIONS FOR:
66th AVENUE OVER THE NORTH RELIEF CANAL
IRC 1505
INDIAN RIVER COUNTY, FLORIDA

SEAL
Timothy Alan DeLand-71588
FLORIDA P.E. NAME & NUMBER

SHEET
B-9
PROJECT NO.
16162296.00

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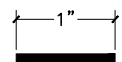
NOTES:

- GRADE IS TO TOP OF PRECAST CONCRETE SLABS. ASPHALT, SIDEWALKS, AND BARRIERS ARE NOT INCLUDED.

FINISH GRADE ELEVATIONS PLAN

Scale: 1" = 10'-0"

VERIFY SCALE



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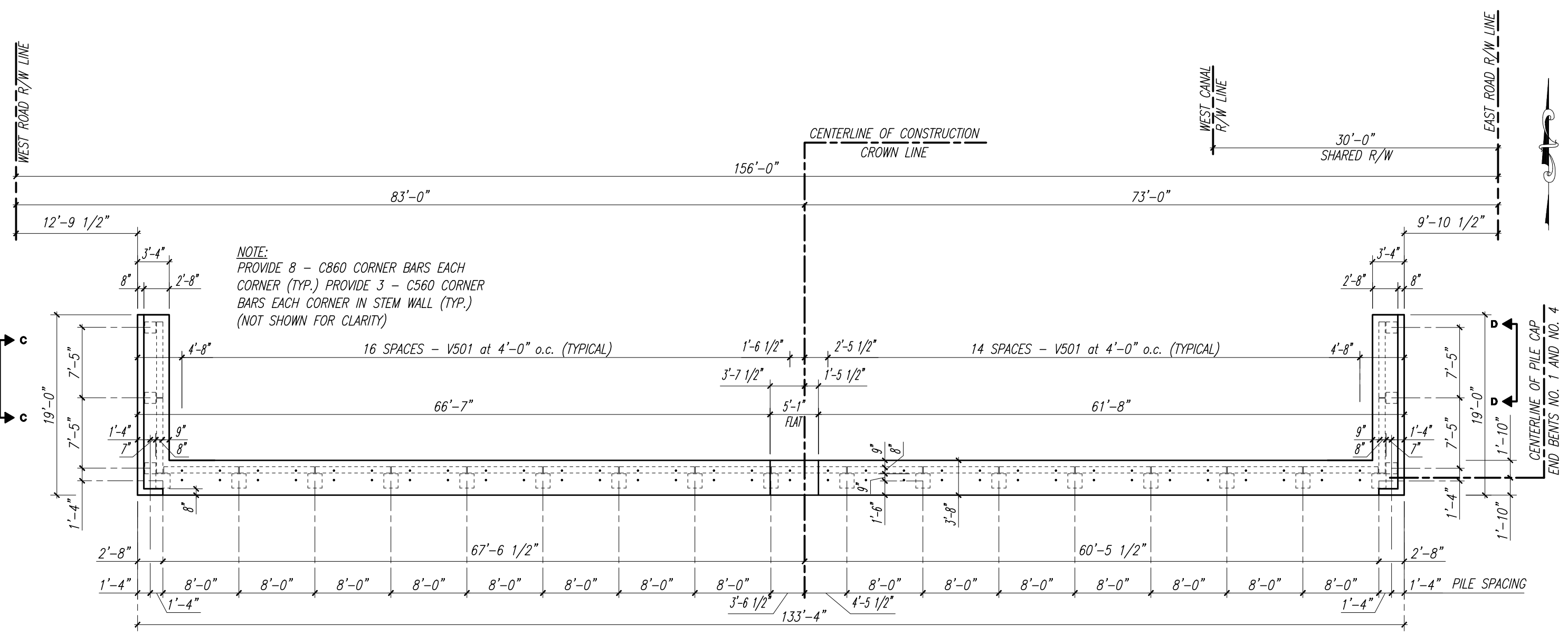
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B-10
PROJECT NO.
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NOTE:
 PROVIDE 8 - C860 CORNER BARS EACH CORNER (TYP.) PROVIDE 3 - C560 CORNER BARS EACH CORNER IN STEM WALL (TYP.) (NOT SHOWN FOR CLARITY)

NOTE:
 PROPOSED END BENT NO. 1 SIMILAR - OPPOSITE HAND
 END BENT NO. 1 - STA. 324 + 74.69
 END BENT NO. 4 - STA. 325 + 39.69

VERIFY SCALE

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NORTH END BENT NO. 4 PLAN

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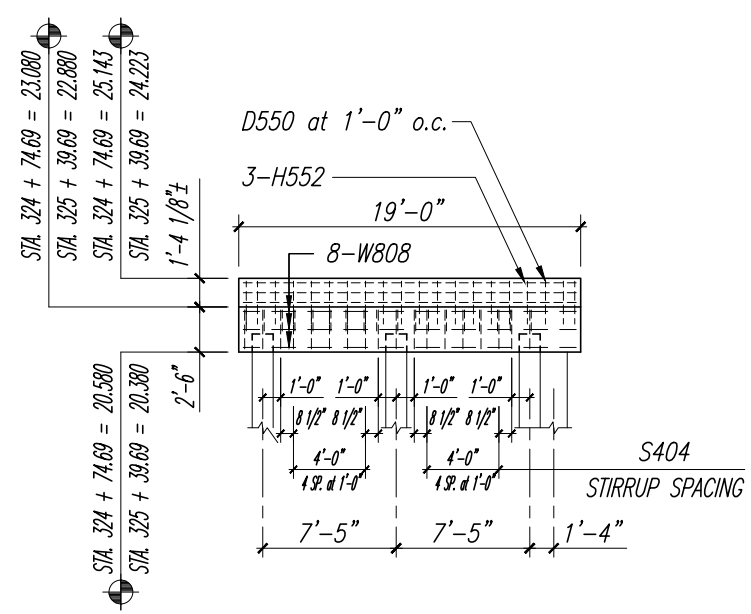
INDIAN RIVER COUNTY
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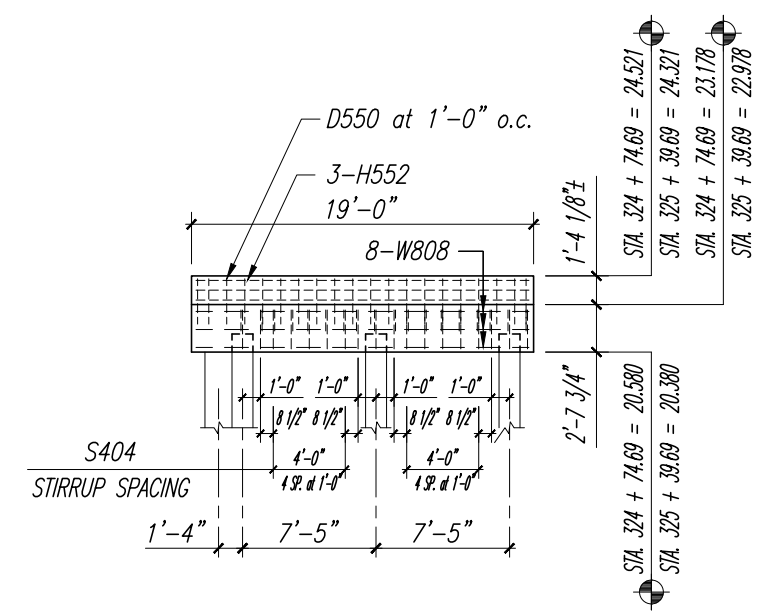
PROJECT:
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 IRC 1505
 INDIAN RIVER COUNTY, FLORIDA

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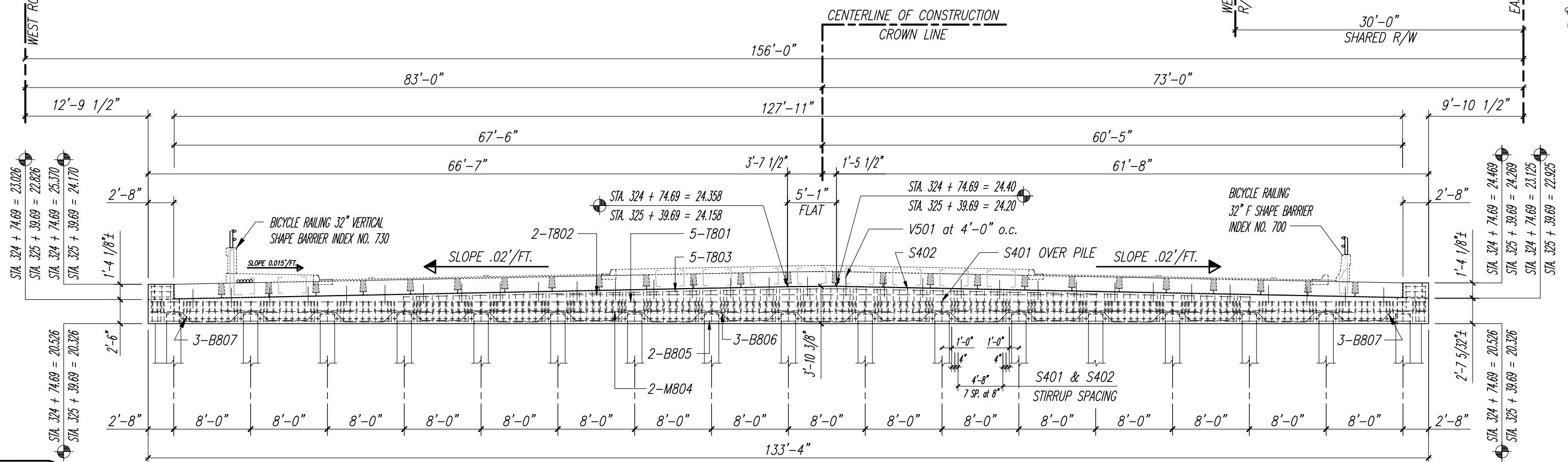
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 16162296.00



ELEVATION C - C



ELEVATION D - D



NORTH END BENT NO. 4 ELEVATION

NOTE:
 PROPOSED END BENT NO. 1
 SIMILAR - OPPOSITE HAND
 END BENT NO. 1 - STA. 324 + 74.69
 END BENT NO. 4 - STA. 325 + 39.69

VERIFY SCALE

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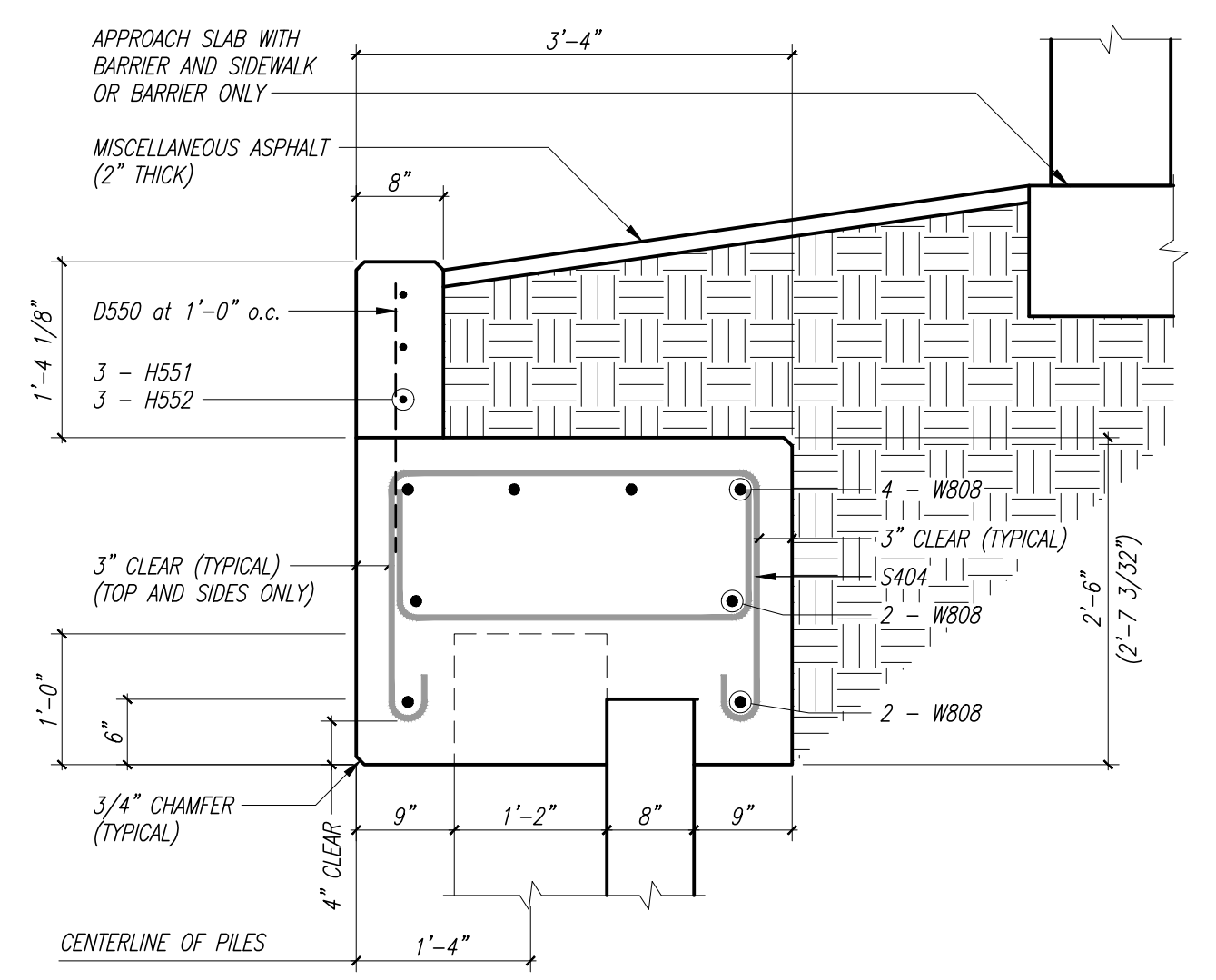
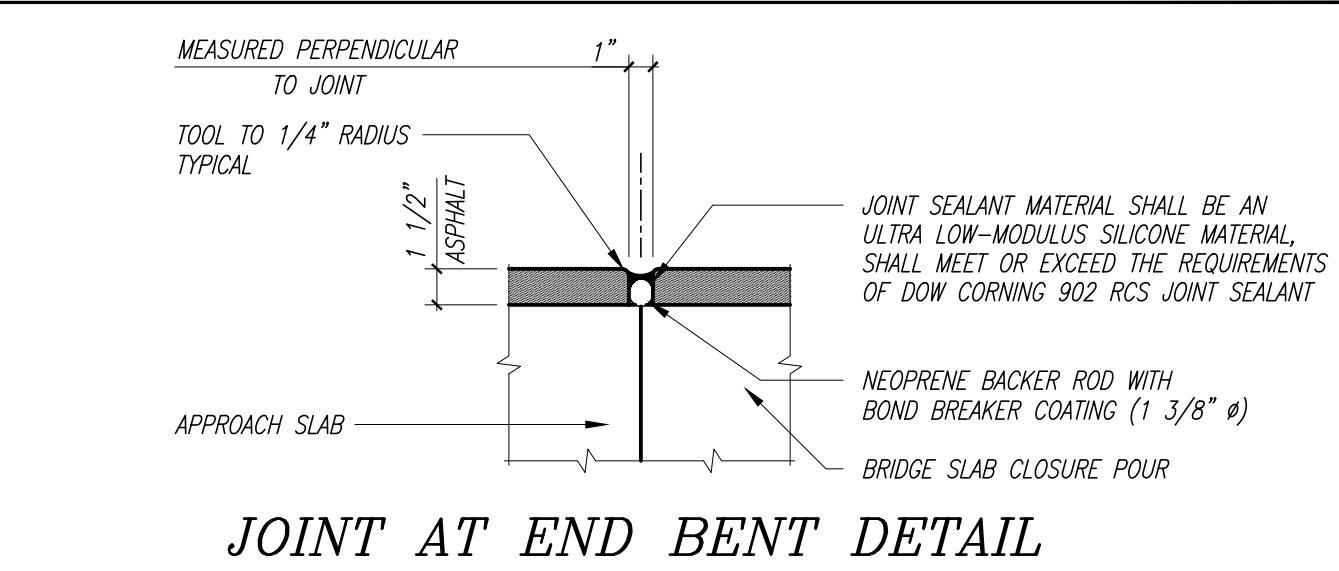
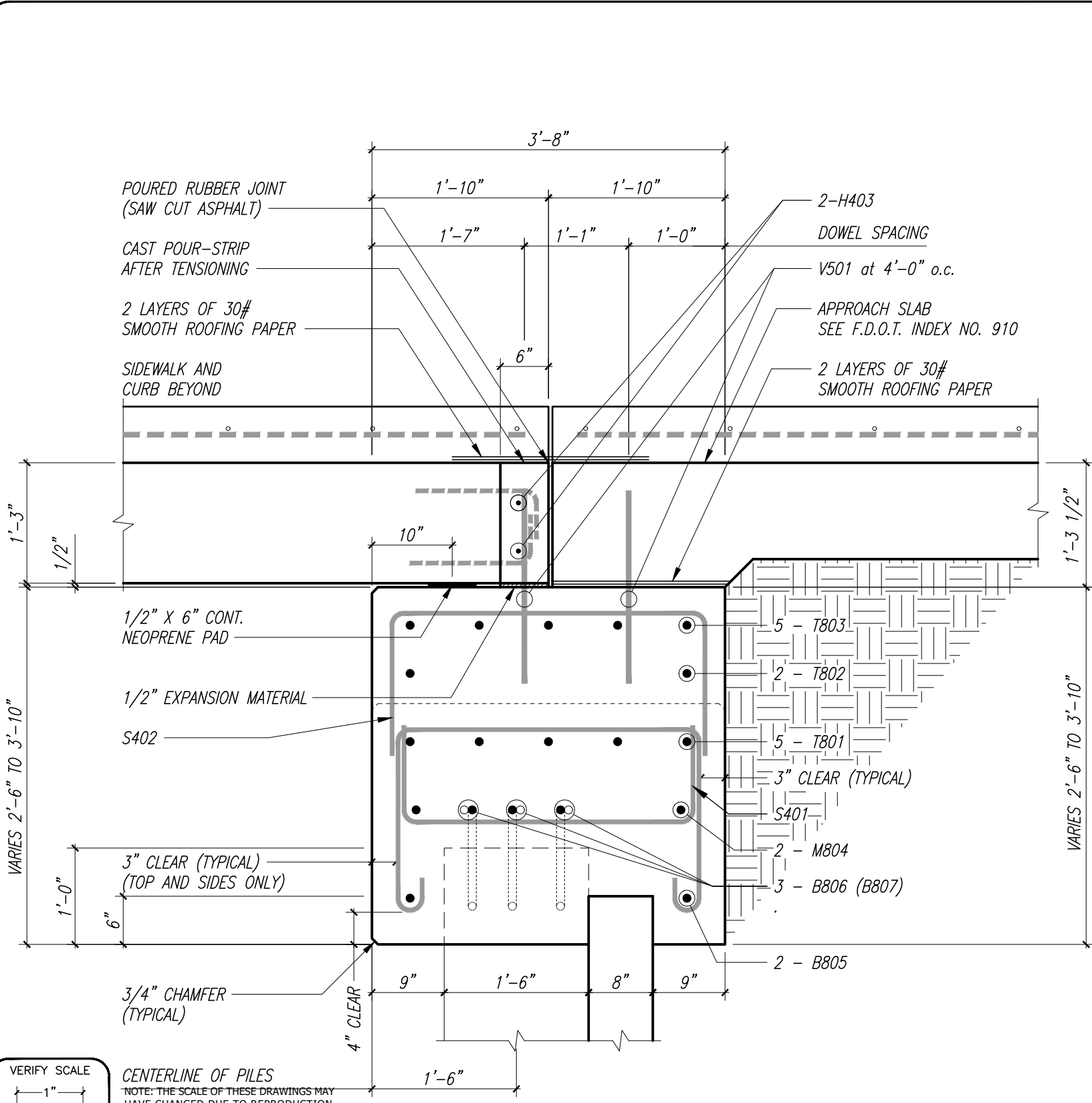
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 INDIAN RIVER COUNTY, FLORIDA

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SHEET
 B-12
 PROJECT NO.
 16162296.00

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DATE: Dec. 17, 2020 - 9:54am C:\pwworking\legi\cmgiburkharath\d0396607\END BENT DETAILS AND REINFORCING SCHEDULES.dwg



VERIFY SCALE

1" = 1"

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CENTERLINE OF PILES

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END BENT DETAIL A

WING BENT DETAIL B

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PROPOSED BRIDGE MODIFICATIONS FOR:

66th AVENUE OVER THE NORTH RELIEF CANAL

IRC 1505

INDIAN RIVER COUNTY, FLORIDA

SEAL

Timothy Alan DeLand-71588

FLORIDA P.E. NAME & NUMBER

SHEET

B-13

PROJECT NO.

16162296.00

Estimated End Bent Quantities

Item	Unit	Quantity
Class IV Concrete (Pile Cap)	Cu. Yds.	70.0
Reinforcing Steel (Pile Cap)	lbs.	12279

Bill of Reinforcing Steel

Mark	Size	Number Required	Length + Lap	Total Length	Bending	Weight (lbs.)
C800	#8	16		8'-0"	Bar C800	342
T801	#8	5	132'-10" + 19'-6"	152'-4"	Straight-3 Laps	2034
T802	#8	2	132'-10" + 19'-6"	152'-4"	Straight-3 Laps	813
T803	#8	5	88'-0" + 19'-6"	107'-6"	Straight-3 Laps	1435
M804	#8	2	132'-10" + 13'-6"	146'-4"	Straight-3 Laps	781
B805	#8	2	132'-10" + 13'-6"	146'-4"	Straight-3 Laps	781
B806	#8	42		14'-10"	Bar B806	1663
B807	#8	6		14'-1"	Bar B807	226
S401	#4	217		13'-4"	Bar S401	1933
S402	#4	144		6'-2"	Bar S402	593
H403	#4	2	127'-5" + 6'-0"	133'-5"	Straight-3 Laps	178
W808	#8	16		18'-5"	Straight	787
S404	#4	36		12'-8"	Bar S404	305
V501	#5	64		2'-3"	Straight	150
D550	#5	40		2'-6"	Straight	104
H551	#5	6		2'-1"	Straight	13
H552	#5	6		18'-5"	Straight	115
C560	#5	6		4'-0"	Bar C560	25

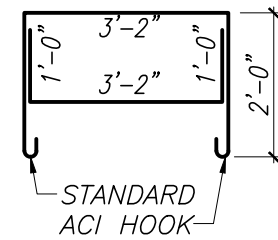
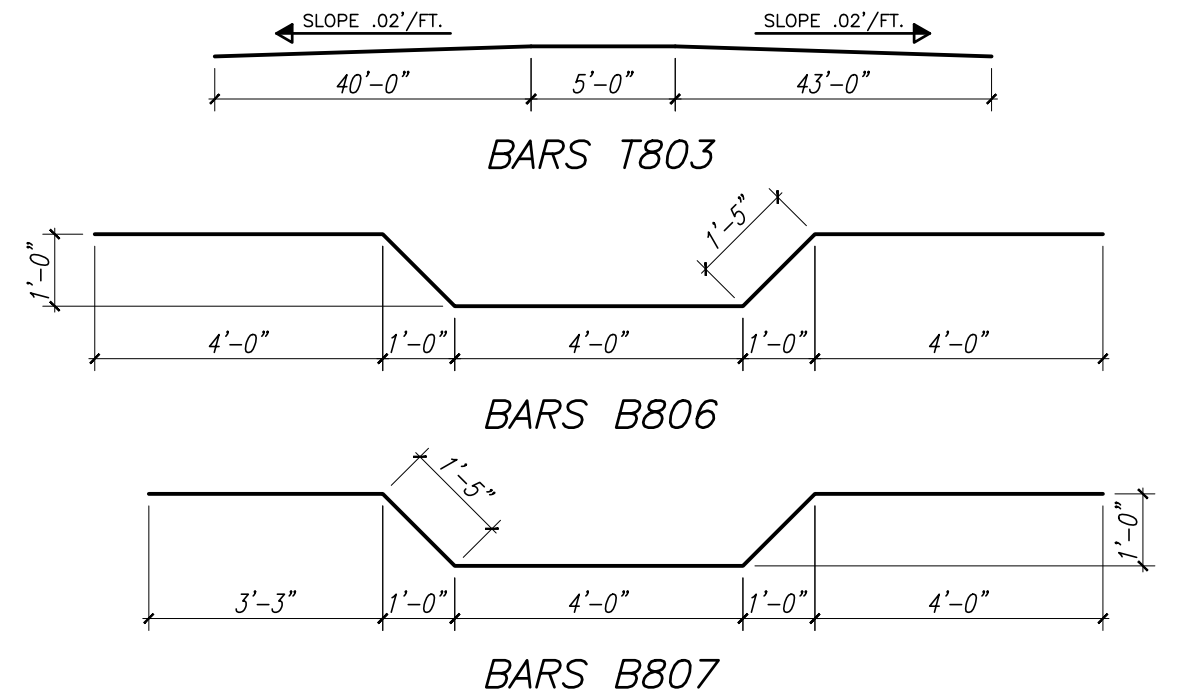
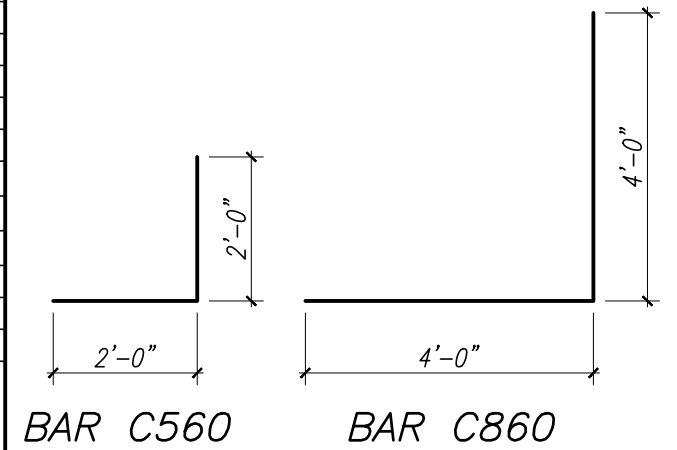
Bill of Reinforcing Steel and Estimated Quantities are for one pile cap only.

Required Bar Lap Splices

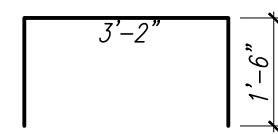
Mark	Size	Splice Length
T	#4	29"
T	#5	36"
T	#6	44"
T	#8	78"
M	#8	54"
B	#6	36"
B	#8	54"
W (Top)	#8	54"
W (Middle)	#8	54"
W (Bottom)	#8	54"
H	#4	24"
H	#5	36"

Note:
Splice continuous bars thus:
Top bars at mid-span between the piles
Bottom bars at the piles

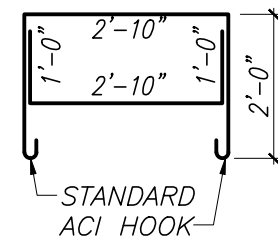
BENDING DIAGRAM



BAR S401

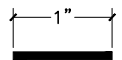


BAR S402



BAR S404

VERIFY SCALE



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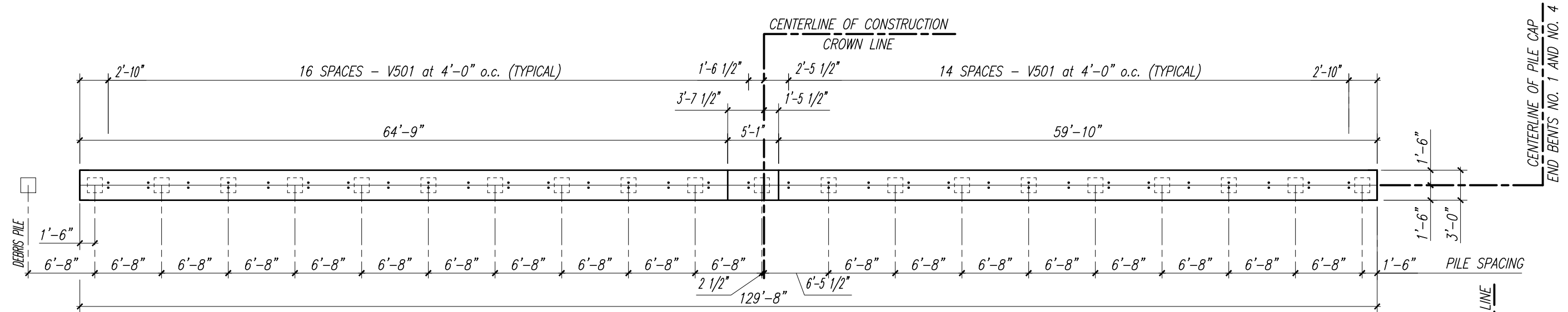
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IRC 1505
INDIAN RIVER COUNTY, FLORIDA

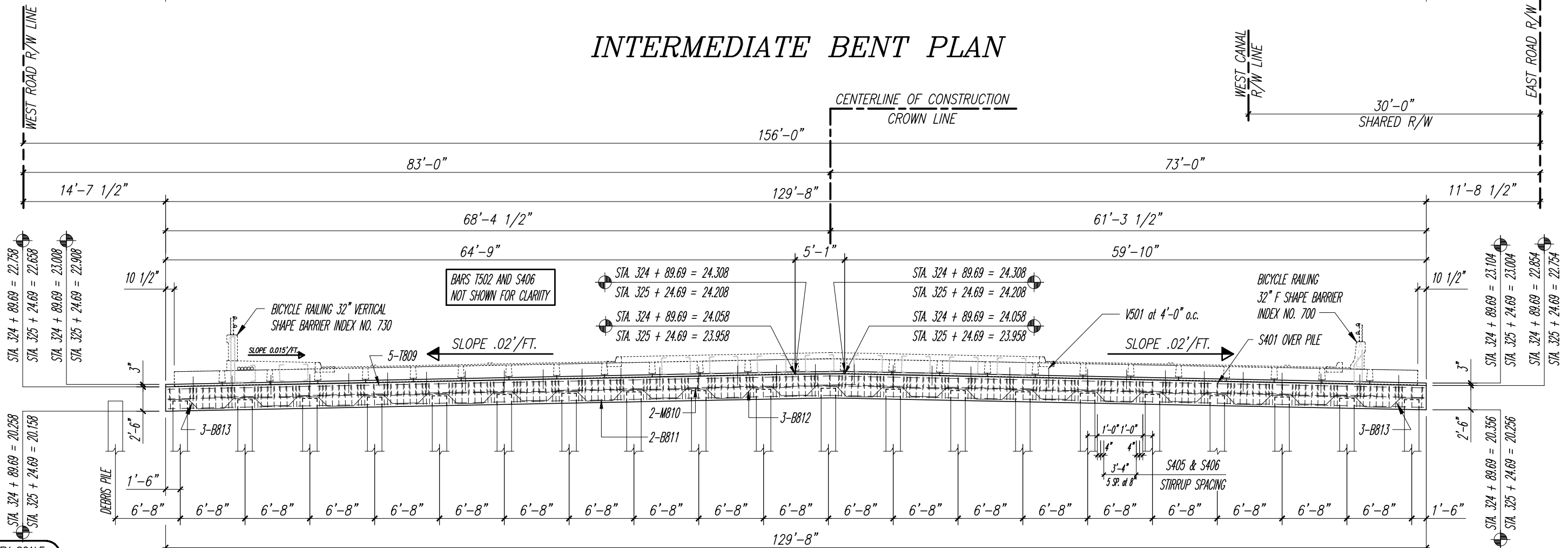
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INTERMEDIATE BENT PLAN



INTERMEDIATE BENT ELEVATION

VERIFY SCALE

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Estimated Intermediate Bent Quantities

Item	Unit	Quantity
Class IV Concrete (Pile Cap)	Cu. Yds.	38.0
Reinforcing Steel (Pile Cap)	lbs.	7722

Bill of Reinforcing Steel and Estimated Quantities are for one pile cap only.

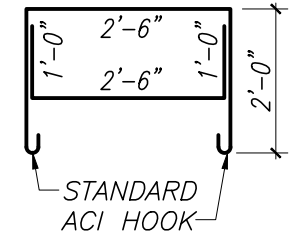
Bill of Reinforcing Steel

Mark	Size	Number Required	Length + Lap	Total Length	Bending	Weight (lbs.)
T502	#5	2	129'-2" + 9'-0"	138'-2"	Straight-3 Laps	288
T809	#8	5	129'-2" + 19'-6"	148'-8"	Straight-3 Laps	1985
M810	#8	2	129'-2" + 19'-6"	148'-8"	Straight-3 Laps	794
M812	#8	51		13'-6"	Bar S405	1838
B813	#8	6		11'-7"	Bar S406	186
S405	#4	212		12'-0"	Bar S405	1699
S406	#4	212		3'-0"	Bar S406	425
H407	#4	4	127'-5" + 6'-0"	133'-5"	Straight-3 Laps	356
V503	#5	64		2'-3"	Straight	150

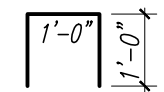
Required Bar Lap Splices

Mark	Size	Splice Length
T	#4	29"
T	#5	36"
T	#6	44"
T	#8	78"
M	#8	54"
B	#6	36"
B	#8	54"
W (Top)	#8	54"
W (Middle)	#8	54"
W (Bottom)	#8	54"
H	#4	24"
H	#5	36"

BENDING DIAGRAM

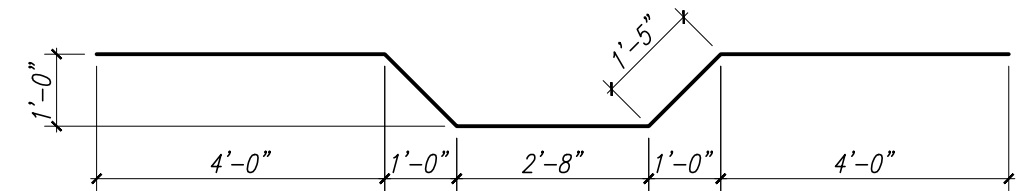


BAR S405

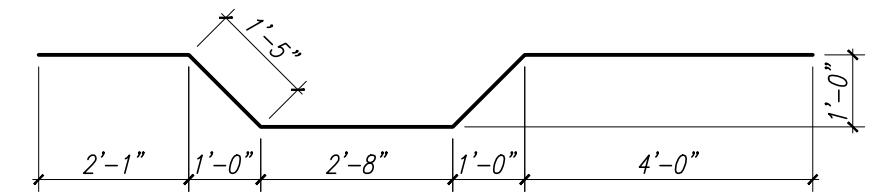


BAR S406

Note:
Splice continuous bars thus:
Top bars at mid-span between the piles
Bottom bars at the piles



BARS B812



BARS B813

VERIFY SCALE

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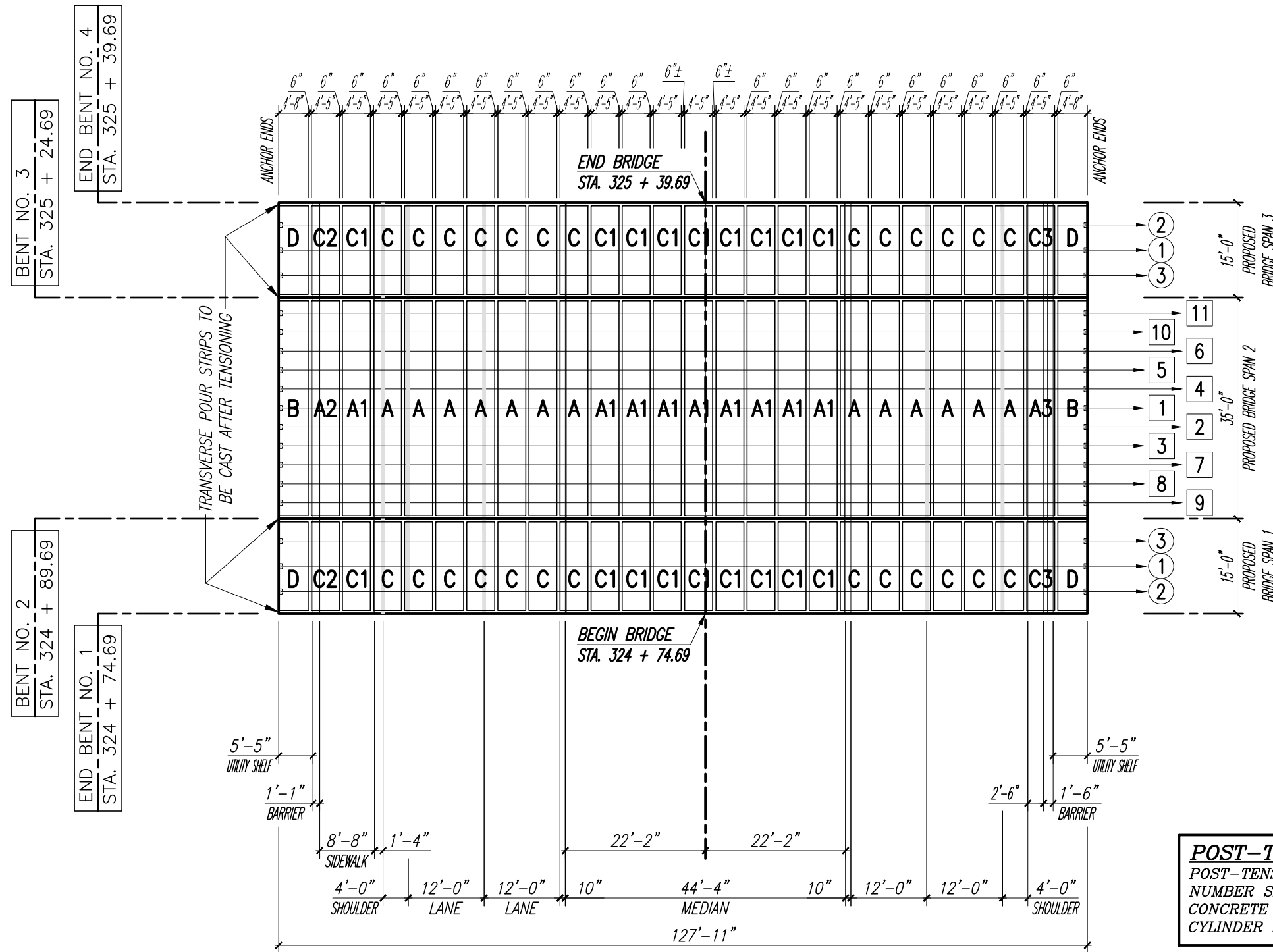
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TYPICAL PULL END PULL
 (4) POST-TENSIONING CABLES TO 168,000# EACH CABLE USING THE SEQUENCE SHOWN

TYPICAL PULL END PULL
 (3) POST-TENSIONING CABLES TO 128,000# EACH CABLE USING THE SEQUENCE SHOWN

TYPICAL PULL END PULL
 (4) POST-TENSIONING CABLES TO 168,000# EACH CABLE USING THE SEQUENCE SHOWN

POST-TENSIONING SEQUENCE
 POST-TENSIONING SHALL BE DONE ACCORDING TO THE NUMBER SEQUENCE ON THE SUPER-STRUCTURE. CONCRETE IN CLOSURE POURS SHALL HAVE A MINIMUM CYLINDER STRENGTH OF 3000 psi BEFORE TENSIONING.

A PRECAST SLAB LAYOUT PLAN
 Scale: 1" = 10'-0"

VERIFY SCALE
 1" = 10'-0"
 NOTE: THE SCALE OF THESE DRAWINGS MAY HAVE CHANGED DUE TO REPRODUCTION.

Sunshine811

WGI
 2035 Vista Parkway
 West Palm Beach, FL 33411
 Phone No. 561.687.2220
 Fax No. 561.687.1110
 Registry No. 33574

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INDIAN RIVER COUNTY FLORIDA
 DEPARTMENT OF PUBLIC WORKS
 ENGINEERING DIVISION

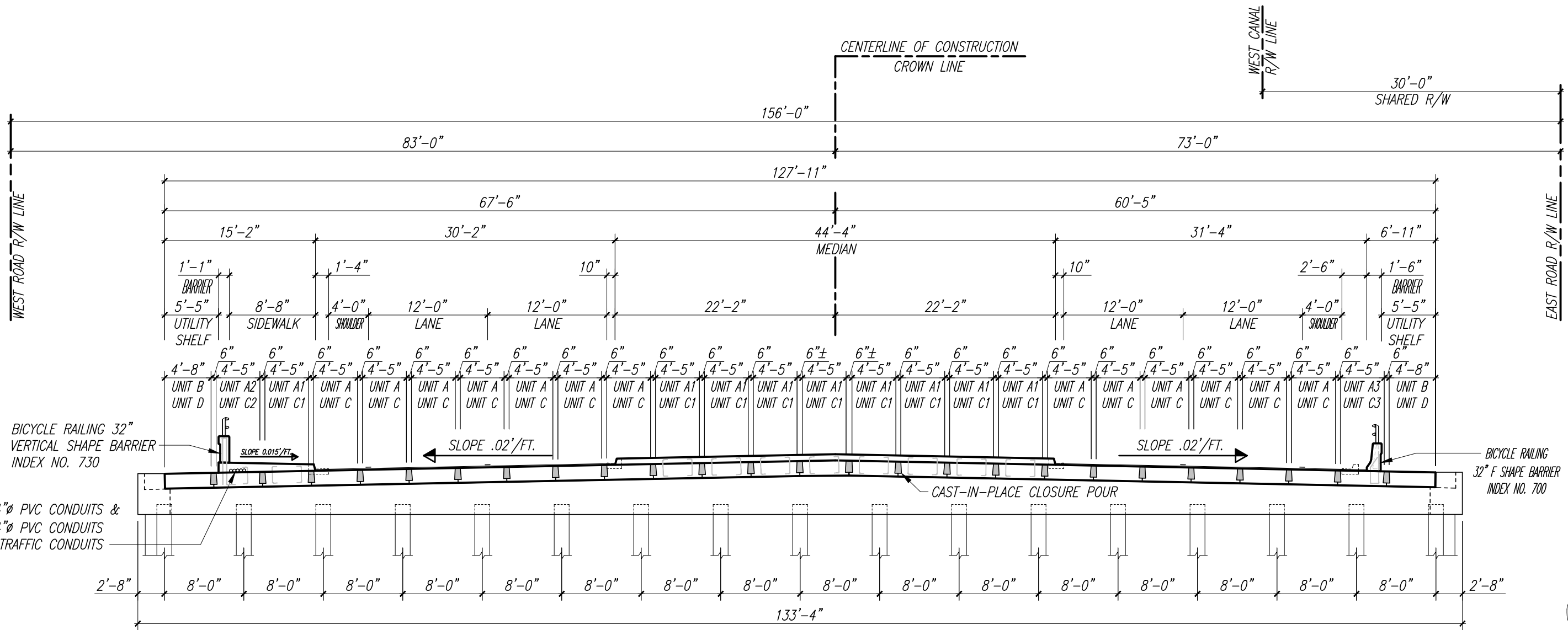
Scale: AS NOTED
 Approved:
 Drawn: C.A.B.
 Checked: T.A.D.
 Date: DECEMBER 2020
 Field Book No:

PROJECT:
 PROPOSED BRIDGE MODIFICATIONS FOR:
 66th AVENUE OVER THE NORTH RELIEF CANAL
 IRC 1505
 INDIAN RIVER COUNTY, FLORIDA

SEAL
 Timothy Alan DeLand-71588
 FLORIDA P.E. NAME & NUMBER

SHEET
 B-18
 PROJECT NO.
 16162296.00

DATE: Dec. 17, 2020 - 9:55am C:\pwworking\wgi\craig.burkhardt\20209607\PRECASL\SLAB_LAYOUT_PLAN.dwg



TYPICAL BRIDGE CROSS SECTION at END BENT
 $3/16" = 1'-0"$

VERIFY SCALE

 NOTE: THE SCALE OF THESE DRAWINGS MAY HAVE CHANGED DUE TO REPRODUCTION.
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PROJECT:
**PROPOSED BRIDGE MODIFICATIONS FOR:
 66th AVENUE OVER THE NORTH RELIEF CANAL
 IRC 1505
 INDIAN RIVER COUNTY, FLORIDA**

SEAL
 Timothy Alan DeLand-71588
 FLORIDA P.E. NAME & NUMBER

SHEET
B-19
 PROJECT NO.
 16162296.00

DATE: Dec. 17, 2020 - 9:55am C:\pwworking\wgi\craig.burkhardt\d020966071\TYPICAL BRIDGE CROSS SECTION.dwg

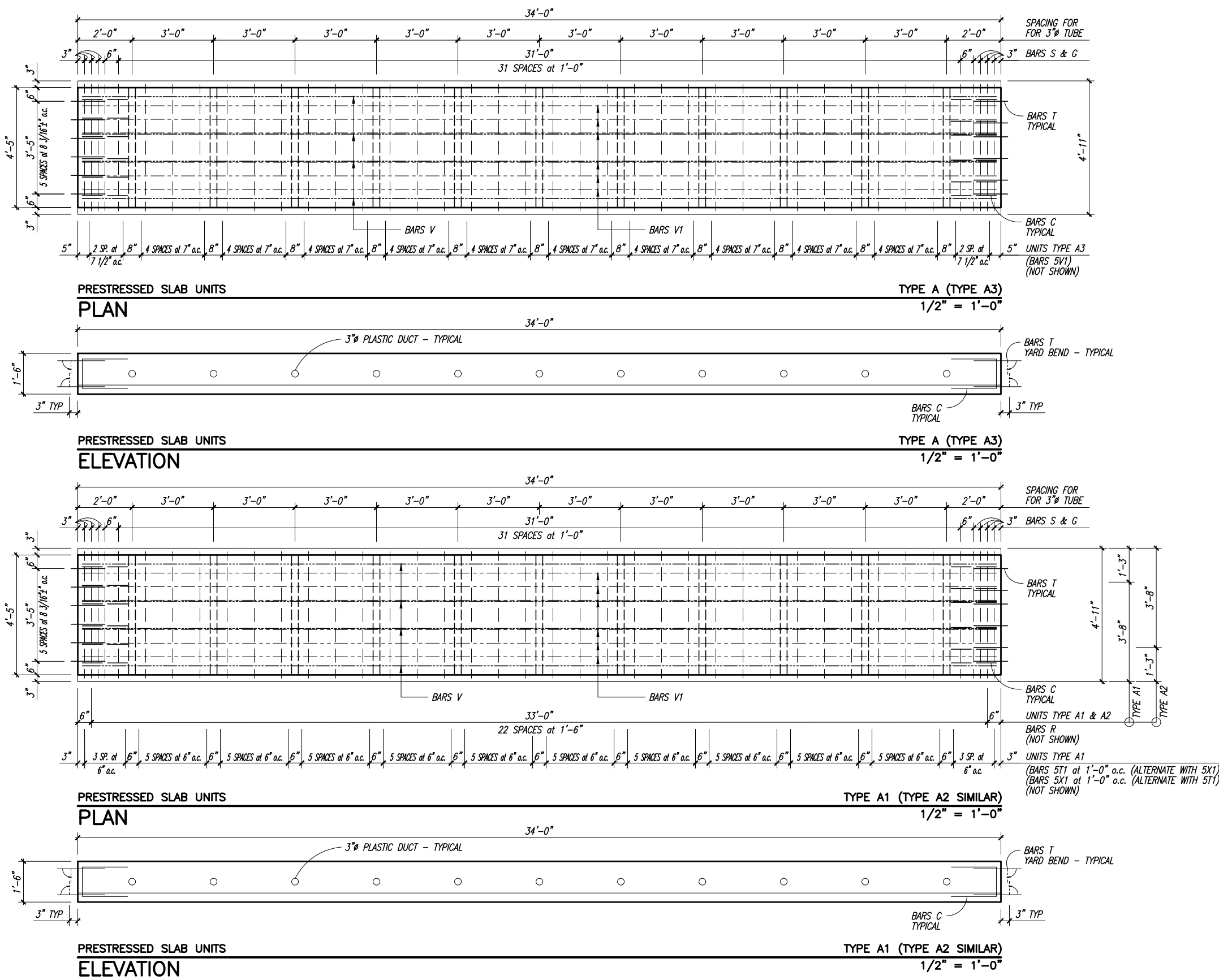
ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
TYPE A SLAB UNITS (13 REQUIRED)	L.F.	442'-0"
TYPE A1 SLAB UNITS (9 REQUIRED)	L.F.	306'-0"
TYPE A2 SLAB UNITS (1 REQUIRED)	L.F.	34'-0"
TYPE A3 SLAB UNITS (1 REQUIRED)	L.F.	34'-0"

BILL OF REINFORCING STEEL

MARK	SIZE	NUMBER REQUIRED				LENGTH	BENDING
		TYPE					
		A	A1	A2	A3		
C	4	12	12	12	12	4'-4 1/2"	SEE DIAG.
G	4	40	40	40	40	4'-3"	STRAIGHT
R	4		46	23		2'-9 3/4"	SEE DIAG.
S	4	40	40	40	40	16'-10"	SEE DIAG.
T	4	24	24	24	24	1'-9"	SEE DIAG.
V	5	4	4	4	4	33'-6"	STRAIGHT
V1	8	6	6	6	6	33'-6"	STRAIGHT
5T1	5				34	9'-4"	SEE DIAG.
5X1	5				34	5'-7"	SEE DIAG.
5V1	5				56	7'-6"	SEE DIAG.

SEE SHEET B22 & B23 FOR BENDING DIAGRAM



**

DATE: Dec. 17, 2020 - 9:55am C:\pwworking\legi\cmgiburkharath\d0396607\PRECASH\SLAB PLANS AND ELEVATIONS_TYPE A - A3.dwg

VERIFY SCALE

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Date: DECEMBER 2020
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PROJECT:
PROPOSED BRIDGE MODIFICATIONS FOR:
66th AVENUE OVER THE NORTH RELIEF CANAL
IRC 1505
INDIAN RIVER COUNTY, FLORIDA

SEAL
Timothy Alan DeLand-71588
FLORIDA P.E. NAME & NUMBER

SHEET
B-20
PROJECT NO.
16162296.00

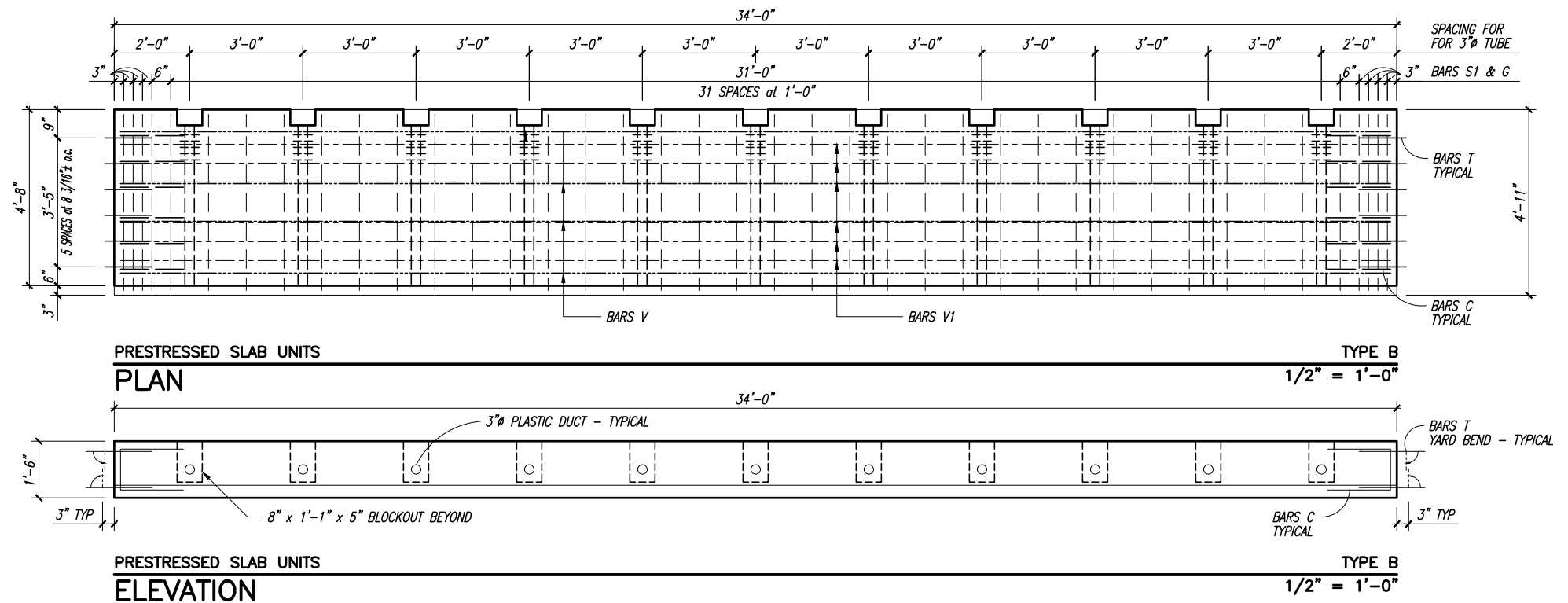
ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
TYPE B SLAB UNITS (2 REQUIRED)	L.F.	68'-0"

BILL OF REINFORCING STEEL

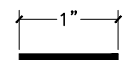
MARK	SIZE	NUMBER REQUIRED				LENGTH	BENDING
		TYPE					
		B					
C	4	12				4'-4 1/2"	SEE DIAG.
G	4	40				4'-3"	STRAIGHT
S1	4	40				17'-4"	SEE DIAG.
T	4	24				1'-9"	SEE DIAG.
V	5	4				33'-6"	STRAIGHT
V1	8	6				33'-6"	STRAIGHT
D	3	55				2'-0"	STRAIGHT

SEE SHEET B22 & B23 FOR BENDING DIAGRAM



**

VERIFY SCALE



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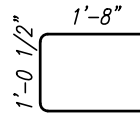
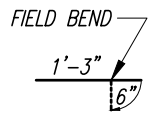
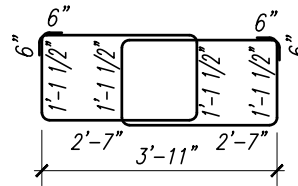
PROJECT:
PROPOSED BRIDGE MODIFICATIONS FOR:
66th AVENUE OVER THE NORTH RELIEF CANAL
IRC 1505
INDIAN RIVER COUNTY, FLORIDA

SEAL
Timothy Alan DeLand-71588
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SHEET
B-21
PROJECT NO.
16162296.00

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BENDING DIAGRAM

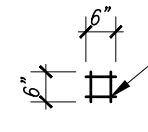
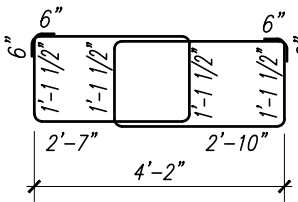


BARS T

BARS C

BARS S

** NUMBER REQUIRED SHOWN REPRESENTS PAIRS OF BARS

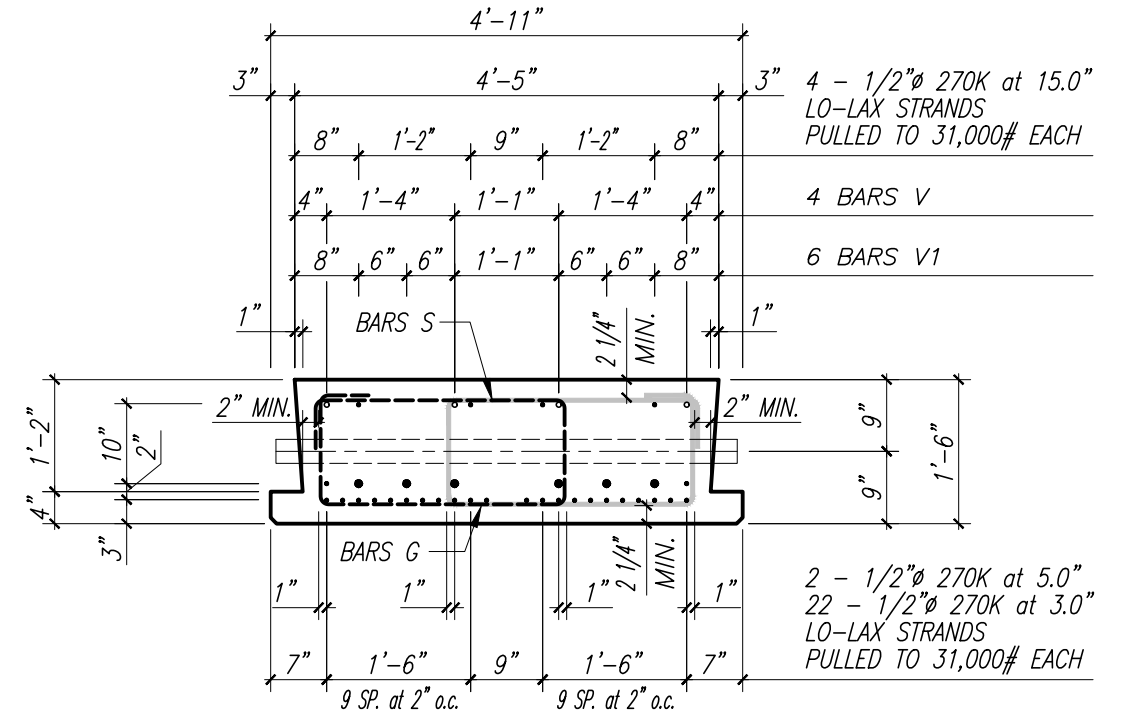


BARS D

BARS S1

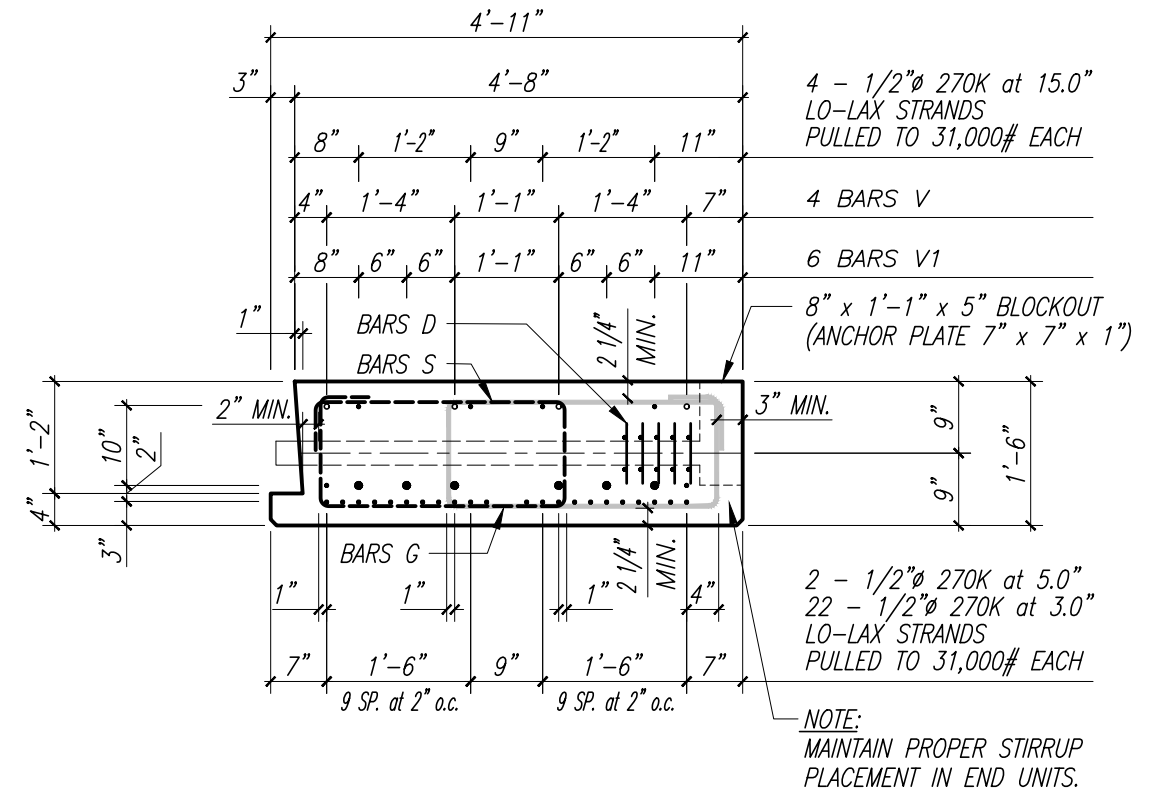
** NUMBER REQUIRED SHOWN REPRESENTS PAIRS OF BARS

* MEASUREMENTS ARE FROM OUT TO OUT OF REINFORCING STEEL. *



TYPE A

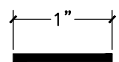
TYPICAL SECTION



TYPE B

TYPICAL SECTION

VERIFY SCALE



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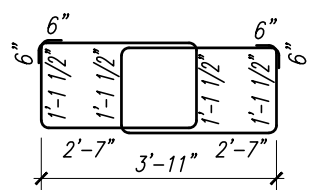
PROJECT:
PROPOSED BRIDGE MODIFICATIONS FOR:
66th AVENUE OVER THE NORTH RELIEF CANAL
IRC 1505
INDIAN RIVER COUNTY, FLORIDA

SEAL
Timothy Alan DeLand-71588
FLORIDA P.E. NAME & NUMBER

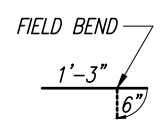
SHEET
B-22
PROJECT NO.
16162296.00

DATE: Dec 17, 2020 - 9:55am C:\pwworking\wgi\craig.burkhardt\202096207\PROJECT\SAB DETAIL\TYPE A.B.dwg

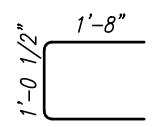
BENDING DIAGRAM



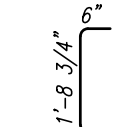
BARS S
** NUMBER REQUIRED SHOWN REPRESENTS PAIRS OF BARS



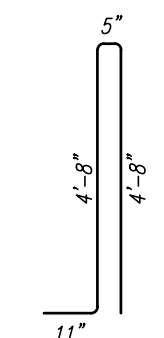
BARS T



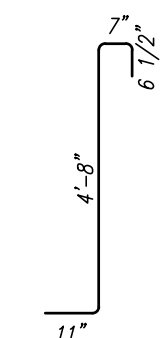
BARS C



BARS R



BARS 5T1

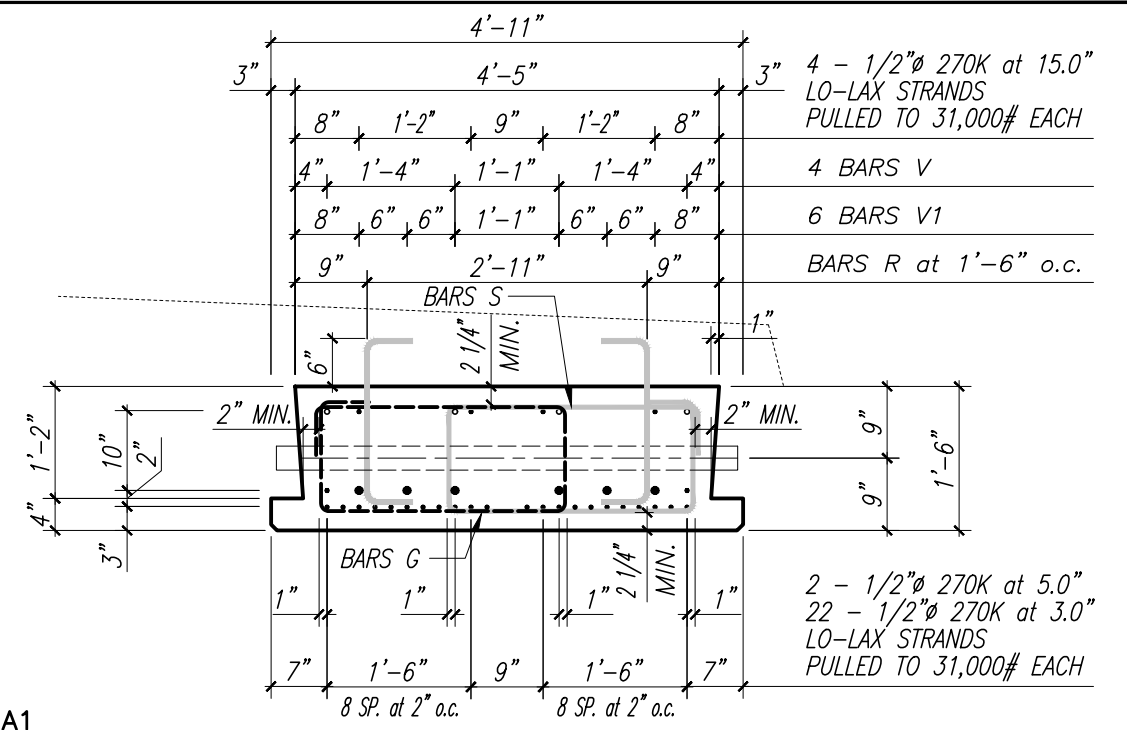


BARS 5X1

SEE SHEET INDEX NO. 730 FOR ADDITIONAL INFORMATION.

SEE SHEET INDEX NO. 700 FOR ADDITIONAL INFORMATION.

* MEASUREMENTS ARE FROM OUT TO OUT OF REINFORCING STEEL. *



TYPE A1

TYPICAL SECTION

4 - 1/2" ϕ 270K at 15.0" LO-LAX STRANDS PULLED TO 31,000# EACH

4 BARS V

6 BARS V1

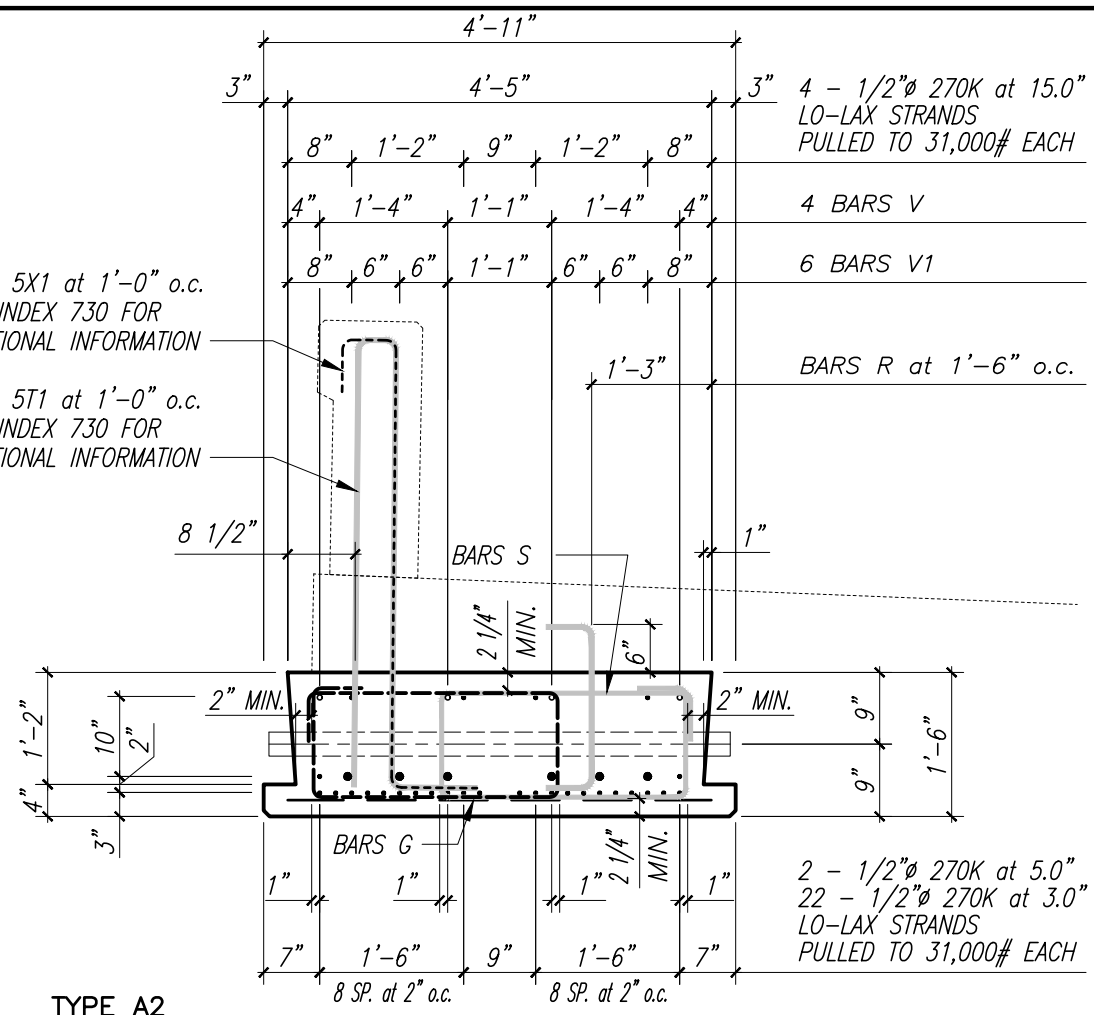
BARS 5P SEE INDEX 700 FOR ADDITIONAL INFORMATION

BARS 5V1 at 8" o.c. SEE INDEX 700 FOR ADDITIONAL INFORMATION

2 - 1/2" ϕ 270K at 5.0" 22 - 1/2" ϕ 270K at 3.0" LO-LAX STRANDS PULLED TO 31,000# EACH

TYPE A3

TYPICAL SECTION



TYPE A2

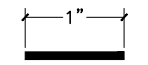
TYPICAL SECTION

BARS 5X1 at 1'-0" o.c. SEE INDEX 730 FOR ADDITIONAL INFORMATION

BARS 5T1 at 1'-0" o.c. SEE INDEX 730 FOR ADDITIONAL INFORMATION

2 - 1/2" ϕ 270K at 5.0" 22 - 1/2" ϕ 270K at 3.0" LO-LAX STRANDS PULLED TO 31,000# EACH

VERIFY SCALE



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ENGINEERING DIVISION

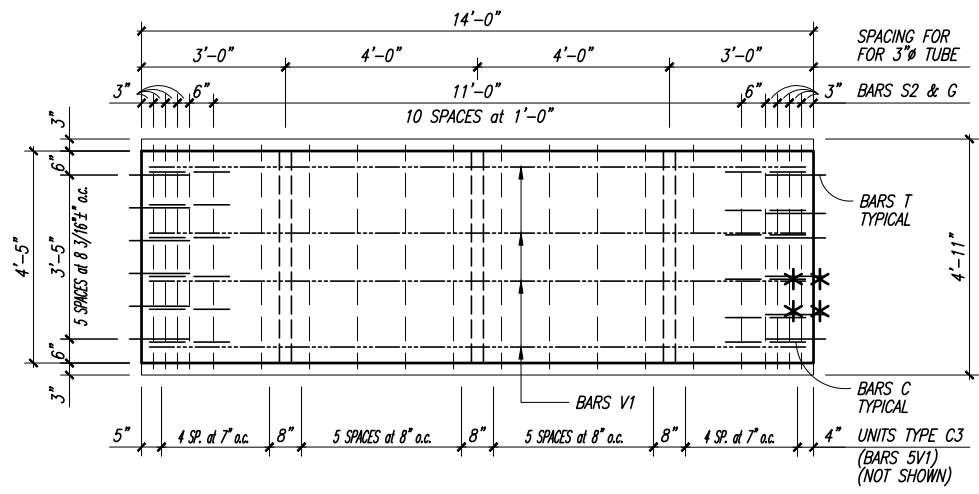
Scale: AS NOTED
Approved:
Drawn: C.A.B.
Checked: T.A.D.
Date: DECEMBER 2020
Field Book No:

PROJECT:
PROPOSED BRIDGE MODIFICATIONS FOR:
66th AVENUE OVER THE NORTH RELIEF CANAL
IRC 1505
INDIAN RIVER COUNTY, FLORIDA

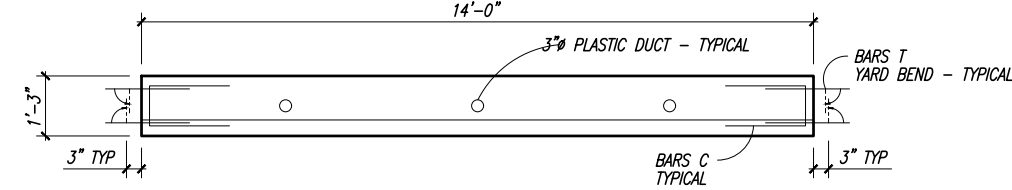
SEAL
Timothy Alan DeLand-71588
FLORIDA P.E. NAME & NUMBER

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B-23
PROJECT NO.
16162296.00

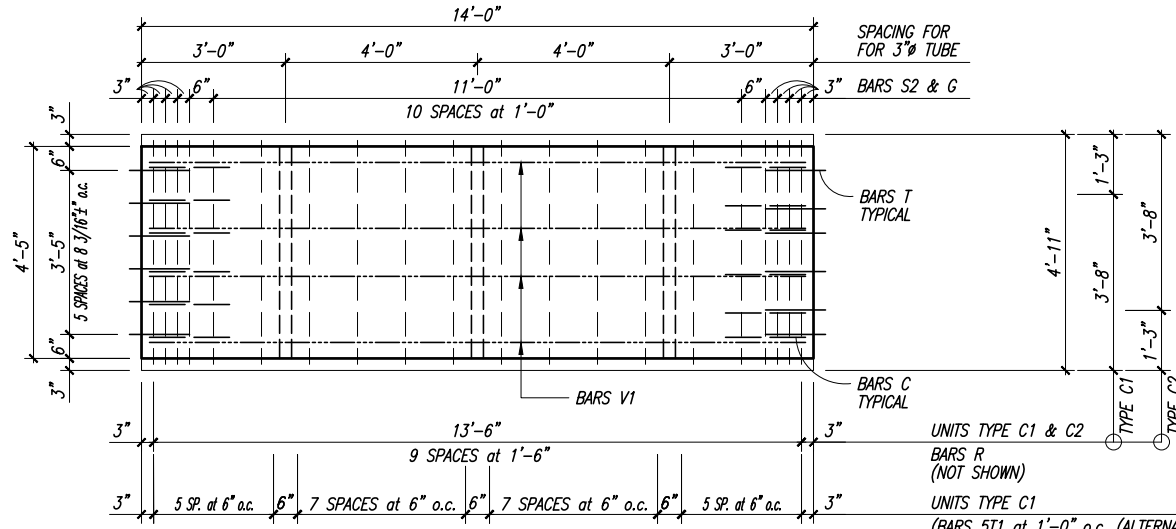
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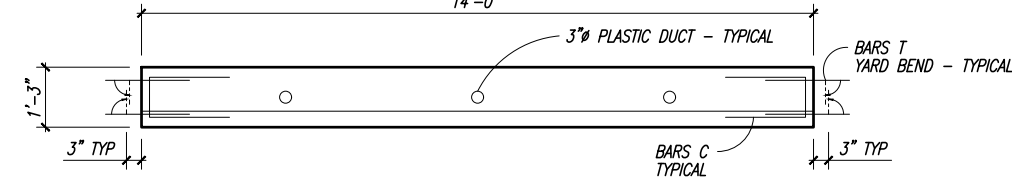
PRESTRESSED SLAB UNITS TYPE C (TYPE C3)
PLAN 1/2" = 1'-0"



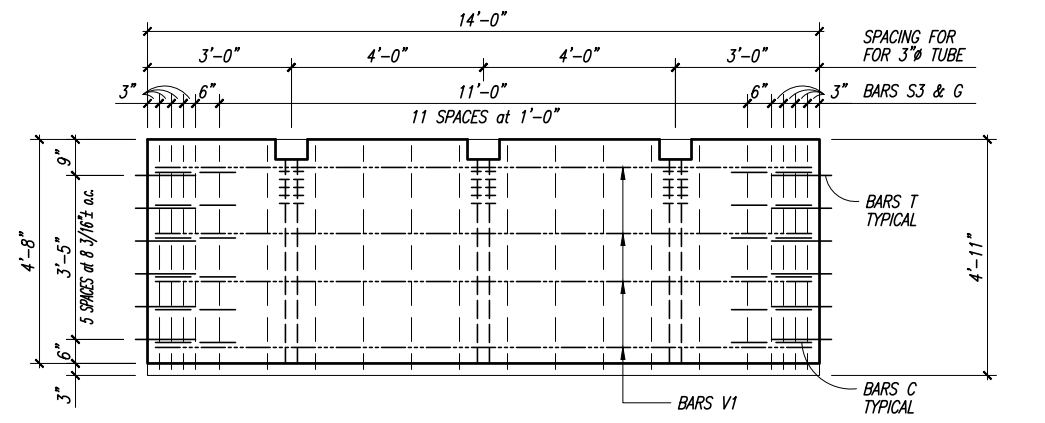
PRESTRESSED SLAB UNITS TYPE C (TYPE C3)
ELEVATION 1/2" = 1'-0"



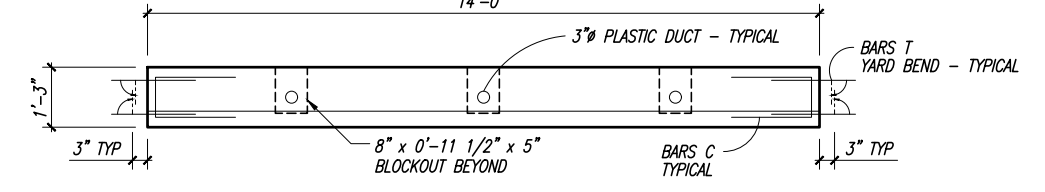
PRESTRESSED SLAB UNITS TYPE C1 (TYPE C2 SIMILAR)
PLAN 1/2" = 1'-0"



PRESTRESSED SLAB UNITS TYPE C1 (TYPE C2 SIMILAR)
ELEVATION 1/2" = 1'-0"



PRESTRESSED SLAB UNITS TYPE D
PLAN 1/2" = 1'-0"



PRESTRESSED SLAB UNITS TYPE D
ELEVATION 1/2" = 1'-0"

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
TYPE C SLAB UNITS (26 REQUIRED)	L.F.	364'-0"
TYPE C1 SLAB UNITS (18 REQUIRED)	L.F.	252'-0"
TYPE C2 SLAB UNITS (2 REQUIRED)	L.F.	28'-0"
TYPE C3 SLAB UNITS (2 REQUIRED)	L.F.	28'-0"
TYPE D SLAB UNITS (4 REQUIRED)	L.F.	56'-0"

BILL OF REINFORCING STEEL

MARK	SIZE	NUMBER REQUIRED						LENGTH	BENDING
		A	A1	A2	A3	B			
C	4	12	12	12	12	12	4'-1 1/2"	SEE DIAG.	
G	4	20	20	20	20	20	4'-3"	STRAIGHT	
R	4		20	10			2'-5 3/4"	SEE DIAG.	
S2	4	20	20	20	20	20	15'-10"	SEE DIAG.	
S3	4	20	20	20	20	20	16'-4"	SEE DIAG.	
T	4	24	24	24	24	24	1'-9"	SEE DIAG.	
V1	5	4	4	4	4	4	13'-6"	STRAIGHT	
5T1	5			14			10'-2"	SEE DIAG.	
5X1	5			14			6'-5 1/2"	SEE DIAG.	
5V1	5				22	22	6'-3"	SEE DIAG.	

SEE SHEET B26 & B27 FOR BENDING DIAGRAM

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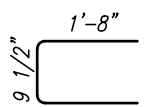
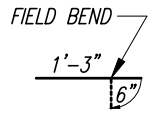
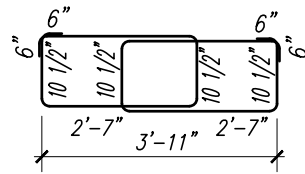
Scale: AS NOTED
 Approved:
 Drawn: C.A.B.
 Checked: T.A.D.
 Date: DECEMBER 2020
 Field Book No:

PROJECT:
 PROPOSED BRIDGE MODIFICATIONS FOR:
 66th AVENUE OVER THE NORTH RELIEF CANAL
 IRC 1505
 INDIAN RIVER COUNTY, FLORIDA

SEAL
 Timothy Alan DeLand-71588
 FLORIDA P.E. NAME & NUMBER

SHEET
 B-24
 PROJECT NO.
 16162296.00

BENDING DIAGRAM

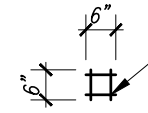
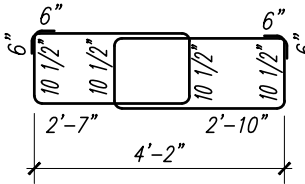


BARS T

BARS C

BARS S

** NUMBER REQUIRED SHOWN REPRESENTS PAIRS OF BARS



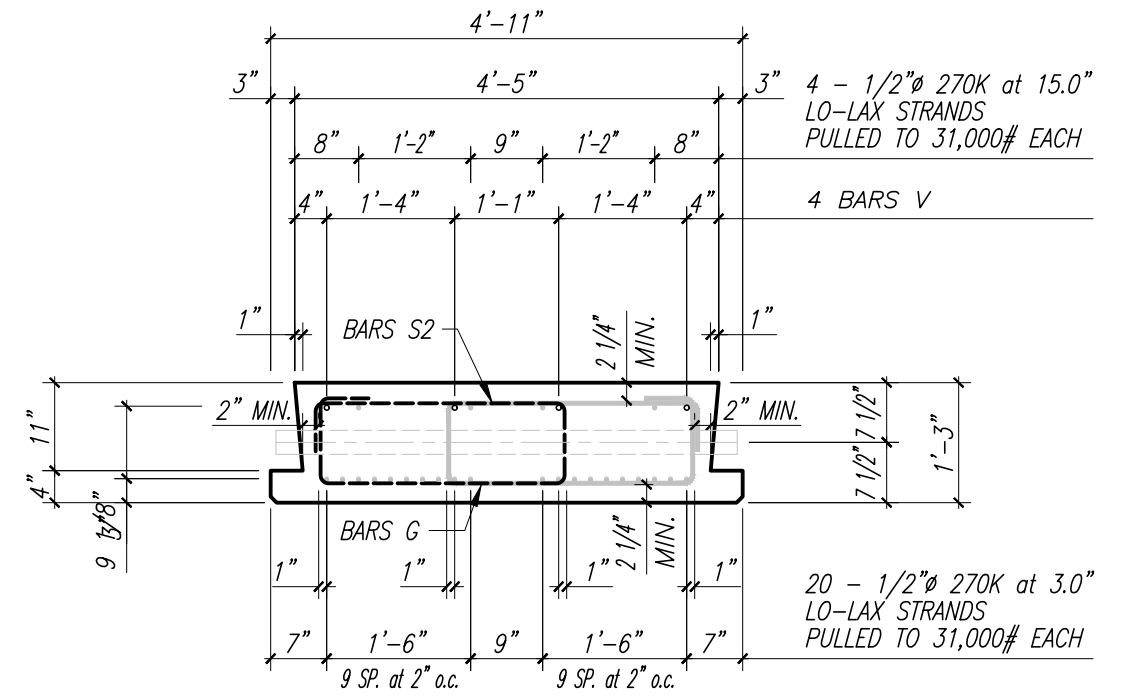
#3 TACK WELD
TACK WELD 4 PLACES
(5 PIECES)

BARS D

BARS S1

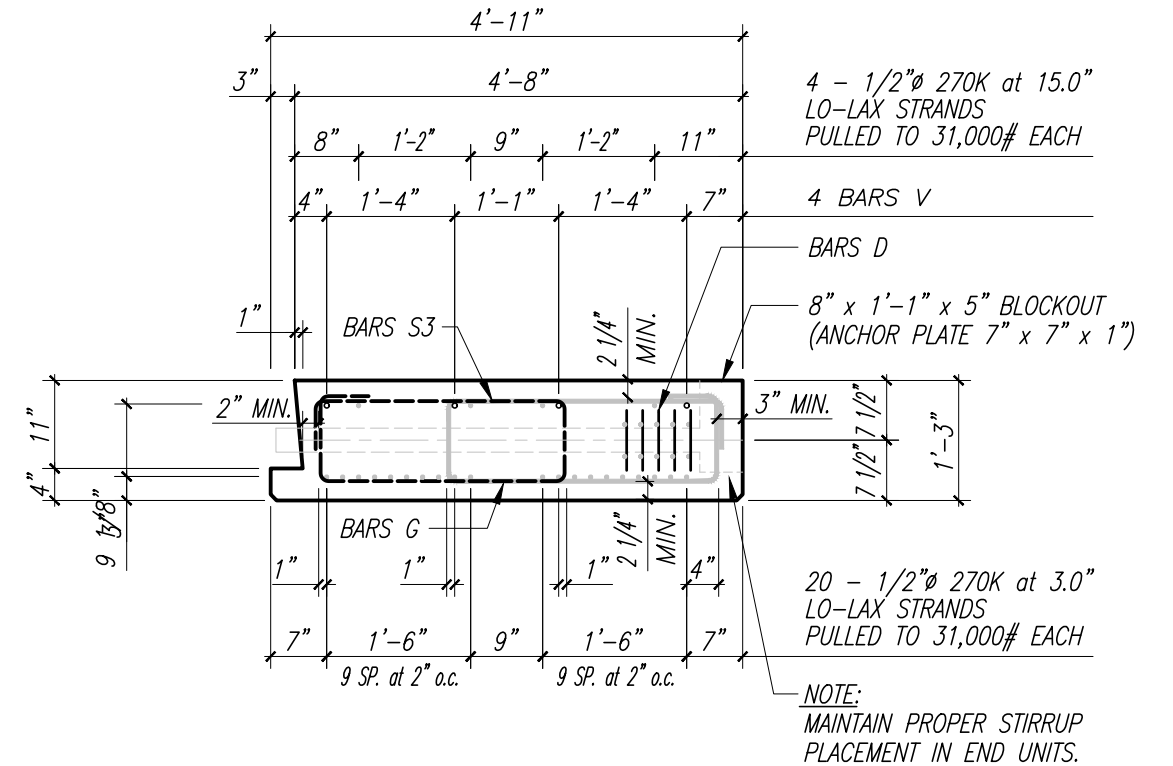
** NUMBER REQUIRED SHOWN REPRESENTS PAIRS OF BARS

* MEASUREMENTS ARE FROM OUT TO OUT OF REINFORCING STEEL. *



TYPE C

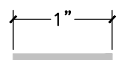
TYPICAL SECTION



TYPE D

TYPICAL SECTION

VERIFY SCALE



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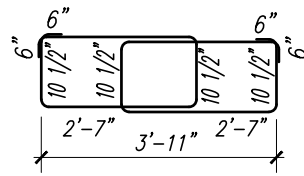
PROJECT:
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66th AVENUE OVER THE NORTH RELIEF CANAL
IRC 1505
INDIAN RIVER COUNTY, FLORIDA

SEAL
Timothy Alan DeLand-71588
FLORIDA P.E. NAME & NUMBER

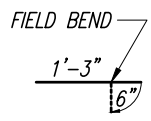
SHEET
B-25
PROJECT NO.
16162296.00

DATE: Dec 17, 2020 - 9:55am C:\pwworking\wgi\craig.burkhardt\d0396607\PRECAST_SLAB_DETAILS-TYPE C-D.dwg

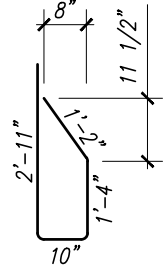
BENDING DIAGRAM



BARS S
** NUMBER REQUIRED SHOWN REPRESENTS PAIRS OF BARS

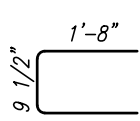


BARS T

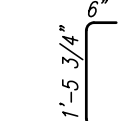


BARS 5V1

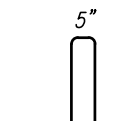
SEE SHEET INDEX NO. 700 FOR ADDITIONAL INFORMATION.



BARS C



BARS R



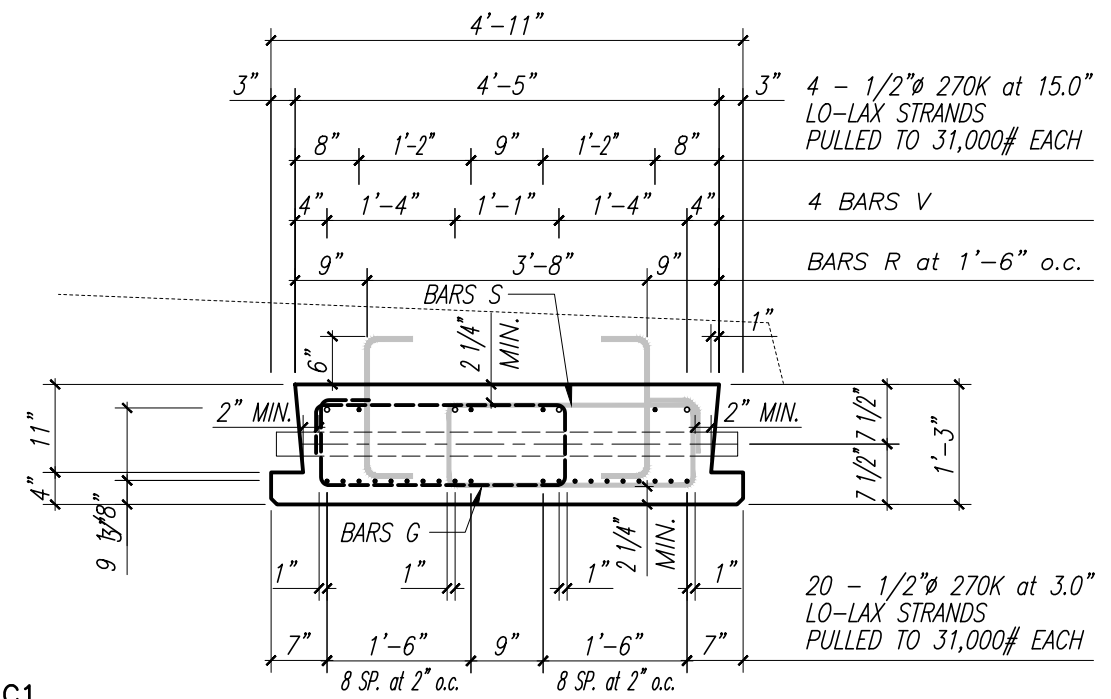
BARS 5T1

SEE SHEET INDEX NO. 730 FOR ADDITIONAL INFORMATION.



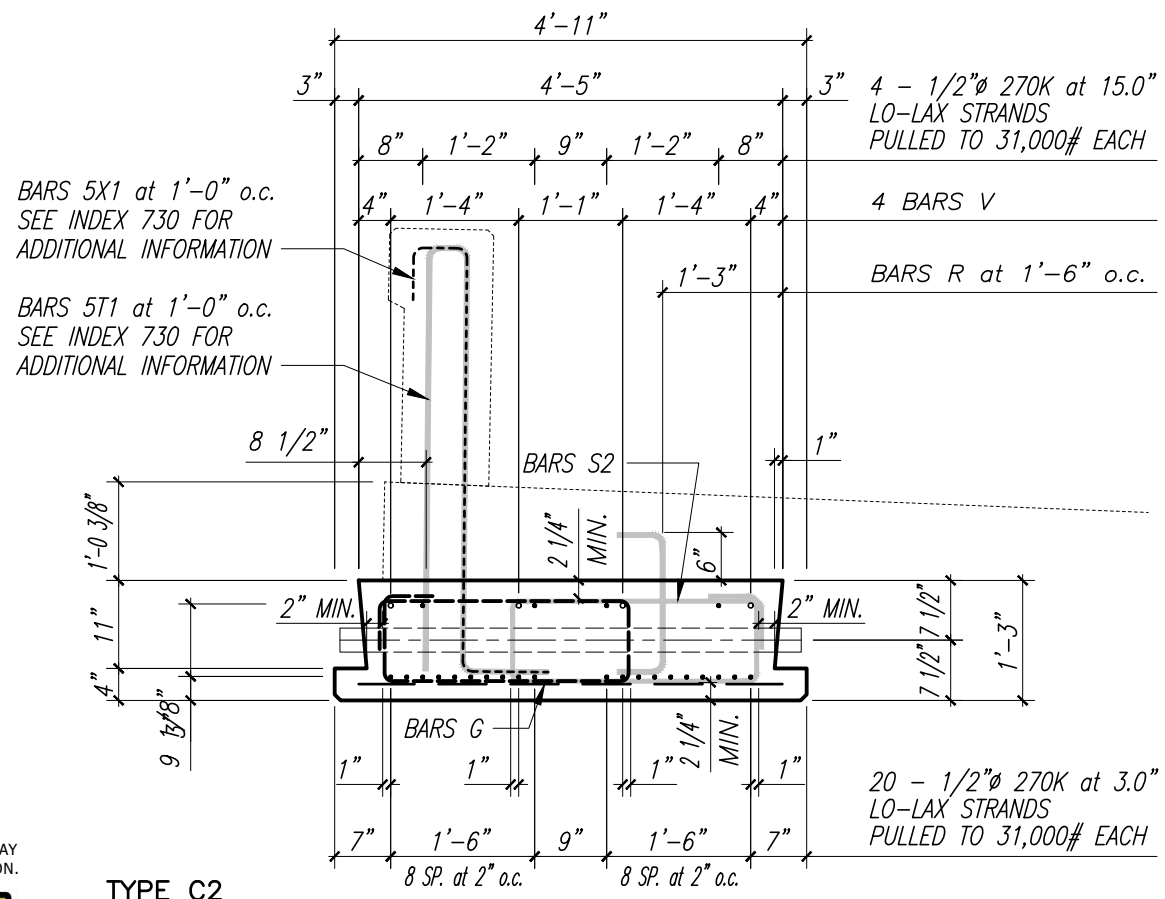
BARS 5X1

* MEASUREMENTS ARE FROM OUT TO OUT OF REINFORCING STEEL. *



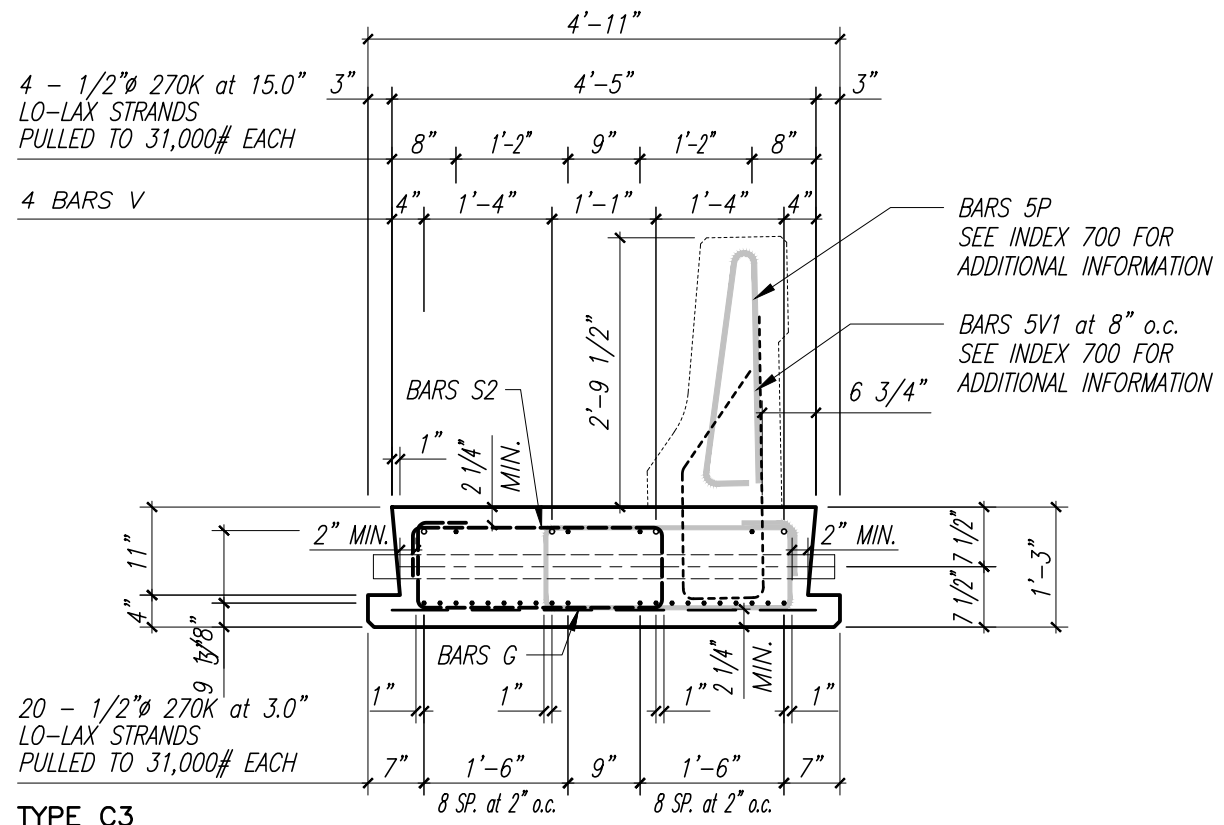
TYPE C1

TYPICAL SECTION



TYPE C2

TYPICAL SECTION



TYPE C3

TYPICAL SECTION

VERIFY SCALE

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

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BAR IS ONE INCH ON ORIGINAL DRAWINGS. ADJUST SCALES AS NECESSARY.

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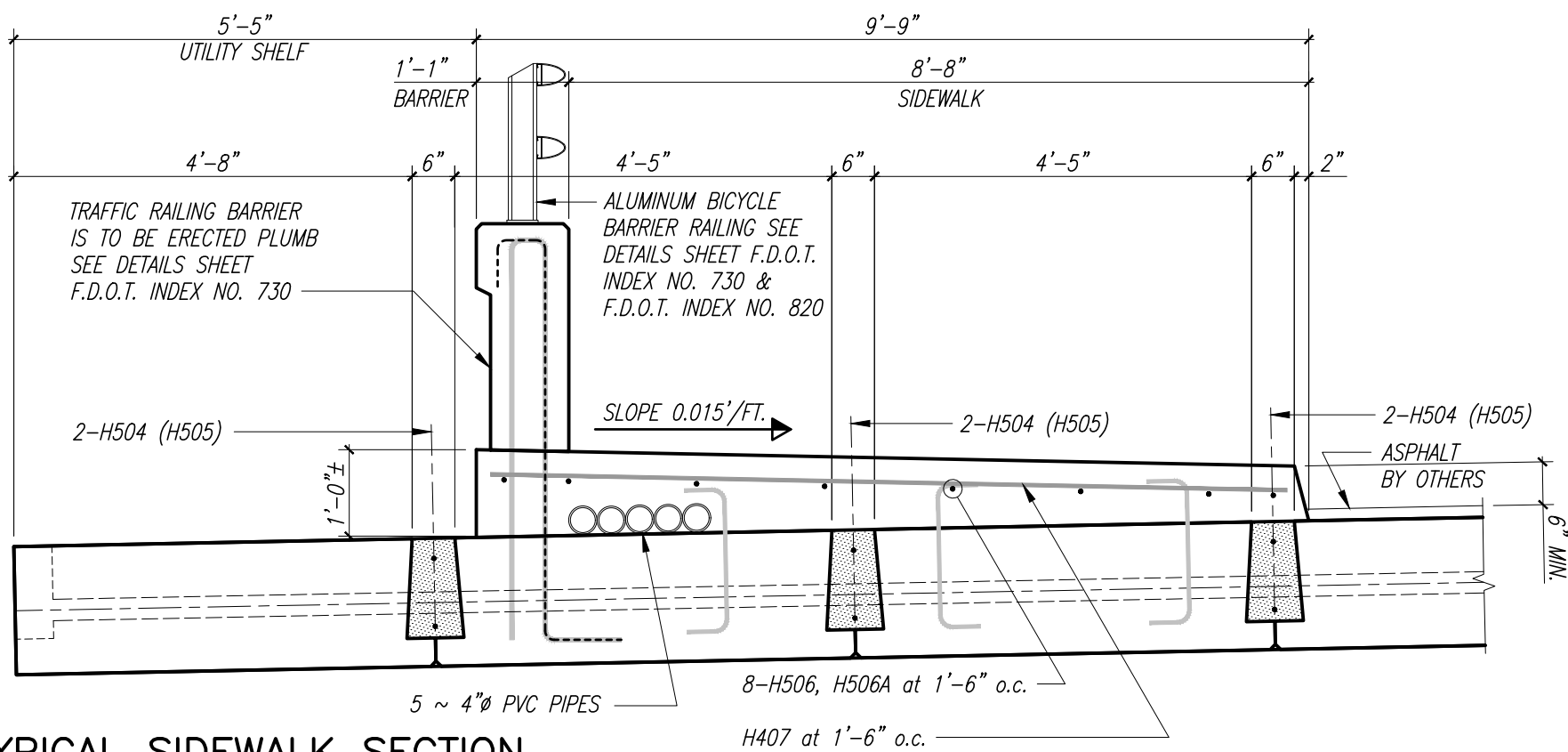
Scale: AS NOTED
Approved:
Drawn: C.A.B.
Checked: T.A.D.
Date: DECEMBER 2020
Field Book No:

PROJECT:
PROPOSED BRIDGE MODIFICATIONS FOR:
66th AVENUE OVER THE NORTH RELIEF CANAL
IRC 1505
INDIAN RIVER COUNTY, FLORIDA

SEAL
Timothy Alan DeLand-71588
FLORIDA P.E. NAME & NUMBER

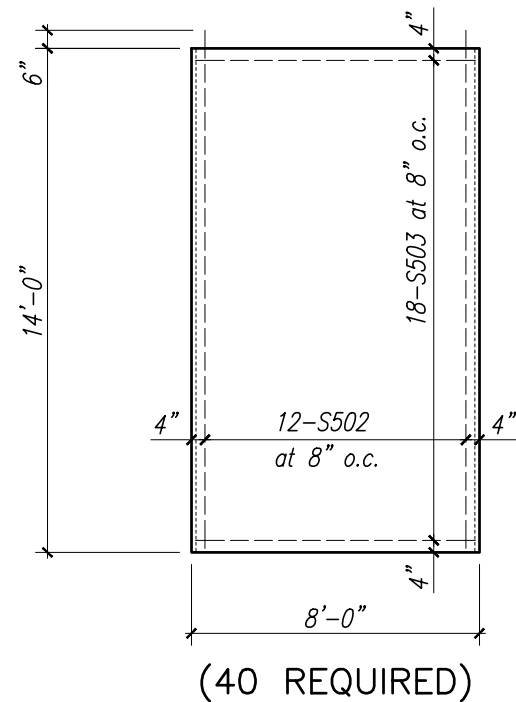
SHEET
B-26
PROJECT NO.
16162296.00

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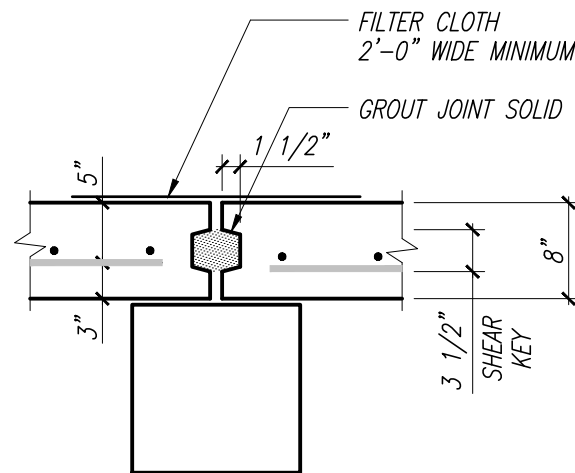
TYPICAL SIDEWALK SECTION

1" = 1'-0"



(40 REQUIRED)

WALL DETAIL



SHEET WALL JOINT DETAIL

Miscellaneous Quantities

Item	Required	Unit	Quantity
Class II Concrete (Closure Pours)		Cu. Yds.	59.0
Reinforcing Steel (Closure Pours)		lbs.	3546
Class II Concrete (Sidewalks including Approach Slabs)		Cu. Yds.	37.0
Reinforcing Steel (Sidewalks including Approach Slabs)		lbs.	1566
8" x 8'-0" x 14'-0" Sheet Wall	40	L.F.	560'-0"

Bill of Reinforcing Steel

Mark	Size	Number Required	Total Length	Bending	Weight (lbs.)
SHEET WALLS (TOTAL)					
S502	5	480	14'-3"	Straight	7134
S503	5	840	7'-4"	Straight	6425
CLOSURE POURS (TOTAL)					
H504	5	100	16'-0"	Straight	1669
H505	5	50	36'-0"	Straight	1877
SIDEWALKS (TOTAL)					
H407	4	88	9'-3"	Straight	544
H506	5	8	34'-6"	Straight	288
H506A	5	16	14'-6"	Straight	242
H506B	5	16	29'-6"	Straight	492

GENERAL NOTES

PAYMENT

THE CONTRACT UNIT PRICE FOR PRECAST CONCRETE SHEET PILING SHALL INCLUDE REINFORCING STEEL AND PICK-UP BARS. ALL CORNER PILING SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR CONCRETE SHEET PILING.

CONCRETE

CLASS II CONCRETE ($f'c = 3400$ p.s.i.)

PICKUP BARS

AT THE OPTION OF THE CONTRACTOR, 2-7/16" STRANDS MAY BE SUBSTITUTED FOR NO. 6 PICKUP BAR. STRANDS SHALL BE EMBEDDED IN PILE A MINIMUM OF TWO (2) FEET.

REINFORCING STEEL

REINFORCING STEEL SHALL BE GRADE 60.

PLASTIC FILTER FABRIC

A PLASTIC FILTER FABRIC (SEE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION) SHALL BE PLACED BETWEEN FILL AND BULKHEAD CAP AND BETWEEN FILL AND PRECAST SHEET PILES TO TWO (2) FEET BELOW MUD LINE. COST OF ALL LABOR AND MATERIALS REQUIRED FOR INSTALLING PLASTIC FILTER FABRIC SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR SHEET PILING.

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VERIFY SCALE
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WGI
 2035 Vista Parkway
 West Palm Beach, FL 33411
 Phone No. 561.687.2220
 Fax No. 561.687.1110
 Registry No. 33574

NO.	REVISION	DATE	BY

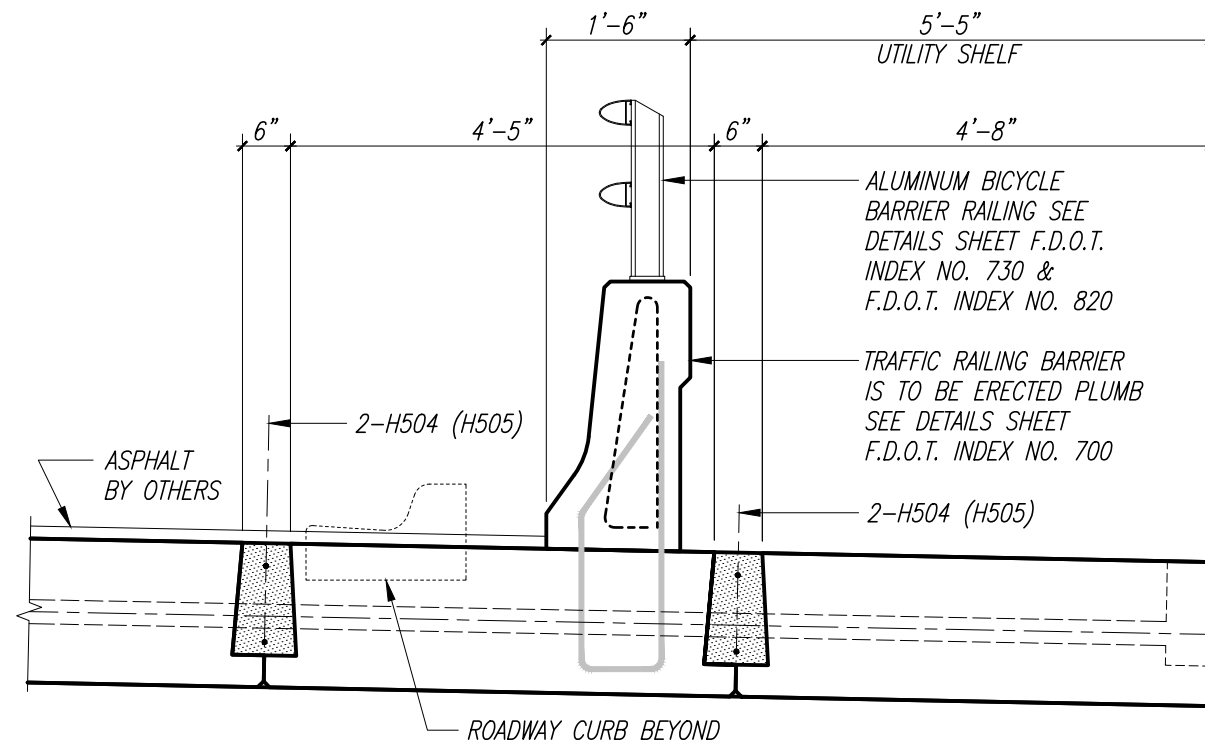
INDIAN RIVER COUNTY
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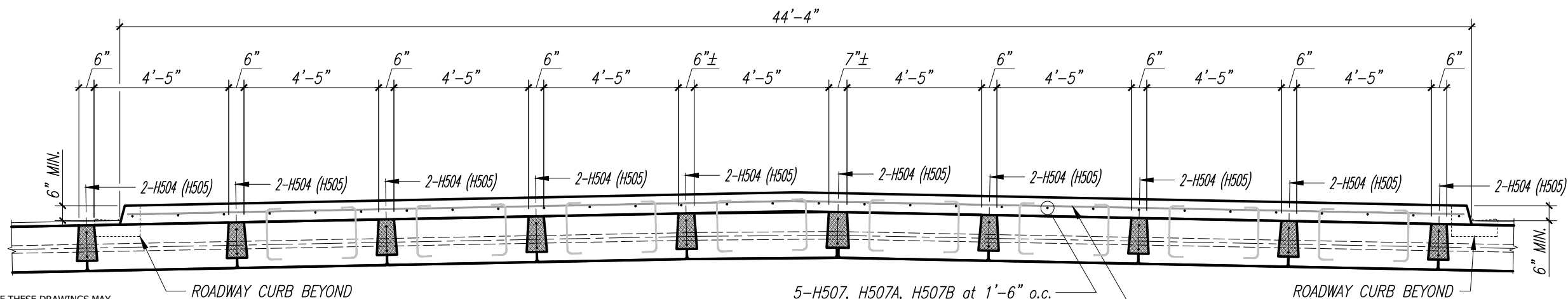
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 B-27
 PROJECT NO.
 16162296.00



TYPICAL TRAFFIC RAILING BARRIER SECTION

1" = 1'-0"

Miscellaneous Quantities					
Item	Required	Unit	Quantity		
Class II Concrete (Median including Approach Slabs)		Cu. Yds.	127.0		
Reinforcing Steel (Median including Approach Slabs)		lbs.	5686		
Bill of Reinforcing Steel					
Mark	Size	Number Required	Total Length	Bending	Weight (lbs.)
MEDIANS (TOTAL)					
H408	4	88	43'-8"	Straight	2567
H507	5	30	34'-6"	Straight	691
H507a	5	60	14'-6"	Straight	581
H507b	5	60	29'-6"	Straight	1846



TYPICAL MEDIAN SECTION

1" = 1'-0"

VERIFY SCALE

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DATE: Dec. 17, 2020 - 9:56am C:\pwworking\wgi\craig_burkhardt\d0396607\MISCELLANEOUS DETAILS.dwg

Load Rating Summary Details for Prestressed Concrete Bridges (Flat Slab and Deck/Girder)

Table Date 10-13-16

Table 2 - LRFR using Part A³

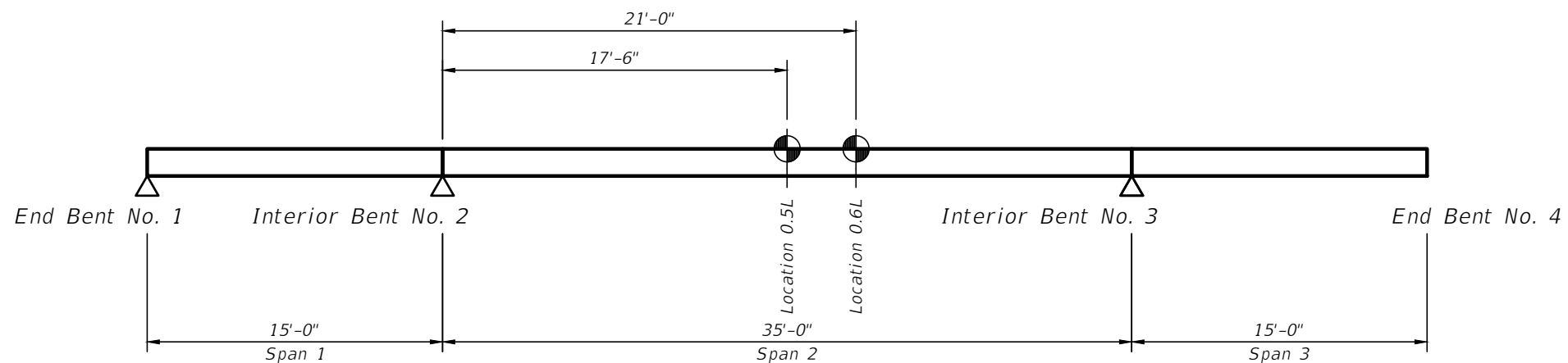
Level	Limit State	Vehicle	Weight (tons)	Load Factors			Moment (Strength) or Stress (Service)					Shear (Strength)				Comments:	
				LL	DC	DW	Distribution Factor (DF)	Rating Factor	Tons	Location	Dimension	Distribution Factor (DF)	Rating Factor	Tons	Location		Dimension
Design Load Rating	Strength I (Inv)	HL-93	-	1.75	1.25	1.50	0.60	1.22	-	0.5L	16.75	0.60	4.31	-	Transfer	2.25	Interior/exterior beam DF Method if other than LRFD. Other appropriate comments
	Strength I (Op)	HL-93	-	1.35	1.25	1.50	0.60	1.58	-	0.5L	16.75	0.60	5.75	-	Transfer	2.25	
	Service III (Inv)	HL-93	-	0.80	1.00	1.00	0.60	1.03	-	0.5L	16.75	-	-	-	-	-	
	Service III (Op)	HL-93	-	0.80	1.00	1.00	0.60	1.32	-	0.5L	16.75	-	-	-	-	-	
Permit Load Rating	Strength I	C5 Truck	40.00	1.35	1.25	1.50	0.60	2.12	84.67	0.5L	16.75	0.60	7.58	303.16	Bearing	0.00	
	Strength I	ST5 Truck	40.00	1.35	1.25	1.50	0.60	2.24	89.78	0.5L	16.75	0.60	8.12	324.72	Transfer	2.25	
	Strength I	SU4 Truck	35.00	1.35	1.25	1.50	0.60	1.65	57.75	0.5L	16.75	0.60	6.19	216.57	Transfer	2.25	
	Service III	C5 Truck	40.00	0.80	1.00	1.00	0.60	1.76	70.53	0.5L	16.75	-	-	-	-	-	
	Service III	ST5 Truck	40.00	0.80	1.00	1.00	0.60	1.87	74.78	0.5L	16.75	-	-	-	-	-	
	Service III	SU4 Truck	35.00	0.80	1.00	1.00	0.60	1.37	48.10	0.6L	16.75	-	-	-	-	-	
Permit Load Rating	Strength II	FL120	60.00	1.60	1.25	1.50	0.60	1.05	63.01	0.6L	20.15	0.60	2.43	146.03	0.3L	9.95	
	Service I	FL120	60.00	1.00	1.00	1.00	0.60	1.33	79.56	0.6L	20.15	-	-	-	-	-	

Abbreviations:
Inv - Inventory
Op - Operating

General Notes:
1. This table is based on the requirements established in the January 2011 "Structures Manual".

Table 2 Notes:
1. Permit capacity is determined by using the permit vehicle in all lanes.
2. If the Design Operating Load Rating is greater than 1.4, Load Rating using Legal Vehicles SU4, C5, and ST5 is not required.
3. Service III Design Inventory tensile stress limits = $6\sqrt{f'_c}$, Service III Design Operating, Legal, and Permit tensile stress limits = $7.5\sqrt{f'_c}$.
4. Has the AASHTO LRFD Specifications Article 5.8.3.5 longitudinal reinforcement been satisfied? Yes No

Limit State	Vehicle	Weight (Tons)	Rating Factor
Service III (Inv)	HL-93	-	1.03



RATING LOCATIONS

VERIFY SCALE
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