INDEX OF STRUCTURE PLANS

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STANDARD PLANS:

550-002	FENCE TYPE B
458-110	EXPANSION JOINT SYSTEM POURED

GOVERNING STANDARDS PLANS:

Florida Department of Transportation, FY 2019-20 Standard Plans for Road and Bridge Construction and applicable Interim Revisions (IRs).

Standard Plans for Road Construction and associated IRs are available at the following website: http://www.fdot.gov/design/standardplans

Standard Plans for Bridge Construction are include in the Structures Plan Component

GOVERNING STANDARD SPECIFICATIONS:

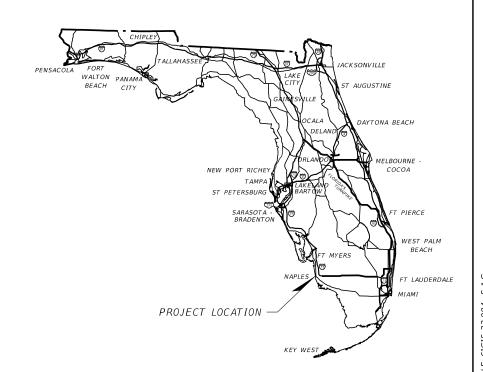
Florida Department of Transportation, July 2019 Standard Specifications for Road and Bridge Construction at the following website: http://www.fdot.gov/programmanagement/Implemented/SpecBooks

CITY OF NAPLES, FLORIDA

CONTRACT PLANS

CITY OF NAPLES BRIDGE REHABILITATION PROJECT PARK SHORE DRIVE OVER MOORING BAY (034101) & GALLEON DRIVE OVER LANTERN LAKE (035252) CITY CONTRACT NO. 20-020

STRUCTURE PLANS



STRUCTURE SHOP DRAWINGS TO BE SUBMITTED TO:

ROLANDO CORSA, PE, CBI BRIDGING SOLUTIONS, LLC 8112 CHAMPIONS FOREST WAY TAMPA, FL 33635

PLANS PREPARED BY:



8112 CHAMPIONS FOREST WAY TAMPA, FL 33635 ROLANDO CORSA, P.E. #73191 CERT. OF AUTHORIZATION #30505

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

STRUCTURE PLANS ENGINEER OF RECORD: ROLANDO CORSA, PE, CBI

P.E. NO.: <u>73191</u>

FISCAL YEAR	SHEET NO.
20	B-1

PROJECT MANAGER:

GREGG R. STRAKALUSE, P.E.

/21/2020

P:\214 Bridging Solutions\29 Park Shore Dr and Galleon Dr Bridge Repairs\

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY:

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

8112 CHAMPIONS FOREST WAY TAMPA, FLORIDA 33635 PH: 813-767-0538 ROLANDO CORSA, PE #73191 CERT. OF AUTHORIZATION #30505

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

STRUCTURE PLANS

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B-2	SIGNATURE SHEET
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B-4	GENERAL NOTES (2 OF 2)
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	LANTERN LAKE
B-14	STANDARD CONCRETE SPALL REPAIR DETAILS

STANDARD PLANS:

550-002 FENCE TYPE B

458-110 EXPANSION JOINT SYSTEM POURED

JOIN WITH BACKER ROD

Bridge Nos. 034101 & 035252

	REVISIONS			
	DESCRIPTION	BY	DATE	
BRIDGING				
SOLUTION				
SOLUTION				

8112 CHAMPIONS FOREST WAY TAMPA, FLORIDA 33635 PH: 813-767-0538 ROLANDO CORSA, PE #73191 CERT. OF AUTHORIZATION #30505

	DRAWN BY:	
	BDN 01/20	
	CHECKED BY:	
	PDB 01/20	
	DESIGNED BY:	RO
	RC 01/20	
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	DV 01/20	

REF. DWG. NO. CITY OF NAPLES SIGNATURE SHEET CITY CONTRACT NO. COUNTY SHEET NO. PARK SHORE DR. OVER MOORING BAY & GALLEON DR. OVER N/ACOLLIER LANTERN LAKE BRIDGE REHABILITATION PROJECT

GENERAL SPECIFICATIONS

FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (CURRENT EDITION, AND APPROVED SUPPLEMENTAL SPECIFICATIONS).

DESIGN SPECIFICATIONS

- 1. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE DESIGN SPECIFICATION (8TH EDITION, 2017) AND APPROVED INTERIMS AS SPECIFIED IN THE STRUCTURES DESIGN GUIDELINES.
- 2. FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STRUCTURES DESIGN GUIDELINES (JANUARY 2019).

DESIGN LOADS:

LIVE LOAD: HS20-44 VEHICLE LOAD

PRIMARY SCOPE OF WORK

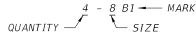
- 1. EXPANSION JOINT REPAIRS
- 2. CONCRETE PATCHING REPAIRS 3. FLOWABLE FILL INSTALLATION
- 4. FENCE REPLACEMENT
- 5. PRECAST STONE PANEL REPLACEMENT
- 6. REPLACE BARRIER SURFACE FINISH
- 7. INSTALL RIPRAP

DRAWINGS AND DIMENSIONS

- 1. DO NOT SCALE DRAWINGS FOR DIMENSIONS NOT GIVEN.
- 2. VERIFY ALL EXISTING FIELD CONDITIONS AND DIMENSIONS PRIOR TO COMMENCING REPAIRS OR ORDERING ANY MATERIALS, NOTIFY ENGINEER OF ANY DISCREPANCIES FOUND.
- 3. ALL DIMENSIONS ARE IN FEET AND INCHES

REINFORCING STEEL

- 1. ALL REINFORCING STEEL SHALL BE ASTM A615-96, GRADE 60.
- 2. ALL DIMENSIONS PERTAINING TO LOCATION OF REINFORCEMENT ARE TO CENTERLINE OF BARS EXCEPT WHERE THE CLEAR DIMENSION IS SHOWN TO FACE OF CONCRETE.
- 3, REINFORCEMENT DETAIL DIMENSIONS ARE OUT-TO-OUT OF BARS.
- 4. TYPICAL REINFORCING BARS ARE DESIGNATED THUS:



ENVIRONMENT

LOCATION = COASTAL (SALT-WATER)

SUPERSTRUCTURE: MODERATELY AGGRESSIVE SUBSTRUCTURE: EXTREMELY AGGRESSIVE

CONCRETE STRESSES:

CONCRETE INFORMATION TABLE					
CLA	SS	APPLICATION	MIN. 28 DAY COMPRESSIVE STRESS		
II	Ī	SEAL	3000 PSI		

PLAN DIMENSIONS

ALL DIMENSIONS IN THESE PLANS ARE GIVEN EITHER HORIZONTALLY OR VERTICALLY. UNLESS OTHERWISE NOTED DECK JOINT OPENINGS ARE GIVEN FOR A MEAN TEMPERATURE OF 70°F.

EXISTING PLANS

EXISTING PLANS ARE FOR INFORMATIONAL PURPOSES ONLY.

DIMENSION VERIFICATION

THE DIMENSIONS, ELEVATIONS, AND INTERSECTION ANGLES SHOWN ARE BASED ON INFORMATION AS DETAILED IN THE ORIGINAL CONSTRUCTION PLANS OF THE EXISTING BRIDGES (UNLESS OTHERWISE NOTED), AND MAY NOT REPRESENT THE AS-BUILT CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE DATA BEFORE CONSTRUCTION OR ORDERING MATERIALS.

DATUM

CONTRACTOR SHALL VERIFY ALL EXISTING ELEVATIONS IN THE FIELD.

UTILITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES (INCLUDING SUBAQUEOUS CHANNEL CROSSINGS) PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL CONTACT SUNSHINE AT (800) 432-4770 AND ANY OTHER LOCAL UTILITIES TO VERIFY EXISTING UTILITIES AT SITE OF CONSTRUCTION IF ANY EXISTING UTILITIES CONFLICT WITH PROPOSED CONSTRUCTION METHODS, MATERIALS, OR EQUIPMENT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

CITY OF NAPLES UTILITIES	(941) 2]3-5000
FLORIDA POWER AND LIGHT CO.	(941) 353-604.
TECO/PEOPLE GAS SYSTEM	(941) 366-427
COMCAST	(941) 732-381:
SPRINT-FLORIDA, INC.,	(941) 263-267

INCIDENTAL ITEMS

PAYMENT FOR INCIDENTAL ITEMS NOT SPECIFICALLY COVERED IN THE INDIVIDUAL PAY ITEMS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR BID ITEMS CONTAINED IN THIS CONTRACT.

CONCRETE

ALL CONCRETE SHALL BE IN ACCORDANCE WITH SECTION 346 OF THE FDOT SPECIFICATIONS.

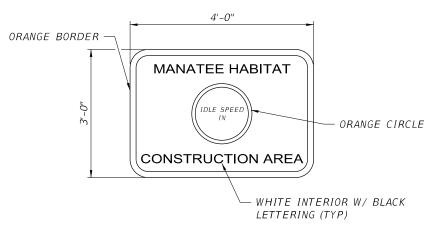
JOINTS IN CONCRETE

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

SPECIAL MANATEE PROTECTION CONDITIONS:

MANATEES MAY BE PRESENT IN THE AREA. THE CONTRACTOR SHALL COMPLY WITH THE FLORIDA FISH AND WILDLIFE CONVERSATION COMMISSION'S STANDARD MANATEE PROTECTION CONSTRUCTION CONDITIONS FOR IN-WATER WORK.

- A. ALL PERSONNEL ASSOCIATED WITH THE PROJECT SHALL BE INSTRUCTED ABOUT THE PRESENCE OF MANATEES AND MANATEE SPEED ZONES, AND THE NEED TO AVOID COLLISIONS WITH AND INJURY TO MANATEES. THE PERMITTEE SHALL ADVISE ALL CONSTRUCTION PERSONNEL THAT THERE ARE CIVIL AND CRIMINAL PENALTIES FOR HARMING, HARASSING, OR KILLING MANATEES WHICH ARE PROTECTED UNDER THE MARINE MAMMAL PROTECTION ACT, THE ENDANGERED SPECIES ACT, AND THE FLORIDA MANATEE SANCTUARY ACT.
- B. ALL VESSELS ASSOCIATED WITH THE CONSTRUCTION PROJECT SHALL OPERATE AT "IDLE SPEED/NO WAKE" AT ALL TIMES WHILE IN THE IMMEDIATE AREA AND WHILE IN WATER WHERE THE DRAFT OF THE VESSEL PROVIDES LESS THAN A FOUR-FOOT CLEARANCE FROM THE BOTTOM, ALL VESSELS WILL FOLLOW ROUTES OF DEEP WATER WHENEVER POSSIBLE.
- C. SILTATION OR TURBIDITY BARRIERS SHALL BE MADE OF MATERIAL IN WHICH MANATEES CANNOT BECOME ENTANGLED, SHALL BE PROPERLY SECURED, AND SHALL BE REGULARLY MONITORED TO AVOID MANATEE ENTANGLEMENT OR ENTRAPMENT. BARRIERS MUST NOT IMPEDE MANATEE MOVEMENT.
- D, ALL ONSITE PROJECT PERSONNEL ARE RESPONSIBLE FOR OBSERVING WATER-RELATED ACTIVITIES FOR THE PRESENCE OF MANATEE(S), ALL IN-WATER OPERATIONS, INCLUDING VESSELS, MUST BE SHUTDOWN IF A MANATEE(S) COMES WITHIN 50 FEET OF THE OPERATION. ACTIVITIES WILL NOT RESUME UNTIL THE MANATEE(S) HAS MOVED BEYOND THE 50-FOOT RADIUS OF THE PROJECT OPERATION, OR UNTIL 30 MINUTES ELAPSES IF THE MANATEE(S) HAS NOT REAPPEARED WITHIN 50 FEET OF THE OPERATION, ANIMALS MUST NOT BE HERDED AWAY OR HARASSED INTO LEAVING.
- E, ANY COLLISION WITH OR INJURY TO A MANATEE SHALL BE REPORTED IMMEDIATELY TO THE FWC HOTLINE AT 1-888-404-FWCC. COLLISION AND/OR INJURY SHOULD ALSO BE REPORTED TO THE U.S. FISH AND WILDLIFE SERVICE IN JACKSONVILLE (1-904-232-2580) FOR NORTH FLORIDA OR VERO BEACH (1-561-562-3909) FOR SOUTH FLORIDA.
- F. TEMPORARY SIGNS CONCERNING MANATEES SHALL BE POSTED PRIOR TO AND DURING ALL IN-WATER PROJECT ACTIVITIES. ALL SIGNS ARE TO BE REMOVED BY THE PERMITTEE UPON COMPLETION OF THE PROJECT. AWARENESS SIGNS THAT HAVE ALREADY BEEN APPROVED FOR THIS USE BY THE FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION (FWC) MUST BE USED. ONE SIGN MEASURING AT LEAST 3 FT. BY 4 FT. WHICH READS CAUTION: MANATEE AREA MUST BE POSTED.



Bridge Nos. 034101 & 035252

REF. DWG. NO

SHEET NO.

REVISIONS

8112 CHAMPIONS FOREST WAY TAMPA, FLORIDA 33635 PH: 813-767-0538 ROLANDO CORSA, PE #73191 CERT. OF AUTHORIZATION #30505

3DN 01/20 PDB 01/20 DESIGNED BY RC 01/20

CITY OF NAPLES CITY CONTRACT NO. ROAD NO COUNTY N/ACOLLIER

GENERAL NOTES (1 OF 2) PARK SHORE DR. OVER MOORING BAY & GALLEON DR. OVER LANTERN LAKE BRIDGE REHABILITATION PROJECT

B - 3

CAUTION: MANATEE HABITAT

All project vessels IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work all in-water activities must SHUT DOWN

Report any collision or injury to: 1-888-404-FWCC (1-888-404-3922)

Florida Fish and Wildlife Conservation Commission

ALL SIGNS ARE TO BE REMOVED BY THE CONTRACTOR UPON COMPLETION OF THE PROJECT.

PHASING OF WORK

WORK PHASING AND PROGRESSION OF THE WORK SHALL CONFORM WITH THE TRAFFIC CONTROL NOTES AND THE NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS.

CONCRETE RESTORATION

FOR REQUIREMENTS ON SURFACE PREPARATION MIXING, PLACING, FINISHING, MATERIAL, AND OTHER RELATED ITEMS, REFER TO THE FDOT SPECIFICATION.

SITE CONDITIONS

THE CONTRACTOR SHALL BE AWARE OF THE SITE CONDITIONS WITH REGARD TO WATER DEPTH. SEA GRASS BEDS AND OTHER HABITAT SHALL NOT BE DISTURBED.

ON SITE AREAS AVAILABLE FOR STAGING OF EQUIPMENT AND MATERIAL HANDLING ARE LIMITED. CONTRACTOR SHALL MAKE ANY NECESSARY ARRANGEMENTS FOR CARRYING OUT THE DESCRIBED WORK INCLUDING ACCESS BY WATERWAY.

CONCRETE COVER

CONCRETE COVER SHOWN IN THE PLANS DOES NOT INCLUDE PLACEMENT OR FABRICATION TOLERANCES UNLESS SHOWN AS "MINIMUM COVER." SEE FDOT SPECIFICATIONS FOR ALLOWABLE TOLERANCES. UNLESS OTHERWISE SHOWN ON THE PLANS, THE FOLLOWING CONCRETE COVERS SHALL BE USED:

CIP SUPERSTRUCTURE = 2" (BOTTOM & SIDES), $2\frac{1}{2}$ " TOP CIP SUBSTRUCTURE = 4" FOR EXTERNAL FORMED SURFACES

MATERIAL PRODUCTS

MATERIAL MEETING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS SHALL BE INSTALLED IN ACCORDANCE WITH APPROVED MANUFACTURER'S RECOMMENDATIONS.

APPLICABLE FDOT DESIGN STANDARD DRAWINGS

- 1. 102-600 SERIES
- 2. 550-002

TRAFFIC CONTROL NOTES

- 1. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE 2019 EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS FOR DESIGN, CONSTRUCTION AND UTILITY OPERATIONS ON THE STATE HIGHWAY SYSTEM (102-600 SERIES). MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2019 EDITION, AND THE FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 EDITION.
- 2. UNLESS OTHERWISE NOTED IN THE PLANS, PROPOSED THRU-LANE WIDTHS SHALL BE NO LESS THAN 11 FEET IN WIDTH.
- 3. THE CONTRACTOR SHALL NOTIFY LOCAL EMERGENCY AND RESCUE AGENCIES LOCATED IN THE PROJECT VICINITY INCLUDING BUT NOT LIMITED TO THOSE AGENCIES LISTED BELOW AS WELL AS THE ENGINEER 14 DAYS IN ADVANCE OF ANY LANE CLOSURES OR RESTRICTIONS, AND AGAIN 24 HOURS IN ADVANCE OF EACH SERIES OF LANE CLOSURES.

NORTH NAPLES FIRE DEPARTMENT - (239) 597-3222 EAST NAPLES FIRE DEPARTMENT - (239) 774-7111 COLLIER COUNTY SHERIFF'S OFFICE - (239) 252-9300

- 4. THE CONTRACTOR SHALL RESTORE ALL EXISTING PAVEMENT DAMAGED AS A RESULT OF CONSTRUCTION OR MOT OPERATIONS TO ORIGINAL CONDITION (PRIOR TO CONSTRUCTION) AS DETERMINED BY THE ENGINEER. ALL COSTS SHALL BE INCLUDED IN PAY ITEM 102-1 MAINTENANCE OF TRAFFIC (LS).
- 5. FOR TEMPORARY CONSTRUCTION SIGNS LOCATED IN PAVED AREAS. THE CONTRACTOR SHALL PROVIDE TEMPORARY SIGN SUPPORT WHICH DOES NOT PENETRATE THE PAVEMENT.

MAINTENANCE OF NAVIGATION CHANNEL

NOTIFY MR. MICHAEL LIEBERMAN (PER RANDALL OVERTON OF THE USCG) AT 305-415-6744 PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES, IN ADVANCE OF ACTIONS DURING BRIDGE CONSTRUCTION OR DEMOLITION WHICH POTENTIALLY AFFECT WATERWAY USERS AND PRIOR TO THE PLACEMENT OF ANY FLOATING CONSTRUCTION EQUIPMENT IN THE WATERWAY. NOTIFY NO LESS THAN 60 DAYS IN ADVANCE OF ACTIONS WHICH COULD POTENTIALLY AFFECT THE WATERWAY.

MARINE TRAFFIC

KEEP THE CHANNEL OPEN TO TRAFFIC AT ALL TIMES. MAINTAIN A MINIMUM HORIZONTAL OPENING OF 22 FEET.

PROTECTION OF WATER RESOURCES

THE CONTRACTOR SHALL CONDUCT HIS ACTIVITIES IN A MANNER TO AVOID POLLUTION OF SURFACE AND GROUND WATER AND WETLANDS. THE CONTRACTOR'S CONSTRUCTION METHODS SHALL PROTECT WETLAND AND SURFACE WATER AREAS FROM DAMAGE DUE TO MECHANICAL GRADING, EROSION, SEDIMENTATION VEHICULAR TRAFFIC, AND TURBID DISCHARGES. NO STORAGE OR STOCKPILING OF EQUIPMENT SHALL BE ALLOWED WITHIN ANY WETLAND AREA UNLESS SPECIFICALLY AUTHORIZED UNDER PERMIT. WATER DIRECTLY DERIVED FROM CONSTRUCTION ACTIVITIES SHALL BE COLLECTED IN RETENTION AREAS TO ALLOW SETTLING OF SUSPENDED MATERIALS. ALL MONITORING OF ANY WATER AREAS THAT ARE AFFECTED BY CONSTRUCTION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

PROTECTION OF WATER RESOURCES

THE CONTRACTOR SHALL CONDUCT HIS ACTIVITIES IN A MANNER TO AVOID POLLUTION OF SURFACE AND GROUND WATER AND WETLANDS. THE CONTRACTOR'S CONSTRUCTION METHODS SHALL PROTECT WETLAND AND SURFACE WATER AREAS FROM DAMAGE DUE TO MECHANICAL GRADING, EROSION, SEDIMENTATION VEHICULAR TRAFFIC, AND TURBID DISCHARGES. NO STORAGE OR STOCKPILING OF EQUIPMENT SHALL BE ALLOWED WITHIN ANY WETLAND AREA UNLESS SPECIFICALLY AUTHORIZED UNDER PERMIT. WATER DIRECTLY DERIVED FROM CONSTRUCTION ACTIVITIES SHALL BE COLLECTED IN RETENTION AREAS TO ALLOW SETTLING OF SUSPENDED MATERIALS. ALL MONITORING OF ANY WATER AREAS THAT ARE AFFECTED BY CONSTRUCTION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

OIL, FUEL AND HAZARDOUS SUBSTANCE SPILL PREVENTION

THE CONTRACTOR SHALL PREPARE A SPILL CONTINGENCY PLAN IN ACCORDANCE WITH 40CFR. PART 109. THE CONTRACTOR SHALL PREVENT OIL. FUEL OR OTHER HAZARDOUS SUBSTANCES FROM ENTERING THE AIR, GROUND, DRAINAGE, AND LOCAL BODIES OF WATER OR WETLANDS. IN THE EVENT THAT A SPILL OCCURS, DESPITE DESIGN AND PROCEDURAL CONTROLS, THE CONTRACTOR SHALL TAKE IMMEDIATE ACTION TO CONTAIN AND CLEANUP THE SPILL AND REPORT THE SPILL IMMEDIATELY TO THE CITY'S REPRESENTATIVE. A WRITTEN REPORT PROVIDING CERTIFICATION OF COMMITMENT OF MANPOWER, EQUIPMENT AND MATERIALS NECESSARY TO PREVENT THE SPREAD AND EFFECT EXPEDITIOUS CLEANUP AND DISPOSAL SHALL BE SUBMITTED.

FISH AND WILDLIFE RESOURCE PROTECTION

THE CONTRACTOR SHALL CONTROL AND MINIMIZE INTERFERENCE WITH, DISTURBANCE TO, AND DAMAGE OF FISH AND WILDLIFE RESOURCES. IF APPROPRIATE, THREATENED AND ENDANGERED SPECIES THAT REQUIRE SPECIFIC PROTECTION MEASURES SHALL BE LISTED IN THE ENVIRONMENTAL PROTECTION PLAN. THE PERSON DESIGNATED AS RESPONSIBLE FOR THE ENVIRONMENTAL PROTECTION PLAN SHALL BE ABLE TO IDENTIFY THE THREATENED AND ENDANGERED SPECIES LISTED IN THE ENVIRONMENTAL PROTECTION PLAN. ANY ACTIVITY OBSERVED BY THE CONTRACTOR THAT MAY RESULT IN ADVERSE IMPACT TO THREATENED OR ENDANGERED SPECIES SHALL BE REPORTED IMMEDIATELY TO THE CITY AND THE CITY'S REPRESENTATIVE, WHO SHALL HAVE SOLE AUTHORITY FOR ANY WORK STOPPAGES, CREATION OF A BUFFER AREA, OR RESTART OF CONSTRUCTION ACTIVITIES.

IN THE EVENT THAT THE CITY'S REPRESENTATIVE DETERMINES THAT AN ADVERSE IMPACT TO THREATENED OR ENDANGERED SPECIES MAY OCCUR AS A RESULT OF THE CONSTRUCTION ACTIVITIES, THE CITY SHALL NOTIFY THE CORPS OF ENGINEERS AND THE FISH AND WILDLIFE SERVICE. ADVERSE IMPACT IS DEFINED AS TO HARASS, HARM, PURSUE, HUNT, SHOOT, WOUND, KILL, TRAP, CAPTURE, COLLECT, OR TO ATTEMPT TO ENGAGE IN ANY SUCH CONDUCT.

Bridge Nos. 034101 & 035252

REVISIONS DATE BY

BRIDGING SOLUTIONS

8112 CHAMPIONS FOREST WAY TAMPA, FLORIDA 33635 PH: 813-767-0538 ROLANDO CORSA, PE #73191 CERT. OF AUTHORIZATION #30505

3DN 01/20 PDB 01/20 DESIGNED BY RC 01/20

CITY OF NAPLES CITY CONTRACT NO. ROAD NO. COUNTY N/ACOLLIER

GENERAL NOTES (2 OF 2) PARK SHORE DR. OVER MOORING BAY & GALLEON DR. OVER LANTERN LAKE BRIDGE REHABILITATION PROJECT

REF. DWG. NO

SHEET NO.

B - 4

BID ITEMS FOR	BRIDGE NO. 034101 PARK SHORE DRIVE OV	ER MO	ORING BAY	
ITEM NO.	DESCRIPTION UNIT QUA			
0101-1	MOBILIZATION /MOT (NOTE 8)	LS	1	
	CONCRETE PATCHING REPAIRS (NOTE 1)	LS	1	
0121-70	SIDEWALK JOINTS (NOTE 2)	LS	1	
	FLOWABLE FILL (NOTE 3)	LS	1	
	FENCE REPLACEMENT (NOTE 4)	LS	1	
	END BENT 5 JOINT REPAIR (NOTE 5)	LS	1	
	PRECAST STONE PANEL REPLACEMENT (NOTE 6)	LS	1	
	MISCELLANEOUS REPAIRS	LS	1	

PAY ITEM NOTES:

- 1.0 CONCRETE PATCHING REPAIRS PERFORM CONCRETE PATCHING REPAIRS AT THE FOLLOWING LOCATIONS PER THE STANDARD CONCRETE SPALL REPAIR DETAILS SHEET.
 - 1.1 20 INCH BY 15 INCH BY 1 INCH SPALL/DELAMINATION ON THE DIAPHRAGM BETWEEN SLAB UNIT 1-12 AND THE COSMETIC FASCIA BEAM AT END BENT 1. SEE
 - 1.2 12 INCH BY 6 INCH DELAMINATION ON THE DIAPHRAGM BETWEEN SLAB UNIT 4-1 AND THE COSMETIC AT END BENT 5.
 - 1.3 POST-TENSION DUCT ON THE SOUTH FACE OF SLAB UNIT 4-12 AT THE 1/4 POINT. SEE PHOTO 4.
 - 1.4 10 INCH BY $rac{3}{4}$ INCH SPALL ON THE NORTH FACE OF SLAB UNIT 4-1 ABOVE AND ON THE EAST SIDE OF THE WEST POST-TENSIONING DUCT. SEE PHOTO 5.
 - 1.5 THE JACKET ON PILE 3-7 EXHIBITS A 36 INCH BY 28 INCH DELAMINATION WITH CORROSION BLEED OUT ON THE EAST FACE AT THE TOP OF THE MARINE GROWTH. SEE PHOTO 9. CHIP OUT THE DELAMINATED CONCRETE AND PATCH WITH AN FDOT APPROVED MATERIAL.
 - 1.6 THE 6 LOOSE PICK HOLE PATCHES ON THE UNDERSIDE OF THE BEAMS IN SPAN 1 OVER THE SERVICE DRIVE. SEE PHOTO 14. 3 EA ARE IN SLAB UNIT 1-3 AND 3 EA IN SLAB UNIT 1-10. EASTERLY ONES ARE OVER THE WATER.
- 2.0 SIDEWALK JOINTS CLEAN AND SEAL THE SIDEWALK JOINTS WITH BACKER ROD AND SEALANT AT 4 LOCATIONS OVER EACH OF THE END BENTS (4 LOCATIONS AT 6 FEET = 24 LF) PER FDOT INDEX NO. 458-110. SEE PHOTO 6.
- 3.0 FLOWABLE FILL INSTALL NONEXCAVATABLE FLOW FILL PER FDOT ITEM 0121-70 BY FORMING 4" IN FRONT OF THE UNDERMINED WALL TO AT LEAST 6 INCHES ABOVE THE BOTTOM OF THE WALL AT THE FOLLOWING LOCATIONS TO PROVIDE A PRESSURE HEAD:
 - 3.1 THE END LEFT RETAINING WALL, ADJACENT TO END BENT 5, IS UNDERMINED UP TO 24 INCHES BY 3 INCHES WITH 25 INCHES OF PENETRATION. SEE PHOTO 7.
 - 3.2 THE END LEFT SIDEWALK OVERLOOK IS UNDERMINED UP TO 7 FEET LONG BY 16 INCHES BY 15 INCHES. SEE PHOTO 8.
- 4.0 FENCE REPLACEMENT REPLACE THE CHAIN LINK FENCE PER FDOT INDEX 550-002 AT THESE LOCATIONS.
 - 4.1 END RIGHT QUADRANT (APPROXIMATELY 25 LF). SEE PHOTO 12.
 - 4.2 END LEFT QUADRANT (APPROXIMATELY 45 LF) WHICH INCLUDES A 6 FOOT GATE. THE NEW LOCATION OF THE GATE SHALL BE SHIFTED TO THE SOUTH AS DIRECTED BY THE ENGINEER IN THE FIELD. SEE PHOTO 13.
- 5.0 END BENT 5 JOINT REPAIR INSTALL BACKER ROD IF NECESSARY AND SILICONE SEALANT IN THE OPEN JOINT BETWEEN THE CONCRETE APRON AND THE BOTTOM EDGE OF END BENT 5 - FULL LENGTH OF THE BENT - GRIND THE APRON FIRST TO CREATE A UNIFORM JOINT OPENING. SEE PHOTO 10.
- 6.0 PRECAST STONE PANEL REPLACEMENT REPLACE THE 2 PRECAST STONE FASCIA PANELS THAT ARE DAMAGED ON THE LEFT SIDE OF SPAN 1. SEE PHOTO 3. 7.0 MISCELLANEOUS REPAIRS
 - 7.1 SECURE THE LOOSE TIDAL CLEARANCE GAUGE USING TAPCONS. SEE PHOTO 15. THE TIDE GAUGE IS LOCATED ON NORTH FACE OF PILE 2-1.
 - 7.2 THERE IS CUT OUT IN THE RIPRAP MEASURING 3 FEET BY 2 FEET BY 9 INCHES NEAR END BENT 5 AT THE SEA WALL CAP ON THE RIGHT SIDE. SEE PHOTO 11. FILL THE CUT OUT WITH CONCRETE.
 - 7.3 REMOVE THE VEGETATION GROWTH BETWEEN THE SLAB UNITS AT BENT 1 AND BENT 4 CAPS AND SPRAY REMNANT VEGETATION WITH AN HERBICIDE. SEE PHOTO 1.
- 7.4 INSTALL FILL TO FLATTEN THE SLOPE (AFTER INSTALLING THE FLOW FILL) AT END LEFT SIDEWALK OVERLOOK AND INSTALL FLORATAM SOD.
- 8.0 MOBILIZATION SHALL INCLUDE MAINTENANCE OF TRAFFIC COSTS.

8	8112 CHAMPIONS FOREST WAY	DRAWN BY: BDN 01/20		CITY OF NA	DI DO	SHEET TITLE:	REF. DWG. NO.
	TAMPA, FLORIDA 33635	CHECKED BY: PDB 01/20	CITY OF NAPLES			SUMMARY OF QUANTITIES (1 OF 2)	
	PH: 813-767-0538	DESIGNED BY:	ROAD NO.	COUNTY	CITY CONTRACT NO.	PROJECT NAME:	OUEST NO.
	ROLANDO CORSA, PE #73191 CERT OF AUTHORIZATION #30505	RC 01/20	N/A	COLLIER		PARK SHORE DR. OVER MOORING BAY & GALLEON DR. OVER	SHEET NO.

REVISIONS LANTERN LAKE BRIDGE REHABILITATION PROJECT B - 5

BID ITEMS FOR BRIDGE NO. 035252 GALLEON DRIVE OVER LANTERN LAKE					
ITEM NO.	DESCRIPTION	UNIT	QUANTITY		
	MOBILIZATION /MOT (NOTE 1)				
	REPAIR EXPANSION JOINTS (NOTE 2)	LS	1		
0121-70	0121-70 INSTALL FLOWABLE FILL (NOTE 3)				
530-2.1.3.2 INSTALL RUBBLE RIPRAP (NOTE 4)			4		
	REPLACE BARRIER SURFACE FINISH (NOTE 5)	LS	1		

PAY ITEM NOTES:

- 1. MOBILIZATION SHALL INCLUDE MAINTENANCE OF TRAFFIC COSTS.
- 2. REPAIR EXPANSION JOINTS REPLACE THE EXPANSION JOINT SEALANT MATERIAL AT END BENTS 1 AND 2 IN ACCORDANCE PER FDOT INDEX NO. 458-110. SEE PHOTO 1 AND 2.
- 3. INSTALL FLOWABLE FILL INSTALL NONEXCAVATABLE FLOW FILL PER FDOT ITEM 0121-70 BY FORMING 4" IN FRONT OF THE UNDERMINED WALL TO AT LEAST 6 INCHES ABOVE THE BOTTOM OF THE WALL TO PROVIDE A PRESSURE HEAD TO FILL VOIDS UP TO 18 INCHES WIDE BY 5 INCHES HIGH BY UP TO 56 INCHES BACK UNDER THE ABUTMENT CAPS/APPROACH SLABS AT ALL FOUR (4) QUADRANTS OF THE BRIDGE. SEE PHOTO 3. REMOVE VEGETATION AND SAW CUT WOOD SIDING AS NECESSARY TO ALLOW ACCESS. REPLACEMENT OF VEGETATION AND THE WOOD SIDING IS NOT INCLUDED IN THIS WORK.
- 4. INSTALL RUBBLE RIPRAP PLACE ADDITIONAL RUBBLE RIPRAP AS DIRECTED BY THE ENGINEER AT THE BEGIN RIGHT SIDE OF THE BRIDGE BEHIND THE DRAINAGE PIPE HEAD WALL AND ON THE END RIGHT SIDE OF THE BRIDGE NEAR THE SOLAR PANELS. REMOVE EXISTING RIPRAP, INSTALL FILTER FABRIC AND INSTALL THE ORIGINAL AND THE NEW RUBBLE RIPRAP.
- 5. REPLACE BARRIER SURFACE FINISH REMOVE THE EXISTING STUCCO FROM BOTH BRIDGE BARRIERS FULL LENGTH ON ROADWAY SIDE OF BARRIER, POINT AND PATCH TO PROVIDE A SEMI SMOOTH FINISH, AND APPLY A FDOT CLASS 5 MATERIAL OR APPROVED EQUAL WITH A ROUGH TEXTURE. COLOR TO BE SELECTED BY THE CITY. SEE PHOTO 4 FOR A VIEW OF EXISTING STUCCO. THIS ITEM SHALL ALSO INCLUDE PREFORMING A SAW-CUT AND THE REMOVAL OF THE ASPHALT A MINIMUM OF 1' WIDE AT ALL FOUR APPROACHES TO ALLOW FOR THE REMOVAL OF THE THICKENED BOTTOM EDGE OF THE STUCCO. PATCH WITH SP-9.5 ASPHALT. APPROXIMATE LENGTH OF EACH QUADRANT IS 13'. THE CONTRACTOR SHALL FURNISH AND DELIVER TO THE CITY A 1 GALLON UNOPENED CONTAINER OF THE CLASS 5 MATERIAL FOR THE CITY'S USE DOING TOUCH UPS IN THE FUTURE. THE SHORT TAPERED BARRIER END SECTIONS HAVE STUCCO ON BOTH SIDES WHICH SHALL BE REMOVED AND PAINTED WITH THE CLASS 5 MATERIAL.

Bridge No. 035252

SHEET NO.

	REVISIONS			
	DESCRIPTION	BY	DATE	
BRIDGING				

8112 CHAMPIONS FOREST WAY TAMPA, FLORIDA 33635 PH: 813-767-0538 ROLANDO CORSA, PE #73191 CERT. OF AUTHORIZATION #30505

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CITY OF NAPLES SUMMARY OF QUANTITIES (2 OF 2) CITY CONTRACT NO. COUNTY PARK SHORE DR. OVER MOORING BAY & GALLEON DR. OVER N/ACOLLIER



PHOTO 1 - VEGETATION AT BENT 4



PHOTO 2 - VEGETATION AT END BENT 1 AND SPALL AT DIAPHRAGM BETWEEN SLAB UNIT 1-12 AND THE COSMETIC FASCIA BEAM.



PHOTO 3 - DAMAGED PRECAST STONE PANELS.



PHOTO 4 - PATCH POST-TENSION DUCT.

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8112 CHAMPIONS FOREST WAY TAMPA, FLORIDA 33635 PH: 813-767-0538 ROLANDO CORSA, PE #73191 CERT. OF AUTHORIZATION #30505

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REF. DWG. NO. REPAIR LOCATION PHOTOGRAPHS (1 OF 5) CITY CONTRACT NO. SHEET NO. PARK SHORE DR. OVER MOORING BAY & GALLEON DR. OVER LANTERN LAKE BRIDGE REHABILITATION PROJECT



PHOTO 5 - SPALL AT NORTH FACE OF SLAB UNIT 4-1 AT POST-TENSION DUCT



PHOTO 6 - SIDEWALK JOINT SEALS



PHOTO 7 - UNDERMINING AT END LEFT WINGWALL AT END BENT 5



PHOTO 8 - UNDERMINING AT SIDEWALK OVERLOOK AT END LEFT QUADRANT

REF. DWG. NO.

SHEET NO.

REVISIONS

8112 CHAMPIONS FOREST WAY BRIDGING

TAMPA, FLORIDA 33635

PH: 813-767-0538

ROLANDO CORSA, PE #73191

CERT. OF AUTHORIZATION #30505

CHECKED BY:
PDB 01/20
DESIGNED BY:

CITY OF NAPLES COUNTY COLLIER

REPAIR LOCATION PHOTOGRAPHS (2 OF 5) PARK SHORE DR. OVER MOORING BAY & GALLEON DR. OVER LANTERN LAKE BRIDGE REHABILITATION PROJECT

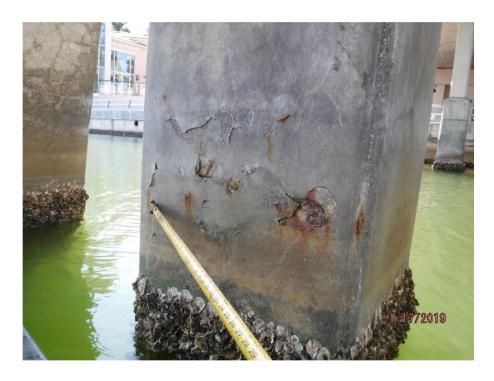


PHOTO 9 - DELAMINATION ON PILE JACKET 3-7.



PHOTO 10 - UNDERMINING AT END BENT 5

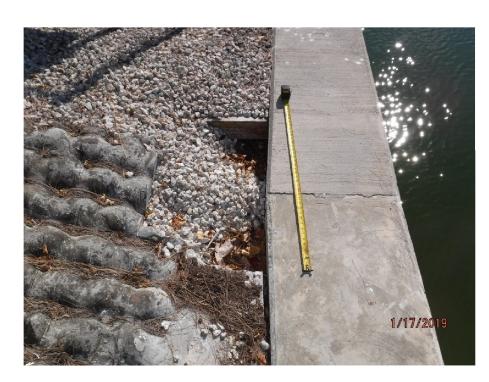


PHOTO 11 -CUT OUT OF RIPRAP AT SEA WALL JUNCTION AT END BENT 5 NEAR PRIVATE SEA WALL ON RIGHT SIDE.



PHOTO 12 - REPLACE FENCE AT END RIGHT QUADRANT.

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8112 CHAMPIONS FOREST WAY
TAMPA, FLORIDA 33635
PH: 813-767-0538
ROLANDO CORSA, PE #73191
CERT. OF AUTHORIZATION #30505

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PHOTO 13 - REPLACE FENCE AND GATE AT END LEFT QUADRANT.

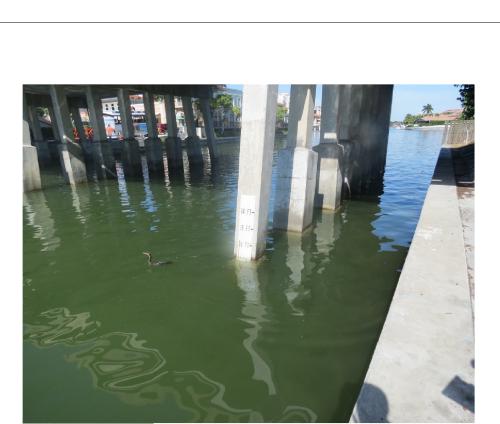


PHOTO 15 - LOOSE TIDAL GAUGE MARKER SIGN



PHOTS 14 - LOOSE PATCH FOR OLD PICK POINTS

REF. DWG. NO. CITY OF NAPLES REPAIR LOCATION PHOTOGRAPHS (4 OF 5) CHECKED BY:
PDB 01/20
DESIGNED BY: CITY CONTRACT NO. COUNTY SHEET NO. PARK SHORE DR. OVER MOORING BAY & GALLEON DR. OVER LANTERN LAKE BRIDGE REHABILITATION PROJECT RC 01/20

Bridge No. 034101

B - 10

REVISIONS

8112 CHAMPIONS FOREST WAY TAMPA, FLORIDA 33635
PH: 813-767-0538
ROLANDO CORSA, PE #73191
CERT. OF AUTHORIZATION #30505

COLLIER



PHOTO 1 - EXPANSION JOINT AT END BENT 1



PHOTO 2 - EXPANSION JOINT AT END BENT 2



PHOTO 3 - UNDERMINING AT END BENTS/APPROACH SLABS AT ALL 4 QUADRANTS.



PHOTO 4 - EXISTING STUCCO FINISH ON BARRIERS

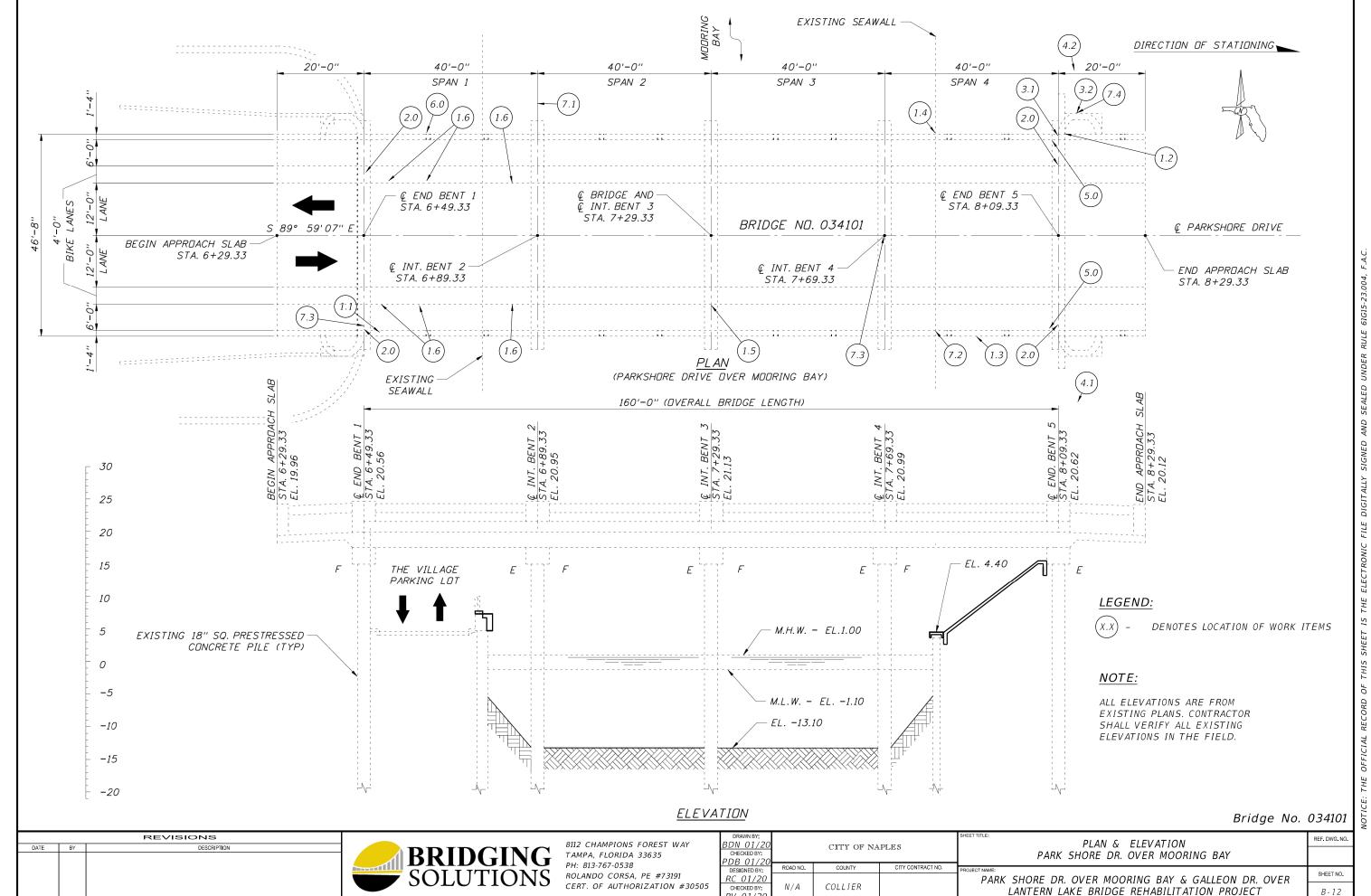
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8112 CHAMPIONS FOREST WAY BRIDGING

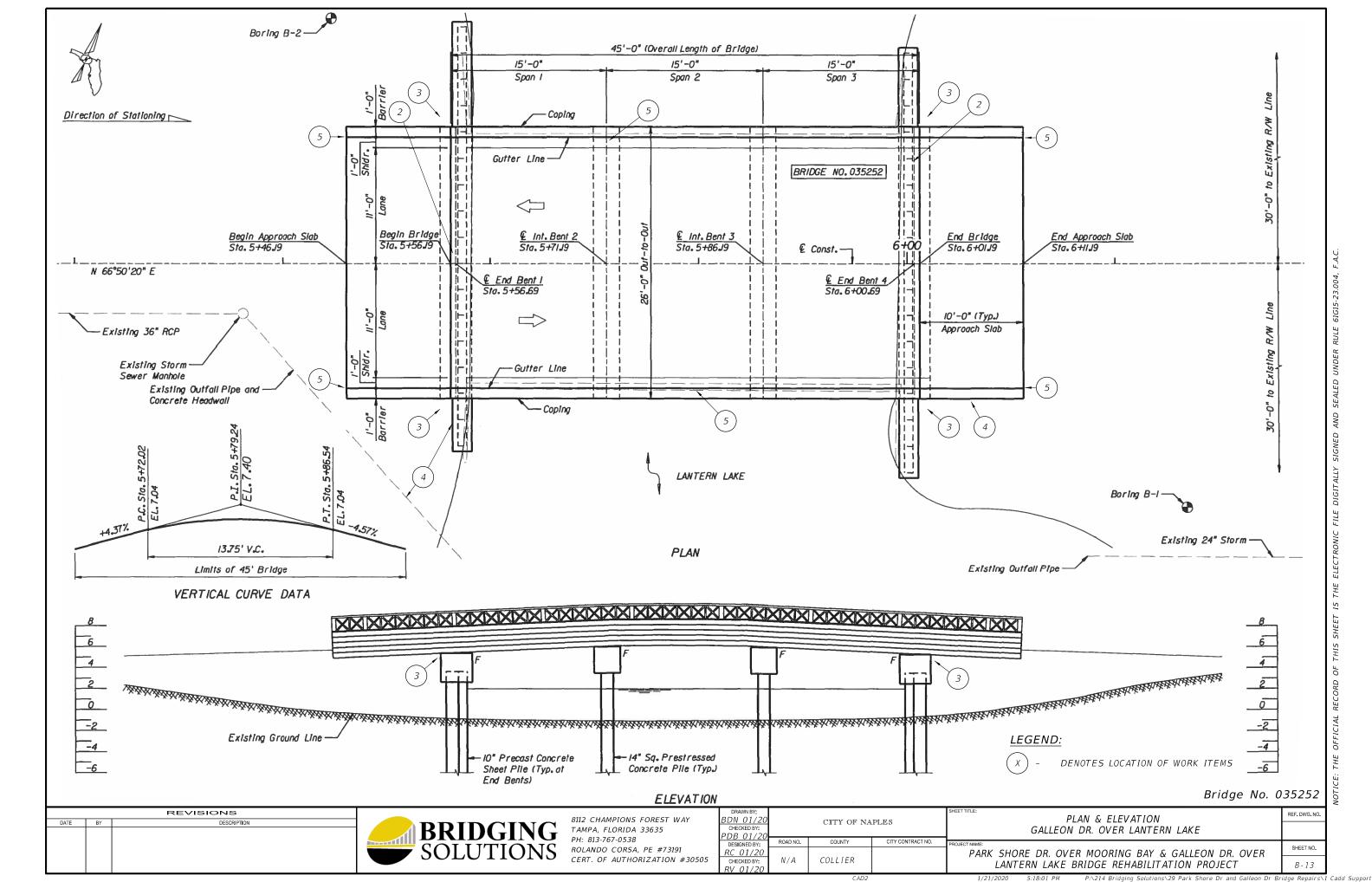
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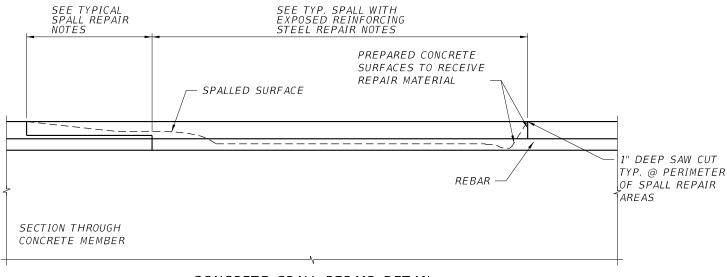
ROLANDO CORSA, PE #73191
CERT. OF AUTHORIZATION #30505

REF. DWG. NO. CITY OF NAPLES REPAIR LOCATION PHOTOGRAPHS (5 OF 5) CHECKED BY: PDB 01/20 COUNTY SHEET NO. PARK SHORE DR. OVER MOORING BAY & GALLEON DR. OVER LANTERN LAKE BRIDGE REHABILITATION PROJECT RC 01/20 COLLIER B - 11

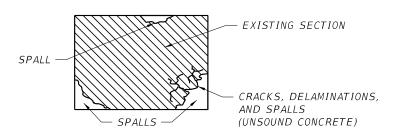


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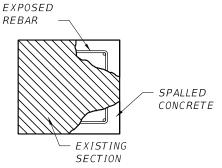




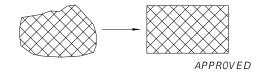
CONCRETE SPALL REPAIR DETAIL APPLICABLE TO HORIZONTAL, VERTICAL AND OVERHEAD LOCATIONS

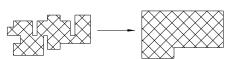


TYPICAL DELAMINATION AND SPALLS



TYPICAL SPALL WITH EXPOSED REBARS





APPROVED

SIMPLE PATCH CONFIGURATION

AT CORNER LOCATIONS PROVIDE RIGHT ANGLE CUTS.
PATCH CONFIGURATIONS SHALL BE KEPT AS SIMPLE AS
POSSIBLE. INDIVIDUAL REPAIR AREAS WITHIN 2 FEET
SHALL BE JOINED AT THE DIRECTION OF THE ENGINEER.

EXPOSED REINFORCING STEEL NOTES

1. REMOVE RUST FROM EXPOSED REINFORCING STEEL BY ABRADING TO "WHITE METAL CONDITION" AND PREPARE SURFACES IN ACCORDANCE WITH ICRI TECHNICAL GUIDE 03730 "GUIDE FOR SURFACE PREPARATION" OF DETERIORATED CONCRETE RESULTING FROM REINFORCING STEEL CORROSION".

CONCRETE REMOVAL AND SURFACE PREPARATION NOTES

- 1. REMOVE ALL UNSOUND CONCRETE AND PREPARE SURFACES FOR REPAIR IN ACCORDANCE WITH ICRI TECHNICAL GUIDELINES 03730 "GUIDE FOR SURFACE PREPARATION" OF DETERIORATED CONCRETE RESULTING FROM REINFORCING STEEL CORROSION".
- 2. ALL REPAIR AREAS SHALL HAVE SQUARE EDGES AROUND THE PERIMETER OF THE SPALL DEFINED BY ¾"
 DEEP SAW CUT LINES. CHIP THE REPAIR EDGES CLEAN TO FORM 45 TO 90 DEGREE CORNERS ALONG THE
 EDGES AND CORNERS OF THE REPAIR AREA. THE DEPTH OF THE CHIPPED EDGE SHALL BE ¾" OR
 GREATER. FEATHERED EDGES WILL NOT BE ACCEPTABLE.
- 3. REMOVE UNSOUND CONCRETE USING MECHANICAL ABRASION, BUT DO NOT USE EXCESSIVE FORCE, WHICH MAY CAUSE MICRO-FRACTURING OF THE SOUND CONCRETE.
- 4. CARE SHALL BE TAKEN TO AVOID DAMAGING THE EXISTING REINFORCEMENT.
- 5. PREPARED SURFACES SHALL BE INTENTIONALLY ROUGHENED TO A MINIMUM PROFILE OF 1/4" TO PROVIDE MECHANICAL LOCK FOR THE REPAIR.
- 6. CONCRETE SURFACES SHALL BE STRUCTURALLY SOUND AND FREE OF BOND INHIBITING SURFACES.
- 7. APPLY A TYPE A EPOXY COMPOUND IN ACCORDANCE WITH SECTION 926 OF THE SPECIFICATION TO THE EXISTING CONCRETE SURFACES PRIOR TO PLACING THE FRESH REPAIR MATERIAL.

CONCRETE SPALL REPAIR NOTES

- 1. RESTORE CONCRETE SURFACES USING APPROVED MATERIALS IN ACCORDANCE WITH SECTION 926 OR SECTION 930 OF THE SPECIFICATIONS.
- 2. FOR SPALLS WITH AN AVERAGE DEPTH OF 1" OR LESS, REPAIR USING A TYPE F-1 OR TYPE F-2 EPOXY REPAIR MORTAR, FOR SPALLS WITH AN AVERAGE DEPTH GREATER THAN 1", REPAIR USING A RAPID HARDENING CONCRETE MORTAR.
- 3. SELECT MATERIALS SUITABLE FOR APPLICATION INCLUDING ORIENTATION (E.G. HORIZONTAL, VERTICAL OR OVERHEAD APPLICATION) AND THICKNESS.
- 4. MIX, PLACE AND CURE REPAIR MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 5. FINISH REPAIR MATERIALS FLUSH WITH THE ORIGINAL CONCRETE SURFACE (U.N.D). THE SURFACE FINISH SHALL MEET THE REQUIREMENTS FOR A GENERAL SURFACE FINISH PER SECTION 400 OF THE SPECIFICATIONS.
- 6. COMPLETION OF CLEANING OPERATIONS AND REPAIR SHALL OCCUR WITHIN THE SAME DAY AND SHALL NOT EXCEED THE BONDING AGENT WINDOW OF APPLICATION.
- 7. SAW-CUT 1" AT THE AREA OF THE DAMAGED CONCRETE.

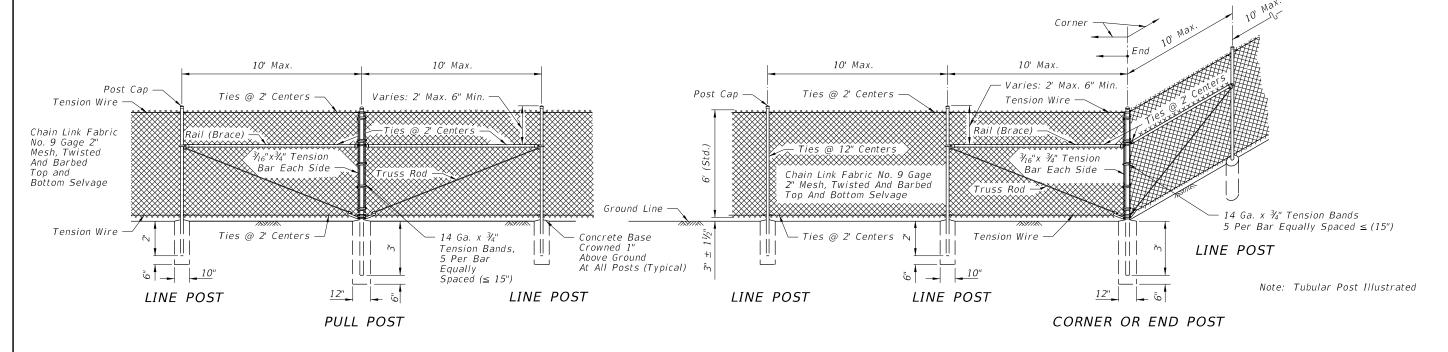
GENERAL NOTE

IN THE PRESENCE OF THE ENGINEER, CLEARLY OUTLINE ALL AREAS IN NEED OF REPAIR WITH AN APPROVED PAINT OR MARKER PRIOR TO DEMOLITION. NO DEMOLITION OF ANY AREA OR MEMBER OF THE BRIDGE SHALL BE PERFORMED UNTIL APPROVAL FROM THE ENGINEER. INFORM THE ENGINEER IF A REMOVAL AREA EXCEEDS HALF THE THICKNESS OF THE SECTION.

Bridge Nos. 034101 & 035252

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DATE	BY	DESCRIPTION	BRIDGING	8112 CHAMPIONS FOREST WAY TAMPA, FLORIDA 33635	BDN 01/20 CHECKED BY:	1	CITY OF NA	PLES	STANDARD CONCRETE SPALL REPAIR DETAILS	
			COLUTIONS	PH: 813-767-0538 ROLANDO CORSA, PE #73191	PDB 01/20 DESIGNED BY: RC 01/20	ROAD NO.	COUNTY	CITY CONTRACT NO.	PROJECT NAME: PARK SHORE DR. OVER MOORING BAY & GALLEON DR. OVER	SHEET NO.
			SOLUTIONS	CERT. OF AUTHORIZATION #30505	CHECKED BY: RV 01/20	N/A	COLLIER		LANTERN LAKE BRIDGE REHABILITATION PROJECT	B-14

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GENERAL NOTES

- 1. This fence to be used generally in urban areas.
- 2. For supplemental information refer to Specification 550.
- 3. Chain link fabric, post, truss rods, tension wires, tie wires, stretcher bars, gates and all miscellaneous fittings and hardware shall meet the requirements of AASHTO and ASTM signify current reference.
- 4. Fence Component Options:
 - A. Line post options:
 - (1) Galvanized steel pipe, Schedule 40- $1\frac{1}{2}$ " nominal dia. zinc galvanized at the rate of 1.8 oz./ft².: ASTM A53 Table 2 (Grade A or B), ASTM F1083, and AASHTO M111.
 - (2) Aluminum coated steel pipe: ASTM A53, Table 2 (Grade A or B): Schedule 40- 11/2" nominal dia., 1.90" OD; coated at the rate 0.40 oz./ft.: AASHTO M111.
 - (3) Aluminum alloy pipe- 2" nominal dia.: ASTM B241 or B221, Alloy 6063, T6.
 - (4) Steel H-Beam- 11/8" x 15/8": Zinc Galv. 1.8 oz./ft.: AASHTO M111 and Detail.
 - (5) Aluminum alloy H-Beam- 17/8" X 15/8" Detail.
 - (6) Steel C- 1%"X 15%": Galv.: 1.8 oz/ft. zinc: AASHTO M111; OR , 0.9 oz./ft². zinc-5% aluminummischmetal: ASTM F1043 and Detail.
 - (7) Resistance welded steel pipe; 50,000 psi min. yield strength ASTM A569/A569M, A653/A653M or undepleted stock of discontinued A446/A446M base materials; ASTM F669 Group IV (Alternative Design); fence industry 2" OD, 11/2" NPS, 1.900" dec. equiv., 0.120" min. wall thick, and min. wt. 2.28 lb./ft.; with ASTM F1043 metric equivalent internal coating Types A, B, C or D and external coating Types A, B, or C; the chromate conversion coating of external Type B shall have a thickness of 15μg/in². min. and the polymer film topcoat shall have a thickness of 0.0003" min.; internal and external coatings are not restricted to the combinations of Table 2, ASTM F1043.

 - B. Corner, end, and pull post options:

 (1) Galvanized steel pipe, Schedule 40- 2" nominal dia. zinc galvanized at the rate of 1.8 oz./ft².:

 ASTM A53 Table X 2, ASTM F1083, and AASHTO M111.

 (2) Aluminum coated steel pipe: ASTM A53 steel, X 2 Tables: Schedule 40; 2" nominal dia.,

 2.375" OD; coated at the rate 0.40 oz./ft.: AASHTO M111.

 - (3) Aluminum alloy pipe- $2\frac{1}{2}$ " nominal dia.: ASTM B241 or B221, Alloy 6063,T6.
 - (4) Resistance welded steel pipe; 50,000 psi min. yield strength ASTM A569/A569M, A653/A653M or undepleted stock of discontinued A446/A446M base materials; ASTM F669 Group IV (Alternative Design); fence industry 2½" OD, 2" NPS, 2.375" dec. equiv., 0.130"min. wall thick. and min. wt. 3.117 lb./ft.; with ASTM F1043 metric equivalent internal coating Types A, B, C or D and external coating Types A, B, or C; the chromate conversion coating of external Type B shall have a thickness of $15\mu g/in^2$. min. and the polymer film topcoat shall have a thickness of 0.0003" min.; internal and external coatings are not restricted to the combinations of Table 2, ASTM F1043.

C. Rail options:

- (1) Galvanized steel pipe, Schedule 40- $1\frac{1}{4}$ " nominal dia. zinc galvanized at the rate of 1.8 oz./ft².: ASTM A53 Table X 2, ASTM F1083, and AASHTO M111.
- (2) Aluminum coated steel pipe; ASTM A53 steel, X 2 Tables Schedule 40; 11/4" nominal dia., 1.660" OD; coated at the rate 0.40 oz./ft.: AASHTO M111.
- (3) Aluminum alloy pipe- 11/4" nominal dia.: ASTM B241 or B221, Alloy 6063, T6.
- (4) Resistance welded steel pipe; 50,000 psi min. yeild strength ASTM A569/A569M, A653/A653M or undepleted stock of discontinued A446/A446M base materials; ASTM F669 Group IV (Alternative Design); fence industry 15/8" OD, 11/4" NPS, 1.660" dec. equiv., 0.111" min. wall thick. and min. wt. 1.836 lb./ft.; with ASTM F1043 metric equivalent internal coating Types A, B, C or D and external coating Types A, B, or C; the chromate conversion coating of external Type B shall have a thickness of $15\mu g/in^2$. min. and the polymer film topcoat shall have a thickness of 0.003" min.; internal and external coatings are not restricted to the combinations of Table 2, ASTM F1043
- D. Chain link fabric options (2" mesh with twisted and barbed selvage top and bottom for all options except as described in Note 10):
- (1) AASHTO M181 Type I Zinc Coated Steel, No. 9 gage (coated wire diameter), coated at the rate of 1.8 oz/ft². (M181 Class D 2.0 oz./ft². modified to 1.8 oz./ft².).
- (2) AASHTO M181 Type II -Aluminum Coated Steel, No. 9 gage (coated wire diameter), coated
- (3) AASHTO M181 Type IV- Polyvinyl Chloride (PVC) Coated Steel, No. 9 gage (coated core wire diameter), core wire-zinc coated steel. PVC coating: M181 Class A (either extruded or extruded and bonded) or Class B (bonded). See table right. Unless the plans call for M181 standard colors medium green, dark green or black the coating color shall be soft gray matching that of No. 36622 of Federal Standard 595a.

E. Tension wire options:

- (1) Steel wire No. 7 gage zinc galvanized at the rate of 1.2 oz./ft².: AASHTO M181.
- (2) Aluminum alloy wire with a diameter of 0.1875" or larger conforming to the requirements of ASTM B211, Alloy 5056 Temper H38, or, Alclad Alloy 5056 Temper H192.
- (3) Aluminum coated steel wire No.7 gage coated at the rate of 0.040 oz./ft².: AASHTO M181.

F. Tie wire and hog ring options:

- (1) Steel wire No.9 gage zinc galvanized at the rate of 1.2 oz./ft².
- (2) Aluminum alloy wire with a diameter of 0.1443" or larger conforming to the requirements of
- ASTM B211, Alloy 5056 Temper H38, or, Alclad Alloy 5056 Temper H192. (3) Aluminum coated steel wire No. 7 gage coated at the rate of 0.040 oz./ft².

DESCRIPTION:

(a) Only one fabric optional material will be permitted between corner and/or end post assemblies.

- (b) Only one line post optional material will be permitted between corner and/or end post assemblies.
 (c) Pull post assemblies shall be optional materials identical to either the linepost optional material or the corner and end post assembly optional material; but, pull post assemblies shall be the same optional material between any set of corner and/or end post assemblies.
- 6. Concrete for bases shall be Class NS concrete as specified in Section 347 of the Standard Specifications or a packaged, dry material meeting the requirements of a concrete under ASTM C-387. Materials for Class NS concrete may be proportioned by volume and/or by weight.
- 7. Line post shall be 8'-6" long (Standard). Line post are to be set in concrete as described above or by the following methods:
 - (a) In accordance with special details and/or as specifically described in the contract plans and specifications.
 - (b) In accordance with ASTM F567 Subsections 5.4 through 5.10 as approved by the Engineer. Line post installed in accordance with Section 5.8 shall be 9'-6" long.
 - (c) Post mounted on concrete structure or solid rock shall be mounted in accordance with the base plate detail "Fence Mounting On Concrete Endwalls And Retaining Wall", Sheet 3; or, by embedment in accordance with ASTM F567 Subsection 5.5.

End, pull and corner post assemblies shall be in concrete as detailed above for all soil conditions other than solid rock. Post within assemblies that are located on concrete structures or solid rock shall be set by base plate or by embedment as prescribed under (b) above for line post.

Line and assembly posts for 6' fence which must be lengthened due to a variation in the normal ground clearance, shall be set an additional 3" in depth for each 1' of of additional ground clearance.

- 8. Pull post shall be used at breaks in vertical grades of 15° or more, or at approximately 350' centers except that this maximum interval may be reduced by the Engineer on curves where the curve is greater than 3°.
- 9. Corner post are to be installed at all horizontal breaks in fence at 15° or more and as required at vertical breaks over 15° as determined by the Engineer.
- 10. When fence has an installed top of fabric height less than 6' knuckled top and bottom selvages shall be used unless the plans specifically identify locations for twisted selvage fabrics.
- 11. Unless sliding gates or special gates are called for in the plans, all gates shall be chain link swing gates meeting the material requirements described and as approved by the Engineer. Payment shall include the gates, single or double, all necessary hardware for installation and any additional length and/or size for posts at the opening. Gates shall be paid for under the contract unit price for Fence Gates, EA.
- 12. For construction purposes corner post assemblies shall consist of one corner post, two braces, two truss rods, and all necessary fittings and hardware as detailed. End post assemblies shall consist of one end post, one brace, one truss rod and all necessary fittings and hardware as detailed.
- 13. In areas where there are physical constraints outside the right-of-way which restricts the fence construction, the fabric may be installed on the inside of the posts..

	TYPE IV VINYL COATED FABRIC							
	AASHTO M181 Table 4 Redefined As Follows							
PVC Thickness Rai						ness Range		
	fied Dia tallic Co Wire				(Extruded Or Extruded			Class B Coating)
in.	mm	gage	oz./ft².	g/m²	in. mm		in.	mm
0.148	3.77	9	0.30	92	0.015 to 0.025	0.38 to 0.64	0.006 to 0.010	0.15 to 0.25

DESIGN NOTE

This index details fencing that is constructed with chain link fabric 6' (nominal) in height and with specific ground clearance.

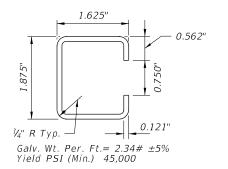
For fencing of different height or installation details, the fence shall be fully detailed in the Contract plans.

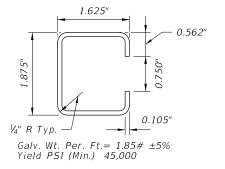
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LAST REVISION 11/01/17

DESCRIPTION:







STANDARD WALL

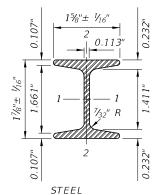
THINWALL

ALUMINUM

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25,000

OPTIONAL "C" LINE POST

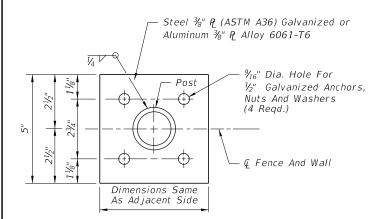


Area (Sq. In.)	
Weight (Lb./Ft.)	
Surface Area (SF/Ft.)	
Tensile Strength (psi Min.)
Yielding Point (psi Min.)	

2.72 ± 5% (Galv.) 80,000 48,000

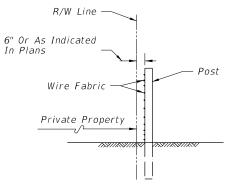
	Axes	Axes		
	1-1 2-2	1-1 2-2		
Moment Of Inertia	0.428 0.101	0.428 0.101		
Section Modulus	0.456 0.124	0.456 0.124		
Rad. Of Gyration	0.779 0.373	0.779 0.373		

OPTIONAL 17/8" x 15/8" H-BEAM LINE POST



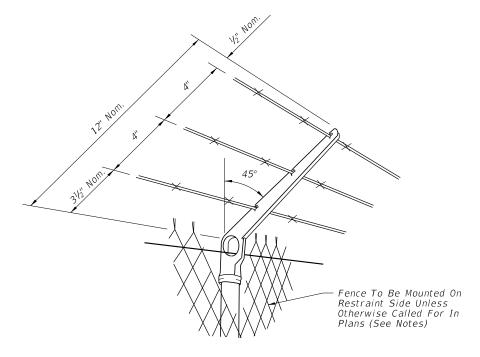
TOP VIEW FOUR ANCHOR PLATE OPTION

DESCRIPTION:



FENCE POSITION AT LOCATIONS WITHOUT FRONTAGE ROADS

(REFER TO DETAIL PLANS FOR FENCE POSITION AT LOCATIONS WITH FRONTAGE ROADS)



NOTES

Attachments to be used only when called for in the plans.
Attachments to extend in direction of restraint. Unless otherwise called for in plans, direction of restraint will be as follows:
(a.) Outward on limited access right of way line.
(b.) Outward on controlled access right of way line.
(c.) Outward from utilities and hazardous facilities located within bighway right of way.

- within highway right of way.
- (d.) Outward from lateral ditches, outfalls, retention basins, canals, borrow areas and similar support facilities.
- (e.) Inward on pedestrian ways.

The cap-arm shall be designed to provide a drive fit over the top of posts and to exclude moisture in posts with tubular sections.

BARB WIRE ATTACHMENT

BASE PLATE AND ANCHOR NOTES:

- 1. Base plate identical for line, pull, end and corner posts and shall be considered an integral part of the respective posts for basis of payment.
- 2. Post to be plumbed by grout shim under base plate.
- 3. Anchors (Galvanized Steel):

12" Cast In Place, 10½" Embedment: Headed Bolts, U-Bolts or Cluster Plates. 8" Adhesive Anchors, 6" Min. Embedment.*

*Adhesive anchors shall be headless anchor bolts set in drilled holes with an Adhesive Material System in accordance with Specifications 416 and 937; drilled holes shall be $\frac{1}{8}$ " larger in diameter than the anchor bolt.

Expansion Bolts Not Permitted.

TOP VIEW TWO ANCHOR PLATE OPTION

7/8" Dia. Hole For ¾"Anchors,

Nuts And Washers (2 Regd.)

11/4"

FENCE MOUNTING ON CONCRETE ENDWALL AND RETAINING WALLS

└─ Steel ½" ॡ (ASTM A36) Galvanized or

Aluminum 1/2" P2 Alloy 6061-T6

REVISION 11/01/17



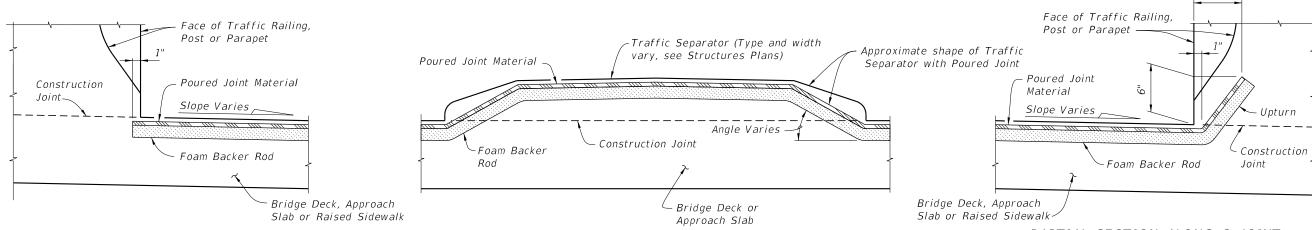
FY 2019-20 STANDARD PLANS

FENCE TYPE B

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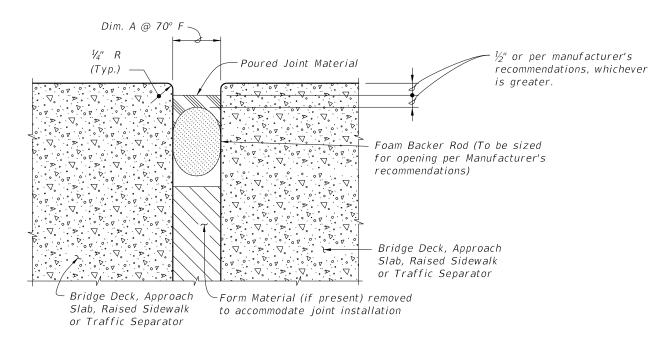
SHEET

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PARTIAL SECTION ALONG Q JOINT JOINT TREATMENT AT HIGH SIDE OF DECK WITH SLOPES 1% OR GREATER

PARTIAL SECTION ALONG Q JOINT, JOINT TREATMENT AT TRAFFIC SEPARATOR PARTIAL SECTION ALONG Q JOINT
JOINT TREATMENT AT LOW SIDE OF DECK OR
HIGH SIDE OF DECK WITH SLOPES < 1%



TYPICAL SECTION THRU JOINT

GENERAL NOTES:

- 1. Furnish and install Poured Joint With Backer Rod Expansion Joint Systems in accordance with Specification Sections 458 and 932 using Type D silicone sealant material.
- 2. Refer to the Structures Plans, Poured Expansion Joint Data Table for Dim. A @ 70° F.

DESCRIPTION:

