Origination Form

Specifications

Name:	Shae Gibbs	**Standard Specification Section:**	9621001
Email:	shae.gibbs@dot.state.fl.us	**Special Provision:**	
Date:	2025-06-30T17:56:50Z	**Associated Specs:**	550, 954, 965

Summary:

Moves fencing materials notes from the Standard Plans and adds APL requirements

Justification:

Moved to the appropriate specification to ensure BABA compliance

Do the changes affect other types of specifications?

Neither

List Specifications Affected:

Other Affected Documents/Offices	Contacted	Yes/No
Other Standard Plans	Rick Jenkins	Yes
Florida Design Manual		No
Structures Manual		No
Basis of Estimates Manual		No
Approved Product List	Missy Hollis	Yes
Construction Office		No
Maintenance Office		No
Materials Manual		No
Traffic Engineering Manual		No

Are changes in line with promoting and making progress on improving safety, enhancing mobility, inspiring innovation, and fostering talent; explain how?

Yes

What financial impact does the change have; project costs, pay item structure, or consultant fees?

None

What impact does the change have on production or construction schedules?

None

How does this change improve efficiency or quality?

Ensure materials requirements are in the correct specification

Which FDOT offices does the change impact?

Design and SMO

What is the impact to districts with this change?

None

Does the change shift risk and to who?

No

Provide summary and resolution of any outstanding comments from the districts or industry.

Comments and Responses are available on the Track the Status of Revisions hyperlink located on the Specifications landing page: https://www.fdot.gov/programmanagement/Specs.shtm

What is the communication plan?

Through the established specification revision process (e.g., Internal and Industry Review)

What is the schedule for implementation?

The Standard Specifications eBook and Workbook are effective July 1st every year.

STRUCTURAL STEEL AND MISCELLANEOUS METAL ITEMS (OTHER THAN ALUMINUM)
(REV 6-30-25)

SUBARTICLE 962-10.1 is deleted and the following substituted:

962-10.1 General: Unless otherwise specified in the contract documents, provide miscellaneous metal components in accordance with this section and Table 962-11, Table 962-12, Table 962-13, or Table 962-14. Structural tubing subject to tensile stresses, as defined in Section 460, shall meet Table 962-2.2 for tension components, Zone 1. Welding shall be done in accordance with the most current AWS D1.1 structural welding code. When galvanizing is specified in the contract documents, provide galvanizing in accordance with the contract documents.

Requirements for concrete reinforcement are contained in Section 931.

Requirements for steel guardrail components are contained in Section 967.

Table 962-11
Requirements for Miscellaneous Metals

Product	Standard	Grade	Type/ Style	Reportable Properties
Steel Sheet Piling	A328	All	Cold Rolled, Heat Treated	Composition, Tensile, Killed
	A572	42, 50, 55, 60, 65	1, 2, 3, 5	Composition, Tensile, Size, Killed
	A690	All	All	Composition, Tensile, Killed
Steel Pipe Piling	A252	3	All	Composition, Tensile, Size
	API 5L	X46, X52, X56, X60, X65, X70	PSL1	Tensile
			PSL2	Killed, Fine Grain, Tensile
Structural Tubing	A500	Round	B, C	Composition, Tensile, Flattening Test, Impact (Zone 1), Size
		Shaped		Composition, Tensile, Impact (Zone 1), Size
	A501	Square, Round, Rectangular, Special	A, B	Composition, Tensile, Impact (Zone 1), Size
	A847	Round	Welded, Seamless	Composition, Tensile, Flattening, Impact (Zone 1), Size
		Square, Rectangle, Special	Welded, Seamless	Composition, Tensile, Impact (Zone 1), Size
Pipe Railing	A53	A, B	E, S	Composition, Mechanical Testing (Tensile, Bend, Flattening), Size

SUBARTICLE 962-10.3 is deleted and the following substituted:

962-10.3 Fencing Material: Provide fencing materials in accordance with this Section and Table 962-13. When galvanizing is specified, provide galvanizing in accordance with the contract documents.

Table 962-13 Material Requirements for Fencing				
Product	Standard	Grade / Type	Style	Reportable Properties
Fabric	A116	60	No. 9	Breaking Strength, Coating Weight
		175	No. 12-1/2	
	A584	175	No. 12-1/2	
	M181	1, 2, 4	No. 9	
	A392	All	No. 9	
	A491	All	No. 9	
	F668	All	No. 9	
Posts	A702	50	Carbon, Rail	Tensile or Hardness
Pipe, Tube	A53	A, B	E, F, S	Grade, Finish
	F1083	Schedule 40	High Strength	Schedule
	F1043	1C	All	Group, Coating, Type
		1A	High strength	
Beam	A36	36	All Shapes	Grade, Killed
	A572	42		
	A992	50		
Sheets	A1011	36, 45, 50	HSLAS, HSLAS-F, SS	Designation, Style

962-10.43 Steel Grates: Provide steel grating in accordance with this section and Table 962-1413. When vaned gratings are specified, AASHTO HL-93 load testing may be substituted for tensile testing when specified in the contract documents. When Alternate G is specified, provide galvanizing in accordance with 962-11.1.

Table 962-143 Requirements for Steel Grating				
Product	Standard	Grade	Type/ Style	Reportable Properties
Steel Grating	A242	50	1	Composition, Tensile*, Killed
	A572		1, 2, 3, 5	Composition, Tensile*, Size, Killed
	A588		A, B, K	Composition, Tensile*, Fine Grain
	A1011	Any	SS, HSLAS, HSLAS-F	Designation, Style
* AASHTO HL-93 may be substituted for tensile testing for vaned gratings when specified.				

SUBARTICLE 962-10.4 is deleted.

SUBARTICLE 962-11.1 is deleted and the following substituted:

962-11 Galvanizing.

962-11.1 Plates, Structural Shapes, Bars, and Strip: When galvanizing is specified in the Contract Documents for ferrous metal products, provide galvanizing in accordance with the requirements of ASTM A123 or AASHTO M111. Zinc composition shall meet "Intermediate Grade" in accordance with ASTM B6 and Table 962-~~15~~14.

Table 962-~~15~~14 Requirements for Galvanizing Bath Composition			
Product	Zinc (Zn)	Lead (Pb)	Tin (Sn)
Galvanizing Bath	≥ 99.00%	≤ 0.50%	≤ 0.10%

SUBARTICLE 962-11.3.2 is deleted and the following substituted:

962-11.3.2 Fasteners and Hardware Designated as High-Strength: When zinc coating is required in the Contract Documents, provide galvanizing in accordance with Table 962-~~16~~15. Coating of ASTM F3125, A490 bolts is prohibited. Bake all hot dipped or electroplated bolt, rod, or bar with a tensile strength greater than or equal to 150 ksi to remove any residual hydrogen.

Table 962-~~16~~15 Coating Requirements for Fastener and Hardware Designated as High-Strength				
Product	ASTM	Grade	Type/Style	Coating Finish
Bolts	F3125	A325	1	ASTM B695, Class 55 ASTM F2329
		A490	All	Do Not Galvanize
Anchor Rods	F3125	A325	1	ASTM B633 SC 3, Type II

Table 962-~~16~~15 Coating Requirements for Fastener and Hardware Designated as High-Strength				
		A490	All	Do Not Galvanize
	F1554	105	All	ASTM B633 SC 3, Type II
Anchor Rods	F1554	36, 55	All	ASTM B695 Class 55 ASTM F2329
Nuts	A563	A, C, D, C3, DH, DH3	Hex, Heavy Hex	
	A194	1, 2	All	
Washers	F436	Circular, Beveled, Clipped, Extra Thick	1	
	F844	Round, Miscellaneous	A	
DTI Devices	F959	A325	1	

SECTION 962 is expanded by the following new Article:

962-13 Fence Materials.

962-13.1 General: The types of fence are designated as follows:

Type A (Farm Fence).
Type A (Wildlife Fence).
Type B (Chain-Link Fence).
Type R (Chain-Link Fence for Pedestrian Overpass).

All materials shall be one of the products listed on the Department's Approved Product List (APL). Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6 and include the documentation identified in Table 962-16.

Table 962-16 APL Requirements for Fence Materials	
Documentation	Requirements (edit as needed for specific products)
Product Photo	Provide product photos that display the significant features of the product.
Product Label and Packaging	Provide label and packaging photos for all manufacturer supplied installation materials.
Technical Data Sheet	Provide product literature that uniquely identifies the product, storage instructions.
Manufacturer's Certification	Provide Manufacturer's Certification showing compliance with the material requirements of this Section.
Product Sample (for APL listing)	A sample may be requested to verify the product, in accordance with the specifications.

962-13.2 Fence Fabric Material Requirements: Provide fencing materials in accordance with this Section and Table 962-17. When galvanizing is specified, provide galvanizing in accordance with the contract documents.

Table 962-17 Material Requirements for Fencing Fabric				
Fence Type	Standard	Grade / Type	Style	Other requirements, including Coating
Fabric Type A (Farm)	A116	60	No. 9	Galvanized, Design No. 1047-6-9, Class 3 zinc coating
Type A (Farm)		175	No. 12-1/2	Galvanized, Design No. 1047-6-12 1/2 , Class 3 zinc coating, with a 10 1/2 gage top and bottom wire
Type A (Wildlife)		175	No. 12-1/2	Galvanized, Design No. 2096-6-12 1/2, Class 3 zinc coating
Type A (Farm)	A584	175	No. 9	Aluminum Coated, Design Number 1047-6-9, with a minimum coating weight of 0.40 oz/ft²
Type A (Wildlife)			No. 12-1/2	Aluminum Coated, Design Number 2096-6-12.5, with minimum coating weight of 0.40 oz/ft2
Type B (Chain link)	M181	I	No. 9	Zinc Coated Steel, rate of 1.8 oz/ft2*
		II		Aluminum Coated Steel, rate of 0.40 oz/ft2
		IV		Polyvinyl Chloride (PVC) coated steel, core wire Zinc Coated Steel, PVC Coating: M181 Class A (either extruded or extruded and bonded) or Class B (bonded) **
Type R	A392	All	No. 9	See Index 550-010, 550-011, 550-012, or 550-013
Type R	A491	All	No. 9	See Index 550-010, 550-011, 550-012, or 550-013
Type R	F668	All	No. 9	See Index 550-010, 550-011, 550-012, or 550-013
* M181 Class D 2.0 oz./ft² modified to 1.8 oz./ft² ** Unless the Plans call for M181 standard colors medium green or black, the coating color shall be soft gray matching that of No. 36622 of Federal Standard 595a				

962-13.3 Steel Posts for Fence: Meet the requirements of Table 962-18.

Table 962-18 Steel Posts, Beams, and Pipe Tube for Fence				
Product	Fence Type	Standard	Dimensions, Minimum	Requirements
Line Posts	Type A (Farm)	A702(18 in²)	8' long	1.33 lb/ft, hot rolled studded; anchor plate attached. Galvanized at the rate of 2 oz/ft²

Table 962-18 Steel Posts, Beams, and Pipe Tube for Fence					
Product	Fence Type	Standard	Dimensions, Minimum	Requirements	
	Type B	ASTM A53 Table 2 (Grade A or B); ASTM F1083, and AASHTO M111	Schedule 40: 1-1/2" 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	Schedule 40: 1-1/2" nominal dia., 1.90" OD	Aluminum Coated, Coated at the rate of 0.40 oz/ft2	
		AASHTO M111	1-7/8" x 1-5/8"	Steel H-Beam; Zinc Galvanized at the rate of 1.8 oz/ft2	
		ASTM F1043, and AASHTO M111	Steel C, 1-7/8" x 1-5/8"	AASHTO M111, OR 0.9 oz./ft². zinc-5% aluminum- mischmetal;- ASTM F1043 and- Standard Index 550-002	
		ASTM A569/A569M, A653/A653M or undepleted stock of discontinued A446/A446M base materials; ASTM F669 Group IV (Alternative Design)	Fence Industry 2" OD, 1-1/2" NPS, 1.900" Dec equiv., 0.120" min wall thick. And min wt 2.28 lb/ft;	Resistance welded steel pipe;- 50,000 psi min yield strength; 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 µg/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.	
	Type R	A702	50	Carbon, Rail	Tensile or Hardness
Approach Posts	Type A (Farm)	-	2-1/2"x 2-1/2"x1/4" angles, 8' long	Fabricated for attaching brace; with necessary hardware. Galvanized at the rate of 2 oz/ft²	

Table 962-18 Steel Posts, Beams, and Pipe Tube for Fence					
Product	Fence Type	Standard	Dimensions, Minimum	Requirements	
	Type R	A702	50	Carbon, Rail	Tensile or Hardness
`Pull, End and Corner Posts	Type A (Farm)	-	2-1/2"x 2-1/2"x1/4" angles, 8' long	Fabricated for attaching brace; with necessary hardware. Galvanized at the rate of 2 oz/ft²	
	Type R	A702	50	Carbon, Rail	Tensile or Hardness
	Type B	ASTM A53 X2 Tables; ASTM F1083, and AASHTO M111	Schedule 40: 2" nominal dia.	Zinc galvanized at the rate of 1.8 oz/ft2	
		ASTM A53 X2 Tables; ASTM F1083, and AASHTO M111	Schedule 40: 2" nominal dia., 2.375" O.D.	Coated at the rate of 0.40 oz/ft2	
		ASTM A569/A569M, A653/A653M or undepleted stock of discontinued A446/A446M base materials; ASTM F669 Group IV (Alternative Design)	Fence Industry 2.5" OD, 2" NPS, 2.375" dec equiv, 0.130" min wall thickness and min wt 3.117 lb/ft	Resistance welded steel pipe: 50,000 psi min yield strength; 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 µg/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.	
Rail Options	Type B	ASTM A53 X2 Tables, ASTM F1083 and AASHTO M111	Schedule 40- 11 #4" nominal dia.	Zinc galvanized at the rate of 1.8 oz/ft2	

Table 962-18 Steel Posts, Beams, and Pipe Tube for Fence					
Product	Fence Type	Standard	Dimensions, Minimum	Requirements	
		ASTM A53 AASHTO M111	Schedule 40- 11 #4" nominal dia., 1.660" O.D.	Aluminum Coated, Coated at the rate of 0.40 oz/ft	
		ASTM A569/A569M, ASTM A653/A653M, , or undepleted stock of discontinued A446/A446M base materials; ASTM F669 Group IV (Alternative Design)	Fence Industry 15 #8" O.D., 11 #4" NPS, 1.660" dec. equiv., 0.111 min. wall thick. And min. wt. 1.836 lb/ft	Resistance welded steel pipe; 50,000 psi min. yield strength; 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 µg/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.	
		ASTM F1043	-	-	-
Pipe, Tube	Type B	A53	A, B	E, F, S	Grade, Finish
	Type R	F1083	Schedule 40	High Strength	Schedule
	Type B	F1043	1C	All	Group, Coating, Type
			1A	High strength	
Braces	Type A (Farm)	-	2"x 2"x 1/4" angles	With necessary hardware and fabricated for attaching to post. Galvanized at the rate of 2 oz/ft²	
Beam	Type R	A36	36	All Shapes	Grade, Killed
		A572	42		
		A992	50		
Sheets	-	A1011	36, 45, 50	HSLAS, HSLAS-F, SS	Designation, Style D

962-13.4 Tie Wire and Barbed Wire for Fence: Meet the requirements of Table 962-19:

Table 962-19 Tie Wire and Barbed Wire Requirements			
Tie Wire Requirements			
Product	Fence Type	Standard	Requirements
Tie Wire	Type A (Farm)	ASTM A-641	Steel wire 0.120” diameter with Zinc coating Class 3, soft temper
	Type B	-	Steel wire No. 9 gage, zinc galvanized at rate of 1.2 oz/ft2
		-	Aluminum coated steel wire No. 7 gage, at rate of 0.040 oz/ft2
Hog Ring	Type B	-	Steel wire No. 9 gage, zinc galvanized at rate of 1.2 oz/ft2
			Aluminum coated steel wire No. 7 gage, at rate of 0.040 oz/ft2
Barbed Wire Requirements			
Barbed Wire	Type A (Farm)	ASTM A121	Type I: with two strands of 12-1/2 gage wire; four-point barbs, wire size 14 gage, twisted around both line wires; and Class 3 coating; Design No. 12-4-5-14R
			Type IIA: Same as Type I except the two strand wires are twisted in alternating directions between consecutive barbs
			Type IIB: with two strands og 15-1/2 gage high tensile wire; four-point barbs, wire size 16 ½ gage twisted around both line wires; and Class 3 coating; Design No. 15-4-5-16R
	Type A (Wildlife)		Type I: with two strands of 15-1/2 gage wire; four point barbs, wire size 14 gage, twisted around both line wires; class 3 coating
			Type II: same as Type I except the two strands are twisted in alternating directions between consecutive barbs
Tension Wire	Type B	AASHTO M181	Steel wire No. 7 gage, zinc galvanized at the rate of 1.2 oz/ft2
			Aluminum coated steel wire, No. 7 gage, coated at the rate of 0.040 oz/ft2