



**II. FISCAL IMPACT ANALYSIS**

**A. Five Year Summary of Fiscal Impact:**

Fiscal Years	2022	2023	2024	2025	2026
Capital Expenditures					
Operating Costs	-0-	\$1,967	\$1,967	\$1,967	\$1,967
External Revenues (Grants)					
Program Income (County)					
In-Kind Match (County)					
<b>NET FISCAL IMPACT</b>	<b>-0-</b>	<b>\$1,967</b>	<b>\$1,967</b>	<b>\$1,967</b>	<b>\$1,967</b>
<b># ADDITIONAL FTE POSITIONS (Cumulative)</b>					

Is Item Included in the Current Budget? Yes  No   
 Does this item include the use of federal funds? Yes  No

Budget Account No: Fund 4100 Department 120 Unit 2550 Object 3401  
 Reporting Category \_\_\_\_\_

**B. Recommended Sources of Funds/Summary of Fiscal Impact:**

No Fiscal Impact in FY 22. FY 2023-2026, maintenance costs of \$1,967 per year.

C. Departmental Fiscal Review: *Debbie Duncanson*

**III. REVIEW COMMENTS**

**A. OFMB Fiscal and/or Contract Development and Control Comments:**

*Lisa M...* 5/5/22  
 OFMB *JA* 5-4-22  
*(EW)* 5-5-22

*Ang J. Jacobson* 5/11/22  
 Contract Dev. and Control  
 5-11-22 *TC*

**B. Legal Sufficiency:**

\_\_\_\_\_  
 Assistant County Attorney

**C. Other Department Review:**

\_\_\_\_\_  
 Department Director

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
**RAILROAD REIMBURSEMENT AGREEMENT**  
**GRADE CROSSING AND CROSSING TRAFFIC CONTROL DEVICES - COUNTY**

725-090-23c  
RAIL  
OGC - 07/21

FINANCIAL PROJECT NO.	ROAD NAME OR NUMBER	COUNTY NAME	PARCEL & R/W NUMBER	FAP NUMBER
448637-1-57-01	Aviation Rd / Airport Access Rd	PALM BEACH		

THIS AGREEMENT, made and entered this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, by and between the STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION, hereinafter called the DEPARTMENT, and CSX Transportation, a corporation organized and existing under the laws of Virginia, with its principal place of business in the City of Jacksonville, County of Duval, State of Florida, hereinafter called the COMPANY; and Palm Beach COUNTY, political subdivision of the State of Florida, acting by and through its Board of County Commissioners, hereinafter called the COUNTY:

WHEREAS, the DEPARTMENT is constructing, reconstructing or otherwise changing a portion of the Public Road System, designated by the Financial Project ID 448637-1-57-01, on Aviation Rd / Airport Access Rd, which crosses at grade the right of way and track(s) of the COMPANY'S Mile Post SX-954.36, FDOT/AAR Crossing Number 621463M, at or near West Palm Beach, Florida, hereinafter called the Grade Crossing, as shown on the DEPARTMENT'S Plan Sheet No. Location Map A-1, attached hereto as a part hereof; and

NOW, THEREFORE, in consideration of the mutual undertakings as herein set forth, the parties hereto agree as follows:

1. The COMPANY hereby grants to the DEPARTMENT the right to construct road at grade, and necessary approaches thereto, across its right of way and over its track(s) at the hereinabove referred to location.

2. The COMPANY will provide, furnish or have furnished, all necessary materials required for, and will construct or have constructed at the DEPARTMENT'S expense a Standard Railroad Crossing Type Install 2 new gates with bells and new cable in accordance with the DEPARTMENT'S Standard Plans, Index 830-T01 attached hereto and by this reference made a part hereof. Upon completion of the crossing the COMPANY shall be responsible for the maintenance cost of all trackbed and rail components plus the highway roadbed and surface for the width of the rail ties within the crossing area.

The COUNTY shall be responsible for the maintenance cost of the highway roadbed outside of the railway ties. IT BEING EXPRESSLY UNDERSTOOD AND AGREED that the COMPANY may, at its option and upon notification of the COUNTY, perform such periodic maintenance work and bill the COUNTY directly for costs thus incurred that are the responsibility of the COUNTY.

3. It is further agreed mutually between the parties hereto that the grade crossing be recognized by this Agreement:

- (a) Is adequately signalized for the safe operation of the general public. However, should future highway traffic conditions warrant additional crossing traffic control devices through use of automatic grade crossing traffic control devices, including signals with and without gates, or grade separation structure(s); then, such additional traffic control devices and/or structure(s) will be installed as necessary at the complete cost and expense of the COUNTY. IT IS EXPRESSLY UNDERSTOOD AND AGREED that once a determination has been made as to the type of facility to be installed whether signals or structure, such installation will be the subject of a supplemental agreement which will set forth the maintenance responsibility as governed by the applicable State and/or Federal law at the time of such installation.
- (b) Presently requires the installation of grade crossing traffic control devices and the DEPARTMENT agrees to pay such cost subject to the COMPANY'S participation as specified in Paragraph 13; such installation to be in accordance with plans and specifications as approved by the DEPARTMENT. The COMPANY shall furnish the necessary materials and install automatic grade crossing signals and/or traffic control devices at said location on an actual cost basis, and in accordance with the

Standard Plans Index 509-070 and 711-001, and the FDOT Design Manual (FDM) as amended by Freight and Multimodal Operations Bulletin 21-01, dated February 12, 2021, which is attached hereto and by reference made a part hereof. After installation of said signals is completed, fifty percent (50%) of the expense thereof in maintaining the same shall be borne by the COUNTY and fifty percent (50%) of the cost shall be borne by the COMPANY, as enumerated by the Schedule of Annual Cost of Automatic Highway Grade Crossing Traffic Control Devices attached hereto and by this reference made a part hereof and subject to future revision. After said signals have been installed and found to be in satisfactory working order by the parties hereto, the same shall be immediately put into service, operated and maintained by the COMPANY so long as said COMPANY or successors or assigns shall operate the said signals at said grade crossing; or until it is agreed between the parties hereto that the signals are no longer necessary; or until the said crossing is abandoned; or legal requirements occur which shall cease operation of signals thereat. The COMPANY agrees that any future relocation or adjustment of said signals shall be performed by the COMPANY, but at the expense of the party initiating such relocation. Upon relocation the maintenance responsibilities shall be in accordance with the provisions of this agreement. It is further agreed that the cost of maintaining any additional or replacement signal equipment at the same location will be shared as provided above

4. All work contemplated hereabove shall at all times be subject to the approval of the COMPANY'S Chief Engineer or his authorized representative. The DEPARTMENT or the DEPARTMENT'S contractor shall give the COMPANY'S Division Engineer and/or Superintendent at least seventy-two (72) hours notice prior to the performance of any work within the limits of the COMPANY'S right of way.

5. Unless otherwise agreed upon herein, the COUNTY agrees to ensure that the advance warning signs and railroad crossing pavement marking will conform to the Department of Transportation Manual on Uniform Traffic Control Devices within 30 days of notification that the railroad signal improvements have been completed and that such signs and pavement markings will be continually maintained at an acceptable level.

6. The DEPARTMENT will reimburse the COMPANY for the cost of watchmen or flagging service when the DEPARTMENT'S contractor is carrying out work adjacent to the COMPANY'S tracks and whenever the contractor is performing work requiring movement of employees, trucks, or other equipment across the tracks of the COMPANY, or when at other times the COMPANY and DEPARTMENT shall agree that such a service is necessary. Such costs shall be accrued and billed directly to the DEPARTMENT as specified in Paragraph 9.

7. The DEPARTMENT will require its contractor to furnish Railroad Protective Public Liability and Railroad Protective Property Damage Liability Insurance in a combined amount of \$5,000,000.00, for all personal injuries, death or property damage, per occurrence arising during the policy period. The maximum dollar amounts of coverage to be reimbursed by Federal funds, with respect to bodily injury, death or property damage, is limited to a combined amount of \$10,000,000.00 per occurrence unless approval for larger amounts by the FHWA Division Administrator is made a part of this Agreement. The DEPARTMENT will also require its contractor to furnish the COMPANY a Certificate of Insurance showing that the contractor carries liability insurance (applicable to the job in question) in the amount of \$5,000,000.00 for all personal injuries, death or property damage, per occurrence arising during the policy period. Such insurance is to conform with the requirements of 23 C.F.R., Subchapter G, Part 646, Subpart A, and any supplements thereto or revisions thereof.

8. The DEPARTMENT will bear the cost of all temporary and permanent changes made necessary in the COMPANY'S signal wire line or other facilities and in the wire line facilities of any utility that has compensable interest on the COMPANY'S right of way occasioned by the construction of said crossing and the occupancy of the COMPANY'S property, provided such costs are accrued as specified in Paragraph 9.

9. The COMPANY hereby agrees to install and/or adjust the necessary parts of its facilities in accordance with the provisions set forth in the:

- (a) DEPARTMENT Procedure 725-080-002 and Rule 14-57.011 "Public Railroad-Highway Grade Crossing Costs", Florida Administrative Code.
- (b) Federal Highway Administration's Federal Aid-Highway Policy Guide, 23 C.F.R. Subchapter B, Part 140, Subpart I; and 23 C.F.R. Subchapter G, Part 646, Subpart B,



and any supplements thereto or revisions thereof, which, by reference hereto, are made a part hereof. The COMPANY further agrees to do all such work with its own forces or by a contractor paid under a contract held by the COMPANY, all under the supervision and approval of the DEPARTMENT and the Federal Highway Administration, when applicable.

10. The DEPARTMENT hereby agrees to reimburse the COMPANY, as detailed in this Agreement, for all costs incurred by it in the adjustment of said facilities, in accordance with the provisions of the above indicated Reimbursement Policy, and any supplements thereto or revisions thereof. It is understood and agreed by and between the parties hereto that preliminary engineering costs not incorporated within this Agreement shall not be subject to payment by the DEPARTMENT.

11. Attached hereto, and by this reference made a part hereof, are plans and specifications of the work to be performed by the COMPANY pursuant to the terms hereof, and an estimate of the costs thereof in the amount of \$170,288.00. All work performed by the COMPANY pursuant hereto, shall be performed according to these plans and specifications as approved by the DEPARTMENT, and the Federal Highway Administration, if federal aid participating; and all subsequent plan changes shall likewise be approved by the DEPARTMENT and the Federal Highway Administration, when applicable.

12. All labor, services, materials, and equipment furnished by the COMPANY in carrying out the work to be performed hereunder shall be billed by the COMPANY directly to the DEPARTMENT. Separate records as to costs of contract bid items and force account items performed for the COMPANY shall also be furnished by the COMPANY to the DEPARTMENT.

13. The COMPANY has determined that the method to be used in developing the relocation or installation cost shall be as specified for the method checked and described hereafter:

- (a) Actual and related indirect costs accumulated in accordance with a work order accounting procedure prescribed by the applicable Federal or State regulatory body.
- (b) Actual and related indirect costs accumulated in accordance with an established accounting procedure developed by the COMPANY and approved by the DEPARTMENT.
- (c) An agreed lump sum of \_\_\_\_\_, as supported by a detail analysis of estimated costs attached hereto. (NOTE: This method is not applicable where the estimated cost of the proposed adjustment exceeds \$100,000.)

14. The installation and/or adjustment of the COMPANY'S facility as planned  will  will not involve additional work over and above reimbursable requirements of the DEPARTMENT. (If upgrading and/or nonreimbursable work is involved at the option of the COMPANY, then credit against the cost of the project is required and will be governed by the method checked and described hereafter):

- (a) \_\_\_\_\_% will be applied to the final billing of work actually accomplished to determine required credit for  (betterment) and/or  (expired service life) and/or  (nonreimbursable segments).
- (b) All work involving nonreimbursable segments will be performed by special COMPANY work or job order number apart and separate from the reimbursable portion of the work; such work or job order number to be \_\_\_\_\_. The COMPANY further agrees to clearly identify such additional work areas in the COMPANY'S plans and estimates for the total work covered by this Agreement.
- (c) \_\_\_\_\_ credited for  (betterment) and/or  (expired service life) and/or  (nonreimbursable segments) in accord with Article 13.(c) hereinabove.

15. It is specifically agreed by and between the DEPARTMENT and the COMPANY that the DEPARTMENT shall receive fair and adequate credit for any salvage which shall accrue to the COMPANY as a result of the above adjustment work.

16. It is further agreed that the cost of all improvements made during this adjustment work shall be borne by the COMPANY, subject only to the DEPARTMENT bearing such portion of this cost as represents the cost of adjustment of previously existing facility, less salvage credit as set forth in the immediately preceding paragraph.

17. Upon completion of the work, the COMPANY shall, within one hundred eighty (180) days, furnish the DEPARTMENT with two (2) copies of its final and complete billing of all costs incurred in connection with the work performed hereunder, such statement to follow as closely as possible the order of items contained in the estimate attached hereto. The totals for labor, overhead, travel expense, transportation, equipment, material and supplies, handling costs and other services shall be shown in such a manner as will permit ready comparison with the approved plans and estimates. Materials shall be itemized where they represent major components of cost in the relocation following the pattern set out in the approved estimate as closely as possible. Salvage credits from recovered and replaced permanent and recovered temporary materials shall be reported in said bills in relative position with the charge for the replacement or the original charge for temporary use.

The final billing shall show the description and site of the Project; the date on which the first work was performed, or, if preliminary engineering or right-of-way items are involved, the date on which the earliest item of billed expense was incurred; the date on which the last work was performed or the last item of billed expense was incurred; and the location where the records and accounts billed can be audited. Adequate reference shall be made in the billing to the COMPANY'S records, accounts and other relevant documents. All cost records and accounts shall be subject to audit by a representative of the DEPARTMENT. Upon receipt of invoices, prepared in accordance with the provisions of the above indicated Reimbursement Policy, the DEPARTMENT agrees to reimburse the COMPANY in the amount of such actual costs approved by the DEPARTMENT'S auditor.

18. Payment shall be made only after receipt and approval of goods and services unless advance payments are authorized by the DEPARTMENT's Comptroller under Section 334.044(29), F.S., or by the Department of Financial Services under Section 215.422(14), Florida Statutes (F.S.).

19. In accordance with Section 287.058, Florida Statutes, the following provisions are in this Agreement: If this Contract involves units of deliverables, then such units must be received and accepted in writing by the Contract Manager prior to payments. Bills for fees or other compensation for services or expenses shall be submitted in detail sufficient for a proper preaudit and postaudit there of.

20. Bills for travel expenses specifically authorized in this agreement shall be submitted and paid in accordance with DEPARTMENT Rule 14-57.011 "Public Railroad-Highway Grade Crossing Costs" and the Federal Highway Administration Federal-Aid Policy Guide, 23 C.F.R. Subchapter B, Part 140, Subpart I "Reimbursement for Railroad Work."

21. In accordance with Section 215.422, Florida Statutes, the followings provisions are in this Agreement: Contractors providing goods and services to the DEPARTMENT should be aware of the following time frames. Upon receipt, the DEPARTMENT has five (5) working days to inspect and approve the goods and services, unless the Agreement specifies otherwise. The DEPARTMENT has 20 days to deliver a request for payment (voucher) to the Department of Financial Services. The 20 days are measured from the latter of the date the invoice is received or the date the goods or services are received, inspected, and approved.

If a payment is not available within 40 days, a separate interest penalty at a rate as established pursuant to Section 215.422 (3)(b), Florida Statutes, will be due and payable in addition to the invoice amount, to the Contractor. Interest penalties of less than one (1) dollar will not be enforced unless the Contractor requests payment. Invoices which have to be returned to a Contractor because of Contractor preparation errors will result in a delay in the payment. The invoice payment requirements do not start until a properly completed invoice is provided to the DEPARTMENT.

A Vendor Ombudsman has been established within the Department of Financial Services. The duties of this individual include acting as an advocate for contractors/vendors who may be experiencing problems in obtaining timely payment(s) from a state agency. The Vendor Ombudsman may be contacted at (850) 413-5516 or by calling the Division of Consumer Services at 1-877-693-5236.

22. In the event this contract is for services in excess of TWENTY FIVE THOUSAND DOLLARS (\$25,000.00) and a term for a period of more than one year, the provisions of Section 339.135(6)(a), Florida Statutes, are hereby incorporated:

The DEPARTMENT, during any fiscal year, shall not expend money, incur any liability, or enter into any contract which, by its terms, involves the expenditure of money in excess of the amounts budgeted as available for expenditure during such fiscal year. Any contract, verbal or written, made in violation of this subsection is null and void, and no money may be paid on such contract. The DEPARTMENT shall require a statement from the Comptroller of the DEPARTMENT that such funds are available prior to entering in any such contract or other binding commitment of funds. Nothing herein contained shall prevent the making of contracts for periods exceeding one year, but any contract so made shall be executory only for the value of the services to be rendered or agreed to be paid for in succeeding fiscal years; and this paragraph shall be incorporated verbatim in all contracts of the DEPARTMENT which are for an amount in excess of TWENTY FIVE THOUSAND DOLLARS (\$25,000.00) and which have a term for a period of more than one year.

23. In accordance with Section 287.133 (2)(a), Florida Statutes, the following provisions are included in this Agreement:

A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s.287.017 for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list.

24. In accordance with Section 287.134(2)(a), Florida Statutes, the following provisions are included in this agreement:

An entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity.

25. In accordance with Section 287.0582, Florida Statutes, the following provision is included in this Agreement:

The DEPARTMENT'S obligation to pay under this contract is contingent upon an annual appropriation by the Florida Legislature.

26. Should the use of said crossing be abandoned due to removal of the roadway then all rights hereby to the COUNTY shall thereupon cease and terminate and the COUNTY will, at its sole cost and in a manner satisfactory to satisfactory to the COMPANY, remove said crossing and restore the COMPANY'S property to the condition previously found, provided that the COMPANY may, at its option, remove the said crossing and restore its property, and the COUNTY will, in such event, upon bill rendered, pay to the COMPANY the entire cost incurred by it in such removal and restoration, provided such costs are accrued as specified in Paragraph 9.

27. The COMPANY covenants and agrees that it will indemnify and hold harmless the DEPARTMENT and all of the DEPARTMENT'S officers, agents, and employees from any claim, loss, damage, cost charge, or expense arising out of any act, action, neglect, omission, or delay by the COMPANY during the performance of the contract, whether direct or indirect, and whether to any person or property to which the DEPARTMENT or said parties may be subject, except that neither the COMPANY nor any of its subcontractors will be liable under this section for damages arising out of injury or damage to persons or property directly caused or resulting from sole negligence of the DEPARTMENT, its officers, agents, or employees.



28. COMPANY shall:

1. utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the COMPANY during the term of the contract; and

2. expressly require any subcontractors performing work or providing services pursuant to the state contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term.

3. use steel and iron manufactured in the United States, in accordance with the Buy America provisions of 23 CFR 635.410, as amended. Ensure that all manufacturing processes for this material occur in the United States. As used in this specification, a manufacturing process is any process that modifies the chemical content, physical shape or size, or final finish of a product, beginning with the initial melting and continuing through the final shaping and coating. If a steel or iron product is taken outside the United States for any manufacturing process, it becomes foreign source material. When using steel or iron materials as a component of any manufactured product (e.g., concrete pipe, prestressed beams, corrugated steel pipe, etc.), these same provisions apply. Foreign steel and iron may be used when the total actual cost of such foreign materials does not exceed 0.1% of the total Contract amount or \$2,500, whichever is greater. These requirements are applicable to all steel and iron materials incorporated into the finished work but are not applicable to steel and iron items that the COMPANY uses but does not incorporate into the finished work. Submit a certification from the manufacturer of steel or iron, or any product containing steel or iron, stating that all steel or iron furnished or incorporated into the furnished product was produced and manufactured in the United States or a statement that the product was produced within the United States except for minimal quantities of foreign steel and iron valued at \$ (actual cost). Submit each such certification to the Engineer prior to incorporating the material or product into the project. Prior to the use of foreign steel or iron materials on a project, submit invoices to document the actual cost of such material, and obtain the Engineer's written approval prior to incorporating the material into the project; and

4. comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964, the regulations of the U.S. Department of Transportation issued thereunder, and the assurance by the COMPANY pursuant thereto. The COMPANY shall include the attached Title VI / Nondiscrimination Assurance in all contracts with consultants and contractors performing work on the Project that ensure compliance with Title VI of the Civil Rights Act of 1964, 49 C.F.R. Part 21, and related statutes and regulations.

29. It is understood and agreed by the parties to this Agreement that if any part, term, or provision of this Agreement is held illegal by the courts or in conflict with any law of the State of Florida, the validity of the remaining portions or provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular part, term, or provision held to be invalid.

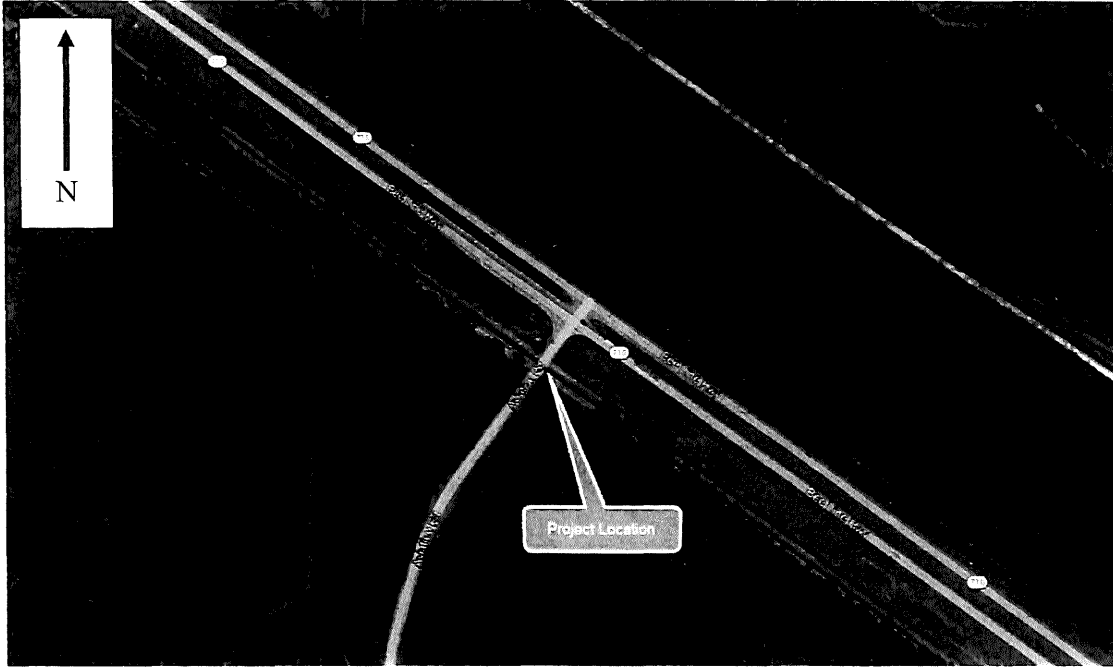
30. Any questions or matters arising under this Agreement as to validity, construction, enforcement, performance, or otherwise, shall be determined in accordance with the laws of the State of Florida. Venue for any action arising out of or in any way related to this Agreement shall lie exclusively in a state court of appropriate jurisdiction in Leon County, Florida.

31. The parties agree to bear their own attorney's fees and costs with respect to this Agreement.

32. The parties agree that this Agreement is binding on the parties, their heirs-at-law, and their assigns and successors in interest as evidenced by their signatures and lawful executions below.

33. A modification or waiver of any of the provisions of this Agreement shall be effective only if made in writing and executed with the same formality as this Agreement.





**LOCATION MAP (A-1)**

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**CSX Transportation**

LOCATION:	Aviation Rd
FINANCIAL PROJECT NO.:	448637-1-57-01
CROSSING NO.:	621463M
RAILROAD MILEPOST:	SX 954.36

CROSSING SURFACES	
Type	Definition
C	Concrete
R	Rubber
RA	Rubber/Asphalt
TA	Timber/Asphalt

STOP ZONE FOR RUBBER CROSSING	
Design Speed (mph)	Zone Length (Distance From Stop)
45 Or Less	250'
50 - 55	350'
60 - 65	500'
70	600'


Notes:

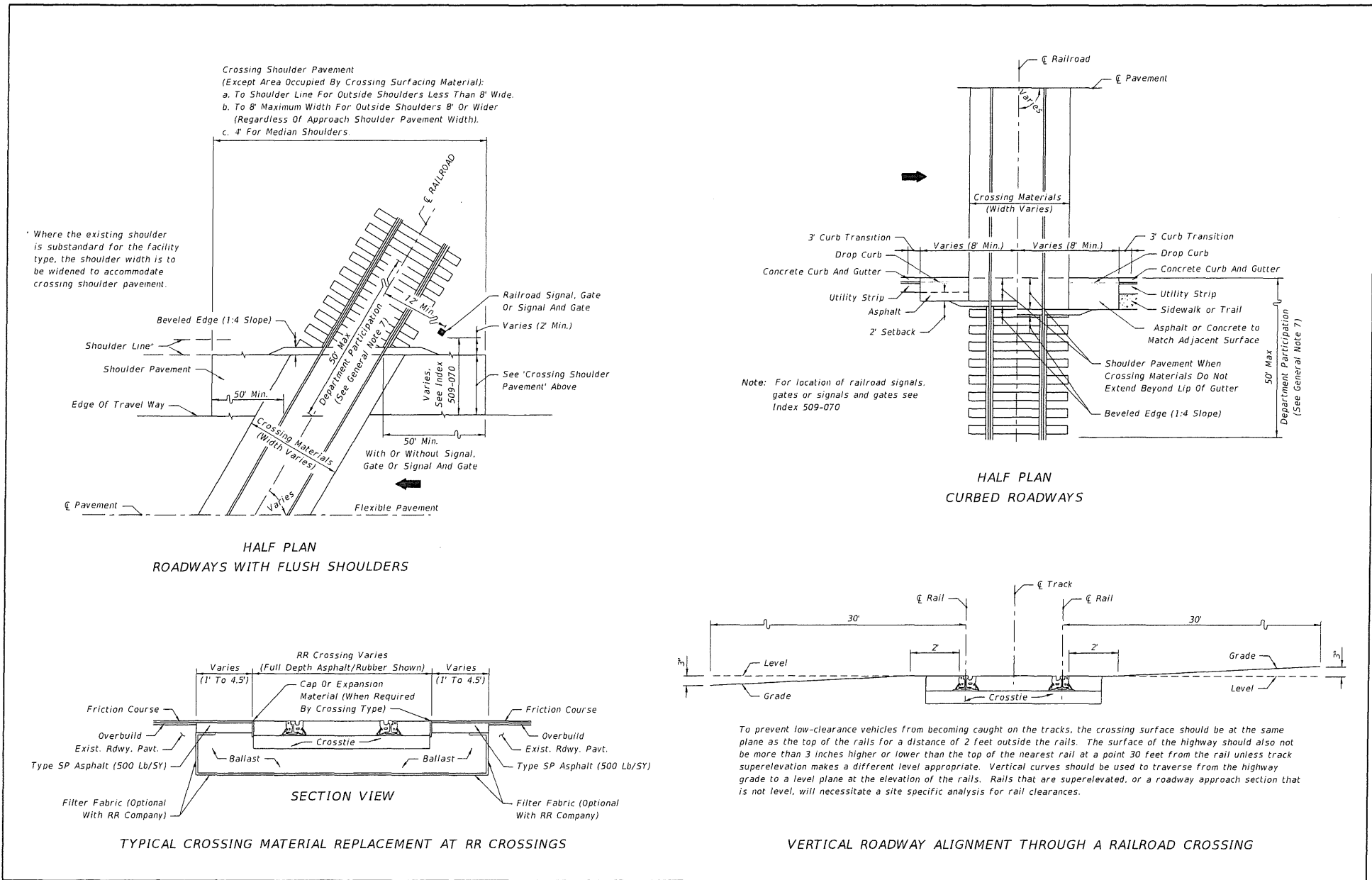
1. Type R Crossings are NOT to be used for multiple track crossings within zones for an existing or scheduled future vehicular stop. Zone lengths are charted above.
2. Single track Type R Crossings within the zones on the chart may be used unless engineering or safety considerations dictate otherwise.

GENERAL NOTES

1. The Railroad Company will furnish and install all track bed (ballast), crossties, rails, crossing surface panels and accessory components. All pavement material, including that through the crossing, will be furnished and installed by the Department or its Contractor, unless negotiated otherwise.
2. When a railroad grade crossing is located within the limits of a highway construction project, a transition pavement will be maintained at the approaches of the crossing to reduce vehicular impacts to the crossing. The transition pavement will be maintained as appropriate to protect the crossing from low clearance vehicles and vehicular impacts until the construction project is completed and the final highway surface is constructed.
3. The Central Rail Office will maintain a list of currently used Railroad Crossing Products and will periodically distribute the current list to the District Offices as the list is updated.
4. The Railroad Company shall submit engineering drawings for the proposed crossing surface type to the Construction Project Engineer and/or the District Rail Office for concurrence along with the List of Railroad Crossing Products. The approved engineering drawings of the crossing surface type shall be made a part of the installation agreement.
5. Sidewalks shall be constructed through the crossing between approach sidewalks of the crossing. Sidewalks shall be constructed with appropriate material to allow unobstructed travel through the crossing in accordance with ADA requirements.
6. Install pavement in accordance with the Specifications.
7. The Department will participate in crossing work, that requires adjustments to rail outside of the crossing, no more than 50 feet from the edge of the travel way.

10/12/2020 9:14AM JH

LAST REVISION 11/01/17	REVISION	DESCRIPTION:	 FY 2021-22 STANDARD PLANS	RAILROAD (GRADE) CROSSING	INDEX 830-T01	SHEET 1 of 2
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10/12/2020 9:14:09 AM

LAST REVISION 11/01/19	DESCRIPTION: REVISION	 FY 2021-22 STANDARD PLANS	RAILROAD (GRADE) CROSSING	INDEX 830-T01	SHEET 2 of 2
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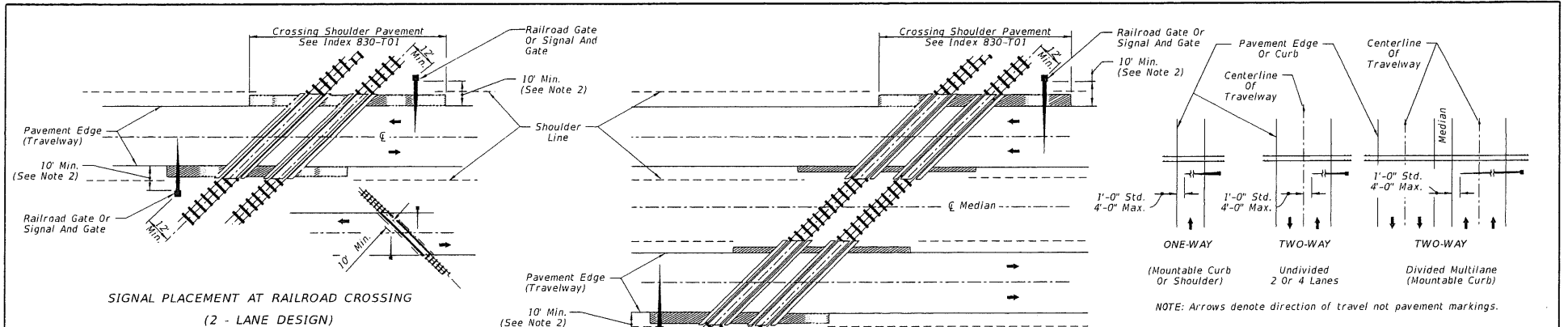


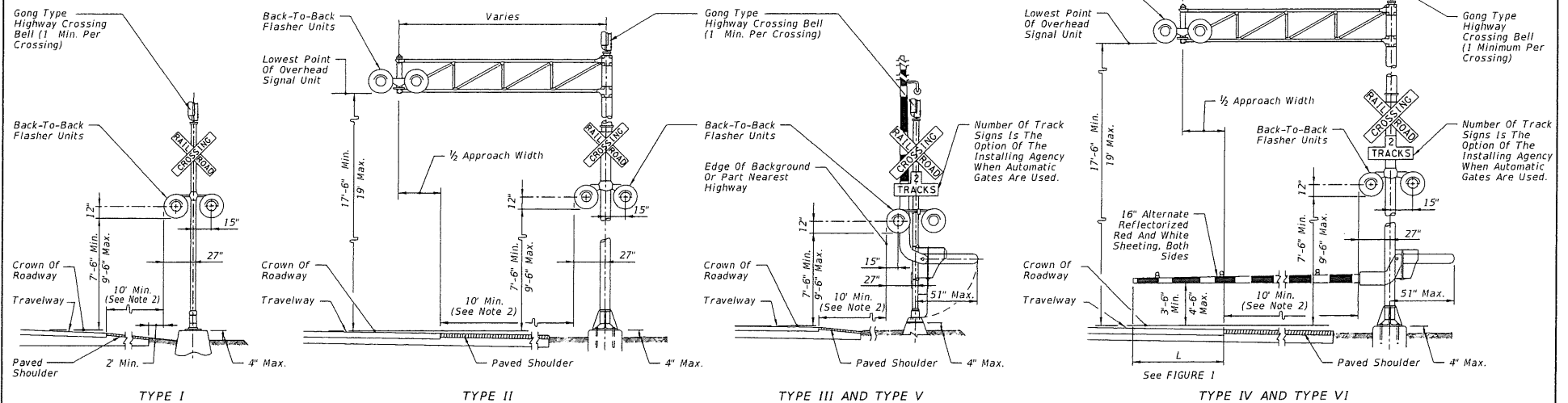
FIGURE 1

GENERAL NOTES:

1. No guardrail is proposed for signals; however, some form of impact attenuation device may be specified for certain locations.
2. Advance flasher to be installed when and if called for in Plans or Specifications.
3. Top of foundation shall be no higher than 4" above finished shoulder grade.
4. Type of traffic control device
  - I Flashing warning devices
  - II Flashing warning devices with cantilever
  - III Flashing warning devices with gate
  - IV Flashing warning devices with cantilever and gate
  - V Gate
5. Class of traffic control devices (Not Shown)
  - I 2 Quadrant flashing warning devices-one track
  - II 2 Quadrant flashing warning devices-multiple tracks
  - III 2 Quadrant flashing warning devices and gates-one track
  - IV 2 Quadrant flashing warning devices and gates-multiple tracks
  - V 3-4 Quadrant flashing warning devices and gates-one track
  - VI 2-4 Quadrant flashing warning devices and gates-multiple tracks

NOTE:

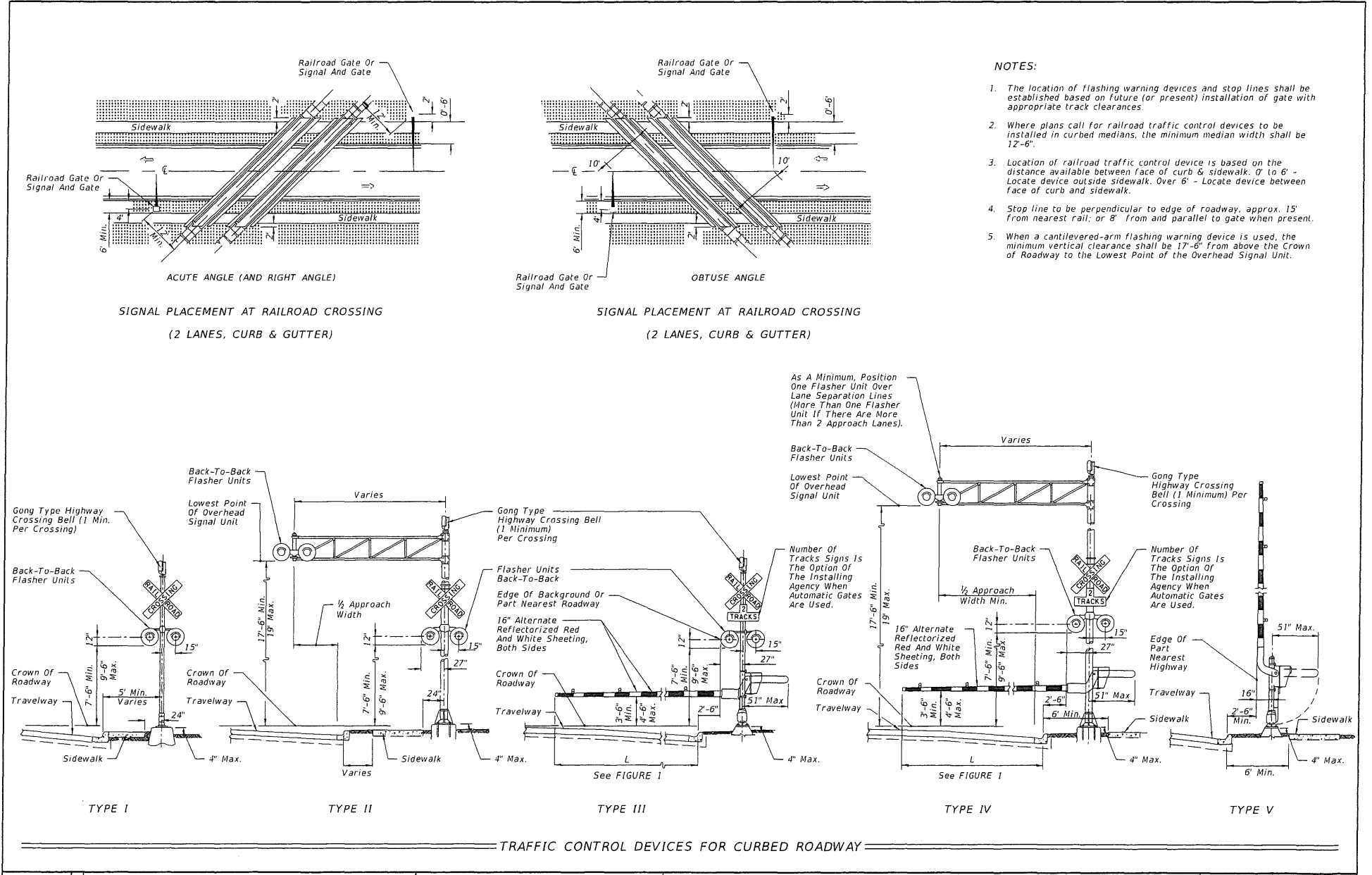
1. Two separate foundations may be required (one for signals, one for gate), depending on type of equipment used.
2. When 10' is deemed impractical the control device can be located as close as 2' from the edge of a paved shoulder but not less than 6' from the edge of the near traffic lane.



TRAFFIC CONTROL DEVICES FOR FLUSH SHOULDER ROADWAY

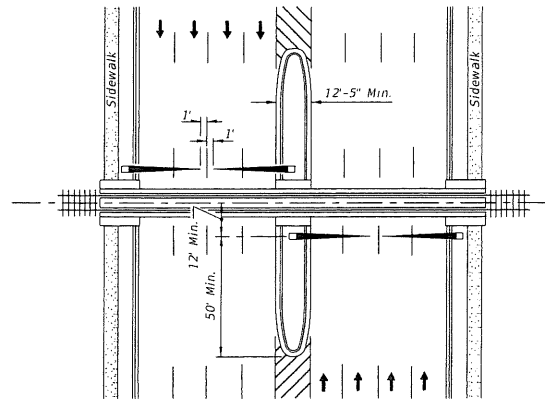
LAST REVISION 02/05/21	DESCRIPTION: Deleted railroad signage and pavement marking details.		FY 2021-22 STANDARD PLANS	<b>RAILROAD GRADE CROSSING          TRAFFIC CONTROL DEVICES</b>	INDEX 509-070	SHEET 1 of 3
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12/12/05 PH  
2/5/2021

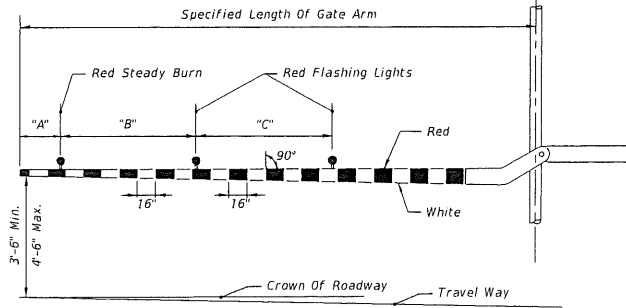


2/5/2021 12:12:48 PM

LAST REVISION 02/05/21	DESCRIPTION: Deleted railroad signage and pavement marking details.		FY 2021-22 STANDARD PLANS	<b>RAILROAD GRADE CROSSING          TRAFFIC CONTROL DEVICES</b>	INDEX 509-070	SHEET 2 of 3
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PLAN

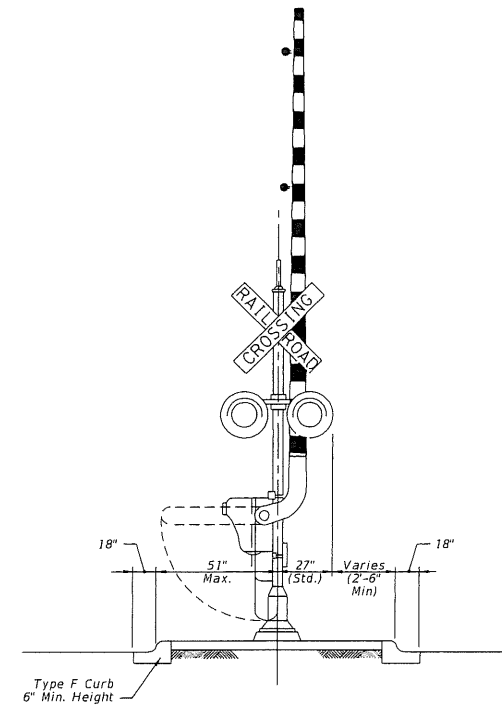


GATE ARM DETAIL

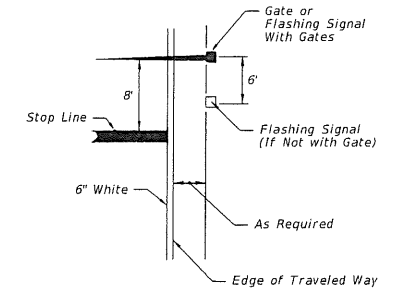
RAILROAD GATE ARM LIGHT SPACING			
Specified Length Of Gate Arm	Dimension "A"	Dimension "B"	Dimension "C"
14 Ft.	6"	36"	5'
15 Ft.	18"	36"	5'
16-17 Ft.	24"	36"	5'
18-19 Ft.	28"	41"	5'
20-23 Ft.	28"	4'	5'
24-28 Ft.	28"	5'	5'
29-31 Ft.	36"	6'	6'
32-34 Ft.	36"	7'	7'
35-37 Ft.	36"	9'	9'
38 And Over	36"	10'	10'

**NOTE:**

For additional information see the "Manual On Uniform Traffic Control Devices", Part 8; The "Traffic Control Handbook", Part VIII; and AASHTO "A Policy On Geometric Design Of Streets And Highways".



MEDIAN SECTION AT SIGNAL GATES



RELATIVE LOCATION OF CROSSING TRAFFIC CONTROL DEVICES

**MEDIAN SIGNAL GATES FOR MULTILANE UNDIVIDED URBAN SECTIONS**  
(Three or More Driving Lanes in one Direction, 45 mph or less)

2/5/2021 12:25:11 PM

LAST REVISION 02/05/21	DESCRIPTION: Added Relative Location of Crossing Traffic Control Devices details.		FY 2021-22 STANDARD PLANS	<b>RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES</b>	INDEX 509-070	SHEET 3 of 3
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*Florida Department of Transportation*

RON DESANTIS  
GOVERNOR

605 Suwannee Street  
Tallahassee, FL 32399-0450

KEVIN J. THIBAUT, P.E.  
SECRETARY

**OFFICE OF DESIGN BULLETIN 21-02**

**TRAFFIC ENGINEERING AND OPERATIONS BULLETIN 21-01**

**FREIGHT AND MULTIMODAL OPERATIONS BULLETIN 21-01**

DATE: February 12, 2021

TO: District Directors of Transportation Operations, District Directors of Transportation Development, District Design Engineers, District Construction Engineers, District Structures Design Engineers, District Maintenance Engineers, District Consultant Project Management Engineers, District Roadway Design Engineers, District Traffic Operations Engineers, Program Management Engineers, District Materials Engineers, District Specifications Engineers, District Estimates Engineers, District Rail Administrators and Coordinators, District Safety Engineers, District Modal Administrators, District Intermodal Systems Development Administrators

FROM: Tim Lattner, P.E., Director, Office of Design

Trey Tillander, P.E., Director, Traffic Engineering and Operations Office

Rickey Fitzgerald, Manager, Freight and Multimodal Operations

COPIES: Courtney Drummond, Brad Thoburn, Will Watts, Dan Hurtado, Rudy Powell, Michael Shepard, Stefanie Maxwell, Scott Arnold, Paul Hiers, Vern Danforth, Daniel Strickland, Robert Robertson, Lora Hollingsworth, Gevin McDaniel, Kevin Burgess (FHWA), Chad Thompson (FHWA), Bren George (FHWA)

SUBJECT: **Railroad At-Grade Crossings: Signing and Pavement Markings**

This Bulletin introduces revisions to the *FDOT Design Manual (FDM)* and the *FDOT Standard Plans for Road and Bridge Construction (Standard Plans)* to further enhance safety at highway-railroad at-grade crossings.

**REQUIREMENTS**

1. Delete *FDM 220.2.1.1* and replace it with Attachment 'A'.
2. *Standard Plans, Index 509-070 (Railroad Grade Crossing Traffic Control Devices)* has been updated to remove signing and pavement marking details and is released as an *Interim Revision (IR509-070-1)* to the *FY 2020-21 Standard Plans*. See Attachment 'B'. An *Interim Revision*

*Improve Safety, Enhance Mobility, Inspire Innovation*  
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Office of Design Bulletin 21-02  
Traffic Engineering and Operations Bulletin 21-01  
Freight and Multimodal Operations Bulletin 21-01  
Railroad At-Grade Crossings: Signing and Pavement Markings  
Page 2 of 2

will also replace the original version of the Index published on October 30, 2020 with the ***FY 2021-22 Standard Plans***.

3. ***Standard Plans, Index 711-001 (Pavement Markings)*** has been updated to include a ‘*Railroad Dynamic Envelope (RDE) Pavement Marking Detail*’ and ‘*Railroad Crossing Pavement Message*’ details. This update is released as an ***Interim Revision (IR711-001-1)*** to the ***FY 2020-21 Standard Plans***. See Attachment ‘C’. An ***Interim Revision*** will also replace the original version of the Index published on October 30, 2020 with the ***FY 2021-22 Standard Plans***.

## **IMPLEMENTATION**

These requirements are effective immediately for all projects where the Railroad Dynamic Envelope Safety Countermeasures (per Traffic Engineering and Operations Bulletin 20-01, Roadway Design Bulletin 20-02, Program Management Bulletin 20-01, Construction Bulletin 20-02, and Freight and Multimodal Operations Bulletin 20-01) have not been installed. For projects where Railroad Dynamic Envelope Safety Countermeasures have already been installed, this new criteria may be used if the District determines that it will enhance the safety of the railroad crossing.

## **CONTACT**

Gevin McDaniel, P.E.  
Roadway Design Criteria Administrator  
[gevin.mcdaniel@dot.state.fl.us](mailto:gevin.mcdaniel@dot.state.fl.us)

TL/TT/RF/gjm

# Attachment 'A'

### 220.2.1.1 Signing and Pavement Markings

**Exhibits 220-1** through **220-4** provide typical signing and pavement markings for Active Grade Crossings. Refer to the MUTCD for definitions and signing and pavement markings at Passive Grade Crossings.

Do not place turning movement lane-use pavement markings on the upstream approach between the railroad crossing pavement message and the tracks.

Where intersections occur between the W10-1 sign shown in **Exhibits 220-1** through **220-4** and the tracks, place an additional W10-1 sign between the intersection and the railroad gate.

Include Railroad Dynamic Envelope (RDE) pavement markings at Active and Passive Grade Crossings on:

- State Roads,
- State-owned rails, and
- State-owned property.

Any Variations to not install an RDE are to be approved by the Chief Engineer.

The determination of slightly or significantly skewed is at the discretion of the EOR.

Detail RDE pavement markings in the Plans in accordance with **Standard Plans, Index 711-001** and the details shown in **Exhibits 220-1** through **220-4**. Ensure the details in the plans include the following:

- (1) Orient RDE pavement markings:
  - (a) In the direction of the travel lanes at all approaches upstream of the crossing (i.e., transverse to the travel lanes).
    - i. For slightly skewed railroads extend the RDE markings transverse across all lanes, as shown in **Exhibits 220-2** and **220-3**.
    - ii. For significantly skewed railroads, step the RDE markings transverse across each lane, as shown in **Exhibit 220-4**.
  - (b) Along the railroad (i.e., parallel to the railroad tracks) for areas between tracks and downstream of the crossing.

- (c) To maximize the visibility of the RDE pattern for both the upstream and downstream sides of the track. Locate markings in a manner to ensure the "X" pattern is identifiable to the motorists and bicyclists and centered in the lanes to the extent practicable.
- (2) Place RDE markings through the foul area as shown in **Exhibits 220-3** and **220-4**. If the railroad owner will not allow the RDE markings through the foul area, or the substrate material will not provide an appropriate bonding surface for the markings, keep the RDE markings outside of the railroad's foul area as shown in **Exhibits 220-1** and **220-2**.
- (3) Replace all skip lane lines with solid lines for the following distance: From stop bar to stop bar of each approach, then upstream and downstream for a Distance "A" plus 15 feet. For Distance "A", see table in **Exhibit 220-1**.
- (4) Continue solid longitudinal edge line, lane line, and centerline markings through the RDE pattern, maintaining a 9-inch clear space between the RDE pattern and the longitudinal lane lines or gore areas.
- (5) Refurbish all existing longitudinal lane lines, edge lines, and centerlines to remain in-place for the following minimum distance: From stop bar to stop bar of each approach, then upstream and downstream for a Distance "A" plus 15 feet. For Distance "A", see table in **Exhibit 220-1**.
- (6) Place RPMs at 10' maximum on center for the following distance: From stop bar to stop bar of each approach excluding the foul area, then upstream and downstream for a Distance "A" plus 15 feet. For Distance "A", see table in **Exhibit 220-1**.
- (7) For conditions where multiple tracks are configured non-parallel to each other, maintain the typical RDE pattern and fill the gap between the tracks, as necessary.
- (8) RDE markings must not interfere with any pedestrian crosswalk.

Consider the following additional provisions for Active and Passive Grade Crossings:

- For significantly skewed angles, corridor highway lighting for the following minimum distance: From stop bar to stop bar of each approach, then upstream and downstream for a Distance "A" plus 15 feet. For Distance "A", see table in **Exhibit 220-1**.
- For significantly skewed angles, curves, and intersections directly adjacent to crossings, consider using additional channelization techniques for the roadway alignment. Some channelization techniques include Internally Illuminated RPMs

Topic #625-000-002  
FDOT Design Manual

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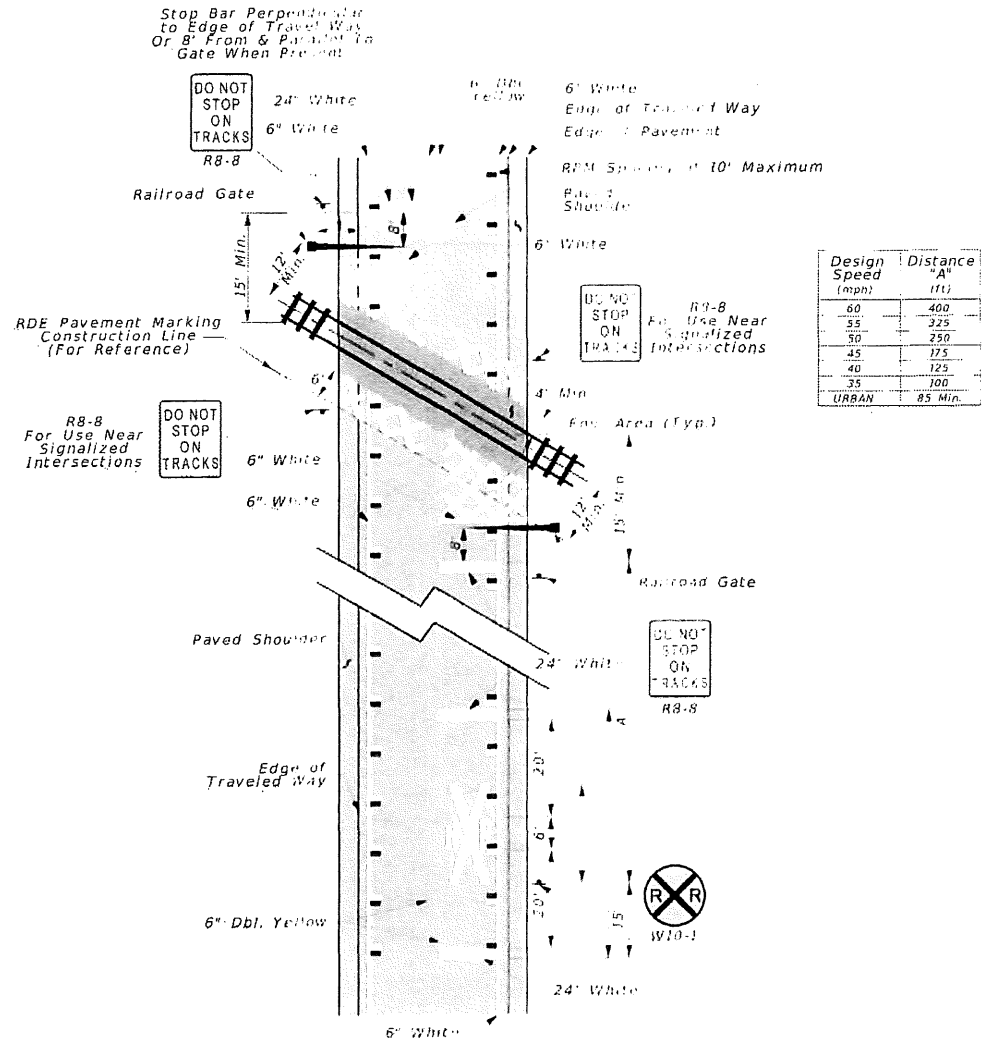
and Tubular Markers. When crest vertical curves impede the visibility of RPMs, Tubular Markers should be used. Consider excluding downstream RDE pattern when traffic queuing is not expected.

- Consider the use of through lane-use arrows. For turn lanes, a route shield may be used in conjunction with the through lane-use arrow.
- Remove all existing traffic control signs and pavement markings (e.g., turning signs and turning arrow lane-use pavement markings) from the upstream approach that may lead to driver confusion on the correct turning point for downstream turning movements.

For pavement marking material selection, see ***FDM 230***.

For side roads with Active and Passive Grade Crossings within 100 feet of the edge of traveled way, include W10-2, W10-3 or W10-4 signs on the mainline state road in accordance with the ***MUTCD***.

# RAILROAD CROSSING AT TWO-LANE ROADWAY



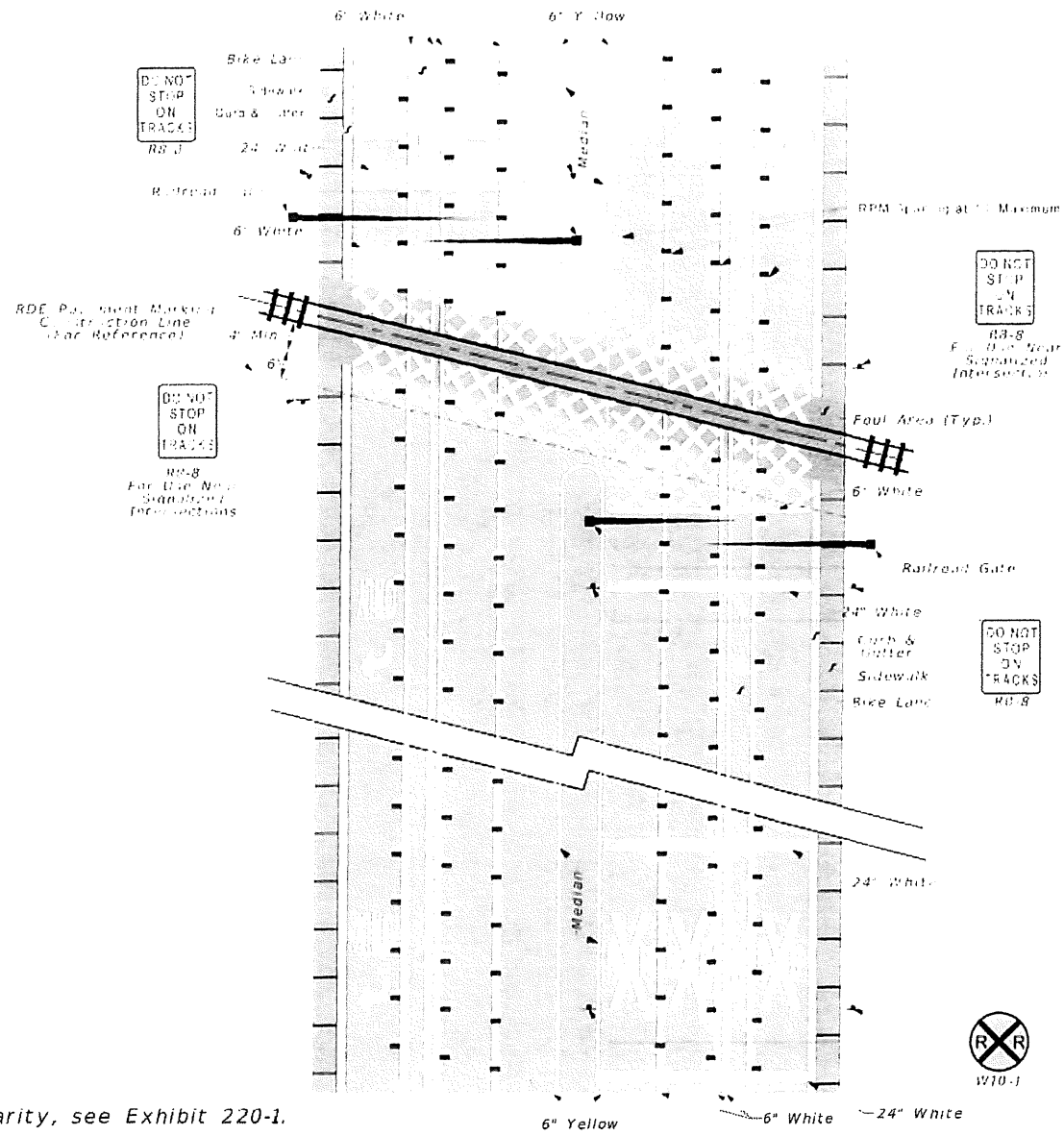
NOT TO SCALE

EXHIBIT 220-1  
02/05/2021



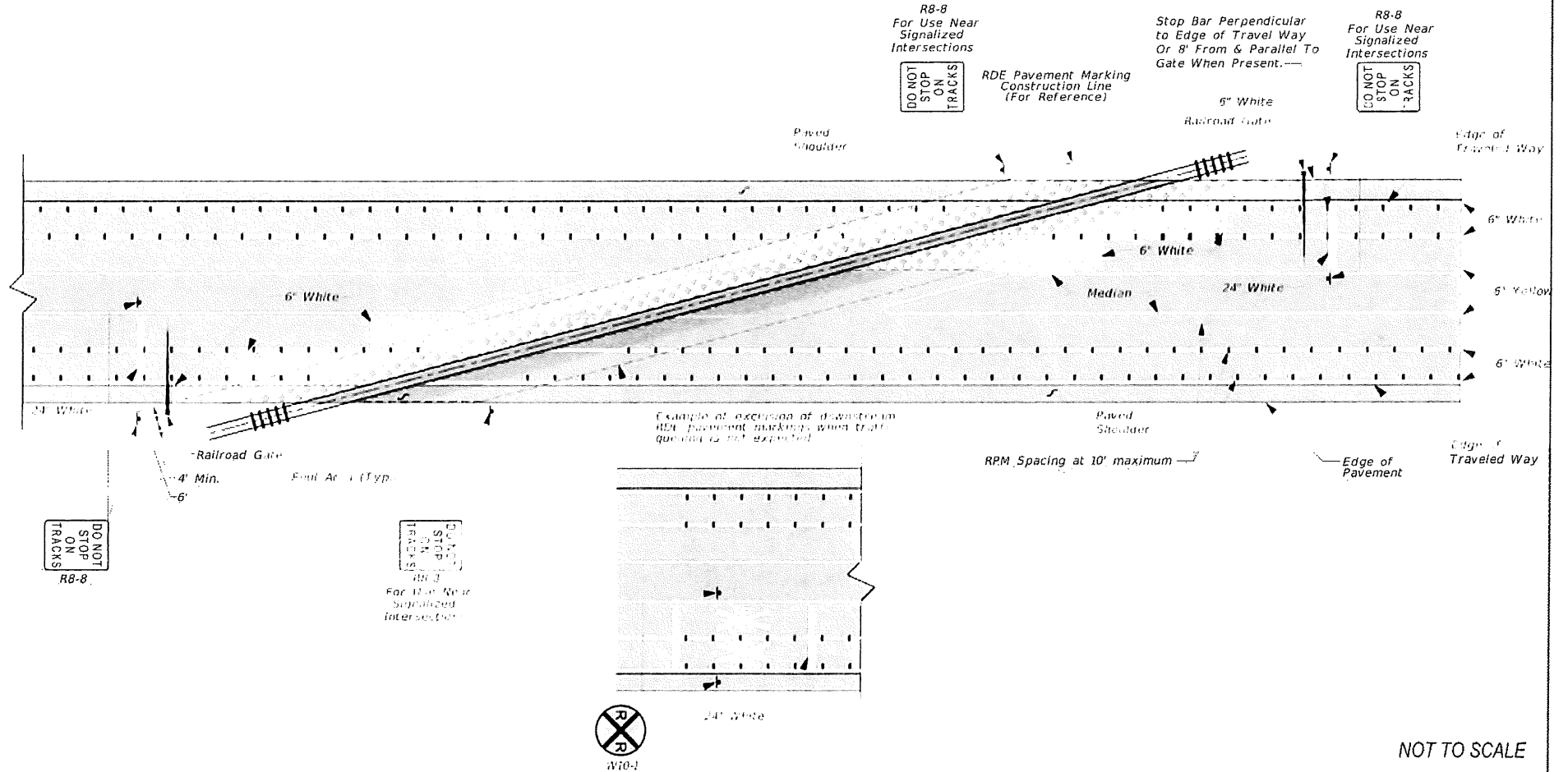


# RAILROAD CROSSING AT URBAN MULTILANE ROADWAY WITH TURN LANE



Dimensions not shown for clarity, see Exhibit 220-1.

# RAILROAD CROSSING WITH SIGNIFICANT SKEW TO THE ROADWAY

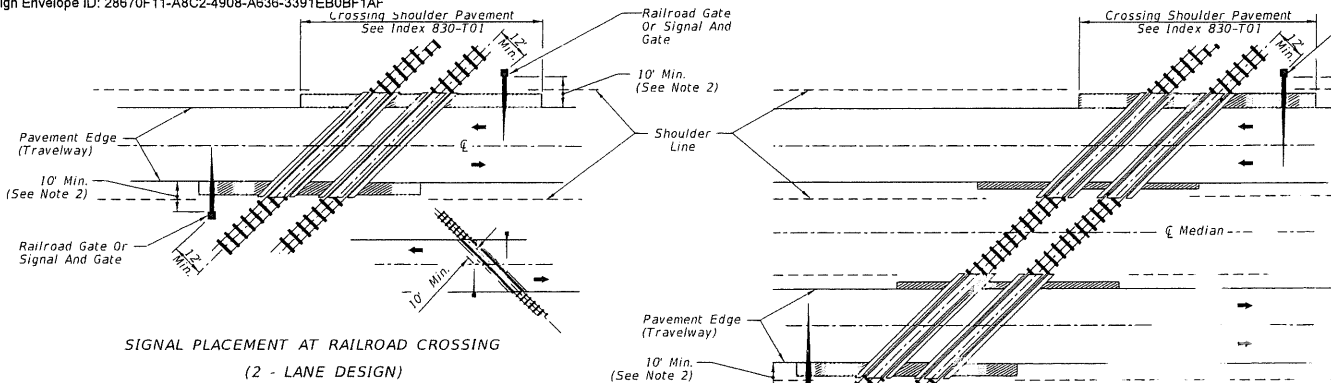


Dimensions not shown for clarity, see Exhibit 220-1.

NOT TO SCALE

EXHIBIT 220-4  
02/05/2021

# Attachment 'B'



SIGNAL PLACEMENT AT RAILROAD CROSSING  
(2 - LANE DESIGN)

GENERAL NOTES:

1. No guardrail is proposed for signals; however, some form of impact attenuation device may be specified for certain locations.
2. Advance flasher to be installed when and if called for in Plans or Specifications.
3. Top of foundation shall be no higher than 4" above finished shoulder grade.
4. Type of traffic control device
  - I Flashing warning devices
  - II Flashing warning devices with cantilever
  - III Flashing warning devices with gate
  - IV Flashing warning devices with cantilever and gate
  - V Gate
5. Class of traffic control devices (Not Shown)
  - I 2 Quadrant flashing warning devices-one track
  - II 2 Quadrant flashing warning devices-multiple tracks
  - III 2 Quadrant flashing warning devices and gates-one track
  - IV 2 Quadrant flashing warning devices and gates-multiple tracks
  - V 3-4 Quadrant flashing warning devices and gates-one track
  - VI 2-4 Quadrant flashing warning devices and gates-multiple tracks

SIGNAL PLACEMENT AT RAILROAD CROSSING  
(4 - LANE DESIGN)

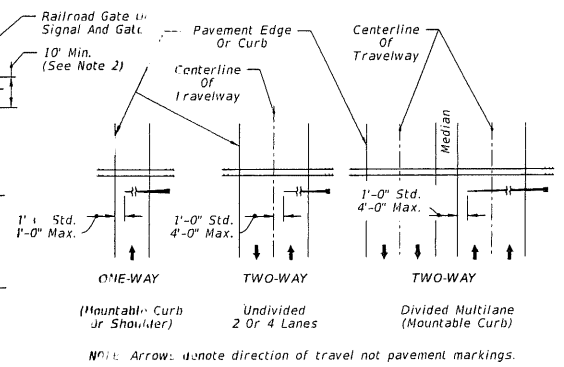
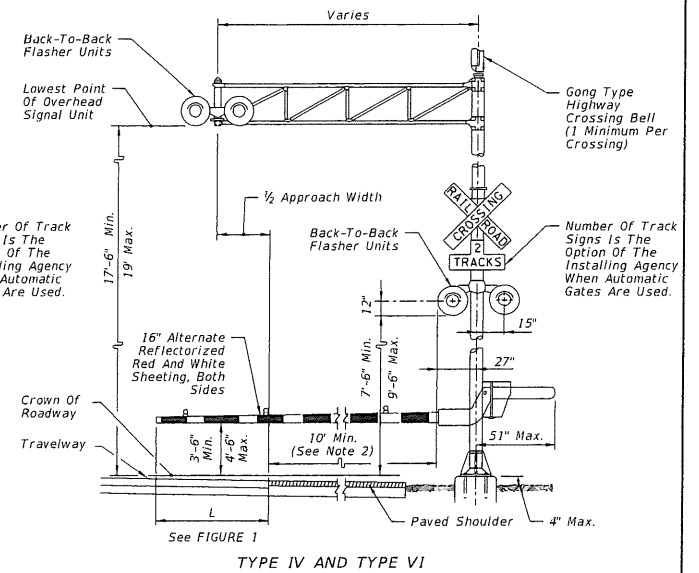
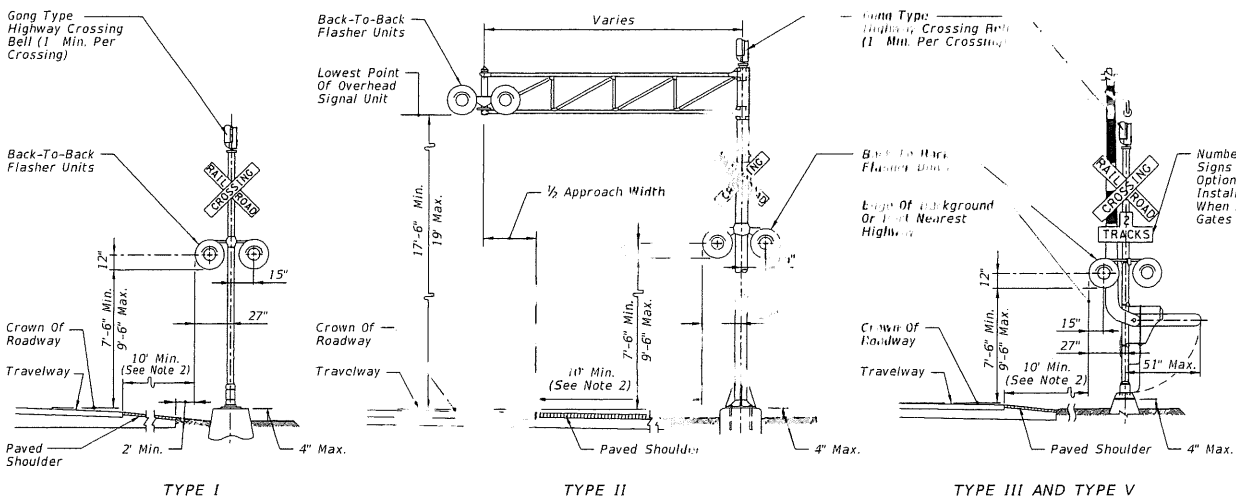


FIGURE 1

NOTE:

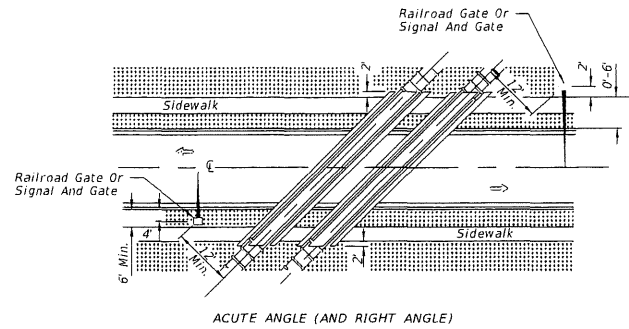
1. Two separate foundations may be required (one for signals, one for gate), depending on type of equipment used.
2. When 10' is deemed impractical the control device can be located as close as 2' from the edge of a paved shoulder but not less than 6' from the edge of the near traffic lane.



TRAFFIC CONTROL DEVICES FOR FLUSH SHOULDER ROADWAY

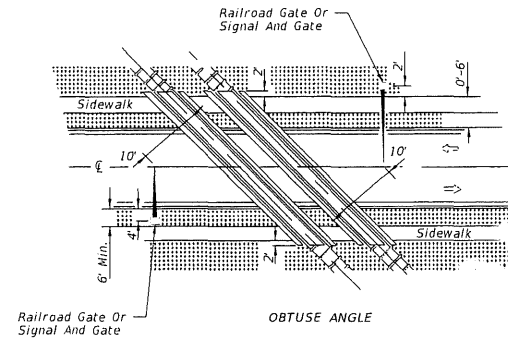
12/12/2000 PH  
2/5/2021

LAST REVISION 02/05/21	DESCRIPTION: Deleted railroad signage and pavement marking details.		FY 2020-21 STANDARD PLANS	RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES	INDEX 509-070-1	SHEET 1 of 3
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ACUTE ANGLE (AND RIGHT ANGLE)

SIGNAL PLACEMENT AT RAILROAD CROSSING  
(2 LANES, CURB & GUTTER)

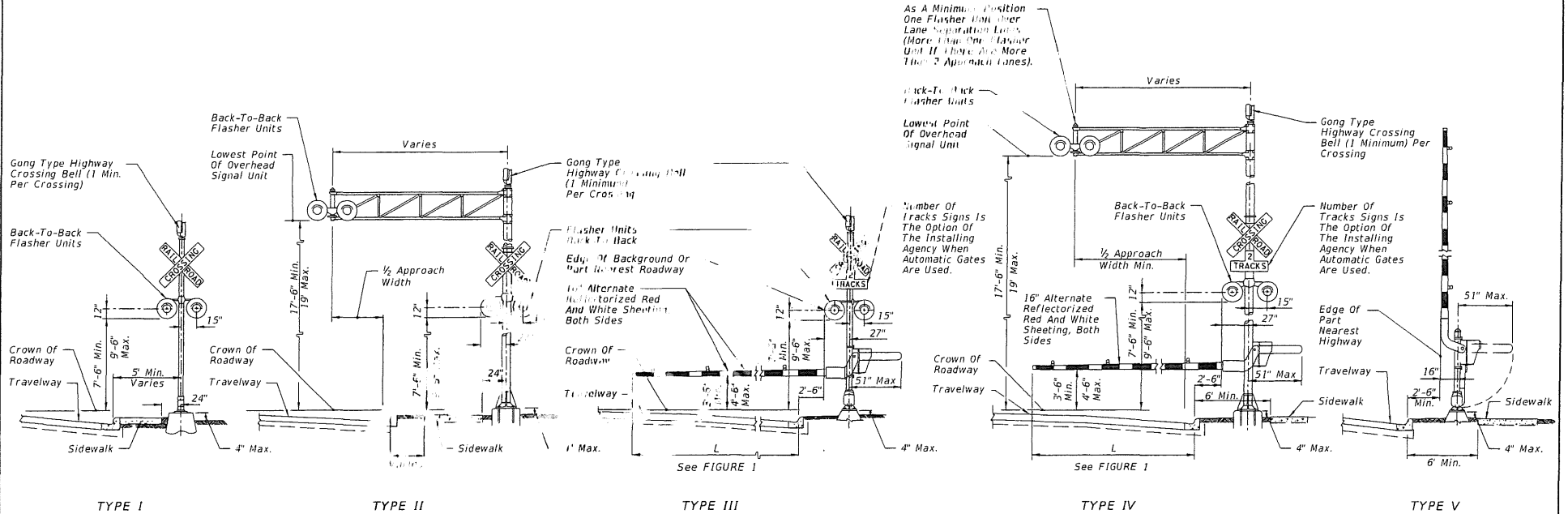


OBTUSE ANGLE

SIGNAL PLACEMENT AT RAILROAD CROSSING  
(2 LANES, CURB & GUTTER)

NOTES:

- The location of flashing warning devices and stop lines shall be established based on future (or present) installation of gate with appropriate track clearances.
- Where plans call for railroad traffic control devices to be installed in curbed medians, the minimum median width shall be 12'-6".
- Location of railroad traffic control device is based on the distance available between face of curb & sidewalk. 0' to 6' - Locate device outside sidewalk. Over 6' - Locate device between face of curb and sidewalk.
- Stop line to be perpendicular to edge of roadway, approx. 15' from nearest rail; or 8' from and parallel to gate when present.
- When a cantilevered arm flashing warning device is used, the minimum vertical clearance shall be 17'-6" from above the Crown of Roadway to the Lowest Point of the Overhead Signal Unit.



TYPE I

TYPE II

TYPE III

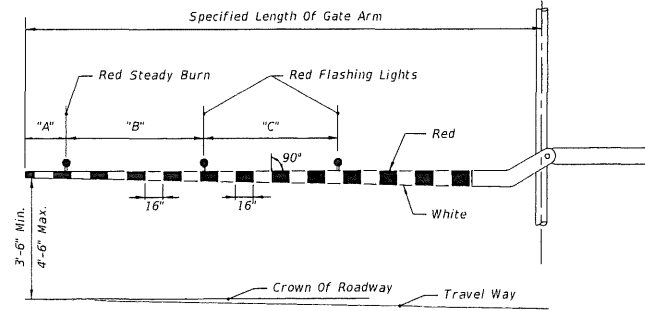
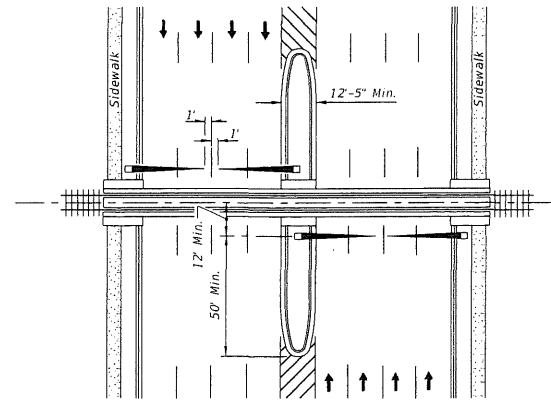
TYPE IV

TYPE V

TRAFFIC CONTROL DEVICES FOR CURBED ROADWAY

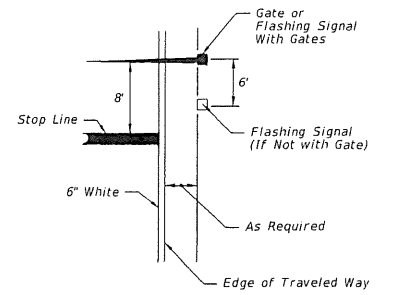
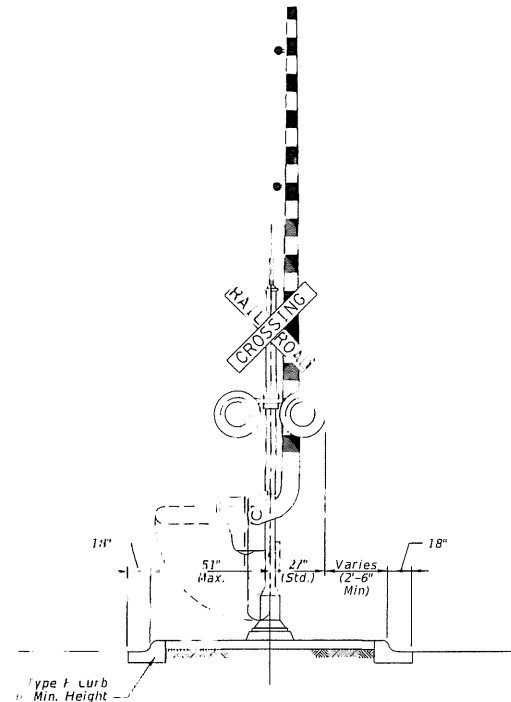
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LAST REVISION 02/05/21	DESCRIPTION: Deleted railroad signage and pavement marking details.		FY 2020-21 STANDARD PLANS	RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES	INDEX 509-070-1	SHEET 2 of 3
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RAILROAD GATE ARM LIGHT SPACING			
Specified Length Of Gate Arm	Dimension "A"	Dimension "B"	Dimension "C"
14 Ft.	6"	36"	5'
15 Ft.	18"	36"	5'
16-17 Ft.	24"	36"	5'
18-19 Ft.	28"	41"	5'
20-23 Ft.	28"	4'	5'
24-28 Ft.	28"	5'	5'
29-31 Ft.	36"	6'	6'
32-34 Ft.	36"	7'	7'
35-37 Ft.	36"	9'	9'
38 And Over	36"	10'	11'

**NOTE:**  
 For additional information see the "Manual On Uniform Traffic Control Devices", Part 8; The "Traffic Control Handbook", Part VIII; and AASHTO "A Policy On Geometric Design Of Streets And Highways."

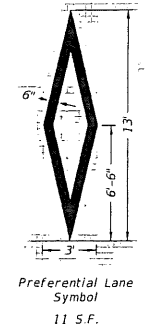
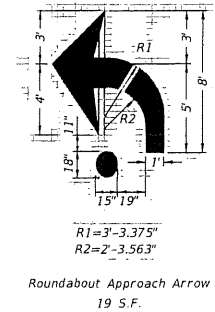
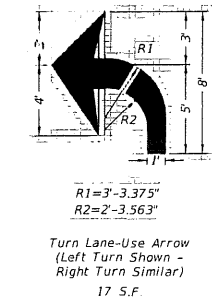
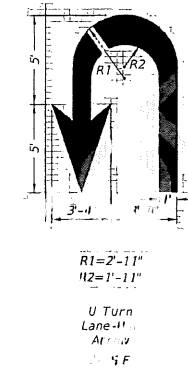
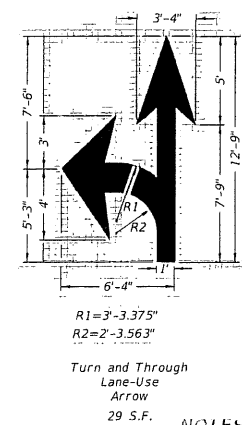
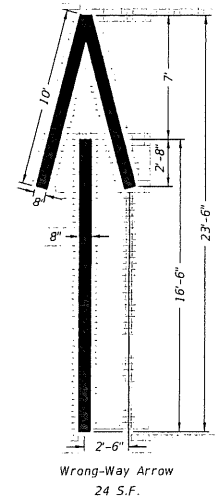
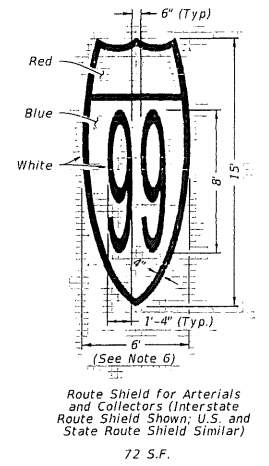
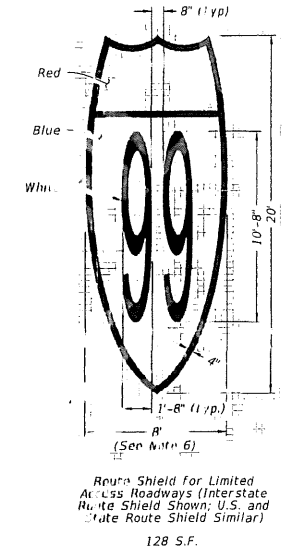
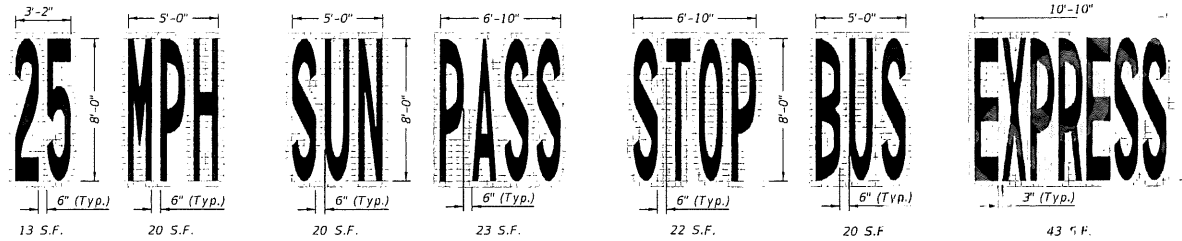
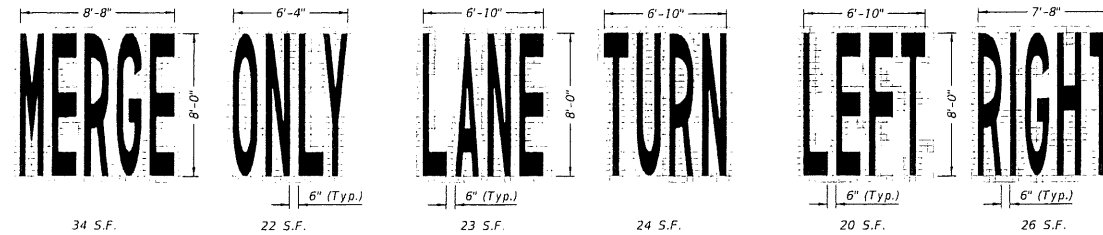


MEDIAN SIGNAL GATES FOR MULTILANE UNDIVIDED URBAN SECTIONS  
 (Three or More Driving Lanes in one Direction, 45 mph or less)

RELATIVE LOCATION OF CROSSING TRAFFIC CONTROL DEVICES

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# Attachment 'C'



**NOTES FOR PAVEMENT MESSAGES:**

- When an arrow or another pavement message is used with a pavement message, maintain a minimum distance of "S" between items, measured from the base of each item. See the Pavement Message Spacing Table for "S" value.
- Place all pavement messages 25' back from the stop line.
- Dimensions are within 1" ±.
- All grids are 4" x 4".
- All pavement messages must be white except route shields.
- Increase width of route shield for routes with three digits.

PAVEMENT MESSAGE SPACING TABLE	
Posted Speed (mph)	Distance "S" (feet)
≤ 25	40
30 - 35	56
40 - 45	72
≥ 50	88

**PAVEMENT MESSAGE AND ARROW DETAILS**

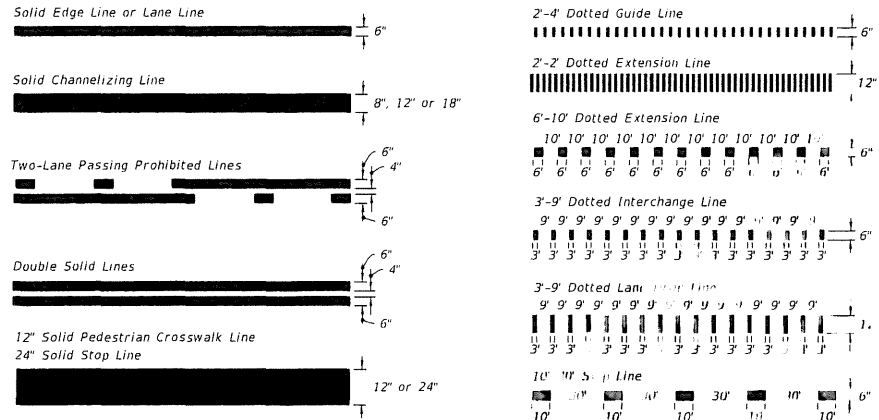
**GENERAL NOTE:**

- See Index 509-070 for pavement markings at railroad crossings.

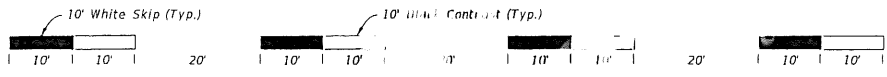
2/5/2021 12:06:14 PM

REVISION	DESCRIPTION
LAST REVISION 02/05/21	Added railroad pavement marking details.

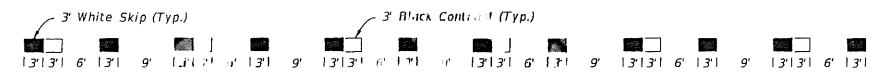




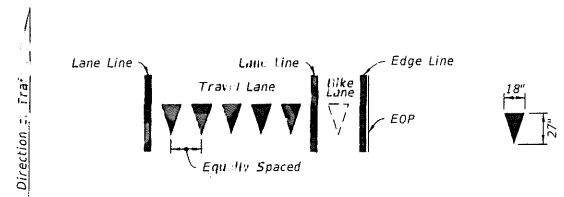
PAVEMENT MARKING LINES



10'-30' SKIP LINE WITH SHADOW MARKINGS



DOTTED LINE WITH ALTERNATING SHADOW MARKINGS  
(3'-9" Dotted Line Shown, Other Dotted Lines Similar)

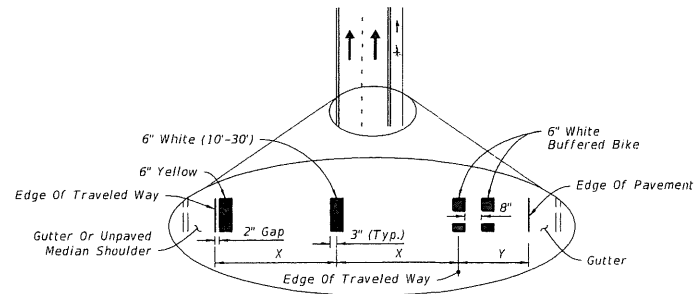


Yield Lines consist of five - 18" X 27" white triangles which face traffic. Equally space triangles within traffic lane. When a bike lane is present, add one additional triangle in the center of the bike lane.

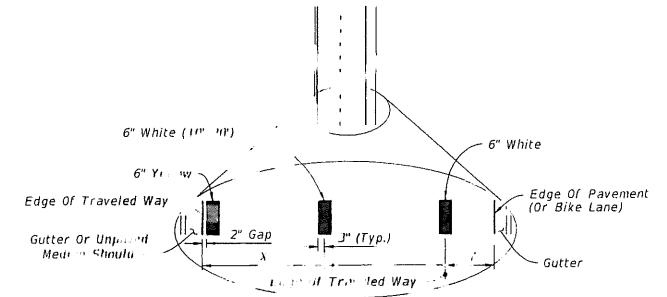
YIELD LINES

2/5/2021 12:06:17 PM

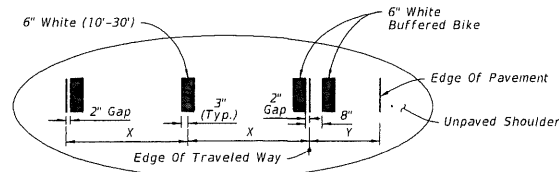
LAST REVISION 02/05/21	REVISION DESCRIPTION: Added railroad pavement marking details.	FDOT FY 2020-21 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001-1	SHEET 2 of 14
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CURB AND GUTTER

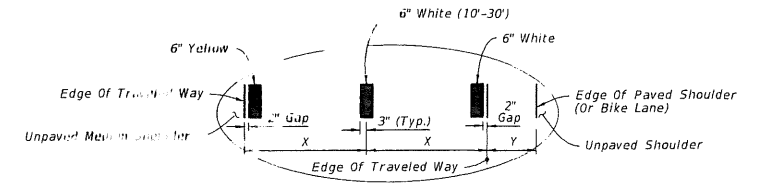


CURB AND GUTTER



FLUSH SHOULDER

X = LANE WIDTH (FT.)  
Y = BUFFERED BIKE LANE WIDTH (FT.)

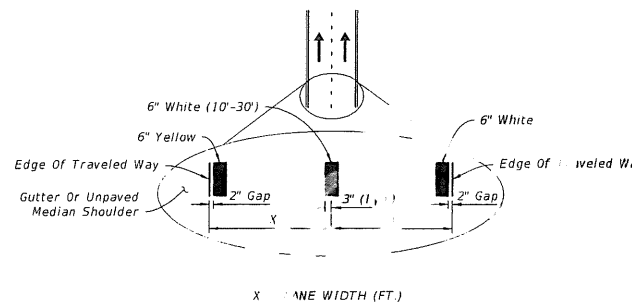


FLUSH SHOULDER

X = LANE WIDTH (FT.)  
Y = PAVED SHOULDER / BIKE LANE

==== STRIPING FOR BUFFERED BIKE LANE =====

==== STRIPING WITH SHOULDER OR NON-BUFFERED BIKE LANE =====



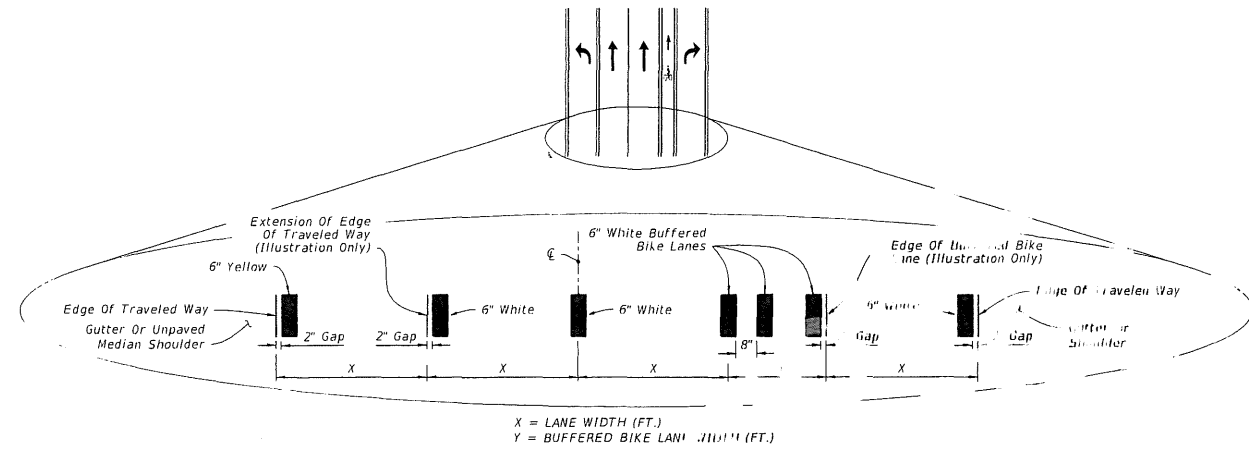
==== STRIPING WITH NO SHOULDER OR BIKE LANE =====

NOTES:

1. Lane widths (X) may not be same for each lane in the section.
2. For placement of RPMs, see Index 706-001.

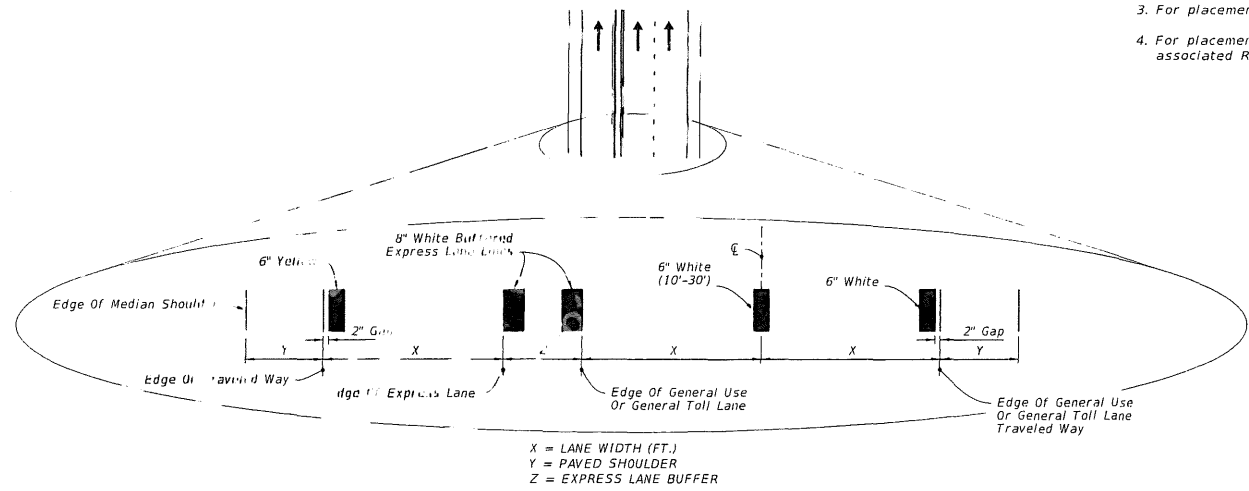
2/5/2021 12:06:18 PM

LAST REVISION 02/05/21	REVISION DESCRIPTION: Added railroad pavement marking details.	FDOT FY 2020-21 STANDARD PLANS	PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS PAVEMENT MARKINGS	INDEX 711-001-1	SHEET 3 of 14
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INTERSECTION APPROACH STRIPING WITH TURN LANES AND BUFFERED BIKE LANE KEY HOLE

- NOTES:**
1. Lane widths (X) may not be same for each lane in the section.
  3. For placement of RPMs, see Index 706-001.
  4. For placement of Express Lane markers and associated RPMs, see the Plans.

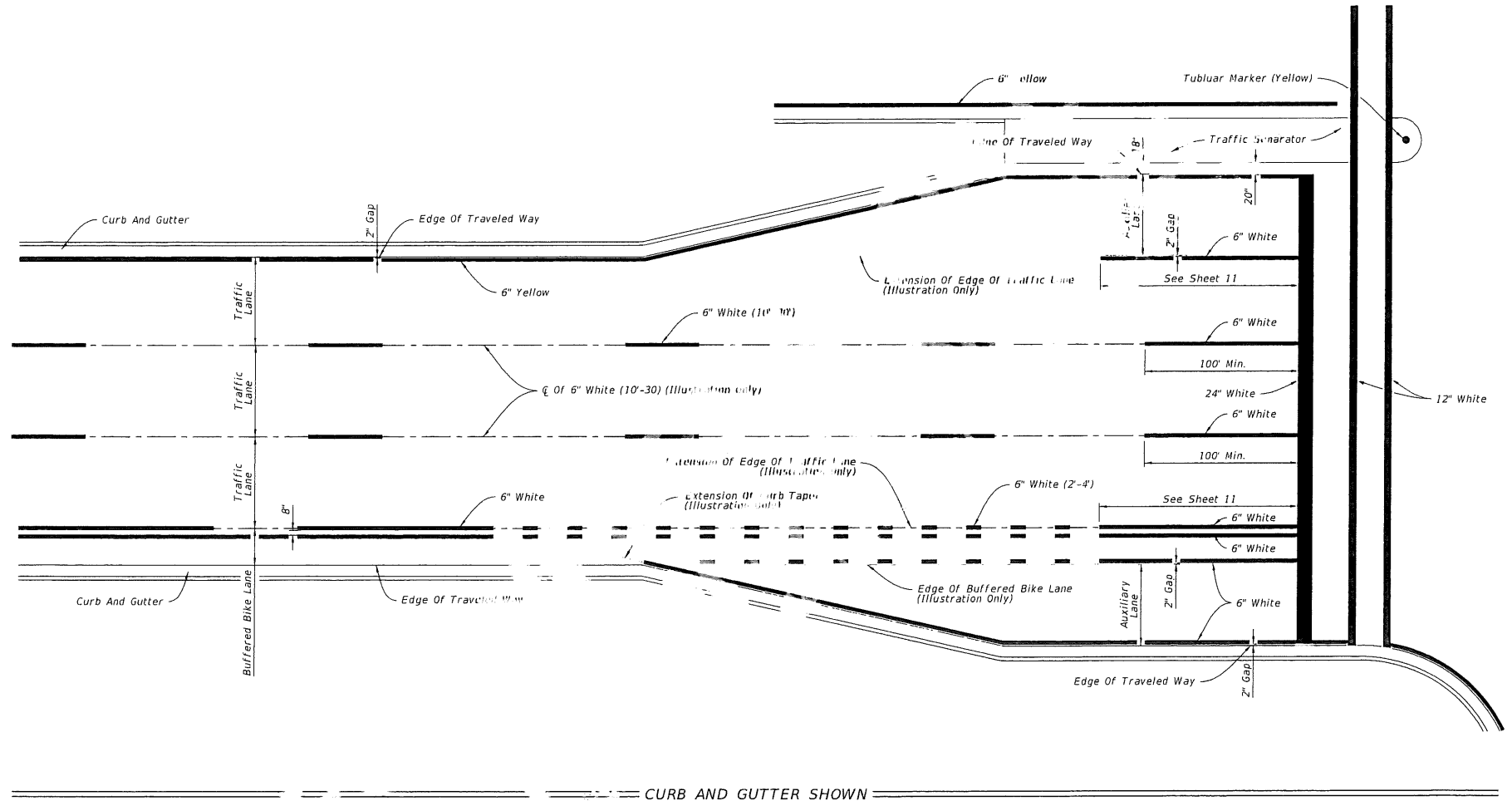


BUFFERED EXPRESS LANE STRIPING

PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

LAST REVISION 02/05/21	REVISION DESCRIPTION: Added railroad pavement marking details	FDOT FY 2020-21 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001-1	SHEET 4 of 14
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PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

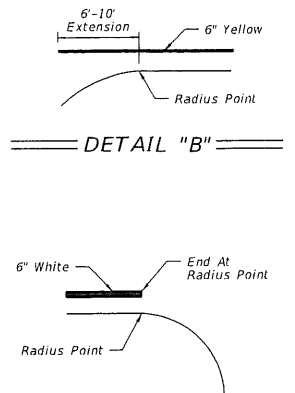
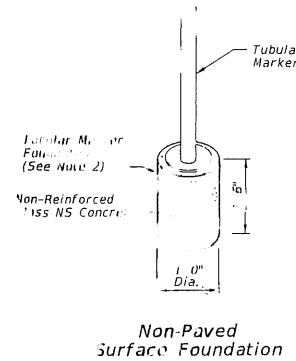
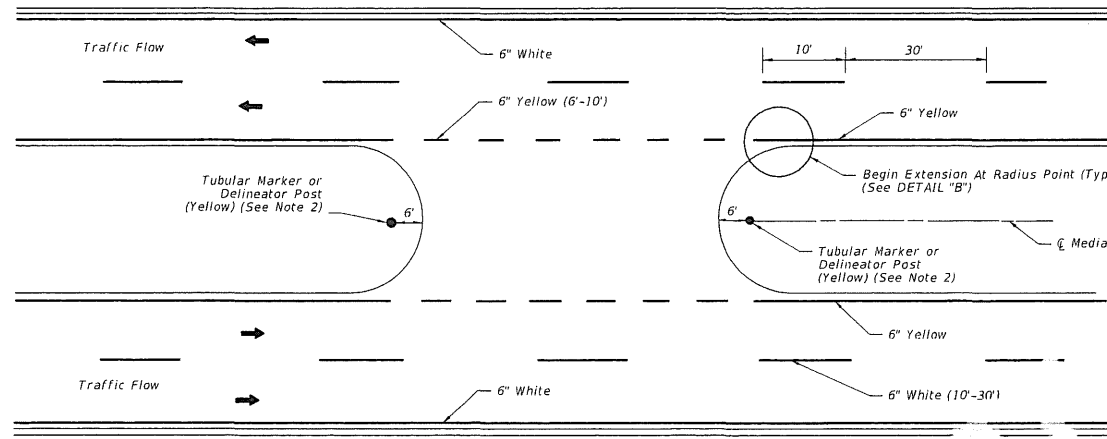
LAST REVISION 02/05/21	DESCRIPTION: Added railroad pavement marking details
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**FDOT** FY 2020-21  
STANDARD PLANS

PAVEMENT MARKINGS

INDEX 711-001-1	SHEET 5 of 14
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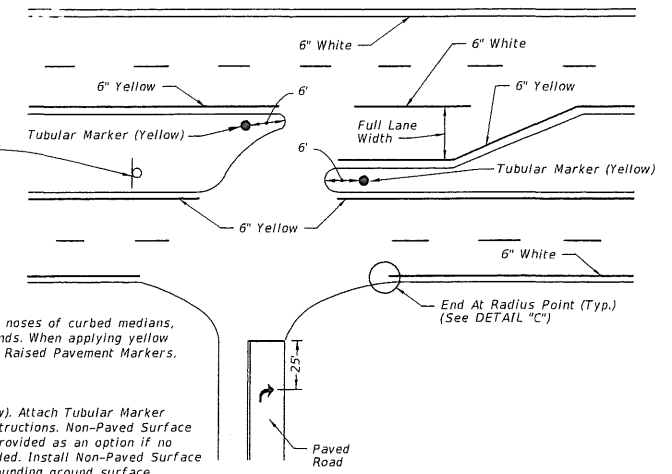
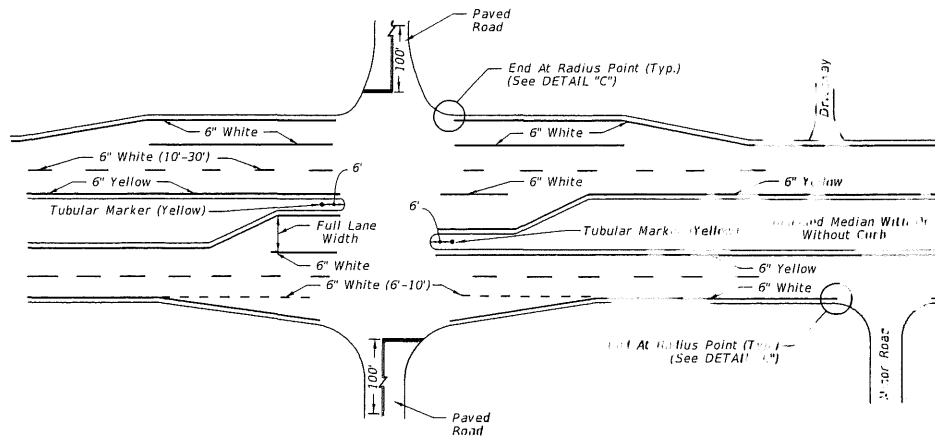




PAVEMENT MARKINGS AND DELINEATORS FOR MEDIAN CROSSOVER

DETAIL "A"

DETAIL "C"



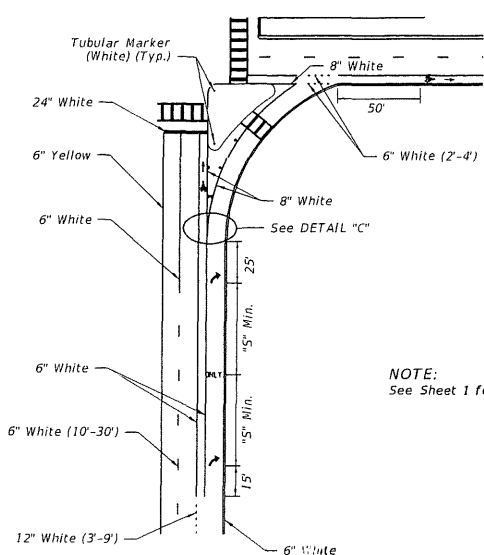
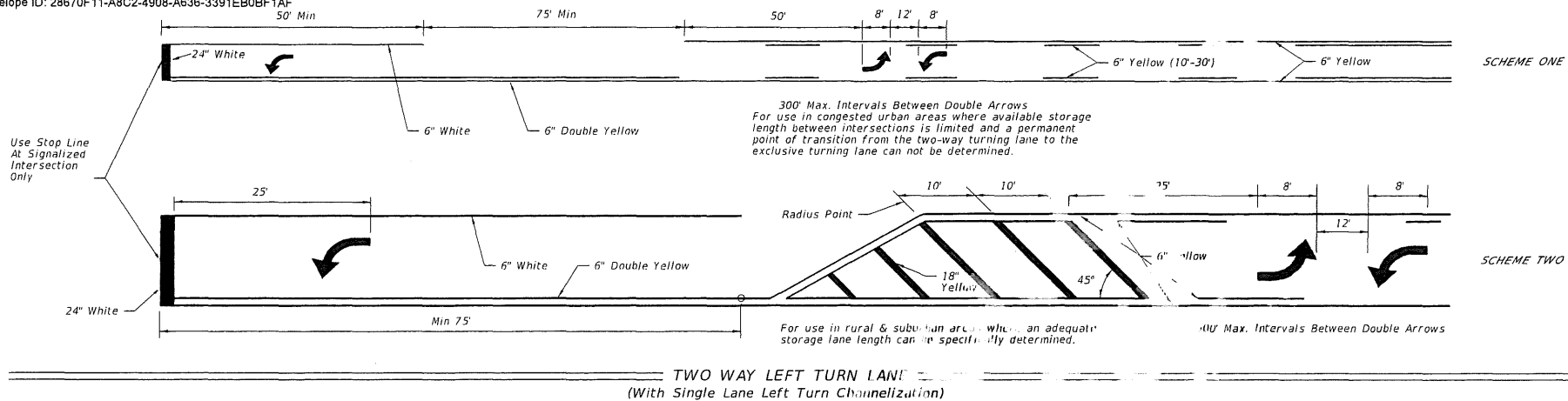
NOTE:

1. Apply yellow reflective paint to the noses of curbed medians, traffic separators, and raised islands. When applying yellow reflective paint in conjunction with Raised Pavement Markers, see Index 706-001.
2. Options for grassed medians:
  - A. Option 1: Tubular Marker (Yellow). Attach Tubular Marker according to manufacturer's instructions. Non-Paved Surface Foundation (See Detail "A") is provided as an option if no other suitable surface is provided. Install Non-Paved Surface Foundation flush with the surrounding ground surface.
  - B. Option 2: Delineator Post. Use yellow retro-reflective sheeting on both sides of the delineator. Install the post so that the top is 4'-0" above the grade at the edge of the pavement.
3. Extend double yellow centerlines 100' back from intersection on all approaches or 50' for unmarked cross roads.

PAVEMENT MARKINGS FOR INTERSECTIONS WITH MAJOR AND MINOR ROADS

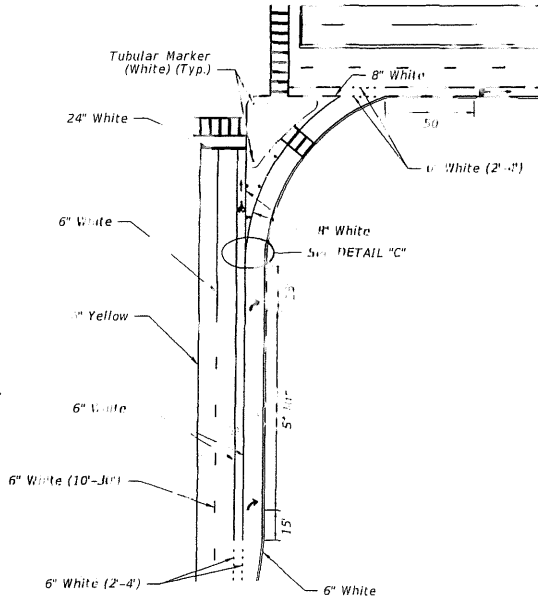
2/5/2021 12:06:25 PM

LAST REVISION 02/05/21	DESCRIPTION: Added railroad pavement marking details.		FY 2020-21 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001-1	SHEET 7 of 14
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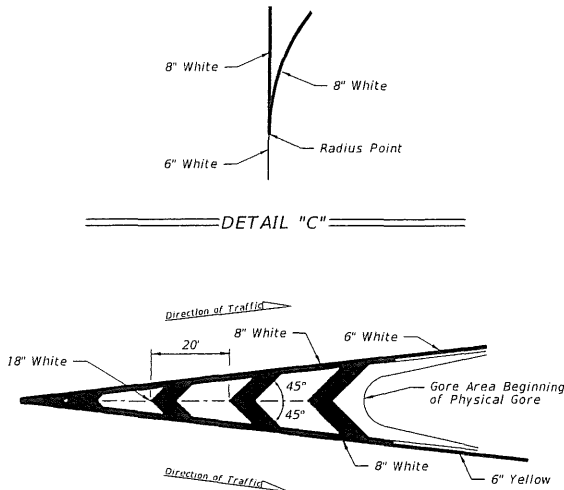


NOTE:  
See Sheet 1 for "S" value.

**RIGHT TURN LANE DROP AND ISLAND DETAILS**  
LEFT TURN LANE DROP IS MIRROR IMAGE



**RIGHT TURN LANE AND ISLAND DETAILS**

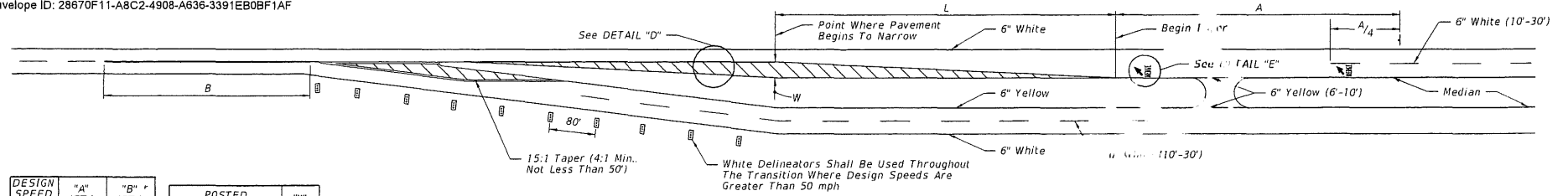


**TRAFFIC CHANNELIZATION AT GORE**

NOTE:  
See Sheet 1 for "S" value.

12/06/21 PH 2/2/2021

LAST REVISION 02/05/21	REVISION DESCRIPTION: Added railroad pavement marking details.	FY 2020-21 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001-1	SHEET 8 of 14
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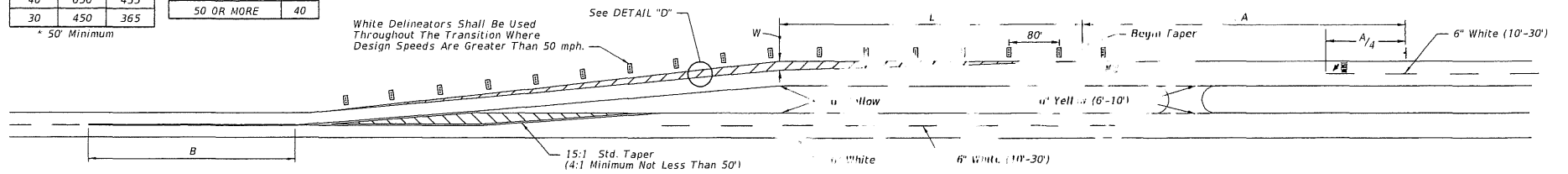


DESIGN SPEED (MPH)	"A" (FT.)	"B" (FT.)
60	---	640
55	950	595
50	850	550
45	750	500
40	650	455
30	450	365

POSTED SPEED LIMIT MPH	"Y" (FT.)
30 OR LESS	10
35	20
40	20
45	30
50 OR MORE	40

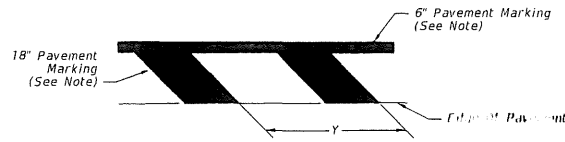
DESIGN SPEED 'S' (MPH)	Length 'L' (FT.)
40 or Less	$L = WS^2/60$
45 or Greater	$L = WS$

LEFT ROADWAY CENTERED ON EXISTING ROADWAY

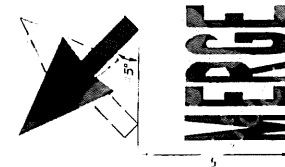


RIGHT ROADWAY CENTERED ON EXISTING ROADWAY

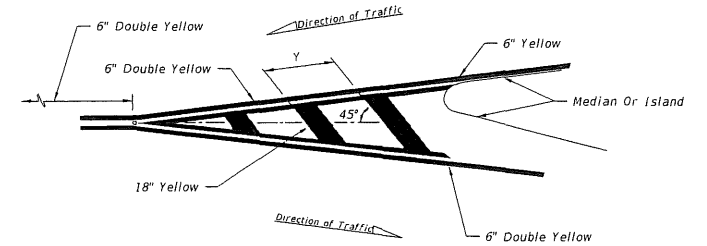
SCHEMES FOR TRANSITION - 2 LANE / 4 LANE ROADWAY



**NOTE:**  
Make pavement markings yellow for left roadway centered on existing roadway. Right roadway centered on existing roadway is similar with white pavement markings.



**NOTE:** See Sheet 1 for "S" value.

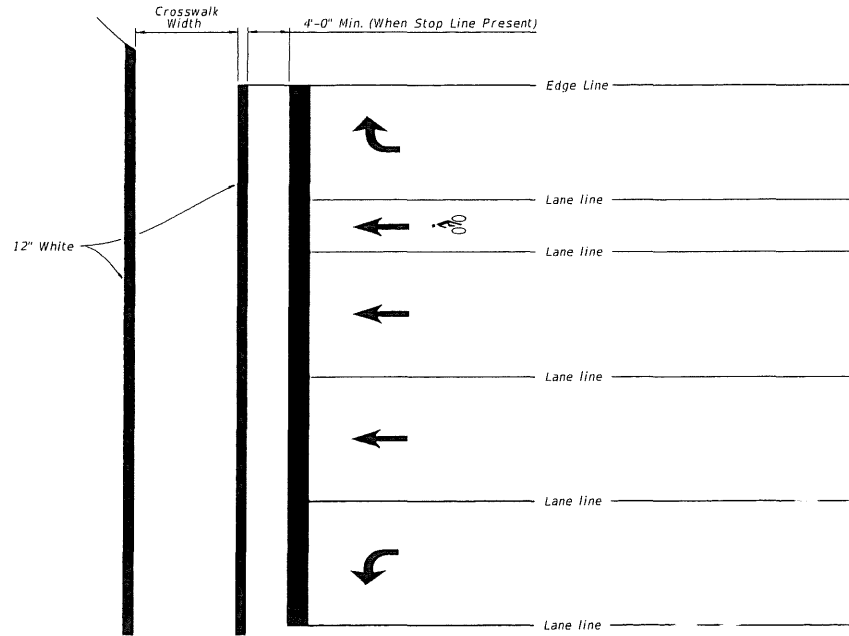


MARKINGS FOR TRAFFIC SEPARATION

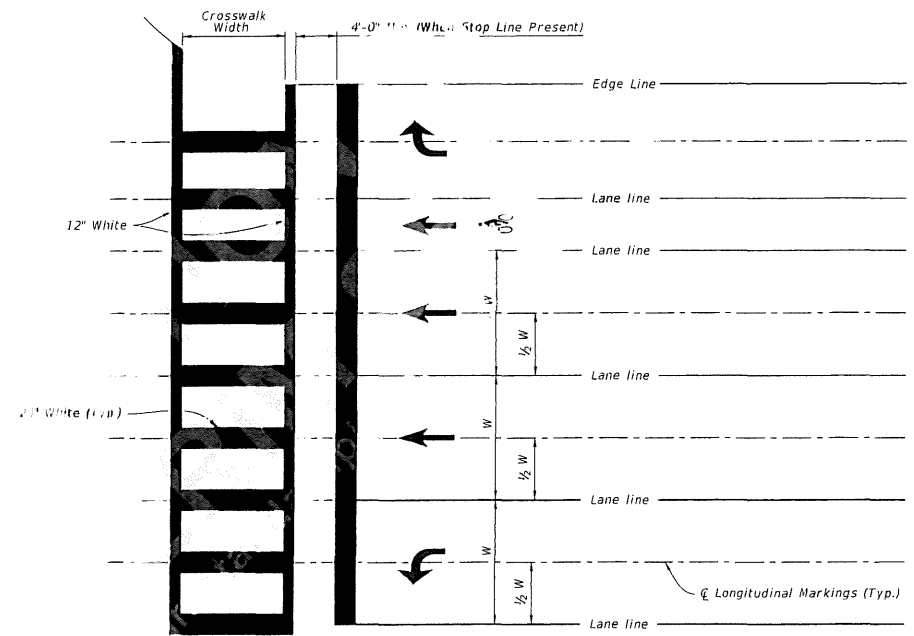
12/06/20 PH 2/15/2021

LAST REVISION 02/05/21	REVISION DESCRIPTION: Added railroad pavement marking details.	FDOT FY 2020-21 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001-1	SHEET 9 of 14
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STANDARD CROSSWALK DETAILS



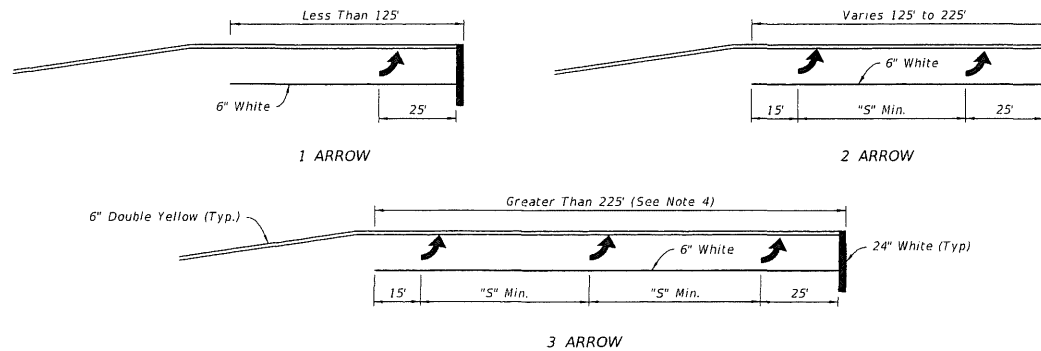
SPECIAL EMPHASIS CROSSWALK DETAILS

**NOTES:**

1. The crosswalk width, except width of the adjacent sidewalk, but do not make width less than 6' for intersection crosswalks and 14' for mid-block crosswalks. Measure width from the inside of the transverse crosswalk markings.
2. When the Special Emphasis Crosswalk is not perpendicular to the lane lines, make the longitudinal markings parallel to the lane lines.
3. Refer to Inp. 522-002 when Curb Ramps are present.

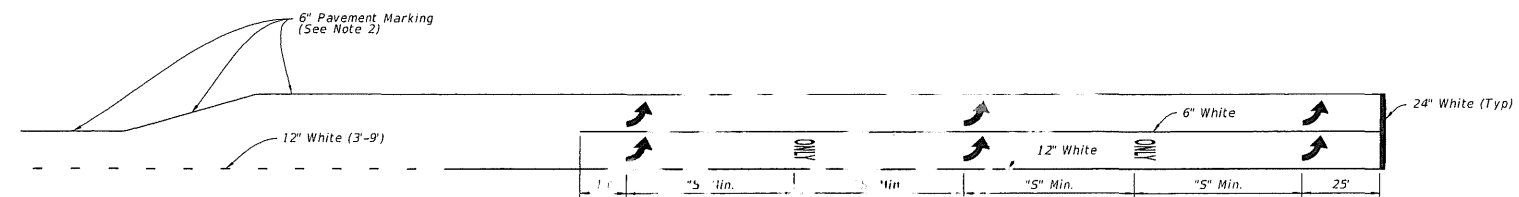
2/5/2021 12:06:20 PM

LAST REVISION 02/05/21	REVISION	DESCRIPTION: Added railroad pavement marking details.	FY 2020-21 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001-1	SHEET 10 of 14
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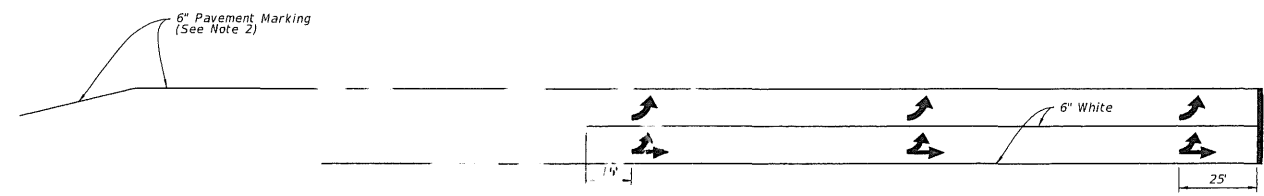


- NOTES:**
- This Index also applies to right turn lanes.
  - Make pavement marking yellow for left-turn lanes and white for right-turn lanes.
  - See Sheet 1 for "S" value.
  - Space arrows evenly between the first and last arrow with a minimum spacing of "S" between arrows.
  - For turn lanes greater than 225' in length, use a minimum of three arrows. Use additional arrows in accordance with the Plans or as directed by the Engineer. Space arrows evenly throughout the available length with a minimum spacing of "S" between arrows.

**SINGLE LEFT TURNS**



Through Lane Becomes Exclusive Left Turn



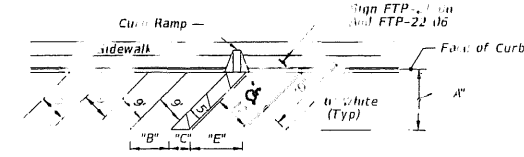
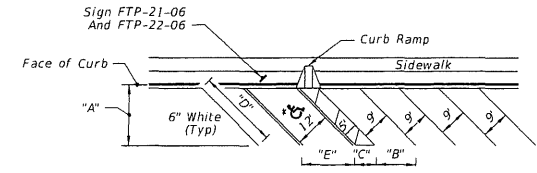
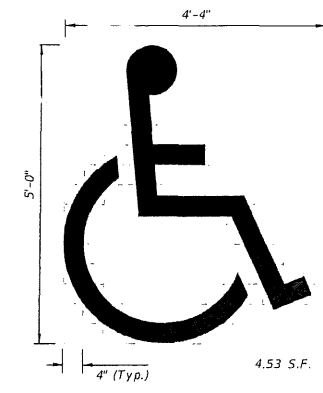
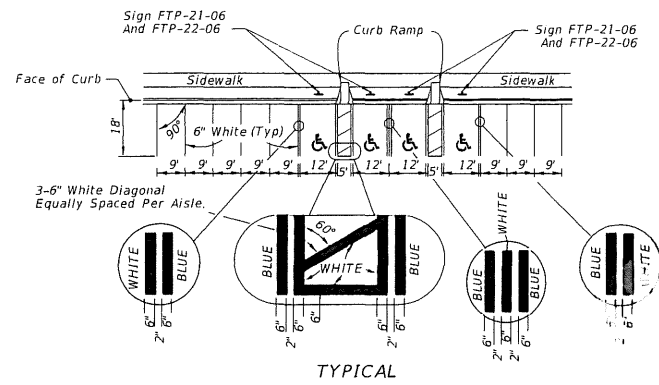
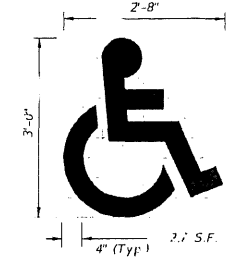
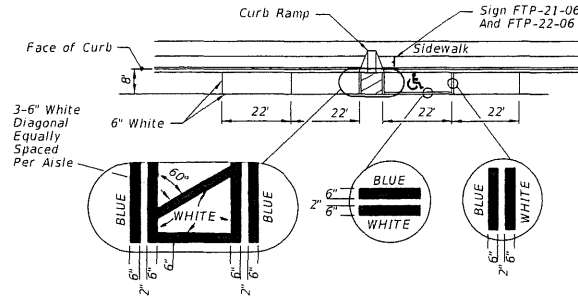
Through Lane Becomes Optional Left Turn

**DOUBLE LEFT TURNS**

2/5/2021 12:06:31 PM

LAST REVISION 02/05/21	REVISION DESCRIPTION: Added railroad pavement marking details.	FY 2020-21 STANDARD PLANS	PAVEMENT MARKINGS	INDEX	SHEET
				711-001-1	11 of 14

**TURN LANE MARKINGS**



FORWARD-IN PARKING

REVERSE-IN PARKING

\*FOR ACCESSIBLE MARKINGS - SEE APPROVAL

DIMENSIONS				
"A"	"B"	"C"	"D"	"E"
17'-0"	12'-9"	7'-0"	24'-0"	14'-0"

PAVEMENT MARKING FOR PARKING

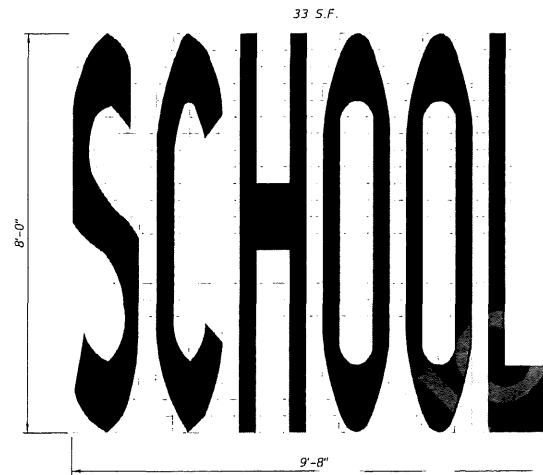
UNIVERSAL SYMBOL OF ACCESSIBILITY

NOTES:

1. Dimensions are to the centerline of markings.
2. An Access Aisle is required for each accessible space when angle parking is used.
3. Criteria for pavement markings only, not public sidewalk curb ramp locations. For ramp locations refer to plans.
4. Tint blue pavement markings to match color 15180 of Federal Standards 595a.
5. Mount FTP-22-06 sign below the FTP-21-06 sign.
6. Use of the pavement symbol in accessible parking spaces is optional. When pavement symbol is used, the symbol is either 3'-0" or 5'-0" high and white in color.

12/06/12 PH 2/5/2021

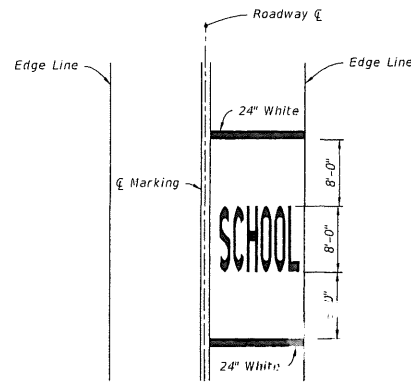
LAST REVISION 02/05/21	DESCRIPTION: Added railroad pavement marking details.	FY 2020-21 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001-1	SHEET 12 of 14
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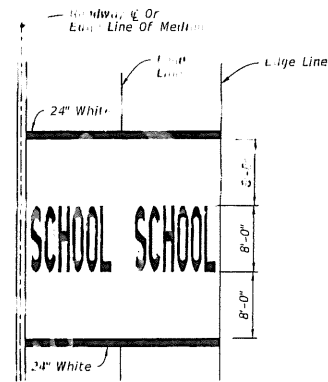
SCHOOL PAVEMENT MARKING

NOTES:

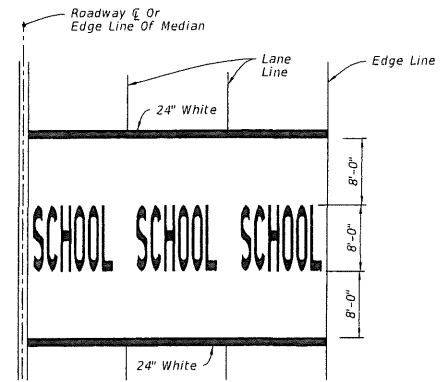
1. All grids are 4" x 4"
2. Pavement Marking Should Not Extend Into Opposing Lane.
3. Center School Pavement Marking in Lane.



SINGLE-LANE APPROACH



TWO-LANE APPROACH



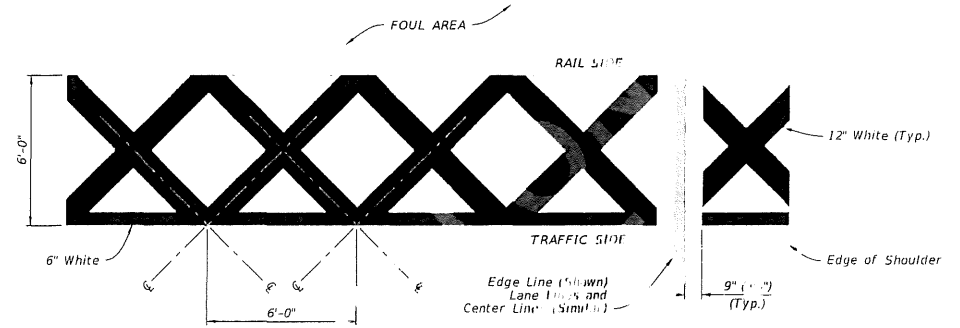
MULTI-LANE APPROACH  
(Three or More)

MARKINGS FOR SCHOOL ZONES

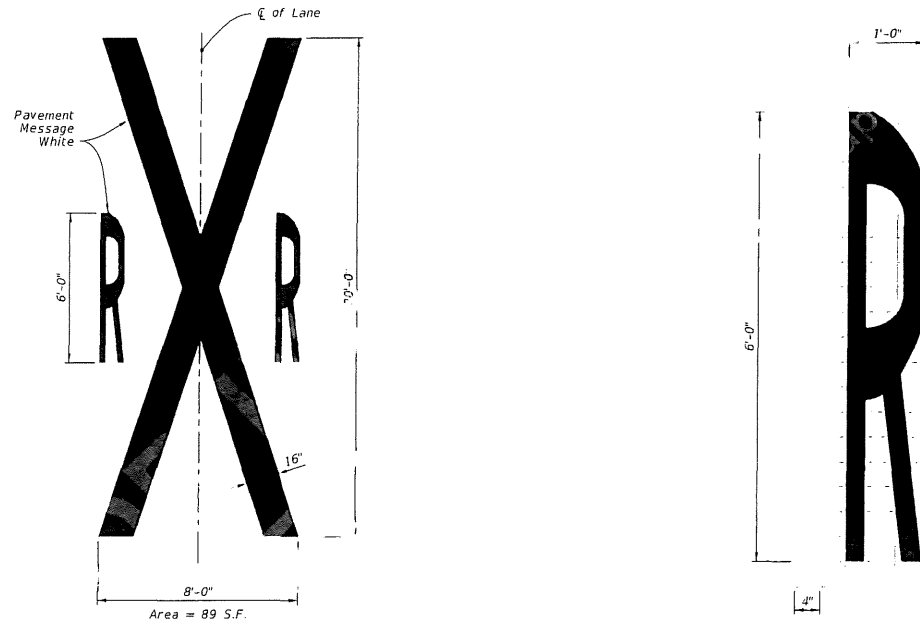
2/5/2021 12:06:35 PM

<p>LAST REVISION 02/05/21</p>	<p>REVISION DESCRIPTION: Added railroad pavement marking details</p>	<p>FDOT FY 2020-21 STANDARD PLANS</p>	<p>PAVEMENT MARKINGS</p>	<p>INDEX 711-001-1</p>	<p>SHEET 13 of 14</p>
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**NOTE:**  
Orient Railroad Dynamic Envelope Marking as shown in the Plans



RAILROAD DYNAMIC ENVELOPE (RDE) PAVEMENT MARKING DETAIL



RAILROAD CROSSING PAVEMENT MESSAGE

2/5/2021 12:06:36 PM

LAST REVISION 02/05/21	REVISION DESCRIPTION: Added railroad pavement marking details.	FDOT FY 2020-21 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001-1	SHEET 14 of 14
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
**RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES**  
**ANNUAL MAINTENANCE COSTS**

725-090-41  
RAIL  
06/21

FINANCIAL PROJECT NO.	ROAD NAME OR NUMBER	COUNTY NAME	PARCEL & R/W NUMBER	FAP NUMBER
448637-1-57-01	Aviation Rd	Palm Beach	N/A	N/A

COMPANY NAME: CSX Transportation

A. FDOT/AAR XING NO.: 621463M

RR MILE POST TIE: SX 954.36

B. TYPE SIGNALS PROPOSED: III

CLASS: III

DOT INDEX: 509-070

**SCHEDULE OF ANNUAL COST OF AUTOMATIC  
HIGHWAY GRADE CROSSING TRAFFIC CONTROL DEVICES**

Annual Maintenance Cost Exclusive of Installation

<u>CLASS</u>	<u>DESCRIPTION</u>	<u>COST*</u>
I	2-Quadrant Flashing Lights with One Track	\$2,608.00
II	2-Quadrant Flashing Lights with Multiple Tracks	\$3,451.00
III	2-Quadrant Flashing Lights and Gates with One Track	\$3,934.00
IV	2-Quadrant Flashing Lights and Gates with Multiple Tracks	\$4,940.00
V	3 or 4-Quadrant Flashing Lights and Gates with One Track	\$7,777.00
VI	3 or 4-Quadrant Flashing Lights and Gates with Multiple Tracks	\$9,759.00

AUTHORITY: FLORIDA ADMINISTRATIVE RULE 14-57.011  
Public Railroad-Highway Grade Crossing Costs

EFFECTIVE DATE: July 22, 1982

GENERAL AUTHORITY: 334.044, F.S.

SPECIFIC LAW IMPLEMENTED: 335.141, F.S.

\*This schedule will become effective July 1, 2021 and will be reviewed every 5 years and revised as appropriate based on the Consumer Price Index for all Urban Consumers published by the U.S. Department of Labor.

ESTIMATE SUBJECT TO REVISION AFTER: **12/30/1900** DOT NO.: 621463M  
 CITY: Royal Palm Beach COUNTY: Palm Beach STATE: FL  
 DESCRIPTION: Airport Access Road - OOM estimate to install 2 new gates with bells and new cable.  
 ZONE: Florida SUB-DIV: Auburndale MILE POST: SX-954.36  
 AGENCY PROJECT NUMBER: 0

**PRELIMINARY ENGINEERING:**

212	Contracted & Administrative Engineering Services			\$	6,500
	<b>Subtotal</b>			\$	<b>6,500</b>

**CONSTRUCTION ENGINEERING/INSPECTION:**

212	Contracted & Administrative Engineering Services			\$	6,500
	<b>Subtotal</b>			\$	<b>6,500</b>

**FLAGGING SERVICE: (Contract Labor)**

70	Labor (Conductor-Flagman)	0	Days @	\$ 350.00	\$	-
50	Labor (Foreman/Inspector)	0	Days @	\$ 504.00	\$	-
70	Additive	150.40%	(Transportation Department)		\$	-
50	Additive	149.50%	(Engineering Department)		\$	-
230	Expenses		(Engineering Department)	0	Days @	\$ 75.00
230	Expenses		(Transportation Department)	0	Days @	\$ 45.00
	<b>Subtotal</b>				\$	-

**SIGNAL & COMMUNICATIONS WORK:** \$ 117,991

**TRACK WORK:** \$ -

**PROJECT SUBTOTAL:** \$ 130,990.80

900 **CONTINGENCIES:** 30.00% \$ 39,297.24

**PROJECT TOTAL:** \*\*\*\*\* \$ 170,288.04

**CURRENT AUTHORIZED BUDGET:** \*\*\*\*\* \$ -

**TOTAL SUPPLEMENT REQUESTED:** \*\*\*\*\* \$ 170,288.04

**DIVISION OF COST:**

Agency	100.00%	\$	170,288
Railroad	0.00%	\$	-

**NOTE: Estimate is based on FULL CROSSING CLOSURE during work by Railroad Forces.**

This estimate has been prepared based on site conditions, anticipated work duration periods, material prices, labor rates, manpower and resource availability, and other factors known as of the date prepared. The actual cost for CSXT work may differ based upon the agency's requirements, their contractor's work procedures, and/or other conditions that become apparent once construction commences or during the progress of the work

Office of Chief Engineer Public Projects--Jacksonville, Florida

Estimated prepared by: 0 Approved by: 0 CSXT Public Project Group  
 DATE: 01/00/00 REVISED: 01/00/00 DATE: 01/00/00



April 12, 2022

Via Email [dduncanson@pbia.org](mailto:dduncanson@pbia.org)

Debbie Duncanson  
Palm Beach County Department of Airports  
1000 PBI, Suite 846  
West Palm Beach, Florida 33406-1412

**RE: CSXT RAILWAY COMPANY – AIRPORT ACCESS ROAD DOT  
CROSSING NO. 621463M SAFETY UPGRADES**

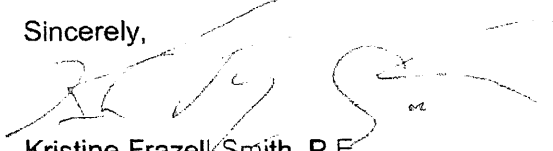
Dear Ms. Duncanson:

As indicated in our letter of February 11, 2022, due to safety concerns, CSXT Railway has programmed a project with FDOT to install signal safety upgrades. The upgrades are estimated at \$170,288.00. Upon further review of the Tri-party Railroad Reimbursement Agreement (Agreement), the FDOT will be paying for the current proposed upgrade of the crossing traffic control devices. Palm Beach County Department of Airports (DOA) has been and will continue to be responsible for all costs related to the maintenance of the road crossing. Based on conditions of the Agreement, annual signal maintenance costs will be evenly shared between CSXT and DOA.

The DOA has indicated that the Agreement for the proposed crossing grade and traffic control device improvements will be taken to the May 17, 2022 Board of County Commissioner's meeting.

Once you have the Agreements executed by the Board, please send five originals to me so that I can distribute them to the appropriate parties within CSXT Railway and FDOT. Please copy me on any related correspondence.

If you should have any questions regarding this request, please contact me via email, [kfsmith@pbcgov.org](mailto:kfsmith@pbcgov.org).

Sincerely,  
  
Kristine Frazell-Smith, P.E.  
Local Roads Section Manager

cc: Cynthia Portnoy, Deputy Director Planning & Development, DOA  
Morton L. Rose, P.E., Director, Roadway Production  
Kathleen O. Farrell, P.E., Assistant Director, Roadway Production