



**Interoffice Memorandum**

November 10, 2021

TO: Mayor Jerry L. Demings  
-AND-  
County Commissioners

FROM: Joseph C. Kunkel, P.E., Director, Public Works Department

CONTACT PERSON: Humberto L. Castillero, P.E., PTOE, Manager  
Traffic Engineering Division

PHONE NUMBER: (407) 836-7891

SUBJ: **Railroad Reimbursement Agreement between Florida Department of Transportation, Florida Central Railroad, and Orange County for Traffic Control Improvements**

Submitted for approval and execution is the tripartite agreement between the Florida Department of Transportation, Florida Central Railroad Company, Inc., and Orange County for the installation of type III automatic grade crossing signals on East 13<sup>th</sup> Street, west of South Apopka Boulevard. The improvements, to be performed by Florida Central Railroad, will be funded by the Florida Department of Transportation at an estimated cost of \$259,974. Orange County agrees to pay one-half of the annual cost to maintain the railroad signals, in addition to installing and maintaining pavement markings and advance warning signs for both approaches to the crossing. The County's portion of the total annual cost of this project is currently scheduled at \$3,934.

The County Attorney's Office and the Public Works Traffic Engineering Division have reviewed the Railroad Reimbursement Agreement and find it acceptable.

**Action Requested: Approval and execution of (1) State of Florida Department of Transportation Railroad Reimbursement Agreement Grade Crossing Traffic Control Devices - County Financial Project No. 44838515701 by and between the State of Florida Department of Transportation, Florida Central Railroad Company, Inc. and Orange County for RR Crossing No. 625274E and (2) State of Florida Department of Transportation County Resolution Grade Crossing Traffic Control Devices and Future Responsibility Financial Project No. 44838515701. District 2.**

JCK/HLC/FCY/dar

Attachments

APPROVED BY ORANGE  
COUNTY BOARD OF COUNTY  
COMMISSIONERS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

725-090-27

RAIL

OGC - 06/17

BCC Mtg. Date: December 14, 2021

**RAILROAD REIMBURSEMENT AGREEMENT  
GRADE CROSSING TRAFFIC CONTROL DEVICES - COUNTY**

FINANCIAL PROJECT NO.	ROAD NAME OR NUMBER	COUNTY NAME	PARCEL & R/W NUMBER	FAP NUMBER
44838515701	E. 13th ST.	ORANGE <input type="checkbox"/>	4(75500-SIGG)	D22-014-B

THIS AGREEMENT, made and entered into this 1st day of February, 2022, by and between the STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION, hereinafter called the DEPARTMENT, and FLORIDA CENTRAL RAILROAD COMPANY, INC., a corporation organized and existing under the laws of FLORIDA, with its principal place of business in the City of APOPKA, County of ORANGE, State of FLORIDA, hereinafter called the COMPANY; and ORANGE County, a political subdivision of the State of Florida, acting by and through its Board of County Commissioners, hereinafter called the COUNTY.

## WITNESSETH:

WHEREAS, the DEPARTMENT is constructing, reconstructing or otherwise changing a portion of the Public Road System, designated by the Financial Project ID 448385-1-57-01, on E. 13th STREET, which crosses at grade the right of way and tracks of the COMPANY'S Milepost ST-802.95, FDOT/AAR Crossing Number 625274E, at or near APOPKA, as shown on DEPARTMENT'S Plan Sheet No. 509-070 & 100, 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 shall furnish the necessary materials and install Automatic Grade Crossing Signals Type III Class III and/or other traffic control devices at said location on an actual cost basis and in accordance with (1) the attached detailed statement of the work, plans, and specifications; and (2) the DEPARTMENT'S Standard Plans, Index 509-070 attached hereto and made a part hereof.

2. After installation of said signals is completed, fifty (50%) ☐ percent of the expense thereof in maintaining the same shall be borne by the COUNTY and fifty (50%) ☐ percent shall be borne by the COMPANY, as enumerated by the Schedule of Annual Cost of Automatic Highway Grade Crossing Devices attached hereto and by this reference made a part hereof and subject to future revision.

3. 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 its 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 under Paragraph 2. above.

4. Unless otherwise agreed upon herein, the COUNTY agrees to ensure that at the crossing the advance warning signs and railroad crossing pavement markings will conform to the U.S. 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.

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

- ☐ (a) DEPARTMENT Procedure No. 725-080-002 Appendix D.4, and Rule 14.57.011 "Public Railroad-Highway Grade Crossing Costs", Florida Administrative Code.
- ☒ (b) Federal Highway Administration Federal-Aid Policy Guide, 23 C.F.R. Subchapter G, Part 646, Subpart B, and 23 C.F.R., Subchapter B, Part 140, Subpart I,

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

6. The DEPARTMENT hereby agrees to reimburse the COMPANY for all costs incurred by it in the installation and/or adjustment of said facilities, in accordance with the provisions of Procedure No. 725-080-002 Appendix D-4 "Billing Requirements," 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.

7. 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 itemized estimate of the cost thereof in the amount of \$ 259,974.00 . 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.

8. 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 direct to the DEPARTMENT. Separate records as to the costs of

contract bid items and force account items performed for the COMPANY shall also be furnished by the COMPANY to the DEPARTMENT.

9. 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 \$ \_\_\_\_\_, as supported by a detail analysis of estimated cost attached hereto. (NOTE: This method is not applicable where the estimated cost of the proposed adjustment exceeds \$100,000.)

10. The installation and/or adjustment of the COMPANY'S facility as planned ☐ will ☒ will not involve additional work over and above the minimum 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 ☐ expired service life  
☐ nonreimbursable segments in accord with Article 9.(c) hereinabove.

11. 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 installation and/or adjustment work.

12. 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.

13. 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 the 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 is 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 as approved by the DEPARTMENT'S auditor.

14. 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.).

15. 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 thereof.

16. 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, Subchapter B, Part 140, Subpart I "Reimbursement for Railroad Work."

17. In accordance with Section 215.422, Florida Statutes, the following 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 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.

18. 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 into 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.

19. 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.

20. 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.

21. 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.

22. 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 sub-contractors will be liable under this section for damages arising out of injury or damage to persons or property directly caused or resulting from the sole negligence of the DEPARTMENT or any of its officers, agents, or employees.

23. 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.

24. 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.

25. 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.

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

27. 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.

28. 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.

29. The DEPARTMENT has secured Federal funding to install (2) flashing lights & gates, a cabinet, (2) pedestrian gates, Constant Warning Time, cable, conduit and power for this project.



IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their duly authorized officers, the day and year first above written.

STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION

DocuSigned by:  
BY: John Tyler  
(TITLE: Director of Transportation Operations)  
2/1/2022 | 1:48 PM EST

DS  
JSS

COMPANY: Florida Central Railroad Company, Inc.

DocuSigned by:  
BY: Karen Kuivinen 3/11/2021 | 8:04 AM EST  
(TITLE: ...)

ORANGE COUNTY, FLORIDA  
BY: Byron W. Brooks  
(TITLE: County Administrator)



Legal Review

Approved as to Funds  
Available

Approved as to FAPG  
Requirements

DocuSigned by:  
BY: Daniel McDermott BY: \_\_\_\_\_  
(TITLE: Attorney - DOT) (TITLE: Comptroller - DOT)  
1/31/2022 | 9:43 AM EST Date Date Date

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
448385-1-57-01	E. 13th Street	ORANGE	4(75550-SIGM)	TBD

COMPANY NAME: FLORIDA CENTRAL RAILROAD, INC

A. FDOT/AAR XING NO.: 625274E RR MILE POST TIE: ST-802.95

B. TYPE SIGNALS PROPOSED: III CLASS: III DOT INDEX: 509-070 & 100

**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.

Customer:	FCRR
Road Name:	East 13th St. (XP4)
City, State & County:	Apopka, FL.
Crossing No.	625274E
Milepost No.	ST 802.95
Engineering Service	\$6,200.00
Factory Wired Shelter	\$67,926.96
Gate/Flasher Material	\$39,867.94
Cantilever/Combo Material	\$0.00
Ground Material	\$51,060.90
Material Handling & Trans.	\$3,914.37
Labor to Wire House & Gate	\$10,485.22
Installation Services	\$34,894.29
Railroad Protective Liab. Ins.	\$1,714.29
Railroad Cost	\$10,000.00
Total Estimate	\$226,063.96

CROSSING NO: 020214E		Roadway: E 13TH ST		RR Street:		District: 5 County: Orange		
PUBLIC	HWY	AT GRADE	Commercial	City: South Apopka	IN CITY	OPEN-TRACK ACTIVE		
Rank 2018: 2692	SR No.:			RR Company:	FCEN	Date: 05/22/2019		
Rank 2017: 2694	CR No.:			Division Name:	FCEN	Team Members:		
Rank 2016:	US No.:			Subdivision Name:	ORLANDO	L. Miller		
	Latitude:	28.662100		Branch Name:	MAIN	J. Ganey		
	Longitude:	-81.500000		RR Milepost:	4.08	D. Mixon		
Field Review Comments: Antiquated signals						J. Eady		
						S. Iacono		
Team Recommendations: Install 2-FL&G's; 2- ped gates; CWT; cabinet, cable, conduit and power						M. Schwerin		
Highway Speed:	25	<input type="checkbox"/>		Train Speed Range:	10-25	<input type="checkbox"/>		
Crossing Angle:	0-29 DEG	<input type="checkbox"/>		Max Time Table Speed:	25	<input type="checkbox"/>		
AADT:	507 (2011)	<input type="checkbox"/>		Day Thru/Switch:	0/2	<input type="checkbox"/>		
Percent Trucks:	11 (2009)	<input type="checkbox"/>		Night Thru/Switch:	0/2	<input type="checkbox"/>		
School Buses:	8 (2020)	<input type="checkbox"/>		Train Service: Freight		<input type="checkbox"/>		
Street Types:	Two-Way Street	<input type="checkbox"/>		Passenger Count/Day:	0	<input type="checkbox"/>		
Thru Lanes:	2	<input type="checkbox"/>		Train Count Date:	10/17/2011	<input type="checkbox"/>		
Aux Lanes:	0	<input type="checkbox"/>		Main Tracks:	1	<input type="checkbox"/>		
Hazmat Route?	NO	<input type="checkbox"/>		Other Tracks:		<input type="checkbox"/>		
Emergency Services Route?	YES	<input type="checkbox"/>		Train Signals?	NO	<input type="checkbox"/>		
Emergency Notification Signs:	YES	<input type="checkbox"/>		Train Signal Proximity:	NO	<input type="checkbox"/>		
Crossbuck(4x4 post):	0	<input type="checkbox"/>		Train Detection: Constant Warning Time		<input type="checkbox"/>		
Crossbuck Sign:	2	<input type="checkbox"/>		Event Recorder?		<input type="checkbox"/>		
Stop Sign:	0	<input type="checkbox"/>		Number of Bells:	1	<input type="checkbox"/>		
Yield Sign:	0	<input type="checkbox"/>		Post Mounted Flashing Lights:	2	<input type="checkbox"/>		
Low Ground Clearance Signs:	0	<input type="checkbox"/>		Backlights, LED		<input type="checkbox"/>		
Exempt Signs:		<input type="checkbox"/>		Roadway Gate Count:	2	<input type="checkbox"/>		
Trespass Signs:	YES	<input type="checkbox"/>		Pedestrian Gate Count:	2	<input type="checkbox"/>		
W10-1	2	R10-6a	0	W8-1	0	Gates:	2 Quad	
W10-2	0	R11-2	0	W10-8	0	Cantilevered Flashing Over Traffic:	0	
W10-3	0	R15-2P	0	W10-9	0	Cantilevered Flashing Not Over Traffic:	0	
W10-4	0	R15-6	0	W10-9P	0	Intersecting Roadway?	NO	
W10-11	0	R15-6a	0	W10-11a	0	Signalized?	NO	
W10-12	0	R15-7	0	W10-11b	0	Interconnection:	Not Interconnected	
R3-1a	0	R15-7a	0	W10-13P	0	Traffic Signals Controlling?		
R3-2a	0	R15-8	0	W10-14P	0	Preemption:		
R8-8	0	Pvt Crossing	0	W10-14aP	0	Does traffic queue across the tracks?	NO	
R8-9	0	Look Out	0	W10-15P	0	Traffic Pre-Signals?	NO	
R8-10	0	R8-8 w/Beacon	0	Slow	0	8" Count:	0	
R8-10a	0	W3-1		W10-1w/Beacon	0	12" Count:	4	
R10-6	0	W3-3		LED Signs	0	LED Count:	0	
Surface Installment Date:				<input type="checkbox"/>		Install - Upgrade:	--	
Surface Type:				CONCRETE	<input type="checkbox"/>			
Pvmt Mrk:				<input type="checkbox"/>				
Surface Condition:				EXCELLENT	<input type="checkbox"/>		Maintenance Responsibility:	COUNTY
Approach:				LOS A = Smooth	<input type="checkbox"/>		Roadway Paved:	YES
Vehicle Reaction:				LOS B = Vibrating	<input type="checkbox"/>		Tracks run down street?	NO
Driver Reaction:				LOS A = No reaction	<input type="checkbox"/>		Sidewalks on Crossing Approach?	YES
Rail/Pad Movement:				LOS A = Smooth	<input type="checkbox"/>		Sidewalks Thru Crossing?	YES
Incident History: 02/1995							Crossing illuminated?	NO
							Commerical Power?	YES
							Alternative Power?	NO
							Recommended Warning Device: FL & G	

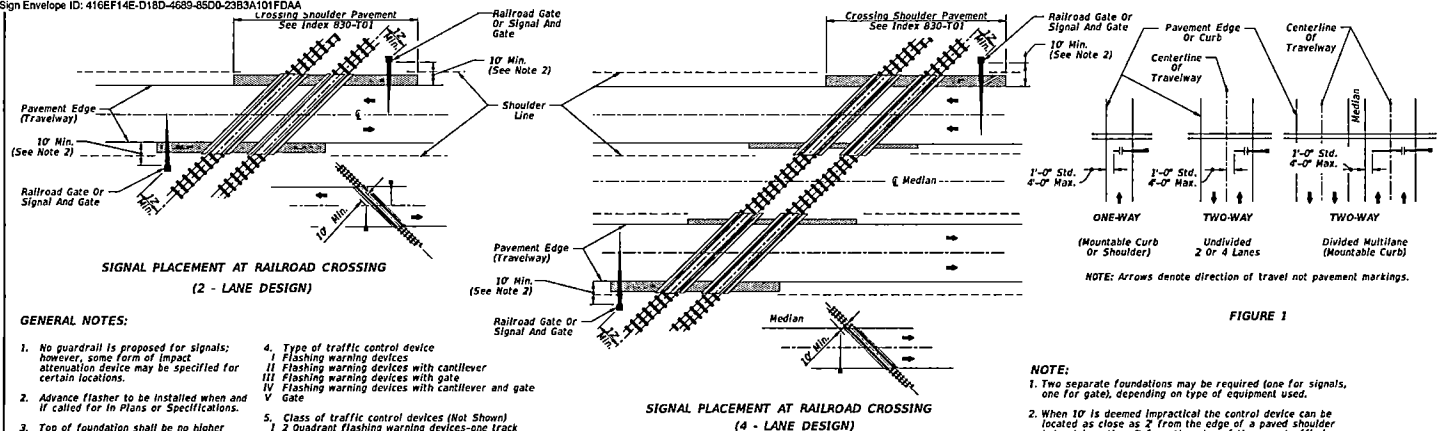


FIGURE 1

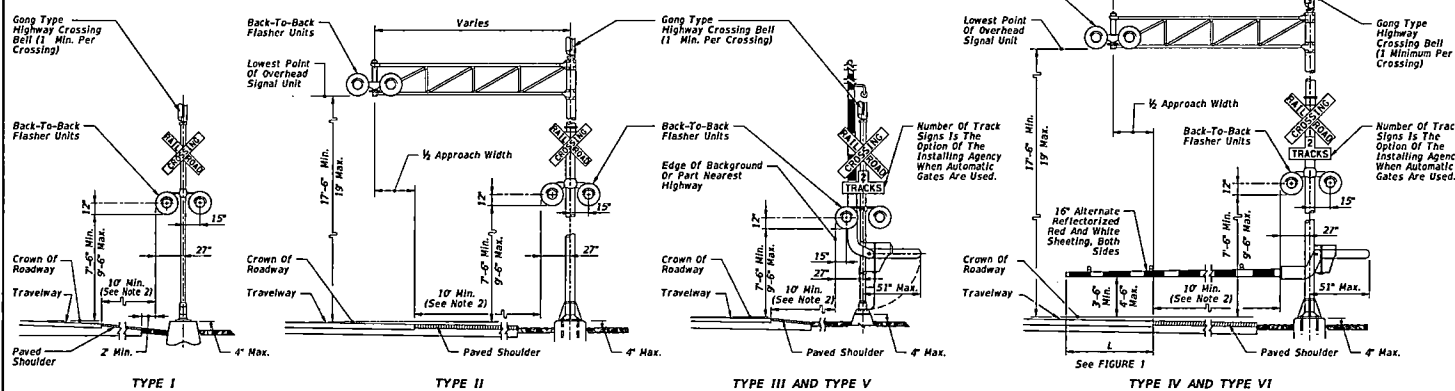
**GENERAL NOTES:**

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

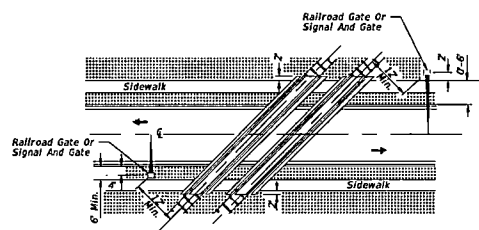
**SIGNAL PLACEMENT AT RAILROAD CROSSING (4 - LANE DESIGN)**

**NOTE:**

- Two separate foundations may be required (one for signals, one for gate), depending on type of equipment used.
- 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.

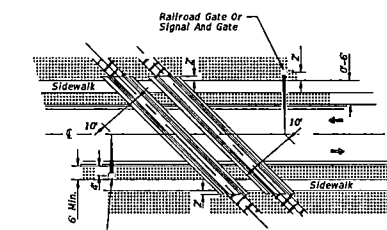


LAST REVISION	DESCRIPTION	FY 2020-21 STANDARD PLANS	RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES	INDEX	SHEET
11/01/17				509-070	1 of 4



ACUTE ANGLE (AND RIGHT ANGLE)

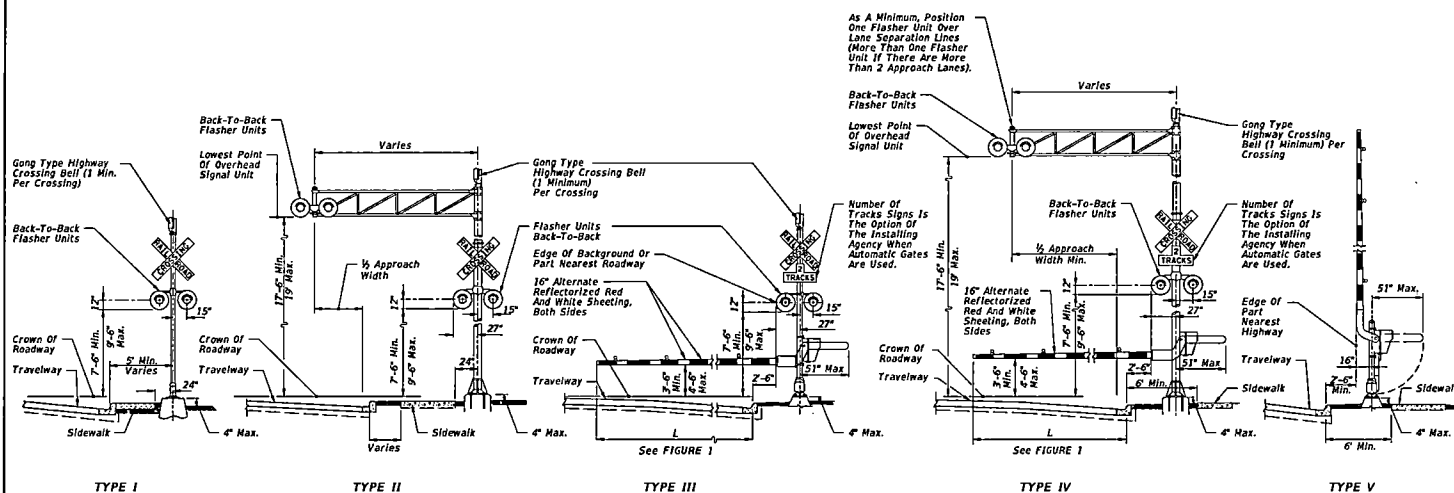
SIGNAL PLACEMENT AT RAILROAD CROSSING  
(2 LANES, CURB & GUTTER)




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

**NOTES:**

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



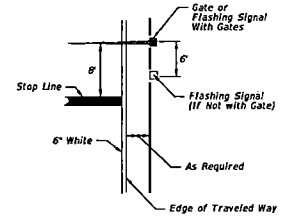
### TRAFFIC CONTROL DEVICES FOR CURBED ROADWAY

LAST REVISION 11/01/17	REVISION	DESCRIPTION:	 FY 2020-21 STANDARD PLANS	RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES	INDEX 509-070	SHEET 2 of 4
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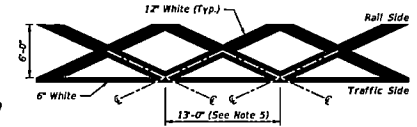
**NOTES:**

1. Place an additional W10-1 sign where intersections occur between the R/R pavement message and the tracks.
2. Place FTP-61-06 or FTP-62-06 sign 100' in advance of crossing for urban conditions and 300' in advance of crossing for rural conditions. See Index 700-102 for sign details.
3. Install Railroad Dynamic Envelope Pavement Markings only when called for in the Plans.
4. Do not install pavement markings when the distance between tracks is less than 14'.
5. The transverse dimension for the RDE "X" may be reduced to the lane width for two-lane roadways without shoulders or when shown in the Plans.
6. Do not install pavement markings in the Foul areas.

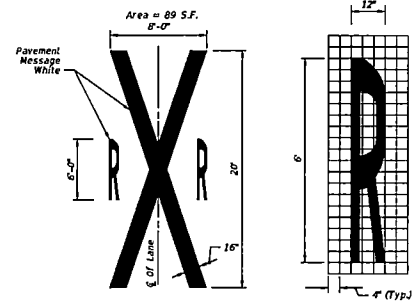
Design Speed (mph)	Distance "A" (ft)
60	400
55	325
50	250
45	175
40	125
35	100
URBAN	85 Min.



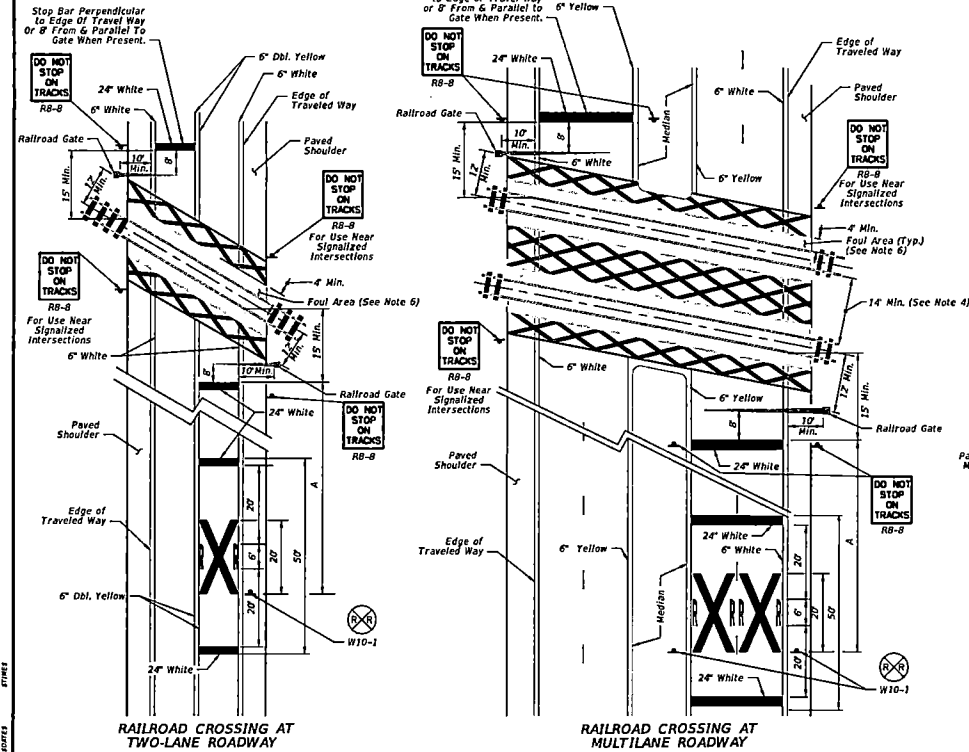
RELATIVE LOCATION OF CROSSING TRAFFIC CONTROL DEVICES



RAILROAD DYNAMIC ENVELOPE (RDE) PAVEMENT MARKING DETAIL



RAILROAD CROSSING PAVEMENT MESSAGE



RAILROAD CROSSING AT TWO-LANE ROADWAY

RAILROAD CROSSING AT MULTILANE ROADWAY

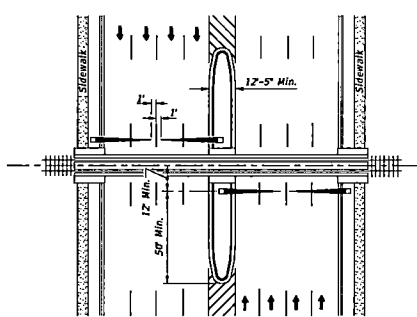
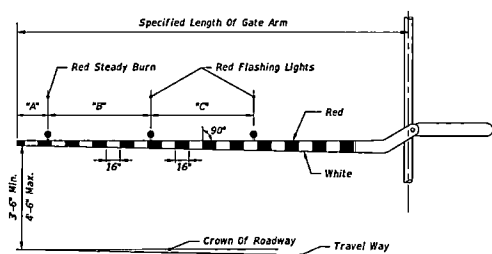
LAST REVISION 02/11/20  
DESCRIPTION: Added Railroad Dynamic Envelope Pavement Marking Details.



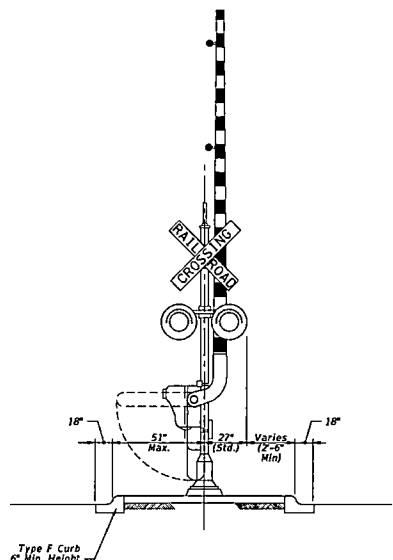
FY 2020-21  
STANDARD PLANS

RAILROAD GRADE CROSSING  
TRAFFIC CONTROL DEVICES

INDEX SHEET  
509-070 .3 of 4



PLAN



MEDIAN SECTION AT SIGNAL GATES

RAILROAD GATE ARM LIGHT SPACING

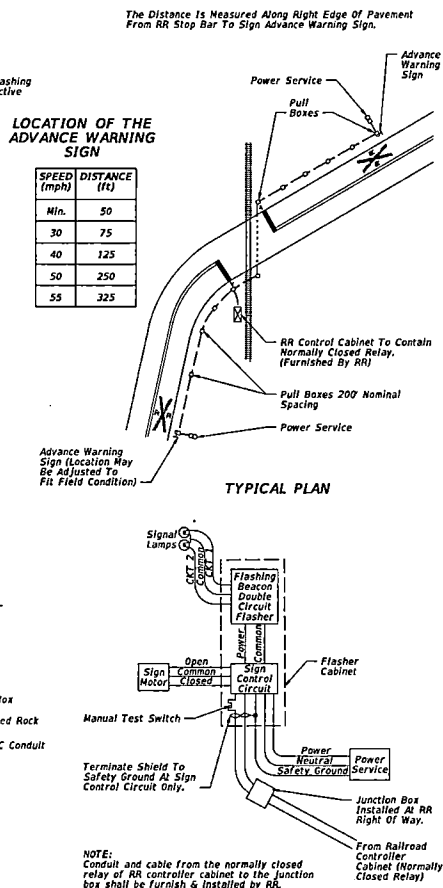
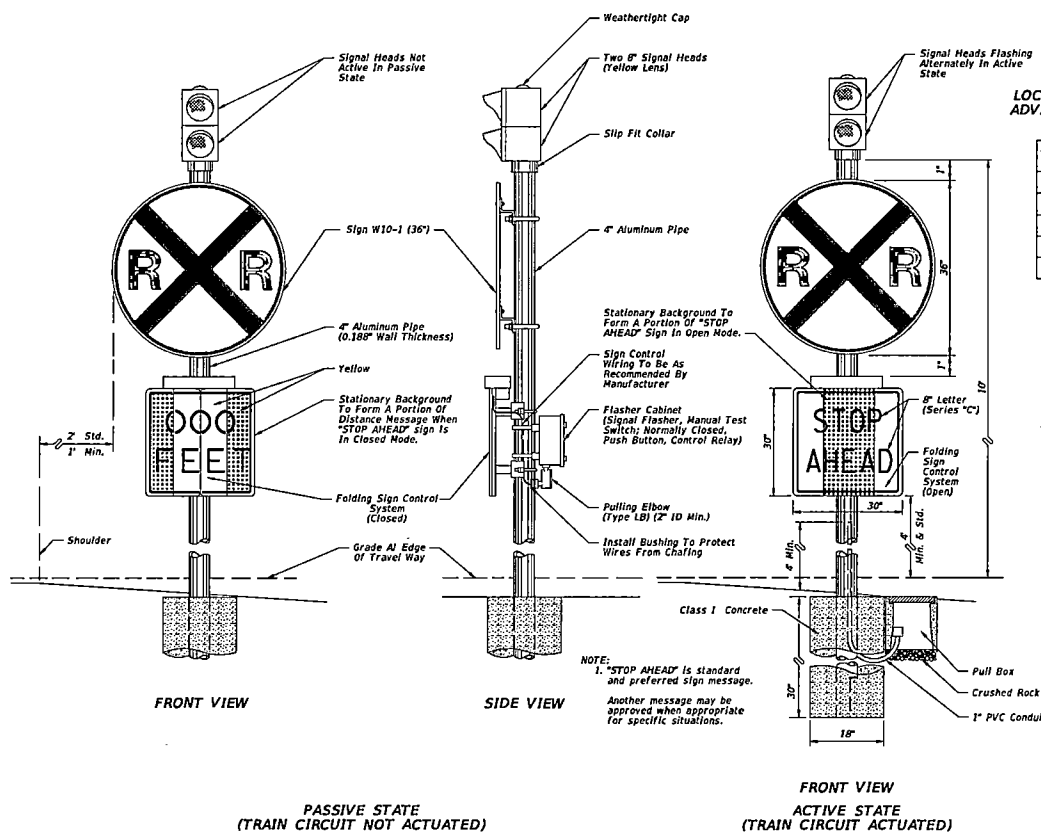
Specified Length Of Gate Arm	Dimension "A"	Dimension "B"	Dimension "C"
14 Ft.	6'	36'	5'
15 Ft.	18'	36'	5'
16-17 Ft.	24'	36'	5'
18-19 Ft.	28'	41'	5'
20-23 Ft.	28'	4'	5'
24-28 Ft.	28'	5'	5'
29-31 Ft.	36'	6'	6'
32-34 Ft.	36'	7'	7'
35-37 Ft.	36'	9'	9'
38 And Over	36'	10'	10'

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 SIGNAL GATES FOR  
MULTILANE UNDIVIDED URBAN SECTIONS  
(THREE OR MORE DRIVING LANES IN ONE DIRECTION, 45 MPH OR LESS)

11/01/17 11:00:00 AM





11/01/17 AM

LAST REVISION	DESCRIPTION	FY 2020-21 STANDARD PLANS	ADVANCE WARNING FOR R/R CROSSING	INDEX	SHEET
11/01/17				509-100	1 of 1