Agenda Item #: 3 - C - 3

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS
AGENDA ITEM SUMMARY

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Meeting Date: October 19, 2021 **{X} Consent { } Regular**
{ } Public Hearing { } Workshop

Department: **Engineering & Public Works**
Submitted By: **Engineering & Public Works**
Submitted For: **Roadway Production Division**

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I. EXECUTIVE BRIEF

Motion and Title: Staff recommends motion to:

A) **adopt** a resolution to approve a Stipulation of Parties (SOP) with the Florida Department of Transportation (FDOT), the CSX Transportation Inc. (CSXT), and the Avenir Community Development District (CDD) for the closure of Youth Camp Road/Halpatiokee Road railroad-highway grade crossing, FDOT Crossing Number 628094S, and the opening of the future extension of Coconut Boulevard railroad-highway grade crossing, FDOT Crossing Number to be determined (TBD); and

B) **approve** the SOP with the FDOT, CSXT and CDD for the closure of Youth Camp Road/Halpatiokee Road railroad-highway grade crossing, FDOT Crossing Number 628094S, and the opening of the future extension of Coconut Boulevard railroad-highway grade crossing, FDOT Crossing Number TBD.

SUMMARY: Adoption of the resolution and approval of the SOP with the FDOT, the CSXT, and the CDD are for the closure of Youth Camp Road/Halpatiokee Road railroad-highway grade crossing, FDOT Crossing Number 628094S (Youth Camp Road Crossing), and the opening of the future extension of Coconut Boulevard railroad-highway grade crossing, FDOT Crossing Number TBD (Coconut Boulevard Crossing). The CDD is proposing the extension of Coconut Boulevard from the Northlake Boulevard intersection north to the Beeline Highway through their Avenir development, and the new Coconut Boulevard Crossing is required for the new road. Palm Beach County (County) is the license holder of the crossing agreement with CSXT that allows Youth Camp Road to cross the railroad tracks at grade. CSXT currently maintains a railroad-highway grade crossing on Youth Camp Road. CSXT, at the CDD's expense, will close the Youth Camp Road Crossing and will provide all necessary labor and materials to install a railroad-highway grade crossing surface at the Coconut Boulevard Crossing. Closure of the Youth Camp Road Crossing will occur concurrently with the opening of the Coconut Boulevard Crossing. The Youth Camp Road Crossing shall not be closed until the Coconut Boulevard Crossing is open to the public and alternative access to Youth Camp Road/Halpatiokee Road has been provided via a paved access road and bridge over the C-18 Canal at CDD's expense. The paved access road must be completed prior to the opening of the new Coconut Boulevard Crossing and the access road shall not be on CSXT property. District 1 (YBH)

Background and Justification: The CDD has filed applications to the FDOT to relocate a public at-grade crossing by closing the existing Youth Camp Road Crossing, and opening the future Coconut Boulevard Crossing, pursuant to Chapter 335.141(1), Florida Statutes and Rule 14-57.012, Florida Administrative Code. The Engineering & Public Works Department recommends adoption of the Resolution.

Attachments:
1. Location Maps (3)
2. Resolution
3. Stipulation of Parties with Exhibits A, B, C, D, E, F, and G (4)

Recommended By: YBH/TEL for KFS _____ 9/16/2021
County Engineer **Date**

Approved By: _____ 9/30/21
Assistant County Administrator **Date**

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

Fiscal Years	2022	2023	2024	2025	2026
Capital Expenditures	$ -0-	-0-	-0-	-0-	-0-
Operating Costs	-0-	-0-	-0-	-0-	-0-
External Revenues	-0-	-0-	-0-	-0-	-0-
Program Income (County)	-0-	-0-	-0-	-0-	-0-
In-Kind Match (County)	-0-	-0-	-0-	-0-	-0-
NET FISCAL IMPACT	$ **	-0-	-0-	-0-	-0-
# ADDITIONAL FTE POSITIONS (Cumulative)					

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

Budget Account No:
Fund Dept Unit Object

Recommended Sources of Funds/Summary of Fiscal Impact:

**This item has no fiscal impact. Palm Beach County will not be responsible for any of the construction or maintenance costs associated with this project.

C. Departmental Fiscal Review:

III. REVIEW COMMENTS

A. OFMB Fiscal and/or Contract Dev. and Control Comments:

OFMB 9/20/21 Contract Dev. and Control 9/23/21

B. Approved as to Form and Legal Sufficiency:

Jean-Adel Williams
Assistant County Attorney

C. Other Department Review:

Department Director

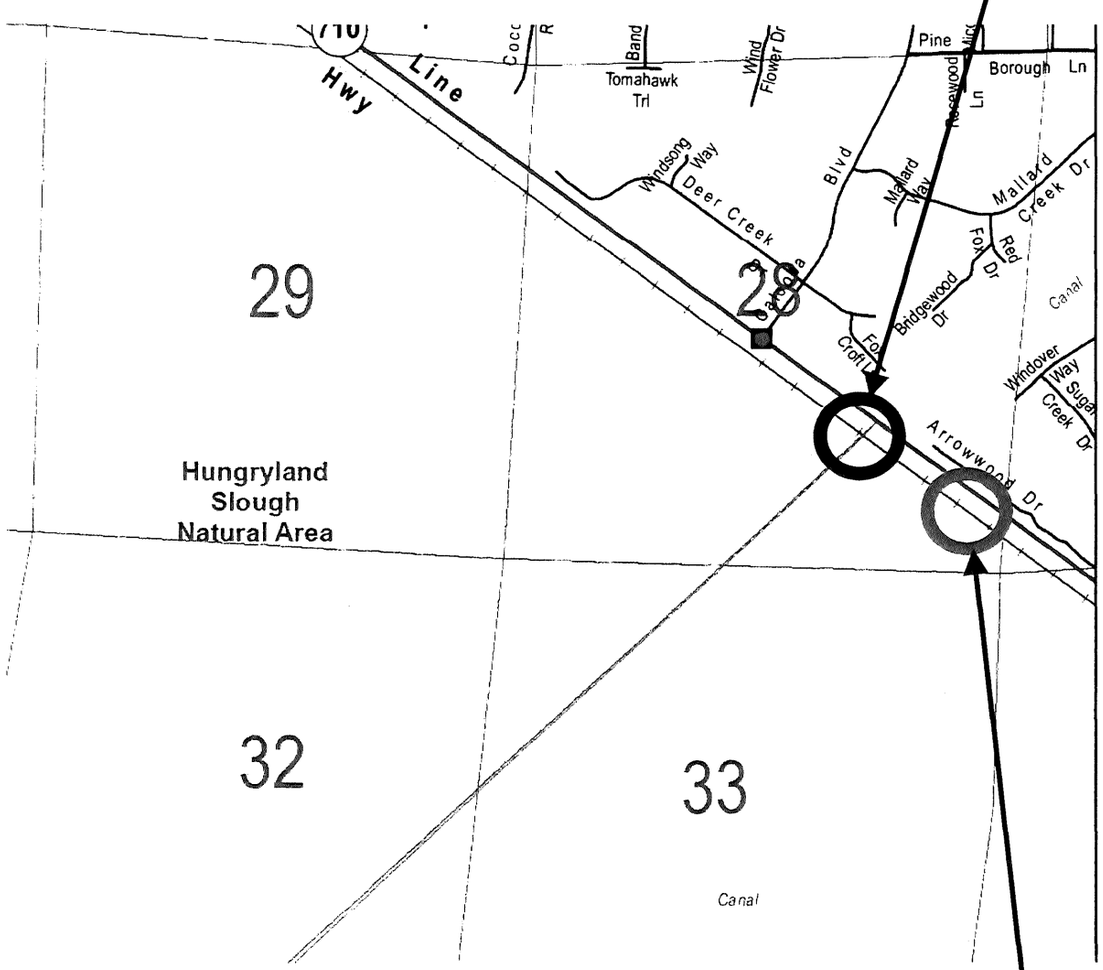
This summary is not to be used as a basis for payment.

ATTACHMENT 1A

PROJECT LOCATION

Existing Youth Camp Road at CSX Railroad

FDOT/AAR CROSSING NUMBER 628094S



New Coconut Boulevard at CSX Railroad

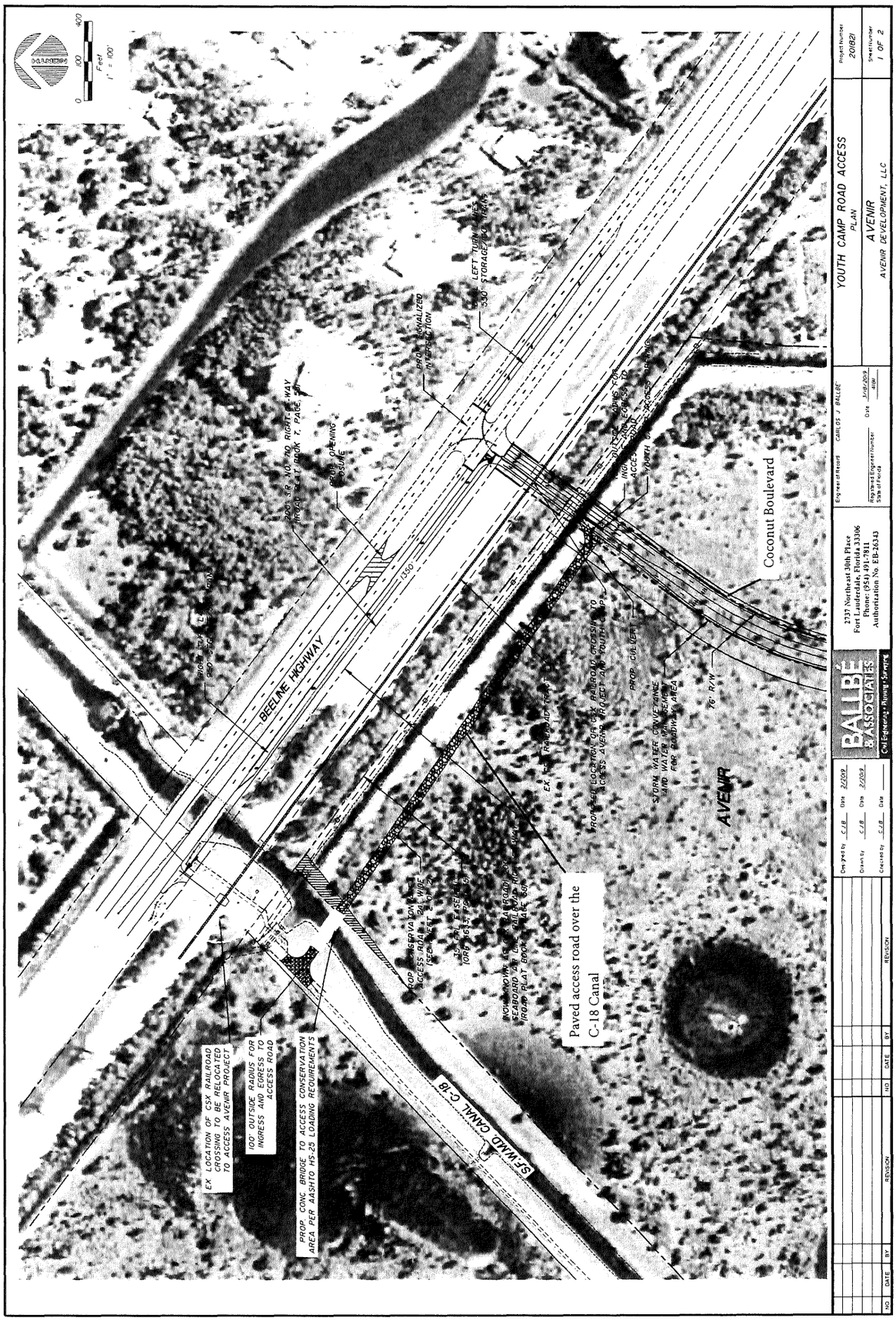
FDOT/AAR CROSSING NUMBER To Be Determined

N

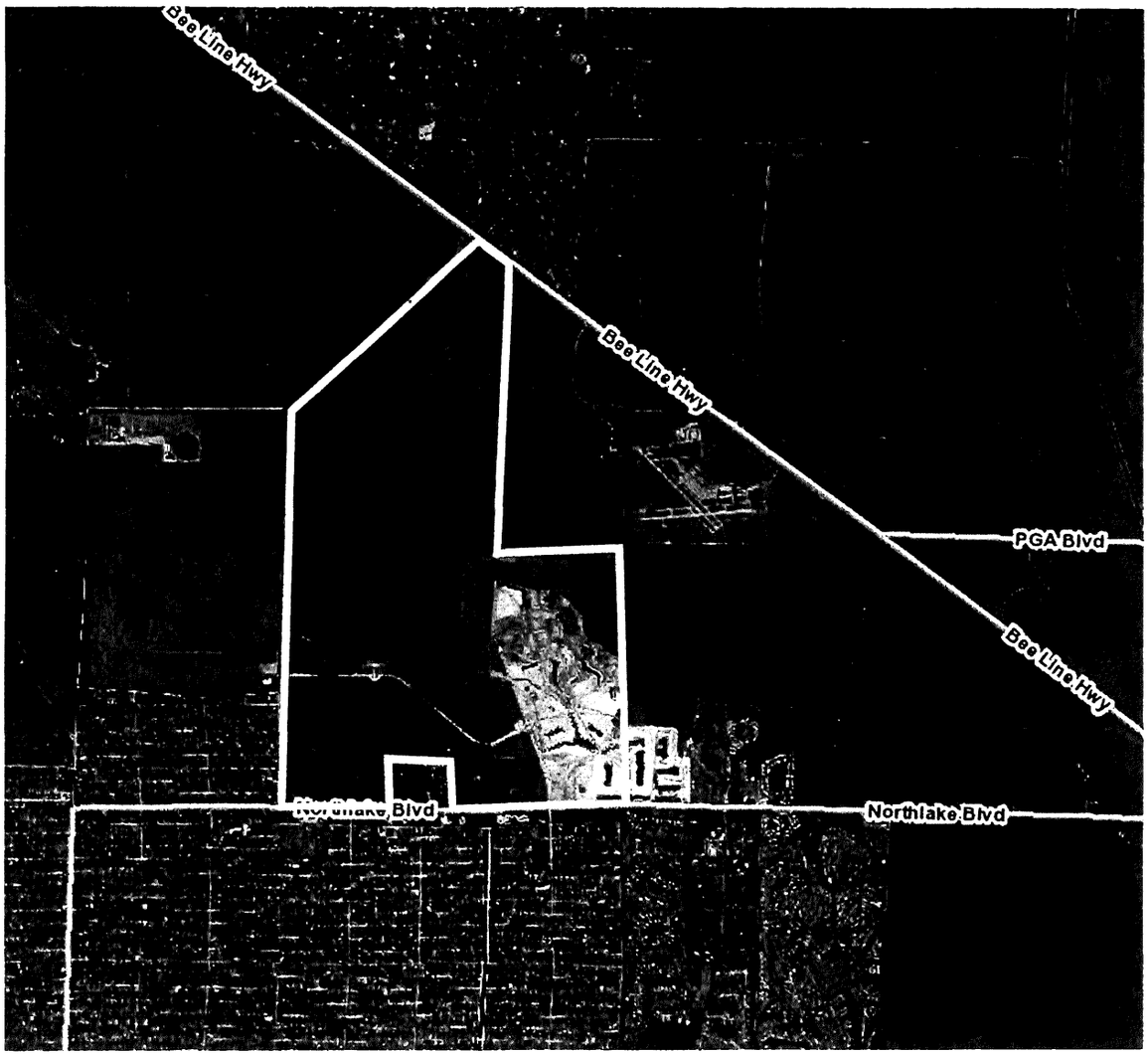
LOCATION SKETCH

Location Map

Attachment 1B



LOCATION MAP



AVENIR DEVELOPMENT

N

LOCATION SKETCH

Attachment 2

RESOLUTION NO. R2021-

RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF PALM BEACH COUNTY, FLORIDA TO APPROVE A STIPULATION OF PARTIES (SOP) WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT), THE CSX TRANSPORTATION INC. (CSXT), AND THE AVENIR COMMUNITY DEVELOPMENT DISTRICT (CDD) FOR THE CLOSURE OF YOUTH CAMP ROAD/HALPATIOKEE ROAD RAILROAD-HIGHWAY GRADE CROSSING, FDOT CROSSING NUMBER 628094S, AND THE OPENING OF THE FUTURE EXTENSION OF COCONUT BOULEVARD RAILROAD-HIGHWAY GRADE CROSSING, FDOT CROSSING NUMBER TO BE DETERMINED (TBD)

WHEREAS, the CDD has filed applications to the FDOT to relocate a public at-grade crossing by closing a public railroad-highway grade crossing, Youth Camp Road/Halpatiokee Road, FDOT Crossing Number 628094S (Youth Camp Road Crossing), and opening a nearby public railroad-highway grade crossing, at the future extension of Coconut Boulevard, FDOT Crossing Number TBD (Coconut Boulevard Crossing) pursuant to Chapter 335.141(1), Florida Statutes, and Rule 14-57.012, Florida Administrative Code; and

WHEREAS, the CDD is proposing the extension of Coconut Boulevard from the Northlake Boulevard intersection north to the Beeline Highway through their Avenir development and the new Coconut Boulevard Crossing is required for the new road: and

WHEREAS, Palm Beach County (County) is the license holder of the crossing agreement with CSXT that allows Youth Camp Road to cross the railroad tracks at grade; and

WHEREAS, CSXT currently maintains a railroad-highway grade crossing on Youth Camp Road Crossing; and

WHEREAS, CSXT, at the CDD's expense, will close the Youth Camp Road Crossing and will provide all necessary labor and materials to install a railroad-highway grade crossing surface at Coconut Boulevard Crossing; and

WHEREAS, CSXT, at the CDD's expense, shall maintain in perpetuity the railroad-highway grade crossing surface and automatic railroad crossing warning devices at

Coconut Boulevard Crossing; and

WHEREAS, closure of the Youth Camp Road Crossing will occur concurrently with the opening of the Coconut Boulevard Crossing. The Youth Camp Road Crossing shall not be closed until the Coconut Boulevard Crossing is open to the public and alternative access to Youth Camp Road/Halpatiokee Road has been provided via a paved access road and bridge over the C-18 Canal at CDD's expense. The paved access road must be completed prior to the opening of the new Coconut Boulevard Crossing and the access road shall not be on CSXT property.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF PALM BEACH COUNTY FLORIDA, that:

1. The above recitals are hereby reaffirmed and ratified.

2. The Board of County Commissioners approve the SOP with CSXT, FDOT, and the CDD, as herein described.

3. This Resolution will take effect upon its adoption.

This section left blank intentionally

RESOLUTION NO. R2021-
October 5, 2021

The foregoing Resolution was offered by Commissioner _____ who moved its adoption. The motion was seconded by Commissioner _____, and upon being put to a vote, the vote was as follows:

Commissioner Dave Kerner, Mayor	_____
Commissioner Robert S. Weinroth, Vice Mayor	_____
Commissioner Maria G. Marino	_____
Commissioner Gregg K. Weiss	_____
Commissioner Maria Sachs	_____
Commissioner Melissa McKinlay	_____
Commissioner Mack Bernard	_____

The Mayor thereupon declared the Resolution duly passed and adopted this ____ day of _____, 2021.

PALM BEACH COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF FLORIDA, BY AND THROUGH ITS BOARD OF COUNTY COMMISSIONERS

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY

JOSEPH ABRUZZO,
CLERK OF THE CIRCUIT COURT
& COMPTROLLER

BY: _____
Assistant County Attorney

BY: _____
Deputy Clerk

APPROVED AS TO TERMS
AND CONDITIONS

BY: _____
Division Director

KFS KOF

Attachment 3

STIPULATION OF PARTIES FOR THE
CLOSURE OF YOUTH CAMP ROAD/HALPATIOKEE ROAD
RAILROAD-HIGHWAY GRADE CROSSING, FDOT CROSSING NUMBER 628094S,
AND THE OPENING OF COCONUT BOULEVARD
RAILROAD-HIGHWAY GRADE CROSSING, FDOT CROSSING NUMBER TBD

The Avenir Community Development District (CDD), CSX Transportation, Inc. (RAILROAD), Palm Beach County, Florida (COUNTY), and Florida Department of Transportation (DEPARTMENT), by and through their undersigned representatives enter this Stipulation of Parties and agree to the following conditions:

1. The CDD has filed applications to the DEPARTMENT to relocate a public at-grade crossing, by closing a public railroad-highway grade crossing, Youth Camp Road/Halpatiokee Road, FDOT Crossing Number 628094S, Railroad Milepost SX-953.38 (hereinafter "Youth Camp Road Crossing"), and opening a nearby public railroad-highway grade crossing, at Coconut Boulevard, FDOT Crossing Number TBD, Railroad Milepost SX-953.606 (hereinafter "Coconut Boulevard Crossing") in Palm Beach County, Florida, pursuant to Chapter 335.141(1), Florida Statutes and Rule 14-57.012, Florida Administrative Code. Copies of the applications are attached hereto as EXHIBIT "A."
2. The RAILROAD currently maintains a railroad-highway grade crossing on Youth Camp Road Crossing. There is one mainline track with 6 train movements per day. The maximum train speed is 79 miles per hour at this crossing location.
3. The proposed crossing location at Coconut Boulevard Crossing will be a five-lane divided roadway at a signalized intersection as set forth on the map and plans, attached hereto as EXHIBIT "B."
4. The RAILROAD, at the CDD'S expense will close the Youth Camp Road Crossing by: 1)

providing the COUNTY with a minimum of 72 hours notification in advance to starting any work; 2) erecting on each side of the Youth Camp Road Crossing, signs and object markers as identified in the Department's Standard Plans, Index 102-600, attached hereto as EXHIBIT "E"; 3) removing the Youth Camp Road Crossing surface and any roadway pavement; 4) restoring the RAILROAD'S right-of-way to remove all remnants of the Youth Camp Road Crossing; 5) removing and disposing of existing railroad-highway grade Crossing warning devices, other applicable electronic devices, bungalow, and signage; and 6) installing a permanent barricade on both sides of Youth Camp Road Crossing, as identified in the DEPARTMENT'S Standard Plans, Index 700-109, attached hereto as EXHIBIT "F," with the CDD being responsible for the perpetual maintenance of such barricades. Closure of the Youth Camp Road Crossing will occur concurrently with the opening of the Coconut Boulevard Crossing. Youth Camp Road Crossing shall not be closed until the Coconut Boulevard Crossing is open to the public and the alternative access to Youth Camp Road/Halpatiokee Road via a paved access road and bridge over the C-18 Canal has been provided as shown on Exhibit "B." The paved access road must be completed prior to the opening of the new Coconut Boulevard Crossing and the access road shall not be on CSX property. The paved access road and bridge shall be provided and maintained in perpetuity in accordance with applicable County requirements and County permits by CDD at CDD'S expense.

5. The RAILROAD, at the CDD'S expense will provide all necessary labor and materials to install a railroad-highway grade crossing surface at Coconut Boulevard Crossing, in compliance with the DEPARTMENT'S Standard Plans, Index 830-T01, attached hereto as EXHIBIT "C."
6. The RAILROAD, at the CDD'S expense, will provide all necessary labor and materials and

install at the Coconut Boulevard Crossing, automated railroad grade crossing warning devices including Type III, Class V flashing lights and gates, in accordance with the DEPARTMENT'S Standard Plans, Index 509-070, attached hereto as EXHIBIT "D."

7. The RAILROAD, at the CDD'S expense, shall maintain in perpetuity the railroad-highway grade crossing surface and automatic railroad crossing warning devices at Coconut Boulevard Crossing.
8. The RAILROAD, at the CDD'S expense, shall erect on each side of the crossings, signs and object markers as identified in the DEPARTMENT'S Standard Plans Index 102-600, attached hereto as "EXHIBIT E".
9. The RAILROAD, at the CDD'S expense will ensure that all Federal Railroad Administration Workplace Safety Regulations, to include flagging and insurance, are met for the improvements referenced in this Stipulation of Parties.
10. The CDD shall acquire the proper easements and agreements for the new Coconut Boulevard Crossing across CSX property.
11. Any work performed by the CDD, within the Coconut Boulevard Crossing area, will be coordinated a minimum of 72 hours in advance, except for emergency work for which immediate notice will be provided, with the RAILROAD engineer to ensure that all Federal Railroad Administration Workplace Safety Regulations, to include flagging and insurance, are met.
12. All work performed by the RAILROAD and CDD will be consistent with Manual of Uniform Traffic Control Devices (MUTCD) (2009 Edition), Federal Railroad Administration (FRA) Rules and Regulations, American Association of State Highway and Transportation Officials (AASHTO) Policy, the DEPARTMENT'S Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways (Florida's Green Book), and

COUNTY requirements.

13. The RAILROAD will complete the USDOT Crossing Inventory Forms (OMB No. 2130-0017) for the opening of the Coconut Boulevard Crossing and the closing of the Youth Camp Road Crossing. Form OMB No. 2130-0017, attached hereto as EXHIBIT "G," will be submitted to the DEPARTMENT and FRA for inventory data entry no later than 60 days upon completion of the opening and closure.
14. The COUNTY shall provide the DEPARTMENT a copy of a COUNTY Resolution or a certified copy of the Minutes from the Clerk and Comptroller, evidencing COUNTY approval of this Stipulation of Parties.
15. This Stipulation of Parties has been executed by all parties having an interest in this matter. All parties waive hearing rights provided by Chapter 120, Florida Statutes, for the opening of the Coconut Boulevard Crossing and the closing of the Youth Camp Road Crossing.
16. The terms of this Stipulation of Parties may not be changed, waived, discharged, or terminated orally, but only by an instrument or instruments in writing, signed by the RAILROAD, CDD, COUNTY, and DEPARTMENT.
17. This Stipulation of Parties is governed by, and shall be interpreted and construed in accordance with, the laws of the State of Florida.
18. Any failure of any party to insist upon the strict performance of any terms or provisions of this Stipulation of Parties is not deemed to be a waiver of the terms of this Stipulation.
19. As authorized by Section 335.141, Florida Statutes, and Rule Chapter 14-57, Florida Administrative Code, the DEPARTMENT permits this public at-grade crossing relocation with the closure of the Youth Camp Road Crossing, and the opening of the Coconut Boulevard Crossing, as evidenced by this Stipulation of Parties, provided all conditions of this Stipulation are met and completed within 60 months of the execution of this Stipulation.

(THIS CONCLUDES THE BODY OF THIS STIPULATION OF PARTIES)

CSX TRANSPORTATION, INC. (RAILROAD)

By: Tony C Bellamy

Date: 4/26/21

Tony C. Bellamy
Director Project Management
Public Projects

AVENIR COMMUNITY DEVELOPMENT DISTRICT (DEVELOPER)

By: Virginia Cepero

Date: 4/28/2021

Virginia Cepero
Chairperson, Avenir CCD
Board of Supervisors

PALM BEACH COUNTY, BY ITS BOARD OF COUNTY COMMISSIONERS (COUNTY)

By: _____
Deputy Clerk

By: _____
Dave Kerner, Mayor

(SEAL)

APPROVED AS TO FORM AND TO LEGAL SUFFICIENCY

By: _____
Assistant County Attorney

APPROVED AS TO TERMS AND CONDITIONS

By: Joanne M. Keller
for Deputy County Engineer

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION (DEPARTMENT)

By: _____
Chief of Modal Development

Date: _____

LEGAL REVIEW (DEPARTMENT)

By: _____
Attorney, FDOT Central Office

Date: _____

EXHIBIT A

Rule 14-57.010, F.A.C.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

RAILROAD GRADE CROSSING APPLICATION
CLOSING

725-060-66a
RAIL
05/18

ROAD NAME OR NUMBER	COUNTY/CITY NAME
State Road 710 (Beeline Highway)	PALM BEACH / PALM BEACH GARDENS

A. IDENTIFICATION

Submitted By:

Applicant: Avenir Community Development District

Office: SPECIAL DISTRICT SERVICES, INC.

Telephone: (561) 630-4922

Address: 2501A Burns Road

Palm Beach Gardens, FL 33410

Application For:

Closing a public highway-rail grade crossing by:

☒ roadway removal
☐ rail removal

B. CROSSING LOCATION

FDOT/AAR Crossing Number: 628094-S

Jurisdiction for Street or Roadway by Authority of: ☐ City ☒ County ☐ State

Local Popular Name of Street or Roadway: COUNTY YOUTH CAMP ROAD RAILROAD CROSSING

Railroad Company: CSX TRANSPORTATION

Railroad Mile Post: SX-953.38

Submitted for the Applicant by: Jason Pierman - District Manager DATE: 2-27-
Name and Title

Application FDOT Review by: DATE:
Central Rail Office

REFERENCES:
(Specific Legal Authority) 334.044 F.S.
(Law Implemented) 335.141 F.S.
(Administrative Rule) 14-57.012 F.A.C.

CLOSING APPLICATION QUESTIONNAIRE

Maps, aerials, and supporting documentation must be provided with the application.

If all parties, Applicant, Railroad, and Department, fail to agree to the rail crossing closure through a Stipulation of Parties, the Applicant must establish the closure meets the criteria found in Rule 14-57.012, Florida Administrative Code. This questionnaire will assist the Department in evaluating the criteria and is not intended to be an exclusive list of factors. If the information is not available or unknown, please mark N/A.

Florida Administrative Code criteria:

A) Safety

a-1. How will the crossing closure affect safety to drivers, pedestrians, cyclists, and rail personnel?

The existing crossing and the rock base road is actively used to access the Palm Beach County Natural Areas, Youth Camp, utility easements and facilities, and South Florida Water Management District's (SFWMD's) access to the C-18 canal. A new access road will be provided across the SFWMD C-18 Canal which will connect to the extension of Coconut Boulevard and the new crossing/intersection with the State Road 710 (Beeline Highway) proposed by the concurrently filed Railroad Grade Crossing Application-Opening. The new crossing will enhance safety to drivers, pedestrians, cyclists, and rail personnel as it will be constructed to current design standards. The existing crossing has no safety features in place for pedestrians and cyclists. Upon opening of the new crossing, the existing crossing will be removed entirely such that no access to the tracks at this location shall exist.

a-2. What, if any, safety measures are proposed for adjacent crossings?

This crossing is proposed to be relocated and upgraded to include significantly enhanced safety measures including, signalization and turn lanes that will ehhance safety for the traveling public.

a-3. Identify all highway traffic control devices and highway traffic signals at adjacent crossings that may be improved or upgraded if the subject crossing is closed.

There are no highway control devices and highway traffic signals at adjacent crossings that will be improved or upgraded if the subject crossing is closed. However, the relocation of this crossing to the new location will include new traffic management opportunities, including signalization, turn lanes, and adjustments to the existing median on State Road 710 (Beeline Highway).

a-4. What is the distance from the subject crossing to the nearest intersection? Identify the street.

The existing crossing is 1,446' from the nearest intersection - Caloosa Boulevard and State Road 710 (Beeline Highway).

a-5. Are there structures, fences, or vegetation near the subject crossing that inhibits sight distance?

No.

a-6. Identify major traffic generators (i.e., businesses, shopping malls, recreational areas, special events, etc.) in this area. Specify type, location, and distance to subject crossing.

Traffic generators for this area consist of the following:
Avenir, a mixed use development located on Northlake Boulevard and Coconut Boulevard (south of the subject crossing) consisting of approximately 3,900 dwelling units, 400,000 sf of retail, 200,000 sf of medical office, 1,800,000 sf of profesional office and a 300 room hotel. The Avenir project is located approximately 2.4 miles south of the existing crossing. Please note that the crossing is currently being used as described in a-1 above and none of the traffic being generated by the adjacent developments impacts the crossing.

Calusa, a residential development located on the State Road 710 (Beeline Highway) consisting of 350 homes. Calusa is located approximately .5 miles from the existing crossing.

The Palm Beach Park of Commerce, an industrial development approved for approximately 6.25 million square feet, with approximately 1.7 million square feet constructed. The Palm Beach Park of Commerce is located approximately 2.6 miles from the existing crossing.

Pratt Whitney offices and testing facility, consisting of approximately 1.3 million square feet. Pratt Whitney is located approximatley 3.6 miles from the existing crossing.

a-7. Is the crossing located on a designated evacuation route?

Yes. The crossing is located along State Road 710 (Beeline Highway).

a-8. Provide a traffic operations and safety analysis, with traffic issues evaluated for the railroad crossing closure. This analysis should include all adjacent rail crossings and roadways in the immediate vicinity and the increase in traffic predicted on these roadways from rerouting.

The crossing is proposed to be relocated pursuant to the concurrently filed Railroad Grade Crossing Application - Opening. The information is provided in that application.

B) <u>Necessity for rail and vehicle traffic</u>

b-1. Is the crossing necessary to access property?

Yes, the crossing is currently used to access the SFWMD C-18 Canal, the Youth Camp facility, utility easements and facilities, Palm Beach County Natural Areas, and other related facilities. The Fish and Wildlife Conservation Commission (FWC) has agreed to the relocation of the crossing and access to the Youth Camp and management area through an alternative access route which will utilize the proposed relocated opening at Coconut Boulevard and Beeline Highway as proposed by the Railroad Grade Crossing Application - Opening filed concurrently herewith. A copy of the FWC letter is attached as Exhibit "C."

b-2. Provide description of land use on each side of the rail crossing.

The immediately adjacent use is a preservation and passive recreation area. On the north side of State Road 710 (Beeline Highway) is a conservation area.

b-3. Are there any churches, schools, or hospitals within a mile or less of the subject crossing? Please list by name and location.

No.

b-4. Annual Average Daily Traffic (AADT) at the crossing?

Less than 15 AADT

b-5. Level of service at the crossing?

LOS A

b-6. Percentage of truck traffic?

Approximately 50% of vehicular traffic is truck traffic.

b-7. Do trucks carrying hazardous materials use the crossing?

No.

If so, approximately how many trips per day or week?

N/A

b-8. How many school buses use the crossing daily?

None.

b-9. What is the estimated number of pedestrians and bike riders that use the subject crossing (daily/weekly)?

Approximately 5 per day on average.

b-10. Is the subject crossing on a local transit route?

No.

b-11. Please provide any corridor studies or other preliminary traffic engineering studies that pertain to this crossing.

There are no corridor studies or other preliminary traffic engineering studies available for this crossing.

C) Alternate Routes

c-1. Are there access roads available to property owners if the crossing is closed?

A new access road will be provided to the property owner prior to the proposed closure. This is described and shown on the exhibits with the concurrently filed Railroad Grade Crossing Application-Opening.

c-2. Name routes that can be used if the crossing is closed?

A new route is proposed concurrently with this application. A new road will be constucted as a Coconut Boulevard Extension that will connect Northlake Boulevard to State Road 710 (Beeline Highway) and to the Youth Camp and management area currently served by this crossing.

c-3. Are there traffic signals on these routes?

A new traffic signal will be installed at the location of the relocated crossing.

c-4. How does the proposed crossing closure impact the AADT at nearby public crossings? Provide estimated traffic count changes.

There will be no impact to the AADT on nearby public crossings.

c-5 By driving alternate routes, during peak times, calculate the additional travel time and distance between two points (nearest intersection or major access) on either side of the subject crossing. Provide calculated times, routes, and distances.

The alternate route provided will not have any impact on additional travel time and distance during peak times. The current crossing provides service off peak and the new access to that property will continue in this fashion.

D) Effect on rail operations and expenses

d-1. Provide current number and type of rail tracks at the subject crossing.

One railroad track - normal railway fastening system (wooden sleeper with spike fastening system).

d-2. Are there rail sidings or switches in the location of the subject crossing?

No.

d-3. Is there a nearby rail yard?

No.

If so, what is the distance of the yard to the subject crossing.

N/A.

d-4. Provide the current number of daily train movements (number of switching or thru trains; number of passenger or freight trains).

According to the U.S. DOT Crossing Inventory Form, there is an average of four (4) passenger trains per day. Although CSX does not post a schedule, based on upstream and down stream inventories, and the other area data, 0 to 2 freight trains could also be expected on average.

d-5. Provide the approximate times during the day and evening that the crossing is blocked.

Amtrak Trains - 10:15 AM, 2:00 PM, 3:45 PM, and 4:15 PM. Freight trains are scheduled based on demand and schedules are not made public. Published data indicate freight is ideally scheduled from 10:00 PM to 6:00 AM.

d-6. Provide the approximate length of time (i.e., minutes) that the crossing is blocked.

Passenger trains will block the crossing for less than 2 minutes per train, which is based on approximately 15 seconds for train to pass (1073'/60 mph) + clearance time for gates. Freight trains will block the crossing for just under 5 minutes per train, which is based on approximately 2 minutes 40 seconds for the train to pass (8,550'/33 mph) + clearance time for gates.

d-7. Provide minimum and maximum train speeds at the subject crossing.

Passenger trains have a minimum speed of 60 mph and maximum speed of 79 mph. Freight trains have a maximum speed of 60 mph.

d-8. What is the anticipated expansion of tracks and/or train movements?

There is no expansion anticipated.

d-9. What is the distance from the subject crossing to adjacent public crossings? (Identify adjacent crossings by road name and crossing number.)

6,310' southeast of existing crossing at State Road 710 (Beeline Highway), crossing number 628093K.
5,330' northwest of the existing crossing at State Road 710 (Beeline Highway), crossing number 621463M.

E) <u>Excessive restriction to emergency type vehicles resulting from closure</u>

e-1. Provide response from the Sheriff/Police Chief and Fire Chief to the proposed crossing closure.

The response from Palm Beach Gardens Fire Rescue is attached as Exhibit "B." The Applicant is working with the applciable police agency and will suppy upon receipt.

e-2. Based on observation, the response from the City/County, or traffic studies, is this a route that emergency rescue would typically use?

Not typically.

e-3. How many emergency rescue vehicles have used the crossing to respond to calls in the past 2-3 years?

As noted in Exhibit "B," attached, approximately 5 emergency vehicles would have used this crossing.

F) <u>Design of the grade crossing and road approaches</u>

f-1. Identify and describe the condition of: crossing surface, rail warning devices (including pavement markings, signs, and highway traffic signals), sidewalks, bike lanes, and approaches on each side of subject crossing.

Existing crossing consists of an asphalt driveway to exit State Road 710 (Beeline Highway) and a dirt/gravel road across the railroad tracks. Please refer to Exhibit "A."

f-2. Is the crossing surface and track higher than either side of the road (i.e., hump crossing)?

Yes. Please refer to Exhibit "A."

f-3. What is the vehicular design speed at the subject crossing?

There is no design speed as the crossing is a dirt road.

f-4. Number of lanes at the crossing?

One.

f-5. Width of crossing?

Approximately 15'.

f-6. Condition of roadway?

Poor.

G) <u>Presence of multiple tracks and their effect upon railroad and highway operations</u>

g-1. Please confirm the number of tracks at the location and identify each track.

One track.

g-2. How many train movements occur on each track and the types of trains that run on each track (passenger, thru freight, or switching freight and the number of cars)?

Four (4) passenger trains per day with 11 cars per train. There may also be between 0-2 freight trains per day with a projected average length of 8,150'.

EXHIBIT A

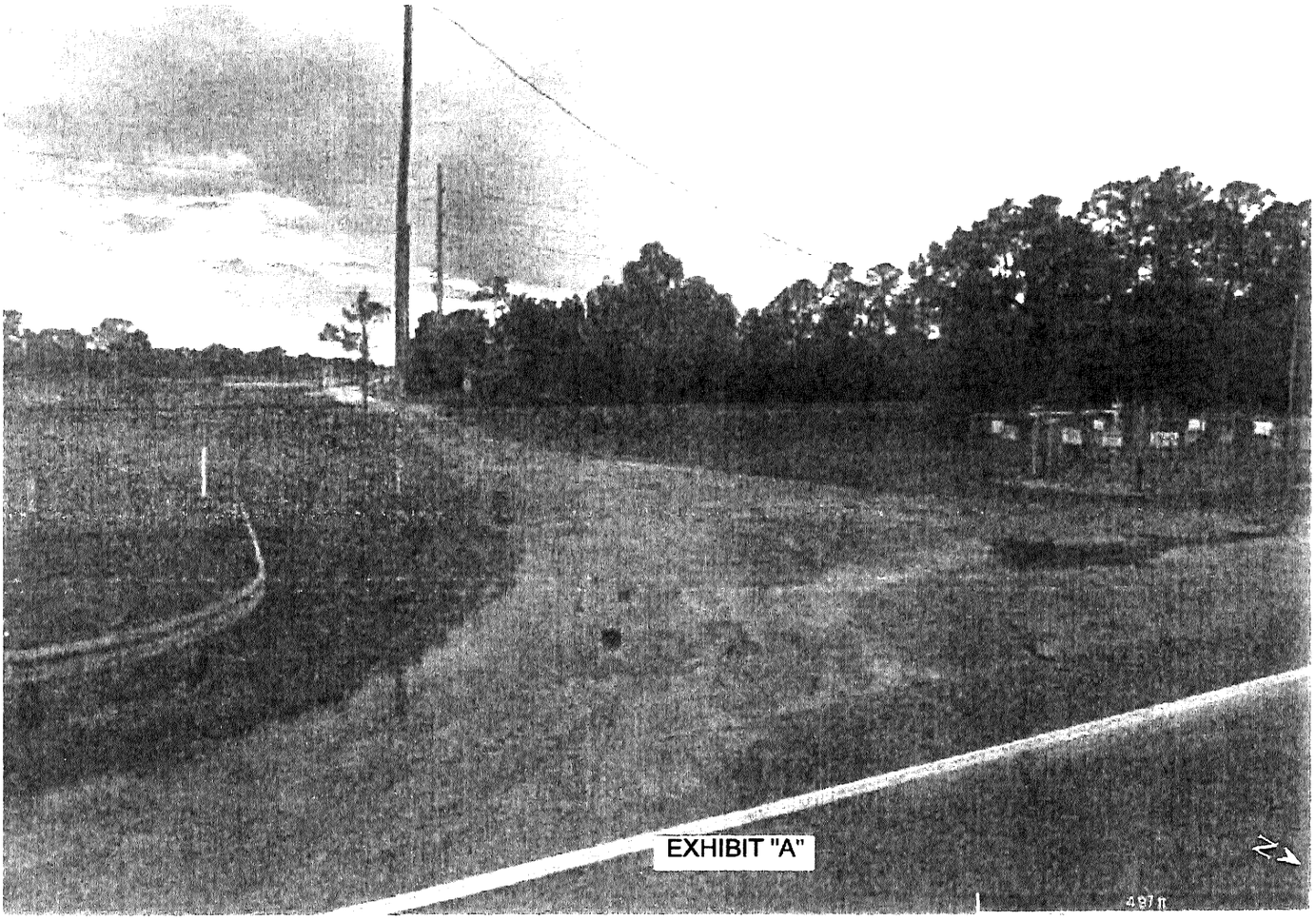


EXHIBIT A

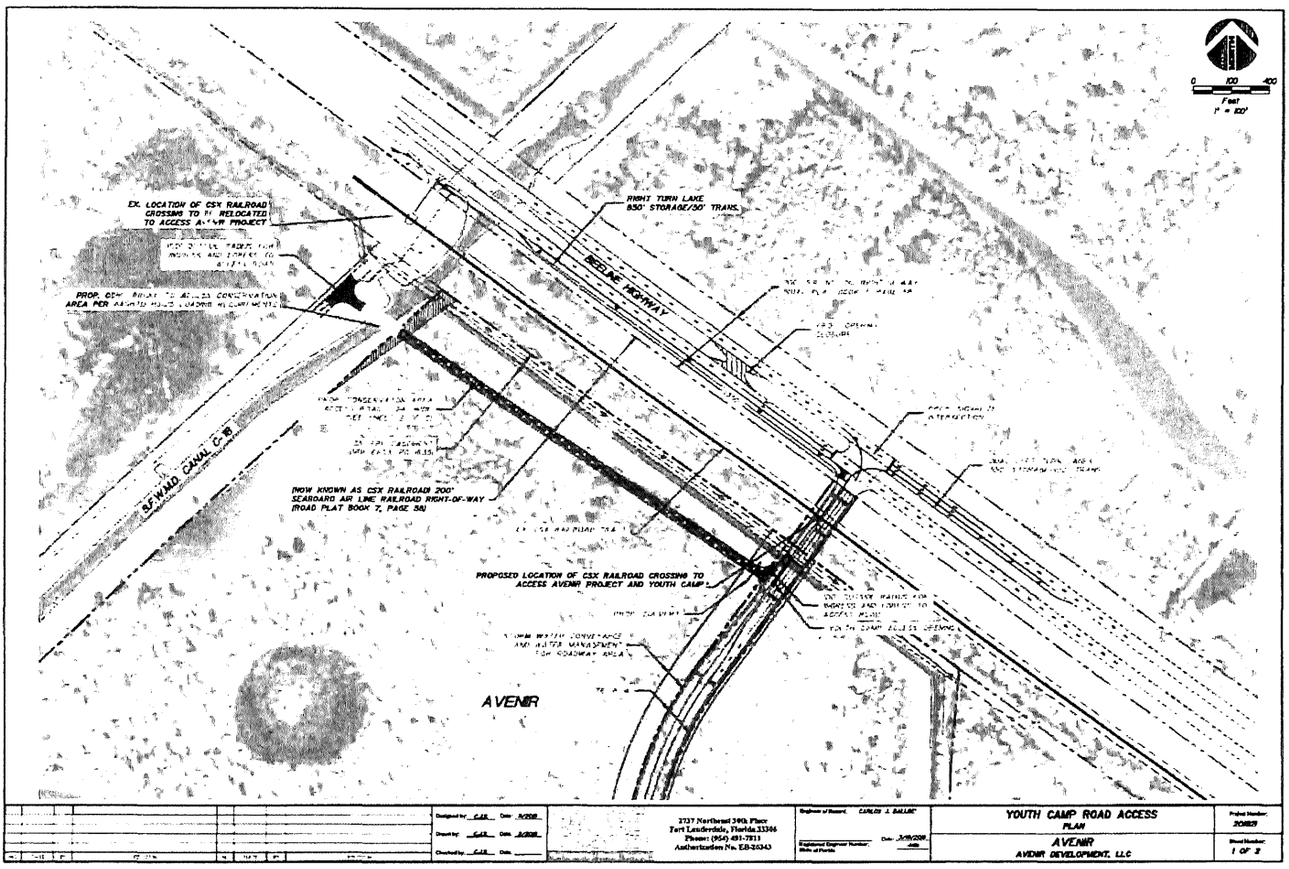

Untitled Map
Write a description for your map
Legend
Google Earth
N

Tanya N. McConnell, P.E.

March 27, 2019

EXHIBIT "A"

EXHIBIT A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PROP. CSX RAILROAD TO ACCESS CONSERVATION AREA PER APPROVED PLANS
RIGHT TURN LANE 850' STORAGE/50' TRANS.
BEELINE HIGHWAY
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(NOW KNOWN AS CSX RAILROAD 200' SEABOARD AIR LINE RAILROAD RIGHT-OF-WAY (ROAD PLAT BOOK 7, PAGE 58)
PROPOSED LOCATION OF CSX RAILROAD CROSSING TO ACCESS AVENIR PROJECT AND YOUTH CAMP
AVENIR
0 100 400
Feet
1" = 100'
2737 Northeast 30th Place
Fort Lauderdale, Florida 33306
Phone: (954) 491-7811
Authorization No. EB-26343
YOUTH CAMP ROAD ACCESS
PLAN
AVENIR
AVENIR DEVELOPMENT, LLC

EXHIBIT A

NOTES:

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3. LIMEROCK BASE SHALL BE 12" PRIMED AND SHALL HAVE A MINIMUM LIMEROCK BEARING RATIO (LBR) OF 100. SHALL BE OF THE MIAMI FORMATION HAVING A MINIMUM PERCENTAGE OF CARBONATES OF CALCIUM AND MAGNESIUM OF 60, UNLESS OTHERWISE APPROVED. BASE MATERIAL SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 98% OF MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180 UNDER ALL PAVED AREAS.
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6. LABORATORY (PROCTOR) COMPACTION TEST (T-180) SHALL BE PERFORMED ON ALL MATERIAL SUBGRADE AND BASE AND ANY SUBSEQUENT CHANGES IN MATERIALS. LIMEROCK BEARING RATIOS, SIEVE ANALYSIS AND DENSITIES REQUIRED BY THE CONTRACT DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER-OF-RECORD.
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[illegible]

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2. OUTSIDE TURNING RADIUS SHALL BE 100'.
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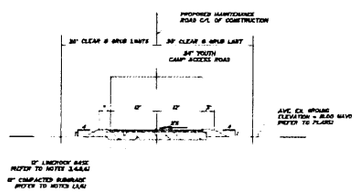

YOUTH CAMP ROAD TYPICAL SECTION
SCALE 1" = 10'

NO	DATE	BY	REVISION	NO	DATE	BY	REVISION

Designed by: C.J.B. Date: 3/2008
Drawn by: C.J.B. Date: 3/2008
Checked by: C.J.B. Date: ---

2737 Northeast 34th Place
Fort Lauderdale, Florida 33306
Phone: (954) 491-7811
Authorization No. ED-26343

Engineer of Record: CARLOS J. BALLAS
Registered Engineer Number: [illegible]
State of Florida
Date: 3-4-08

YOUTH CAMP ROAD ACCESS
SECTION AND NOTES

AVENIR
AVENIR DEVELOPMENT, LLC

Project Number: 20.0631
Sheet Number: 2 OF 2

EXHIBIT A

EXHIBIT A

Rule 14-57.010, F.A.C.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

RAILROAD GRADE CROSSING APPLICATION
OPENING

725-090-66b
RAIL
05/18

ROAD NAME OR NUMBER	COUNTY/CITY NAME
State Road 710 (Beeline Highway)	PALM BEACH / PALM BEACH GARDENS

A. IDENTIFICATION

Submitted By:

Applicant: Avenir Community Development District

Office: SPECIAL DISTRICT SERVICES, INC.

Telephone: (561) 630-4922

Address: 2501A Burns Road

Palm Beach Gardens, FL 33410

Application For:

Opening a public highway-rail grade crossing by:

- ☐ new rail line construction
- ☒ new roadway construction
- ☐ conversion of private to public highway-rail grade crossing

B. CROSSING LOCATION

FDOT/AAR Crossing Number: 628094-S

Jurisdiction for Street or Roadway by Authority of: ☒ City ☐ County ☐ State

Local Popular Name of Street or Roadway: COCONUT BOULEVARD

Railroad Company: CSX TRANSPORTATION

Railroad Mile Post: SX 953.606

Submitted for the Applicant by: Jason Pierman, District Manager DATE: 12-27-19
Name and Title

Application FDOT Review by: _____ DATE: _____
Central Rail Office

REFERENCES:
(Specific Legal Authority) 334.044 F.S.
(Law Implemented) 335.141 F.S.
(Administrative Rule) 14-57.012 F.A.C.

OPENING APPLICATION QUESTIONNAIRE

Design plans, maps, aerials, and supporting documentation must be provided with the application.

If all parties, Applicant, Railroad, and Department, fail to agree to the rail crossing opening through a Stipulation of Parties, the Applicant must establish the crossing meets the criteria found in Rule 14-57.012, Florida Administrative Code. This questionnaire will assist the Department in evaluating the criteria and is not intended to be an exclusive list of factors. If the information is not available or unknown, please mark N/A.

Florida Administrative Code criteria:

A) Safety

a-1. How will the proposed crossing affect safety to drivers, pedestrians, cyclists, and rail personnel?

This Proposed crossing will enhance safety. This relocation (see concurrently filed Railroad Grade Crossing Application - Closing) has been approved by FDOT Access Management Committee. That approval is attached hereto as Exhibit "C." The proposal includes signalizing the crossing and intersection to secure drivers, pedestrians, cyclists and rail personnel. Turn lanes are also proposed to provide safer through traffic on the intersecting roadways. Also, bicycle and pedestrian signals and markings will be installed in conformance to FDOT requirements. The new crossing will provide sidewalks and bike lanes and will substantially increase the pedestrian and cyclist safety.

a-2. Has grade separation been considered in planning the crossing? Yes, but it is not feasible. If not, why? The proposed crossing is adjacent to State Road 710 (Beeline Highway) and there is no room for grade separation.

a-3. What crossings will be submitted for closure to offset the safety impacts of a new crossing opening?

Youth Camp Crossing located at Milepost SX-853.38 U.S. DOT/AAR 628094-S.

a-4. What safety measures are designed for the proposed crossing?

Safety measures include signalizing the intersection of Coconut Boulevard and State Road 710 (Beeline Highway), installing signals, barricades and markings as per FDOT requirments; increasing sight distance for drivers; timing signal to stop traffic movement through the intersection during railroad traffic through crossing. These safety measures are identified on Exhibit "A."

a-5. What is the distance from the proposed crossing to the nearest intersection? Identify the street.

Distances to the nearest intersections are as follows: 1,452 feet to Caloosa Blvd (Northwest location) and 3,306 feet to Sand Ridge Road (Southwest location).

a-6. Are there plans for any structures to be built near the crossing intersection?

No.

a-7. Identify all major traffic generators (i.e., businesses, shopping malls, recreational areas, special events, etc.) in this area. Specify type, location, and distance to proposed crossing.

Traffic generators for this area consist of the following:
Avenir, a mixed use development located on Northlake Boulevard and Coconut Boulevard (south of the subject crossing) consisting of approximately 3,900 dwelling units, 400,000 sf of retail, 200,000 sf of medical office, 1,800,000 sf professional office and a 300 room hotel. The Avenir project is located approximately 2.4 miles south of the proposed crossing.

Calusa, a residential development located on the State Road 710 (Beeline Highway) consisting of 350 homes . Calusa is located approximately .5 miles from the proposed crossing.

The Palm Beach Park of Commerce, an industrial development approved for approximately 6.25 million square feet, with approximately 1.7 million square feet constructed. The Palm Beach Park of Commerce is located approximately 2.6 miles from the proposed crossing.

Pratt Whitney offices and testing facility, consisting of approximately 1.3 million square feet. Pratt Whitney is located approximatley 3.6 miles from the proposed crossing

a-8. Provide a traffic operations and safety analysis, with traffic issues evaluated for the railroad crossing, train traffic movements, and railroad preemption. This analysis should include all proposed developments in the immediate vicinity and the increase in traffic predicted from the developments.

Please see the traffic study attached hereto as Exhibit "B".

B) Necessity for rail and vehicle traffic

b-1. Why is the crossing necessary?

The relocation of the crossing as proposed by this application and a concurrently filed closing application was contemplated as part of the Avenir project Land Use Amendment Approval and the Palm Beach County Traffic Performance Standards/Proportionate Share Agreeement. The relocation of the crossing as proposed will enhance traffic safety and flow for the traveling public.

b-2. Provide excerpts from the Comprehensive Plan or any other transportation plans relative to the proposed crossing.

The City of Palm Beach Gardens Comprehensive Plan provides the following:

Transportation Element

GOAL 2.2.: CONTINUE TO DEVELOP AND MAINTAIN SUSTAINABLE, SAFE AND EFFICIENT INTERMODAL TRANSPORTATION LINKAGES THROUGH A BALANCE OF TRAFFIC CIRCULATION SYSTEMS, PUBLIC TRANSPORTATION, AND PEDESTRIAN AND BICYCLE NETWORKS.

Policy 2.2.1.6: The City shall encourage connectivity of roadways and cross connection of property with similar or compatible land uses in the City to improve accessibility, reduce congestion on arterial and collector roads, including bicycle and pedestrian connections, and utilize traffic calming measures to minimize the traffic impacts on residential neighborhoods.

Policy 2.2.5.1: The City shall continue to enforce its adopted design standards, which minimize roadway hazard by:
a) Requiring the provision of adequate storage and weaving areas;
b) Providing turn lanes with adequate storage;
c) Limiting direct access from residential driveways and local roads onto high-speed traffic lanes;
d) Reducing conflicts between roadway and pedestrian or rail traffic;
e) Providing adequate capacity for emergency evacuation;
f) Providing standard signing and marking for roadways, bikeways, sidewalks, and intersections;
g) Controlling access between dissimilar land uses;
h) Regulating the length of cul-de-sacs; and
i) Road drainage.

Future Land Use Element

Policy 1.2.4.6: The City shall maintain land development regulations requiring subdivisions to be designed so that all individual lots have access to the internal street system, and lots along the periphery are buffered from major roads and incompatible land uses.

Intergovernmental Coordination Element

Objective 8.1.7.: Coordinate transportation planning efforts with the South Florida Regional Transit Authority (SFRTA), TCRPC, other governmental entities and local transit providers to ensure collaboration and dissemination of information regarding transit decisions and projects.

In addition, the Palm Beach County Comprehensive Plan provides in Policy 1.13-d of its transportation element that it should "ensure the availability of adequate transportation facilities, the County's transportation system shall be coordinated with local comprehensive plans to reflect the demand created by anticipated development."

b-3. Provide description of land use on each side of the rail crossing.

Immediately adjacent to the crossing is a conservation area. On the north side of the State Road 710 (Beeline Highway) is the Calusa subdivision described in answer to a-7 above.

b-4. Provide predicted Annual Average Daily Traffic (AADT) at the crossing.

Annual Average Daily Traffic at build out (2035) is anticipated to be approximatley 20,712 trips.

b-5. Provide level of service at the crossing.

The level of service at the crossing is D.

b-6. Provide anticipated AADT and level of service in 5 years.

The anticipated AADT in five years is anticipated at 14,775, with a level of service of C.

b-7. Provide predicted percentage of truck traffic and anticipated truck traffic 5 years out.

It is anticipated that approximately 5% of traffic generated will be truck traffic 5 years out.

b-8. Will trucks carry hazardous materials?

No hazardous truck shipments are anticipated.

If so, approximately how many trips per day or week?

N/A

b-9. Will school buses use the crossing?

Yes. It is anticipated that ten (10) school buses will utilize the crossing per week on average.

If so, how many school buses will use the crossing per day or week?

b-10. Will emergency rescue vehicles use the crossing? If so, approximately how many trips per day or week?

Limited emergency rescue vehicles will use the crossing due to police and fire being contained within the Avenir community. It is, therefore, anticipated that there may be one emergency vehicle trip per day that may use the crossing.

b-11. What is the predicted number of pedestrians and bike riders that will use the proposed crossing? What is the predicted number of users 5 years out?

It is predicted that approximately 5 pedestrians and bike riders will use the crossing per day on average immediately and that approximately 10 pedestrians and bike riders will use the crossing per day on average five years out.

b-12. Please provide any corridor studies or other preliminary traffic engineering studies that pertain to this crossing.

Please refer to the traffic study attached Exhibit "B".

C) Alternate Routes

c-1. Are there access roads available to property owners if the crossing is not there?

No.

c-2. Name routes currently used or intended for use if the crossing is not approved?

No other routes available.

c-3. Are there traffic signals on these routes?

N/A.

c-4. How does the proposed crossing, if built, affect the AADT at nearby public crossings? Provide estimated traffic count changes, if any.

There will be a reduction in approximately 5,903 AADT each at Crossing Number 628096F (Northlake Boulevard) and 628095Y (Northlake Boulevard Turn Lane).

D) Effect on rail operations and expenses

d-1. Provide current number and type of rail tracks.

One track - normal railway fastening system (wooden sleeper with spike fastening system).

d-2. Are there rail sidings or switches in the location of the proposed crossing?

No.

d-3. Is there a nearby rail yard?

No. If so, what is the distance of the yard to the proposed crossing. N/A

d-4. Provide the current number of daily train movements (number of switching or thru trains; number of passenger or freight trains).

According to the U.S. DOT Crossing Inventory Form, there is an average of four (4) passenger trains per day. Although CSX does not post a schedule, based on upstream and down stream inventories, and the other area data, 0 to 2 freight trains could also be expected on average.

d-5. Provide the approximate times during the day and evening that the crossing will be blocked.

Amtrak Trains - 10:15 AM, 2:00 PM, 3:45 PM, and 4:15 PM. Freight trains are scheduled based on demand and schedules are not made public. Published data indicate freight is ideally scheduled from 10:00 PM to 6:00 AM.

d-6. Provide the approximate length of time (i.e., minutes) that the crossing is blocked.

Passenger trains will block the crossing for less than 2 minutes per train, which is based on approximately 15 seconds for train to pass (1073'/60 mph) + clearance time for gates. Freight trains will block the crossing for just under 5 minutes per train, which is based on approximately 2 minutes 40 seconds for the train to pass (8,550'/33 mph) + clearance time for gates.

d-7. Provide minimum and maximum train speeds at the proposed crossing.

Passenger trains have a minimum speed of 60 mph and maximum speed of 79 mph. Freight trains have a maximum speed of 60 mph.

d-8. What is the anticipated expansion of tracks and/or train movements?

No expansion is anticipated.

d-9. What is the distance from the proposed crossing to adjacent public crossings? (Identify adjacent crossings by road name and crossing number.)

7,500' northwest, FAA Xing, 628093K
4,260' southeast, Airport Access Road, 621463M

d-10. What are the estimated costs of the crossing installation and annual maintenance?

Information will be provided after receiving the initial application review comments.

Who will be responsible for the costs of installation and maintenance?

The cost of the installation will be funded privately by the developer of Avenir consistent with the requirements of the Proportionate Share Agreement with Palm Beach County. It is anticipated that the crossing will be maintained by the Avenir Community Development District.

E) Closure of one or more public crossings to offset opening a new crossing

e-1. Provide the names and crossing numbers of any crossing closure candidates that may offset the opening of the proposed crossing.

Youth Camp Crossing, which is located approximately 1,350 feet northwest from the proposed opening. A concurrent closing application has been filed with this opening application to coordinate both the opening and closing without impacting access provided by the existing crossing.

F) Design of the grade crossing and road approaches

f-1. Submit design plans, inclusive of location of sidewalks, bike lanes, and traffic control devices, including pavement markings, signs, and highway traffic signals.

Information is identified on Exhibit "A. "Additional information will be provided if requested.

f-2. What future changes are proposed (ex: phase one is a 2-lane roadway, left turn lane to be added in phase two)?

This is proposed as a one phase construction.

f-3. What is the vehicular design speed at the proposed crossing?

30 MPH

f-4. How many thru or turn lanes?

Two southbound through lanes
One northbound left turn lane
Two northbound right turn lanes
Divided or undivided? Divided by a traffic separator

G) Presence of multiple tracks and their effect upon railroad and highway operations

g-1. Please confirm the number of tracks at the location and identify each track.

One track.

g-2. How many train movements occur on each track and the types of trains that run on each track (passenger, thru freight or switching freight, and the number of cars)?

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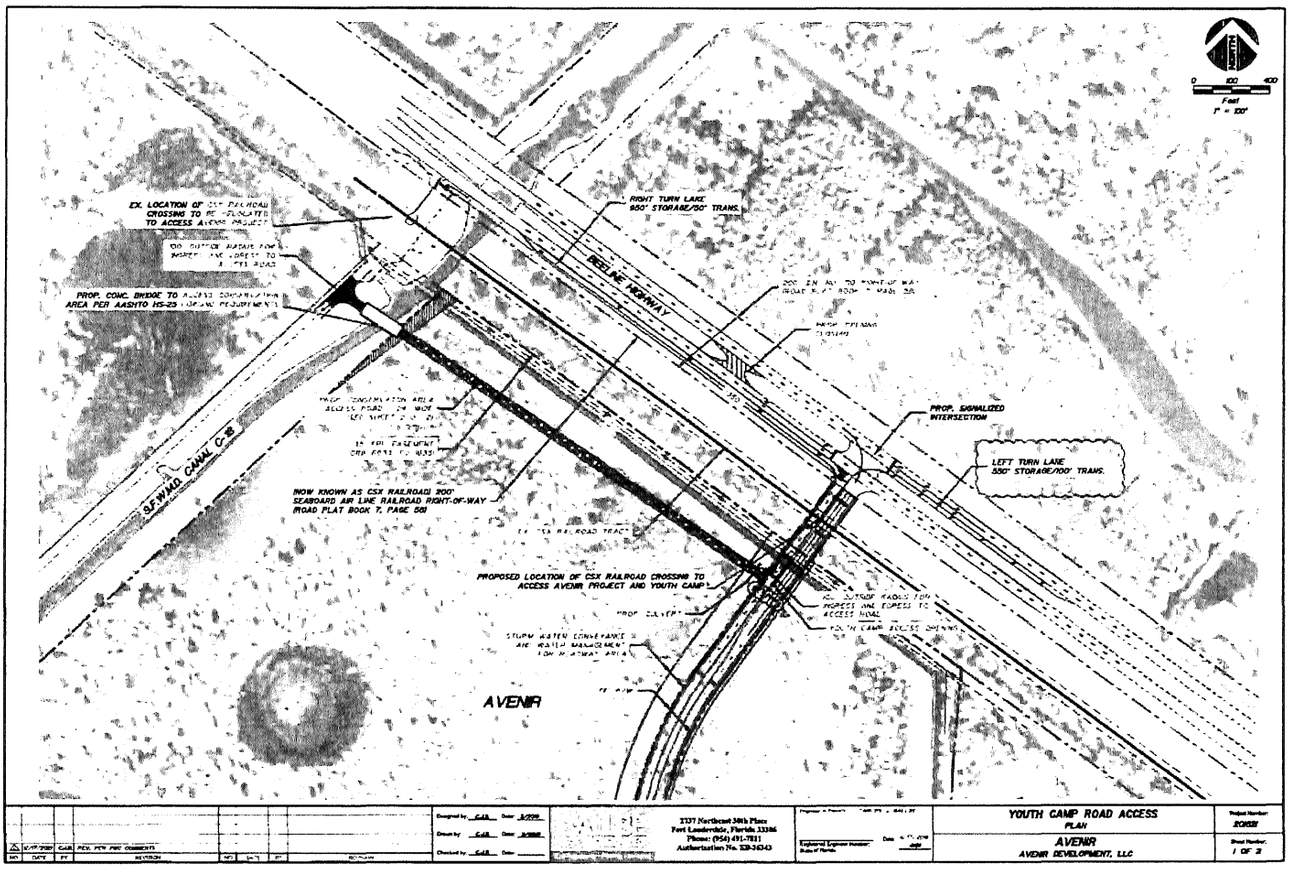
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Authorization No. 328-2643
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20055
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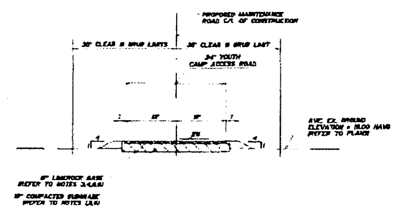
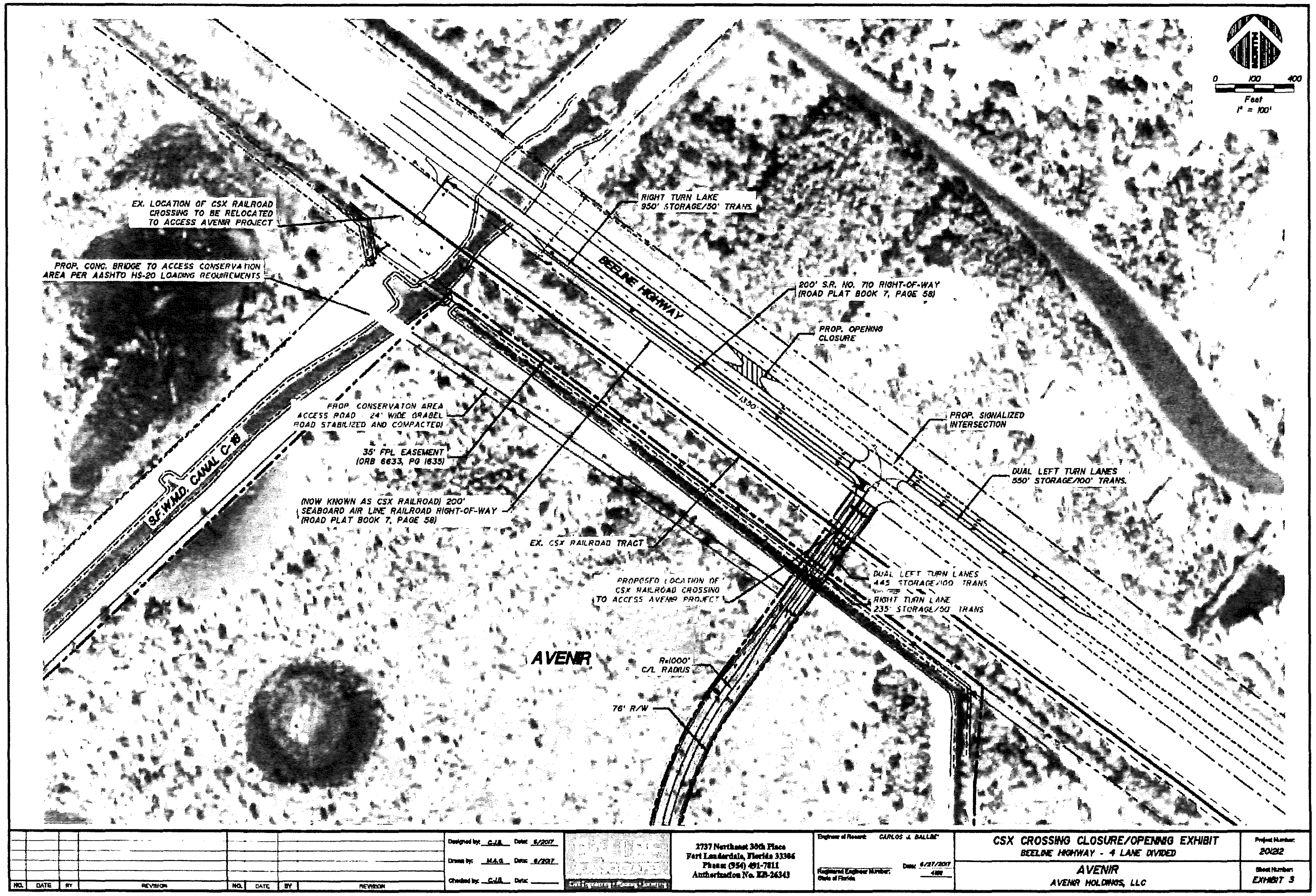


YOUTH CAMP ROAD TYPICAL SECTION

2737 Northeast 30th Place Fort Lauderdale, Florida 33306 Phone: (954) 491-7811 Authorization No. EB-26343	YOUTH CAMP ROAD ACCESS SECTION AND NOTES	AVENIR AVENIR DEVELOPMENT, LLC	2 OF 2

EXHIBIT A

EXHIBIT B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200' S.R. NO. 710 RIGHT-OF-WAY
(ROAD PLAT BOOK 7, PAGE 58)
PROP. OPENING
CLOSURE
PROP. CONSERVATON AREA
ACCESS ROAD 24' WIDE GRAVEL
ROAD STABILIZED AND COMPACTED)
35' FPL EASEMENT
(ORB 6633, PG 1635)
PROP. SIGNALIZED
INTERSECTION
DUAL LEFT TURN LANES
550' STORAGE/100' TRANS.
(NOW KNOWN AS CSX RAILROAD) 200'
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S.F.W.M.D. CANAL C-18
EX. CSX RAILROAD TRACT
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CSX RAILROAD CROSSING
TO ACCESS AVENIR PROJECT
DUAL LEFT TURN LANES
445 STORAGE/100 TRANS
RIGHT TURN LANE
235 STORAGE/50 TRANS
AVENIR
R=1000'
C/L RADIUS
76' R/W
NO. DATE BY REVISION
NO. DATE BY REVISION
Designed by: C.J.B. Date: 6/2017
Drawn by: M.A.G. Date: 6/2017
Checked by: C.J.B. Date:
2737 Northeast 30th Place
Fort Lauderdale, Florida 33306
Phone (954) 491-7811
Authorization No. EB-26343
Engineer of Record: CARLOS J. BALLBE'
Registered Engineer Number: State of Florida
Date: 6/27/2017
CSX CROSSING CLOSURE/OPENNIG EXHIBIT
BEELINE HIGHWAY - 4 LANE DIVIDED
AVENIR
AVENIR HOLDINGS, LLC
Project Number: 201212
Sheet Number: EXHIBIT 3

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.

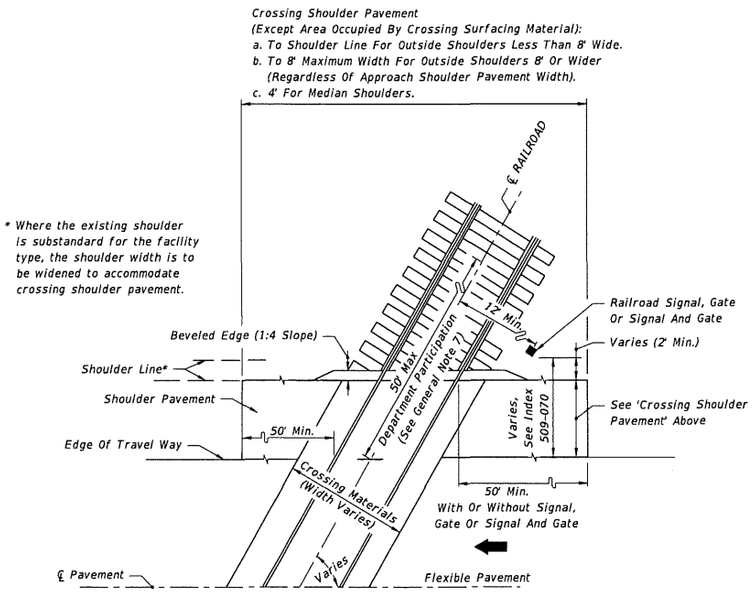
5. Sidewalks shall be constructed through the crossing between approach sidewalks of the crossing. Sidewalks shall be constructed with appropriate material to allow unobstructed travel through the crossing in accordance with ADA requirements.

6. Install pavement in accordance with the Specifications.

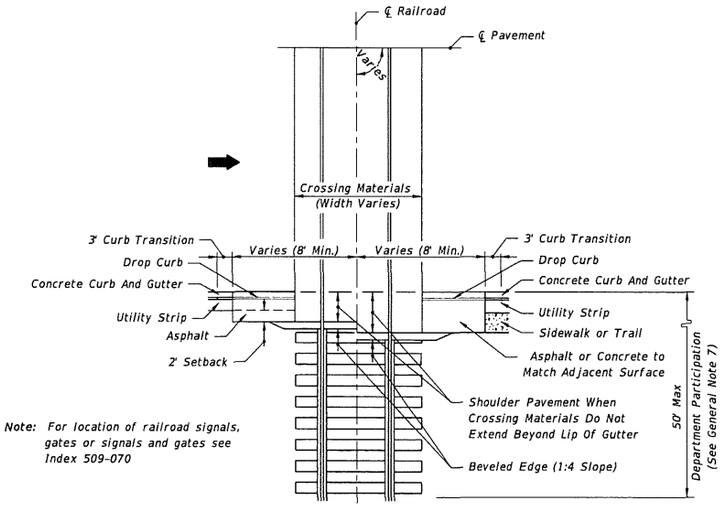
7. The Department will participate in crossing work, that requires adjustments to rail outside of the crossing, no more than 50 feet from the edge of the travel way.

10/29/2019 2:25:06 PM

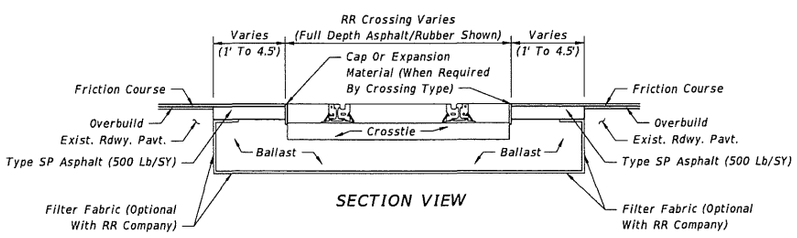
LAST REVISION	REVISION	DESCRIPTION:				INDEX	SHEET
11/01/17		EXHIBIT C	FDOT	FY 2020-21 STANDARD PLANS	RAILROAD (GRADE) CROSSING	830-T01	1 of 2



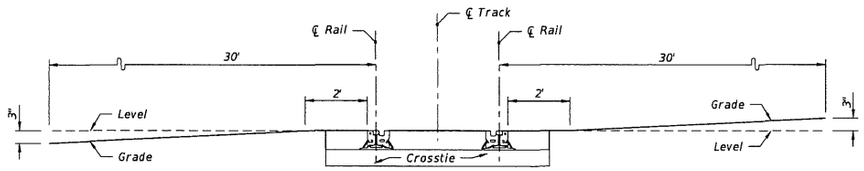
HALF PLAN
ROADWAYS WITH FLUSH SHOULDERS



HALF PLAN
CURBED ROADWAYS



TYPICAL CROSSING MATERIAL REPLACEMENT AT RR CROSSINGS



To prevent low-clearance vehicles from becoming caught on the tracks, the crossing surface should be at the same plane as the top of the rails for a distance of 2 feet outside the rails. The surface of the highway should also not be more than 3 inches higher or lower than the top of the nearest rail at a point 30 feet from the rail unless track superelevation makes a different level appropriate. Vertical curves should be used to traverse from the highway grade to a level plane at the elevation of the rails. Rails that are superelevated, or a roadway approach section that is not level, will necessitate a site specific analysis for rail clearances.

VERTICAL ROADWAY ALIGNMENT THROUGH A RAILROAD CROSSING

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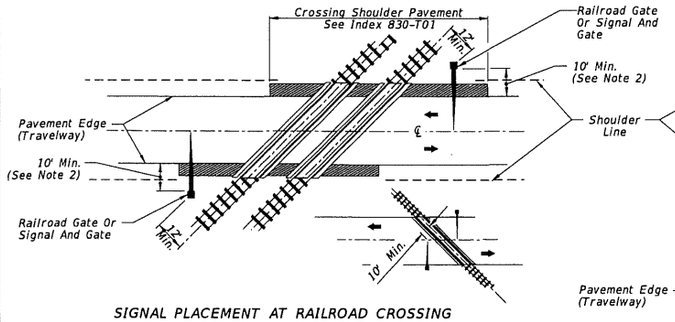
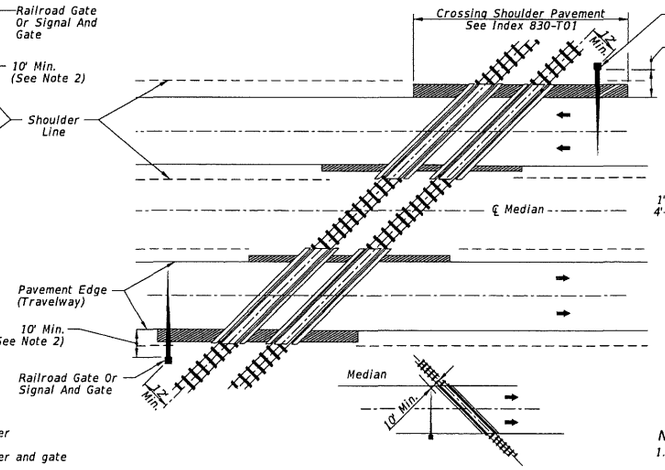


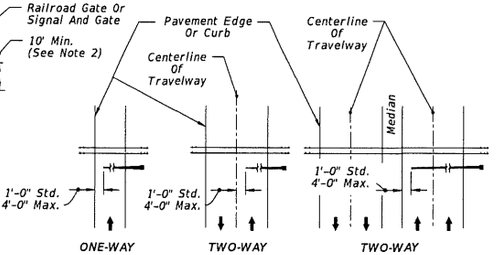
SIGNAL PLACEMENT AT RAILROAD CROSSING

(2 - LANE DESIGN)



SIGNAL PLACEMENT AT RAILROAD CROSSING

(4 - LANE DESIGN)



NOTE: Arrows denote direction of travel not pavement markings.

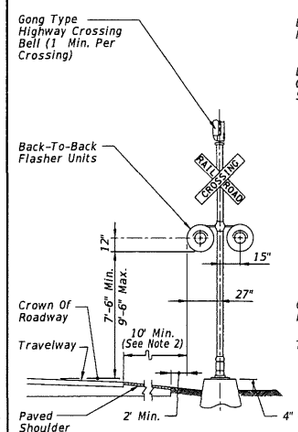
FIGURE 1

GENERAL NOTES:

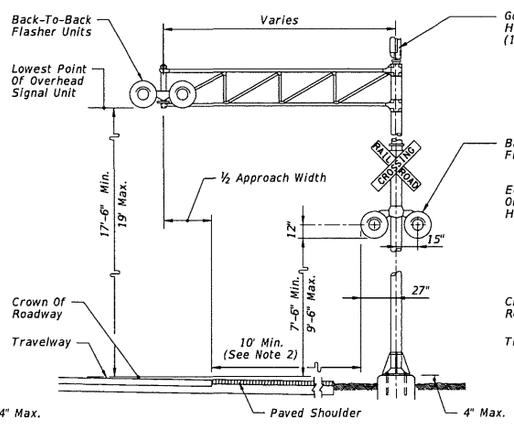
1. No guardrail is proposed for signals; however, some form of impact attenuation device may be specified for certain locations.
2. Advance flasher to be installed when and if called for in Plans or Specifications.
3. Top of foundation shall be no higher than 4" above finished shoulder grade.
4. Type 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:

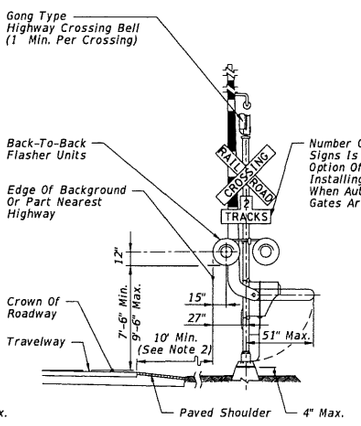
1. Two separate foundations may be required (one for signals, one for gate), depending on type of equipment used.
2. When 10' is deemed impractical the control device can be located as close as 2' from the edge of a paved shoulder but not less than 6' from the edge of the near traffic lane.



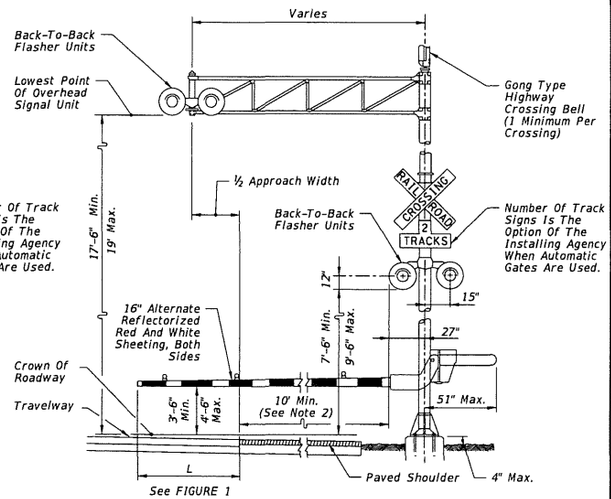
TYPE I



TYPE II



TYPE III AND TYPE V



TYPE IV AND TYPE VI

TRAFFIC CONTROL DEVICES FOR FLUSH SHOULDER ROADWAY

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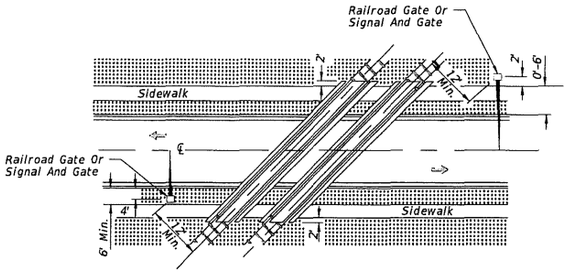
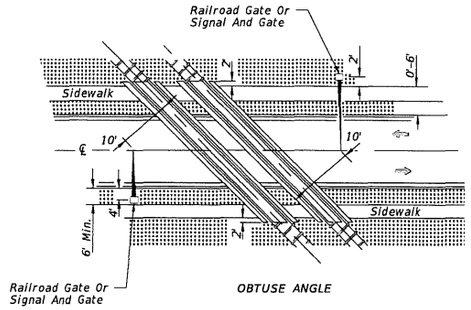


ACUTE ANGLE (AND RIGHT ANGLE)

SIGNAL PLACEMENT AT RAILROAD CROSSING

(2 LANES, CURB & GUTTER)



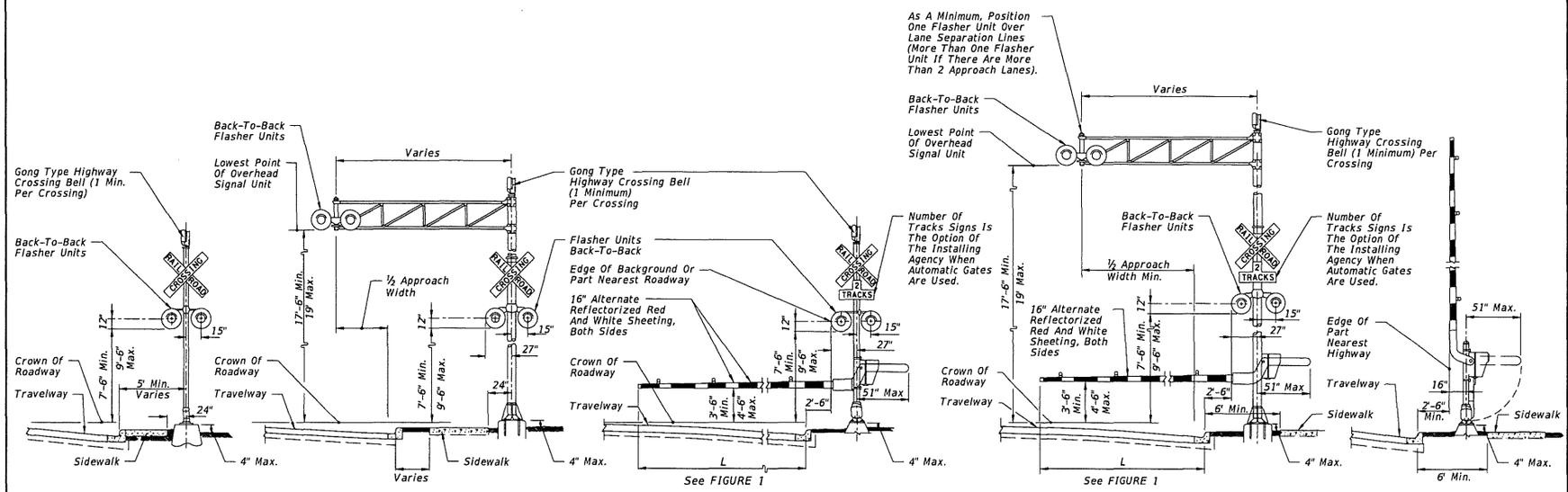
OBTUSE ANGLE

SIGNAL PLACEMENT AT RAILROAD CROSSING

(2 LANES, CURB & GUTTER)

NOTES:

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 curbed medians, the minimum median width shall be 12'-6".*
3. *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.*
4. *Stop line to be perpendicular to edge of roadway, approx. 15' from nearest rail; or 8' from and parallel to gate when present.*
5. *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.*



TRAFFIC CONTROL DEVICES FOR CURBED ROADWAY

10/14/2019 11:00:49 AM

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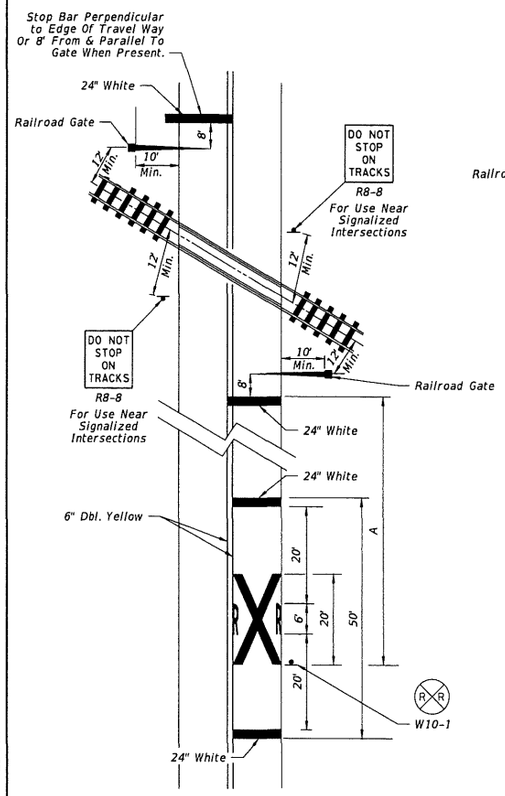
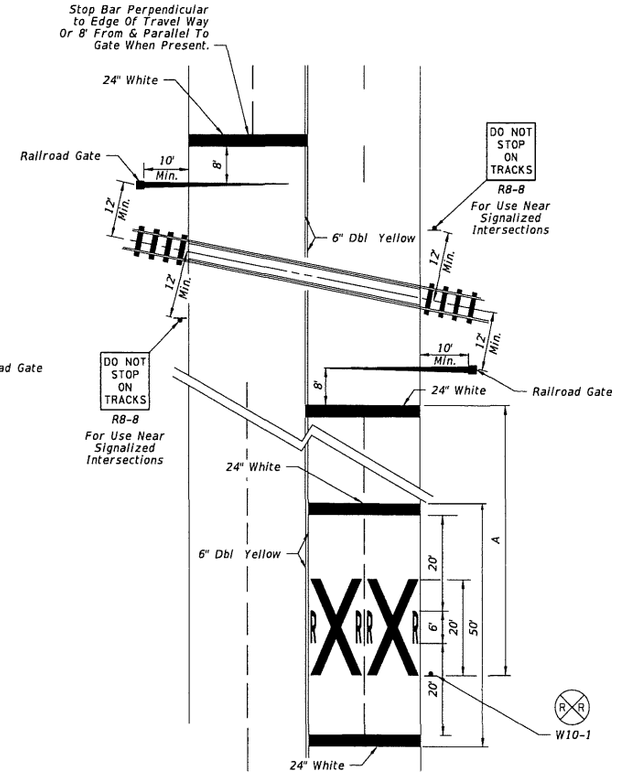
NOTES:

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.

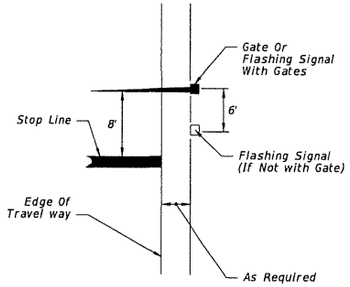
Design Speed (mph)	Distance "A" (ft)
60	400
55	325
50	250
45	175
40	125
35	100
URBAN	85 Min.



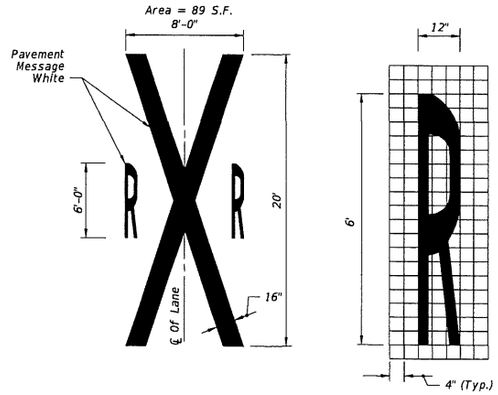
RAILROAD CROSSING AT TWO-LANE ROADWAY



RAILROAD CROSSING AT MULTILANE ROADWAY



RELATIVE LOCATION OF CROSSING TRAFFIC CONTROL DEVICES



RAILROAD CROSSING PAVEMENT MESSAGE

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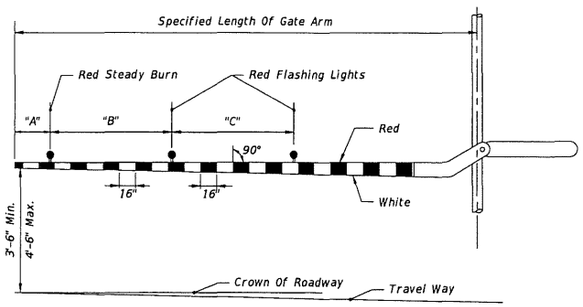
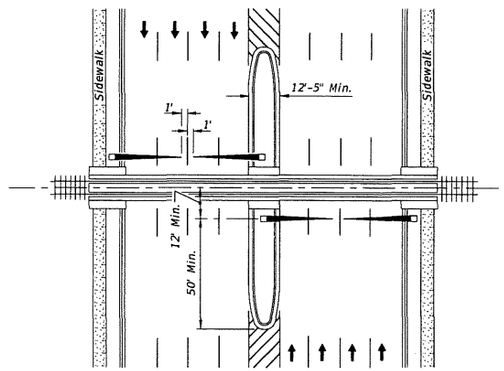
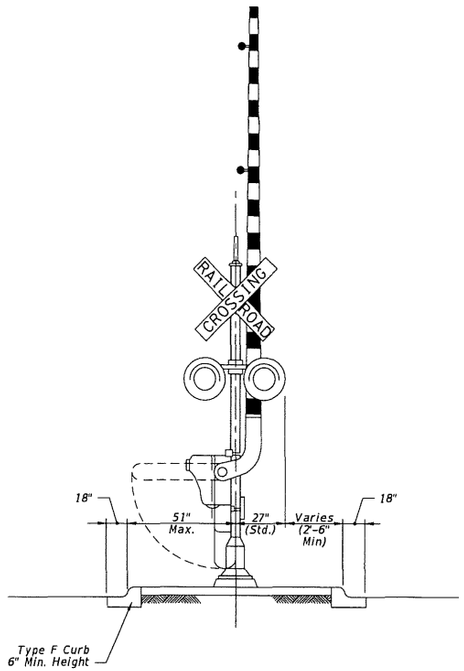
LAST REVISION	REVISION	DESCRIPTION:				
11/01/18		EXHIBIT D	FDOT FY 2020-21 STANDARD PLANS	RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES	INDEX 509-070	SHEET 3 of 4





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)

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SHEET	CONTENTS
1	General Notes
2	Definitions Temporary Traffic Control Devices Pedestrian and Bicyclist Overhead Work Railroads Sight Distance Above Ground Hazard
3	Clear Zone Widths For Work Zones Superelevation Length Of Lane Closures Overweight/Oversize Vehicles Lane Widths High-Visibility Safety Apparel Regulatory Speeds In Work Zones
4	Flagger Control Survey Work Zones Signs
5	Work Zone Sign Supports
6	Commonly Used Warning and Regulatory Signs In Work Zones
7	Manholes/Crosswalks/Joints Truck Mounted Attenuators Removing Pavement Markings Signals Channelizing Devices Channelizing Devices Consistency Portable Changeable (Variable) Message Signs (PCMS) Advanced Warning Arrow Boards
8	Drop-Offs In Work Zones
9	Business Entrance Temporary Asphalt Separator
10	Channelizing Devices Notes Temporary Barrier Notes
11	Pavement Markings

GENERAL NOTES:

1. All projects and works on highways, roads and streets shall have a traffic control plan. All work shall be executed under the established plan and Department-approved procedures. This Index contains information specific to the Federal and State guidelines and standards for the preparation of traffic control plans and for the execution of traffic control in work zones, for construction and maintenance operations and utility work on highways, roads and streets on the State Highway System. Certain requirements in this Index are based on the high volume nature of State Highways. For highways, roads and streets off the State Highway System, the local agency (City/County) having jurisdiction may adopt requirements based on the minimum requirements provided in the MUTCD.

2. Indexes 102-601 through 102-670 are Department-specific typical applications of commonly encountered situations. Adjust device location or number thereof as recommended by the Worksite Traffic Supervisor and approved by the Engineer. Devices include, but are not limited to, Flaggers, portable temporary signals, signs, pavement markings, and channelizing devices. Comply with MUTCD or applicable Department criteria for any changes and document the reason for the change.

3. Except for emergencies, any road closure on State Highway System shall comply with Section 335.15, F.S.

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DEFINITIONS

Regulatory Speed (In Work Zones)

The maximum permitted travel speed posted for the work zone is indicated by the regulatory speed limit signs. The work zone speed must be shown or noted in the plans. This speed should be used as the minimum design speed to determine runout lengths, departure rates, flare rates, lengths of need, clear zone widths, taper lengths, crash cushion requirements, marker spacings, superelevation and other similar features.

Advisory Speed

The maximum recommended travel speed through a curve or a hazardous area.

Travel Way

The portion of the roadway for the movement of vehicles. For traffic control through work zones, travel way may include the temporary use of shoulders and any other permanent or temporary surface intended for use as a lane for the movement of vehicular traffic.

a. Travel Lane: The designated widths of roadway pavement marked to carry through traffic and to separate it from opposing traffic or traffic occupying other traffic lanes.

b. Auxiliary Lane: The designated widths of roadway pavement marked to separate speed change, turning, passing and climbing maneuvers from through traffic.

Detour, Lane Shift, and Diversion

A detour is the redirection of traffic onto another roadway to bypass the temporary traffic control zone. A lane shift is the redirection of traffic onto a different section of the permanent pavement. A diversion is the redirection of traffic onto a temporary roadway, usually adjacent to the permanent roadway and within the limits of the right of way.

Aboveground Hazard

An aboveground hazard is any object, material or equipment other than traffic control devices that encroaches upon the travel way or that is located within the clear zone which does not meet the Department's safety criteria, i.e., anything that is greater than 4" in height and is firm and unyielding or doesn't meet breakaway requirements.

TEMPORARY TRAFFIC CONTROL DEVICES

All temporary traffic control devices shall be ON the Department's Approved Products List (APL). Ensure the appropriate APL number is permanently marked on the device in a readily visible location.

All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time, temporary traffic control devices that are no longer appropriate shall be removed or covered.

Arrow Boards, Portable Changeable Message Signs, Radar Speed Display Trailer, Portable Regulatory Signs, and any other trailer mounted device shall be delineated with a channelizing device placed at each corner when in use and shall be moved outside the travel way and clear zone or be shielded by a barrier or crash cushion when not in use.

PEDESTRIAN AND BICYCLIST

When an existing pedestrian way or bicycle way is located within a traffic control work zone, accommodation must be maintained and provision for the disabled must be provided.

Only approved pedestrian longitudinal channelizing devices may be used to delineate a temporary traffic control zone pedestrian walkway.

Advanced notification of sidewalk closures and marked detours shall be provided by appropriate signs.

OVERHEAD WORK

Work is only allowed over a traffic lane when one of the following options is used:

OPTION 1 (OVERHEAD WORK USING A MODIFIED LANE CLOSURE)

Overhead work using a modified lane closure is allowed if all of the following conditions are met:

a. Work operation is located in a signalized intersection and limited to signals, signs, lighting and utilities.
b. Work operations are 60 minutes or less.
c. Speed limit is 45 mph or less.
d. Aerial lift equipment in the work area has high-intensity, rotating, flashing, oscillating, or strobe lights operating.
e. Aerial lift equipment is placed directly below the work area to close the lane.
f. Traffic control devices are placed in advance of the vehicle/equipment closing the lane using a minimum 100 foot taper.
g. Volume or complexity of the roadway may dictate additional devices, signs, flagmen and/or a traffic control officer.

OPTION 2 (OVERHEAD WORK ABOVE AN OPEN TRAFFIC LANE)

Overhead work above a open traffic lane is allowed if all of the following conditions are met:

a. Work operation is located on a utility pole, light pole, signal pole, or their appurtenances.
b. Work operations are 60 minutes or less.
c. Speed limit is 45 mph or less.
d. No encroachment by any part of the work activities and equipment within an area bounded by 2 feet outside the edge of travel way and 18 feet high.
e. Aerial lift equipment in the work area has high-intensity, rotating, flashing, oscillating, or strobe lights operating.
f. Volume or complexity of the roadway may dictate additional devices, signs, flagmen and/or a traffic control officer.
g. Adequate precautions are taken to prevent parts, tools, equipment and other objects from falling into open lanes of traffic.
h. Other Governmental Agencies, Rail facilities, or Codes may require a greater clearance. The greater clearance required prevails as the rule.

OPTION 3 (OVERHEAD WORK ADJACENT TO AN OPEN TRAFFIC LANE)

Overhead work adjacent to an open traffic lane is allowed if all of the following conditions are met:

a. Work operation is located on a utility pole, light pole, signal pole, or their appurtenances.
b. Work operations are 1 day or less.
c. Speed limit is 45 mph or less.
d. No encroachment by any part of the work activities and equipment within 2 foot from the edge of travel way up to 18' height.
   Above 18' in height, no encroachment by any part of the work activities and equipment over the open traffic lane (except as allowed in Option 2 for work operations of 60 minutes or less).
e. Aerial lift equipment in the work area has high-intensity, rotating, flashing, oscillating, or strobe lights operating.
f. Volume or complexity of the roadway may dictate additional devices, signs, flagmen and/or a traffic control officer.
g. Adequate precautions are taken to prevent parts, tools, equipment and other objects from falling into open lanes of traffic.
h. Other Governmental Agencies, Rail facilities, or Codes may require a greater clearance. The greater clearance required prevails as the rule.

OPTION 4 (OVERHEAD WORK MAINTAINING TRAFFIC WITH NO ENCROACHMENT BELOW THE OVERHEAD WORK AREA)

Traffic shall be detoured, shifted, diverted or paced as to not encroach in the area directly below the overhead work operations in accordance with the appropriate index drawing or detailed in the plans. This option applies to, but not limited to, the following construction activities:

a. Beam, girder, segment, and bent/pier cap placement.
b. Form and falsework placement and removal.
c. Concrete placement.
d. Railing construction located at edge of deck.
e. Structure demolition.

OPTION 5 (CONDUCTOR/CABLE PULLING ABOVE AN OPEN TRAFFIC LANE)

Overhead cable and/or de-energized conductor installations initial pull to proper tension shall be done in accordance with the appropriate Index or temporary traffic control plan.

Continuous pulling operations of secured cable and/or conductors are allowed over open lane(s) of traffic with no encroachment by any part of the work activities, materials or equipment within the minimal vertical clearance above the travel way. The utility shall take precautions to ensure that pull ropes and conductors/cables at no time fall below the minimum vertical clearance.

On Limited Access facilities, a site specific temporary traffic control plan is required. The temporary traffic control plan shall include:

a. The temporary traffic control set up for the initial pulling of the pull rope across the roadway.
b. During pulling operations, advance warning consisting of no less than a Changeable Message Sign upstream of the work area with alternating messages, "Overhead Work Ahead" and "Be Prepared to Stop" followed by a traffic control officer and police vehicle with blue lights flashing during the pulling operation.

RAILROADS

Railroad crossings affected by a construction project should be evaluated for traffic controls to reduce queuing on the tracks. The evaluation should include as a minimum: traffic volumes, distance from the tracks to the intersections, lane closure or taper locations, signal timing, etc.

SIGHT DISTANCE

Tapers: Transition tapers should be obvious to drivers. If restricted sight distance is a problem (e.g., a sharp vertical or horizontal curve), the taper should begin well in advance of the view obstruction. The beginning of tapers should not be hidden behind curves.

Intersections: Traffic control devices at intersections must provide sight distances for the road user to perceive potential conflicts and to traverse the intersection safely. Construction equipment and materials shall not restrict intersection sight distance.

ABOVEGROUND HAZARD

Aboveground hazards (see definitions) are to be considered work areas during working hours and treated with appropriate work zone traffic control procedures. During nonworking hours, all objects, materials and equipment that constitute an aboveground hazard must be stored/placed outside the travel way and clear zone or be shielded by a barrier or crash cushion.

For aboveground hazards within a work zone the clear zone required should be based on the regulatory speed posted during construction.

CLEAR ZONE WIDTHS FOR WORK ZONES

The term 'clear zone' describes the unobstructed relatively flat area, impacted by construction, extending outward from the edge of the traffic lane. The table below gives clear zone widths in work zones for medians and roadside conditions other than for roadside canals; where roadside canals are present, clear zone widths are to conform with the distances to canals as described in the FDOT Design Manual 215.2.

CLEAR ZONE WIDTHS FOR WORK ZONES		
WORK ZONE SPEED (MPH)	TRAVEL LANES & MULTILANE RAMPS (feet)	AUXILIARY LANES & SINGLE LANE RAMPS (feet)
60-70	30	18
55	24	14
45-50	18	10
30-40	14	10
ALL SPEEDS CURB & GUTTER	4' BEHIND FACE OF CURB	4' BEHIND FACE OF CURB

SUPERELEVATION

Horizontal curves constructed in conjunction with work zone traffic control should have the required superelevation applied to the design radii. Under conditions where normal crown controls curvature, the minimum radii that can be applied are listed in the table below.

MINIMUM RADII FOR NORMAL CROWN	
WORK ZONE POSTED SPEED	MINIMUM RADIUS
MPH	feet
70	4090
65	3130
60	2400
55	1840
50	1390
45	1080
40	820
35	610
30	430
Superelevate When Smaller Radii is Used	

LENGTH OF LANE CLOSURES

For interstates and state highways with a posted speed of 55MPH or greater, lane closures must not exceed 3 miles (includes taper, buffer, and work zone) in any given direction and must not close two consecutive interchanges.

OVERWEIGHT/OVERSIZE VEHICLES

Restrictions to Lane Widths, Heights or Load Capacity can greatly impact the movement of over dimensioned loads. The Contractor shall notify the Engineer who in turn shall notify the State Permits Office, phone no. (850) 410-5777, at least seven calendar days in advance of implementing a maintenance of traffic plan which will impact the flow of overweight/oversized vehicles. Information provided shall include location, type of restriction (height, width or weight) and restriction time frames. When the roadway is restored to normal service the State Permits Office shall be notified immediately.

LANE WIDTHS

Lane widths of through roadways should be maintained through work zone travel ways wherever practical. The minimum widths for work zone travel lanes shall be as follows: 11' for Interstate with at least one 12' lane provided in each direction, unless formally excepted by the Federal Highway Administration; 11' for freeways; and 10' for all other facilities.

HIGH-VISIBILITY SAFETY APPAREL

All high-visibility safety apparel shall meet the requirements of the International Safety Equipment Association (ISEA) and the American National Standards Institute (ANSI) for "High-Visibility Safety Apparel", and labeled as ANSI/ISEA 107-2004 or newer. The apparel background (outer) material color shall be either fluorescent orange-red or fluorescent yellow-green as defined by the standard. The retroreflective material shall be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 1,000 feet. Class 3 apparel may be substituted for Class 2 apparel. Replace apparel that is not visible at 1,000 feet.

WORKERS: All workers within the right-of-way shall wear ANSI/ISEA Class 2 apparel. Workers operating machinery or equipment in which loose clothing could become entangled during operation shall wear fitted high-visibility safety apparel. Workers inside the bucket of a bucket truck are not required to wear high-visibility safety apparel.

UTILITIES: When other industry apparel safety standards require utility workers to wear apparel that is inconsistent with FDOT requirements such as NFPA, OSHA, ANSI, etc., the other standards for apparel may prevail.

FLAGGERS: For daytime activities, Flaggers shall wear ANSI/ISEA Class 2 apparel. For nighttime activities, Flaggers shall wear ANSI/ISEA Class 3 apparel.

REGULATORY SPEEDS IN WORK ZONES

Traffic Control Plans (TCP's) for all projects must include specific regulatory speeds for each phase of work. This can either be the posted speed or a reduced speed. The speed shall be noted in the TCPs; this includes indicating the existing speed if no reduction is to be made. Regulatory speeds are to be uniformly established through each phase.

In general, the regulatory speed should be established to route vehicles safely through the work zone as close as to normal highway speed as possible. The regulatory speed should not be reduced more than 10 mph below the posted speed and never below the minimum statutory speed for the class of facility. When a speed reduction greater than 10 mph is imposed, the reduction is to be done in 10 mph per 500' increments.

Temporary regulatory speed signs shall be removed as soon as the conditions requiring the reduced speed no longer exist. Once the work zone regulatory speeds are removed, the regulatory speed existing prior to construction will automatically go back into effect unless new speed limit signing is provided for in the plans.

On projects with interspaced work activities, speed reductions should be located in proximity to those activities which merit a reduced speed, and not "blanketed" for the entire project. At the departure of such activities, the normal highway speed should be posted to give the motorist notice that normal speed can be resumed.

If the existing regulatory speed is to be used, consideration should be given to supplementing the existing signs when the construction work zone is between existing regulatory speed signs. For projects where the reduced speed conditions exist for greater than 1 mile in rural areas (non-interstate) and on rural or urban interstate, additional regulatory speed signs are to be placed at no more than 1 mile intervals. Engineering judgement should be used in placement of the additional signs. Locating these signs beyond ramp entrances and beyond major intersections are examples of proper placement. For urban situations (non-interstate), additional speed signs are to be placed at a maximum of 1000' apart.

When field conditions warrant speed reductions different from those shown in the TCP the contractor may submit to the project engineer for approval by the Department, a signed and sealed study to justify the need for further reducing the posted speed, or, the engineer may request the District Traffic Operations Engineer (DTOE) to investigate the need. It will not be necessary for the DTOE to issue regulations for regulatory speeds in work zones due to the revised provisions of F.S. 316.07451(2) (b). Advisory Speed plates will be used at the option of the field engineer for temporary use while processing a request to change the regulatory speed specified in the plans when deemed necessary. Advisory speed plates cannot be used alone but must be placed below the construction warning sign for which the advisory speed is required.

For additional information, refer to the FDOT Design Manual 240.

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FLAGGER CONTROL

Where flaggers are used, a FLAGGER symbol or legend sign must replace the WORKERS symbol or legend sign.

The flagger must be clearly visible to approaching traffic for a distance sufficient to permit proper response by the motorist to the flagging instructions, and to permit traffic to reduce speed or to stop as required before entering the work site. Flaggers shall be positioned to maintain maximum color contrast between the Flagger's high-visibility safety apparel and equipment and the work area background.

Hand-Signaling Devices

STOP/SLOW paddles are the primary hand-signaling device. The STOP/SLOW paddle shall have an octagonal shape on a rigid handle. If the STOP/SLOW paddle is placed on a rigid staff, the minimum length of the staff, measured from the bottom of the paddle to the end of the staff that rests on the ground, must not be less than 6 ft. STOP/SLOW paddles shall be at least 24 inches wide with letters at least 6 inches high and should be fabricated from light semirigid material. The background of the STOP face shall be red with white letters and border. The background of the SLOW face shall be orange with black letters and border. When used at night-time, the STOP/SLOW paddle shall be retroreflectorized.

Flag use is limited to immediate emergencies, intersections, and when working on the centerline or shared left turn lanes where two (2) flaggers are required and there is opposing traffic in the adjacent lanes. Flags, when used, shall be a minimum of 24 inches square, made of a good grade of red material, and securely fastened to a staff that is approximately 36 inches in length. When used at nighttime, flags shall be retroreflectorized red.

Flashlight, lantern or other lighted signal that will display a red warning light shall be used at night.

Flagger Stations

Flagger stations shall be located far enough in advance of the work space so that approaching road users will have sufficient distance to stop before entering the work space. When used at nighttime, the flagger station shall be illuminated.

SURVEY WORK ZONES

The SURVEY CREW AHEAD symbol or legend sign shall be the principal Advance Warning Sign used for Traffic Control Through Survey Work Zones and may replace the ROAD WORK AHEAD sign when lane closures occur, at the discretion of the Party Chief.

When Traffic Control Through Work Zones is being used for survey purposes only, the END ROAD WORK sign as called for on certain 102 Series of Indexes should be omitted.

Survey Between Active Traffic Lanes or Shared Left Turn Lanes

The following provisions apply to Main Roadway Traffic Control Work Zones. These provisions must be adjusted by the Party Chief to fit roadway and traffic conditions when the Survey Work Zone includes intersections.

(A) A STAY IN YOUR LANE (MOT-1-06) sign shall be added to the Advance Warning Sign sequence as the second most immediate sign from the work area.

(B) Elevation Surveys-Cones may be used at the discretion of the Party Chief to protect prism holder and flagger(s). Cones, if used, may be placed at up to 50' intervals along the break line throughout the work zone.

(C) Horizontal Control-With traffic flow in the same direction, cones shall be used to protect the backsight tripod and/or instrument. Cones shall be placed at the equipment, and up to 50' intervals for at least 200' towards the flow of traffic.

(D) Horizontal Control-With traffic flow in opposite directions, cones shall be used to protect the backsight tripod and/or instrument. Cones shall be placed at the equipment, and up to 50' intervals for at least 200' in both directions towards the flow of traffic.

SIGNS

SIGN MATERIALS

Mesh signs and non-retroreflectice vinyl signs may only be used for daylight operations. Non-retroreflectice vinyl signs must meet the requirements of Specifications Section 994.

Retroreflective vinyl signs meeting the requirements of Specification Section 994 may be used for daylight or night operations not to exceed 1 day except as noted in the Indexes.

Rigid or Lightweight sign panels may be used in accordance with the vendor APL drawing for the sign stand to which they are attached.

INTERSECTING ROAD SIGNING

Signing for the control of traffic entering and leaving work zones by way of intersecting crossroads shall be adequate to make drivers aware of work zone conditions. When Work operations exceed 60 minutes, place the ROAD WORK AHEAD sign on the side street entering the work zone.

ADJOINING AND/OR OVERLAPPING WORK ZONE SIGNING

Adjoining work zones may not have sufficient spacing for standard placement of signs and other traffic control devices in their advance warning areas or in some cases other areas within their traffic control zones. Where such restraints or conflicts occur or are likely to occur, one of the following methods will be employed to avoid conflicts and prevent conditions that could lead to misunderstanding on the part of the traveling public as to the intended travel way by the traffic control procedure applied:

(A) For scheduled projects the engineer in responsible charge of project design will resolve anticipated work zone conflicts during the development of the project traffic control plan. This may entail revision of plans on preceding projects and coordination of plans on concurrent projects.

(B) Unanticipated conflicts arising between adjoining in progress highway construction projects will be resolved by the Resident Engineer for projects under his residency, and, by the District Construction Engineer for in progress projects under adjoining residencies.

(C) The District Maintenance Engineer will resolve anticipated and occurring conflicts within scheduled maintenance operations.

(D) The Unit Maintenance Engineer will resolve conflicts that occur within routine maintenance works; between routine maintenance work, unscheduled work and/or permitted work; and, between unit controlled maintenance works and highway construction projects.

SIGN COVERING AND INTERMITTENT WORK STOPPAGE SIGNING

Existing or temporary traffic control signs that are no longer applicable or are inconsistent with intended travel paths shall be removed or fully covered.

Sign blanks or other available coverings must completely cover the existing sign. Rigid sign coverings shall be the same size as the sign it is covering, and bolted in a manner to prevent movement.

Sign covers are incidental to work operations and are not paid for separately.

SIGNING FOR DETOURS, LANE SHIFTS AND DIVERSIONS

Detours should be signed clearly over their entire length so that motorists can easily determine how to return to the original roadway. The reverse curve (W1-4) warning sign should be used for the advanced warning for a lane shift. A diversion should be signed as a lane shift.

EXTENDED DISTANCE ADVANCE WARNING SIGN

Advance Warning Signs shall be used at extended distance of one-half mile or more when limited sight distance or the nature of the obstruction may require a motorist to bring their vehicle to a stop. Extended distance Advanced Warning Signs may be required on any type roadway, but particularly be considered on multilane divided highways where vehicle speed is generally in the higher range (45 MPH or more).

UTILITY WORK AHEAD SIGN

The UTILITY WORK AHEAD (W21-7) sign may be used as an alternate to the ROAD WORK AHEAD or the ROAD WORK XX FT (W20-1) sign for utility operations on or adjacent to a highway.

LENGTH OF ROAD WORK SIGN

The length of road work sign (G20-1) bearing the legend ROAD WORK NEXT_____ MILES is required for all projects of more than 2 miles in length. The number of miles entered should be rounded up to the nearest mile. The sign shall be located at begin construction points.

SPEEDING FINES DOUBLED WHEN WORKERS PRESENT SIGN

The SPEEDING FINES DOUBLED WHEN WORKERS PRESENT sign should be installed on all projects, but may be omitted if the work operation is less than 1 day. The placement should be 500 feet beyond the ROAD WORK AHEAD sign or midway to the next sign whichever is less.

GROOVED PAVEMENT AHEAD SIGN

The GROOVED PAVEMENT AHEAD sign is required 500 feet in advance of a milled or grooved surface open to traffic. The W8-15P placard shall be used in conjunction with the GROOVED PAVEMENT AHEAD sign.

END ROAD WORK SIGN

The END ROAD WORK sign (G20-2) should be installed on all projects, but may be omitted where the work operation is less than 1 day. The sign should be placed approximately 500 feet beyond the end of a construction or maintenance project unless other distance is called for in the plans. When other Construction or Maintenance Operations occur within 1 mile this sign should be omitted and signing coordinated in accordance with Index 102-600, ADJOINING AND/OR OVERLAPPING WORK ZONE SIGNING.

PROJECT INFORMATION SIGN

The Project information sign shall be installed when called for in the plans.

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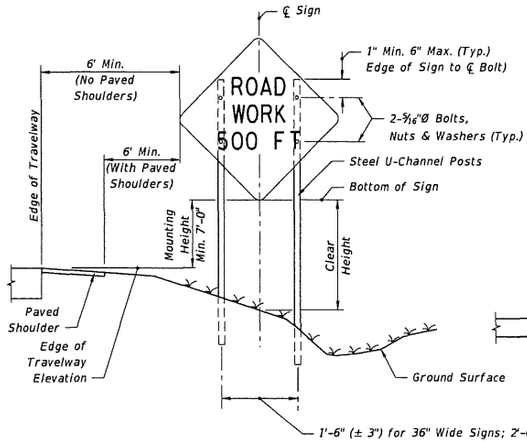
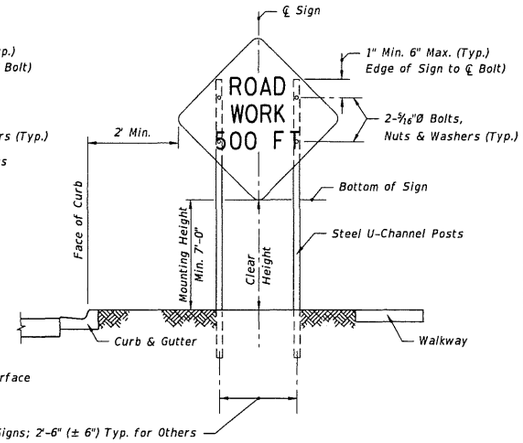
TEMPORARY SIGN SUPPORT NOTES:

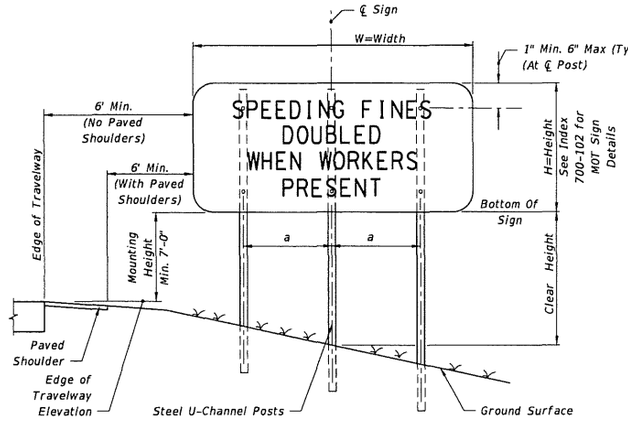
1. All signs shall be post mounted when work operations exceed one day except for:
   a. Road closure signs mounted in accordance with the vendor drawing for the Type III Barricade shown on the APL.
   b. Pedestrian advanced warning or pedestrian regulatory signs mounted on sign supports in accordance with the vendor drawing shown on the APL.
   c. Median barrier mounted signs per Index 700-013.
2. Unless shielded with barrier or outside of the Clear Zone, signs mounted on temporary supports or barricades, and barricade/sign combination must be crashworthy in accordance with NCHRP 350 requirements and included on the Approved Products List (APL).
3. Use only approved systems listed on the Department's Approved Products List (APL).
4. Manufacturers seeking approval of U-Channel and steel square tube sign support assemblies for inclusion on the Approved Products List (APL) must submit a APL application, design calculations (for square tube only), and detailed drawings showing the product meets all the requirements of this Index.
5. Provide 3 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.43 in³ for 60 ksi steel, a minimum section modulus of 0.37 in³ for 70 ksi steel, or a minimum section modulus of 0.34 in³ for 80 ksi steel.
6. Provide 4 lb/ft Steel U-Channel Posts with a minimum section modulus of 0.56 in³ for 60 ksi steel, or a minimum section modulus of 0.47 in³ for 70 ksi or 80 ksi steel.
7. U-channel posts shall conform with ASTM A 499, Grade 60, or ASTM A 576, Grade 1080 (with a minimum yield strength of 60 ksi). Square tube posts shall conform with ASTM A 653, Grade 50, or ASTM A 1011, Grade 50.
8. Sign attachment bolts, washers, nuts, and spacers shall conform with ASTM A307 or A 36.
9. For diamond warning signs with supplement plaque (up to 5 ft² in area), use 4 lb/ft posts for up to 10 ft Clear Height (measure to the bottom of diamond warning sign).
10. Install 4 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.
11. The contractor may install 3 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.
12. Install all posts plumb.
13. The contractor may set posts in preformed holes to the specified depth with suitable backfill tamped securely on all sides, or drive 3 lb/ft sign posts and any size base post in accordance with the manufacturer's detail shown on the APL.



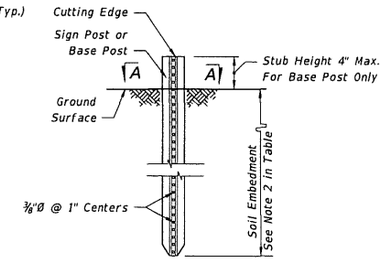
2 POST SIGN SUPPORT MOUNTING DETAILS
(SINGLE POST SIMILAR)
RURAL



2 POST SIGN SUPPORT MOUNTING DETAILS
(SINGLE POST SIMILAR)
URBAN

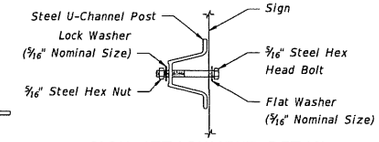


3 POST SIGN SUPPORT MOUNTING DETAILS
Where W = 48": a = 1' - 4½" (± 1")
W = 60": a = 1' - 9" (± 1")
W = 72": a = 2' - 1" (± 1")



TYPICAL FOUNDATION DETAIL
See APL for post, splice and connection details.
No bolts installed closer than 1" to cutting edge.

SECTION A-A
(SCHEMATIC)



SIGN ATTACHMENT DETAIL
(WITHOUT Z-BRACKET)

POST AND FOUNDATION TABLE FOR WORK ZONE SIGNS

SIGN SHAPE	SIGN SIZE (inches)	NUMBER OF STEEL U CHANNEL POSTS
Octagon	30x30	1
Triangle	36x36x36	1
	48x48x48	1
	60x60x60	2
Rectangle (W x H)	24x18	1
	24x30	1
	30x24	1
	36x18	1
	36x24	1
	48x18	1
	48x24	1
	36x48	2
	48x30	2
	48x36	2
	54x36	2
	48x60	3
	60x54	3
	72x48	3
	120x60*	4*
Square	30x30	1
	36x36	2
	48x48	2
Diamond (See Note 7)	48x48	2
Circle	36Ø	2

Notes For Table:

1. Use 3 lb/ft posts for Clear Height up to 10' and 4 lb/ft posts for Clear Height up to 12'.
* Use 4 lb/ft U-channel sign post with a mounting height of 7' min. and 8' max. Attach sign panel using Z-bracket detail on Sheet 6.
2. Minimum foundation depth is 4.0' for 3 lb/ft posts and 4.5' for 4 lb/ft posts.
3. For both 3 lb/ft and 4 lb/ft base or sign posts installed in rock, a minimum cumulative depth of 2' of rock layer is required.
4. The soil plate as shown on the APL vendor drawing is not required for base posts or sign posts installed in existing rock (as defined in Note 3), asphalt roadway, shoulder pavement or soil under sidewalk.

WORK ZONE SIGN SUPPORTS

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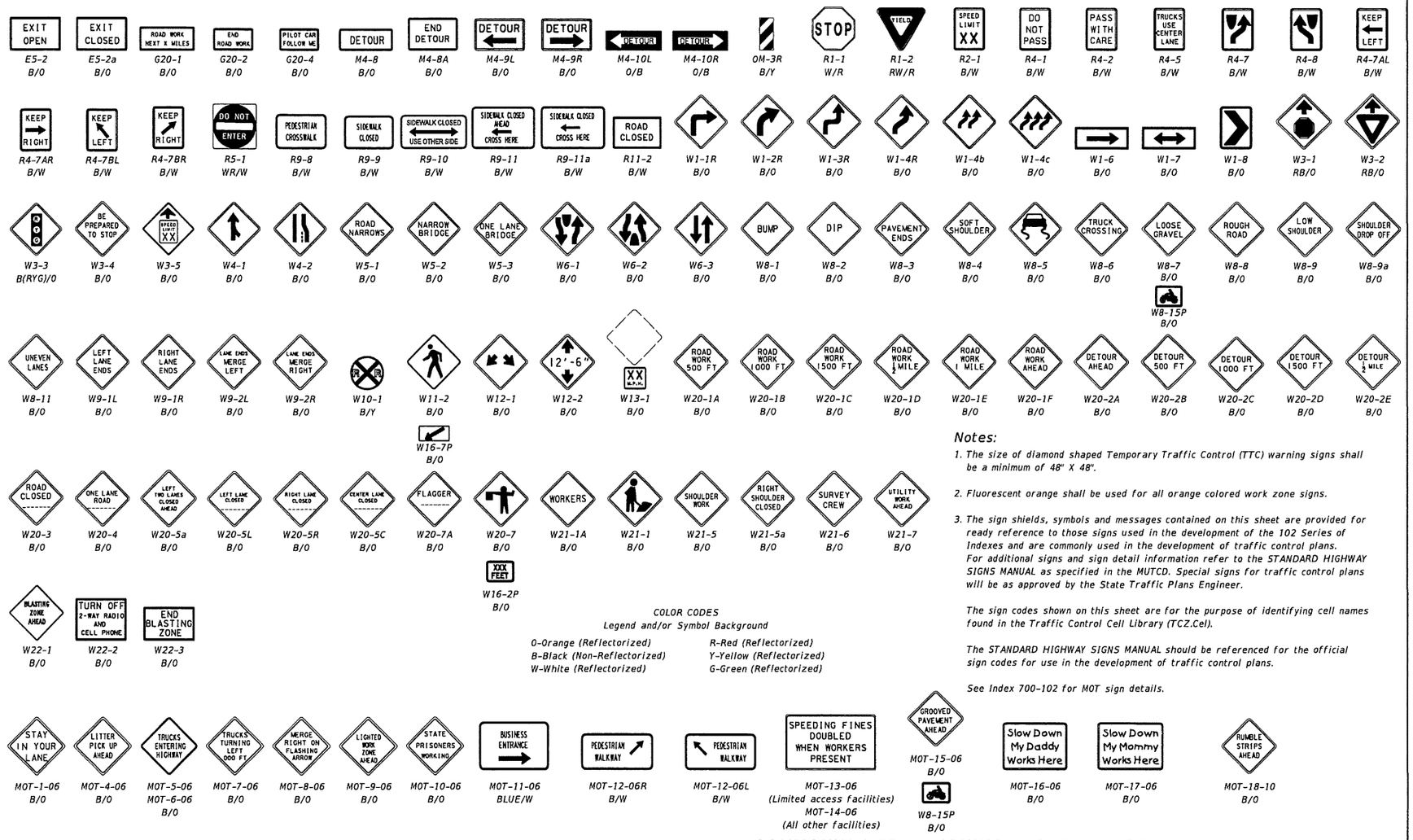

COLOR CODES

Legend and/or Symbol Background

O-Orange (Reflectorized)
B-Black (Non-Reflectorized)
W-White (Reflectorized)
R-Red (Reflectorized)
Y-Yellow (Reflectorized)
G-Green (Reflectorized)

Notes:

1. The size of diamond shaped Temporary Traffic Control (TTC) warning signs shall be a minimum of 48" X 48".
2. Fluorescent orange shall be used for all orange colored work zone signs.
3. The sign shields, symbols and messages contained on this sheet are provided for ready reference to those signs used in the development of the 102 Series of Indexes and are commonly used in the development of traffic control plans. For additional signs and sign detail information refer to the STANDARD HIGHWAY SIGNS MANUAL as specified in the MUTCD. Special signs for traffic control plans will be as approved by the State Traffic Plans Engineer.

The sign codes shown on this sheet are for the purpose of identifying cell names found in the Traffic Control Cell Library (TC2.Cel).

The STANDARD HIGHWAY SIGNS MANUAL should be referenced for the official sign codes for use in the development of traffic control plans.

See Index 700-102 for MOT sign details.

COMMONLY USED WARNING AND REGULATORY SIGNS IN WORK ZONES

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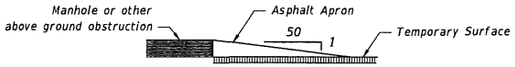
MANHOLES/CROSSWALKS/JOINTS

Manholes extending 1" or more above the travel lane and crosswalks having an uneven surface greater than ¼" shall have a temporary asphalt apron constructed as shown in the diagram below.

All transverse joints that have a difference in elevation of 1" or more shall have a temporary asphalt apron constructed as shown in the diagram below.



The apron is to be removed prior to constructing the next lift of asphalt. The cost of the temporary asphalt shall be included in the contract unit price for Maintenance of Traffic, LS.

REMOVING PAVEMENT MARKINGS

Existing pavement markings that conflict with temporary work zone delineation shall be removed by any method approved by the Engineer, where operations exceed one daylight period. Remove conflicting pavement marking using a method that will not damage the surface texture of the pavement, unless the pavement will be restored prior to traffic use. Painting over existing pavement markings with black paint or spraying with asphalt shall not be accepted as substitute for removal or obliteration. Full pavement width overlays of either a structural or friction course (non-final surface) are an acceptable alternate means to achieve removal.

SIGNALS

Existing traffic signal operations that require modification in order to carry out work zone traffic control shall be included in the TCP and be approved by the District Traffic Operations Engineer.

Maintain all existing actuated or traffic responsive mode signal operations for main and side street movements for the duration of the Contract and require restoration of any loss of detection within 12 hours. The contractor shall select only detection technology listed on the Department's Approved Products List (APL) and approved by the Engineer to restore detection capabilities.

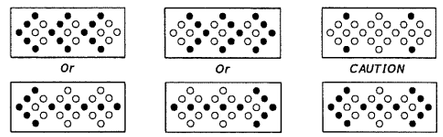
ADVANCE WARNING ARROW BOARDS

An arrow board in the arrow or chevron mode shall be used only for stationary or moving lane closures on multilane roadways.

For shoulder work, blocking the shoulder, for roadside work near the shoulder, or for temporarily closing one lane on a two-lane, two-way roadway, an arrow board shall be used only in the caution mode.

A single arrow board shall not be used to merge traffic laterally more than one lane. When arrow boards are used to close multiple lanes, a single board shall be used at the merging taper for each closed lane.

When Advance Warning Arrow Boards are used at night, the intensity of the flashers shall be reduced during darkness when lower intensities are desirable.



● Minimum Required Lamps
○ Additional Lamps Allowed

MODES

PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)

The PCMS can be used to:

1. Supplement standard signing in construction or maintenance work zones.
2. Reinforce static advance warning messages.
3 Provide motorists with updated guidance information.

PCMS should be placed approx. 500 to 800 feet in advance of the work zone conflicts or 0.5 to 2 miles in advance of complex traffic control schemes which require new and/or unusual traffic maneuvers.

If PCMS are to be used at night, the intensity of the flashers shall be reduced during darkness when lower intensities are desirable.

For additional information refer to the FDOT Design Manual 240.

TRUCK/TRAILER-MOUNTED ATTENUATORS

Truck/Trailer-mounted attenuators (TMA) can be used for moving operations and short-term stationary operations. For moving operations, see Indexes 102-607 and 102-619. For short-term, stationary operations, see Part VI of the MUTCD.

CHANNELIZING DEVICES

Channelizing devices for work zone traffic control shall be as prescribed in Part VI of the MUTCD, subject to supplemental revisions provided in the contract documents and the 102 Series of Indexes. Lighting Devices must not be used to supplement channelization.

CHANNELIZING DEVICE CONSISTENCY

Barricades, vertical panels, cones, tubular markers and drums shall not be intermixed within either the lateral transition or within the tangent alignment.

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DROP-OFF CONDITION NOTES

1. These conditions and treatments can be applied only in work areas that fall within a properly signed work zone.

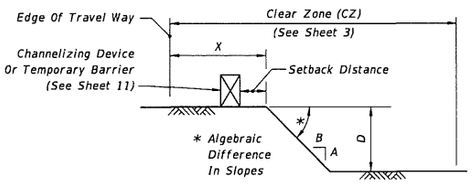
2. When drop-offs occur within the clear zone due to construction or maintenance activities, protection devices are required (See Table 1). A drop-off is defined as a drop in elevation, parallel to the adjacent travel lanes, greater than 3" with slope (A:B) steeper than 1:4. In superelevated sections, the algebraic difference in slopes should not exceed 0.25 (See Drop-off Condition Detail).

3. Drop-offs may be mitigated by placement of slopes with optional base material per Specifications Section 285. Slopes shallower than 1:4 may be required to avoid algebraic difference in slopes greater than 0.25. Include the cost for the placement and removal of the material in Maintenance of Traffic, LSD. Use of this treatment in lieu of a temporary barrier is not eligible for CSIP consideration. Conduct daily inspections for deficiencies related to erosion, excessive slopes, rutting or other adverse conditions. Repair any deficiencies immediately.

4. For Setback Distance, refer to the Index or Approved Products List (APL) drawing of the selected barrier.

5. For Conditions 1 and 3 provided in Table 1, any drop-off condition that is created and restored within the same work period will not be subject to use of temporary barriers; however, channelizing devices will be required.

6. When permanent curb heights are ≥ 6", no channelizing device will be required. For curb heights < 6", see Table 1.



DROP-OFF CONDITION DETAIL

Table 1 Drop-off Protection Requirements			
Condition	X (ft)	D (in.)	Device Required
1	0-12	> 3	Temporary Barrier
2	> 12-CZ	> 3 to ≤ 5	Channelizing Device
3	0-CZ	> 5	Temporary Barrier
4	Removal of Bridge or Retaining Wall Barrier		Temporary Barrier
5	Removal of portions of Bridge Deck		Temporary Barrier

TRAVEL LANE TREATMENT FOR MILLING OR RESURFACING NOTES

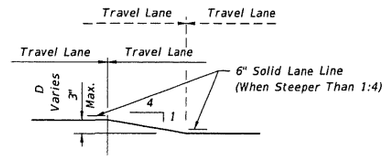
1. This treatment applies to resurfacing or milling operations between adjacent travel lanes.

2. Whenever there is a difference in elevation between adjacent travel lanes, the W8-11 sign with "UNEVEN LANES" is required at intervals of ½ mile maximum.

3. If D is 1½" or less, no treatment is required.

4. Treatment allowed only when D is 3" or less.

5. If the slope is steeper than 1:4 (not to be steeper than 1:1), the R4-1 and MOT-1-06 signs shall be used as a supplement to the W8-11; this condition should never exceed 3 miles in length.



TRAVEL LANE TREATMENT FOR MILLING OR RESURFACING DETAIL

PEDESTRIAN WAY DROP-OFF CONDITION NOTES

1. A pedestrian way drop-off is defined as:

   a. a drop in elevation greater than 10" that is closer than 2' from the edge of the pedestrian way

   b. a slope steeper than 1:2 that begins closer than 2' from the edge of the pedestrian way when the total drop-off is greater than 60"

2. Protect any drop-off adjacent to a pedestrian way with pedestrian longitudinal channelizing devices, temporary barrier wall, or approved handrail.

DROP-OFFS IN WORK ZONES

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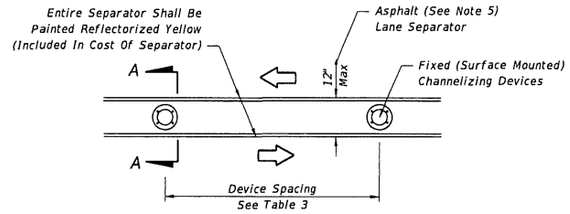
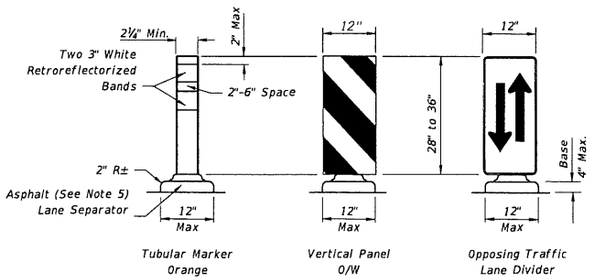
Table 3 Device Spacing				
Speed (mph)	Max. Distance Between Devices (ft.)			
	Tubular Markers		Vertical Panels or Opposing Traffic Lane Divider	
	Taper	Tangent	Taper	Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100



PLAN



FIXED (SURFACE MOUNTED) CHANNELIZING DEVICES

SECTION AA

1. Temporary lane separators shall be supplemented with any of the following approved fixed (surface mounted) channelizing devices: tubular markers, vertical panels, or opposing traffic lane divider panels. Opposing traffic lane divider panels (W6-4) shall only be used as center lane dividers to separate opposing vehicular traffic on a two-lane, two-way operation. Tubular Markers, Vertical Panels and Opposing Traffic Lane Divider panels shall not be intermixed within the limits where the temporary lane separator is used. The connection between the channelizing device and the temporary lane separator curb shall hold the channelizing device in a vertical position.

2. Reflectorized materials shall have a smooth sealed outer surface which will display the same approximate color day and night. Furnish channelizing devices having retroreflective sheeting meeting the requirements of Section 990.

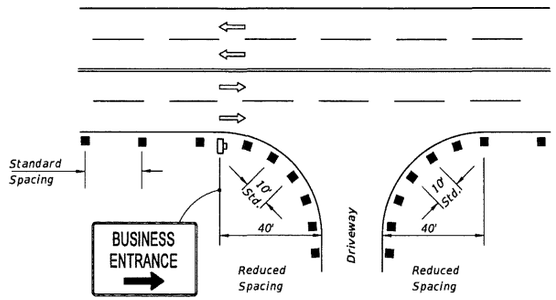
3. 12" openings for drainage shall be constructed in the asphalt and portable temporary lane separator at a maximum spacing of 25' in areas with grades of 1% or less or 50' in areas with grades over 1% as directed by the Engineer.

4. Tapered ends shall be used at the beginning and end of each run of the temporary lane separator to form a gradual increase in height from the pavement level to the top of the temporary lane separator.

5. The Contractor has the option of using portable temporary lane separators containing fixed channelizing devices in lieu of the temporary asphalt separator and channelizing devices detailed on this sheet. The portable temporary lane separator shall come in portable sections that can be connected to maintain continuous alignment between the separate curb sections. Each temporary lane separator section shall be 36 inches to 48 inches in total length. Portable temporary lane separators shall duplicate the color of the pavement marking. Portable temporary lane separators shall be one of those listed on the Approved Products List.

6. Any damage to existing pavement caused by the removal of temporary lane separator shall be satisfactorily repaired and the cost of such repairs are to be included in the cost of Maintenance of Traffic, LS.

TEMPORARY LANE SEPARATOR



1. For single business entrances, place one 24" x 36" business sign for each driveway entrance affected. Signs shall show specific business names. Logos may be provided by business owners. Standard BUSINESS ENTRANCE sign in Index 700-102 may be used when approved by the Engineer.

2. When several businesses share a common driveway entrance, place one 24" x 36" standard BUSINESS ENTRANCE sign in accordance with Index 700-102 at the common driveway entrance.

3. Channelizing devices shall be placed at a reduced spacing on each side of the driveway entrance, but shall not restrict sight distance for the driveway users.

4. Business entrance signs are intended to guide motorist to business entrances moved/modified or disturbed during construction projects. Business entrance signs are not required where there is minimal disruption to business driveways which is often the case with resurfacing type projects.

PLACEMENT OF BUSINESS ENTRANCE SIGNS AND CHANNELIZING DEVICES AT BUSINESS ENTRANCE

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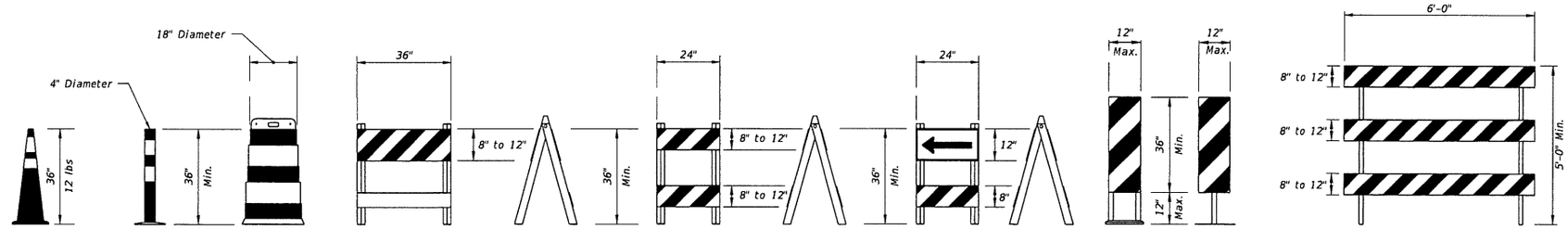


CHANNELIZING DEVICES

CHANNELIZING DEVICE NOTES:

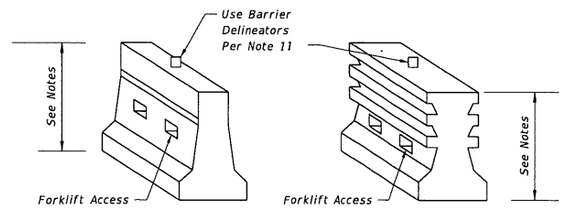
1. The details shown on this sheet are for the following purposes:
   a. For ease of identification and
   b. To provide information that supplements or supersedes that provided by the MUTCD.
2. The Type III Barricade shall have a unit length of 6'-0" only. When barricades of greater lengths are required those lengths shall be in multiples of the 6'-0" unit.
3. No sign panel should be mounted on any channelizing device unless the channelizing device/sign combination was found to be crashworthy and the sign panel is mounted in accordance with the vendor drawing for the channelizing device shown on the Approved Products List (APL).
4. Ballast shall not be placed on top rails or any striped rails or higher than 13" above the driving surface.
5. The direction indicator barricade may be used in tapers and transitions where specific directional guidance to drivers is necessary. If used, direction indicator barricades shall be used in series to direct the driver through the transition and into the intended travel lane.
6. The splicing of sheeting is not permitted on either channelizing devices or MOT signs.
7. For rails less than 3'-0" long, 4" stripes shall be used.
8. Cones shall:
   a. Be used only in active work zones where workers are present.
   b. Be reflectorized as per the MUTCD with Department-approved reflective collars when used at night.
9. Vehicular longitudinal channelizing devices shall not exceed 36" in height. For vehicular longitudinal channelizing devices (LCDs) less than 32" in height, the LCD shall be supplemented with approved fixed (surface mounted) channelizing devices (tubular markers, vertical panels, etc.) along the run of the LCD, at the ends, at 50' centers on tangents, and 25' centers on radii. The cost of the fixed supplemented channelizing devices shall be included in the cost of the LCD. LCDs less than 32" in height shall not be used for speeds greater than 45 mph.
10. For pedestrian longitudinal channelizing devices, the device shall have a minimum of 8" continuous detectable edging above the walkway. A gap not exceeding a height of 2" is allowed to facilitate drainage. The top surface of the device shall be a minimum height of 32" and have a 1/8" or less difference in any plane at all connection points between the devices to facilitate hand trailing. The bottom and the top surface of the device shall be in the same vertical plane. If pedestrian drop-off protection is required, the device shall have a footprint or offset of at least 2', otherwise the device must be at least 42" in height above the walkway and be anchored or ballasted to withstand a 200 lb lateral point load at the top of the device.
11. For Barrier Delineators, see Specification 102. Place on top of unit so that retroreflective sheeting faces vehicular traffic. Color must match adjacent longitudinal pavement marking.

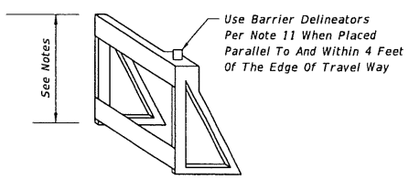
TEMPORARY BARRIER NOTES:

1. Where a barrier is specified, any of the types below may be used in accordance with the applicable Index:

Index	Description
102-100	Temporary Barrier
102-120	Low Profile Barrier
536-001	Guardrail

2. Trailer Mounted Barriers may be used to provide positive protection for workers within the work areas. APL drawings may be used as a guide to develop project specific Temporary Traffic Control Plans that are signed and sealed by the Contractor's Engineer.





LONGITUDINAL CHANNELIZING DEVICE

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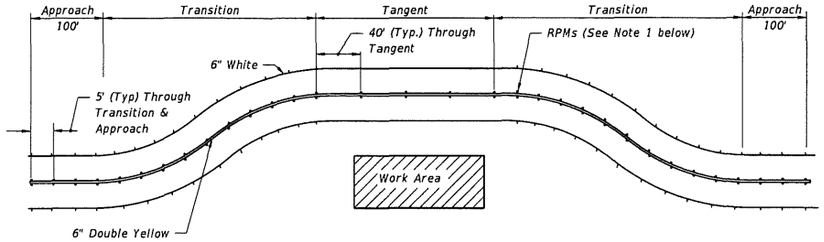
LAST REVISION	REVISION	DESCRIPTION:				INDEX	SHEET
01/28/20		EXHIBIT E	FDOT	FY 2020-21 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	102-600	10 of 11



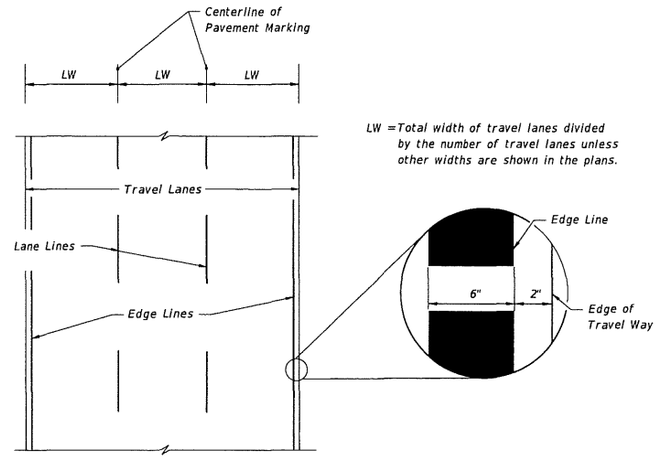
USE OF RPMS TO SUPPLEMENT PAINT OR REMOVABLE TAPE IN WORK ZONES

1. RPMs shall be installed as a supplement to:
   a. All lane lines.
   b. Edge lines in transition & approach areas.
   c. Edge lines of gore areas.
2. Placement of RPMs should be as shown in Index 706-001 with the following exceptions: RPMs shall be placed at 5 feet center to center in approach and transition areas.

NOTES FOR RAISED PAVEMENT MARKERS:

1. The color of the raised pavement marker under both day and night conditions shall conform to the color of the marking for which they serve as a positioning guide, or for which they supplement.

2. RPMs used to supplement lane lines are to be paid for as Raised Pavement Marker (Temporary), EA. RPMs used as a temporary substitute for paint or removable tape due to equipment malfunction are to be placed at the Contractor's expense.



PLACEMENT OF PAVEMENT MARKINGS

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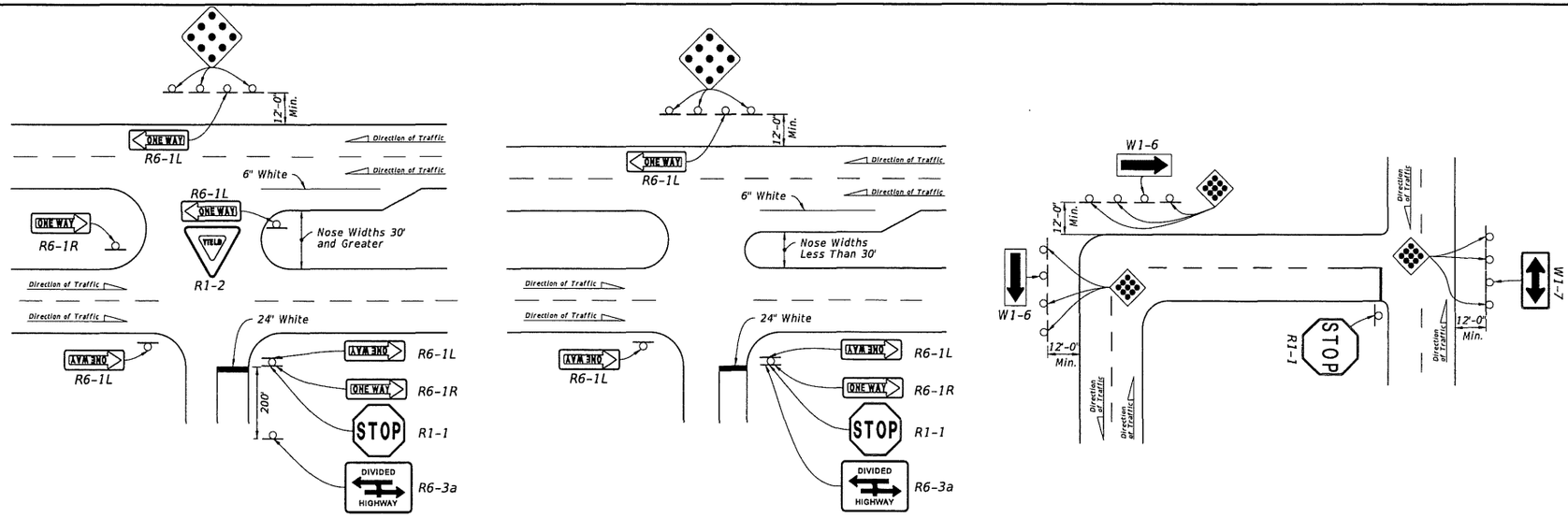
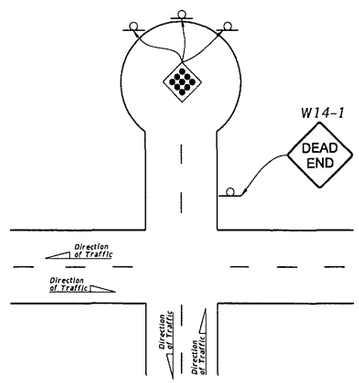
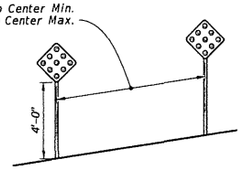
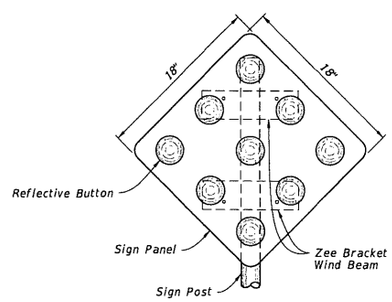
LAST REVISION	REVISION	DESCRIPTION:				INDEX	SHEET
01/28/20		EXHIBIT E	FDOT	FY 2020-21 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	102-600	11 of 11



TYPE 1 OBJECT MARKER PLACEMENT







TYPE 4 OBJECT MARKER PLACEMENT

OBJECT MARKER DETAIL

NOTES:

1. *Index applicable to residential and minor streets only. Major streets to be evaluated on a case-by-case basis.*
2. *Install Object Markers in accordance with Index 700-010*
3. *See Index 711-001 for pavement markings.*

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LAST REVISION	REVISION	DESCRIPTION:				INDEX	SHEET
11/01/19		EXHIBIT F	FDOT	FY 2020-21 STANDARD PLANS	TRAFFIC CONTROLS FOR STREET TERMINATIONS	700-109	1 of 1

EXHIBIT G

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date *(MM/DD/YYYY)* _____/_____/_____	**B. Reporting Agency** ☐ Railroad ☐ Transit ☐ State ☐ Other	**C. Reason for Update** *(Select only one)* ☐ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	**D. DOT Crossing Inventory Number**

Part I: Location and Classification Information

1. Primary Operating Railroad	**2. State**	**3. County**

4. City / Municipality ☐ In ☐ Near _____	**5. Street/Road Name & Block Number** _____ *(Street/Road Name)* | _____ ** (Block Number)*	**6. Highway Type & No.**

7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☐ No If Yes, Specify RR	**8. Do Other Railroads Operate Over Your Track at Crossing?** ☐ Yes ☐ No If Yes, Specify RR

9. Railroad Division or Region ☐ None _____	**10. Railroad Subdivision or District** ☐ None _____	**11. Branch or Line Name** ☐ None _____	**12. RR Milepost** _____ *(prefix)* | _____ *(nnnn.nnn)* | _____ *(suffix)*

13. Line Segment *	**14. Nearest RR Timetable Station** *	**15. Parent RR** *(if applicable)* ☐ N/A _____	**16. Crossing Owner** *(if applicable)* ☐ N/A _____

17. Crossing Type ☐ Public ☐ Private	**18. Crossing Purpose** ☐ Highway ☐ Pathway, Ped. ☐ Station, Ped.	**19. Crossing Position** ☐ At Grade ☐ RR Under ☐ RR Over	**20. Public Access** *(if Private Crossing)* ☐ Yes ☐ No	**21. Type of Train** ☐ Freight ☐ Transit ☐ Intercity Passenger ☐ Shared Use Transit ☐ Commuter ☐ Tourist/Other	**22. Average Passenger Train Count Per Day** ☐ Less Than One Per Day ☐ Number Per Day_____

23. Type of Land Use
☐ Open Space ☐ Farm ☐ Residential ☐ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number? ☐ Yes ☐ No If Yes, Provide Crossing Number _____	**25. Quiet Zone** *(FRA provided)* ☐ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established _____

26. HSR Corridor ID _____ ☐ N/A	**27. Latitude in decimal degrees** *(WGS84 std: nn.nnnnnn)*	**28. Longitude in decimal degrees** *(WGS84 std: -nnn.nnnnnn)*	**29. Lat/Long Source** ☐ Actual ☐ Estimated

30.A. Railroad Use *	**31.A. State Use** *
30.B. Railroad Use *	**31.B. State Use** *
30.C. Railroad Use *	**31.C. State Use** *
30.D. Railroad Use *	**31.D. State Use** *
32.A. Narrative *(Railroad Use)* *	**32.B. Narrative** *(State Use)* *

33. Emergency Notification Telephone No. *(posted)*	**34. Railroad Contact** *(Telephone No.)*	**35. State Contact** *(Telephone No.)*

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains *(6 AM to 6 PM)*	1.B. Total Night Thru Trains *(6 PM to 6 AM)*	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week? _____

2. Year of Train Count Data *(YYYY)*	3. Speed of Train at Crossing 3.A. Maximum Timetable Speed *(mph)* _____ 3.B. Typical Speed Range Over Crossing *(mph)* From _____ to _____

4. Type and Count of Tracks

Main _____ Siding _____ Yard _____ Transit _____ Industry _____

5. Train Detection *(Main Track only)*
☐ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled? ☐ Yes ☐ No	7.A. Event Recorder ☐ Yes ☐ No	7.B. Remote Health Monitoring ☐ Yes ☐ No

EXHIBIT G

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☐ Yes ☐ No	2. Types of Passive Traffic Control Devices associated with the Crossing			
	2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1)* *(count)*	2.C. YIELD Signs *(R1-2)* *(count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☐ None ☐ W10-1 _____ ☐ W10-3 _____ ☐ W10-11 _____ ☐ W10-2 _____ ☐ W10-4 _____ ☐ W10-12 _____

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count_____)* ☐ No	☐ Stop Lines ☐ Dynamic Envelope ☐ RR Xing Symbols ☐ None	☐ All Approaches ☐ Median ☐ One Approach ☐ None	☐ Yes ☐ No	☐ Yes ☐ No

2.J. Other MUTCD Signs ☐ Yes ☐ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type _____ Count _____ Specify Type _____ Count _____ Specify Type _____ Count _____	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* _____	3.E. Total Count of Flashing Light Pairs
Roadway _____ Pedestrian _____	☐ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane _____ ☐ Incandescent Not Over Traffic Lane _____ ☐ LED	☐ Incandescent ☐ LED ☐ Back Lights Included ☐ Side Lights Included	

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☐ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☐ No	☐ Yes ☐ No	

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☐ None	Count _____ Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☐ No	☐ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☐ No Storage Distance * _____ Stop Line Distance * _____	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☐ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☐ Two-way Traffic ☐ Divided Traffic Number of Lanes _____	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * _____ Length * _____
☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☐ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☐ Yes ☐ No If Yes, Approximate Distance *(feet)* _____	☐ 0° – 29° ☐ 30° – 59° ☐ 60° - 90°	☐ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☐ (08) Non-Federal Aid	☐ (0) Rural ☐ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local	☐ Yes ☐ No	_____ MPH ☐ Posted ☐ Statutory
		5. Linear Referencing System *(LRS Route ID)* *	
		6. LRS Milepost *	

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year _____ AADT _____	_____ %	☐ Yes ☐ No Average Number per Day _____	☐ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____