

CONTRACT DOCUMENTS FOR:



ITB # 22-006

FLAGLER PEDESTRIAN IMPROVEMENTS

FEBRUARY 2022

MAYOR: TERI JOHNSTON

COMMISSIONERS:

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City of Key West
Engineering Services

CITY OF KEY WEST
KEY WEST, FLORIDA
CONTRACT DOCUMENTS

For

***FLAGLER PEDESTRIAN IMPROVEMENTS
ITB 22-006***

INFORMATION TO BIDDERS

SUBJECT:	INVITATION TO BID NO. 22-006: CITY OF KEY WEST FLAGLER PEDESTRIAN IMPROVEMENTS
ISSUE DATE:	February 19, 2022
MAIL OR SPECIAL DELIVERY REPOSSES TO:	CITY CLERK CITY OF KEY WEST 1300 WHITE STREET KEY WEST, FL 33040
DELIVER BIDS TO:	SAME AS ABOVE.
NON-MANDATORY PRE-BID:	March 2, 2022
FINAL DATE FOR INQUIRIES:	March 9, 2022
FINAL DATE FOR RESPONSES:	March 11, 2022
BIDS MUST BE RECEIVED:	March 16, 2022
NOT LATER THAN:	3:00 P.M. LOCAL TIME

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PART 1

BIDDING REQUIREMENTS

INVITATION TO BID

Sealed bids for the City of Key West ITB# 22-006 FLAGLER PEDESTRIAN IMPROVEMENTS, addressed to the City of Key West, will be received at the Office of the City Clerk, 1300 White Street., Key West Florida, 33040 until 3:00 p.m. on Wednesday, March 16, 2022 and then publicly opened and read. Any bids received after the time and date specified will not be considered.

Please submit one (1) original, and two (2) flash drives each with one single PDF file of the sections entitled “Bidding Requirements” and “Contract Forms”. Bid package is to be enclosed in a sealed envelope, clearly marked on the outside “ITB # 22-006 FLAGLER PEDESTRIAN IMPROVEMENTS” addressed and delivered to the City Clerk at the address noted above.

The project contemplated consists of providing all site work, materials, equipment and labor necessary to accomplish the following:

Traffic signalization, asphalt paving, curb, gutter, sidewalk construction, signing, pavement markings and utility adjustments.

Drawings and Specifications may be obtained from Demand Star by Onvia or City of Key West. Please contact Demand Star at www.demandstar.com or call 1-800-711-1712 or www.cityofkeywest-fl.gov

A non-mandatory pre-bid meeting will be held at 3:00pm on March 2, 2022 in the City Manager’s Conference room, 2nd floor, Key West City Hall, 1300 White Street, Key West, Florida

EACH BID MUST BE SUBMITTED ON THE PRESCRIBED FORM AND ACCOMPANIED BY BID SECURITY AS PRESCRIBED IN THE INSTRUCTIONS TO BIDDERS, PAYABLE TO THE CITY OF KEY WEST, FLORIDA, IN AN AMOUNT NOT LESS THAN FIVE (5) PERCENT OF THE AMOUNT BID.

THE BIDDER MUST BE A LICENSED CONTRACTOR BY THE STATE OF FLORIDA AND SUBMIT PROOF OF SUCH WITH THE BID.

The successful Bidder shall furnish documentation showing that he is in compliance with the licensing requirements of the State and the provisions of Chapter 66 Section 87 of the Code of Ordinances of the City of Key West; within 10 days following the Notice of Award and must demonstrate that he holds at a minimum, the following licenses & certificates;

- A. City of Key West Business Tax License Receipt
- B. A valid Certified General Contractors License issued by the State of Florida.

All bid bonds, insurance contracts, and certificates of insurance shall be either executed by or countersigned by a licensed resident agent of the Surety or Insurance Company having his place of business in the State of Florida, and in all ways complying with the insurance laws of the State of

Florida. Further, the said Surety or Insurance Company shall be duly licensed and qualified to do business in the State of Florida.

Before a Contract will be awarded for the work contemplated herein, the CITY will conduct such investigation as is necessary to determine the performance record and ability of the apparent low Bidder to perform the size and type of work specified under this Contract. Upon request, the Bidder shall submit such information as deemed necessary by the CITY to evaluate the Bidder's qualifications.

Any request for information concerning this project must be made in writing, per City of Key West Ordinance Section 2-773, Code of Silence, to Kelly Crowe, P.E., City Engineer at kcrowe@cityofkeywest-fl.gov

As stated above at the time of the bid submittal the Bidder must provide satisfactory documentation of State Licenses. The Bidder shall furnish documentation showing that he is in compliance with the licensing requirements of County, and City licenses as would be required within ten days of the award. The successful Bidder must also be able to satisfy the CITY Attorney as to such insurance coverage and legal requirements as may be demanded by the Bid in question. The CITY may reject bids for any and/or all of the following reasons: (1) for budgetary reasons, (2) if the bidder misstates or conceals a material fact in its bid, (3) if the bid does not strictly conform to the law or is non-responsive to the bid requirements, (4) if the bid is conditional, or (5) if a change of circumstances occurs making the purpose of the bid unnecessary to the CITY. The CITY may also waive any minor formalities or irregularities in any bid, (6) if such rejection is in the best interest of the CITY.

INSTRUCTIONS TO BIDDERS

1. CONTRACT DOCUMENTS

A. FORMAT

The Contract Documents are divided into parts, divisions, and sections for convenient organization and reference. Generally, there has been no attempt to divide the sections into work performed by the various building trades, work by separate subcontractors, or work required for separate facilities in the project.

B. DOCUMENT INTERPRETATION

The separate sections contained within these Contract Documents are intended to be mutually cooperative and to provide all details reasonably required for the execution of the proposed work.

Should there be any doubt as to the meaning or intent of said Contract Documents, the Bidder should request of the ENGINEER, in writing (at least ten (10) calendar days prior to bid opening) an interpretation thereof. Any interpretation or change in said Contract Documents will be made only in writing in the form of Addenda to the documents which will be available to all registered holders of Contract Documents via Demand star. Bidders shall submit with their Bids, or indicate receipt of, all Addenda. The CITY will not be responsible for any other explanation or interpretations of said Documents.

2. GENERAL DESCRIPTION OF THE PROJECT

A general description of the work to be done is contained in the Invitation to Bid. The scope is specified in applicable parts of these Contract Documents.

3. QUALIFICATION OF CONTRACTORS

The prospective Bidders must meet the statutorily prescribed requirements before award of Contract by the CITY. Bidders must hold or obtain all licenses and/or certificates as required by the State and Local Statutes to bid and perform the work specified herein.

4. BIDDER'S UNDERSTANDING

Each Bidder must inform himself of the conditions relating to the execution of the work, and it is assumed that he will inspect the site and make himself thoroughly familiar with all the Contract Documents. Failure to do so will not relieve the successful Bidder of his obligation to enter a Contract and complete the contemplated work in strict accordance with the Contract Documents. It shall be the Bidder's obligation to verify for himself and to his complete satisfaction all information concerning site and subsurface conditions.

The CITY will make available to prospective Bidders upon request and at the office of the ENGINEER, prior to bid opening, any information that he may have as to subsurface conditions and surface topography at the worksite.

Each Bidder shall inform himself of, and the Bidder awarded a Contract shall comply with, federal,

state, and local laws, statutes, and ordinances relative to the execution of the work. This requirement includes, but is not limited to, applicable regulations concerning minimum wage rates, nondiscrimination in the employment of labor, protection of public and employee safety and health, environmental protection, the protection of natural resources, fire protection, burning and non-burning requirements, permits, fees, and similar subjects.

5. TYPE OF BID

A. UNIT PRICE

The bid for the work shall be submitted on a unit price basis. Unit prices shall be submitted in all appropriate places in the Bid Proposal Form.

6. PREPARATION OF BIDS

A. GENERAL

All blank spaces in the BID form must be filled in, as required, preferably in BLACK ink. All price information shall be shown in both words and figures where required. No changes shall be made in the phraseology of the forms. Written amounts shall govern in case of discrepancy between the amounts stated in writing and the amounts stated in figures. In case of discrepancy between unit prices and extended totals, unit prices shall prevail.

Any BID shall be deemed informal which contains omissions, erasures, alterations, or additions of any kind, or prices uncalled for, or in which any of the prices are obviously unbalanced, or which in any manner shall fail to conform to the conditions of the published Invitation to Bid.

Only one BID from any individual, firm, partnership, or corporation, under the same or different names, will be considered. Should it appear to the CITY that any Bidder is interested in more than one Bid for work contemplated; all Bids in which such Bidder is interested will be rejected.

B. SIGNATURE

The Bidder shall sign his BID in the blank space provided therefore. If Bidder is a corporation, the legal name of the corporation shall be set forth above, together with the signature of the officer or officers authorized to sign Contracts on behalf of the corporation. If Bidder is a partnership, the true name of the firm shall be set forth above, together with the signature of the partner or partners authorized to sign Contracts in behalf of the partnership. If signature is by an agent, other than an officer of a corporation or a member of a partnership, a notarized power-of-attorney must be on file with the CITY prior to opening of Bids or submitted with the Bid, otherwise the Bid will be regarded as not properly authorized.

C. SPECIAL BIDDING REQUIREMENTS

The Bidder's attention is brought to the hiring practices and licenses and permits of the City of Key West. These are defined in the addition to Article 39, ORDINANCES, PERMITS, AND LICENSES, as set forth in the Supplementary Conditions.

The Bidder shall submit with his Bid his experience record showing his experience and expertise in general construction projects and related work. Such experience record shall provide at least five current or recent projects (within the past 5 years) of similar work, within the State Florida and preferably Monroe County. For each project the following information shall be provided:

1. Description and location of work.
2. Contract amount.
3. Dates work was performed.
4. Owner.
5. Name of Owner's contact person and phone number.
6. ENGINEER.
7. Name of ENGINEER's contact person and phone number.

The bidder shall submit with his bid a list of items to be performed by his own labor and that performed by subcontractors or others.

D. ATTACHMENTS

Bidder shall complete and submit the following forms with his bid:

State of Florida Contractor's License
Anti-Kickback Affidavit
Public Entity Crimes Form
Indemnification Form
City of Key West Business License Tax Receipt
Local Vendors Form
Domestic Partnership Affidavit
Cone of Silence Affidavit
Non-Collusion Affidavit
Bidders' Checklist

E. PUBLIC ENTITY CRIMES FORM

Pursuant to the requirements of Chapter 287.133, Laws of Florida, pertaining to the sworn statement on Public Entity Crimes and the Convicted Vendor List, all Bidders shall submit a signed and notarized statement with their Bid on the form provided herein.

7. STATE AND LOCAL SALES AND USE TAXES

Unless the Supplementary Conditions contains a statement that the CITY is exempt from state sales tax on materials incorporated into the work due to the qualification of the work under this Contract, the Contractor, as required by the laws and statutes of the state and its political

subdivisions, shall pay all state and local sales and use taxes. Prices quoted in the Bid shall include all nonexempt sales and use taxes, unless provision is made in the Bid form to separately itemize the tax.

8. SUBMISSION OF BIDS

All BIDS must be submitted not later than the time prescribed, at the place, and in the manner set forth in the Invitation to Bid. BIDS must be made on the BID forms provided herewith, **submit one (1) ORIGINAL and two (2) FLASH DRIVES each containing a single PDF file of the entire bid package.**

Each BID must be submitted in a sealed envelope, so marked as to indicate the Bidder's name and its contents (project name and number) without being opened, and addressed in conformance with the instructions in the Invitation to Bid.

9. MODIFICATION OR WITHDRAWAL OF BIDS

Prior to the time and date designated for receipt of BIDS, any BID submitted may be withdrawn by notice to the party receiving BIDS at the place designated for receipt of BIDS. Such notice shall be in writing over the signature of the Bidder or by telegram. If by telegram, written confirmation over the signature of the Bidder shall be mailed and postmarked on or before the date and time set for receipt of BID. No BID may be withdrawn after the time scheduled for opening of BIDS, unless the time specified in paragraph AWARD OF CONTRACT of these Instructions to Bidders shall have elapsed.

10. BID SECURITY

BIDS must be accompanied by cash, a certified check, or cashier's check drawn on a bank in good standing, or a bid bond issued by a Surety authorized to issue such bonds in the state where the work is located, in the amount of five (5) percent of the total amount of the Bid submitted. This bid security shall be given as a guarantee that the Bidder will not withdraw his BID for a period of ninety (90) days after bid opening, and that if awarded the Contract, the successful Bidder will execute the attached Contract and furnish properly executed Performance and Payment Bonds, each in the full amount of the Contract price within the time specified. Agent and Surety phone numbers must be provided.

The Attorney-in-Fact who executes this bond in behalf of the Surety must attach a notarized copy of his power-of-attorney as evidence of his authority to bind the Surety on the date of execution of the bond. Where State Statute requires, certification by a resident agent shall also be provided.

If the Bidder elects to furnish a Bid Bond, he shall use the Bid Bond form bound herewith, or one conforming substantially thereto in form and content.

11. RETURN OF BID SECURITY

Within fifteen (15) days after the award of the Contract, the CITY will return the bid securities to all Bidders whose BIDS are not to be further considered in awarding the Contract. Retained bid securities will be held until the Contract has been finally executed, after which all bid securities, other than Bidders' bonds and any guarantees, which have been forfeited, will be returned to the

respective Bidders whose Bids they accompanied.

12. AWARD OF CONTRACT

Within ninety (90) calendar days after the opening of Bids, the CITY will accept one of the Bids or will act in accordance with the following paragraphs. The acceptance of the Bid will be by written notice of award, mailed to the office designated in the Bid, or delivered to the Bidder's representative. In the event of failure of the lowest responsive, responsible Bidder to sign the Contract, provide additional documents, insurance certificate(s) and evidence of holding required licenses and certificates, the Owner may award the Contract to the next lowest responsive, responsible Bidder. Such award, if made, will be made within one hundred & twenty (120) days after the opening of Bids.

The CITY reserves the right to accept or reject any or all Bids, and to waive any informalities and irregularities in said Bids.

13. BASIS OF AWARD

The award will be made by the OWNER on the basis of the BID from the lowest, responsive, responsible BIDDER which, in the OWNER's sole and absolute judgment will best serve the interest of the OWNER.

14. EXECUTION OF CONTRACT

The successful Bidder shall, within ten (10) working days after receiving Notice of Award, sign and deliver to the CITY an original Contract and two (2) copies in the form hereto attached, together with the insurance certificate as required in the Contract Documents and evidence of holding required licenses and certificates. Within 10 working days after receiving the signed Contract from the successful Bidder, the City's authorized agent will sign the Contract. Signature by both parties constitutes execution of the Contract.

15. CONTRACT BONDS

A. PERFORMANCE AND PAYMENT BONDS

The successful Bidders shall file with the City, at the time of delivery of the signed Contract, a Performance Bond and Payment Bond on the forms bound herewith, each in the full amount of the Contract Price in accordance with the requirements of Florida Statutes Section 255.05 or 713.23, as applicable, as security for the faithful performance of the Contract and the payment of all persons supplying labor and materials for the construction of the work, and to cover all guarantees against defective workmanship or materials, or both, during the warranty period following the date of final acceptance of the work by the City. The Surety furnishing this bond shall have a sound financial standing and a record of service satisfactory to the City, shall be authorized to do business in the State of Florida, and shall be listed on the current U.S. Department of Treasury Circular Number 570, or amendments thereto in the Federal Register, of acceptable Sureties for federal Projects. Section 255.05(7), Florida Statutes, in lieu of the bond required by law, the contractor may file with the city an alternative form of security in the form of cash, a money order, a certified check, a cashier's check or an irrevocable letter of credit.

B. POWER-OF-ATTORNEY

The Attorney-in-Fact (Resident Agent) who executes Performance and Payment Bonds on behalf of the Surety must attach a notarized copy of his power-of-attorney as evidence of his authority to bind the Surety on the date of execution of the bond. Performance and Payment Bonds, and respective powers-of-attorney will have the same date.

16. FAILURE TO EXECUTE CONTRACT AND FURNISH BID BOND

The Bidder who has a Contract awarded to him and who fails to promptly and properly execute the Contract shall forfeit the bid security that accompanied his bid, and the bid security shall be retained as liquidated damages by the CITY, and it is agreed that this said sum is a fair estimate of the amount of damages the CITY will sustain in case the Bidder fails to enter into a Contract. Bid security deposited in the form of cash, a certified check, or cashier's check shall be subject to the same requirement as a Bid Bond.

17. TIME OF COMPLETION

The time of completion of the work to be performed under this Contract is the essence of the Contract. Delays and extensions of time may be allowed in accordance with the provisions stated in the General Conditions.

When the Contractor receives a Notice to Proceed, he shall commence work as soon as possible and shall complete all work within **180** calendar days as stipulated in this Bid with exception to the following:

The Contractor is hereby informed that construction activity for the 1st and Bertha Street project is active adjacent to the intersection of 1st/Bertha Street and Flagler Avenue. Work shown in the plans for ITB 22-006 at this intersection must be completed prior to May 20, 2022, to avoid conflicts with the 1st and Bertha Street project.

At a minimum, the following work must be completed at the intersection of 1st/Bertha Street and Flagler Avenue prior to the mill and pave operations for the 1st and Bertha Street project:

Signalization

- *Pedestrian pole installation on SW and NE corners; if lead times prevent installation of aluminum pole with frangible base, Contractor at minimum to install the foundation, anchor bolts, and associated pull box and conduits.*
- *Prepare new loop windows (placement of conduit from nearside pull box and window in asphalt)*
- *All directional bore operations with the intersection*

Roadway

- *Ramp reconstruction of NE and SW corner of 1st/Bertha Street and Flagler Avenue.*

NOTE TO BIDDER: Use preferably BLACK ink for completing this BID form.

BID PROPOSAL

To: The City of Key West
Address: 1300 White Street, Key West, Florida 33040
Project Title: FLAGLER PEDESTRIAN IMPROVEMENTS
ITB 22-006

Bidder's contact person for additional information on this BID:

Company Name: _____

Contact Name & Telephone #: _____

Email Address: _____

BIDDER'S DECLARATION AND UNDERSTANDING

The undersigned, hereinafter called the Bidder, declares that the only persons or parties interested in this Bid are those named herein, that this Bid is, in all respects, fair and without fraud, that it is made without collusion with any official of the Owner, and that the Bid is made without any connection or collusion with any person submitting another Bid on this Contract.

The Bidder further declares that he has carefully examined the Contract Documents for the construction of the project, that he has personally inspected the site, that he has satisfied himself as to the quantities involved, including materials and equipment, and conditions of work involved, including the fact that the description of the quantities of work and materials, as included herein, is brief and is intended only to indicate the general nature of the work and to identify the said quantities with the detailed requirements of the Contract Documents, and that this Bid is made according to the provisions and under the terms of the Contract Documents, which Documents are hereby made a part of this Bid.

CONTRACT EXECUTION

The Bidder agrees that if this Bid is accepted, he will, within 10 days, not including Sundays and legal holidays, after Notice of Award, sign the Contract in the form annexed hereto, and will at that time, deliver to the Owner evidence of holding required licenses and certificates, and will, to the extent of his Bid, furnish all machinery, tools, apparatus, and other means of construction and do the work and furnish all the materials necessary to complete all work as specified or indicated in the Contract Documents.

CERTIFICATES OF INSURANCE

Bidder agrees to furnish the Owner, before commencing the work under this Contract, the certificates of insurance as specified in these Documents.

BID PROPOSAL FORM

FDOT Item Number	Item Description	Unit	Quantity	Unit Price	Total Extended Price
101-1	MAINTENANCE OF TRAFFIC	LS	1	\$ _____	\$ _____
102-1	MOBILIZATION	LS	1	\$ _____	\$ _____
102-60	WORK ZONE SIGN	ED	1560	\$ _____	\$ _____
102-74-1	CHANNELIZING DEVICE-TYPES I, II, DI, VP, DRUM, OR LCD	ED	1800	\$ _____	\$ _____
102-74-8	CHANNELIZING DEVICE- PEDESTRIAN LCD	FD	1050	\$ _____	\$ _____
102-76	ARROW BOARD / ADVANCE WARNING ARROW PANEL	ED	75	\$ _____	\$ _____
102-99	PORTABLE CHANGEABLE MESSAGE SIGN TEMPORARY	ED	148	\$ _____	\$ _____
102-104	TEMPORARY SIGNALIZATION AND MAINTENANCE, INTERSECTION	ED	60	\$ _____	\$ _____
102-115	TYPE III BARRICADE	ED	148	\$ _____	\$ _____
104-18	INLET PROTECTION	EA	3	\$ _____	\$ _____
107-1	LITTER REMOVAL	LS	0.07	\$ _____	\$ _____
107-2	MOWING	LS	0.19	\$ _____	\$ _____
110-1-1	CLEARING & GRUBBING	LS/A C	0.05	\$ _____	\$ _____
110-4-10	REMOVAL OF EXISTING CONCRETE	SY	70	\$ _____	\$ _____
120-1	REGULAR EXCAVATION	CY	90.0	\$ _____	\$ _____
160-4	TYPE B STABILIZATION	SY	137	\$ _____	\$ _____
285-711	OPTIONAL BASE, BASE GROUP 11	SY	185	\$ _____	\$ _____
0334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	TN	19.8	\$ _____	\$ _____
425-5	MANHOLE, ADJUST	EA	1.0	\$ _____	\$ _____
520-1-10	CONCRETE CURB & GUTTER, TYPE F	LF	18	\$ _____	\$ _____

FDOT Item Number	Item Description	Unit	Quantity	Unit Price	Total Extended Price
520-2-2	CONCRETE CURB, TYPE B	LF	148	\$ _____	\$ _____
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	51	\$ _____	\$ _____
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	56	\$ _____	\$ _____
527-2	DETECTABLE WARNINGS	SF	21	\$ _____	\$ _____
570-1-2	PERFORMANCE TURF, SOD	SY	24	\$ _____	\$ _____
710-90	PAINTED PAVEMENT MARKINGS, FINAL SURFACE	LS	1	\$ _____	\$ _____
711-11-123	THERMO, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK	LF	409.8	\$ _____	\$ _____
711-11-125	THERMO, STD., WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK	LF	409.0	\$ _____	\$ _____
711-14-170	THERMOPLASTIC, PREFORMED, WHITE, ARROW	EA	2	\$ _____	\$ _____
711-16-101	THERMOPLASTIC, STANDARD- OTHER SURFACES, WHITE, SOLID, 6"	GM	0.032	\$ _____	\$ _____
711-16-201	THERMOPLASTIC, STANDARD- OTHER SURFACES, YELLOW, SOLID, 6"	GM	0.045	\$ _____	\$ _____
630-2-12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	829	\$ _____	\$ _____
630-2-14	CONDUIT, FURNISH & INSTALL, ABOVEGROUND	LF	35	\$ _____	\$ _____
632-7-1	SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION, F&I	PI	2	\$ _____	\$ _____
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	23	\$ _____	\$ _____
646-1-11	ALUMINUM SIGNALS POLE, PEDESTAL	EA	9	\$ _____	\$ _____
653-1-11	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY	AS	12	\$ _____	\$ _____
653-1-12	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 2 WAY	AS	1	\$ _____	\$ _____
660-1-109	LOOP DETECTOR INDUCTIVE, F&I, TYPE 9	EA	7	\$ _____	\$ _____
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	AS	8	\$ _____	\$ _____

FDOT Item Number	Item Description	Unit	Quantity	Unit Price	Total Extended Price
665-1-12	PEDESTRIAN DETECTOR, FURNISH & INSTALL, ACCESSIBLE	EA	10	\$ _____	\$ _____
670-5-400	TRAFFIC CONTROLLER ASSEMBLY, MODIFY	AS	2	\$ _____	\$ _____

SUBTOTAL OF EXTENDED AMOUNTS

_____ \$ _____
TOTAL IN WORDS TOTAL IN FIGURES

TOTAL OF BASE BID ITEMS

_____ \$ _____
TOTAL IN WORDS TOTAL IN FIGURES

Company Name

Authorized Signature

Title

List items to be performed by CONTRACTOR's own forces and the estimated total cost of these items. (Use additional sheets if necessary.)

SUBCONTRACTORS

The Bidder further proposes that the following subcontracting firms or businesses will be awarded subcontracts for the following portions of the work if the Bidder is awarded the Contract:

Name

_____, _____, _____, _____
Street City State Zip

Name

_____, _____, _____, _____
Street City State Zip

Name

_____, _____, _____, _____
Street City State Zip

Name

_____, _____, _____, _____
Street City State Zip

SURETY

_____ whose address is

_____, _____, _____
Street City State Zip

BIDDER

The name of the Bidder submitting this Bid is

_____ doing business at

_____, _____, _____
Street City State Zip

which is the address to which all communications concerned with this Bid and with the Contract shall be sent.

The names of the principal officers of the corporation submitting this Bid, or of the partnership, or of all persons interested in this Bid as principals are as follows:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

If Sole Proprietor or Partnership

IN WITNESS hereto the undersigned has set his (its) hand this _____ day of _____ 2022.

Signature of Bidder

Title _____

If Corporation

IN WITNESS WHEREOF the undersigned corporation has caused this instrument to be executed and its seal affixed by its duly authorized officers this _____ day of _____ 2022.

(SEAL)

Name of Corporation

By _____

Title _____

Attest _____

Secretary

FLORIDA BID BOND

BOND NO. _____

AMOUNT: \$ _____

KNOW ALL MEN BY THESE PRESENTS, that _____

hereinafter called the PRINCIPAL, and _____

a corporation duly organized under the laws of the State of _____

having its principal place of business at _____

_____ in the State of _____,

and authorized to do business in the State of Florida, as SURETY, are held and firmly bound unto

hereinafter called the OBLIGEE, in the sum of _____

DOLLARS (\$ _____) for the payment for which we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these present.

THE CONDITION OF THIS BOND IS SUCH THAT:

WHEREAS, the PRINCIPAL is herewith submitting his or its Bid for

ITB # 22-006 / FLAGLER PEDESTRIAN IMPROVEMENTS said Bid, by reference thereto, being hereby made a part hereof.

WHEREAS, the PRINCIPAL contemplates submitting or has submitted a bid to the OBLIGEE for the furnishing of all labor, materials (except those to be specifically furnished by the CITY), equipment, machinery, tools, apparatus, means of transportation for, and the performance of the work covered in the Bid and the detailed Specifications, entitled:

ITB # 22-006 / FLAGLER PEDESTRIAN IMPROVEMENTS

WHEREAS, it was a condition precedent to the submission of said bid that a cashier's check, certified check, or bid bond in the amount of five (5) percent of the base bid be submitted with said bid as a guarantee that the Bidder would, if awarded the Contract, enter into a written Contract with the CITY for the performance of said Contract, within 10 working days after written notice having been given of the award of the Contract.

NOW, THEREFORE, the conditions of this obligation are such that if the PRINCIPAL within 10 consecutive calendar days after written notice of such acceptance, enters into a written Contract with the OBLIGEE and furnishes the Performance and Payment Bonds, each in an amount equal to 100 percent of the base bid, satisfactory to the CITY, then this obligation shall be void; otherwise the sum herein stated shall be due and payable to the OBLIGEE and the Surety herein agrees to pay said sum immediately upon demand of the OBLIGEE in good and lawful money of the United States of America, as liquidated damages for failure thereof of said PRINCIPAL.

Signed and sealed this _____ day of _____, 2022.

PRINCIPAL

By _____

STATE OF _____)

: SS

COUNTY OF _____)

SURETY

By _____

SWORN STATEMENT UNDER SECTION 287.133(3)(A)
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted with Bid or Bid for _____

2. This sworn statement is submitted by _____
(Name of entity submitting sworn statement)

whose business address is _____

and (if applicable) its Federal Employer Identification Number (FEIN) is _____

(If the entity has no FEIN, include the Social Security Number of the individual
signing this sworn statement _____

3. My name is _____
(Please print name of individual signing)

and my relationship to the entity named above is _____

4. I understand that a “public entity crime” as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including but not limited to, any bid or contract for goods or services to be provided to any public or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, material misrepresentation.

5. I understand that “convicted” or “conviction” as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication guilt, in any federal or state trial court of record relating to charges brought by indictment information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

6. I understand that an “affiliate” as defined in Paragraph 287.133(1)(a), Florida Statutes, means

a. A predecessor or successor of a person convicted of a public entity crime; or

- b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term “affiliate” includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm’s length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
7. I understand that a “person” as defined in Paragraph 287.133(1)(8), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with public entity. The term “person” includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.
 8. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies).

_____ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

_____ There has been a proceeding concerning the conviction before a hearing of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

_____ The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of

Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

_____ The person or affiliate has not been put on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

(Signature)

(Date)

STATE OF _____

COUNTY OF _____

PERSONALLY, APPEARED BEFORE ME, the undersigned authority,

_____ who, after first being sworn by me, affixed his/her
(Name of individual signing)

Signature in the space provided above on this ____ day of _____, 2022.

My commission expires:

NOTARY PUBLIC

INDEMNIFICATION

To the fullest extent permitted by law, the CONTRACTOR expressly agrees to indemnify and hold harmless the City of Key West, their officers, directors, agents, and employees (herein called the “indemnitees”) from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney’s fees and court costs, such legal expenses to include costs incurred in establishing the indemnification and other rights agreed to in this Paragraph, to persons or property, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the CONTRACTOR, its Subcontractors or persons employed or utilized by them in the performance of the Contract. Claims by indemnitees for indemnification shall be limited to the amount of CONTRACTOR’s insurance or \$1 million per occurrence, whichever is greater. The parties acknowledge that the amount of the indemnity required hereunder bears a reasonable commercial relationship to the Contract and it is part of the project specifications or the bid documents, if any.

The indemnification obligations under the Contract shall not be restricted in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR under workers’ compensation acts, disability benefits acts, or other employee benefits acts, and shall extend to and include any actions brought by or in the name of any employee of the CONTRACTOR or of any third party to whom CONTRACTOR may subcontract a part or all of the Work. This indemnification shall continue beyond the date of completion of the work.

CONTRACTOR: _____

SEAL:

Address

Signature

Print Name

Title

DATE: _____

LOCAL VENDOR CERTIFICATION PURSUANT TO CKW ORDINANCE 09-22 SECTION 2-798

The undersigned, as a duly authorized representative of the vendor listed herein, certifies to the best of his/her knowledge and belief, that the vendor meets the definition of a “Local Business.” For purposes of this section, “local business” shall mean a business which:

- a. Principle address as registered with the FL Department of State located within 30 miles of the boundaries of the city, listed with the chief licensing official as having a business tax receipt with its principle address within 30 miles of the boundaries of the city for at least one year immediately prior to the issuance of the solicitation.
- b. Maintains a workforce of at least 50 percent of its employees from the city or within 30 miles of its boundaries.
- c. Having paid all current license taxes and any other fees due the city at least 24 hours prior to the publication of the call for bids or request for Bids.
 - Not a local vendor pursuant to Ordinance 09-22 Section 2-798
 - Qualifies as a local vendor pursuant to Ordinance 09-22 Section 2-798

If you qualify, please complete the following in support of the self-certification & submit copies of your County and City business licenses. Failure to provide the information requested will result in denial of certification as a local business.

Business Name _____ Phone: _____

Current Local Address: _____ Fax: _____
(P.O Box numbers may not be used to establish status)

Length of time at this address: _____

Date: _____

Signature of Authorized Representative

STATE OF _____ COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 2022.

By _____, of _____
(Name of officer or agent, title of officer or agent) (Name of corporation acknowledging)

or has produced identification _____ as identification
(Type of identification)

Signature of Notary

Return Completed form with
Supporting documents to:
City of Key West Purchasing

Print, Type or Stamp Name of Notary

Title or Rank

BIDDER'S CHECKLIST

(Note: The purpose of this checklist is to serve as a reminder of major items to be addressed in submitting a bid and is not intended to be all inclusive. It does not alleviate the Bidder from the responsibility of becoming familiar with all aspects of the Contract Documents and proper completion and submission of his bid.)

1. All Contract Documents thoroughly read and understood. []
2. All blank spaces in Bid filled in, using black ink. []
3. Total and unit prices added correctly and attached Schedule of Values []
4. Addenda acknowledged. []
5. Subcontractors are named as indicated in the Bid. []
6. Experience record included. []
7. Bid signed by authorized officer. []
8. Bid Bond completed and executed, including power-of-attorney dated the same date as Bid Bond. []
9. Bidder familiar with federal, state, and local laws, ordinances, rules and regulations affecting performance of the work. []
10. Bidder, if successful, able to obtain and/or demonstrate possession of required licenses and certificates within (10) ten calendar days after receiving a Notice of Award. []
11. BID submitted intact with the volume entitled "Bidding Requirements" and "Contract Forms", 1 original, and 2 flash drives as stated in the invitation to bid. []
12. Bid Documents submitted in sealed envelope and addressed and labeled in conformance with the instructions in the Invitation to Bid. []

PART 2

CONTRACT FORMS

CONTRACT

This Contract, made and entered into this _____ day of _____ 2022,

by and between the CITY OF KEY WEST, hereinafter called the "Owner", and _____

hereinafter called the "Contractor";

WITNESSETH:

The Contractor, in consideration of the sum to be paid him by the Owner and of the covenants and agreements herein contained, hereby agrees at his own proper cost and expense to do all the work and furnish all the materials, tools, labor, and all appliances, machinery, and appurtenances for ITB 22-006, FLAGLER PEDESTRIAN IMPROVEMENTS, Key West, Florida to the extent of the Bid made by the Contractor, dated the _____ th day of _____ 2022, all in full compliance with the Contract Documents referred to herein.

The CONTRACT DOCUMENTS, including the signed copy of the BID, BID BOND, CONTRACT FORM, SUMMARY OF WORK, SPECIFICATIONS, DRAWINGS, GENERAL & SUPPLEMENTARY CONDITIONS OF THE CONTRACT.

In consideration of the performance of the work as set forth in these Contract Documents, the Owner agrees to pay to the Contractor the amount bid in the Bid as adjusted in accordance with the Contract Documents, or as otherwise herein provided, and to make such payments in the manner and at the times provided in the Contract Documents.

The Contractor agrees to complete the work within One hundred eighty (180) calendar days and to accept as full payment hereunder the amounts computed as determined by the Contract Documents and based on the said BID.

The Contractor agrees to remedy all defects appearing in the work or developing in the materials furnished and the workmanship performed under this Contract during the warranty period after the date of final acceptance of the work by the Owner, and further agrees to indemnify and save the Owner harmless from any costs encountered in remedying such defects.

It is agreed that the Contract, based upon the BID, shall be fully complete within the stated number of consecutive calendar days from the date the Notice to Proceed is issued.

In the event the Contractor fails to complete the work within the time limit or extended time limit agreed upon, as more particularly set forth in the Contract Documents, liquidated damages shall be paid at a per day rate as specified in Section 8-10.2 of the Florida Department of Transportation Specifications. Sundays and legal holidays shall be included in determining days in default.

This contract will automatically expire upon completion of the project. Contractors warranty obligations remain in effect.

IN WITNESS WHEREOF, we, the parties hereto, each herewith subscribe the same this

_____ Day of _____, A.D., 2022.

CITY OF KEY WEST

By _____

Title City Manager

CONTRACTOR

By _____

Title _____

FLORIDA PERFORMANCE BOND

BOND NO. _____

AMOUNT: \$ _____

KNOW ALL MEN BY THESE PRESENTS, that in accordance with Florida Statutes Section 255.05, _____

with offices, at _____

hereinafter called the CONTRACTOR, (Principal), and _____

with offices, at _____

a corporation duly organized and existing under and by virtue of the laws of the State of _____, hereinafter called the SURETY, and authorized to transact business within the State of Florida, as SURETY, are held and firmly bound CITY OF KEY WEST,

represented by its _____, hereinafter called the City (Obligee), in the sum of:

_____ DOLLARS (\$ _____),

lawful money of the United States of America, for the payment of which, well and truly be made to the CITY, and the CONTRACTOR and the SURETY bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the CONTRACTOR has executed and entered into a certain Contract hereto attached, with the CITY, dated _____, 2022, to furnish at his own cost, charges, and expense all the necessary materials, equipment, and/or labor in strict and express accordance with said Contract and the Contract Documents as defined therein, all of which is made a part of said Contract by certain terms and conditions in said Contract more particularly mentioned, which Contract, consisting of the various Contract Documents is made a part of this Bond as fully and completely as if said Contract Documents were set forth herein;

NOW THEREFORE, the conditions of this obligation are such that if the above bounden CONTRACTOR:

1. Shall in all respects comply with the terms and conditions of said Contract and his obligation there under, including the Contract Documents (which include the permit form, coral relocation plan, specifications, and conditions as prepared by the CITY, invitation to bid, instructions to bidders, the CONTRACTOR'S bid as accepted by the above CITY, the bid and contract performance and payment bonds, and all addenda, if any, issued prior to the opening of bids),

being made a part of this bond by reference, at the times and in the manner prescribed in the contract; and

2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying PRINCIPAL with labor, materials, or supplies, used directly or indirectly by PRINCIPAL in the prosecution of the work provided for in the contract; and

3. Pays CITY all losses, costs, expenses, damages, attorney's fees, including appellate proceedings, injury or loss of whatever kind and however arising including, without limitation, delay damages to which said CITY may be subject by reason of any wrongdoing, misconduct, want of care or skill, negligence, failure of performance, breach, failure to petition within the prescribed time, or default, including patent infringements, on the part of said CONTRACTOR, his agents or employees, in the execution or performance of said Contract; and

4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this obligation shall be void; otherwise, to remain in full force and effect for the term of said Contract.

AND, the said Surety for value received, hereby stipulates and agrees that no change involving any extension of time, or addition to the terms of the Contract Documents, or to the work to be performed, or materials to be furnished there under shall affect said obligation of said Surety on this Bond, and the said Surety does hereby waive notice of any such changes, extension of time, alterations, or additions of the terms of the Contract Documents, or to the work.

Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes.

IN WITNESS WHEREOF, the above parties bonded together have executed this instrument this day of _____, 2022, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

By: _____ (Seal)

_____ Attest

SURETY

By _____ (Seal)

_____ Attest

FLORIDA PAYMENT BOND

BOND NO _____

AMOUNT: \$ _____

KNOW ALL MEN BY THESE PRESENTS, that in accordance with Florida Statutes Section 255.05, _____

with offices at _____

hereinafter called the CONTRACTOR, (Principal), and

_____ with offices at _____

a corporation duly organized and existing under and by virtue of the laws of the State of _____, hereinafter called the SURETY, and authorized to transact business within the State of Florida, as SURETY, are held and firmly bound CITY OF KEY WEST,

represented by its _____, hereinafter called the City (Obligee), in the sum of:

_____ DOLLARS (\$ _____), lawful money of the United States of America, for the payment of which, well and truly be made to the CITY, and the CONTRACTOR and the SURETY bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the CONTRACTOR has executed and entered into a certain Contract for

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attached hereto, with the CITY, dated _____, 2022, to furnish at his own cost, charges, and expense the necessary materials, equipment, and/or labor in strict and express accordance with said Contract and the plans, drawings (if any), and specifications prepared by the CITY, all of which is made a part of said Contract by certain terms and conditions in said Contract more particularly mentioned, which Contract, consisting of the various Contract Documents specifically mentioned herein and relative hereto, is made a part of this Bond as fully and completely as if said Contract Documents were set forth herein.

NOW THEREFORE, the conditions of this obligation are such that if the above bounden CONTRACTOR shall in all respects comply with the terms and conditions of said Contract and his obligation thereunder, including the Contract Documents (which include the permit form, coral

relocation plan, the specifications, and conditions prepared by the CITY, invitation to bid, instructions to bidders, the CONTRACTOR'S bid as accepted by the CITY, the bid and contract and payment bonds, and all addenda, if any, issued prior to the opening of bids), and further that if said CONTRACTOR shall promptly make payments to all persons supplying materials, equipment, and/or labor, used directly or indirectly by said CONTRACTOR or SUBCONTRACTORS in the prosecution of the work for said contract in accordance with Florida Statutes, Section 255.05 or Section 713.23, then this obligation shall be void; otherwise to remain in full force and effect for the term of said contract, including and all guarantee periods as specifically mentioned in said Contract Documents.

AND, the said SURETY for value received, hereby stipulates and agrees that no change involving any extension of time, or addition to the terms of the Contract or to the work to be performed, or materials to be furnished thereunder, or in the Contract Documents and specifications accompanying the said contract shall affect said obligation of said SURETY on this Bond, and the said SURETY does hereby waive notice of any such changes, extension of time, alternations, or additions of the terms of the Contract, or to the work, to the Contract Documents, or to the specifications.

Claimant shall give written notice to the CONTRACTOR and the SURETY as required by Section 255.05 or Section 713.23, Florida Statutes. Any action instituted against the CONTRACTOR or SURETY under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2) or Section 713.23, Florida Statutes.

IN WITNESS WHEREOF, the above parties bounded together have executed this instrument this _____ day of _____, 2022, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

By: _____ (Seal)

Attest

SURETY

By _____ (Seal)

Attest

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DEFINITIONS

Whenever in the Contract Documents the following terms are used, the intent and meaning shall be interpreted as follows:

1. AS APPROVED

The words “as approved”, unless otherwise qualified, shall be understood to be followed by the words “by the ENGINEER for conformance with the Contract Document”.

2. AS SHOWN, AND AS INDICATED

The words “as shown” and “as Indicated” shall be understood to be followed by the words “on the Drawings”.

3. BIDDER

The person or persons, partnership, firm, or corporation submitting a Bid for the work contemplated.

4. CONTRACT DOCUMENTS

The “Contract Documents” consist of the Bidding Requirements, Contract Forms, Conditions of the Contract, Specifications, Drawings, all modifications thereof incorporated into the Documents before their execution, Change Orders, and all other requirements incorporated by specific reference thereto. These form the Contract.

5. CONTRACTOR

The person or persons, partnership, firm, or corporation who enters into the Contract awarded him by the OWNER.

6. CONTRACT COMPLETION

The “Contract Completion” is the date the OWNER accepts the entire work as being in compliance with the Contract Documents, or formally waives nonconforming work to extent of nonconformity, and issues the final payment in accordance with the requirements set forth in Article, “Final Payment” of these General Conditions.

7. DAYS

Unless otherwise specifically stated, the term “days” will be understood to mean calendar days. Business day or working day means any day other than Saturday, Sunday, or legal holiday.

8. DRAWINGS

The term “Drawings” refers to the official Drawings, Profiles, cross sections, elevations, details, and other working drawings and supplementary drawings, or reproductions thereof, signed by the ENGINEER, which shows the location, character, dimensions, and details of the work to be performed. Drawings may either be bound in the same book as the balance of the Contract Documents, or bound in separate sets, and are a part of the Contract Documents, regardless of the method of binding.

9. ENGINEER

The person or organization identified as such in the Contract Documents. The Term “ENGINEER” means ARCHITECT OR ENGINEER OF RECORD. or their authorized representative.

10. NOTICE

The term “notice” or the requirement to notify, as used in the Contract Documents or applicable state or federal statutes, shall signify a written communication delivered in person or by registered mail to the individual, or to a member of the firm, or to an officer of the corporation for whom it is intended. Certified or registered mail shall be addressed to the last business address known to him who gives the notice.

11. OR EQUAL

The term “or equal” shall be understood to indicate that the “equal” Product is equivalent to or better than the Product named in function, performance, reliability, quality, and general configuration. Determination of equality in reference to the Project design requirements will be made by the ENGINEER. Such equal Products shall not be purchased or installed by the CONTRACTOR without written authorization.

12. OWNER

Wherever in these Documents the word "Owner" appears, it shall be understood to mean the City of Key West whose address is 1300 White Street, P.O. Box 1409, Key West, Florida 33041-1409.

13. PLANS(See Drawings)

14. SPECIFICATIONS

The term “Specifications” refers to those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards, and workmanship as applied to the work and certain administrative details applicable thereto. Where standard specifications, such as those of ASTM, AASHTO, etc., have been referred to, the applicable portions of such standard specifications shall become a part of these Contract Documents. If referenced specifications conflict with specifications contained herein, the requirements contained herein shall prevail.

15. NOTICE TO PROCEED

A written notice given by the OWNER to the CONTRACTOR (with a copy to the ENGINEER) fixing the date on which the Contract time will commence to run and on which the CONTRACTOR shall start to perform his obligation under the Contract Documents. The Notice to Proceed will be given within 30 days following the execution of the Contract by the OWNER.

16. SUBSTANTIAL COMPLETION

“Substantial Completion” shall be that degree of completion of the Project or a defined portion of the Project, as evidenced by the ENGINEER’s written notice of Substantial Completion, sufficient to Provide the OWNER, at his discretion, the full-time use of the Project or defined portion of the Project for the purposes for which it was intended. “Substantial Completion” of an operating facility shall be that degree of completion that has Provided a minimum of 7 continuous days of successful, trouble-free, operation, which period shall begin after all performance and acceptance testing has been successfully demonstrated to the ENGINEER. All equipment contained in the work, plus all other components necessary to enable the OWNER to operate

the facility in a manner that was intended, shall be complete on the substantial completion date.

17. WORK

The word “work” within these Contract Documents shall include all material, labor, tools, and all appliances, machinery, transportation, and appurtenances necessary to perform and complete the Contract, and such additional items not specifically indicated or described which can be reasonably inferred as belonging to the item described or indicated and as required by good Practice to Provide a complete and satisfactory system or structure. As used herein, “Provide” shall be understood to mean “furnish and install, complete in-place “.

CONTRACT DOCUMENTS

18. INTENT OF CONTRACT DOCUMENTS

The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. The intent of the Documents is to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any work, materials, or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe work, materials, or equipment, such words shall be interpreted in accordance with that meaning.

Reference to standard specifications, manuals, or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect on the first published date of the Invitation to Bid, except as may be otherwise specifically stated. However, no Provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to ENGINEER, or any ENGINEER’s consultants, agents, or employees, any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility contrary to the Provisions of Article LIMITATIONS ON ENGINEER’S RESPONSIBILITIES.

19. DISCREPANCIES AND OMISSIONS

Any discrepancies or omissions found in the Contract Documents shall be reported to the ENGINEER immediately. The ENGINEER will clarify discrepancies or omissions, in writing, within a reasonable time.

In resolving inconsistencies among two or more sections of the Contract Documents, Precedence shall be given in the following order:

- A. CONTRACT
- B. BID
- C. SUPPLEMENTARY CONDITIONS
- D. INVITATION TO BID
- E. INSTRUCTIONS TO BIDDERS
- F. GENERAL CONDITIONS
- G. SPECIFICATIONS
- H. DRAWINGS

Addenda shall take Precedence over all sections referenced therein. Figure dimensions on Drawings shall

take precedence over scale dimensions. Detailed Drawings shall take precedence over general Drawings.

20. CHANGES IN THE WORK

The OWNER, without notice to the Sureties and without invalidating the Contract, may order changes in the work within the general scope of the Contract by altering, adding to, or deducting from the work, the Contract being adjusted accordingly. All such work shall be executed under the conditions of the original Contract, except as specifically adjusted at the time of ordering such change.

In giving instructions, the ENGINEER may order minor changes in the work not involving extra cost and not inconsistent with the purposes of the Project, but otherwise, except in an emergency endangering life and Property, additions or deductions from the work shall be performed only in pursuance of an approved Change Order from the OWNER, countersigned by the ENGINEER.

If the work is reduced by alterations, such action shall not constitute a claim for damages based on loss of anticipated Profits.

21. EXAMINATION AND VERIFICATION OF CONTRACT DOCUMENTS

The CONTRACTOR shall thoroughly examine and become familiar with all of the various parts of these Contract Documents and determine the nature and location of the work, the general and local conditions, and all other matters, which can in any way affect the work under this Contract. Failure to make an examination necessary for this determination shall not release the CONTRACTOR from the obligations of this Contract. No verbal agreement or conversation with any officer, agent, or employee of the OWNER or with the ENGINEER either before or after the execution of this Contract shall affect or modify any of the terms or obligations herein contained.

22. DOCUMENTS TO BE KEPT ON THE JOBSITE

The CONTRACTOR shall keep one copy of the Contract Documents on the job- site, in good order, available to the ENGINEER and to his representatives.

The CONTRACTOR shall maintain on a daily basis at the jobsite, and make available to the ENGINEER on request, one current record set of the Drawings which have been accurately marked to indicate all modifications in the completed work that differ from the design information shown on the Drawings. Upon Substantial completion of the work, the CONTRACTOR shall give the ENGINEER one complete set of these marked up record Drawings.

23. ADDITIONAL CONTRACT DOCUMENTS

Copies of Contract Documents or Drawings may be obtained on request from the ENGINEER and by paying the actual cost of reproducing the Contract Documents or Drawings.

24. OWNERSHIP OF CONTRACT DOCUMENTS

All portions of the Contract Documents, and copies thereof furnished by the ENGINEER are instruments of service for this Project. They are not to be used on other work and are to be returned to the ENGINEER on request at the completion of the work. Any reuse of these materials without specific written verification or adaptation by the ENGINEER will be at the risk of the user and without liability or legal expense to the ENGINEER. Such user shall hold the ENGINEER harmless from any and all damages, including reasonable attorneys' fees, from any and all claims arising from any such reuse. Any such verification and adaptation

shall entitle the ENGINEER to further compensation at rates to be agreed upon by the user and the ENGINEER.

THE ENGINEER

25. AUTHORITY OF THE ENGINEER

The ENGINEER will be the OWNER's representative during the construction period. His authority and responsibility will be limited to the Provisions set forth in these Contract Documents. The ENGINEER will have the Authority to reject work that does not conform to the Contract Documents. However, neither the ENGINEER's authority to act under this Provision, nor any decision made by him in good faith either to exercise or not to exercise such authority, shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any SUBCONTRACTOR, their respective Sureties, any of their agents or employees, or any other person performing any of the work.

26. DUTIES AND RESPONSIBILITIES OF THE ENGINEER

The ENGINEER will make visits to the site at intervals appropriate to the various stages of construction to observe the Progress and quality of the work and to determine, in general, if the work is proceeding in accordance with the intent of the Contract Documents. He will not make comprehensive or continuous review or observation to check quality or quantity of the work, and he will not be responsible for construction means, methods, techniques, sequences, or Procedures, or for safety Precautions and Programs in connection with the work. Visits and observations made by the ENGINEER shall not relieve the CONTRACTOR of his obligation to conduct comprehensive inspections of the work and to furnish materials and perform acceptable work, and to provide adequate safety Precautions, in conformance with the intent of the Contract.

The ENGINEER will make recommendations to the OWNER, in writing, on all claims of the OWNER or the CONTRACTOR arising from interpretation or execution of the Contract Documents. Such recommendations will be of factual and/or technical nature, and will not include the legal interpretation of the Contract Documents. Any necessary legal interpretation of the Contract Document will be made by the OWNER. Such recommendation shall be necessary before the CONTRACTOR can receive additional money under the terms of the Contract. Changes in work ordered by the ENGINEER shall be made in compliance with Article CHANGES IN THE WORK.

One or more Project representatives may be assigned to observe the work. It is understood that such Project representatives shall have the authority to issue notice of nonconformance and make decisions within the limitations of the authority of the ENGINEER. The CONTRACTOR shall furnish all reasonable assistance required by the ENGINEER or Project representatives for Proper observation of the work. The above-mentioned Project representatives shall not relieve the CONTRACTOR of his obligations to conduct comprehensive inspections of the work and to furnish materials and perform acceptable work, and to provide adequate safety Precautions, in conformance with the intent of the Contract.

27. LIMITATIONS ON ENGINEER'S RESPONSIBILITIES

ENGINEER will not be responsible for CONTRACTOR's means, methods, techniques, sequences, or Procedures of construction, or the safety Precautions and Programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR's failure to perform or furnish the work in accordance with the Contract Documents.

ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any SUBCONTRACTOR, any supplier, or of any other person or organization performing or furnishing any of the work.

Whenever in the Contract Documents the terms “as ordered”, “as directed”, “as required”, “as allowed”, “as approved”, or terms of like effect or import are used, or the adjectives “reasonable”, “suitable”, “acceptable”, “Proper”, or “satisfactory”, or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility contrary to the Provisions of this Article.

28. REJECTED WORK

Any defective work or nonconforming materials or equipment that may be discovered at any time prior to expiration of the warranty period shall be removed and replaced by work which shall conform to the Provisions of the Contract Documents. Any material condemned or rejected shall be removed at once from the Project site.

Failure on the part of the ENGINEER to condemn or reject bad or inferior work or to note nonconforming materials or equipment on CONTRACTOR submittals shall not be construed to imply acceptance of such work. The OWNER shall reserve and retain all of its rights and remedies at law against the CONTRACTOR and its Surety for correction of any and all latent defects discovered after the guarantee period.

29. LINES AND GRADES

Lines and grades shall be established as provided in the supplementary conditions. All stakes, marks, and other reference information shall be carefully preserved by the CONTRACTOR, and in case of their careless or unnecessary destruction or removal by him or his employees, such stakes, marks, and other information shall be replaced at the CONTRACTOR’s expense.

It will be the Contractor's responsibility to layout the work and to transfer elevations from benchmarks. Where new construction connects to existing facilities, the Contractor shall check and establish the exact location prior to construction of the facilities.

The Contractor shall furnish all surveys, labor, and equipment, including setting all alignment and gradient, grade stakes, batter boards, and everything necessary to lay out his work. The Contractor shall be responsible for maintaining and re-establishing at his expense, all control points. After completion of his construction, he shall reset all permanent monuments at their original locations and elevations through the use of registered surveys.

Layout work may be checked by the Engineer, and the Contractor shall furnish all necessary labor, equipment, and materials, and shall cooperate and assist the Engineer in making such checks.

The dimensions for lines and elevations for grades of the structures, appurtenances, and utilities will be shown on Drawings attached to each Work Order, together with other pertinent information required for laying out the work. If site conditions vary from those indicated, the Contractor shall notify the Engineer immediately, who will make any minor adjustment as required.

30. SUBMITTALS

After checking and verifying all field measurements and after complying with applicable Procedures specified

in Division I, GENERAL REQUIREMENTS, CONTRACTOR shall submit to ENGINEER, in accordance with the schedule for submittals for review, shop drawings, electrical diagrams, and catalog cuts for fabricated items and manufactured items (including mechanical and electrical equipment), which shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submittal. All submittals shall be identified as ENGINEER may require. The data shown shall be complete with respect to quantities, dimensions specified, performance and design criteria, materials, and similar data to enable ENGINEER to review the information. CONTRACTOR shall also submit to ENGINEER for review, with such promptness as to cause no delay in work, all samples required by the Contract Documents. All samples shall have been checked by and accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submission and shall be identified clearly as to material, supplier, pertinent data such as catalog numbers and the use for which intended.

Before submission of each submittal, CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect thereto and reviewed or coordinated each submittal with other submittals and with the requirements of the work and the Contract Documents.

At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the submittal may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each shop drawing submitted to ENGINEER for review and approval of each variation.

ENGINEER will review submittals with reasonable Promptness, but ENGINEER's review will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences, or Procedures of construction (except where a specific means, method, technique, sequence, or Procedure of construction is indicated in or required by the Contract Documents) or to safety Precautions or Programs incident thereto. The review of a separate item as such will not indicate review of the assembly in which the item functions. CONTRACTOR shall make corrections required by ENGINEER, and shall return the required number of corrected copies of shop drawings and submit as required new samples for review. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on Previous submittals.

ENGINEER's review of submittals shall not relieve CONTRACTOR from the responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of submission and ENGINEER has given written approval of each such variation by a specific written notation thereof incorporated therein or accompanying the shop drawing or sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the shop drawings or from responsibility for having complied with the Provisions herein.

Where a shop drawing or sample is required by the specifications, any related work performed prior to ENGINEER's review and approval of the pertinent submission shall be at the sole expense and responsibility of the CONTRACTOR.

31. DETAIL DRAWINGS AND INSTRUCTIONS

The ENGINEER will furnish, with reasonable Promptness, additional instructions by means of Drawings or otherwise, if, in the ENGINEER's opinion, such are required for the Proper execution of the work. All such Drawings and instructions will be consistent with the Contract Documents, true developments thereof, and reasonably inferable there from.

THE CONTRACTOR AND HIS EMPLOYEES

32. CONTRACTOR, AN INDEPENDENT AGENT

The CONTRACTOR shall independently perform all work under this Contract and shall not be considered as an agent of the OWNER or of the ENGINEER, nor shall the CONTRACTOR’s SUBCONTRACTORS or employees be subagents of the OWNER or of the ENGINEER.

A. ASSIGNMENT OF CONTRACT

Assignment of any part or the whole of this Contract shall be subject to review and approval of the City Commission

33. SUBCONTRACTING

Unless modified in the Supplementary Conditions, within 10 days after the execution of the Contract, the CONTRACTOR shall submit to the ENGINEER the names of all SUBCONTRACTORS Proposed for the work, including the names of any SUBCONTRACTORS that were submitted with the Bid. The CONTRACTOR shall not employ any SUBCONTRACTORS to which the OWNER may object to as lacking capability to properly perform work of the type and scope anticipated.

The CONTRACTOR is as fully responsible to the OWNER for the acts and omissions of his SUBCONTRACTORS and of persons either directly or indirectly employed by them as he is for the acts and omissions of persons directly employed by him.

Nothing contained in the Contract Documents shall create any contractual relationship between any SUBCONTRACTOR and the OWNER or ENGINEER.

34. INSURANCE AND LIABILITY

Contractor shall maintain limits no less than those stated below:

CONTRACTOR is to secure, pay for, and file with the City of Key West, prior to commencing any work under the Contract, all certificates for workers’ compensation, public liability, and property damage liability insurance, and such other insurance coverages as may be required by specifications and addenda thereto, in at least the following minimum amounts with specification amounts to prevail if greater than minimum amounts indicated. Notwithstanding any other provision of the Contract, the CONTRACTOR shall provide the minimum limits of liability insurance coverage as follows:

Auto Liability	\$1,000,000	Combined Single Limit
General Liability	\$2,000,000	Aggregate (Per Project)
	\$2,000,000	Products Aggregate
	\$1,000,000	Any One Occurrence
	\$1,000,000	Personal Injury
	\$300,000	Fire Damage/Legal
Additional Umbrella Liability	\$2,000,000	Occurrence / Aggregate

CONTRACTOR shall furnish an original Certificate of Insurance indicating, and such policy providing coverage to, City of Key West named as an additional insured on a PRIMARY and NON CONTRIBUTORY basis utilizing an ISO standard endorsement at least as broad as CG 2010 (11/85) or its equivalent, (combination of CG 20 10 07 04 and CG 20 37 07 04, providing coverage for completed operations, is

acceptable) including a waiver of subrogation clause in favor of City of Key West on all policies. CONTRACTOR will maintain the General Liability and Umbrella Liability insurance coverages summarized above with coverage continuing in full force including the additional insured endorsement until at least 3 years beyond completion and delivery of the work contracted herein.

Notwithstanding any other provision of the Contract, the CONTRACTOR shall maintain complete workers' compensation coverage for each and every employee, principal, officer, representative, or agent of the CONTRACTOR who is performing any labor, services, or material under the Contract. Further, CONTRACTOR shall additionally maintain the following minimum limits of coverage:

Bodily Injury Each Accident	\$1,000,000
Bodily Injury by Disease Each Employee	\$1,000,000
Bodily Injury by Disease Policy Limit	\$1,000,000

CONTRACTOR's insurance policies shall be endorsed to give 30 days' written notice to the City of Key West in the event of cancellation or material change, using form CG 02 24, or its equivalent.

Certificates of Insurance submitted to the City of Key West will not be accepted without copies of the endorsements being requested. This includes additional insured endorsements, cancellation/material change notice endorsements, and waivers of subrogation. PLEASE ADVISE YOUR INSURANCE AGENT ACCORDINGLY.

CONTRACTOR will comply with any and all safety regulations required by any agency or regulatory body including but not limited to OSHA. CONTRACTOR will notify City of Key West immediately by telephone at (305) 809-3811 any accident or injury to anyone that occurs on the jobsite and is related to any of the work being performed by the CONTRACTOR.

A. NO PERSONAL LIABILITY OF PUBLIC OFFICIALS

In carrying out any of the Provisions hereof in exercising any authority granted by the Contract, there will be no personal liability upon any public official.

B. SURETY AND INSURER QUALIFICATIONS

All bonds, insurance contracts, and certificates of insurance shall be either executed by or countersigned by a licensed resident agent of the Surety or insurance company, having his place of business in the State of Florida, and in all ways complying with the insurance laws of the State of Florida. Further, the said Surety or Insurance Company shall be duly licensed and qualified to do business in the State of Florida. If requested, Contractor shall Provide Proof of Florida Licensure for all insurance companies. The City of Key West shall be named as Additional Insured on the insurance certificates.

35. INDEMNITY

To the fullest extent permitted by law, the CONTRACTOR expressly agrees to indemnify and hold harmless the City of Key West, their officers, directors, agents, and employees (herein called the "indemnitees") from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees and court costs, such legal expenses to include costs incurred in establishing the indemnification and other rights agreed to in this Paragraph, to persons or property, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the CONTRACTOR, its Subcontractors or persons employed or utilized by them in the performance of the Contract. Claims by indemnitees for indemnification shall be limited to the amount of CONTRACTOR's insurance or \$1 million per occurrence,

whichever is greater. The parties acknowledge that the amount of the indemnity required hereunder bears a reasonable commercial relationship to the Contract and it is part of the project specifications or the bid documents, if any. The indemnification obligations under the Contract shall not be restricted in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the CONTRACTOR under workers' compensation acts, disability benefits acts, or other employee benefits acts, and shall extend to and include any actions brought by or in the name of any employee of the CONTRACTOR or of any third party to whom CONTRACTOR may subcontract a part or all the Work. This indemnification shall continue beyond the date of completion of the work.

36. EXCLUSION OF CONTRACTOR CLAIMS

In performing its obligations, the ENGINEER and its consultants may cause expense for the CONTRACTOR or its SUBCONTRACTORS and equipment or material suppliers. However, those parties and their sureties shall maintain no direct action against the ENGINEER, its officers, employees, agents, and consultants for any claim arising out of, in connection with, or resulting from the engineering services performed or required to be performed.

37. TAXES AND CHARGES

The CONTRACTOR shall withhold and pay any and all sales and use taxes and all withholding taxes, whether State or Federal, and pay all Social Security charges and also all State Unemployment Compensation charges, and pay or cause to be withheld, as the case may be, any and all taxes, charges, or fees or sums whatsoever, which are now or may hereafter be required to be paid or withheld under any laws.

38. REQUIREMENTS OF STATE LAW FOR PUBLIC WORKS PROJECTS

When the Contract Documents concern public works of the state or any county, municipality, or political subdivision created by its laws, the applicable statutes shall apply. All parties to this Contract shall determine the contents of all applicable statutes and comply with their Provisions throughout the performance of the Contract.

39. CODES, ORDINANCES, PERMITS AND LICENSES

The CONTRACTOR shall keep himself fully informed of all local codes and ordinances, as well as state and federal laws, which in any manner affect the work herein specified. The CONTRACTOR shall at all times comply with said codes and ordinances, laws, and regulations, and Protect and indemnify the OWNER, the ENGINEER and their respective employees, and its officers and agents against any claim or liability arising from or based on the violation of any such laws, ordinances, or regulations. All permits, licenses and inspection fees necessary for Prosecution and completion of the work shall be secured and paid for by the CONTRACTOR, unless otherwise specified.

A. PERMIT FOR WORK WITHIN LOCAL RIGHTS OF WAY

The Contractor shall obtain from the City of Key West the necessary permits for work within the rights of way. The Contractor shall abide by all regulations and conditions, including maintenance of traffic. RIGHT OF WAY Permit fees will be waived by the City for work within the City's RIGHT OF WAY

B. HISTORIC ARCHITECTURAL REVIEW COMMISSION (HARC) APPROVAL

Prior to beginning construction within the Historic District of Key West, the CONTRACTOR shall obtain a Certificate of Appropriateness from the City of Key West Historic Planner's office if required.

C. NOISE ORDINANCE

City of Key West has a noise ordinance that allows working hours between 8:00 AM to 7:00 PM, Monday through Friday. No work should be performed during weekends or City Holidays, State Holidays and National Holidays. Any construction operations outside these hours and these days will require a variance from the City of Key West Commission.

D. "LICENSES"

THE BIDDER MUST BE A LICENSED CONTRACTOR BY THE STATE OF FLORIDA AND SUBMIT PROOF OF SUCH WITH THE BID.

1. Within 10 days of Notice of Award, the successful Bidder must represent that he holds all applicable, county, and City of Key West licenses and permits required to do business as a contractor with respect to the work described in the Contract Documents.
2. Further, the successful Bidder must, within 10 days of Notice of Award, furnish documentation showing that, as a minimum, he has complied with the provisions of Chapter 18 of the Code of Ordinances of the City of Key West to enter the Agreement contained in the Contract Documents.
3. Specifically, within 10 days after Notice of Award, the successful Bidder must demonstrate that he holds, as a minimum, the following licenses and certificates:
 - a.) City of Key West Tax License Receipt;
 - b.) A valid Certified Contractors License issued by the State of Florida.

40. SUPERINTENDENCE

The CONTRACTOR shall keep at the project site, competent supervisory personnel. The CONTRACTOR shall designate, in writing, before starting work, a Project superintendent who shall be an employee of the CONTRACTOR and shall have complete authority to represent and to act for the CONTRACTOR. ENGINEER shall be notified in writing prior to any change in superintendent assignment. The CONTRACTOR shall give efficient supervision to the work, using his best skill and attention. The CONTRACTOR shall be solely responsible for all construction means, methods, techniques, and Procedures, and for providing adequate safety Precautions and coordinating all portions of the work under the Contract. It is specifically understood and agreed that the ENGINEER, its employees and agents, shall not have control or charge of and shall not be responsible for the construction means, methods, techniques, procedures, or for providing adequate safety precautions in connection with the work under Contract.

The CONTRACTOR shall keep at the project site, competent supervisory personnel, able to read, write and speak English to effectively communicate with City staff.

41. RECEPTION OF ENGINEER'S COMMUNICATIONS

The superintendent shall receive for the CONTRACTOR all communications from the ENGINEER. Communications of major importance will be confirmed in writing upon request from the CONTRACTOR.

The ENGINEER may schedule Project meetings for the purposes of discussing and resolving matters concerning the various elements of the work. Time and place for these meetings and the names of persons required to be Present shall be as determined by the ENGINEER. CONTRACTOR shall comply with these attendance requirements and shall also require his SUBCONTRACTORS to comply.

42. SAFETY

The CONTRACTOR shall be solely and completely responsible for conditions of the jobsite, including safety of all persons (including employees) and Property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. Safety Provisions shall conform to U.S. Department of Labor (OSHA), and all other applicable federal, state, county, and local laws, ordinances, codes, and regulations. Where any of these are in conflict, the more stringent requirement shall be followed. The CONTRACTOR's failure to thoroughly familiarize himself with the aforementioned safety Provisions shall not relieve him from compliance with the obligations and penalties set forth therein.

The CONTRACTOR shall develop and maintain for the duration of this Contract, a safety Program that will effectively incorporate and implement all required safety Provisions. The CONTRACTOR shall appoint an employee who is qualified and authorized to supervise and enforce compliance with the safety Program. The duty of the ENGINEER to conduct construction review of the work does not include review or approval of the adequacy of the CONTRACTOR's safety Program, safety supervisor, or any safety measures taken in, on, or near the construction site. The CONTRACTOR, as a part of his safety Program, shall maintain at his office or other well-known place at the jobsite, safety equipment applicable to the work as Prescribed by the aforementioned authorities, all articles necessary for giving first-aid to the injured, and shall establish the Procedure for the immediate removal to a hospital or a doctor's care of persons (including employees) who may be injured on the jobsite.

If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the ENGINEER and the OWNER. In addition, the CONTRACTOR must promptly report in writing to the ENGINEER all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.

If a claim is made by anyone against the CONTRACTOR or any SUBCONTRACTOR on account of any accident, the CONTRACTOR shall promptly report the facts in writing to the ENGINEER, giving full details of the claim.

A. OCCUPATIONAL SAFETY AND HEALTH

The Contractor shall observe and comply with all applicable local, state, and federal occupational safety and health regulations during the prosecution of work under this Contract. In addition, full compliance by the Contractor with the U.S. Department of Labor's Occupational Safety and Health Standards, as established in Public Law 91-596, will be required under the terms of this Contract.

43. PROTECTION OF WORK AND PROPERTY

The CONTRACTOR shall at all times safely guard and Protect from damage the OWNER's Property, adjacent Property, and his own work from injury or loss in connection with this Contract. All facilities required for Protection by federal, state, or municipal laws and regulations and local conditions must be provided and maintained. The CONTRACTOR shall Protect his work and materials from damage due to the nature of the work, the elements, carelessness of other CONTRACTORS, or from any cause whatever until the completion and acceptance of the work. All loss or damages arising out of the nature of the work to be done under these Contract Documents, or from any unforeseen obstruction or defects which may be

encountered in the Prosecution of the work, or from the action of the elements, shall be sustained by the CONTRACTOR.

A. HISTORIC PRESERVATION

The Contractor shall comply with Florida's Archives and Historic Act (Florida Statutes, Chapter 267) and the regulations of the local historic preservation board as applicable and protect against the potential loss or destruction of significant historical or archaeological data, sites, and properties in connection with the project.

44. RESPONSIBILITY OF CONTRACTOR TO ACT IN AN EMERGENCY

In case of an emergency which threatens loss or injury of Property, and/or safety of life, the CONTRACTOR shall act, without previous instructions from the OWNER or ENGINEER, as the situation may warrant. The CONTRACTOR shall notify the ENGINEER thereof immediately thereafter. Any claim for compensation by the CONTRACTOR, together with substantiating documents in regard to expense, shall be submitted to the OWNER through the ENGINEER and the amount of compensation shall be determined by agreement.

45. MATERIALS AND APPLIANCES

Unless otherwise stipulated, the CONTRACTOR shall Provide and pay for all materials, labor, water, tools, equipment, heat, light, fuel, power, transportation, construction equipment and machinery, appliances, telephone, sanitary facilities, temporary facilities and other facilities and incidentals necessary for the execution and completion of the work.

Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of good quality. The CONTRACTOR shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

In selecting and/or approving equipment for installation in the Project, the OWNER and ENGINEER assume no responsibility for injury or claims resulting from failure of the equipment to comply with applicable federal, state, and local safety codes or requirements, or the safety requirements of a recognized agency, or failure due to faulty design concepts, or defective workmanship and materials.

46. CONTRACTORS' AND MANUFACTURERS' COMPLIANCE WITH STATE SAFETY, OSHA, AND OTHER CODE REQUIREMENTS

The completed work shall include all necessary permanent safety devices, such as machinery guards and similar ordinary safety items required by the state and federal (OSHA) industrial authorities and applicable local and national codes. Further, any features of the work subject to such safety regulations shall be fabricated, furnished, and installed (including OWNER-furnished equipment) in compliance with these requirements. CONTRACTORS and manufacturers of equipment shall be held responsible for compliance with the requirements included herein. CONTRACTORS shall notify all equipment suppliers and SUBCONTRACTORS of the Provisions of this Article.

47. SUBSTITUTION OF MATERIALS

Except for OWNER-selected equipment items, and items where no substitution is clearly specified, whenever

any material, article, device, Product, fixture, form, type of construction, or Process is indicated or specified by patent or Proprietary name, by name of manufacturer, or by catalog number, such specifications shall be deemed to be used for the purpose of establishing a standard of quality and facilitating the description of the material or Process desired. This Procedure is not to be construed as eliminating from competition other Products of equal or better quality by other manufacturers where fully suitable in design, and shall be deemed to be followed by the words "or equal". The CONTRACTOR may, in such cases, submit complete data to the ENGINEER for consideration of another material, type, or Process that shall be substantially equal in every respect to that so indicated or specified. Substitute materials shall not be used unless approved in writing. The ENGINEER will be the sole judge of the substituted article or material.

48. TESTS, SAMPLES, AND OBSERVATIONS

The CONTRACTOR shall furnish, without extra charge, the necessary test pieces and samples, including facilities and labor for obtaining the same, as requested by the ENGINEER. When required, the CONTRACTOR shall furnish certificates of tests of materials and equipment made at the point of manufacture by a recognized testing laboratory.

The OWNER, ENGINEER, and authorized government agents, and their representatives shall at all times be Provided safe access to the work wherever it is in Preparation or Progress, and the CONTRACTOR shall Provide facilities for such access and for observations, including maintenance of temporary and permanent access.

If the Specifications, laws, ordinances, or any public authority require any work, to be specially tested or approved, the CONTRACTOR shall give timely notice of its readiness for observations. If any work should be covered up without approval or consent of the ENGINEER, it shall, if required by the ENGINEER, be uncovered for examination at the CONTRACTOR's expense.

Reexamination of questioned work may be ordered by the ENGINEER, and, if so ordered, the work shall be uncovered by the CONTRACTOR. If such work is found to be in accordance with the Contract Documents, the OWNER will pay the cost of uncovering, exposure, observation, inspection, testing and reconstruction. If such work is found to be not in accordance with the Contract Documents, the CONTRACTOR shall correct the defective work, and the cost of reexamination and correction of the defective work shall be paid by the CONTRACTOR.

49. ROYALTIES AND PATENTS

The CONTRACTOR shall pay all royalty and licenses fees, unless otherwise specified. The CONTRACTOR shall defend all suits or claims for infringement of any patent rights and shall save the OWNER and the ENGINEER harmless from any and all loss, including reasonable attorneys' fees, on account thereof.

50. CONTRACTOR'S RIGHT TO TERMINATE CONTRACT

If the work should be stopped under an order of any court or other public authority for a period of more than 3 months, through no act or fault of the CONTRACTOR, its SUBCONTRACTORS, or respective employees or if the ENGINEER should fail to make recommendation for payment to the OWNER or return payment request to CONTRACTOR for revision within 30 days after it is due, or if the OWNER should fail to pay the CONTRACTOR within 30 days after time specified in Article PARTIAL PAYMENTS, any sum recommended by the ENGINEER, then the CONTRACTOR may, upon 15 days' written notice to the OWNER and the ENGINEER, stop work or terminate this Contract and recover from the OWNER payment for all acceptable work performed and reasonable termination expenses, unless said default has been remedied.

51. CORRECTION OF DEFECTIVE WORK DURING WARRANTY PERIOD

The CONTRACTOR hereby agrees to make, at his own expense, all repairs or replacements necessitated by defects in materials or workmanship, Provided under terms of this Contract, and pay for any damage to other works resulting from such defects, which become evident within 2 years after the date of final acceptance of the work or within 2 years after the date of substantial completion established by the ENGINEER for specified items of equipment, or within such longer period as may be Prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents. Un-remedied defects identified for correction during the warranty period but remaining after its expiration shall be considered as part of the obligations of the warranty. Defects in material, workmanship, or equipment which are remedied as a result of obligations of the warranty shall subject the remedied portion of the work to an extended warranty period of 2 years after the defect has been remedied.

The CONTRACTOR further assumes responsibility for a similar guarantee for all work and materials provided by SUBCONTRACTORS or manufacturers of packaged equipment components. The effective date for the start of the guarantee or warranty period for equipment qualifying as substantially complete is defined in Article SUBSTANTIAL COMPLETION, AND Article SUBSTANTIAL COMPLETION DATE, in these General Conditions.

The CONTRACTOR also agrees to hold the OWNER and the ENGINEER harmless from liability of any kind arising from damage due to said defects. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order for same from the OWNER. If the CONTRACTOR fails to make the repairs and replacements promptly, or in an emergency where delay would cause serious risk, or loss, or damage, the OWNER may have the defective work corrected or the rejected work removed and replaced, and the CONTRACTOR and his Surety shall be liable for the cost thereof.

PROGRESS OF THE WORK

52. BEGINNING OF THE WORK

Following execution of the Contract, the CONTRACTOR shall meet with the OWNER and ENGINEER relative to his arrangements for prosecuting the work.

53. SCHEDULES AND PROGRESS REPORTS

Prior to starting the construction, the CONTRACTOR shall Prepare and submit to the ENGINEER, a Progress schedule showing the dates on which each part or division of the work is expected to be started and finished, and a Preliminary schedule for submittals. The Progress schedule for submittals shall be brought up to date and submitted to the ENGINEER at the end of each month or at such other times the ENGINEER may request.

The CONTRACTOR shall forward to the ENGINEER, at the end of each month, an itemized report of the delivery status of major and critical items of purchased equipment and material, including shop drawings and the status of shop and field fabricated work. These Progress reports shall indicate the date of the purchase order, the current percentage of completion, estimated delivery, and cause of delay, if any.

If the completion of any part of the work or the delivery of materials is behind the submitted Progress schedule, the CONTRACTOR shall submit in writing a plan acceptable to the OWNER and ENGINEER for bringing the work up to schedule.

The OWNER shall have the right to withhold Progress payments for the work if the CONTRACTOR fails to update and submit the Progress schedule and reports as specified.

54. PROSECUTION OF THE WORK

It is expressly understood and agreed that the time of beginning, rate of Progress, and time of completion of the work are the essence of this Contract. The work shall be prosecuted at such time, and in or on such part or parts of the Project as may be required, to complete the Project as contemplated in the Contract Documents and the Progress schedule.

If the CONTRACTOR desires to carry on work at night or outside the regular hours, he shall give timely notice to the ENGINEER to allow satisfactory arrangements to be made for observing the work in Progress.

55. OWNER'S RIGHT TO RETAIN IMPERFECT WORK

If any part or portion of the work completed under this Contract shall Prove defective and not in accordance with the Drawings and Specifications, and if the imperfection in the same shall not be of sufficient magnitude or importance as to make the work dangerous or unsuitable, or if the removal of such work will create conditions which are dangerous or undesirable, the OWNER shall have the right and authority to retain such work but will make such deductions in the final payment therefore as may be just and reasonable.

56. OWNER'S RIGHT TO DO WORK

Should the CONTRACTOR neglect to Prosecute the work in conformance with the Contract Documents or neglect or refuse at his own cost to remove and replace work rejected by the ENGINEER, then the OWNER may notify the Surety of the condition, and after 10 days' written notice to the CONTRACTOR and the Surety, or without notice if an emergency or danger to the work or public exists, and without Prejudice to any other right which the OWNER may have under Contract, or otherwise, take over that portion of the work which has been improperly or non-timely executed, and make good the deficiencies and deduct the cost thereof from the payments then or thereafter due the CONTRACTOR.

57. OWNER'S RIGHT TO TRANSFER EMPLOYMENT

If the CONTRACTOR should abandon the work or if he should persistently or repeatedly refuse or should fail to make prompt payment to SUBCONTRACTORS for material or labor, or to persistently disregard laws, ordinances, or to prosecute the work in conformance with the Contract Documents, or otherwise be guilty of a substantial violation of any Provision of the Contract or any laws or ordinance, then the OWNER may, without Prejudice to any other right or remedy, and after giving the CONTRACTOR and Surety 10 days' written notice, transfer the employment for said work from the CONTRACTOR to the Surety. Upon receipt of such notice, such Surety shall enter upon the Premises and take possession of all materials, tools, and appliances thereon for the purpose of completing the work included under this contract and employ by Contract or otherwise, any qualified person or persons to finish the work and Provide the materials therefore, in accordance with the Contract Documents, without termination of the continuing full force and effect of this contract. In case of such transfer of employment to such Surety, the Surety shall be paid in its own name on estimates according to the terms hereof without any right of the CONTRACTOR to make any claim for the same or any part thereof.

If, after the furnishing of said written notice to the Surety, the CONTRACTOR and the Surety still fail to make reasonable Progress on the performance of the work, the OWNER may terminate the employment of the CONTRACTOR and take possession of the Premises and of all materials, tools, and appliances thereon and finish the work by whatever method he may deem expedient and charge the cost thereof to the CONTRACTOR and the Surety. In such case, the CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the expense of completing the Contract, including compensation for

additional managerial and administrative services, shall exceed such unpaid balance, the CONTRACTOR and the Surety shall pay the difference to the OWNER.

A. TERMINATION FOR CONVENIENCE AND RIGHT OF SUSPENSION

Owner shall have the right to terminate this Contract without cause by written notice of Termination to the Contractor. In the event of such termination for convenience, the Contractor's recovery against the Owner shall be limited to that portion of the Contract amount earned through the date of termination, together with any retainage withheld and reasonable termination expenses incurred. Contractor shall not be entitled to any other or further recovery against the Owner, including, but not limited to, damages or any anticipated profit on portions of the Work not performed.

The Owner shall have the right to suspend all or any portions of the Work upon giving the Contractor prior written notice of such suspension. If all or any portion of the Work is so suspended, the Contractor shall be entitled to reasonable costs, expenses and time extension associated with the suspension.

58. DELAYS AND EXTENSION OF TIME

If the CONTRACTOR is delayed in the Progress of the work by any act or neglect of the OWNER or the ENGINEER, or by any separate CONTRACTOR employed by the OWNER, or by strikes, lockouts, fire, adverse weather conditions not reasonably anticipated, or acts of Nature, and if the CONTRACTOR, within 48 hours of the start of the occurrence, gives written notice to the OWNER of the cause of the potential delay and estimate of the possible time extension involved, and within 10 days after the cause of the delay has been remedied, the CONTRACTOR gives written notice to the OWNER of any actual time extension requested as a result of the aforementioned occurrence, then the Contract time may be extended by change order for such reasonable time as the ENGINEER determines. It is agreed that no claim shall be made or allowed for any damages, loss, or expense which may arise out of any delay caused by the above referenced acts or occurrences other than claims for the appropriate extension of time. No extension of time will be granted to the CONTRACTOR for delays occurring to parts of the work that have no measurable impact on the completion of the total work under this Contract. No extension of time will be considered for weather conditions reasonably anticipated for the area in which the work is being performed. Reasonably anticipated weather conditions will be based on official records of monthly Precipitation and other historical data. Adverse weather conditions, if determined to be of a severity that would impact Progress of the work, may be considered as cause for an extension of Contract completion time.

Delays in delivery of equipment or material purchased by the CONTRACTOR or his SUBCONTRACTORS, including OWNER-selected equipment shall not be considered as a just cause for delay, unless the OWNER determines that for good cause the delay is beyond the control of the CONTRACTOR. The CONTRACTOR shall be fully responsible for the timely ordering, scheduling, complete the work is the per-diem rate, as stipulated in the Bid. The said amount is hereby agreed upon as a reasonable estimate of the costs, which may be accrued by the OWNER after the expiration of the time of completion. It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty, but as liquidated damages which have accrued against the CONTRACTOR. The OWNER shall have the right to deduct such damages from any amount due, or that may become due the CONTRACTOR, or the amount of such damages shall be due and collectible from the CONTRACTOR or Surety.

59. DIFFERING SITE CONDITIONS

The CONTRACTOR shall promptly, and before the conditions are disturbed, give a written notice to the OWNER and ENGINEER of:

- 1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract,
- 2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

The ENGINEER will investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the CONTRACTOR's cost of, or the time required for, performing any part of the work under this Contract, whether or not changed as a result of the conditions, and equitable adjustment shall be made under this Article and the Contract modified in writing accordingly.

No request by the CONTRACTOR for an equitable adjustment to the Contract under this Article will be allowed, unless the CONTRACTOR has given the written notice required; provided that the time prescribed above for giving written notice may be extended by the OWNER.

No request by the CONTRACTOR for an equitable adjustment to the Contract for differing site conditions will be allowed if made after final payment under this Contract.

60. LIQUIDATED DAMAGES

Should the Contractor fail to complete the work or any part thereof in the time agreed upon in the Contract Documents or within such extra time as may have been allowed for delays by extensions granted as provided in the Contract, the Contractor shall reimburse the Owner for the additional expense and damage for each calendar day that project outlined in Contract Documents remains uncompleted after the completion date. Liquidated damages shall be assessed at a per day rate as specified in Section 8-10.2 of the Florida Department of Transportation Specifications. It is agreed that the amount of such additional expense and damage incurred by reason of failure to complete the work is the per diem rate as stipulated in the Bid. The said amount is hereby agreed upon as a reasonable estimate of the costs which may be accrued by the Owner after the expiration of the time of completion. It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty but as liquidated damages, which have accrued against the Contractor. The Owner shall have the right to deduct such damages from any amount due or that may become due the Contractor or the amount of such damages shall be due and collectible from the Contractor.

61. OTHER CONTRACTS

The OWNER reserves the right to let other Contracts in connection with the work. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate his work with theirs.

If any part of the work under this Contract depends for Proper execution or results upon the work of any other CONTRACTOR, utility service company or OWNER, the CONTRACTOR shall inspect and Promptly report to the ENGINEER in writing any patent or apparent defects to deficiencies in such work that render it unsuitable for such Proper execution and results. The CONTRACTOR's failure to so report shall constitute and acceptance of the work by others as being fit and Proper for integration with work under this Contract, except for latent or non-apparent defects and deficiencies in the work.

62. USE OF PREMISES

The CONTRACTOR shall confine his equipment, the storage of materials and the operation of his workers to limits shown on the Drawings or indicated by law, ordinances, permits, or directions of the ENGINEER,

and shall not unreasonably encumber the Premises with his materials. The CONTRACTOR shall provide, at his own expense, the necessary rights-of-way and access to the work, which may be required outside the limits of the OWNER's Property and shall furnish the ENGINEER copies of permits and agreements for use of the Property outside that provided by the OWNER.

The CONTRACTOR shall not load nor permit any part of the structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the work or adjacent Property to stresses or Pressures that will endanger it.

63. SUBSTANTIAL COMPLETION DATE

The ENGINEER may issue a written notice of substantial completion for the purpose of establishing the starting date for specific equipment guarantees, and to establish the date that the OWNER will assume the responsibility for the cost of operating such equipment. Said notice shall not be considered as final acceptance of any portion of the work or relieve the CONTRACTOR from completing the remaining work within the specified time and in full compliance with the Contract Documents. See SUBSTANTIAL COMPLETION under DEFINITIONS of these General Conditions.

64. PERFORMANCE TESTING

Operating equipment and systems shall be performance tested in the Presence of the ENGINEER to demonstrate compliance with the specified requirements. Performance testing shall be conducted under the specified design operating conditions or under such simulated operating conditions as recommended or approved by the ENGINEER. Schedule such testing with the ENGINEER at least one week in advance of the planned date for testing.

65. OWNER'S USE OF PORTIONS OF THE WORK

Following issuance of the written notice of Substantial Completion, the OWNER may initiate operation of the facility. Such use shall not be considered as final acceptance of any portion of the work, nor shall such use be considered as cause for an extension of the Contract completion time, unless authorized by a Change Order issued by the OWNER.

66. CUTTING AND PATCHING

The CONTRACTOR shall do all cutting, fitting, or patching of his work that may be required to make its several parts come together Properly and fit it to receive or be received by work of other CONTRACTORS shown upon or reasonably implied by the Drawings.

67. CLEANING UP

The CONTRACTOR shall, at all times, keep Property on which work is in Progress and the adjacent Property free from accumulations of waste material or rubbish caused by employees or by the work. Upon completion of the construction, the CONTRACTOR shall remove all temporary structures, rubbish, and waste materials resulting from his operations.

PAYMENT

68. PAYMENT FOR CHANGE ORDERS

The OWNER's request for quotations on alterations to the work shall not be considered authorization to

proceed with the work expediting, delivery, and installation of all equipment and materials. Within a reasonable period after the CONTRACTOR submits to the OWNER a written request for an extension of time, the ENGINEER will Present his written opinion to the OWNER as to whether an extension of time is justified, and, if so, his recommendation as to the number of days for time extension. The OWNER will make the final decision on all requests for extension of time.

Prior to the issuance of a formal Change Order, nor shall such request justify any delay in existing work. Quotations for alterations to the work shall include substantiating documentation with an itemized breakdown of CONTRACTOR and SUBCONTRACTOR costs, including labor, material, rentals, approved services, overhead, and profit. OWNER may require detailed cost data in order to substantiate the reasonableness of the proposed costs.

Any compensation paid in conjunction with the terms of a Change Order shall comprise total compensation due the CONTRACTOR for the work or alteration defined in the Change Order. By signing the Change Order, the CONTRACTOR acknowledges that the stipulated compensation includes payment for the work or alteration plus all payment for the interruption of schedules, extended overhead, delay, or any other impact claim or ripple effect, and by such signing specifically waives any reservation or claim for additional compensation in respect to the subject Change Order.

At the OWNER's option, payment or credit for any alterations covered by a Change Order shall be determined by one or a combination of the methods set forth in A, B, or C below, as applicable:

A. UNIT PRICES

Those unit Prices stipulated in the Bid shall be utilized where they are applicable. In the event the Change Order results in a change in the original quantity that is materially and significantly different from the original bid quantity, a new unit Price shall be negotiated upon demand of either party. Unit Prices for new items included in the Change Order shall be negotiated and mutually agreed upon.

B. LUMP SUM

A total lump sum for the work negotiated and mutually acceptable to the CONTRACTOR and the OWNER. Lump sum quotations for modifications to the work shall include substantiating documentation with an itemized breakdown of CONTRACTOR and SUBCONTRACTOR costs, including labor, material, rentals, approved services, overhead, and Profit, all calculated as specified under "C" below.

C. COST REIMBURSEMENT WORK

The term "cost reimbursement" shall be understood to mean that payment for the work will be made on a time and expense basis, that is, on an accounting of the CONTRACTOR's forces, materials, equipment, and other items of cost as required and used to do the work.

If the method of payment cannot be agreed upon Prior to the beginning of the work, and the OWNER directs by written Change Order that the work be done on a cost reimbursement basis, then the CONTRACTOR shall furnish labor, and furnish and install equipment and materials necessary to complete the work in a satisfactory manner and within a reasonable period of time. For the work performed, payment will be made for the documented actual cost of the following:

1. Labor including foremen for those hours they are assigned and participating in the cost reimbursement work (actual payroll cost, including wages, fringe benefits as established by negotiated labor agreements, labor insurance, and labor taxes as established by law). No other fixed labor burdens

- will be considered, unless approved in writing by the OWNER.
2. Material delivered and used on the designated work, including sales tax, if paid by the CONTRACTOR or his SUBCONTRACTOR.
 3. Rental or equivalent rental cost of equipment, including necessary transportation for items having a value in excess of \$100. Rental or equivalent rental cost will be allowed for only those days or hours during which the equipment is in actual use. Rental and transportation allowances shall not exceed the current rental rates prevailing in the locality. The rentals allowed for equipment will, in all cases, be understood to cover all fuel, supplies, repairs, and renewals, and no further allowances will be made for those items, unless specific agreement to that effect is made.
 4. Additional bond, as required and approved by the OWNER.
 5. Additional insurance (other than labor insurance) as required and approved by the OWNER.

In addition to 1 through 5 above, an added fixed fee of 15 percent (%) for general overhead & profit shall be allowed for the CONTRACTOR (or approved SUBCONTRACTOR) executing the Cost Reimbursement work.

An additional fixed fee of 5% will be allowed the CONTRACTOR for the administrative handling of portions of the work that are executed by an approved SUBCONTRACTOR. No additional fixed fee will be allowed for the administrative handling of work executed by the SUBCONTRACTOR of a SUBCONTRACTOR.

The added fixed fees shall be considered to be full compensation, covering the cost of general supervision, overhead, Profit, and any other general expense. The CONTRACTOR's records shall make clear distinction between the direct costs of work paid for on a cost reimbursement basis and the costs of other work. The CONTRACTOR shall furnish the ENGINEER report sheets in duplicate of each day's cost reimbursement work no later than the working day following the performance of said work. The daily report sheets shall itemize the materials used, and shall cover the direct cost of labor and the charges for equipment rental, whether furnished by the CONTRACTOR, SUBCONTRACTOR or other forces. The daily report sheets shall provide names or identifications and classifications of workers, the hourly rate of pay and hours worked, and also the size, type, and identification number of equipment and hours operated.

Material charges shall be substantiated by valid copies of vendors' invoices. Such invoices shall be submitted with the daily report sheets, or, if not available, they shall be submitted with subsequent daily report sheets. Said daily report sheets shall be signed by the CONTRACTOR or his authorized agent.

The OWNER reserves the right to furnish such materials and equipment as he deems expedient and the CONTRACTOR shall have no claim for profit or added fees on the cost of such materials and equipment. To receive partial payments and final payment for cost reimbursement work, the CONTRACTOR shall submit to the ENGINEER, detailed and complete documented verification of the CONTRACTOR's and any of his SUBCONTRACTORS' actual costs involved in the cost reimbursement work. Such costs shall be submitted within 30 days after said work has been performed.

69. PARTIAL PAYMENTS

A. GENERAL

Nothing in this Article shall be construed to affect the right, hereby reserved, to reject the whole or any part of the aforesaid work, should such work be later found not to comply with the Provisions of the Contract Documents. All estimated quantities of work for which partial payments have been made are subject to review and correction on the final estimate. Payment by the OWNER and acceptance by the CONTRACTOR of partial payments based on periodic estimates of quantities of work performed shall not, in any way, constitute acceptance of the estimated quantities used as a basis for computing the amounts of the partial payments.

B. ESTIMATE

No more than once each month the Contractor shall submit to the ENGINEER a detailed estimate of the amount earned during the preceding month for the separate portions of the work and request payment. As used in this Article the words "amount earned" means the value, on the date of the estimate, for partial payment of the work completed in accordance with the Contract Documents and the value of approved materials delivered to the project site suitably stored and protected prior to incorporation into the work. Payment will be made by the Owner to the Contractor within 40 days receipt of the written recommendation of payment from the ENGINEER. Payment will be made by the Owner to the Contractor within 40 days receipt of the written recommendation of payment from the ENGINEER.

ENGINEER will, within 7 days after receipt of each request for payment, either indicate in writing a recommendation of payment and present the request to OWNER, or return the request to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may, within 7 days, make the necessary corrections and resubmit the request.

ENGINEER may refuse to recommend the whole or any part of any payment if, in his opinion, it would be incorrect to make such representations to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such an extent as may be necessary in ENGINEER's opinion to protect the OWNER from loss because:

1. The work is defective, or completed work has been damaged requiring correction or replacement;
2. Written claims have been made against OWNER or Liens have been filed in connection with the work;
3. The Contract Price has been reduced because of Change Orders;
4. OWNER has been required to correct defective work or complete the work in accordance with Article OWNER'S RIGHT TO DO WORK;
5. Of CONTRACTOR's unsatisfactory Prosecution of the work in accordance with the Contract Documents; or
6. CONTRACTOR's failure to make payment to SUBCONTRACTORS or for labor, materials, or equipment.

C. DEDUCTION FROM ESTIMATE

Unless modified in the Supplementary Conditions, deductions from the estimate will be as described below:

1. The OWNER will deduct from the estimate, and retain as part security, 10 percent of the amount earned for work satisfactorily completed. A deduction and retainage of 10 percent will be made on the estimated amount earned for approved items of material delivered to and properly stored at the jobsite but not incorporated into the work. When the work is 90 percent complete, the OWNER may reduce the retainage to 5 percent of the dollar value of all work satisfactorily completed to date provided the CONTRACTOR is making satisfactory progress and there is no specific cause for a greater retainage. The OWNER may reinstate the retainage up to 10 percent if the OWNER determines, at his discretion, that the CONTRACTOR is not making satisfactory progress or where there is other specific cause for such withholding.

D. QUALIFICATION FOR PARTIAL PAYMENT FOR MATERIALS DELIVERED

Unless modified in the Supplementary Conditions, qualification for partial payment for materials delivered but not yet incorporated into the work shall be as described below:

1. Materials, as used herein, shall be considered to be those items which are fabricated and manufactured material and equipment. No consideration shall be given to individual purchases of less than \$200 for any one item.
2. To receive partial payment for materials delivered to the site, but not incorporated in the work, it shall be necessary for the CONTRACTOR to include a list of such materials on the Partial Payment Request. At his sole discretion, the ENGINEER may approve items for which partial payment is to be made. Partial payment shall be based on the CONTRACTOR's actual cost for the materials as evidenced by invoices from the supplier. Proper storage and Protection shall be provided by the CONTRACTOR, and as approved by the ENGINEER. Final payment shall be made only for materials actually incorporated in the work and, upon acceptance of the work, all materials remaining for which advance payments had been made shall revert to the CONTRACTOR, unless otherwise agreed, and partial payments made for these items shall be deducted from the final payment for the work.
3. CONTRACTOR warrants and guarantees that title to all work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER at the time of payment free and clear of all liens, claims, security interests, and encumbrances.
4. If requested by the ENGINEER, the CONTRACTOR shall provide, with subsequent pay requests, invoices received by the supplier showing payment in full has been made.

E. PAYMENT

After deducting the retainage and the amount of all previous partial payments made to the Contractor from the amount earned the amount due will be made payable to the Contractor. Recommendations for payment received by the Owner less than 40 days prior to the scheduled day for payment will not be processed or paid until the following month.

70. CLAIMS FOR EXTRA WORK

In any case where the CONTRACTOR deems additional time or compensation will become due him under this Contract for circumstances other than those defined in Article DELAYS AND EXTENSION OF TIME, the CONTRACTOR shall notify the ENGINEER, in writing, of his intention to make claim for such time or compensation before he begins the work on which he bases the claim, in order that such matters may be settled, if possible, or other appropriate action taken. The notice of claim shall be in duplicate, in writing, and shall state the circumstances and the reasons for the claim but need not state the amount. If such notification is not given or if the ENGINEER is not afforded proper facilities by the CONTRACTOR for keeping strict account of actual cost, then the CONTRACTOR hereby agrees to waive the claim for such additional time or compensation. Such notice by the CONTRACTOR, and fact that the ENGINEER has kept account of the cost as aforesaid, shall not in any way be construed as proving the validity of the claim.

No extension of time will be granted to the CONTRACTOR for delays resulting from extra work that have no measurable impact on the completion of the total work under this Contract. Claims for additional time or compensation shall be made in itemized detail and submitted, in writing, to the OWNER and ENGINEER within 10 days following completion of that portion of the work for which the CONTRACTOR bases his

claim. Failure to make the claim for additional compensation in the manner and within the time specified above shall constitute waiver of that claim. In case the claim is found to be just, it shall be allowed and paid for as provided in Article PAYMENT FOR CHANGE ORDERS.

71. RELEASE OF LIENS OR CLAIMS

The CONTRACTOR shall indemnify and hold harmless the OWNER from all claims for labor and materials furnished under this Contract. Prior to the final payment, the CONTRACTOR shall furnish to the OWNER, as part of his final payment request, a certification that all of the CONTRACTOR's obligations on the project have been satisfied and that all monetary claims and indebtedness have been paid. The CONTRACTOR shall furnish complete and legal effective releases or waivers, satisfactory to the OWNER, of all liens arising out of or filed in connection with the work.

72. FINAL PAYMENT

Upon completion of the work the Contractor shall notify the ENGINEER, in writing, that he has completed it and shall request final payment. The Contractor shall be responsible for keeping an accurate and detailed record of his actual construction. Upon completion of construction and before final acceptance and payment the Contractor shall furnish the ENGINEER as-built drawings of his construction. Upon receipt of a request for final payment and the as-built drawings the ENGINEER will inspect and, if acceptable, submit to the Owner his recommendation as to acceptance of the completed work and as to the final estimate of the amount due the Contractor. Upon approval of this final estimate by the Owner and compliance by the Contractor with provisions in Article RELEASE OF LIENS OR CLAIMS, and other provisions as may be applicable, the Owner shall pay to the Contractor all monies due him under the provisions of these Contract Documents.

A. Acceptance and Final Payment

Whenever the Contractor has completely performed the work provided for under the Contract and the ENGINEER has performed a final inspection and made final acceptance and subject to the terms of the ENGINEER will prepare a final estimate showing the value of the work as soon as the ENGINEER makes the necessary measurements and computations. The ENGINEER will correct all prior estimates and payments in the final estimate and payment. The OWNER will pay the estimate, less any sums that the OWNER may have deducted or retained under the provisions of the Contract, as soon as practicable after final acceptance of the work, provided the Contractor has met the requirements of (1) through (4) below.

1. The Contractor has agreed in writing to accept the balance due or refund the overpayment, as determined by the OWNER, as full settlement of his account under the Contract and of all claims in connection therewith, or the Contractor, accepted the balance due or refunded the overpayment, as determined by the OWNER, with the stipulation that his acceptance of such payment or the making of such refund does not constitute any bar, admission, or estoppel, or have any effect as to those payments in dispute or the subject of a pending claim between the Contractor and the OWNER. To receive payment based on a FINAL PAYMENT CERTIFICATE, The Contractor further agrees, by submitting a FINAL PAYMENT CERTIFICATE that any pending or future arbitration claim or suit is limited to those particulars, including the itemized amounts, defined in the original FINAL PAYMENT CERTIFICATE, and that he will commence with any such arbitration claim or suit within 15 calendar days from and after the time of final PAYMENT of the work and that his failure to file a formal claim within this period constitutes his full acceptance of the ENGINEER's final estimate and payment. The overpayment refund check from the Contractor, if required, will be considered a part of any Acceptance Letter executed.

2. The Contractor has properly maintained the project, as specified hereinbefore.
3. The Contractor has furnished a sworn affidavit to the effect that the Contractor has paid all bills and no suits are pending (other than those exceptions listed, if any) in connection with work performed under the Contract and that the Contractor has not offered or made any gift or gratuity to, or made any financial transaction of any nature with, any employee of the OWNER in the performance of the Contract.
4. Final payment will not be released until the City receives Certified As-built drawings in Auto Cad & Adobe format as well as:

73. NO WAIVER OF RIGHTS

Neither the inspection by the OWNER, through the ENGINEER or any of his employees, nor any order by the OWNER for payment of money, nor any payment for, or acceptance of, the whole or any part of the work by the OWNER or ENGINEER, nor any extension of time, nor any possession taken by the OWNER or its employees, shall operate as a waiver of any Provision of this Contract, or any power herein reserved to the OWNER, or any right to damages herein Provided, nor shall any waiver of any breach in this Contract be held to be a waiver of any other or subsequent breach. Acceptance or final payment shall not be final and conclusive with regards to latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the OWNER's rights under the warranty.

74. ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE

The acceptance by the CONTRACTOR of the final payment shall release the OWNER and the ENGINEER, as representatives of the OWNER, from all claims and all liability to the CONTRACTOR for all things done or furnished in connection with the work, and every act of the OWNER and others relating to or arising out of the work except claims Previously made in writing and still unsettled. No payment, however, final or otherwise, shall operate to release the CONTRACTOR or his Sureties from obligations under this Contract and the Performance Bond, Payment Bond, and other bonds and warranties, as herein provide

END OF SECTION

PART 4

GENERAL REQUIREMENTS

SECTION 01001
GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 PROJECT DESCRIPTION

- A. A brief description of the work is stated in the Invitation to Bid. To determine the full scope of the project or of any part of the project, coordinate the applicable information in the several parts of these Contract Documents.

1.2 MOBILIZATION AND DEMOBILIZATION

- A. Contractor shall be responsible for mobilization and demobilization of labor, materials and equipment. Payment for mobilization and demobilization will be included in the lump sum price indicated in the BID. Parking for vehicles used on site will be determined by the ENGINEER prior to mobilization.
- B. DAILY REPORTS (If Required)
 - 1) The CONTRACTOR shall submit daily reports of construction activities for each site, including non-work days. The report shall include:
 - a) Manpower, number of workers by craft
 - b) Quality Control
 - c) Equipment on the Project
 - d) Major deliveries
 - e) Activities worked
 - f) New problems
 - g) Other pertinent information
 - 2) A similar report shall be submitted for/by each Subcontractor.
 - 3) The reports shall be submitted to the ENGINEER upon request.

1.3 SCHEDULING

- A. Prior to starting the work, confer with the ENGINEER and Owner's representative to develop an approved work schedule. Which will permit the surrounding facilities to function as normally as practical. It may be necessary to do certain parts of the work outside normal working hours to avoid undesirable conditions. The Contractor shall do this work at such times and at no additional cost to the Owner.
- B. SPECIAL EVENTS: Contractor may be asked to stop work during special events. Individual days where work is stopped at the city's request due to special events shall not count toward the total number of contract days.

1.4 COORDINATION

- A. Contractors shall cooperate in the coordination of their separate activities in a manner that will provide the least interference with the Owner's operations and other contractors and utility companies working in the area, and in the interfacing and connection of the separate elements of the overall project work.

- B. If any difficulty or dispute should arise in the accomplishment of the above, the problem shall be brought immediately to the attention of the ENGINEER.
- C. CONTRACTOR shall notify all residents and proprietors adjacent to construction site of work to be performed, more specifically the notice shall state the day and time construction will begin, the name and phone number of the Contractor's representative responsible for the completion of the proposed improvements. Notice shall also include the Owner's representative for the project.
- D. All contractors working on the site are subject to this requirement for cooperation and all shall abide by the OWNER's decision in resolving project coordination problems without additional cost to the OWNER.

1.5 SITE INVESTIGATION AND REPRESENTATION

- A. The Contractor acknowledges satisfaction as to the nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation, access to the site, disposal, handling and storage of materials, availability of labor, water, electric power, roads, and uncertainties of weather, or similar physical conditions at the site, the conformation and conditions at the site, the character of equipment and facilities needed preliminary to and during the prosecution of the work, and all other matters which can any way affect the work or the cost thereof under this Contract.
- B. The Contractor further acknowledges satisfaction as to character, quality, and quantity of surface and subsurface materials to be encountered from his inspection of the site and from reviewing any available records of exploratory work furnished by the Owner or included in these Documents. Failure by the Contractor to become acquainted with the physical conditions of the site and all available information will not relieve the Contractor from responsibility for properly estimating the difficulty or cost of successfully performing the work.
- C. The Contractor warrants that as a result of examination and investigation of all the aforesaid data, the contractor can perform the work in a good and workmanlike manner and to the satisfaction of the Owner.
- D. The Owner assumes no responsibility for any representations made by any of its officers or agents during or prior to the execution of this Contract, unless (1) such representations are expressly stated in the Contract, and (2) the Contract expressly provides that the responsibility therefore is assumed by the Owner.

1.6 INFORMATION ON SITE CONDITIONS

- A. General: Any information obtained by the ENGINEER regarding site conditions, subsurface information, water level, existing construction of site facilities as applicable, and similar data will be available for inspection at the office of the ENGINEER upon request. Such information is offered as supplementary information only. Neither the ENGINEER nor the Owner assumes any responsibility for the completeness or interpretation of such supplementary information.
- B. The Contractor shall provide a color audio-video recording showing the entire preconstruction site. All videos shall be taken by a professional commercial video photographer. The video

photographer shall be an established enterprise that routinely provides these services. The videos shall be in DVD format or .wav files on removable USB drive, indicating the date, project name, and a brief description of the location where the video was taken. The Contractor shall submit one (1) copy of the preconstruction audio-video to the OWNER.

1.7 DIFFERING SUBSURFACE CONDITIONS

- A. The ENGINEER shall investigate such conditions promptly and following this investigation, the Contractor shall proceed with the work, unless otherwise instructed by the ENGINEER. If the ENGINEER finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for performing the work, the ENGINEER will recommend to the Owner the amount of adjustment in cost and time he considers reasonable. The Owner will make the final decision on all Change Orders to the Contract regarding any adjustment in cost or time for completion.

1.8 UTILITIES

- A. During excavation, the Contractor shall be responsible for determining, at his cost, the locations of all known utilities in the project area.
- B. Contractor shall notify utility location service (e.g. Call Sunshine 1-800-432-4770) a minimum for 48 hours prior to work order mobilization. Assigned notification number shall be maintained at the job site at all times and recorded in the daily reports.

1.9 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTIES AND SERVICE

- A. Where the Contractor's operations could cause damage or inconvenience to telephone, television, gas, water, sewer, or irrigation systems, the operations shall be suspended until all arrangements necessary for the protection of these utilities and services have been made by the Contractor.
- B. Notify all utility offices, which are affected by the construction operation at least 48 hours in advance. Under no circumstances expose any utility without first obtaining permission from the appropriate agency. Once permission has been granted, locate, expose, and provide temporary support for all existing underground utilities.
- C. The Contractor shall be solely and directly responsible to the Owner and operators of such properties for any damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of any injuries or damage which may result from the construction operations under this Contract
- D. Neither the Owner nor its Officers or agents shall be responsible to the Contractor for damages as a result of the Contractor's failure to protect utilities encountered in the work.
- E. In the event of interruption to domestic water, sewer, storm drain, or other utility services as a result of accidental breakage due to construction operations, promptly notify the proper authority. Cooperate with said authority in restoration of service as promptly as possible and bear all costs of repair. In no case shall interruption of any water or utility service be allowed to exist outside working hours unless prior approval is granted.

- F. In the event the Contractor encounters water service lines that interfere with trenching, he may, by obtaining prior approval of the property owner, Florida Keys Aqueduct Authority (FKAA), or Fire Department as applicable, and the ENGINEER, cut the service dig through, and restore service with similar and equal materials at the Contractor's expense.
- G. The Contractor shall replace, at his own expense, all existing utilities or structures removed or damaged during construction, unless otherwise provided for in these Contract Documents or ordered by the ENGINEER.

1.10 PROTECTED VEGETATION

- A. Trees and shrubs are regulated and protected. Prior to any trimming or pruning, the CONTRACTOR shall contact the City of Key West Urban Forestry Manager and obtain approval to perform the trimming and pruning work. This work is considered to be incidental to the project cost.

1.11 TEMPORARY WATER

- A. The Contractor shall make his own arrangements to obtain suitable water for any need and shall pay all costs.

1.12 TEMPORARY ELECTRIC POWER

- A. The Contractor shall make his own arrangements to obtain and pay for electrical power used until final acceptance by the Owner.

1.13 SAFETY REQUIREMENTS FOR TEMPORARY ELECTRIC POWER

- A. Temporary electric power installation shall meet the construction Safety requirements of OSHA, State, and other governing agencies.

1.14 SANITARY FACILITIES

- A. The Contractor shall provide and maintain sanitary facilities for his employees and his subcontractor's employees that will comply with the regulations of the local and State Departments of Health and as directed by the Owner.

1.15 STORAGE OF MATERIALS

- A. Materials shall be so stored as to ensure the preservation of their quality and fitness for the work. When considered necessary, they shall be placed on wooden platforms or other clean hard surfaces and not on the ground. Stored materials shall be located so as to facilitate prompt inspection. Stored materials on city property must safe and secured from the general public and if necessary they must be fitted with lights at night. Private property shall not be used for storage purposes without the written permission of the owner or lessee. Materials shall not be stored where access to any structure, plot, or road is blocked. Location of stored materials approved by the ENGINEER or his designee.
- B. Delicate instruments and materials subject to vandalism shall be placed under lock cover and, if necessary, provided with temperature control as recommended by the manufacturer.

1.16 CONSTRUCTION SAFETY PROGRAM

- A. The Contractor shall develop and maintain for the duration of this Contract, a safety program that will effectively incorporate and implement all required safety provisions. The Contractor shall appoint an employee who is qualified and authorized to supervise and enforce compliance with the safety program.
- B. The duty of the ENGINEER to conduct construction review of the Contractor's performance is not intended to include a review or approval of the adequacy of the Contractor's safety supervisor, the safety program or any safety measures taken in, on, or near the construction site.
- C. The Contractor shall do all work necessary to protect the public from hazards, including, but not limited to, surface irregularities, or unramped grade changes on pedestrian walkways and docks. Barricades, lights, and proper signs shall be furnished in sufficient amount to safeguard the public and the work.
- D. The performance of all work shall be in accordance with the applicable governing safety authorities.

1.17 ACCIDENT REPORTS

- A. If death or serious injuries or serious damages are caused; the Contractor must promptly report by telephone or messenger to the ENGINEER. In addition, the Contractor must promptly report in writing to the ENGINEER all accidents whatsoever arising out of or in connection with, the performance of the work whether on, or adjacent, to the site, giving full details and statements of witnesses.
- B. If a claim is made against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the ENGINEER, giving full details of the claim.

1.18 TRAFFIC MAINTENANCE AND SAFETY

- A. Comply with all rules and regulations of the state, county, and city authorities regarding closing or restricting the use of public streets or highways. No public or private road shall be closed, except by express permission of the owner. Conduct the work so as to assure the least possible obstruction to traffic and normal commercial pursuits. Protect all obstructions within traveled roadways by installing approved signs, barricades, and lights where necessary for the safety of the public. The convenience of the general public and residents adjacent to the project and the protection of persons and property are of prime importance and shall be provided for in an adequate and satisfactory manner.
- B. Maintenance of Traffic shall be maintained at all construction sites until the work is either completed or any open trenches have been properly covered and all equipment is properly stored. Contractor shall maintain Maintenance of Traffic (MOT) signs in good repairs and required MOT lights should be operative at all times. The Owner shall stop work if MOT is not properly maintained; there shall not be any additional cost to the Owner for this downtime.

- C. When flagmen and guards are required by regulation, permits, or when deemed necessary for safety, they shall be furnished with approved orange wearing apparel and other regulation traffic-control devices. Flaggers shall be certified by State approved agency.
- D. MOT plans shall be in accordance with Florida Department of Transportation standard details for MOT and the Manual on Uniform Traffic Control Devices (MUTCD). MOT plans shall be submitted with the Temporary Right-of-Way Permit application for review and approval by the Engineering Department.

1.19 STREET MAINTENANCE

- A. CONTRACTOR shall notify all residents and proprietors adjacent to construction site of work to be performed, more specifically the notice shall state the day and time construction will begin, the name and phone number of the Contractor's representative responsible for the completion of the proposed improvements. Notice shall also include the Owner's representative for the project.

1.20 PROTECTION OF PROPERTY

- A. Protect stored materials located adjacent to the proposed work. Notify property owners affected by the construction at least 48 hours in advance of the time construction begins. During construction operations, construct and maintain such facilities as may be required to provide access by all property owners to their property. No person shall be cut off from access to his residence or place of business for a period exceeding 8 hours, unless the CONTRACTOR has made special arrangements with the affected persons.
- B. The CONTRACTOR shall identify and isolate his work zone in such a manner as to exclude all personnel not employed by him, the ENGINEER, and the OWNER.

1.21 FIRE PREVENTION AND PROTECTION

- A. The Contractor shall perform all work in a fire-safe manner and shall supply and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. The Contractor shall comply with applicable federal, state, and local fire-prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Prevention Standard for Safeguarding Building Construction Operations (NFPA No. 241) shall be followed.

1.22 SITE RESTORATION AND CLEANUP:

- A. At all times during the work keep the premises clean and orderly and upon completion of daily work repair all damage caused by equipment and leave the project free of rubbish or excess materials of any kind.
- B. Stockpile excavated materials in a manner that will cause the least damage to adjacent lawns, grassed areas, gardens, shrubbery, or fences regardless of whether these are on private property, or State, County, or City rights-of-way. Remove all excavated materials from

grassed and planted areas, and leave these surfaces in a condition equivalent to their original condition.

1.23 FINISHING OF SITE AND STORAGE AREAS

- A. Upon completion of the project, all areas used by the Contractor shall be properly cleared of all temporary structures, rubbish and waste materials and properly graded to drain and blend in with the abutting property. Areas used for the deposit of waste materials shall be finished to properly drain and blend in with the surrounding terrain.

1.24 AREA CLEANUP DURING CONSTRUCTION

- A. Thoroughly clean all spilled dirt, gravel, sand or other foreign materials caused by the construction operations from all streets and roads, grass, pathways, docks or concrete walkways and from adjacent areas at the conclusion of each day's operation. Truck or equipment wash down is not to be performed on City Property.

1.25 SUBMITTALS

- A. See Submittals section of the specifications

1.26 PAYMENT

- A. The cost of the work in this section is considered incidental to the contract.

END OF SECTION

SECTION 01014
ENVIRONMENT PROTECTION

PART 1 GENERAL

1.1 GENERAL

- A. The Contractor shall maintain all work areas within and outside the project boundaries free from environmental pollution, which would be in violation to any federal, state, or local regulations.
- B. The work specified in this Section consists of designing, providing, maintaining and removing temporary erosion and sedimentation controls as necessary.
- C. Temporary erosion controls include, but are not limited to, grassing, mulching, watering, and reseeding on-site surfaces and spoil and borrow area surfaces and providing interceptor ditches at ends of berms and at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits as established by the OWNER.
- D. Temporary sedimentation controls include, but are not limited to, silt dams, traps, barriers, and appurtenances at the foot of sloped surfaces which will ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits as established by the OWNER.
- E. CONTRACTOR is responsible for providing effective temporary erosion and sediment control measures during construction or until final controls become effective.

1.2 PROTECTION OF AIR QUALITY

- A. The air pollution likely to occur due to construction operations shall be minimized by wetting down bare soils during windy periods, requiring the use of properly operating combustion emission control devices on construction vehicles and equipment used by contractors, and by encouraging the shutdown of motorized equipment not actually in use.
- B. Trash burning will not be permitted on the construction site.
- C. Contractor shall provide dust control for any asphalt / concrete removal and during the asphalt milling operations.

1.3 DUST PREVENTION

- A. Give all unpaved streets, roads, detours, haul roads or disturbed areas used in the construction area an approved dust-preventive treatment or periodically water to prevent dust. Applicable environmental regulations for dust prevention shall be strictly enforced.

1.4 PRESERVATION OF INLETS

- A. Existing inlets in the area shall be protected with appropriate best management practices and shall be periodically cleaned and kept free of siltation.

1.5 CONSTRUCTION NOISE CONTROL

- A. The Contractor shall conduct all his work, use appropriate construction methods and equipment, and furnish and install acoustical barriers, all as necessary so that no noise emanating from the process or any related tool or equipment will exceed legal noise levels, as set forth in the Code of Ordinances, City of Key West, Florida.

1.6 PAYMENT

- A. Payment for the work associated with this Section will be incidental to the contract.

PART 2 – Not used

PART 3 – Not used

END OF SECTION

SECTION 01020
SUMMARY OF WORK

PART 1 – GENERAL

1.1 DESCRIPTION

A. Work Included: The general construction and furnishing of all materials, equipment and labor for the construction of asphalt paving, curb, gutter, sidewalk construction, utility trench repair, minor drainage improvements, signing, pavement markings, utility adjustments, site clean-up and all necessary appurtenances and record drawings, surveys, and incidental work to provide a complete and serviceable project identified as:

FLAGLER PEDESTRIAN IMPROVEMNTS

B. Related requirements in other parts of the Contract Documents: Include but not limited to:

1. General Conditions of the Contract for Construction.

1.2 CONTRACTOR'S DUTIES:

- A. In addition to provisions stipulated in other portions of the Contract Documents, the Contractor shall:
1. Secure permits as necessary for proper execution and completion of the work.
 2. All conditions of the permit must be adhered to by the contractor.
 3. Notify (in writing) all vendors, residents and proprietors adjacent to construction site of work to be performed, more specifically the notice shall state the day and time construction will begin, hours of work, the name and phone number of the Contractor's Superintendent and an end date for the project.
- B. The Contractor shall be totally responsible for securing and complying with all, required permits and payment of associated fees. Contractor shall ensure that construction complies with all applicable local, state, and federal codes.
- C. Provide an experienced, qualified, and competent Superintendent able to read, write and speak English to oversee the work and perform quality assurance inspections. Prior to starting construction, the proposed Superintendent's qualifications shall be submitted in writing to the City for approval. The approved Superintendent shall be expected to remain for the duration of the Project, unless the City or ENGINEER deem him/her inadequate and requests his/her removal or the Contractor cannot continue his services to the Project for a reason or reasons that shall be communicated in writing to the City.
- D. The Superintendent shall provide to the City, upon request, Construction Reports for each week of construction, the reports shall be in English, legible, and signed. Contractor, upon request, shall provide PDF copies monthly. Reports shall include quantity control checks.
- E. It shall be the Contractor's responsibility to comply with the City's Ordinance

Chapter 26 Environment, Article IV. Sound Control below:

Sec. 26-193. - Exceptions.

- A. The prohibitions contained in this article shall not apply to the following:
 - 1. Construction/demolition. Sound levels produced from tools and equipment in commercial construction, demolition, drilling, or reasonably similar activities. However, such sound levels are limited to the hours of 8:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturday. The tools and equipment must be muffled and maintained equal to the functional standards of the industry. No exceptions contained in this subsection shall apply on Thanksgiving Day, Christmas Day and New Year's Day.
- B. The Contractor is responsible for the construction of the above mentioned project, concrete walkways and all associated items used in the completion of the project. Contractor is further responsible for all costs associated with the disposal of materials and must dispose of in an environmentally responsible manner.
- C. The Contractor shall provide material safety data sheets (2 copies) for chemicals, paints, coatings and materials used on-site prior to initiation of work.

1.3 CONTRACTOR'S USE OF PREMISES

- A. Work shall be scheduled as to not interfere with on-going area activities.
- B. Coordinate use of premises and requirements for security under direction of City.
- C. Assume full responsibility for the protection and safekeeping of products, under this Contract, stored on the site.
- D. Obtain and pay for the use of additional storage or work areas needed for operation.

1.4 MAINTENANCE OF EXISTING UTILITIES OPERATION

- A. Provide at least three weeks' notice prior to interruption of utility services for temporary or permanent connections.
- B. Keep interruption of utility services, and utility outages during disconnection, moving, and reconnection to a minimum.
- C. Keys Energy shall be notified two weeks in advance in writing by the contractor for any KEYS support equipment required by the Contractor during construction. Contractor is responsible for all impact fees. No additional payment will be paid for this coordination.

END OF SECTION

SECTION 01050
FIELD ENGINEERING

PART 1 - GENERAL

1.1 DESCRIPTION:

A. Work Included:

1. Provide field-engineering services required for the Project, including but not limited to survey work required in execution of the Work.

B. Related Work:

1. General and Supplementary Conditions of the Contract.
2. Section 01020 Summary of Work.

1.2 SUBMITTALS:

- A. Upon request of the City's Engineer, submit documentation to verify accuracy of field engineering work.
- B. Upon request, submit certificates signed by the Surveyor or Engineer certifying that elevations and locations of the work of this Project are in conformance, or non-conformance, with the Contract Documents.

PART 2 – MATERIALS (not used)

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION OF SITE

- A. Before starting operations, Contractor shall examine work site to acquaint himself with conditions to be encountered.
- B. Compare actual site with drawings and specifications.
- C. Report discrepancies affecting work or cost thereof to the City.
- D. Verify exact locations of sewers, water mains, gas mains, above or below ground electrical wires and conduits and structures which may interfere with work.
- E. No extra compensation will be allowed for any extra work made necessary due to conditions or obstacles encountered during progress of work, which could have been determined by examination of site or by contacting Owners of utilities, pipelines and conduits before starting operations.

- F. Comply with State law concerning Sunshine State One Call of Florida, State Statute Title 33, Chapter 556.

3.2 LINES AND GRADES

- A. Prior to staking out work, Contractor shall verify established base line, benchmarks, and control points provided.
- B. Contractor shall furnish and maintain lines and grades.
- C. Contractor shall take immediate steps to correct errors or inconsistencies in lines and grades of work to be in conformity with Contract Documents.
- D. Contractor shall be fully responsible for accuracy of lines and grades of work and control and checking and immediate correction of it.

3.3 RESTORATION

- A. Items to remain which are disturbed, damaged, or removed when performing required work or for convenience of Contractor or to expedite his operations shall be restored, repaired, reinstalled, or replaced with new work and refinished, as appropriate, so as to be left in as good condition as existed before work commenced and such restoration shall be considered incidental to the work.
- B. Any sidewalks or pavement replaced or installed shall meet ADA requirements.
- C. Existing items to be altered, extended, salvaged, or relocated and reused, if found to be defective in any way, shall be reported to the City before items are disturbed.
- D. Materials and workmanship used in restoring work shall conform in type and quality to original existing construction.

3.4 PAYMENT

- A. Payment for work specified in this section will be incidental to the contract.

END OF SECTION

SECTION 01300
SUBMITTALS

PART 1 - GENERAL

1.1 GENERAL

- A. Inquiries: Direct to ENGINEER regarding procedure, purpose, or extent of Submittal.
- B. Submittal Submission Procedures: As provided in General Conditions, as specified herein, and as may otherwise be established during the preconstruction conference.
- C. OWNER's Authorization: At any time, OWNER may authorize changes to procedures and requirements for Submittals, as necessary to accomplish specific purpose of each Submittal. Such authorization will be by Field Order or Work Change Directive.
- D. Timeliness: Make submissions in accordance with requirements of individual Specification sections, as shown on the current accepted schedule of Submittals submissions, and in such sequence as to cause no delay in Work or in work of other contractors.
- E. Identification of Submittals:
 - 1. Complete, sign, and transmit with each Submittal package, one Transmittal of CONTRACTOR's Submittal Form.
 - 2. Identify each Submittal with numbering and tracking system reviewed by ENGINEER:
 - i. Sequentially number each Submittal.
 - ii. Resubmission of a Submittal will have original number with sequential alphabetic suffix.
 - 3. Show date of submission and dates of previous submissions.
 - 4. Show Project title and OWNER's contract identification and contract number.
 - 5. Show names of CONTRACTOR, Subcontractor or Supplier, and manufacturer as appropriate.
 - 6. Identify, as applicable, Contract Document section and paragraph to which Submittal applies.
 - 7. Clearly identify revisions from previous submissions.
- F. Incomplete Submittal Submissions:
 - 1. At ENGINEER's sole discretion, ENGINEER will either (i) return the entire Submittal for CONTRACTOR's revision/correction and resubmission, or (ii) retain portions of the Submittal and request submission/resubmission of specified items or as noted thereon.
 - 2. Submittals which do not clearly bear CONTRACTOR's specific written indication of CONTRACTOR review and approval of Submittal or which are transmitted with an unsigned or uncertified submission form or as may otherwise be required under Contract Documents, will be returned to CONTRACTOR unreviewed for resubmission in accordance with Contract Documents.
 - 3. Delays, re-sequencing or other impact to Work resulting from the CONTRACTOR's submission of unchecked or unreviewed, incomplete, inaccurate or erroneous, or

nonconforming Submittals, which will require CONTRACTOR's resubmission of a Submittal for ENGINEER's review, shall not constitute a basis of claim for adjustment in Contract Price or Contract Times.

- G. Non-specified Submissions: Submissions not required under these Contract Documents and not shown on schedule of Submittals submissions will not be reviewed and will be returned to CONTRACTOR.
- H. Transmit submittals in accordance with current accepted schedule of Submittal submissions, and deliver the ENGINEER designated by the ENGINEERING Department of the City of Key West.
- I. Disposition of Submittals: As specified herein for administrative Submittals. ENGINEER will review, stamp, and indicate requirements for resubmission or acceptance on Submittal as follows:
 - 1. No Exceptions Taken.
 - 2. Reviewed as Noted:
 - i. Reference the General Conditions for intent.
 - ii. CONTRACTOR may proceed to perform Submittal related Work.
 - iii. One copy for ENGINEER's file.
 - iv. One copy returned to CONTRACTOR.
 - 3. Revise and Resubmit (Revise/Correct or Develop Replacement and Resubmit):
 - i. Revise/correct in accordance with ENGINEER's comments and resubmit.
 - ii. One copy to ENGINEER's file.
 - iii. One copy returned to CONTRACTOR appropriately annotated.
 - 4. Payment for the work in this section will be incidental to the contract.

END OF SECTION

SECTION 01390
PRECONSTRUCTION AUDIO/VIDEO SURVEY

PART 1 – GENERAL

1.1 REQUIREMENTS

A. The Contractor shall provide a color audio-video recording showing the entire preconstruction site. The videos shall be in DVD format or .wav files on removable USB drive, indicating the date, project name, and a brief description of the location where the video was taken. The Contractor shall submit one (1) copy of the preconstruction audio-video to the OWNER.

B. All video recordings shall, by electronic means, display on the screen the time of day, the month, day, and year of the recording.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION

3.1 GENERAL

A. The following shall be included with the audio-video documentation:

1. Coverage is required within and adjacent to the right of way, easements, storage, and staging areas where the work is to be constructed.
2. Documentation of the conditions of the adjacent properties or any affected structures as a result of the impending construction.
3. Videos shall be properly identified by project name and ITB number

B. There will be no separate payment for this preconstruction audio-video recording. The cost will be incidental to the contract.

END OF SECTION

SECTION 01500
TESTING SERVICES

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. The Contractor shall employ and pay for the services of a qualified commercial independent testing laboratory acceptable to the Owner to perform specified services.
- B. Inspection, sampling, and testing is required for:
 - 1. Backfill
 - 2. Paving and surfacing
 - 3. Concrete
 - 3. Additional quality checks as required by the Engineer
- C. Employment of a testing laboratory shall in no way relieve the Contractor of his obligation to perform work in accordance with the Contract.

PART 2 - PRODUCTS

2.1 SUBMITTALS

- A. Submit two copies of reports of inspections and tests to Engineer promptly upon completion of inspections and tests, including: Provide one copy in PDF.
 - 1. Date issued.
 - 2. Project title and Engineer's job number.
 - 3. Testing laboratory name and address.
 - 4. Name and signature of inspector.
 - 5. Date of inspection or sampling.
 - 6. Record of temperature and weather.
 - 7. Date of test.
 - 8. Location of inspection or test.
 - 9. Identification of product and specification section.
 - 10. Type of inspection or test.
 - 11. Observation regarding compliance with the Contract Documents.

PART 3 - EXECUTION

3.1 LABORATORY DUTIES - LIMITATIONS OF AUTHORITY

- A. Cooperate with the Owner and Contractor; provide qualified personnel promptly on notice.
- B. Perform specified inspections, sampling, and testing of materials and methods of construction:

1. Comply with specified standards; ASTM, other recognized standards, authorized and as specified.
 2. Ascertain compliance with requirements of Contract Documents.
- C. Notify the Engineer and Contractor immediately of irregularities or deficiencies of work that are observed during performance of services.
- D. Perform additional services as required by the Engineer.

3.2 ON SITE TESTING

- A. On site testing must be performed by technical staff certified/accredited by state approved agencies and industry standards.
- B. Testing as required by other sections of this document.

3.3 PAYMENT

- A. Payment for the work in this section will be incidental to the respective unit price items.

END OF SECTION

SECTION 01530
BARRIERS

PART 1 – GENERAL

1.1 REQUIREMENTS

- A. Furnish, install, and maintain suitable barriers as required to prevent public entry, and to protect the work, existing facilities, trees, and plants from construction operations; remove when no longer needed, or at completion of work.

1.2 RELATED REQUIREMENTS

- A. Section 01020 Summary of Work.

PART 2 - PRODUCTS

2.1 MATERIALS – GENERAL

- A. Materials may be new or used, suitable for the intended purpose, but must not violate requirements of applicable codes and standards.

2.2 FENCING

- A. Minimum fence height shall be four feet. Open-mesh orange plastic fence shall be used to prohibit

2.3 BARRIERS

- A. Materials are Contractor's option, as appropriate to serve required purpose.

2.4 NO PARKING SIGNS

- A. The Contractor is responsible to furnish and place “No Parking” signs when necessary to perform work.

PART 3 - EXECUTION

3.01 GENERAL

- A. Install facilities of a neat and reasonably uniform appearance, structurally adequate for the required purposes.
- B. Maintain barriers during entire construction period.
- C. Relocate barriers as required by the progress of construction.

3.02 FENCES

- A. Provide and maintain fences necessary to assure security of the site during construction to keep unauthorized people and animals from the site when construction is not in progress.
- B. Provide additional security measures as deemed necessary and approved by the OWNER.

3.03 TREE AND PLANT PROTECTION

- A. Preserve and protect existing trees and plants at site which are designated to remain, and those adjacent to site.
- B. Consult with the ENGINEER and the City's Urban Forestry Manager and remove agreed-on roots and branches which interfere with construction. Employ a qualified tree surgeon to remove branches and treat cuts. No trees or roots shall be removed without approval and/or a permit issued by the City Tree Commission.
- C. Protect root zones of trees and plants:
 - 1. Do not allow vehicular traffic or parking.
 - 2. Do not store materials or products.
 - 3. Prevent dumping of refuse or chemically injurious materials or liquids.
 - 4. Prevent puddling or continuous running water.
- D. Carefully supervise excavating, grading and filling, and other construction operations, to prevent damage.
- E. Replace, or suitably trim trees and plants designated to remain which are damaged or destroyed due to construction operations.

3.04 REMOVAL

- A. Completely remove barricades when construction has progressed to the point that they are no longer needed and when approved by the OWNER.
- B. Repair damage caused by construction. Fill and grade areas of the site to the required evaluations, and clean up the area.

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1 – GENERAL

1.1 REQUIREMENTS

- A. Contract completion includes completion of all work, final inspection after completion, final cleaning, contractor's closeout submittals, and final adjustment of accounts.

1.2 FINAL INSPECTION AFTER COMPLETION

- A. When Contractor considers the contract complete with all minor deficiencies completed or corrected, he shall submit written certification that:
 - 1. Contract Document requirements have been met.
 - 2. Work has been inspected for compliance with Contract Documents.
 - 3. Work has been completed in accordance with Contract Documents.
 - 4. All minor deficiencies have been corrected or completed and the Work is ready for final inspection.
 - 5. Project record documents are complete and submitted.
- B. Within a reasonable time upon receipt of such certification, the OWNER will make an inspection to verify the status of completion.
- C. Should the OWNER determine that the work is incomplete or defective:
 - 1. The OWNER will promptly notify the Contractor in writing, listing the incomplete or defective work.
 - 2. Contractor shall remedy the deficiencies in the work and send a second written certification to the OWNER that the work is complete.
 - 3. Upon receipt of the second certification, the OWNER will review the Work.
- D. When the OWNER determines that the work is acceptable under the Contract Documents, the Contractor shall provide all closeout submittals.

1.3 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean site; sweep paved areas, rake clean other surfaces.

- C. Remove waste and surplus materials, rubbish, and construction facilities from the Project and from the site.

1.5 CONTRACTOR'S CLOSEOUT SUBMITTALS

A. Project Record Documents

1. At Contract Closeout, submit documents with transmittal letter containing date, project title, Contractor's name and address, list of documents, and signature of Contractor.
2. Changes made by Field Order or by Change Order.

B. Evidence of payment and Release of Liens.

1.6 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit a final statement of accounting to the OWNER.

B. Statement shall reflect all adjustments to the Contract Sum.

1. The original Contract sum.
2. Additions and deductions resulting from:
 - a. Previous change orders or written amendment.
 - b. Allowances
 - c. Unit prices
 - d. Deductions for uncorrected work.
 - e. Deductions for liquidated damages
 - f. Other adjustments
3. Total contract sum as adjusted
4. Previous payments
5. Sum remaining due

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION (not used)

END OF SECTION

PART 5

**TECHNICAL SPECIFICATIONS AND
REFERENCES**

TECHNICAL SPECIFICATIONS AND REFERENCES

1. CONSTRUCTION SPECIFICATIONS:

- A. Work associated with this contract shall comply with the January 2022 edition of the FDOT Standard Specifications for Road and Bridge Construction – Divisions II and III and the 2022-23 FDOT Standard Plans for Road Construction.

2. STRIPING AND SIGNAGE SPECIFICATIONS:

All roadway striping and signage shall comply with the 2009 Manual on Uniform Traffic Control Devices, revised May 2012.

3. CONSTRUCTION PLANS AND DETAILS:

- A. In addition to the 2022 FDOT Standard Specifications, all work associated with this contract shall conform to the plans titled, “Flagler Ave /1st /Bertha Signal Improvements” dated February 10, 2022 by Choice Engineering Consultants and the technical specifications included in this section.



SPECIFICATIONS PACKAGE

CITY OF KEY WEST
MONROE COUNTY FLORIDA

The January 2022 Edition of the Florida Department of Transportation Standard Specifications is revised as follows:

I hereby certify that this specifications package has been properly prepared by me, or under my responsible charge, in accordance with procedures adopted by the Florida Department of Transportation.

This item has been digitally signed and sealed by Rafael S. Aguilar, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Date:	<u>February 10, 2022</u>
State of Florida Professional Engineer, License No.:	<u>Florida, 74068</u>
Firm/Agency Name:	<u>Choice Engineering Consultants, Inc.</u>
Firm/Agency Address:	<u>12855 SW 132nd Street, Suite 200</u>
City, State, Zip Code:	<u>Miami, Florida, 33186</u>
Page(s):	<u>1 Thru 9</u>

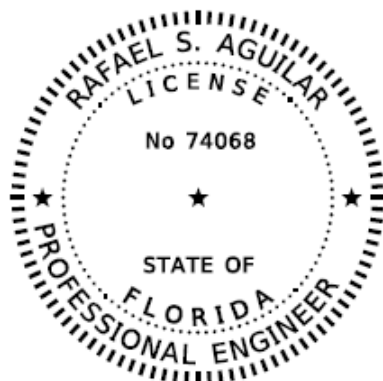


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SPECIAL PROVISIONS

SCOPE OF WORK – INTENT OF CONTRACT.
(REV 8-19-09) (FA 8-24-09) (1-22)

ARTICLE 4-1 is expanded by the following:

The Improvements under this Contract consist of are to upgrade the existing signal to include full vehicular and pedestrian actuation at the intersection of Flagler Avenue and First Street/Bertha Street as well as upgrade the existing signal to include full pedestrian actuation and provision the spare underground infrastructure to future deployment of vehicular detection at the intersection of Flagler Avenue at Kennedy Boulevard.

The summary of pay items for this project is listed in the Plans.

CONDUIT – INSTALLATION REQUIREMENTS - GENERAL.
(REV 7-29-21) (1-22)

SUBARTICLE 630-3.1 is deleted and the following substituted:

630-3 Installation Requirements.

630-3.1 General: Install the conduit in accordance with NEC or National Electrical Safety Code (NESC) requirements and the Standard Plans. Consider the locations of conduit as shown in the Plans as approximate. Construct conduit runs as straight as possible, and obtain the Engineer's approval for all major deviations in conduit locations from those shown in the Plans. Include buried cable warning tape with all trenched conduit. Mark the location of the conduit system with route markers as shown in the Plans and approved by the Engineer. Ensure that all route markers used are new and consistent in appearance.

For conduit installed by directional bore, install in accordance with Section 555. For conduit installed by jack and bore, install in accordance with Section 556.

Use only intermediate galvanized metal conduit, rigid galvanized metal conduit, rigid aluminum conduit or PVC coated intermediate metal conduit for above-ground electrical power service installations and rigid galvanized metal conduit or rigid aluminum conduit for underground electrical power service installations. Meet the requirements of Section 562 for coating all field cut and threaded galvanized pipe.

Use Schedule 80 PVC or fiberglass reinforced epoxy conduit in or on structural elements.

For non-structural, above ground ITS communication and electrical conduit, use intermediate galvanized metal conduit, rigid galvanized metal conduit, or Schedule 80 PVC conduit.

Use HDPE with an SDR number less than or equal to 13.5, Schedule 80 HDPE, Schedule 40 HDPE, Schedule 80 PVC, or Schedule 40 PVC for underground installations of electrical conduit in earth for ITS electrical applications.

Use HDPE with an SDR number less than or equal to 11, Schedule 80 PVC or Schedule 40 PVC for underground installations in earth or concrete for ITS and traffic control signal applications, except, use only HDPE with an SDR number less than or equal to 11 for blown fiber optic cable installations on limited access facilities.

Use HDPE with an SDR number less than or equal to 13.5, Schedule 80 PVC, or Schedule 40 PVC for underground installations of electrical conduit in earth for lighting applications and landscape irrigation applications.

Use HDPE with an SDR number less than or equal to 13.5, Schedule 80 PVC, Schedule 40 PVC, or rigid galvanized metal for underground installations of electrical conduit in concrete for lighting applications.

Use HDPE with an SDR number less than or equal to 11 for directional bores or Schedule 80 PVC for open trenching and conduits serving toll site vehicle detection loop pull boxes. Use the following for all underground toll site applications except for conduits serving vehicle detection loop pull boxes:

1. Rigid steel conduit coated with PVC or a bituminous coating extending 6 inches above finished grade for conduits entering or leaving the ground. Use threaded end and paint all exposed exterior conduit.

2. Rigid galvanized steel elbows and bends for HDPE and PVC conduit raceways longer than 200 feet in length or 2 inches trade size and larger.

Do not place more than the equivalent of three quarter bends or 270 degrees of bends, including the termination bends, between the two points of termination in the conduit, without a pull box. Obtain the Engineer's approval to use corrugated flexible conduits for short runs of 6 feet or less.

When a conduit installation changes from underground to above-ground, make the change a minimum of 6 inches below finished grade.

Install a No. 12 AWG pull wire or polypropylene cord inside the full length of all conduits. Ensure that a minimum of 24 inches of pull wire/cord is accessible at each conduit termination.

Ensure the conduit includes all required fittings and incidentals necessary to construct a complete installation.

When earth backfill and tamping is required, place backfill material as per Section 120 in layers approximately 12 inches thick, and tamp each layer to a density equal to or greater than the adjacent soil.

When backfilling trenches in existing pavement, use a flowable fill meeting the requirements of Section 121.

Provide a standard clearance between underground control cable and electrical service cable or another parallel underground electrical service cable that meets NESC requirements.

Prevent the ingress of water, dirt, sand, and other foreign materials into the conduit prior to, during, and after construction. Seal the ends of conduit after wiring is complete with a moisture resistant duct sealant that is designed for this specific application. Protect raceways containing #6 AWG or larger conductors with an insulating fitting, unless the conductors are separated from the fitting or raceway by substantial insulating material that is securely fastened in place. Install bushing bells on conduits that enter pull boxes and barrier wall junction boxes.

**SIGNAL CABLE – INSTALLATION REQUIREMENTS – NUMBER OF CONDUCTORS.
(REV 8-28-20) (1-22)**

SUBARTICLE 632-3.1 is deleted and the following substituted:

632-3.1 Number of Conductors: Determine the number of conductors required for each signal cable unless specified in the Contract Documents.

Provide four spare conductors for each mast arm (existing and/or installed) from the cabinet to the base of mast arm. Conductor of the signal cable(s) in the mast arm must be connected per Field Engineer's approval. Each signal head and pushbutton on the pedestrian signal pole must be connected to a separate signal cable or otherwise must be concurred with by the Field Engineer.

Identify all spare conductors in a controller cabinet and ground them to the controller cabinet ground bus bar. Provide spare conductors within the controller cabinet of sufficient length to reach the furthestmost field wiring terminals in the cabinet.

PULL, SPLICE, AND JUNCTION BOXES – MATERIALS – PULL AND SPLICE BOXES - DIMENSIONS.

(REV 7-29-21) (1-22)

SUBARTICLE 635-2.2.3 is deleted and the following substituted:

635-2.2.3 Dimensions: Unless otherwise shown in the Plans, provide pull and splice boxes with the following dimensions.

For signalized intersection and lighting applications, provide pull boxes with nominal cover dimensions of 13 inches wide by 24 inches long or larger and no less than 12 inches deep. Ensure the inside opening area is a minimum of 240 square inches and no inside dimension is less than 12 inches.

For Pull Boxes containing #4 AWG or larger conductors with splices or U pulls, the distance between raceway and the opposite wall of the box shall not be less than six times the trade size of the largest raceway in a row, increase the distance by adding the sum of the diameters of any additional raceways that are in a row. All wiring repairs and adjustments shall be performed by a qualified electrical contractor.

SUPPLEMENTAL SPECIFICATIONS

T670 - TRAFFIC CONTROLLER ASSEMBLY, MODIFY

T670-1 Description.

Modify existing traffic controller assembly includes, but is not limited to, all wiring, connections, inductive vehicle loop cable, and detector rack and interface panel jumper cables, according to the signal operating plan (SOP) on the signalization plan, from the terminal board to and including all controller units, interface panel, SDLC interface module or detector service interface, loop detector cards, detector expansion modules, preemptor, flashers, relays, coordinating units, radios, switches, service lead-ins, interconnect and any other equipment necessary to provide satisfactory operations to the existing controller cabinet. Reprogram the signal controller based on timing chart and for reassignment of detector assignments (including, but not limited to, pin number, attributes, and phases) to accommodate the loop detectors or detector output convention and traffic cabinets with or without detector rack crossover cables. Provide new conflict monitor program sheet and new hook-up chart, based on the SOP and timing chart and all modifications indicated above at existing cabinet installations. Furnish and install any associated controller items indicated in the Plans and any additional items needed for the existing controller assembly to be fully functional in the final signal configuration.

T670-2 Materials.

Use materials compatible with the existing traffic controller assembly.

T670-3 Construction Requirements.

T670-3.2 Field Wiring: Meet the requirements of Sections 632,660, and 676 of the FDOT Standard Specification.

T670-4 Method of Measurement.

The Contract unit price per assembly for traffic controller assembly, modify will include all materials, equipment, and hardware specified in the Contract Documents, and all work, labor, equipment, and miscellaneous materials necessary for a complete, functioning, and accepted installation.

T670-5 Basis of Payment.

Prices and payments will be full compensation for all work specified in this Section.

Payment will be made under:

Item No. 670- 5-400 Traffic Controller Assembly, Modify - per assembly.

**THIS COMPLETES
THIS
SPECIFICATIONS
PACKAGE**

PART 6

2022-23 FDOT STANDARD PLANS

SHEET	TABLE OF CONTENTS
1	General Notes, TTC Tables
2	Definitions Temporary Traffic Control Devices 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 Speed Reduction Signing
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 Signals Channelizing Devices Channelizing Devices Consistency 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:

- 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.
- Use this Index in accordance with the Plans and Indexes 102-601 through 102-680. Indexes 102-601 through 102-680 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.
- Except for emergencies, any road closure on State Highway System must comply with Section 335.15, F.S.

Work Zone Speed (mph)	Max. Spacing (feet)			
	Cones or Temporary Tubular Markers		Type I Barricades, Type II Barricades, Vertical Panels, or Drums	
	Taper	Tangent	Taper	Tangent
≤ 45	25	50	25	50
≥ 50	25	50	50	100

Work Zone Speed (mph)	Min. Length (feet)
≤ 40	$L = \frac{WS^2}{60}$
≥ 45	$L = WS$

Where: W = width of offset in feet
S = speed in mph

Road Type	Min. Spacing (feet)
Arterials and Collectors with Work Zone Speed ≤ 40 mph	200
Arterials and Collectors with Work Zone Speed ≥ 45 mph	500
Limited Access Roadways *	1,500

* For Limited access roadways with work zone speed ≤ 55 mph, the minimum spacing may be reduced in accordance with the MUTCD and as approved by the Engineer.

Work Zone Speed (mph)	Min. Length (feet)
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730

Note: When Buffer Length "B" cannot be attained due to geometric constraints, use the greatest length possible, but not less than 155 feet.

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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:

1. 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.

2. 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. Do not store temporary traffic control devices on the shoulder, sidewalk, or other roadway facility not affected by the work when work is suspended.

3. 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.

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.

OVERHEAD WORK: (Cont.)

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:

- 1. **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.
- 2. **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:

- 1. 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.
- 2. For aboveground hazards within a work zone the clear zone required should be based on the regulatory speed posted during construction.

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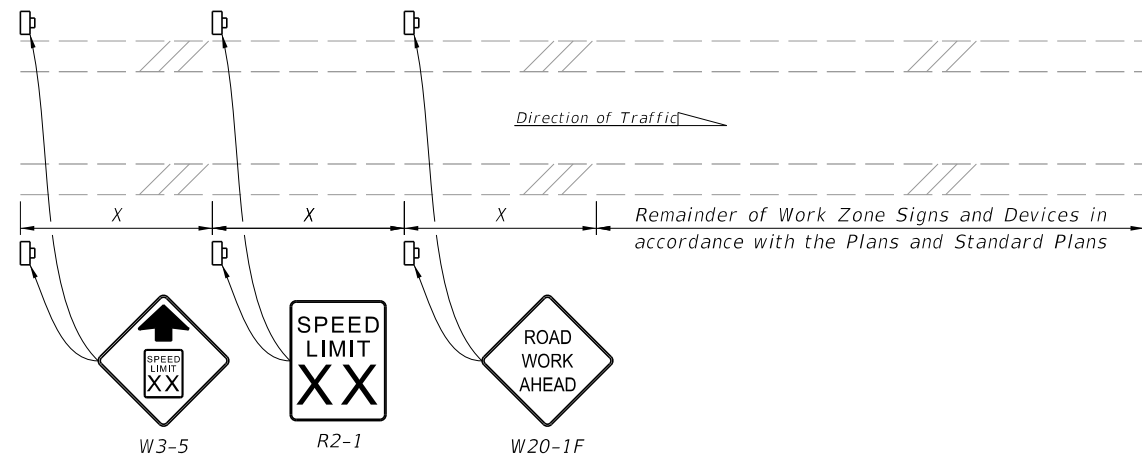
LAST REVISION 11/01/20	REVISION DESCRIPTION:	 FY 2022-23 STANDARD PLANS	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES	INDEX 102-600	SHEET 2 of 11
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CLEAR ZONE WIDTHS FOR WORK ZONES:

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.

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

NOTE: For temporary conditions where existing curb has been removed but not reconstructed, curb and gutter values may be used.



NOTES:

1. X = Work Zone Sign Spacing
2. When called for in the Plans, use this detail in accordance with the Plans and Standard Plans. Place the speed reduction signs (W3-5 and R2-1) in advance of the "Road Work Ahead" sign (W20-1F) as shown.
3. Do not use this detail in conjunction with the Motorist Awareness System.
4. For speed reductions greater than 10 MPH, reduce the speed in 10 MPH increments of 'X' distance. Do not reduce the speed below the minimum statutory speed for the class of facility.
5. Place additional "Speed Limit" signs (R2-1) at intervals of no more than one mile for rural conditions and 1,000 feet for urban conditions.
6. For undivided roadways, omit the signs shown in the median.
7. Remove temporary regulatory speed signs 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.

SPEED REDUCTION SIGNING

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.

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	

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. Provide minimum widths for work zone travel lanes 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 all other limited access roadways; 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, Flagger shall wear ANSI/ISEA Class 2 apparel. For nighttime activities, Flagger shall wear ANSI/ISEA Class 3 apparel.

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.

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FLAGGER CONTROL:

Regulatory Speed (In Work Zones)

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 area so that approaching road users will have sufficient distance to stop before entering the work area. 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.

SURVEY WORK ZONES: (Cont.)

(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-retroreflective vinyl signs may only be used for daylight operations. Non-retroreflective 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.

SIGNS: (Cont.)

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.


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

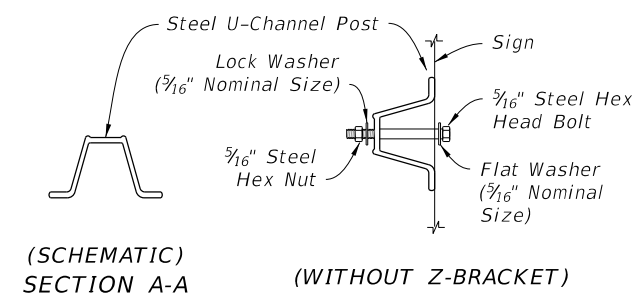
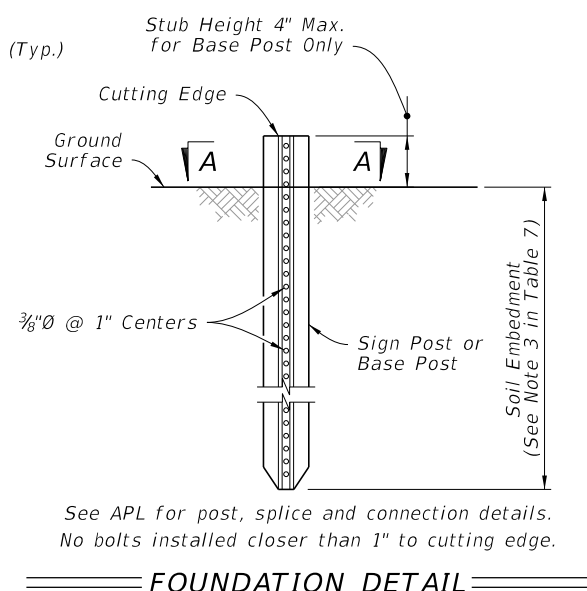
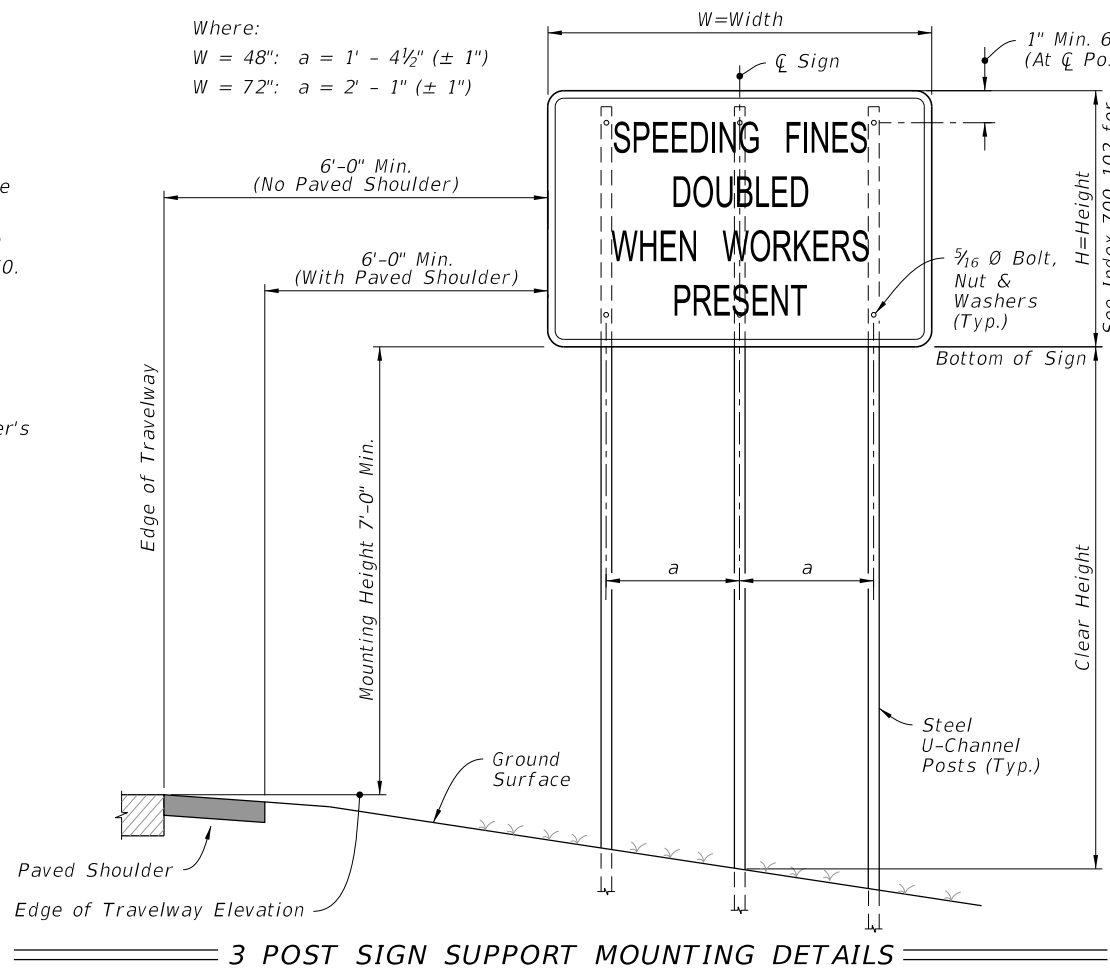
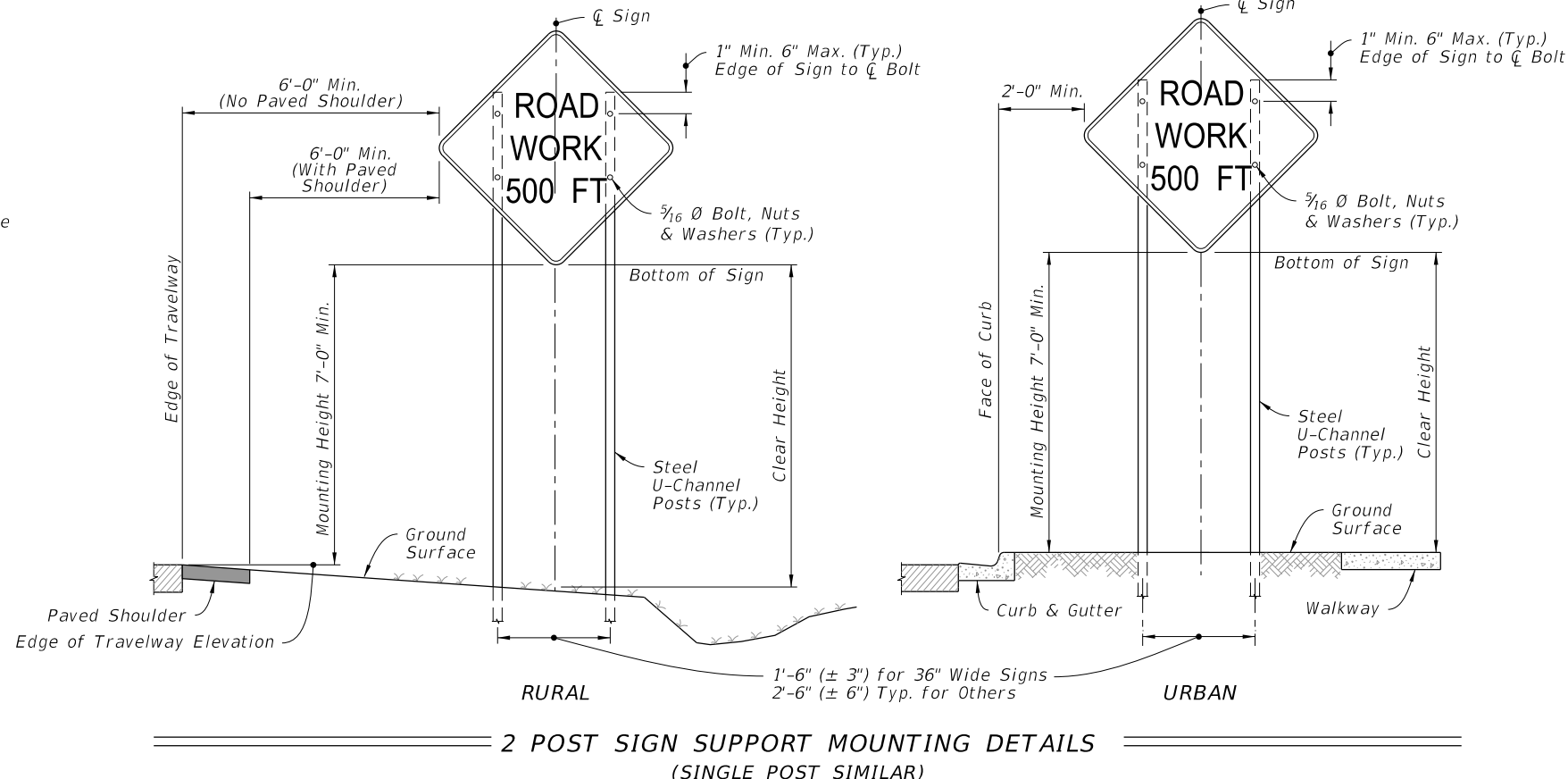
The END ROAD WORK sign (G20-2) should be installed on all projects, but may be omitted where the work operation is less than 1 day. The sign should be placed approximately 500 feet beyond the end of a construction or maintenance project unless other distance is called for in the plans. When other Construction 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.

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NOTES:

- All signs shall be post mounted when work operations exceed one day except for:
 - Road closure signs mounted in accordance with the vendor drawing for the Type III Barricade shown on the APL.
 - Pedestrian and bicycle advanced warning or pedestrian regulatory signs mounted on sign supports in accordance with the vendor drawing shown on the APL.
 - Median barrier mounted signs per Index 700-013.
 - Bridge mounted signs per Index 700-012.
- 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).
- Use only approved systems listed on the Department's Approved Products List (APL).
- 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.
- 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.
- 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.
- 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.
- Sign attachment bolts, washers, nuts, and spacers shall conform with ASTM A307 or A 36.
- Install 4 lb/ft Steel U-Channel Posts with approved breakaway splice in accordance with the manufacturer's detail shown on the APL.
- 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.
- Install all posts plumb.
- 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.

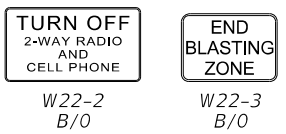
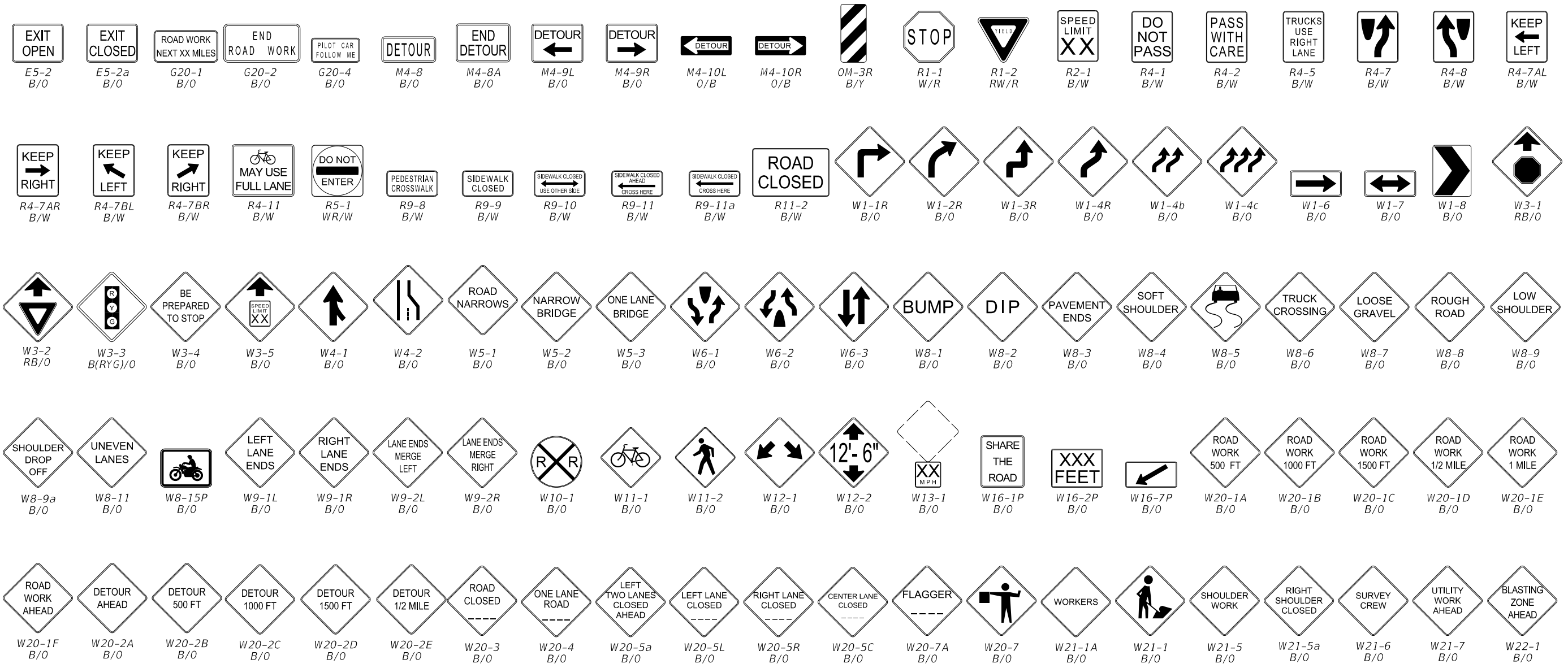


**TABLE 7
POST AND FOUNDATION
TABLE FOR
WORK ZONE SIGNS**

SIGN SHAPE	SIGN SIZE (Inches)	NUMBER OF STEEL U CHANNEL POSTS
Octagon	30x30	1
	36x36x36	1
Triangle	48x48x48	1
	60x60x60	2
	24x18	1
Rectangle (W x H)	24x30	1
	30x24	1
	36x18	1
	36x24	1
	48x18	1
	48x24	1
	36x48	2
	48x30	2
	48x36	2
	54x36	2
	48x60	3
Square	30x30	1
	36x36	2
	48x48	2
Diamond	48x48	2
Circle	36Ø	2

- Notes For Table:**
- Use 3 lb/ft posts for Clear Height up to 10' and 4 lb/ft posts for Clear Height up to 12'.
 - Minimum foundation depth is 4.0' for 3 lb/ft posts and 4.5' for 4 lb/ft posts.
 - 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.
 - 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.
 - 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).

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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 (TCZ.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.

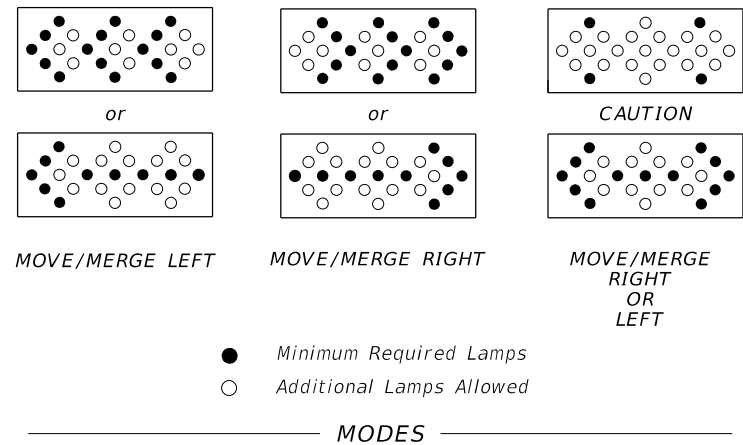
COLOR CODES:

- Legend and/or Symbol Background
- R-Red (Reflectorized)
 - Y-Yellow (Reflectorized)
 - G-Green (Reflectorized)
 - O-Orange (Reflectorized)
 - B-Black (Non-Reflectorized)
 - W-White (Reflectorized)

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COMMONLY USED WARNING AND REGULATORY SIGNS IN WORK ZONES

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NOTES:

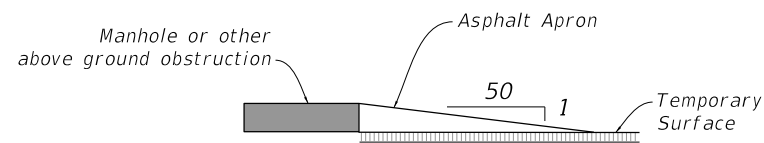
An arrow board in the arrow or chevron mode shall be used only for stationary or moving lane closures on multilane roadways.

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.

ADVANCE WARNING ARROW BOARDS



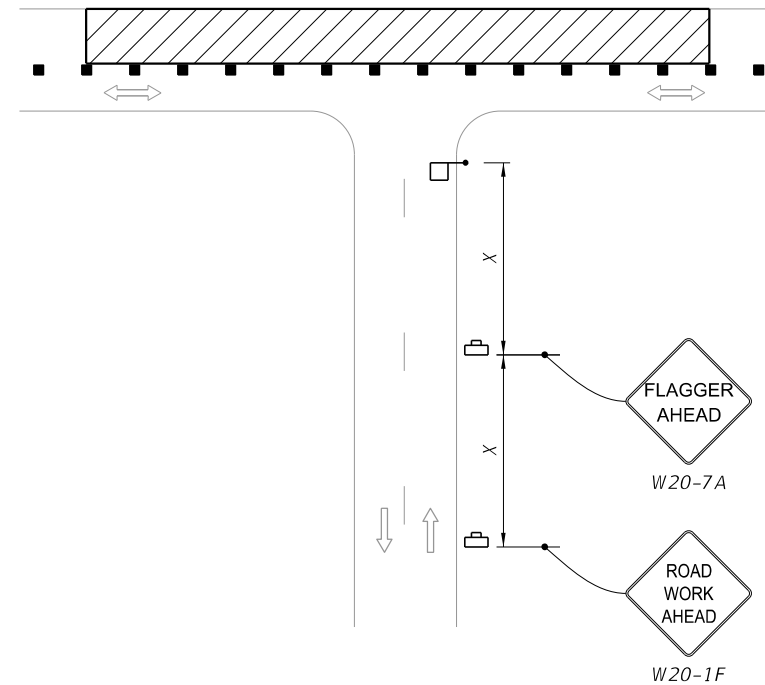
NOTES:

Manholes extending 1" or more above the travel lane and crosswalks having an uneven surface greater than 1/4" shall have a temporary asphalt apron constructed as shown above.

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

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.

MANHOLES/CROSSWALKS/JOINTS



NOTE:

Optionally, use "Flagger Ahead" sign with text (W20-7A) instead of "Flagger Ahead" sign with symbol (W20-7).

SIDE ROAD INTERSECTING THE WORK ZONE

SIGNALS:

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

Refer to Specification 102-9 for additional information.

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. Omit tapers and channelizing devices for paved shoulders less than 4' in width.

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.

TRUCK/TRAILER-MOUNTED ATTENUATORS:

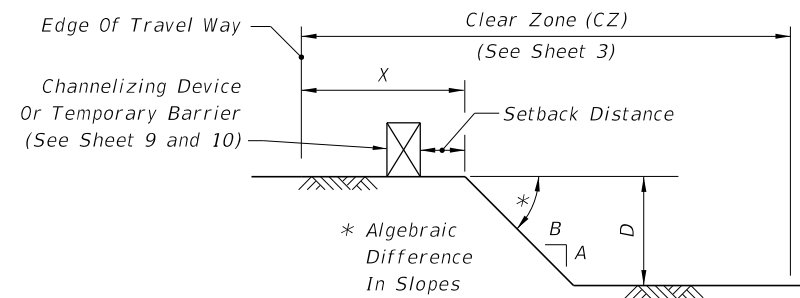
Truck/Trailer-mounted attenuators (TMA) can be used for moving operations and short-term stationary operations. For moving operations, see Index 102-607. For short-term, stationary operations, see Part VI of the MUTCD.

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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 8). 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, LS. 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 8, 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 $\geq 6"$, no channelizing device will be required. For curb heights $< 6"$, see Table 8.



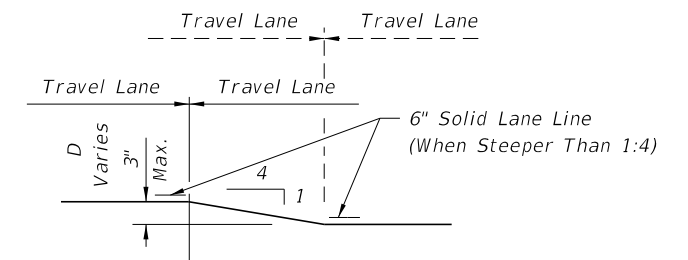
DROP-OFF CONDITION DETAIL

**Table 8
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 1/2 mile maximum.
3. If D is 1 1/2" 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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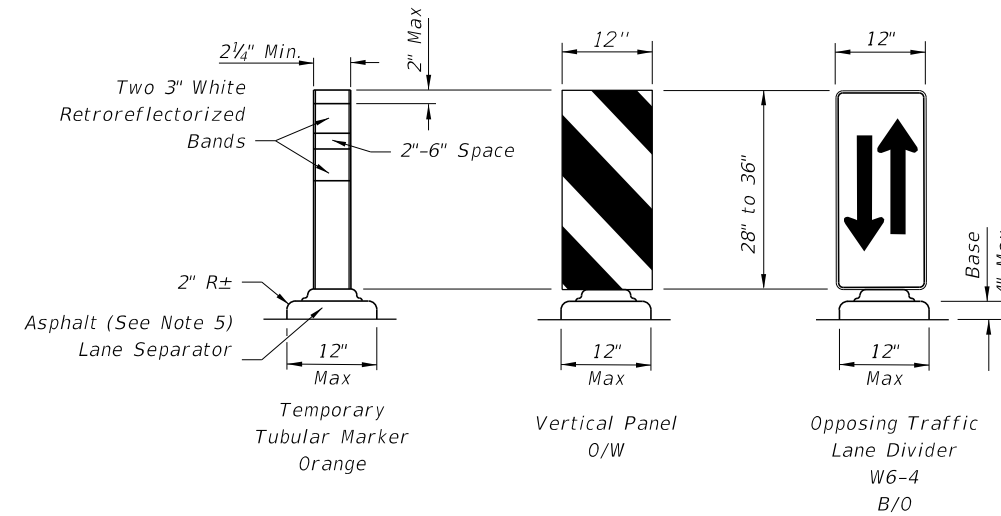
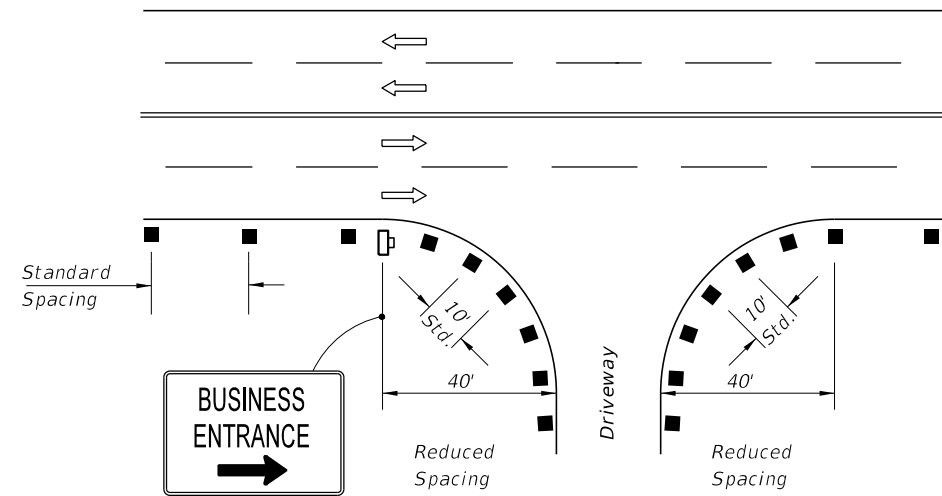
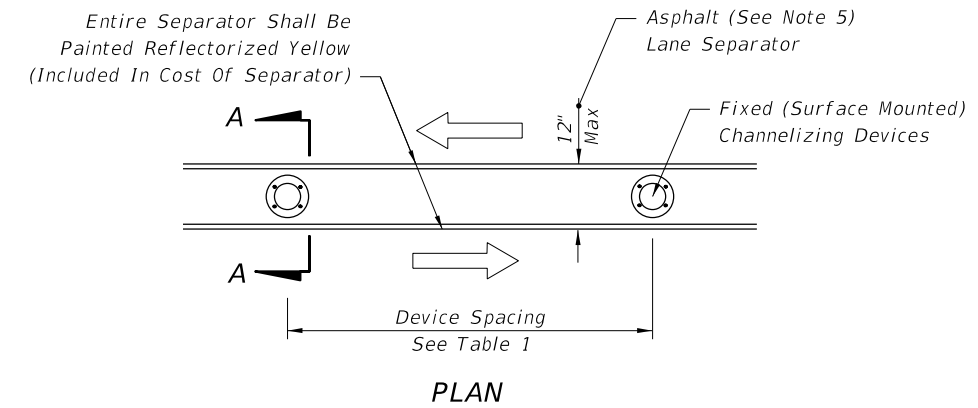


**FY 2022-23
STANDARD PLANS**

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

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FIXED (SURFACE MOUNTED) CHANNELIZING DEVICES

SECTION AA

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.

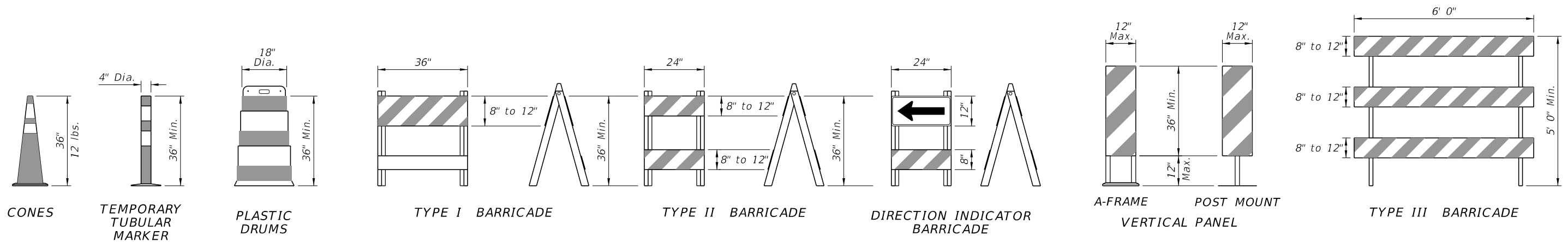
PLACEMENT OF BUSINESS ENTRANCE SIGNS AND CHANNELIZING DEVICES AT BUSINESS ENTRANCE

1. Temporary lane separators shall be supplemented with any of the following approved fixed (surface mounted) channelizing devices: temporary 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. Temporary 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.

TEMPORARY LANE SEPARATOR

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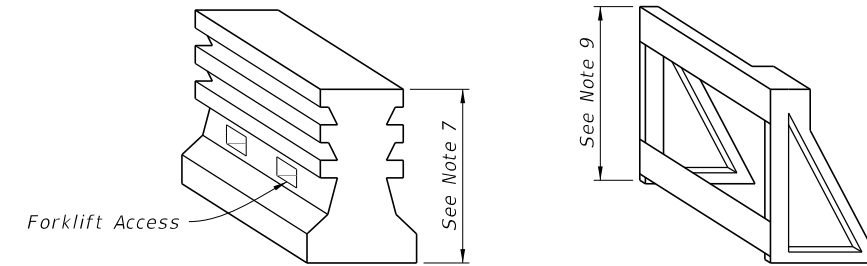
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CHANNELIZING DEVICES

CHANNELIZING DEVICE NOTES:

- The details shown on this sheet are for the following purposes:
 - For ease of identification and
 - To provide information that supplements or supersedes that provided by the MUTCD.
- 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.
- 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).
- Ballast shall not be placed on top rails or any striped rails or higher than 13" above the driving surface.
- 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.
- The splicing of sheeting is not permitted on channelizing devices or MOT signs.
- For rails less than 3'-0" long, 4" stripes shall be used.
- Cones shall:
 - Be used only in active work zones where workers are present.
 - Be reflectorized as per the MUTCD with Department-approved reflective collars when used at night.
- 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.



PEDESTRIAN LONGITUDINAL CHANNELIZING DEVICES

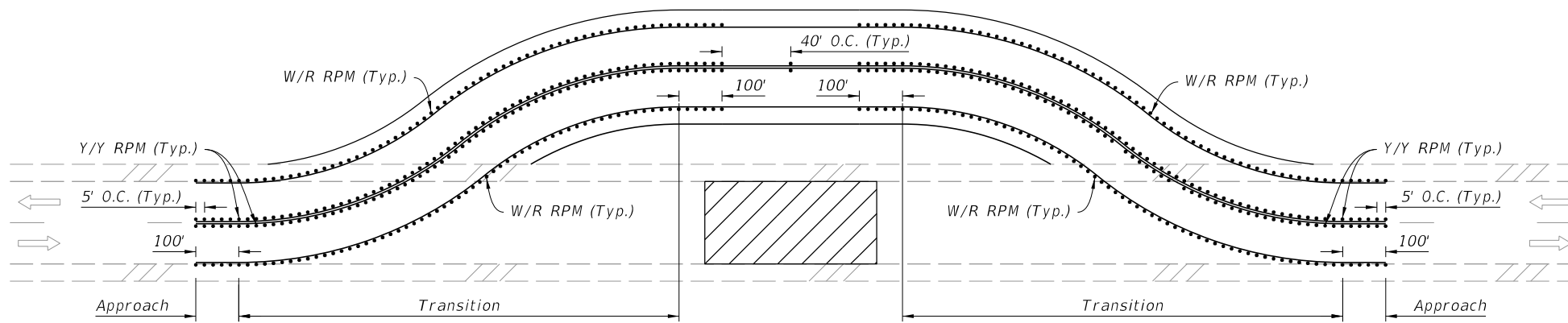
TEMPORARY BARRIER NOTES:

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

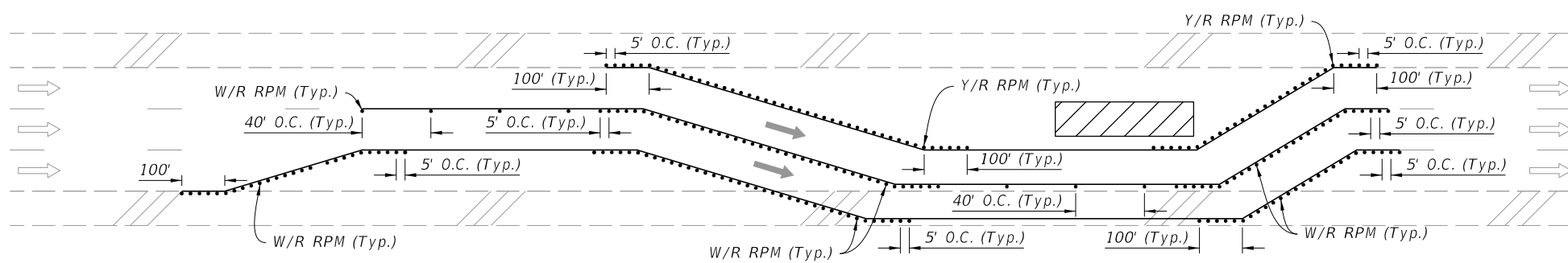
Index	Description
102-100	Temporary Barrier
102-120	Low Profile Barrier
536-001	Guardrail

- 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.

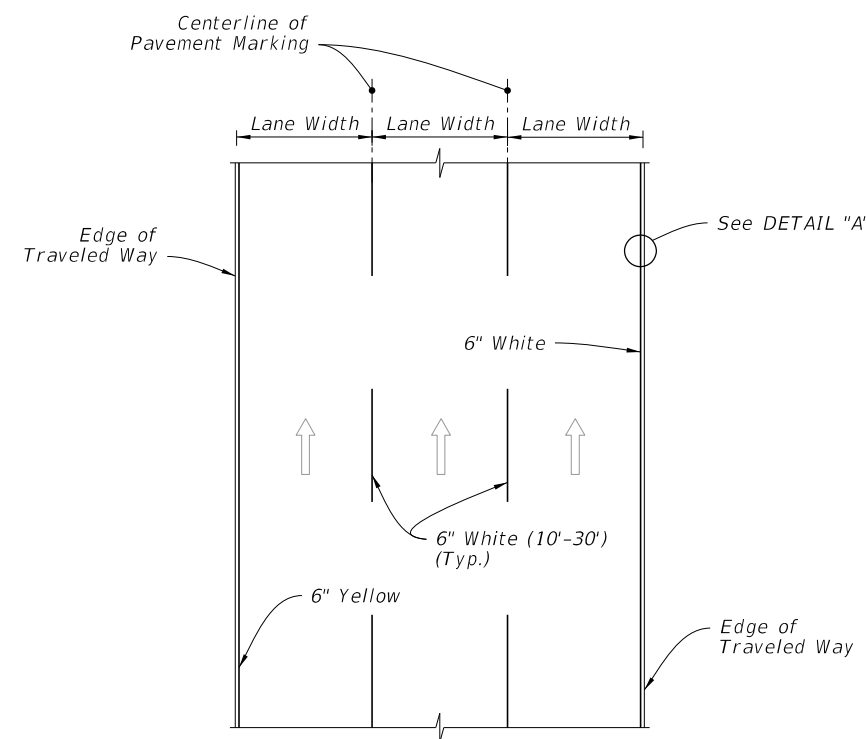
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RPM PLACEMENT ON TWO-LANE ROADWAYS



RPM PLACEMENT ON MULTILANE ROADWAYS
(Lane Shift Shown, Other Multilane Typical Applications Similar)



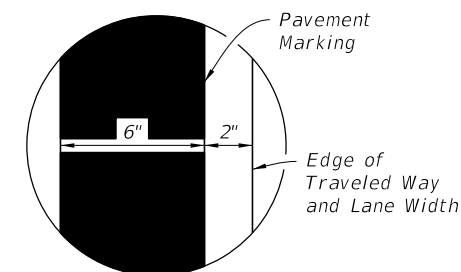
PLAN VIEW

NOTES:

1. Install RPMs as a supplement to:
 - a. All lane lines
 - b. Edge lines in transitions (e.g., merges, diversions, lane shifts)
 - c. Edge lines of gore areas
2. Extend pavement marking and 5' RPM spacing by 100' in each direction for all transitions regardless of the line type.
3. Place RPMs in accordance with this detail and Index 706-001.

SYMBOLS:

-  Work Area
-  Lane Identification and Direction of Traffic




DETAIL "A"

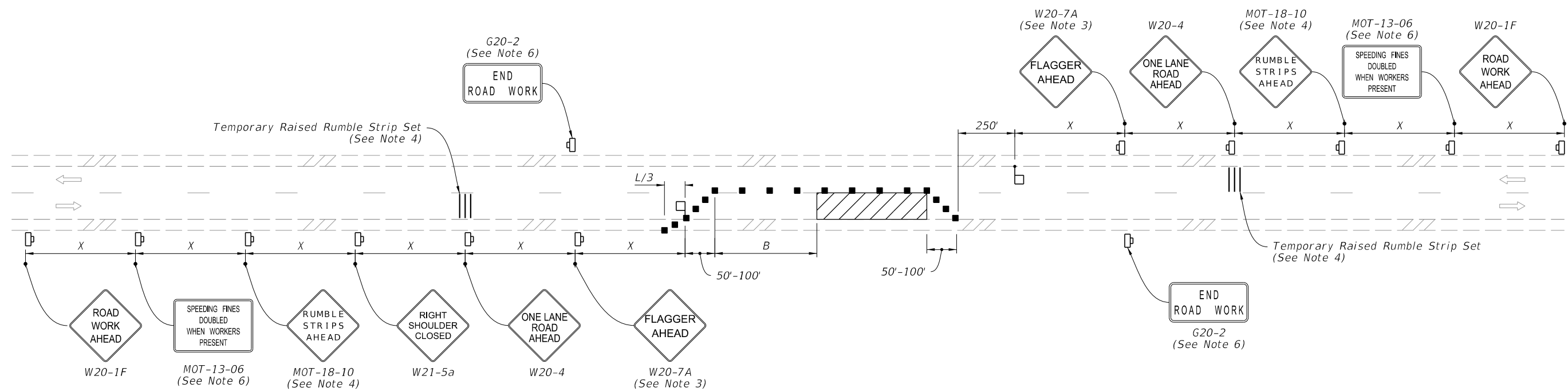
RPM PLACEMENT IN WORK ZONES

PAVEMENT MARKINGS PLACEMENT

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WORK ZONE PAVEMENT MARKINGS



NOTES:

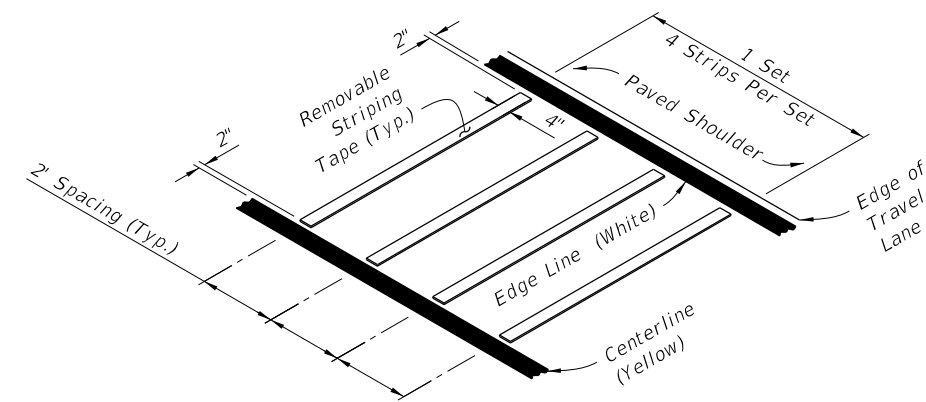
1. This Index applies to Two-Lane, Two-Way Roadways with work within the traveled way.
2. L = Taper Length
B = Buffer Length
X = Work Zone Sign Spacing
See Index 102-600 for "L", "B", "X" and channelizing device spacing values.
3. Optionally, use "Flagger Ahead" sign with symbol (W20-7) instead of "Flagger Ahead" sign with text (W20-7A).
4. Use temporary raised rumble strips when the existing posted speed is 55 mph or greater and the work duration is greater than 60 minutes. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing.
5. Additional one-way control may be provided by the following means:
 - a. Flag-carrying vehicle
 - b. Official vehicle
 - c. Pilot vehicles
 - d. Traffic signals

When flaggers are the sole means of one-way control, the flaggers must be in sight of each other or in direct communication at all times.

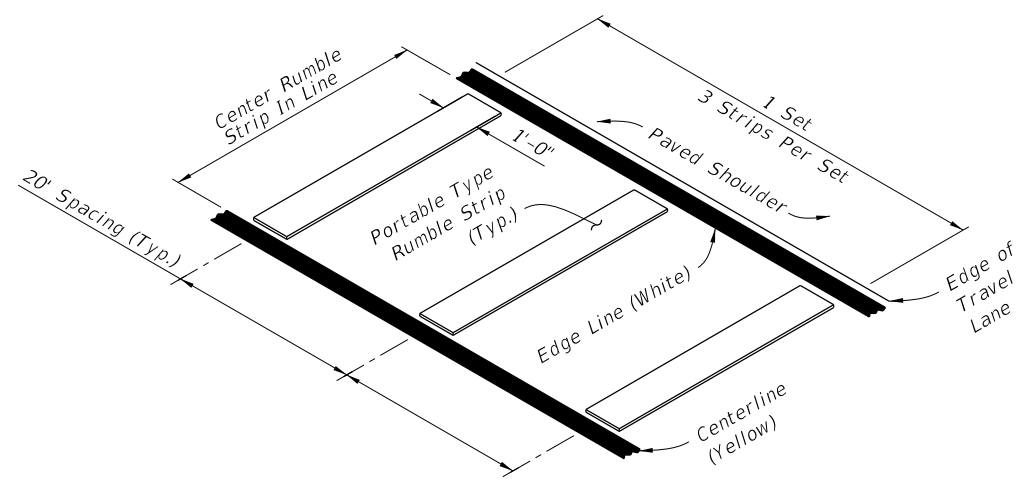
SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Flagger
- Lane Identification and Direction of Traffic

6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing, may be omitted when the work operation will be in place for 24 hours or less.
7. Automated Flagger Assistance Devices (AFADs) may be used in accordance with Specification Sections 102, 990 and the APL vendor drawings.
8. Railroad Crossings:
 - a. If an active railroad crossing is located closer to the Work Area than the queue length plus 300 feet, extend the Buffer Space as shown on Sheet 2.
 - b. If the queuing of vehicles across an active railroad crossing cannot be avoided, provide a uniformed traffic control officer or flagger at the highway-rail grade crossing to prevent vehicles from stopping within the highway-rail grade crossing, even if automatic train warning devices are in place.



**OPTION - 1
REMOVABLE STRIPING TYPE**

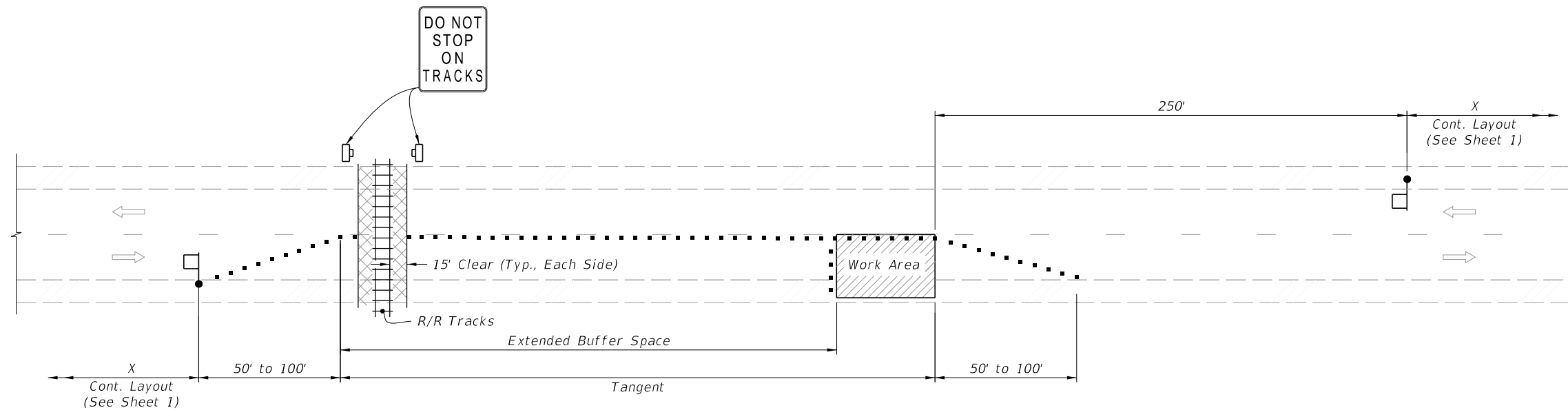


**OPTION - 2
PORTABLE TYPE**

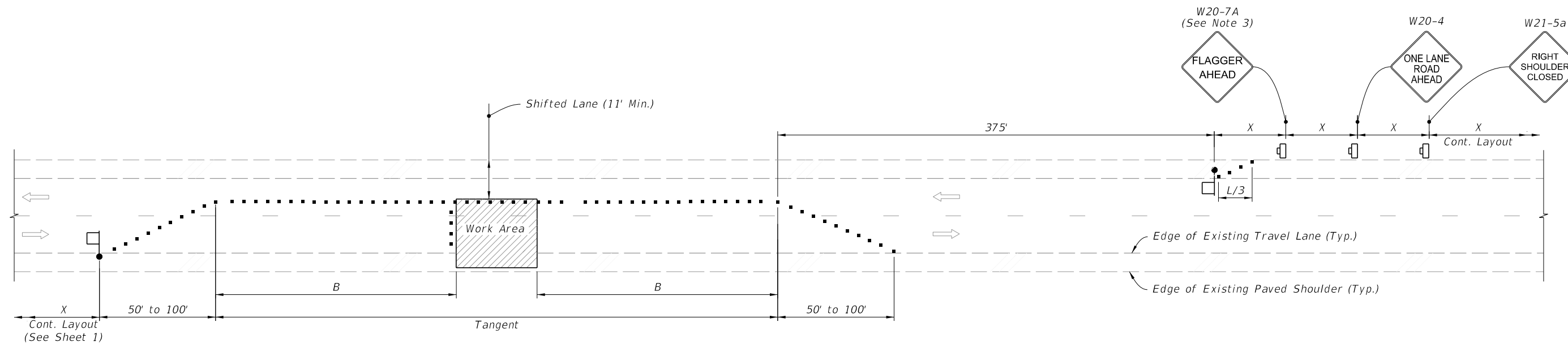
RUMBLE STRIP SETS

9/23/2021 2:41:17 PM

LAST REVISION 11/01/21	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	TWO-LANE, TWO-WAY WORK WITHIN THE TRAVEL WAY	INDEX 102-603	SHEET 1 of 2
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




TEMPORARY RAILROAD CROSSING BUFFER SPACE EXTENSION




TEMPORARY LANE SHIFT TO SHOULDER WHEN WORK AREA ENCROACHES ON THE CENTERLINE
(For Work Operations In place 24 Hours or Less)

SYMBOLS:

-  Work Area
-  Channelizing Device (See Index 102-600)
-  Work Zone Sign
-  Flagger
-  Lane Identification and Direction of Traffic

SPECIAL CONDITIONS







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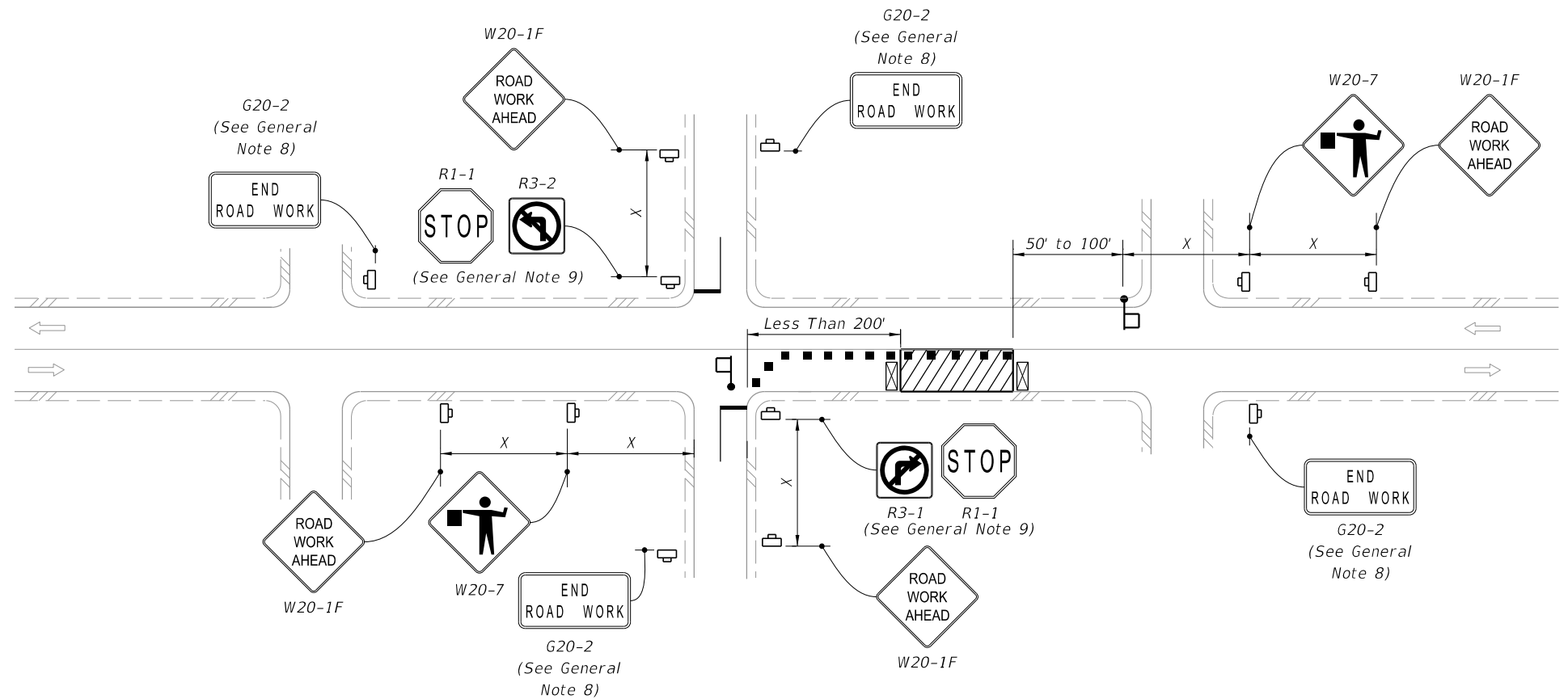
LAST REVISION 11/01/21	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	TWO-LANE, TWO-WAY WORK WITHIN THE TRAVEL WAY	INDEX 102-603	SHEET 2 of 2
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GENERAL NOTES:

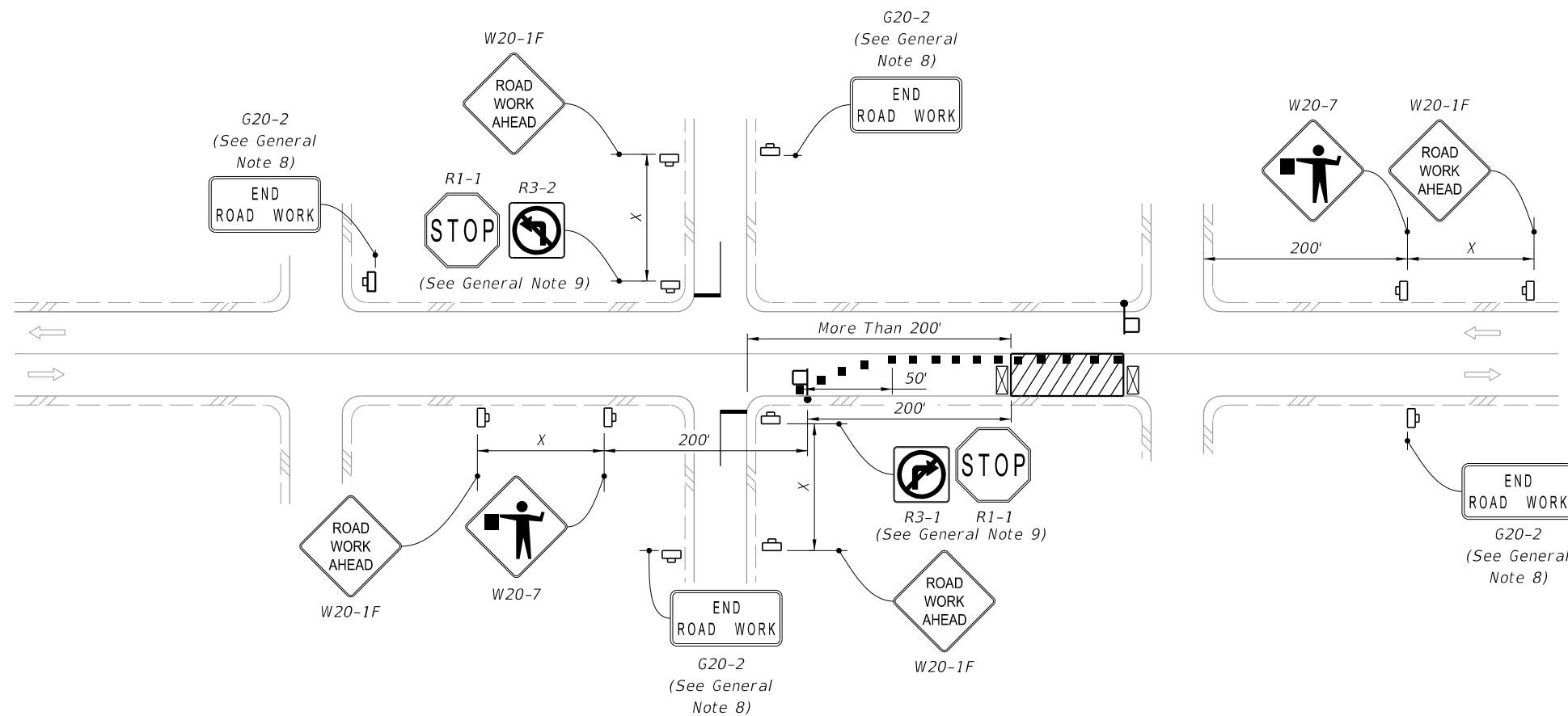
1. This Index applies to two-lane, two-way roadways with work within or near the intersection.
2. X = Work Zone Sign Spacing
See Index 102-600 for "X" and channelizing device spacing values.
3. Optionally, use "Flagger Ahead" sign with text (W20-7A) instead of "Flagger Ahead" sign with symbol (W20-7).
4. If vehicles in a parking zone block the line of sight to TCZ signs, locate and post mount signs in accordance with Index 700-101.
5. If the work area extends across a crosswalk, close the crosswalk in accordance with Index 102-660.
6. District Traffic Operations Engineer must approve temporary signal phasing modifications prior to beginning of work
7. For unsignalized intersections, use Temporary Raised Rumble Strips in accordance with Index 102-603. Placement of Rumble Strips and additional signs should begin at FLAGGER sign location.
8. The "End Road Work" signs (G20-2) along with the associated work zone sign distances may be omitted when the work zone will be in place for 24 hours or less.
9. As an option to the "STOP" sign (R1-1) and Restricted Left/Right Turning Movement sign (R3-1 or R3-2), the "SIDE ROAD INTERSECTING THE WORK ZONE" flagging operation from Index 102-600 may be used.

SYMBOLS:

-  Work Area
-  Channelizing Device (See Index 102-600)
-  Work Zone Sign
-  Type III Barricade
-  Stop Bar
-  Flagger
-  Lane Identification and Direction of Traffic




LANE CLOSURE FOR WORK LESS THAN 200' FROM INTERSECTION

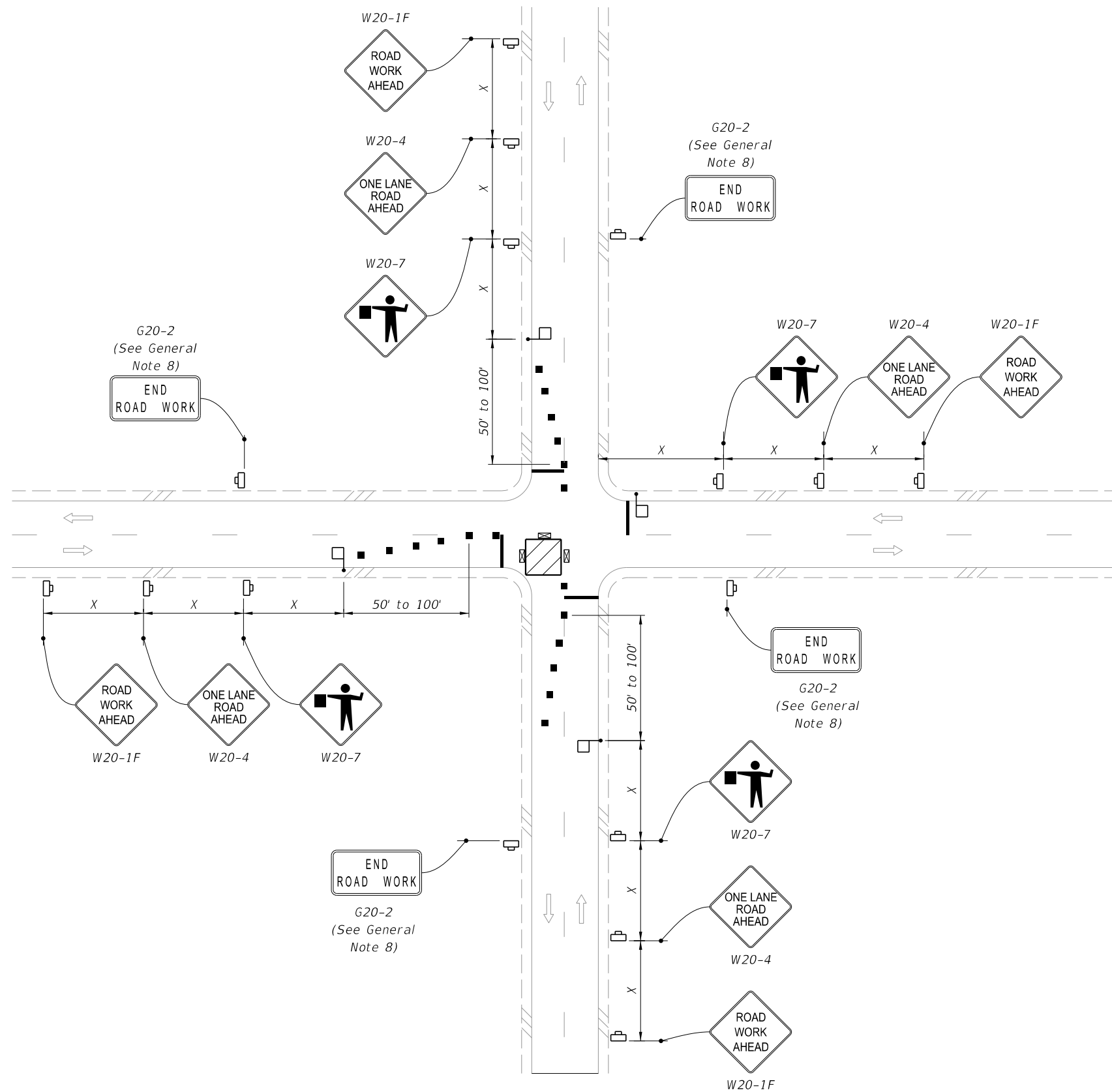


LANE CLOSURE FOR WORK MORE THAN 200' FROM INTERSECTION





9/21/2021 12:17:57 PM

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	TWO-LANE, TWO-WAY, INTERSECTION WORK	INDEX 102-604	SHEET 1 of 2
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12:17:58 PM
9/21/2021



SYMBOLS:

-  Work Area
-  Channelizing Device (See Index 102-600)
-  Work Zone Sign
-  Type III Barricade
-  Stop Bar
-  Flagger
-  Lane Identification and Direction of Traffic

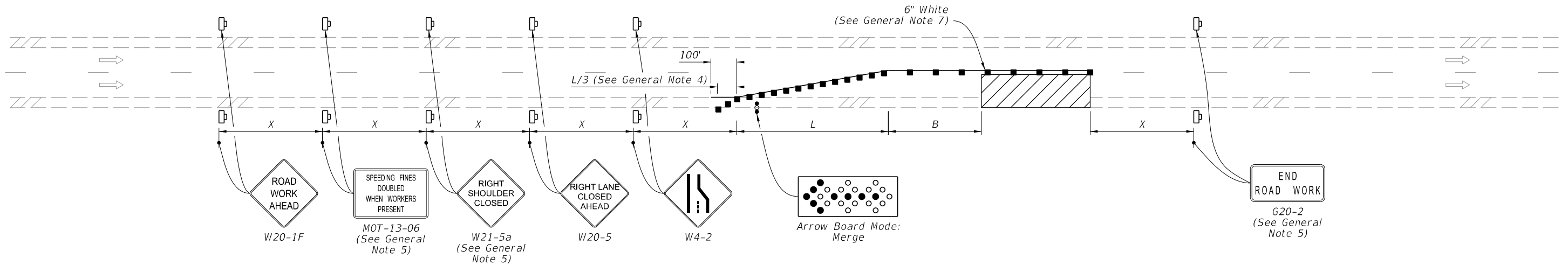
WORK IN INTERSECTION OF TWO-LANE ROADWAY

LAST REVISION 11/01/21	REVISION	DESCRIPTION:
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**FY 2022-23
STANDARD PLANS**

TWO-LANE, TWO-WAY, INTERSECTION WORK

INDEX 102-604	SHEET 2 of 2
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SINGLE LANE CLOSURE

SYMBOLS:

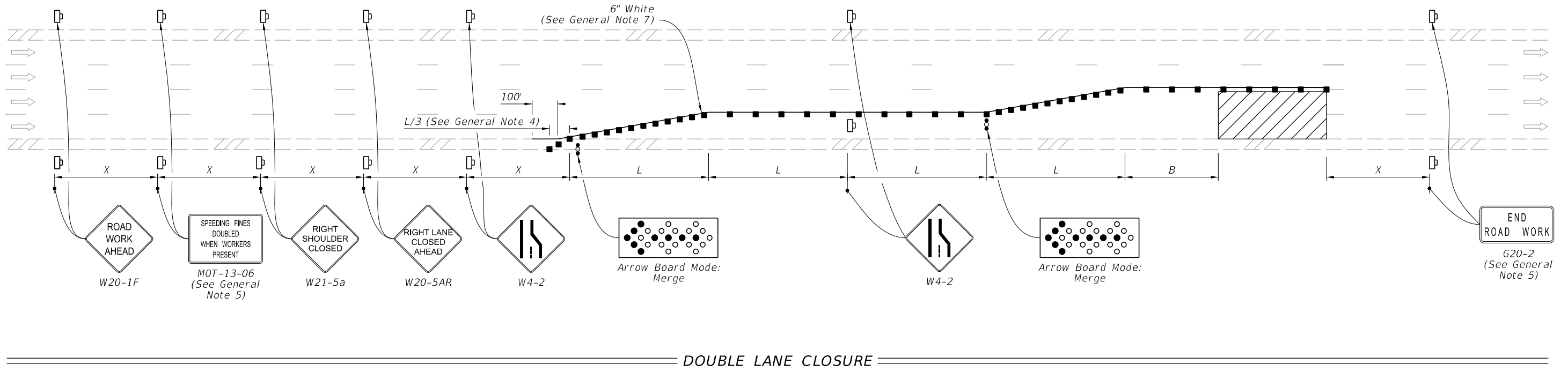
- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Arrow Board
- Lane Identification and Direction of Traffic

GENERAL NOTE:






1. L = Taper Length
 B = Buffer Length
 X = Work Zone Sign Distance
 See Index 102-600 for " L ", " B ", " X ", and channelizing device spacing values.
2. On undivided highways the median signs as shown are to be omitted.
3. On limited access facilities, omit "Right Shoulder Closed" signs (W21-5a) and associated work zone sign spacing distances.
4. If the paved shoulder is less than 4' in width, omit the taper and channelizing devices from the paved shoulder.
5. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2) and "Right Shoulder Closed" (W21-5a), along with associated work zone sign distances, may be omitted when the work operation will be in place for 24 hours or less. For Single Lane Closures, arrow boards and buffer (B) may also be omitted when the work operation will be in place for 60 minutes or less and the speed limit is 45 mph or less.
6. Use inverted plan of the illustrations for work on left side of roadways.
7. Temporary pavement markings may be omitted when the work operation is in place for 3 days or less.

12/16/2021 7:13:18 AM


LAST REVISION 11/01/21	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	MULTILANE ROADWAY, LANE CLOSURES	INDEX 102-613	SHEET 1 of 5
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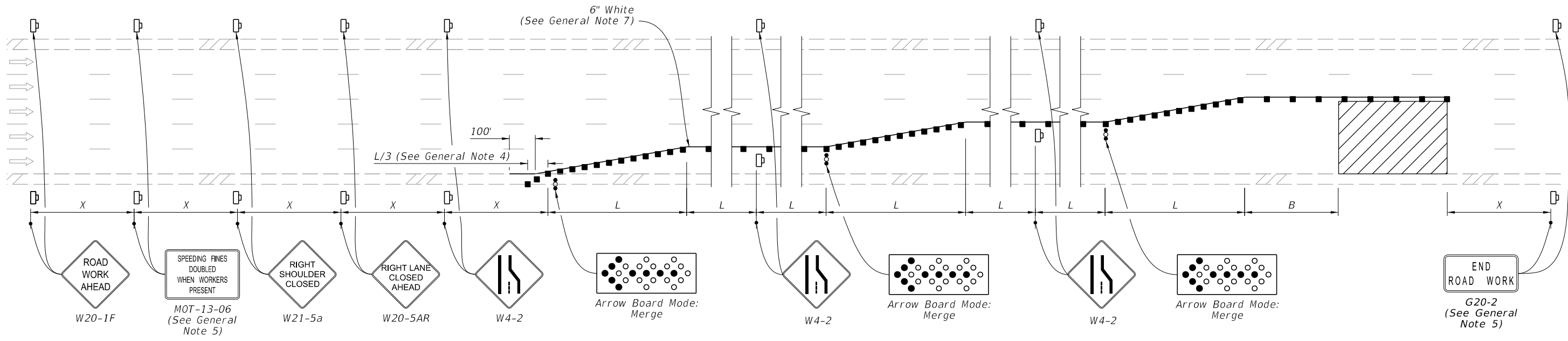


SYMBOLS:

-  Work Area
-  Channelizing Device (See Index 102-600)
-  Work Zone Sign
-  Arrow Board
-  Lane Identification and Direction of Traffic






12/16/2021 7:13:19 AM

LAST REVISION 11/01/20	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	MULTILANE ROADWAY, LANE CLOSURES	INDEX 102-613	SHEET 2 of 5
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TRIPLE LANE CLOSURE

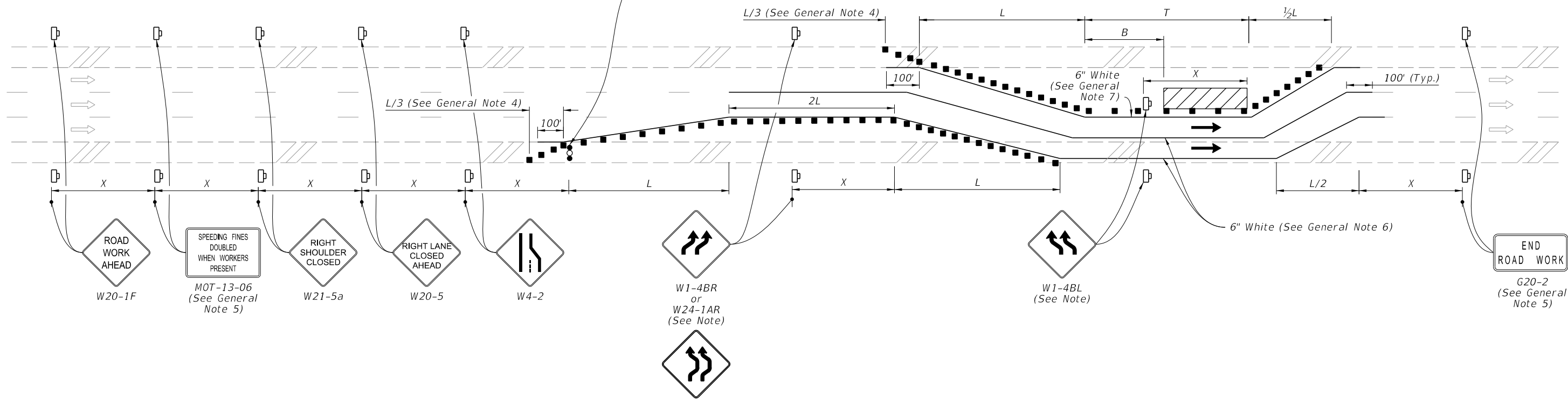
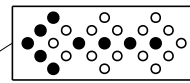
SYMBOLS:

-  Work Area
-  Channelizing Device (See Index 102-600)
-  Work Zone Sign
-  Arrow Board
-  Lane Identification and Direction of Traffic

12/16/2021 7:13:19 AM

LAST REVISION 11/01/20	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	MULTILANE ROADWAY, LANE CLOSURES	INDEX 102-613	SHEET 3 of 5
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Arrow Board Mode:
Merge



LANE CLOSURE WITH LANE SHIFT

NOTE:

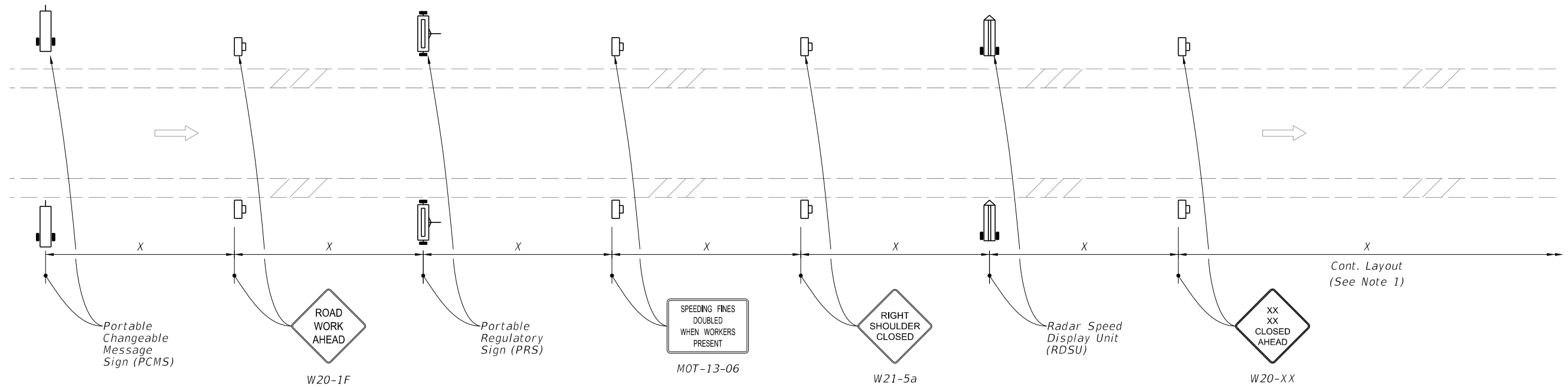
If the tangent distance "T" is less than 600', then use "Double Reverse Curve" signs (W24-1A) instead of the first pair of "Reverse Curve" signs (W1-4B) and omit the second pair of "Reverse Curve" signs.

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Arrow Board
- Lane Identification and Direction of Traffic






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LAST REVISION 11/01/20	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	MULTILANE ROADWAY, LANE CLOSURES	INDEX 102-613	SHEET 4 of 5
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MOTORIST AWARENESS SYSTEM

SYMBOLS:

-  Work Zone Sign
-  (1) PCMS= Portable Changeable (Variable) Message Sign
-  (2) PRS= Portable Regulatory Sign-Speed Limit When Flashing
-  (2) RDSU= Radar Speed Display Unit
-  Lane Identification and Direction of Traffic


NOTES:

1. Use the Motorist Awareness System (MAS) for lane closures of at least 5 days (consecutive or not) on multilane divided facilities with a posted speed of 55 or greater when workers are present and not protected by a barrier.
2. Locate the Motorist MAS devices (i.e., PCMS, PRS, and RDSU) within the advance warning signs as shown. Continue with the remainder of the work zone signs and devices in accordance with the Plans or Standard Plans after the appropriate "Lane Closed Ahead" (W20-XX) sign.
3. For a posted speed of 65 mph or greater, display speed with a ten mph reduction. For a posted speed of 60 mph, display a reduced speed of 55 mph. For areas outside of the lane closure, use the posted speed as the work zone speed.
4. Omit the PCMS in the median for roadways with three lanes or less in the same direction of traffic.

TYPICAL PCMS DISPLAY:

- With speed reduction:
 Message 1: WORKERS PRESENT AHEAD
 Message 2: SPEED REDUCED NEXT XXMI
- Without speed reduction:
 Message 1: WORKERS PRESENT AHEAD
 Message 2: NEXT XX MILES




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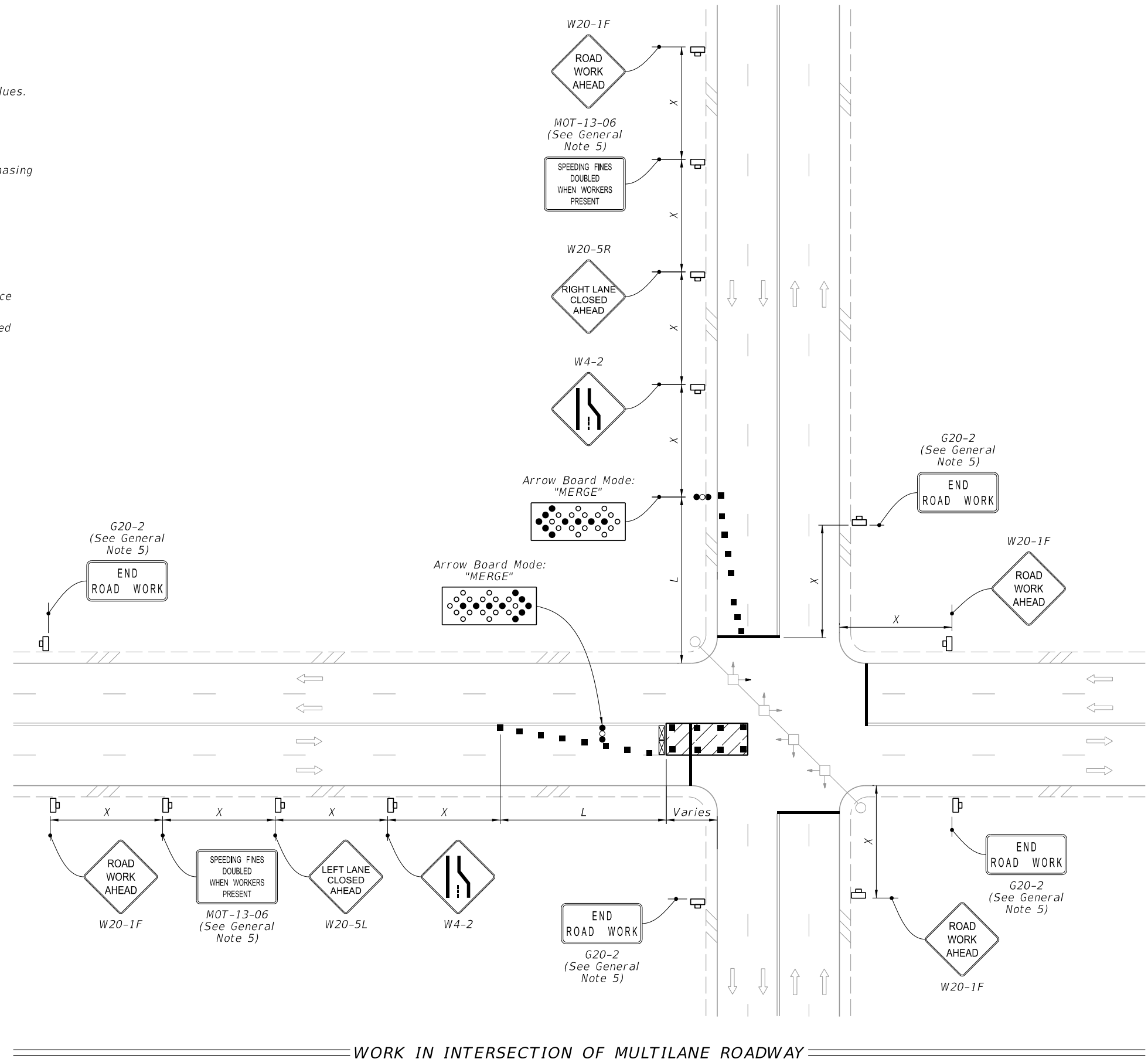
LAST REVISION 11/01/21	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	MULTILANE ROADWAY, LANE CLOSURES	INDEX 102-613	SHEET 5 of 5
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GENERAL NOTES:

1. L = Taper Length
 B = Buffer Length
 X = Work Zone Sign Distance
 See Index 102-600 for "L", "B", "X", and channelizing device spacing values.
2. If vehicles in a parking zone block the line of sight to TCZ signs, locate and post mount signs in accordance with Index 700-101.
3. District Traffic Operations Engineer must approve temporary signal phasing modifications prior to beginning of work.
4. Use temporary "STOP" sign (R1-1) where the existing stop bar is more than 30' from the taper, remove or cover existing sign.
5. The "Speeding Fines Doubled When Workers Present" sign (MOT-13-06) and "End Road Work" Sign (G20-2), along with associated Work Zone Sign Sign Distances, may be omitted when the work operation will be in place for 24 hours or less. Additionally, arrow boards may be omitted when the work operation will be in place for 60 minutes or less and the speed limit is 45 mph or less.
6. If the work area extends across a crosswalk, close the crosswalk in accordance with Index 102-660.
7. Dual signs are required for divided roadways.

SYMBOLS:

-  Work Area
-  Channelizing Device (See Index 102-600)
-  Work Zone Sign
-  Type III Barricade
-  Arrow Board
-  Stop Bar
-  Lane Identification and Direction of Traffic



WORK IN INTERSECTION OF MULTILANE ROADWAY

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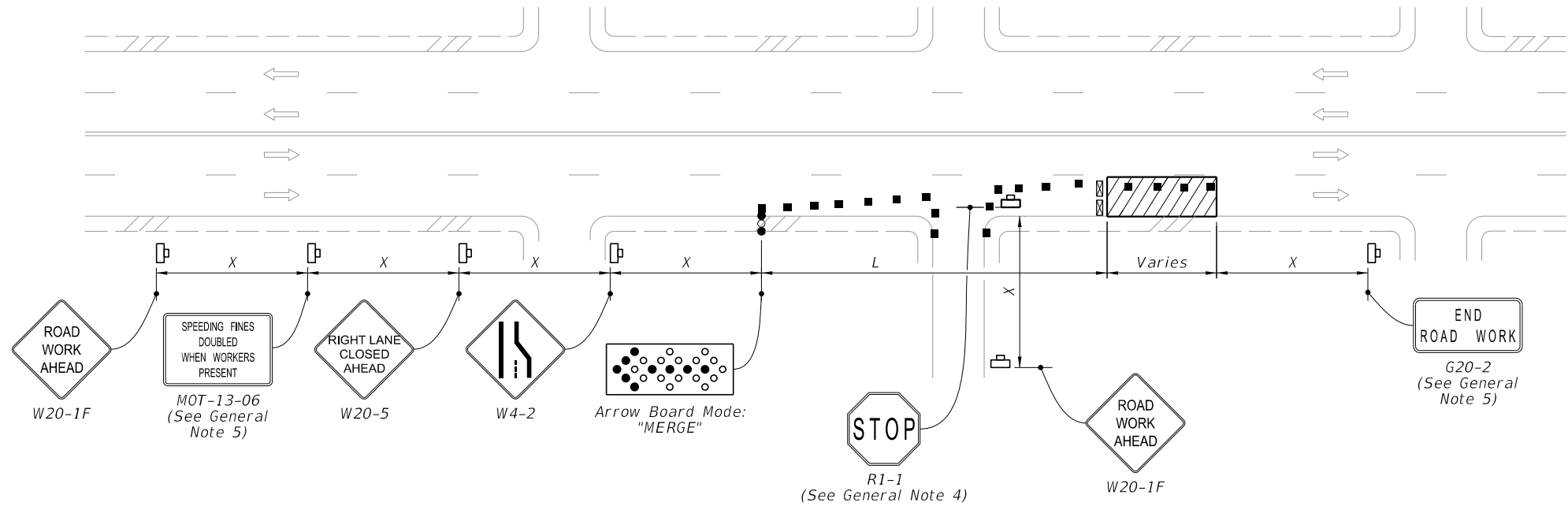
LAST REVISION 11/01/21	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	MULTILANE ROADWAY, INTERSECTION WORK	INDEX 102-615	SHEET 1 of 5
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NOTES:

Confine work operations to the following lane or lane combinations:

- a. Outside travel lane
- b. Outside auxiliary lane
- c. Outside travel lane and adjoining auxiliary lane
- d. Inside travel lane
- e. Inside auxiliary lane
- f. Inside travel lane and adjoining auxiliary lane

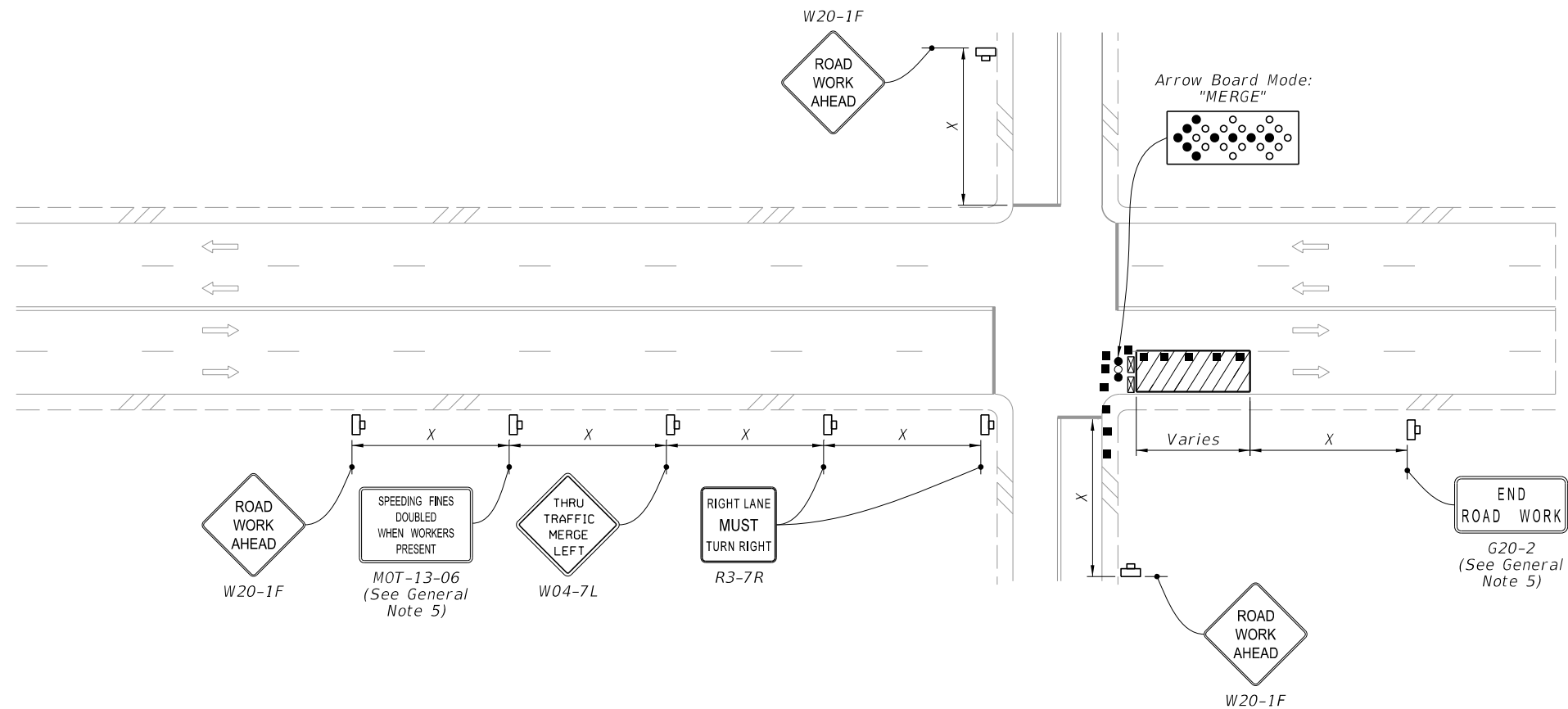
If the work area is confined to an auxiliary lane, the work area must be barricaded. Replace the RIGHT (LEFT) LANE CLOSED AHEAD signs with ROAD WORK AHEAD signs, and omit the merge symbol signs and arrow board.



RIGHT LANE CLOSED ON FAR SIDE OF MINOR SIDE STREET

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Type III Barricade
- Arrow Board
- Stop Bar
- Lane Identification and Direction of Traffic



RIGHT LANE CLOSED ON FAR SIDE OF INTERSECTION WITH SIGNIFICANT RIGHT TURNING MOVEMENTS

11/19/2021 7:06:11 AM

LAST REVISION 11/01/20	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	MULTILANE ROADWAY, INTERSECTION WORK	INDEX 102-615	SHEET 2 of 5
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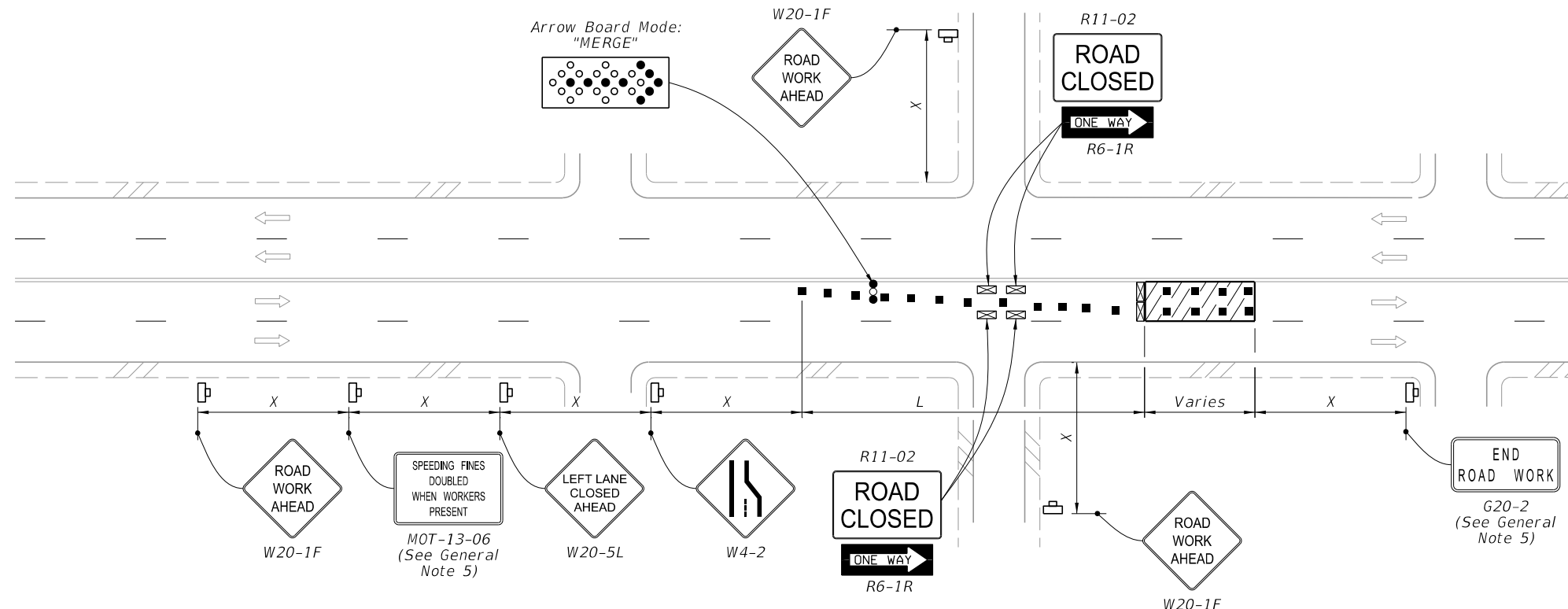
NOTES:

1. Confine work operations to the following lane or lane combinations:

- a. Outside travel lane
- b. Outside auxiliary lane
- c. Outside travel lane and adjoining auxiliary lane
- d. Inside travel lane
- e. Inside auxiliary lane
- f. Inside travel lane and adjoining auxiliary lane

If the work area is confined to an auxiliary lane, the work area must be barricaded. Replace the RIGHT (LEFT) LANE CLOSED AHEAD signs with ROAD WORK AHEAD signs, and omit the merge symbol signs and arrow board.

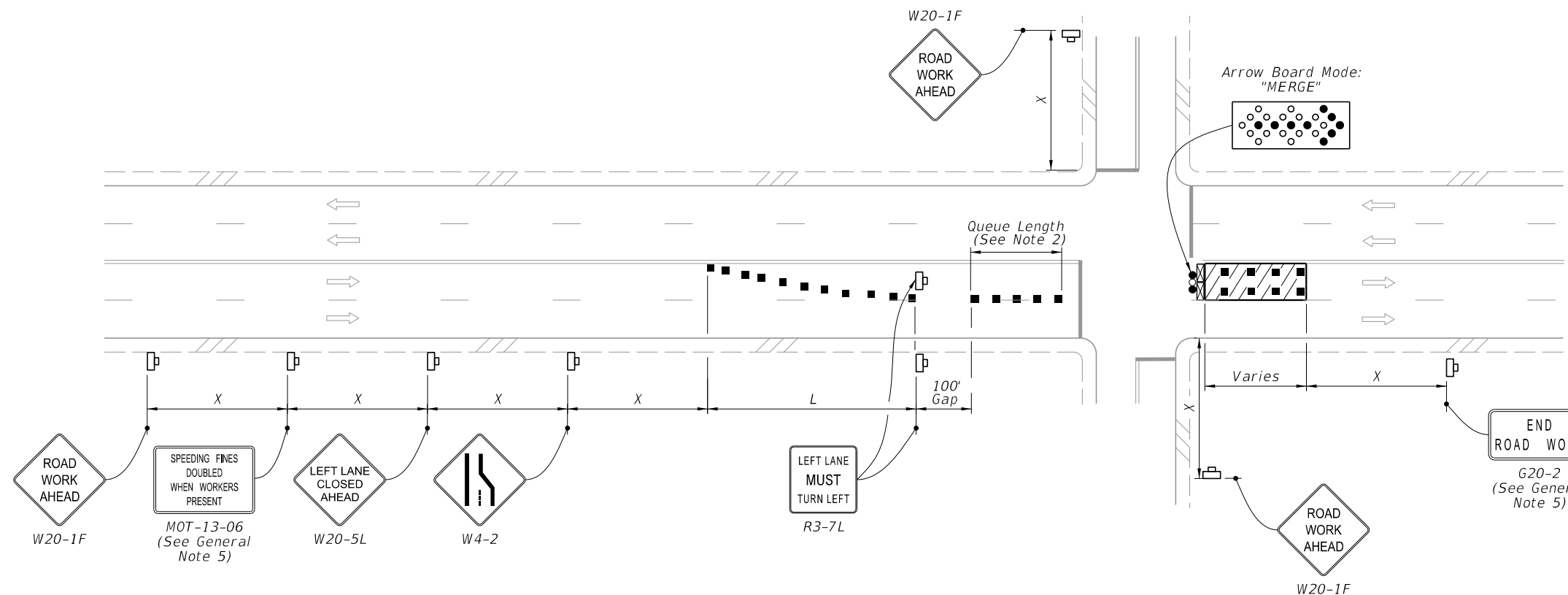
2. Provide sufficient Queue Length so that left-turning vehicles do not block through lanes.



LEFT LANE CLOSED ON FAR SIDE OF MINOR SIDE STREET - RESTRICTED TURNING MOVEMENTS

SYMBOLS:

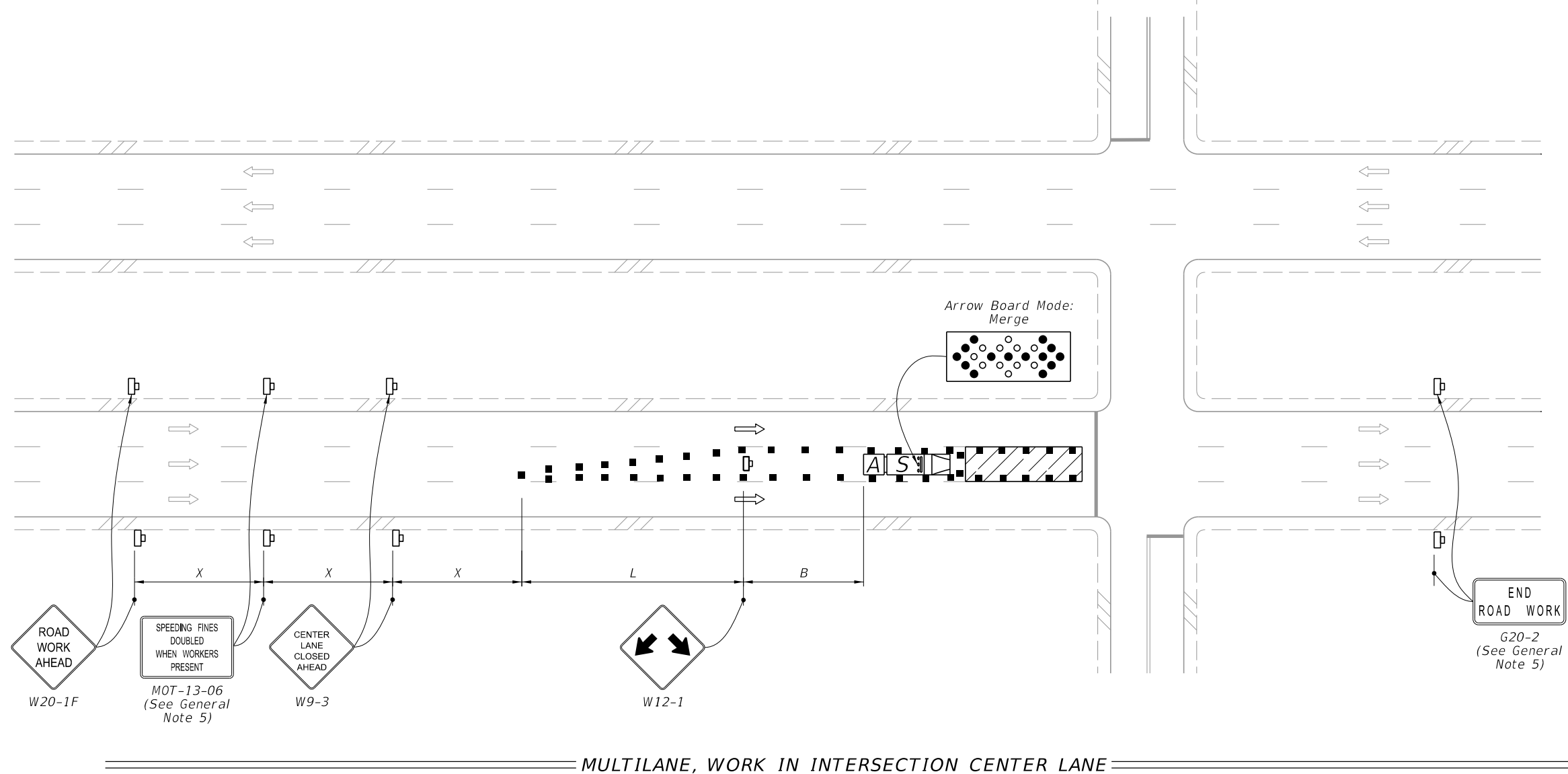
- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Type III Barricade
- Arrow Board
- Stop Bar
- Lane Identification and Direction of Traffic



LEFT LANE CLOSED ON FAR SIDE OF INTERSECTION TURNING MOVEMENTS ALLOWED

1/4/2022 7:58:26 AM

LAST REVISION 11/01/20	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	MULTILANE ROADWAY, INTERSECTION WORK	INDEX 102-615	SHEET 3 of 5
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MULTILANE, WORK IN INTERSECTION CENTER LANE

NOTES:

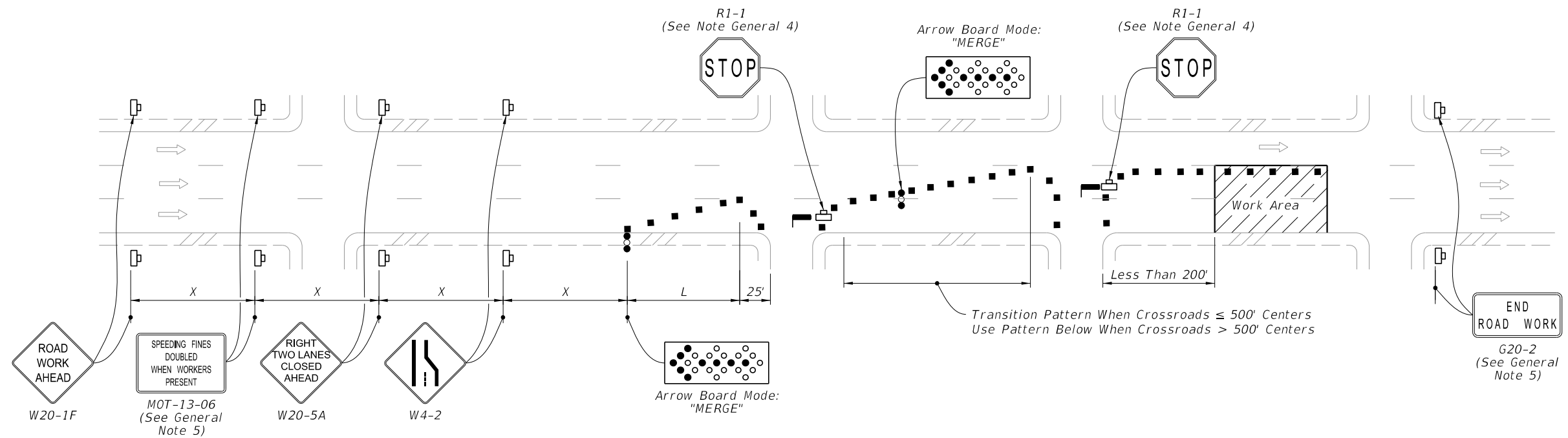
1. Confine work operations to one center travel lane and leave the adjacent travel lanes open to traffic.
2. Ensure that the merging taper only directs vehicular traffic into either the right or left lane.

SYMBOLS:

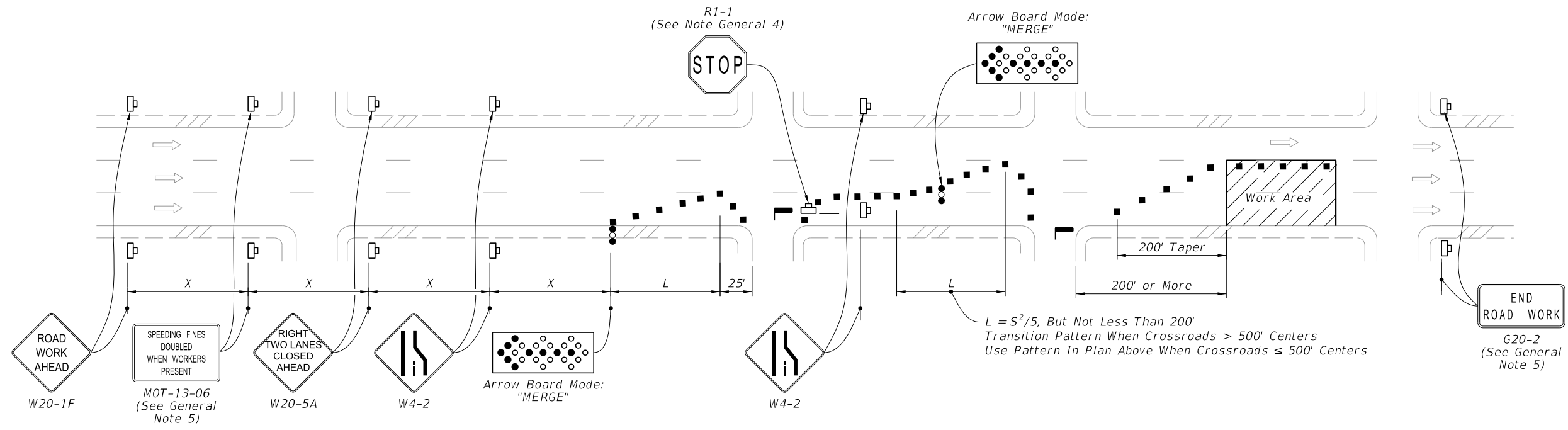
- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Type III Barricade
- Arrow Board
- Stop Bar
- Shadow (S) Vehicle With Warning Lights And Arrow Board
- Truck/Trailer Mounted Attenuator (TMA)
- Lane Identification and Direction of Traffic

9/21/2021 12:23:28 PM

LAST REVISION 11/01/21	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	MULTILANE ROADWAY, INTERSECTION WORK	INDEX 102-615	SHEET 4 of 5
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DOUBLE LANE CLOSURE FOR WORK LESS THAN 200' FROM INTERSECTION



SYMBOLS: (See General Note 5)

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Arrow Board
- Stop Bar
- Lane Identification and Direction of Traffic

DOUBLE LANE CLOSURE FOR WORK MORE THAN 200' FROM INTERSECTION





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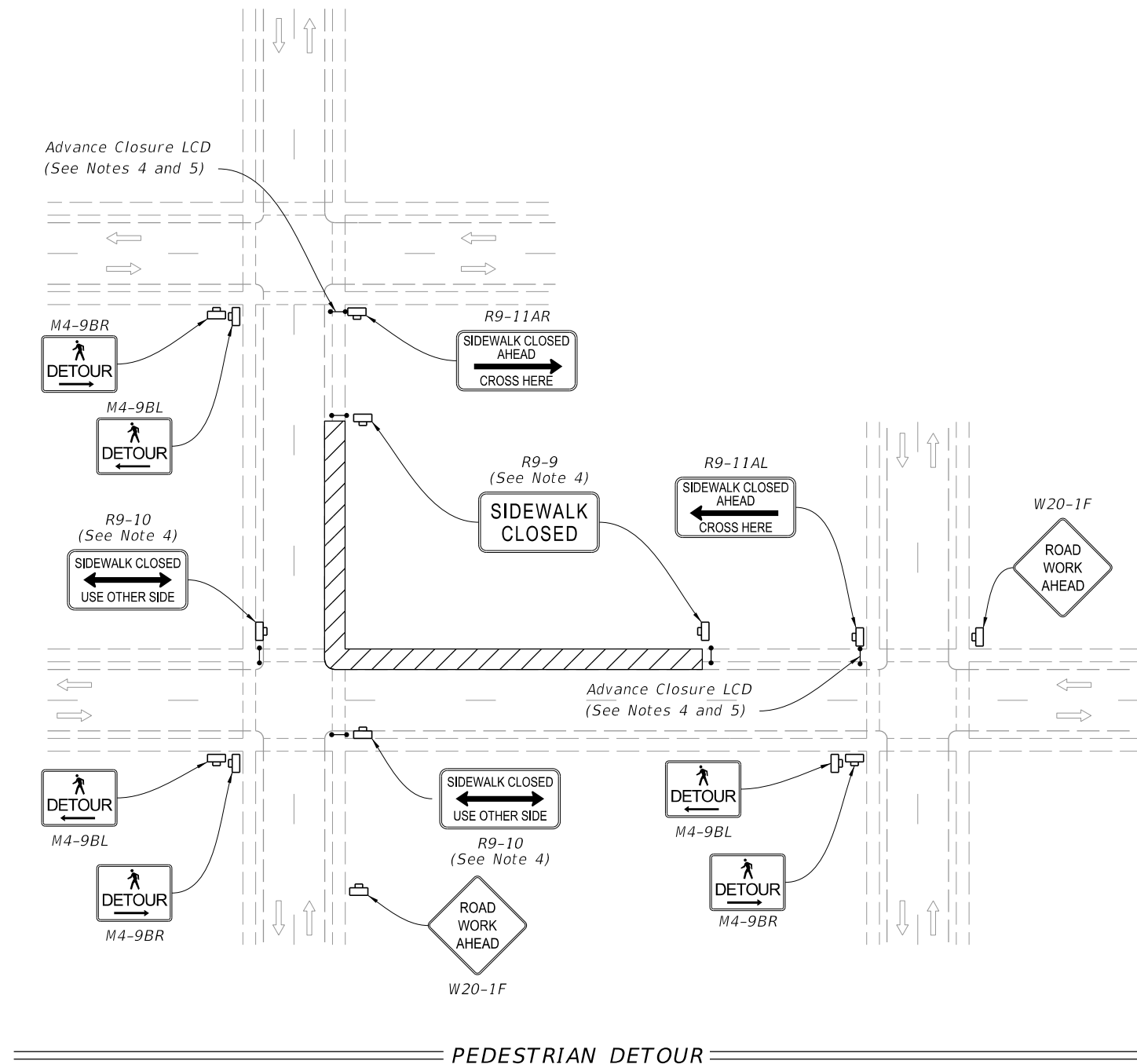
LAST REVISION 11/01/20	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	MULTILANE ROADWAY, INTERSECTION WORK	INDEX 102-615	SHEET 5 of 5
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NOTES:

1. Cover or deactivate pedestrian traffic signal display(s) controlling closed crosswalks.
2. Place pedestrian LCDs across the full width of the closed sidewalk.
3. For post mounted signs located near or adjacent to a sidewalk, maintain a minimum 7' clearance from the bottom of the sign panel to the surface of the sidewalk.
4. "Sidewalk Closed" signs (R9-XX) may be mounted on pedestrian LCDs in accordance with the manufacturer's instructions.
5. Omit the Advance Closure LCD if it blocks access to other pedestrian facilities (e.g., transit stops, residences, or business entrances).

SYMBOLS:

-  Work Area
-  Work Zone Sign
-  Pedestrian Longitudinal Channelizing Device (LCD)
-  Lane Identification and Direction of Traffic











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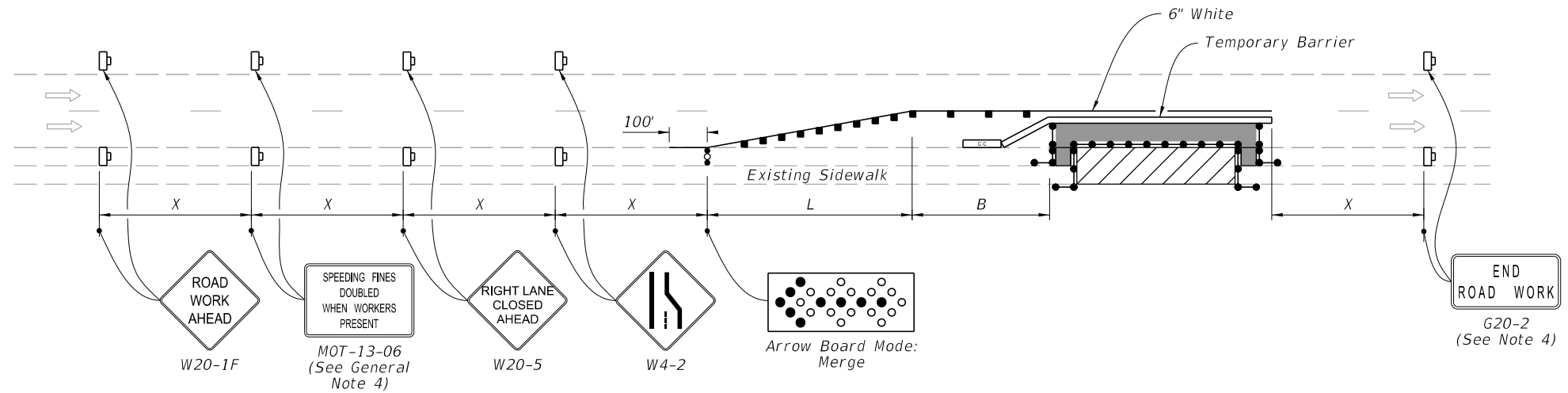
LAST REVISION 11/01/20	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	SIDEWALK CLOSURE	INDEX 102-660	SHEET 1 of 2
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NOTES:

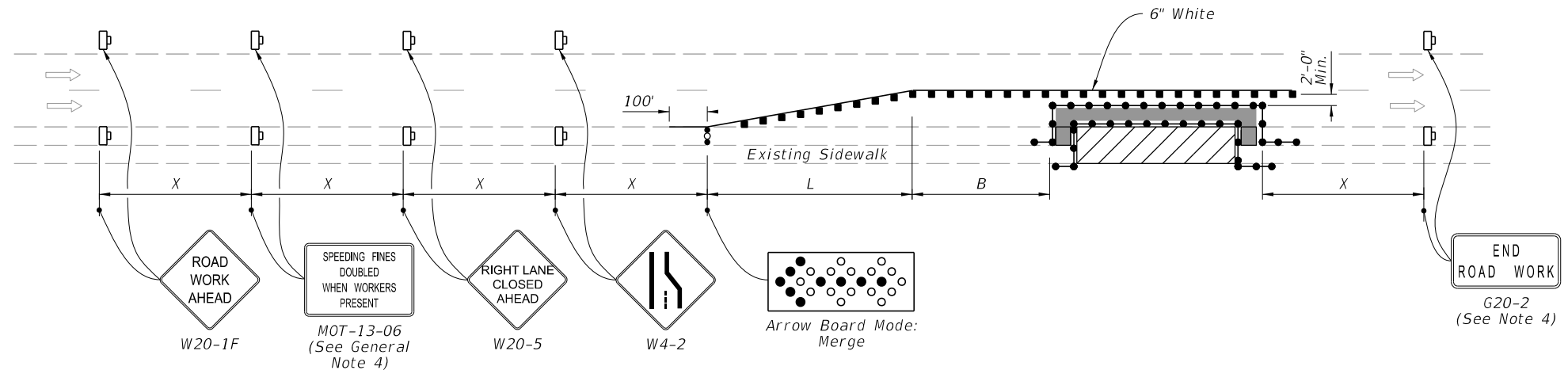
1. L = Taper Length
B = Buffer Length
X = Work Zone Sign Distance
See Index 102-600 for "L", "B", "X", channelizing device spacing values.
2. Provide a 5' wide temporary pedestrian way with a maximum cross-slope of 0.02, except where space restrictions warrant a minimum width of 4'. Provide a 5' x 5' passing space for temporary pedestrian ways less than 5' in width at intervals not to exceed 200'.
3. When temporary pedestrian ways require curb ramps, meet the requirements of Index 522-002. Detectable warnings are not required for curb ramps diverting pedestrian traffic into a closed lane.
4. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign distances, may be omitted when the work operation will be in place for 24 hours or less.
5. Pedestrian Diversion Option 2 may only be used when called for in the Plans or as approved by an Engineer.

SYMBOLS:

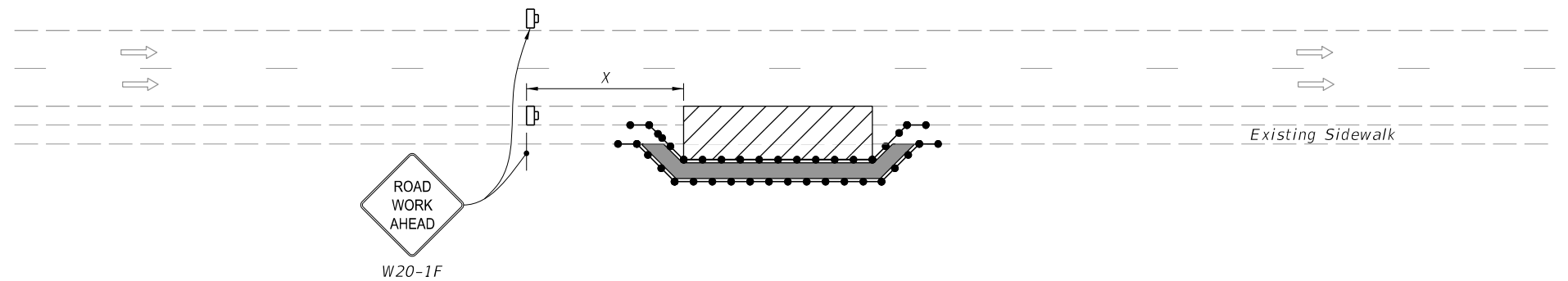
-  Work Area
-  Temporary Pedestrian Way
-  Channelizing Device (See Index 102-600)
-  Pedestrian Longitudinal Channelizing Device (LCD)
-  Work Zone Sign
-  Arrow Board
-  Crash Cushion
-  Lane Identification and Direction of Traffic



PEDESTRIAN DIVERSION - OPTION 1
(Temporary Barrier Shown, Low Profile Barrier Similar)




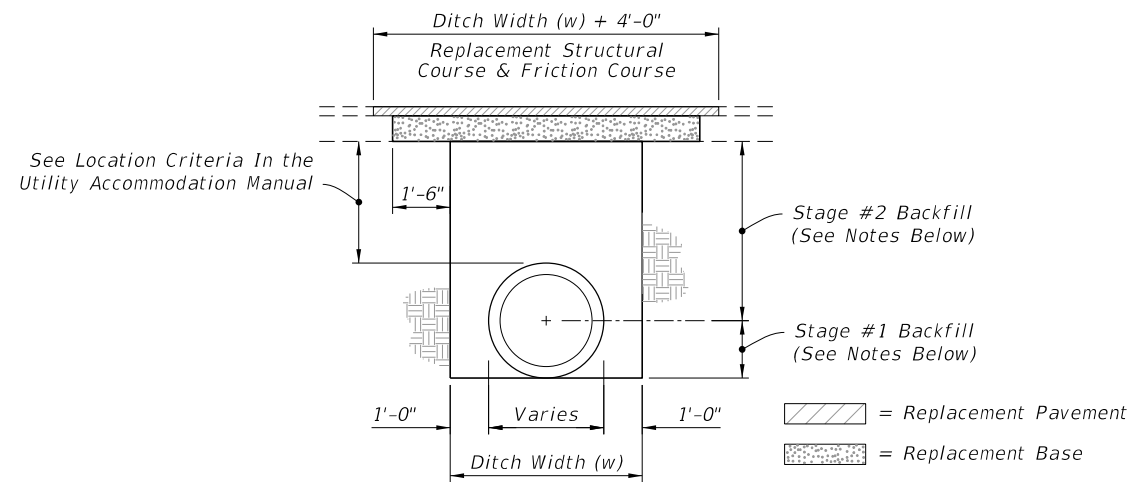
PEDESTRIAN DIVERSION - OPTION 2
(Work Zone Speed 35 mph or Less)



PEDESTRIAN SPECIAL DETOUR

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LAST REVISION 11/01/21	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	SIDEWALK CLOSURE	INDEX 102-660	SHEET 2 of 2
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NOTES:
PAVEMENT REMOVAL AND REPLACEMENT

1. Pavement shall be mechanically sawed.
2. The replacement asphalt shall match the existing structural and friction courses for type and thickness in accordance with current FDOT asphalt mix specifications.
3. The new base materials shall be either of the same type and composition as the materials removed or of equal or greater structural adequacy.

BACKFILL OPTION

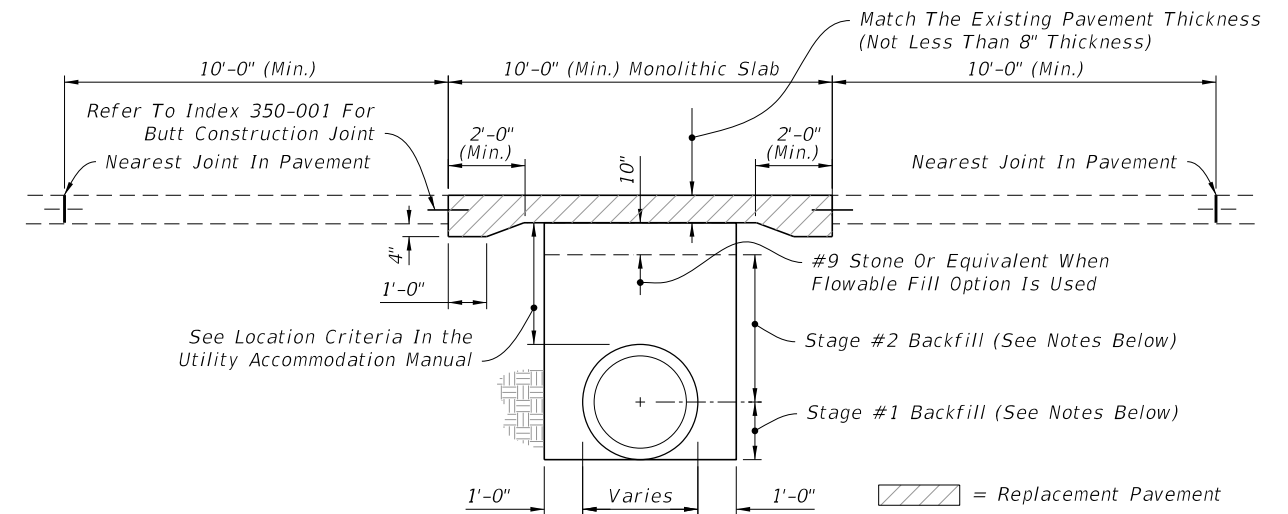
1. COMPACTED AND STABILIZED FILL

- A. Place backfill material in accordance with Specification 125.
- B. In Stage #1, construct compacted fill beneath the haunches of the pipe, using mechanical tamps suitable for this purpose. This compaction applies to the material placed beneath the haunches of the pipe and above any bedding.
- C. In Stage #2, construct compacted fill along the sides of the pipe and up to the bottom of the base, with the upper 12" receiving Type B Stabilization. In lieu of Type B Stabilization, the Contractor may construct using Optional Base Group 3.

2. FLOWABLE FILL

- A. If compaction can not be achieved through normal mechanical methods then flowable fill may be used.
- B. Flowable fill is to be placed in accordance with Specification 121, as approved by the Engineer.
- C. Do not allow the utility being installed to float. If a method is provided to prevent flotation from occurring, Stages #1 and #2 can be combined, if approved by the Engineer.
- D. In Stage #1, place flowable fill midway up on both sides of the utility. Allow to harden before placing Stage #2.
- E. In Stage #2, place flowable fill to the bottom of the existing base course.

FLEXIBLE PAVEMENT CUT



NOTES:
PAVEMENT REMOVAL AND REPLACEMENT

1. High early strength cement concrete (3000 psi) meeting the requirements of Specification 346 shall be used for rigid pavement replacement.
2. Pavement shall be mechanically sawed and restored to conform with existing pavement joints within 12 hours. (See Index 350-001)

BACKFILL OPTION

1. GRANULAR BACKFILL

- A. Any edgedrain system that is removed shall be replaced with the same type materials. Any edgedrain system that is damaged shall be repaired with methods approved by the Engineer.
- B. Fill material shall be placed in accordance with the Standard Specifications. Fill material shall be special select soil in accordance with Index 350-001.
- C. In Stage #1, construct compacted fill beneath the haunches of the pipe, using mechanical tamps suitable for this purpose. This compaction applies to the material placed beneath the haunches of the pipe and above any bedding.
- D. In Stage #2, construct fill along the sides of the pipe and up to the bottom of replacement pavement.

2. FLOWABLE FILL

- A. If mechanical compaction can not be achieved through normal mechanical methods then flowable fill may be used.
- B. Flowable fill is to be placed in accordance with Specification 121, as approved by the Engineer.
- C. Do not allow the utility being installed to float. If a method is provided to prevent flotation from occurring, Stages #1 and #2 can be combined, if approved by the Engineer.
- D. In Stage #1, place flowable fill midway up on both sides of the utility. Allow to harden before placing Stage #2.
- E. In Stage #2, place flowable fill to the bottom of the stone layer.


RIGID PAVEMENT CUT

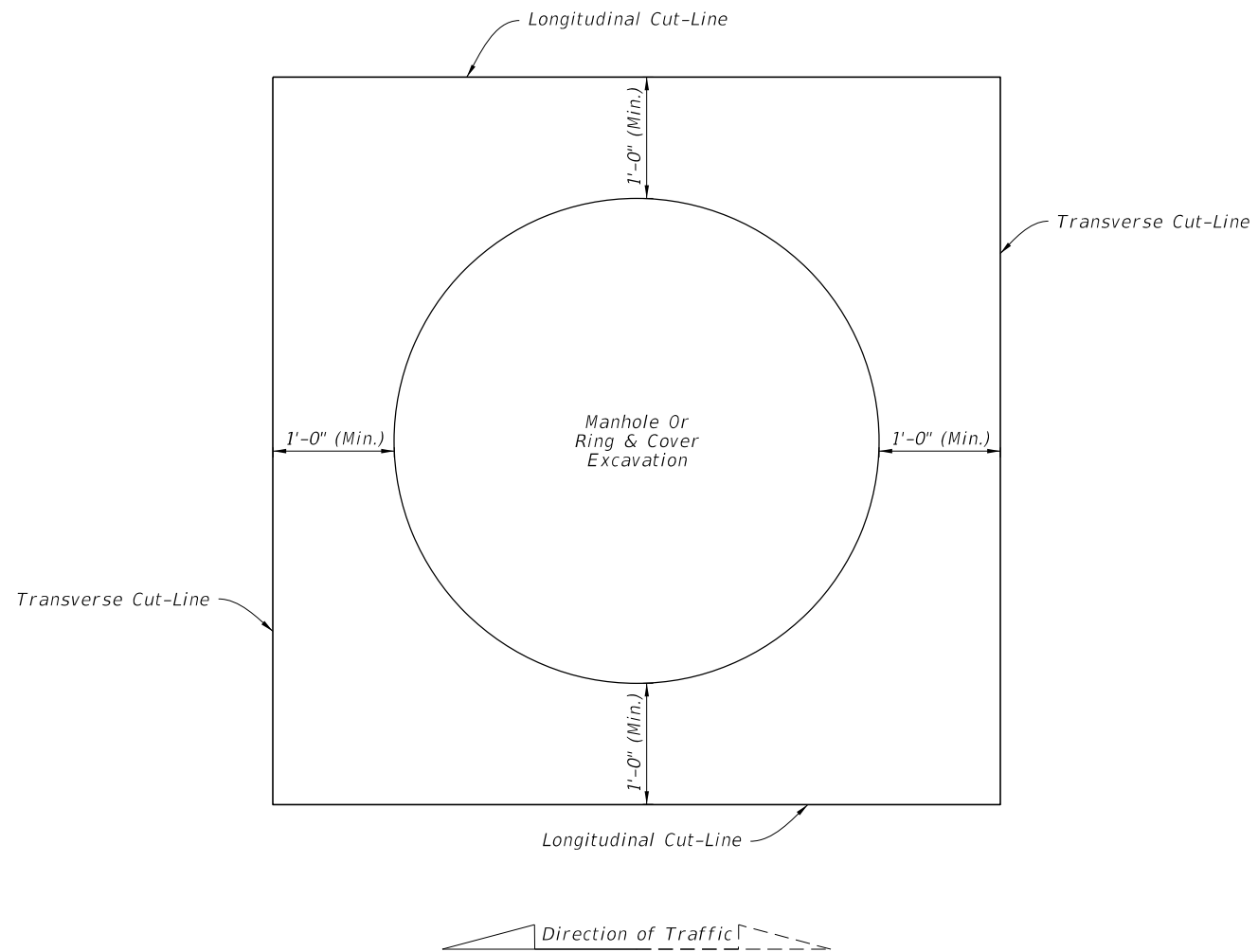
GENERAL NOTES

1. The details provided in this Index apply to cases in which jack and bore or directional boring methods are not required by the Engineer.
2. Flowable fill shall not be placed directly over loose, or high plastic, or muck material (see Index 120-001) which will cause settlement due to fill weight. Where highly compressible material exists, the amount, shape and depth of flowable fill must be engineered to prevent pavement settlement.
3. These details do not apply to utility cuts longitudinal to the centerline of the roadway which may require the additional use of geotextiles, special bedding and backfill, or other special requirements.
4. Method of construction must be approved by the Engineer.
5. Some pipe may require special granular backfill up to 6" above top of pipe. Geotextiles may be required to encapsulate the special granular material.
6. Where asphalt concrete overlays exist over full slab concrete pavement, the replacement pavement shall have an overlay constructed over the replacement slab. The overlay shall match the existing asphalt pavement thickness. The replacement friction course shall match the existing friction course, except structural course may be used in lieu of dense graded friction course.
7. All shoulder pavement, curb, curb and gutter, and their substructure disturbed by utility trench cut construction shall be restored in kind.
8. The use of flowable fill to reduce the time traffic is taken off a facility is acceptable but must have prior approval by the Engineer. Flowable fill use is allowed only when properly engineered for pavement crossings, whether straight or diagonal, and shall not be installed for significant depths or lengths. The maximum length shall be fifty (50) feet and a maximum depth of six (6) feet unless supported by an engineering document prepared by a registered professional engineer that specializes in soils engineering. The engineering document shall address the evaluation of local groundwater flow interruption and settlement potential.
9. Excavatable flowable fill is to be used when the flowable fill option is selected.

TRENCH CUTS AND RESTORATIONS ACROSS ROADWAYS

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PARTIAL CUTS FOR RING AND COVER ADJUSTMENTS

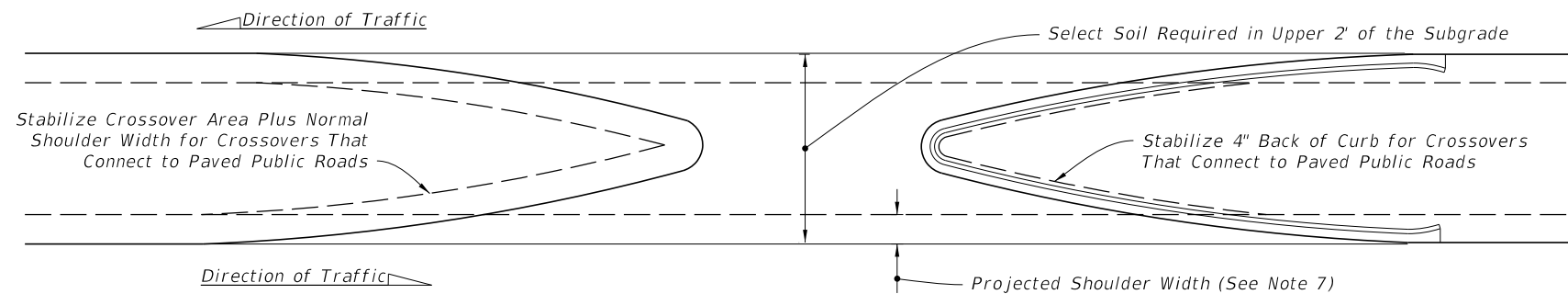
NOTES

1. Cut-Lines must be straight and cleanly sawed.
2. See Sheet 1 for replacement pavement.
3. Adjust manholes prior to placing friction course when pavement resurfacing is occurring in the area adjacent to the manhole.
4. Align Longitudinal Cut-Lines with pavement joint or center of traffic lane to avoid wheel path.
5. For rigid pavement, align Transverse Cut-Lines with nearest existing joint.

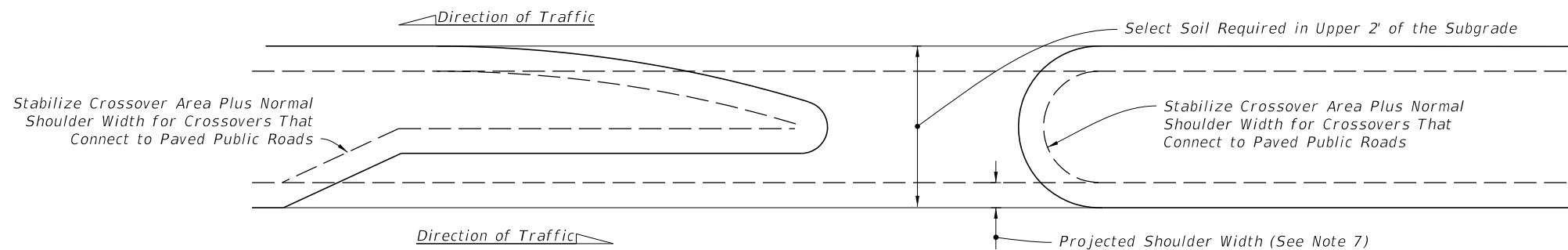
NONTRENCH PAVEMENT CUTS FOR UNDERGROUND UTILITY STRUCTURES IN PAVEMENT

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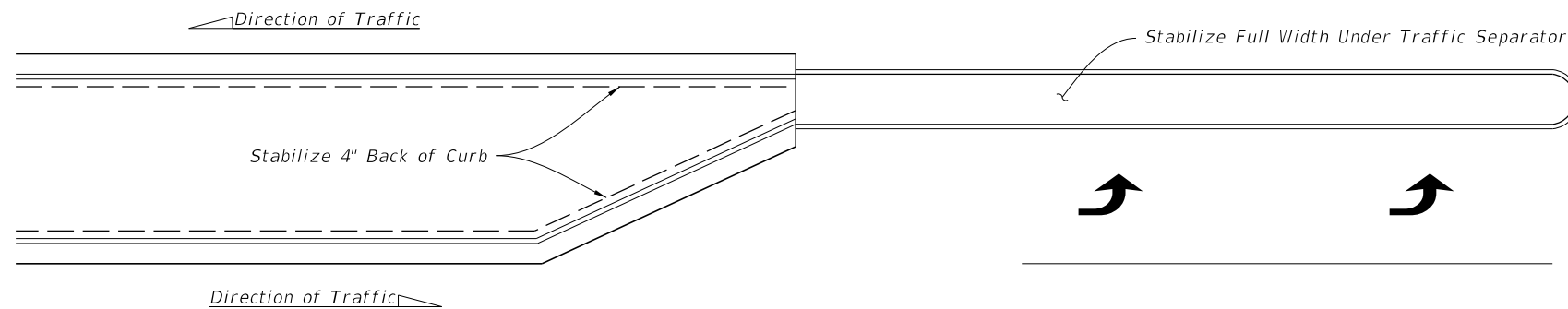
LAST REVISION 11/01/17	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	UTILITY ADJUSTMENTS THRU EXISTING PAVEMENT	INDEX 125-001	SHEET 2 of 2
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TYPICAL CROSSOVER



TURN LANE



TRAFFIC SEPARATOR

NOTES:

1. When the median has curb or curb and gutter, stabilize 4" back of curb.
2. When the median has shoulder with no curb or curb and gutter, stabilize to normal shoulder width.
3. See the details above for stabilizing requirements at crossroads.
4. Stabilize entire area under all paved traffic islands.
5. Stabilize full width under all traffic separators.
6. Provide select soil where shown above and as defined on Index 120-001. For minor collectors and local facilities the depth of select material thickness may be reduced from 24" to 18".
7. Limits of Stabilization for Intermediate U-Turn Crossovers and, unless otherwise specified in the Plans, at paved and unpaved private roads and unpaved public roads.

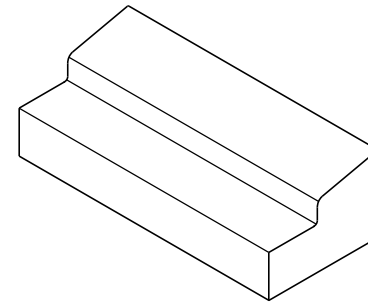
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LAST REVISION 11/01/19	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	MEDIAN STABILIZING DETAILS	INDEX 160-001	SHEET 1 of 1
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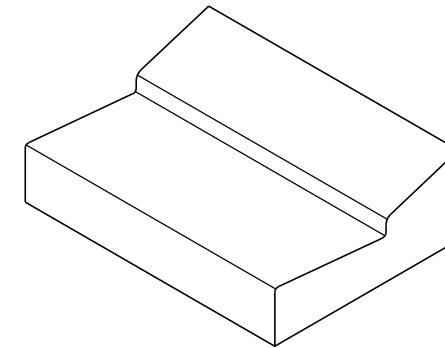
GENERAL NOTES:

1. For curb, gutter and curb & gutter provide $\frac{1}{8}$ " - $\frac{1}{4}$ " contraction joints at 10' centers (max.). Contraction joints adjacent to concrete pavement on tangents and flat curves are to match the pavement joints, with intermediate joints not to exceed 10' centers.
2. Locate expansion joints for curb, gutter and curb & gutter in accordance with Specification 520.

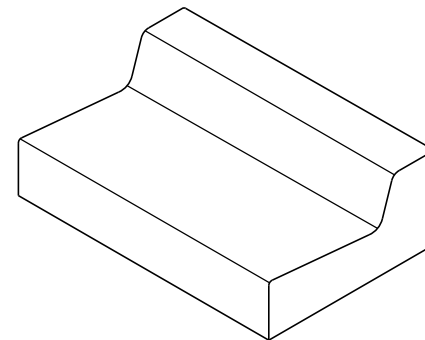
TABLE OF CONTENTS:	
Sheet	Description
1	General Notes and Contents
2	Concrete Curb and Gutter
3	Curb and Gutter Joints and Endings, Concrete Bumper Guard, and Asphaltic Concrete Curb



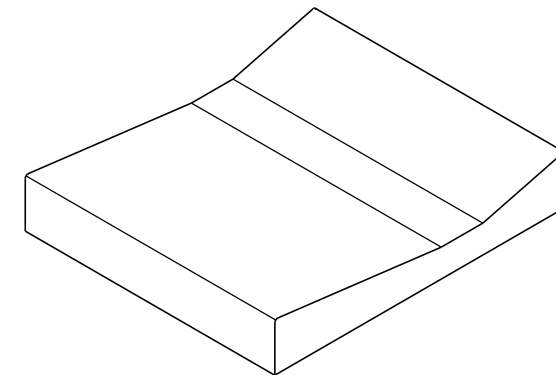
TYPE A



TYPE E

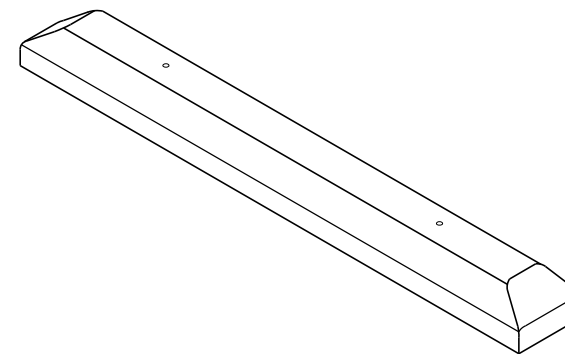


TYPE F



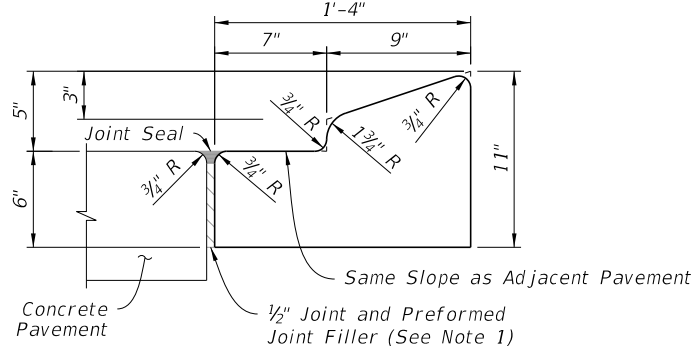
SHOULDER GUTTER

===== TYPE A, TYPE E, TYPE F, AND SHOULDER GUTTER =====
(Other Types Similar)



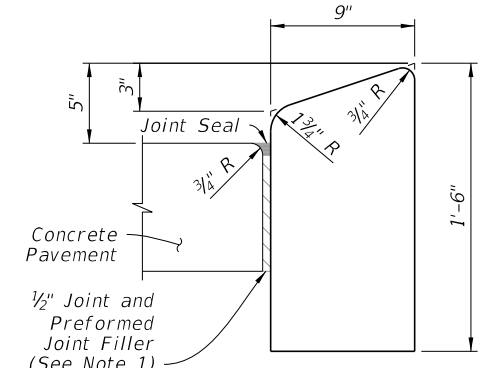
===== CONCRETE BUMPER GUARD =====

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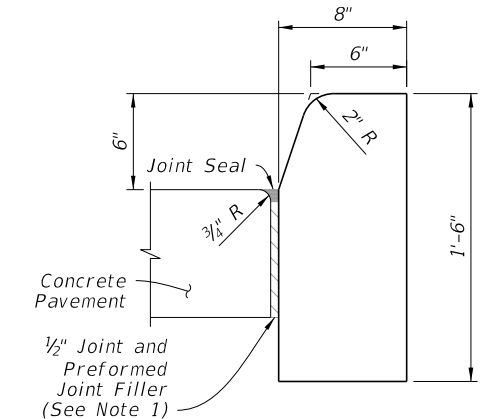
NOTE: For use adjacent to concrete or flexible pavement, concrete shown (See Note 4).

TYPE A



NOTE: For use adjacent to concrete or flexible pavement, concrete shown.

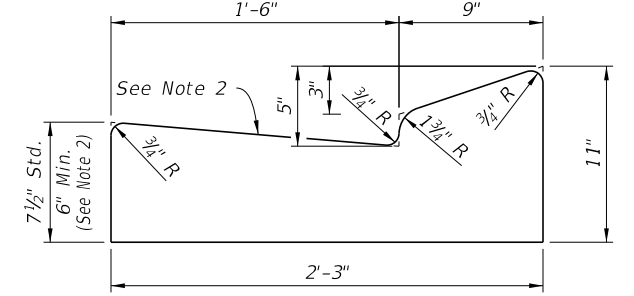
TYPE B



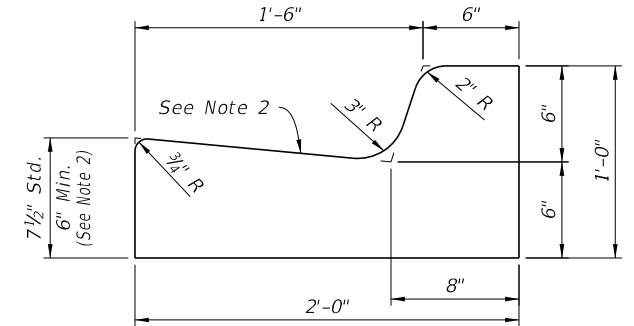
NOTE: For use adjacent to concrete or flexible pavement, concrete shown.

TYPE D

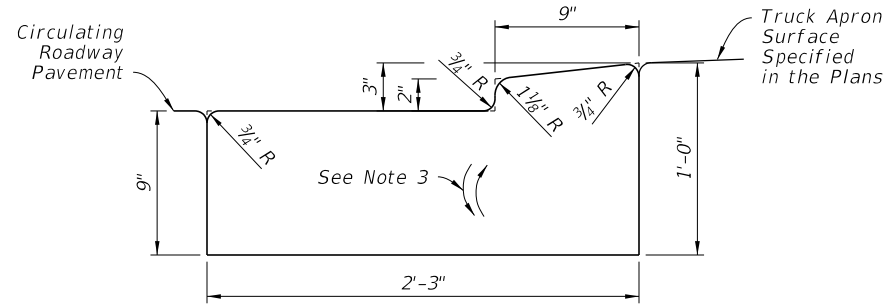
- NOTES:**
- For Type A, Type B, and Type D Curb: Expansion joint, preformed joint filler and joint seal are required between curbs and concrete pavement only, see Sheet 3.
 - For Type E, Type F, Drop Curb, and Valley Gutter: When used on high side of roadways, match the cross slope of the gutter to the cross slope of the adjacent pavement. The thickness of the lip is 6", unless otherwise shown on Plans.
 - For Type RA, rotate entire section so that gutter cross slope matches slope of adjacent circulating roadway pavement.
 - For details depicting usage of Type A Curb adjacent to flexible pavement see Sheet 3.



TYPE E

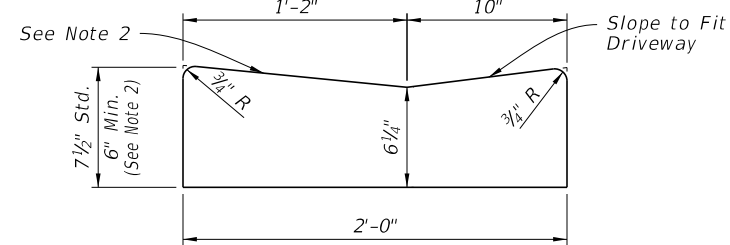


TYPE F

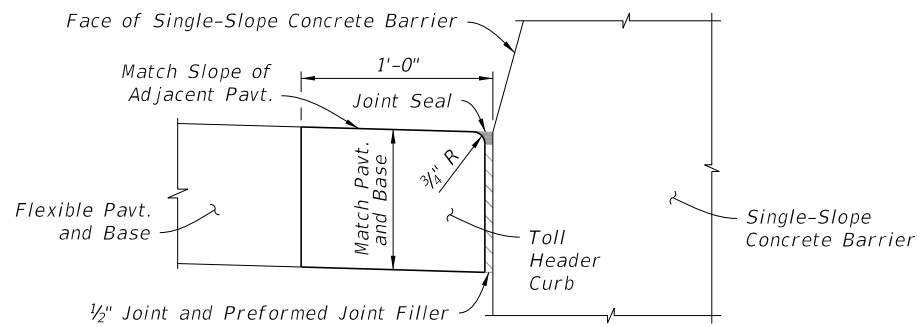


NOTE: Traffic Bearing Sections for use in Roundabout Central Island Construction.

TYPE RA

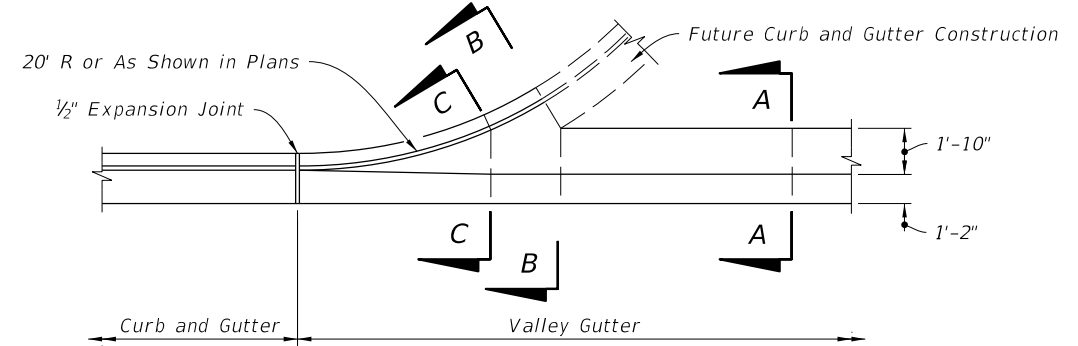


DROP CURB

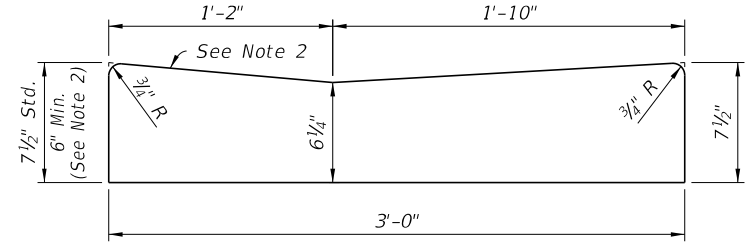


NOTE: See the toll site details for conduit requirements.

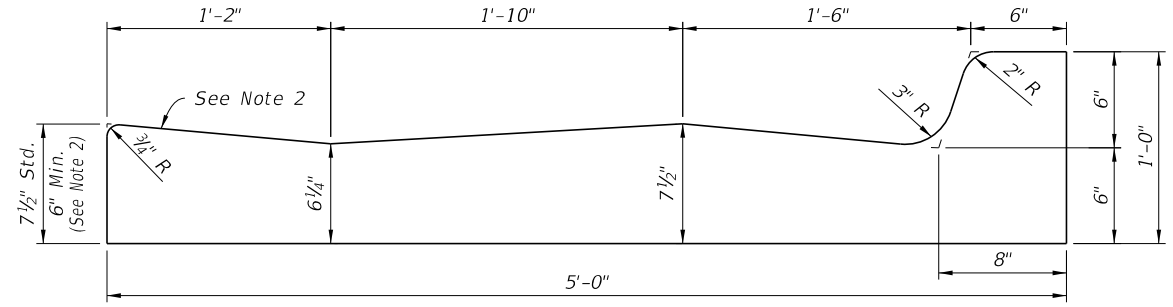
TOLL HEADER CURB



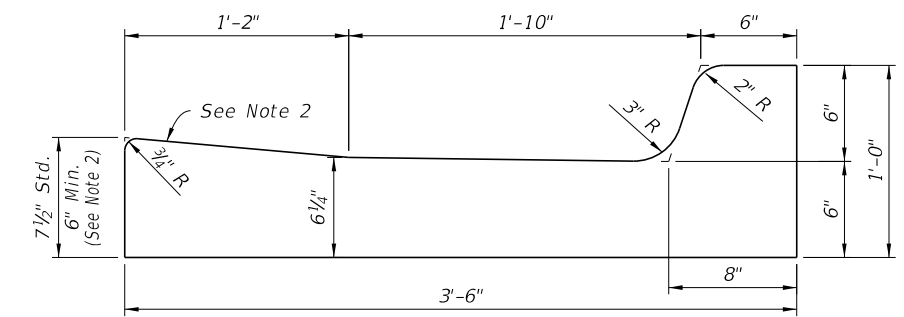
PLAN VIEW



SECTION A-A

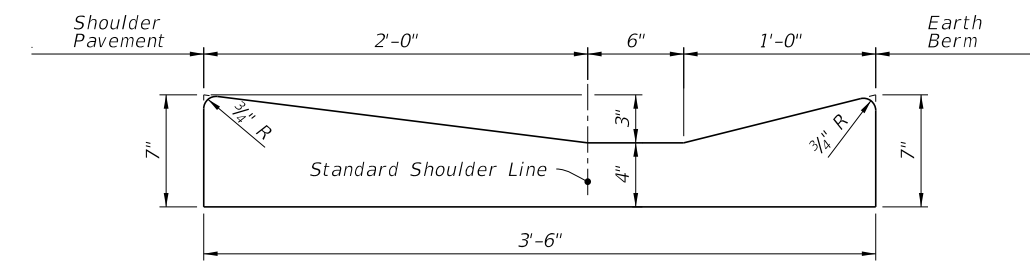


SECTION B-B



SECTION C-C

VALLEY GUTTER

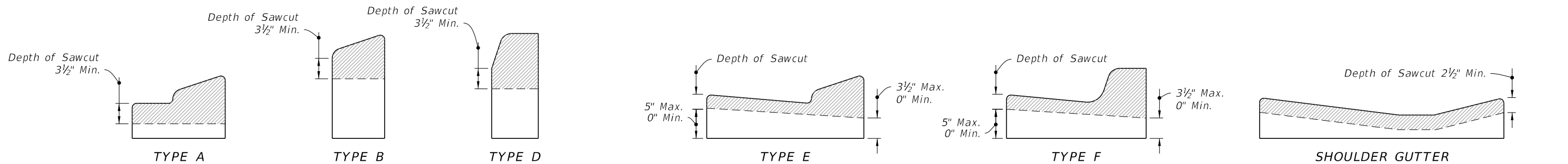


SHOULDER GUTTER

CONCRETE CURB AND GUTTER

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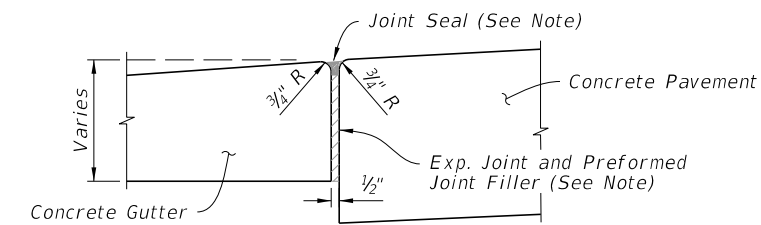
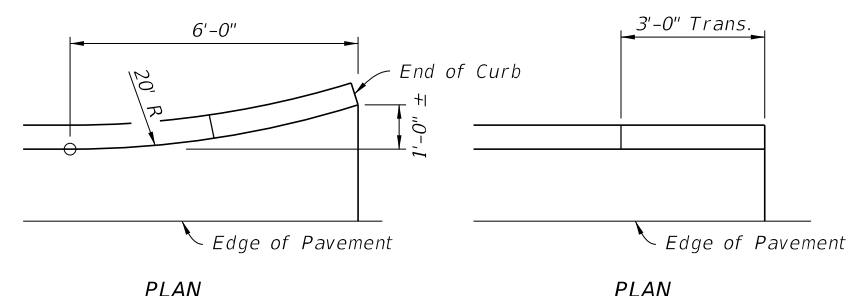
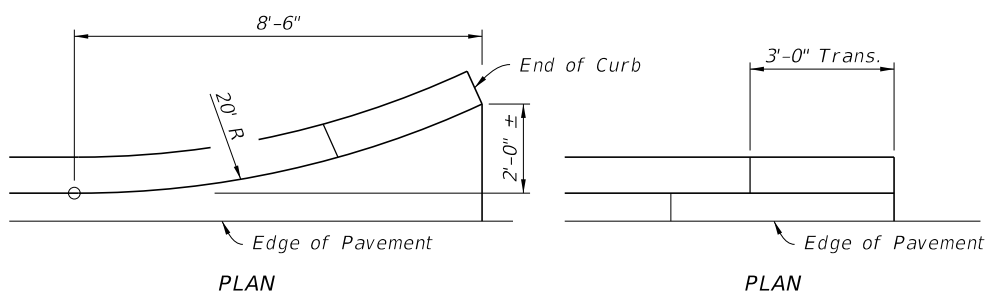
LAST REVISION 11/01/21	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	CURB AND GUTTER	INDEX 520-001	SHEET 2 of 3
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NOTE: Sawcuts should be avoided within valley gutter and within curb and gutter endings.

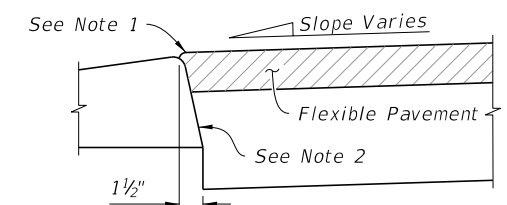
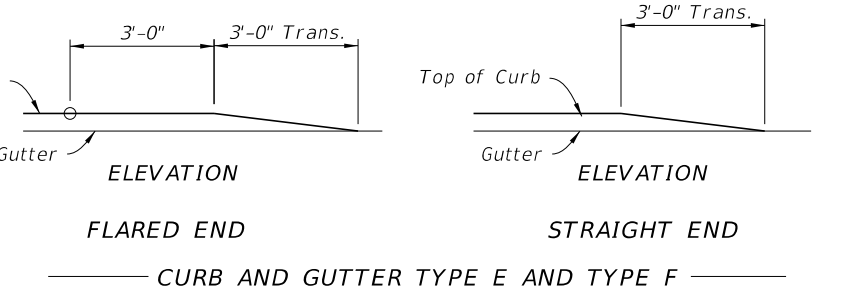
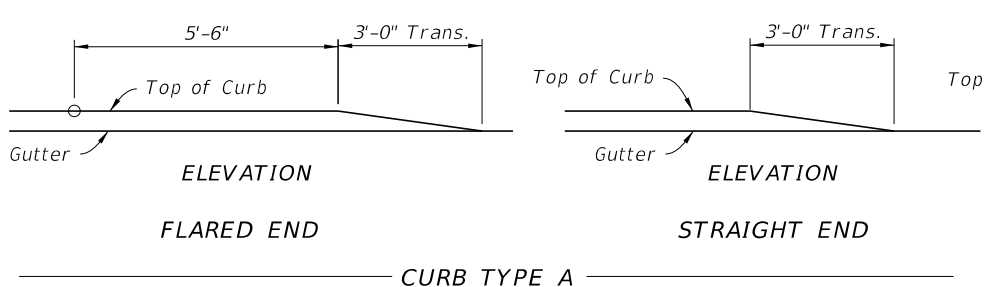
CONTRACTION JOINTS IN CURB

CONTRACTION JOINTS IN CURB & GUTTER



NOTE: Joint Seal application applies to both high and low sides of pavement, low side shown.

EXPANSION JOINT BETWEEN GUTTER AND CONCRETE PAVEMENT

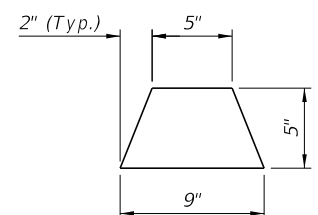
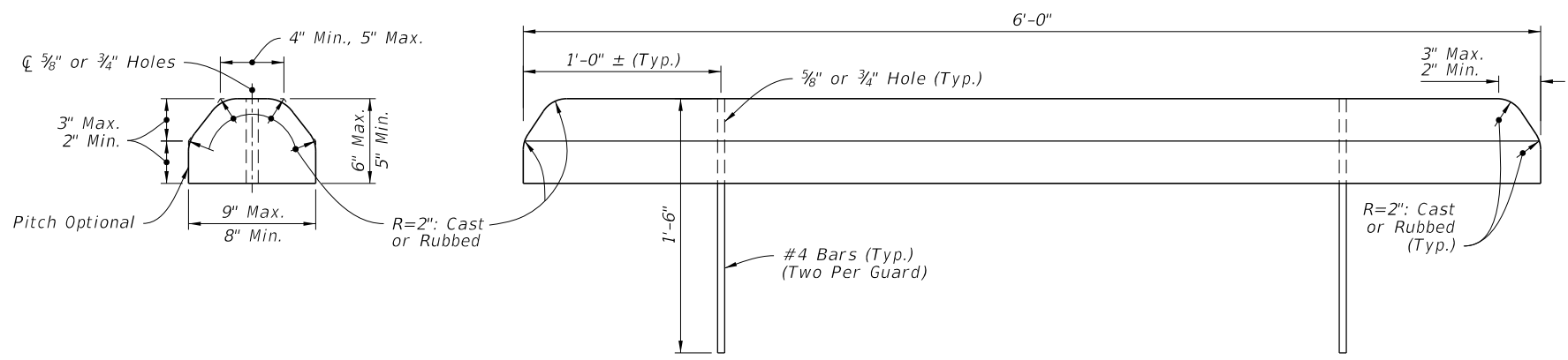


NOTES:
 1. Surface on Low Side of Pavement to be 1/4" Above Lip of Gutter. Surface on High Side to be Flush With Lip of Curb or Curb & Gutter.
 2. Applies to both high and low sides of pavement, low side shown. Applies to shoulder gutter only where adjoining traffic lanes.

CURB AND CURB & GUTTER ENDINGS

NOTE: Ends of Type B and D Curb transition from full to zero heights in 3 ft.

CURB AND GUTTER AND TYPE A CURB ADJACENT TO FLEXIBLE PAVEMENT



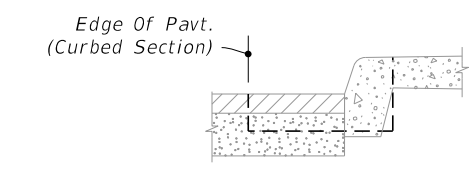
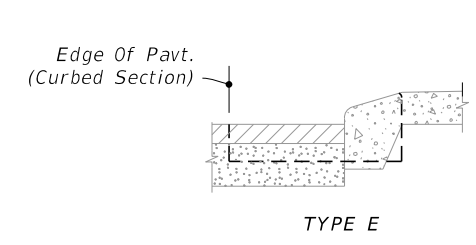
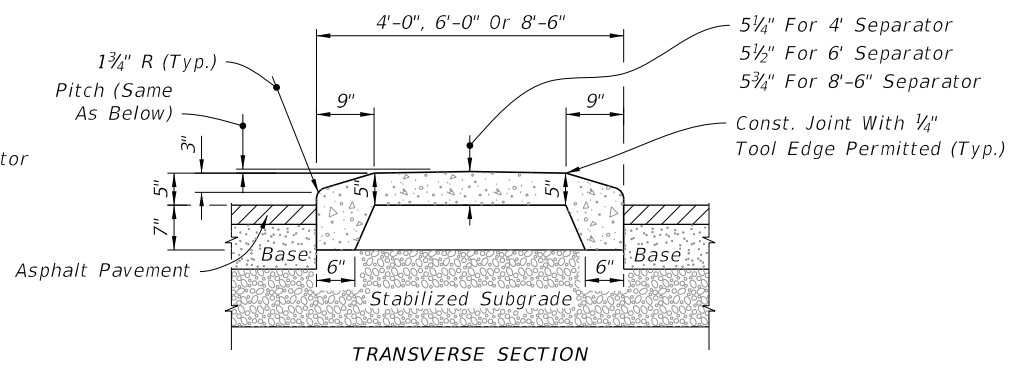
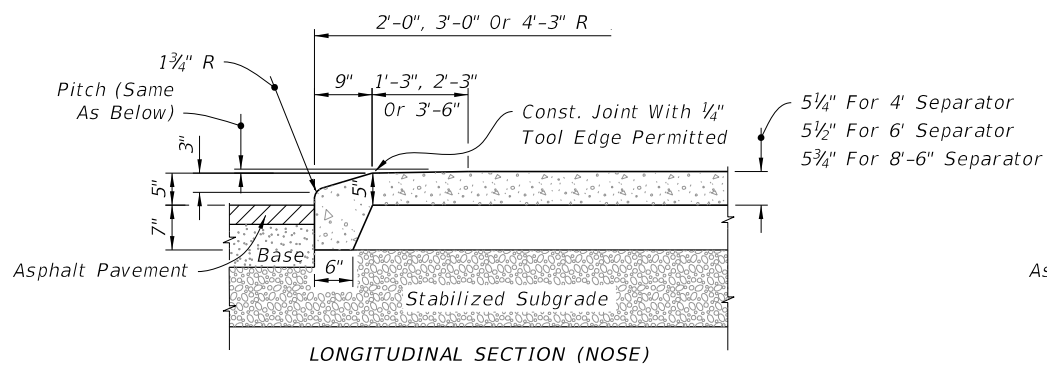
CONCRETE BUMPER GUARD

ASPHALTIC CONCRETE CURB

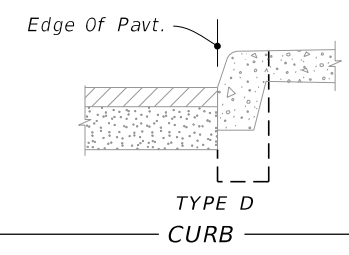
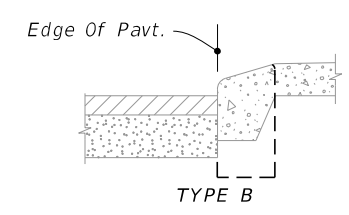
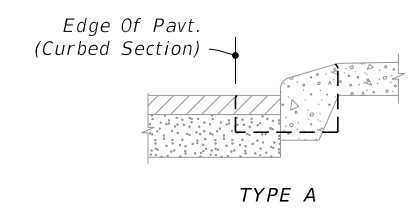
CURB AND GUTTER JOINTS AND ENDINGS, CONCRETE BUMPER GUARD, AND ASPHALTIC CONCRETE CURB

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LAST REVISION 11/01/21	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	CURB AND GUTTER	INDEX 520-001	SHEET 3 of 3
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CURB AND GUTTER

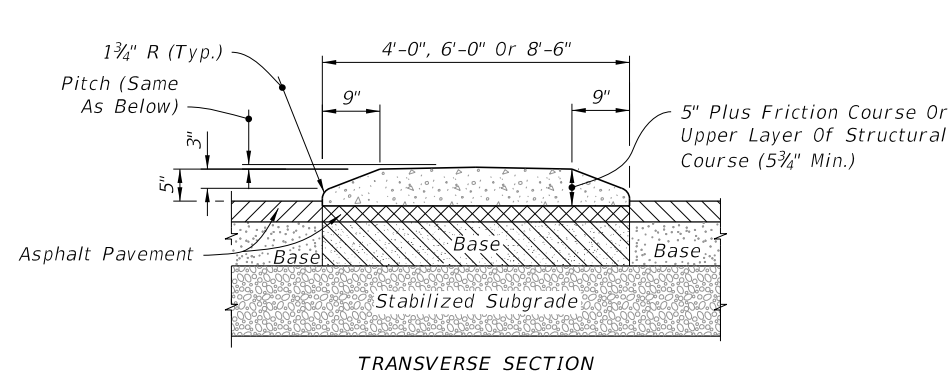
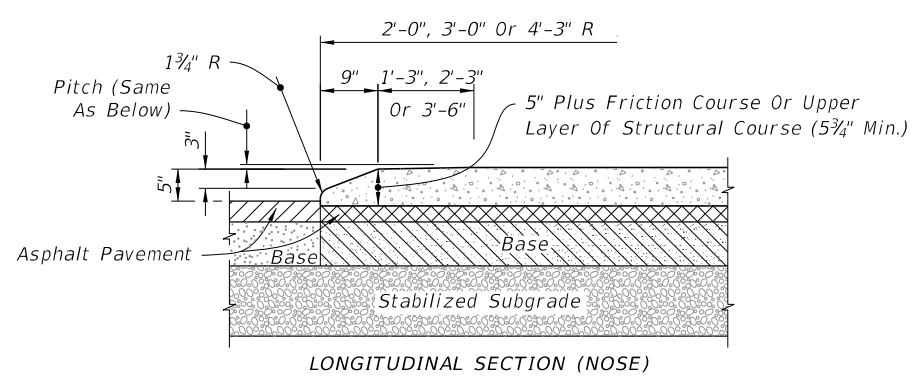


MEDIAN CURB AND TRAFFIC SEPARATOR JUNCTURE DETAILS

(Option I Separator Shown, For Curb Details see Index 520-001)

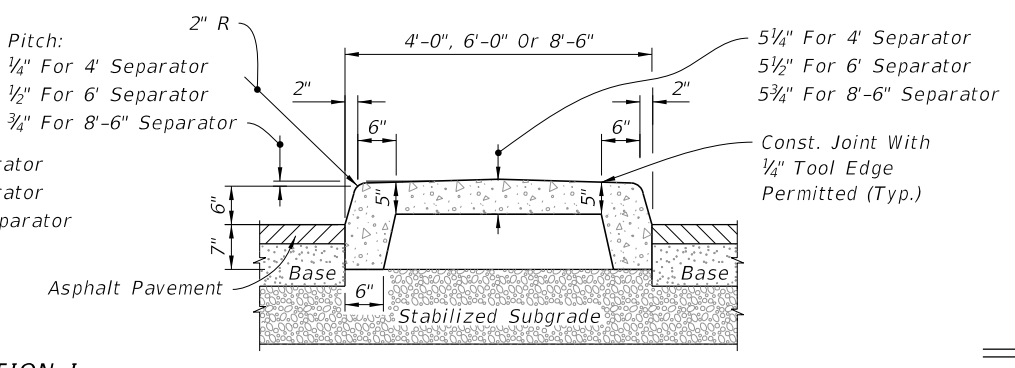
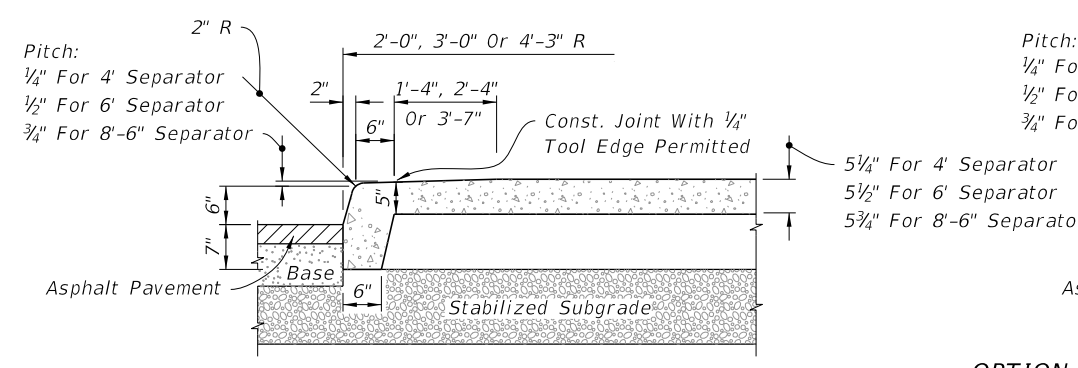
NOTES:

- Separators Type I and IV are to be used with flexible pavement. Separators Types II and V are to be used with rigid pavement.
- Either Option I or Option II may be used for Types I and IV separators except when a specific option is called for in the Plans.
- For all separators provide 1/8" - 1/4" contraction joints at 10' centers (max.). Contraction joints adjacent to concrete pavement on tangents and flat curves to match the pavement joints, with intermediate joints not to exceed 10' center.

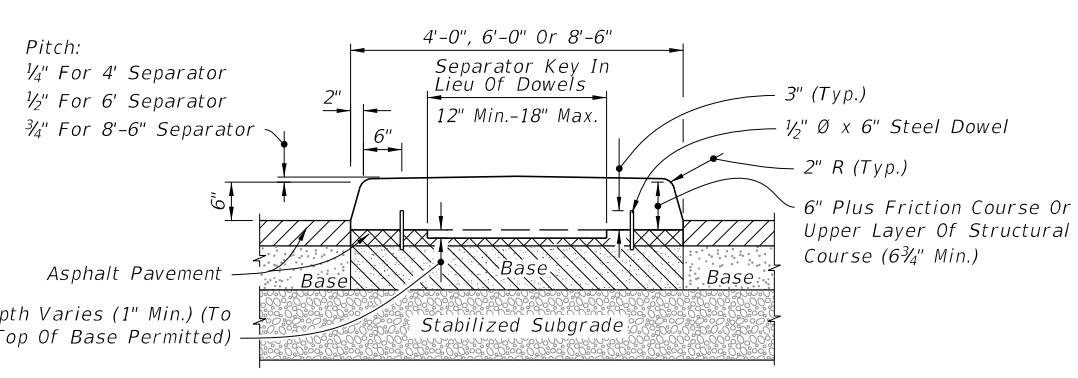
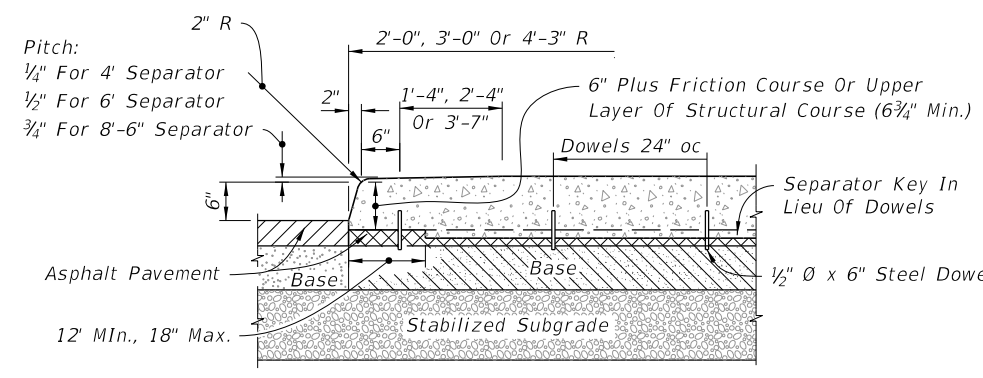


OPTION II

TYPE I - CONCRETE TRAFFIC SEPARATOR



OPTION I



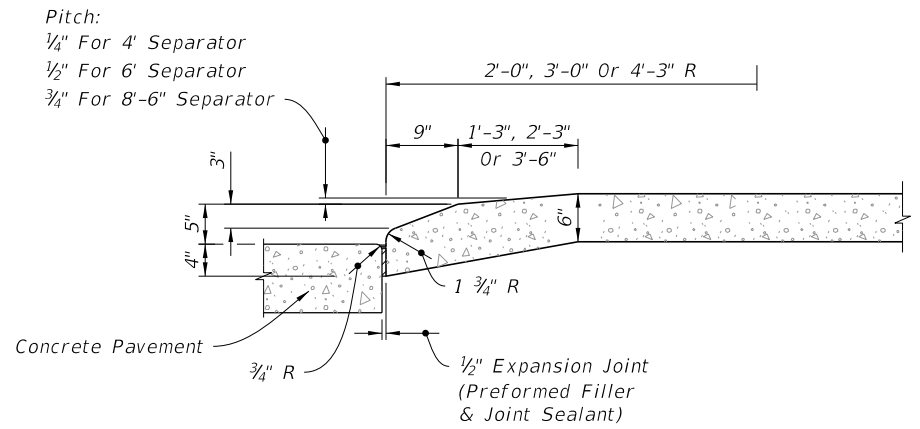
OPTION II

TYPE IV - CONCRETE TRAFFIC SEPARATOR

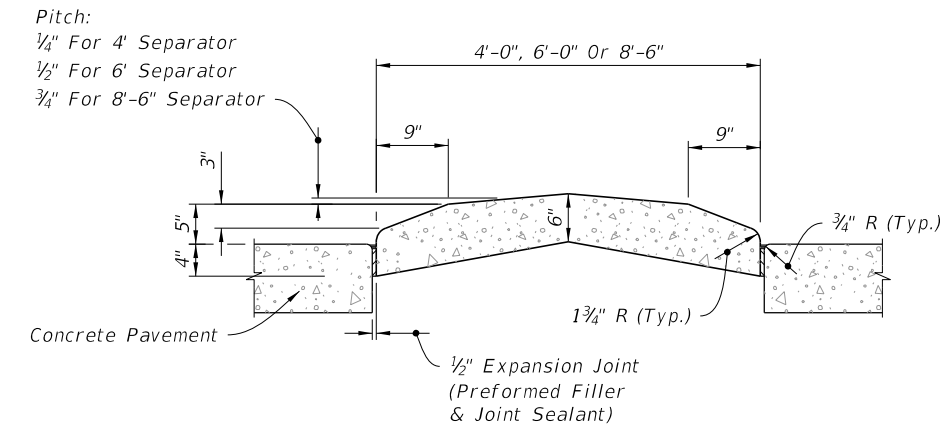
ROADWAY INSTALLATIONS - FLEXIBLE PAVEMENT

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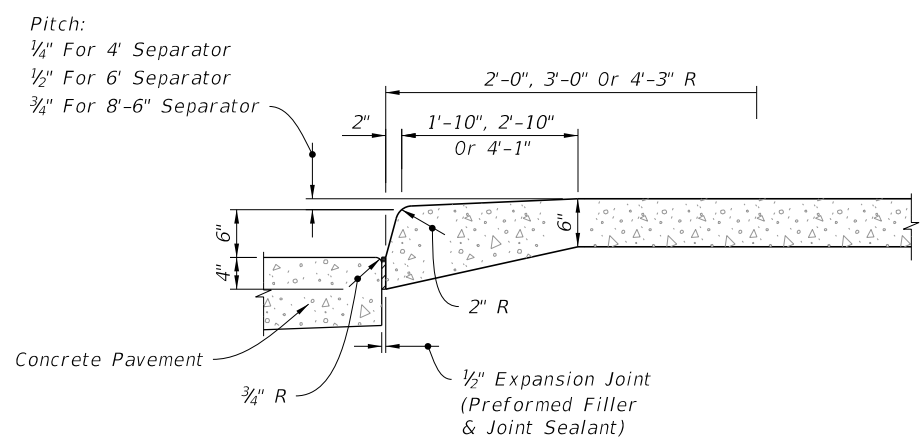


LONGITUDINAL SECTION (NOSE)

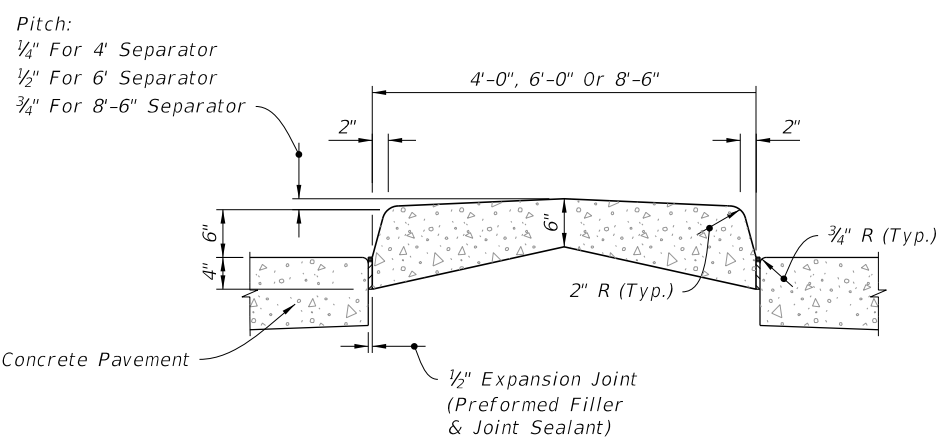


TRANSVERSE SECTION

TYPE II - CONCRETE TRAFFIC SEPARATOR



LONGITUDINAL SECTION (NOSE)

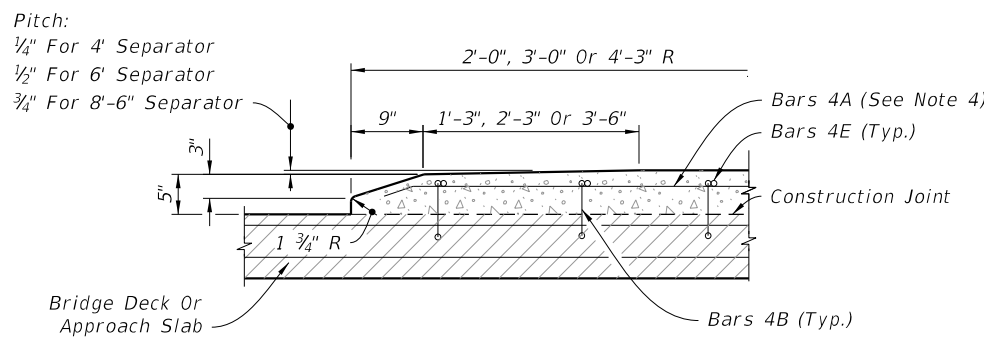


TRANSVERSE SECTION

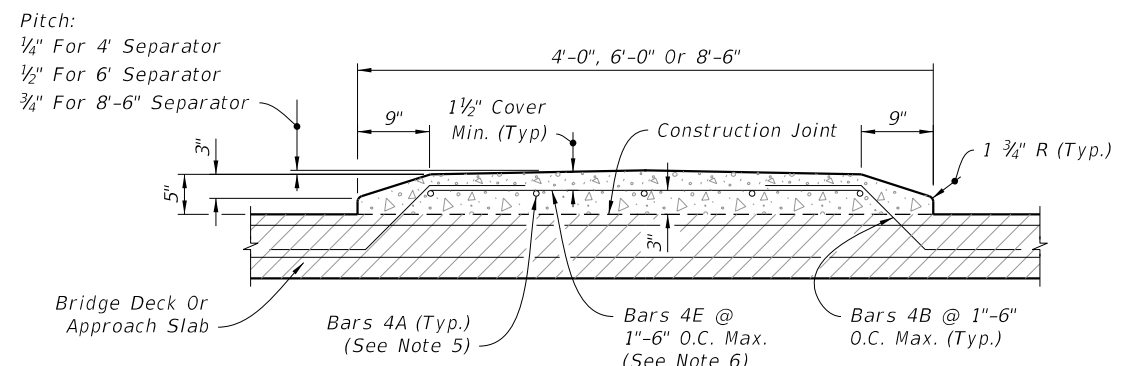
TYPE V - CONCRETE TRAFFIC SEPARATOR

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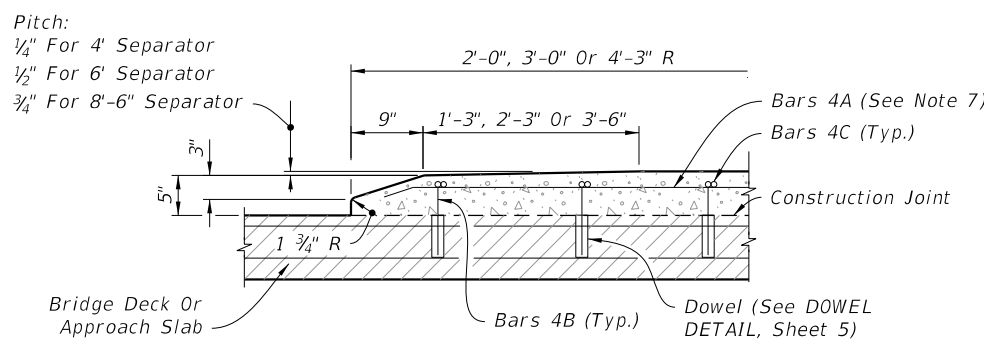


LONGITUDINAL SECTION (NOSE)

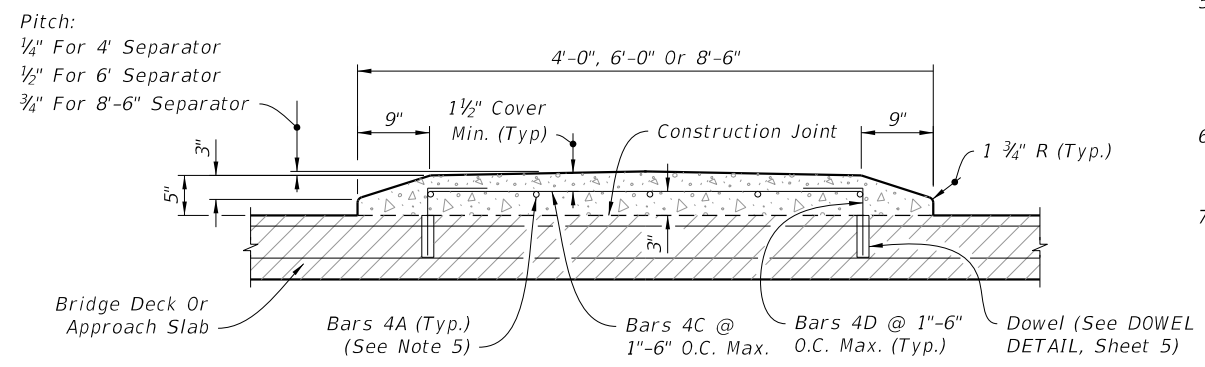


TRANSVERSE SECTION

OPTION I



LONGITUDINAL SECTION (NOSE)

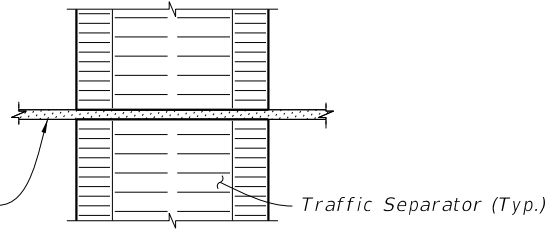


TRANSVERSE SECTION

OPTION II

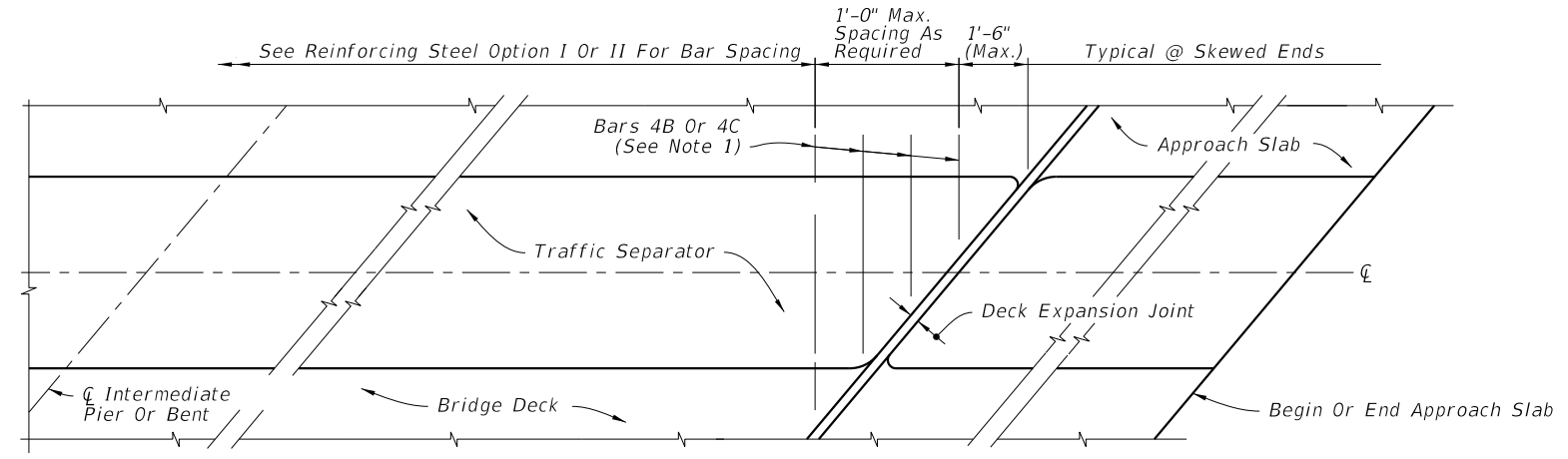
NOTES:

1. Traffic Separator transverse reinforcement adjacent to deck expansion joints shall be field adjusted to maintain clearance and spacing. Bars shall be field cut as shown, bars may be rotated to maintain clearance.
2. Traffic Separator ends at deck expansion joints shall follow the deck joint limits. Drainage joints and b" V-Grooves shall be placed perpendicular or radial to the ϕ of the Traffic Separator. See Structures Plans, Superstructure and Approach Slab Sheets for details.
3. See Structures Plans, Superstructure Sheets for actual dimensions and joint orientation.
4. Option II is not permitted on bridge decks with prestressing steel.
5. Bar Spacing:
 4'-0" @ 3 equal spaces (continuous)
 6'-0" @ 5 equal spaces (continuous)
 8'-6" @ 7 equal spaces (continuous)
6. At the Contractor's option, a one piece bar may be substituted for Bars 4B and 4E.
7. Field bend and cut rebar as required to maintain cover.

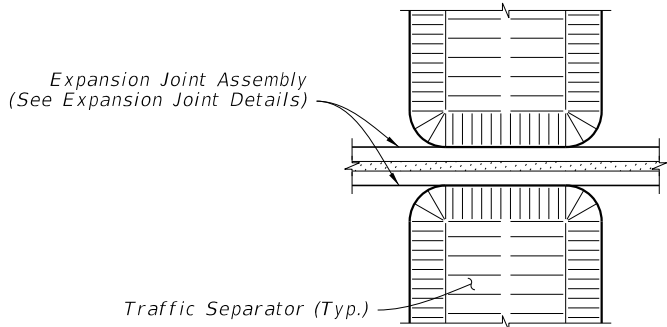


DETAIL AT Poured Joint With Backer Rod Expansion Joints

REINFORCING STEEL
(Bridge Deck Shown, Approach Slab Similar)



SKEWED BRIDGE DECK AND APPROACH SLAB WITH TRAFFIC SEPARATOR
(Deck Expansion Joint at Begin or End Bridge Shown, Expansion Joint at ϕ Pier or Intermediate Bents Similar)

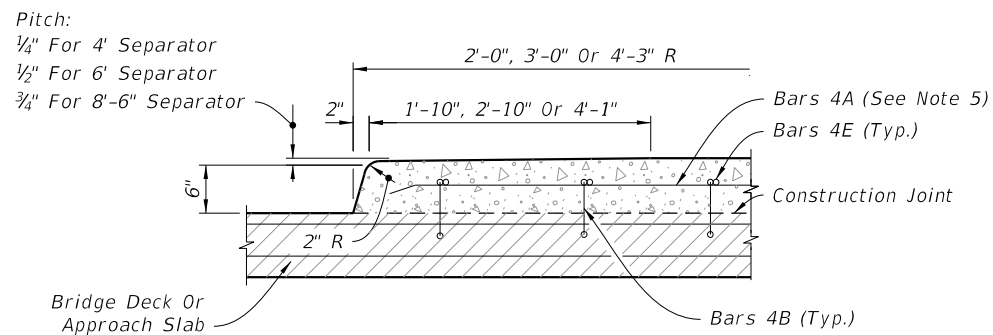


DETAIL AT EXPANSION JOINTS
(Strip Seal Shown, Other Armored Joint Types Similar)

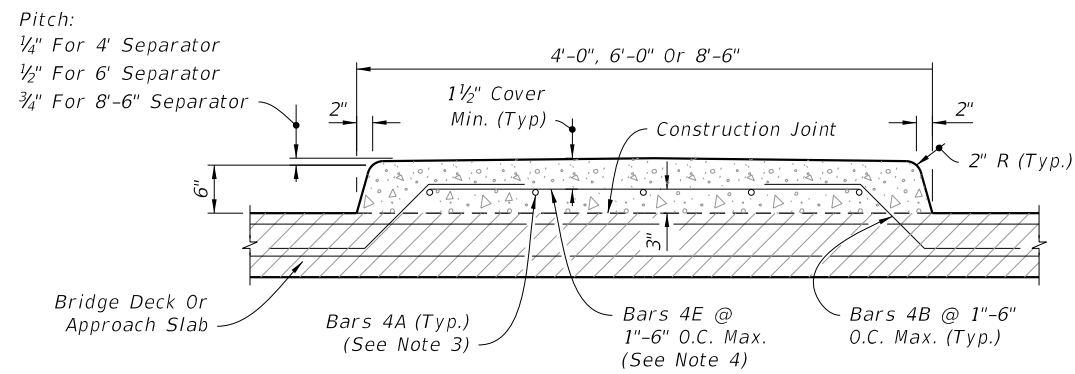
BRIDGE INSTALLATIONS - TYPE "E" CURB

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LAST REVISION 11/01/17	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	TRAFFIC SEPARATORS	INDEX 520-020	SHEET 3 of 5
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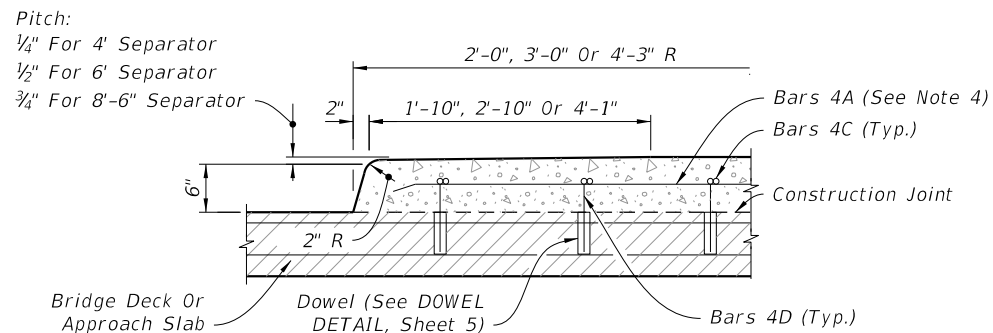


LONGITUDINAL SECTION (NOSE)

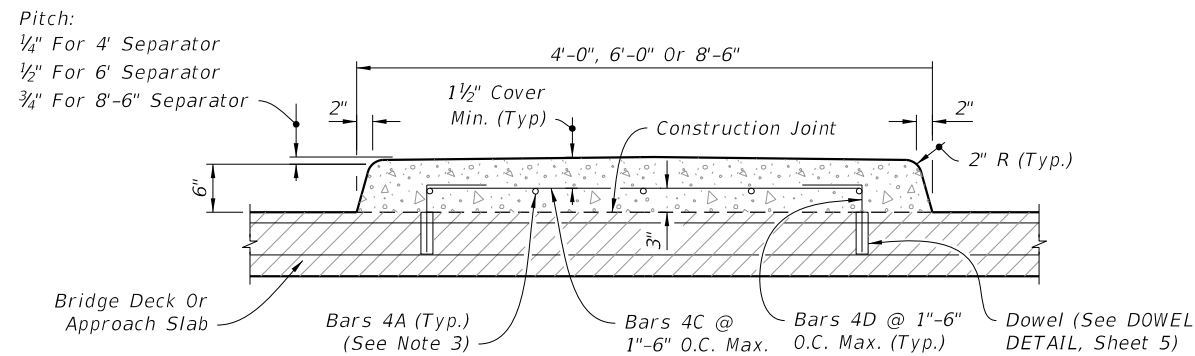


TRANSVERSE SECTION

OPTION I



LONGITUDINAL SECTION (NOSE)



TRANSVERSE SECTION

OPTION II

REINFORCING STEEL

(Bridge Deck Shown, Approach Slab Similar)

Expansion Joint Assembly
 (See Expansion Joint Details)

Traffic Separator (Typ.)

DETAIL AT EXPANSION JOINTS

(Strip Seal Shown, Other Armored Joint Types Similar)

Poured Joint With Backer
 Rod Expansion Joint
 (See Expansion Joint Details)

Traffic Separator (Typ.)

DETAIL AT POURED JOINT WITH
 BACKER ROD EXPANSION JOINTS

NOTES:

1. Treatment of separators on straight bridges shown. For additional notes and treatment of separators on skewed bridges, see Sheet 2.
2. Option II is not permitted on bridge decks with prestressing steel.
3. Bar Spacing:
 4'-0" @ 3 equal spaces (continuous)
 6'-0" @ 5 equal spaces (continuous)
 8'-6" @ 7 equal spaces (continuous)
4. At the Contractor's option, a one piece bar may be substituted for Bars 4B and 4E.
5. Field bend and cut rebar as required to maintain cover.

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LAST REVISION 11/01/17	REVISION	DESCRIPTION:
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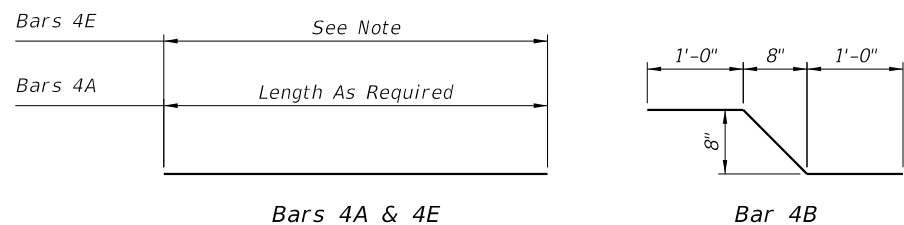
FY 2022-23
 STANDARD PLANS

TRAFFIC SEPARATORS

INDEX
 520-020

SHEET
 4 of 5

BRIDGE INSTALLATIONS - TYPE "F" CURB



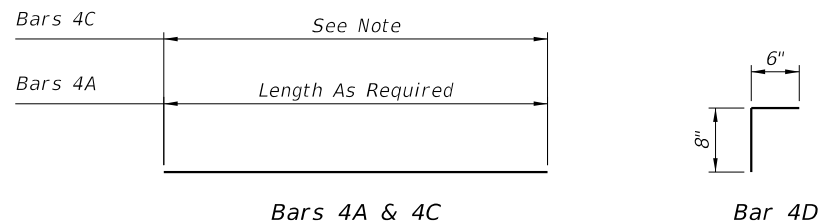
Bars 4A & 4E

Bar 4B

NOTE:

Length of Bars 4E is 2'-5" for 4'-0" Separator.
 Length of Bars 4E is 4'-5" for 6'-0" Separator.
 Length of Bars 4E is 6'-11" for 8'-6" Separator.

OPTION I



Bars 4A & 4C

Bar 4D

NOTE:

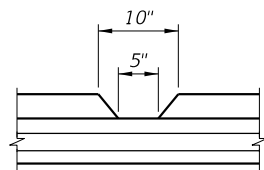
Length of Bars 4C is 2'-4½" for 4'-0" Separator.
 Length of Bars 4C is 4'-4½" for 6'-0" Separator.
 Length of Bars 4C is 6'-10½" for 8'-6" Separator.

OPTION II

REINFORCING STEEL NOTES:

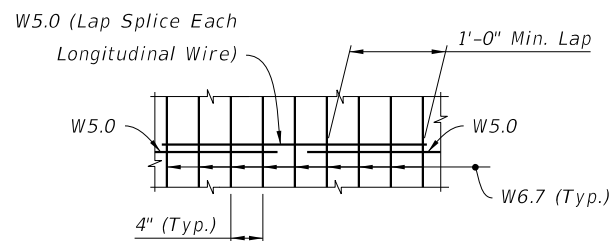
- All dimensions are out to out.
- The 8" vertical dimension shown for Bars 4B and 4D are based on a slab 8½" thick or greater without a wearing surface. If slab thickness is less than 8½", decrease this dimension by an amount equal to the difference in thickness. If a wearing surface is to be provided, increase this dimension by an amount equal to the wearing surface thickness.

CONVENTIONAL REINFORCING STEEL BENDING DIAGRAMS



See Structures Plans, Superstructure Sheets for location(s) of drainage joints. Locations for drainage joints shall be limited to the constant width section of separator.

DRAINAGE JOINT DETAIL
(For 5" Opening Or Less)



SPLICE DETAIL

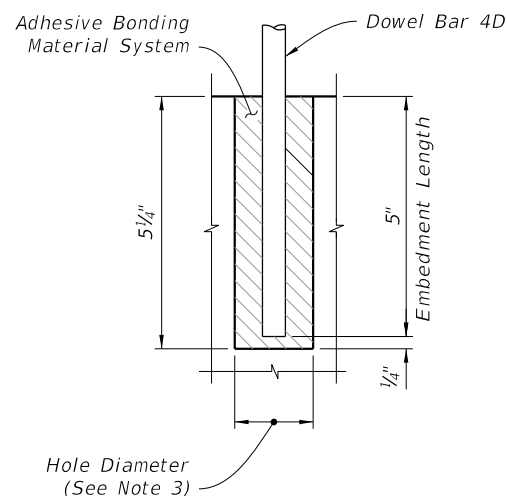
(Between WWR 3 x 4 - W5.0 x W6.7 Sections)

OPTION A: Use Welded Wire Reinforcement 3 x 4 - W5.0 x W6.7 as required by plans in place of Bars 4A, 4B and 4E. Bend the Welded Wire Reinforcement to the dimensions of Bar 4B shown in the Bending Diagram for Reinforcing Steel Option I.

OPTION B: Use Welded Wire Reinforcement 3 x 4 - W5.0 x W6.7 as required by plans in place of Bars 4A and 4C shown in Reinforcing Steel Option II.

NOTE: Welded Wire Reinforcement to consist of smooth wire meeting the requirements of Specification 931.

ALTERNATE REINFORCING STEEL DETAILS
(Welded Wire Reinforcement)



DOWEL NOTES:

- Shift Dowel Holes to clear if existing reinforcement is encountered.
- Provide and install an adhesive bonding material system in accordance with Specifications 416 and 937.
- The dowel hole diameter is to meet adhesive bonding material system manufacturer's requirements.

DOWEL DETAIL

ESTIMATED TRAFFIC SEPARATOR QUANTITIES:

CONCRETE:

CONSTANT WIDTH OF SEPARATOR:

	TYPE "E"	TYPE "F"
4'-0" Width	0.056 CY per Ft.	0.072 CY per Ft.
6'-0" Width	0.089 CY per Ft.	0.112 CY per Ft.
8'-6" Width	0.132 CY per Ft.	0.164 CY per Ft.

NOSE:

	TYPE "E"	TYPE "F"
4'-0" Width	0.080 CY	0.109 CY
6'-0" Width	0.193 CY	0.257 CY
8'-6" Width	0.403 CY	0.536 CY

REINFORCING STEEL:

(All quantities are based on an 8½" slab.)

OPTION I:

4'-0" Width	6.37 Lbs. per Ft.
6'-0" Width	8.60 Lbs. per Ft.
8'-6" Width	11.05 Lbs. per Ft.

OPTION II:

4'-0" Width	4.77 Lbs. per Ft.
6'-0" Width	7.00 Lbs. per Ft.
8'-6" Width	9.45 Lbs. per Ft.

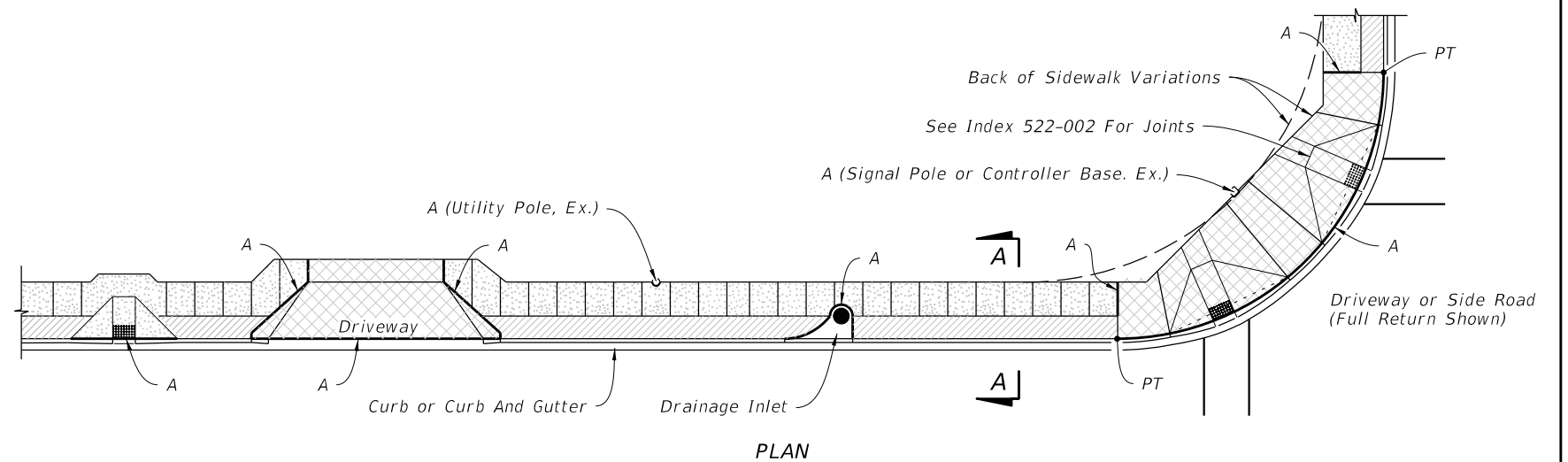
BRIDGE INSTALLATIONS - TYPE "E" AND "F" CURB

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LAST REVISION	DESCRIPTION:
11/01/17	

GENERAL NOTES:

1. Construct sidewalks in accordance with Specification 522. Use 6" concrete for Sidewalks and Curb Ramps Located within Curb Returns (See Plan View). Install all other concrete with thickness as shown, unless otherwise detailed in the Plans.
2. Include detectable warnings on sidewalk curb ramps in accordance with Index 522-002.
3. For Driveways see Index 522-003.
4. Bond breaker material can be any impermeable coated or sheet membrane or preformed material having a thickness of not less than 6 mils and not more than 1/2".
5. Construct sidewalks with Edge Beam through the limits of any surface mounted Pedestrian/Bicycle Railing or Pipe Guiderail shown in the plans. (See RAILING DETAIL)

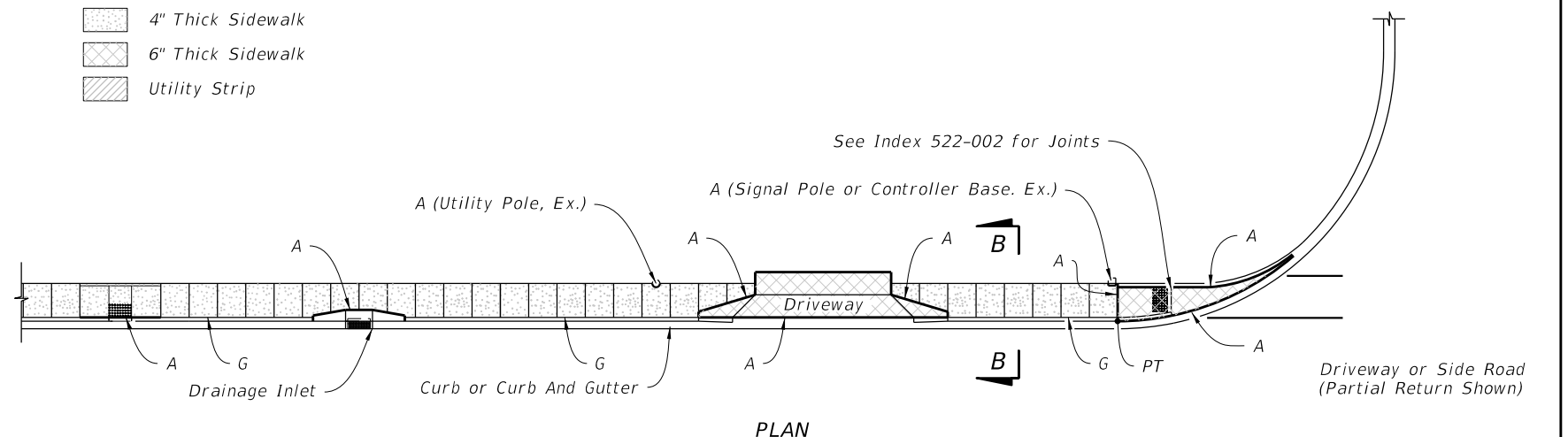


PLAN

SIDEWALK WITH UTILITY STRIP

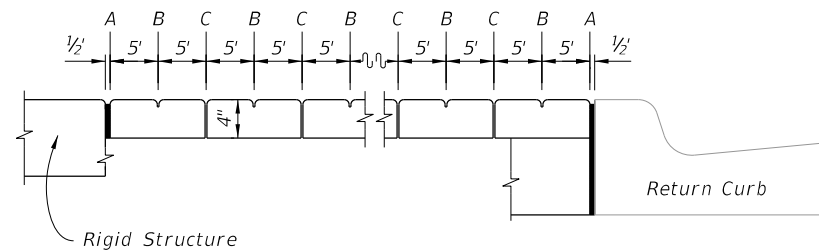
LEGEND:

- 4" Thick Sidewalk
- 6" Thick Sidewalk
- Utility Strip

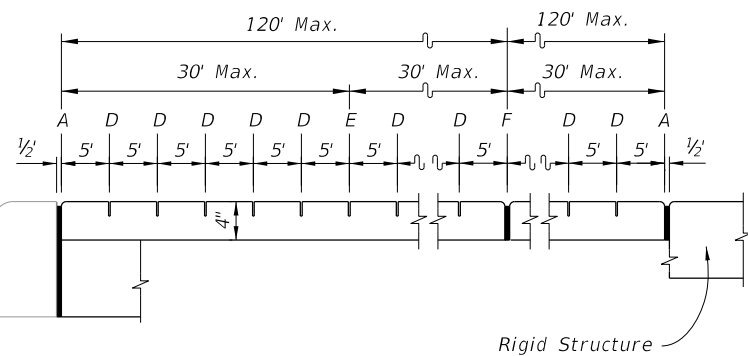


PLAN

SIDEWALK WITHOUT UTILITY STRIP



OPEN JOINTS



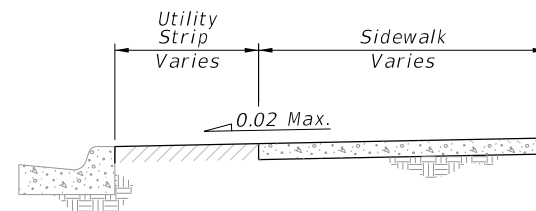
SAWED JOINTS

LONGITUDINAL SECTION

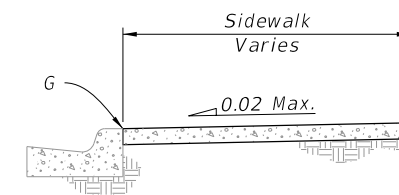
LEGEND:

- A- 1/2" Expansion Joints (Preformed Joint Filler) between the sidewalk and; driveways, sidewalk-intersections, and all other fixed objects (e.g. drainage inlets and utility poles).
- B- 1/8" Dummy Joints, Tooled
- C- 1/8" Formed Open Joints
- D- 3/16" Saw Cut Joints, 1 1/2" Deep (within 96 hours) Max. 5' Centers
- E- 3/16" Saw Cut Joints, 1 1/2" Deep (within 12 hours) Max. 30' Centers Joint(s) Required When Length Exceeds 30'
- F- 1/2" Expansion Joint When Run Of Sidewalk Exceeds 120'. Intermediate locations when called for in the plans or at locations as directed by the Engineer.
- G- Cold Joint With Bond Breaker, Tooled

SIDEWALK JOINTS

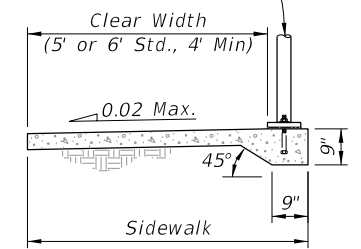


SECTION A-A



SECTION B-B

Railing (See Index 515-052, 515-062, 515-070 or 515-080)



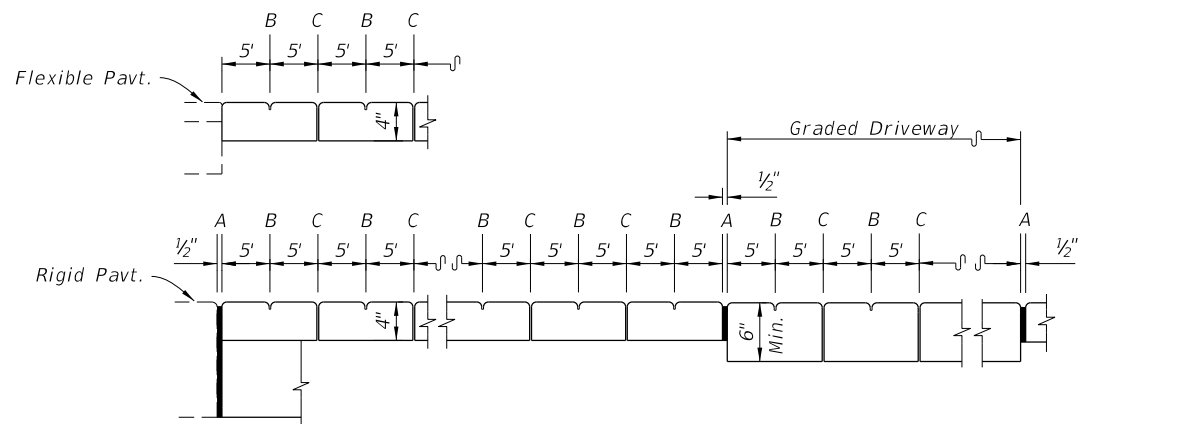
Varies Based on Railing Used

RAILING DETAIL

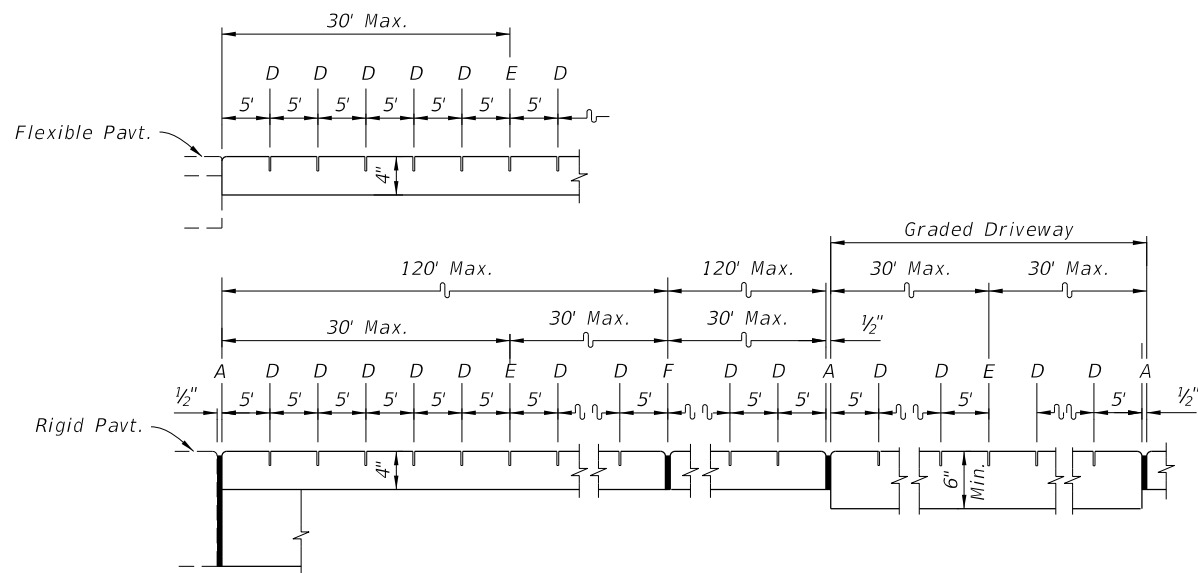
GENERAL NOTES AND CONCRETE SIDEWALK ON CURBED ROADWAYS

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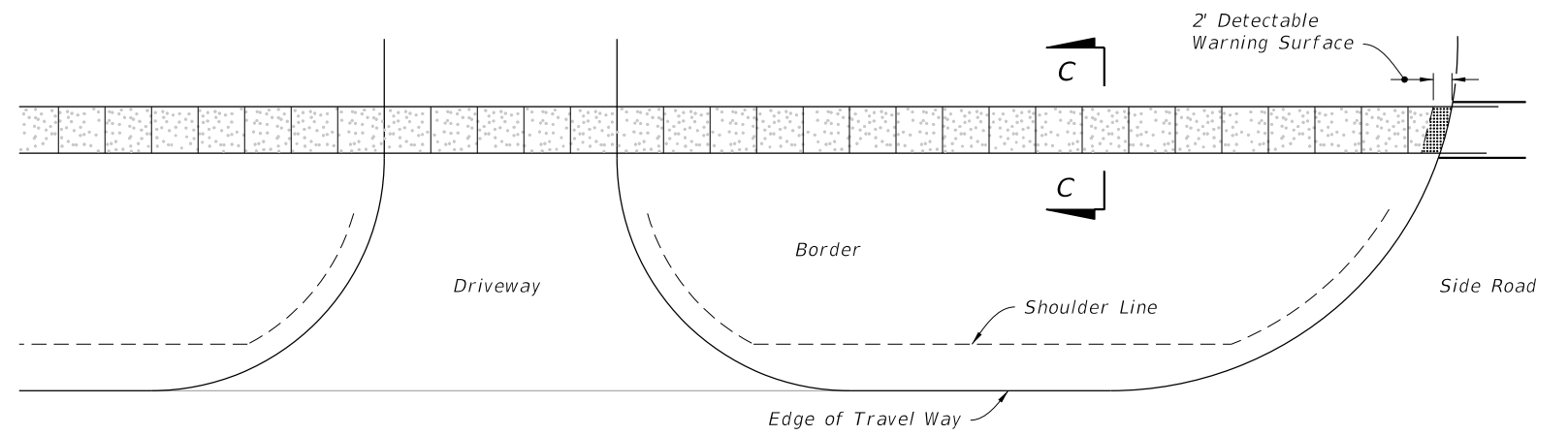
LAST REVISION 11/01/18	DESCRIPTION:	FY 2022-23 STANDARD PLANS	CONCRETE SIDEWALK	INDEX 522-001	SHEET 1 of 2
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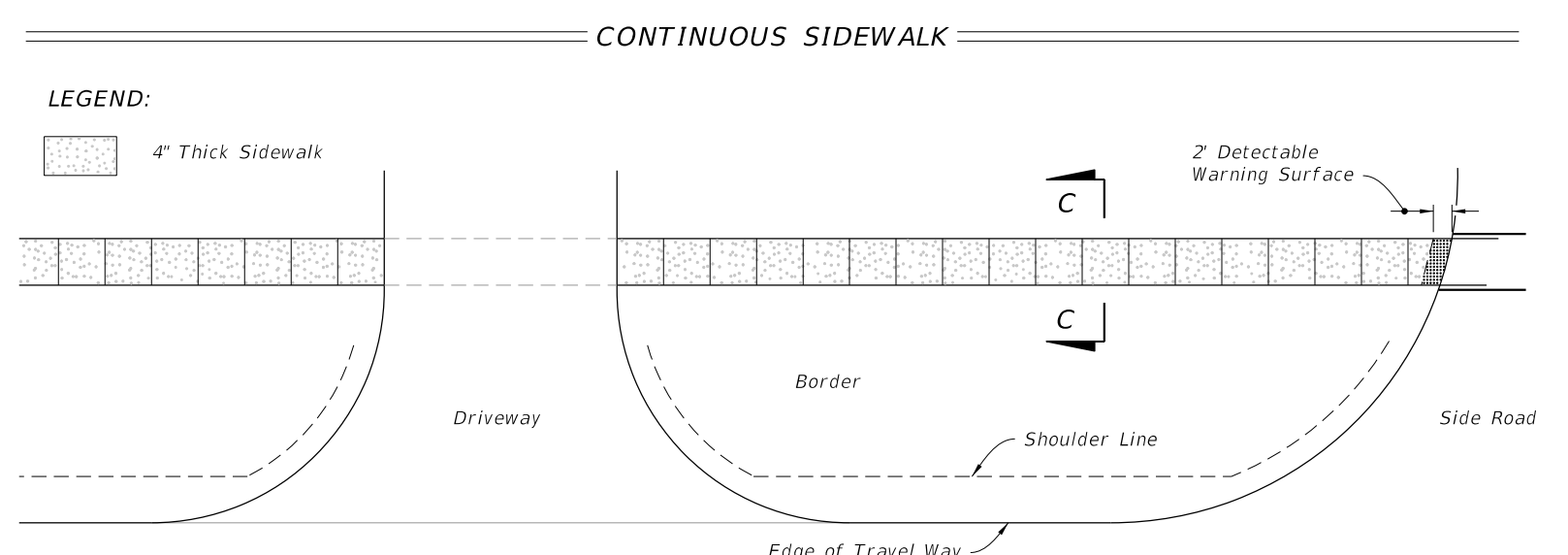
OPEN JOINTS



SAWED JOINTS
LONGITUDINAL SECTION



PLAN



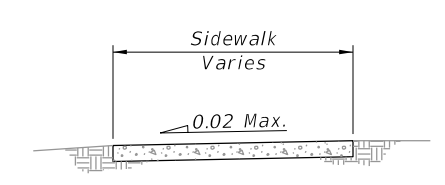
PLAN

LEGEND:

4" Thick Sidewalk

LEGEND:

- A- 1/2" Expansion Joints (Preformed Joint Filler) between the sidewalk and driveways, sidewalk-intersections, and all other fixed objects (e.g. drainage inlets and utility poles).
- B- 1/8" Dummy Joints, Tooled
- C- 1/8" Formed Open Joints
- D- 3/16" Saw Cut Joints, 1 1/2" Deep (within 96 hours) Max. 5' Centers
- E- 3/16" Saw Cut Joints, 1 1/2" Deep (within 12 hours) Max. 30' Centers Joint(s) Required When Length Exceeds 30'
- F- 1/2" Expansion Joint When Run Of Sidewalk Exceeds 120'. Intermediate locations when called for in the plans or at locations as directed by the Engineer.



SECTION C-C

SIDEWALK JOINTS

CONCRETE SIDEWALK ON FLUSH SHOULDER ROADWAYS

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LAST REVISION 11/01/18	DESCRIPTION:
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FY 2022-23
 STANDARD PLANS

CONCRETE SIDEWALK

INDEX 522-001	SHEET 2 of 2
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GENERAL NOTES:

1. Cross Slopes and Grades:

- A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.
- B. Landings must have cross-slopes less than or equal to 0.02 in any direction.
- C. Maintain a single longitudinal slope along each side of the curb ramp. Ramp slopes are not required to exceed 15 feet in length.
- D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.

2. Curb, Curb and Gutter and/or Sidewalk:

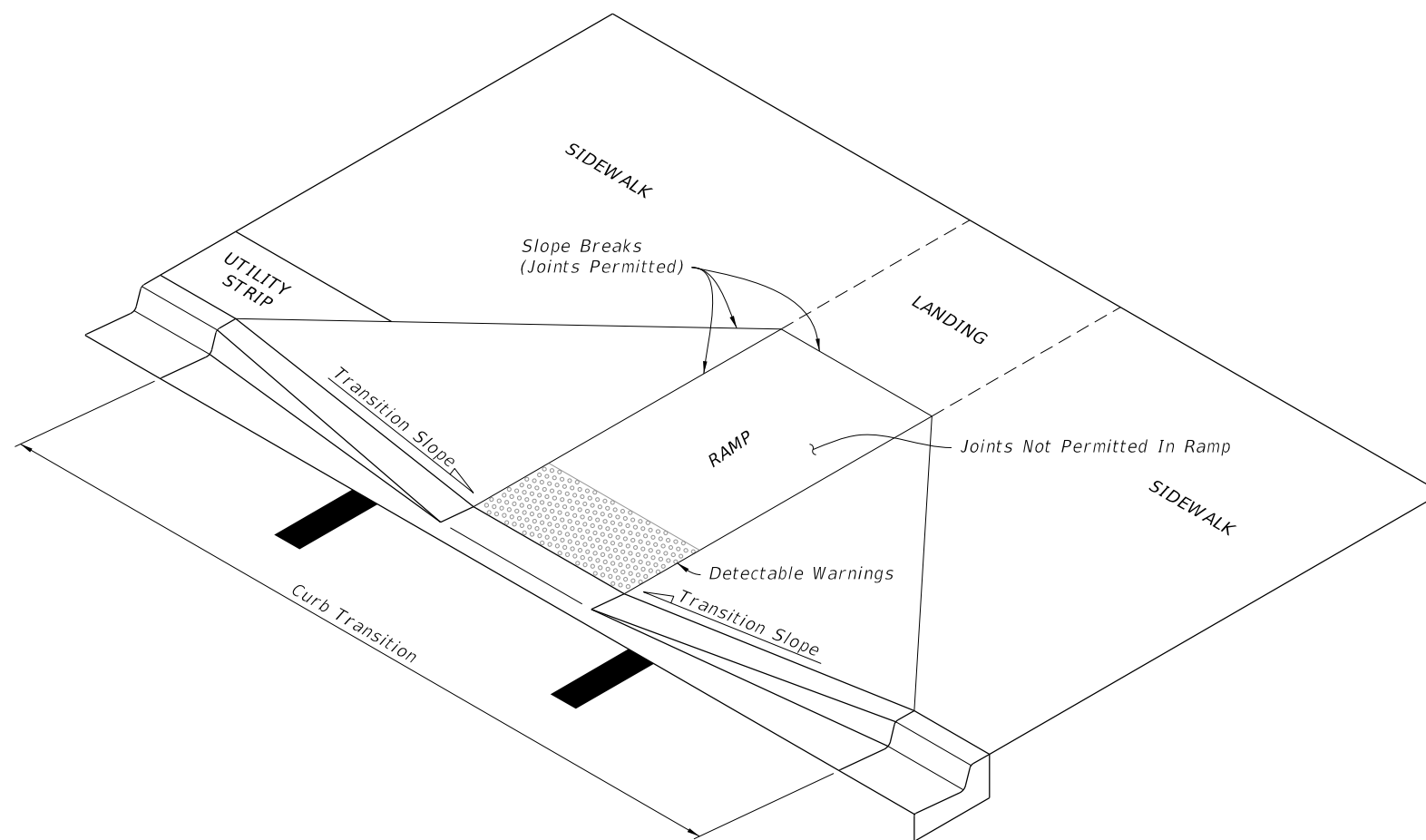
- A. Refer to Index 522-001 for concrete thickness and sidewalk details.
- B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.
- C. Width of Curb Ramp is 4'-0" minimum. Match sidewalk or Shared Use Path width as shown in the Plans.

3. Curb Ramp Alpha-Identification:

- A. Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.
- B. Alpha-identifications CR-I and CR-J are intentionally omitted.


4. Detectable Warnings:

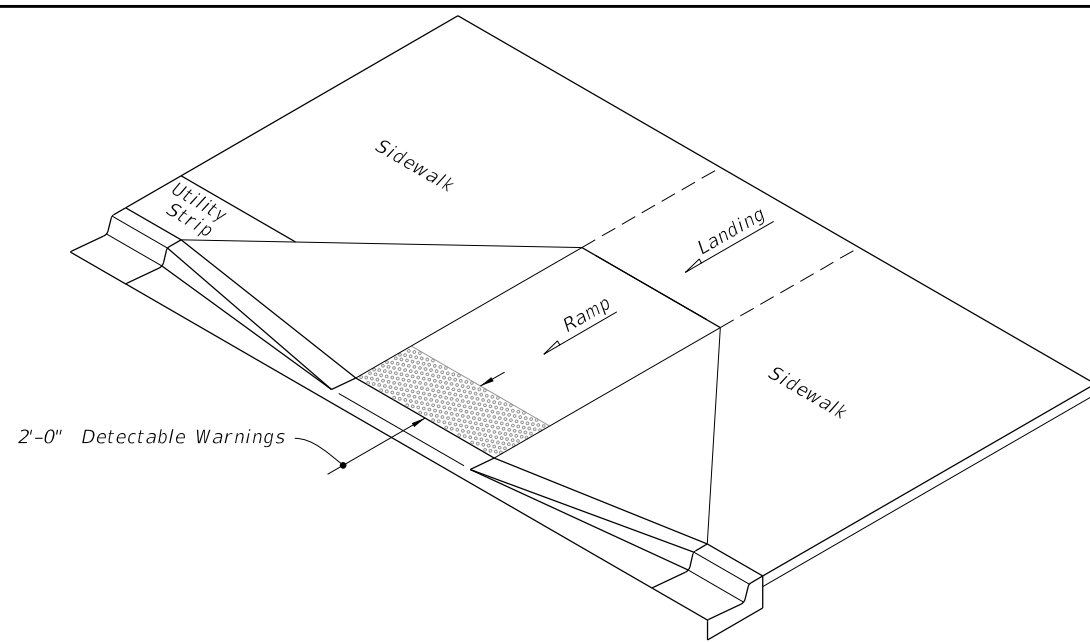
- A. Install detectable warnings in accordance with Specification 527.
- B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.
- C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.



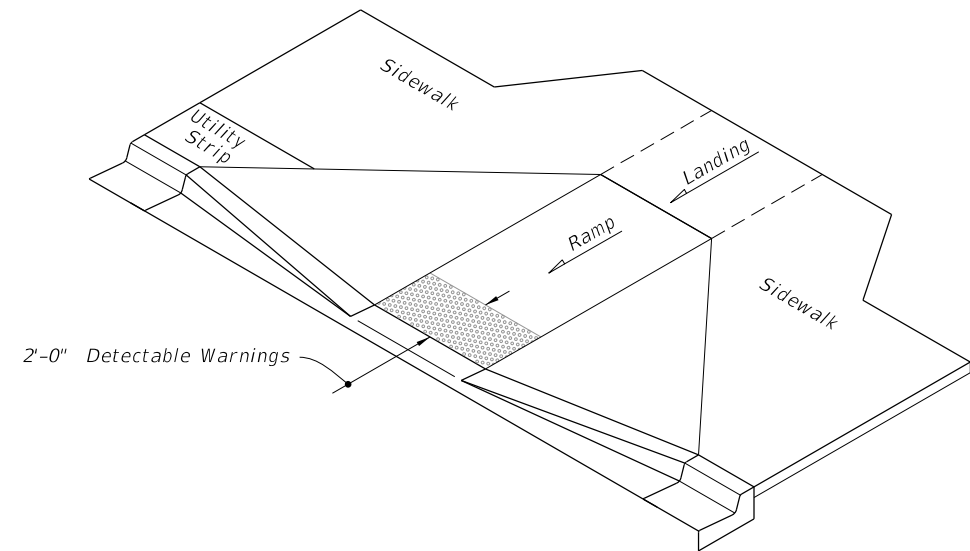
==== CURB RAMP NOMENCLATURE =====

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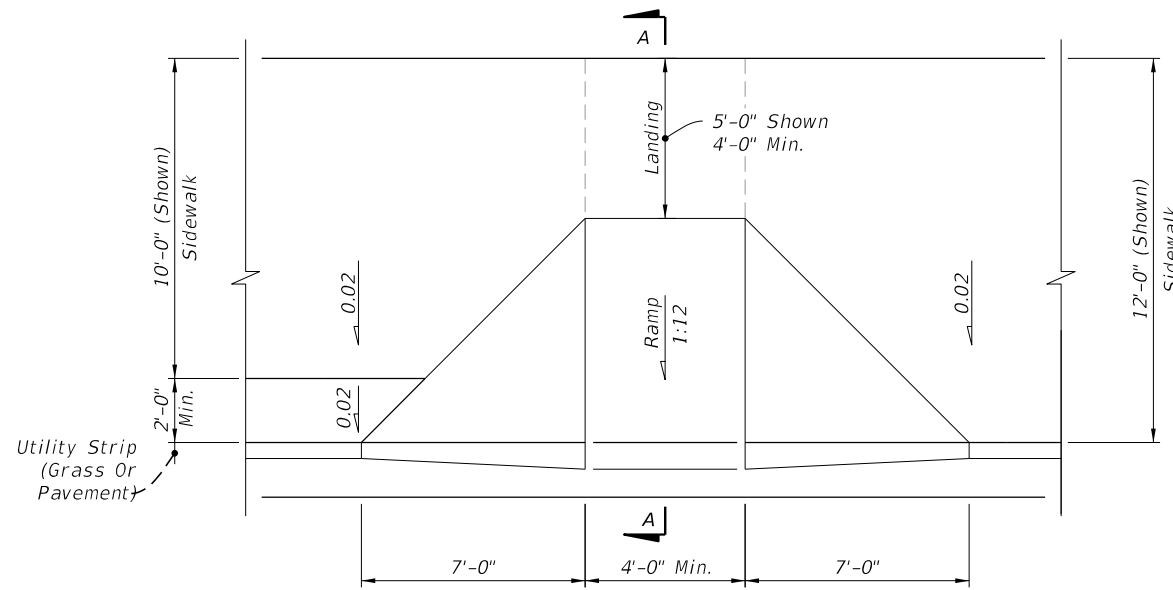
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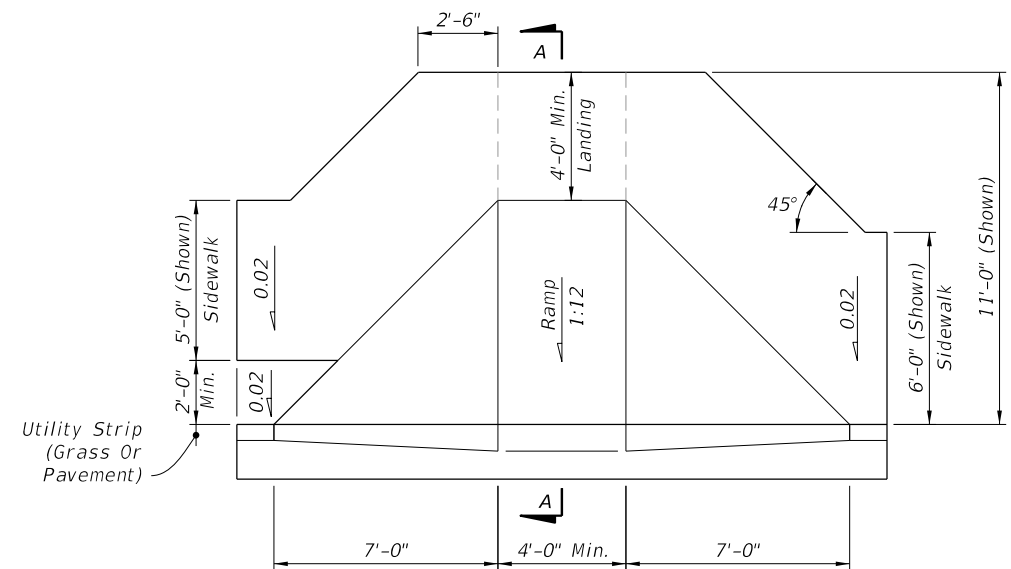
ISOMETRIC VIEW



ISOMETRIC VIEW



PLAN VIEW

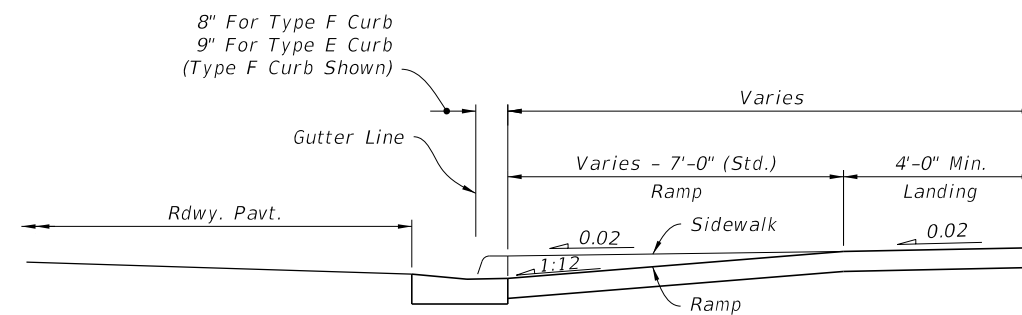


PLAN VIEW

NOTE: For Example of CR-A used in Radial Curb Returns, See Sheet 8.

CR-A

CR-B



SECTION A-A

SIDEWALK CURB RAMPS CR-A AND CR-B

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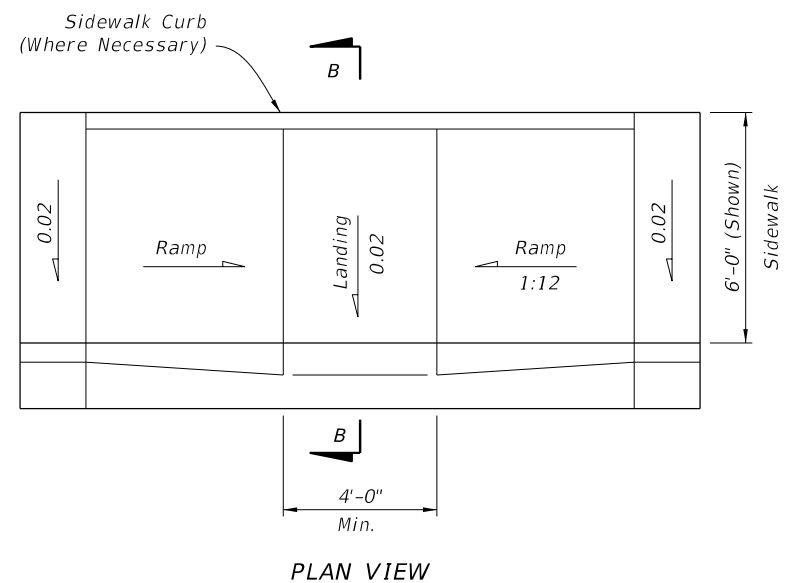
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FY 2022-23
 STANDARD PLANS

DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS

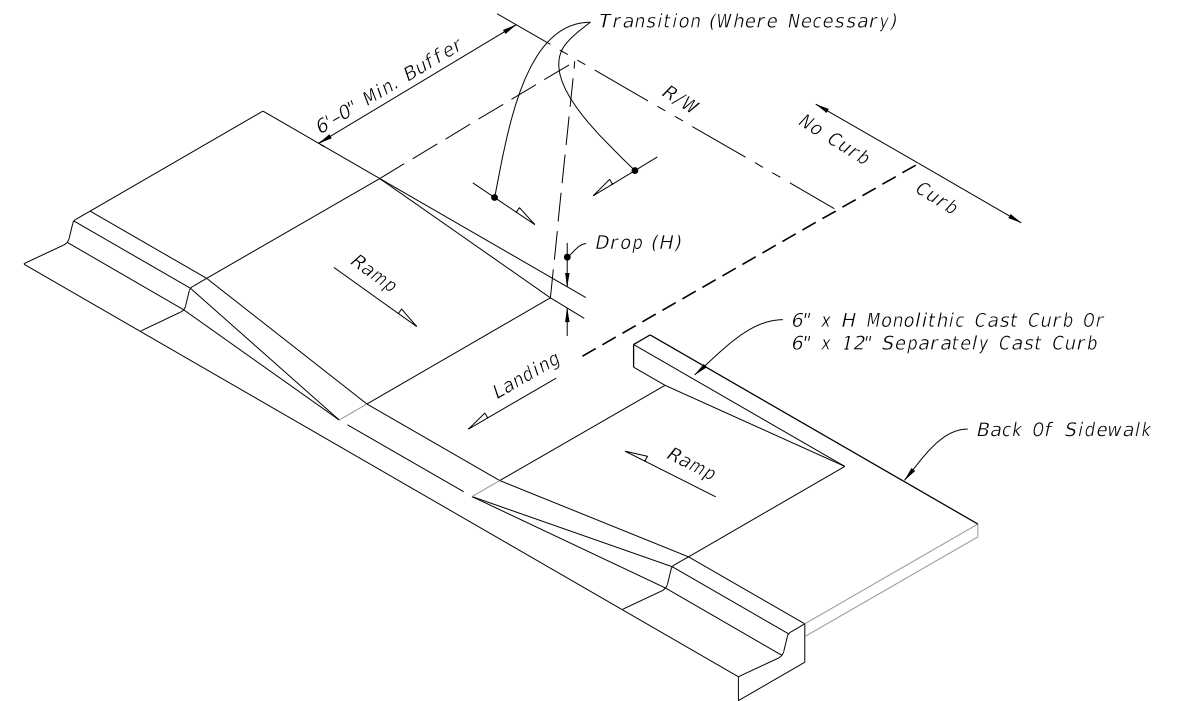
INDEX
522-002

SHEET
2 of 7

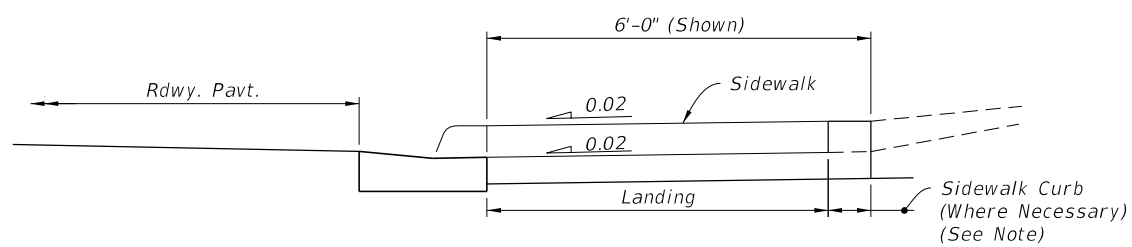


PLAN VIEW

CR-C

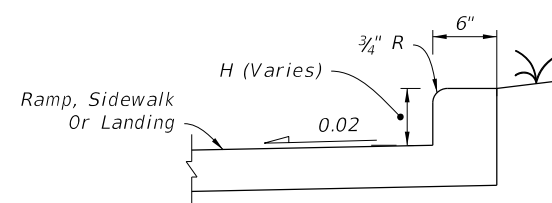


CONSTRUCTION OF SIDEWALK CURB IN CUT SECTIONS

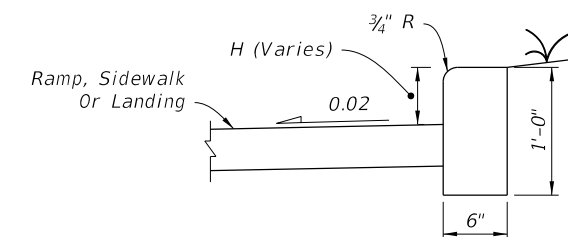


SECTION B-B

NOTE: For additional information on sidewalk curb construction, see SIDEWALK CURB OPTIONS details.



MONOLITHIC CAST CURB




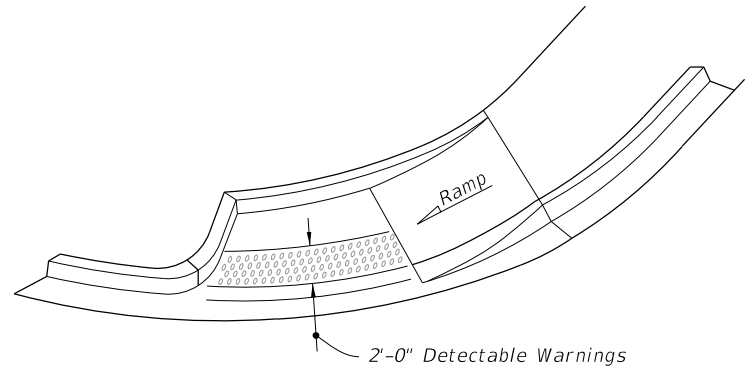
SEPARATELY CAST CURB

SIDEWALK CURB OPTIONS

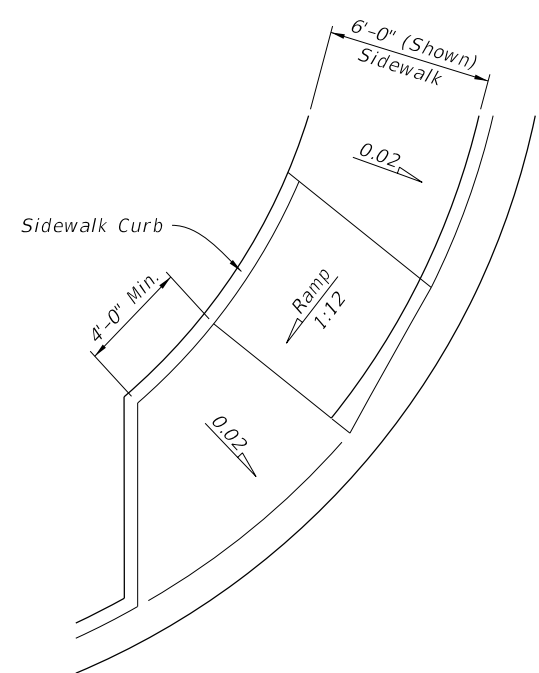
SIDEWALK CURB RAMPS CR-C AND SIDEWALK CURB

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LAST REVISION 11/01/20	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX 522-002	SHEET 3 of 7
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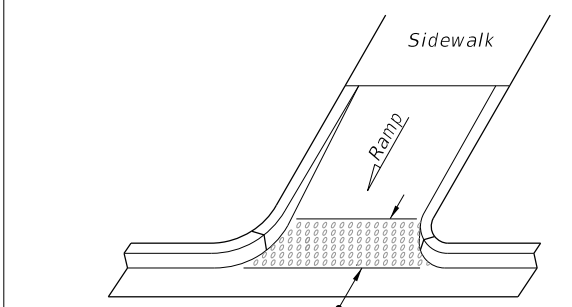


ISOMETRIC VIEW



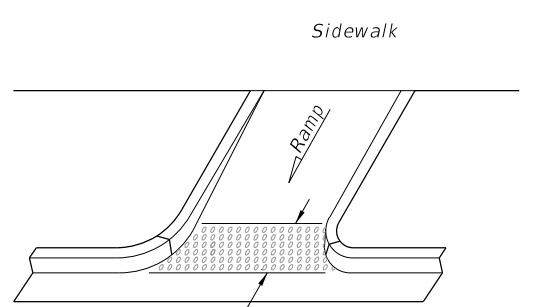
PLAN VIEW

CR-D



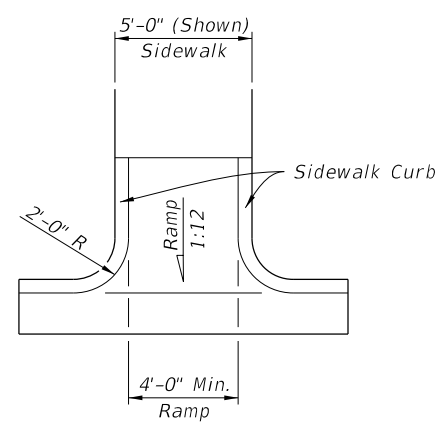
2'-0" Detectable Warnings

OPTION A



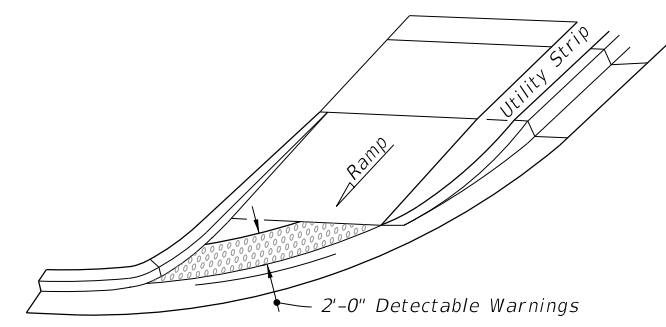
2'-0" Detectable Warnings

OPTION B
ISOMETRIC VIEW

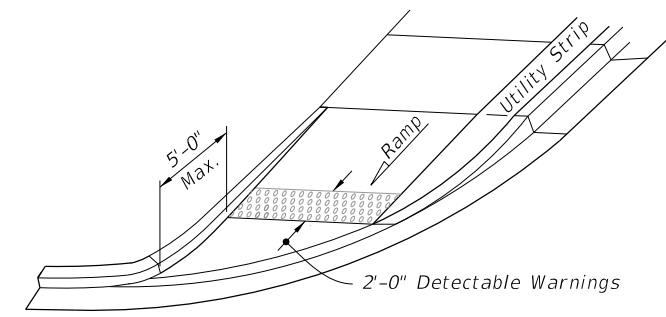


PLAN VIEW

CR-E

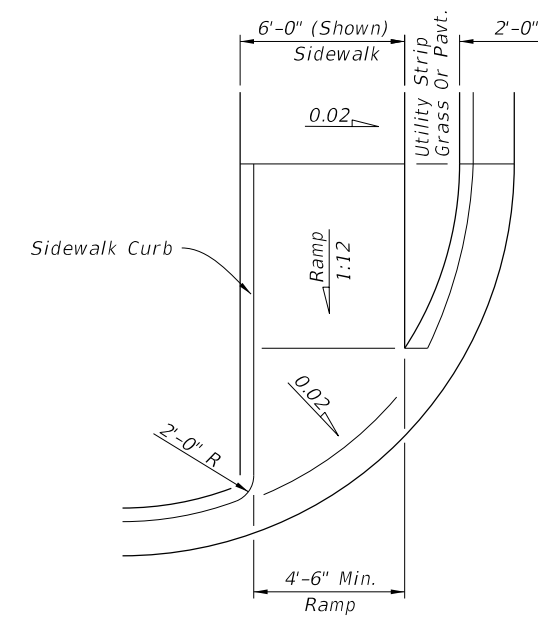


OPTION A



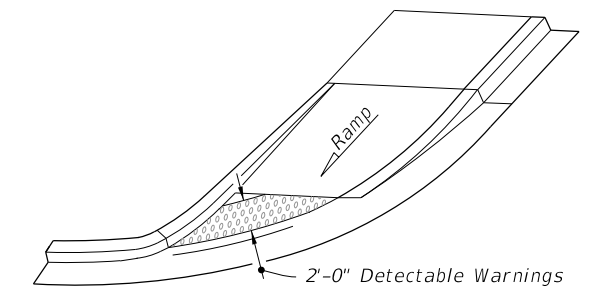
OPTION B

ISOMETRIC VIEW

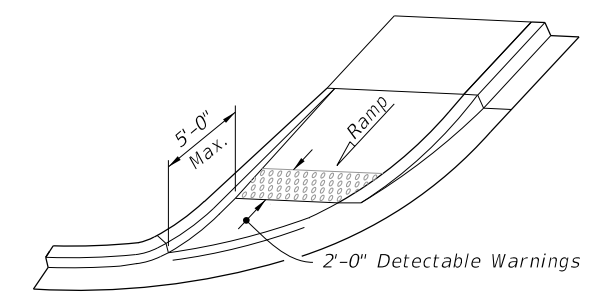


PLAN VIEW

CR-F

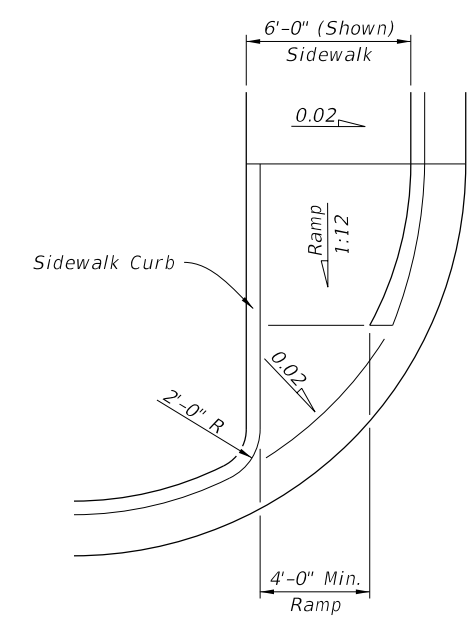


OPTION A



OPTION B

ISOMETRIC VIEW



PLAN VIEW

CR-G

SIDEWALK CURB RAMPS CR-D, CR-E, CR-F & CR-G

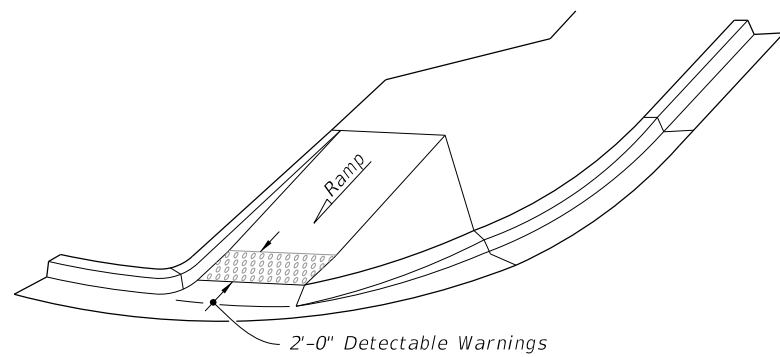
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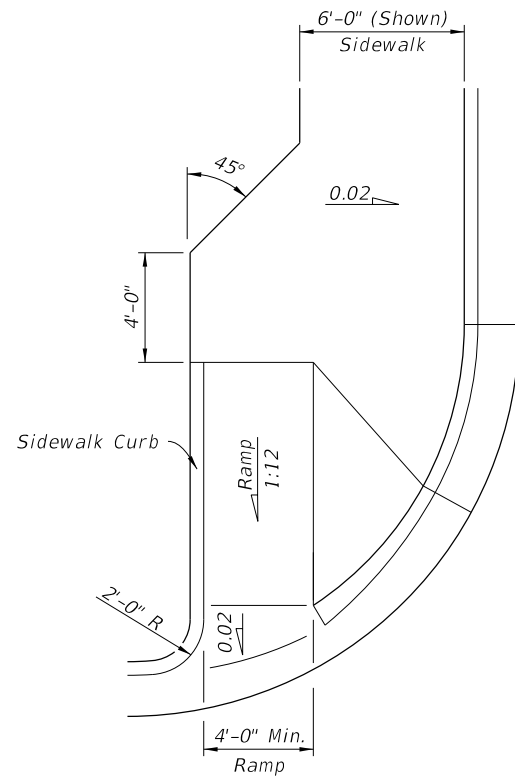
FY 2022-23
 STANDARD PLANS

DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS

INDEX 522-002	SHEET 4 of 7
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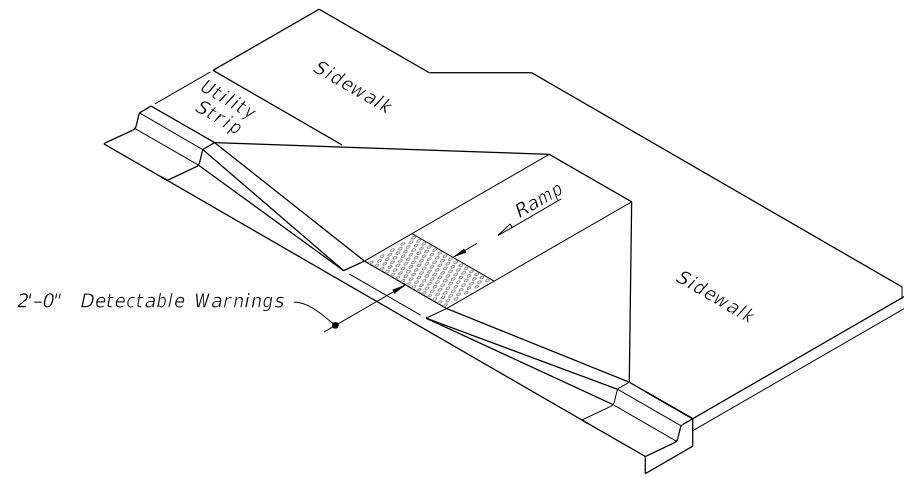


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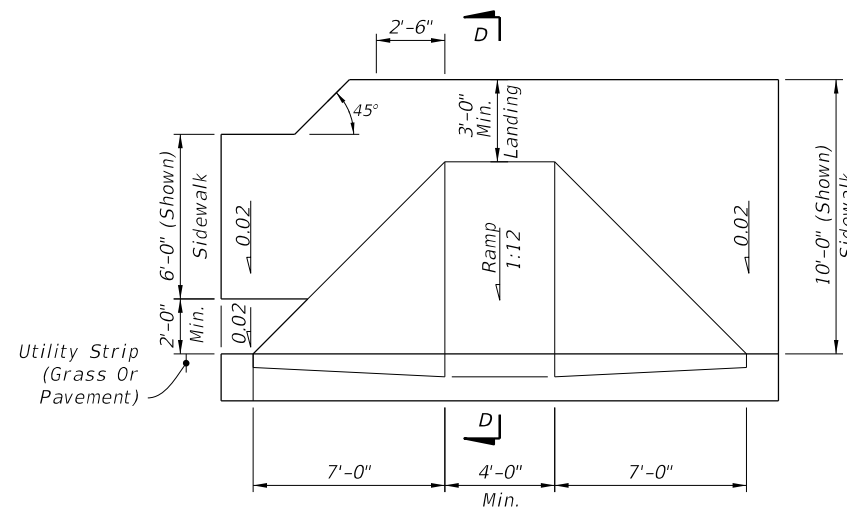


PLAN VIEW

CR-H

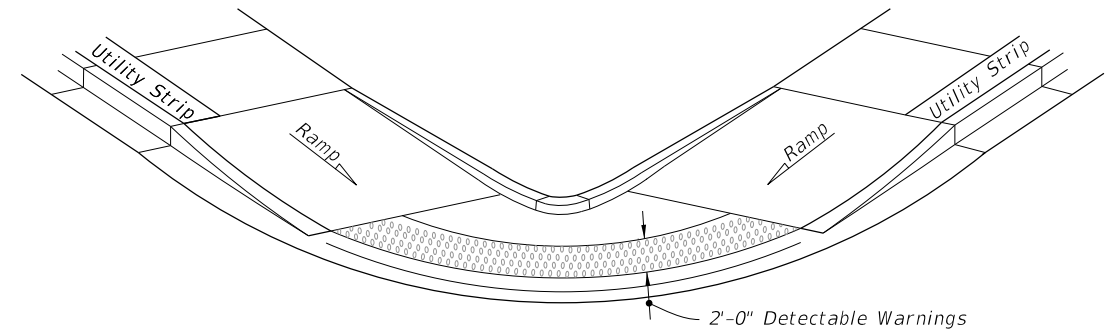


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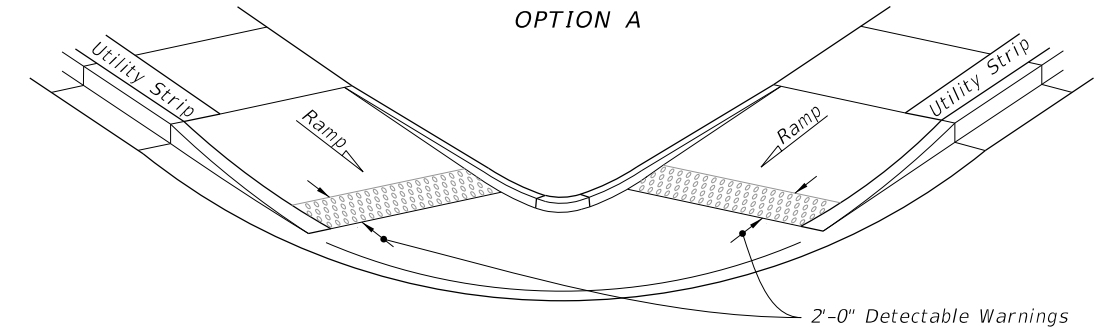


PLAN VIEW

CR-K

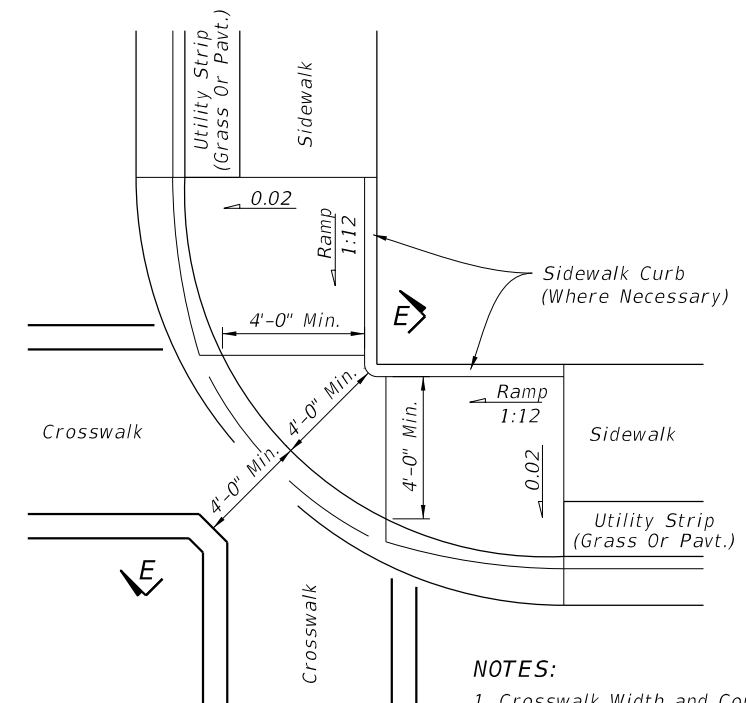


OPTION A



OPTION B

ISOMETRIC VIEW

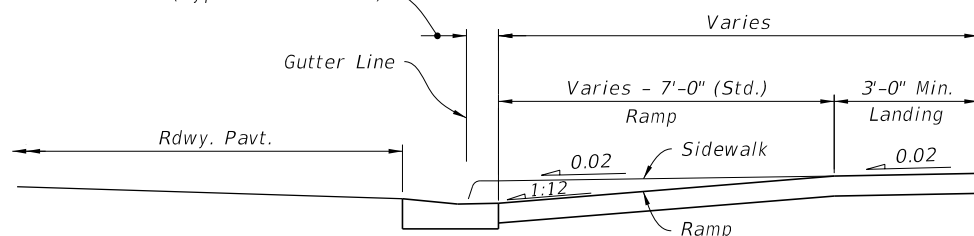


PLAN VIEW

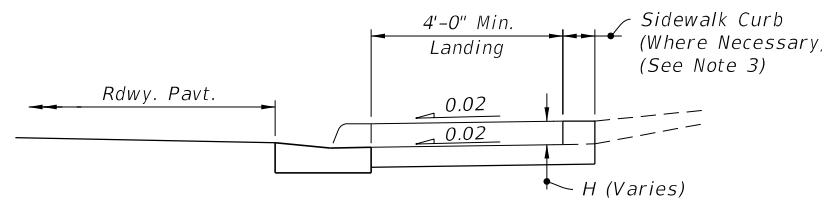
CR-L

- NOTES:
1. Crosswalk Width and Configuration Vary; Must Conform to Index 711-001.
 2. 15' Radius Curve Shown for CR-L.
 3. For additional information on sidewalk curb construction, see SIDEWALK CURB OPTIONS details, on Sheet 3.

8" For Type F Curb
9" For Type E Curb
(Type F Curb Shown)



SECTION D-D



SECTION E-E

SIDEWALK CURB RAMPS CR-H, CR-K & CR-L

9/22/2021 8:50:38 AM

LAST REVISION	DESCRIPTION:
11/01/20	

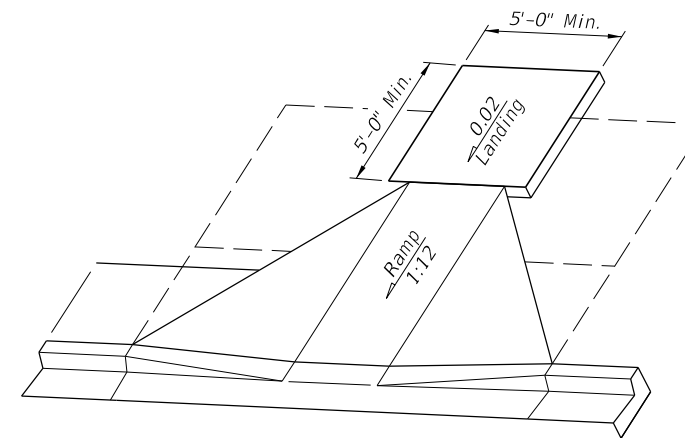
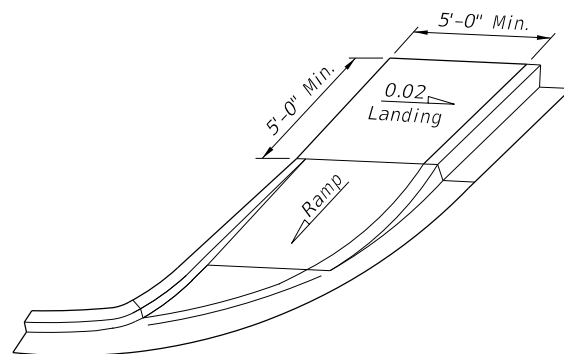
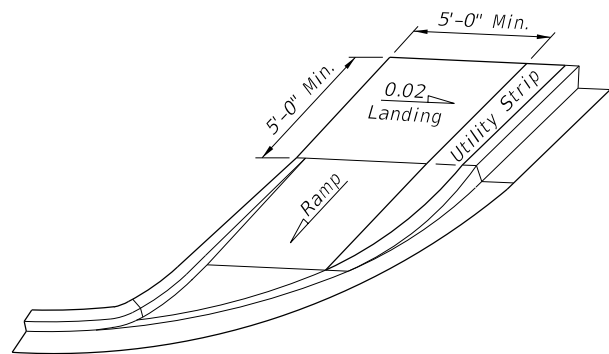


FY 2022-23
STANDARD PLANS

DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS

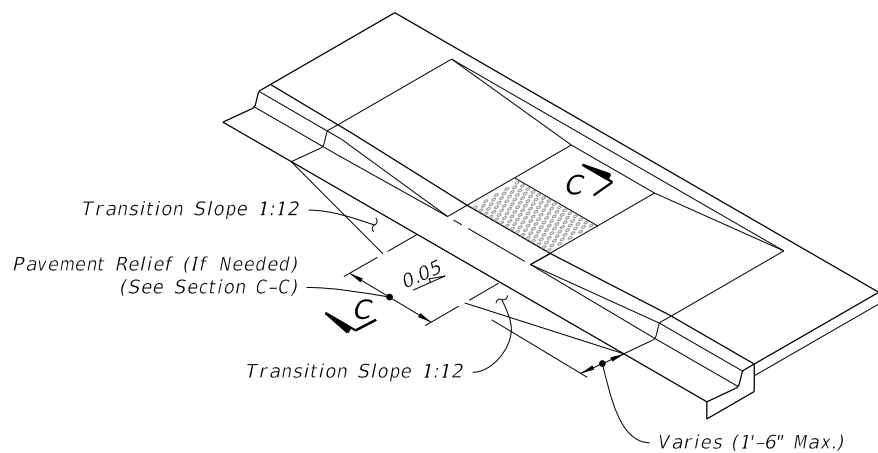
INDEX
522-002

SHEET
5 of 7

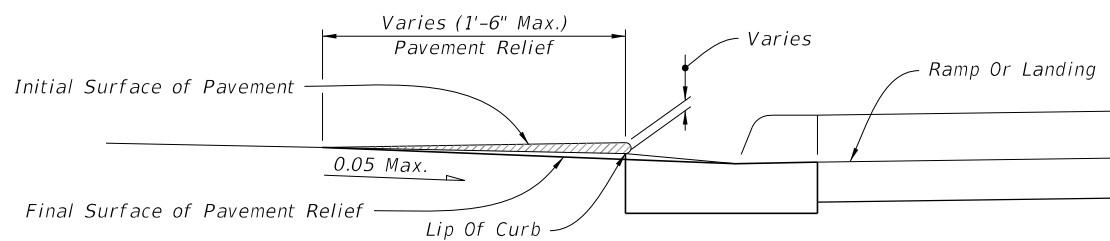


LANDINGS FOR CURB RAMPS WITHOUT SIDEWALKS

(See CR-F, CR-G & CR-K Respectively For Detectable Warning Details/Options)



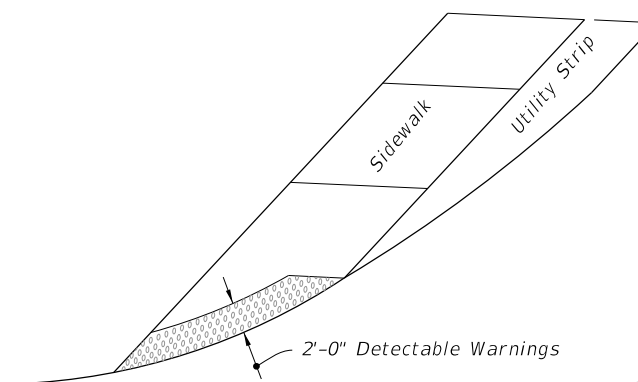
ISOMETRIC VIEW
(CR-C Shown, Other Similar)



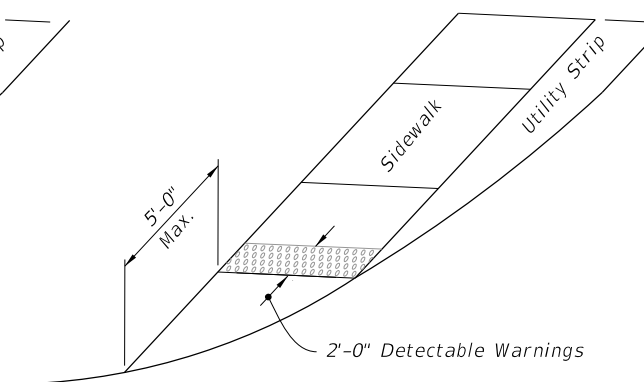
SECTION C-C

PAVEMENT RELIEF DETAILS

NOTE: Remove Elevated Pavement By Spading And Rolling, Smooth Milling, or Grinding.



OPTION A



OPTION B

DETECTABLE WARNING ON FLUSH SHOULDER SIDEWALKS

CURB RAMPS WITHOUT SIDEWALKS AND FLUSH SHOULDER SIDEWALKS

9/22/2021 8:50:40 AM

LAST REVISION 11/01/20	REVISION	DESCRIPTION:
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FY 2022-23
STANDARD PLANS

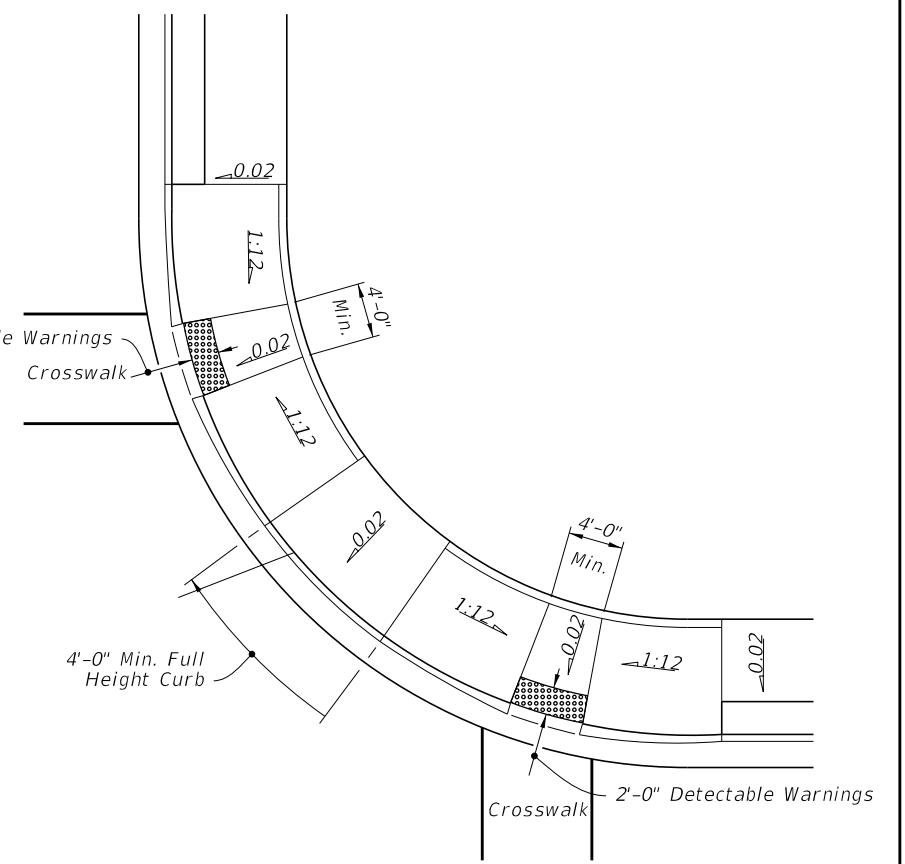
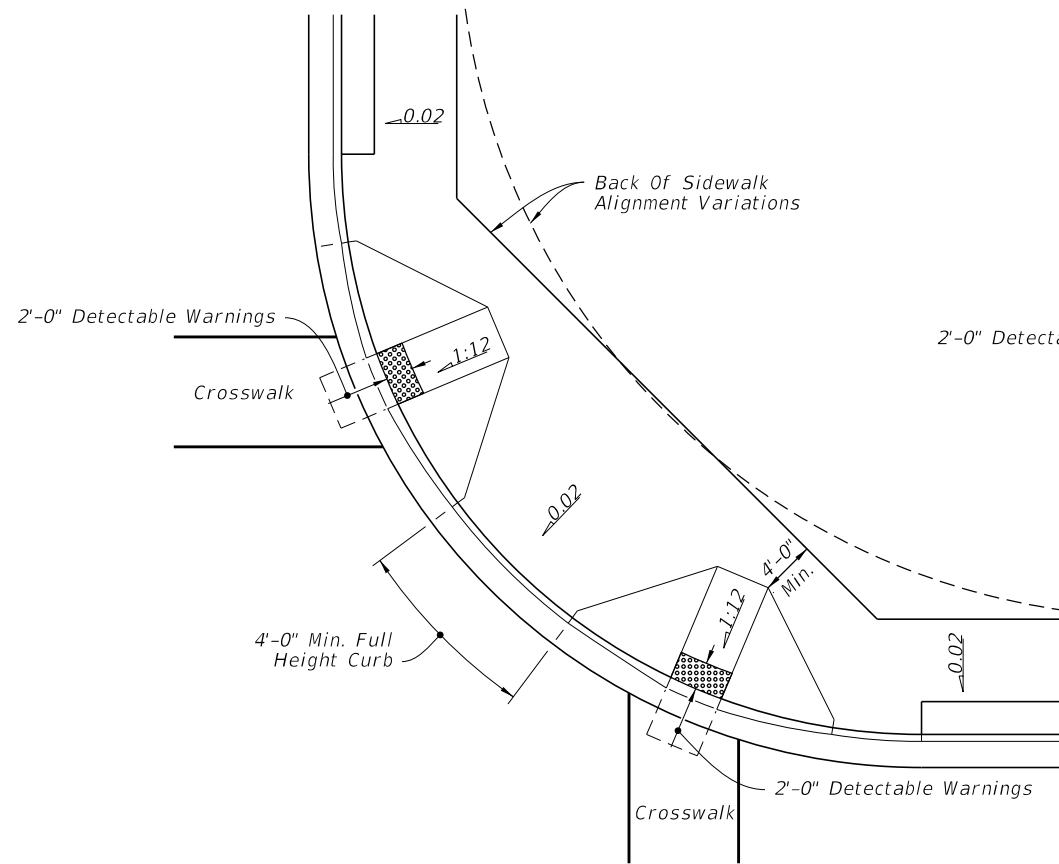
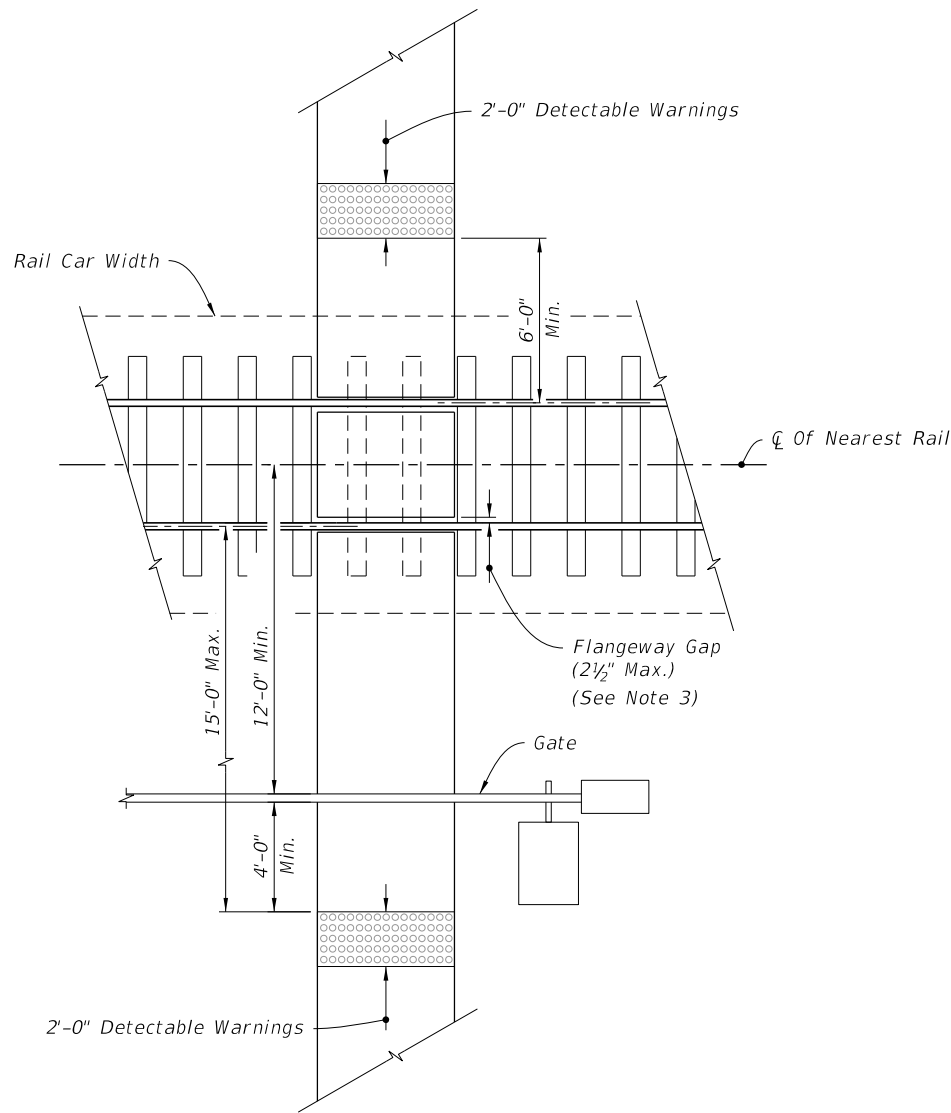
DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS

INDEX
522-002

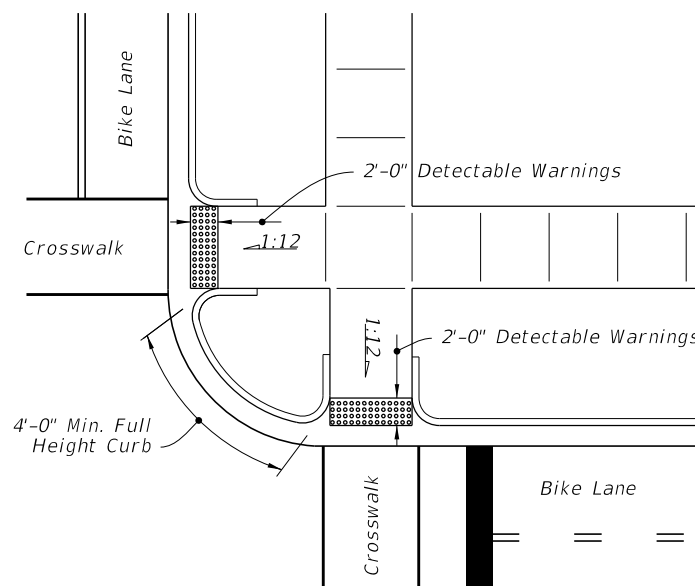
SHEET
6 of 7

NOTES:

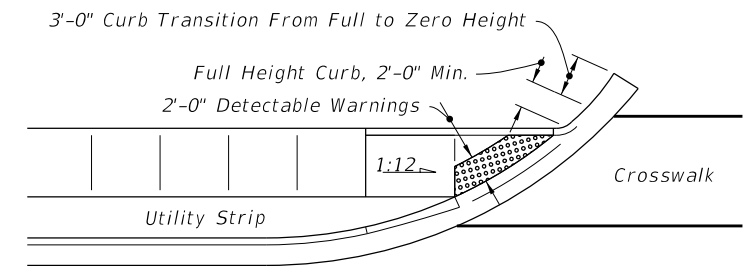
1. Where crosswalk markings are used, ramps must fall within the crosswalk limits. A clear space of 48" minimum is required at the bottom of the ramp within a marked crosswalk. If crosswalk markings are not present, a clear space of 48" minimum is required at the bottom of the ramp outside of active travel lanes.
2. Crosswalk widths and configurations vary; must conform to Index 711-001.
3. Flangeway Gap may be up to 3" for Freight-only Railways.



CURB RAMPS WITHIN RADIAL RETURN



CURB RAMPS OUTSIDE RADIAL RETURN




LINEAR SIDEWALK RAMPS

RAILROAD CROSSING

PLACEMENT OF SIDEWALK CURB RAMPS AT CURBED RETURNS (TYP.)

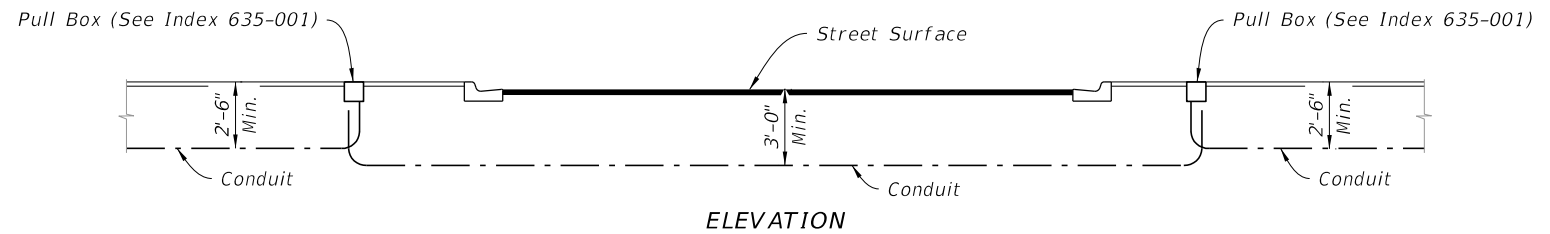
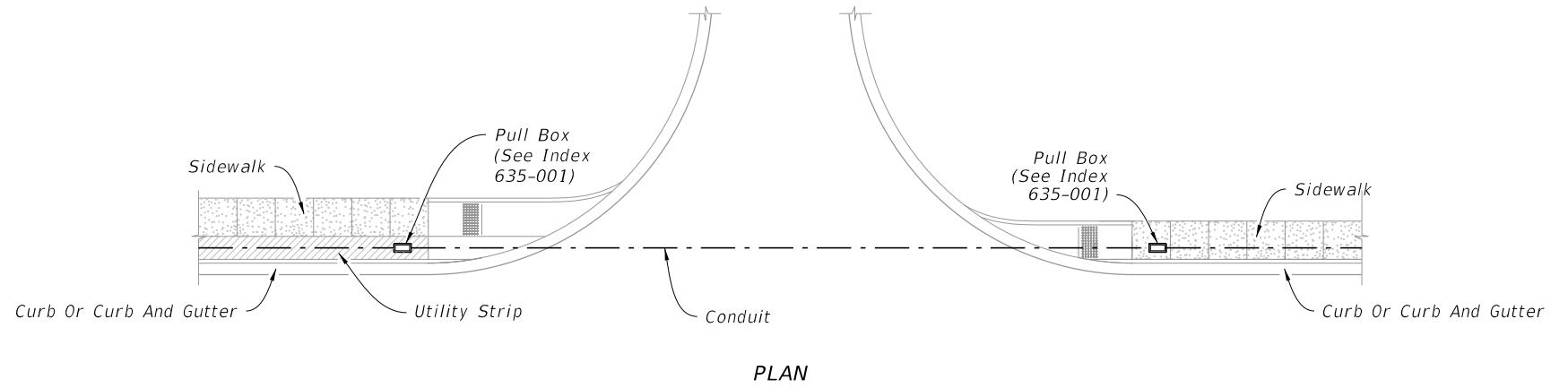
RAILROAD CROSSING AND CURB RAMPS AT CURBED RETURNS

9/22/2021 8:50:43 AM

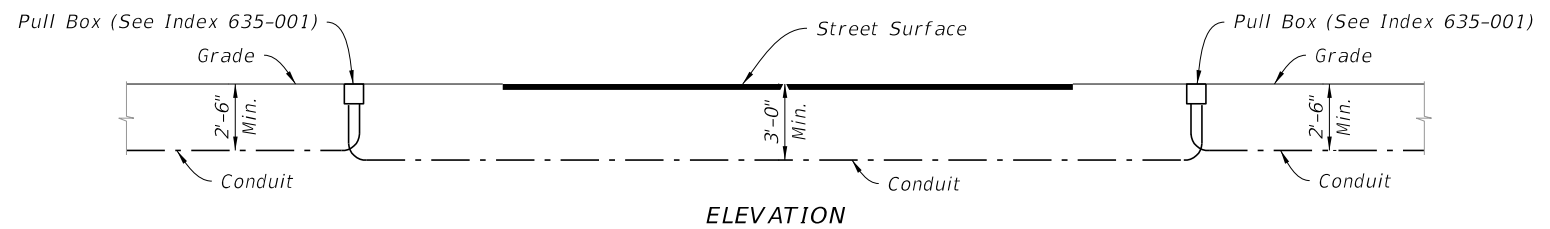
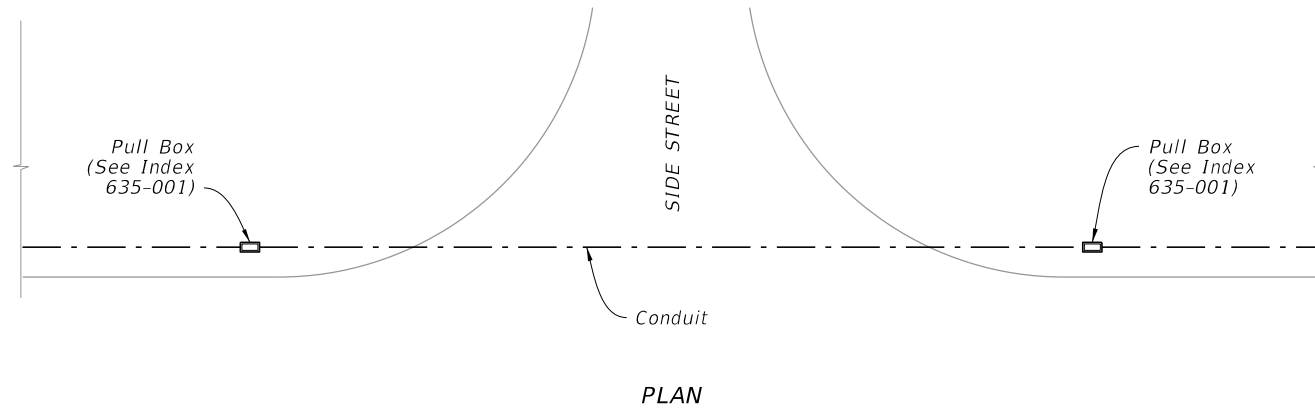
LAST REVISION 11/01/20	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX 522-002	SHEET 7 of 7
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GENERAL NOTES:

1. Install conduit in accordance with Specification 630.
2. When sidewalk is damaged by conduit installation, replace entire sidewalk slab.
3. Trench not to be open more than 250' at a time when construction area is subject to vehicular or pedestrian traffic.
4. Sawcut asphalt at the edges of the trench to leave neat lines.
5. Provide route marker and route marker label in accordance with Specification 630.



=====**CURB AND GUTTER**=====



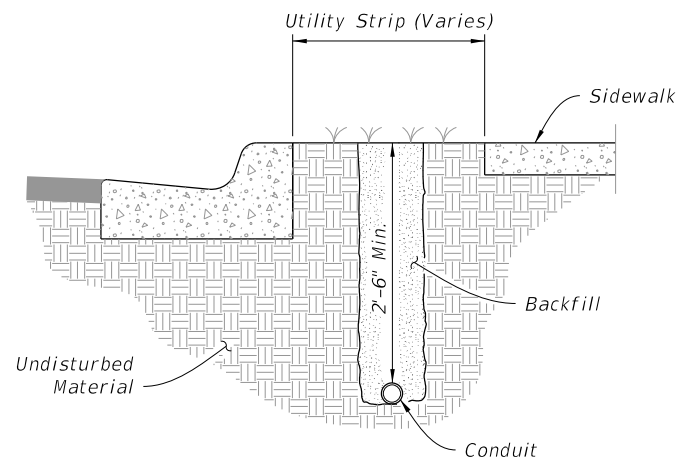
=====**FLUSH SHOULDER**=====



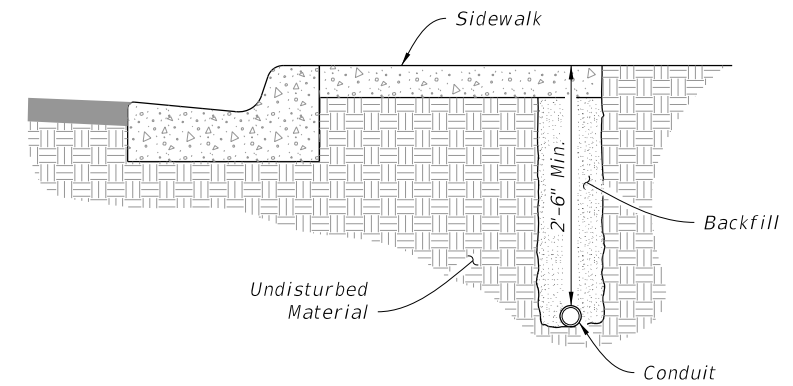
=====**ROUTE MARKER DETAIL**=====

9/22/2021 10:49:36 AM

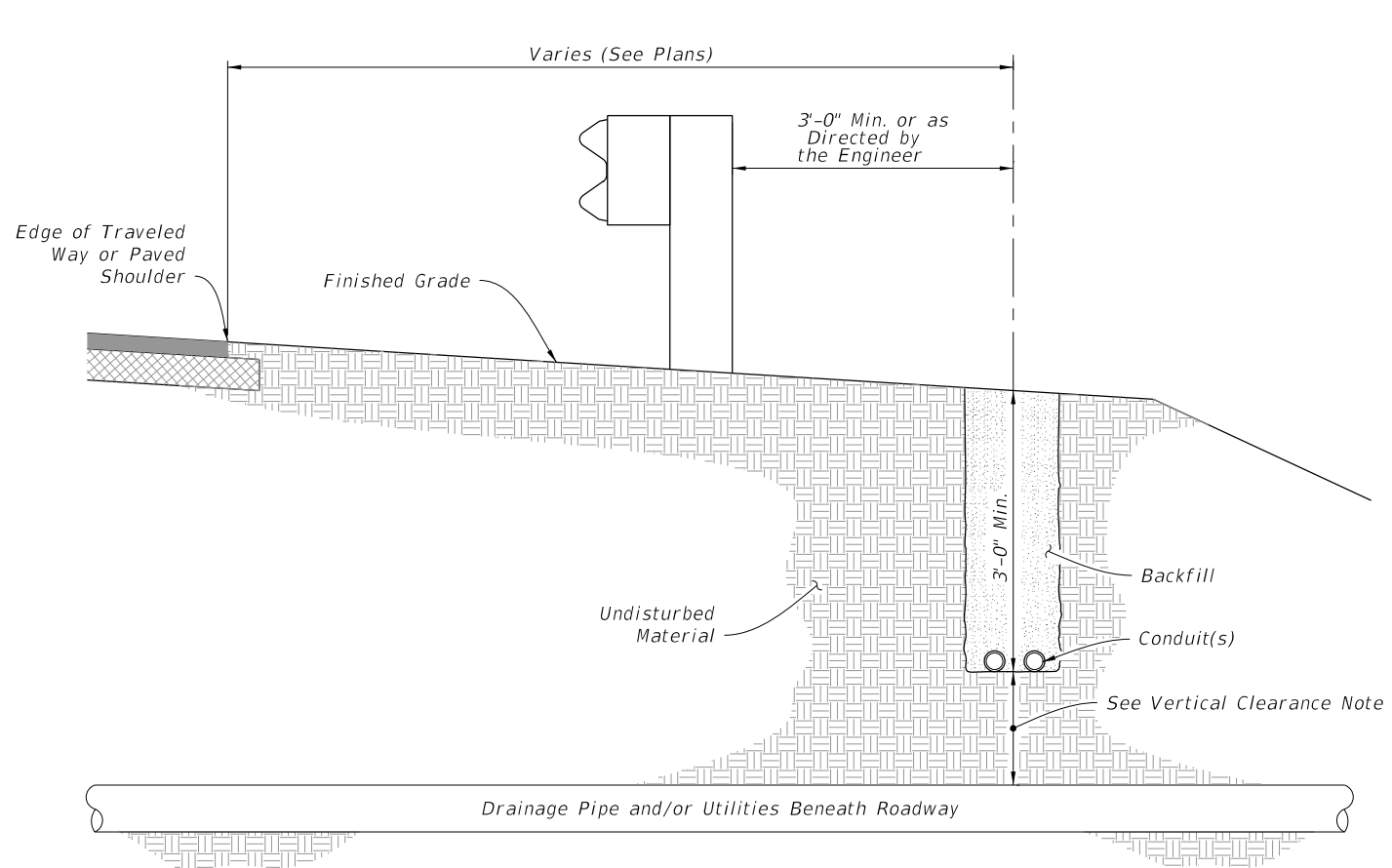
LAST REVISION 11/01/21	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	CONDUIT INSTALLATION DETAILS	INDEX 630-001	SHEET 1 of 4
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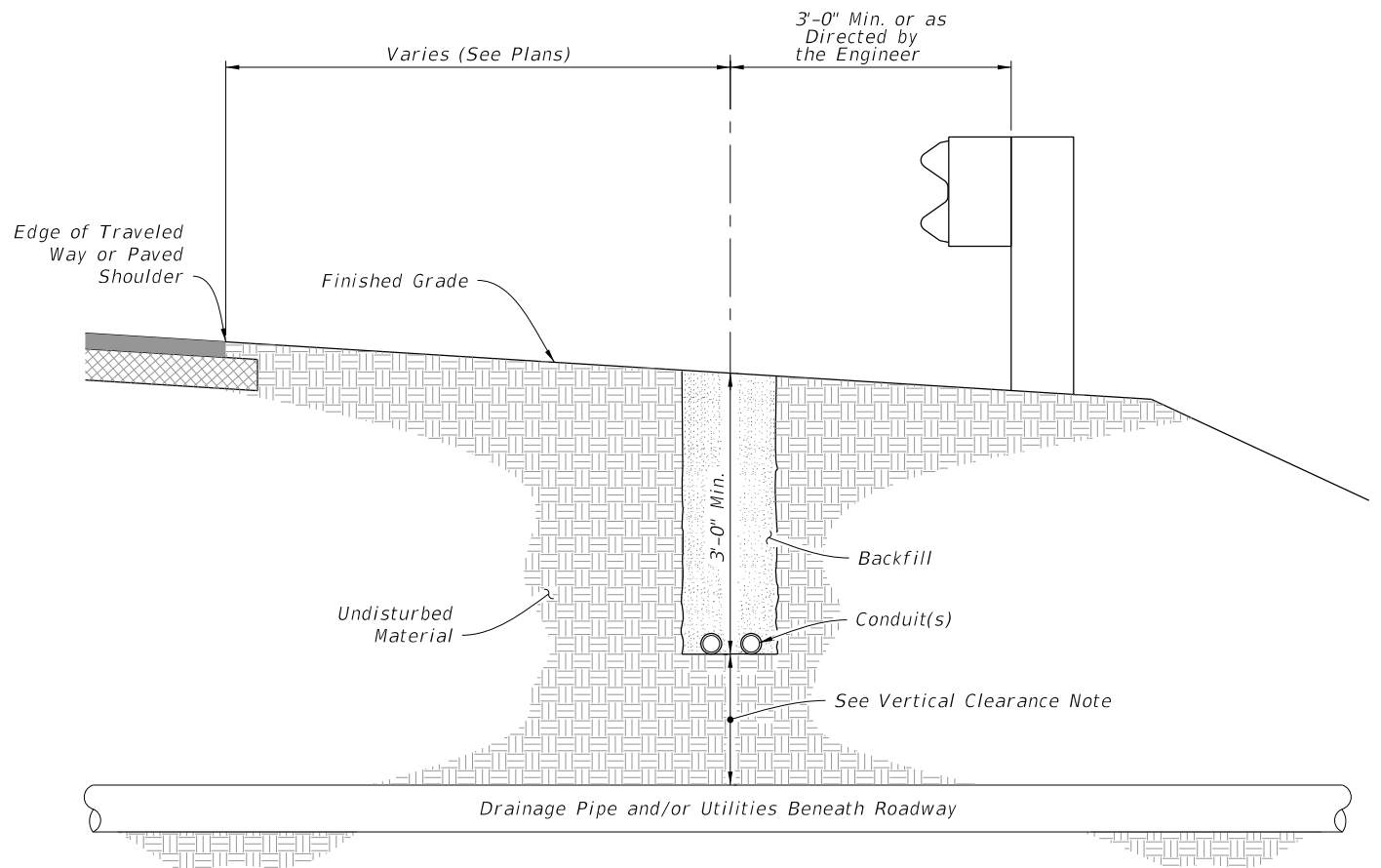
PLACEMENT WITHIN THE UTILITY STRIP



PLACEMENT UNDER SIDEWALK



PLACEMENT BEHIND GUARDRAIL




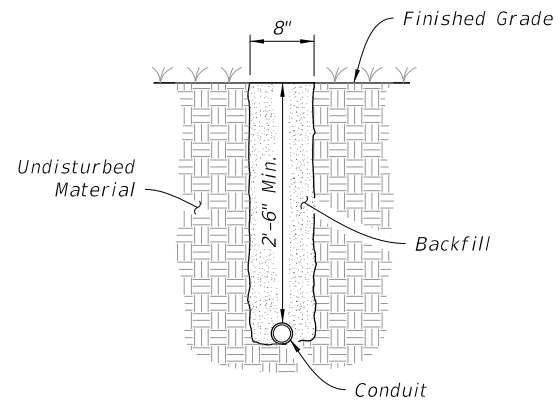
PLACEMENT IN FRONT OF GUARDRAIL

VERTICAL CLEARANCE NOTE:

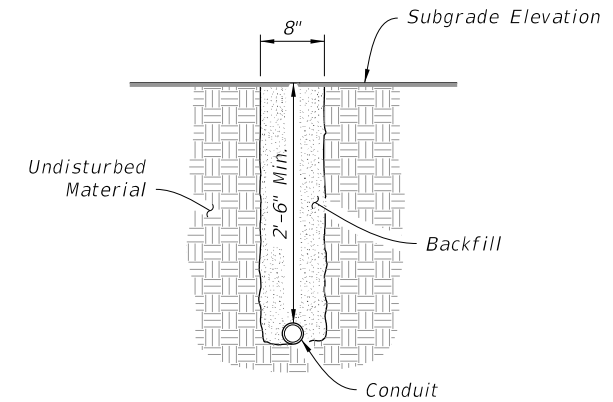
Maintain 1'-0" minimum vertical clearance when crossing over pipe and or utilities.
If minimum vertical clearance cannot be maintained, conduit is to be routed under pipe maintaining 1'-0" minimum vertical clearance.

9/22/2021 10:49:43 AM

LAST REVISION 11/01/18	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	CONDUIT INSTALLATION DETAILS	INDEX 630-001	SHEET 2 of 4
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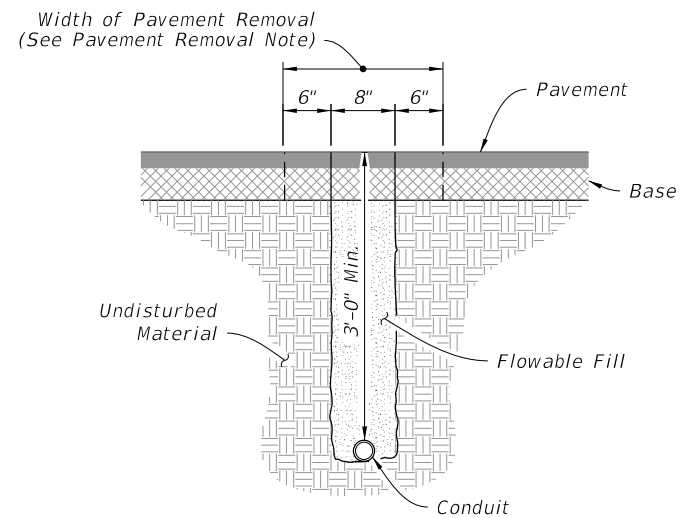
PLACEMENT NOT EXPOSED
TO VEHICULAR TRAFFIC



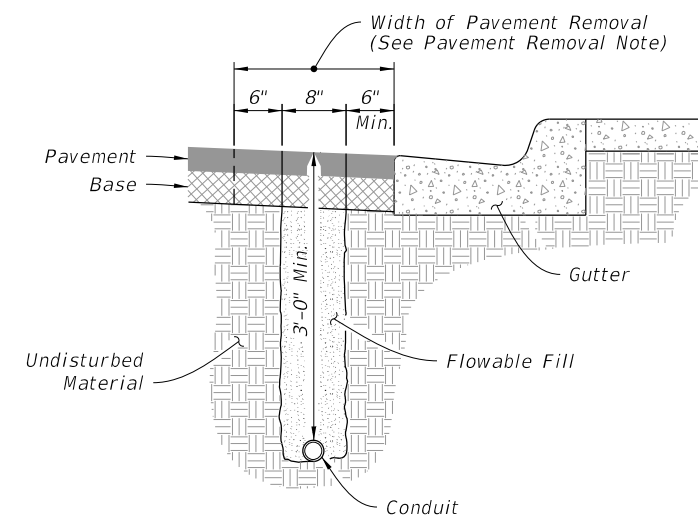
PLACEMENT UNDER NEW ROADWAY
PRIOR TO INSTALLATION OF
BASE AND PAVEMENT

NOTES:

1. Pavement Removal: The removal and replacement of the additional pavement width (i.e., 6" width either side of trench) will not be required when the trench can be constructed without disturbing the asphalt surface on either side.
2. Placement Under Existing Pavement: Place conduit prior to installation of base and pavement, unless otherwise shown in the Plans or approved by the Engineer.




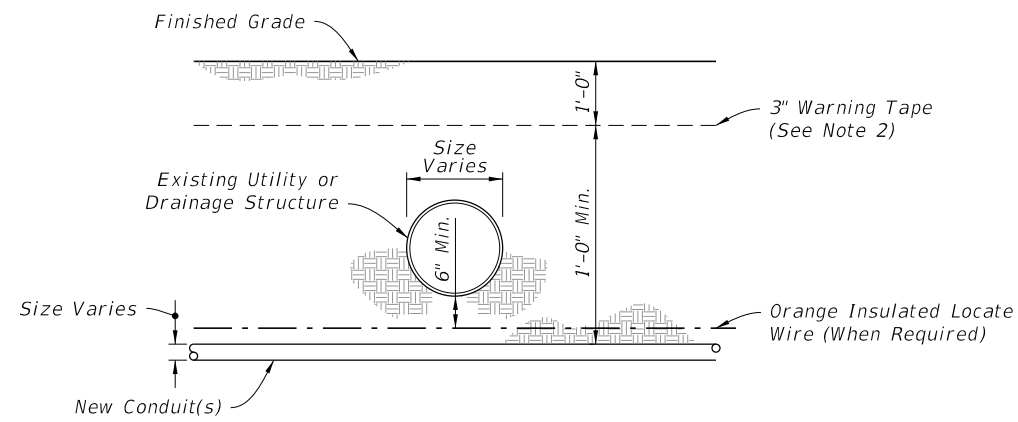
PLACEMENT UNDER EXISTING PAVEMENT
NOT ADJACENT TO GUTTER



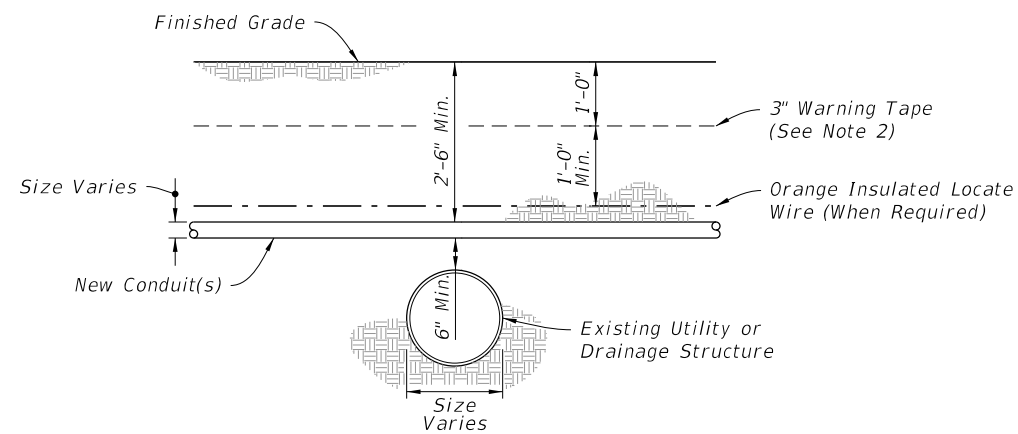
PLACEMENT UNDER EXISTING PAVEMENT
ADJACENT TO GUTTER

9/22/2021 10:49:50 AM

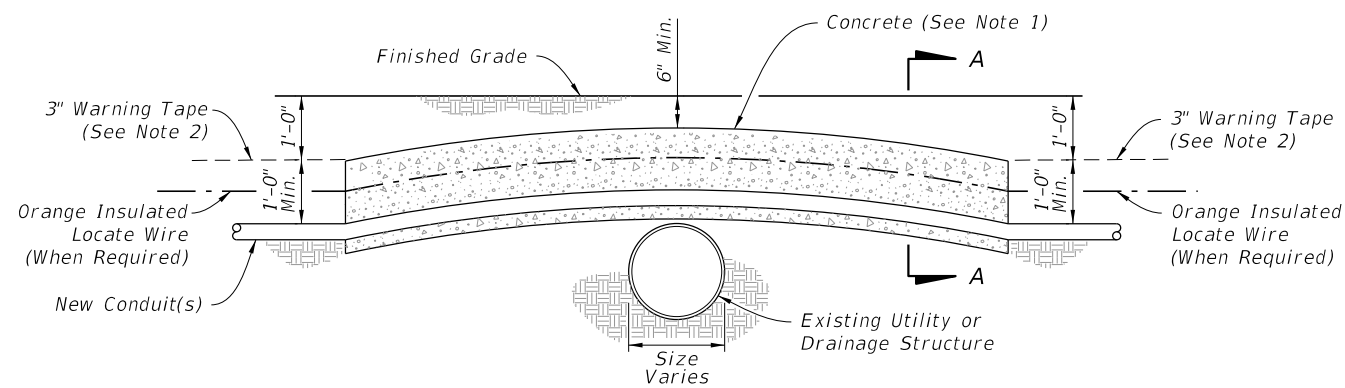
LAST REVISION 11/01/18	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	CONDUIT INSTALLATION DETAILS	INDEX 630-001	SHEET 3 of 4
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BELOW EXISTING

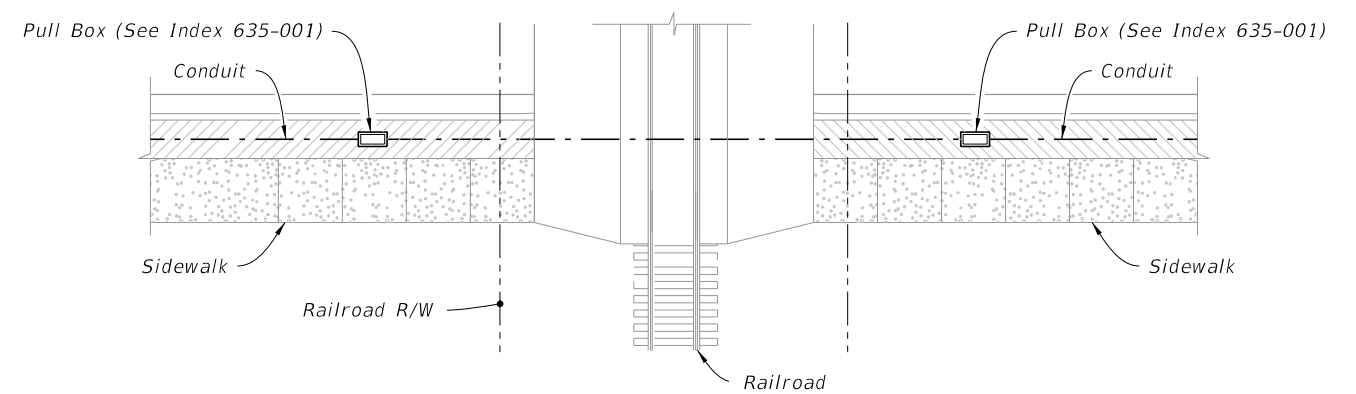


ABOVE EXISTING - DEPTH 2'-6" OR GREATER

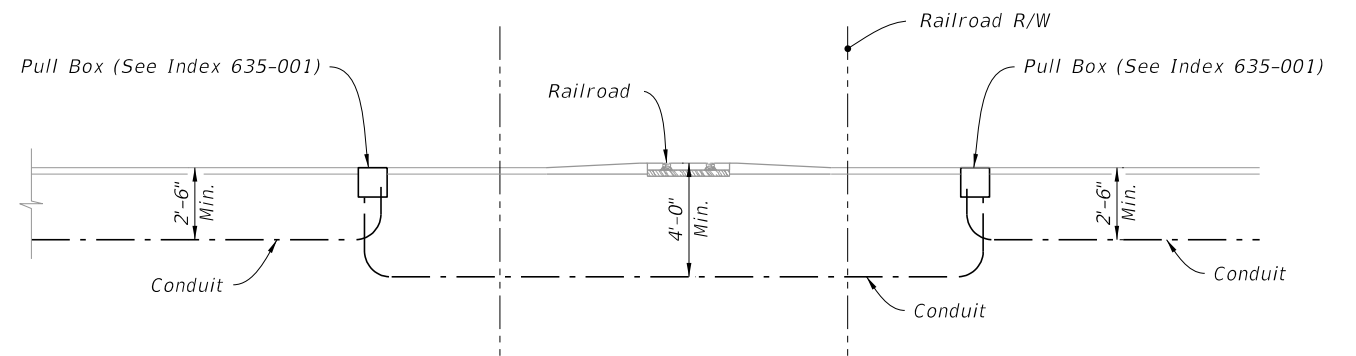


ABOVE EXISTING - DEPTH 2'-6" OR LESS

PLACEMENT ACROSS EXISTING DRAINAGE PIPES OR UTILITIES



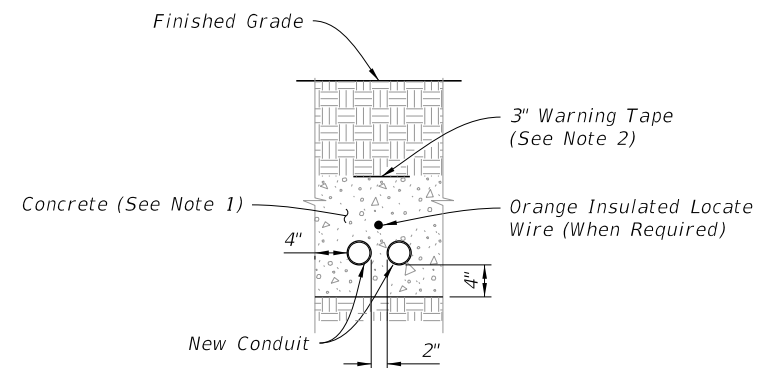
PLAN



PLACEMENT UNDER RAILROAD

NOTES:

1. Where conduits are to be installed over existing underground structures (e.g., drainage pipes or utility lines) which are less than 2'-6" deep, encase the conduit in Class NS concrete for the entire length of conduit that is installed at a depth of less than 2'-6".
2. Place 3" Warning Tape when new conduit is installed at a depth of 1'-6" or greater, and the new conduit is not encased in concrete.

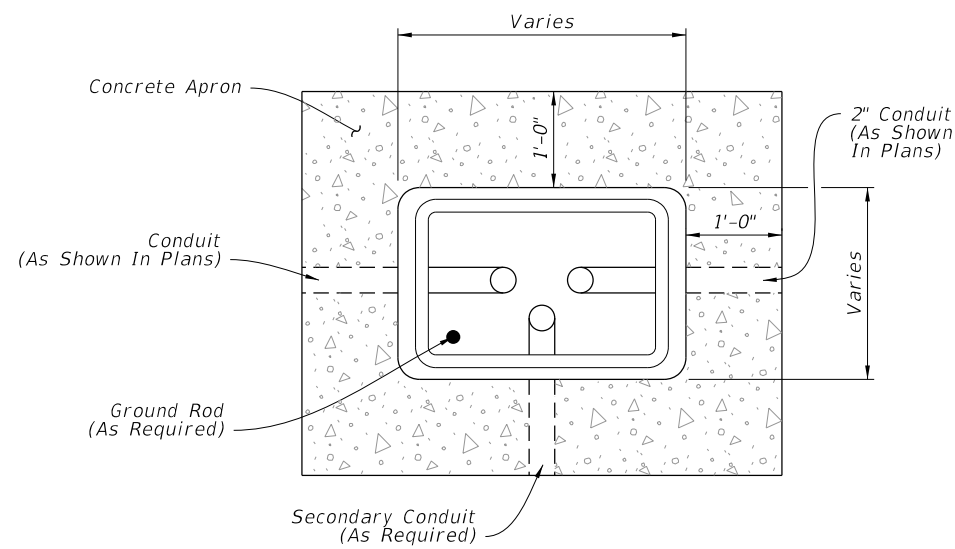


SECTION A-A

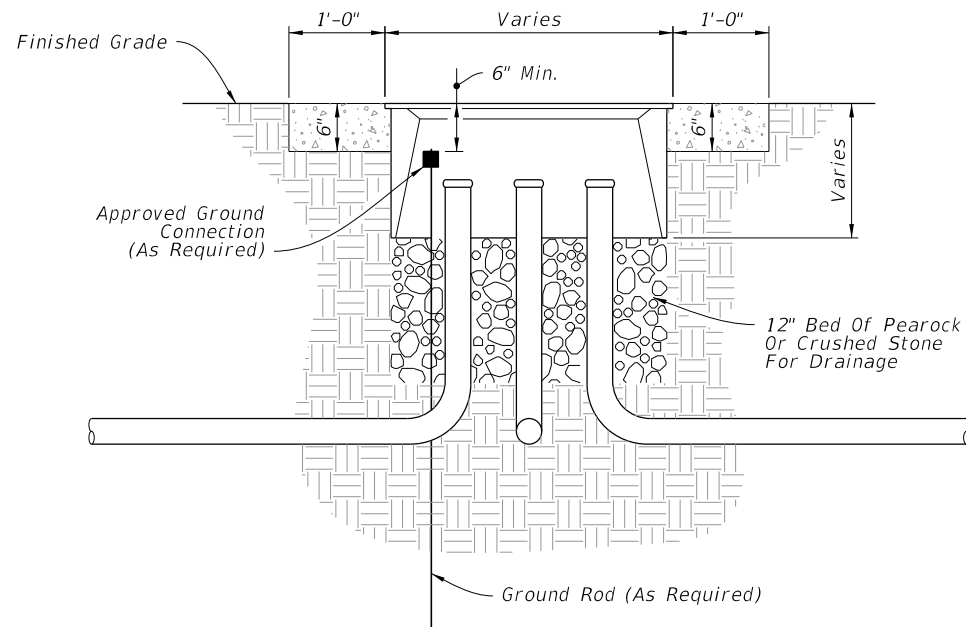
9/22/2021 10:49:55 AM

LAST REVISION 11/01/18	DESCRIPTION:		FY 2022-23 STANDARD PLANS	CONDUIT INSTALLATION DETAILS	INDEX 630-001	SHEET 4 of 4

9/22/2021 10:55:11 AM

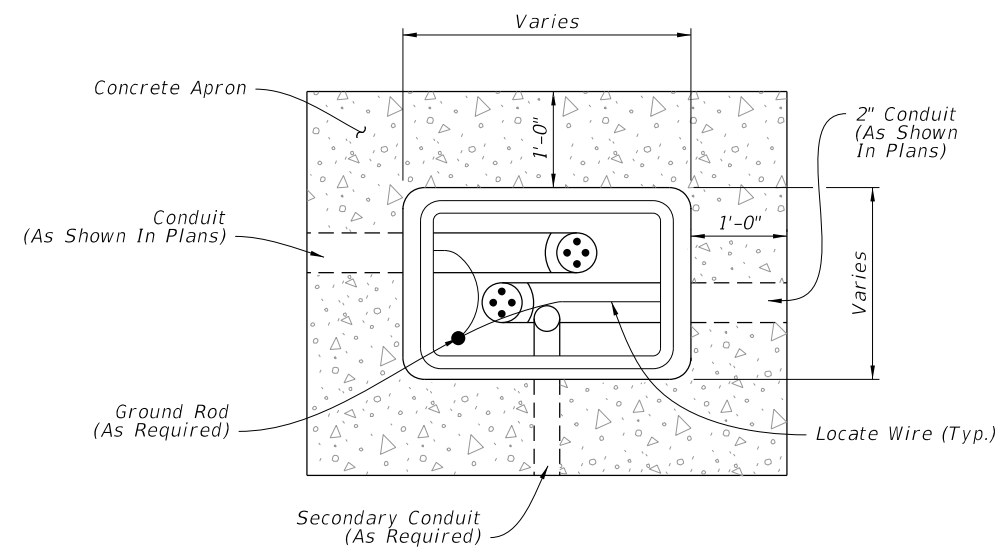


PLAN

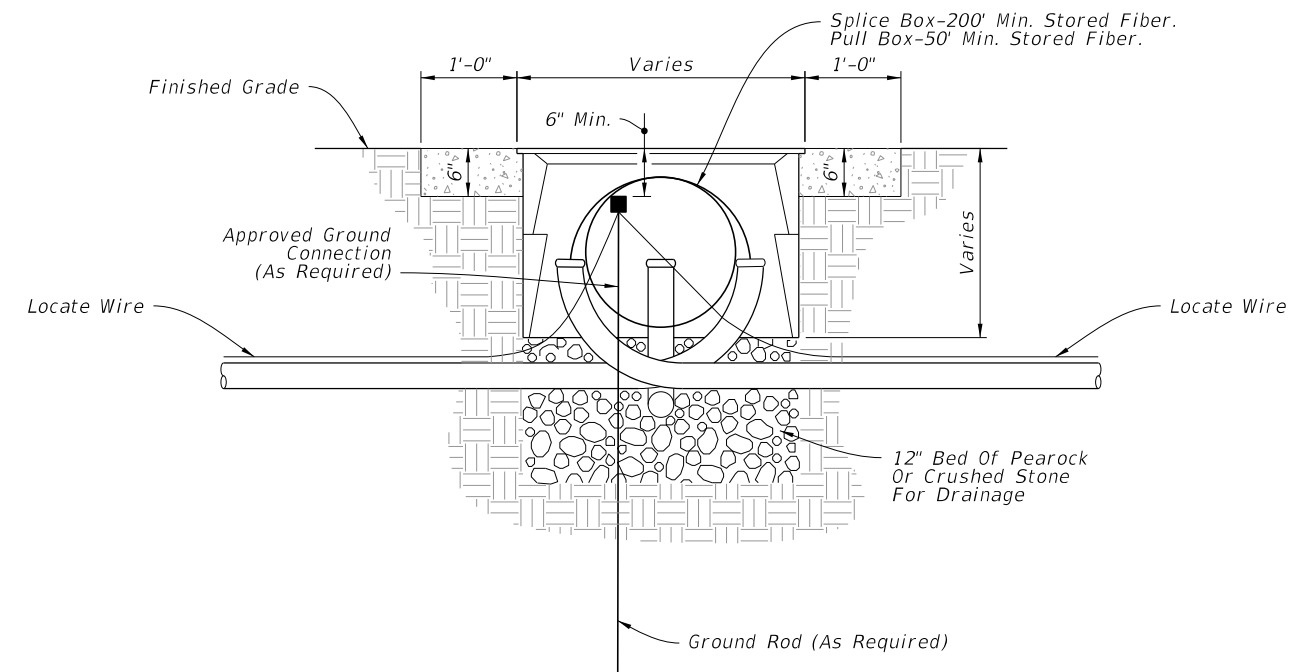


ELEVATION

PULL BOX



PLAN



ELEVATION

FIBER OPTIC BOX

NOTES:

1. Provide fiber optic splice boxes with cable hanger racks designed to support cables and splice enclosures.
2. Install a 1'-0" wide (Min.) concrete apron around all boxes using Class NS concrete. Slope the apron away from the box.
3. Where multiple pull boxes are placed side by side, maintain at least 8" between the pull boxes.
4. Rectangular boxes shown, others similar.

LAST REVISION
11/01/18

REVISION

DESCRIPTION:



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STANDARD PLANS

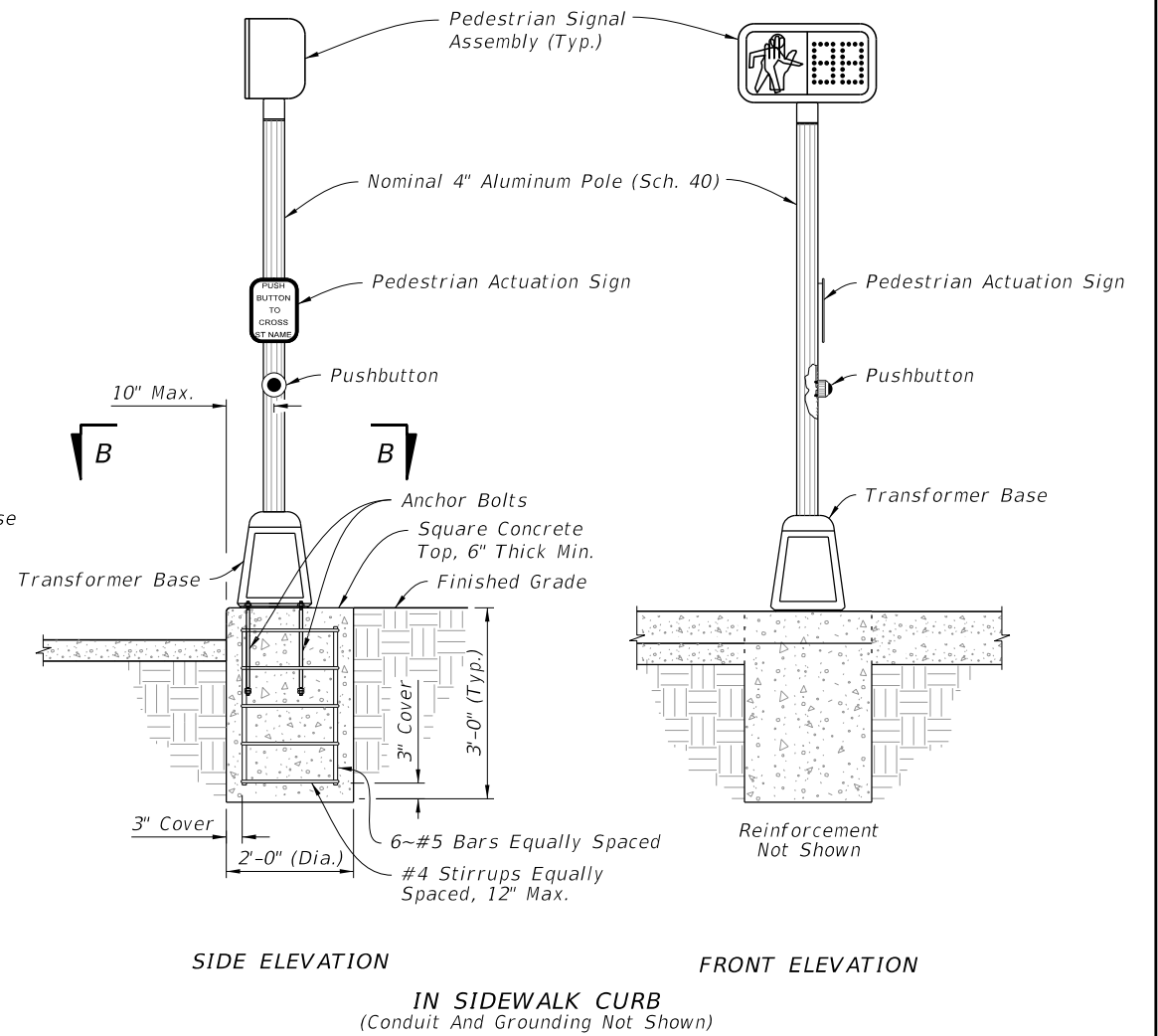
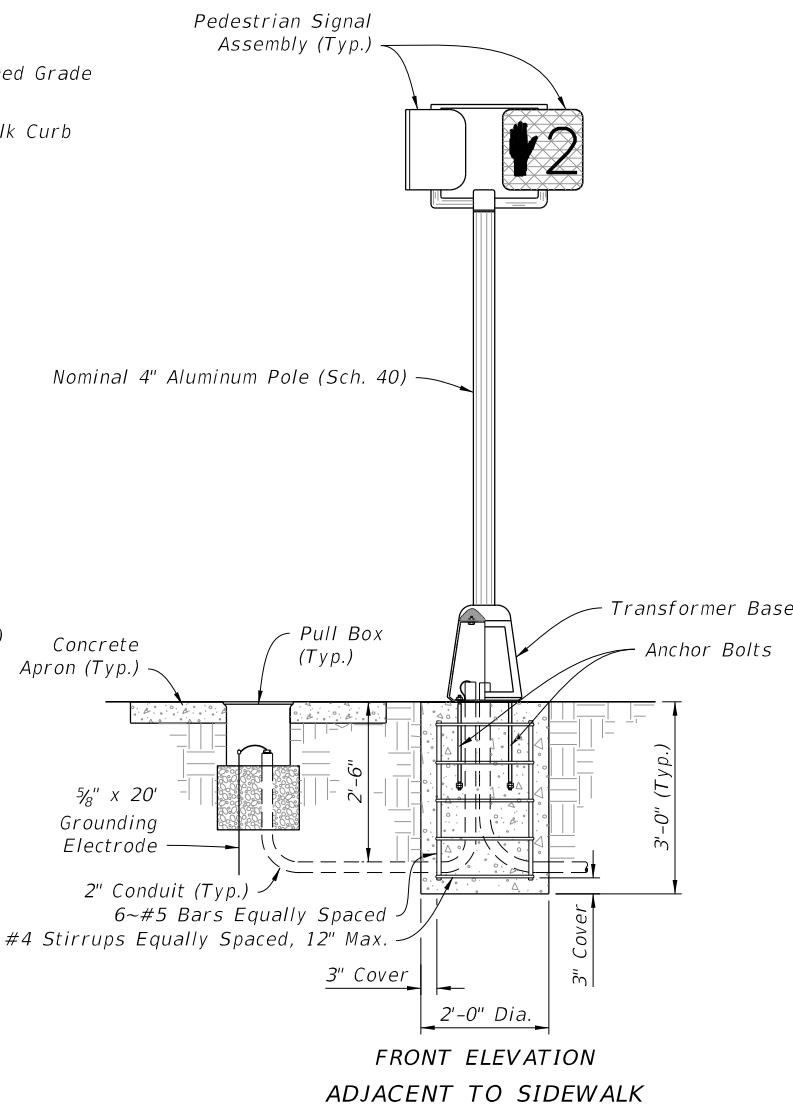
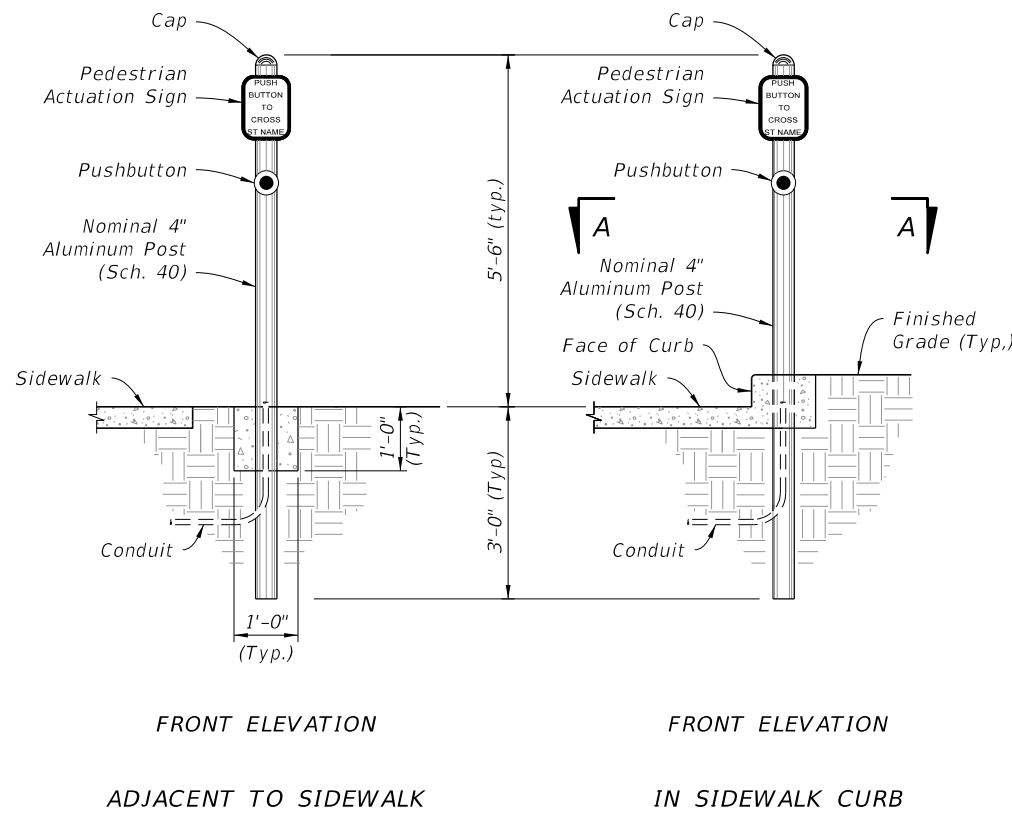
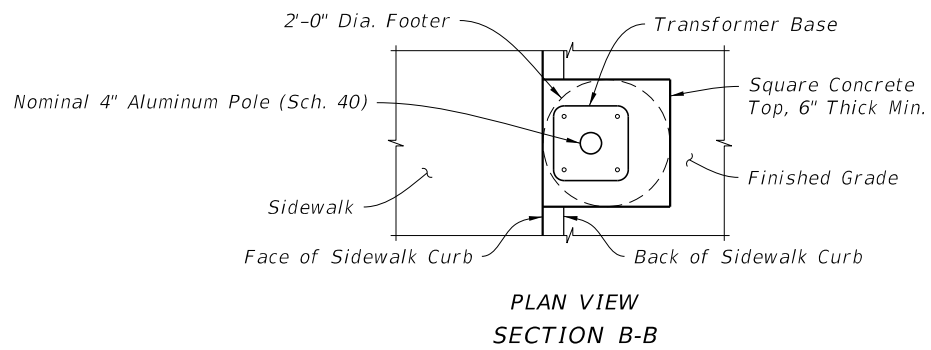
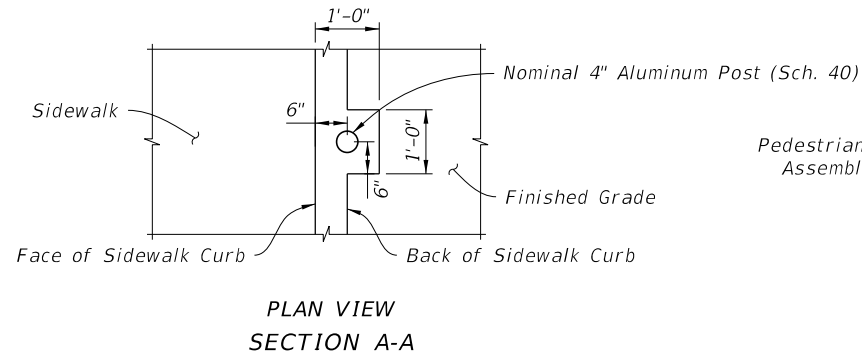
PULL AND SPLICE BOXES

INDEX
635-001

SHEET
1 of 1

NOTES:

1. Work this Index with Specification 646.
2. For Pedestrian Signals see Index 653-001.
3. For Pedestrian Detector Assembly (i.e., Pushbutton and Sign) details see Index 665-001.
4. Footing may be Cast-In-Place (C-I-P) or Precast.
5. As an alternative to the direct buried "Post Mounted" Pedestrian Detector Assembly shown below, the post may be installed on a transformer base. Use a transformer base included on the APL approved as an alternative to a "Post Mounted" assembly,

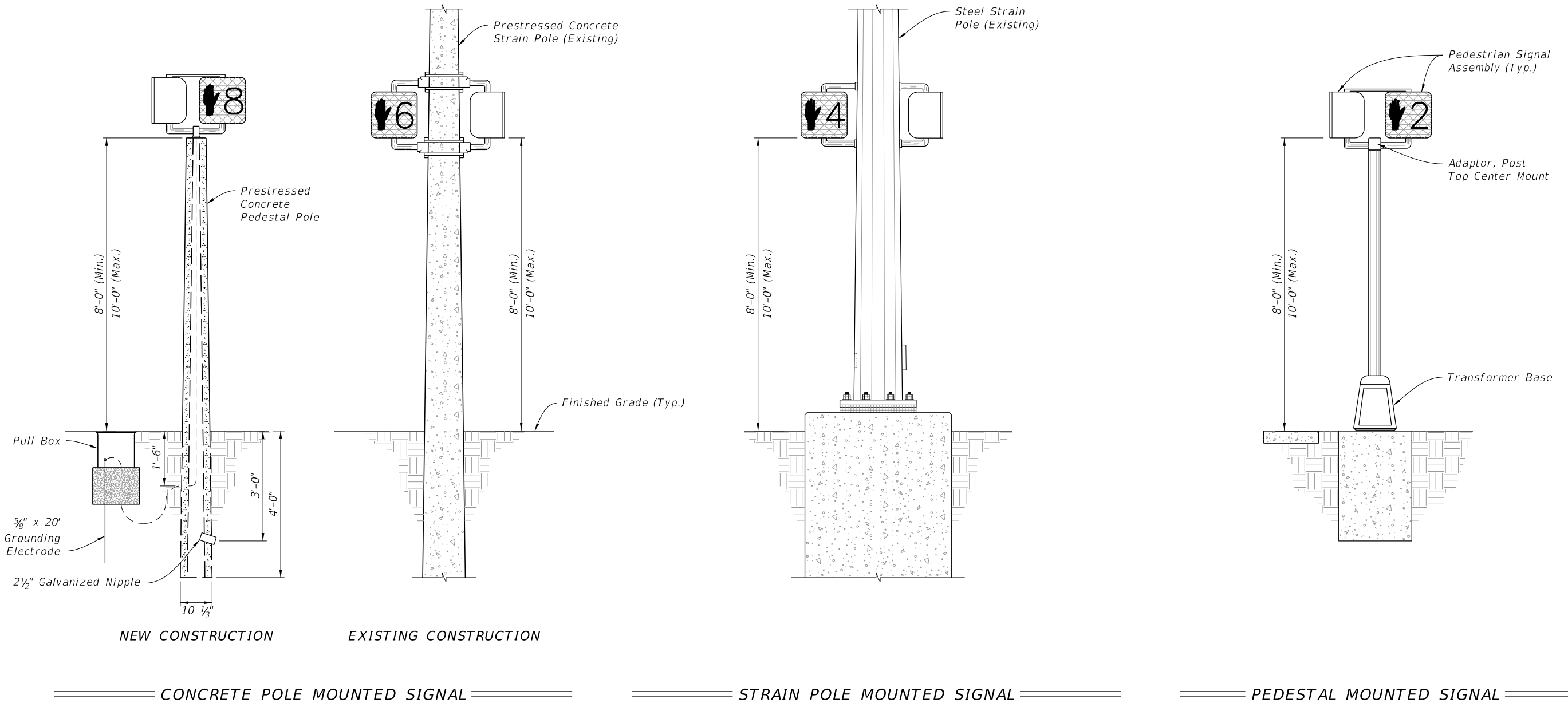


10/22/2021 9:59:44 AM


LAST REVISION 11/01/21	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	ALUMINUM POST AND PEDESTAL MOUNTED PEDESTRIAN DETECTORS AND SIGNALS	INDEX 646-001	SHEET 1 of 1
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NOTES:

1. As an option, pedestrian signals may be installed on concrete poles and pedestals using lead anchors (two bolts same size per hub) in lieu of the stainless steel bands.
2. Repair drilled or punched holes in galvanized steel poles or pedestals in accordance with Specification 562. Install grommets or bushings in each hole.
3. Meet grounding requirements of Specification 620.
4. See APL for Department-approved Pedestrian Signal Assemblies and hardware.
5. For Prestressed Concrete Poles see Index 641-010.
6. For Steel Strain Poles see Index 649-010.
7. For Pedestal Mounted Signal posts and foundations see Index 646-001

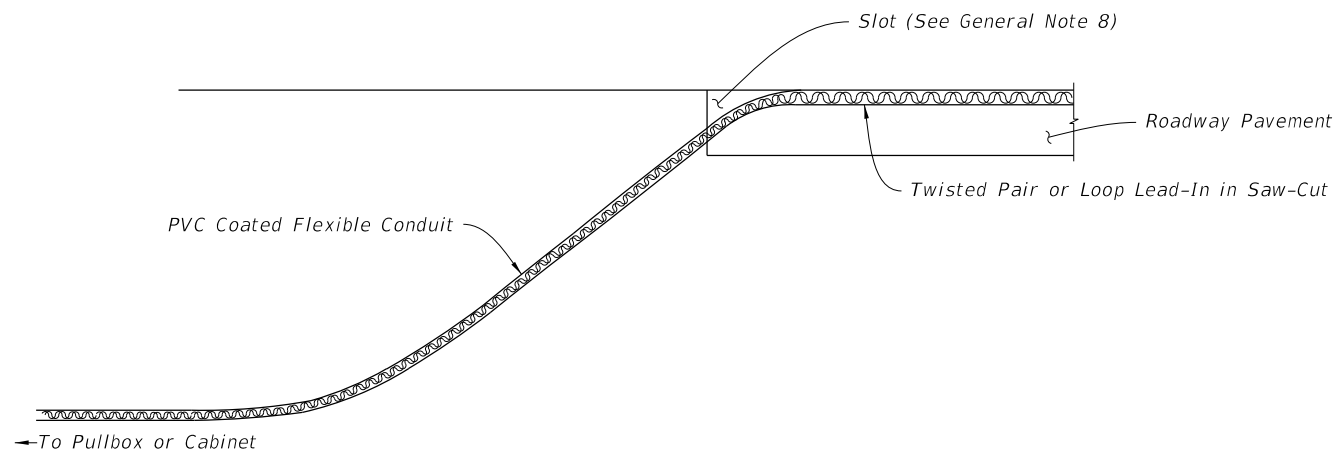
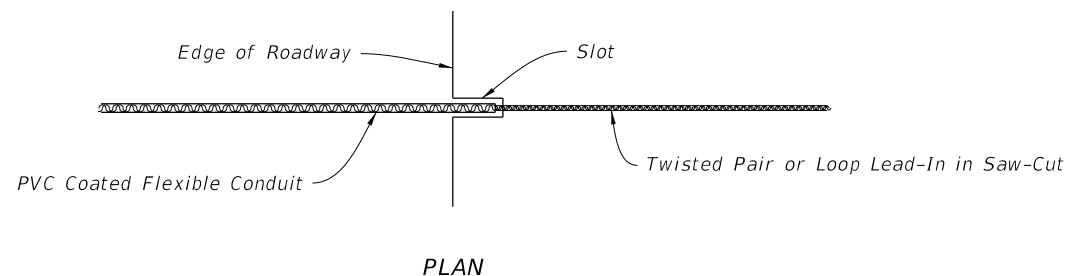


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LAST REVISION 11/01/20	REVISION	DESCRIPTION:	 FY 2022-23 STANDARD PLANS	PEDESTRIAN CONTROL SIGNAL INSTALLATION DETAILS	INDEX 653-001	SHEET 1 of 1
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GENERAL NOTES:

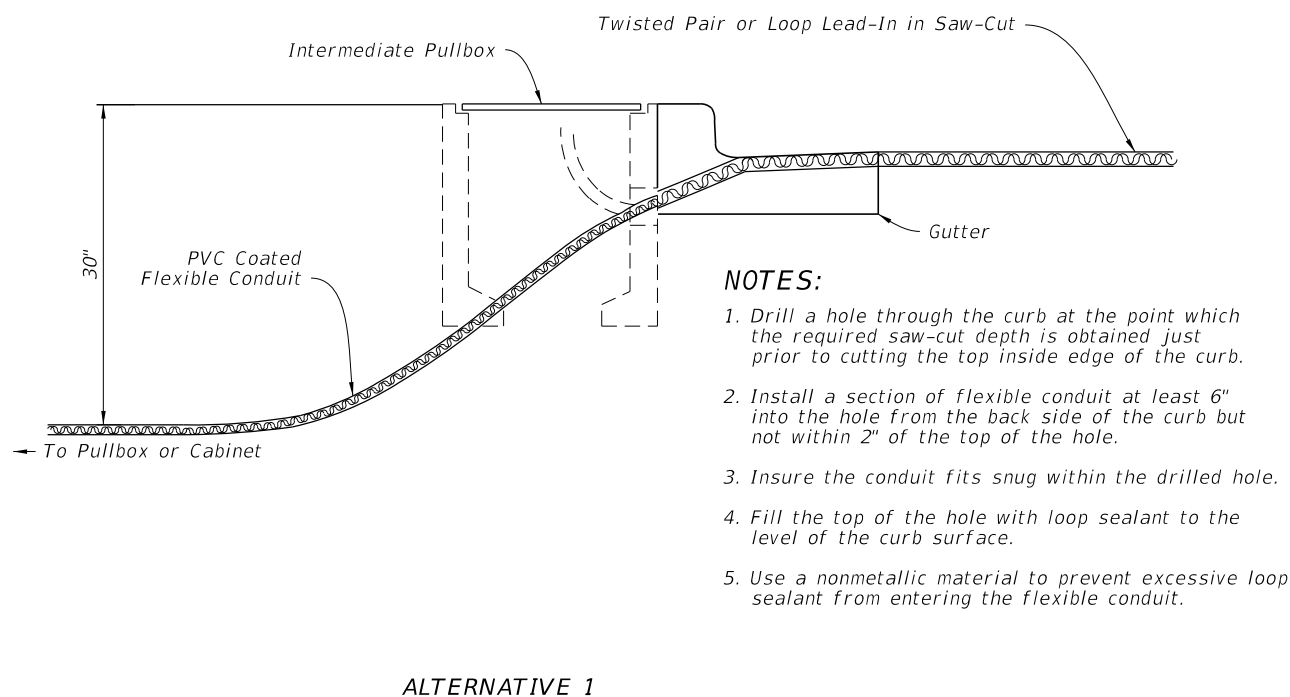
1. If the loop lead-in is 75' or less from the edge of the loop detector to controller cabinet, continue the twisted pair to the cabinet. If the loop lead-in is greater than 75' continue the twisted pair an Intermediate Pullbox, splice to shielded lead-in wire and continue to the controller cabinet.
2. Provide sufficient saw-cut width to allow unforced placement of loop wires or lead-in cables into the saw-cut. Except across expansion joints, saw-cut to a standard depth of 3", but no more than 4" below the top of the final surface.
3. On resurfacing or new roadway construction projects, install the loop wires and lead-in cables in the asphalt structural course prior to the placement of the asphalt friction course. Place the loop wires and lead-in cables in a saw cut in the structural course.
4. Use nonmetallic hold down material to secure loop wires and lead-ins to the bottom of saw-cuts. Place the hold down material approximately 12" intervals around loops and 24" intervals on lead-ins.
5. The minimum distance between the twisted pairs of loop lead-in wire is 6" from the loop to 12" from the pavement edge or curb.
6. Splice Connections in pull boxes with UL listed, watertight, insulated enclosures. Place one enclosure over the end of each conductor and place a third enclosure over the exposed end of the shielded cable. As an alternate, a larger diameter enclosure that will accommodate both the splices of the conductors and the exposed end of the shielded cable may be used.
7. Do not disturb more than a 6" x 6" area of asphalt. Restore asphalt as directed by the Engineer.
8. Alternative installations may be approved by the State Traffic Operations Engineer.



NOTES:

1. Cut a slot in the edge of the roadway of sufficient size and depth to snugly place the end of the flexible conduit.
2. Install the conduit at least 6" into the roadway pavement and approximately 2" below the top of the roadway surface.
3. The departure angle of the conduit from the roadway is between 30° to 45°.

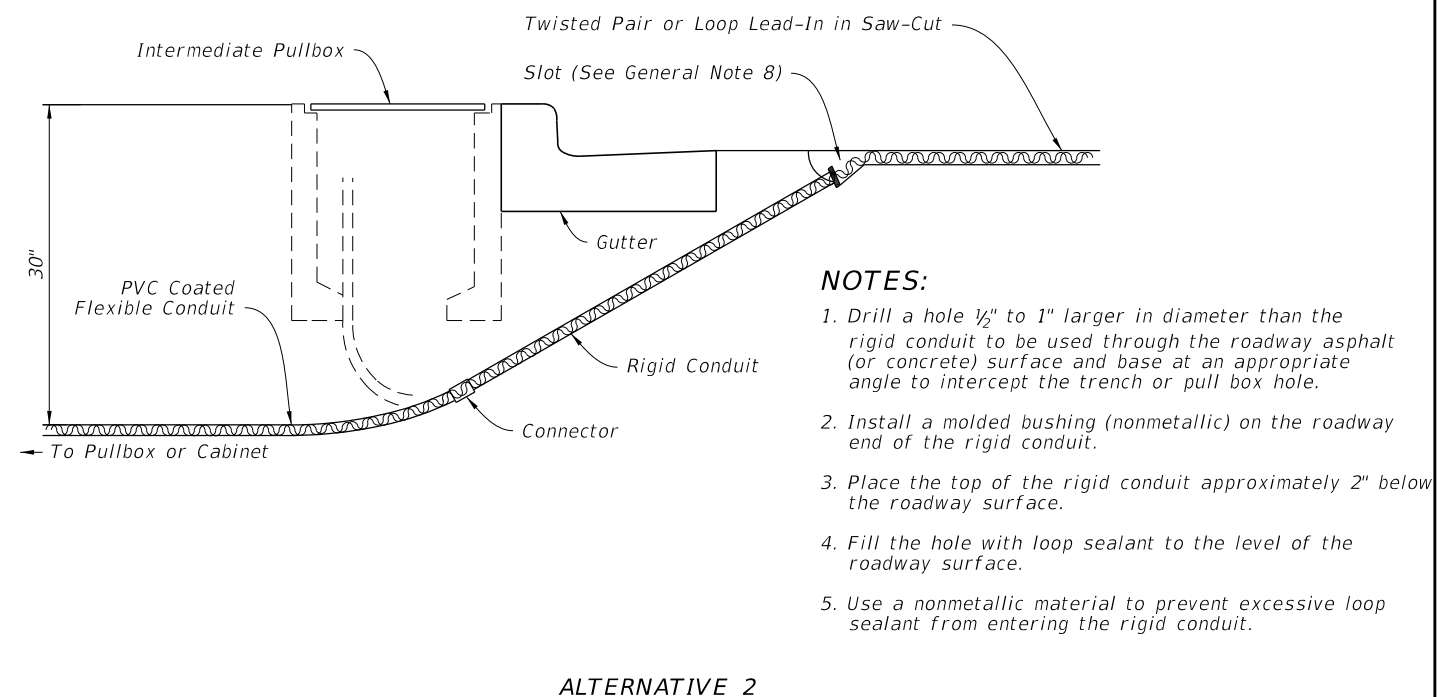
INSTALLATION WITHOUT CURB & GUTTER



NOTES:

1. Drill a hole through the curb at the point which the required saw-cut depth is obtained just prior to cutting the top inside edge of the curb.
2. Install a section of flexible conduit at least 6" into the hole from the back side of the curb but not within 2" of the top of the hole.
3. Insure the conduit fits snug within the drilled hole.
4. Fill the top of the hole with loop sealant to the level of the curb surface.
5. Use a nonmetallic material to prevent excessive loop sealant from entering the flexible conduit.

ALTERNATIVE 1



NOTES:

1. Drill a hole 1/2" to 1" larger in diameter than the rigid conduit to be used through the roadway asphalt (or concrete) surface and base at an appropriate angle to intercept the trench or pull box hole.
2. Install a molded bushing (nonmetallic) on the roadway end of the rigid conduit.
3. Place the top of the rigid conduit approximately 2" below the roadway surface.
4. Fill the hole with loop sealant to the level of the roadway surface.
5. Use a nonmetallic material to prevent excessive loop sealant from entering the rigid conduit.

ALTERNATIVE 2

INSTALLATION WITH CURB & GUTTER

TWISTED PAIR AND LOOP LEAD-IN INSTALLATION

9/22/2021 12:34:58 PM

LAST REVISION 11/01/18	DESCRIPTION:
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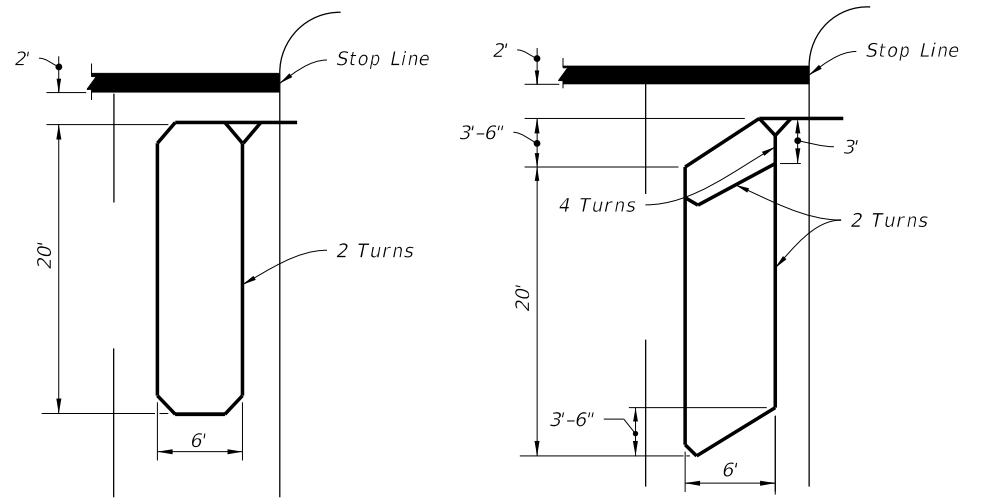


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STANDARD PLANS

VEHICLE LOOP INSTALLATION DETAILS

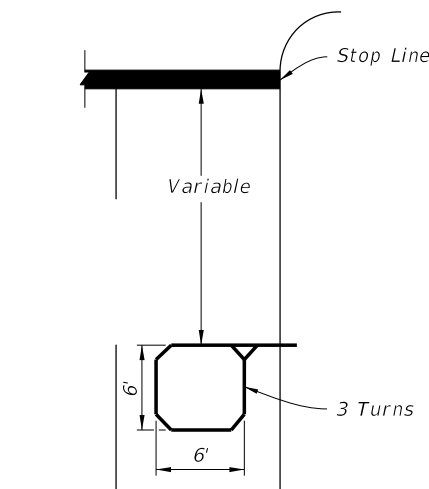
INDEX
660-001

SHEET
1 of 2

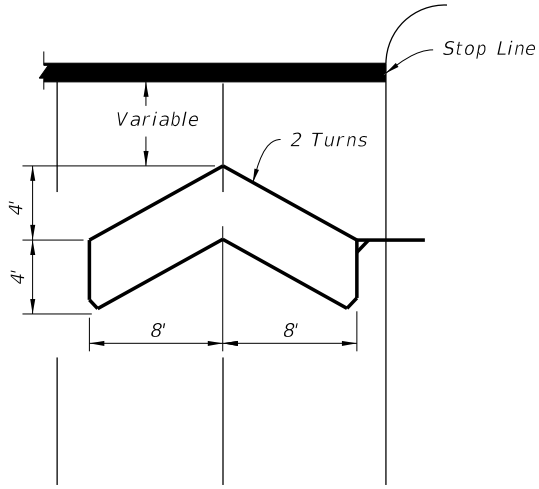


TYPE A

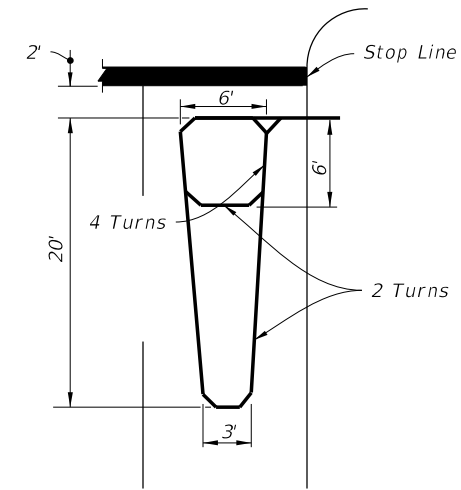
TYPE D



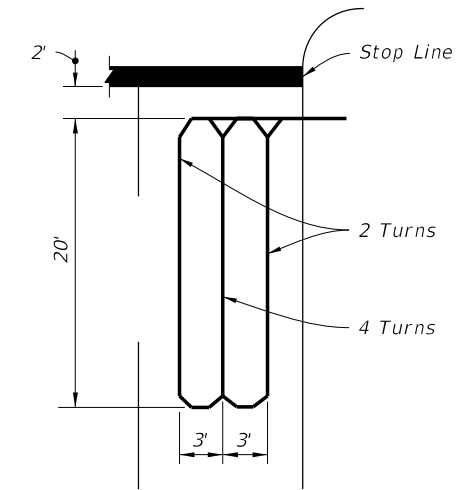
TYPE B



TYPE E



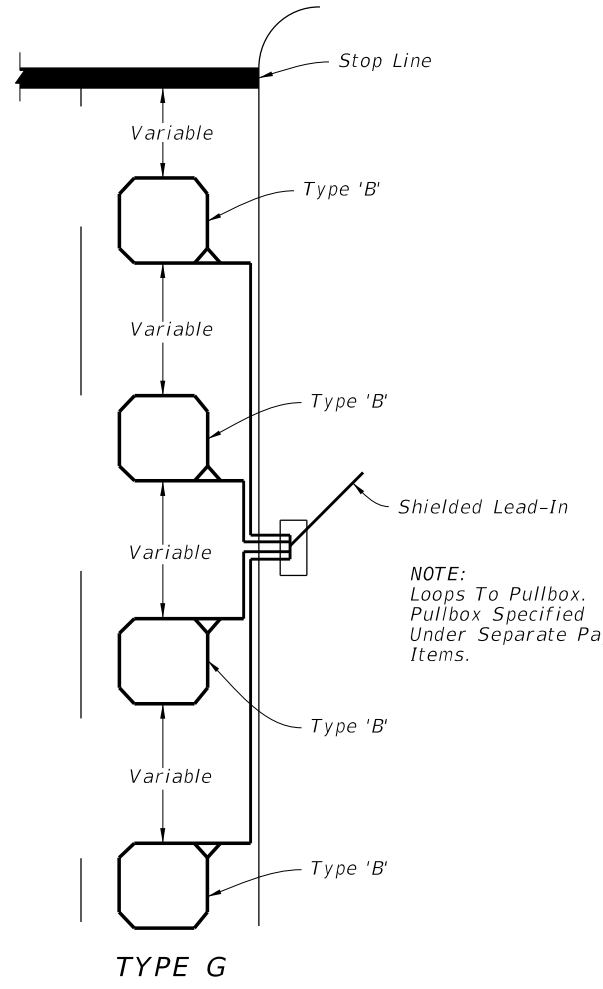
TYPE C



TYPE F

NOTE:
Loop conductors must follow saw-cut to bottom forming slack section at joint.

LOOP TYPES

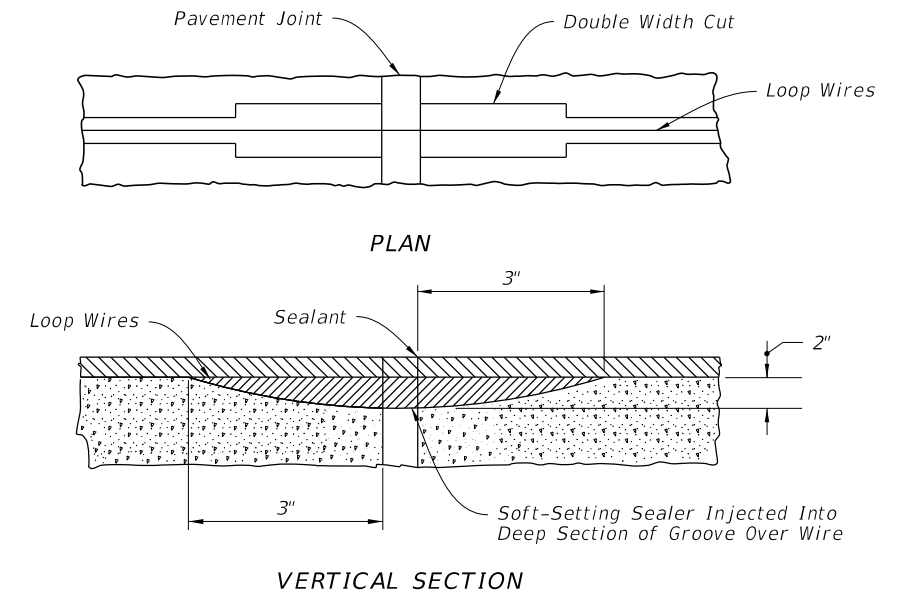


TYPE G

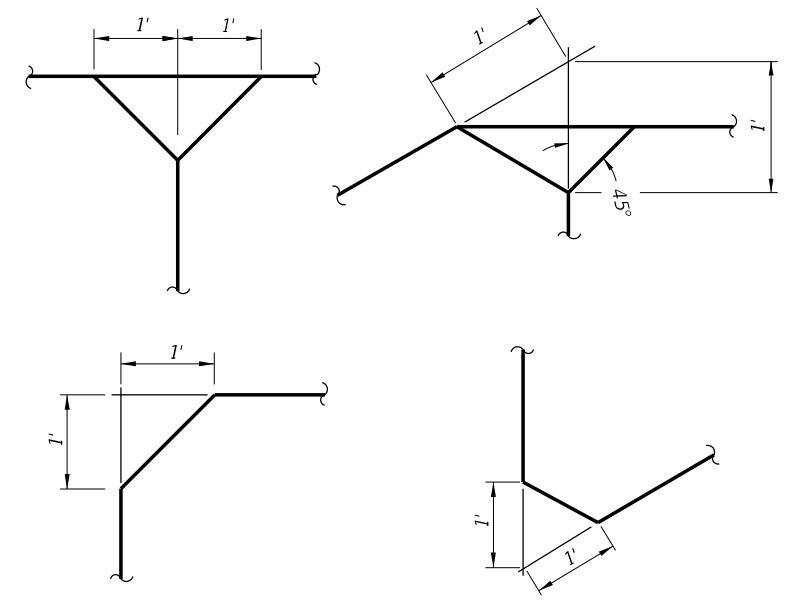
NOTE:
Loops To Pullbox.
Pullbox Specified
Under Separate Pay
Items.

NOTES:

1. The number of "Turns" indicated at the specified point on the loop refers to the number of passes of loop wires which are placed in the saw-cut forming the complete loop.
2. Loop types or details not drawn to scale.
3. Loop Types are centered in a single lane except Type E which is centered on two lanes.
4. The number of individual loops in the Type G loop may vary up to a maximum of four (4).
5. Lead-in may be connected to either end of loop.
6. When shown in the Plans, the leading edge of loop Types A, C, D, & F may extend past the stop line a maximum of 10' and the length of these loops may be extended to a maximum of 60'.
7. Do not install loop lead-in wires in the same pull box with signal power cable.



CONCRETE PAVEMENT EXPANSION JOINTS

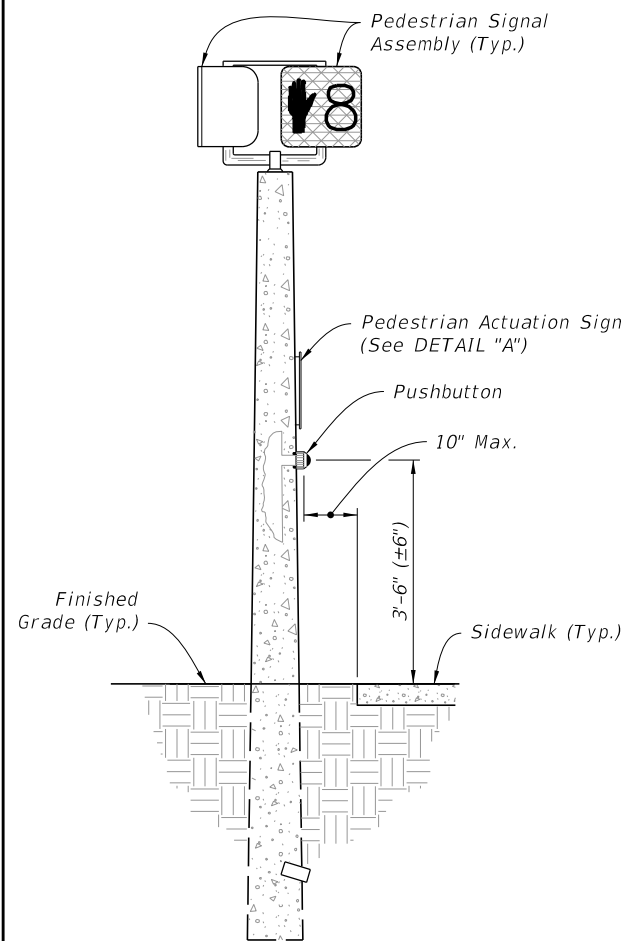


LOOP CORNER AND LEAD-IN DETAILS

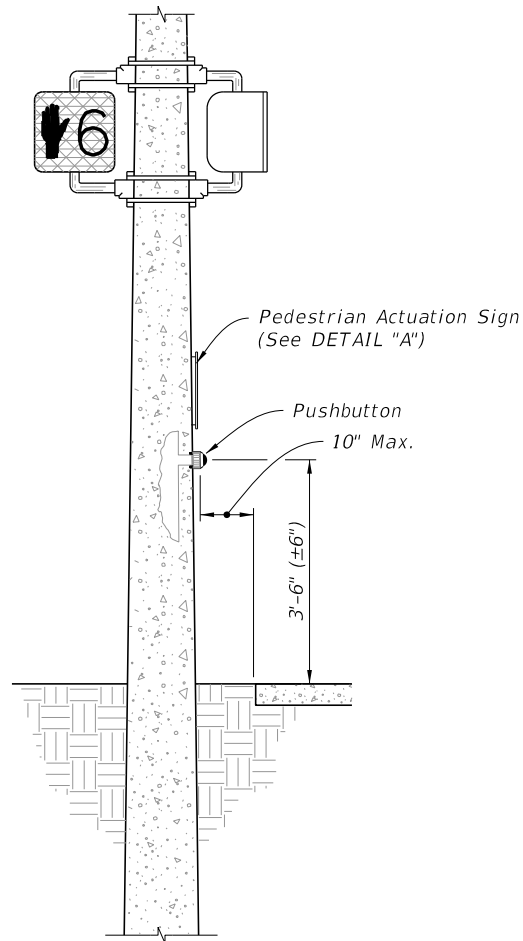
LOOP TYPES, EXPANSION JOINTS, AND DETAILS

9/22/2021 12:35:14 PM

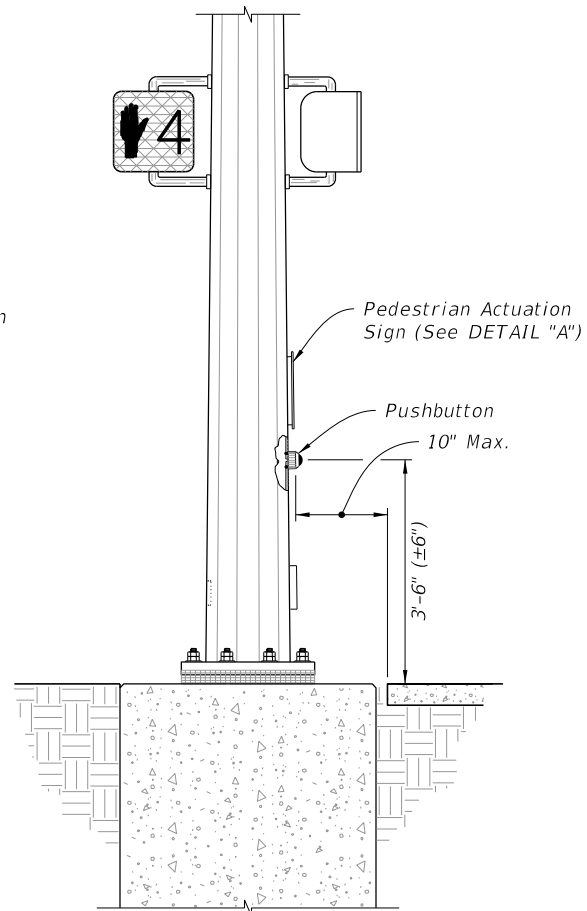
LAST REVISION 11/01/18	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	VEHICLE LOOP INSTALLATION DETAILS	INDEX 660-001	SHEET 2 of 2
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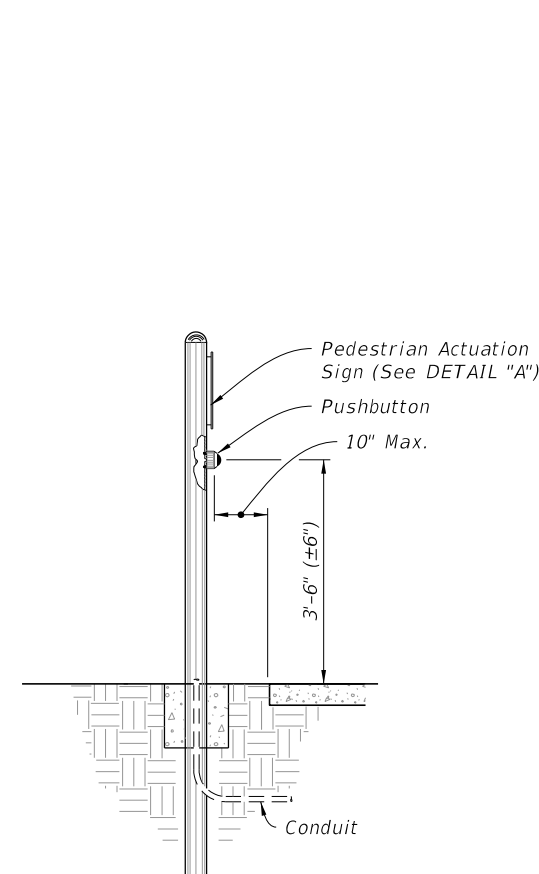
PRESTRESSED CONCRETE
PEDESTAL POLE



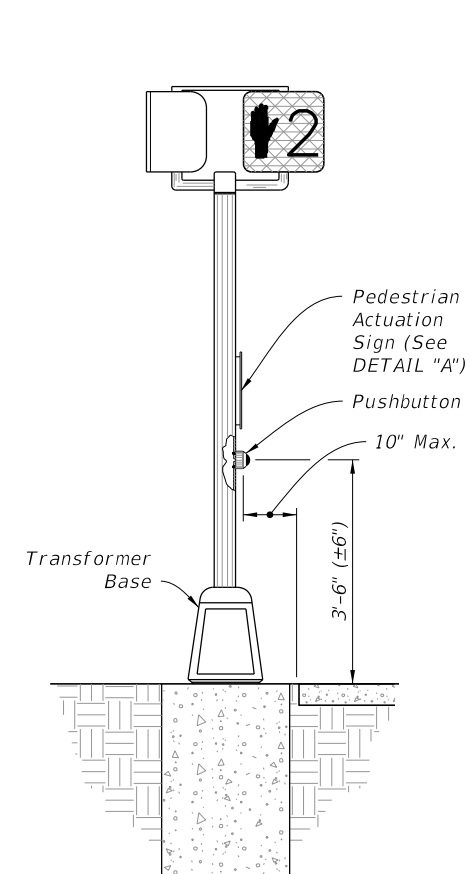
PRESTRESSED CONCRETE
STRAIN POLE



STEEL STRAIN POLE

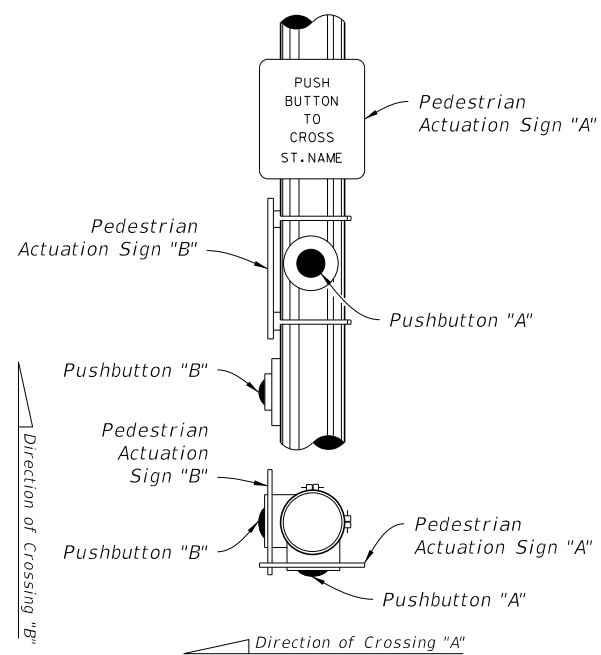


ALUMINUM POLE

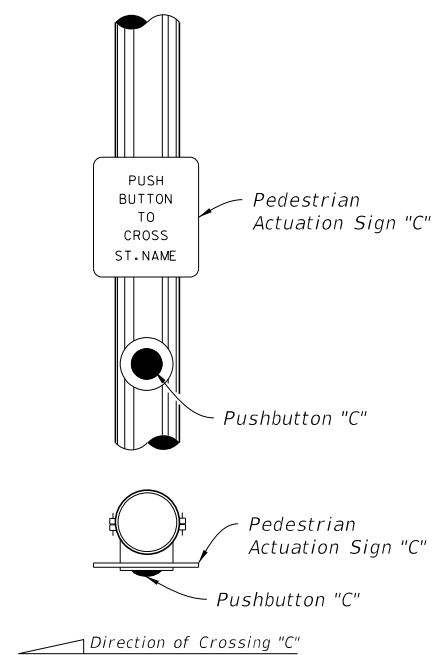


PEDESTAL

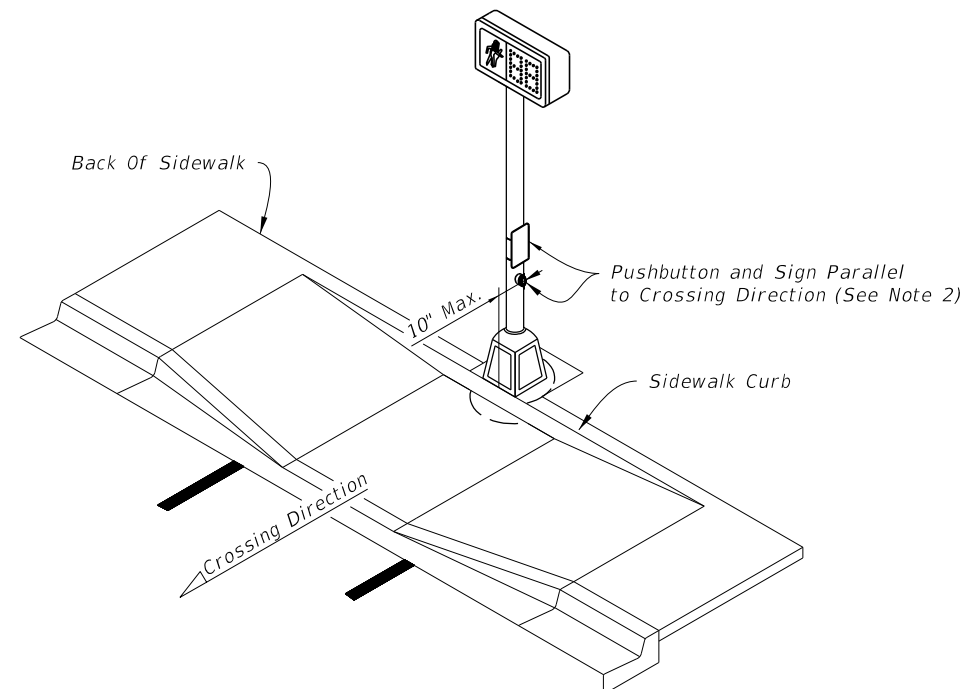
PUSHBUTTON PEDESTRIAN DETECTORS



DETAIL "A"



DETAIL "B"



NOTES:

1. Mount Signs above the detectors. See Index 700-102 for sign details.
2. Install Pushbuttons and Pedestrian Actuation Signs with faces parallel to the crossing direction, see DETAIL "B".
3. Mount pushbuttons and Signs in accordance with Specification 665.
4. Pushbutton mounting height shown is taken at the center of the actuation switch.
5. for pedestrian control signal see index 653-001.
6. For Aluminum Pole and Pedestal supports see Index 646-001.

9/22/2021 12:35:50 PM

LAST REVISION 11/01/20	REVISION	DESCRIPTION:
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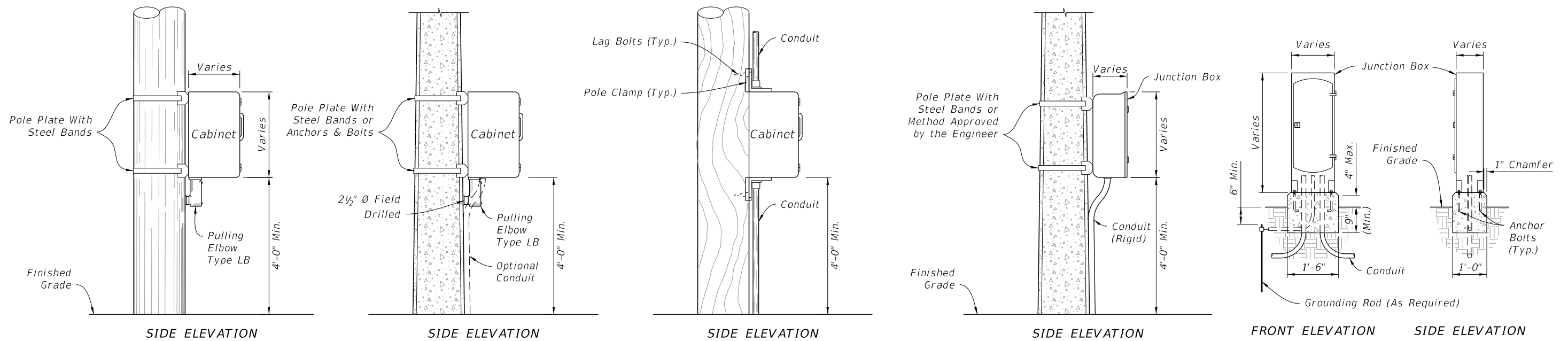


FY 2022-23
STANDARD PLANS

PEDESTRIAN DETECTOR ASSEMBLY
INSTALLATION DETAILS

INDEX
665-001

SHEET
1 of 1

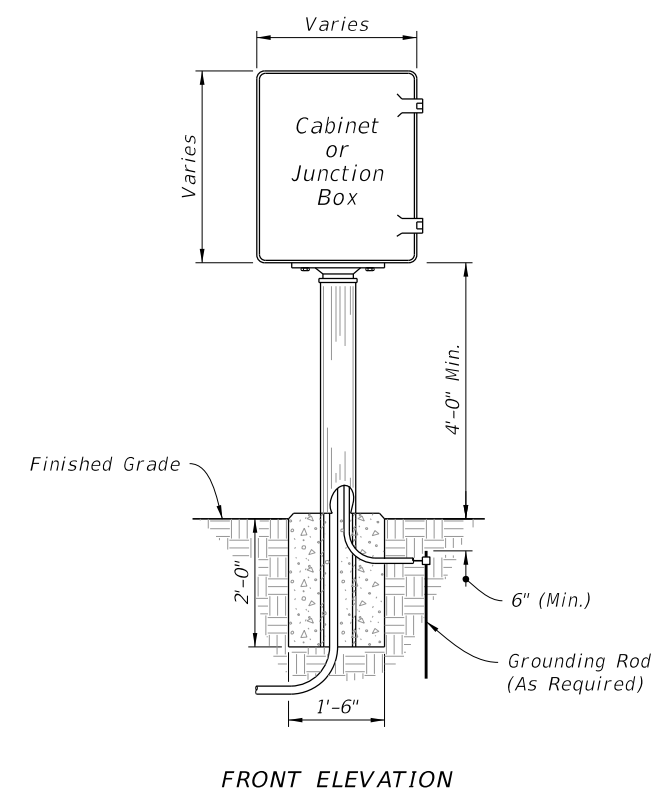
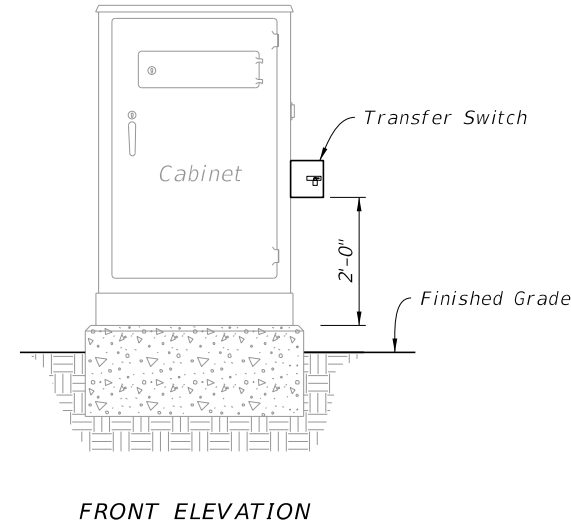
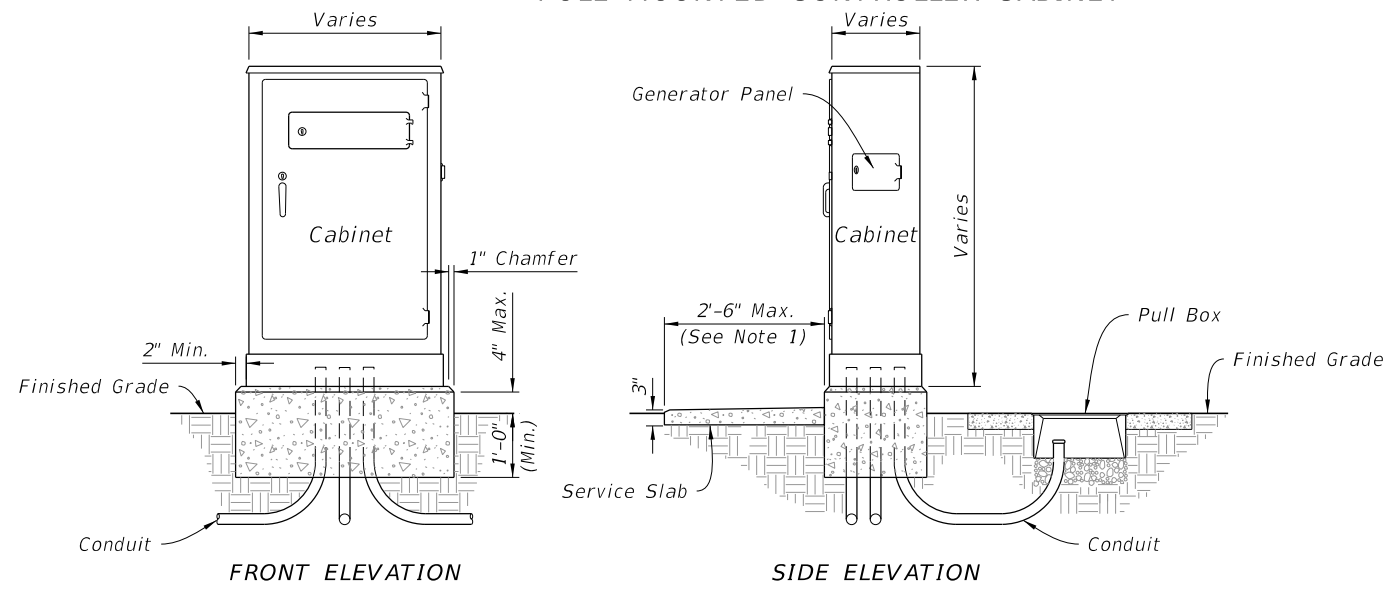


NOTES:

1. If cabinet mounting requires relocation of hole in concrete pole, fill existing hole with concrete or cover with a noncorrosive cover plate.
2. Liquidtight flexible conduit is approved for use from the electrical disconnect to the cabinet when both are installed on the same pole.

POLE MOUNTED CONTROLLER CABINET

INTERCONNECT JUNCTION BOX



NOTES:

1. Service Slab: slope $\frac{1}{4}$ " to 1" for drainage. Not required in sidewalk, pavement areas, or where R/W is restricted.
2. The number, size and orientation of conduit sweep will vary according to site condition or locations. Provided two spare 2" PVC conduits in all bases. Place the exits of the spare conduits in the direction of the center rear of the cabinet base and into a pullbox. If obstructions prevent the spare conduit from exiting to the rear, or the rear of the cabinet is located on the R/W line, locate as directed by the Engineer. Cap all spare conduit sweeps with a weatherproof fitting.

NOTES:

1. Retrofit existing controller cabinets in accordance with Specification 678.
2. Retrofit installation procedure for signalized intersection controller cabinet are located at: http://www.fdot.gov/Traffic/Doc_Library/Doc_Library.shtm Generator Power for Signalized Intersection

NEW CONTROLLER CABINET

EXISTING CONTROLLER CABINET

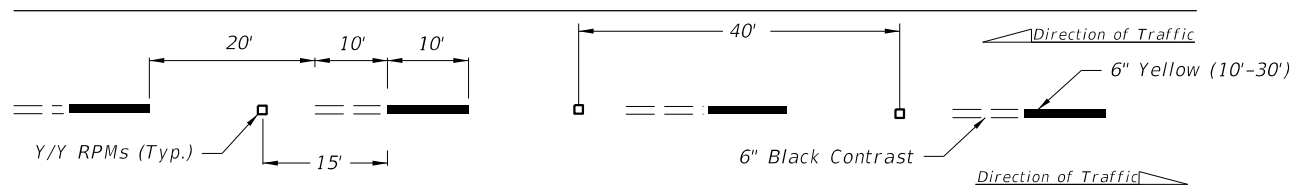
FRONT ELEVATION

GROUND MOUNTED CONTROLLER CABINET

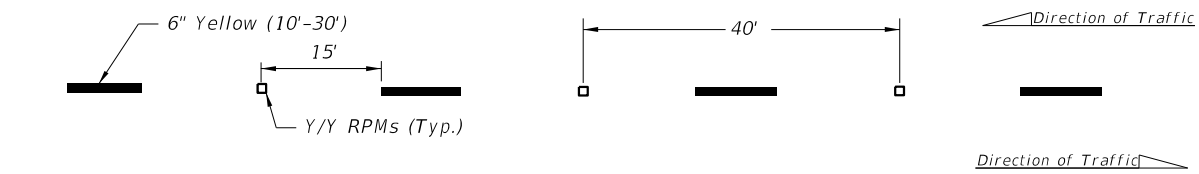
PEDESTAL MOUNTED CABINET

9/22/2021 12:38:37 PM

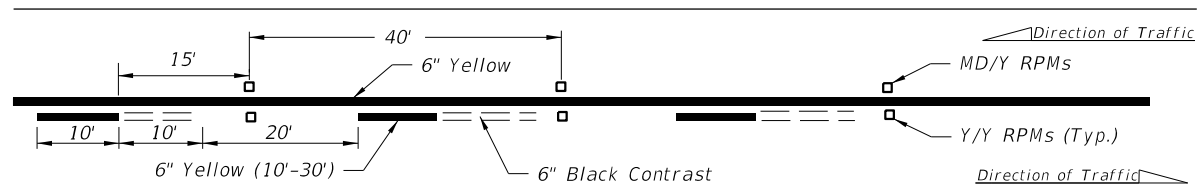
LAST REVISION 11/01/18	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	CABINET INSTALLATION DETAILS	INDEX 676-010	SHEET 1 of 1
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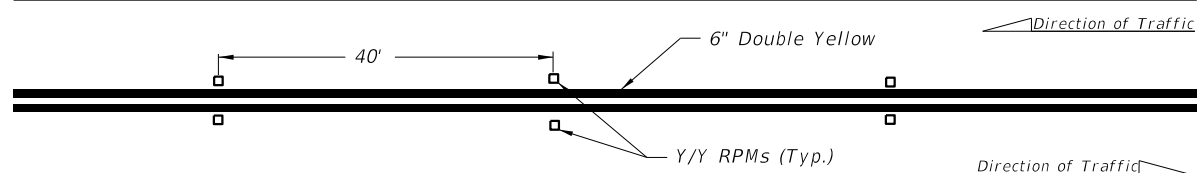
ALTERNATING SKIP LINE



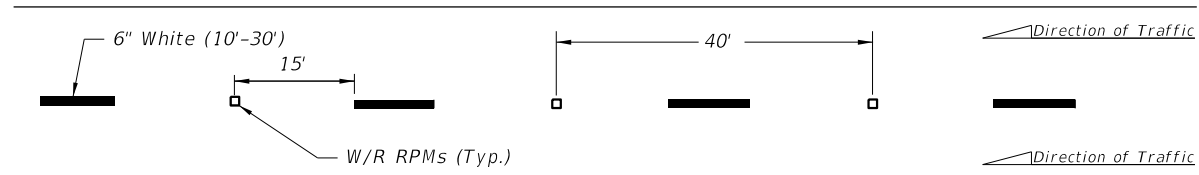
SKIP LINE



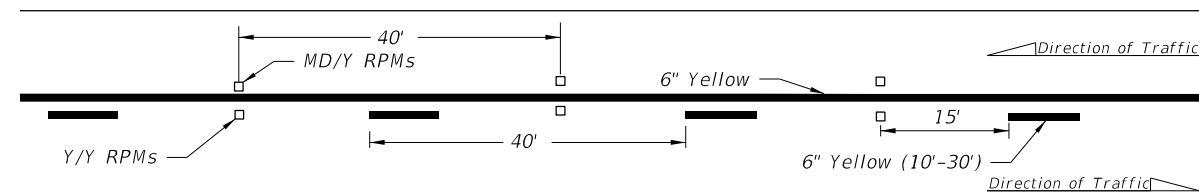
SOLID LINE WITH ALTERNATING SKIP



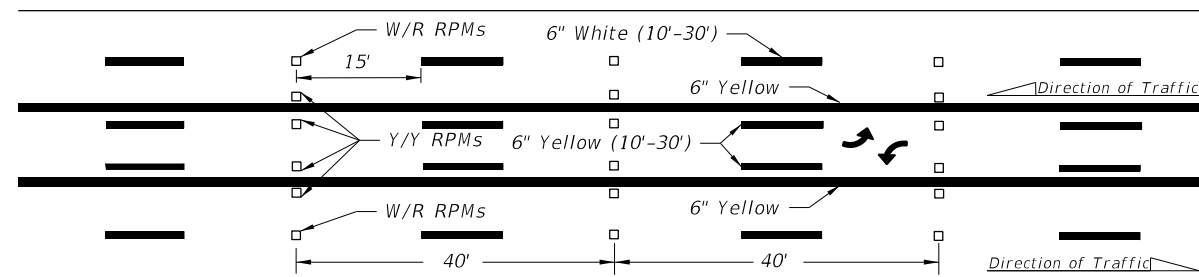
DOUBLE SOLID LINE



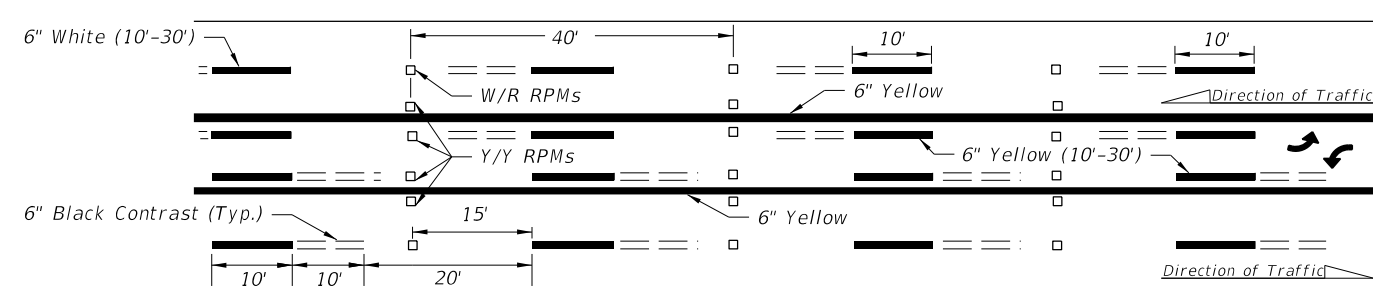
MULTILANE



SOLID LINE WITH SKIP



SKIP LINE WITH TWO-WAY LEFT TURN LANE



ALTERNATING SKIP LINE WITH TWO-WAY LEFT TURN LANE

NOTES:

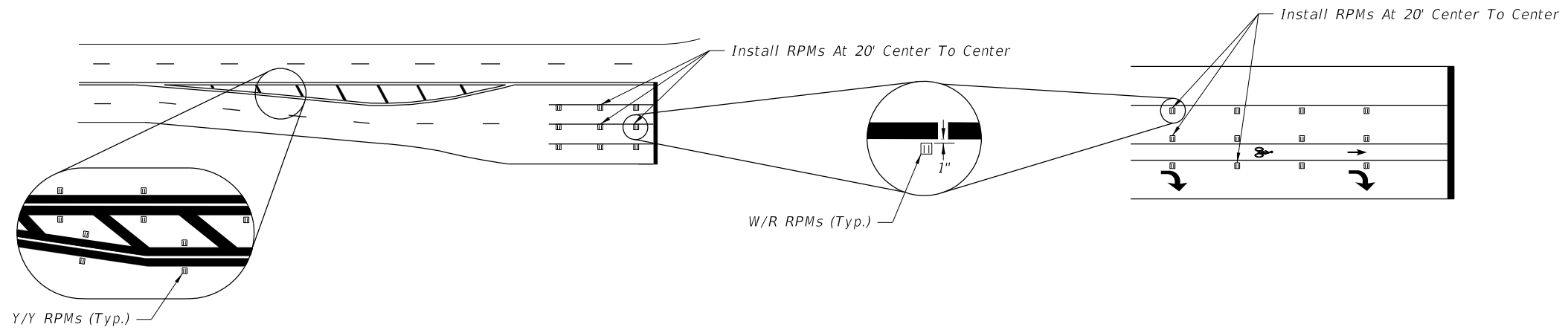
1. Offset all RPMs 1" from solid longitudinal lines unless otherwise noted or shown.
2. Spacing may be reduced for sharp curves if required.
3. For placement of RPMs on ramps, see Index 711-003.
4. Make the traffic face of the RPM the same color as the pavement marking that it is supplementing.

LEGEND:

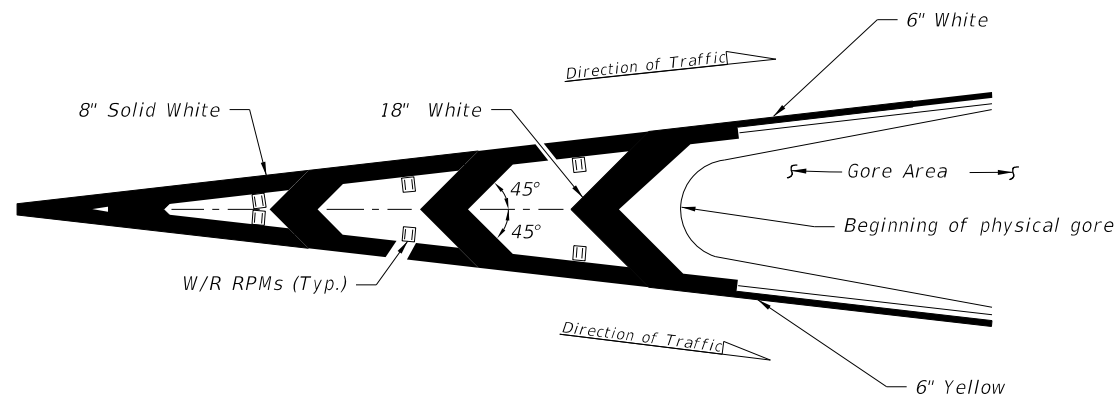
- B/C = BACK OF CURB
- EOP = EDGE OF PAVEMENT
- RPM = RAISED PAVEMENT MARKER
- W/R = WHITE/RED RPM
- Y/Y = YELLOW/YELLOW RPM
- Y/R = YELLOW/RED RPM
- MD/Y = MONO-DIRECTIONAL YELLOW RPM

9/22/2021 3:09:35 PM

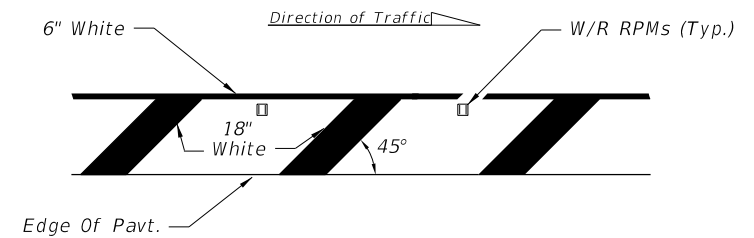
LAST REVISION 11/01/18	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	TYPICAL PLACEMENT OF RAISED PAVEMENT MARKERS	INDEX 706-001	SHEET 1 of 6
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RPM PLACEMENT AT INTERSECTIONS



RPM PLACEMENT AT TRAFFIC CHANNELIZATION AT GORE
(Traffic Flows In Same Direction)



RPM PLACEMENT AT ROADSIDE CROSSHATCHING

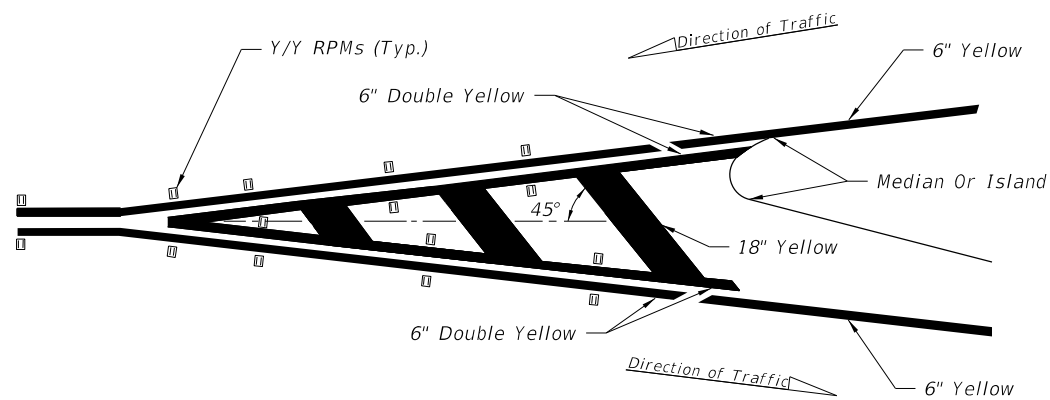
NOTE:

Center the Raised Pavement Markers between chevrons and crosshatching.

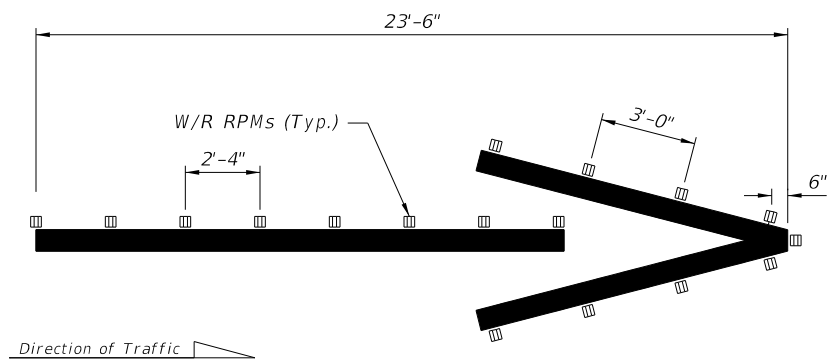
Right side of the roadway shown. For the left side of roadway, the pavement marking is yellow and oriented opposite hand.

LEGEND:

- B/C = BACK OF CURB
- EOP = EDGE OF PAVEMENT
- RPM = RAISED PAVEMENT MARKER
- W/R = WHITE/RED RPM
- Y/Y = YELLOW/YELLOW RPM
- Y/R = YELLOW/RED RPM
- MD/Y = MONO-DIRECTIONAL YELLOW RPM



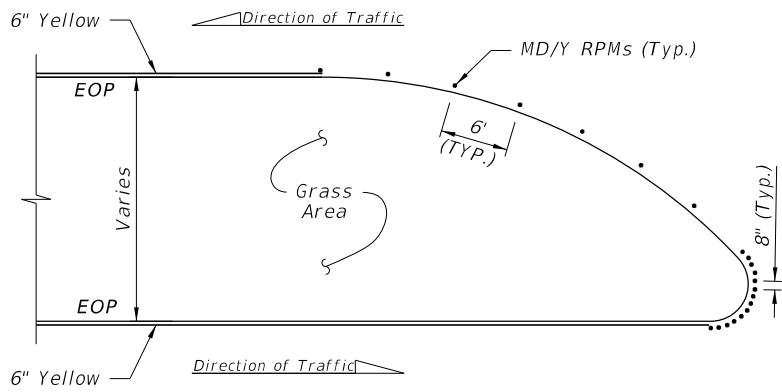
RPM PLACEMENT AT TRAFFIC SEPARATION
(Traffic Flows In Opposite Direction)



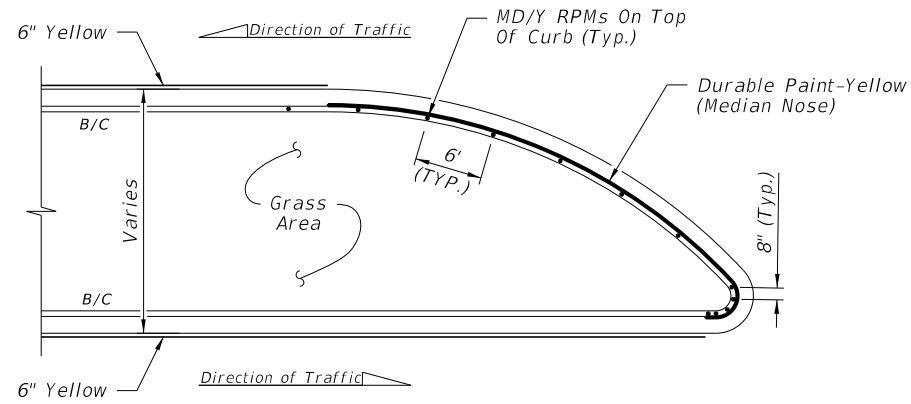
WRONG-WAY ARROW

9/22/2021 3:09:38 PM

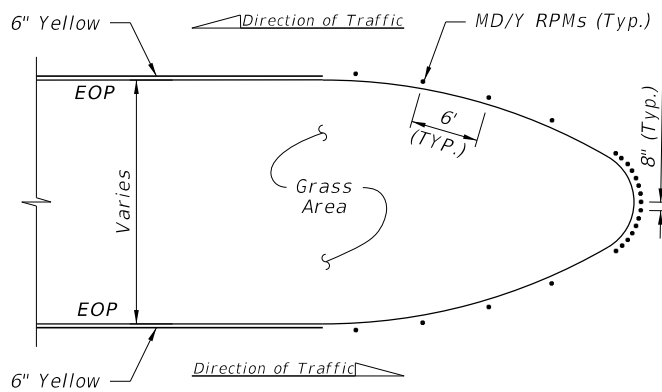
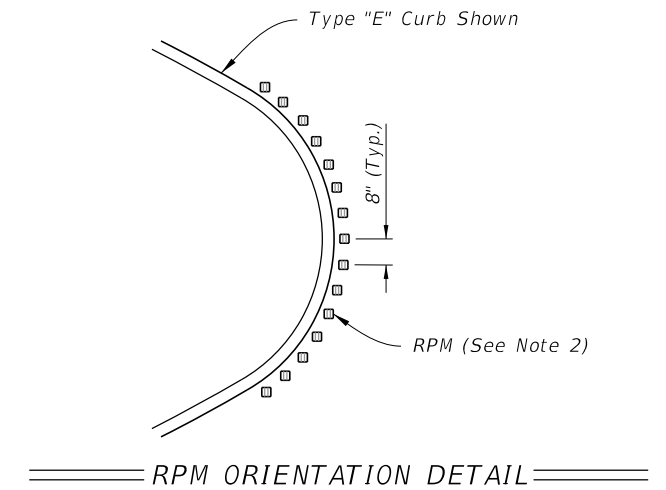
LAST REVISION 11/01/21	REVISION	DESCRIPTION:		FY 2022-23 STANDARD PLANS	TYPICAL PLACEMENT OF RAISED PAVEMENT MARKERS	INDEX 706-001	SHEET 2 of 6
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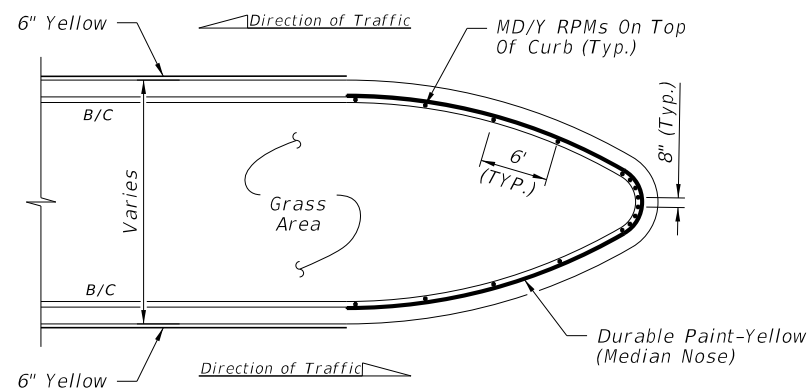
DETAIL "A"



DETAIL "D"



DETAIL "B"



DETAIL "E"

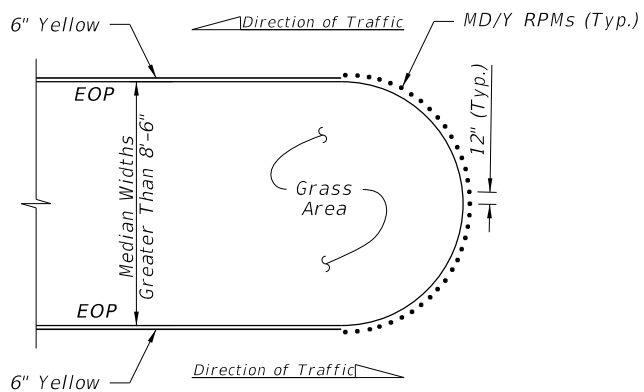
POSTED SPEED LIMIT MPH	"Y" FEET
30 OR LESS	10
35	20
40	20
45	30
50 OR MORE	40

LEGEND:

- B/C = BACK OF CURB
- EOP = EDGE OF PAVEMENT
- RPM = RAISED PAVEMENT MARKER
- W/R = WHITE/RED RPM
- Y/Y = YELLOW/YELLOW RPM
- Y/R = YELLOW/RED RPM
- MD/Y = MONO-DIRECTIONAL YELLOW RPM

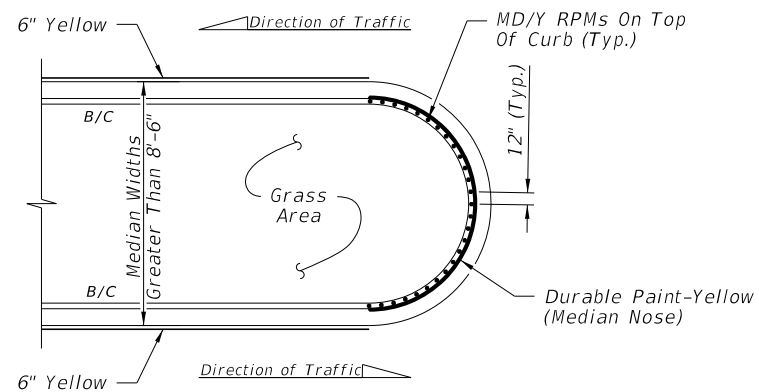
NOTES:

1. For Type "E" Curb, install RPMs along the pavement edge marking using the same spacing shown.
2. Orient traffic faces of RPMs in curb median radii to be parallel to direction of travel lanes.
3. Use epoxy adhesive to install RPMs on concrete median nose curbs.
4. Install RPMs on clean, unpainted surface. Do not paint curb surface where RPMs will be placed.



DETAIL "C"

FLUSH MEDIAN OPENINGS
(Type "E" Curb Similar. See Note 1)

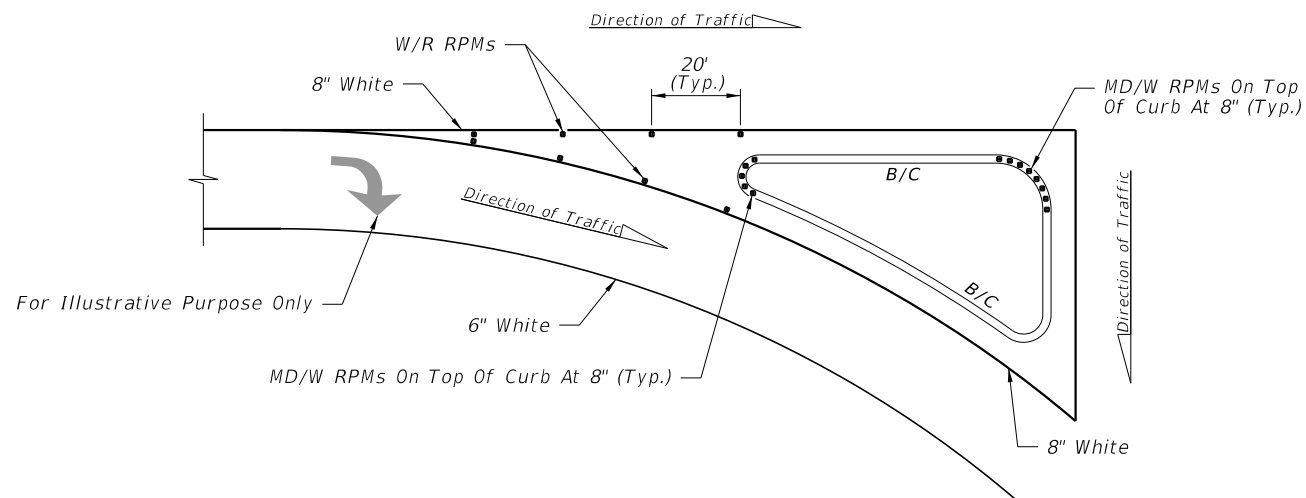


DETAIL "F"

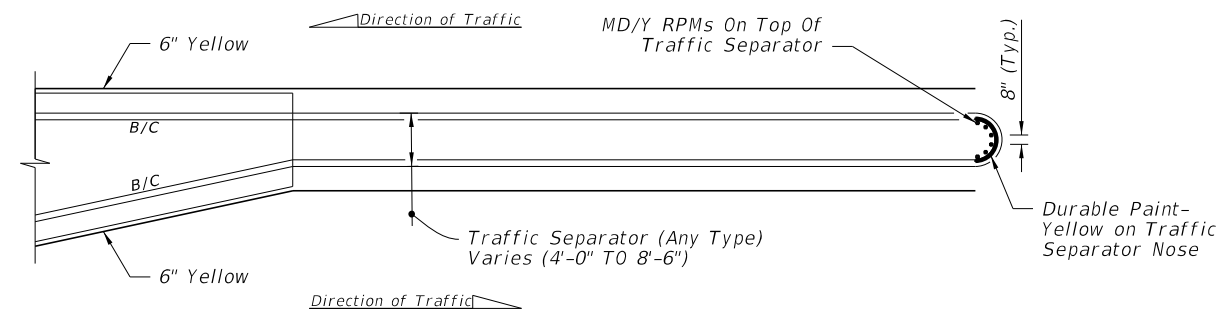
TYPE "D" OR "F" CURB

RPM PLACEMENT AT MEDIAN OPENINGS
(When called for in the Plans)

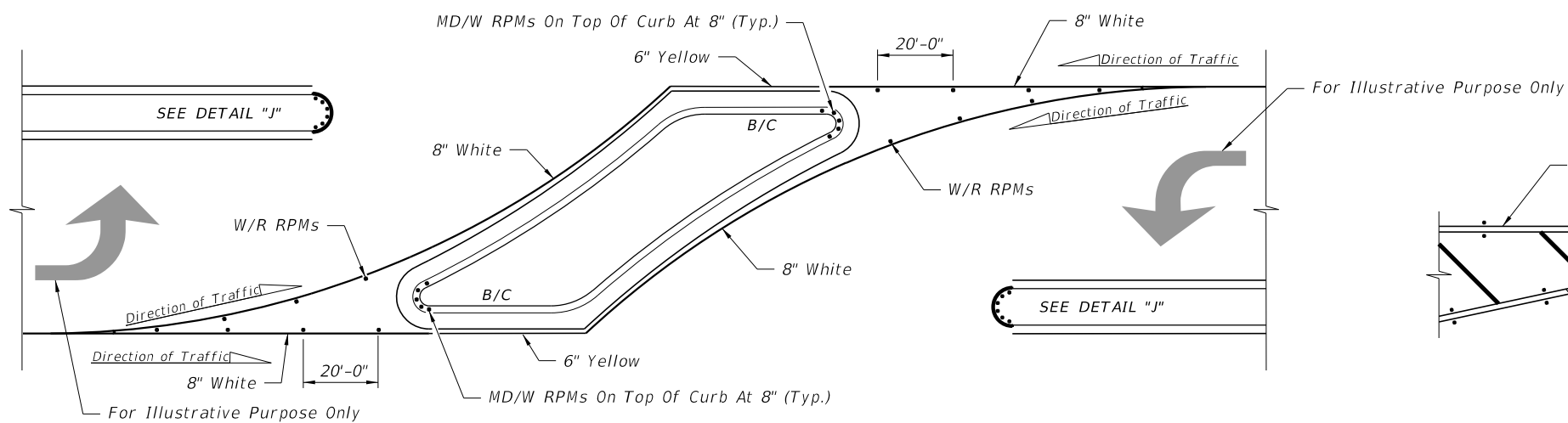
1/5/2022 10:06:18 AM



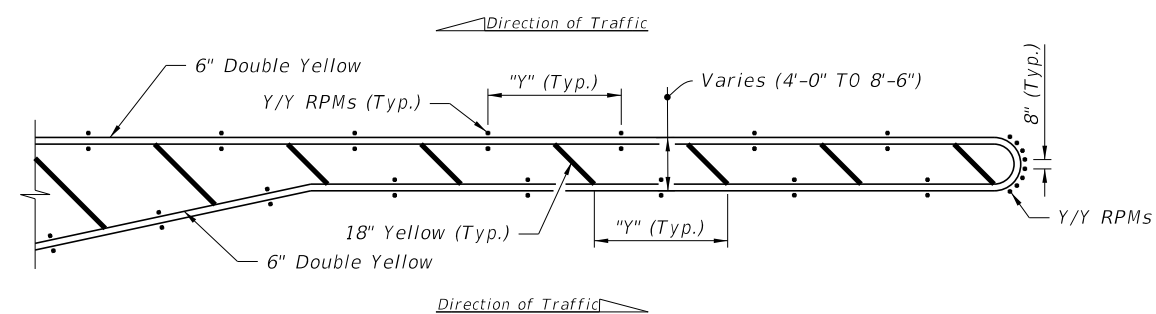
DETAIL "G"



DETAIL "J"



DETAIL "H"



DETAIL "K"

RPM PLACEMENT AT ISLANDS
(When called for in the Plans)

RPM PLACEMENT AT TRAFFIC SEPARATORS
(When called for in the Plans)

POSTED SPEED LIMIT MPH	"Y" FEET
30 OR LESS	10
35	20
40	20
45	30
50 OR MORE	40

NOTES:

- For Type "E" Curb install RPMs along the pavement edge marking using the same spacing shown.
- Orient traffic faces of RPMs in median radii to be parallel to direction of travel lanes.

LEGEND:

- B/C = BACK OF CURB
- EOP = EDGE OF PAVEMENT
- RPM = RAISED PAVEMENT MARKER
- W/R = WHITE/RED RPM
- Y/Y = YELLOW/YELLOW RPM
- Y/R = YELLOW/RED RPM
- MD/Y = MONO-DIRECTIONAL YELLOW RPM
- MD/W = MONO-DIRECTIONAL WHITE RPM

10:08:09 AM
1/5/2022

LAST REVISION	DESCRIPTION:
11/01/21	

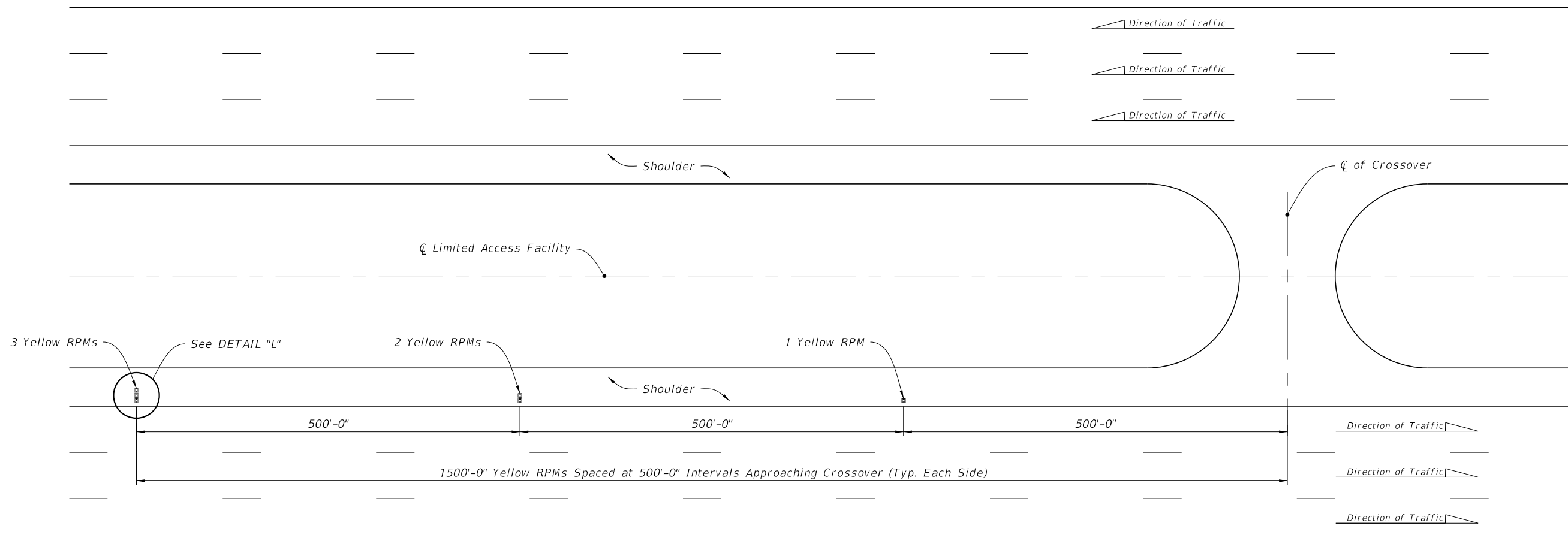


FY 2022-23
STANDARD PLANS

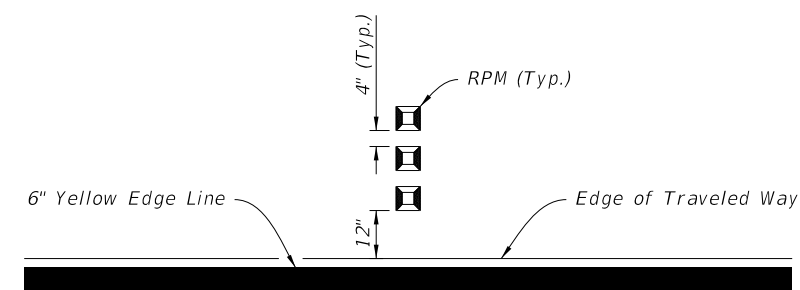
**TYPICAL PLACEMENT OF
RAISED PAVEMENT MARKERS**

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706-001

SHEET
4 of 6



RPM PLACEMENT FOR CROSSOVERS ON LIMITED ACCESS ROADWAYS



DETAIL "L"

9/22/2021 3:09:54 PM

LAST REVISION 11/01/18	DESCRIPTION:
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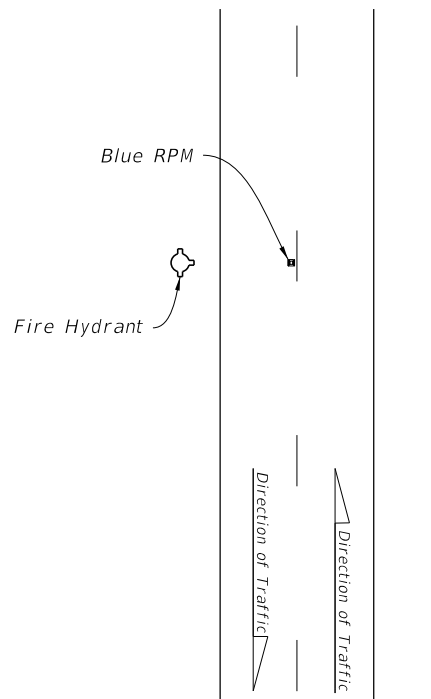


FY 2022-23
STANDARD PLANS

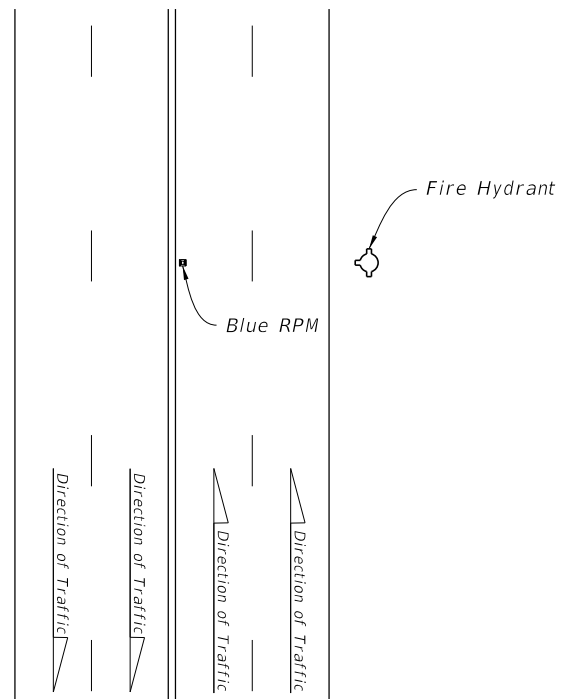
TYPICAL PLACEMENT OF
RAISED PAVEMENT MARKERS

INDEX
706-001

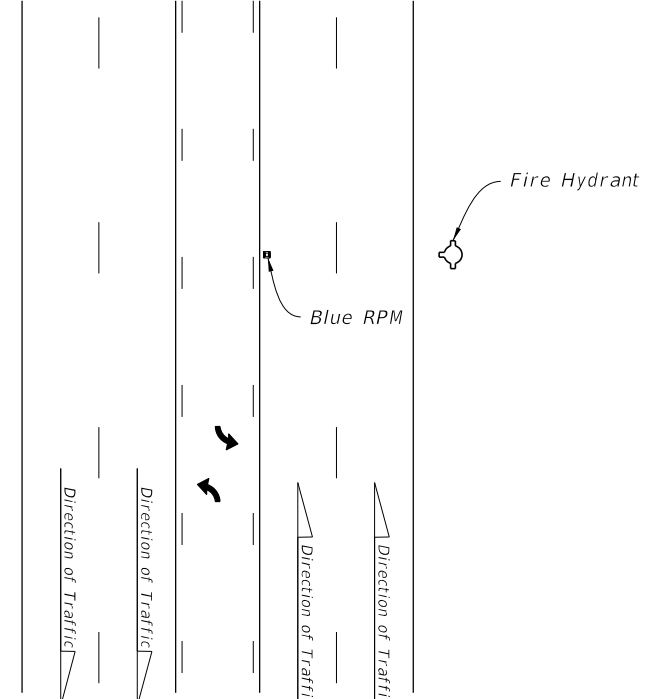
SHEET
5 of 6



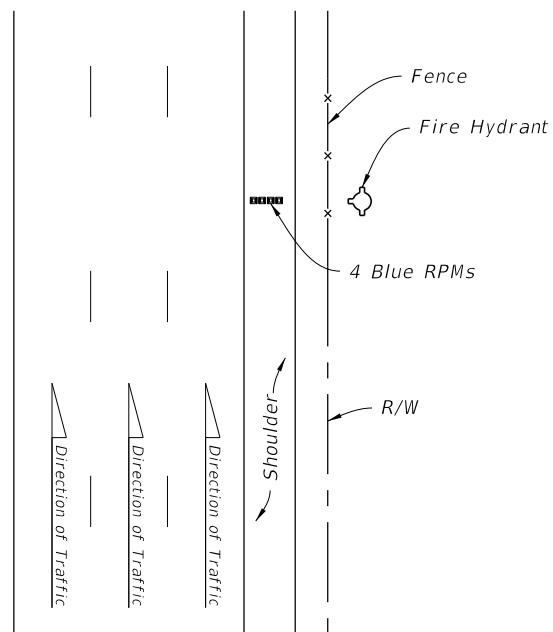
TWO-LANE ROADWAY



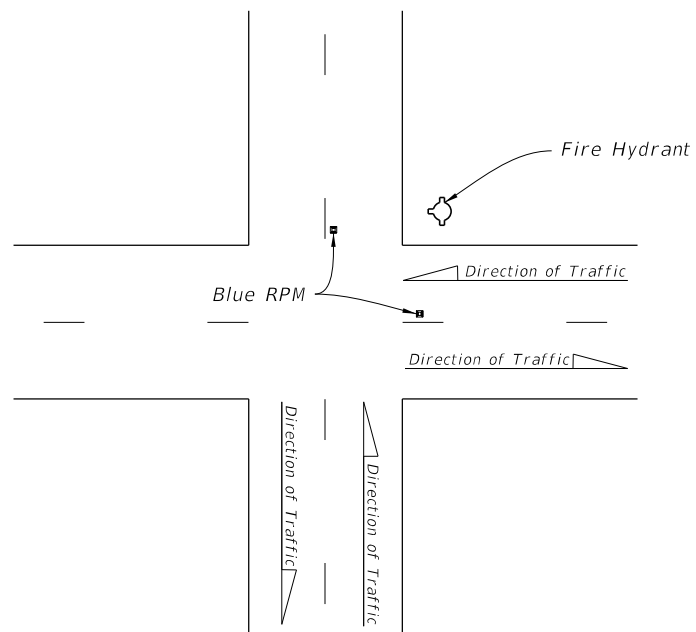
MULTILANE ROADWAY



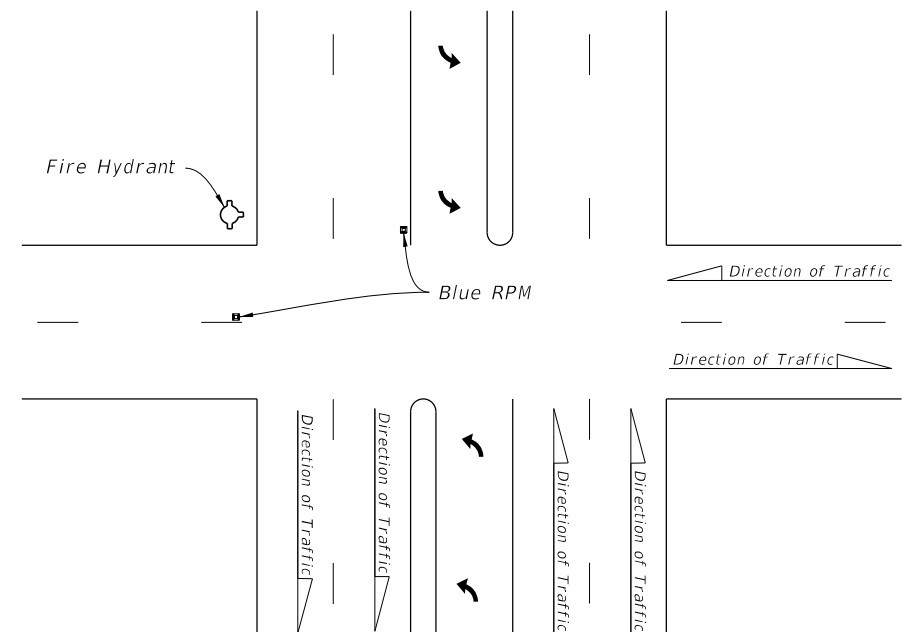
MULTILANE ROADWAY WITH TURN LANE



LIMITED ACCESS ROADWAY



TWO-LANE ROADWAY AT INTERSECTION



MULTILANE ROADWAY AT INTERSECTION

BLUE RPM PLACEMENT

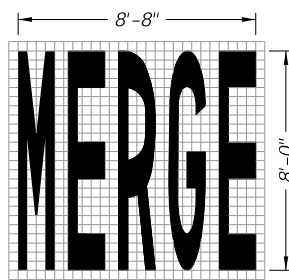
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9/22/2021

LAST REVISION 11/01/18	REVISION	DESCRIPTION:
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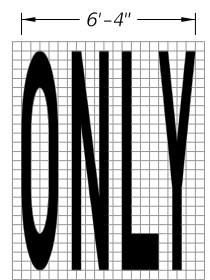

**FY 2022-23
STANDARD PLANS**

**TYPICAL PLACEMENT OF
RAISED PAVEMENT MARKERS**

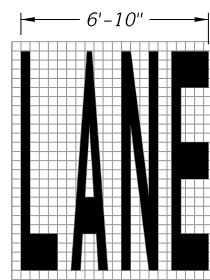
INDEX 706-001	SHEET 6 of 6
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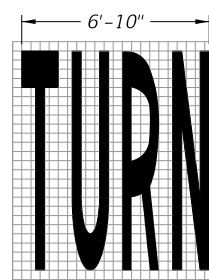
34 S.F.



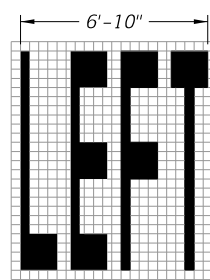
22 S.F.



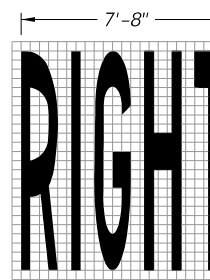
23 S.F.



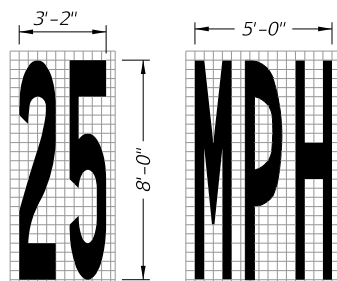
24 S.F.



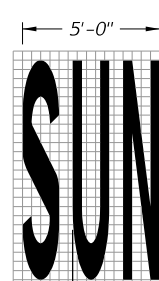
20 S.F.



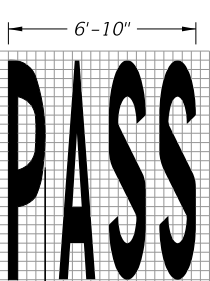
26 S.F.



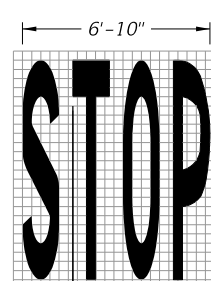
13 S.F.



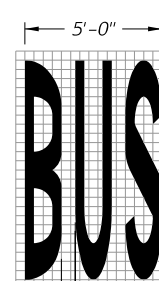
20 S.F.



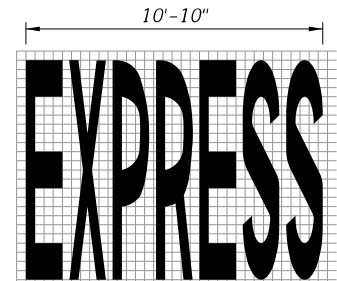
23 S.F.



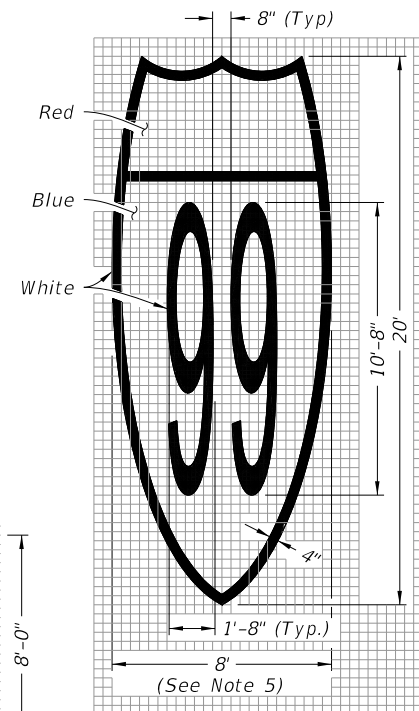
22 S.F.



20 S.F.

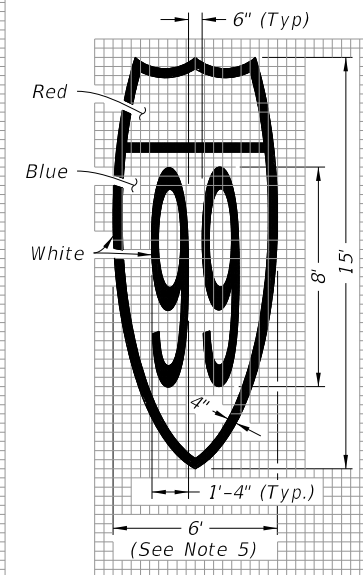


43 S.F.



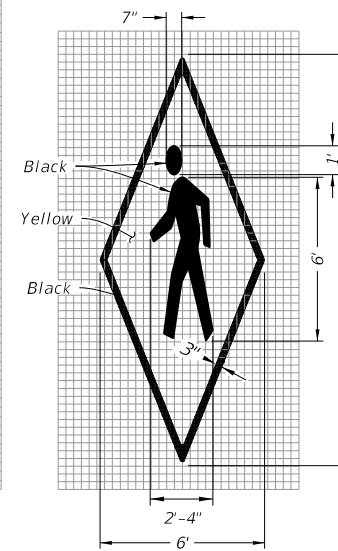
Route Shield for Limited Access Roadways (Interstate Route Shield Shown; U.S. and State Route Shield Similar)

128 S.F.



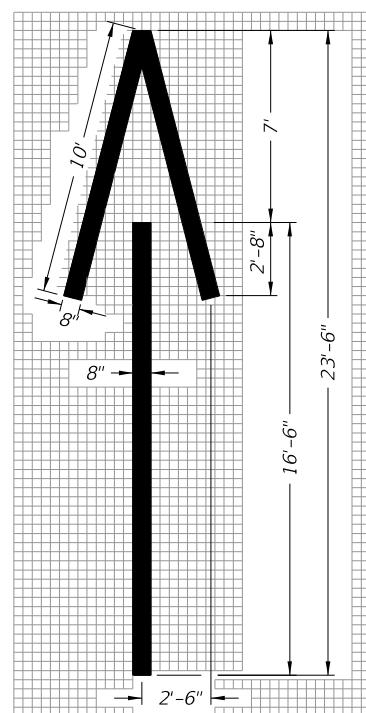
Route Shield for Arterials and Collectors (Interstate Route Shield Shown; U.S. and State Route Shield Similar)

72 S.F.

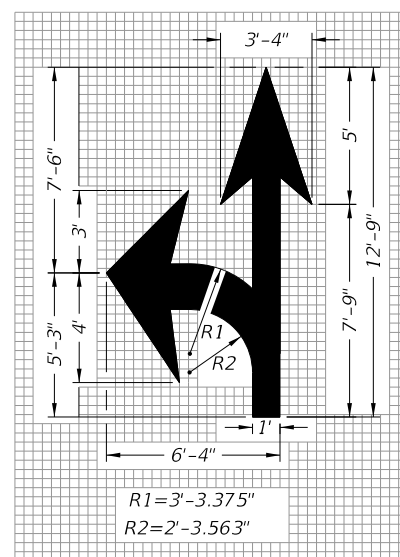


In Pavement Warning Marking

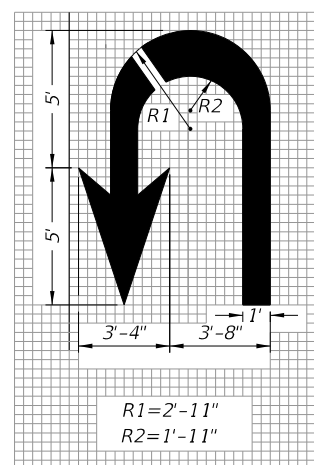
45 S.F.



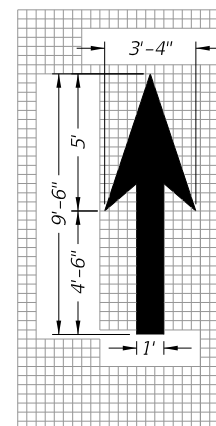
Wrong-Way Arrow
24 S.F.



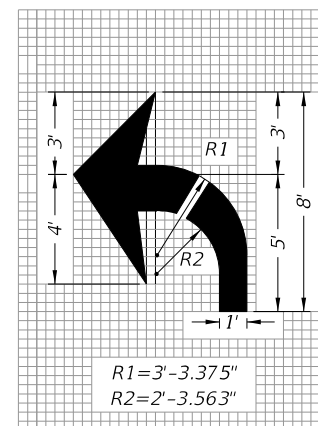
Turn and Through Lane-Use Arrow
29 S.F.



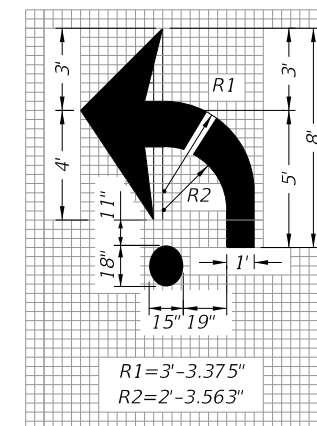
U Turn Lane-Use Arrow
27 S.F.



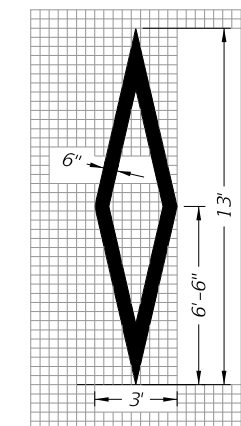
Through Lane-Use Arrow
12 S.F.



Turn Lane-Use Arrow (Left Turn Shown - Right Turn Similar)
17 S.F.



Roundabout Approach Arrow
19 S.F.



Preferential Lane Symbol
11 S.F.

PAVEMENT MESSAGES NOTES:

1. Place all pavement messages 25' back from the stop line.
2. Dimensions are within 1" ±.
3. All grids are 4" x 4".
4. All pavement messages must be white except Route Shields and In Pavement Warning Markings.
5. Increase width of route shield for routes with three digits.

PAVEMENT MESSAGE AND ARROW DETAILS

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LAST REVISION	DESCRIPTION:
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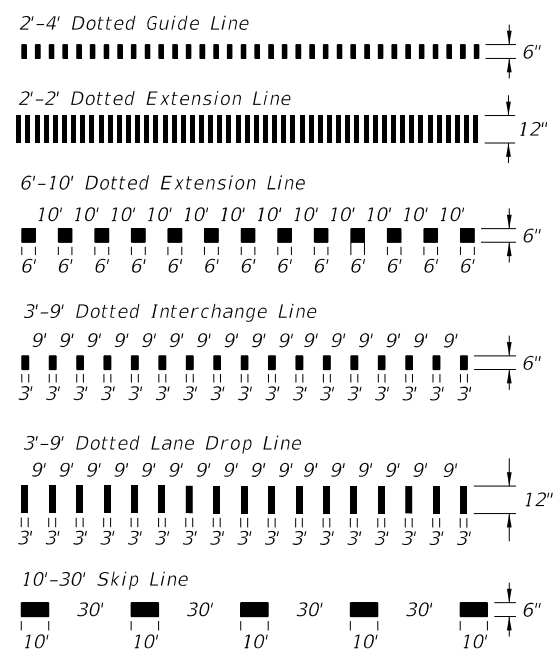
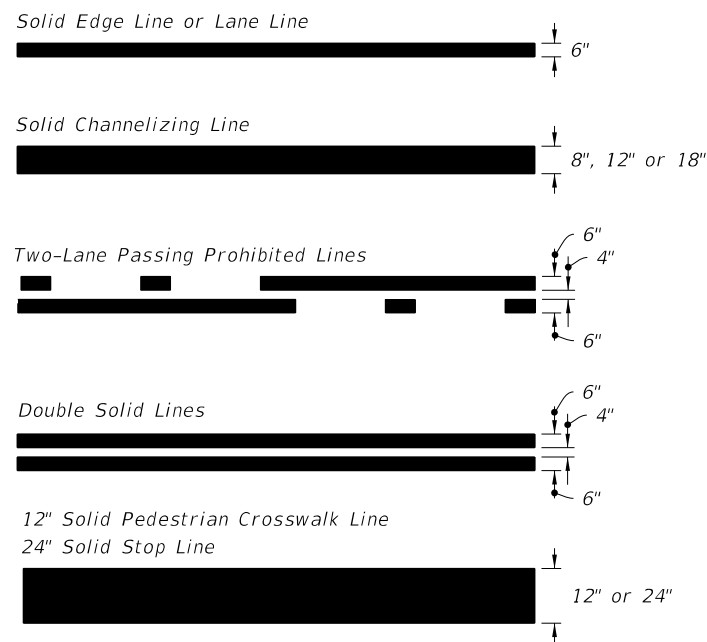


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STANDARD PLANS

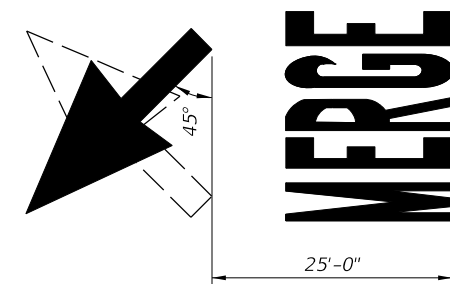
PAVEMENT MARKINGS

INDEX
711-001

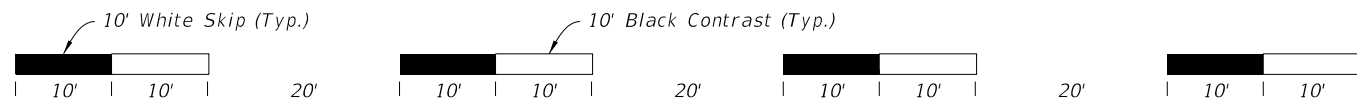
SHEET
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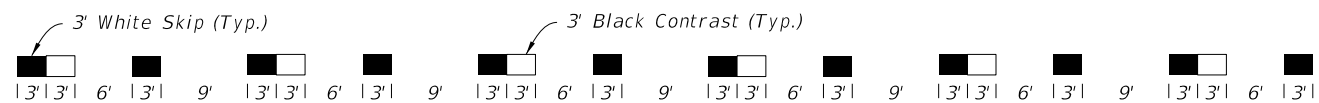
PAVEMENT MARKING LINES



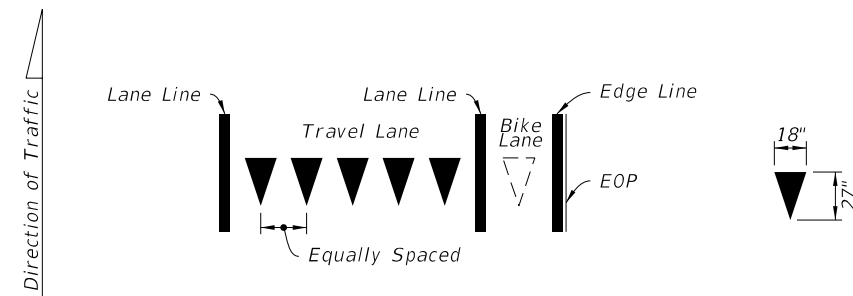
MARKINGS FOR MERGE



10'-30' SKIP LINE WITH SHADOW MARKINGS



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



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

YIELD LINES

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LAST REVISION 11/01/21	DESCRIPTION:
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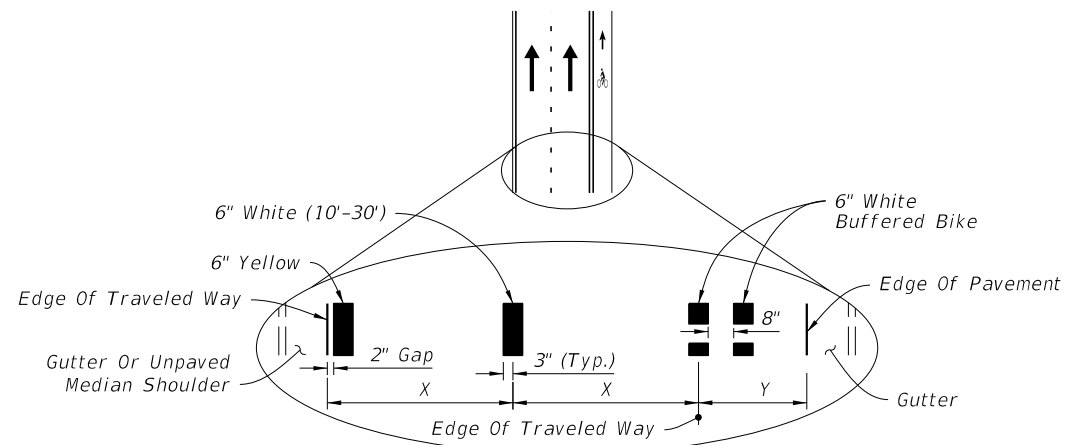


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STANDARD PLANS

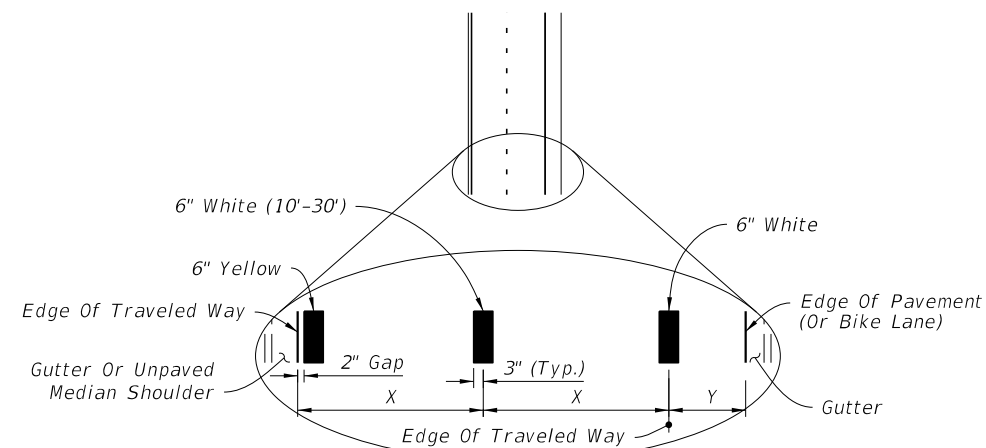
PAVEMENT MARKINGS

INDEX
711-001

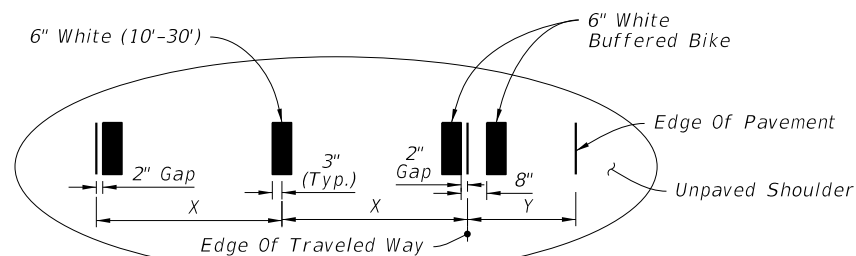
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CURB AND GUTTER

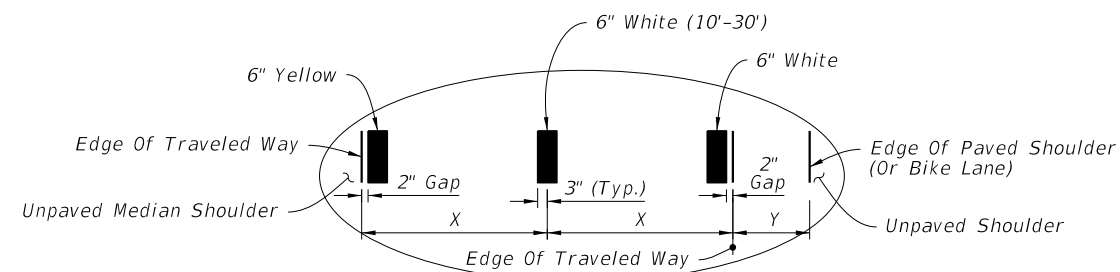


CURB AND GUTTER



FLUSH SHOULDER

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

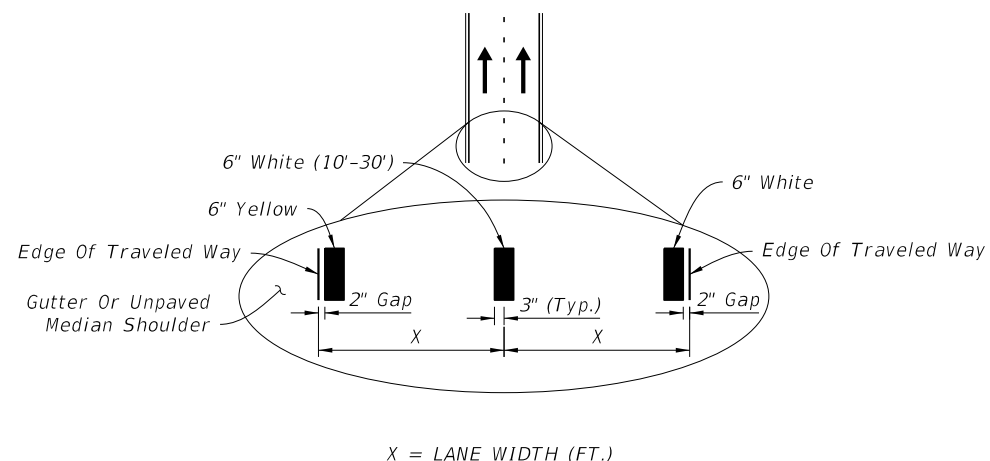


FLUSH SHOULDER

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

STRIPING FOR BUFFERED BIKE LANE

STRIPING WITH SHOULDER OR NON-BUFFERED BIKE LANE




X = LANE WIDTH (FT.)

STRIPING WITH NO SHOULDER OR BIKE LANE

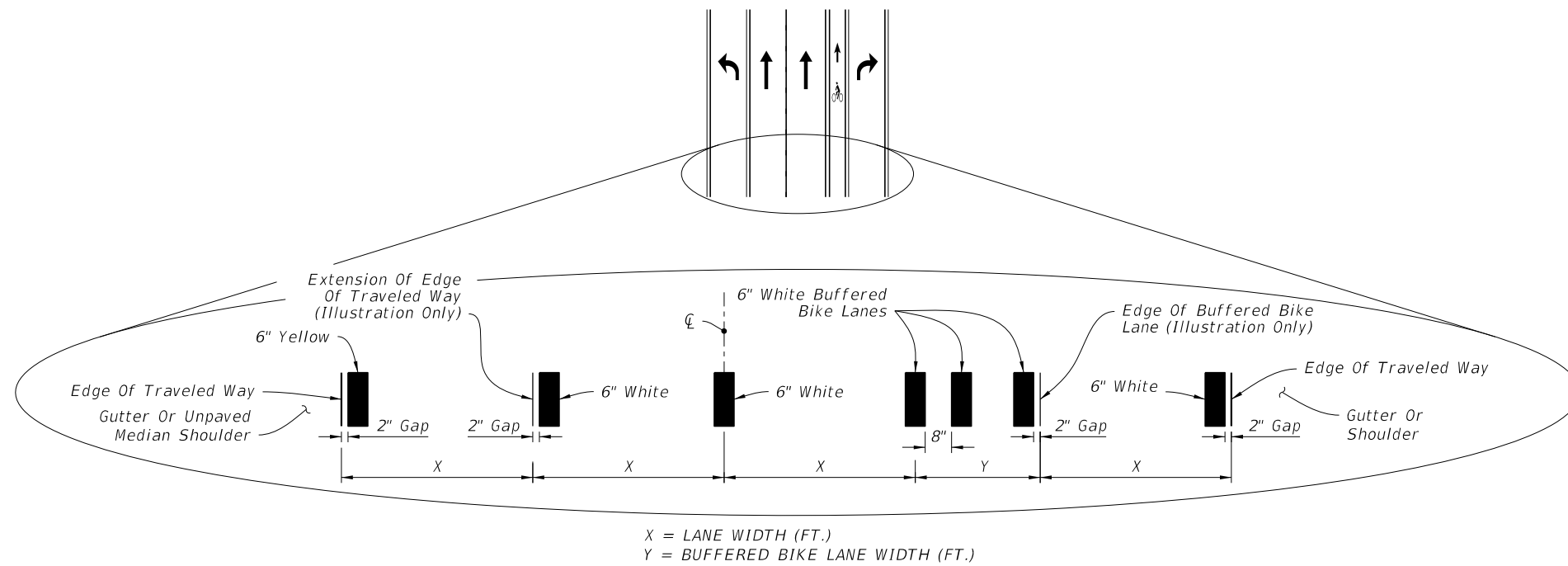
NOTES:

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

9/22/2021 3:12:31 PM

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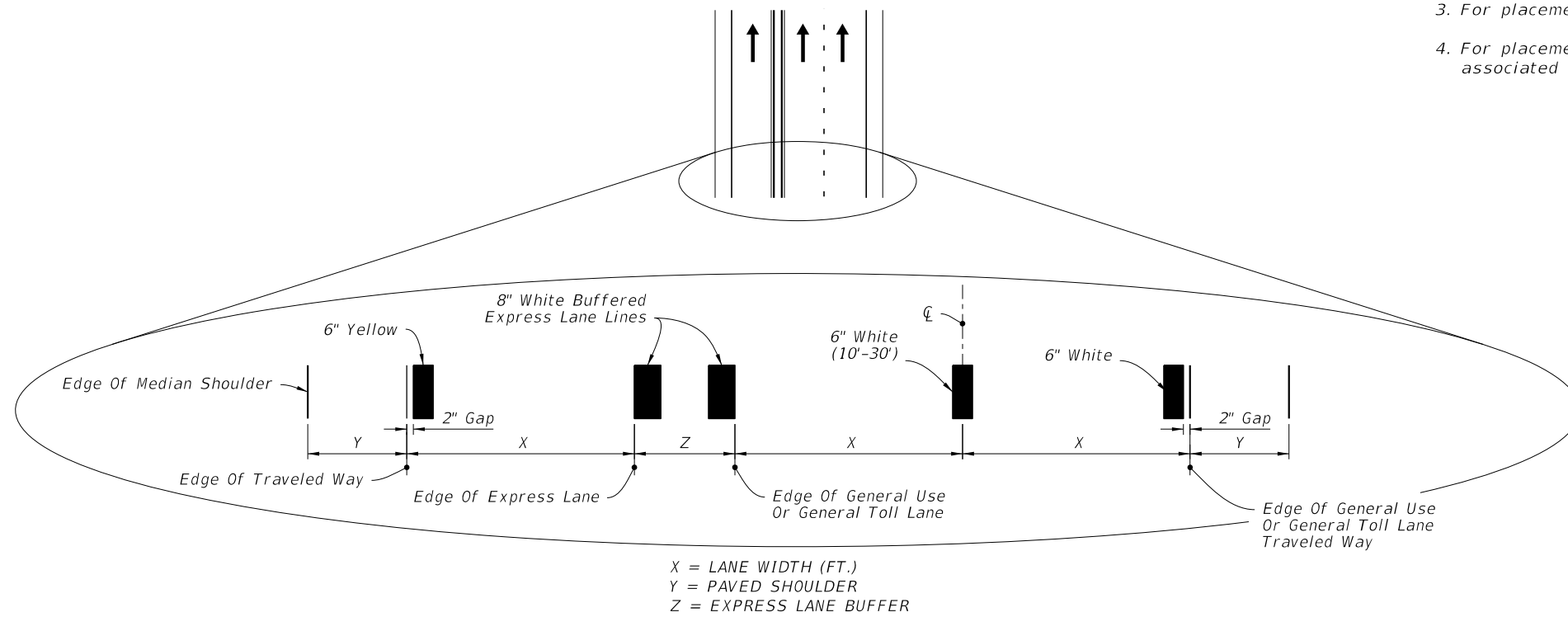
PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS



INTERSECTION APPROACH STRIPING WITH TURN LANES AND BUFFERED BIKE LANE KEY HOLE

NOTES:


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



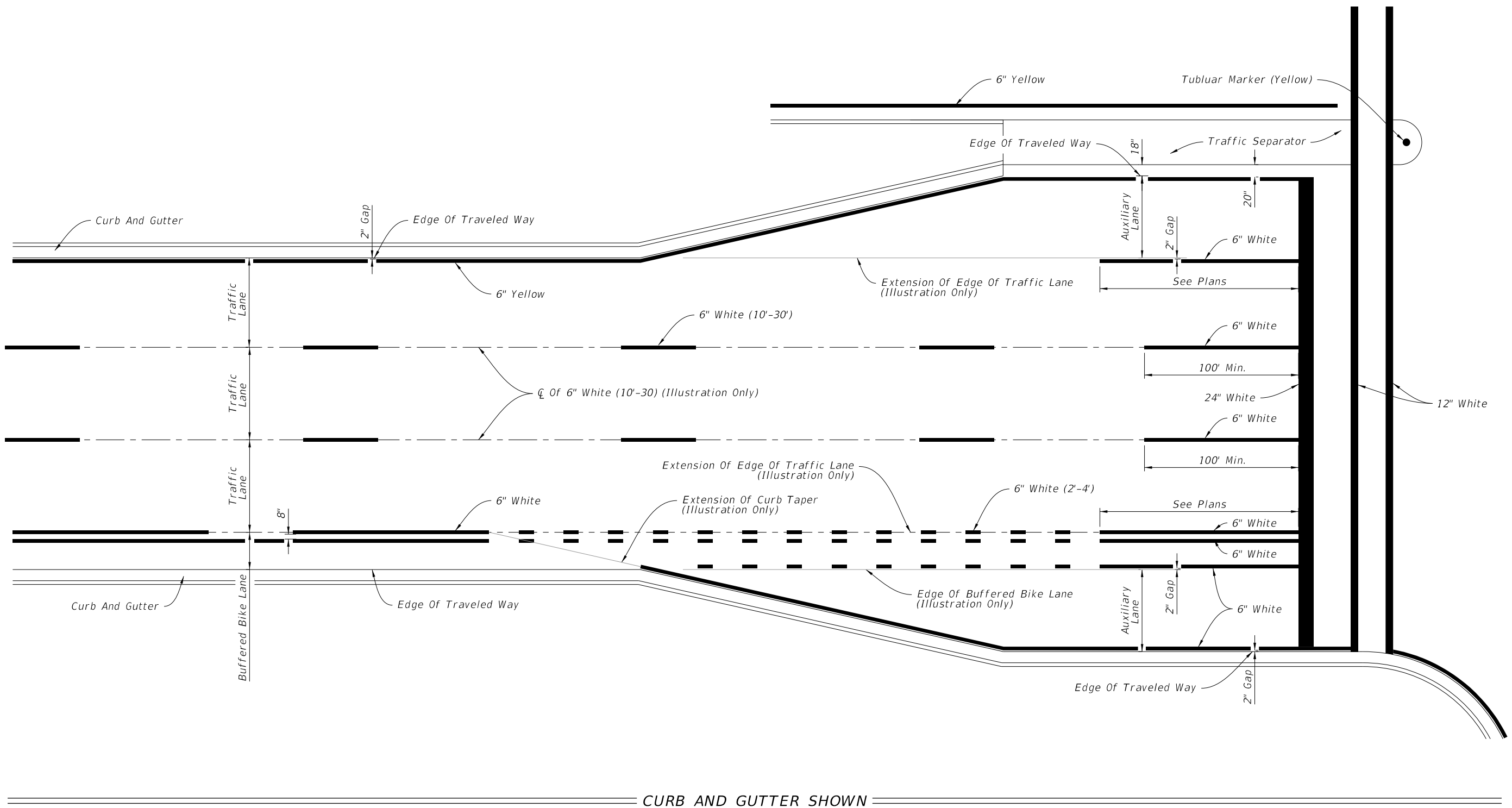
BUFFERED EXPRESS LANE STRIPING

PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

9/22/2021 3:12:35 PM

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11/4/2021 11:38:10 AM



CURB AND GUTTER SHOWN

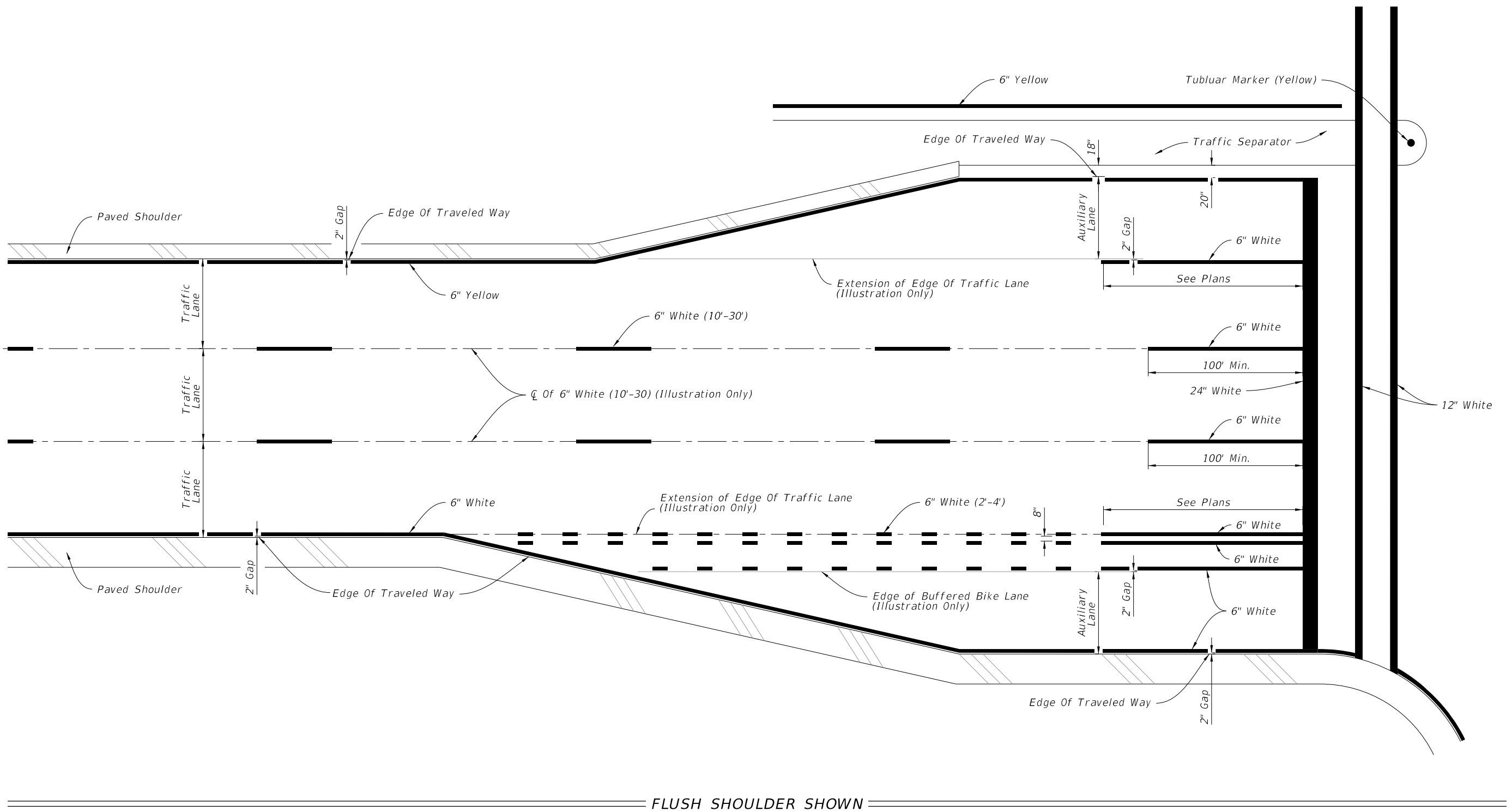
PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

LAST REVISION 11/01/21	REVISION	DESCRIPTION:
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STANDARD PLANS**

PAVEMENT MARKINGS

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FLUSH SHOULDER SHOWN

PLACEMENT OF LONGITUDINAL PAVEMENT MARKINGS

11/4/2021 11:36:11 AM

LAST REVISION 11/01/21	DESCRIPTION:
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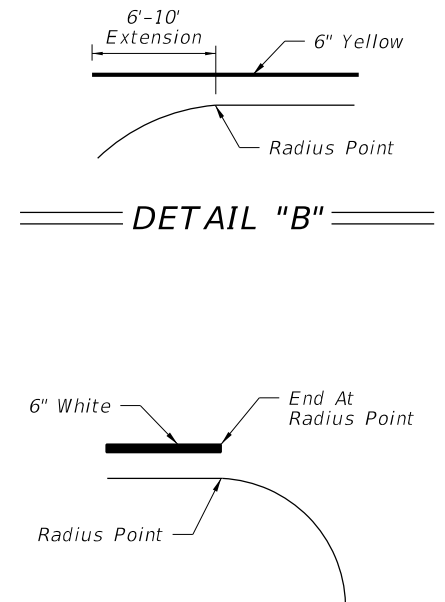
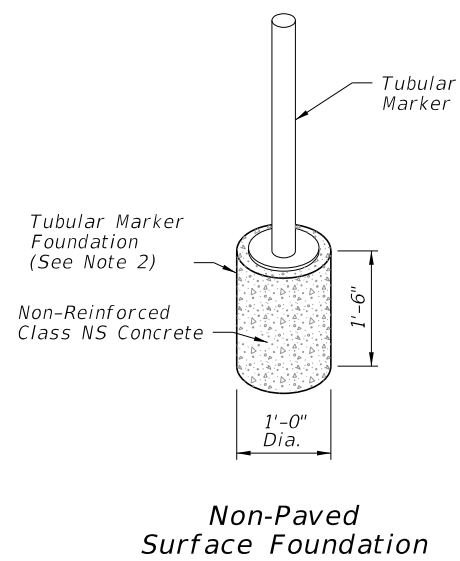
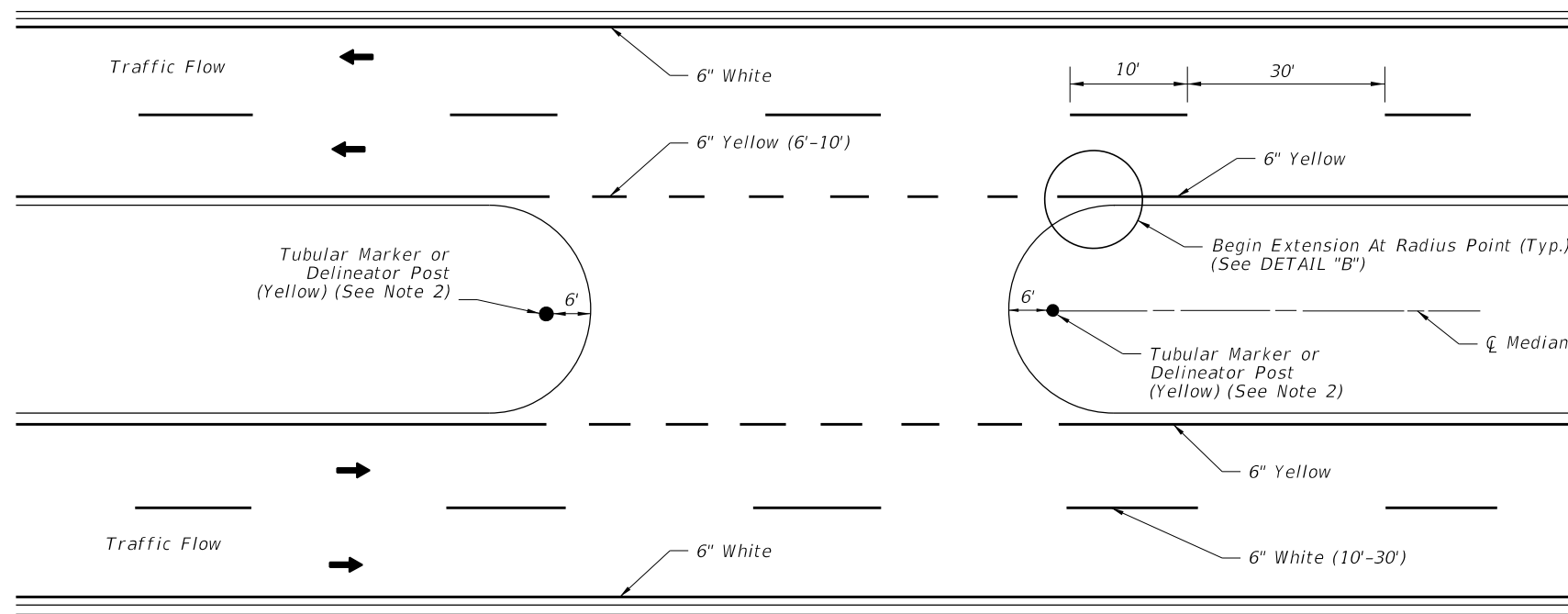


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STANDARD PLANS

PAVEMENT MARKINGS

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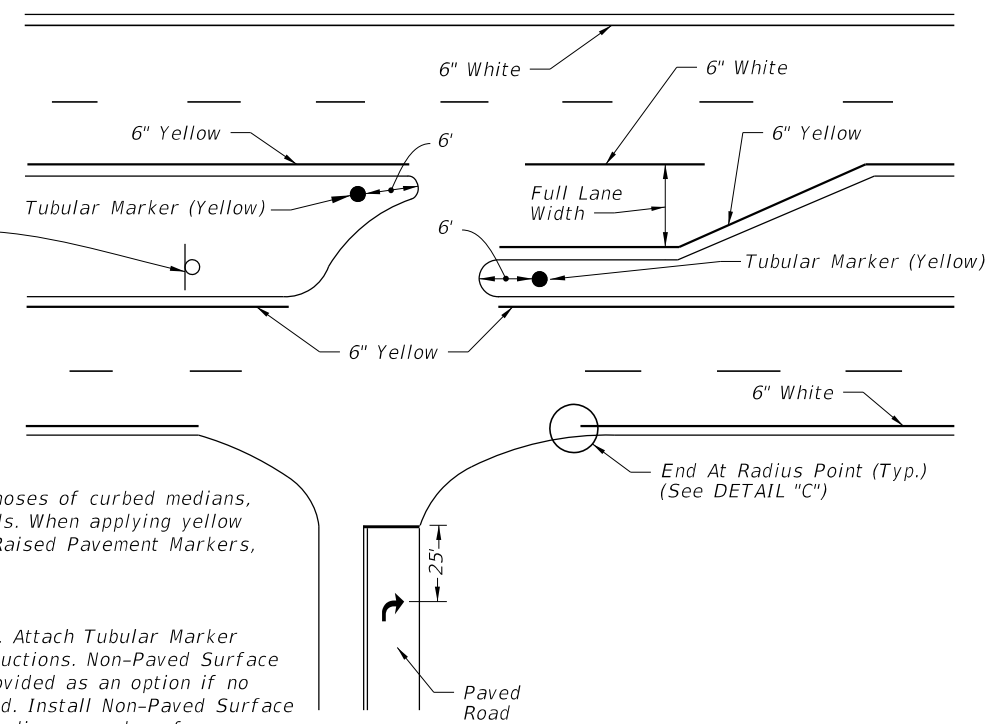
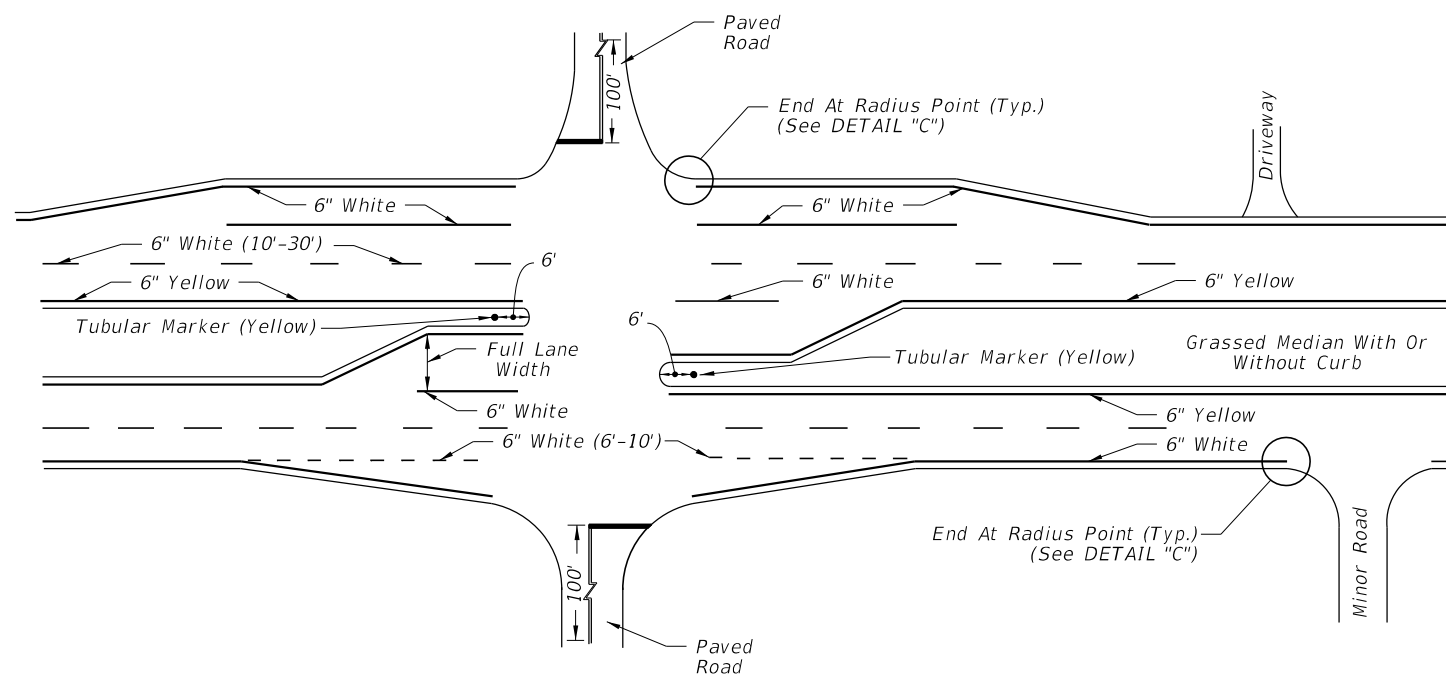
SHEET
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PAVEMENT MARKINGS AND DELINEATORS FOR MEDIAN CROSSOVER

DETAIL "A"

DETAIL "C"



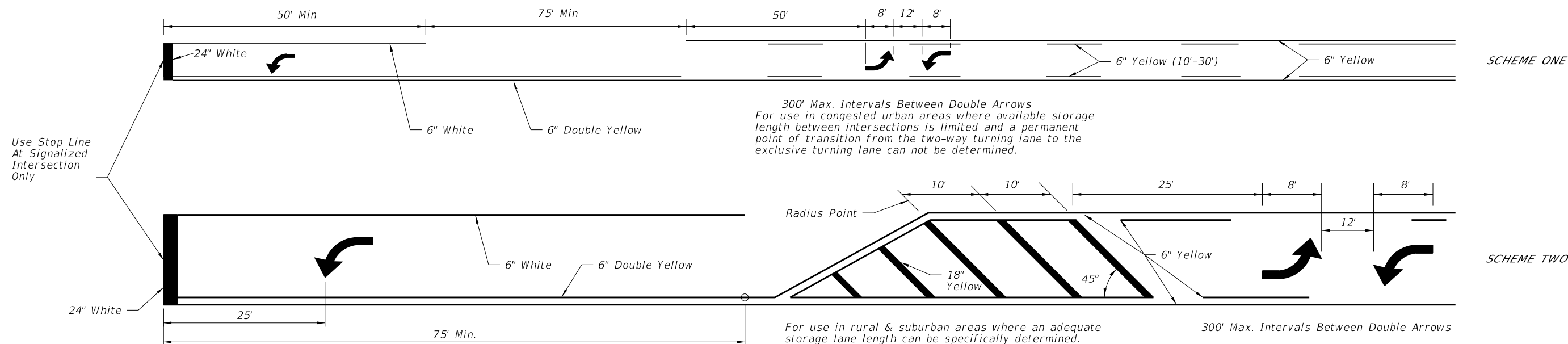
NOTE:

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

PAVEMENT MARKINGS FOR INTERSECTIONS WITH MAJOR AND MINOR ROADS

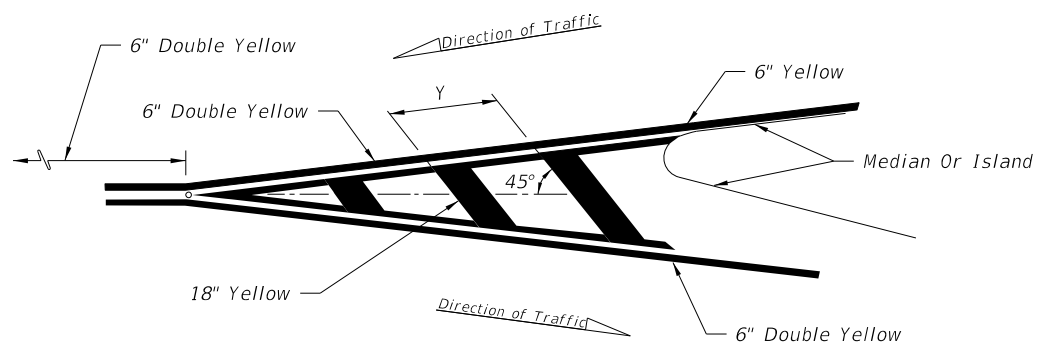
9/22/2021 3:12:45 PM

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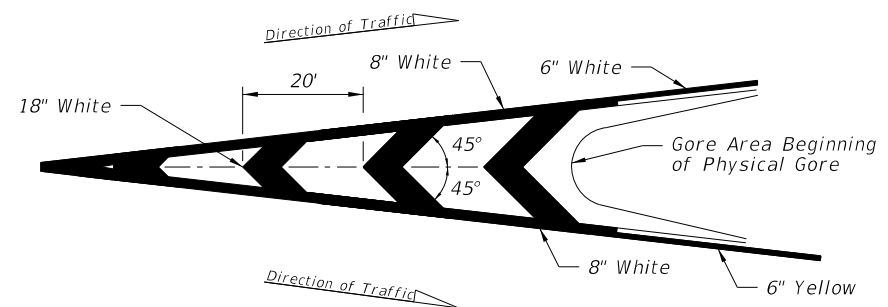


TWO WAY LEFT TURN LANE
(With Single Lane Left Turn Channelization)

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

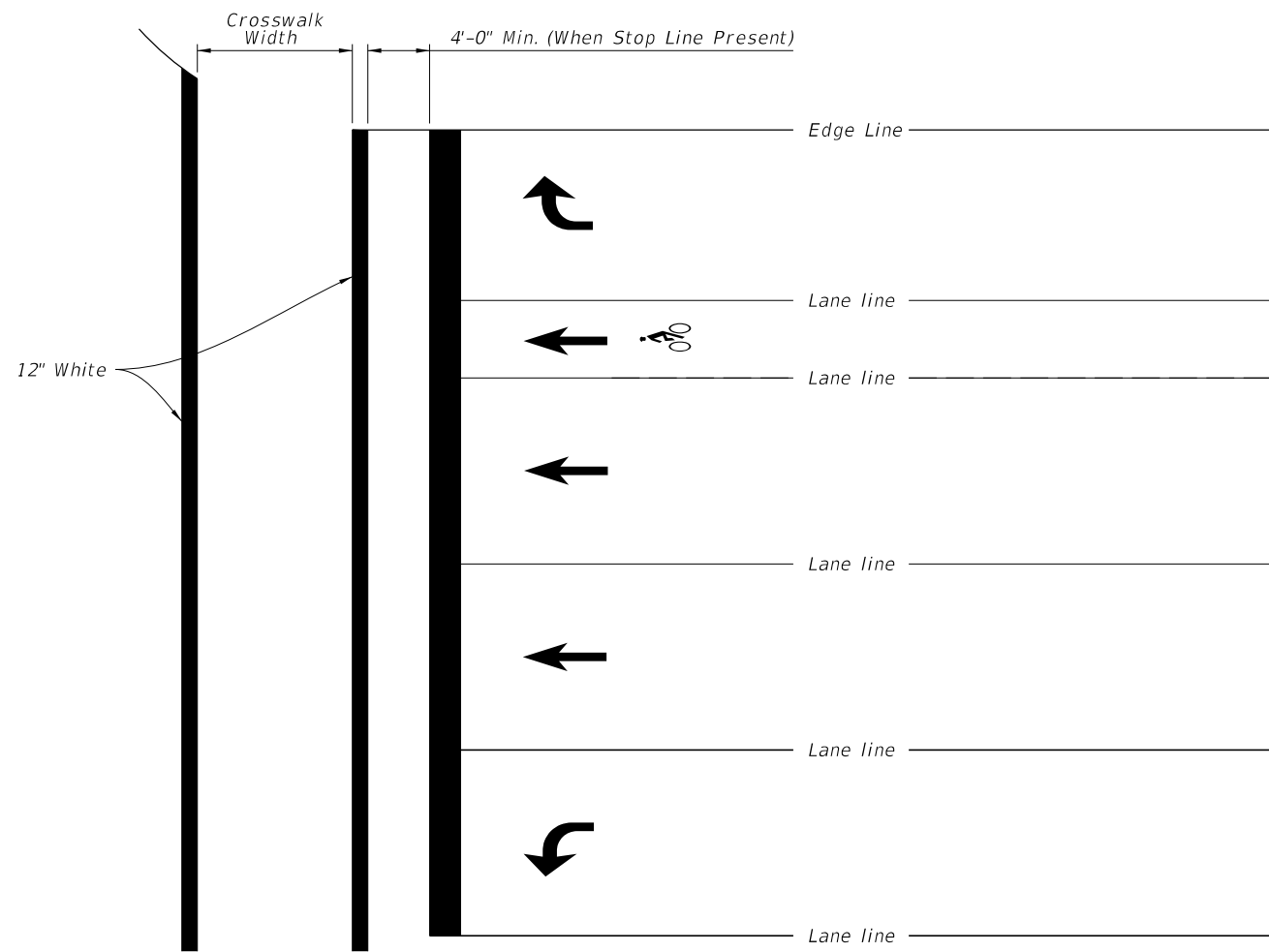


MARKINGS FOR TRAFFIC SEPARATION

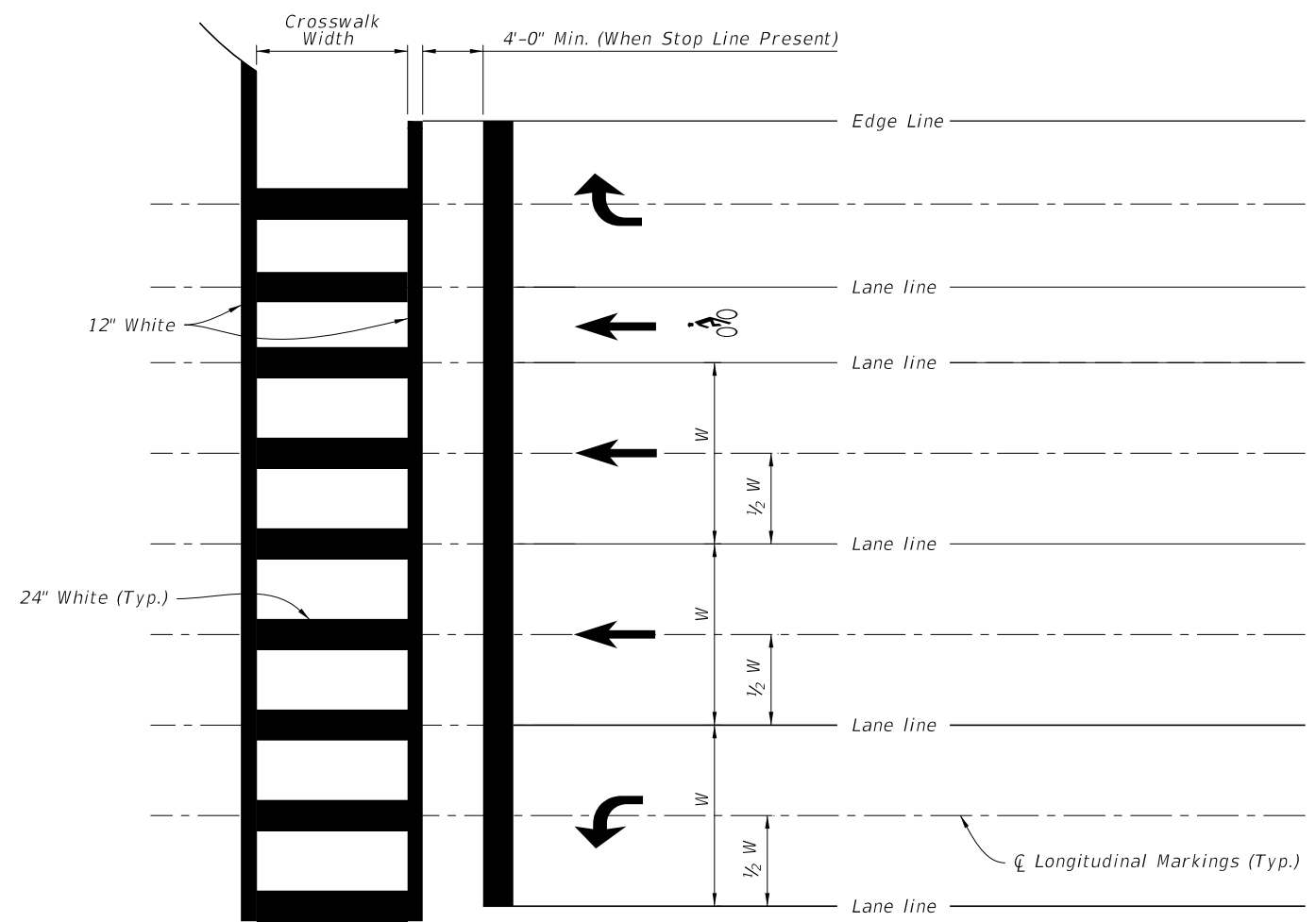


TRAFFIC CHANNELIZATION AT GORE

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STANDARD CROSSWALK DETAILS




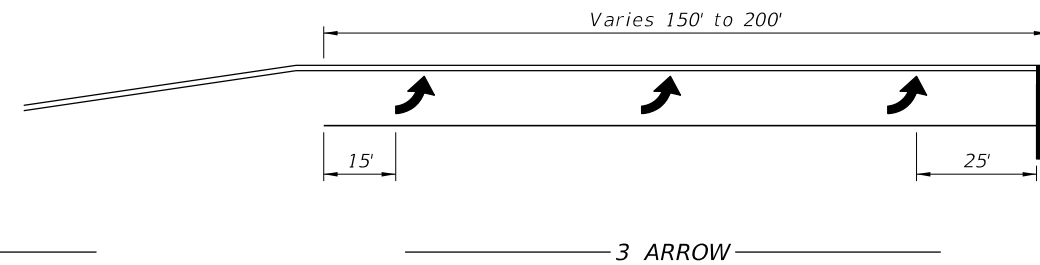
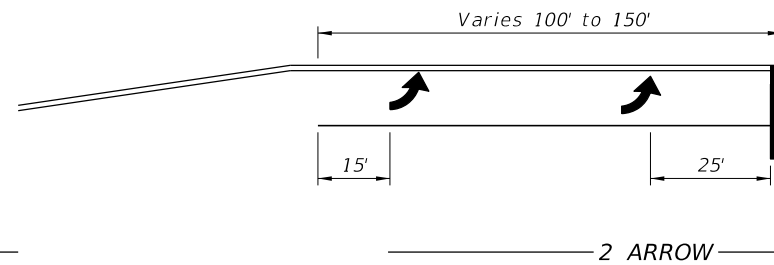
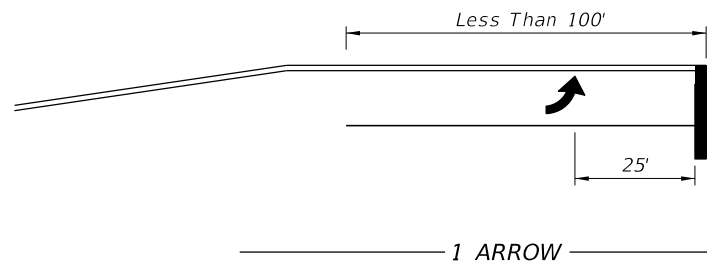
SPECIAL EMPHASIS CROSSWALK DETAILS

NOTES:

1. For crosswalk width, exceed width of the adjacent sidewalk, but do not make width less than 6' for intersection crosswalks and 10' for midblock crosswalks. Measure width from the inside of the transverse crosswalk markings.
2. When the Special Emphasis Crosswalk is not perpendicular to the lane lines, make the longitudinal markings parallel to the lane lines.
3. Refer to Index 522-002 when Curb Ramps are present.

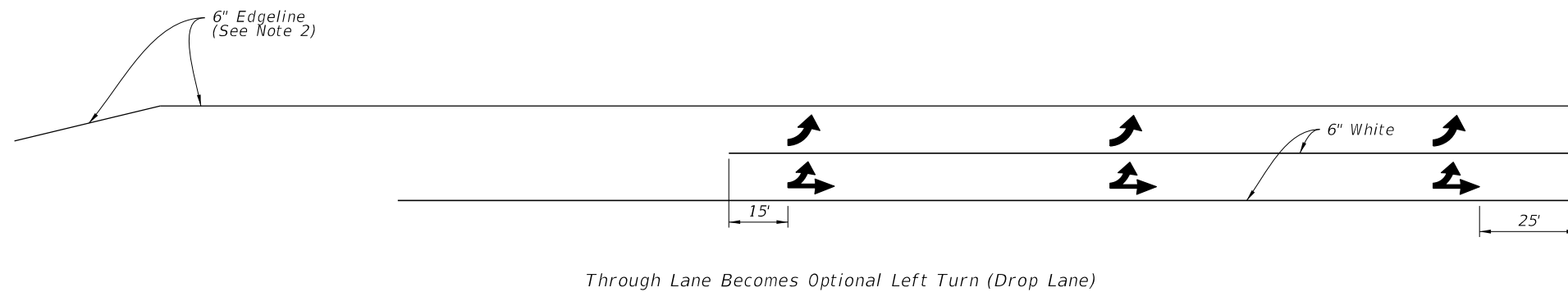
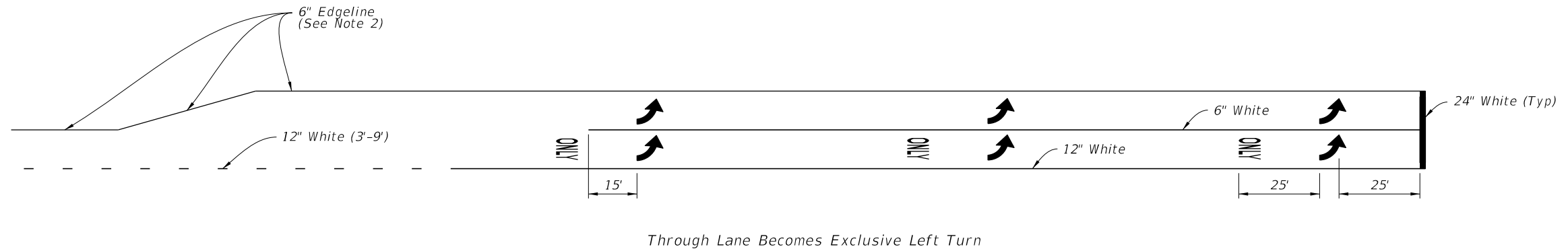
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Arrow should be evenly spaced between first and last arrow. Turn lanes longer than 200' add one arrow for each 100' additional length.

ARROW SPACING




URNS LANE MARKINGS

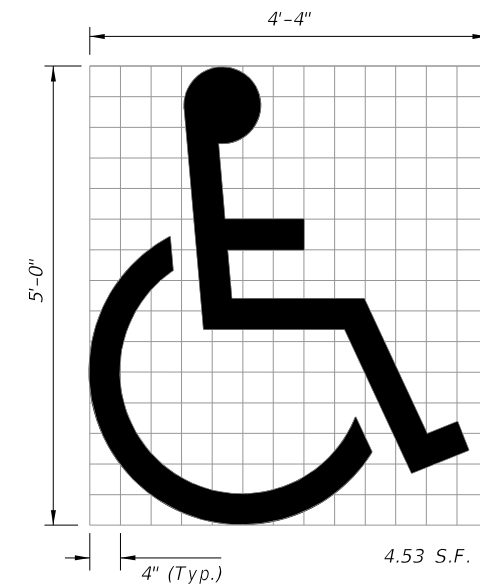
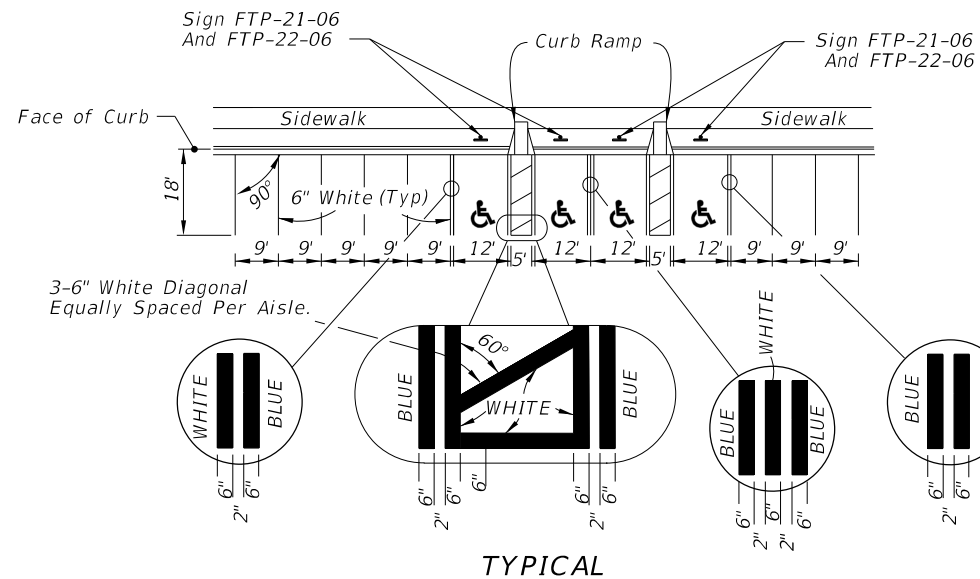
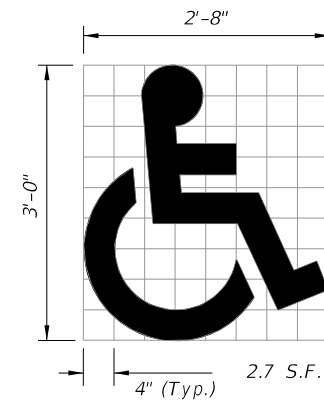
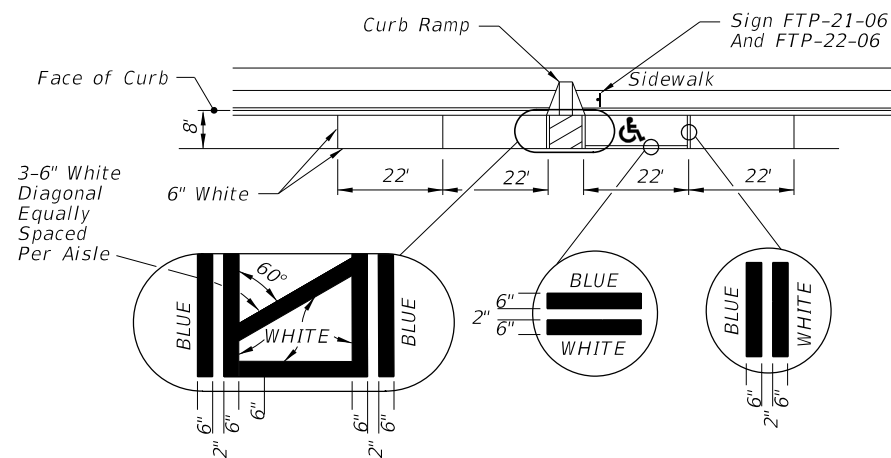
NOTES:

1. This Index also applies to right turn lanes.
2. Make Edgeline pavement markings yellow for left-turn lanes and white for right-turn lanes.

ARROW SPACING AND TURN LANE MARKINGS

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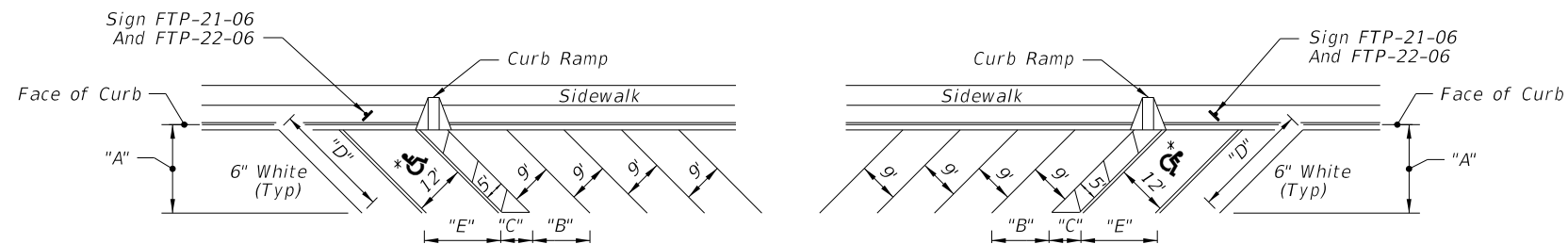


(See Note 5)

UNIVERSAL SYMBOL OF ACCESSIBILITY

NOTES:

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



FORWARD-IN PARKING

REVERSE-IN PARKING

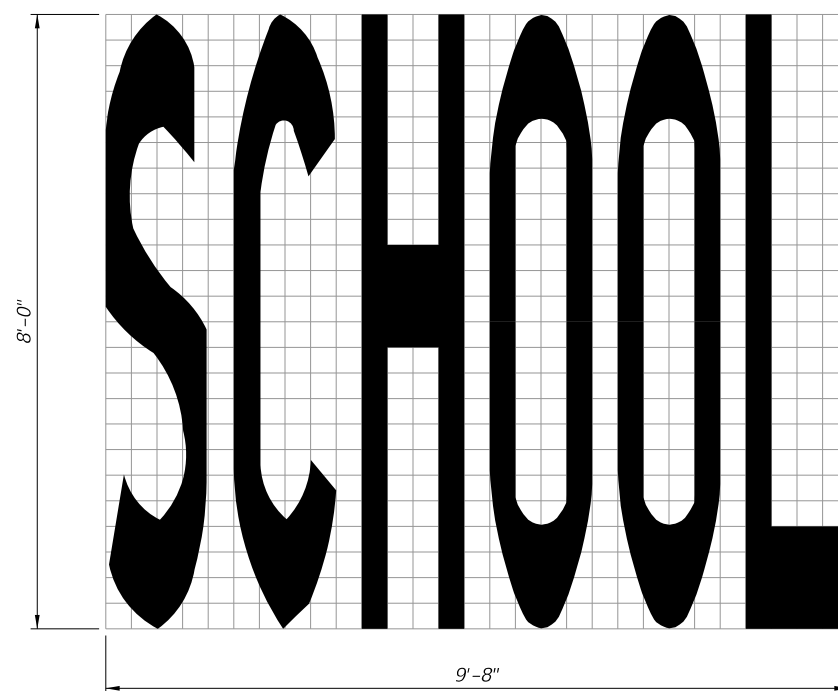
* FOR ACCESSIBLE MARKINGS - SEE ABOVE

DIMENSIONS					
∠ θ	"A"	"B"	"C"	"D"	"E"
45°	17'-0"	12'-9"	7'-0"	24'-0"	17'-0"

PAVEMENT MARKING FOR PARKING

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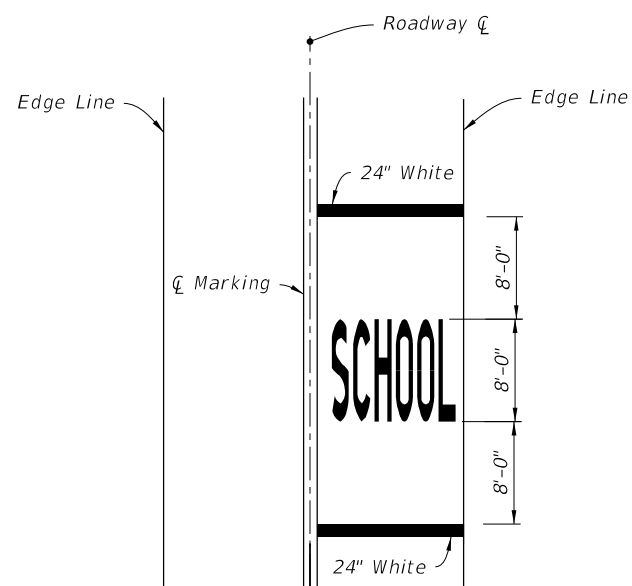
33 S.F.



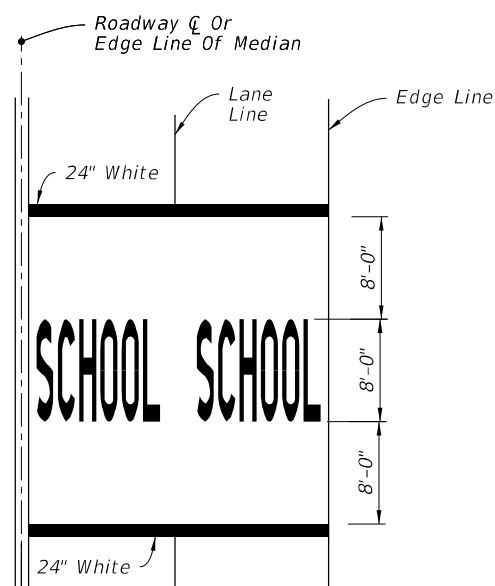
SCHOOL PAVEMENT MARKING

NOTES:

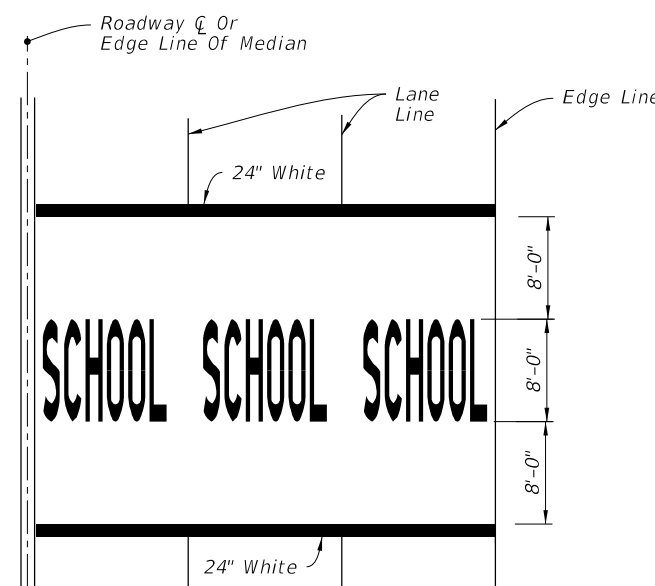
- 1. All grids are 4" x 4".
- 2. Pavement Marking Should Not Extend Into Opposing Lane.
- 3. Center School Pavement Marking in lane.



SINGLE-LANE APPROACH



TWO-LANE APPROACH



MULTI-LANE APPROACH
(Three or More)

MARKINGS FOR SCHOOL ZONES

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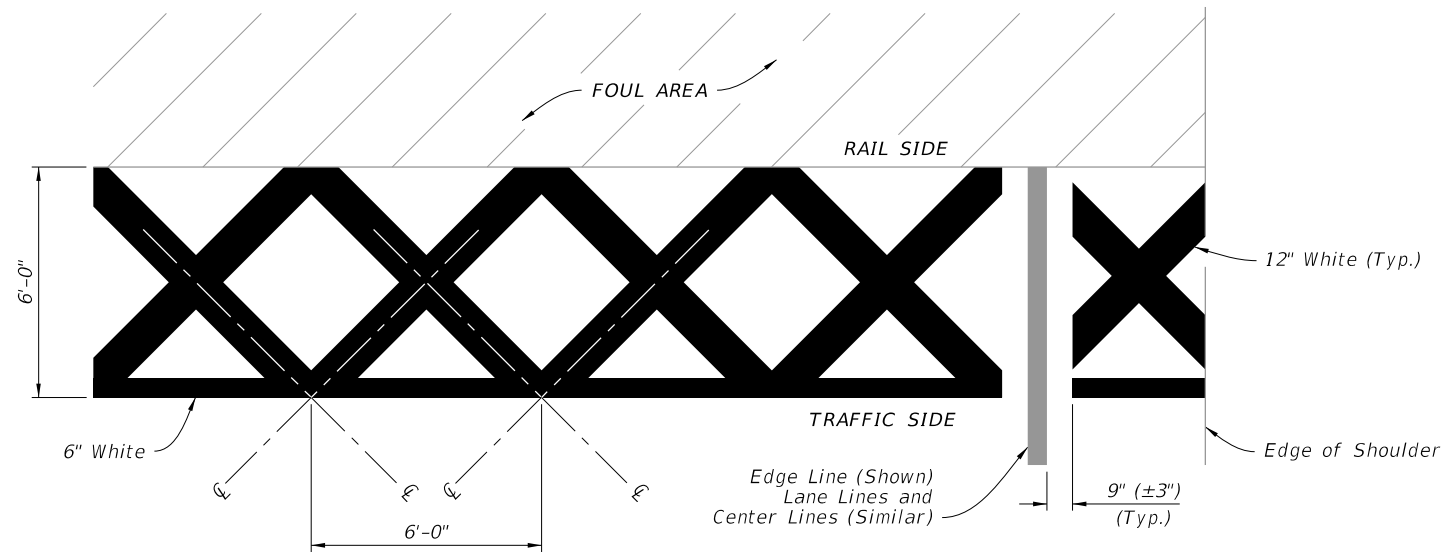
PAVEMENT MARKINGS

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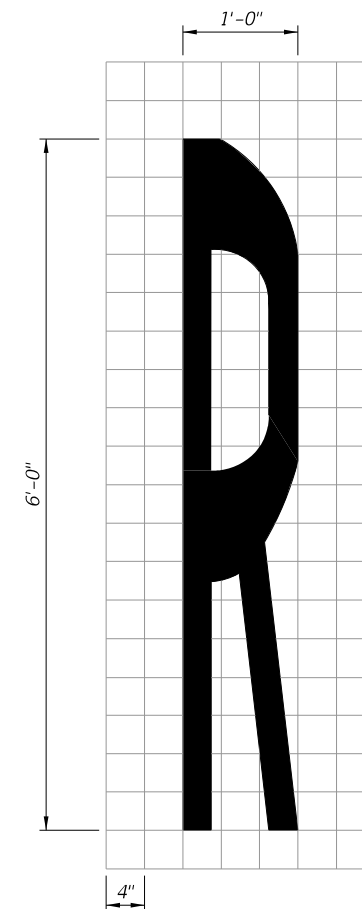
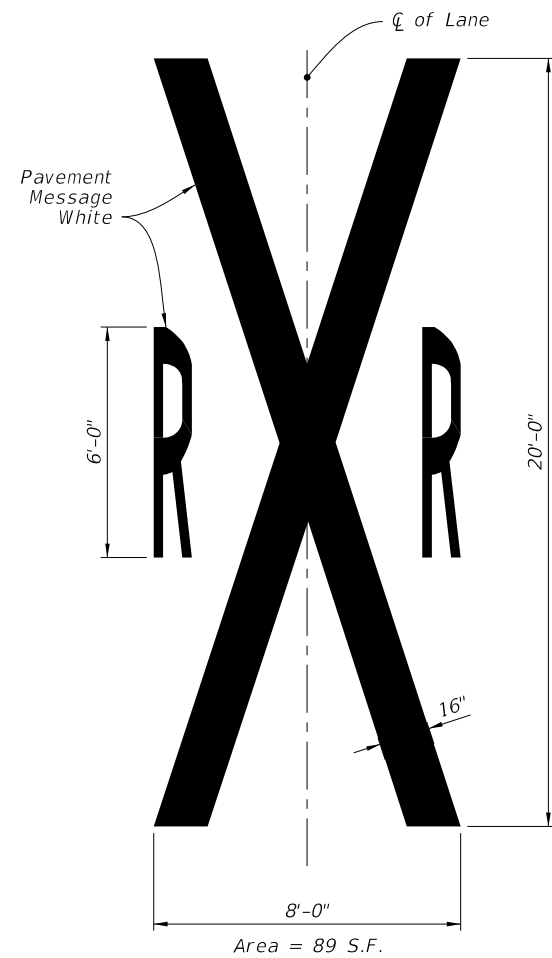
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NOTE:

Orient Railroad Dynamic Envelope Marking as shown in the Plans.




RAILROAD DYNAMIC ENVELOPE (RDE) PAVEMENT MARKING DETAIL



RAILROAD CROSSING PAVEMENT MESSAGE

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