Florida Department of Transportation

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JIM BOXOLD
SECRETARY

January 21, 2016

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section **102**
Proposed Specification: **1020300 Maintenance of Traffic. REVISED**

Dear Mr. Nguyen:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification. **Please disregard 1020300 submittal on January 14, 2016. An additional revision was made to 102-9.9 to delete the reference to "Roadside Hardware Installation On-Site Supervisor. Changes are highlighted.**

The changes are proposed by the State Construction Office to modify the language for current Department practice.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to daniel.scheer@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on file

Daniel Scheer, P.E.
State Specifications Engineer

DS/dt
Attachment
cc: Florida Transportation Builders' Assoc.
State Construction Engineer

MAINTENANCE OF TRAFFIC.
(REV ~~10-30~~11-1812-18301-414-15~~1~~-21-16)

ARTICLE 102-3 is expanded by the following:

102-3.3 Lane Closure Information System: Approval for all lane closures, mobile operations, and traffic pacing operations is required. Submit routine requests fourteen calendar days in advance of all lane closures, mobile operations, and traffic pacing operations at the following URL address: ~~https://laneclosureinformationsystem.dot.state.fl.us~~https://lcis.dot.state.fl.us/ . For unforeseen events that require cancelling or rescheduling lane closures, mobile operations, and traffic pacing operations, revise the lane closure request as soon as possible.

ARTICLE 102-4 is deleted and the following substituted:

102-4 Alternative Traffic Control Plan.

The Contractor may propose an alternative traffic control plan (TCP) to the plan presented in the Contract Documents. Have the Contractor's Engineer of Record sign and seal the alternative plan and submit to the Engineer. Prepare the TCP in conformance with and in the form outlined in the current version of the Department's Plans Preparation Manual. Indicate in the plan a TCP for each phase of activities. Take responsibility for identifying and assessing any potential impacts to a utility that may be caused by the alternate TCP proposed by the Contractor, and notify the Department in writing of any such potential impacts to utilities.

Engineer's approval of the alternate TCP does not relieve the Contractor of sole responsibility for all utility impacts, costs, delays or damages, whether direct or indirect, resulting from Contractor initiated changes in the design or construction activities from those in the original Contract Specifications, Design Plans (including TCPs) or other Contract Documents and which effect a change in utility work different from that shown in the Utility Plans, joint project agreements or utility relocation schedules.

The Department reserves the right to reject any alternative TCP. Obtain the Engineer's written approval before beginning work using an alternate TCP. The Engineer's written approval is required for all modifications to the TCP. The Engineer will only allow changes to the TCP in an emergency without the proper documentation.

SUBARTICLE 102-5.4 is deleted and the following substituted:

102-5.4 Crossings and Intersections: Provide and maintain adequate accommodations for intersecting and crossing traffic. Do not block or unduly restrict any median opening, road or street crossing the project unless approved by the Engineer. Before beginning any construction, submit to ~~provide~~ the Engineer the names and phone numbers of persons that can be contacted when signal operation malfunctions.

SUBARTICLE 102-5.8 is deleted and the following substituted:

102-5.8 Conflicting Pavement Markings: Where the lane use or where normal vehicle or pedestrian paths are altered during construction, remove all pavement markings (paint, tape, thermoplastic, ~~raised~~ retroreflective pavement markers, etc.) that will conflict with the adjusted vehicle or pedestrian paths. Use of paint to cover conflicting pavement markings is prohibited. Remove conflicting pavement markings using a method that will not damage the surface texture of the pavement and which will eliminate the previous marking pattern regardless of weather and light conditions.

Remove all pavement markings that will be in conflict with "next phase of operation" vehicle pedestrian paths as described above, before opening to vehicle traffic or use by pedestrians.

Cost for removing conflicting pavement markings (paint, tape, thermoplastic, retroreflective~~raised~~ pavement markers, etc.) to be included in Maintenance of Traffic, Lump Sum.

SUBARTICLE 102-6.2 is deleted and the following substituted:

102-6.2 Construction: Plan, construct, and maintain detours for the safe passage of traffic in all conditions of weather. Provide the detour with all facilities necessary to meet this requirement. Where pedestrian facilities are detoured, blocked or closed during the work, provide safe alternate accessible routes through or around the work zone meeting the requirements of the ADA Standards for Transportation Facilities.

When the Plans call for the Department to furnish detour bridge components, construct the pile bents in accordance with the Plans, unless otherwise authorized by the Engineer.

Provide two Contractor representatives, who will be directly involved in the erection of Department-owned temporary bridging, to attend a mandatory one-day training session to be conducted at the Department's storage facility. No bridging will be released to the Contractor prior to the completion of this training.

Submit ~~a letter with~~ the following: company name, phone number, office address, project contact person, names of the representatives who will attend the training described above, project number, detour bridge type, bridge length, span length, location and usage time frames, to the Engineer at least 30 calendar days before the intended pick-up date, to obtain the storage facility location and list of components for the project. Upon receipt~~ of letter~~, the Engineer will, within 10 calendar days submit~~provide~~ an approved material list to the Contractor and the appropriate Department storage yard.

Submit the name of~~Provide a letter with an original company seal, identifying~~ the representative with authority to pick up components, to the Engineer at least 10 calendar days before the proposed pick-up date. The Department is not obligated to load the bridge components without this notice. Take responsibility and sign for each item loaded at the time of issuance.

Provide timber dunnage, and transport the bridge components from the designated storage facility to the job site. Unload, erect, and maintain the bridge, then dismantle the bridge and load and return the components to the designated storage facility.

Notify the Engineer in writing at least 10 calendar days before returning the components. Include in this notice the name of the Contractor's representative authorized to sign

for return of the bridge components. The yard supervisor is not obligated to unload the bridge components without this notice.

The Department will provide equipment and an operator at the Department's storage facility to assist in loading and unloading the bridge components. Furnish all other labor and equipment required for loading and unloading the components.

The Department's representative will record all bridge components issued or returned on the Detour Bridge Issue and Credit Ticket. The tickets must be signed by a Department and a Contractor representative, after loading or unloading each truck to document the quantity and type of bridging issued or returned.

Bind together all bridge components to be returned in accordance with the instructions given by the storage facility. The yard supervisor will repack components that are not packed in compliance with these instructions. Upon request, written packing instructions will be made available to the Contractor, before dismantling of the bridge for return to the Department's storage facility.

Assume responsibility for any shortage or damage to the bridge components. Monies due the Contractor will be reduced at the rate of $35.00 per hour plus materials for repacking, repairs or replacement of bridge components.

The skid resistance of open steel grid decking on the detour bridge may decrease gradually after opening the bridge to traffic. The Department will furnish a pneumatic floor scabbler machine for roughening the roadway surface of the detour bridge decking. Provide an air compressor at the job site with 200 cubic feet per minute capacity, 90 psi air pressure for the power supply of the machine, and an operator. Transport the scabbler machine to and from the Department's structures shop. Repair any damage to the scabbler machine caused by operations at no expense to the Department. Perform scabbling when determined necessary by the Engineer. The Department will pay for the cost of scabbling as Unforeseeable Work in accordance with 4-4.

Return the bridge components to the designated storage facility beginning no later than 10 calendar days after the date the detour bridge is no longer needed, the date the new bridge is placed in service, or the date Contract Time expires, whichever is earliest. Return the detour bridging at an average of not less than 200 feet per week. Upon failure to return the bridge components to the Department within the time specified, compensate the Department for the bridge components not returned at the rate of $5.00 per 10 feet, per day, per bridge, for single lane; and $10.00 per 10 feet, per day, per bridge, for dual lane until the bridge components are returned to the Department.

ARTICLE 102-9 is deleted and the following substituted:

102-9 Temporary Traffic Control Devices.

102-9.1 Installation and Maintenance: Install and maintain temporary traffic control devices as detailed in the Plans, Index 600 of the Design Standards and when applicable, in accordance with the approved vendor drawings, as provided on the Department's Approved Product List (APL). Erect the required temporary traffic control devices to prevent any hazardous conditions and in conjunction with any necessary traffic re-routing to protect the traveling public, workers, and to safeguard the work area. Use only those devices that are on the APL or meeting the requirements of the Design Standards. Immediately remove or cover any devices that do not apply to existing conditions.

All temporary traffic control devices must meet the requirements of National Cooperative Highway Research Program Report 350 (NCHRP 350) or the Manual for Assessing Safety Hardware 2009 (MASH) and current FHWA directives. Manufacturers seeking evaluation must submit~~furnish~~ certified test reports showing that their product meets all test requirements set forth by NCHRP 350 or the MASH. Manufacturers seeking evaluation of Category I devices for inclusion on the APL shall include the manufacturer's self-certification letter. Manufacturer's seeking evaluation of Category II and Category III devices for inclusion on the APL shall include the FHWA WZ numbered acceptance letter with attachments and vendor drawings of the device in sufficient detail to enable the Engineer to distinguish between this and similar devices. For devices requiring field assembly or special site preparation, vendor drawings shall include all field assembly details and technical information necessary for proper application and installation. Vendor drawings for Category III devices and Automated Flagger Assistance Devices (AFAD) must be signed and sealed by a Professional Engineer registered in the State of Florida. Manufacturers seeking evaluation of Category IV devices for inclusion on the APL must comply with the requirements of Section 990 and include detailed vendor drawings of the device along with technical information necessary for proper application, field assembly and installation.

The APL number is to be permanently marked on the device at a readily visible location. Sheeting used on devices is exempt from this marking requirement.

Notify the Engineer in writing of any scheduled operation that will affect traffic patterns or safety sufficiently in advance of commencing such operation to permit review of the plan for the proposed installation of temporary traffic control devices.

Assign an employee the responsibility of maintaining the position and condition of all temporary traffic control devices throughout the duration of the Contract. Keep the Engineer advised at all times of the identification and means of contacting this employee on a 24 hour basis.

Maintain temporary traffic control devices in the correct position, properly oriented, clearly visible and clean, at all times. All traffic control devices must meet the classification level of Acceptable as defined in the American Traffic Safety Services Association (ATSSA) Quality Guidelines for Temporary Traffic Control Devices and Features (2008-09 Edition). Immediately repair, replace or clean damaged, defaced or dirty devices. Traffic control devices shall not be cleaned while installed/used. Use of warning lights on any temporary traffic control device shall be prohibited, with the exception of the portable regulatory signs.

Employ an approved independent Channelizing Device Supplier (CDS) to provide and maintain the condition of the following non-fixed channelizing devices: drums, cones, vertical panels, barricades, tubular markers, and longitudinal channeling devices. Cones may be provided and maintained by the Contractor.

The CDS shall not be affiliated with the Contractor and shall be approved by the Engineer in accordance with 102-9.1.1. The CDS shall submit a monthly certification on letterhead that the channelizing devices mentioned above installed/used within the work zone meet acceptable standards as outlined in ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features. The certification shall include the following statement, "I certify that I have provided and maintained the following devices <list devices covered under the certification> in accordance with the ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features." If the Contractor chooses to provide and maintain cones, the Contractor shall submit a monthly certification on a Department approved form that all cones installed/used within the work zone meet acceptable standards as outlined in ATSSA Quality Guidelines for

Temporary Traffic Control Devices and Features, and the CDS shall submit the monthly certification for any other channelizing devices installed/used within the work zone.

102-9.1.1 Approved Independent Channelizing Device Supplier (CDS) Requirements: Submit the following documents to the Engineer for independent CDS approval at the preconstruction conference. CDSs may elect to provide a one-time submittal of this information for approval and have the information posted on the State Construction Office website for use by Department personnel. Inform the Engineer at the preconstruction conference of this approval.

1. A letter on company letterhead signed and dated by the owner of the company or company officer with the following information and statements:

a. The company's owners, stockholders, and officers.

b. A statement declaring that the company will not perform as a CDS on any project where there is common ownership, directly or indirectly, between the company and the Contractor.

c. A statement declaring that the company will furnish and maintain the condition of all channelizing devices with the exception of cones as required in 102-9.1 with its own forces.

d. A statement declaring at least five years of experience in providing channelizing device supplier services, with its own inventory of channelizing devices.

e. On a separate sheet, list a sample project history of the company's experience as a channeling device supplier for the five years declared in item 1(d) above including the following information:

1. Project name and number and a brief description of CDS work performed,
2. Beginning and ending date of CDS project activities,
3. Location of project (city, state),
4. Monetary amount of CDS work on project,
5. Owner of project, contact person and phone number with area code,
6. Name of Contractor (client) that the work was performed for and phone number with area code.

2. A maintenance plan for approval by the Department that outlines the frequency and methods for maintaining the condition of all channelizing devices, except cones owned and maintained by the Contractor, installed/used in the work zone.

102-9.2 Work Zone Signs: Furnish, install, maintain, remove and relocate signs in accordance with the Plans and Design Standards, Index No. 600. Use signs that meet the material and process requirements of Section 994. Use Type IV sheeting for fluorescent orange work zone signs. Roll-up signs must meet the requirements of Type VI sheeting. Use Type IV or Type XI sheeting for all other work zone signs. Attach the sign to the sign support using hardware meeting the manufacturer's recommendations on the APL vendor drawings or as specified in the Design Standards.

102-9.2.1 Post Mounted Signs: Meet the requirements of 990-8.

102-9.2.2 Portable Signs: Use only approved systems, which includes sign stands and attachment hardware (nuts, bolts, clamps, brackets, braces, etc.), meeting the vendor requirements specified on the APL drawings. Provide Federal Highway Administration's (FHWA) accepted sign substrate for use with accepted sign stands on the National Highway

System (NHS) under the provisions of the NCHRP Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features."

102-9.2.3 Barrier Mounted Signs: If post mounting criteria cannot be achieved in accordance with Design Standards, Index No. 600 and a barrier or traffic railing exists, use temporary sign criteria provided in Design Standards, Index No. 11871.

102-9.3 Business Signs: Provide and place signs in accordance with the Plans and Design Standards, Index No. 600 series. Furnish signs having retroreflective sheeting meeting the requirements of Section 990.

102-9.4 Project Information Signs: Provide and place signs in accordance with the Plans and Design Standards, Index No. 600 series. Furnish signs having retroreflective sheeting meeting the requirements of Section 990.

102-9.5 Channelizing Devices: Furnish and install channelizing devices in accordance with the Plans and Design Standards.

102-9.5.1 Retroreflective Collars for Traffic Cones: Use collars for traffic cones listed on the APL that meet the requirements of Section 990. Use cone collars at night designed to properly fit the taper of the cone when installed. Place the upper 6 inch collar a uniform 3-1/2 inches distance from the top of the cone and the lower 4 inch collar a uniform 2 inches distance below the bottom of the upper 6 inch collar. Collars are to be capable of being removed for temporary use or attached permanently to the cone in accordance with the manufacturer's recommendations. Provide a white sheeting having a smooth outer surface and that has the property of a retroreflector over its entire surface.

102-9.5.2 Longitudinal Channelizing Devices (LCDs): ~~Furnish LCDs in accordance with the Plans and Design Standards.~~ Use LCDs ~~are~~listed and categorized on the APL as vehicular, pedestrian or vehicular/pedestrian. Retroreflective sheeting must meet the requirements of Section 990. LCDs must ~~and shall~~ be interlocked except for the stand-alone unit placed perpendicular to a sidewalk. For LCDs requiring internal ballasting, an indicator that clearly identifies the proper ballast level will be required.

Use alternating orange and white ~~pattern for~~ solid color vehicular LCDs. Vehicular LCDs may be substituted for drums, vertical panels, or barricades.

102-9.6~~5.2~~ Barrier Wall (Temporary): Furnish, install, maintain, remove and relocate temporary barrier wall in accordance with the Plans. Obtain and use precast temporary barrier wall from a manufacturing plant that is on the Department's list of Producers of Incidental Precast/Prestressed Concrete Products with an Accepted Quality Control Program at the time of production. Producers seeking inclusion on the list shall meet the requirements of 105-3. Temporary barrier wall must meet the material and construction requirements of Section 521 unless noted otherwise in the Design Standards.

The maximum allowable height increase between consecutive temporary barrier wall units in the direction of traffic is 1 inch.

Temporary concrete barrier wall used on roadway sections must comply with Design Standards, Index Nos. 412, 415 or 414. Temporary concrete barrier wall used on bridge and wall sections, shall comply with Design Standards, Index No 414.

Temporary water filled barrier wall used on roadway sections shall meet the NCHRP Report 350 or MASH criteria and be listed on the APL.

Barriers meeting the requirements of Design Standards, Index Nos. 412, 415 or temporary water filled barriers on the APL will not be accepted as an alternate to barriers meeting the requirements of Design Standards, Index No. 414.

Trailer mounted barriers listed on the APL may be used at the option of the Contractor. Trailer mounted barriers listed on the APL must have an FHWA eligibility letter and be successfully crash tested in accordance with MASH TL-3 criteria. All trailer mounted barriers must be equipped with an APL listed truck mounted attenuator, an APL listed vehicle mounted arrow board and vehicle warning lights in accordance with this Section.

102-9.~~5.2~~6.1 Temporary Barrier Wall Meeting the Requirements of Design Standards, Index Nos. 412 and 414: Ensure the marking requirements of the respective Index are met.

102-9.~~5.2~~6.2: Proprietary Precast Temporary Barrier Wall Fabricated prior to 2005: The Contractor must submit a certification stating that all unmarked barrier wall units meet the requirements of the Specifications and the Design Standards. Certifications will be project specific and non-transferable

102-9.~~5.2~~6.3 Proprietary Precast Temporary Barrier Wall Fabricated in 2005 or later: Ensure each wall unit has permanent clear markings, showing the manufacture date, serial number, manufacturer's name or symbol, and the APL number. Label the markings on a plate, plaque, or cast in the unit. Proprietary barrier wall fabricated prior to 2016 and marked with the "INDX 521" in lieu of the APL number will be permitted.

102-9.7 Barrier Delineators: Install barrier delineators on top of temporary barrier wall and vehicular LCDs meeting the requirements of the Design Standards and Section 705.

102-9.~~5.3~~8 Glare Screen (Temporary): Use temporary glare screens listed on the APL that meet the requirements of Section 990. Furnish, install, maintain, remove and relocate glare screen systems in conjunction with temporary barrier wall at locations identified in the Plans.

The anchorage of the glare screen to the barrier must be capable of safely resisting an equivalent tensile load of 600 pounds per foot of glare screen, with a requirement to use a minimum of three fasteners per barrier section.

When glare screen is utilized on temporary barrier wall, barrier delineators will not be required.

~~**102-9.5.4 Longitudinal Channelizing Devices (LCDs):** Furnish LCDs in accordance with the Plans and Design Standards. LCDs are categorized as vehicular or pedestrian and shall be interlocked. For LCDs requiring internal ballasting, an indicator that clearly identifies the proper ballast level will be required.~~

~~Use alternating orange and white pattern for solid color vehicular LCDs. Vehicular LCDs may be substituted for drums, vertical panels, or barricades.~~

102-9.9~~6~~ Temporary Crash Cushion (Redirective/Gating): Furnish, install, maintain and subsequently remove temporary crash cushions in accordance with the details and notes shown in the Plans, the Design Standards, and requirements of the pre-approved alternatives listed on the APL. Delineate the crash cushion in accordance with Section 544. Maintain the crash cushions until their authorized removal. Repair all attachment scars to permanent structures and pavements after crash cushion removal. Make necessary repairs due to defective material, work, or Contractor operations at no cost to the Department. Restore crash cushions damaged by the traveling public within 24 hours after notification as authorized by the Engineer.

~~Provide an Roadside Hardware Installation On-site Construction Supervisor in accordance with Section 105 for the installation and repair of crash cushions.~~

102-9.10~~7~~ Guardrail (Temporary): Furnish guardrail (temporary) in accordance with the Plans and Design Standards. Meet the requirements of Section 536.

102-9.11~~8~~ Arrow Board: Furnish arrow boards that meet the requirements of Section 990 as required by the Plans and Design Standards to advise approaching traffic of lane closures or shoulder work. Type B arrow boards may be used on low to intermediate speed (0 mph to 50 mph) facilities or for maintenance or moving operations on any speed facility. Type C arrow boards shall be used for all other operations on high-speed (50 mph and greater) facilities and may be substituted for Type B arrow boards on any speed facility.

102-9.12~~9~~ Portable Changeable Message Sign (PCMS): Furnish PCMSs or truck mounted changeable message signs that meet the requirements of Section 990 as required by the Plans and Design Standards to supplement other temporary traffic control devices used in work zones.

102-9.13~~0~~ Portable Regulatory Signs (PRS): Furnish PRSs that meet the requirements of 990 as required by the Plans and Design Standards.

Activate portable regulatory signs only during active work activities and deactivate when no work is being performed.

102-9.14~~1~~ Radar Speed Display Unit (RSDU): Furnish RSDUs that meet the requirements of Section 990 as required by the Plans and Design Standards to inform motorists of the posted speed and their actual speed.

Activate the radar speed display unit only during active work activities and deactivate when no work is being performed.

102-9.15~~2~~ Temporary Signalization and Maintenance: Provide temporary signalization and maintenance at existing, temporary, and new intersections including but not limited to the following:

1. Installation of temporary poles and span wire assemblies as shown in the Plans,
2. Temporary portable traffic signals as shown in the Plans,
3. Adding or shifting signal heads,
4. Trouble calls,
5. Maintaining intersection and coordination timing and preemption devices. Coordination timing will require maintaining functionality of system communications.

Restore any loss of operation within 12 hours after notification.

Provide traffic signal equipment that meets the requirements of the Design Standards and 603-2. The Engineer may approve used signal equipment if it is in acceptable condition. Replacement components for traffic signal cabinet assemblies will be provided by the maintaining agency.

102-9.16~~3~~ Temporary Traffic Detection and Maintenance: Provide temporary traffic detection and maintenance at existing, temporary, and new signalized intersections. Provide temporary traffic detection equipment listed on the APL. Restore any loss of detection within 12 hours. Ensure 90% accuracy per signal phase, measured at the initial installation and after any lane shifts, by comparing sample data collected from the detection system with ground truth data collected by human observation. Collect the sample and ground truth data for a minimum of five minutes during a peak and five minutes during an off-peak period with a minimum three detections for each signal phase. Perform the test in the presence of the Engineer.

102-9.17~~4~~ Truck Mounted Attenuators and Trailer Mounted Attenuators: Furnish, install and maintain only those attenuators that meet the requirements of NCHRP 350 or the MASH.

Use truck mounted attenuators or trailer mounted attenuators, when called for in the Design Standards. Use attenuators listed on the APL.

When attenuators are called for, use either a truck mounted attenuator or a trailer mounted attenuator system designed and installed in accordance with the manufacturers recommendations.

Equip the attenuator cartridge with lights and reflectors in compliance with applicable Florida motor vehicle laws, including turn signals, dual tail lights, and brake lights. Ensure that lights are visible in both the raised and lowered positions if the unit is capable of being raised.

Install either alternating black with yellow or white with orange sheeting on the rear of trailer mounted attenuators and on truck mounted attenuators, in both the operating and raised position. Use Type III (work zone) or Type IV sheeting consisting of 4 or 6 inch wide stripes installed to form chevrons that point upward. All sheeting except black shall be retroreflective.

Attenuators will not be paid for separately. Include the cost of the truck with either a truck mounted attenuator or a trailer mounted attenuator in MOT Lump Sum. Payment includes all costs, including furnishing, maintaining and removal when no longer required, and all materials, labor, tools, equipment and incidentals required for attenuator maintenance.

102-9.18~~5~~ Temporary Raised Rumble Strip Set: Furnish, install, maintain, remove, and reinstall temporary raised rumble strips per the manufacturer's recommendations and in accordance with Design Standards, Index No. 603.

The temporary raised rumble strip may be either a removable polymer striping tape or a molded engineered polymer material.

102-9.19~~6~~ Automated Flagger Assistance Devices (AFAD): Furnish, install, maintain, remove and relocate AFADs in accordance with the Plans and Design Standards. Position AFADs where they are clearly visible to oncoming traffic and out of the lane of traffic. The devices may be operated either by a single flagger at one end of the traffic control zone, from a central location, or by a separate flagger near each device's location.

AFADs may be either a remotely controlled Stop/Slow AFAD mounted on either a trailer or a movable cart system, or a remotely controlled Red/Yellow Lens AFAD.

AFADs will not be paid for separately. AFADs may be used as a supplement or an alternate to flaggers in accordance with Index 603. Include the cost for AFADs in Maintenance of Traffic Lump Sum.

102-9.20~~17~~ Temporary Lane Separator: Furnish, install, maintain, remove and relocate temporary lane separator in accordance with the Plans and Design Standards, Index No 600. Anchor the portable temporary lane separator with a removable anchor bolt. Use epoxy on bridge decks where anchoring is not allowed. Remove the epoxy from the bridge deck by hydroblasting or other method approved by the Engineer.

ARTICLE 102-10 is deleted and the following substituted:

102-10 Work Zone Pavement Marking.

102-10.1 Description: Furnish and install ~~work zone pavement markings~~ standard paint for MOT in construction areas and in close conformity with the lines and details shown in the Plans and Design Standards.

Centerlines, lane lines, edge lines, stop bars, crosswalks, and turn arrows will be required in work zones prior to opening the road to traffic.

~~The most common types of work zone pavement markings are painted pavement markings and removable tape. Removable tapeOther types of work zone pavement markings may be used when required byidentified in the Plans.~~

102.10.2 Painted Pavement Markings:

102-10.2.1 General: Use painted pavement markings meeting the requirements of Section 710. Use standard ~~waterborne~~ paint unless otherwise identified in the Plans or approved by the Engineer.

102-10.3 Removable Tape:

102-10.3.1 General: Use removable tape listed on the APL as shown in the Plans and meeting the requirements of 990-4.

102-10.3.2 Application: Apply removable tape with a mechanical applicator to provide pavement lines that are neat, accurate and uniform. Equip the mechanical applicator with a film cut-off device and with measuring devices that automatically and accumulatively measure the length of each line placed within an accuracy tolerance of plus or minus 2%. Ensure removable tape adheres to the road surface. Removable tape may be placed by hand on short sections, 500 feet or less, if it is done in a neat accurate manner.

102-10.3.3 Retroreflectivity: Apply white and yellow pavement markings that will attain an initial retroreflectivity of not less than 300 mcd/lx·m^2 for white and contrast markings and not less than 250 mcd/lx·m^2 for yellow markings. Black portions of contrast tapes and black masking tapes must be non-reflective and have a reflectance of less than 5 mcd/lx m^2. At the end of the six month service life, the retroreflectance of white and yellow removable tape shall not be less than 150 mcd/lx·m^2.

102-10.3.4 Removability: Provide removable tape capable of being removed from bituminous concrete and portland cement concrete pavement intact or in substantially large strips, either manually or by a mechanical roll-up device, at temperatures above 40ºF, without the use of heat, solvents, grinding or blasting.

102-10.4 Temporary Retroreflective Pavement Markers (RPM~~'~~s): Use Class B ~~markers~~RPMs for all locations, except center line ~~other than rumble striping.~~ rumble striping operations, where ~~Use~~ Class D and Class B RPMs~~markers for center line rumble striping operations as shown in Index 519~~are required. All markers must be listed on the APL. Install all markers in accordance with the manufacturer's recommendations and in accordance with Design Standards, Index Nos. 519, 600, ~~-~~and 17352, prior to opening the road to traffic. After initial installation, replace markers any time more than three consecutive markers fail or are missing at no expense to the Department.

SUBARTICLE 102-11.10 is deleted and the following substituted:

102-11.10 Barrier Delineators: No separate payment will be made for barrier delineators installed on top of temporary barrier wall and vehicular LCDs.~~The number of barrier delineators, installed on top of barrier and~~wall ~~or~~and vehicular LCDs~~, used on the project, meeting the requirements of the Design Standards and Section 705.~~

SUBARTICLE 102-11.18 is deleted and the following substituted:

102-11.18 Temporary Signalization and Maintenance: For existing intersections, the certified quantity to be paid for will be the number of signalized intersections per day for the full duration of the Contract. For temporary intersections, the certified quantity to be paid for will be the number of signalized intersections per day for the duration of the temporary intersection. No separate payment will be made for temporary signalization and maintenance at new intersections.

SUBARTICLE 102-11.19 is deleted and the following substituted:

102-11.19 Temporary Traffic Detection and Maintenance: For existing intersections, the certified quantity to be paid for will be the number of signalized intersections of temporary lane separator per day beginning the day Contract Time begins and ending the day the permanent detection is operational and the final lane configuration is in place. For temporary and new intersections, the certified quantity to be paid for will be the number of signalized intersections per day beginning the day the temporary detection is functional and ending the day the permanent detection is operational and the final lane configuration is in place for a new intersection; or, when the detection is removed for a temporary intersection.

SUBARTICLE 102-11.20 is deleted and the following substituted:

102-11.20 Work Zone Pavement Markings: The quantities~~, furnished and installed, to~~ of work zone pavement markings authorized and acceptably applied under this Section and certified as installed/used on the project, will be paid for ~~will be the length of skip and solid pavement markings, and the area of pavement markings placed~~ as follows:

1. The ~~total transverse distance, in feet, of skip pavement marking authorized and acceptably applied. The~~ length ~~of actual applied line will depend on the skip ratio of the material used. Measurement will be the distance from the beginning of the first stripe to the end of the last stripe with proper deductions made for unpainted intervals as determined by plan dimensions or stations, subject to 9-1.3~~in gross miles, of solid, 10’-30’ skip, 3’-9’ dotted, 6’-10’ dotted, and 2’-4’ dotted lines.

The gross mile measurement will be taken as the distance from the beginning of the painted line to the end of the painted line and will include the unmarked gaps for skip and dotted lines. The gross mile measurement will not include designated unmarked lengths at intersections, turn lanes, etc. Final measurement will be determined by plan dimensions or stations, subject to 9-1.3.1.

2. The ~~net~~ length, in linear feet, of ~~solid pavement marking authorized and acceptably applied~~ transverse lines, diagonal lines, chevrons, and parking spaces.

3. The number of ~~directional arrows or~~ pavement messages ~~authorized and acceptably applied~~, symbols, and arrows. Each arrow is paid as a complete marking, regardless of the number of "points" or directions.

4. The number of temporary RPM's authorized and acceptably applied.

SUBARTICLE 102-11.22 is deleted and the following substituted:

102-11.22 Temporary Lane Separator: The quantity ~~of temporary lane separator~~ to be paid for will be the field measure, in feet, of temporary lane separator certified as installed/used on the project, including drainage gaps, completed and accepted.

SUBARTICLE 102-13.10 is deleted and the following substituted:

102-13.10 Barrier Delineators: ~~No separate~~Price and payment will be ~~made for barrier delineators installed on top of temporary barrier wall. The cost of~~full compensation for furnishing, installing and maintaining the barrier delineators ~~will be included in the cost of the temporary barrier wall~~.

SUBARTICLES 102-13.20 thru 102-13.23 are deleted and the following substituted:

102-13.20 Work Zone Pavement Markings: Price and payment will be full compensation for all work specified including, all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.

Removable tape may be substituted for ~~work zone~~standard paint at no additional cost to the Department.

Payment for temporary RPMs used to supplement line markings will be paid for under temporary retroreflective pavement markers. Install these markers as detailed in the Design Standards.

102-13.2~~0~~1 Temporary Raised Rumble Strips: Price and payment will be full compensation for all work and materials described in this Section, including all cleaning and preparing of surfaces, disposal of all debris, furnishing of all materials, application, curing, removal, reinstalling and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work.

~~**102-13.21 Work Zone Pavement Markings:** Price and payment will be full compensation for all work specified including, all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.~~

~~Removable tape may be substituted for work zone paint at no additional cost to the Department.~~

~~Payment for temporary RPMs used to supplement line markings will be paid for under temporary retroreflective pavement markers. Install these markers as detailed in the Design Standards.~~

102-13.22 Temporary Lane Separator: Price and payment will be full compensation for all work specified in this Section.

102-13.23 Payment Items: Payment will be made under:

Item No. 102- 1-	Maintenance of Traffic - lump sum.
Item No. 102- 2-	Special Detour - lump sum.
Item No. 102- 3-	Commercial Material for Driveway Maintenance - per cubic yard.
Item No. 102- 14-	Traffic Control Officer - per hour.
Item No. 102- 60-	Work Zone Sign - per each per day.
Item No. 102- 61-	Business Sign - each.
Item No. 102- 62-	Barrier Mounted Work Zone Sign – per each per day
Item No. 102- 71-	Barrier Wall - per foot.
Item No. 102- 75-	Temporary Lane Separator - per foot
Item No. 102- 94-	Glare Screen - per foot.
Item No. 102- 73-	Guardrail (Temporary) - per foot.
Item No. 102- 74-	Channelizing Devices - per each per day.
Item No. 102- 76-	Arrow Board - per each per day.
Item No. 102- 78-	Temporary Retroreflective Pavement Markers - each.
Item No. 102- 81-	Crash Cushion (Gating) (Temporary) - per location.
Item No. 102- 89-	Crash Cushion (Redirective) (Temporary) - per location.
Item No. 102- 99-	Portable Changeable Message Sign (Temporary) - per each per day.
Item No. 102-104-	Temporary Signalization and Maintenance - per intersection per day.
Item No. 102-107-	Temporary Traffic Detection and Maintenance - per intersection per day.
Item No. 102-150-	Portable Regulatory Sign - per each per day.
Item No. 102-150-	Radar Speed Display Unit - per each per day.
Item No. 102-909-	Temporary Raised Rumble Strips - per day.
Item No. 102-911-	Removable Tape (White/Black) - per gross mile~~foot~~.
Item No. 102-912-	Removable Tape (Yellow) - per gross -mile~~foot~~.
Item No. 710-	Painted Pavement Markings.
Item No. 711-	Thermoplastic Pavement Markings.

MAINTENANCE OF TRAFFIC.
(REV 1-21-16)

ARTICLE 102-3 is expanded by the following:

102-3.3 Lane Closure Information System: Approval for all lane closures, mobile operations, and traffic pacing operations is required. Submit routine requests fourteen calendar days in advance of all lane closures, mobile operations, and traffic pacing operations at the following URL address: https://lcis.dot.state.fl.us/ . For unforeseen events that require cancelling or rescheduling lane closures, mobile operations, and traffic pacing operations, revise the lane closure request as soon as possible.

ARTICLE 102-4 is deleted and the following substituted:

102-4 Alternative Traffic Control Plan.

The Contractor may propose an alternative traffic control plan (TCP) to the plan presented in the Contract Documents. Have the Contractor's Engineer of Record sign and seal the alternative plan and submit to the Engineer. Prepare the TCP in conformance with and in the form outlined in the current version of the Department's Plans Preparation Manual. Indicate in the plan a TCP for each phase of activities. Take responsibility for identifying and assessing any potential impacts to a utility that may be caused by the alternate TCP proposed by the Contractor, and notify the Department in writing of any such potential impacts to utilities.

Engineer's approval of the alternate TCP does not relieve the Contractor of sole responsibility for all utility impacts, costs, delays or damages, whether direct or indirect, resulting from Contractor initiated changes in the design or construction activities from those in the original Contract Specifications, Design Plans (including TCPs) or other Contract Documents and which effect a change in utility work different from that shown in the Utility Plans, joint project agreements or utility relocation schedules.

The Department reserves the right to reject any alternative TCP. Obtain the Engineer's written approval before beginning work using an alternate TCP. The Engineer's written approval is required for all modifications to the TCP. The Engineer will only allow changes to the TCP in an emergency without the proper documentation.

SUBARTICLE 102-5.4 is deleted and the following substituted:

102-5.4 Crossings and Intersections: Provide and maintain adequate accommodations for intersecting and crossing traffic. Do not block or unduly restrict any median opening, road or street crossing the project unless approved by the Engineer. Before beginning any construction, submit to the Engineer the names and phone numbers of persons that can be contacted when signal operation malfunctions.

SUBARTICLE 102-5.8 is deleted and the following substituted:

102-5.8 Conflicting Pavement Markings: Where the lane use or where normal vehicle or pedestrian paths are altered during construction, remove all pavement markings (paint, tape, thermoplastic, retroreflective pavement markers, etc.) that will conflict with the adjusted vehicle or pedestrian paths. Use of paint to cover conflicting pavement markings is prohibited. Remove conflicting pavement markings using a method that will not damage the surface texture of the pavement and which will eliminate the previous marking pattern regardless of weather and light conditions.

Remove all pavement markings that will be in conflict with "next phase of operation" vehicle pedestrian paths as described above, before opening to vehicle traffic or use by pedestrians.

Cost for removing conflicting pavement markings (paint, tape, thermoplastic, retroreflective pavement markers, etc.) to be included in Maintenance of Traffic, Lump Sum.

SUBARTICLE 102-6.2 is deleted and the following substituted:

102-6.2 Construction: Plan, construct, and maintain detours for the safe passage of traffic in all conditions of weather. Provide the detour with all facilities necessary to meet this requirement. Where pedestrian facilities are detoured, blocked or closed during the work, provide safe alternate accessible routes through or around the work zone meeting the requirements of the ADA Standards for Transportation Facilities.

When the Plans call for the Department to furnish detour bridge components, construct the pile bents in accordance with the Plans, unless otherwise authorized by the Engineer.

Provide two Contractor representatives, who will be directly involved in the erection of Department-owned temporary bridging, to attend a mandatory one-day training session to be conducted at the Department's storage facility. No bridging will be released to the Contractor prior to the completion of this training.

Submit the following: company name, phone number, office address, project contact person, names of the representatives who will attend the training described above, project number, detour bridge type, bridge length, span length, location and usage time frames, to the Engineer at least 30 calendar days before the intended pick-up date, to obtain the storage facility location and list of components for the project. Upon receipt, the Engineer will, within 10 calendar days submit an approved material list to the Contractor and the appropriate Department storage yard.

Submit the name of the representative with authority to pick up components, to the Engineer at least 10 calendar days before the proposed pick-up date. The Department is not obligated to load the bridge components without this notice. Take responsibility and sign for each item loaded at the time of issuance.

Provide timber dunnage, and transport the bridge components from the designated storage facility to the job site. Unload, erect, and maintain the bridge, then dismantle the bridge and load and return the components to the designated storage facility.

Notify the Engineer in writing at least 10 calendar days before returning the components. Include in this notice the name of the Contractor's representative authorized to sign

for return of the bridge components. The yard supervisor is not obligated to unload the bridge components without this notice.

The Department will provide equipment and an operator at the Department's storage facility to assist in loading and unloading the bridge components. Furnish all other labor and equipment required for loading and unloading the components.

The Department's representative will record all bridge components issued or returned on the Detour Bridge Issue and Credit Ticket. The tickets must be signed by a Department and a Contractor representative, after loading or unloading each truck to document the quantity and type of bridging issued or returned.

Bind together all bridge components to be returned in accordance with the instructions given by the storage facility. The yard supervisor will repack components that are not packed in compliance with these instructions. Upon request, written packing instructions will be made available to the Contractor, before dismantling of the bridge for return to the Department's storage facility.

Assume responsibility for any shortage or damage to the bridge components. Monies due the Contractor will be reduced at the rate of $35.00 per hour plus materials for repacking, repairs or replacement of bridge components.

The skid resistance of open steel grid decking on the detour bridge may decrease gradually after opening the bridge to traffic. The Department will furnish a pneumatic floor scabbler machine for roughening the roadway surface of the detour bridge decking. Provide an air compressor at the job site with 200 cubic feet per minute capacity, 90 psi air pressure for the power supply of the machine, and an operator. Transport the scabbler machine to and from the Department's structures shop. Repair any damage to the scabbler machine caused by operations at no expense to the Department. Perform scabbling when determined necessary by the Engineer. The Department will pay for the cost of scabbling as Unforeseeable Work in accordance with 4-4.

Return the bridge components to the designated storage facility beginning no later than 10 calendar days after the date the detour bridge is no longer needed, the date the new bridge is placed in service, or the date Contract Time expires, whichever is earliest. Return the detour bridging at an average of not less than 200 feet per week. Upon failure to return the bridge components to the Department within the time specified, compensate the Department for the bridge components not returned at the rate of $5.00 per 10 feet, per day, per bridge, for single lane; and $10.00 per 10 feet, per day, per bridge, for dual lane until the bridge components are returned to the Department.

ARTICLE 102-9 is deleted and the following substituted:

102-9 Temporary Traffic Control Devices.

102-9.1 Installation and Maintenance: Install and maintain temporary traffic control devices as detailed in the Plans, Index 600 of the Design Standards and when applicable, in accordance with the approved vendor drawings, as provided on the Department's Approved Product List (APL). Erect the required temporary traffic control devices to prevent any hazardous conditions and in conjunction with any necessary traffic re-routing to protect the traveling public, workers, and to safeguard the work area. Use only those devices that are on the APL or meeting the requirements of the Design Standards. Immediately remove or cover any devices that do not apply to existing conditions.

All temporary traffic control devices must meet the requirements of National Cooperative Highway Research Program Report 350 (NCHRP 350) or the Manual for Assessing Safety Hardware 2009 (MASH) and current FHWA directives. Manufacturers seeking evaluation must submit certified test reports showing that their product meets all test requirements set forth by NCHRP 350 or the MASH. Manufacturers seeking evaluation of Category I devices for inclusion on the APL shall include the manufacturer's self-certification letter. Manufacturer's seeking evaluation of Category II and Category III devices for inclusion on the APL shall include the FHWA WZ numbered acceptance letter with attachments and vendor drawings of the device in sufficient detail to enable the Engineer to distinguish between this and similar devices. For devices requiring field assembly or special site preparation, vendor drawings shall include all field assembly details and technical information necessary for proper application and installation. Vendor drawings for Category III devices and Automated Flagger Assistance Devices (AFAD) must be signed and sealed by a Professional Engineer registered in the State of Florida. Manufacturers seeking evaluation of Category IV devices for inclusion on the APL must comply with the requirements of Section 990 and include detailed vendor drawings of the device along with technical information necessary for proper application, field assembly and installation.

The APL number is to be permanently marked on the device at a readily visible location. Sheeting used on devices is exempt from this marking requirement.

Notify the Engineer in writing of any scheduled operation that will affect traffic patterns or safety sufficiently in advance of commencing such operation to permit review of the plan for the proposed installation of temporary traffic control devices.

Assign an employee the responsibility of maintaining the position and condition of all temporary traffic control devices throughout the duration of the Contract. Keep the Engineer advised at all times of the identification and means of contacting this employee on a 24 hour basis.

Maintain temporary traffic control devices in the correct position, properly oriented, clearly visible and clean, at all times. All traffic control devices must meet the classification level of Acceptable as defined in the American Traffic Safety Services Association (ATSSA) Quality Guidelines for Temporary Traffic Control Devices and Features (2008-09 Edition). Immediately repair, replace or clean damaged, defaced or dirty devices. Traffic control devices shall not be cleaned while installed/used. Use of warning lights on any temporary traffic control device shall be prohibited, with the exception of the portable regulatory signs.

Employ an approved independent Channelizing Device Supplier (CDS) to provide and maintain the condition of the following non-fixed channelizing devices: drums, cones, vertical panels, barricades, tubular markers, and longitudinal channeling devices. Cones may be provided and maintained by the Contractor.

The CDS shall not be affiliated with the Contractor and shall be approved by the Engineer in accordance with 102-9.1.1. The CDS shall submit a monthly certification on letterhead that the channelizing devices mentioned above installed/used within the work zone meet acceptable standards as outlined in ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features. The certification shall include the following statement, "I certify that I have provided and maintained the following devices <list devices covered under the certification> in accordance with the ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features." If the Contractor chooses to provide and maintain cones, the Contractor shall submit a monthly certification on a Department approved form that all cones installed/used within the work zone meet acceptable standards as outlined in ATSSA Quality Guidelines for

Temporary Traffic Control Devices and Features, and the CDS shall submit the monthly certification for any other channelizing devices installed/used within the work zone.

102-9.1.1 Approved Independent Channelizing Device Supplier (CDS) Requirements: Submit the following documents to the Engineer for independent CDS approval at the preconstruction conference. CDSs may elect to provide a one-time submittal of this information for approval and have the information posted on the State Construction Office website for use by Department personnel. Inform the Engineer at the preconstruction conference of this approval.

1. A letter on company letterhead signed and dated by the owner of the company or company officer with the following information and statements:

a. The company's owners, stockholders, and officers.

b. A statement declaring that the company will not perform as a CDS on any project where there is common ownership, directly or indirectly, between the company and the Contractor.

c. A statement declaring that the company will furnish and maintain the condition of all channelizing devices with the exception of cones as required in 102-9.1 with its own forces.

d. A statement declaring at least five years of experience in providing channelizing device supplier services, with its own inventory of channelizing devices.

e. On a separate sheet, list a sample project history of the company's experience as a channeling device supplier for the five years declared in item 1(d) above including the following information:

1. Project name and number and a brief description of CDS work performed,
2. Beginning and ending date of CDS project activities,
3. Location of project (city, state),
4. Monetary amount of CDS work on project,
5. Owner of project, contact person and phone number with area code,
6. Name of Contractor (client) that the work was performed for and phone number with area code.

2. A maintenance plan for approval by the Department that outlines the frequency and methods for maintaining the condition of all channelizing devices, except cones owned and maintained by the Contractor, installed/used in the work zone.

102-9.2 Work Zone Signs: Furnish, install, maintain, remove and relocate signs in accordance with the Plans and Design Standards, Index No. 600. Use signs that meet the material and process requirements of Section 994. Use Type IV sheeting for fluorescent orange work zone signs. Roll-up signs must meet the requirements of Type VI sheeting. Use Type IV or Type XI sheeting for all other work zone signs. Attach the sign to the sign support using hardware meeting the manufacturer's recommendations on the APL vendor drawings or as specified in the Design Standards.

102-9.2.1 Post Mounted Signs: Meet the requirements of 990-8.

102-9.2.2 Portable Signs: Use only approved systems, which includes sign stands and attachment hardware (nuts, bolts, clamps, brackets, braces, etc.), meeting the vendor requirements specified on the APL drawings. Provide Federal Highway Administration's (FHWA) accepted sign substrate for use with accepted sign stands on the National Highway

System (NHS) under the provisions of the NCHRP Report 350 “Recommended Procedures for the Safety Performance Evaluation of Highway Features.”

102-9.2.3 Barrier Mounted Signs: If post mounting criteria cannot be achieved in accordance with Design Standards, Index No. 600 and a barrier or traffic railing exists, use temporary sign criteria provided in Design Standards, Index No. 11871.

102-9.3 Business Signs: Provide and place signs in accordance with the Plans and Design Standards, Index No. 600 series. Furnish signs having retroreflective sheeting meeting the requirements of Section 990.

102-9.4 Project Information Signs: Provide and place signs in accordance with the Plans and Design Standards, Index No. 600 series. Furnish signs having retroreflective sheeting meeting the requirements of Section 990.

102-9.5 Channelizing Devices: Furnish and install channelizing devices in accordance with the Plans and Design Standards.

102-9.5.1 Retroreflective Collars for Traffic Cones: Use collars for traffic cones listed on the APL that meet the requirements of Section 990. Use cone collars at night designed to properly fit the taper of the cone when installed. Place the upper 6 inch collar a uniform 3-1/2 inches distance from the top of the cone and the lower 4 inch collar a uniform 2 inches distance below the bottom of the upper 6 inch collar. Collars are to be capable of being removed for temporary use or attached permanently to the cone in accordance with the manufacturer’s recommendations. Provide a white sheeting having a smooth outer surface and that has the property of a retroreflector over its entire surface.

102-9.5.2 Longitudinal Channelizing Devices (LCDs): Use LCDs listed and categorized on the APL as vehicular, pedestrian or vehicular/pedestrian. Retroreflective sheeting must meet the requirements of Section 990. LCDs must be interlocked except for the stand-alone unit placed perpendicular to a sidewalk. For LCDs requiring internal ballasting, an indicator that clearly identifies the proper ballast level will be required.

Use alternating orange and white solid color vehicular LCDs. Vehicular LCDs may be substituted for drums, vertical panels, or barricades.

102-9.6 Barrier Wall (Temporary): Furnish, install, maintain, remove and relocate temporary barrier wall in accordance with the Plans. Obtain and use precast temporary barrier wall from a manufacturing plant that is on the Department’s list of Producers of Incidental Precast/Prestressed Concrete Products with an Accepted Quality Control Program at the time of production. Producers seeking inclusion on the list shall meet the requirements of 105-3. Temporary barrier wall must meet the material and construction requirements of Section 521 unless noted otherwise in the Design Standards.

The maximum allowable height increase between consecutive temporary barrier wall units in the direction of traffic is 1 inch.

Temporary concrete barrier wall used on roadway sections must comply with Design Standards, Index Nos. 412, 415 or 414. Temporary concrete barrier wall used on bridge and wall sections, shall comply with Design Standards, Index No 414.

Temporary water filled barrier wall used on roadway sections shall meet the NCHRP Report 350 or MASH criteria and be listed on the APL.

Barriers meeting the requirements of Design Standards, Index Nos. 412, 415 or temporary water filled barriers on the APL will not be accepted as an alternate to barriers meeting the requirements of Design Standards, Index No. 414.

Trailer mounted barriers listed on the APL may be used at the option of the Contractor. Trailer mounted barriers listed on the APL must have an FHWA eligibility letter and be successfully crash tested in accordance with MASH TL-3 criteria. All trailer mounted barriers must be equipped with an APL listed truck mounted attenuator, an APL listed vehicle mounted arrow board and vehicle warning lights in accordance with this Section.

102-9.6.1 Temporary Barrier Wall Meeting the Requirements of Design Standards, Index Nos. 412 and 414: Ensure the marking requirements of the respective Index are met.

102-9.6.2: Proprietary Precast Temporary Barrier Wall Fabricated prior to 2005: The Contractor must submit a certification stating that all unmarked barrier wall units meet the requirements of the Specifications and the Design Standards. Certifications will be project specific and non-transferable

102-9.6.3 Proprietary Precast Temporary Barrier Wall Fabricated in 2005 or later: Ensure each wall unit has permanent clear markings, showing the manufacture date, serial number, manufacturer's name or symbol, and the APL number. Label the markings on a plate, plaque, or cast in the unit. Proprietary barrier wall fabricated prior to 2016 and marked with the "INDX 521" in lieu of the APL number will be permitted.

102-9.7 Barrier Delineators: Install barrier delineators on top of temporary barrier wall and vehicular LCDs meeting the requirements of the Design Standards and Section 705.

102-9.8 Glare Screen (Temporary): Use temporary glare screens listed on the APL that meet the requirements of Section 990. Furnish, install, maintain, remove and relocate glare screen systems in conjunction with temporary barrier wall at locations identified in the Plans.

The anchorage of the glare screen to the barrier must be capable of safely resisting an equivalent tensile load of 600 pounds per foot of glare screen, with a requirement to use a minimum of three fasteners per barrier section.

When glare screen is utilized on temporary barrier wall, barrier delineators will not be required.

102-9.9 Temporary Crash Cushion (Redirective/Gating): Furnish, install, maintain and subsequently remove temporary crash cushions in accordance with the details and notes shown in the Plans, the Design Standards, and requirements of the pre-approved alternatives listed on the APL. Delineate the crash cushion in accordance with Section 544. Maintain the crash cushions until their authorized removal. Repair all attachment scars to permanent structures and pavements after crash cushion removal. Make necessary repairs due to defective material, work, or Contractor operations at no cost to the Department. Restore crash cushions damaged by the traveling public within 24 hours after notification as authorized by the Engineer.

102-9.10 Guardrail (Temporary): Furnish guardrail (temporary) in accordance with the Plans and Design Standards. Meet the requirements of Section 536.

102-9.11 Arrow Board: Furnish arrow boards that meet the requirements of Section 990 as required by the Plans and Design Standards to advise approaching traffic of lane closures or shoulder work. Type B arrow boards may be used on low to intermediate speed (0 mph to 50 mph) facilities or for maintenance or moving operations on any speed facility. Type C arrow boards shall be used for all other operations on high-speed (50 mph and greater) facilities and may be substituted for Type B arrow boards on any speed facility.

102-9.12 Portable Changeable Message Sign (PCMS): Furnish PCMSs or truck mounted changeable message signs that meet the requirements of Section 990 as required by the

Plans and Design Standards to supplement other temporary traffic control devices used in work zones.

102-9.13 Portable Regulatory Signs (PRS): Furnish PRSs that meet the requirements of 990 as required by the Plans and Design Standards.

Activate portable regulatory signs only during active work activities and deactivate when no work is being performed.

102-9.14 Radar Speed Display Unit (RSDU): Furnish RSDUs that meet the requirements of Section 990 as required by the Plans and Design Standards to inform motorists of the posted speed and their actual speed.

Activate the radar speed display unit only during active work activities and deactivate when no work is being performed.

102-9.15 Temporary Signalization and Maintenance: Provide temporary signalization and maintenance at existing, temporary, and new intersections including but not limited to the following:

1. Installation of temporary poles and span wire assemblies as shown in the Plans,
2. Temporary portable traffic signals as shown in the Plans,
3. Adding or shifting signal heads,
4. Trouble calls,
5. Maintaining intersection and coordination timing and preemption devices. Coordination timing will require maintaining functionality of system communications.

Restore any loss of operation within 12 hours after notification.

Provide traffic signal equipment that meets the requirements of the Design Standards and 603-2. The Engineer may approve used signal equipment if it is in acceptable condition. Replacement components for traffic signal cabinet assemblies will be provided by the maintaining agency.

102-9.16 Temporary Traffic Detection and Maintenance: Provide temporary traffic detection and maintenance at existing, temporary, and new signalized intersections. Provide temporary traffic detection equipment listed on the APL. Restore any loss of detection within 12 hours. Ensure 90% accuracy per signal phase, measured at the initial installation and after any lane shifts, by comparing sample data collected from the detection system with ground truth data collected by human observation. Collect the sample and ground truth data for a minimum of five minutes during a peak and five minutes during an off-peak period with a minimum three detections for each signal phase. Perform the test in the presence of the Engineer.

102-9.17 Truck Mounted Attenuators and Trailer Mounted Attenuators: Furnish, install and maintain only those attenuators that meet the requirements of NCHRP 350 or the MASH.

Use truck mounted attenuators or trailer mounted attenuators, when called for in the Design Standards. Use attenuators listed on the APL.

When attenuators are called for, use either a truck mounted attenuator or a trailer mounted attenuator system designed and installed in accordance with the manufacturers recommendations.

Equip the attenuator cartridge with lights and reflectors in compliance with applicable Florida motor vehicle laws, including turn signals, dual tail lights, and brake lights. Ensure that lights are visible in both the raised and lowered positions if the unit is capable of being raised.

Install either alternating black with yellow or white with orange sheeting on the rear of trailer mounted attenuators and on truck mounted attenuators, in both the operating and raised position. Use Type III (work zone) or Type IV sheeting consisting of 4 or 6 inch wide stripes installed to form chevrons that point upward. All sheeting except black shall be retroreflective.

Attenuators will not be paid for separately. Include the cost of the truck with either a truck mounted attenuator or a trailer mounted attenuator in MOT Lump Sum. Payment includes all costs, including furnishing, maintaining and removal when no longer required, and all materials, labor, tools, equipment and incidentals required for attenuator maintenance.

102-9.18 Temporary Raised Rumble Strip Set: Furnish, install, maintain, remove, and reinstall temporary raised rumble strips per the manufacturer's recommendations and in accordance with Design Standards, Index No. 603.

The temporary raised rumble strip may be either a removable polymer striping tape or a molded engineered polymer material.

102-9.19 Automated Flagger Assistance Devices (AFAD): Furnish, install, maintain, remove and relocate AFADs in accordance with the Plans and Design Standards. Position AFADs where they are clearly visible to oncoming traffic and out of the lane of traffic. The devices may be operated either by a single flagger at one end of the traffic control zone, from a central location, or by a separate flagger near each device's location.

AFADs may be either a remotely controlled Stop/Slow AFAD mounted on either a trailer or a movable cart system, or a remotely controlled Red/Yellow Lens AFAD.

AFADs will not be paid for separately. AFADs may be used as a supplement or an alternate to flaggers in accordance with Index 603. Include the cost for AFADs in Maintenance of Traffic Lump Sum.

102-9.20 Temporary Lane Separator: Furnish, install, maintain, remove and relocate temporary lane separator in accordance with the Plans and Design Standards, Index No 600. Anchor the portable temporary lane separator with a removable anchor bolt. Use epoxy on bridge decks where anchoring is not allowed. Remove the epoxy from the bridge deck by hydroblasting or other method approved by the Engineer.

ARTICLE 102-10 is deleted and the following substituted:

102-10 Work Zone Pavement Marking.

102-10.1 Description: Furnish and install standard paint for MOT in construction areas and in close conformity with the lines and details shown in the Plans and Design Standards.

Centerlines, lane lines, edge lines, stop bars, crosswalks, and turn arrows will be required in work zones prior to opening the road to traffic.

102.10.2 Painted Pavement Markings:

102-10.2.1 General: Use painted pavement markings meeting the requirements of Section 710. Use standard paint unless otherwise identified in the Plans or approved by the Engineer.

102-10.3 Removable Tape:

102-10.3.1 General: Use removable tape listed on the APL as shown in the Plans and meeting the requirements of 990-4.

102-10.3.2 Application: Apply removable tape with a mechanical applicator to provide pavement lines that are neat, accurate and uniform. Equip the mechanical applicator with

a film cut-off device and with measuring devices that automatically and accumulatively measure the length of each line placed within an accuracy tolerance of plus or minus 2%. Ensure removable tape adheres to the road surface. Removable tape may be placed by hand on short sections, 500 feet or less, if it is done in a neat accurate manner.

102-10.3.3 Retroreflectivity: Apply white and yellow pavement markings that will attain an initial retroreflectivity of not less than 300 mcd/lx·m^2 for white and contrast markings and not less than 250 mcd/lx·m^2 for yellow markings. Black portions of contrast tapes and black masking tapes must be non-reflective and have a reflectance of less than 5 mcd/lx m^2. At the end of the six month service life, the retroreflectance of white and yellow removable tape shall not be less than 150 mcd/lx·m^2.

102-10.3.4 Removability: Provide removable tape capable of being removed from bituminous concrete and portland cement concrete pavement intact or in substantially large strips, either manually or by a mechanical roll-up device, at temperatures above 40ºF, without the use of heat, solvents, grinding or blasting.

102-10.4 Temporary Retroreflective Pavement Markers (RPMs): Use Class B RPMs for all locations, except center line rumble striping operations, where Class D and Class B RPMs are required. All markers must be listed on the APL. Install all markers in accordance with the manufacturer's recommendations and in accordance with Design Standards, Index Nos. 519, 600, and 17352, prior to opening the road to traffic. After initial installation, replace markers any time more than three consecutive markers fail or are missing at no expense to the Department.

SUBARTICLE 102-11.10 is deleted and the following substituted:

102-11.10 Barrier Delineators: No separate payment will be made for barrier delineators installed on top of temporary barrier wall and vehicular LCDs.

SUBARTICLE 102-11.18 is deleted and the following substituted:

102-11.18 Temporary Signalization and Maintenance: For existing intersections, the certified quantity to be paid for will be the number of signalized intersections per day for the full duration of the Contract. For temporary intersections, the certified quantity to be paid for will be the number of signalized intersections per day for the duration of the temporary intersection. No separate payment will be made for temporary signalization and maintenance at new intersections.

SUBARTICLE 102-11.19 is deleted and the following substituted:

102-11.19 Temporary Traffic Detection and Maintenance: For existing intersections, the certified quantity to be paid for will be the number of signalized intersections of temporary lane separator per day beginning the day Contract Time begins and ending the day the permanent detection is operational and the final lane configuration is in place. For temporary and new intersections, the certified quantity to be paid for will be the number of signalized intersections per day beginning the day the temporary detection is functional and ending the day the permanent detection is operational and the final lane configuration is in place for a new intersection; or, when the detection is removed for a temporary intersection.

SUBARTICLE 102-11.20 is deleted and the following substituted:

102-11.20 Work Zone Pavement Markings: The quantities of work zone pavement markings authorized and acceptably applied under this Section and certified as installed/used on the project, will be paid for as follows:

1. The length in gross miles, of solid, 10'-30' skip, 3'-9' dotted, 6'-10' dotted, and 2'-4' dotted lines.

The gross mile measurement will be taken as the distance from the beginning of the painted line to the end of the painted line and will include the unmarked gaps for skip and dotted lines. The gross mile measurement will not include designated unmarked lengths at intersections, turn lanes, etc. Final measurement will be determined by plan dimensions or stations, subject to 9-1.3.1.

2. The length, in linear feet, of transverse lines, diagonal lines, chevrons, and parking spaces.

3. The number of pavement messages, symbols, and arrows. Each arrow is paid as a complete marking, regardless of the number of "points" or directions.

4. The number of temporary RPM's authorized and acceptably applied.

SUBARTICLE 102-11.22 is deleted and the following substituted:

102-11.22 Temporary Lane Separator: The quantity to be paid for will be the field measure, in feet, of temporary lane separator certified as installed/used on the project, including drainage gaps, completed and accepted.

SUBARTICLE 102-13.10 is deleted and the following substituted:

102-13.10 Barrier Delineators: Price and payment will be full compensation for furnishing, installing and maintaining the barrier delineators.

SUBARTICLES 102-13.20 thru 102-13.23 are deleted and the following substituted:

102-13.20 Work Zone Pavement Markings: Price and payment will be full compensation for all work specified including, all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.

Removable tape may be substituted for standard paint at no additional cost to the Department.

Payment for temporary RPMs used to supplement line markings will be paid for under temporary retroreflective pavement markers. Install these markers as detailed in the Design Standards.

102-13.21 Temporary Raised Rumble Strips: Price and payment will be full compensation for all work and materials described in this Section, including all cleaning and preparing of surfaces, disposal of all debris, furnishing of all materials, application, curing, removal, reinstalling and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work.

102-13.22 Temporary Lane Separator: Price and payment will be full compensation for all work specified in this Section.

102-13.23 Payment Items: Payment will be made under:

Item No. 102- 1-	Maintenance of Traffic - lump sum.
Item No. 102- 2-	Special Detour - lump sum.
Item No. 102- 3-	Commercial Material for Driveway Maintenance - per cubic yard.
Item No. 102- 14-	Traffic Control Officer - per hour.
Item No. 102- 60-	Work Zone Sign - per each per day.
Item No. 102- 61-	Business Sign - each.
Item No. 102- 62-	Barrier Mounted Work Zone Sign – per each per day
Item No. 102- 71-	Barrier Wall - per foot.
Item No. 102- 75-	Temporary Lane Separator - per foot
Item No. 102- 94-	Glare Screen - per foot.
Item No. 102- 73-	Guardrail (Temporary) - per foot.
Item No. 102- 74-	Channelizing Devices - per each per day.
Item No. 102- 76-	Arrow Board - per each per day.
Item No. 102- 78-	Temporary Retroreflective Pavement Markers - each.
Item No. 102- 81-	Crash Cushion (Gating) (Temporary) - per location.
Item No. 102- 89-	Crash Cushion (Redirective) (Temporary) - per location.
Item No. 102- 99-	Portable Changeable Message Sign (Temporary) - per each per day.
Item No. 102-104-	Temporary Signalization and Maintenance - per intersection per day.
Item No. 102-107-	Temporary Traffic Detection and Maintenance - per intersection per day.
Item No. 102-150-	Portable Regulatory Sign - per each per day.
Item No. 102-150-	Radar Speed Display Unit - per each per day.
Item No. 102-909-	Temporary Raised Rumble Strips - per day.
Item No. 102-911-	Removable Tape (White/Black) - per gross mile.
Item No. 102-912-	Removable Tape (Yellow) - per gross mile.
Item No. 710-	Painted Pavement Markings.
Item No. 711-	Thermoplastic Pavement Markings.