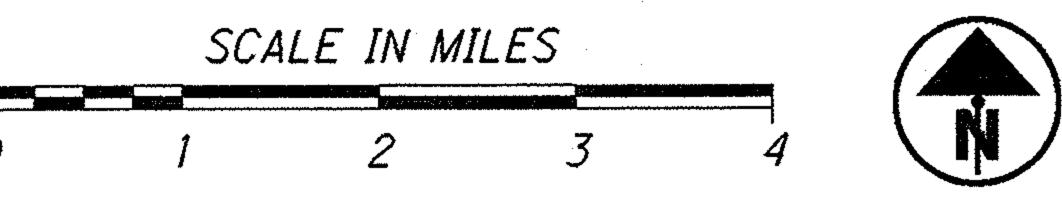
### LOCATION MAP

LATITUDE: 41° 23′ 13.6" LONGITUDE: 81° 30′ 43.8"



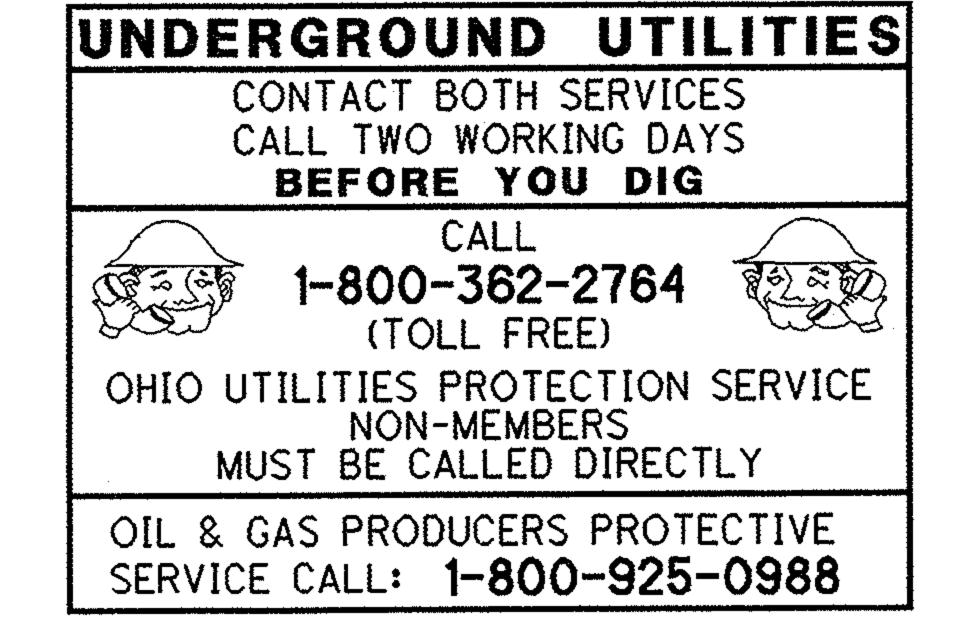
PORTION TO BE IMPROVED \_\_\_\_\_ INTERSTATE & DIVIDED HIGHWAY \_\_\_\_\_ UNDIVIDED STATE & FEDERAL ROUTES \_\_\_\_\_

### DESIGN DESIGNATION

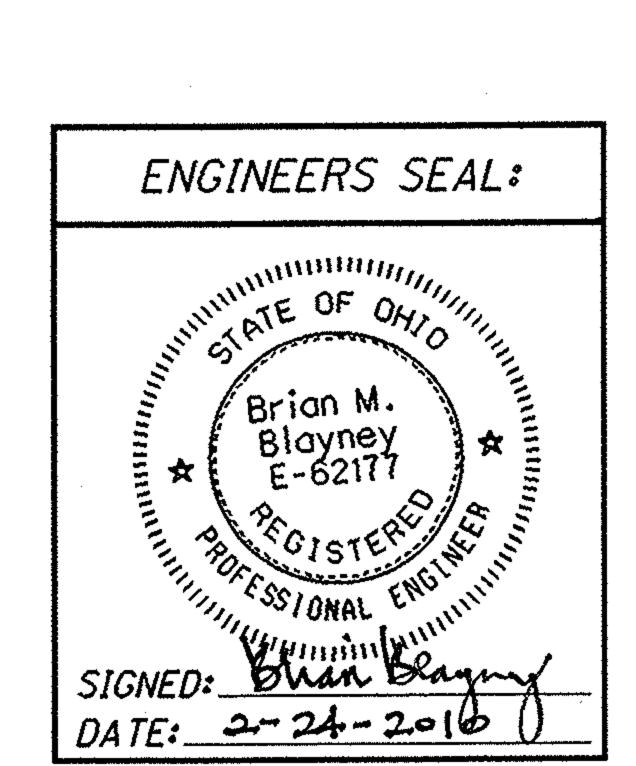
CURRENT ADT (2008)	
DESIGN YEAR ADT (2028)	· · · · · · · · · · · · · · · · · · ·
DESIGN HOURLY VOLUME (2030)	
DIRECTIONAL DISTRIBUTION	
TRUCKS (24 HOUR B&C)	
DESIGN SPEED	65 MPH
LEGAL SPEED	60 MPH/65 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	
Urban Interstate	
NHS PROJECT	YES

### DESIGN EXCEPTIONS

None Required



PLAN PREPARED BY: ODOT District 12 5500 Transportation Blvd Garfield Heights, OH 44126



## STATE OF OHIO DEPARTMENT OF TRANSPORTATION

CUY-271-13.20 LAK-271/90-0.00/2.76

# CUYAHOGA COUNTY LAKE COUNTY

### INDEX OF SHEETS:

Title Sheet	1
Schematic Plan	2-3
Typical Sections	4
General Notes	5-10
General Summary	11
Subsummaries	12-13
General Plan Sheets	14-28
Pavement Transitions	29

### NPDES REQUIREMENTS

PROJECT EARTH DISTURBED AREA: NA (MAINTENANCE PROJECT) ESTIMATED CONTRACTOR EARTH DISTURBED AREA: NA (MAINTENANCE PROJECT) NOTICE OF INTENT EARTH DISTURBED AREA: NA (MAINTENANCE PROJECT)

JPPLEMENTAL PECIFICATIONS		RAWINGS	CONSTRUCT	NDARD	STA		
<i>00</i> 4/16/10	800			1/19/01	TC-61.10	10/19/07	BP-3.1
32 5/5/09	8.32			1/21/05	TC-65_10	4/15/05	BP-9.1
				1/21/05	TC-65.11		
				10/16/09	TC-72.20	4/20/01	MT-35.10
				1/19/01	TC-73.10	7/17/09	MT-95.30
			~			4/17/09	MT-95.50
						7/17/09	MT-98.10
		·				7/17/09	MT-98.11
						7/17/09	MT-98.20
. SPECIAL						7/17/09	MT-98.22
PROVISIONS	•					7/17/09	MT-98.28
						7/17/09	MT-98.29
one Required	None					1/16/09	MT-99.20
						1/16/09	MT-101.90
						1/16/09	MT-105.10
7	•						

### PROJECT DESCRIPTION

IMPROVEMENT OF 6.37 MILES OF I-271 AND I-90 BY RESURFACING WITH ASPHALT CONCRETE FROM SLM 13.20 (MAYFIELD ROAD IN CUYAHOGA COUNTY TO SLM 2.93 IN LAKE COUNTY.

### LIMITED ACCESS

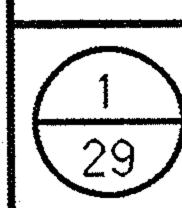
THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

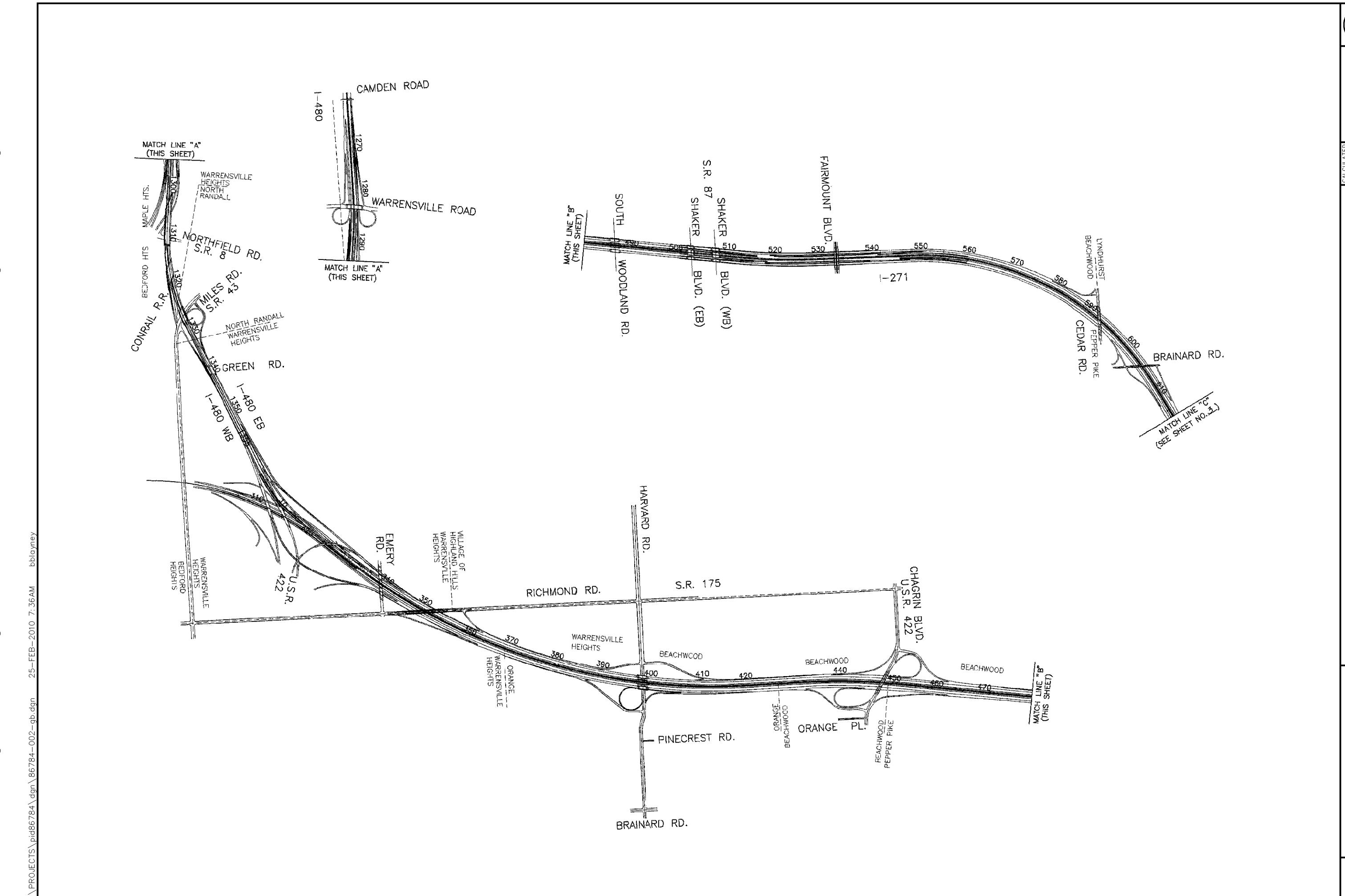
### 2010 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

3-8-10 DIRECTOR, DEPARTMENT OF TRANSPORTATION





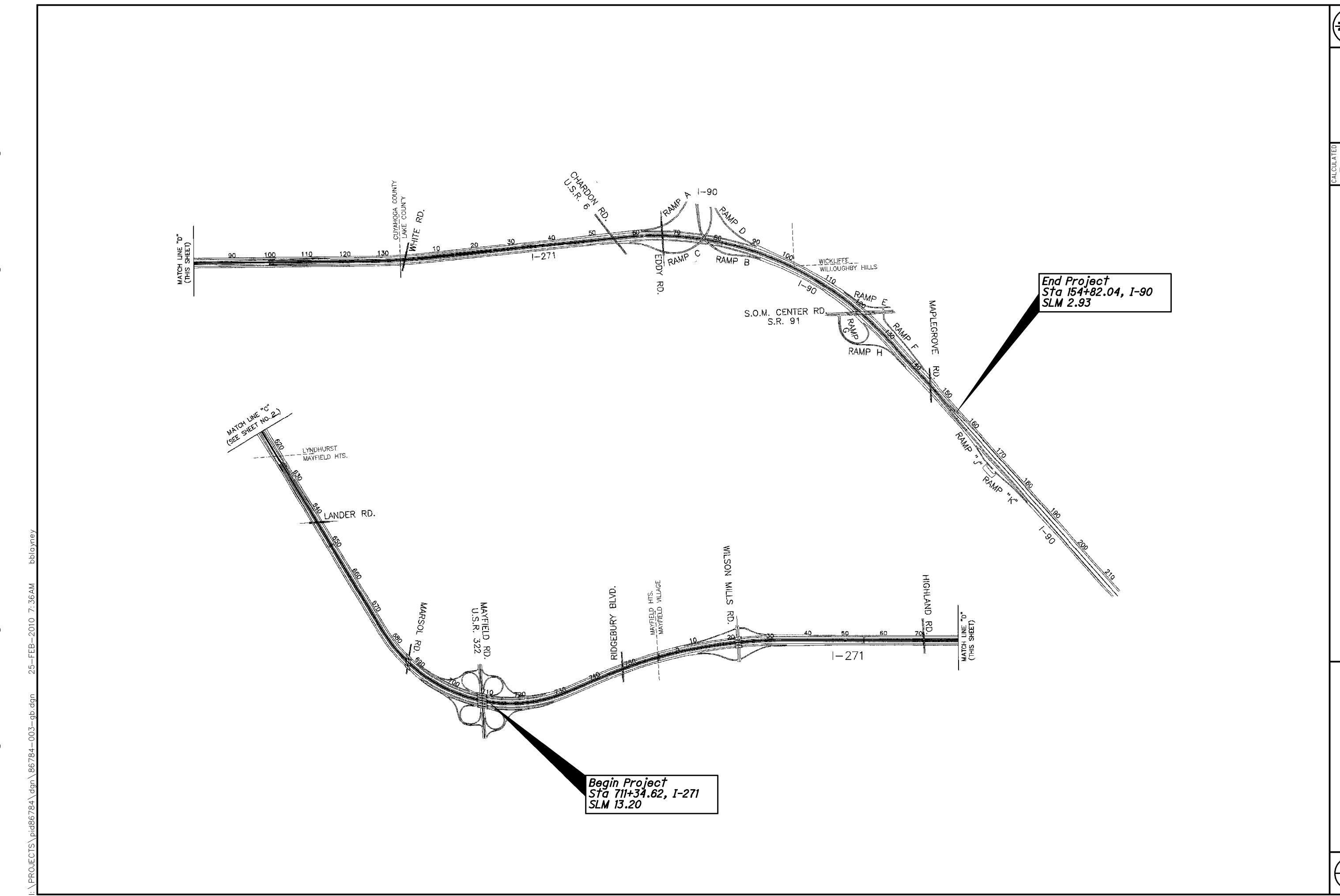
CUY-271-13.20 LAK-271/90-0.00/

Schematic

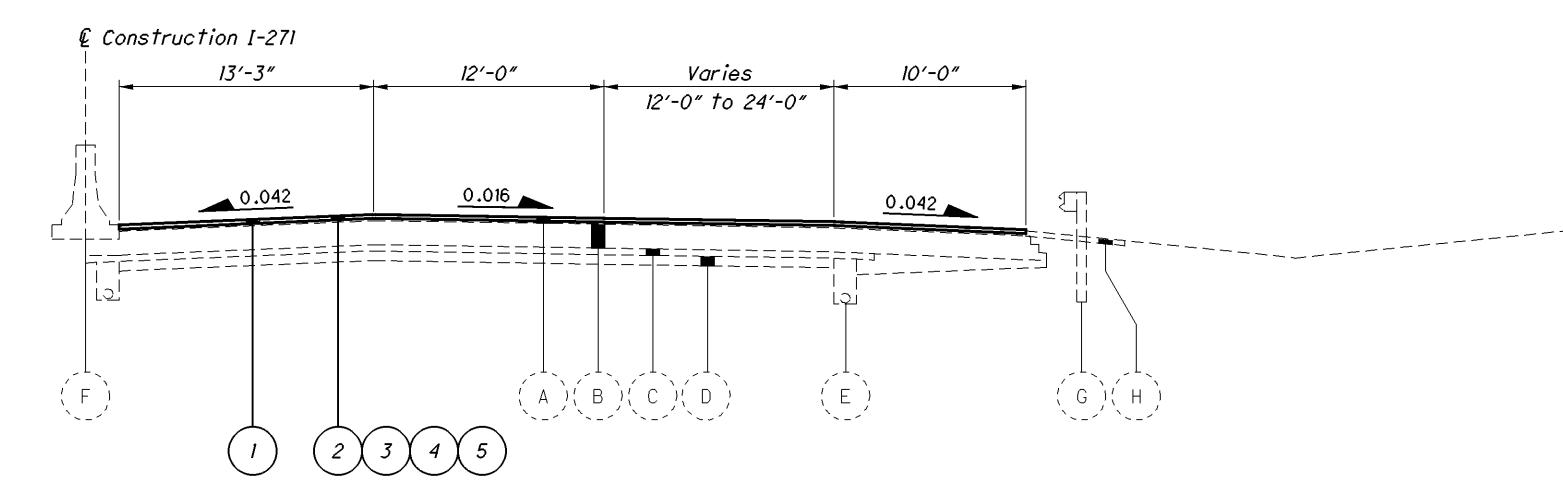
Plan

NO SCALE

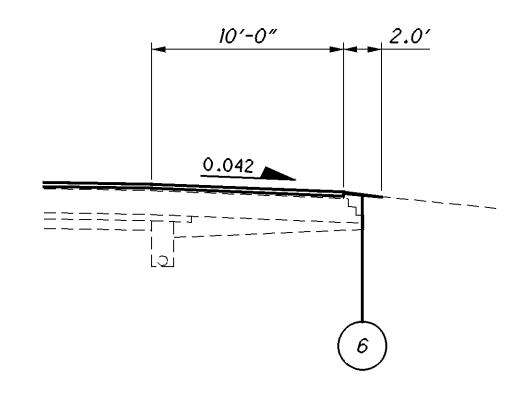








I-271 Express Lanes, Typical Section



Shoulder Detail With No Guardrail

#### Legend--Existing

- 3.25″± Asphalt Concrete Overlay
- 15″ Bituminous Aggregate Base
- 4" Free Draining Base
- /-(D) 6″ Aggregate Base
- (E) 6" 1 ,

  (G) Cuardrail

  (H) Asphalt Under Guardrail

#### Legend--Proposed

- Item 254 Pavement Planing, Asphalt Concrete, 1.6"
- Item 407 Tack Coat
  - Item 446 1" Asphalt Concrete Intermediate Course, Type 1, PG70-22M
  - Item 407 Tack Coat for Intermediate Course
  - Item 442 1½″ Asphalt Concrete Surface Course, 12.5mm, Type A, (446) As Per Plan

Item 617 - Compacted Aggregate

#### **Project Description**

This project consists of the minor rehabilitation of I-271 and I-90 express lanes by planing and resurfacing the roadway from SLM 13.20 in Cuyahoga County to SLM 2.93 in Lake County, in the Cities of Highland Heights, Mayfield Heights, Willoughby Hills, and Mayfield Village. Incidental work items include pavement repairs, pavement markings, and raised pavement markers.

#### **Existing Typical Sections**

Existing typical sections have been taken from the records and are believed to represent the existing pavement, but the State of Ohio does not guarantee the accuracy of the same.

For further information in regard to the existing typical sections, the Contractor shall refer to the previous construction plans.

These plans may be reviewed at the following location:

Ohio Department of Transportation District 12 Office 5500 Transportation Boulevard Garfield Heights, Ohio 44125

#### **Contingency Quantities**

The Contractor shall not order materials or perform work for items designated by plan note to be used "as directed by the Engineer" unless authorized by the Engineer. The actual work locations and quantities used for such items shall be incorporated into the final change order governing completion of this project.

#### **Interim Completion Dates**

October 1, 2010 constitutes an interim completion date for the placement of the proposed overlay and slotted drains at all locations.

October 15, 2010 constitutes an interim completion date for placement of RPM's and final pavement markings at all locations.

The Department will assess road user costs in accordance with 108.07 of the Construction and Material Specifications for each day after these dates that these interim requirements are not met.

#### **Cooperation Between Contractors**

The Contractor shall cooperate and coordinate his/her operations with the contractors on other projects that may be in force during the life of the contract. No waiver of any provisions of 105.07 of the Construction and Material Specifications is intended.

#### Right of Way

Perform all work within the existing right of way or easements.

#### **Utilities**

There are no underground utilities shown on this plan. The nature of the work required by this project will not affect any known underground utilities that exist under or adjacent to the work area.

#### **Alignment and Profile**

The proposed pavement resurfacing shall follow the alignment and profile of the existing pavement. The proposed asphalt concrete overlay shall be as shown on the typical sections. The intent of the plans is to maintain the existing profile.

#### **Equipment and Material Storage**

In order to provide for the safety of the traveling public the Contractor's attention is directed to 614.03. In addition the following provisions shall apply:

- Any removed items shall not be stored on the right of way for more than thirty (30) days.
- The storage of equipment, materials, and vehicles within the highway right of way will be permitted. The number of areas and exact locations shall be approved by the Engineer.
- All disturbed areas shall be returned to their original condition at no expense to the state.

#### **Work Limits**

The work limits shown on these plans are for physical construction only. The installation and operation of all temporary traffic control and temporary traffic control devices required by these plans shall be provided by the Contractor whether inside or outside these work limits.

#### <u>Item 623 Construction Layout Stakes, As Per Plan</u>

Prior to the planing of pavement beneath all overhead structures, a licensed surveyor shall measure the vertical clearances and document the measurements on an approved Ohio Department of Transportation form available from the District Bridge Office. The measurements shall be taken at the locations indicated on the approved ODOT form and submitted to the Project Engineer. After new paving has been completed, a registered surveyor again shall take vertical clearance measurements at locations indicated on the approved ODOT form. These final measurements shall be recorded on the form and submitted to the Project Engineer and the District Bridge Engineer. The record shall bear the stamp or seal of the licensed surveyor who has taken the measurements and will verify that vertical clearances have been preserved.

See plan note "Pavement Markings" for additional requirements.

#### <u>Item 619 Field Office, Type C</u>

A Type C Field Office is required for this project.

Item 619 Field Office, Type C 6 Months

#### Item Special Miscellaneous Metal

Existing castings may prove to be unsuitable for reuse, as determined by the Engineer. It shall be the Contractor's responsibility to provide the castings of the required type, size and strength (heavy duty) for the particular structure in question. All materials must meet Item 604 of the Specifications and shall have the prior approval of the Engineer.

The Contractor is cautioned to use extreme care in the removal, storage and replacement of all existing castings. Castings damaged by the negligence of the Contractor, as determined by the Engineer, shall be replaced with the proper new castings at the expense of the Contractor. The Contractor shall not order materials until authorized by the Engineer and if none are needed the item is to be nonperformed.

The following estimated quantity has been carried to the General Summary for use as directed by the Engineer.

Item Special Miscellaneous Metal 5000 Lbs

#### <u>Item 442 Asphalt Concrete Surface Course, 12.5mm, Type A (446), As Per</u> Plan

Use a minimum of 50% crushed air cooled slag or Ontario trap rock for coarse aggregate. The remainder of the coarse aggregate may be crushed carbonate stone, crushed air cooled slag or Ontario trap rock.

When air cooled slag is used for a fraction of the coarse aggregate, use an N<sub>des</sub> of 50, an N<sub>max</sub> of 75, and provide a total asphalt binder content greater than or equal to 6.5%. These requirements do not apply if air cooled slag makes up 100% of the coarse aggregate.

In addition, construct joints subject to the requirement of the plan notes for "Sealing" Joints in Asphalt Concrete Surface Courses" and "Longitudinal Joints (Flexible Pavement)."

#### **Sealing Joints in Asphalt Surface Courses**

In addition to the gutter sealing requirements specified on SCD BP-3.1 and in 401.15, after completion of the surface course but prior to placement of permanent pavement markings, seal the following locations with a certified PG binder:

- All transverse cold joints.
- All castings including but not limited to monuments, manholes, water valves, catch basins
- Butt joints and feather joints, including those at bridge approaches
- The foreword joint for driveway asphalt and trailing joint when butting to existing asphalt drive.

Seal at a width of 2 inches.

#### **Longitudinal Joints (Flexible Pavement)**

Locate longitudinal joints in the surface course subject to the following requirements:

- In 2-lane sections, place the mainline pavement surface course with a single cold longitudinal joint located between the inside and outside lanes.
- In 3-lane sections, place the mainline surface course with a cold longitudinal ioint located between the inside lane and the middle lane. A second cold longitudinal joint is permitted between the outside lane and the adjacent shoulder.
- For placement of surface course within the limits of slip ramps, one or two additional cold longitudinal joints will be permitted under the following conditions:
  - If paved while maintaining traffic using part-width construction, a single cold longitudinal joint is permitted near the middle of the ramp's total width.
  - o If paved during a complete closure of the ramp, a cold longitudinal joint is permitted at one or both edge lines.
  - o Under either condition, do not place a cold longitudinal joint across the throat of an entrance or an exit throat. Accomplish paving width transitions in these areas by staggering a series of staggered transverse cold joints in order to meet the previouslystated requirements for locating cold joints at mainline and ramp edge lines.
- No cold joints are permitted anywhere else within the proposed overlay.
- At speed change lanes at ramp merge and diverge areas: Place surface course on speed change areas within the same work day as adjacent mainline pavement.



#### Item 251 Partial Depth Pavement Repair, As Per Plan A Item 251 Partial Depth Pavement Repair, As Per Plan B

Use these items to repair unsound, cold-patch, or pop-out areas of longitudinal and transverse joints as directed by the Engineer. Perform repairs after the milling operation and prior to resurfacing. Make typical repairs at a depth of 3".

- For "As Per Plan A" repairs, make repairs at a width of 12" to 24". Center the repair over the existing joint or crack.
- For "As Per Plan B" repairs, make repairs at a width of 4' to 12'.

When directed by the Engineer, increase the depth of repairs to up to an additional 3". The additional removal and placement of material will be paid for separately on a cubic yard basis.

The following quantities have been carried to the general summary to complete these items of work:

Item 251 Partial Depth Pavement Repair, As Per Plan A 3600 Sq Yds Item 251 Partial Depth Pavement Repair, As Per Plan B 3600 Sq Yds Item 251 Partial Depth Pavement Repair, Misc. Additional Material 300 Cu Yds

#### Item 407 Tack Coat **Item 407 Tack Coat for Intermediate Course**

The rate of application of the 407 Tack Coat shall be subject to adjustment as directed by the Engineer. Plan quantities indicate an average application rate of 0.10 gallons per square yard of tack coat and 0.05 gallons per square yard of tack coat for intermediate course.

#### Item 618 Rumble Strips (Asphalt Concrete)

Once the surface course is complete, place rumble strips along I-271 express lane edges of pavement per the requirements of Standard Drawing BP-9.1. Do not place rumble strips along ramps.

The following estimated quantity is carried to the general summary to complete this

Item 618 Rumble Strips (Asphalt Concrete) 25.34 Miles

#### Adjustments and Reconstructions to Grade

Because the project typical section does not raise the profile of the express lanes, and because traffic will not run across existing frames/grates located in the shoulders, it is anticipated that nearly all structures can be re-used without adjustment. However, in the event that structures may have fallen out of adjustment since their original construction, a nominal amount of the following items are provided as contingency quantities for use as directed by the Engineer:

> Item 604 Manhole Adjusted to Grade, As Per Plan <u>5 Each</u> Item 604 Catch Basin Adjusted to Grade, As Per Plan <u>5 Each</u> Item 604 Inlet Adjusted to Grade, As Per Plan <u>5 Each</u> Item 604 Monument Box Adjusted to Grade, As Per Plan <u>5 Each</u>

<u>Item 604 Manhole Adjusted to Grade, As Per Plan</u> Item 604 Catch Basin Adjusted to Grade, As Per Plan Item 604 Inlet Adjusted to Grade, As Per Plan Item 604 Monument Box Adjusted to Grade, As Per Plan

Do not use adjustment devices.

#### ODOT Automatic Traffic Recorder Sites

The Contractor is advised automatic traffic recording (ATR) site #580 is located near SLM 15.66 (1.24 miles north of Wilson Mills) on I-271.

ODOT project engineer shall contact Office of Technical Services, Attention Dave Stewart, phone (614) 275-1382, prior to pavement operations and upon completion of the overlay. ODOT will restore operation of the ATR site.

#### **Pavement Markings**

Prior to any planing and paving operations, the contractor is responsible for conducting a field survey of the existing pavement markings. It is the intent of this plan to replace the pavement markings in the same location as the existing pavement markings. Any staking or marking required to establish control points to ensure that the new markings are accurately placed is the responsibility of the contractor. The engineer shall verify all permanent marking locations prior to the actual installation. The cost of this item shall be included in Item 623 Construction Layout Stakes, As Per Plan.

Entrance and exit markings shall be located and installed as per standard construction drawing TC-72.20. Plan details showing gore locations are approximate. The contractor shall be responsible to perform any measurements as needed to determine the location of the markings.

Auxiliary markings shall be located and installed as per standard construction drawing TC-71.10.

#### Item 621 RPM

Install RPM's for lane lines at a spacing of 80' center-to-center.

#### <u>Item 646 Lane Line, As Per Plan</u>

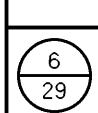
The width of the lane lines shall be six inches (6"). Apply materials at the rates for 6" lines as required in 646.05. All other pavement markings shall be placed per C.M.S. 641.08.

#### Summary of Extra Areas for Emergency Vehicle Crossings

The following estimated areas at authorized emergency vehicle crossovers are carried to the pavement calculations to complete proposed items of work:

<u>l-271 Northbound</u>								
<u>Location</u>	Area (Sq Yds)							
754+50	184							
60+15	173							
130+30	182							
Subtotals, NB:	539 Sq Yds							

<u>I-271 Southbound</u>								
<u>Location</u>	Area (Sq Yds)							
754+65	188							
60+20	191							
130+35	180							
Subtotals, NB:	559 Sq Yds							



Caclulate BMB Checked

5-21-10

#### <u>Item 614 Maintaining Traffic</u>

#### **General**

It is the responsibility of the Contractor to provide through vehicular access in both directions at all times throughout the project area. The project shall be constructed in phases in order to minimize traffic disruption and inconvenience to the general public. The Contractor shall be responsible for providing all equipment, materials and manpower needed to adequately maintain traffic as provided for in the plans and specifications.

The Contractor is reminded that, in the conduct of this project, the sequence of operations shall be planned in a fashion which minimizes the number of lane reductions and/or lane width reductions required to maintain traffic through the project.

Maintain a minimum of one 11' travel lane on the express lanes and slip ramps, except during periods during periods of permitted closures as detailed in the plans.

Permitted lane closures shall be as shown on the "Schedule of Through Lanes to be Maintained" table. The time limits shown in this table shall be adhered to or road user costs will be assessed.

#### Schedule of Through Lanes to Be Maintained

I-271 Express Lanes											
Section	Permitted Lane Reductions and Closures										
Section	One Lane Closed	Full Closure									
NB, South of Sta 711+00; SB, South of Sta 711+00	<u>Weekday</u> 9 AM to 3 PM 8 PM to 6 AM <u>Weekend</u> 9 PM Fri to 6 AM Mon	NA <u>Weekday</u> 8 PM to 6 AM <u>Weekend</u> 9 PM Fri to 6 AM Mon									
NB, North of Sta 711+00; SB, North of Sta 711+00	All Hours <sup>1</sup>	<u>Weekday</u> 8 PM to 6 AM <u>Weekend</u> 9 PM Fri to 6 AM Mon									

	LOZI Everene Lence and	Demne
	I-271 Express Lanes and	ramps
	Permitted Closure	es, Lane Reductions
Ramp  All 1- and 2- Lane Ramps	Short Term Closures with Detour	Partial Width Closures (Maintain a minimum 1 11' lane.)
	See Permitted Times for Express Lanes	<u>Weekday</u> 8 PM to 6 AM <u>Weekend</u> 9 PM Fri to 6 AM Mon

	I-271 Local Lanes	
Section	Permitted Lane Rec	ductions and Closures
Section	One Lane Closed	Two Lanes Closed
All	<u>Weekday</u> 9 AM to 3 PM 8 PM to 6 AM <u>Weekend</u> 9 PM Fri to 6 AM Mon	Not Permitted

Trucks are not permitted to enter or exit the work zone on weekdays between 6 AM to 9 AM or 3 PM and 6 PM.

#### **Overnight Closures of Express Lanes and Ramps**

For pavement markings and RPM's on the express lanes and ramps, the Contractor is permitted to close express lane entrance and exit terminals, including add lanes, drop lanes, and tapers. Restrict closures to the hours shown in the "Schedule of thru Lanes to Be Maintained." Provide notice to ramp traffic at least 72 hours in advance through the use of either a ground mounted flat sheet sign or a portable changeable message sign. Provide an LEO with patrol car for each ramp closure to remain present for the duration of the closure.

Close ramps using a portable changeable message sign (PCMS) routing traffic to the next entrance or exit.

Ramps may be closed repeatedly, but all must be re-opened at the end of each work day.

Although the plans contain bid items for LEO's and PCMS, their use for the overnight closure of express lanes is incidental to Item 614 Maintaining Traffic in order to limit the frequency of closures to the minimum needed to perform the work.

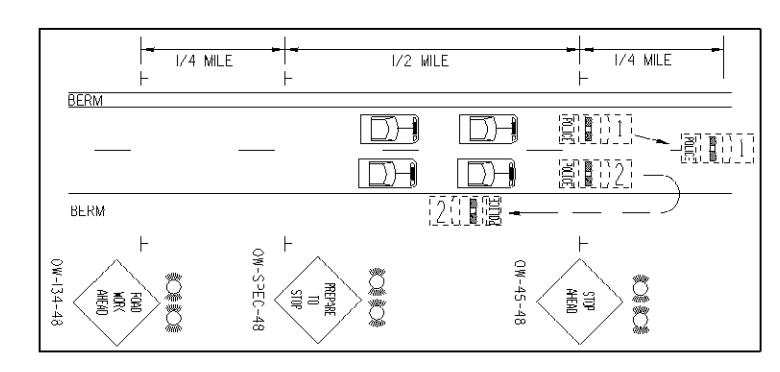
#### **Shoulder Closures**

Do not close shoulders except during the times permitted in the "Schedule" for One Lane Closures.

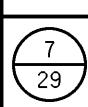
#### **Maintaining Traffic-General Provisions**

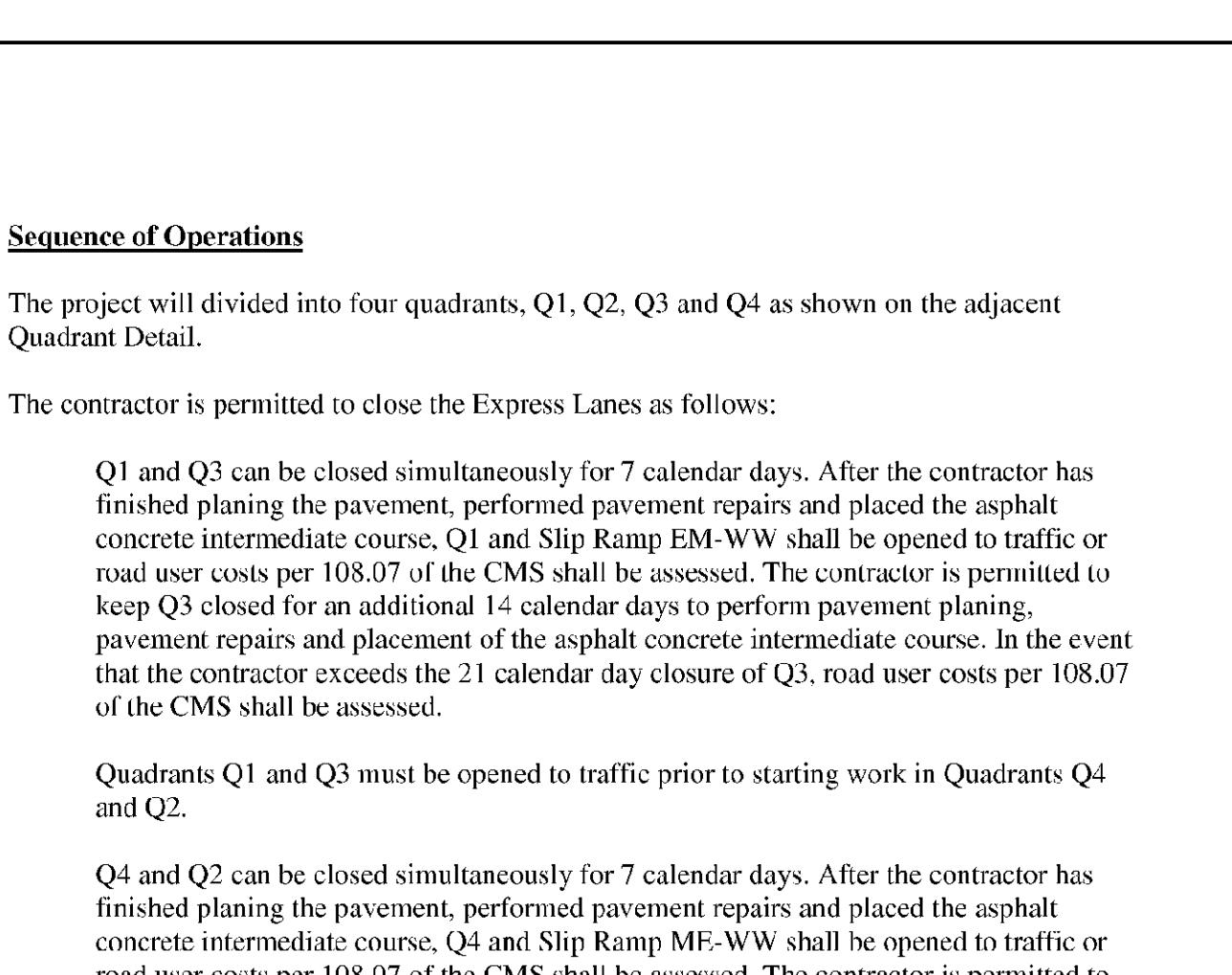
- Traffic shall be maintained in accordance with the "Schedule of Through Lanes to be Maintained." The Contractor shall set up and operate his equipment in such a manner as to minimize encroachment upon the traveled width of pavement.
- 2. The Contractor shall notify the Engineer, the responsible law enforcement agency and the Ohio Department of Transportation, District 12 Public Information Officer ((216) 584-2007) not less than 24 hours prior to a scheduled disruption of traffic.
- 3. Nighttime work shall be permitted in accordance with these plans and notes. The Contractor shall provide flood lighting of the work area in order to assure the safest conditions during nighttime work. A lighting plan for nighttime operations shall be presented to and approved by the Engineer.
- 4. The Contractor shall furnish, erect and maintain all new warning and information signs necessary for maintaining traffic. The Contractor shall determine what signs are needed and advise the Engineer two (2) weeks in advance of his detailed plans. See the OMUTCD and standard drawings for the minimum signage required.
- 5. Traffic control devices shall be set up prior to the start of construction, and shall be properly maintained during the time special conditions exist. They shall remain in place only as long as they are needed and shall be immediately removed thereafter. Where operations are performed in stages, there shall be in place only those devices that apply to the condition present during stage in progress. All signs with messages which do not apply during a certain period shall be covered or set aside out of the view of traffic.

- 6. Placement of final roadway pavement markings and raised pavement markers shall be accomplished in accordance with the "Schedule of Through Lanes to be Maintained." The Contractor shall provide 2 trailing vehicles as per MT-99.20M following the pavement marking equipment. The trailing vehicles shall travel 500' apart with the remote vehicle traveling on the shoulder (left or right as applicable) where usable shoulder is available. The first trail vehicle in a traffic lane shall be equipped with a truck mounted attenuator meeting NCHRP 350 requirements. Each trailing vehicle shall have a yellow flashing beacon plus 48" construction warning signs mounted on the back facing traffic with standard type messages advising motorists of the work ahead, advisory warning speed, and which lane is closed.
- 7. During non-working periods, open excavations shall be delineated with warning flashers and/or other approved devices as deemed appropriate by the Engineer.
- 8. Existing signs located within the road work areas which are necessary for interim or permanent traffic control shall be removed and re-erected in locations as approved by the Engineer.
- 9. No stoppage of traffic shall occur without law enforcement personnel at each location to direct traffic.
- 10. Any time traffic must be completely stopped on a freeway or interstate, it shall be as follows. The complete traffic stoppage of all lanes of any directional roadway shall be no more than 10 minutes in any one consecutive 30 minute period. A minimum of two (2) law enforcement officers (LEO's) with patrol vehicles shall be used to pace motorists to a stop. One LEO with patrol car should be provided for each lane of traffic to be closed. Payment for LEO's shall be incidental to Item 614 Maintaining Traffic, unless itemized separately elsewhere in the plans. After traffic has been slowed, one (1) patrol vehicle shall travel along the roadway shoulder 500' behind the back up of stopped vehicles. Where stoppage occurs in the vicinity of freeway entrances, the Contractor shall place flaggers on the ramps to stop traffic. Patrol vehicles shall have flashing beacons. To provide adequate visibility to approaching motorists, the Contractor shall erect and maintain "Road Work Ahead", "Prepare to Stop", and "Stop Ahead" signs with two flashing 12" traffic signal heads in accordance with 632.05. Flares may be substituted for flashing lights and sign illumination. These signs shall be illuminated during night operations and shall be 48" by 48" signs. Stopping traffic shall be done when the greatest numbers of lanes are permitted to be closed according to the Schedule of Through Lanes To Be Maintained. A portable changeable message sign shall be placed 1.5 miles to 2 miles in advance of the closure. Patrol vehicles and signs shall be located in accordance with the sketch below.



- 11. Whenever a total closure is implemented, the Contractor shall provide a portable changeable message sign, type from ODOT's pre-approved list. It shall be placed 1.5 miles to 2 miles in advance of the closure or as directed by the Engineer.
- 12. Complete stoppages of highway traffic shall be used when removing or placing overhead box trusses.





Q4 and Q2 can be closed simultaneously for 7 calendar days. After the contractor has finished planing the pavement, performed pavement repairs and placed the asphalt concrete intermediate course, Q4 and Slip Ramp ME-WW shall be opened to traffic or road user costs per 108.07 of the CMS shall be assessed. The contractor is permitted to keep Q2 closed for an additional 14 calendar days to perform pavement planing, pavement repairs and placement of the asphalt concrete intermediate course. In the event that the contractor exceeds the 21 calendar day closure of Q2, road user costs per 108.07 of the CMS shall be assessed.

The asphalt concrete surface course shall be placed with the Express Lanes closed using the times outlined in the "Schedule of Through Lanes to be Maintained" table.

**Sequence of Operations** 

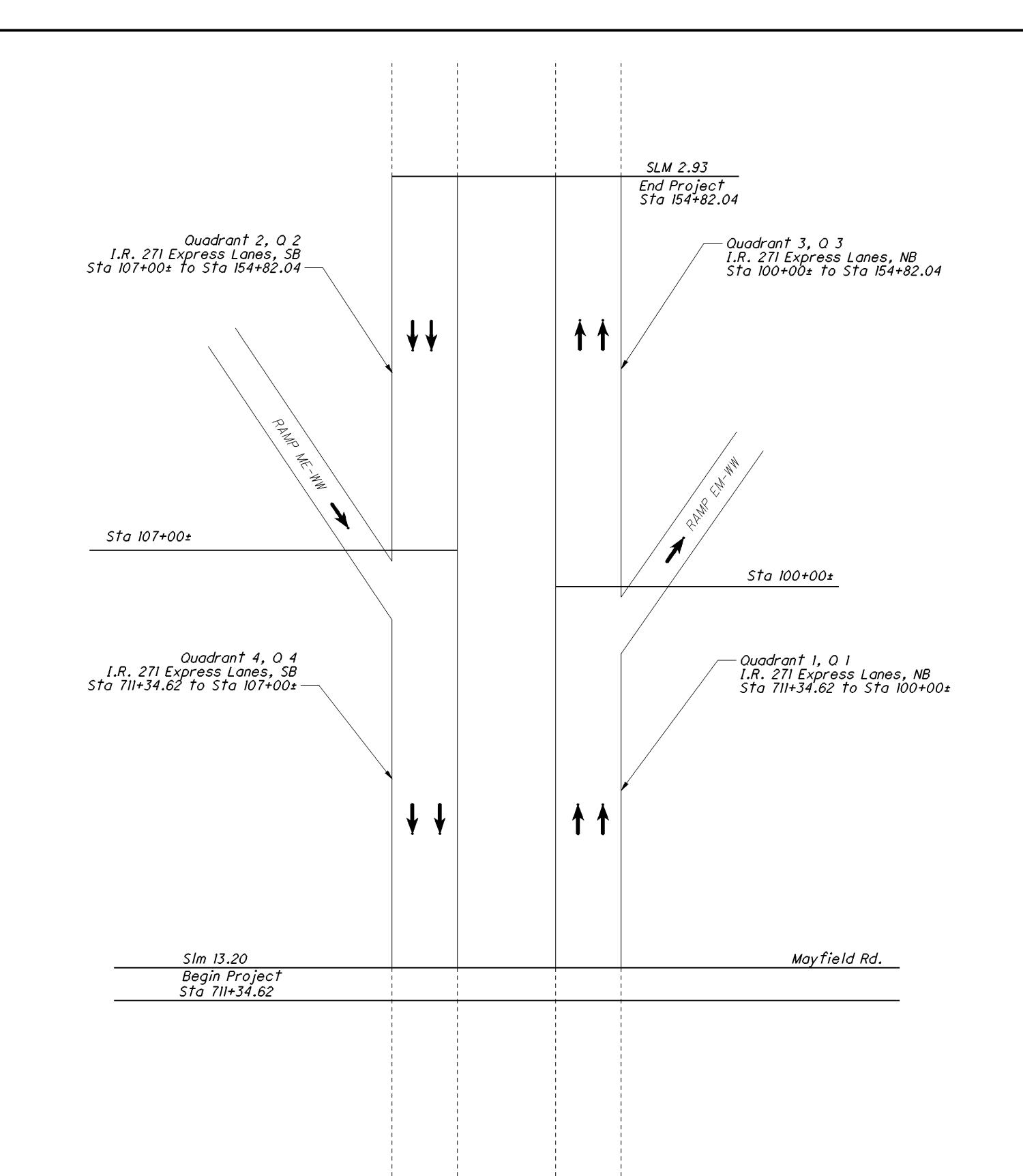
of the CMS shall be assessed.

Quadrant Detail.

and Q2.

The "Holiday Closure" note on sheet 10 shall not apply to the 21 calendar day closures of Quadrants Q1 and Q3 or Q4 and Q2.

The contractor shall provide notice of Express Lane closures via Portable Changeable Message Sign one week prior to the scheduled closure.



Quadrant Detail

#### **Maintaining Traffic and Sequence of Operations**

Conduct all asphalt concrete operations in a manner assuring minimum danger and inconvenience to the highway users. Perform all work at the times provided in the "Schedule of Through Lanes to be Maintained." Schedule removal and paving operations such that traffic is never required to travel across a vertical drop greater than  $1\frac{1}{2}$ ".

A. Longitudinal Joints for Removals and All Asphalt Courses Greater Than 11/2"

• For removal of existing overlays, plane a wedge transition into the existing asphalt at a rate of 6:1 where the pavement must be re-opened to traffic to meet MOT requirements. The planing and subsequent removal of wedge transitions is incidental to the item for planing adjacent pavement at a uniform thickness. A wedge is required at pavement and shoulders alike. No vertical drop-offs are permitted.

#### B. Transverse Joints

- For removal of existing overlays, plane a transition into the existing overlay at the rate indicated in the plan details for asphalt transitions. The planing of the required transition is incidental to the item for planing adjacent pavement at a uniform thickness.
- Prior to paving with intermediate courses, remove planed transitions (in existing asphalt) to a vertical butt joint at the paving limits. This removal is itemized and paid for separately under Item 254 Pavement Planing, Asphalt Concrete (for Transitions). Prior to re-opening the joint to traffic, wedge the remaining lip (for the surface course) with Item 614 Asphalt for Maintaining Traffic. Ramp joints at a rate of 1" in 10'.

Whenever traffic is subject to partial width removals or overlays prior to full width completion, provide W8-11-48 signs (dual sign installation). Place signs as directed by the Engineer, incidental to Item 614 Maintaining Traffic.

#### Contractor's Equipment-Operation and Storage

Vehicles and equipment must always move with, and not across or against the flow of traffic. Vehicles and other equipment must not park or stop except within designated work areas; and must not enter and leave work areas in a manner which will be hazardous to, or interfere with the normal traffic flow. Personal vehicles are not be permitted to park within the right-of-way except in specific areas designated by the Engineer.

Do not store or park equipment, vehicles and materials within 35' of the traveled way unless located 6' feet behind barrier and protected with at least a 150' length of approaching barrier.

All work vehicles and equipment entering the work zone more than once a day must be equipped with at least one flashing, rotating, or oscillating amber light that is visible in all directions of traffic for at least one quarter of a mile, day or night.

#### **Maintenance of Traffic Control Zones**

The Contractor shall be responsible to maintain the signs, drums and temporary pavement markings at the locations detailed in the plans or specified in the standard drawings. When the Contractor is notified of deficiencies he shall correct the deficiencies as soon as possible, preferably within 12 hours and no later than 24 hours. If any noted deficiencies are not corrected within 24 hours the Engineer shall deduct one day pay for Item 614 Maintaining Traffic, not as a penalty but as road user costs. The Contractor shall be subject to these road user costs for each and every day that these provisions are not met. All costs for maintaining the work zones as described above shall be included under Item 614 Maintaining Traffic.

#### Suspension of Work

If the Contractor fails to comply with the provisions for traffic control as set forth in these plans or with provisions of the OMUTCD, the Engineer shall suspend work until the Contractor complies with the necessary requirements.

#### **Construction Traffic**

All construction traffic shall use acceptable truck routes to access the construction area. Use of local residential streets is strictly prohibited unless allowed in writing by the local enforcement authority.

#### <u>Signage</u>

Advance warning sign groups as per standard drawings MT-95.30, MT-98.12, MT-98.13, MT-98.14, MT-98.15, MT-98.16, MT-98.17, and MT-98.18 shall be installed. Payment for these signs shall be under Item 614 Maintaining Traffic.

#### <u>Item 614 Asphalt Concrete for Maintaining Traffic, As Per Plan A</u>

Use this item to provide temporary asphalt ramps for transverse joints butting into existing pavement, after placing intermediate course but before placing surface course. Place temporary ramps at the rate of 1" per 10'. Remove temporary asphalt ramps as part of this item.

#### <u>Item 614 Asphalt Concrete for Maintaining Traffic, As Per Plan B</u>

Use this item as directed by the Engineer to patch existing planed surfaces which deteriorate under traffic. The Contractor has the option to remove this material, incidental to this item, provided it does not interfere with the placement of subsequent courses of asphalt concrete.

#### **Item 614 Work Zone Pavement Markings**

The following estimated quantities have been carried to the general summary, to be used as directed by the Engineer, to place work zone pavement markings after the Contractor has removed the wearing course, after placement of each intermediate course and after the surface course has been placed.

Apply temporary lane line markings at a width of 6".

#### Permanent Pavement Markings

After placing the surface course, the Contractor may place permanent pavement markings at locations shown in the typical sections and the traffic control sheets instead of placing work zone pavement markings, which shall be non-performed at these locations.

#### **Worksite Traffic Supervisor**

Subject to approval of the Engineer, the Contractor shall employ and identify (someone other than the superintendent) a certified Worksite Traffic Supervisor (WTS) before starting work in the field. The WTS may be certified from one of the following organizations:

- 1. American Traffic Safety Service Association (ATSSA), Phone: 1-800-272-8772, certified Traffic Control Supervisor (TCS).
- 2. National Highway Institute, Design and Operation of Work Zone Traffic Control, Phone: 1-703-235-0528.
- 3. The Ohio Contractors Association, Traffic Control Supervisor (OCA/TCS) Work Zone Class, only if taken after May 5, 2004, Phone: 1-614-599-7915.
- 4. Ohio Laborers Training, Traffic Control Supervisors Class, Phone: 1-740-599-7915.

A copy of each WTSS certification and 24-hour contact information shall be provided to the engineer at the preconstruction conference. If the designated WTS will not be available full time (24/7) the contractor may designate an alternate WTS to be available when the primary is off duty. Each WTS shall have a current WTS certification (with an expiration date no more than 5 years from the date of issue) from any of the approved organizations.

The WTS position has the responsibility of monitoring traffic control deficiencies for the entire work zone. The duties of the WTS are as follows:

- Be available on a 24-hour per day basis, and be able to be on site for all emergency traffic control needs within one hour of notification by police or project staff and be prepared to effect corrective measures immediately on existing work zone traffic control devices.
- 2. Attend preconstruction meeting and all project meetings where traffic control management is discussed.
- 3. Be available for meetings or discussions with the Engineer upon request or within 36 hours.
- 4. Be aware of, and coordinate if necessary, all traffic control operations, including those of subcontractors and suppliers.
- Coordinate project activities with all Law Enforcement Officers (LEOS). A WTS shall also be the main contact person with the LEOS while they are on the project.
- 6. Coordinate meetings with ODOT personnel, LEOS and other applicable entities before each plan phase switch to discuss work zone traffic control.
- 7. Ensure compliance with the contract documents for signs, barricades, temporary concrete barrier, pavement markings, portable message signs, and other traffic control devices on a daily basis; and facilitate any corrective action necessary.
- 8. Notify the Contractor of the need for cleaning and maintenance of all traffic control devices, including the covering and removal of inapplicable signs.
- 9. Inspect, evaluate, propose necessary modifications to, and document the effectiveness of, the traffic control devices and/or traffic operations on a daily basis (7 days a week). In addition, a weekly night inspection of the work zone setup for daytime work operations; and one daytime inspection per week for nighttime projects. This shall include (but not be limited to) documentation on the following project events:
  - a) Initial traffic control setup (day and night review).
  - b) Daily traffic control setup and removal.
  - c) When construction staging causes a change in the traffic control setup.
  - Crash occurrences within the construction area.

- e) Removal of traffic control devices at the end of a phase or project.
- f) All other emergency traffic control needs.
- 10. Complete the Department approved long term inspection form (CA-D-8) after each inspection as required in # 9 and submit it to the engineer the following work day. These reports shall include a checklist of all traffic control maintenance items to be reviewed. A copy of the form will be provided at the pre-construction meeting. Any deficiencies observed shall be noted, along with recommended corrective actions and the dates by which such corrections were, or will be, completed. A copy of this document can be found in the department of transportation construction inspection forms manual dated 10/15/06 or current revision.
- 11. Verify that all flagging operations are being conducted per The Ohio Manual of Uniform Traffic Control Devices.
- 12. Have copies of the ODOT Temporary Traffic Control Manual and applicable standards and specifications included in the contract documents available at all times on the project.

The Department will not pay the unit price bid for the WTS for any day on which the contractor fails to perform the duties set forth above. Should the Contractor's failure to perform any of the duties described above result in a maintenance of traffic safety issue, the department will deduct the prorated daily amount for Item 614 Mainting Traffic from the Contractor's next scheduled estimate.

If three or more failures to perform the duties set forth above occur, the WTS shall be immediately removed from the work in accordance with C&MS 108.05.

#### <u>Item 614 Portable Changeable Message Sign, As Per Plan</u>

Furnish, install, maintain and remove, when no longer needed, a changeable message sign, on site, for the duration of the project. The sign shall be of a type shown on a list of approved PCMS units maintained by the Director (Office of Materials Management). This list is available on the ODOT website at http://www.dot.state.oh.us/testlab/applists/misc/pcms.htm. Furnish only units with a legibility distance in excess of 1250'.

Furnish a PCMS that is trailer-mounted and equipped with a functional dimming mechanism, to dim the sign during darkness, and a tamper and vandal proof enclosure. Each sign shall be provided with appropriate training and operation instructions to enable on-site personnel to operate and troubleshoot the unit. The sign shall also be capable of being powered by an electrical service drop from a local utility company. PCMS trailers should be delineated on a permanent basis by affixing retroreflective material, in a continuous line on the face of the trailer as seen by oncoming road users.

Placement, operation, maintenance and all activation of the signs by the Contractor shall be as directed by the Engineer. The PCMS shall be located in a highly visible position yet protected from traffic. The Contractor shall, at the direction of the Engineer, relocate the PCMS to improve visibility or accommodate changed conditions. When not in use, the PCMS shall be turned off. Additionally, when not in use for extended periods of time, the PCMS shall be turned, facing away from all traffic, and shall display one or more high-intensity yellow reflective sheeting surfaces of 9-inch by 15-inch minimum size facing traffic.

The Engineer shall be provided access to each sign unit and shall be provided with appropriate training and operation instructions to enable ODOT personnel to operate and troubleshoot the unit, and to revise sign messages, if necessary.

All messages to be displayed on the sign will be provided by the Engineer. A list of all required pre-programmed messages will be given to the Contractor at the project preconstruction conference. The sign shall have the capability to store up to 99 messages. Message memory or pre-programmed displays shall not be lost as a result of power failures to the on-board computer. The sign legend shall be capable of being changed in the field. Three-line presentation formats with up to

six message phases shall be supported. PCMS format shall permit the complete message for each phase to be read at least once.

The PCMS shall contain an accurate clock and programming logic which will allow the sign to be activated, deactivated or messages changed automatically at different times of the day for different days of the week.

The PCMS unit shall be maintained in good working order by the Contractor in accordance with the provisions of CMS 614.07. The Contractor shall, prior to activating the unit, make arrangements, with an authorized service agent for the PCMS, to assure prompt service in the event of failure. Any failure shall not result in the sign being out of service for more than 12 hours, including weekends. Failure to comply may result in an order to stop work and open all traffic lanes and/or in the Department taking appropriate action to safely control traffic. The entire cost to control traffic, accrued by the Department due to the Contractor's noncompliance, will be deducted from moneys due, or to become due the Contractor on his contract.

The Contractor shall be responsible for 24-hour-per-day operation and maintenance of these signs on the project for the duration of the phases when the plan requires their use.

At the direction of the Engineer, the PCMS may be removed for periods or times when not in use. No payment will be made for these times (ex. winter months).

Payment for the above described item shall be at the contract unit price. Payment shall include all labor, materials, equipment, fuels, lubricating oils, software, hardware and incidentals to perform the above described work.

#### **Application for Use of Weighted Channelizer (Grabber Cone)**

The weighted channelizer may be used on this project as described below:

The weighted channelizer shall be predominantly orange in color and shall be made of a lightweight, flexible, and deformable material. They shall be at least 42 inches in height with a weighted base. They may have a "handle" or lifting device which extends above the 42" minimum height.

The markings on the weighted channelizer shall be horizontal, circumferential, alternating orange and white retroreflective stripes 6 inches wide. Each weighted channelizer shall have a minimum of two orange and two white stripes. Any nonretroreflective spaces between the horizontal orange and white stripes shall not exceed 2 inches wide. The weighted channelizer shall have a 4 inch minimum width, regardless of orientation.

Use of weighted channelizers on ODOT-maintained highway shall be as follows:

For short-term work zones on I-271 express lanes and slip ramps.

Use of weighted channelizers on freeways and multilane highways shall be limited to short-term operation, generally twelve hours or less, for either day or night. Upon completion of work within the above noted time period, the weighted channelizers shall be removed. The weighted channelizers may again be placed on the highway when the work is to resume on the following day or night. Any lane closure using channelization devices, expected to remain for more than twelve hours, shall require the use of drums or barriers.

When used at night weighted channelizers shall only be placed in the "tangent area". The "tangent area" is defined as the area after the transition taper where the work takes place. Drums shall be used in the transition tapers for night operations. Maximum spacing of the weighted channelizers shall be 40 feet.

Steps should be taken to ensure that the weighted channelizers will not be blown over or displaced by wind or moving traffic. Ballasts should not present a hazard if the weighted channelizers are inadvertently struck, nor should they affect the visibility of the weighted channelizers. All ballasts used should be in accordance with the manufacturer's specifications.

#### **Holiday Closures**

No work shall be performed and all existing lanes shall be open to traffic during the following designated holidays or events: Easter, Memorial Day, Fourth of July, and Labor Day.

The period of time that the lanes are to be open depends on the day of the week on which the holiday or event falls. The following schedule shall be used to determine this period:

<u>Day</u>	Times All Lanes Must Be Open
Sunday	12 noon Friday Through 6 AM Monday
Monday	12 noon Friday Through 6 AM Tuesday
Tuesday	12 noon Monday Through 6 AM Wednesday
Wednesday	12 noon Tuesday Through 6 AM Thursday
Thursday	12 noon Wednesday Through 6 AM Friday
Friday	12 noon Thursday Through 12 midnight Sunday
Saturday	12 noon Friday Through 12 midnight Sunday

No extensions of time shall be granted for delays in material deliveries, unless such delays are industry-wide, or for labor strikes, unless such strikes are area-wide.

Should the Contractor fail to meet any of these requirements, the Contractor shall be assessed road user costs in accordance with CMS 108.07.

#### Road User Costs-Short Term Lane Closures

Short term lane closures are those which are permitted by the "Schedule of Through Lanes to Be Maintained" table. These times shall not be revised without prior approval from the District 12 Work Zone Traffic Control Engineer. Short term road user costs shall also be assessed when a ramp closure is violated. If short term lane closures are in place outside the specified times, road user costs in the amount of \$50.00 per minute shall be assessed to the Contractor for each minute the lane remains closed.

Short term lane closures shall only be implemented when work is being continuously performed. The closure shall be removed as soon as possible after work has stopped.

#### <u>Item 614 Maintaining Traffic (Alternate Methods)</u>

If the Contractor so elects, he may submit detailed traffic control plans including written descriptions of the alternate methods for the maintenance of traffic, provided the intent of the provisions herein is followed without subsequent additional inconvenience to the traveling public. No alternate plan shall be placed into effect until prior approval has been granted in writing, by the Director.

All items proposed for use under these provisions must comply with current Department standards for their use when the plan detail, standard construction drawing, or other bid document governing their use is not provided as part of the bid package.

#### Covering of Ground-Mounted Signs--General

When required by other items or incidentally to Item 614 Maintaining Traffic, cover existing ground-mounted signs with plywood or OSB blanks (1/2" minimum thickness) covering 80% of the sign area and all of the sign legend. The use of low quality materials such as duct tape and black plastic is not permitted.

#### <u>Item 614 Work Zone Increased Penalties Sign (R11-H5a)</u>

R11-H5a-48 signs shall be furnished, erected, and maintained in good condition and/or replaced as necessary and subsequently removed by the Contractor. Signs shall be mounted at the appropriate offsets and elevations as prescribed by the Ohio Manual of Uniform Traffic Control Devices. They shall be maintained on supports meeting current safety criteria.

Uncover or place Work Increased Penalties signs once the pavement surface is under construction for overlay removal, pavement repair, and placement of intermediate and surface courses. Uncover or place Increased Penalties signs no more than four hours before the actual start of work. Do not cover signs when lanes are re-opened to traffic subject to the provisions of the "Schedule of Through Lanes To Be Maintained." Once implemented, the penalties will be increased for the duration of the project until all work requiring lane closures is complete.

#### Once the mainline surface course is complete in each direction, cover or remove Work Zone Speed Limit signs IMMEDIATELY.

The signs shall be dual mounted. The first sign shall be placed between the ROAD WORK AHEAD (W20-1) sign and the next sign in the sequence. Signs shall be erected on each entrance ramp and every 2 miles (3 kilometers) through the construction work limits.

The Contractor may use signs and supports in used, but good condition provided the signs meet current ODOT specifications. Sign faces shall be reflectorized with Type G sheeting complying with the requirements of CMS 730.19.

Work Zone Increased Penalties signs and supports will be measured as the number of sign installations, including the sign and necessary supports. If a sign and support combination is removed and re-erected at another location as directed by the Engineer, it shall be considered another unit.

Payment for accepted quantities, complete, in place will be made at the contract unit price. Payment shall be full compensation for all materials, labor, incidentals and equipment for furnishing, erecting, maintaining, covering during suspension of work, and removal of the sign and support.

#### <u>Item 614 Maintaining Traffic – Surface Condition Signs</u>

Erect a "Grooved Pavement" sign (W8-H15) 250' in advance of any section of roadway where traffic must travel on a planed surface. Ensure these signs are in place before opening the roadway to traffic. Erect these signs on each entrance ramp and at intersections of through routes to warn traffic of this surface condition. Payment shall be made under the lump sum for Item 614 Maintaining Traffic.

#### **Subsummary of Quantities for Maintenance of Traffic**

The following quantities are carried to the general summary to complete these items of work.

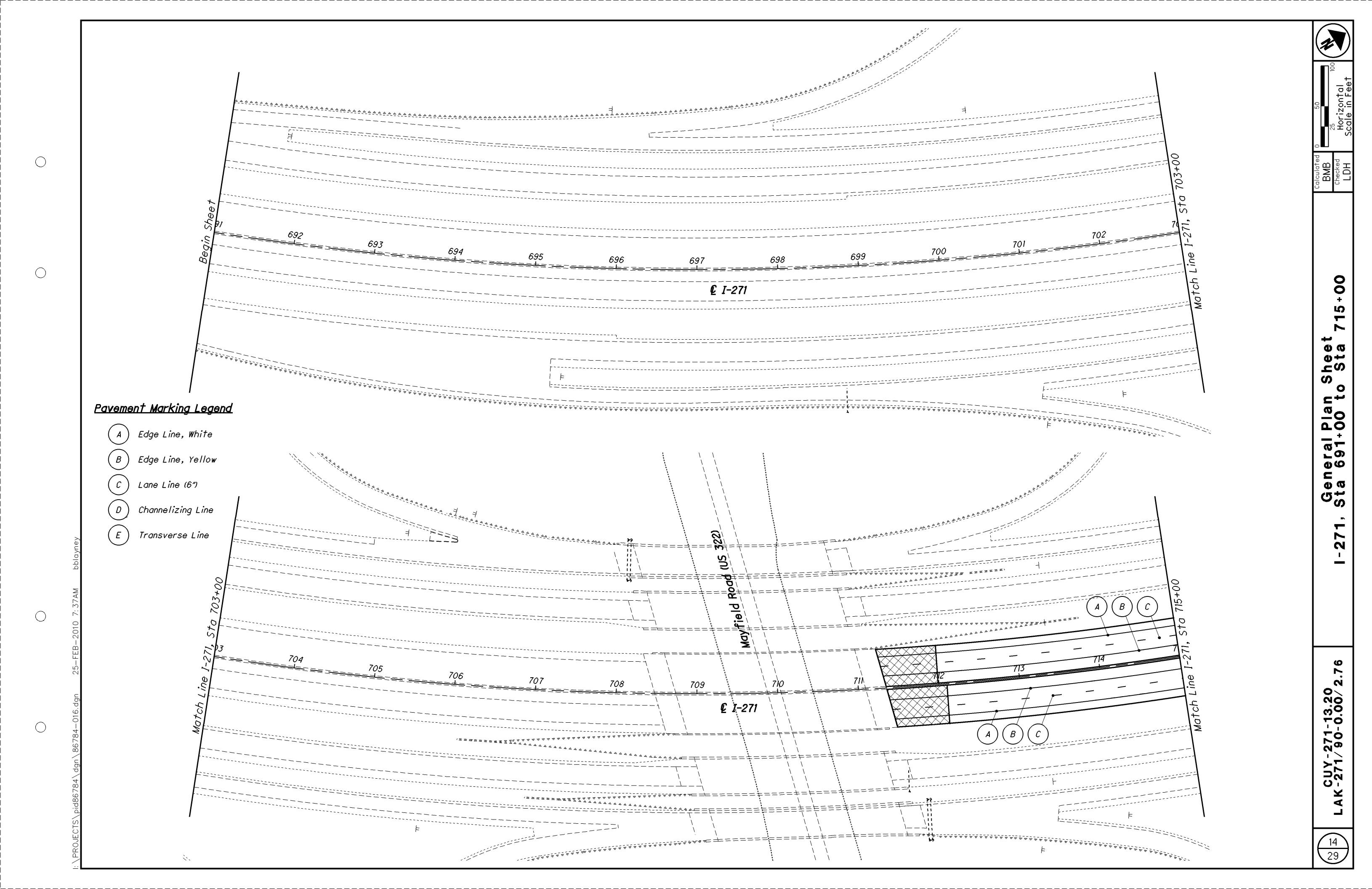
Item 614 Work Zone Lane Line, Class I, As Per Plan Item 614 Work Zone Edge Line, Class I Item 614 Work Zone Channelizing Line, Class I	40 Miles 80 Miles 8200 Feet
Item 614 Asphalt Concrete for Maintaining Traffic, As Per Plan A Item 614 Asphalt Concrete for Maintaining Traffic, As Per Plan B	<u>25 Cu Yds</u> <u>25 Cu Yds</u>
Item 614 Work Zone Increased Penalties Sign	<u>24 Each</u>
Item 614 Portable Changeable Message Sign, As Per Plan Item 614 Worksite Traffic Supervisor	240 Days 4 Months

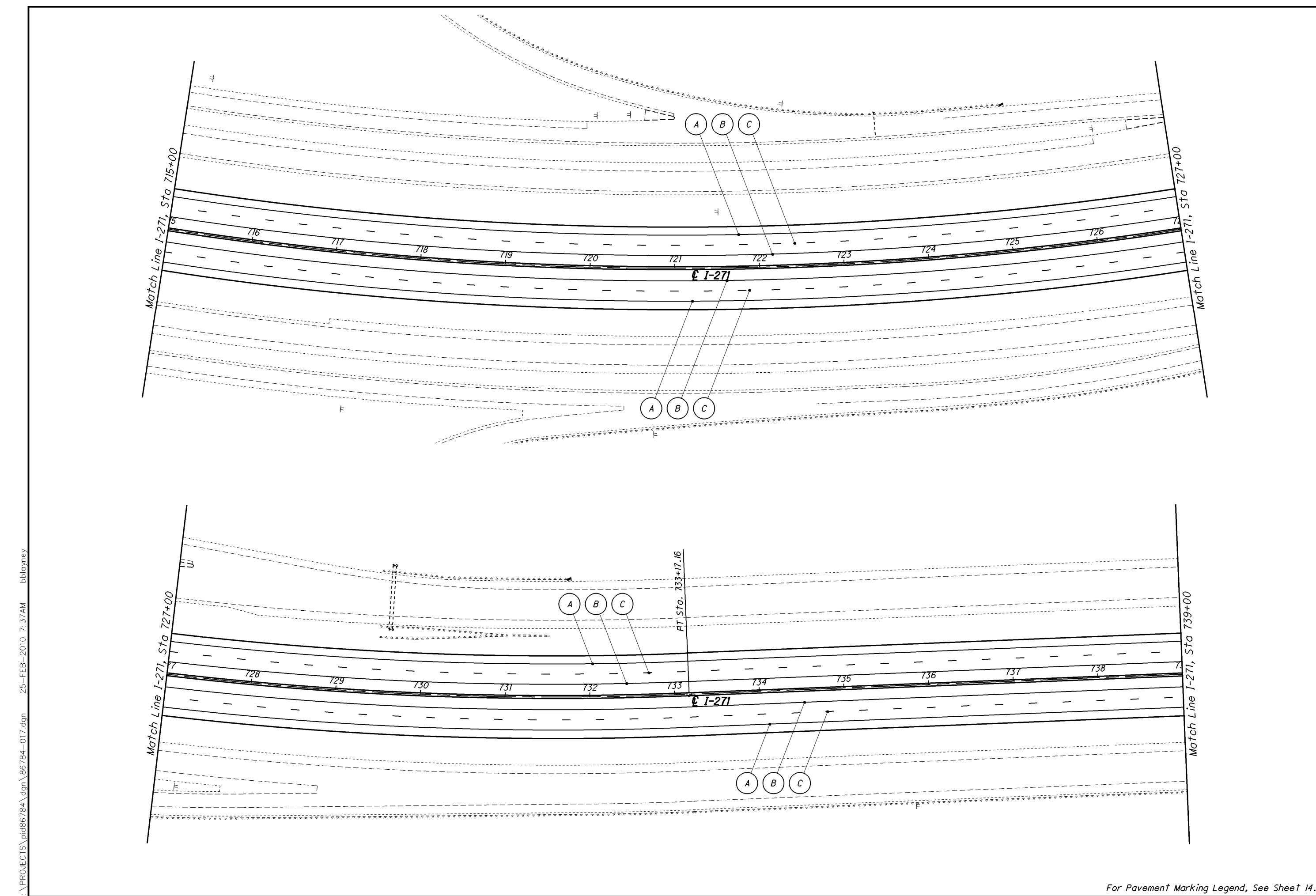
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	5										604	34501	5		MANHOLE ADJUSTED TO GRADE, AS PER PLAN	6
00											SPECIAL	60450000	5,000		MISCELLANEOUS METAL	5
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	3600										251	01001	3,600		PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN B	6
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			36,307								407	10000	<i>36,307</i>	GALLON	TACK COAT	
			18,153								407	14000	18,153		TACK COAT FOR INTERMEDIATE COURSE	
			15,128								442	10001	15,128		ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN	5
			10,085 209								446 617	46010 10100	10,085 209		ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG70-22M  COMPACTED AGGREGATE	
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				12.86							646	10101	12.86	MILE	LANE LINE, AS PER PLAN	6
				2,718						1	646	10300	2,718		CHANNELIZING LINE	
															MAINTENANCE OF TRAFFIC	
		4									614	11500	4	MONTH	WORKSITE TRAFFIC SUPERVISOR	
		24									614	12484	24		WORK ZONE INCREASED PENALTIES SIGN	
		25									614	13001	<i>25</i>		ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN A	8
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		240									614	18401	240	DAYS	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	9
-+		40									614	20001	40		WORK ZONE LANE LINE, CLASS I, AS PER PLAN	8
		80									614	22000	80	MILE	WORK ZONE EDGE LINE, CLASS I	
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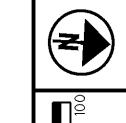
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			Feet	Feet	Feet	Feet	Sq Yd	Sq Yd	Gallon	Cu Yd	Gallon	Cu Yd	Cu Yd		Sq Yd		
		<u>I-271 Express Lanes Northbound</u>					,	,							,		
		Begin at Bridge CUY-271-1315 (US 322/Mayfield) 711+42.00 758+63.72	4721.72	47.25	47.25	47.25	24,789	24,789	2,479	689	1,239	1,033	15		336		
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		22+80.00 39+97.82 40+00.00 57+50.00	1750.00	47.25	47.25	47.25	9,019 9,188	9,019 9,188	919	251 255	451	383	5		328	Station Equation	
		57+50.00 84+62.33	2712.33	47.25	47.25	47.25	14,240	14,240	1,424	396	712	593	8			•	
		84+48.97 85+30.00 85+30.00 86+30.00	81.03 100.00	47.25 47.25	47.25 62.00	47.25 54.63	<i>425</i> <i>607</i>	425 607	43 61	12 17	21 30	18 25	1			Station Equation	
		86+30.00 90+00.00	370.00	62.00	62.00	62.00	2,549	2,549	255	71	127	106	1				
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		0+00.20 14+00.00	1399.80	47.25	47.25	47.25	7,349	7,349	735	204	367	306	4		210	Station Equation	
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		101+01.22 123+00.00	2198.78	47.25	47.25	47.25	11,544	11,544	1,154	321	577	481	7			Station Equation	
		123+00.00 154+90.00	3190.00	47.25	47.25	47.25	16,748	16,748	1,675	465	837	698	10		321		
		End Work at 154+90.00															
		<u>I-271 Express Lanes Southbound</u>															
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		15+00.00 14+00.00	100.00	62.00	62.00	62.00	689	689	69	19	34	29	1				
		14+00.00 2+00.00	1200.00	70.00	47.25	58.63	7,817	7,817	782	217	391	326	4				
		2+00.00	199.80 2779.34	47.25 47.25	47.25 47.25	47.25 47.25	1,049 14,592	1,049 14,592	105 1,459	29 405	52 730	608	9		256		
		106+79.00 99+40.00	739.00	85.00	85.00	85.00	6,979	6,979	698	194	349	291	2				
		99+40.00 87+72.00	1168.00	70.00	47.25	58.63	7,608	7,608	761	211	380	317	4				
		87+72.00 84+48.97 84+62.33 40+00.00	323.03 4462.33	47.25 47.25	47.25 47.25	47.25 47.25	1,696 23,427	1,696 23,427	170 2,343	47 651	85 1,171	71 976	14			Station Equation	
		39+97.82 22+80.00	1717.82	47.25	47.25	47.25	9,019	9,019	902	251	451	376	5		327	Station Equation	
		Suspend Bridge CUY-271-1449 (Wilson Mills)	2070.00	47.05	47.05	47.05	10 700	10 700	1 071	207	C7C	146			707		
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		Emergency Vehicle Crossings					1,096	1,096	110	30	55	46					
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		Totals Carried to Gene	eral Summar	y:				363,069	36,307	10,085	18,153	15,128	209		3,154		

				646									621					614	620	620	LED )
			   E	e//ow	White	er Plan	Line	ne (24")	мс	17 "ONLY"	Φ		nt Marker ed	(Ә.	' Red)	/ Red)		or, Type	lineator	r, (White)	CALCULAT
REF.	SHEET NO.	STATION TO STATION	5 2 3	ine, Y	ine, I	, AS /	lizing	se Li	e Arro	уете	op Lin		eme nov	ı (Whit	hite /	MOII.		flect	of De	Delineator, -Mounted (WI	
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			Feet	Feet	Feet	Feet	Feet	Feet	Each	Each	Feet		Each	Each	Each	Each		Each	Each	Each	S O
		<u>I-271 Express Lanes Northbound</u>																			an
		711+35.40 758+63.11	4,728	4,728	4,728	4,728								39							] =
		0+00.00 39+97.93	3,998	3,998	3,998	3,998								33							S
		40+00.00       84+62.16         84+48.97       88+00.00	4,462 351	4,462 351	4,462 351	4,462 351								<i>37</i>	0						<b>–</b>
		88+00.00 90+66.89	267	267	267	534								4							፭
		90+66.89 99+90.18	923	923	923	923	1,847							8	46						] ×
		99+90.18 134+58.54	3,468	<i>3,468</i>	<i>3,468</i>	<i>3,468</i>								<i>29</i>				_			ш
	+	0+00.20 7+85.20 7+85.42 100+97.66	785 9,312	785 9,312	785 9,312	785 9,312								78	0		1	1			0
		101+01.22 154+82.00	5,381	5,381	5,381	5,381								45							<b>–</b>
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																					-2
		<u>I-271 Express Lanes Southbound</u>																			] <b>-</b>
		711+24.08 758+63.71	4,740	4,740	4,740	4,740								39	0						] <u> </u>
		0+00.00 39+97.83	3,998	3,998	3,998	3,998 4 463								33 37						<u> </u>	_ დ
		40+00.00       84+62.16         84+48.97       95+40.00	4,462 1,091	4,462 1,091	4,462 1,091	4,462 1,091								9 9	0						<b>∃</b>
		95+40.00 98+08.58	269	269	269	537								4							<u> </u>
		98+08.58 99+72.18	164	164	327	164	164							1							]
		99+72.18 106+80.18 134+58.34	708 2,778	1,416 2,778	708 2,778	708	708							6 23	18		_	_		<u> </u>	م ک
		0+00.20 7+85.20	785	785	785	2,778 785								23							<b>3</b>
		7+85.42 100+97.66	9,312	9,312	9,312	9,312															S
		101+01.22 154+98.81	5,398	5,398	5,398	5,398															၂
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a yn e		Project Wide											500					674	85	170	<b>}</b> ⊢
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		SUBTOTALS		68,087	67,543	67 <b>,</b> 915	2,718						500	437	64			674	85	170	13
<u>†</u>	<b>FOTALS</b>	CARRIED TO GENERAL SUMMAR	RY	25	.69	12.86	2,718						500		501			674	85	170	29

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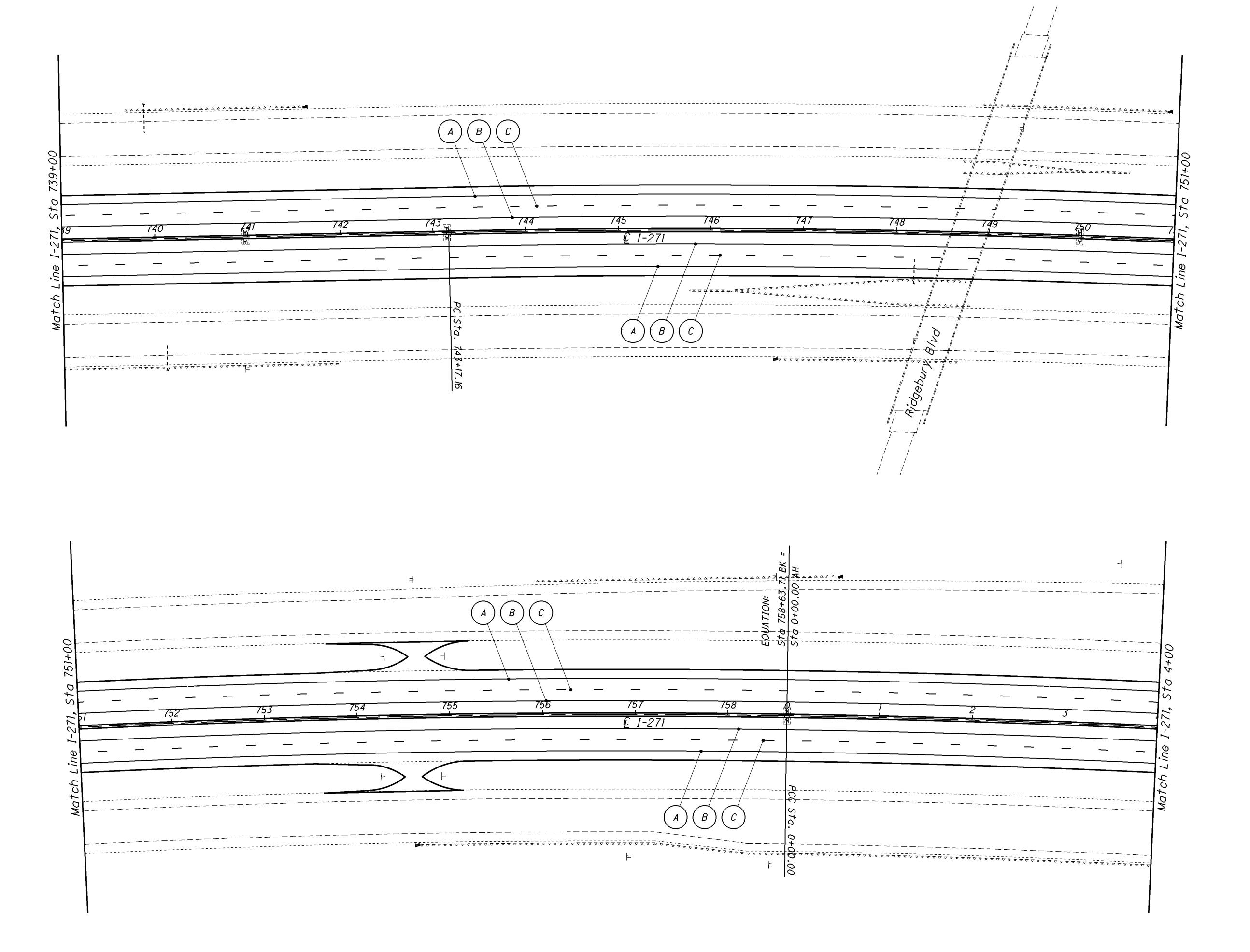


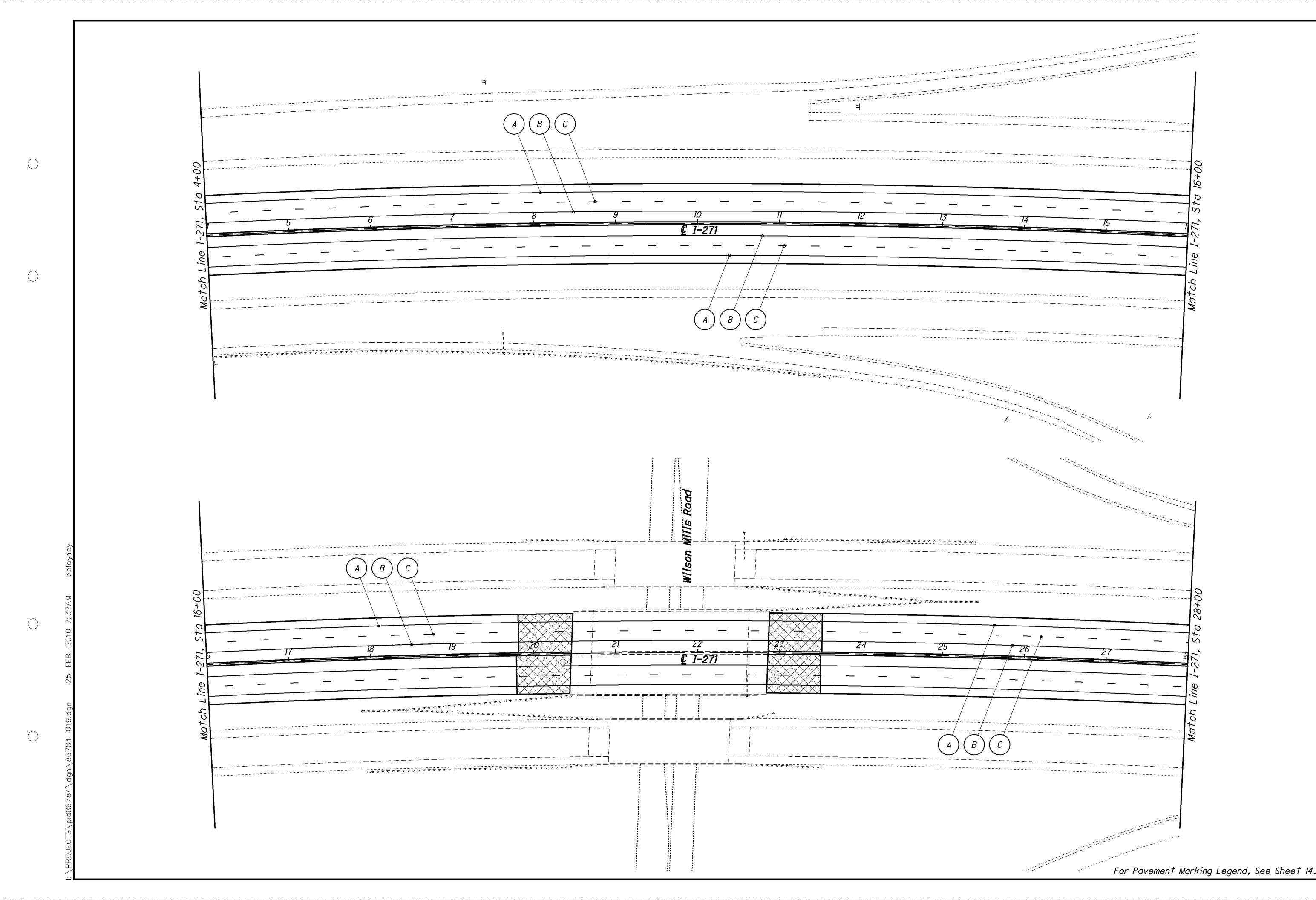


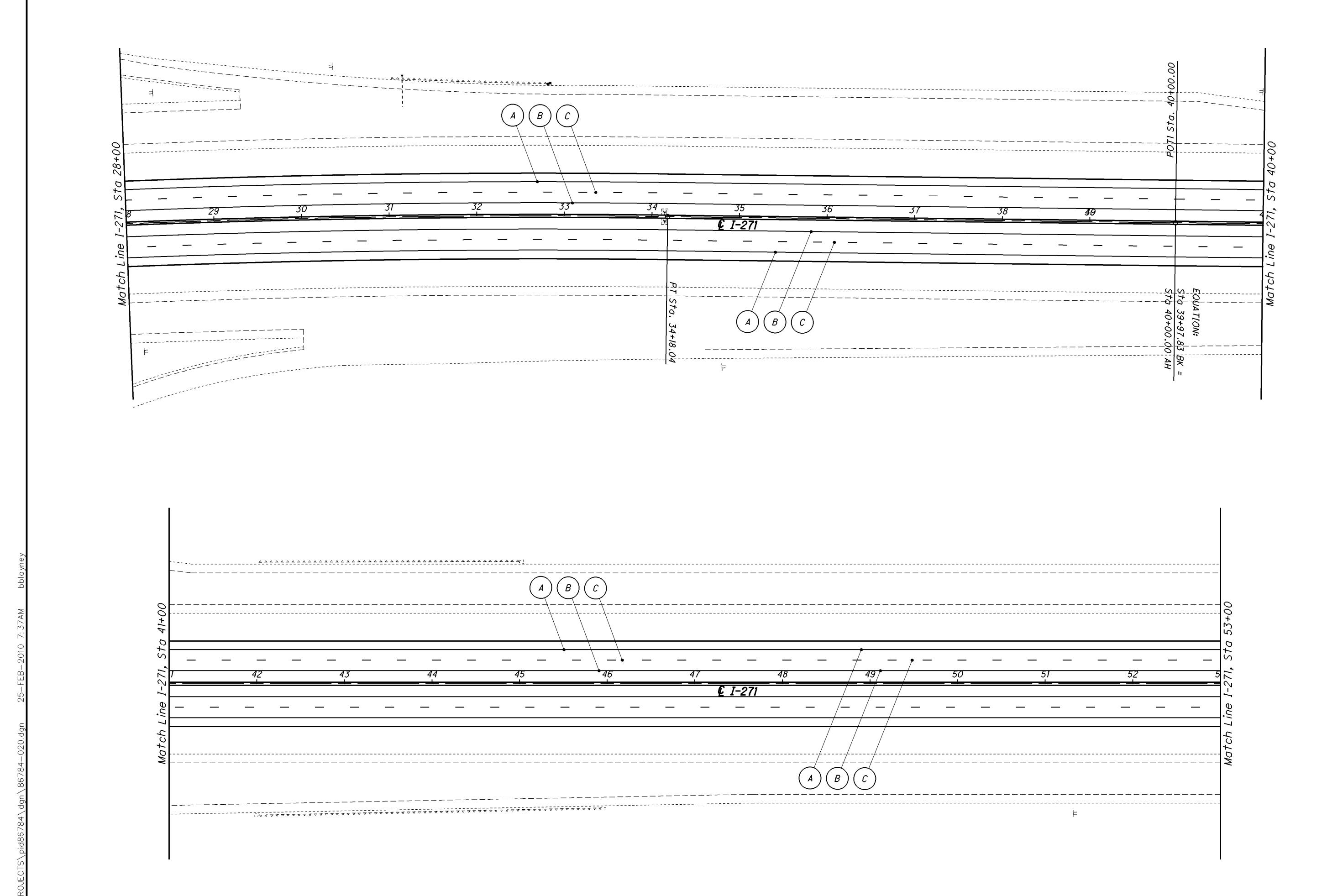


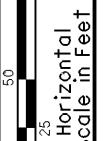
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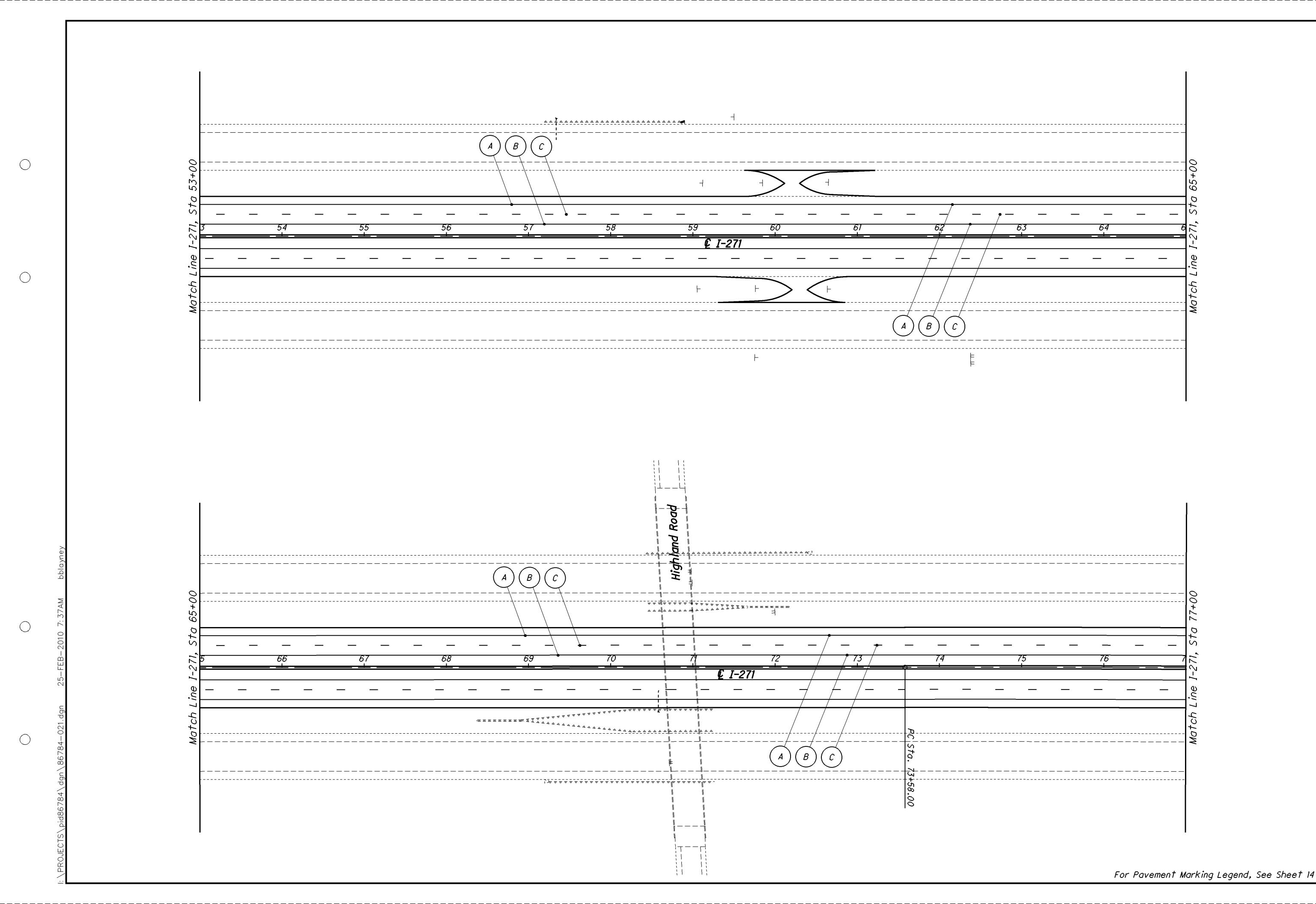


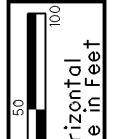




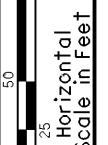




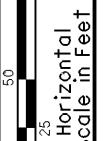


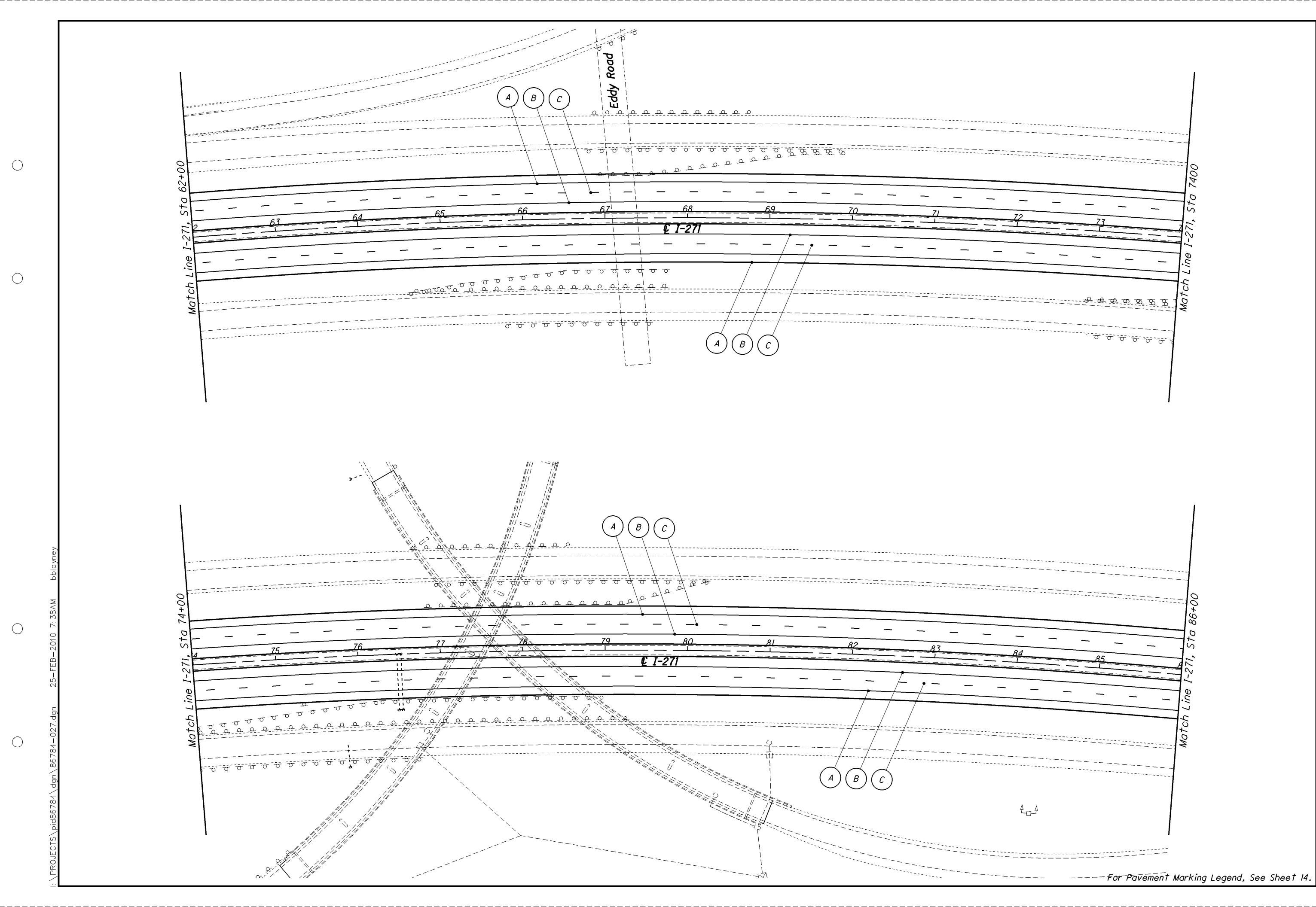






For Pavement Marking Legend, See Sheet 14.





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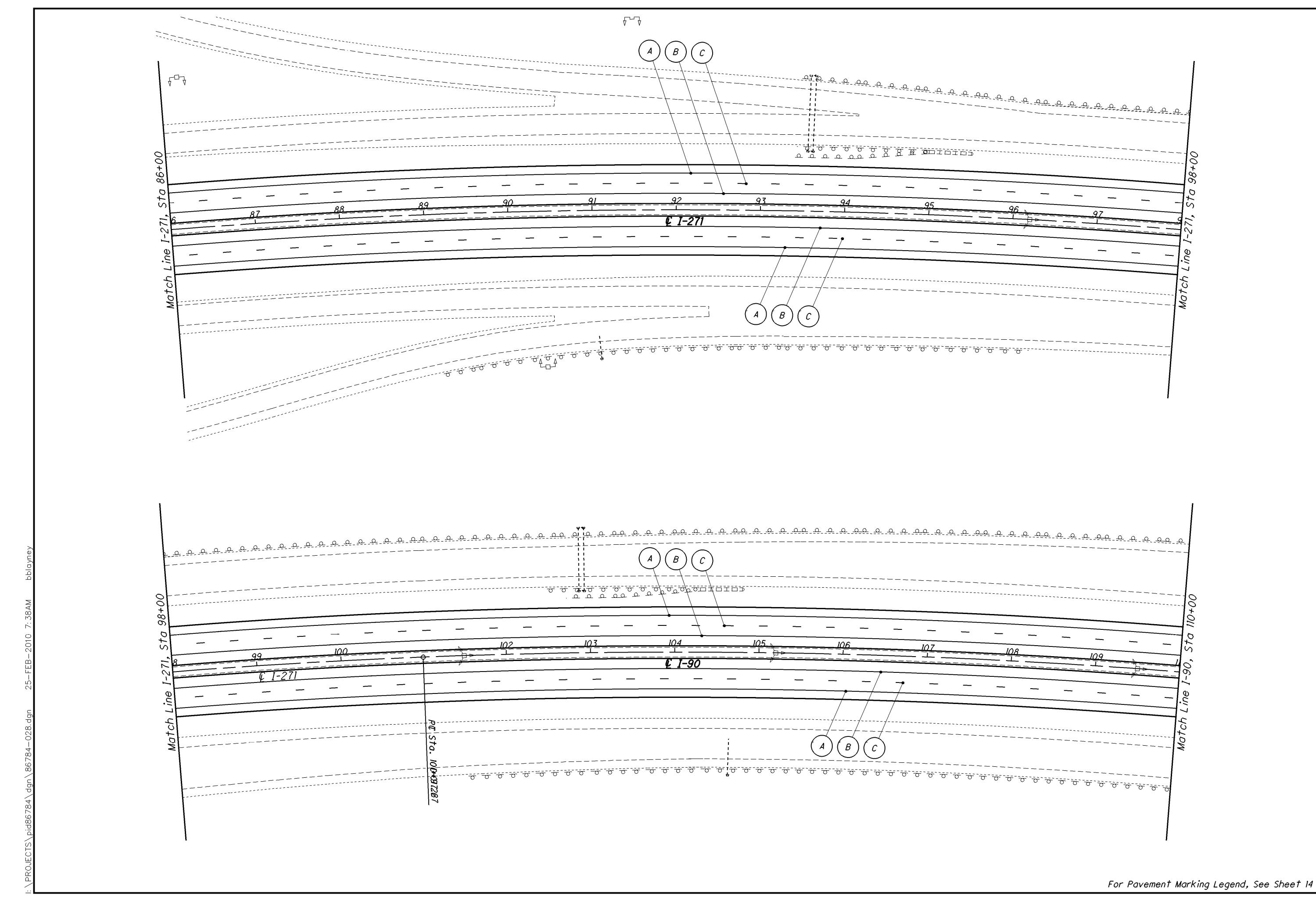
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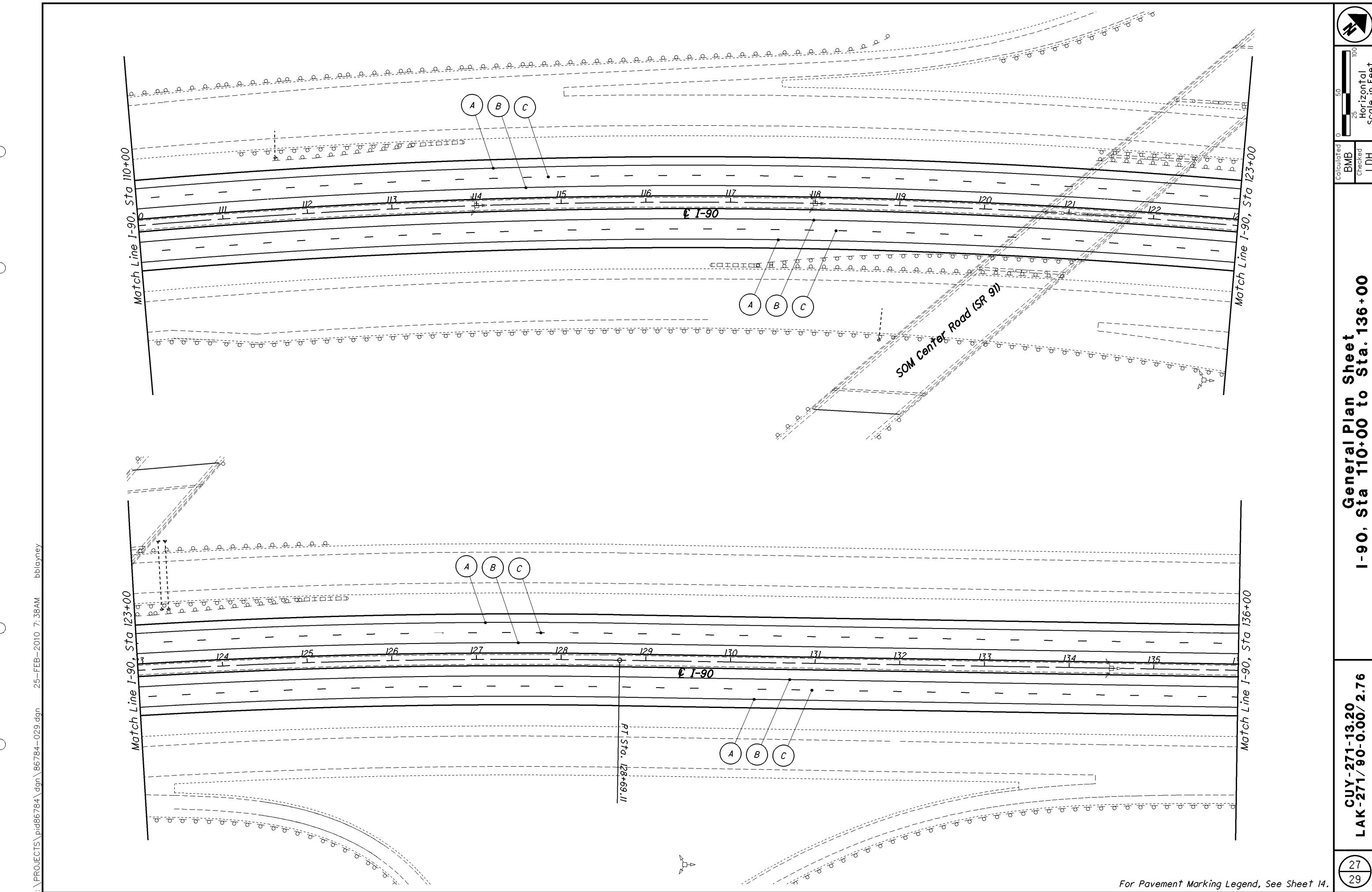
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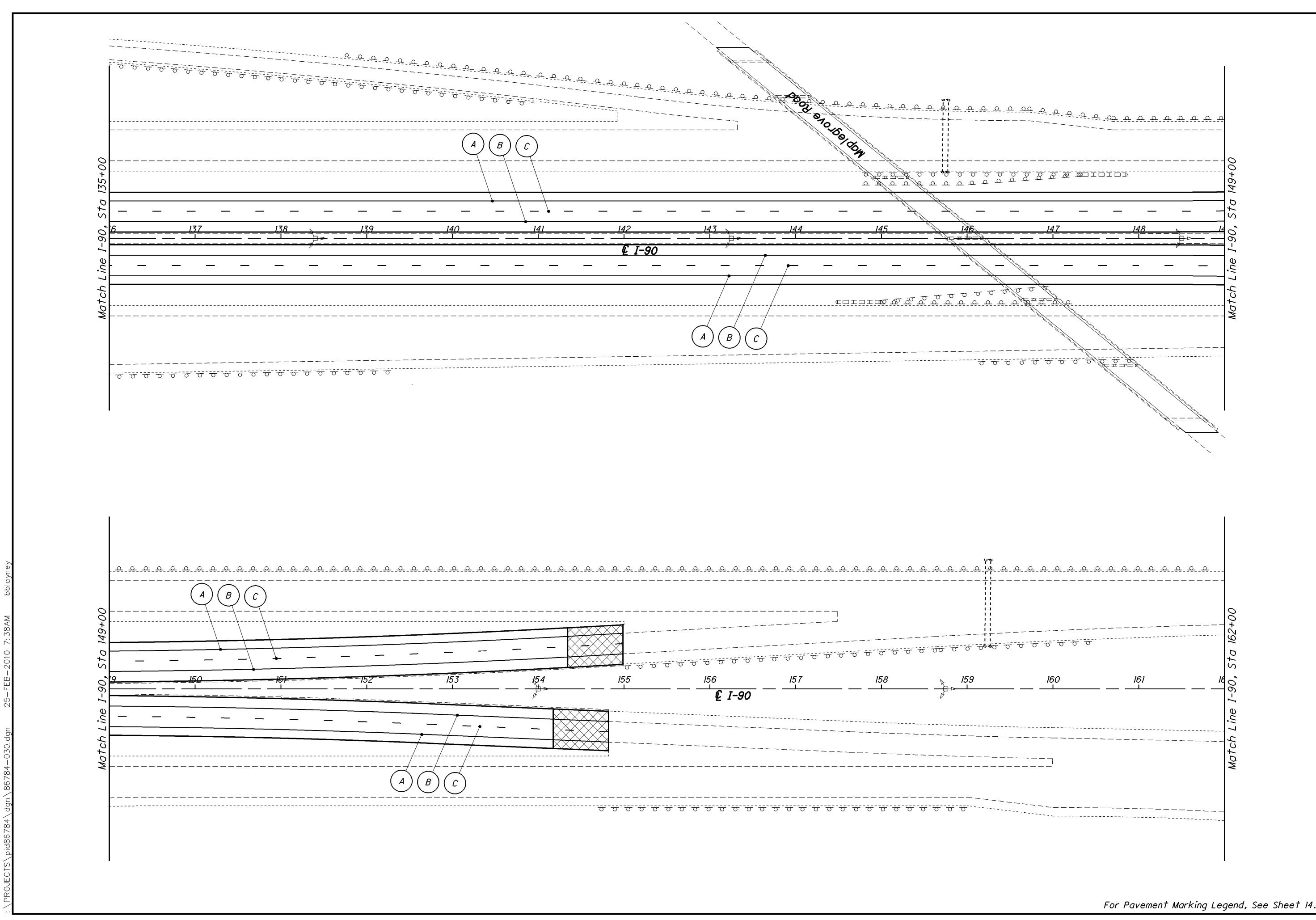


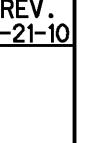
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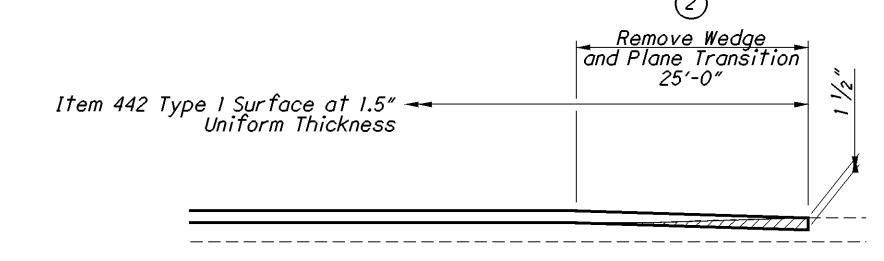
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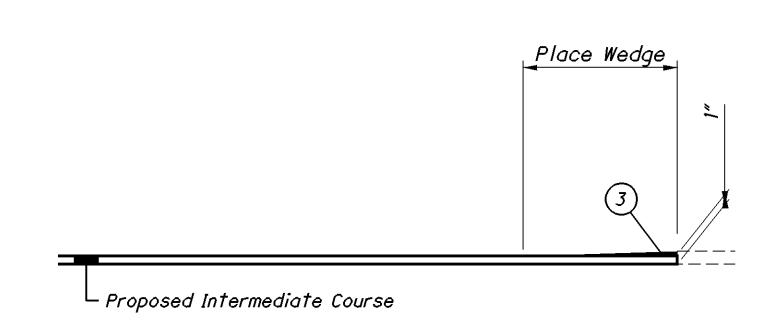




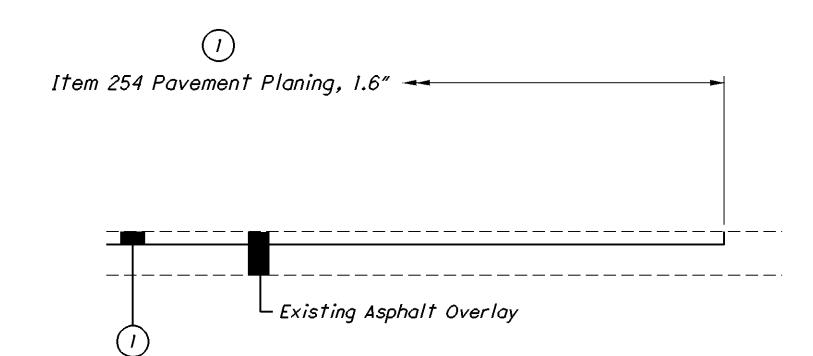




#### <u>Transition Details for Meeting Existing Pavements</u>



### <u>Transition Details for Meeting Existing Pavements</u> (Prior to Placement of Surface Course)



### <u>Transition Details for Meeting Existing Pavements</u> (Prior to Placement of Intermediate Course)

## <u>Legend--Proposed</u> Item 254 - Pavement Planing, Asphalt Concrete, 1.6" Item 254 - Pavement Planing, Asphalt Concrete (For Transitions) Item 614 - Asphalt Concrete for Maintaining Traffic, As Per Plan A

All permanent transitions designed a rate of 300:1 (25' per 1").

