

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-2-15.75
CITY OF CLEVELAND
CUYAHOGA COUNTY

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE RESURFACING OF SR-2 FROM THE MAIN AVE. BRIDGE TO IR-90 IN THE CITY OF CLEVELAND.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: N/A (MAINTENANCE PROJECT)
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: N/A (MAINTENANCE PROJECT)
NOTICE OF INTENT EARTH DISTURBED AREA: N/A (MAINTENANCE PROJECT)

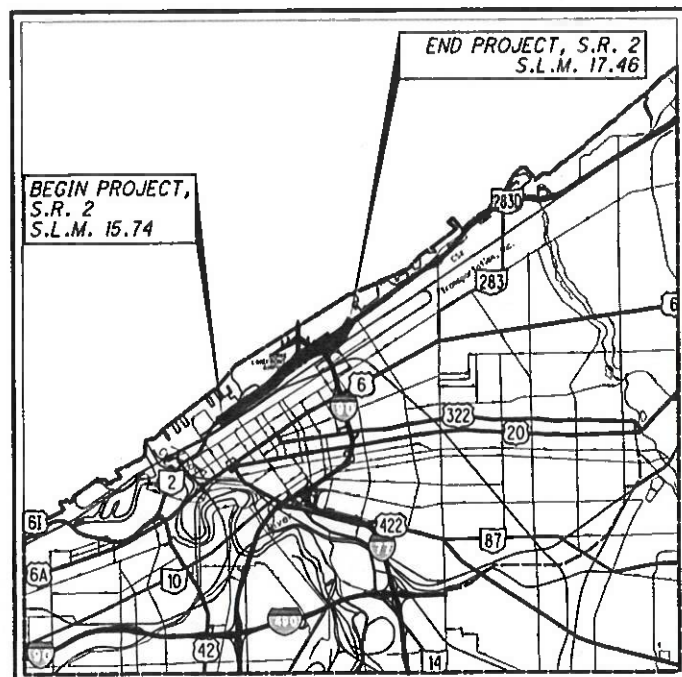
LIMITED ACCESS

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.

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES 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.



LOCATION MAP

LATITUDE: 41°30'27.62" LONGITUDE: -81°41'12"



PORTION TO BE IMPROVED	-----
INTERSTATE HIGHWAY	-----
FEDERAL ROUTES	-----
STATE ROUTES	-----
COUNTY & TOWNSHIP ROADS	-----
OTHER ROADS	-----

DESIGN DESIGNATION

	S.L.M. 15.75-15.78	S.L.M. 15.78-16.07	S.L.M. 16.07-16.12	S.L.M. 16.12-16.69	S.L.M. 16.69-16.85	S.L.M. 16.85-17.05	S.L.M. 17.05-17.47
CURRENT ADT (2020)	39,000	38,500	55,000	55,000	55,000	20,000	20,500
DESIGN YEAR ADT (2040)	59,000	57,500	82,500	84,500	83,000	23,000	27,500
DESIGN HOURLY VOLUME (2040)	7,100	6,900	9,900	8,400	8,300	2,300	3,300
DIRECTIONAL DISTRIBUTION	0.57	0.52	0.52	0.51	0.55	0.55	1.00
TRUCKS (24 HOUR B&C)	0.05	0.05	0.05	0.05	0.05	0.04	0.03
DESIGN SPEED	55 MPH	55 MPH	55 MPH	55 MPH	55 MPH	55 MPH	55 MPH
LEGAL SPEED	50 MPH	50 MPH	50 MPH	50 MPH	50 MPH	50 MPH	50 MPH
DESIGN FUNCTIONAL CLASSIFICATION:							
INTERSTATE							
NHS PROJECT	YES						

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig

OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

PLAN PREPARED BY:
ODOT DISTRICT 12
PLANNING & ENGINEERING
5500 TRANSPORTATION BLVD
GARFIELD HEIGHTS, OH 44125

ENGINEERS SEAL:

SIGNED: Drake Brauer
DATE: 12-6-19

INDEX OF SHEETS:

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STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	10-18-19	MT-95.30	7-19-19	TC-41.20	10-18-13	800	1-17-20
BP-9.1	1-18-19	MT-95.50	7-21-17	TC-41.30	10-18-13	821	4-20-18
		MT-98.10	1-20-17	TC-41.40	10-18-13	832	10-19-18
		MT-98.11	4-19-19	TC-42.20	10-18-13	872	7-19-19
		MT-98.20	4-19-19	TC-52.10	10-18-13	921	4-20-18
		MT-98.22	1-20-17	TC-52.20	7-20-18		
		MT-98.28	1-20-17	TC-65.10	1-17-14		
		MT-99.20	4-19-19	TC-65.11	7-21-17		
		MT-101.90	7-21-17	TC-71.10	1-19-18		
		MT-105.10	7-19-13	TC-72.20	7-20-18		
				TC-73.20	7-21-17		
				TC-82.10	7-19-19		

APPROVED: DISTRICT DEPUTY DIRECTOR
DATE: 12/6/19

APPROVED: DIRECTOR, DEPARTMENT OF TRANSPORTATION
DATE: 12/24/19

FEDERAL PROJECT NO. E100167
PID NO. 87800
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
CUY-2-15.75
1/33

CUY - SR 2-15.75
200127 PID - 87800
Dist 12 3/12/2020

Contract Proposal Available @
www.contracts.dot.state.oh.us/home

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STRUCTURE NO.
CUY-2-14.76
NO WORK

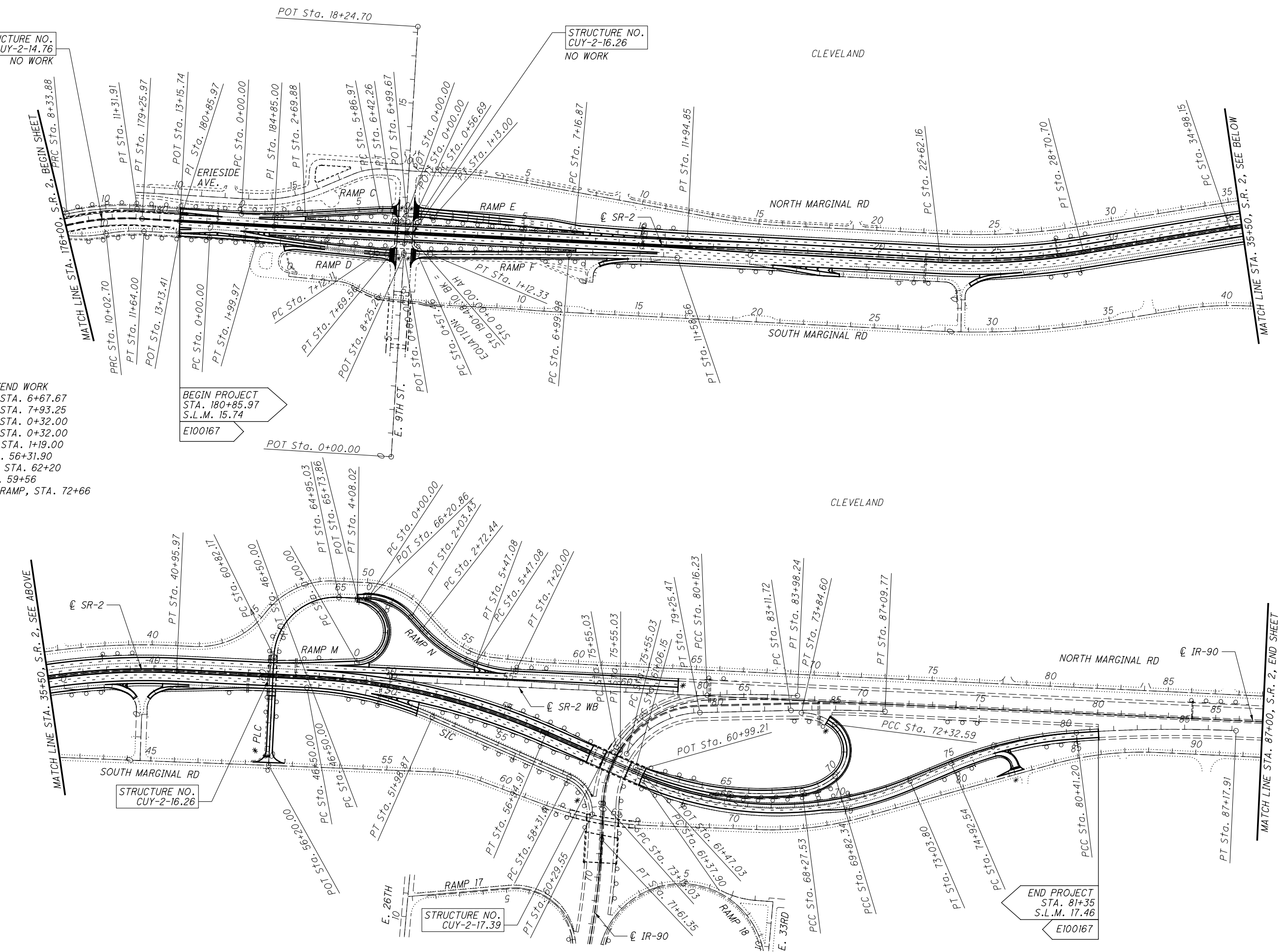
STRUCTURE NO.
CUY-2-16.26
NO WORK

CLEVELAND

* BEGIN/END WORK
RAMP C, STA. 6+67.67
RAMP D, STA. 7+93.25
RAMP E, STA. 0+32.00
RAMP F, STA. 0+32.00
RAMP O, STA. 1+19.00
PLC, STA. 56+31.90
SR-2 WB, STA. 62+20
SIC, STA. 59+56
SR-2 WB RAMP, STA. 72+66

BEGIN PROJECT
STA. 180+85.97
S.L.M. 15.74
E100167

END PROJECT
STA. 81+35
S.L.M. 17.46
E100167



CALCULATED JDA CHECKED DAB

0 200 400
HORIZONTAL SCALE IN FEET

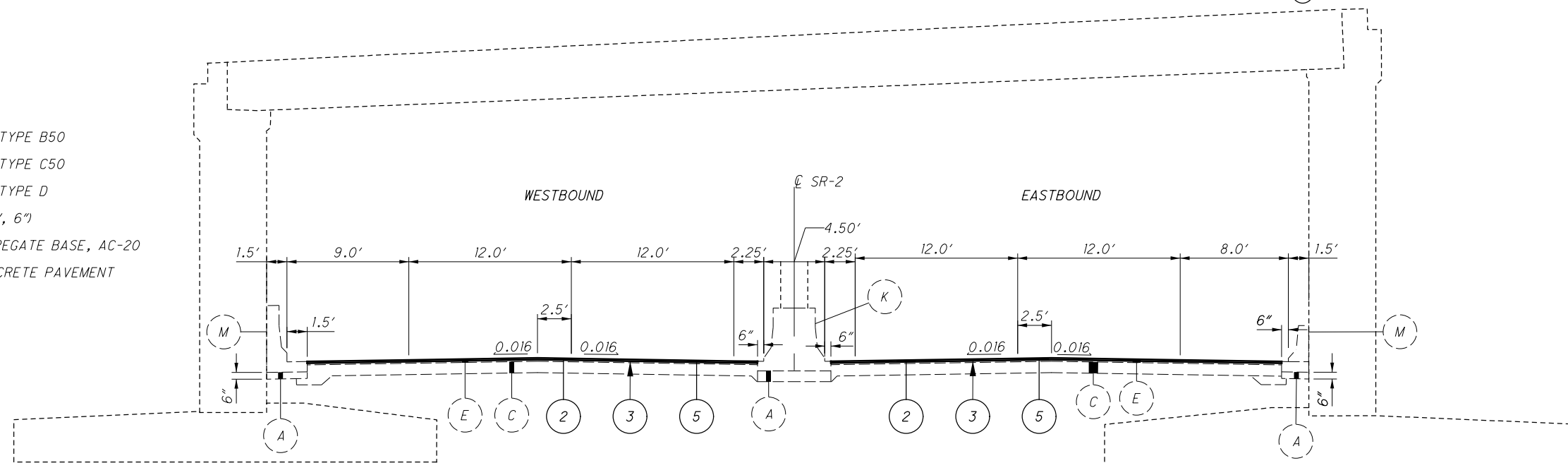
SCHEMATIC PLAN SHEET
S.R. 2, STA. 176+00 TO STA. 87+00

EXISTING LEGEND

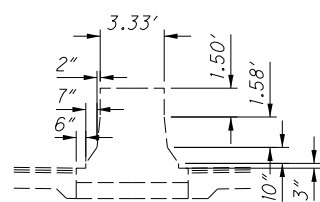
- (A) SUBBASE, TYPE II
- (B) SUBBASE
- (C) REINFORCED CONCRETE PAVEMENT (9", 10")
- (D) PLAIN CONCRETE PAVEMENT
- (E) ASPHALT CONCRETE (3", 6", 10", 13")
- (F) CURB
- (G) CONCRETE MEDIAN
- (H) CONCRETE WALK
- (I) UNDERDRAIN
- (J) CONCRETE BASE
- (K) CONCRETE BARRIER TYPE B50
- (L) CONCRETE BARRIER TYPE C50
- (M) CONCRETE BARRIER TYPE D
- (N) AGGREGATE BASE (3", 6")
- (O) 3" BITUMINOUS AGGREGATE BASE, AC-20
- (P) 9" REINFORCED CONCRETE PAVEMENT
- (Q) GUARDRAIL

PROPOSED LEGEND

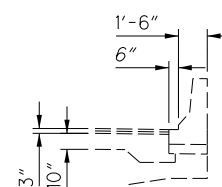
- ① ITEM 209 - LINEAR GRADING, AS PER PLAN
- ② ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"
- ③ ITEM 407 - NON-TRACKING TACK COAT
- ④ ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (446), AS PER PLAN, PG76-22M, 1.5"
- ⑤ ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (447), AS PER PLAN, PG76-22M, 1.5"
- ⑥ ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN



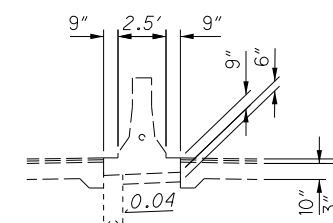
UNDER STRUCTURE NO. CUY-2-1626
 STA. 186+06.50 TO STA. 7+08.43 *
 * STA. 190+48.10 (BACK) - STA. 0+00.00 (AHEAD)



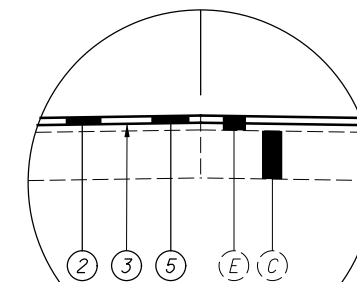
MEDIAN DETAIL
 STATION 189+64.08 TO STA. 190+04.08
 STAT. 0+29.98 TO STA. 0+69.98



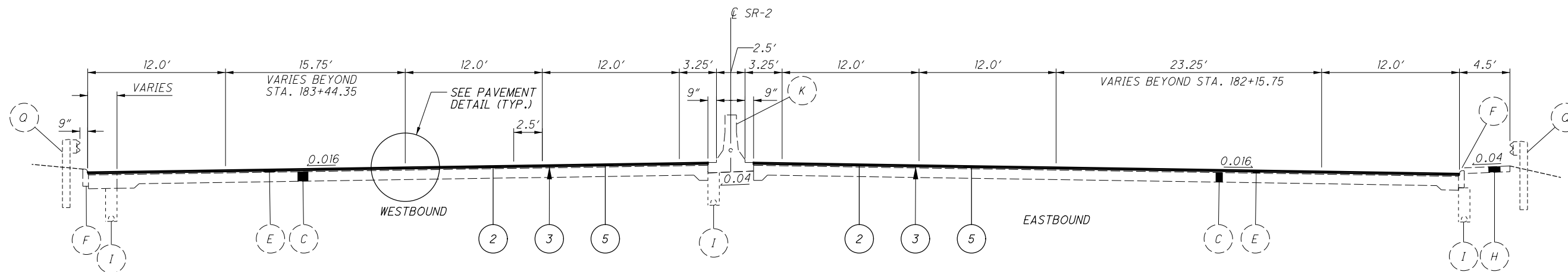
BARRIER DETAILS
 STA. 185+04.99 TO STA. 186+06.50



MEDIAN DETAIL
 STATION 186+06.50 TO STA. 189+64.08
 STAT. 0+69.98 TO STA. 7+08.43



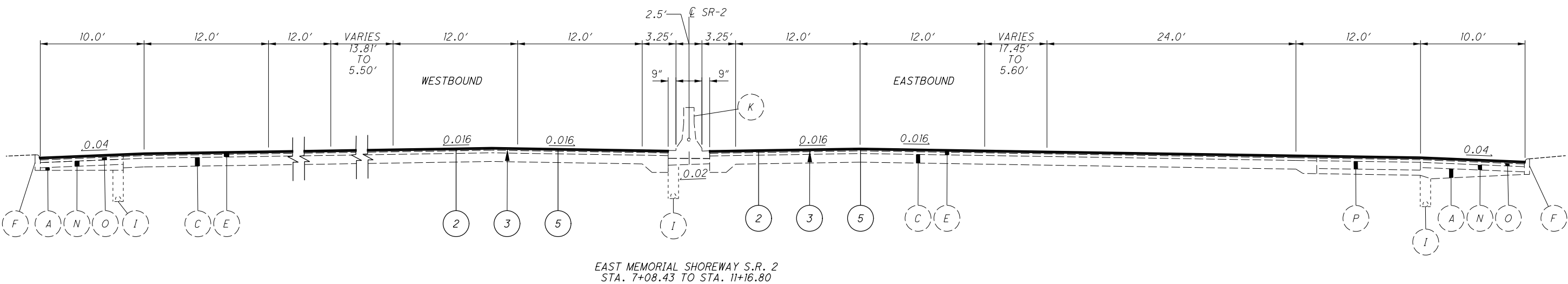
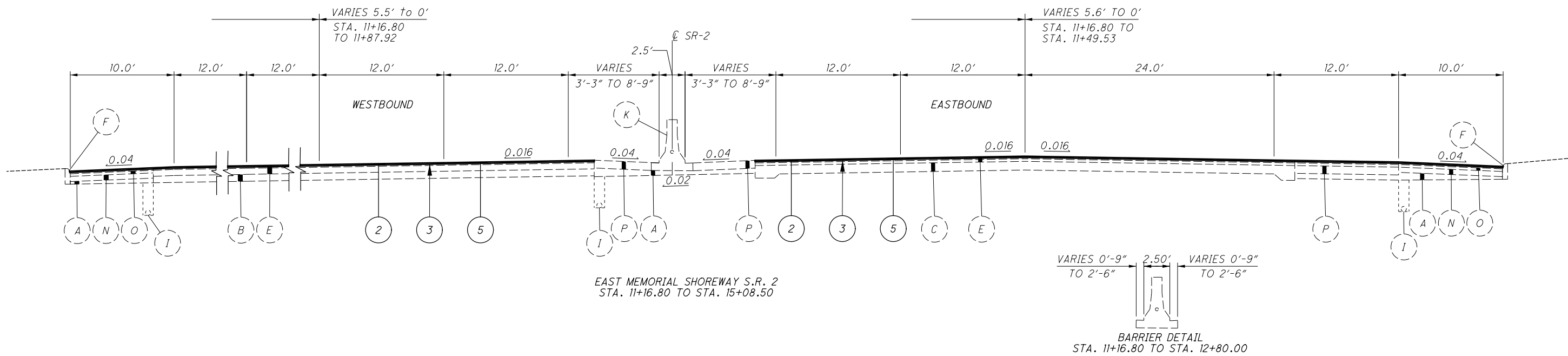
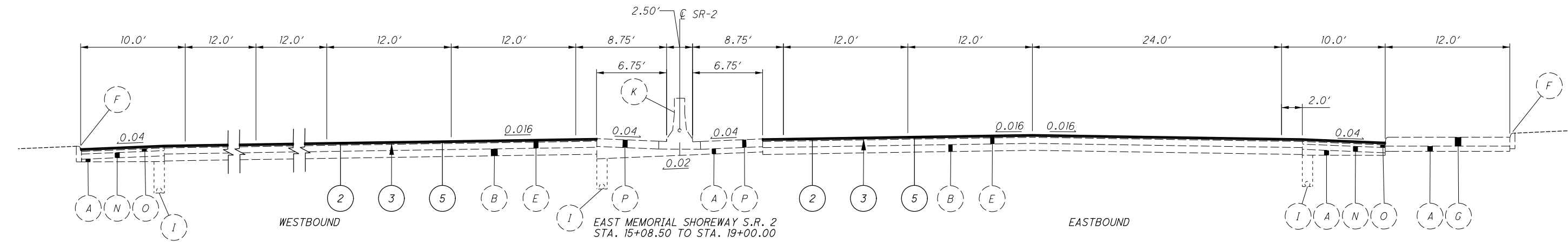
PAVEMENT DETAIL



EAST MEMORIAL SHOREWAY S.R. 2
 STA. 180+85.97 TO STA. 186+06.50

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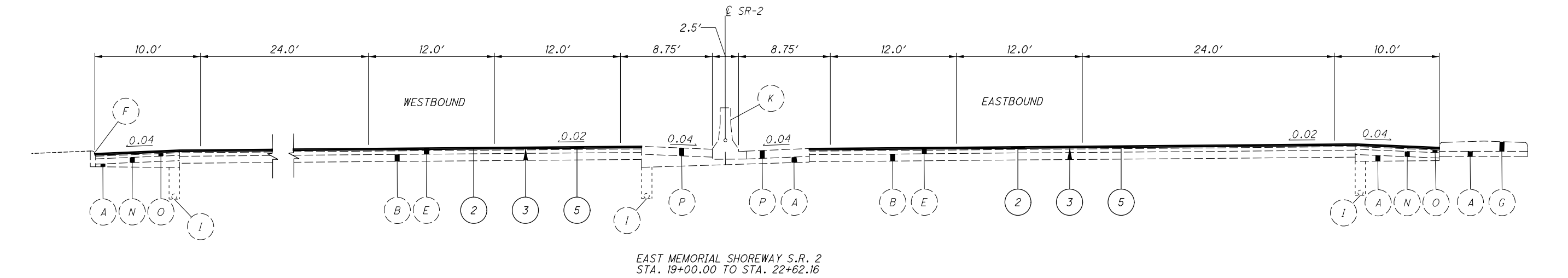
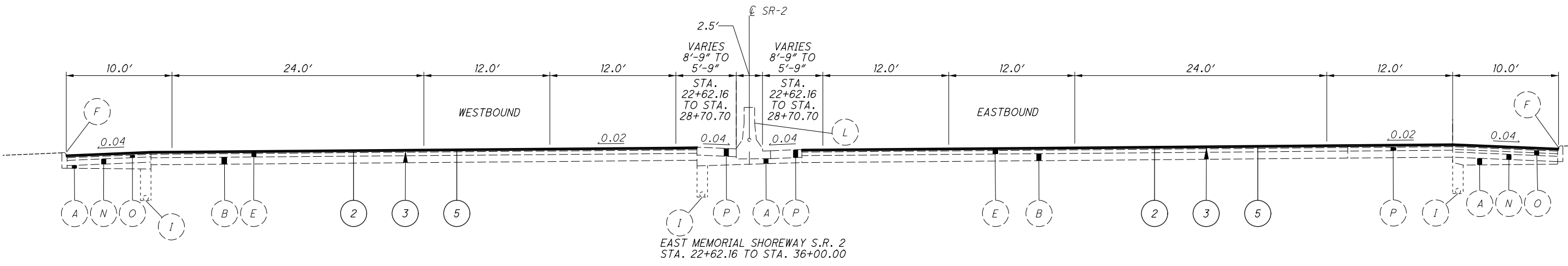
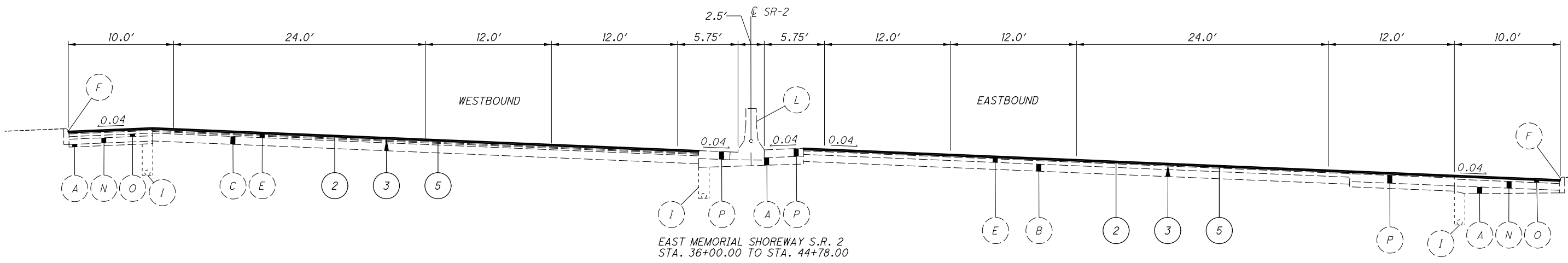


TYPICAL SECTIONS

CUY - 2-15.75

FOR LEGEND, SEE SHEET 3

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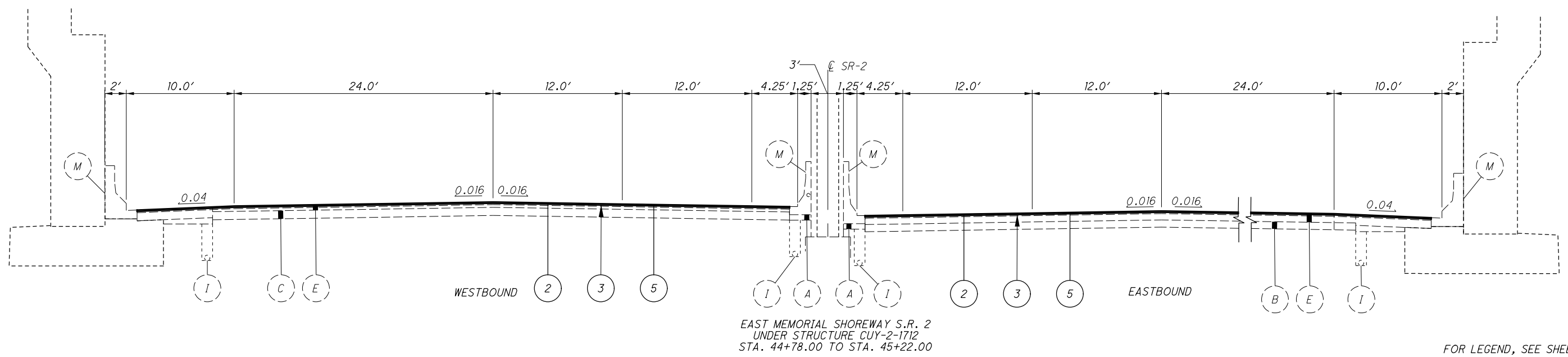
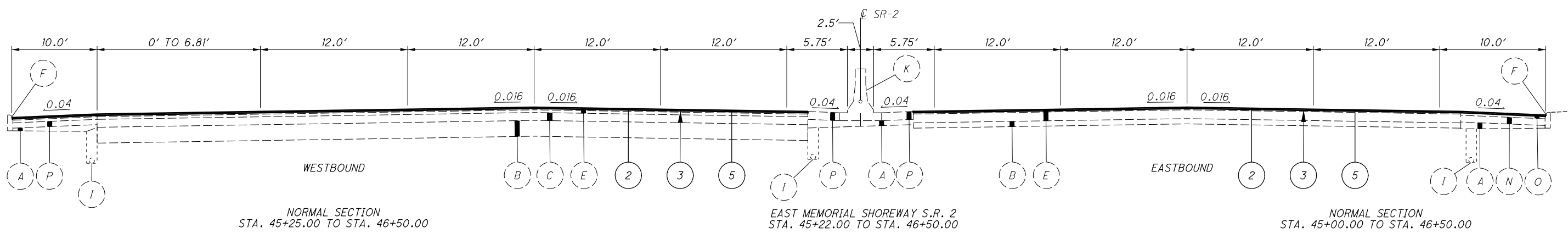
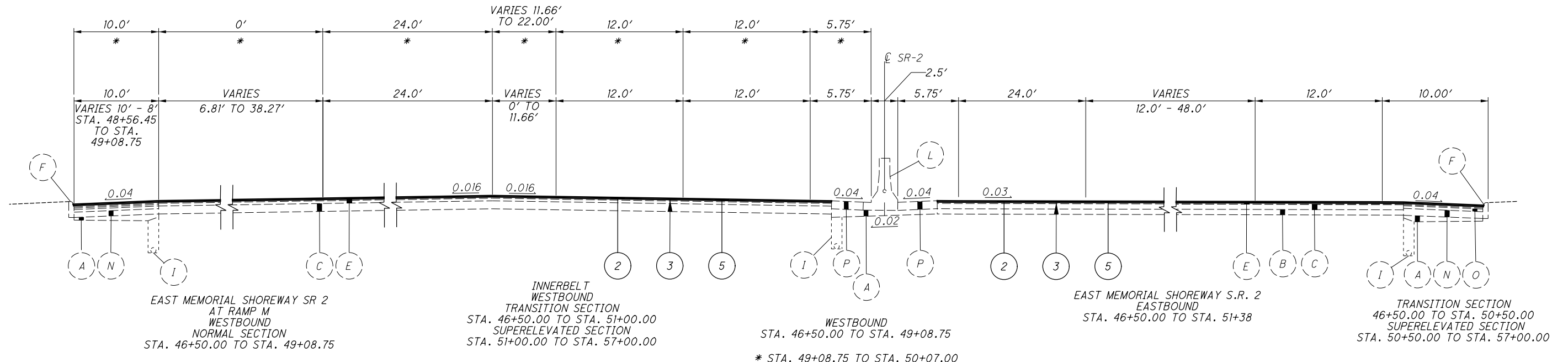


TYPICAL SECTIONS

CUY-2-15.75

FOR LEGEND, SEE SHEET 3

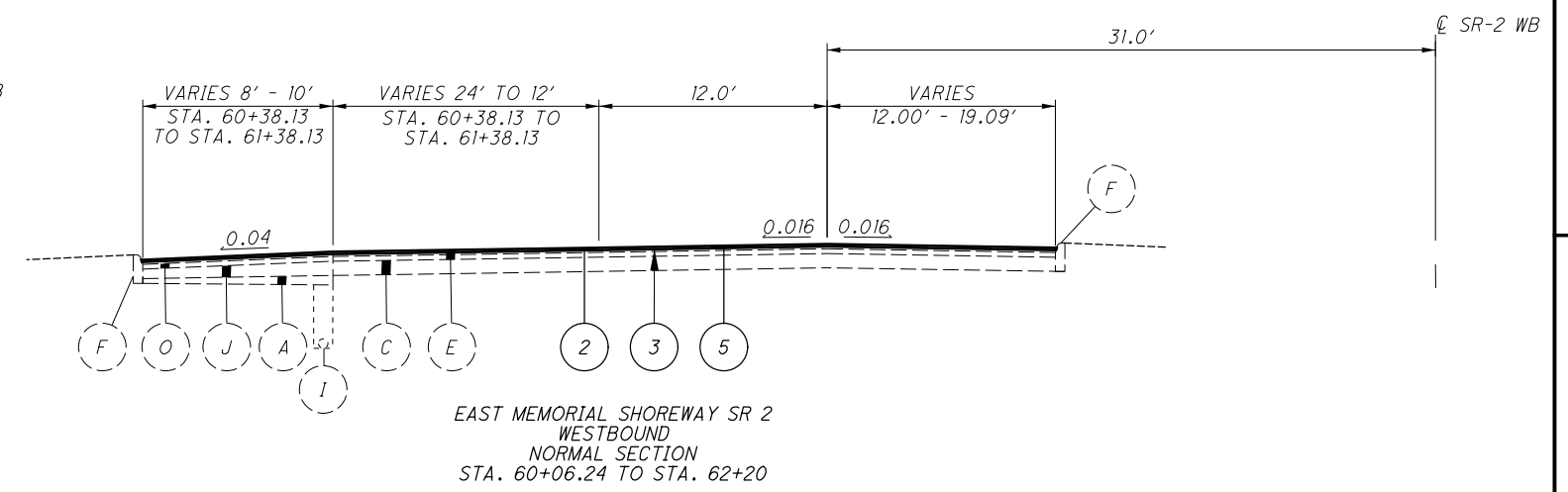
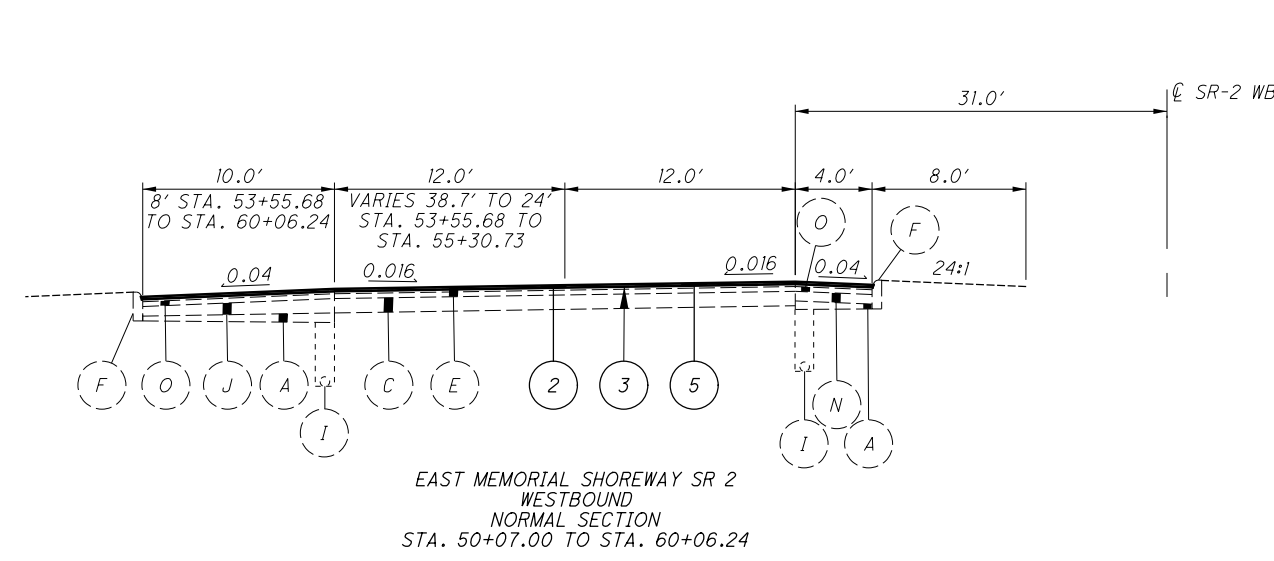
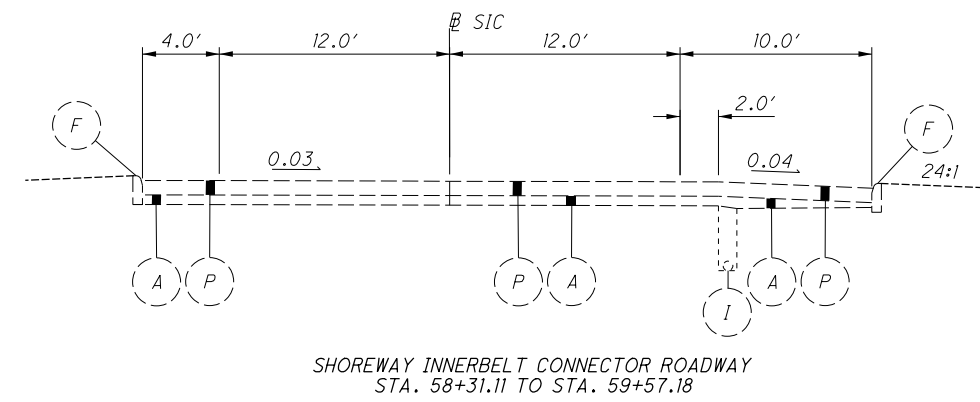
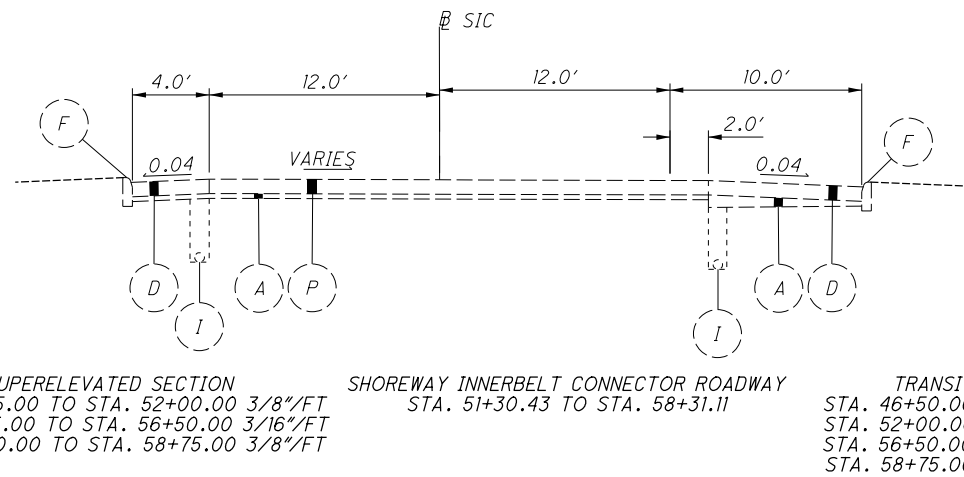
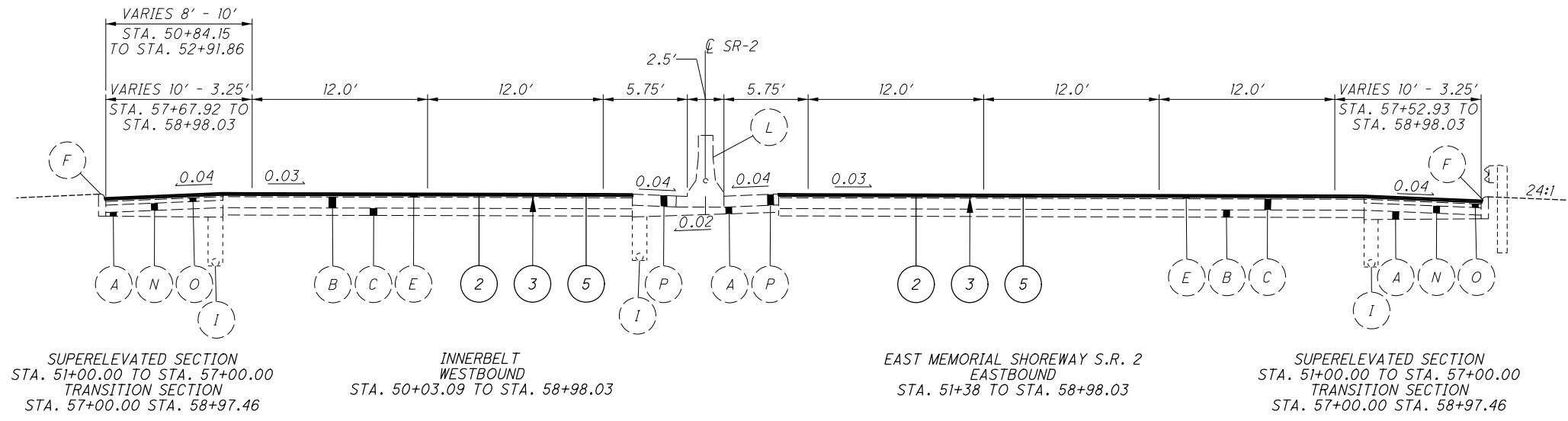
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TYPICAL SECTIONS

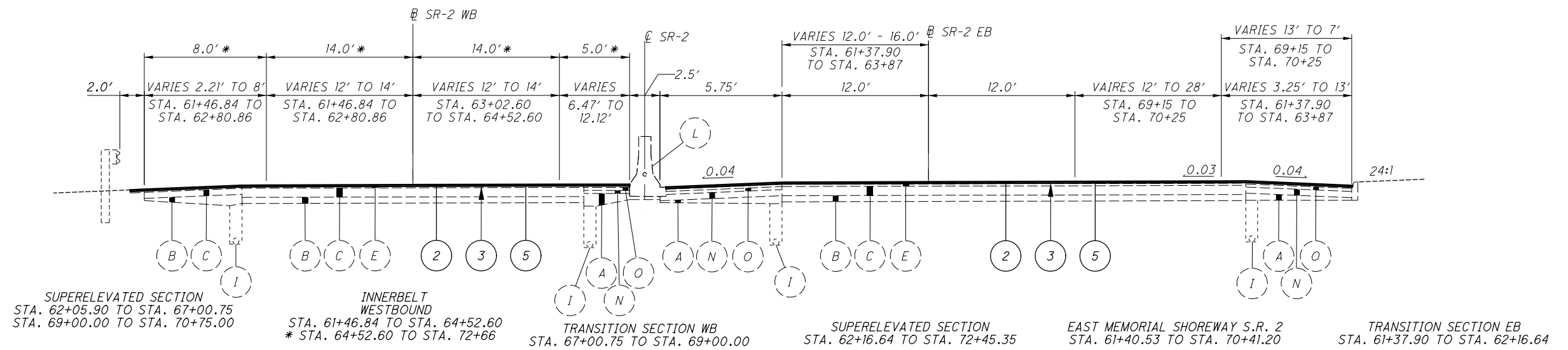
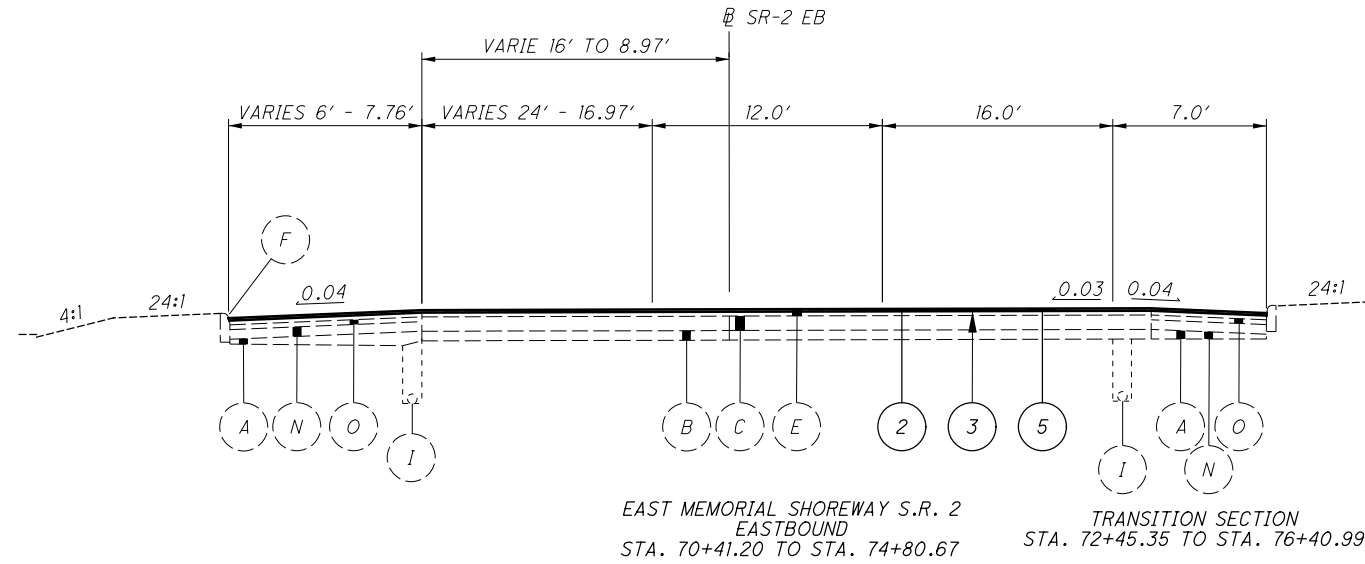
CUY - 2 - 15.75



TYPICAL SECTIONS

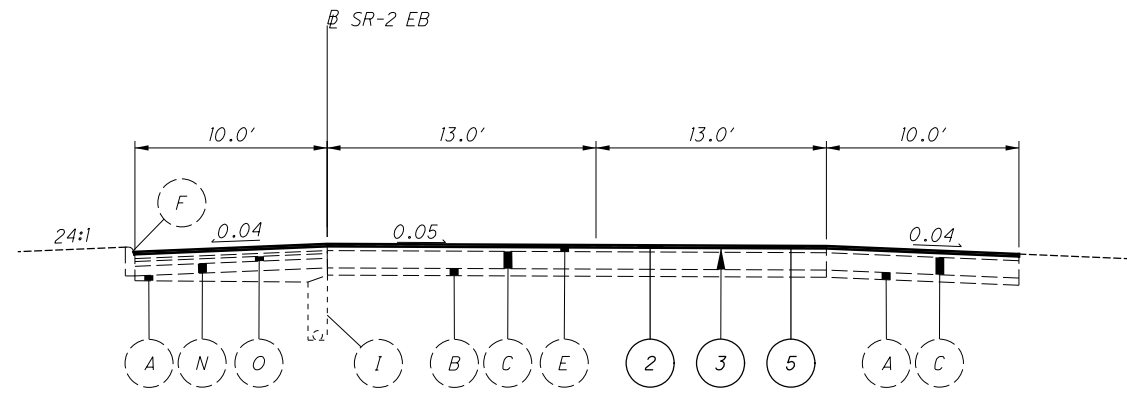
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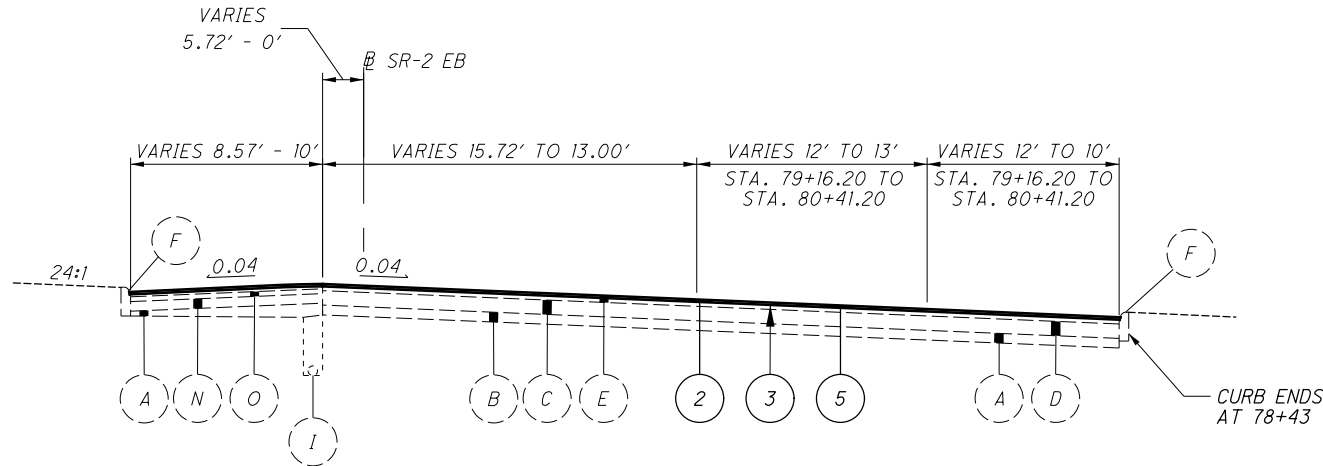


*** STATION EQUATION STA. 61+47.03 @ EMS
= STA. 61+37.90 EXISTING @ EMS EB

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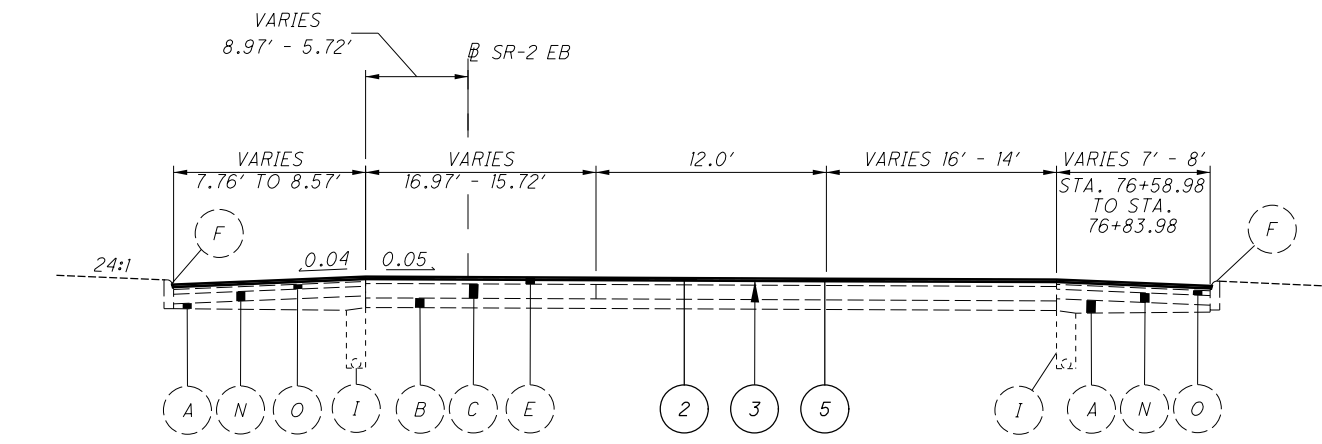


EAST MEMORIAL SHOREWAY S.R. 2
EASTBOUND
STA. 80+41.20 TO STA. 81+35.00



EAST MEMORIAL SHOREWAY S.R. 2
EASTBOUND
STA. 76+83.98 TO STA. 80+41.20

SUPERELEVATED SECTION
STA. 76+40.99 TO STA. 80+41.20



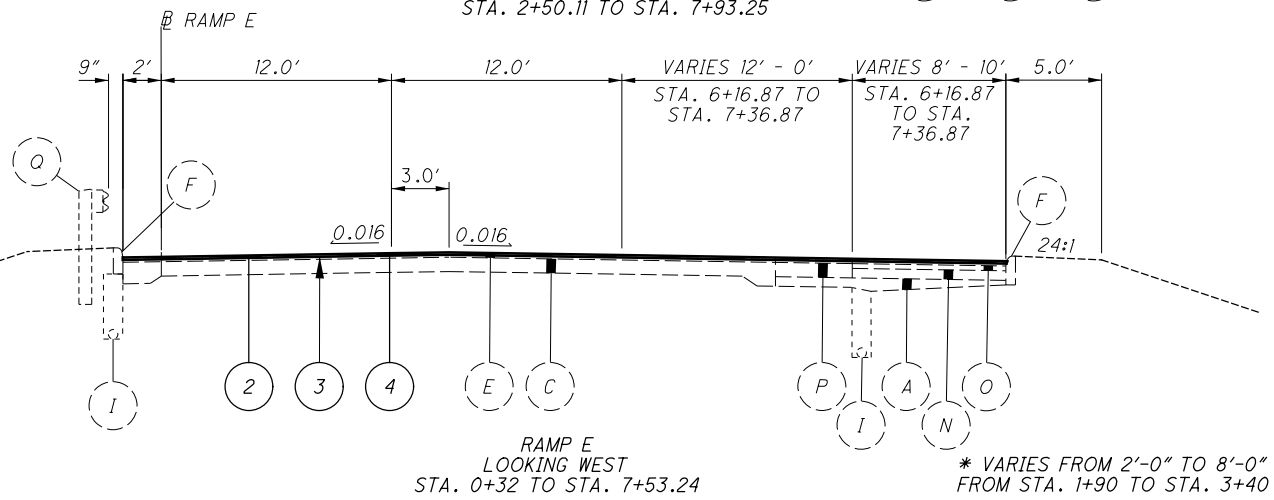
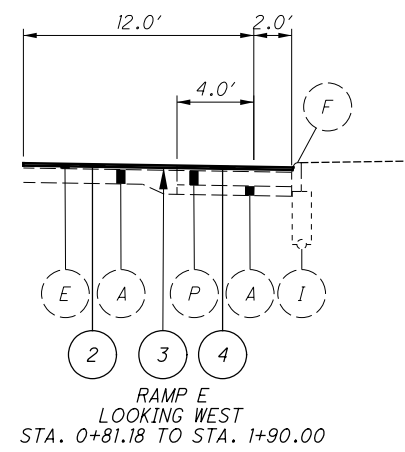
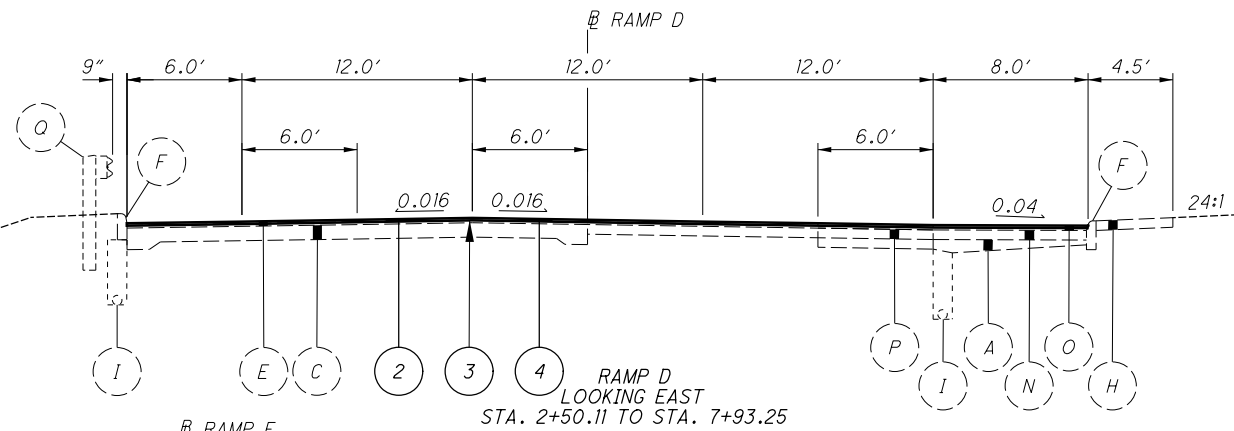
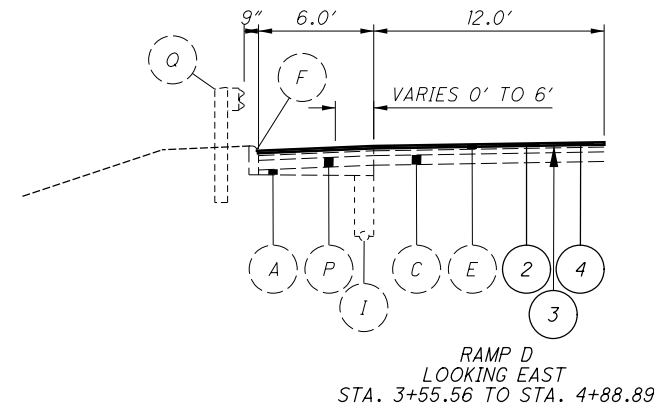
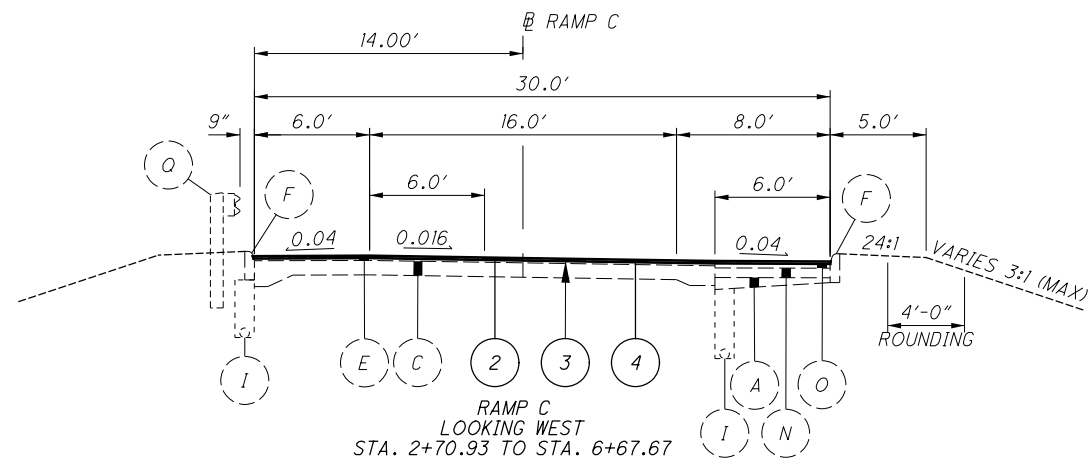
SUPERELEVATED SECTION
STA. 76+40.99 TO STA. 80+41.20

EAST MEMORIAL SHOREWAY S.R. 2
EASTBOUND
STA. 74+80.67 TO STA. 76+83.98

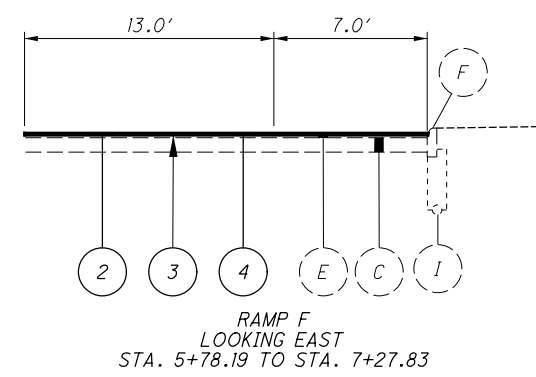
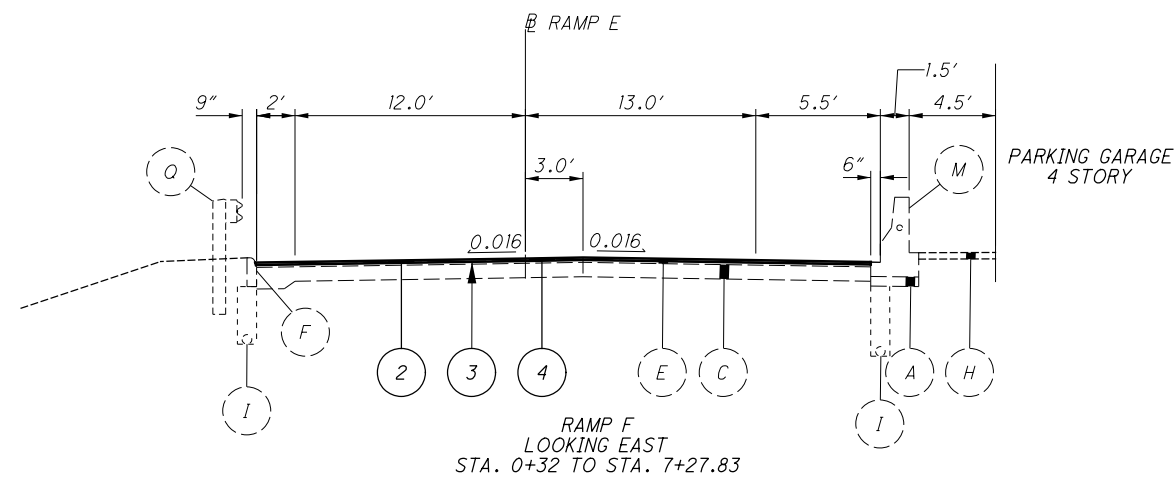
TYPICAL SECTIONS

CUY - 2-15.75

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* VARIES FROM 2'-0" TO 8'-0" FROM STA. 1+90 TO STA. 3+40

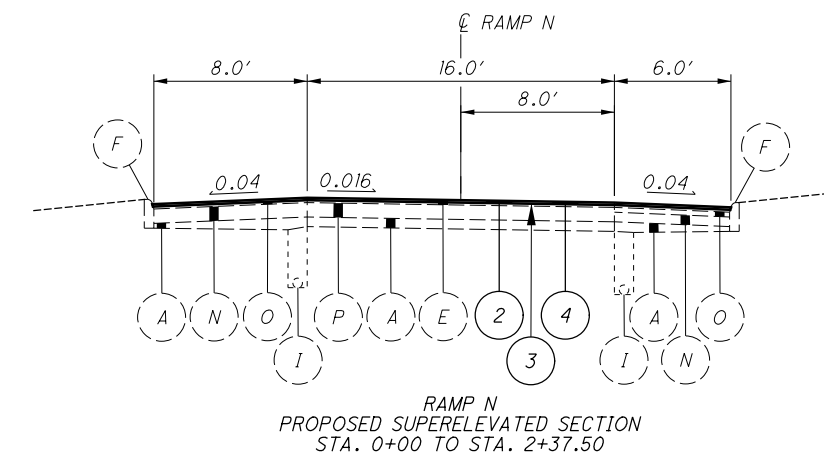
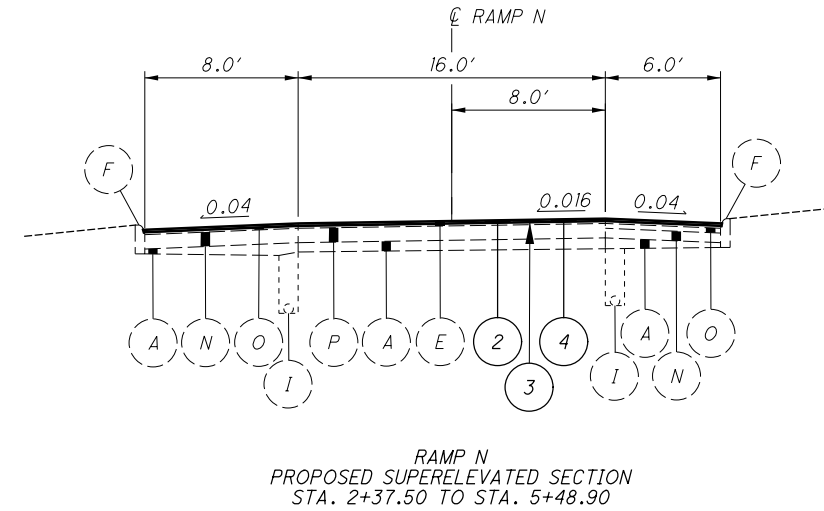
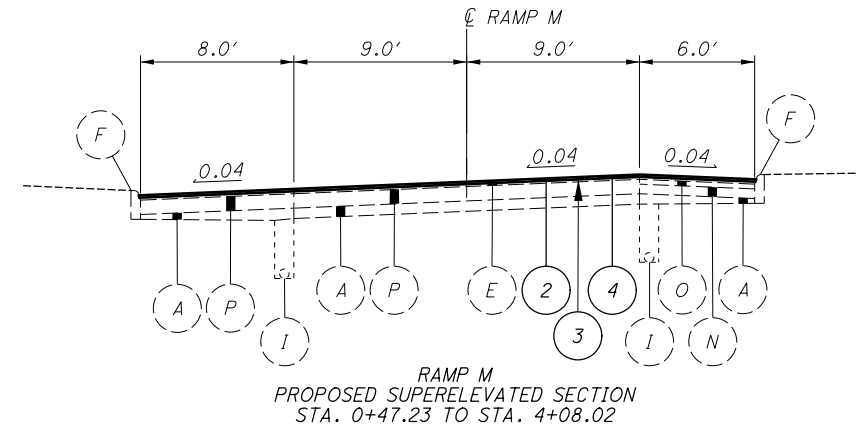
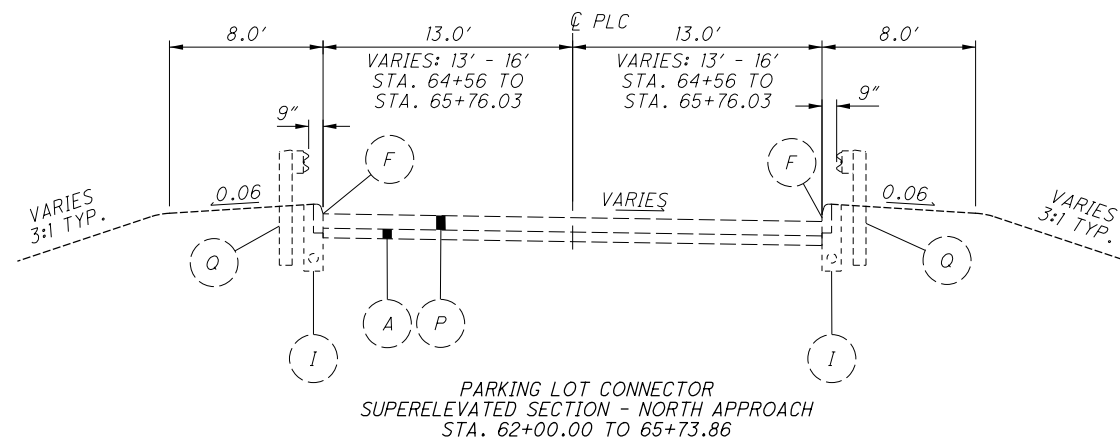
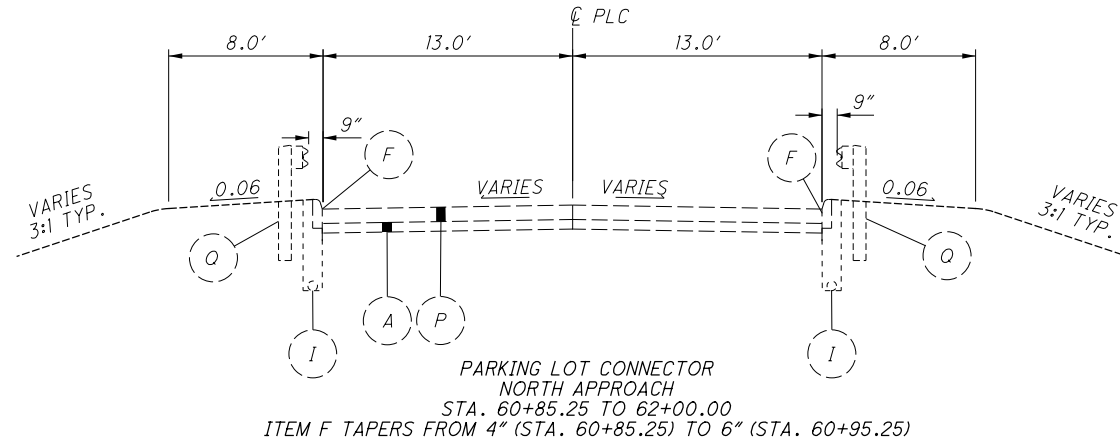
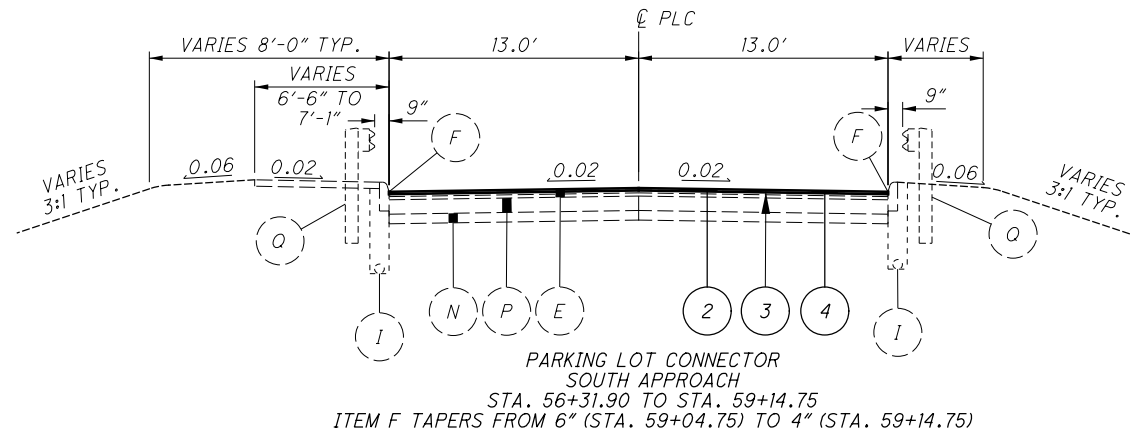


TYPICAL SECTIONS

CUY - 2-15.75

FOR LEGEND, SEE SHEET 3

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TYPICAL SECTIONS

CUY - 2-15.75

GENERAL

Project Description

This project consists of the resurfacing of SR-2 from the Main Ave. Bridge to IR-90 in the City of Cleveland.

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

Ohio Department 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.

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:

1. Any removed items shall not be stored on the right of way for more than thirty (30) days.
2. 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.
3. All disturbed areas shall be returned to their original condition at no expense to the state.

Cooperation Between Contractors

The contractor shall cooperate and coordinate operations with the contractors on other projects that may be in force during the life of the contract.

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.

Right Of Way

All work shall be performed within the existing right of way or easements.

Plan Sheet Stationing

The roadway was not surveyed prior to the preparation of these plans. Stationing was provided to prepare plan sheets and calculate pavement and pavement marking quantities.

Staging Areas

There are no specific areas given in the plans for the Contractor to use as a staging area(s). If the Contractor wants to use an area(s) for staging, regardless if it falls within the project limits or not, the Contractor is to contact Melvin Safford at 216-584-2137 and at District12Permits@dot.ohio.gov in order to apply for a permit per Section 107.02 of the CMS.

If a permit is granted, all conditions of the permit shall be met in addition to the requirements of 104.04 of the CMS, at no additional cost to the State. If the Project Engineer deems that all the conditions of the permit were not met, then 10% of the Contract bid amount for mobilization shall be withheld until all the conditions of the permit are satisfied.

Item 619 – Field Office, Type B, As Per Plan

A Type B Field Office is required for this project. The following revisions to equipment supplied with the Type B Field Office, as specified in Table 619.02-1, Field Office, shall apply:

- The broadband internet connection must meet a minimum upload speed of 5MB per second.
- Contractor shall furnish and set up a Wi-Fi router meeting the requirements of IEEE 802.11ac for the exclusive use of the Department.

All other field office items supplied shall meet the requirements of a Type B, Field Office.

Item 619 – Field Office, Type B, As Per Plan **6 Months**

Item 623 - Construction Layout Stakes and Surveying, As Per Plan

In addition to the requirements of the CMS, this item of work will include the following additional requirements.

An Ohio professional surveyor shall determine the minimum vertical clearances of all existing and new bridges within the project limits after completion of all the work, but prior to final acceptance of the project. At a minimum, measurements shall be taken along the centerline of each fascia beam at the edge of shoulders, edge lines, lane lines, and crown of the roadway below. The measurements shall be documented on the ODOT vertical clearance survey form. The form shall bear the stamp or seal of the Ohio professional surveyor who has taken the measurements. The Ohio professional surveyor shall submit the completed form to the Project Engineer and the district bridge maintenance engineer prior to final acceptance of the project.

Payment for all of the above work shall be at the unit price bid for Item 623 – Construction Layout Stakes, As Per Plan, which shall include all labor, equipment, materials and incidentals necessary to complete the above work.

Protection of Right-of-Way Landscaping

Prior to beginning work, the Contractor, the Project Engineer and a representative of the maintaining agency will review and record all landscaping items within the right-of-way (both within and outside the construction limits). A record of this review will be kept in the Project Engineer's files. Prior to final acceptance, a final review of landscaping items will be made.

Constrict all activities, equipment storage and staging to within the construction limits. Unless otherwise identified in the plans or proposal, the construction limits are identified as 30 feet from the edge of pavement.

Submit a written request to the Project Engineer to use any area outside these limits. The document submitted must clearly identify the area and explain the proposed use and restoration of the area. Use of these areas for disposal of waste material and construction debris, excavation of borrow material and placement of portable plants is prohibited. The request must be approved, in writing, before the Contractor has permission to use the area.

Any items damaged beyond the construction limits, as defined above, will be replaced in kind or as approved by the Project Engineer.

Utilities

The following utilities and owners are located within the work limits of this project. The Ohio Department of Transportation has used the best available information to determine the utility companies serving this area, but cannot guarantee the utility company list is complete.

Illuminating Co.
6896 Miller Road
Brecksville, Ohio 44141
Attn: John Zassick
Phone: (440) 546-8706

City of Cleveland Division of Cleveland
Public Power (MELP)
1300 Lakeside Ave.
Cleveland, Ohio 44114
Attn: Chris Hirzel
Phone: (216) 664-3922, Ext. 76115

AT&T
13630 Lorain Ave. – 2nd floor
Cleveland, Ohio 44111
Attn: James Janis
Phone: (216) 476-6142

City of Cleveland Division of Traffic
Engineering
601 Lakeside Ave.
Cleveland, Ohio 44114
Attn: Andrew Cross
Phone: (216) 664-3197

Dominion Energy Ohio
320 Springside Dr.
Suite 320, Akron, Ohio 44333
Attn: Michael Antonius
Phone: (330) 664-2481

City of Cleveland Division of Water
Pollution Control
12302 Kirby Road
Cleveland, Ohio 44108
Attn: Rachid Zoghaib
Phone: (216) 664-3785

Northeast Ohio Regional Sewer District
(NEORS)
3900 Euclid Ave.
Cleveland, Ohio 44115
Attn: Mary Maciejowski
Phone: (216) 881-6600, Ext. 6466

City of Cleveland Division of Water
1201 Lakeside Ave.
Cleveland, Ohio 44114
Attn: Fred Roberts
Phone: (216) 664-2444 x 5590

U.S. Army Corps of Engineers
1035 E. 9th Street
Cleveland, Ohio 44114
Phone: (216) 685-1200

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.

Airway/Highway Clearance for Airports and Heliports

This project has been identified as being within the influence area of a public use airport or heliport. No temporary structures or construction equipment at maximum operating height shall exceed a height of 25 FT. If any temporary structures or construction equipment will exceed this height, further coordination with the Federal Aviation Administration (FAA), and ODOT Office of Aviation, will be necessary prior to erecting such temporary structures or operating such equipment on the project. The Contractor will be required to file a new FAA Form 7460-1, advising the FAA that aeronautical study no. 2019-AGL-14743-OE, 2019-AGL-14744-OE, and 2019-AGL-14745-OE are being resubmitted and that an alteration to the original submission is requested.

Notify the ODOT Office of Aviation when resubmitting FAA Form 7460-1. No temporary structures or construction equipment shall exceed permissible height, until a copy of the FAA approval and the ODOT Office of Aviation permit has been furnished to the Project Engineer.

FAA approval may take up to 45 days. All submissions shall be directed to these offices:

Express Processing Center	Ohio Department of Transportation
The Federal Aviation Administration	Office of Aviation
Southwest Regional Office	2829 West Dublin-Granville Road
Air Traffic Airspace Branch ASW-520	Columbus, Ohio 43235
2601 Meacham Blvd.	614-387-2346
Fort Worth, TX 76137-4298	

The following conditions shall be met during all construction activities on Ramp M and Ramp N, as required by aeronautical study 2019-AGL-14744-OE:

Dump trucks are to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, flags/red lights – Chapters 3 (Marked), 4, 5 (Red) & 12.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

The dump truck bed must be lowered when not in use and during the hours between sunset and sunrise.

It is required that the manager of BURKE LAKEFRONT (BKL), (216) 781-6411 be notified at least 3 business days prior to construction activities and again when construction activities are completed.

It is required that the manager of BKL Airport Traffic Control Tower at 216-241-2515 be notified at least 3 business days prior to construction activities and again when construction activities are completed. Additionally, please provide contact information for the onsite operator in the event that Air Traffic Control requires the dump truck bed to be lowered immediately.

Roadway and Erosion Control

Item 209 – Linear Grading, As Per Plan

This item of work shall consist of grading along the outside edge of the paved shoulder to eliminate high spots and provide positive sheet flow off the pavement and shoulder into roadside ditches or drainage structures. This item is not intended to be used to excavate a uniform depth to place Item 617 – Compacted Aggregate, As Per Plan.

Any debris collected shall be removed and disposed of as specified in Section 105.16 & 105.17 of the Construction and Material Specifications.

Payment for the above work shall be made at the unit bid price for Item 209, Station, Linear Grading, As Per Plan and shall include all labor, tools, equipment and materials necessary to perform this item of work.

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

Item 209 – Linear Grading, As Per Plan..... **13 Sta**

Drainage

Review of Drainage Facilities

Before any work is started on the project and again before final acceptance by the State, representatives of the State and the Contractor, along with local representatives, shall make an inspection of all existing sewers which are to remain in service and which may be affected by the work. The condition of the existing conduits and their appurtenances shall be determined from field observations. Records of the inspection shall be kept in writing by the State.

All new conduits, inlets, catch basins and manholes constructed as part of the project shall be free of all foreign matter and in a clean condition before the project will be accepted by the State.

All existing sewers inspected initially by the above mentioned parties shall be maintained and left in a condition reasonably comparable to that determined by the original inspection. Any change in the condition resulting from the Contractor's operations shall be corrected by the Contractor to the satisfaction of the Engineer.

Payment for all operations described above shall be included in the contract price for the pertinent 611 drainage items.

Castings Adjusted to Grade, As Per Plan

All castings, within the asphalt overlay section, shall be adjusted to the finished roadway elevation by the Contractor. The time between adjusting the castings and resurfacing shall be kept to an absolute minimum. No adjusting rings shall be permitted.

The following estimated quantities have been carried to the General Summary:

Item 611 – Catch Basin Adjusted to Grade, As Per Plan..... **111 Each**
 Item 611 – Manhole Adjusted to Grade, As Per Plan..... **22 Each**
 Item 638 – Valve Box Adjusted to Grade, As Per Plan..... **2 Each**

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 611 of the CMS 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 shall be non-performed.

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

Item Special – Miscellaneous Metal..... **10000 Lbs**

Pavement

Profile and Alignment

Place the proposed pavement to follow the alignment of the existing pavement. Place the proposed asphalt concrete with a uniform thickness as shown on the typical sections.

Planing Requirements

The duration of time between planing the asphalt and placing the asphalt overlay shall be kept to a minimum. In no instance shall this time exceed 7 calendar days. The time limit shall begin on the first day of planing and shall continue based on calendar days, minus any weather days, until completion of the asphalt concrete surface course. This is to ensure that the potential degradation of the exposed pavement due to traffic is kept to a minimum. This requirement applies to both mainline and ramps alike.

In the event that the time between exposing the existing pavement and placing the asphalt surface course exceeds 7 calendar days, liquidated damages as per 108.07 of the C&MS shall be assessed.

Asphalt Concrete Surface Course Sealing Requirements

In addition to the gutter sealing requirements specified in SCD BP-3.1 and C&MS 401.15, after completion of the surface course, the contractor shall use a certified 702.01 PG binder to seal the following locations:

- All castings including but not limited to monuments, manholes, water valves, catch basins, curb inlets.
- Butt joints and feather joints including bridge approaches.
- Forward joint for driveway asphalt and trailing joint when butting to existing asphalt drive.
- Perimeter of all pavement repairs or other asphalt inlays when pavement repairs/inlays are not overlaid with an asphalt concrete surface course.
- All cold longitudinal joints between paved shoulders and guardrail asphalt.

The material used shall be a certified 702.01 PG binder. The width of the sealer shall be 2-3 inches.

Any additional costs associated with the work identified in this note shall be included in the appropriate asphalt concrete surface course item of work.

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Longitudinal Joints (Flexible Pavement)

Longitudinal joints between a pavement lane and adjoining shoulder or speed change lane, and between a speed change lane and the adjoining shoulder shall be made the same day. All longitudinal joints shall be hot with the exception of one cold joint per roadway. Locate the cold joint along the centerline or a lane line. Longitudinal joint locations shall be as approved by the Engineer. Each ramp shall have a maximum of one longitudinal cold joint located approximately halfway across the ramp.

Item 251 – Partial Depth Pavement Repair (442), As Per Plan A

This item shall be used for the repair unsound, cold patch, or pop-out areas of longitudinal joints consisting of existing asphalt or concrete as directed by the Engineer. The work shall be performed prior to the planing operation. The depth of the repair shall be 4.5" below the top of the existing asphalt surface. The width of the repair shall be 12" centered over the existing joint.

Use replacement materials conforming to the requirements of Item 442, 19mm.

The following estimated quantity has been carried to the General Summary:

Item 251 – Partial Depth Pavement Repair (442) , As Per Plan A..... **600 Sq Yd**

Item 251 – Partial Depth Pavement Repair (442), As Per Plan B

This item shall be used for the repair unsound, cold patch, or pop-out areas of transverse joints and cracks of existing asphalt or concrete as directed by the Engineer. The work shall be performed prior to the planing operation. The depth of the repair shall be 4.5" below the top of the existing asphalt surface. The width of the repair shall be 12" centered over the existing joint.

Use replacement materials conforming to the requirements of Item 422, 19mm.

The following estimated quantity has been carried to the General Summary:

Item 251 – Partial Depth Pavement Repair (442), As Per Plan B..... **950 Sq Yd**

Item 253 – Pavement Repair

This work item is for use as directed by the Engineer for the purpose of pavement repair. All labor and material necessary to perform this work and section 250 of the CMS shall be included for payment under Item 253.

Depth of pavement repair removal shall typically be 5" measured after the pavement has been planed. The depth of repair shall be as directed by the Engineer if unsound material is encountered after the removal of the 5".

Use replacement materials conforming to the requirements of Item 441, Type 2.

The following estimated quantity has been carried to the General Summary:

Item 253 – Pavement Repair..... **235 Cu Yd**

Item 253 – Pavement Repair, As Per Plan

This work item is for use as directed by the Engineer for the purpose of pavement repair at two locations identified in the plans that show excessive settlement. In order to correct the grade, variable depth repairs are needed in the outside lane and outside shoulder. All labor and material necessary to perform this work and section 250 of the CMS shall be included for payment under Item 253. In addition to the variable depth repairs, the curb will be removed and replaced in these sections, as needed, to correct the curb reveal.

Location 1 is at Sta. 19+50 along SR-2 WB and Location 2 is at Sta. 50+85 along the SR-2 WB connection ramp from IR-90 WB.

Depth of pavement repair removal at location 1 shall typically be 7" (avg.) measured after the pavement has been planed. Depth of pavement repair removal at location 2 shall typically be 6" (avg.) measured after the pavement has been planed. The depth of repair shall be as directed by the Engineer if unsound material is encountered after the removal of the average depths.

Use replacement materials conforming to the requirements of Item 441, Type 2.

The following estimated quantities have been carried to the General Summary:

Item 202 – Curb Removed..... **125 Ft**
Item 253 – Pavement Repair, As Per Plan..... **55 Cu Yd**
Item 609 – Curb, Type 6..... **125 Ft**

Item 254 – Pavement Planing, Asphalt Concrete, As Per Plan

This item shall be used to remove the existing asphalt overlay full width at an average depth of 1-1/2" as specified in the plans on SR-2. Areas which have transverse wedges (butt joints) are to be removed in two passes as required for maintaining traffic. No additional payment shall be made for the second pass.

Item 442 – Asphalt Concrete Surface Course, 12.5mm, Type A, (447), As Per Plan, PG 76-22M

The coarse virgin aggregate for this item shall be limited to a blend of air cooled blast furnace slag (ACBFS) or Trap Rock from Ontario and limestone. The Contractor shall use a minimum 60% of ACBFS or Trap Rock from Ontario with limestone comprising the remaining percentage. At least 50% of fine virgin aggregate for this item shall be limited to ACBFS or Trap Rock from Ontario.

Table 442.02-2 applies except No. 4 sieve requirements are 52 to 60 Total Percent Passing. For the No. 4 sieve do not exceed 63 in production.

When ACBFS is used for a fraction of the coarse aggregate, provide a total asphalt binder content greater than or equal to 6.2 percent. If ACBFS makes up 100% of the coarse aggregate, apply the binder content requirements of C&MS 442.

Item 442 – Asphalt Concrete Surface Course, 12.5mm, Type A, (446), As Per Plan, PG 76-22M

Joint coring in accordance with 446.04 is not required for cold longitudinal joints placed over Void Reducing Asphalt Membrane (VRAM). Construct cold longitudinal joints over VRAM using the same techniques, equipment, and roller patterns used on the rest of the mat. Obtain 10 mat cores for each lot of material in accordance with 446.04. Pay factors for each lot of material will be determined according to Table 446.04-2.

The coarse virgin aggregate and at least 50% of fine virgin aggregate for this item shall be limited to air cooled blast furnace slag (ACBFS) or Trap Rock from Ontario.

Table 442.02-2 applies except No. 4 sieve requirements are 52 to 60 Total Percent Passing. For the No. 4 sieve do not exceed 63 in production.

Item 617 – Compacted Aggregate, As Per Plan

This item shall be used to place compacted aggregate at a variable depth only where needed to fill in low spots and eliminate drop offs along shoulders. Material shall be limited to reclaimed asphalt concrete pavement (RAP).

The actual depth of compacted aggregate placed will vary depending upon existing conditions. For estimating purposes, an average depth of one inch (1") has been used. Water, if needed, shall be applied according to 617.05 and shall be included with Item 617 – Compacted Aggregate, As Per Plan.

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

Item 617 – Compacted Aggregate, As Per Plan..... **8 Cu Yd**

Item 618 – Rumble Strips, Shoulder (Asphalt Concrete), As Per Plan

For all freeways, the lateral position of edge line rumble strips shown in SCD BP-9.1 is revised as follows:

1. Median and Outside Shoulder Offset for shoulders less than 6':
Dimension A and B are equal to 6".
2. Median and Outside Shoulder Offset for shoulders 6' to 12':
Dimension A and B are equal to half the shoulder width minus 12".
3. Median and Outside Shoulder Offset for shoulders greater than 12':
Dimension A and B are equal to 5'.

The following estimated quantity shall be used to construct Item 618 – Rumble Strips, Shoulder (Asphalt Concrete), As Per Plan:

Item 618 – Rumble Strips, Shoulder
(Asphalt Concrete), As Per Plan **3.78 Miles**

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Traffic Control

Permanent Pavement Markings on Bridges

Proposed pavement markings on bridges shall be placed on top of existing markings.

Raised Pavement Markers

Install raised pavement markers for lane lines at a spacing of eighty feet (80') center-to-center.

Item 621 – Raised Pavement Marker Removed

This item shall include the removal and disposal of existing RPMs.

The following estimated quantity has been carried to the General Summary:

Item 621 – Raised Pavement Marker Removed **659 Each**

Detection Maintenance

If vehicle detection becomes unexpectedly disabled, requires modification, or is scheduled to be temporarily removed during the construction project, the Contractor shall immediately notify the Project Engineer and City of Cleveland Traffic Engineer.

If the loss of vehicle detection is known prior to the start of construction, it shall be discussed at the preconstruction meeting. At such time, the City of Cleveland Traffic Engineer shall advise the Project Engineer and Contractor on the appropriate action to rectify any loss of vehicle detection. This may include placing the traffic signal on minimum or maximum recall, modifying the minimum green times, and removing the malfunctioning detection from service. Where nonintrusive detection (i.e. video, radar) already exists, the Contractor shall insure that detection is operating and maintained by reconfiguring the detection units accordingly during all construction phases. This is to avoid the signal from maxing out the effected signal phase and creating unnecessary delays.

Locations where non-intrusive detection is proposed and the existing vehicle detection is to be abandon, the non-intrusive vehicle detection shall be installed, configured and made fully functional prior to the existing detection being disabled. The Contractor shall continue to maintain and modify the detection until final acceptance of the traffic signal. This is to ensure vehicle detection remains fully functional throughout construction.

Item 632 – Detector Loop, As Per Plan

All stop line inductance detector loops shown in the plans shall be the powerhead configuration shown on TC-82.10. The width shall be as specified on TC-82.10 and the length shall match the existing detector loop length, with a maximum length of 35'. The stop line detector loops shall not be wired to any other loops and shall have their own detector channel. The location of these loops shall be such that the powerhead is located at the stop line, not past it.

All dilemma zone inductance detector loops called for in the plans shall be the Angular Design Detection (A.D.D.) loop as shown on TC-82.10. Dimensions shall be as specified on TC-82.10.

System loops shall be as depicted in the plans.

All stop line detection shall be tested for a bicycle target and all dilemma detection zones shall be tested for a motorcycle target.

Install detector loops in the surface course within 72 hours of its placement.

When replacing the loop detectors, the loop detector wire shall be replaced to the pull box or pole, whichever is applicable, under Item 632 and TC-82.10. The new cable splice kits shall be included in this pay item.

The Contractor shall contact the Project Engineer and Andy Cross, (216) 664-3197, City of Cleveland Traffic Engineer, seven (7) days prior to planing through an intersection to adjust signal operation as needed.

The City of Cleveland Traffic Engineer shall concur with the location of the replacement loops.

The following estimated quantity has been carried to the General Summary for use as described above:

Item 632 – Detector Loop, As Per Plan..... **12 Each**

Detector Loop Locations

REFERENCE NO.	SEE SHEET NO.	LOCATION	632	632
			6' X 15' POWERHEAD DETECTOR LOOP	6' X 10' POWERHEAD DETECTOR LOOP
			EACH	EACH
L-1	28	SR-2 EB exit ramp to E. 9 th	3	3
L-2	28	SR-2 WB exit ramp to E. 9 th	3	3
SUBTOTALS			6	6
TOTAL CARRIED TO GEN. SUMMARY			12	

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GENERAL NOTES

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Maintenance of Traffic

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.

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.

Construction Sequence

No permanent maintenance of traffic zones are detailed in these plans. Traffic shall be maintained in accordance to the "Schedule of Through Lanes to be Maintained" note. All work zone closures shall comply with the appropriate Standard Construction Drawings.

Prior to opening all lanes to normal traffic, the Contractor shall ensure that the pavement is in a drivable condition with no potholes or dust and that all longitudinal drop-offs greater than 1-1/2" and transverse drop-offs are ramped as per the "Maintaining Traffic and Sequence of Operations" note.

Maintenance of Traffic Control Zones

The Contractor shall be responsible to maintain the signs, drums or cones specified in the Standard Construction 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.

Payment

All work and traffic control devices shall be in accordance with CMS 614 and other applicable portions of the specifications, as well as the Ohio Manual of Uniform Traffic Control Devices. Payment for all labor, equipment, and materials shall be included in the lump sum contract price for Item 614 – Maintaining Traffic unless separately itemized in the plans.

Lane Closure/Reduction Required

Length and duration of lane closures and restrictions shall be at the approval of the Engineer. It is the intent to minimize the impact to the traveling public. Lane closures or restrictions over segments of the project in which no work is anticipated within a reasonable time frame, as determined by the Engineer, shall not be permitted. The level of utilization of maintenance of traffic devices shall be commensurate with the work in progress.

Schedule of Through Lanes to be Maintained

All lane closures may only be implemented at the times permitted by the "District 12 Permitted Lane Closure Times" list, which is located on the ODOT website:

<http://www.dot.state.oh.us/districts/D12/HighwayManagement/Pages/PermittedLaneClosures.aspx>

The latest revision, at 14 days prior to the bid date, shall be in effect for this project.

No lane or shoulder closures shall be in place when no work is being performed, unless directed by the Engineer. Shoulder closures shall only be allowed at the times specified for lane closures.

Any roadway not listed shall not have any lane closures on weekdays from 6:30am to 9:00am and 3:00pm to 6:00pm. Contact Dennis O'Neil, District 12 Work Zone Traffic Manager, at (216) 584-2204 if there are any questions.

All notes on the Permitted Lane Closure Times shall be part of the project.

SR-2 Ramps		
Location	Permitted Ramp Closures, Lane Reductions	
	Short Term Closure	Partial Width Closure (maintain one 11' lane)
One-Lane Ramps	9:00pm – 5:00am ♦	7:00pm – 6:00am
Two-Lane Ramps	Not Permitted	7:00pm – 6:00am

♦Each ramp shall be closed for a maximum of two (2) separate times using an approved detour. Any closure shall be as directed by the Engineer.

Ramp Closures for Resurfacing

The Contractor may close one ramp at a time at each location for milling, partial depth pavement repairs, or resurfacing. Closures for ramps scheduled for repairs and resurfacing shall be limited according to the days of the week and hours shown in the "Schedule of Through Lanes to be Maintained" table.

The motoring public shall be given advance warning of closures at least 72 hours in advance through the use of either a ground mounted flat sheet sign or a portable changeable message sign. A LEO with patrol car (paid for separately) shall be used for each ramp closure and be present for the entire closure time.

Freeway entrance ramps shall be closed with a PCMS suggesting a recommended detour.

Freeway exit ramps shall be closed with a PCMS routing traffic to the next exit and a second PCMS indicating a U-turn at the exit, unless directed differently by the Project Engineer.

For ramp closures, one or two additional PCMS units will be needed as described above. These will be in addition to the PCMS units specified in the plans and shall be included for payment in Item 614 – Maintaining Traffic.

Alternate Methods

If the Contractor so elects, he may submit alternate methods for the maintenance of traffic, provided the intent of the provisions is followed and no additional inconvenience to the traveling public results there from. No alternate plan shall be placed into effect until 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.

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 authorities.

Lane Value Contract Table

Description of Critical Lane/Ramp to be Maintained	Restricted Time Period	Time Unit	Disincentive \$ per Time Unit per Lane
IR-90:			
I-90 east 4 lane section from Superior to SR-2 Split (East)	As per the D12 Permitted Lane Closure Schedule	Each Minute	\$190
Downtown SR-2 to Euclid SR-2 (West)	As per the D12 Permitted Lane Closure Schedule	Each Minute	\$190
SR-2:			
Main Ave. Bridge to E. 9th Ramps (East)	As per the D12 Permitted Lane Closure Schedule	Each Minute	\$150
Main Ave. Bridge to E. 9th Ramps (West)	As per the D12 Permitted Lane Closure Schedule	Each Minute	\$150
E. 9th to I-90 (East)	As per the D12 Permitted Lane Closure Schedule	Each Minute	\$105
Beginning of the 4 lane section at the South Marginal overpass to the E. 9th Exit (West)	As per the D12 Permitted Lane Closure Schedule	Each Minute	\$105
Split to go 90 West and over I-90 EB (East)	As per the D12 Permitted Lane Closure Schedule	Each Minute	\$115
Ramp connecting to I-90 East (East)	As per the D12 Permitted Lane Closure Schedule	Each Minute	\$175
Ramp from Innerbelt curve to 4 lanes of SR-2, loop ramp (West)	As per the D12 Permitted Lane Closure Schedule	Each Minute	\$25

The Contractor shall be assessed a disincentive equal to the largest disincentive within all sections impacted by the physical lane restriction, including the Transition Area, Activity Area, and Termination Area as defined by the OMUTCD. Holiday disincentives shall be applied per section per lane per time unit.

Maintaining Traffic – General Provisions

1. 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 accordance with CMS 401.15 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 warning and information signs necessary for maintaining traffic. The sign faces shall be reflectorized with type G sheeting complying with the requirements of CMS 730.19. The Contractor shall determine what signs are needed and advise the Engineer two 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 the 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 shadow vehicles as per MT-99.20 following the pavement marking equipment. The shadow 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 shadow vehicle in a traffic lane shall be equipped with a truck mounted attenuator meeting NCHRP 350 requirements. Each shadow 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. Whenever a total closure is implemented, the Contractor shall provide a portable changeable message sign 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.
11. For any operation not specifically mentioned in these plans, the traffic shall be maintained in accordance with the OMUTCD.

Holiday Closures

No work shall be performed and all existing lanes shall be open to traffic during the following designated holidays or events:

Christmas	New Years	Mother's Day
Memorial Day	Fourth of July	Easter
Labor Day	Thanksgiving	

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 of the Week</u>	<u>Times All Lanes Must Be Open to Traffic</u>
Sunday	12:00 Noon Friday through 6:00 AM Monday
Monday	12:00 Noon Friday through 6:00 AM Tuesday
Tuesday	12:00 Noon Monday through 6:00 AM Wednesday
Wednesday	12:00 Noon Tuesday through 6:00 AM Thursday
Thursday	12:00 Noon Wednesday through 6:00 AM Monday
Thursday (Thanksgiving only)	6:00AM Wednesday through 6:00 AM Monday
Friday	12:00 Noon Thursday through 6:00 AM Monday
Saturday	12:00 Noon Friday through 6:00 AM Monday

Should the Contractor fail to meet any of these requirements, the Contractor shall be assessed a disincentive per the Lane Value Contract (PN 127).

Maintaining Traffic and Sequence of Operations

All asphalt concrete operations shall be conducted in a manner that will assure minimum danger and inconvenience to highway users. The procedure for the removal or placement of any existing or proposed asphalt course shall be such that no greater than 1-1/2" discontinuity in the elevation of the traveled surface shall be exposed to traffic.

Traffic shall not be permitted to cross any partial-width removal or resurfacing joint during the actual removal or paving operation except as necessary. Any partial-width longitudinal joints with a discontinuity greater than 1-1/2" which must be exposed to traffic shall be ramped using Item 614 – Asphalt Concrete for Maintaining Traffic at a rate not steeper than 6:1.

Temporary transverse removal or paving joints which must be exposed to traffic shall be ramped using Item 614 – Asphalt Concrete for Maintaining Traffic at a rate not to exceed 1" in 10'.

For removal of existing overlays, a transition may be planed into the existing overlay and may be substituted for the asphalt ramps previously described.

Whenever traffic is subject to partial width removals or overlays prior to full width completion, the Contractor shall provide W8-11-48 "UNEVEN LANES" signs (dual sign installation). Placement shall be as directed by the Engineer and included in the lump sum payment for Item 614 – Maintaining Traffic.

Whenever any part of the traveled surface is closed, the motorists shall be warned and diverted by the Contractor through the use of a flashing arrow, in addition to those provisions set forth in the OMUTCD, the Traffic Engineering Manual and the applicable Standard Construction Drawings.

Floodlighting

Floodlighting of the work site for operations conducted during nighttime periods shall be accomplished so that the lights do not cause glare to the drivers on the roadway. To ensure the adequacy of the floodlight placement, the Contractor and the Engineer shall drive through the work site each night when the lighting is in place and operative prior to commencing any work. If glare is detected, the light placement and shielding shall be adjusted to the satisfaction of the Engineer before work proceeds.

Payment for all labor, equipment and materials shall be included in the lump sum contract price for Item 614 – Maintaining Traffic.

Major Work Items

The following major work items will require traffic maintenance which shall be incorporated into the Contractor's sequence of operations.

- A. Removal of existing RPMs
- B. Completion of pavement repairs
- C. Planing of asphalt concrete
- D. Adjustment of existing castings
- E. Placing of asphalt concrete
- F. Placing proposed pavement markings and raised pavement markers
- G. Placing of rumble strips

Item 614 – Asphalt Concrete for Maintaining Traffic, As Per Plan

This item shall be used to provide temporary asphalt ramps for transverse discontinuities. Ramping shall be placed at the rate of 1" per 10' or to be used as directed by the Engineer.

Remove temporary asphalt ramps as part of this item. Materials shall be removed prior to the placement of the next course of asphalt.

Item 614 – Asphalt Concrete for Maintaining Traffic, As Per Plan..... **25 Cu Yd**

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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 for work zone pavement markings per the requirements of CMS 614.04 and 614.11. Place temporary markings at the same locations as the proposed permanent pavement markings.

After the planing is completed, use the following temporary markings:

Item 614 – Work Zone Lane Line, Class I, 6", 642 Paint	6.17 Mile
Item 614 – Work Zone Center Line, Class I, 642 Paint	0.06 Mile
Item 614 – Work Zone Edge Line, Class I, 6", 642 Paint	8.69 Mile
Item 614 – Work Zone Channelizing Line, Class I, 12", 642 Paint	12,255 Ft
Item 614 – Work Zone Dotted Line, Class I, 6", 642 Paint	3,606 Ft
Item 614 – Work Zone Dotted Line, Class I, 12", 642 Paint	5,667 Ft
Item 614 – Work Zone Stop Line, Class I, 642 Paint	149 Ft
Item 614 – Work Zone Crosswalk Line, Class I, 642 Paint	1,002 Ft
Item 614 – Work Zone Arrow, Class I, 642 Paint	27 Each

After the surface course is placed, use the following temporary markings:

Item 614 – Work Zone Lane Line, Class III, 6", 642 Paint	6.17 Mile
Item 614 – Work Zone Center Line, Class III, 642 Paint	0.06 Mile
Item 614 – Work Zone Edge Line, Class III, 6", 642 Paint	8.69 Mile
Item 614 – Work Zone Channelizing Line, Class III, 12", 642 Paint	12255 Ft
Item 614 – Work Zone Dotted Line, Class III, 6", 642 Paint	3606 Ft
Item 614 – Work Zone Dotted Line, Class III, 6", 642 Paint	5,667 Ft
Item 614 – Work Zone Stop Line, Class III, 642 Paint	149 Ft
Item 614 – Work Zone Crosswalk Line, Class III, 642 Paint	1002 Ft
Item 614 – Work Zone Arrow, Class III, 642 Paint	27 Each

Item 614 – Portable Changeable Message Signs, As Per Plan

The Contractor shall furnish, install, maintain and remove, when no longer needed, a changeable message sign. The sign shall be of a type shown on a list of approved PCMS units available on the Office of Materials Management web page. The list contains Class A and B units with minimum legibility distances of 800 feet and 650 feet, respectively.

Each sign shall be 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. The PCMS shall be delineated in accordance with C&MS 614.03.

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 away from all 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 twice.

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 C&MS 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.

The Portable Changeable Message Sign shall have a Web Based Communication System that will allow the Contractor or ODOT to change or program the message board remotely. This system shall be password protected and may be operated from a computer or have an application that can be opened from a cell phone, android or I phone. The Web Based Communication System will show the location of each message board on a map. All charges for the Web Based Communication System will be included in the cost of this item, Portable Changeable Message Sign, As Per Plan.

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.

Item 614 – Portable Changeable Message Sign, As Per Plan	6 Sign Month(s)
Assuming 2 PCMS Signs for 3 Months	

Item 614 – Law Enforcement Officer with Patrol Car for Assistance

Use of Law Enforcement Officers (LEOs) by contractors other than the uses specified below will not be permitted at project cost. LEOs should not be used where the OMUTCD intends that flaggers be used.

In addition to the requirements of C&MS 614 and the OMUTCD, a uniformed LEO with an official patrol car (car with top-mounted emergency flashing lights and complete markings of the appropriate law enforcement agency) shall be provided for the following traffic control tasks:

- During the entire advance preparation and closure sequence where complete blockage of traffic is required.
- During a traffic signal installation when impacting the normal function of the signal or the flow of traffic, or when traffic needs to be directed through an energized traffic signal contrary to the signal display (e.g., directing motorists through a red light).

In addition to the requirement of C&MS 614 and the OMUTCD, a uniformed LEO with an official patrol car (car with top-mounted emergency flashing lights and complete markings of the appropriate law enforcement agency) may be provided for the following traffic control tasks as approved by the Engineer:

- For lane closures: during initial set-up periods, tear down periods, substantial shifts of a closure point or when new lane closure arrangements are initiated for long-term lane closures/shifts (for the first and last day of major changes in traffic control setup).

In general, LEOs should be positioned in advance of and on the same side as the lane restriction or at the point of road closure, and to manually control traffic movements through signalized intersections in work zones.

LEOs should not forgo their traffic control responsibilities to apprehend motorists for routine traffic violations. However, if a motorist's actions are considered to be reckless, then pursuit of the motorist is appropriate.

The LEOs work at the direction of the Contractor. The Contractor is responsible for securing the services of the LEOs with the appropriate agencies and communicating the intentions of the plans with respect to duties of the LEOs. The Engineer shall have final control over the LEOs' duties and placement, and will resolve any issues that may arise between the two parties.

Ensure provided LEOs have been trained appropriate to the job decisions they are required to make while on the project, in accordance with C&MS 614.03.

The LEO shall report in to the Contractor prior to the start of the shift, in order to receive instructions regarding specific work assignments during his/her shift. The LEO is expected to stay at the project site for the entire duration of his/her shift. The LEO shall report to the Contractor at the end of his/her shift. Should it be necessary to leave the project site, the LEO shall notify the Engineer. The Contractor shall provide the LEO with a two-way communication device which shall be returned to the Contractor at the end of his/her shift.

LEOs (with patrol car) required by the traffic maintenance tasks above shall be paid for on a unit price (hourly) basis under Item 614, Law Enforcement Officer (With Patrol Car) for Assistance. The following estimated quantities have been carried to the General Summary.

Item 614 – Law Enforcement Officer With Patrol Car for Assistance	200 Hours
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The hours paid shall include any minimum show-up time required by the law enforcement agency involved.

Any additional costs (administrative or otherwise) incurred by the Contractor to obtain the services of an LEO are included with the bid price for Item 614, Law Enforcement Officer with Patrol Car for Assistance.

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Item 630 – Signing Misc.: Additional Signs, Ground Mounted, As Directed by the Engineer

When additional signing is needed to maintain traffic, the Contractor shall furnish the sign or signs as directed by the Engineer. These signs shall be ground mounted and meet all the specifications of the plan, proposal and current year CMS.

Payment for this item shall include, but not be limited to, the cost to furnish and erect the sign, including driving posts or other approved methods of sign support, maintaining the sign and removal of the sign.

This item of work shall be used to provide signs that are beyond the requirements of the signage detailed in the Standard Construction Drawings and the OMUTCD.

The following estimated quantity has been carried to the General Summary to be used as directed by the Engineer:

Item 630 – Signing Misc.: Additional Signs, Ground Mounted, As Directed by the Engineer **300 Sq Ft**

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.

Item 614 Work Zone Increased Penalties Sign

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.

The signs may be erected or uncovered no more than four hours before the actual start of work. The signs shall be removed or covered no later than four hours following restoration of all lanes to traffic with no restrictions, or sooner as directed by the Engineer. Temporary sign covering and uncovering due to temporary lane restorations shall be guided by the four-hour limitations stated above. Such lane restorations should be expected to remain in effect for 30 or more consecutive calendar days, such as during winter shut-downs.

The signs on the mainline shall be dual mounted unless not physically possible. 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 through the construction work limits. Signs on the mainline shall be R11-H5a-48. Signs used on the ramps shall be R11-H5a-24. R11-H5a-24 signs may be used in the median in lieu of R11-H5a-48 signs if it is not physically possible to provide R11-H5a-48 signs in the median.

The R11-H5a-48 signs shall be mounted on 2 No. 3 posts when located within clear zones.

The Contractor may use signs and supports in used, but good, condition provided the signs meet current ODOT specifications. Sign faces shall be retroreflectorized with Type G sheeting complying with the requirements of C&MS 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 reerected 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.

Item 614 - Work Zone Increased Penalties Sign..... **6 Each**

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SHEET NUM.													PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.		
12	13	14	15	17	18	19	22	23	24	25	26	27	01/NHS/PV		EXT	TOTAL					
																			ROADWAY		
		125											125	202	32000	125	FT	CURB REMOVED			
	13												13	209	60201	13	STA	LINEAR GRADING, AS PER PLAN	13		
													1,000	832	30000	1,000	EACH	EROSION CONTROL			
																			DRAINAGE		
													111	611	98631	111	EACH	CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	13		
													22	611	99655	22	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	13		
	10,000												10,000	SPECIAL	61199820	10,000	LB	MISCELLANEOUS METAL	13		
																			PAVEMENT		
		600											600	251	01021	600	SY	PARTIAL DEPTH PAVEMENT REPAIR (442), AS PER PLAN A	14		
		950											950	251	01021	950	SY	PARTIAL DEPTH PAVEMENT REPAIR (442), AS PER PLAN B	14		
		235											235	253	02000	235	CY	PAVEMENT REPAIR			
		55											55	253	02001	55	CY	PAVEMENT REPAIR, AS PER PLAN	14		
							47,045	57,843	15,032	4,627			124,547	254	01001	124,547	SY	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"	14		
							4,705	5,785	1,503	463			12,456	407	20000	12,456	GAL	NON-TRACKING TACK COAT			
							1,691	1,899	536	193			4,319	442	00100	4,319	CY	ANTI-SEGREGATION EQUIPMENT			
								352	193				545	442	10001	545	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M, 1.5"	14		
							1,961	2,410	274				4,645	442	10301	4,645	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447), AS PER PLAN, PG76-22M, 1.5"	14		
		125											125	609	26000	125	FT	CURB, TYPE 6			
		8											8	617	10101	8	CY	COMPACTED AGGREGATE, AS PER PLAN	14		
		3.78											3.78	618	40601	3.78	MILE	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE), AS PER PLAN	14		
								2,372	1,384				3,756	872	10000	3,756	FT	VOID REDUCING ASPHALT MEMBRANE (VRAM)			
																			WATER WORK		
	2												2	638	10801	2	EACH	VALVE BOX ADJUSTED TO GRADE, AS PER PLAN	13		
																			TRAFFIC CONTROL		
											704	174	878	621	00100	878	EACH	RPM			
		659											659	621	54000	659	EACH	RAISED PAVEMENT MARKER REMOVED			
		12											12	632	26501	12	EACH	DETECTOR LOOP, AS PER PLAN	15		
													7.04	1.65	8.69	8.69	MILE	EDGE LINE, 6"			
													5.77	0.4	6.17	6.17	MILE	LANE LINE, 6"			
														0.17	0.17	646	10200	0.17	MILE	CENTER LINE	
													10,620	1,635	12,255	646	10310	12,255	FT	CHANNELIZING LINE, 12"	
														149	149	646	10400	149	FT	STOP LINE	
														1,002	1,002	646	10500	1,002	FT	CROSSWALK LINE	
														36	36	646	10600	36	FT	TRANSVERSE/DIAGONAL LINE	
														676	676	646	10620	676	FT	CHEVRON MARKING	
														27	27	646	20300	27	EACH	LANE ARROW	
														6	6	646	20320	6	EACH	WRONG WAY ARROW	
														2	2	646	20350	2	EACH	LANE REDUCTION ARROW	
														3,472	134	3,606	646	20504	3,606	FT	DOTTED LINE, 6"
														5,323	344	5,667	646	20510	5,667	FT	DOTTED LINE, 12"

GENERAL SUMMARY

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SHEET NUM.													PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
12	13	14	15	17	18	19	22	23	24	25	26	27	01/NHS/PV	EXT	TOTAL				
					200								200	614	11110	200	HOUR	MAINTENANCE OF TRAFFIC	
						6							6	614	12484	6	EACH	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
			25										25	614	13001	25	CY	WORK ZONE INCREASED PENALTIES SIGN	
					6								6	614	18601	6	SNMT	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN	17
					6.17								6.17	614	20110	6.17	MILE	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	18
					6.17								6.17	614	20560	6.17	MILE	WORK ZONE LANE LINE, CLASS I, 6", 642 PAINT	
					0.06								0.06	614	21100	0.06	MILE	WORK ZONE LANE LINE, CLASS III, 6", 642 PAINT	
					0.06								0.06	614	21550	0.06	MILE	WORK ZONE CENTER LINE, CLASS I, 642 PAINT	
					8.69								8.69	614	22110	8.69	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	
					8.69								8.69	614	22360	8.69	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT	
																		WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT	
					12,255								12,255	614	23210	12,255	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 12", 642 PAINT	
					12,255								12,255	614	23690	12,255	FT	WORK ZONE CHANNELIZING LINE, CLASS III, 12", 642 PAINT	
					3,606								3,606	614	24202	3,606	FT	WORK ZONE DOTTED LINE, CLASS I, 6", 642 PAINT	
					5,667								5,667	614	24208	5,667	FT	WORK ZONE DOTTED LINE, CLASS I, 12", 642 PAINT	
					3,606								3,606	614	24612	3,606	FT	WORK ZONE DOTTED LINE, CLASS III, 6", 642 PAINT	
																		WORK ZONE DOTTED LINE, CLASS III, 12", 642 PAINT	
					5,667								5,667	614	24618	5,667	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	
					149								149	614	26200	149	FT	WORK ZONE STOP LINE, CLASS III, 642 PAINT	
					149								149	614	26610	149	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	
					1,002								1,002	614	27200	1,002	FT	WORK ZONE STOP LINE, CLASS III, 642 PAINT	
					1,002								1,002	614	27620	1,002	FT	WORK ZONE CROSSWALK LINE, CLASS I, 642 PAINT	
																		WORK ZONE CROSSWALK LINE, CLASS III, 642 PAINT	
					27								27	614	30200	27	EACH	WORK ZONE ARROW, CLASS I, 642 PAINT	
					27								27	614	30650	27	EACH	WORK ZONE ARROW, CLASS III, 642 PAINT	
						300							300	630	97800	300	SF	SIGNING, MISC.:ADDITIONAL SIGNS, GROUND MOUNTED, AS DIRECTED BY THE ENGINEER	19
																		INCIDENTALS	
	6												LS	614	11000	LS	MNTH	MAINTAINING TRAFFIC	
	LS												6	619	16011	6		FIELD OFFICE, TYPE B, AS PER PLAN	12
													LS	623	10001	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN	12
													LS	624	10000	LS		MOBILIZATION	

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REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION	LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"	NON-TRACKING TACK COAT	ANTI-SEGREGATION EQUIPMENT	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M, 1.5"	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447), AS PER PLAN, PG76-22M, 1.5"	VOID REDUCING ASPHALT MEMBRANE (VRAM)
				FT.	FT.	FT.	FT.	SQ. YD.						
			S.R. 2 EB											
		1	180+85.97 182+00.00	114.03	61.75	61.75	61.75	782.38	782.38	78.24	32.60	32.60		
		1	182+00.00 182+15.75	15.75	61.00	61.00	61.00	106.75	106.75	10.68	4.45	4.45		
		1	182+15.75 183+51.54	135.79	61.00	62.82	61.91	934.09	934.09	93.41	38.93	38.93		
		1	183+51.54 183+71.09	19.55	62.82	66.39	64.61	140.34	140.34	14.04	5.85	5.85		
		1	183+71.09 184+08.75	37.66	66.39	67.68	67.04	280.51	280.51	28.06	11.69	11.69		
		1	184+08.75 184+67.07	58.32	68.43	69.68	69.06	447.48	447.48	44.75	18.65	18.65		
		1	184+67.07 184+94.99	27.92	34.50	33.58	34.04	105.61	105.61	10.57	3.43	4.41		
		1	184+94.99 189+64.08	469.09	34.00	34.00	34.00	1772.12	1772.12	177.22	57.56	73.84		
		1	189+64.08 190+48.10	84.02	33.25	33.25	33.25	310.41	310.41	31.05	10.02	12.94		
			STA. 190+48.10 BK = STA. 0+00.00 AH											
		1	0+00.00 0+69.98	69.98	33.25	33.25	33.25	258.54	258.54	25.86	8.35	10.78		
		1	0+69.98 7+18.43	648.45	34.00	34.00	34.00	2449.70	2449.70	244.97	79.56	102.08		
		1	7+18.43 8+51.81	133.38	73.99	68.88	71.43	1058.63	1058.63	105.87	40.41	44.11		
		1	8+51.81 8+76.28	24.47	89.67	84.11	86.89	236.25	236.25	23.63	9.50	9.85		
		1	8+76.28 9+54.25	77.97	84.11	81.10	82.61	715.64	715.64	71.57	27.55	29.82		
		1	9+54.25 10+22.15	67.90	80.35	78.24	79.30	598.24	598.24	59.83	21.86	24.93		
		1	10+22.15 10+44.25	22.10	78.24	77.94	78.09	191.76	191.76	19.18	6.97	7.99		
		1	10+44.25 11+49.83	105.58	78.69	78.00	78.35	919.08	919.08	91.91	33.41	38.30		
		1	11+49.83 12+15.00	65.17	78.00	78.00	78.00	564.81	564.81	56.49	20.52	23.54		
		1	12+15.00 15+08.50	293.50	76.12	72.00	74.06	2415.20	2415.20	241.52	87.05	100.64		
		1	15+08.50 15+71.00	62.50	72.00	72.00	72.00	500.00	500.00	50.00	18.06	20.84		
		1	15+71.00 16+57.50	86.50	72.00	79.80	75.90	729.47	729.47	72.95	26.85	30.40		
		1	16+57.50 17+45.00	87.50	79.80	84.00	81.90	796.33	796.33	79.64	31.19	33.19		
		1	17+45.00 18+06.00	61.00	84.00	84.00	84.00	569.34	569.34	56.94	23.73	23.73		
		1	18+06.00 22+62.16	456.16	60.00	60.00	60.00	3041.07	3041.07	304.11	105.60	126.72		
		1	22+62.16 24+28.00	165.84	60.00	60.82	60.41	1113.16	1113.16	111.32	38.71	46.39		
		1	24+28.00 24+87.05	59.05	62.66	73.39	78.03	511.94	511.94	51.20	20.16	21.34		
		1	24+87.05 26+03.00	115.95	73.39	72.00	72.70	936.56	936.56	93.66	34.46	39.03		
		1	26+03.00 28+70.70	267.70	72.00	72.00	72.00	2173.60	2173.60	217.36	76.84	90.57		
		1	28+70.70 38+08.92	938.22	72.00	72.00	72.00	7505.76	7505.76	750.58	274.56	312.74		
		1	38+08.92 38+85.05	76.13	72.00	92.26	82.13	694.73	694.73	69.48	27.62	28.95		
		1	38+85.05 39+10.05	25.00	62.00	60.00	61.00	169.45	169.45	16.95	5.79	7.07		
		1	39+10.05 40+38.03	127.98	60.00	60.00	60.00	853.20	853.20	85.32	29.63	35.55		
		1	40+38.03 40+95.97	57.94	83.75	80.11	81.93	527.45	527.45	52.75	20.42	21.98		
		1	40+95.97 43+84.00	288.03	80.11	62.00	71.05	2273.92	2273.92	227.40	82.52	94.75		
		1	43+84.00 44+78.00	94.00	62.00	60.00	61.00	637.12	637.12	63.72	22.20	26.55		
		1	44+78.00 46+50.00	172.00	60.00	60.00	60.00	1146.67	1146.67	114.67	39.82	47.78		
		1	46+50.00 51+38.00	488.00	CADD AREA			3858.45	3858.45	385.85	138.66	160.77		
		1	51+38.00 57+52.93	614.93	48.00	48.00	48.00	3279.63	3279.63	327.97	108.19	136.66		
		1	57+52.93 58+98.03	145.10	48.00	41.25	44.63	719.46	719.46	71.95	25.53	29.98		
			BRIDGE CUY-2-17.39											
		1	61+40.53 61+47.03	6.50	45.00	45.00	45.00	32.50	32.50	3.25	1.09	1.36		
			SWITCH TO S.R. 2 EB BASELINE											
		1	61+37.90 61+67.90	30.00	45.00	47.26	46.13	153.77	153.77	15.38	5.00	6.41		
		1	61+67.90 62+63.80	95.90	47.26	52.90	50.08	533.64	533.64	53.37	15.99	22.24		
SUBTOTALS									47045	4705	1691	1961		
TOTALS CARRIED TO GENERAL SUMMARY									47045	4705	1691	1961		
PLAN SPLIT #1 TOTAL									47045	4705	1691	1961		
PLAN SPLIT #2 TOTAL														

PAVEMENT SUBSUMMARY

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REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION	LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA	254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"	407 NON-TRACKING TACK COAT	442 ANTI-SEGREGATION EQUIPMENT	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M, 1.5"	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447), AS PER PLAN, PG76-22M, 1.5"	872 VOID REDUCING ASPHALT MEMBRANE (VRAM)
				FT.	FT.	FT.	FT.	SQ. YD.						
			<u>S.R. 2 EB (CONT.)</u>											
	1		62+63.80 63+87.00	123.20	52.90	55.00	53.95	738.52	738.52	73.86	20.54		30.78	
	1		63+87.00 69+15.00	528.00	55.00	55.00	55.00	3226.67	3226.67	322.67	88.00		134.45	
	1		69+15.00 70+25.00	110.00	55.00	65.00	60.00	733.34	733.34	73.34	22.41		30.56	
	1		70+25.00 70+41.20	16.20	65.00	65.00	65.00	117.00	117.00	11.70	3.90		4.88	
	1		70+41.20 76+58.98	617.78	65.00	57.59	61.30	4207.43	4207.43	420.75	134.60		175.31	
	1		76+58.98 76+83.98	25.00	57.59	58.29	57.94	160.95	160.95	16.10	4.83		6.71	
	1		76+83.98 77+50.12	66.14	CADD AREA			459.94	459.94	46.00	15.27		19.17	
	1		77+50.12 80+41.20	2+91.08	49.49	46.00	47.75	1544.18	1544.18	154.42	36.83		64.35	
	1		80+41.20 81+35.00	0+93.80	46.00	46.00	46.00	479.43	479.43	47.95	11.30		19.98	
			<u>S.R. 2 WB</u>											
	1		180+85.97 181+12.97	27.00	50.25	50.25	50.25	150.75	150.75	15.08	6.29		6.29	
	1		181+12.97 182+00.00	87.03	54.25	54.25	54.25	524.60	524.60	52.46	19.81		21.86	
	1		182+00.00 183+44.35	144.35	53.50	53.50	53.50	858.09	858.09	85.81	31.16		35.76	
	1		183+44.35 184+08.75	64.40	53.50	55.21	54.36	388.95	388.95	38.90	13.82		16.21	
	1		184+08.75 186+16.55	207.80	55.21	71.05	63.13	1457.61	1457.61	145.77	53.02		60.74	
	1		186+16.55 189+64.08	347.53	34.00	34.00	34.00	1312.90	1312.90	131.29	42.64		54.71	
	1		189+64.08 190+48.10	84.02	33.25	33.25	33.25	310.41	310.41	31.05	10.02		12.94	
			<u>STA. 190+48.10 BK = STA. 0+00.00 AH</u>											
	1		0+00.00 0+69.98	69.98	33.25	33.25	33.25	258.54	258.54	25.86	8.35		10.78	
	1		0+69.98 7+18.43	648.45	34.00	34.00	34.00	2449.70	2449.70	244.97	79.56		102.08	
	1		7+18.43 7+42.35	23.92	34.00	34.31	34.16	90.78	90.78	9.08	2.94		3.79	
	1		7+42.35 7+46.35	4.00	34.31	34.31	34.31	15.25	15.25	1.53	0.50		0.64	
	1		7+46.35 9+54.25	207.90	74.34	68.20	71.27	1646.34	1646.34	164.64	58.98		68.60	
	1		9+54.25 10+44.25	90.00	67.45	66.02	66.74	667.35	667.35	66.74	23.80		27.81	
	1		10+44.25 11+87.89	143.64	66.77	66.00	66.39	1059.51	1059.51	105.96	37.50		44.15	
	1		11+87.89 11+98.00	10.11	66.00	66.00	66.00	74.14	74.14	7.42	2.63		3.09	
	1		11+98.00 15+08.50	310.50	64.36	60.00	62.18	2145.21	2145.21	214.53	75.01		89.39	
	1		15+08.50 45+22.00	3013.50	60.00	60.00	60.00	20090.00	20090.00	2009.00	697.57		837.09	
	1		45+22.00 46+50.00	128.00	60.00	66.81	63.41	901.76	901.76	90.18	31.65		37.58	
	1		46+50.00 50+03.09	353.09	CADD AREA			3154.62	3154.62	315.47	115.56		131.45	
	1		50+03.09 50+84.15	81.06	34.00	34.00	34.00	306.23	306.23	30.63	9.76		12.76	
	1		50+84.15 52+91.86	207.71	34.00	36.00	35.00	807.77	807.77	80.78	25.01		33.66	
	1		52+91.86 57+67.92	476.06	36.00	36.00	36.00	1904.24	1904.24	190.43	57.31		79.35	
	1		57+67.92 58+98.03	130.11	36.00	29.25	32.63	471.65	471.65	47.17	15.67		19.66	
			<u>BRIDGE CUY-2-17.39</u>											
	1		61+46.84 61+75.12	28.28	33.00	33.91	33.46	105.13	105.13	10.52	3.20		4.39	
	1		61+75.12 61+96.00	20.88	33.91	36.55	35.23	81.74	81.74	8.18	2.40		3.41	
	1		61+96.00 62+80.86	84.86	36.55	43.39	39.97	376.88	376.88	37.69	10.00		15.71	
	1		62+80.86 63+94.61	113.75	43.39	46.08	44.74	565.41	565.41	56.55	14.02		23.56	
	1		63+94.61 64+37.92	43.31	46.08	47.93	47.01	226.20	226.20	22.62	5.52		9.43	
	1		64+37.92 64+52.60	14.68	40.81	41.00	40.91	66.73	66.73	6.68	1.90		2.79	
	1		64+52.60 72+32.59	779.99	41.00	41.00	41.00	3553.29	3553.29	355.33	101.11		148.06	
	1		72+32.59 72+66.00	33.41	41.00	41.88	41.44	153.84	153.84	15.39	4.34		6.41	
SUBTOTALS									57843	5785	1899		2410	
TOTALS CARRIED TO GENERAL SUMMARY									57843	5785	1899		2410	
PLAN SPLIT #1 TOTAL									57843	5785	1899		2410	
PLAN SPLIT #2 TOTAL														

PAVEMENT SUBSUMMARY

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REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION	LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"	NON-TRACKING TACK COAT	ANTI-SEGREGATION EQUIPMENT	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M, 1.5"	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447), AS PER PLAN, PG76-22M, 1.5"	VOID REDUCING ASPHALT MEMBRANE (VRAM)	
				FT.	FT.	FT.	FT.	SQ. YD.							SY
			S.R. 2 WB From I.R. 90 WB												
	1		50+07.00	53+55.68	348.68	38.00	38.00	38.00	1472.21						
	1		53+55.68	55+30.73	175.05				1099.27	1472.21	147.23	38.75	61.35		
	1		55+30.73	55+66.24	35.51	48.00	48.00	48.00	189.39	1099.27	109.93	36.27	45.81		
	1		55+66.24	60+06.24	440.00	48.00	56.00	52.00	2542.23	189.39	18.94	5.92	7.90		
	1		60+06.24	60+38.13	31.89	56.00	56.00	56.00	198.43	2542.23	254.23	73.34	105.93		
	1		60+38.13	61+38.13	100.00	56.00	51.00	53.50	594.45	198.43	19.85	5.32	8.27		
	1		61+38.13	62+20.00	81.87	51.00	55.09	53.05	482.54	594.45	59.45	14.36	24.77		
			S.R. 2 RAMP C												
	1		2+70.03	6+38.60	270.90	30.00	30.00	30.00	903.00						
	1		6+38.60	6+67.67	29.07				129.98	903.00	90.30	37.63	37.63	270.90	
			S.R. 2 RAMP D												
	1		2+50.11	2+78.18	28.07	31.18	30.78	30.98	96.63						
	1		2+78.18	2+88.20	10.02	31.59	31.10	31.35	34.90	96.63	9.67	4.03	4.03	28.07	
	1		2+88.20	3+25.00	36.80	31.10	28.75	29.93	122.36	34.90	3.49	1.46	1.46	10.02	
	1		EXIT RAMP AREA		10.30				16.81	122.36	12.24	5.10	5.10	36.80	
	1		3+25.00	3+36.69	11.69	56.76	54.27	55.52	166.58	16.81	1.69	0.71	0.71	10.30	
	1		3+36.69	3+52.20	15.51	54.27	53.63	53.95	167.58	166.58	16.66	6.95	6.95	11.69	
	1		3+52.20	4+88.89	136.69	53.63	50.00	51.82	168.58	167.58	16.76	6.99	6.99	15.51	
	1		4+88.89	7+60.98	272.09	50.00	50.00	50.00	169.58	168.58	16.86	7.03	7.03	136.69	
	1		7+60.98	7+93.25	32.27				209.66	169.58	16.96	7.07	7.07	272.09	
			S.R. 2 RAMP E												
	1		0+32.00	0+71.13	39.13				225.79	209.66	20.97	8.74	8.74	32.27	
	1		0+71.13	1+90.00	118.87	40.00	40.00	40.00	528.32	225.79	22.58	9.41	9.41	39.13	
	1		1+90.00	3+40.00	150.00	40.00	46.00	43.00	716.67	528.32	52.84	22.02	22.02	118.87	
	1		3+40.00	6+16.87	276.87	46.00	46.00	46.00	1415.12	716.67	71.67	29.87	29.87	150.00	
	1		6+16.87	7+16.87	100.00	46.00	36.00	41.00	455.56	1415.12	141.52	58.97	58.97	276.87	
	1		7+16.87	7+53.24	36.37	36.00	36.00	36.00	145.48	455.56	45.56	18.99	18.99	100.00	
			S.R. 2 RAMP F												
	1		0+32.00	0+71.31	39.31				189.49	145.48	14.55	6.07	6.07	36.37	
	1		0+71.31	5+78.19	506.88	32.50	32.50	32.50	1830.40	189.49	18.95	7.90	7.90	39.31	
	1		5+78.19	6+43.83	65.64	34.00	34.00	34.00	247.98	1830.40	183.04	76.27	76.27	506.88	
	1		6+43.83	6+53.83	10.00	34.00	35.00	34.50	38.34	247.98	24.80	10.34	10.34	65.64	
	1		6+53.83	7+27.83	74.00	35.00	35.00	35.00	287.78	38.34	3.84	1.60	1.60	10.00	
			S.R. 2 RAMP H												
	1		0+82.05	0+98.05	16.00	16.00	17.00	16.50	29.34	287.78	28.78	12.00	12.00	74.00	
	1		0+98.05	1+10.38	12.33				26.12	29.34	2.94	1.23	1.23	16.00	
			S.R. 2 RAMP I												
	1		3+51.32	3+81.32	30.00	19.00	11.00	15.00	50.00	26.12	2.62	1.09	1.09	12.33	
	1		3+81.32	3+84.00	2.68	11.00	11.00	11.00	3.28	50.00	5.00	2.09	2.09	30.00	
			S.R. 2 RAMP J												
	1		0+67.00	0+85.97	18.97	15.37	16.00	15.69	33.07	3.28	0.33	0.14	0.14	2.68	
	1		0+85.97	1+00.00	14.03	16.00	16.00	16.00	24.95	33.07	3.31	1.38	1.38	18.97	
	1		1+00.00	1+07.76	7.76				19.81	24.95	2.50	1.04	1.04	14.03	
			SUBTOTALS												
			TOTALS CARRIED TO GENERAL SUMMARY												
			PLAN SPLIT #1 TOTAL												
			PLAN SPLIT #2 TOTAL												

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REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION	LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA	254	407	442	442	442	872
				FT.	FT.	FT.	FT.	SQ. YD.	SY	GAL	CY	CY	CY	FT
			<u>S.R. 2 RAMP K</u>											
	1		2+70.33 3+05.00	34.67				CADD AREA	101.95					34.67
			<u>S.R. 2 RAMP L</u>											
	1		0+69.00 0+99.77	30.77	14.60	15.00	14.80		50.60	5.06		2.11	2.11	30.77
	1		0+99.77 1+11.77	12.00	15.00	15.00	15.00		20.00	2.00		0.84	0.84	12.00
	1		1+11.77 1+31.50	19.73				CADD AREA	41.27	4.13		1.72	1.72	19.73
			<u>S.R. 2 RAMP M</u>											
	1		0+47.23 3+32.06	284.83	32.00	32.00	32.00		1012.73	101.28		42.20	42.20	284.83
	1		3+32.06 3+53.93	21.87	32.00	23.70	27.85		67.68	6.77		2.82	2.82	21.87
	1		3+53.93 3+75.28	21.35	23.70	21.45	22.58		53.56	5.36		2.24	2.24	21.35
			<u>S.R. 2 RAMP N</u>											
	1		0+00.00 0+13.43	13.43	23.50	24.00	23.75		35.45	3.55		1.48	1.48	13.43
	1		0+13.43 0+75.16	61.73	24.00	30.00	27.00		185.19	18.52		7.72	7.72	61.73
	1		0+75.16 5+48.90	473.74	30.00	30.00	30.00		1579.14	157.92		65.80	65.80	473.74
			<u>RAMP PLC</u>											
	1		56+31.90 56+84.21	52.31				CADD AREA	284.33	28.44		11.85	11.85	52.31
	1		56+84.21 59+14.75	230.54	26.00	26.00	26.00		666.01	66.61		27.76	27.76	230.54
			SUSPEND WORK STA. 59+14.75 RESUME WORK STA. 65+73.86											
	1		65+73.86 66+08.47	34.61				CADD AREA	143.47	14.35		5.98	5.98	34.61
	1		66+08.47 66+20.86	23.00	23.00	23.50	23.25		59.42	5.95		2.48	2.48	23.00
			<u>RAMP O</u>											
	1		0+50.00 0+88.91	38.91	33.00	33.00	33.00		142.67	14.27		5.95	5.95	38.91
	1		0+88.91 1+18.99	30.08				CADD AREA	183.14	18.32		7.64	7.64	30.08
SUBTOTALS									4627	463	193	193	1384	
TOTALS CARRIED TO GENERAL SUMMARY									4627	463	193	193	1384	
PLAN SPLIT #1 TOTAL									4627	463	193	193	1384	
PLAN SPLIT #2 TOTAL														

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SHEET NO.	PLAN SPLIT NO.	STATION TO STATION	LENGTH	646	646	646	646		646	646	646	646	646	646	646	646	646		621	621	621		
				EDGE LINE, 6", WHITE	EDGE LINE, 6", YELLOW	LANE LINE, 6"	CENTER LINE		CHANNELIZING LINE, 12"	STOP LINE	CROSSWALK LINE	TRANSVERSE/DIAGONAL LINE, YELLOW	CHEVRON MARKING	LANE ARROW	WRONG WAY ARROW	LANE REDUCTION ARROW	DOTTED LINE, 6"	DOTTED LINE, 12"		RPM (WHITE)	RPM (WHITE/RED)	RPM (YELLOW/RED)	
			FT	MILE	MILE	MILE	MILE		FT	FT	FT	FT	FT	EACH	EACH	EACH	FT	FT	EACH	EACH	EACH		
		<i>S.R. 2 Ramp C</i>																					
1		2+70.93	6+46.95	376.02	377.00	377.00					170										5		
		<i>S.R. 2 Ramp D</i>																					
1		2+50.11	3+25.00	74.89	75.00	75.00			75											3	2		
		<i>Extra Ramp Area</i>																					
1		3+25.00	4+88.89	163.89	164.00	164.00			8											18	4		
1		4+88.89	6+60.00	171.11	172.00	172.00			492											12	4		
1		6+60.00	7+68.00	108.00	108.00	108.00				216	45	302		3	3			38		6	3		
		<i>S.R. 2 Ramp E</i>																					
1		0+49.50	4+50.00	400.50	401.00	401.00			802	48	278		18				96			4	33		
1		4+50.00	6+16.87	166.87	167.00	167.00	0.07								3					2	3		
1		6+16.87	7+53.24	136.37	137.00	137.00	0.03													2	2		
		<i>S.R. 2 Ramp F</i>																					
1		0+48.92	7+27.83	678.91	679.00	679.00	0.13				252									9	9		
		<i>S.R. 2 Ramp H</i>																					
1		0+82.05	1+14.01	31.96	32.00	32.00																	
		<i>S.R. 2 Ramp I</i>																					
1		3+51.32	3+84.00	32.68	33.00				33														
		<i>S.R. 2 Ramp J</i>																					
1		0+67.00	1+13.76	46.76	47.00	47.00																	
		<i>S.R. 2 Ramp K</i>																					
1		2+58.74	3+05.00	46.26	47.00	47.00																	
		<i>S.R. 2 Ramp L</i>																					
1		0+69.00	1+36.78	67.78	68.00	68.00																	
		<i>S.R. 2 Ramp SIC</i>																					
1		51+30.43	59+47.77	817.34	818.00	818.00	0.16													11	11		
1		59+47.77	59+56.00	8.23	9.00		0.01		9														
		<i>S.R. 2 Ramp M</i>																					
1		0+47.23	3+75.28	328.05	329.00	329.00															5		
		<i>S.R. 2 Ramp N</i>																					
1		0+00.00	5+48.90	548.90	549.00	549.00															8		
		<i>S.R. 2 Ramp PLC</i>																					
1		56+58.00	65+53.86	895.86																			
1		65+53.86	65+73.86	20.00		40.00				20													
1		65+73.86	66+08.47	34.61	70.00	70.00							4								2		
1		66+08.47	66+20.86	12.39	13.00	13.00							32										
		<i>S.R. 2 Ramp O</i>																					
1		0+50.00	1+09.18	59.18	60.00	60.00					36										2		
SUBTOTALS				4359	4353	0.4	0.17		1635	149	1002	36		27	6		134	344		26	77	71	
TOTALS CARRIED TO GENERAL SUMMARY				1.65 MI			0.4	0.17		1635	149	1002	36		27	6		134	344		174		

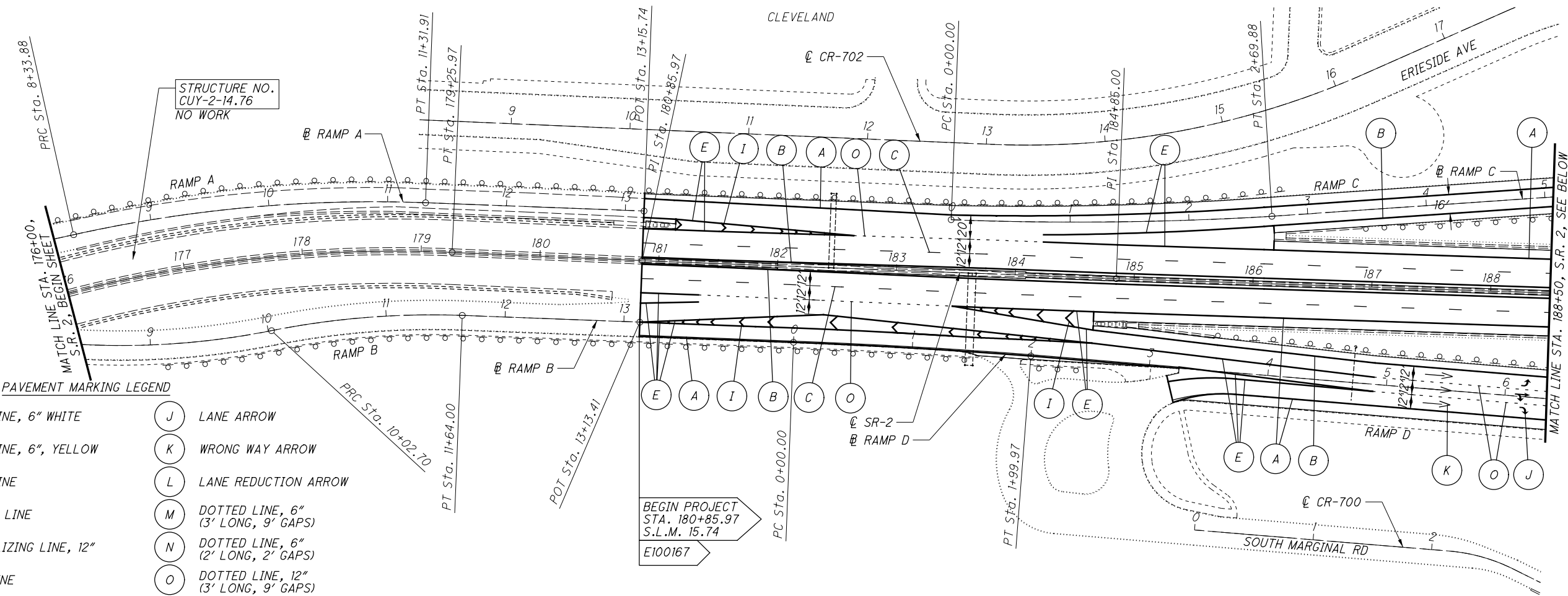
PAVEMENT MARKING SUBSUMMARY

CUY - 2 - 15.75

CALCULATED
JDA
CHECKED
DAB

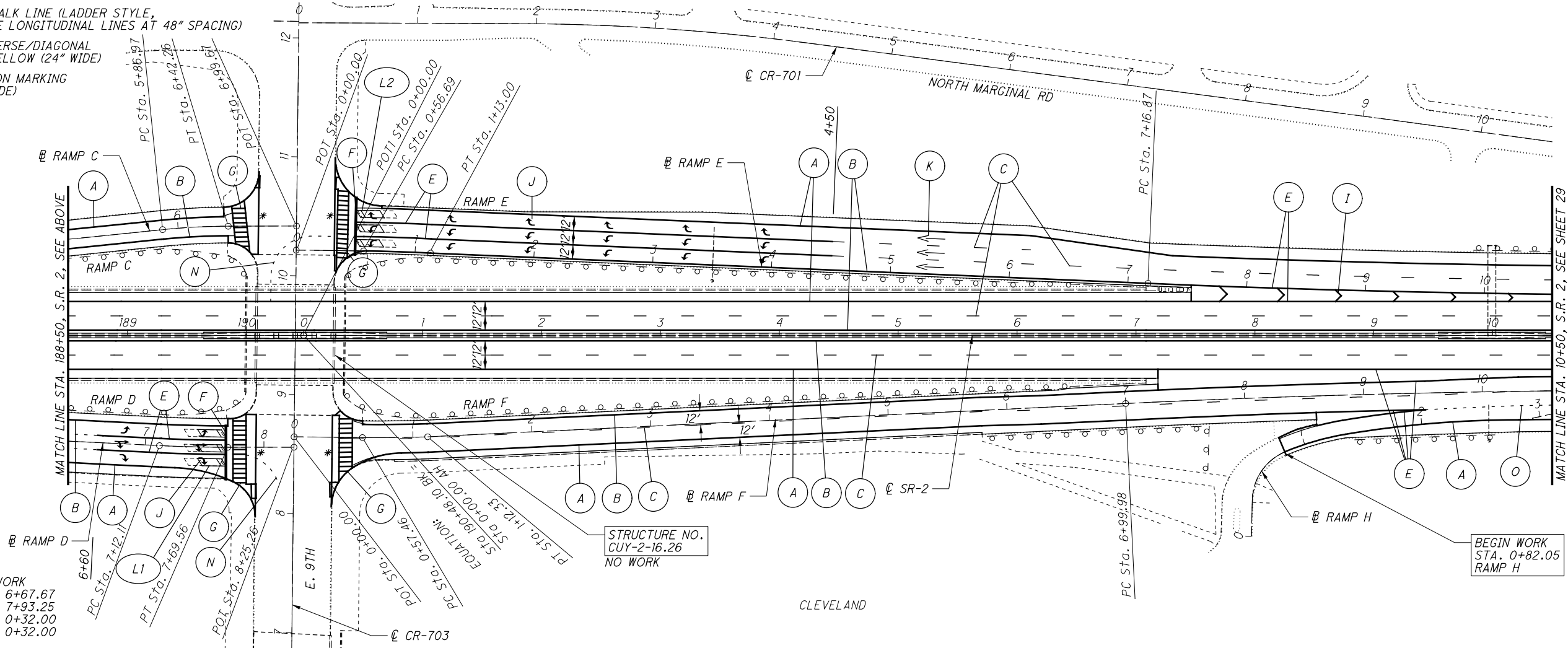
27
33

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PAVEMENT MARKING LEGEND

- (A) EDGE LINE, 6" WHITE
- (B) EDGE LINE, 6", YELLOW
- (C) LANE LINE
- (D) CENTER LINE
- (E) CHANNELIZING LINE, 12"
- (F) STOP LINE
- (G) CROSSWALK LINE (LADDER STYLE, 24" WIDE LONGITUDINAL LINES AT 48" SPACING)
- (H) TRANSVERSE/DIAGONAL LINE, YELLOW (24" WIDE)
- (I) CHEVRON MARKING (24" WIDE)
- (J) LANE ARROW
- (K) WRONG WAY ARROW
- (L) LANE REDUCTION ARROW
- (M) DOTTED LINE, 6" (3' LONG, 9' GAPS)
- (N) DOTTED LINE, 6" (2' LONG, 2' GAPS)
- (O) DOTTED LINE, 12" (3' LONG, 9' GAPS)



*BEGIN/END WORK
 RAMP C, STA. 6+67.67
 RAMP D, STA. 7+93.25
 RAMP E, STA. 0+32.00
 RAMP F, STA. 0+32.00

STRUCTURE NO.
 CUY-2-16.26
 NO WORK

BEGIN WORK
 STA. 0+82.05
 RAMP H

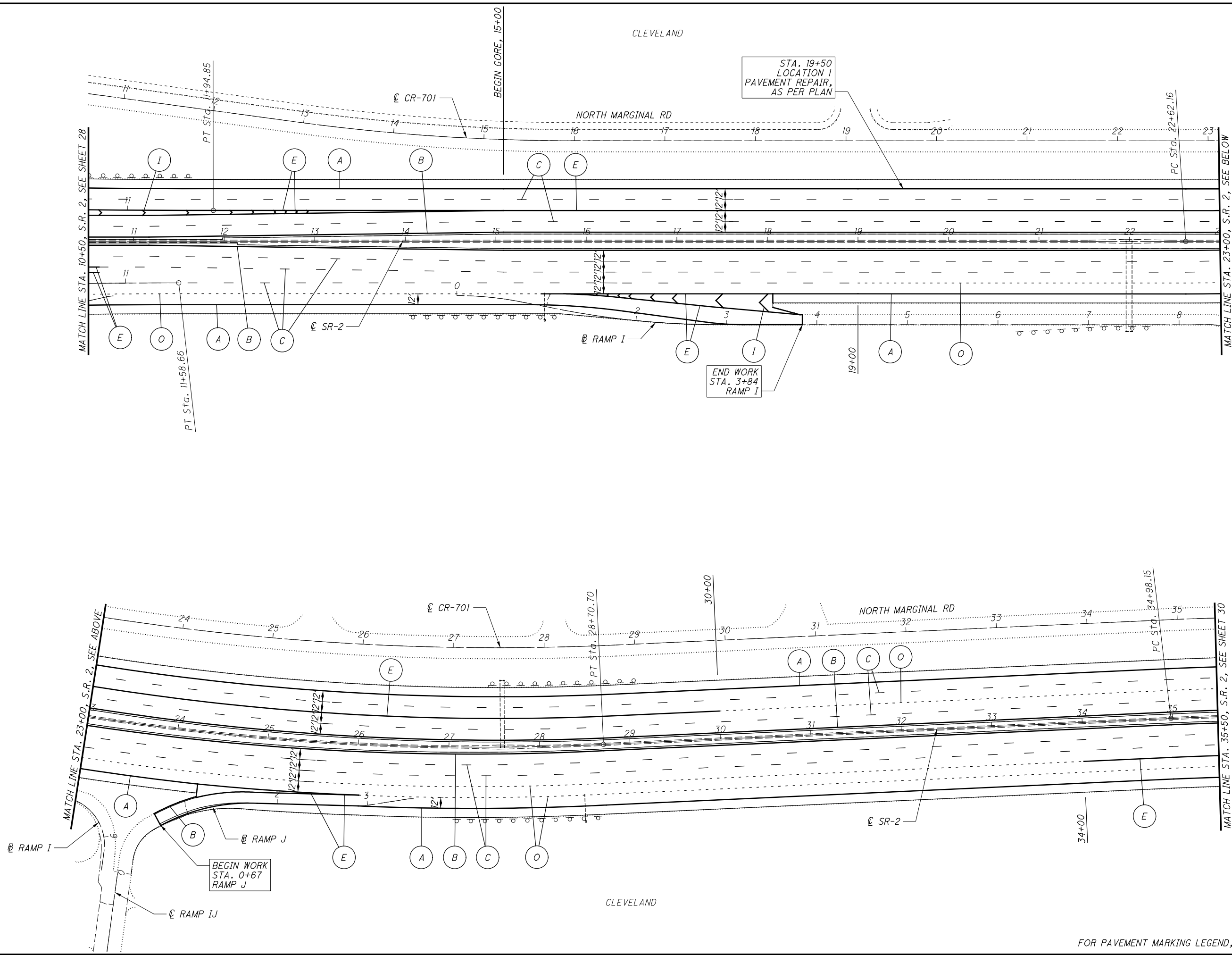
CALCULATED JDA CHECKED DAB

0 50 100
 HORIZONTAL SCALE IN FEET

GENERAL PLAN SHEET
 S.R. 2, STA. 176+00 TO STA. 10+50

CUY-2-15.75

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CALCULATED
JDA
CHECKED
DAB

0 50 100
25
HORIZONTAL
SCALE IN FEET

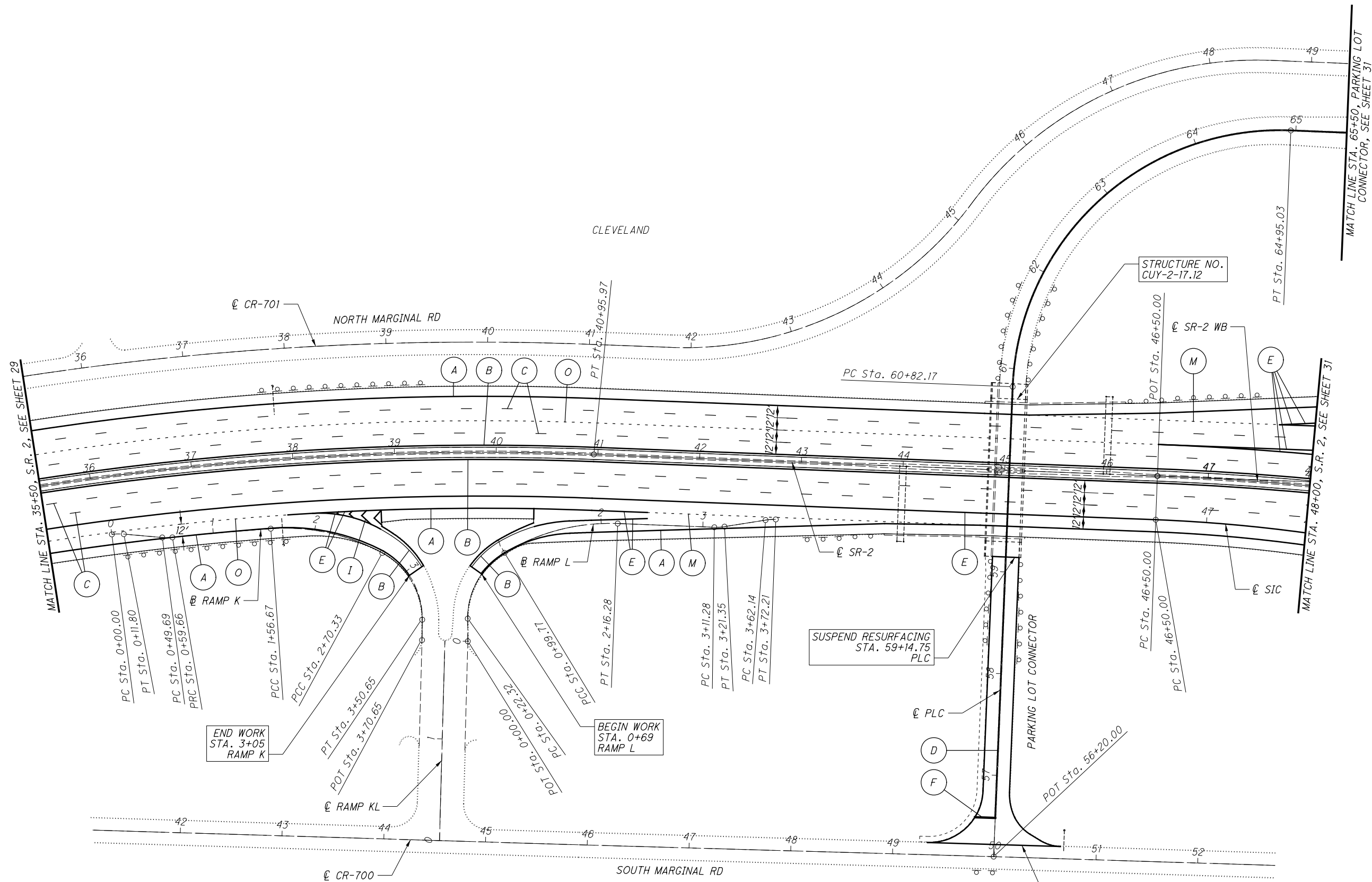
GENERAL PLAN SHEET
S.R. 2, STA. 10+50 TO STA. 35+50

CUY-2-15.75

29
33

FOR PAVEMENT MARKING LEGEND, SEE SHEET 28

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CALCULATED
JDA
CHECKED
DAB

0 50 100
25
HORIZONTAL
SCALE IN FEET

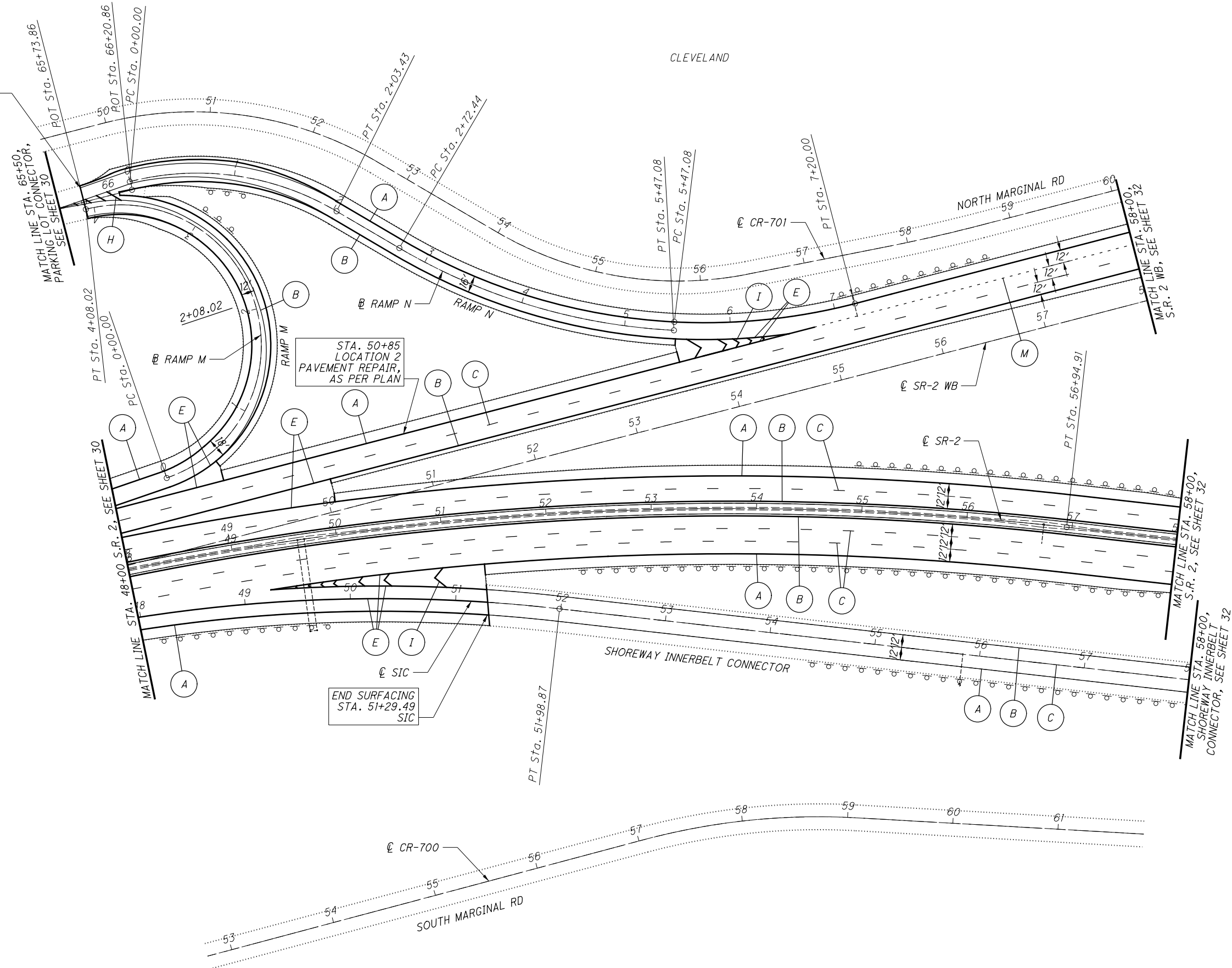
GENERAL PLAN SHEET
S.R. 2, STA. 35+50 TO STA. 48+00

CUY-2-15.75

FOR PAVEMNET MARKING LEGEND, SEE SHEET 28

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RESUME RESURFACING
STA. 65+73.86
PLC



CALCULATED	JDA
CHECKED	DAB

GENERAL PLAN SHEET
S.R. 2, STA. 48+00 TO STA. 58+00

CUY-2-15.75

FOR PAVEMENT MARKING LEGEND, SEE SHEET 28

CLEVELAND

NORTH MARGINAL RD

SOUTH MARGINAL RD



0 50 100
HORIZONTAL SCALE IN FEET

CALCULATED JDA
CHECKED DAB

GENERAL PLAN SHEET
S.R. 2, STA. 58+00 TO STA. 71+00

CUY-2-15.75

32
33

END WORK
STA. 62+20
SR-2 WB

END WORK
STA. 72+66
SR-2 WB RAMP

END WORK
STA. 59+56
SIC

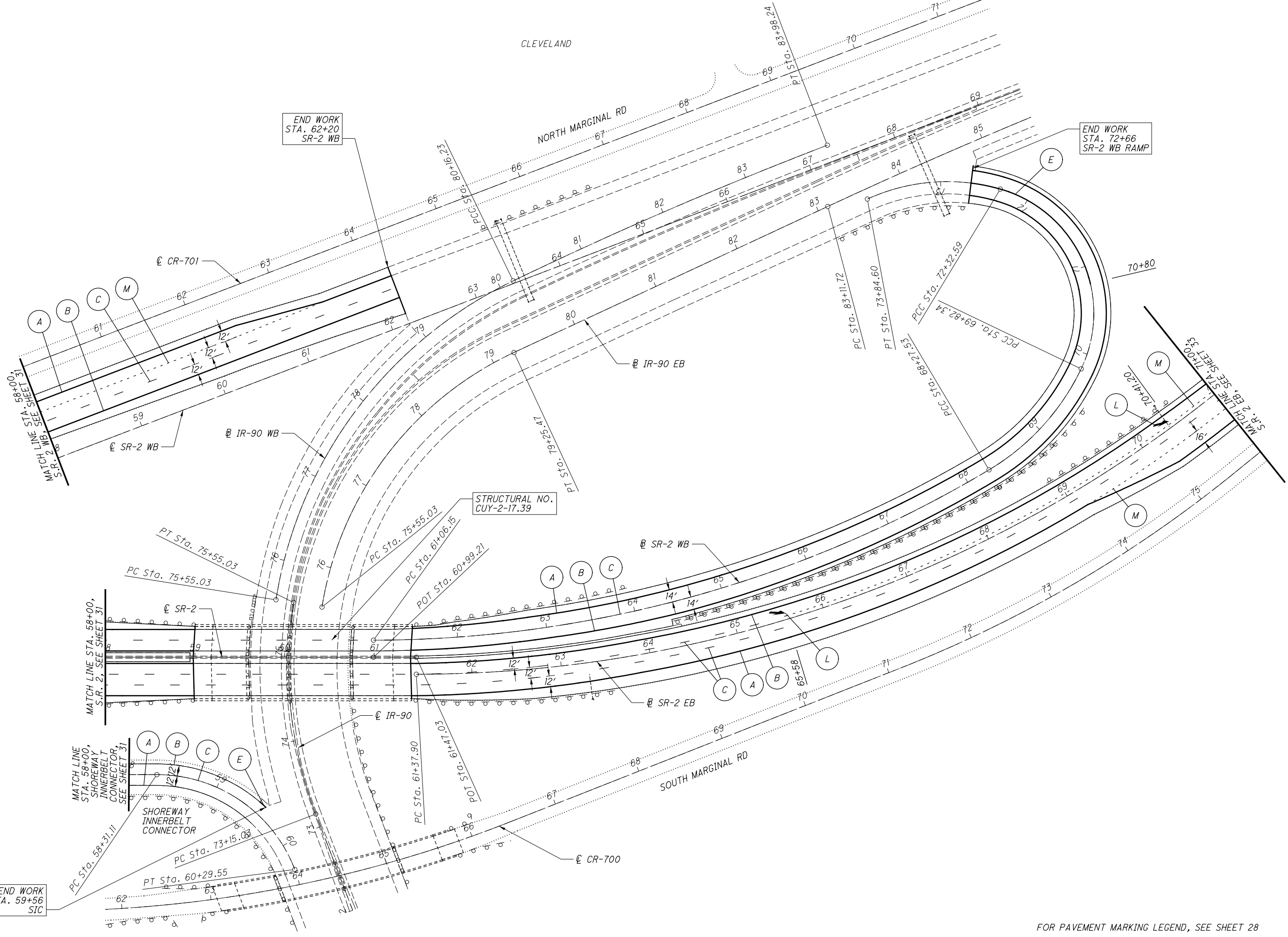
STRUCTURAL NO.
CUY-2-17.39

MATCH LINE
STA. 58+00,
SHOREWAY
INNERBELT
CONNECTOR,
SEE SHEET 31

MATCH LINE STA. 58+00,
S.R. 2, SEE SHEET 31

MATCH LINE STA. 58+00,
S.R. 2, SEE SHEET 31

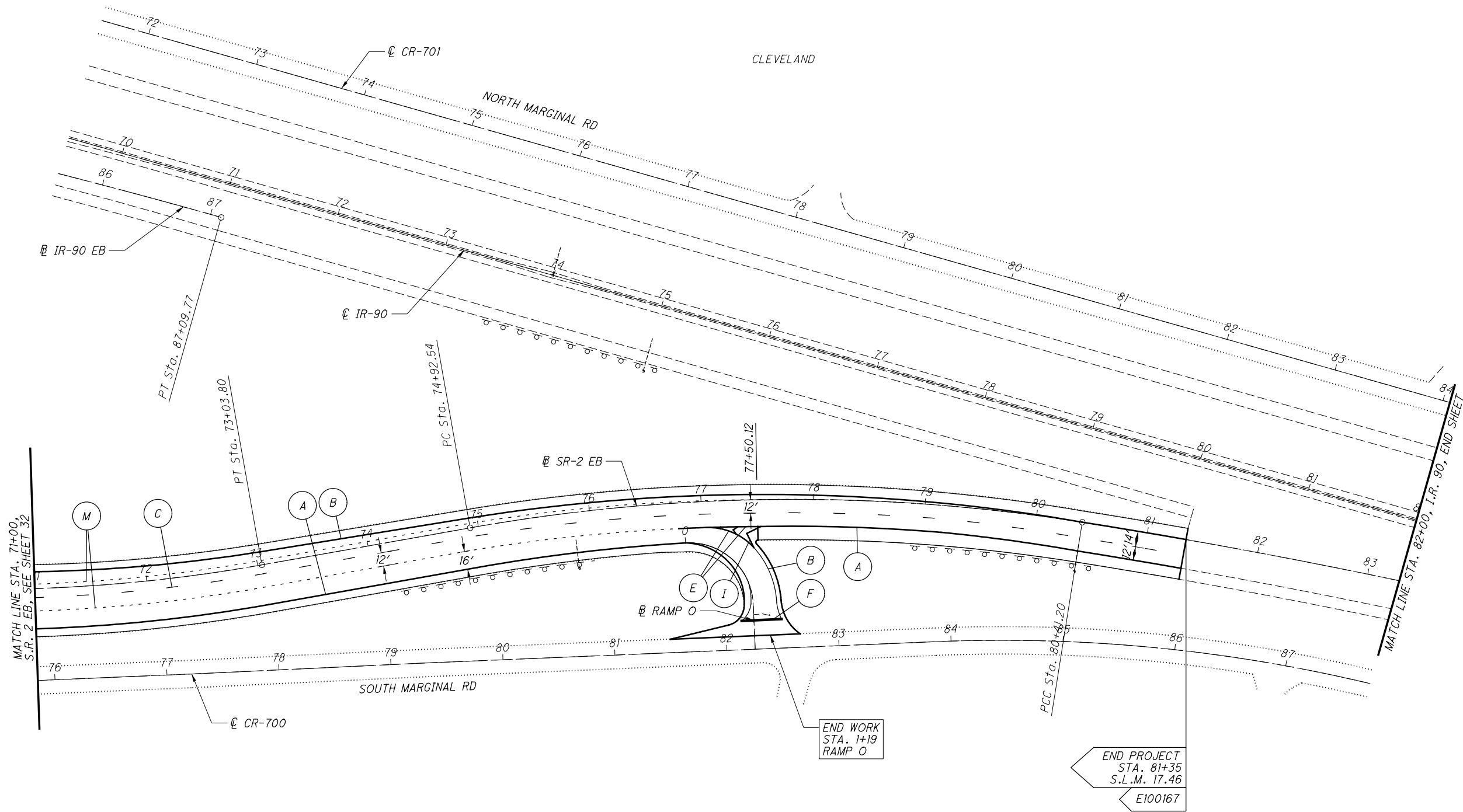
MATCH LINE STA. 71+00,
S.R. 2, SEE SHEET 33



FOR PAVEMENT MARKING LEGEND, SEE SHEET 28

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CALCULATED JDA
CHECKED DAB

0 50 100
HORIZONTAL SCALE IN FEET

GENERAL PLAN SHEET
S.R. 2, STA. 71+00 TO I.R. 90 STA. 82+00

CUY-2-15.75

FOR PAVEMENT MARKING LEGEND, SEE SHEET 28