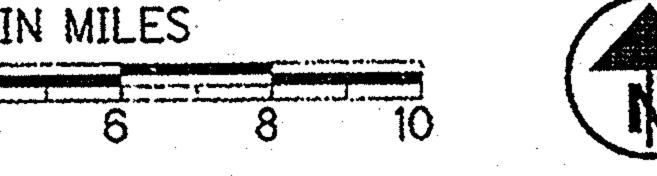
LOCATION MAP

SCALE IN MILES

LATITUDE:N 41°34′53" LONGITUDE:W 81°32′21"



PORTION TO BE IMPROVED INTERSTATE & DIVIDED HIGHWAY UNDIVIDED STATE & FEDERAL ROUTES OTHER ROADS _ _ _ _ _ _ _ -

DESIGN DESIGNATION

-	
	CURRENT ADT (2011)
	DESIGN YEAR ADT (2023) 136,010
	DESIGN HOURLY VOLUME (2023)
	DIRECTIONAL DISTRIBUTION 54%
	TRUCKS (24 HOUR B&C) 8%
	DESIGN SPEED 65 MPH
	LEGAL SPEED 60 MPH

DESIGN FUNCTIONAL CLASSIFICATION - URBAN INTERSTATE

DESIGN EXCEPTIONS : NONE

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

CUY-90-23.93

CITY OF CLEVELAND CITY OF EUCLID VILLAGE OF BRATENAHL

CUYAHOGA COUNTY

INDEX OF SHEETS:

	TITLE SHEET	
	SCHEMATIC PLAN	2-4
٠.	TYPICAL SECTIONS	5-6
	GENERAL NOTES	7-11
	TRAFFIC MAINTENANCE NOTES	
	SUB-SUMMARIES	18-27
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	PLAN SHEETS	30-50
	MISC. DETAILS	51-57, 52A, 57A
	STRUCTURE PLAN SHEET	58
	\cdot	

PROJECT EARTH DISTURBED AREA: ESTIMATED CONTRACTOR EARTH DISTRUBED AREA: NOTICE OF INTENT EARTH DISTURBED AREA:

N/A (MAINTENANCE PROJECT) N/A (MAINTENANCE PROJECT) N/A (MAINTENANCE PROJECT)

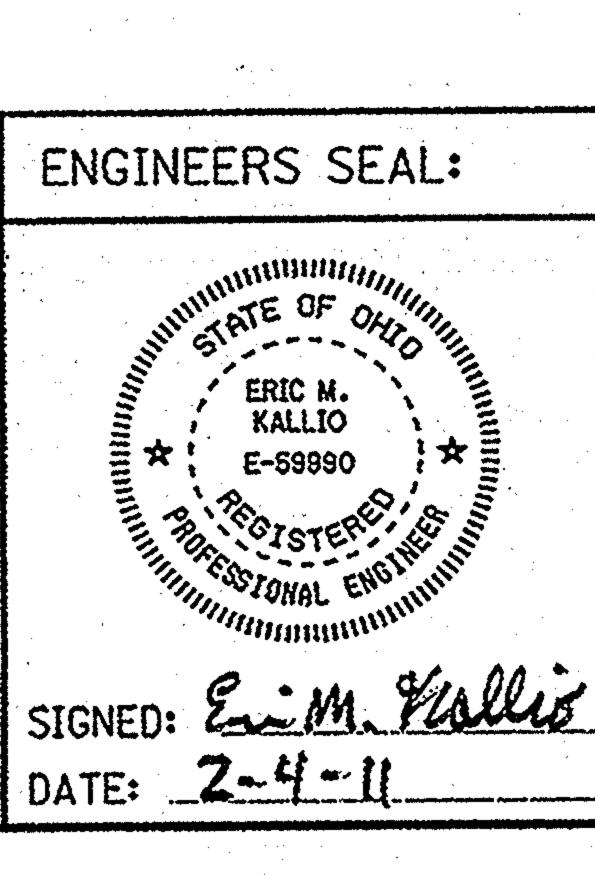
SUPPLEMENTAL

UNDERGROUND UTILITIES TWO WORKING DAYS NON-MEMBERS MUST BE CALLED DIRECTLY

PLAN PREPARED BY: DEPARTMENT OF TRANSPORTATION DISTRICT TWELVE



PRODUCTION



SPECIFICATIONS			RAWINGS	ICTION DE	CONSTRU	STANDARD			
800 1-20-12		10/19/07	TC-41.10	04/20/01	MT-35.10	10/15/10	RM-4.2	10/19/07	BP-3.1
		01/19/01	TC-41.20			10/16/09	RM-4.5	07/28/00	BP-5.1
832 05/05/0				07/17/09	MT-95.30	04/16/10	RM-4.6	10/15/10	BP-7.1
	· · · · · · · · · · · · · · · · · · ·	01/19/07	TC-52.10					04/15/05	BP-9.1
		01/19/07	TC-52.20	07/17/09	MT-98.10				
				07/17/09	MT-98.11			07/16/04	GR-1.1
		10/21/11	TC-61.10	07/17/09	MT-98.20			01/16/04	GR-2.1
				07/17/09	MT-98.22			10/16/09	GR-3.1
		01/21/05	TC-65.10	07/17/09	MT-98.28	•	^	10/16/09	GR-3.2
SPECIAL		01/21/05	TC-65.11	01/16/09	MT-99.20				
PROVISIONS	·								
111041510115		01/21/11	TC-71.10	04/15/11	MT-101.70	-		01/19/07	GR-4.2
			`	10/21/11	MT-101.90				
		10/16/09	TC-72.20	01/16/09	MT-105.10		,		,
				01/16/09	MT-110.10	<u></u>			

PROJECT DESCRIPTION

THIS PROJECT PROVIDES FOR THE RESURFACING OF MAINLINE IR 90 FROM SR-283, LAKESHORE BLVD., TO THE IR-90/SR-2 SPLIT AND SR-2 FROM THE IR-90 & SR-2 SPLIT TO THE LAKE COUNTY LINE. WORK ITEMS INCLUDE PAVEMENT PLANING, RESURFACING, GUARDRAIL REPLACEMENT, PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS.

LIMITED ACCESS

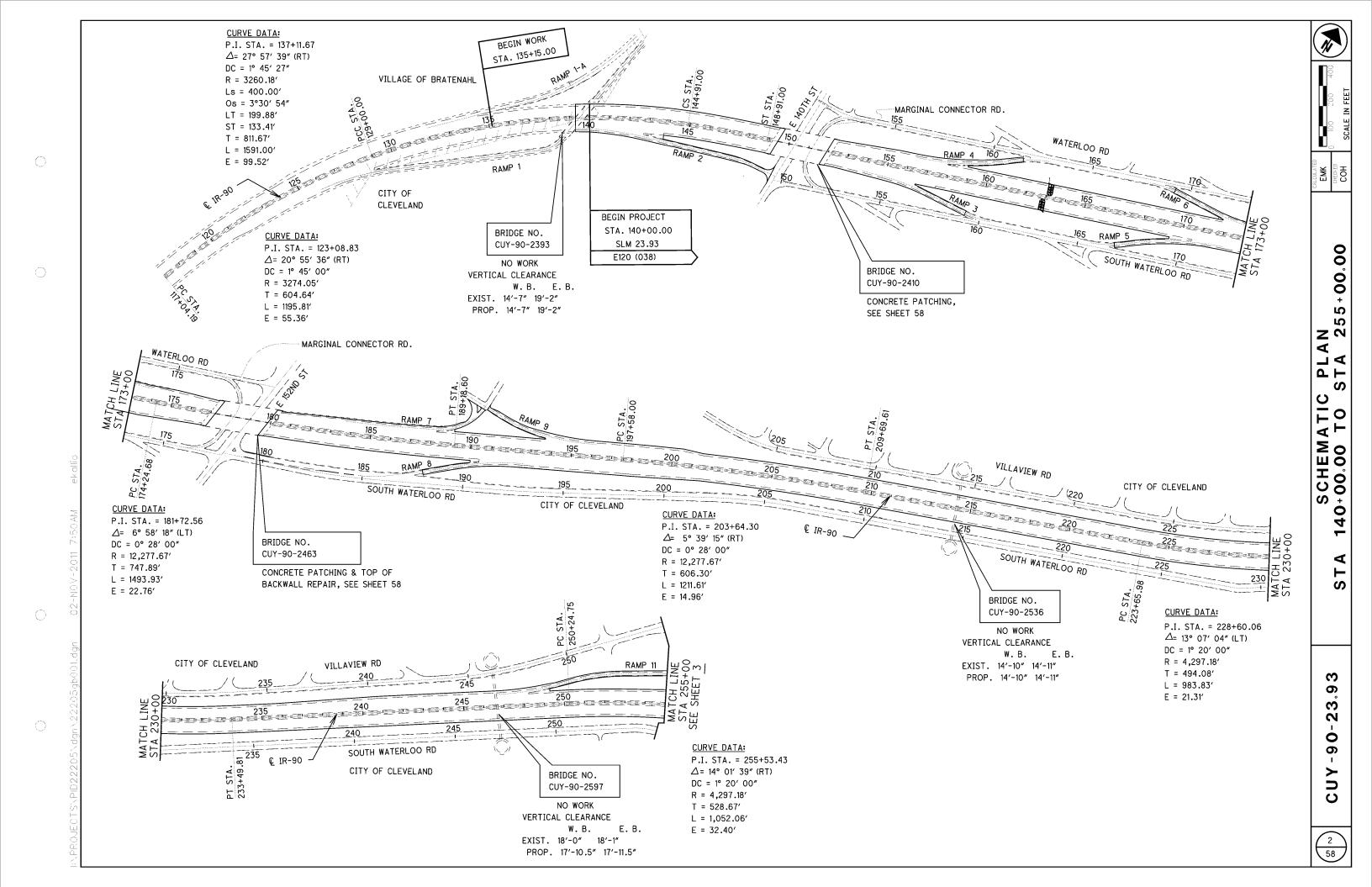
THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2010 SPECIFICATIONS

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

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 IN THE PLANS AND ESTIMATES.

DIRECTOR, DEPARTMENT OF TRANSPORTATION



SCHEMATIC PLAN 55+00.00 TO STA 59+00.00

0-23.93 STA 2

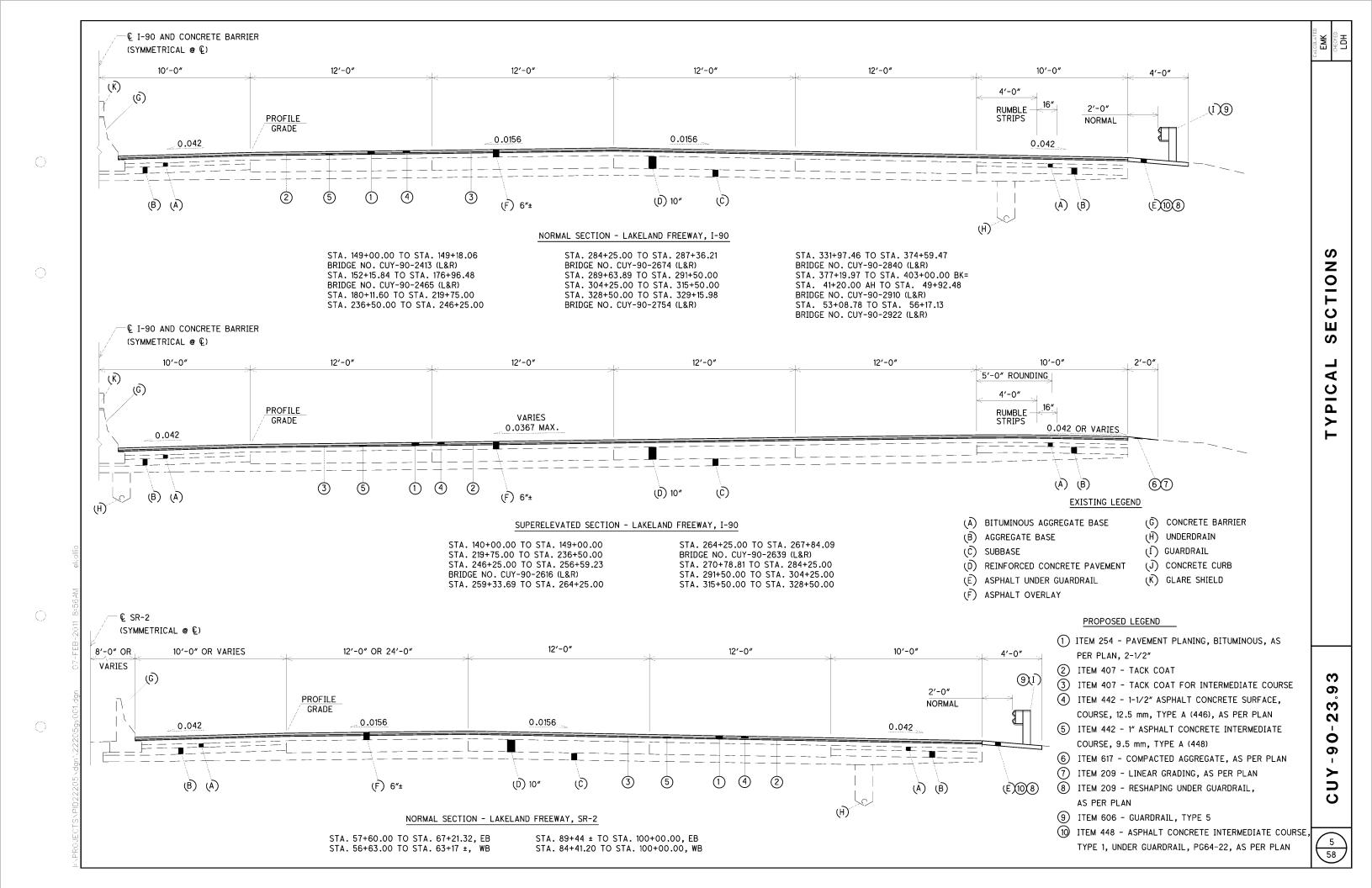
CUY-90-2

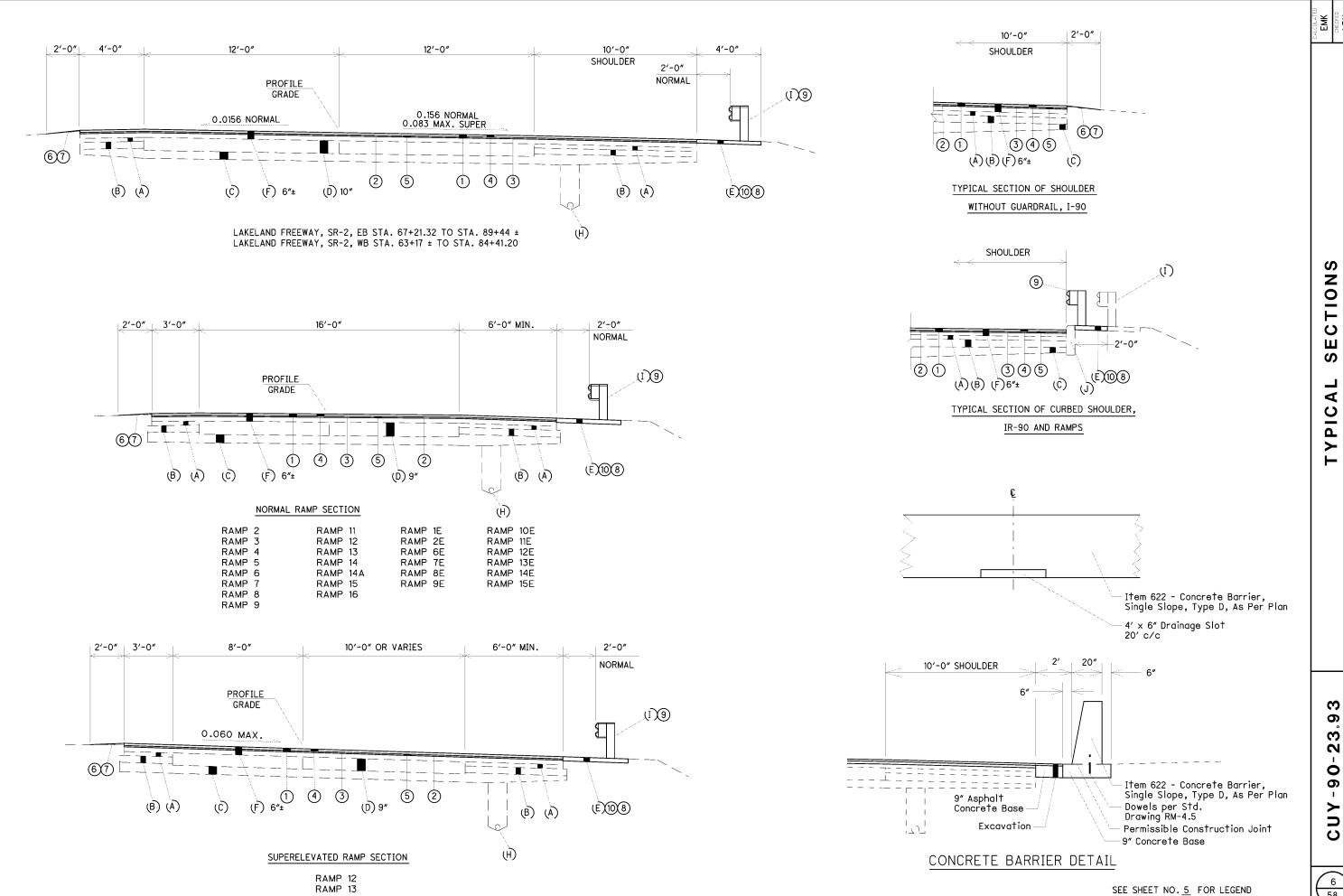
PLAN STA 19+50.00 SCHEMATIC 59+00.00 TO 4 ST

EMK



CUY





GENERAL

Project Description

This project involves the improvement of IR-90 by removing the wearing course and overlaying the roadway from SLD 23.93 to SLD 29.40 in Cuyahoga County. Incidental work includes minor pavement repair, guardrail repair and/or replacement, pavement markings and raised pavement markers.

Existing Typical Sections

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

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

These plans may be reviewed at the

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.

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.

Item 623 - Construction Layout Stakes, As Per Plan

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

In addition to item 623 and the items outlined above, the contractor shall provide field surveys for all asphalt transitions. See detail on sheet 52. Said survey shall consist of elevations taken at the bridge expansion joint (where applicable) and extending as shown on the details. Elevations after resurfacing shall be taken along each edge line and lane line and shall be taken at the following distances: 0 feet, 5 feet, 10 feet, 25 feet, then every 25 feet and at the end of the transition. The contractor shall plot these at each location at a scale of 1 inch equals 10 foot horizontally and 1 inch equals 2 foot vertically. This survey shall be done and the plotted results given to the engineer as soon as possible after the placement of the surface course.

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 Jill Powers at 216-584-2195 at District 12 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.

Utility ownership

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.

City of Cleveland Division of Water 1201 Lakeside Ave. Cleveland, Oh 44114 (216) 664-2444, ext 5555 Fax: (216) 664-2378

The Illuminating Co. 6896 Miller Rd. Brecksville, Oh 44141 (440) 546-8748 Fax: (440) 546-8775

Cuyahoga County Sanitary Engineer 6100 West Canal Rd. Valley View, Oh 44125 (216) 443-8204 Fax:(216) 443-8236 AT&T 13630 Lorain Ave. 4th floor Cleveland, Oh 44111 (216) 476-6142 fax: (216)573-5792

Dominion East Ohio Gas Co. 1201 E. 55th St. Cleveland, Oh 44103 (216) 736-6675 fax: (216) 736-6883

Greater Cleveland Regional Transit Authority 1240 West Sixth Street Cleveland, Oh 44113 phone: (216) 566-5100 fax: (216) 781-4043

ROADWAY

Item 201 - Clearing And Grubbing

Although there are no trees or stumps specifically marked for removal within the limits of the project, a lump sum quantity has been included in the general summary for item 201, Clearing And Grubbing to remove small trees and other vegetation which restricts sight distance or blocks the view of the existing or proposed signs throughout the project. All provisions as set forth in the specifications under this item shall be included in the lump sum price bid for item 201, Clearing And Grubbing.

Paving Under Guardrail

This operation shall include preparation of the graded shoulder using Item 209, Reshaping Under Guardrail, As Per Plan and paving under the guardrail using Item 448, Asphalt Concrete Intermediate Course, Type 1, Under Guardrail, PG64-22. As Per Plan.

Paving under guardrail consists of placing Item 448 to the depth specified (3") using one of the following methods.

Method A:

- 1) Set guardrail posts
- 2) Place Item 448

Method B:

- 1) Place Item 448
- 2) Bore asphalt at post locations (may be omitted if steel posts are used)
- Set guardrail posts
- 4) Patch around posts. Use an asphalt concrete approved by the engineer to perform the patching. Compact patched areas using either had or mechanical means. Finish surfaces so that they are smooth and sloped to drain away from the posts.

All equipment, materials and labor required to perform the work outlined above, with the exception of setting guardrail posts, shall be included for payment under Item 448 – Asphalt Concrete Intermediated Course, Type 1, Under Guardrail, PG64-22, As Per Plan.

For estimated quantities, see sheets 23-24.

Guardrail Protection

Existing guardrail which is scheduled to be replaced with Type 5 Guardrail, shall not be removed until the new guardrail is ready to be installed. Under no circumstances shall any hazard be without guardrail protection for more than 24 hours. (See Public Safety note on sheet 16).

Connection Between Existing And Proposed Guardrail

When it is necessary to splice proposed guardrail to existing guardrail, only the existing quardrail shall be cut, drilled, or punched. The connection shall be made using a "w-beam rail splice" as shown in AASHTO M 180. Payment shall be included in the contract price for the respective guardrail items.

Item 209 - Linear Grading, As Per Plan

This item of work shall consist of grading along the outside edge of the paved shoulder wide enough to provide positive drainage away from the shoulder and to prepare the ground surface for the placing of item 617.

Any debris collected shall be removed and disposed of as specified in section 203.05 of the Construction and Material Specification.

Payment for the above work shall be made at the unit bid price for Item 209, Sta., 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 shall be carried to the General Summary to be used as outlined above:

<u>Item 209 – Reshaping Under Guardrail, As Per Plan</u>

This item of work shall be used to prepare proposed and existing guardrail runs for paving under guardrail, including the removal and disposal of existing asphalt under guardrail.

Fill all holes remaining after removal of guardrail posts and anchor assemblies with granular material. Do not use fill material containing sod. All fill material shall be approved by the engineer and shall be compacted as directed by the engineer. Payment for the above is included in the applicable guardrail item.

Any debris collected shall be removed and disposed of as specified in section 203.05 of the Construction and Material Specification.

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

For estimated quantities, see sheets 23-24.

Item 202 - Removal Misc.: Glare Screen

This item of work shall be used to remove the existing glare screen that is secured to the existing concrete median barrier from Sta. 140+00 +/- to Sta.

Payment for the above work shall be made at the unit bid price for Item 202, Ft., Removal Misc.: Glare Screen and shall include all labor, tools, equipment and materials necessary to perform this item of work.

The following estimated quantity shall be carried to the General Summary to be used as outlined above:

Item 622 - Concrete Barrier, Single Slope, Type D, As Per Plan

The standard details for Type D wall are modified as per the detail in the typical

Install the proposed Type D barrier adjacent to the existing shoulder on a footer with dowels placed at the permissible construction joint between the footing and barrier as shown in the detail. Construct the top of the proposed footing flush with the top of the second intermediate course.

Payment for all materials, labor and equipment to construct the concrete barrier as described above and detailed in the typical sections shall be included in the unit bid price for Item 622, Concrete Barrier, Single Slope, Type D, As Per Plan.

Item 622 - Glare Screen

This item of work shall consist of furnishing and erecting a glare screen, non reflective, along the top of the IR-90 concrete median barrier from Sta. 140+00 +/- to Sta. 56+00 +/-.

The glare screen shall be 24 inches above the top of the existing barrier and be securely and neatly attached to the barrier. The blades shall be green and designed using a 20 degree cut off angle measured relative to the center of the barrier.

The contractor shall furnish all necessary mechanical attachment hardware (including bolts, plates, spacers and washers) as necessary to accommodate the complete installation.

The glare screen used shall be Glare-Gaard manufactured by Glare-Guard Glare Screen, Automotive Safety Transport, Inc. (ASTI), Vancouver, BC V6ZR9 (Contact: Stephanie Plachta, Tel. 604-669-9155) or an approved equal.

Glare screen, complete in place, will be paid for at the unit bid price for Item 622, Ft., Glare Screen,

The following estimated quantity shall be carried to the General Summary to be used as outlined above:

Item 608 - Curb Ramp, As Per Plan

Improve existing curb ramps by providing a landing area with truncated domes. Improve existing sidewalk at its current width and location. Work around existing utility features and within the existing back of sidewalk. Construct ramps conforming to the details related to the size and cross-slope of the landing area and with truncated domes as shown on Std. Drawing BP-7.1.

Minimize disturbed areas adjacent to curb ramps, curb, and sidewalk.

In addition to the CMS requirements for item 608, Curb Ramp, A.P.P. work shall include any sawcutting of adjacent walk or curb and any additional excavation needed to place the proposed truncated domes.

The following quantities shall be carried to the General Summary to replace curb ramps at the locations listed:

		202	202	608		609
Reference No.	Location	Walk Removed	Curb Removed	Curb Ramp, As Per Plan		Curb, Type 6
		S. F.	FT.	S. F.		FT.
CR-1	RAMP 2	165	24	165_		24
CR-2	RAMP 2	100	20	100	_	20
CR-3	RAMP 11	100	20	100		20
CR-4	RAMP 11	100	30	100		30
CR-5	RAMP 12	75	17	75		17
CR-6	RAMP 12	55	15	55		15
CR-7	RAMP 12	65	23	65		23
CR-8	RAMP 12	100	26	100		26
CR-9	RAMP 13	120	20	120		20
CR-10	RAMP 13	120	25	120		25
					_	
-	AL TO GEN. UMMARY	1000	220	1000		220

Item 609 - Concrete Median

The following pay item are to be used as directed by the Engineer to repair curb and concrete median adjacent to curb ramp CR-3, CR-9 and CR-10:

		202	202	609	609
Reference No.	Location	Concrete Median Removed	Curb Removed	4" Concrete Median	Curb, Type 6
		S. Y.	FT.	S. Y.	FT.
CR-3	RAMP 11	10	30	10	30
CR-9	RAMP 13		80		80
CR-10	RAMP 13	16	55	16	55
TOTAL TO	GEN. SUMMARY	26	165	26	165

DRAINAGE AND EROSION CONTROL

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 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 604 Items.

Item Special - Miscellaneous Metal

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

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

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

Item Special - Miscellaneous Metal 5000 Lbs

Item 604 - Catch Basin Adjusted To Grade, As Per Plan Item 604 - Manhole Adjusted To Grade, As Per Plan

Adjustment devices will not be permitted.

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

Item 604 - Catch Basin Adjusted To Grade, As Per Plan 6 Each Item 604 - Manhole Adjusted To Grade, As Per Plan 3 Each

Item 659 - Seeding, Misc.: Seeding And Mulching

This item shall be used to seed and mulch all disturbed areas adjacent to the proposed curb ramp work, as directed by the engineer. Use class 1 lawn

At disturbed areas, remove top 2" of soil and replace with material conforming to 659.05.

Provide a single application of commercial fertilizer per the requirements of

Placement of topsoil and application of fertilizer are incidental to this item.

The following estimated quantity is carried to the general summary for this purpose.

Item 659 - Seeding, Misc.: Seeding And Mulching. Lump Sum

PAVEMENT

Item 251 - Partial Depth Pavement Repair, As Per Plan A

This item shall be used for the repair of unsound, cold-patch, or pop-out areas of longitudinal joints as directed by the engineer. This work shall be performed after the milling operation and prior to resurfacing. The depth of the repair shall be 3" below the top of the planed asphalt surface. The width of the repair shall be 12" centered on the existing joint as shown on sheet 51.

For additional notes, details, and quantities, see sheet 51.

Item 251 - Partial Depth Pavement Repair, As Per Plan B

This item shall be used for the repair of unsound, cold-patch, or pop-out areas of transverse joints and cracks as directed by the engineer. This work shall be performed after the milling operation and prior to resurfacing. The depth of the repair shall be 3" below the top of the planed asphalt surface. The width of the repair shall be 12" centered on the existing joint or crack as shown on sheet 51.

For additional notes, details, and quantities, see sheet 51.

Longitudinal Joints (Flexible Pavement)

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

Item 407 - Tack Coat

The rate of application of the 407 tack coat shall be subject to adjustment as directed by the engineer. Plan quantities indicate an average application rate of 0.10 gallons per square yard of tack coat for estimating purposes only.

Item 407 - Tack Coat For Intermediate Course

The rate of application of the 407 tack coat shall be subject to adjustment as directed by the engineer. Plan quantities indicate an average application rate of 0.05 gallons per square yard of tack coat for each layer of intermediate course. This application rate is for estimating purposes only.

<u>Item 255 - Full Depth Rigid Pavement Removal And Rigid Replacement,</u> Class FS, As Per Plan A

<u>Item 255 - Full Depth Rigid Pavement Removal And Rigid Replacement,</u> <u>Class FS, As Per Plan B</u>

This item shall consist of replacing existing pavement per Item 255 and the notes below and details on sheet 51.

Existing concrete pavement thickness may vary from that shown on the typical sections by plus two inches or minus one inch. No adjustment in payment for this item shall be made providing that the average pavement thickness is within half inch of the thickness shown on the typical sections. Additional compensation shall be made by change order for the material cost of concrete only when the average thickness exceeds the one half inch maximum tolerance above. The volume of concrete paid for shall be based upon the amount of concrete additional above the one half inch tolerance limit.

The contractor shall saw through the remaining asphalt overlay after the pavement planning operation. The contractor shall remove the existing overlay and rigid pavement with care so as to not disturb the adjacent remaining concrete pavement and overlay.

If, after removal of the rigid pavement the engineer determines that the subbase or subgrade has failed or is pumping, the engineer will direct the contractor to excavate the unsuitable material and replace it with compacted 304 aggregate. Quantities of Item 203 - Excavation and Item 304 - Aggregate Base have been provided to repair said failed subbase or subgrade areas.

Pavement repair less than or equal to ten (10) feet in length shall be paid for under "Full Depth Rigid Pavement Removal And Replacement, Class FS, As Per Plan, A". Pavement repairs greater than ten (10) feet in length shall be paid for under "Full Depth Rigid Pavement Removal And Replacement, Class FS, As Per Plan B".

<u>ltem</u>	<u>Unit</u>	<u>Description</u>
255	Sq.Yd.	Full Depth Rigid Pavement Removal And Rigid
		Replacement Class FS, As Per Plan A
255	Sq.Yd.	Full Depth Rigid Pavement Removal And Rigid
		Replacement Class FS, As Per Plan B
255	Lin. Ft.	Full Depth Pavement Sawing
203	Cv. Yd.	Excavation
304	Cy. Yd.	Aggregate Base

For estimated quantities, see sheet 51.

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

Limit coarse aggregate to a blend of air cooled blast furnace slag (ACBFS) or trap rock from Ontario and limestone. Use ACBFS or trap rock from Ontario at a minimum of 50% of coarse aggregate. Use limestone for the remaining portion of coarse aggregate. When ACBFS is used all requirements of 442 apply except use a Ndes of 50, a Nmax of 75 and ensure the minimum total asphalt binder content is 6.5 percent.

Item 617 - Compacted Aggregate, As Per Plan

This item shall be used along all the shoulders. Material shall be limited to reclaimed asphalt concrete pavement.

The actual depth used will vary depending upon existing conditions. For estimating purposes, an average depth of 1-1/2 inches will be used. Water, if needed, shall be applied as per 617 and included under item 617, Compacted Aggregate, As Per Plan.

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

Item 618 - Rumble Strips, (Asphalt Concrete)

The following estimated quantity shall be used to construct Item 618, Rumble Strips, (Asphalt Concrete) as per standard drawing BP-9.1 and as follows. From Sta. 140+00 +/- to the end of the project, Sta. 5+30 +/- the rumble strips on the outside shoulder shall be placed 4 feet from the edge line as detailed on the typical sections.

Asphalt Concrete Surface Courses

In addition to the gutter sealing requirements specified on SCD BP-3.1 and in 401.15, after completion of the surface course, the contractor shall seal, with asphalt binder, the following locations:

- all castings including but not limited to monuments, manholes, water valves, catch basins.
- butt joints and feather joints including bridge approaches.
- foreword joint for driveway asphalt and trailing joint when butting to existing asphalt drive.
- perimeter of all pavement repairs when pavement repairs are not overlaid with asphalt concrete.

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

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

This item is to be used to remove the existing asphalt overlay to a depth as shown on the typical sections. Areas that will have transverse wedges (at mainline bridges and at paving limits) are to be removed in two passes as required for maintaining traffic.

STRUCTURES 20' AND OVER

Propose Structure Work

Repairs to existing structures on this project include patching concrete bridge deck and top of backwall repairs.

Refer to Standard Bridge Drawings

None.

Refer to Supplemental Specifications

As listed on title sheet.

Design Specifications

The structures conform to "Standard Specifications for Highway Bridges" adopted by the America Association of State Highway and Transportation Officials, 17th Edition, 2002 and the ODOT Bridge Design Manual.

Existing Structure Verification

Details and dimensions shown on these plans pertaining to the existing structure have been obtained from plans of the existing structure and from field observations and measurements. Consequently, they are indicative of the existing structure and the proposed work but they shall be considered tentative and approximate. The Contractor is referred to sections 102.05 and 105.02 of the 2010 Construction and Material Specifications.

Base contract bid prices upon a recognition of the uncertainties described above and upon a pre-bid examination of the existing structure by the Contractor. However, the Department will pay for all project work based upon actual details and dimensions that have been verified in the field.

The existing structure plans may be reviewed at the: Ohio Department of Transportation District 12 Office 5500 Transportation Boulevard Garfield Heights, OH 44125

<u>Item Special - Patching Concrete Bridge Deck, Type B</u>

(See Proposal Note)

The engineer shall determine and designate the areas to be repaired. This item shall consist of furnishing all necessary labor, equipment and materials to repair concrete bridge decks, including the removal of loose and unsound concrete and/or bituminous patches, surface preparation, placing, finishing and curing of the patching material. All disturbed pavement markings shall be replaced per 614. Payment for the pavement markings shall be included under Item Special -Patching Concrete Bridge Deck, Type B. For locations and quantities, see Sheet

Item Special - Patching Concrete Structure, Misc.: Top of Backwall Repair

This pay item is intended for patching the top of the existing bridge backwalls from above (riding surface), as directed by the engineer. For locations and quantities, see Sheet 58.

Prior to the surface cleaning specified in 519.04 and within 24 hours of placing patching material, blast clean all surfaces to be patched including the exposed reinforcing steel. Acceptable methods include high-pressure water blasting with our without abrasives in the water, abrasive blasting with containment, or vacuum abrasive blasting.

All equipment, labor, materials and incidentals necessary to perform the above work shall be included for payment per linear foot under Item Special - Patching Concrete Structure, Misc.: Top of Backwall Repair.

TRAFFIC CONTROL

Raised Pavement Markers

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

Pavement Markings

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

Auxiliary markings shall be located and installed as per Standard Construction Drawing TC-71.10.

Item 621 - Raised Pavement Marker Removed

The following estimated quantity has been included in the general summary to remove and dispose of RPM's.

Item 646 - Lane Line, As Per Plan

The width of the lane lines shall be six inches (6")

ODOT Automatic Traffic Recorder Site

The Contractor is advised automatic traffic recording (ATR) sites #576 is located near Sta. 163+00 +/- on IR-90 between E 140 St. and E 152 St.

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

Item 620 - Delineator

The following estimated quantities have been included in the general summary to allow for the total replacement of delineators on the project. The removal and disposal quantity is 50% of the replacement quantity based on the fact that many existing delineators are missing

Item 620 - Delineator, Post Mounted	280 Each
Item 620 - Removal of Delineator	140 Each

General

It is the responsibility of the contractor to provide thru vehicular access 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, his sequence of operations shall be planned in such a way as to minimize the number of lane reductions and/or lane width reductions required to maintain traffic through

Permitted lane closures shall be as shown on the "Schedule Of Thru 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 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 .

All costs associated with the set up and take down of the maintenance of traffic zones including all labor, equipment, signs, drums and flashing arrow board shall be included in the lump sum bid for Item 614, Maintaining Traffic.

Maintenance of traffic control zones

The contractor shall be responsible to maintain the signs, drums or cones specified in the standard drawings. When the contractor is notified of deficiencies he shall correct the deficiencies as soon as possible.

Construction Traffic

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

The contractor shall be responsible to any damage to turn-arounds located within the project limits. Any damage caused by the contractor's actions shall be repaired at no cost to the state.

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 rpm's
- b. Plane asphalt concrete
- c. Perform pavement repairs
- d. Place asphalt concrete courses
- e. Place proposed pavement markings and raised pavement

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 the current year CMS.

Payment for this item shall include but not be limited to the cost to furnish and erect the sign, including drive posts or other approved methods of 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 that is detailed in the Standard Drawings and the OMUTCD.

The following quantity shall be carried to the General Summary:

Item 630 - Signing Misc.: Additional Signs, Ground Mounted, As Directed By The Engineer 300 Sq. Ft.

Item 614 - Law Enforcement Officer (With Patrol Car) For Assistance During **Construction Operations**

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 CMS 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 CMS 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) should be provided for the following traffic control tasks:

- 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 at the point of lane restriction or road closure and to manually control traffic movements through intersections in work
- When construction vehicles are entering/exiting the zone directly from/into an open lane of traffic. If a lane has been closed to provide an acceleration/deceleration lane for the vehicle, the LEO will not be

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.

The LEO should 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. Once the LEO has completed the duties described above and still has time remaining on his/her shift, the LEO may be asked to patrol through the work zone (with flashing lights off) or be placed at a location to deter motorists from speeding. 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 400 Hours

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 unit price for Item 614. Law Enforcement Officer With Patrol Car For Assistance.

Planed Surfaces

The duration of time between removing the existing asphalt concrete pavement and placing the intermediate course of asphalt shall be kept to a minimum. In no instance shall this time exceed 10 calendar days. This is to ensure that the potential degradation of the exposed pavement Due to traffic is kept to a

In the event that the time between exposing the existing pavement and placing the asphalt intermediate course exceeds 10 calendar days, liquidated damages as per 108.07 of the construction and material specifications manual shall be assessed.

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 Ohio Manual Of Uniform Traffic Control Devices, the Engineer shall suspend work until the contractor complies with the necessary requirements.

<u>Item 614 - Asphalt Concrete For Maintaining Traffic, As Per Plan</u>

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

Temporary asphalt ramps shall be removed as part of this item.

Item 614 - Asphalt Concrete For Maintaining

Work Zone Pavement Markings

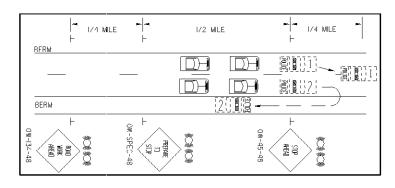
The following estimated quantities have been carried to the general summary, to be used as directed by the Engineer, to place work zone pavement markings after the contractor has planed the the asphalt, placed the intermediate courses and after the surface course has been placed.

em 614 - Work Zone Edge Line, Class I,	
642 Paint	86.88 Mile
em 614 - Work Zone Lane Line, Class I,	
642 Paint	
em 614 - Work Zone Channelizing Line, Class I,	
642 Paint	31,700 Ft.
em 614 - Work Zone Crosswalk Line, Class I,	
642 Paint	450 Ft.
em 614 - Work Zone Stop Line, Class I,	
642 Paint	260 Ft.

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 to 401.15 of the Construction and Material Specifications 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.
- 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 (2) weeks in advance of his detailed plans. See the OMUTCD and standard drawings for the minimum signage required."
- 5. Traffic control devices shall be set up prior to the start of construction, and shall be properly maintained during the time special conditions exist. They shall remain in place only as long as they are needed and shall be immediately removed thereafter. Where operations are performed in stages, there shall be in place only those devices that apply to the condition present during stage in progress. All signs with messages which do not apply during a certain period shall be covered or set aside out of the view of traffic.
- 6. Placement of final roadway pavement markings and raised pavement markers shall be accomplished in accordance with the "Schedule Of Through Lanes To Be Maintained." The contractor shall provide 2 trailing vehicles as per MT-99.20M following the pavement marking equipment. The trailing vehicles shall travel 500' apart with the remote vehicle traveling on the shoulder (left or right as applicable) where usable shoulder is available. The first trail vehicle in a traffic lane shall be equipped with a truck mounted attenuator meeting NCHRP 350 requirements. Each trailing vehicle shall have a yellow flashing beacon plus 48" construction warning signs mounted on the back facing traffic with standard type messages advising motorists of the work ahead, advisory warning speed, and which lane is closed.
- 7. During non-working periods, open excavations shall be delineated with warning flashers and/or other approved devices as deemed appropriate by the Engineer.
- 8. Existing signs located within the road work areas which are necessary for interim or permanent traffic control shall be removed and re-erected in locations as approved by the engineer.
- 9. No stoppage of traffic shall occur without law enforcement personnel at each location to direct traffic.
- 10. Any time traffic must be completely stopped on a freeway or interstate, it shall be as follows. The complete traffic stoppage of all lanes of any directional roadway shall be no more than 10 minutes in any one consecutive 30 minute period. A minimum of two (2) law enforcement officers (LEO's) with patrol vehicles shall be used to pace motorists to a stop. One LEO with patrol car should be provided for each lane of traffic to be closed. Payment for LEO's shall be incidental to Item 614 Maintaining Traffic, unless itemized separately elsewhere in the plans. After traffic has been slowed, one (1) patrol vehicle shall travel along the roadway shoulder 500' behind the back up of stopped vehicles. Where stoppage occurs in the vicinity of freeway entrances, the contractor shall place flaggers on the ramps to stop traffic. Patrol vehicles shall have flashing beacons. To provide adequate visibility to approaching motorists, the contractor shall erect and maintain "road work ahead", "prepare to stop", and "stop ahead" signs with two flashing 12" traffic signal heads in accordance with 632.05. Flares may be substituted for flashing lights and sign illumination. These signs shall be illuminated during night operations and shall be 48" by 48" signs. Stopping traffic shall be done when the greatest numbers of lanes are permitted to be closed according to the schedule of through lanes to be maintained. A portable changeable message sign shall be placed 1.5 miles to 2 miles in advance of the closure. Patrol vehicles and signs shall be located in accordance with the sketch below.



- 11. Whenever a total closure is implemented, the contractor shall provide a portable changeable message sign, type from ODOT's pre-approved list. It shall be placed 1.5 miles to 2 miles in advance of the closure or as directed by the engineer.
- 12. For any operation not specifically mentioned in these plans, the traffic shall be maintained in accordance with the OMUTCD.
- 13. All labor, materials, equipment and any incidentals required to complete the work as described above shall be included in the lump sum bid for Item 614 Maintaining Traffic.

Surface Condition Signs

The contractor shall erect a "Grooved Pavement" sign (W8-H15) 250 Feet in advance of any section of roadway where traffic must travel on a planed surface.

Ensure these signs are in place before opening the roadway to traffic. Erect these signs on each entrance ramp and at intersections of through routes to warn traffic of this surface condition.

Payment shall be made under the Lump Sum bid for Item 614 – Maintaining

Truck Mounted Attenuator

When the contractor is setting short term work zones and the shoulders (right or left shoulder) are less than 10 feet in width and are on a road with speeds 45 mph or higher, a Truck Mounted Attenuator (TMA) must trail the operation of setting the advance warning signs up or taking them down. This same truck must have a Type B flashing arrow panel mounted on it facing the rear of the

The TMA must bring a vehicle weighing 1800 to 4500 pounds to a safe, controlled stop, per NCHRP 350 TL-3 criteria. The manufacturer's specification must be followed concerning the size of the truck and the connections to the TMA

Worksite Traffic Supervisor

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

- 1. American Traffic Safety Service Association (ATSSA), phone number 1-800-272-8772, certified TRAFFIC CONTROL SUPERVISOR (TCS).
- 2. National Highway Institute, design and operation of work zone traffic control, phone number 1-703-235-0528.
- 3. The Ohio Contractors Association, Traffic Control Supervisor (OCA/TCS) work zone class, only if taken after May 5, 2004, phone number 1-614-599-7915.
- 4. Ohio laborers' training, traffic control supervisors class, phone number 1-740-599-7915.

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

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

- 1. Be available on a 24-hour per day basis, and be able to be on site for all emergency traffic control needs within one hour of notification by police or project staff and be prepared to effect corrective measures immediately on existing work zone traffic control devices.
- 2. Attend preconstruction meeting and all project meetings where traffic control management is discussed.
- 3. Be available for meetings or discussions with the Engineer upon request or within 36 hours.
- 4. Be aware of, and coordinate if necessary, all traffic control operations, including those of subcontractors and suppliers.
- 5. Coordinate project activities with all law enforcement officers (LEOs). A WTS shall also be the main contact person with the LEOs while they are
- 6. Coordinate meetings with ODOT personnel, LEOs and other applicable entities before each plan phase switch to discuss work zone traffic
- 7. Ensure compliance with the contract documents for signs, barricades, temporary concrete barrier, pavement markings, portable message signs, and other traffic control devices on a daily basis; and facilitate any corrective action necessary.

- 8. Notify the contractor of the need for cleaning and maintenance of all traffic control devices, including the covering and removal of inapplicable signs.
- 9. Inspect, evaluate, propose necessary modifications to, and document the effectiveness of, the traffic control devices and/or traffic operations on a daily basis (7 days a week). In addition, a weekly night inspection of the work zone setup for daytime work operations; and one daytime inspection per week for nighttime projects. This shall include (but not be limited to) documentation on the following project events:
 - a. Initial traffic control setup (day and night review).
 - b. Daily traffic control setup and removal.
 - c. When construction staging causes a change in the traffic control
 - Crash occurrences within the construction area.
 - Removal of traffic control devices at the end of a phase or project.
 - All other emergency traffic control needs.
- 10. Complete the department approved long term inspection form (CA-D-8) after each inspection as required in #9 and submit it to the Engineer the following work day. These reports shall include a checklist of all traffic control maintenance items to be reviewed. A copy of the form will be provided at the pre-construction meeting. Any deficiencies observed shall be noted, along with recommended corrective actions and the dates by which such corrections were, or will be, completed. A copy of this document can be found in the department of transportation construction inspection forms manual dated 10/15/06 or current revision.
- 11. Verify that all flagging operations are being conducted per the Ohio Manual Of Uniform Traffic Control Devices.
- 12. Have copies of the ODOT temporary traffic control manual and applicable standards and specifications included in the contract documents available at all times on the project.

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

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

The following estimated quantity has been included for the worksite traffic supervisor:

Item 614 - Worksite Traffic Supervisor 6 MONTH

Maintaining Traffic And Sequence Of Operations

All asphalt concrete operations shall be conducted in a manner that will assure minimum danger and inconvenience to the highway users. All work shall be performed at the times provided in the "Schedule Of Through Lanes To Be Maintained." 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 except as necessary during the actual removal or paving operation. 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 signs (dual sign installation). Placement shall be as directed by the Engineer and included in the Lump Sum bid 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 Ohio Manual Of Uniform Traffic Control Devices.

Maintaining Pedestrian Traffic

When replacing crosswalks as detailed in the plans, the contractor shall place signs as detailed in Standard Drawing MT-110.10 to maintain pedestrian traffic.

All costs for providing signs will be included in the unit bid price for Item 614, Lump, Maintaining Traffic.

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Item 614 - Portable Changeable Message Sign, As Per Plan

The Contractor shall furnish, install, maintain and remove, when no longer needed, a changeable message sign, on site, for the duration of the project. The sign shall be of a type shown on a list of approved PCMS units maintained by the Director (Office of Materials Management). The Approved List of Portable Changeable Message Signs can be found on the ODOT website by clicking on the SERVICES menu, then clicking on Materials Management. The list contains Class A and B units with minimum legibility distances of 650 ft. and 475 ft., 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. PCMS trailers should be delineated on a permanent basis by affixing retroreflective material, in a continuous line on the face of the trailer as seen by oncoming road users.

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

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

All messages to be displayed on the sign will be provided by the Engineer. A list of all required pre-programmed messages will be given to the Contractor at the project preconstruction conference. The sign shall have the capability to store up to 99 messages. Message memory or pre-programmed displays shall not be lost as a result of power failures to the on-board computer. The sign legend shall be capable of being changed in the field. Three-line presentation formats with up to six message phases shall be supported. PCMS format shall permit the complete message for each phase to be read at least 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 CMS 614.07. The Contractor shall, prior to activating the unit, make arrangements, with an authorized service agent for the PCMS, to assure prompt service in the event of failure. Any failure shall not result in the sign being out of service for more than 12 hours, including weekends. Failure to comply may result in an order to stop work and open all traffic lanes and/or in the Department taking appropriate action to safely control traffic. The entire cost to control traffic, accrued by the Department due to the Contractor's noncompliance, will be deducted from moneys due, or to become due the Contractor on his contract.

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

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 365 Day

Holiday Closures

Memorial Day

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

Easter

Christmas	New Years	Mothers Day

Fourth of July

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:

Day Of The Week Time All Lanes Must Be Open To Traffic

Sunday	12:00n	Friday	through 12:00n	Monday
Monday	12:00n	Friday	through 12:00n	Tuesday
Tuesday	12:00n	Monday	through 12:00n	Wednesday
Wednesday	12:00n	Tuesday	through 12:00n	Thursday
Thursday	12:00n	Wednesday	through 12:00n	Monday
Friday	12:00n	Thursday	through 12:00n	Monday
Saturday	12:00n	Friday	through 12:00n	Monday

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

Should the contractor fail to meet any of these requirements, the contractor shall be assessed liquidated damages in accordance with 108.07.

Contractor's Equipment - Operation And Storage

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

Equipment, vehicles and materials shall not be stored or parked within 30 feet of the traveled way unless 6 feet behind PCB or guardrail.

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

Item 614 - Work Zone Increased Penalties Sign (R11-H5A)

R11-H5A-48 signs shall be furnished, erected, and maintained in good condition and/or replaced as necessary and subsequently removed by the contractor. Signs shall be mounted at the appropriate offsets and elevations as prescribed by the Ohio Manual Of Uniform Traffic Control Devices. They shall be maintained on supports meeting current safety criteria.

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

Once work requiring lane closures is complete, cover or remove work zone speed limit signs within 4 hours.

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

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

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

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

Item 614 - Work Zone Increased Penalties Sign 24 Each

Public Safety

The following provisions "A", "B", and "C" shall apply when the lane adjacent to the guardrail is open to traffic. The period of time that a hazard is left unprotected by the removal of guardrail shall be held to an absolute minimum. If, after one day, the entire run of guardrail construction is not complete, the following shall apply:

- A. In areas where existing guardrail has been removed or the guardrail is in a partial stage of completion, the contractor shall provide and maintain Type II barricades with Type C (steady burning) warning lights within the limits of the unprotected area. The barricades shall be placed at 50' intervals and offset at least 2' from the edge of the traveled roadway and in close proximity to the construction. The approach end of a partially completed run of guardrail shall be fastened at ground level to a steel drum.
- B. If the existing guardrail is for the protection of an obstacle (such as a sign support, bridge pier or bridge parapet), the contractor shall erect portable concrete barrier in the direction of traffic. The requirements of paragraph "A" shall apply to the remaining guardrail within the run. Temporary barrier shall be flared at a 17:1 (minimum) taper rate and shall terminate outside the clear zone, behind existing guardrail or barrier or with a work zone impact attenuator.
- C. The requirements stated in "A" shall apply for a period not to exceed one week. Where the rebuilding or construction of any run of guardrail cannot be accomplished within one week, the contractor shall provide and maintain temporary concrete barrier in the interim time it takes to complete the work. The approach end of the portable concrete barrier shall be flared to the outer edge of the paved shoulder and shall terminate outside the clear zone, behind existing guardrail or barrier or with a work zone impact attenuator. In addition, a Type II barricade with Type B (high intensity flasher) warning light shall be placed in front of this initial section of temporary barriers to provide forewarning to the approaching traffic.

The term "guardrail" as used herein shall be understood to cover all types of existing or proposed barrier, including standard guardrail, barrier design guardrail, bridge parapet, and concrete barrier.

The cost of complying with these safety procedures shall be included in the lump sum bid price for Item 614 Maintaining Traffic.

<u>Item 614 - Work Zone Impact Attenuator, Unidirectional</u>

This item shall consist of furnishing and installing one of the following impact attenuators:

1. The Quadguard CZ, (24 inches wide six-bay) Work Zone Impact Attenuator manufactured by Energy Absorption Systems, Inc., One East Wacker Drive, Chicago, II 60601 (telephone: 312-467-6750.)

The length of the six-bay Quadguard CZ is 20'-9". Installation shall be at the locations specified in the plans, in accordance with the manufacturer's specifications as detailed on the following pre-approved shop drawings:

Drawing	Title	Drawing and revision date	ODOT approval date
QSCZCVR-T4	Quadguard CZ System For Construction Zones	5/13/99 rev. J	8/27/99
35-40-10	Quadguard System Concrete Pad, CZ, QG	11/19/99 rev. D	8/27/99
35-40-16	Quadguard System Backup Assembly, CZ, QG	7/30/99 rev. F	8/27/99
354051z	Quadguard CZ System Nose Assembly, CZ, QG, 24, 30, 36	5/17/99	8/27/99
35-40-18	Transition Assembly, 4 Offset, QG	6/25/99 rev. F	8/27/99
35400260	Quadguard System PCMB Anchor Assembly	11/19/97 rev. C	8/27/99

2. The TRACC (Trinity Attenuating Crash Cushion) manufactured by Trinity Industry, 1170 N. State Street, Girard, Ohio 44420 (telephone: 330-545-4373).

The TRACC is 21'-0" long and 2'7" wide. Installation shall be at the locations specified in the plans, in accordance with the manufacturer's specifications as detailed on the following pre-approved shop drawings:

Drawing	Title	Drawing and revision date	ODOT approval date
SS450	Crash-cushion attenuating terminal plan, elevation & sections	3/12/99 rev. 1	8/27/99
SS455	TRACC transition to w-beam median barrier plan, elevation & sections	2/18/99	8/27/99
SS461	TRACC transition to concrete safety shape barrier plan, elevation & sections	6/30/99 rev. 1	8/27/99

Drawing	Title	Drawing and revision date	ODOT approval date
SS462	TRACC transition to concrete barrier single slope plan, elevation & sections	6/30/99	8/27/99

3. The Barrier Systems, Inc. TAU-II impact attenuator, distributed by Road Systems, Inc., sales support, 2183 Elm Trace, Austintown, Ohio 44515 (telephone: 330-799-9291).

The TAU-II is a parallel 8-bay unit 24'-0" long and 35" wide. Installation shall be at the locations specified in the plans, in accordance with the manufacturer's specifications as detailed on the following pre-approved shop drawings:

Drawing	Title	Drawing and revision date	ODOT approval date
A040416	Universal TAU-II parts list	4/22/04	10/16/04
A040420	Universal TAU-II foundation, flush mount backstop	4/28/04	10/16/04
A040105	Universal TAU-II foundation, PCB backstop (referenced on a04020)	1/07/04	10/16/04
B040239	Application, flush mount backstop (typical for parallel 60 mph unit)	4/21/04	10/16/04

The contractor shall provide a replacement unit when an impact is severe enough to require complete replacement of the attenuator. The contractor shall have a spare parts package available on the project site at all times when an attenuator is in place. The contractor shall provide a minimum of one complete spare parts package for every 1 to 6 units installed on the project site. For example, 5 installed units require 1 spare parts package and 7 installed units require 2 spare parts packages.

MAINTENANCE OF TRAFFIC NOTE

Schedule Of Through Lanes To Be Maintained

 \bigcirc

	Lane Re	ductions	F	ermitted Ramp	Closures	Half
Location	1 Lane	2 Lane	Yes	Short Ter	m Closure	Width
Location	Closure	Closure	/ No	Weekdays	Weekends	Ramp Paving
IR-90	Weekday ◆	Weekday ◆				
4 Lanes	Weekend ◆	Weekday ◆				
SR-2	Weekday ◆	Weekday ◆				
3 Lanes	Weekend ◆	Weekend ◆				
All One Lane Ramps			**	10:00PM - 6:00AM	10:00PM - 6:00AM	
All Two Lane Ramps	10:00PM - 6:00AM		NO	NO	NO	10:00PM - 6:00AM

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

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.

** - one lane ramps shall each be closed a total of no more than six nights, or as approved by the Engineer.

Road User Costs/Short Term Lane Closures

Short term lane closures are those which are permitted by the "Schedule Of Thru Lanes To Be Maintained" table. Short term road user costs shall also be assessed when a ramp closure is violated.

These times shall not be revised without prior approval from the District 12 Work Zone Traffic Control Engineer.

If short term lane closures are in place outside the specified times, the contractor will be assessed road user costs in the amount of \$75.00 per minute shall be assessed to the contractor for each minute the lane remains closed.

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

	LOCATIONS - FR	OM PLAN RECORD							254		407	407	442	442		7ED
LOCATION	STA	TION	LENGTH	BEGIN WIDTH	END WIDTH	AVERAGE WIDTH		PAVEMENT AREA	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN (2-1/2")		TACK COAT RATE = 0.10 GAL./SQ.YD.	TACK COA ERMEDIAT 0.05 GAL	1.5" ASPHALT CONCRETE SURFACE COURSE, 12.5 mm, TYPE A (446), AS PER PLAN	1" ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5 mm, TYPE A (446)	REMARKS	EMW ECKED COLOUATE
	FROM	ТО	FEET	FEET	FEET	FEET	SQ. FT.	SQ. YD.	SQ. YD.		GAL.	GAL.	CU. YD.	CU. YD.		
EASTBOUND I-90	139+30.00	140+00.00 142+75.00	70.00 275.00	67	70 100	68.5 85.0	4795 23375	533 2597	533 2597		53	27	22.2	14.8		
	140+00.00 142+75.00	149+43.06	668.06	70 67	67	67.0	44760	4973	4973		260 497	130 249	108.2 207.2	72.1 138.1		
	149+43.06 151+90.84	151+90.84 152+35.00	44.16	BR. NO. 67	CUY-90-2	4.13R OVEF 67.0	2959	329	329		33	16	13.7	9.1		\exists
	152+35.00	156+53.06	418.06	67	100	83.5	34908	3879	3879		388	194	161.6	107.7		
	156+53.06 169+39.00	169+39.00 172+11.00	1285.94 272.00	67 102	67 79	67.0 90.5	86158 24616	9573 2735	9573 2735		957 274	479 137	398.9 114.0	265.9 76.0		<u> </u>
																╛≝
	172+11.00 173+50.00	173+50.00 176+50.00	139.00 300.00	79 79	79 67	79.0 73.0	10981 21900	1220 2433	1220 2433		122 243	61 122	50.8 101.4	33.9 67.6		╗
	176+50.00	177+21.48	71.48	67	67	67.0	4789 R E. 152 ST	532	532		53	27	22.2	14.8		╡ 늘
	177+21.48 179+86.60	179+86.60 190+03.50	1016.90	BR. NO. 67	CUY-90-2 67	4.65R OVEI 67.0	R E. 152 ST. 68132	7570	7570		757	379	315.4	210.3		∃ ₹
	190+03.50	192+69.03	265.53	102	79	90.5	24030	2670	2670		267	134	111.3	74.2		□ ⊃
	192+69.03 198+00.00	198+00.00 201+50.00	530.97 350.00	79 79	79 67	79.0 73.0	41947 25550	4661 2839	4661 2839		466 284	233 142	194.2 118.3	129.5 78.9		
					01						204					⊐
	201+50.00 256+84.23	256+84.23 259+08.69	5534.23	67	67	67.0	370793 R E. 185 ST.	41199	41199		4120	2060	1716.6	1144.4		∃ž
	259+08.69	259+58.00	49.31	67	67	67.0	3304 28557	367	367		37	18	15.3	10.2		∃ ઢ
	259+58.00	263+00.00	342.00	67	100	83.5	28557	3173	3173		317	159	132.2	88.1		⊣ ∢
	263+00.00 268+09.09	268+09.09 270+53.81	509.09	67 BR. NO.	67 CUY-90-2	67.0 26.39R OVE	34109 R NEFF RD.	3790	3790		379	189	157.9	105.3		⊢ ⊭
	270+53.81	272+32.00	178.19	67	70	68.5	12206	1356	1356		136	68	56.5	37.7		∃ 8
	272+32.00	274+55.00	223.00	70	100	85.0	18955	2106	2106		211	105	87.8	58.5		— თ
	274+55.00	284+50.00	995.00	67	67	67.0	66665	7407	7407		741	370	308.6	205.8		∃ ₩
	284+50.00 286+72.00	286+72.00 287+65.36	222.00 93.36	102 79	79 79	90.5	20091 7375	2232 819	2232 819		223 82	112 41	93.0 34.1	62.0 22.8		⊣ ¯
	287+65.36	289+35.36		BR. NO	. CUY-90-	26.74R OVE	ER 200 ST.	•								
	289+35.36 296+42.50	296+42.50 300+00.00	707.14 357.50	79 79	79 100	79.0 89.5	55864 31996	6207 3555	6207 3555		621 356	310 178	258.6 148.1	172.4 98.8		_
	300+00.00	325+69.00	2569.00	67	67	67.0	172123	19125	19125		1912	956	796.9	531.2		
.0	325+69.00	328+35.00	266.00	102	79	90.5	24073	2675	2675		267	134	111.4	74.3		4
ek al	328+35.00	329+40.98	105.98	79	79	79.0	8372.42	930	930		93	47	38.8	25.8		
	329+40.98 331+72.46	331+72.46 333+75.00	202.54	BR. NO. 79	CUY-90-2 79	7.54R OVEF 79.0	R E. 222 ST 16001	. 1778	1778		178	89	74.1	0.0 49.4		4
MA.	333+75.00	337+25.00	350.00	79	67	73.0	25550	2839	2839		284	142	118.3	78.9		
9.44	337+25.00 341+50.00	341+50.00 342+50.00	425.00 100.00	67 67	67 79	67.0 73.0	28475 7300	3164 811	3164 811		316 81	158 41	131.8 33.8	87.9 22.5		1
<u> </u>	342+50.00	346+50.00	400.00	79	100	89.5	35800	3978	3978		398	199	165.7	110.5		
C-2	346+50.00	358+56.00	1206.00	67	67	67.0	80802	8978	8978		898	449	374.1	249.4		
90-0	358+56.00	363+01.00	445.00	102	79	90.5	40273	4475	4475		447	224	186.4	124.3		\exists
~	363+01.00	366+00.00	299.00	79	79 67	79.0	23621	2625	2625 4055		262	131	109.4	72.9		⊟ ന
un u	366+00.00 370+99.92	370+99.92 374+84.47	499.92 384.55	<u>79</u> 67	67 67	73.0 67.0	36494 25765	4055 2863	2863		405 286	203 143	169.0 119.3	112.6 79.5		⊣ မ
10	374+84.47	376+92.97	770 07 1				BABBIT RD		F.450		F.45	070	007.1	454.4		⊒ ຕັ
ල ස ව	376+92.97 384+25.00	384+25.00 385+25.00	732.03	67 67	67 79	67.0 73.0	49046 7300	5450 811	5450 811		545 81	272 41	227.1 33.8	151.4 22.5		-2
000	385+25.00	389+25.00	400.00	79	100	89.5	35800	3978	3978		398	199	165.7	110.5		□
7.22	389+25.00	400+43.00	1118.00	67	67	67.0	74906	8323	8323		832	416	346.8	231.2		၂ ္
P	400+43.00	403+00.00	257.00	102	79	90.5	23259	2584	2584		258	129	107.7	71.8		╡┪
2000	STATION EQUATION 41+12.20	N: 403+00 BK = 41+ 44+87.20	12.20 AH 375.00	79	79	79.0	29625	3292	3292		329	165	137.2	91.4		⊣ ರ
D22	44+87.20	47+87.20	300.00	79	67	73.0	21900	2433	2433		243	122	101.4	67.6		\exists
S	47+87.20 50+17.48	50+17.48 52+83.78	230.28	67 BR NO	67 CUY-90-2	67.0	15429 R E. 260 ST	1714	1714		171	86	71.4	47.6		\dashv
TO T	52+83.78	56+61.76	377.98		67	67.0	25325	2814	2814		281	141	117.2	78.2		18
OR O		TOTALS TO S	HEET 22						208450		20845	10423	8686	5790		
5		TOTALS TO S	ILLI ZZ						208450	I	20040	10423	0000	5130		\neg

	LOCATIONS - FR	OM PLAN RECORD							254	407	407	442	442		√ vTED -
LOCATION	STA	TION	LENGTH	BEGIN WIDTH	END WIDTH	AVERAGE WIDTH		PAVEMENT AREA	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN (2-1/2")	TACK COAT RATE = 0.10 GAL./SQ.YD.	TACK COAT FOR INTERMEDIATE COURSE © 0.05 GAL./SQ.YD.	1.5" ASPHALT CONCRETE SURFACE COURSE, 12.5 mm, TYPE A (446), AS PER PLAN	1" ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5 mm, TYPE A (446)	REMARKS	CALCULATE EMK
	FROM	TO	FEET	FEET	FEET	FEET	SQ. FT.	SQ. YD.	SQ. YD.	GAL.	GAL.	CU. YD.	CU. YD.		
EASTBOUND I-90 (CONT'D)	56+61.76 57+77.50 STATION EQUATION	57+77.50 61+93.70 I: 61+93.7(IR-90)E.	416.20	68	68	R E. 260 I	MARGINAL CO 28302	ONNECTOR 3145	3145	314	157	131.0	87.4		
EASTBOUND SR-2	61+87.09 67+22.00	67+22.00 70+00.00	534.91 278.00	68 44	92 39	80.0 41.5	42793 11537	4755 1282	4755 1282	475 128	238 64	198.1 53.4	132.1 35.6	NHS	
	70+00.00 86+00.00	86+00.00 89+44.00	1600.00 344.00	39 63	39 56	39.0 59.5	62400 20468	6933 2274	6933 2274	693 227	347 114	288.9 94.8	192.6 63.2	NHS NHS	ES
	89+44.00 94+01.77 100+00.00	94+01.77 100+00.00 100+70.00	457.77 598.23 70.00	94 56 56	56 56 56	75.0 56.0 56.0	34333 33501 3920	3815 3722 436	3815 3722 436	381 372 44	191 186 22	158.9 155.1 18.1	106.0 103.4 12.1	NHS NHS NHS	╡┋
WESTBOUND I-90	139+30.00 140+00.00	140+00.00 149+43.06	70.00 943.06	67 67	67 67	67.0 67.0	4690 63185	521 7021	521 7021	52 702	26 351	21.7 292.5	14.5 195.0		O A N
	149+43.06 151+90.84	151+90.84 152+50.00	59.16	BR. NO. 67	CUY-90-2 67	4.13L OVER 67.0	R E. 140 ST. 3964	440	440	44	22	18.4	12.2		g
	152+50.00 159+03.50 171+82.94	159+03.50 171+82.94 174+75.00	653.50 1279.44 292.06	67 67 102	100 67 79	83.5 67.0 90.5	54567 85722 26431	6063 9525 2937	6063 9525 2937	606 952 294	303 476 147	252.6 396.9 122.4	168.4 264.6 81.6		
	174+75.00	177+21.48	246.48	79	67	73.0	17993	1999	1999	200	100	83.3	55.5		۵ اع
	177+21.48 179+86.60	179+86.60 180+50.00	63.40	67	67	67.0	R E. 152 ST.	472	472	47	24	19.7	13.1		₩
	180+50.00 183+70.00 189+13.50	183+70.00 189+13.50 193+64.49	320.00 543.50 450.99	67 79 67	79 100 67	73.0 89.5 67.0	23360 48643 30216	2596 5405 3357	2596 5405 3357	260 540 336	130 270 168	108.1 225.2 139.9	72.1 150.1 93.3		
	193+64.49 196+19.30	196+19.30 200+50.00	254.81 430.70	102 79	79 79	90.5 79.0	23060 34025	2562 3781	2562 3781	256 378	128 189	106.8 157.5	71.2 105.0		
	200+50.00	201+50.00	100.00	79	67	73.0	7300	811	811	81	41	33.8	22.5		
	201+50.00 235+75.08 240+75.00	235+75.08 240+75.00 246+65.66	3425.08 499.92 590.66	67 67 79	67 79 79	67.0 73.0 79.0	229480 36494 46662	25498 4055 5185	25498 4055 5185	2550 405 518	1275 203 259	1062.4 169.0 216.0	708.3 112.6 144.0		
	246+65.66 249+31.00	249+31.00 253+10.00	265.34 379.00	79 67	100 67	89.5 67.0	23748 25393	2639 2821	2639 2821	264 282	132 141	109.9 117.6	73.3 78.4		
D X	253+10.00 256+10.00 256+84.23	256+10.00 256+84.23 259+08.69	300.00 74.23	67 79 BR NO	79 79 CUY-90-2	73.0 79.0	21900 5864 R E. 185 ST.	2433 652	2433 652	243 65	122 33	101.4 27.1	67.6 18.1		
	259+08.69	262+66.00	357.31	79	100	89.5	31979	3553	3553	355	178	148.1	98.7		
0	262+66.00 263+10.00	263+10.00 266+10.00	44.00 300.00	67 67	67 79	67.0 73.0	2948 21900 15728	328 2433 1748	328 2433 1748	33 243	16 122	13.6 101.4	9.1 67.6		
	266+10.00 268+09.09 270+53.81	268+09.09 270+53.81 273+81.00	199.09 327.19	79 BR. NO. 79	79 CUY-90-2	79.0 26.39L OVE 89.5	R NEFF RD.	3254	3254	175 325	87 163	72.8	48.5 90.4		
<u> </u>	273+81.00 285+57.49	285+57.49 287+65.36	1176.49 207.87	67 102	67 79	67.0 90.5	78825 18812	8758 2090	8758 2090	876 209	438 105	364.9 87.1	243.3 58.1		_ ღ
	287+65.36 289+35.26	289+35.26 298+44.54	909.28	BR. NO 79	 . CUY-90- 79	 26.74L OVE 79.0	ER 200 ST. 71833	7981	7981	798	399	332.6	221.7		23.9
3	298+44.54 300+72.00	300+72.00 326+84.29	227.46 2612.29	79 67	100	89.5 67.0	20358 175023	2262 19447	2262 19447	226 1945	113 972	94.2 810.3	62.8 540.2		∃ 6
N N N N N N N N N N N N N N N N N N N	326+84.29 329+00.00	329+00.00 329+40.98	215.71 40.98	102 79	79 79	90.5 79.0	19522 3237	2169 360	2169 360	217 36	108 18	90.4 15.0	60.3 10.0		6-7
	329+40.98 331+72.46 332+50.00	331+72.46 332+50.00 333+50.00	77.54 100.00	79 79	79 67	7.54L OVER 79.0 73.0	6126 7300	681 811	681 811	68 81	34 41	28.4 33.8	18.9 22.5		□ 0 □ </td
	333+50.00 338+50.00	338+50.00 342+00.00	500.00 350.00	67 67	67 79	67.0 73.0	33500 25550	3722 2839	3722 2839	372 284	186 142	155.1 118.3	103.4 78.9		
2	342+00.00	344+37.46 TOTALS TO S	237.46 HFFT 22	79	79	79.0	18759	2084	2084 18462	208	8160	86.8 6800	57.9 4533	IM	19
		TOTALS TO SI	HEET 22						163192	1846	923	769	513	NHS	$\frac{1}{58}$

	LOCATIONS - FF	ROM PLAN RECORD							254	407	407	442	442		VIED Y
LOCATION		TION	LENGTH	BEGIN WIDTH	END WIDTH	AVERAGE WIDTH		PAVEMENI AREA	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN (2-1/2")	TACK COAT RATE = 0.10 GAL./SQ.YD.	TACK COAT FOR INTERMEDIATE COURSE © 0.05 GAL./SQ.YD.	1.5" ASPHALT CONCRETE SURFACE COURSE, 12.5 mm, TYPE A (446), AS PER PLAN		REMARKS	EMK EMK I DHE
	FROM	ТО	FEET	FEET	FEET	FEET	SQ. FT.	SQ. YD.	SQ. YD.	GAL.	GAL.	CU. YD.	CU. YD.		
WESTBOUND I-90 (CONT'D)	344+37.46 349+11.00	349+11.00 360+50.00	473.54 1139.00	79 67	100 67	89.5 67.0	42382 76313	4709 8479	4709 8479	471 848	235 424	196.2 353.3	130.8 235.5		
	360+50.00	364+50.00	400.00	102	79	90.5	36200	4022	4022	402	201	167.6	111.7		
	364+50.00 365+50.00	365+50.00 374+84.47	100.00 934.47	79 67	67 67	73.0 67.0	7300 62609	811 6957	811 6957	81 696	41 348	33.8 289.9	22.5 193.2		
	374+84.47 376+92.97	376+92.97 377+25.00	32.03	BR. NO.	CUY-90-28 I 67	.40L OVER 67.0	BABBIT RD 2146	238	238	24	12	9.9	6.6		
	377+25.00	380+75.00	350.00	67	79	73.0	25550	2839	2839	284	142	118.3	78.9		ES
	380+75.00	384+10.07	335.07	79	79	79.0	26471	2941	2941	294	147	122.5	81.7		II E
	384+10.07 386+93.00	386+93.00 401+75.00	282.93 1482.00	79 67	100 67	89.5 67.0	25322 99294	2814 11033	2814 11033	281 1103	141 552	117.2 459.7	78.2 306.5		 - -
	401+75.00	403+00.00 N: 403+00 BK = 41+	125.00	102	87	94.5	11813	1313	1313	131	66	54.7	36.5		Z
	41+12.20	43+87.20	275.00		79	83.0	22825	2536	2536	254	127	105.7	70.4		─
	43+87.20 44+87.20	44+87.20 45+87.20	100.00	79 79	79 67	79.0 73.0	7900 7300	878 811	878 811	88 81	44	36.6 33.8	24.4 22.5		o
	45+87.20	50+17.48	430.28	67	67	67.0	28829	3203	3203	320	160	133.5	89.0		
	50+17.48	52+57.17 *		BR. NO.	CUY-90-2	3.10L OVER	E. 260 ST.	3203	3203	320	160	133.5	89.0		z
	* - STATION EQU	ATION: 52+28.57(IR	-90)W.B. = T	51+67.56 ((SR-2)W.B. 	<u> </u>									A C
WESTBOUND SR-2	52+57.17 55+51.56	55+51.56 56+64.70	294.39	67	75	71.0	20902 MARGINAL CO	2322	2322	232	116	96.8	64.5		
	56+64.70	63+01.60	636.90	68	92	80.0	50952	5661	5661	566	283	235.9	157.3		⊟ an
	63+01.60 83+25.00	83+25.00 84+41.20	2023.40	39 39	39 45	39.0 42.0	78913 4880	8768 542	8768 542	877 54	438 27	365.3 22.6	243.6 15.1	NHS NHS	
	84+41.20	89+99.51	558.31	85	56	70.5	39361	4373	4373	437	219	182.2	121.5	NHS	
	89+99.51 100+00.00	100+00.00	1000.49	56 56	56 56	56.0 56.0	56027 3920	6225 436	6225 436	623 44	311 22	259.4 18.1	172.9 12.1	NHS NHS	
											+				
RAMP 2	0+00.00 1+00.00	1+00.00 1+66.75	100.00	29 27	27 25	28.0 26.0	2800 1736	311 193	311 193	31 19	16 10	13.0 8.0	8.6 5.4		
	1+66.75	4+39.24	272.49	25	25	25.0	6812	757	757	76	38	31.5	21.0		
	4+39.24 5+50.00	5+50.00 6+21.88	110.76 71.88	25 19	19 19	22.0 19.0	2437 1366	271 152	271 152	27 15	14 8	11.3 6.3	7.5 4.2		
	6+21.88	6+62.60	40.72	10	,,,	CADD	1418	158	158	16	8	6.6	4.4		
RAMP 3	2+66.44	3+30.45	64.01	28	25	26.5	1696	188	188	19	9	7.9	5.2		
	3+30.45	5+72.17	241.72	25	25	25.0	6043	671	671	67	34	28.0	18.7		
RAMP 4	2+68.30 2+85.00	2+85.00 4+88.15	16.70 203.15	29 29	29 25	29.0 27.0	484.3 5485	54 609	54 609	5 61	3 30	2.2 25.4	1.5 16.9		
	4+88.15	5+31.15	43.00	25	25	25.0	1075	119	119	12	6	5.0	3.3		
RAMP 5	1+23.00	3+93.00	270.00	25	25	25.0	6750	750	750	75	38	31.3	20.8		
RAMP 6	1+29.82	3+47.31	217.49	25	25	25.0	5437	604	604	60	30	25.2	16.8		
17711111	3+47.31	4+05.40	58.09	25	28	26.5	1539	171	171	17	9	7.1	4.8		က်
RAMP 7	5+48.00	6+00.00	52.00	22	22	22.0	1144	127	127	13	6	5.3	3.5		
	6+00.00	7+16.00	116.00			CADD	4255	473	473	47	24	19.7	13.1		
RAMP 8	3+17.72	5+00.00 5+56.41	182.28	25	25	25.0	4557	506	506	51	25	21.1	14.1		□ '_
	5+00.00		56.41	25	24	24.5	1382	154	154	15	8	6.4	4.3		
RAMP 9	0+13.00 0+25.00	0+25.00 0+62.38	12.00 37.38	16	25	CADD 20.5	228 766	25 85	25 85	3 9	1 4	1.1 3.5	0.7		
	0+62.38	2+31.48	169.10	25	25 31	25.0 28.0	4228 2799	470 311	470	47	23	19.6 13.0	13.0		
	2±31 V0	1 (1 (1))	I du no												
	2+31.48	3+31.46 TOTALS TO SI	99.98	25	31	20.0	2199	311	311 68727	6873	3436	2864	1909	IM	20 58

	LOCATIONS - FR	OM PLAN RECORD							254	407	407	442	442		ж ер
LOCATION	STA	TION	LENGTH	BEGIN WIDTH	END WIDTH	AVERAGE WIDTH		PAVEMENT AREA	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN (2-1/2")	RATE = 0.10 GAL./SQ.YD.	TACK COAT FOR INTERMEDIATE COURSE © 0.05 GAL./SQ.YD.	1.5" ASPHALT CONCRETE SURFACE COURSE, 12.5 mm, TYPE A (446), AS PER PLAN	ALT COI DIATE C	REMARKS	EMIK
	FROM	ТО	FEET	FEET	FEET	FEET	SQ. FT.	SQ. YD.	SQ. YD.	GAL.	GAL.	CU. YD.	CU. YD.		
RAMP 11	2+65.20 11+55.01	11+55.01 12+18.30	889.81 63.29	25	25	25.0 CADD	22245 1332	2472 148	2472 148	247 15	124 7	103.0	68.7 4.1		7
RAMP 12	3+47.86 4+90.66 9+94.19 13+00.00 14+07.03	4+90.66 9+94.19 13+00.00 14+07.03 15+08.69	142.80 503.53 305.81 107.03 101.66	30 27 27 52	27 27 52 53	28.5 27.0 39.5 52.5 CADD	4070 13595 12079 5619 5020	452 1511 1342 624 558	452 1511 1342 624 558	45 151 134 62 56	23 76 67 31 28	18.8 62.9 55.9 26.0 23.2	12.6 42.0 37.3 17.3		ES
RAMP 12 (LEFT)	15+08.69	16+20.00	111.31	36	40	38.0	4230	470	470	47	23	19.6	13.1		∄ ⊟
RAMP 12 (RIGHT)	0+55.15	2+02.51	147.36	18	18	18.0	2652	295	295	29	15	12.3	8.2		
RAMP 13	3+07.60 3+50.77 4+42.42 7+88.93 8+38.93 10+75.00 11+25.00	3+50.77 4+42.42 7+88.93 8+38.93 10+75.00 11+25.00 11+86.17	43.17 91.65 346.51 50.00 236.07 50.00 61.17	24 24 27 27 27 25 25	24 27 27 25 25 16	24.0 25.5 27.0 26.0 25 20.5	1036 2337 9356 1300 5902 1025 979	115 260 1040 144 656 114 109	115 260 1040 144 656 114 109	12 26 104 14 66 11	6 13 52 7 33 6	4.8 10.8 43.3 6.0 27.3 4.7 4.5	3.2 7.2 28.9 4.0 18.2 3.2 3.0		NG QUA
RAMP 14	3+11.30	3+87.08	75.78	23	25	24	1819	202	202	20	10	8.4	5.6		d ACI
2112	3+87.08	7+17.00	329.92	25	25	25	8248	916	916	92	46	38.2	25.5		RF.
RAMP 14A	3+78.76 4+78.76	4+78.76 6+34.30	100.00 155.54	28 25	25 25	26.5 25	2650 3889	294 432	294 432	29 43	15 22	12.3 18.0	8.2		_ Տ
RAMP 15	1+30.56	3+00.00	169.44	25	25	25	4236	471	471	47	24	19.6	13.1		₩
RAMP 16	1+30.70 2+79.80	2+79.80 3+79.80	149.10 100.00	25 25	25 29	25 27	3728 2700	414 300	414 300	41 30	21 15	17.3 12.5	11.5 8.3		\exists
RAMP 1E	3+53.31 4+53.31 6+34.97	4+53.31 6+34.97 6+74.97	100.00 181.66 40.00	31 25 25	25 25 24	28 25 24.5	2800 4542 980	311 505 109	311 505 109	31 50 11	16 25 5	13.0 21.0 4.5	8.6 14.0 3.0		
RAMP 2E	4+13.00	6+51.69	238.69	25	25	25	5967	663	663	66	33	27.6	18.4		1
RAMP 6E	1+31.64	3+55.50	223.86	25	25	25	5597	622	622	62	31	25.9	17.3		
RAMP 7E	1+25.78 3+36.61	3+36.61 4+36.61	210.83	25 25	25 27	25 26	5271 2600	586 289	586 289	59 29	29 14	24.4	16.3 8.0		
RAMP 8E	4+79.00	5+15.00	36.00	25	25	25	900	100	100	10	5	4.2	2.8		
RAMP 9E	3+99.67 4+65.00	4+65.00 6+40.00	65.33 175.00	31 25	25 25	28 25	1829 4375	203	203 486	20 49	10 24	8.5 20.3	5.6 13.5		1
RAMP 10E	2+95.00 3+98.00	3+98.00 4+99.24	103.00	25 25 25	25 31	25 28	2575 2835	286 315	286 315	29 31	14 16	11.9	7.9		3.93
RAMP 11E	1+82.00	2+71.00	89.00	25	25	25	2225	247	247	25	12	10.3	6.9		0-2
RAMP 12E	4+00.31 5+00.31	5+00.31 6+57.00	100.00	27 25	25 25	26 25	2600 3917	289 435	289 435	29 44	14 22	12.0 18.1	8.0 12.1		6
RAMP 13E	2+81.90	4+62.00	180.10	25	25	25	4503	500	500	50	25	20.8	13.9] \(\frac{1}{2} \)
RAMP 14E	1+55.00 3+27.72	3+27.72 3+80.50	172.72 52.78	25 25	25 28	25 26.5	4318 1399	480 155	480 155	48 16	24	20.0	13.3		∄ ັ
		TOTALS TO S	HEET 22						19920	1992	996	830	553		21 58

	LOCATIONS - FR	OM PLAN RECORD							254	407	407	442 w	442	-	KATED *
LOCATION	STA	TION	LENGTH	BEGIN WIDTH	END WIDTH	AVERAGE WIDTH		PAVEMENI AKEA	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN (2-1/2")	TACK COAT RATE = 0.10 GAL./SQ.YD.	TACK COAT FOR INTERMEDIATE COURSE © 0.05 GAL./SQ.YD.	1.5" ASPHALT CONCRETE SURFACE COURSE, 12.5 mm, TYPE A (446), AS PER PLAN	1" ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5 mm, TYPE A (446)	REMARKS	CACCLA
	FROM	ТО	FEET	FEET	FEET	FEET	SQ. FT.	SQ. YD.	SQ. YD.	GAL.	GAL.	CU. YD.	CU. YD.		
RAMP 15E	1+94.00	3+54.81	160.81	25	25	25	4020	447	447	45	22	18.6	12.4		
	3+54.81	4+54.81	100.00	25	27	26	2600	289	289	29	14	12.0	8.0		
TURNING ROADWAY NO. 1	5+30.00	6+00.00	70.00	40	40	40	2800	311	311	31	16	13.0	8.6		-
TURNING ROADWAY NO. 2	28+90.88	29+60.88	70.00	44	41	42.5	2975	331	331	33	17	13.8	9.2		\exists ,
RAMP 1, SR-2 WB TO IR-90 EB	11+60.20	12+30.20	70.00	34	31	32.5	2275	253	253	25	13	10.5	7.0	NHS	=====
RAMP 2, IR-90 WB TO SR-2 EB	17+10.00	17+80.00	70.00	28	28	28	1960	218	218	22	11	9.1	6.0	NHS	╡┋
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		TOTALS THIS TOTALS THIS	SHEET						1377 471	 138 47	69 24	57 20	38 13	IM NHS	
		TOTALS FROM TOTALS FROM	SHEET 18						208450 18462	20845 16319	10423 8160	8686 6800	5790 4533	IM IM	4
		TOTALS FROM	SHEET 19						163192	1846	923	769	513	NHS	1
		TOTALS FROM TOTALS FROM	SHEET 20						68727 20345	 6873 2034	3436 1017	2864 848	1909 565	IM NHS	$\exists L$
		TOTALS FROM TOTALS TO GENER	SHEET 21	Υ					19920 316937	1992 46167	996 23083	830 19237	553 12824	IM IM	$\exists Z$
		TOTALS TO GENER							184007	3927	1964	1637	1091	NHS	フヒ

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									2	02	203	30	1				600	5						622		609	209	448	626	9
SHEET NUMBER	REFERENCE NUMBER	EXIS	STING	PROF	POSED	DIRECTION OF LANES	SIDE OF LANES LENGTH OF NEED	(FOR FIXED OBJECT)	GUARDRAIL REMOVED	CONCRETE BARRIER REMOVED	EXCAVATION	ASPHALT CONCRETE	BASE, PG64-22 GUARDRAIL, TYPE 5	GUARDRAIL, TYPE 5A	GUARDRAIL, BARRIER	DESIGN, TYPE 5 ANCHOR ASSEMBLY,	ANCHOR ASSEMBLY,	ANCHOR ASSEMBLY, TYPE T	IMPACT ATTENUATOR, TYPE 1-98	(UNIDIRECTIONAL) BRIDGE TERMINAL	ASSEMBLY, TYPE 1 BRIDGE TERMINAL	ASSEMBLY, TYPE 2 BRIDGE TERMINAL	ASSEMBLY, TYPE BR-1 CONCRETE BARRIER, SINGLE	SLOPE, ITPE D, AS PER FLAN	END SECTION, TYPE D	CURB, TYPE 4C	RESHAPE UNDER GUARDRAIL, AS PER PLAN	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG64-22	UNDER GUARDRAIL) BARRIER REFLECTOR	EMK EMKE PHECKED
		FROM	ТО	FROM	ТО				FT	FT	CU YD	CU \	YD FT.	FT.	F	FT. EACH	EACH	EACH	EAC	H EAC	H EA	ACH EA	CH F1		EACH	FT	STA.	CU. YD.	EACH	1
30		136+23.5	142+25	135+19.5	142+25	EB	RT		587.5	14	20	9		;						1		1	140		2	20	5.4	19.9	8	1
30 30	G-3	144+00	143+60 149+56	139+47 144+00	143+60 149+56	WB WB	RT		413 556		11	5	556							1		1			2	20	3.3 5.6	12.0 20.6	5 7	1
30 30, 31	G-4 G-5	144+30 151+78	149+05 155+03	144+05 151+78	149+05 155+03	EB EB	RT		475 325				450 325			<u> </u>							1				5.0 3.3	18.5 12.0	6 4	ေ
30, 31 31, 32			3+51, Ramp 4 176+70	152+29	4+88.5, Ramp 4			15.0	750 787.5				837.5 863			1							1				8.9 9.1	32.9	10	쁜
32	G-8	171+87.5	177+46	1+70 171+87.5	177+46	I WB I	RT RT		512.5				500			1		1					2				5.1	33.8	10	1
32, 33 32, 33	G-10	179+62 180+38	182+24.5 189+25.5	179+62 180+38	182+24.5 189+25.5	EB WB	RT		262.5 887.5				250 837.5			1		1									2.6 8.9	9.7 32.9	10	ANTITIE
	G-11	195+15	197+02.5	195+15	196+52.5	WB	RT		187.5				87.5			1		1					1				1.4	5.1	3	1 ⊃
35	G-12 G-13	210+87.5	221+62.5 214+66	205+97.5 210+87.5	221+75 214+65	EB	RT	176	1525 337.5				1462. 325			1		1					-				15.3 3.4	56.5 12.5	17	g
35 35	G-14 G-15	226+25 229+50	227+87.5 230+75	226+25 229+50	227+50 230+75	WB EB	RT RT	110	162.5 125				75 75			1							1				1.3 1.3	4.6 4.6	3	¥
36, 37	G-16	243+50	247+15	243+50	247+15	EB WB	RT	110	325				262.5			1		1					2				3.3	12.0	4	DR/
	G-18	250+25	248+41 257+11	233+91 250+25	248+41 257+11	I WB I	RT l	162	1450 686				1387.5 686			1		1					2				14.5 6.9	53.7 25.4	16 8	ARD
37 38	G-19 G-20	253+73.5 258+94	256+36 4+00, Ramp 12	253+48.5 258+94	256+36 4+00, Ramp 12	EB EB	RT RT	264	262.5 412.5				237.5 400			1		1					1 2				2.9	10.6 15.3	5	
38	G-21	266+51.5	268+14	265+26.5	268+14	EB	RT	264	162.5				237.5	;	+	1							1				2.9	10.6	4	၂ ၒ
38 38	G-22	0+00, Ramp 13 4+12.5, Ramp 13	4+50, Ramp 13	0+00, Ramp 13	4+50, Ramp 13	WB	RT		450 687.5				400 625			1 1		1					1				4.5 6.9	16.7 25.5	5 8	-
38 38, 39	G-24	264+43	267+68 273+39	264+43 270+39	267+68	WB	RT RT		325				312.5 250			1		1					1				3.3	12.0	4 4	-
		0+11, Ramp 14A							237.5				237.5			- '						<u> </u>	2				2.8	8.8	4	1
39	G-27	282+37.5 1+82.5, Ramp 15	283+75	282+37.5	283+75	EB	RT		137.5				87.5			1							1				1.4	5.1	3	1
39, 40	G-29	1+91, Ramp 16	286+45	1+82.5, Ramp 15 1+91, Ramp 16	286+45	EB WB	RT		400 237.5				350 225			ı		1					1				4.0 2.4	14.8 8.8	5	1
₹	G-30		287+74	286+86.5	287+74	WB			87.5				87.5										2				0.9	3.2	3	1
	G-32	289+27	5+88, Ramp 2E 290+52	289+27	5+88, Ramp 2E 290+52	EB	RT		1250 125				1212.5 112.5				1	1					<u>1</u> 1				12.5 1.1	46.3 4.6	14	}
₹ 40, 41 ₹ 41	G-34	301+75	298+42 303+37.5	296+92 301+75	303+25	WB	RT RT	110	150 162.5			+	100		+	1							<u>1</u> 1				1.5 1.5	5.6 5.6	3	<u> </u>
¹ 42	G-35	312+25	313+75	312+25	313+75	EB	RT	110	150				100			1							1				1.5	5.6	3	}
42 42, 43	G-36		315+50 324+25	314+00 322+75	315+50 324+25	WB EB	RT RT	110 110	150 150				100			1 1							1				1.5 1.5	5.6 5.6	3	က
₹ 43	G-38 G-39	327+17	328+67 333+17	325+92 331+42	328+67	EB EB	RT	264	150 175				225 162.5			1		1		1		1	<u>'</u>			20	2.8	10.2	4	၈.
		2+73.5, Ramp 7E		2+73.5, Ramp 7E		WB	RT		425				412.5					1				1 2	2				4.3	15.7	6	-2
43, 44	G-41	332+47.5	343+37.5	332+47.5	343+37.5	WB	RT	277	1050				1000			1				1		- 7	2			20	10.5	19.4	12	06
Б 44	G-43	342+02.5 1+87.5, Ramp 8E		342+02.5 1+87.5, Ramp 8E	4+12.5, Ramp 8E		RT		187.5 225				137.5 162.5			1		1					1				1.9 2.3	6.9 8.3	3	
		349+19 3+95, Ramp 10E	358+69 6+95, Ramp 10E	349+19 3+95, Ramp 10E			RT RT	147	950 300				100 187.5	837.5		1		1					1				10.0	37.0 5.6	11 4) O
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2	•	T(STALS TO GENE	RAL SUMMARY					19655	14	31	14	17455	937.5		27	1	16		4		4 4	5 20	<u> </u>	4	80	201.4	714.4	259	1 🐃

									20)2	203	301	-	1	ı	Г	606	Г	1	1	1	1	62	<u>2</u>	609	209	448	626	- ₽、
SHEET NUMBER	REFERENCE NUMBER	EXIS	TING	PROP	POSED	DIRECTION OF LANES	JF L/	LENGTH OF NEED (FOR FIXED OBJECT)	GUARDRAIL REMOVED	CONCRETE BARRIER REMOVED	EXCAVATION	ASPHALT CONCRETE BASE, PG64-22	. <	GUARDRAIL, TYPE 5A	GUARDRAIL, BARRIER DESIGN, TYPE 5	ANCHOR ASSEMBLY, TYPE F	ANCHOR ASSEMBLY, TYPE B	ANCHOR ASSEMBLY, TYPE T	IMPACT ATTENUATOR, TYPE 1-98 (UNIDIRECTIONAL)	BRIDGE TERMINAL ASSEMBLY, TYPE 1	BRIDGE TERMINAL ASSEMBLY, TYPE 2	BRIDGE TERMINAL ASSEMBLY, TYPE BR-1	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN	CONCRETE BARRIER FND SFCTION, TYPF D	URB, TYPE 4C	RESHAPE UNDER GUARDRAIL, AS PER PLAN	RETE II YPE 1,	UNDER GUARDRAIL) BARRIER REFLECTOR	CALCULATE
\perp		FROM	TO	FROM	ТО	_			FT	FT	CU YD	CU YD	FT.	FT.	FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	EACH	FT	STA.	CU. YD.	EACH	╛
, 45 (G-46	362+95	374+72	362+95	374+72	WB	RT		1137				1137								1	3				11.4	21.1	12	-
	G-47	363+10	374+68	363+10	374+68	EB	RT		1112.5				1062.5			1				1	,	2			20	11.1	20.6	12	1
	G-48 G-49	377+06 377+10	388+43.5 4+26, Ramp 13E	377+06 377+10	388+43.5 4+26, Ramp 13E				1137.5 1125			1	1137.5 1075			1		<u> </u>		1	1				20	11.4	21.1	13 12	_
, 46 (G-50	387+47.5	391+62.5	387+47.5	391+62.5	WB	RT	110	375				312.5			1						2				3.8	13.9	5	4
6 (G-51	397+62.5	400+50	397+62.5	400+87.5	WB	RT		287.5				262.5			1		1								3.3	12.0	4	1
6 (G-52	400+70.5 41+12.20 AH	403+00 BK = 41+95	400+70.5 41+12.20 AH	403+00 BK = 41+95	WB	RT		312.5				300					1								3.1	11.6	4	7
47 (G-53	42+39.5	50+52	42+39.5	50+52	WB	RT		812.5				812.5								1	1				8.1	30.1	9	1
47 (C-54	402+37.5	403+00 BK =	41+87.5	49+45	EB	RT		850				662.5							1		2			20	7.1	26.4	8	4
		41+12.20 AH	49+45																	,								Ť	1
	G-55 G-56	52+45 57+65	56+65 58+35	52+45 57+65	56+65 59+59.5	EB CL	RT		420 112.5			1	420 287.5		12.5			<u> </u>	1	1	1 1				20	4.2 3.3	15.6 12.4	5	-
48 (58+15	66+22	58+15	66+22				807				807		12.0				·		1	1			Ľ	8.1	29.9	9	1
8 (G-58	65+22. SR-2	66+22, SR-2	65+22, SR-2	66+22, SR-2	FB	ΙŢ	88	100			+	50			1		 			-	1				1.0	3.7	3	-
9 *	∗G-59	82+75, SR-2	83+75, SR-2	82+75, SR-2	83+75, SR-2	EB	RT	110	100				50			1						1				1.0	3.7	3	1
19 *	*G-60	85+50, SR-2	86+50, SR-2	85+50, SR-2	86+50, SR-2	WB		88	100			+	50	-	1	1		 				1			1	1.0	3.7	3	
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	LOCATIONS - FRO	OM PLAN RECORD		64	16	646	64	46	646	646	646	646	62	21	621	621			CALCULATED EMK
LOCATION	STA ⁻	TION	LENGTH	T C C C C C C C C C C C C C C C C C C C		LANE LINE, AS PER PLAN	CHANNELIZING	LINE	STOP LINE	CROSSWALK	TRANSVERSE/DIAGONAL LINE	LANE ARROW	RPM (WHITE)		RPM (WHITE/RED)	RPM (YELLOW/RED)	REMA	RKS	
	FROM	ТО	FOOT	WHITE FOOT	YELLOW FOOT	FOOT	GORE FOOT	* F00T	FOOT	FOOT	EACH	EACH	EAG	СН	EACH	EACH			
EASTBOUND IR-90	139+30.00	141+45.00	215	215	215	645							9						S
	141+45.00 143+75.00	143+75.00 154+55.00	230 1080	230 1080	230 1080	690 3240	460						9 42		12				ш
	154+55.00	155+45.00	90	90	90	360							3	3					
	155+45.00	156+55.00	110	110	110	330	220						3	3	6				∤ ⊏
	156+55.00	170+20.00	1365	1365	1365	4095							5	_					Z
	170+20.00 171+75.00	171+75.00 172+75.00	155 100	310 100	155 100	465 400	155						6		5				PΑ
	172+75.00	190+75.00	1800	1800	1800	5400							69						la
	190+75.00	191+45.00	70	140	70	210	70						3	3	2				┨ ¯
	191+45.00	194+50.00	305	305	305	1220							16						열
	194+50.00	262+15.00	6765	6765	6765	20295	170						25	55	_				X N
	262+15.00 263+00.00	263+00.00 273+75.00	85 1075	85 1075	85 1075	255 3225	170						3 42	2	5				쑱
	273+75.00	274+55.00	80	80	80	240	160						3		5				4
	274+55.00	285+10.00	1055	1055	1055	3165							39	9					Σ
	285+10.00	286+40.00	130	260	130	390	130						6	6	4				1.
	286+40.00 298+25.00	298+25.00 300+00.00	1185 175	1185 175	1185 175	4740 525	350				85		60		8				Z
	300+00.00	326+45.00	2645	2645	2645	7935	300				00		99						ME
	326+45.00	327+85.00	140	280	140	420	140						6	+	4				ĮΣ
	327+85.00	331+25.00	340	340	340	1360	140						16		7				N N
	331+25.00 343+15.00	343+15.00 343+90.00	1190	1190	1190	3570							45						4
	343+90.00	347+50.00	75 360	75 360	75 360	300 1080	720							5	18				│ ┗
	747.50.00	760+00-00	1250	1250	125.0	7750							40	0					1
	347+50.00 360+00.00	360+00.00 361+35.00	1250 135	1250 270	1250 135	3750 405	135						48		4				1
0	361+35.00	365+95.00	460	460	460	1840							24		·				1
	365+95.00 386+60.00	386+60.00 387+95.00	2065 135	2065 135	2065 135	6195 540							78						ł
47													Ŭ						1
55 dr	387+95.00 389+25.00	389+25.00 401+60.00	130 1235	130 1235	130 1235	390 3705	260						6 45		7				1
403+00 BK	401+60.00	403+00.00	140	280	140	420	140						6		4				1
STA EQUATION	41, 20, 12	47 - 40 00	210.00	220	220	010							10	,					1
41+12.20 AH	41+20.12 43+40.00	43+40.00 55+00.00	219.88 1160	228 1160	228 1160	912 3480						-	12						<u> </u>
EACTROLING CD C	55+00.00	62+25.00	725	725	725	1450	222	725			100		36	6	0.5				1
EASTBOUND SR-2	62+25.00 67+20.00	67+20.00 89+40.00	495 2220	495 2220	495 2220	990 2220	990				180	-	12		25		NH:	<u> </u>	
-																			1 6
D D D D D D D D D D D D D D D D D D D	89+40.00 93+80.00	93+80.00 100+00.00	440 620	880 620	440 620	440 1240	440						6		11		NH: NH:		m
2	100+00.00	100+70.00	70	70	70	140							2				NH:		?
WESTBOUND IR-90	139+30.00	156+75.00	1745	1745	1745	5235								6					0
MESIDOUND IK-AO	156+75.00	157+40.00	65	65	65	260							66						- o
5 0	157+40.00	158+25.00	85	170	85	255	85						3		2				1 ≥
	158+25.00 171+85.00	171+85.00 172+60.00	1360 75	1360 75	1360 75	4080 225	150				65	-	5	-	5				<u>ج</u> ا
777	172+60.00	173+70.00	110	110	110	440	,,,,,						4						1
												-							1
	TOTAL 0. T			7	72.1.2	62:5=									***				
5	TOTALS TO SHEET TOTALS TO SHEET	21		33273 3790	32418 3350	99127 4040	4335 440	725		1	330		127	71	116		IM NH:		25

	LOCATIONS SD	OM DIAN DECORD		6	46	646	6	46	646	646	646	646	621	621	621				KED TED
	LOCATIONS - FR	ROM PLAN RECORD					1				1			1					CALCULATE EMK CHECKED
							ی				RANSVERSE/DIAGONAL LINE								
z			₌		A F	INE, PLAN	CHANNELIZING		ᇦ	<u> </u>	IAGO	M O	@	(RED)	(YELLOW/RED)				
LOCATION			LENGTH			LINE,		LINE	LINE	CROSSWALK		ARR	(WHITE)	 E	MO.			EN A DIVIC	
)CA	STA	TION			EDGE	NE L	NA NA	\Box	STOP	JSSW,	MS 1			(WHIT	🗓		R	EMARKS	
LO				l L	ш	LANE AS PEF	当		ST	CRO	SVEF	LANE	RPM						
											ANS			RPM	RPM				
											¥								
	FDOM	TO.	FOOT	WHITE	YELLOW	FOOT	GORE		FOOT	FOOT	FACIL	FACIL	FACIL	FACIL	FACU.				4
	FROM	ТО	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	1001	1001	EACH	EACH	EACH	EACH	EACH				1
WECTPOIND ID OO	177.70.00	105 - 50 - 00	4400	440.0	440.0	75.40							45						၂
WESTBOUND IR-90	173+70.00 185+50.00	185+50.00 186+60.00	1180 110	1180 110	1180 110	3540 440							45		+				ΙШ
	186+60.00	188+65.00	205	410	205	615	205						9	5					1⊏
	188+65.00	193+65.00	500	500	500	1500							18]⊏
	193+65.00	194+90.00	125	125	125	375	250						6	7	+				z
	194+90.00	198+10.00	320	320	320	1280							16	<u> </u>					∣ ∢
	198+10.00	244+25.00	4615	4615	4615	13845							174] 🗀
	244+25.00 247+40.00	247+40.00 248+55.00	315 115	315 230	315 115	1260 345	115				-		16	٦ -					ļ٥
			110				110			<u></u>	<u>L</u>								J
	248+55.00	258+75.00	1020	1020	1020	3060							39						
	258+75.00 261+45.00	261+45.00 262+25.00	270 80	270 160	270 80	1080 240	80						16	3					X Z
	262+25.00	268+65.00	640	640	640	1920	00						24	1 3	1				\ <u>*</u>
	268+65.00	271+50.00	285	285	285	1140							12						Ā
	271+50.00	272+90.00	140	280	140	420	140						6	4					ĺΣ
	272+90.00	285+55.00	1265	1265	1265	3795	140						48	4					1
	285+55.00	286+35.00	80	80	80	240	160				70		3	5					J⊨
	286+35.00 298+85.00	298+85.00 299+85.00	1250	1250	1250	5000	100						64	7					
	298+85.00	299+85.00	100	200	100	300	100						3	3] ⊠
	299+85.00	326+85.00	2700	2700	2700	8100							102] 🗔
	326+85.00 327+85.00	327+85.00 330+20.00	100	100	100	300	200						3	5					∤>
	330+20.00	344+35.00	235 1415	235 1415	235 1415	940 4245							12 54						∤ ≮
	344+35.00	346+10.00	175	175	175	700							8						
	740+10-00	747.55.00	145	000	145	475	145							1					4
	346+10.00 347+55.00	347+55.00 360+50.00	145 1295	290 1295	145 1295	435 3885	145						6 48	4	+ +				ł
	360+50.00	362+65.00	215	215	215	645	430						9	11					1
	362+65.00	363+55.00	90	90	90	360							4						4
	363+55.00	382+10.00	1855	1855	1855	5565							69						1
	382+10.00	384+30.00	220	220	220	880							12						1
	384+30.00	385+75.00	145	290	145	435							6	4					1
	385+75.00	401+75.00	1600	1600	1600	4800							60	+	+ +				1
403+00 BK	401+75.00	403+00.00	125	125	125	125	250						6	6					
STA EQUATION 41+12.20 AH	41+12.20	41+50.00	77.0	70	70	114	76							7			_		一
TI 12.20 AN	41+12.20	43+00.00	37.8 150	38 150	38 150	600	76				+		8	 					1
52+28.57 BK	43+00.00	52+28.57	928.57	929	929	2787							36						ო
STA EQUATION 51+67.56 AH	51+67.56	55+65.00	707.44	707	707	1100							15						ြ
DI+07.00 AH	55+65.00	60+70.00	397.44 505	397 505	397 505	1192 1010	1010						15	26					က
WESTBOUND SR-2	60+70.00	63+00.00	230	230	230	230	10.10						3						7
	63+00.00 84+35.00	84+35.00 87+70.00	2135	2135	2135	2135	670				110		27	17				NHS	0
	84+35.00 87+70.00	93+85.00	335 615	335 615	335 615	335 615	670	615			110		24	17				NHS NHS	6
	93+85.00	100+00.00	615	615	615	1230		0,0					16					NHS	 >
	100+00.00	100+70.00	70	70	70	210							3					NHS] ⊃
TURNING ROAD 1	5+30.00	6+00.00	70	70	70	70					1		1	1					၂ပ
													·						1
TURNING ROAD 2	28+90.88	31+85.00	294.12	294	294	294							4						ــــــ
	TOTALS TO SHEET	<u>-1</u> 27		26473	25543	78107	3161				70		987	89				IM	26
	TOTALS TO SHEET				3770	4525	670	•			, , ,	1	, , , , , , , , , , , , , , , , , , , ,	, 55		1			$\frac{20}{58}$

	LOCATIONS - FR	OM PLAN RECORD		6	46	646	6	46	646	646	646	646		621	621	621		CALCULATE
LOCATION	STA	TION	LENGTH	LENGTH EDGE LINE		LANE LINE, AS PER PLAN	CHANNELIZING		STOP LINE	CROSSWALK	TRANSVERSE/DIAGONAL LINE	LANE ARROW		RPM (WHITE)	RPM (WHITE/RED)	RPM (YELLOW/RED)	REMARKS	
	FROM	ТО	FOOT	WHITE FOOT	YELLOW FOOT	FOOT	GORE FOOT	* F00T	FOOT	FOOT	EACH	EACH		EACH	EACH	EACH		
MP 1 (@ SPUR)	11+60.00	12+30.00	70	70	70												NHS	o
MP 2 (@ SPUR)	17+10.00	17+80.00	70	70	70												NHS	L
MP 2	1+00.00	6+50.00	550	550	550				30	70						7		
MP 3	2+65.00	5+50.00	285	285	285				30	10						4		
MP 4	1+90.00	5+30.00	340	340	340											4		~
AMP 5 AMP 6	1+25.00 1+30.00	4+75.00 4+05.00	350 275	350 275	350 275					1						4		—— ∋
																		c
AMP 7 AMP 8	4+90.00 3+20.00	7+20.00 6+30.00	230 310	230 310	230 310					+						3 4		—— ₁₅
MP 9	0+00.00	3+30.00	330	330	330				16							4		
AMP 11	1+90.00	12+30.00	1040	1040	1040											13		
AMP 12	3+50.00	11+35.00	785	785	785											10		—— ☆
····	11+35.00	13+00.00	165	165	165	165								2		2		◀
	13+00.00 14+50.00	14+50.00 14+85.00	150 35	150 35	150			300 70		-		3			8	2		∑
	14+85.00	15+10.00	25	35				50				ı				'		
	15+10.00	16+10.00	100					200	40	80		6			4			
AMP 13	2+65.00	11+85.00	920	920	920											12		──────────────────
AMP 14	2+25.00	7+15.00	490	490	490											6		≥
MP 14-A MP 15	3+80.00 1+30.00	6+35.00 3+60.00	255 230	255 230	255 230		+			+						3		5
AMP 16	1+31.00	3+80.00	249	249	249											3		
AMP 1-E	3+55.00	6+75.00	320	320	320											4		
AMP 2-E	3+40.00	6+50.00	310	310	310											4		
AMP 6-E	1+30.00	4+30.00	700	700	700											4		
AMP 7-E	1+25.00	4+30.00	300 305	300 305	300 305											4		
MP 8-E	3+20.00	5+15.00	195	195	195											3		
AMP 9-E AMP 10-E	5+00.00 2+95.00	6+40.00 5+00.00	140 205	140 205	140 205											3		
AMIF IU-L	2+33.00	3+00.00	203	203	203					+	1					1 3		
MP 11-E	1+85.00	4+15.00	230	230	230											3		
MMP 12-E MMP 13-E	4+00.00 1+65.00	6+55.00 4+60.00	255 295	255 295	255 295					1						3 4		
MP 14-E	1+65.00	4+95.00	330	330	330											4		
MP 15-E	1+95.00	4+55.00	260	260	260											3		
															+			
					-		1	-		+								
	T07::: 0 7::::				42.25												•	
	TOTALS THIS SHE TOTALS THIS SHE			10134	10099 140	165	1	620	86	150		10		2	12	130	IM NHS	
	TOTALS SHEET 2	25		33273	32418	99127	4335	725			330			1271	116		IM	
	TOTALS SHEET 2	<u>.</u> 5		3790	3350	4040	440							52	11		NHS	
	TOTAL SHEET 26 TOTAL SHEET 26	<u>ე</u> ე		26473 3770	25543 3770	78107 4525	3161 670	615		1	70 110			987 74	89 17		IM NHS	
	TOTAL SHEET 20			137	940	177399	0.0	1 013 341	86	150	400	10		17	2607	1	IM	
				26.1	3 MI. 960	33.60 MI. 8565	•		00	130	-	10						 -⊦
	TOTALS TO GENERAL S	LIMMADV		1 143	3 MI.	1.62 MI.	1 17	25	ı	1	110		1	1	154		NHS	——(

		SHEET NUMBER				•	IM	NHS		ITEM	GRAND			SEE
8 9	10	22	23	24	51	52A	IR-90	SR-2	ITEM	EXT.	TOTAL	UNIT	DESCRIPTION	SHT. NO.
													ROADWAY	
1,000							1000		202	30000	1,000		WALK REMOVED	
26							26		202	30600	26		CONCRETE MEDIAN REMOVED	
205			14				14		202	30700	14	FT	CONCRETE BARRIER REMOVED	
385			19,655	8,589 / 200			385 28,244	200	202	32000 38000	385 28,444	FT FT	CURB REMOVED GUARDRAIL REMOVED	
100			10,000	0,000 / 200			27,100	200	202	98200	27,100	FT	REMOVAL MISC.: GLARE SCREEN	8
			31		10		41		203	10000	41	CU YD	EXCAVATION	
			201.4	87.2 / 2.0			288.6	2.0	209	15001	290.6	STA	RESHAPING UNDER GUARDRAIL, AS PER PLAN	8
31			201,4	07.272.0			431	2.0	209	60201	431	STA	LINEAR GRADING, AS PER PLAN	8
										0.5201	101	77.1		1 -
			17,455	8,326.5 / 100			25,781.5	100	606	13000	25,881.50	FT	GUARDRAIL, TYPE 5	
			937.5				937.5		606	13050	937.5	FT	GUARDRAIL, TYPE 5A	
			4	12.5			12.5		606	15500	12.5	FT	GUARDRAIL, BARRIER DESIGN, TYPE 5	
			27	5/2			32	2	606 606	26000 26100	34	EACH EACH	ANCHOR ASSEMBLY, TYPE B ANCHOR ASSEMBLY, TYPE E	
			16	2			18		606	26500	18	EACH	ANCHOR ASSEMBLY, TYPE T	
			4	5			9		606	35000	9	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
			4	6			10		606	35100	10	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
			45	13 / 2			58 1	2	606 606	35170 60000	60	EACH EACH	BRIDGE TERMINAL ASSEMBLY, TYPE BR-1 IMPACT ATTENUATOR, TYPE 1-98 (UNIDIRECTIONAL)	
				3			3		000	00000	ı	EACH	IMPACT ATTENDATOR, TTPE 1-90 (DIVIDIRECTIONAL)	
1,000							1000		608	52001	1,000	SQ FT	CURB RAMP, AS PER PLAN	9
26							26		609	70000	26	SQ YD	4" CONCRETE MEDIAN	
			200							12/24				
			200				200		622 622	10161 25000	200 4	FT EACH	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN CONCRETE BARRIER END SECTION, TYPE D	8
00			4				27,100		622	80000	27,100	FT	GLARE SCREEN	8
							27,100		OEL.	00000	21,100		OLY INCLUSIVE CONTRACTOR	†
						1	1		SPECIAL	69098000	1	EACH	MISC.: ROADWAY WEATHER SENSOR	52A
						1	1		SPECIAL	69098000	1		MISC.: ROADWAY SENSOR COMMISSIONING	52A
						1	1		SPECIAL	69098000	1	EACH	MISC.: ROADWAY SENSOR REMOVED AND DISPOSED	52A
													EROSION CONTROL	
							LUMP		659	98700	LUMP		SEEDING, MISC.; SEEDING AND MULCHING	9
							10,000		832	30000	10,000	EACH	EROSION CONTROL	
-							C		004	00004	•	EAGU	DRAINAGE	
6							6		604 604	09001 34501	6		CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN MANHOLE ADJUSTED TO GRADE, AS PER PLAN	9
5,000							5000		SPECIAL	60450000	5,000		MISCELLANEOUS METAL	9
-,-,-											-,			-
													PAVEMENT	
					1,600		1600 3000		251	01001	1,600		PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN A	10
					3,000		3000		251	01001	3,000	SQ YD	PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN B	10
		316,937 / 184,007					316.937	184,007	254	01001	500,944	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN	10
							, , , ,	,,,,					7	
					2,500		2500		255	10101	2,500		FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS FS, AS PER PLAN A	10
					400		400		255 255	10101	400		FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS FS, AS PER PLAN B FULL DEPTH PAVEMENT SAWING	10
					12,500		12,500		200	20000	12,500	FT	FOLL DEPTH PAVEMENT SAWING	
			14				14		301	46000	14	CU YD	ASPHALT CONCRETE BASE, PG64-22	
													AGGREGATE BASE	
					10		10		304	20000	10	CU YD	AGGREGATE BASE	
		40,407,70,007			10			2.007						
		46,167 / 3,927 23,083 / 1,964			10		46,167	3,927	407	10000	50,094	GAL	TACK COAT	
		46,167 / 3,927 23,083 / 1,964			10			3,927 1,964						
					10		46,167		407	10000	50,094	GAL GAL CU YD	TACK COAT TACK COAT FOR INTERMEDIATE COURSE ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN A	10
		23,083 / 1,964			10		46,167 23,083	1,964	407 407	10000 14000	50,094 25,047	GAL GAL CU YD	TACK COAT TACK COAT FOR INTERMEDIATE COURSE	10
		23,083 / 1,964 19,237 / 1,637		000.017.4	10		46,167 23,083 19,237 12,824	1,964 1,637 1,091	407 407 442 442	10000 14000 10001 20100	50,094 25,047 20,874 13,915	GAL GAL CU YD CU YD	TACK COAT TACK COAT FOR INTERMEDIATE COURSE ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN A ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5 MM, TYPE A (448)	
		23,083 / 1,964 19,237 / 1,637	714.4	239.2 / 7.4	10		46,167 23,083 19,237	1,964 1,637	407 407 442	10000 14000 10001	50,094 25,047 20,874	GAL GAL CU YD	TACK COAT TACK COAT FOR INTERMEDIATE COURSE ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN A	10
		23,083 / 1,964 19,237 / 1,637		239.2 / 7.4	10		46,167 23,083 19,237 12,824 953.6	1,964 1,637 1,091	407 407 442 442	10000 14000 10001 20100	50,094 25,047 20,874 13,915	GAL GAL CU YD CU YD	TACK COAT TACK COAT TACK COAT FOR INTERMEDIATE COURSE ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN A ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5 MM, TYPE A (448) ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64-22, AS PER PLAN	
385		23,083 / 1,964 19,237 / 1,637	714.4		10		46,167 23,083 19,237 12,824	1,964 1,637 1,091	407 407 442 442 442 448	10000 14000 10001 20100 46061	50,094 25,047 20,874 13,915	GAL GAL CU YD CU YD	TACK COAT TACK COAT FOR INTERMEDIATE COURSE ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN A ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5 MM, TYPE A (448)	
385	400	23,083 / 1,964 19,237 / 1,637	714.4		10		46,167 23,083 19,237 12,824 953.6	1,964 1,637 1,091	407 407 442 442 442 448	10000 14000 10001 20100 46061 24510	50,094 25,047 20,874 13,915 961	GAL GAL CU YD CU YD CU YD	TACK COAT TACK COAT TACK COAT FOR INTERMEDIATE COURSE ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN A ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5 MM, TYPE A (448) ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64-22, AS PER PLAN CURB, TYPE 4C	

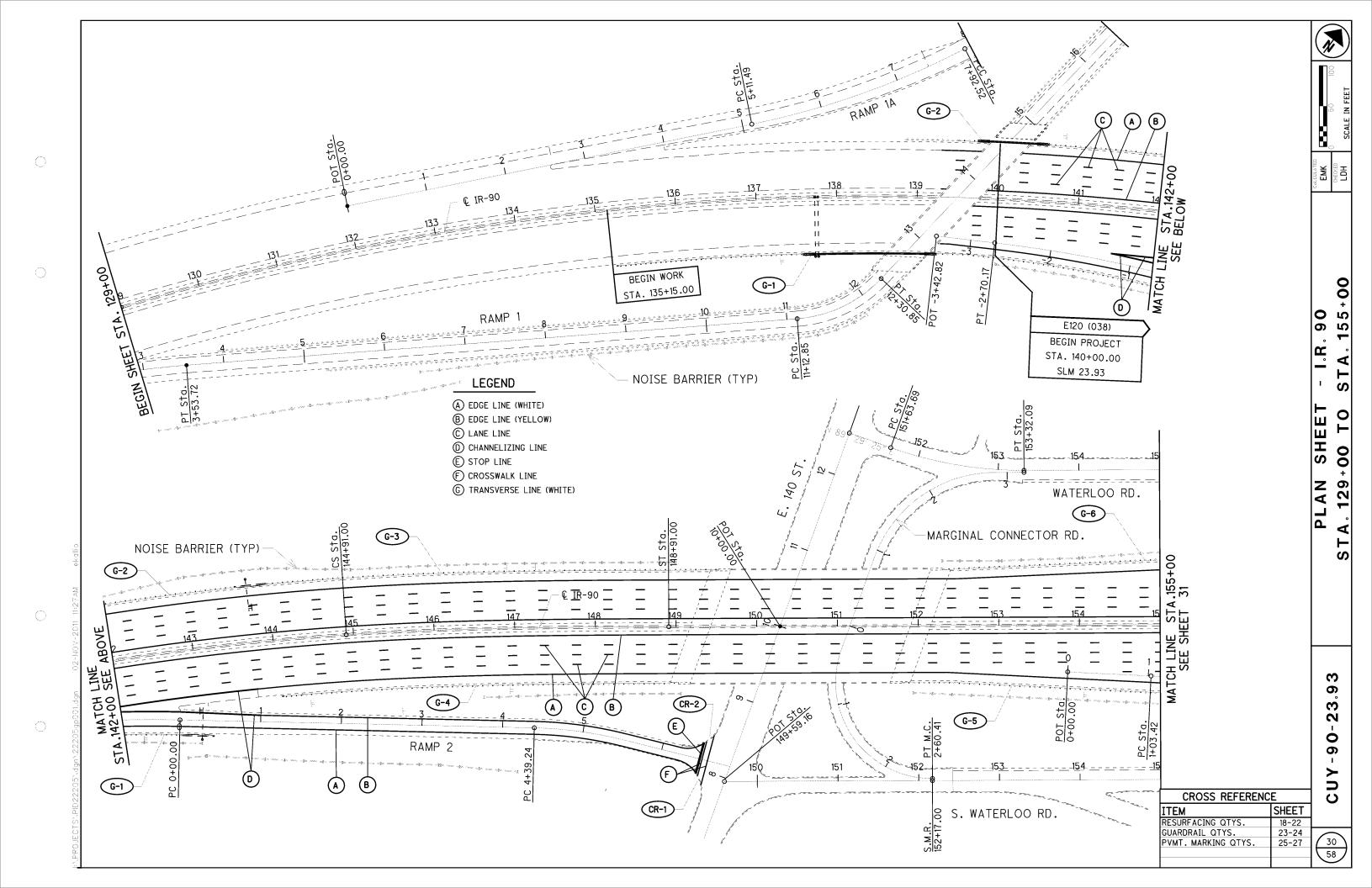
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	SHEET NUMBER					IM	NHS		ITEM	GRAND								
11	12	13	14	15	23	24	27	57A	58	IR-90	SR-2	ITEM	EXT.	TOTAL	UNIT	DESCRIPTION	SHT. NO.	CALCULATE
																TRAFFIC CONTROL		1
280										280 140		620 620	00500 31200	280 140	EACH EACH	DELINEATOR, POST MOUNTED REMOVAL OF DELINEATOR		_
140										140		620	31200	140	EACH	REMOVAL OF DELINEATOR		-
							2,607 / 154			2,607	154	621	00100	2,761	EACH	RPM		
2,000										2,000		621	54000	2,000	EACH	RAISED PAVEMENT MARKER REMOVED		_
					259	96 / 6				355	6	626	00100	361	EACH	BARRIER REFLECTOR		
							26.13 / 2.83			26.13	2.83	646	10000	28.96	MILE	EDGE LINE		_
							33.60 / 1.62			33.6	1.62	646	10101	35.22	MILE	LANE LINE, AS PER PLAN	11	-
							8,841 / 1,725			8,841	1,725	646	10300	10,566	FT	CHANNELIZING LINE		7
							86 150			86 150		646 646	10400 10500	86 150	FT FT	STOP LINE CROSSWALK LINE		_
							400 / 110 10			400 10	110	646 646	10600 20300	510 10	FT EACH	TRANSVERSE / DIAGONAL LINE LANE ARROW		⊣ ≻
							10			10		040	20300	10	LAOIT	LANE AUTOW		A B
																STRUCTURES 20' AND OVER		M M D
																FOR STRUCTURE ESTIMATED QUANTITIES SEE SHEET 58		⊢ ≥
									584	584		SPECIAL	51912300	584	SQ FT	PATCHING CONCRETE BRIDGE DECK - TYPE B	11	าร
									156	156		SPECIAL	51911720	156	FT	PATCHING CONCRETE STRUCTURE, MISC.: TOP OF BACKWALL REPAIR	11] "
																		A
																MAINTENANCE OF TRAFFIC	_	<u>ب</u> د
	400									400		614	11110	400	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE		Щ Z
			6					2		6 2		614 614	11500 12336	6 2	MONTH EACH	WORKSITE TRAFFIC SUPERVISOR WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)		⊣ ш
				24						24		614	12484	24	EACH	WORK ZONE INCREASED PENALTIES SIGN		
		250								250		614	13001	250	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN	13	
								12		12		614	13300	12	EACH	BARRIER REFLECTOR, TYPE B		_
				365				12		12 365		614 614	13350 18401	12 365	EACH DAY	OBJECT MARKER, ONE WAY PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	15	_
																, and the second		
		105.66 86.88								105.66 86.88		614 614	20100 22100	105.66 86.88		WORK ZONE LANE LINE, CLASS I, 642 PAINT WORK ZONE EDGE LINE, CLASS I, 642 PAINT		_
		31,700								31,700		614	23200	31,700	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT		
		260 450								260 450		614 614	26200 27200	260 450	FT FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT WORK ZONE CROSSWALK LINE, CLASS I, 642 PAINT		_
		400								400		014	21200	450	FI	WORK ZONE CROSSWALK LINE, CLASS 1, 642 FAIN 1		-
								600		600		622	40020	600	FT	PORTABLE CONCRETE BARRIER, 32"		_
	300									300		630	97800	300	SQ FT	SIGNING, MISC.: ADDITIONAL SIGNS, GROUND MOUNTED, AS DIRECTED	12	_
																BY THE ENGINEER		
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										LUMP	LUMP	614	11000	LUMP		MAINTAINING TRAFFIC		┨
										8		619	16010	8	MONTH	FIELD OFFICE, TYPE B		⊒ ວັ
										LUMP	LUMP	623	10001	LUMP		CONSTRUCTION LAYOUT STAKES, AS PER PLAN	7	_
										LUMP	LUMP	624	10000	LUMP		MOBILIZATION		- /20
																	+	29

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30 18-22 23-24 25-27

CROSS REFERENCE

ITEM
LEGEND
RESURFACING OTYS.
GUARDRAIL OTYS.
PVMT. MARKING OTYS.

06 <u>۔</u> چ STA. MARKING 10 168+00 PAVEMENT

23.93 -06 CUY

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30 18-22 23-24 25-27

LAYOUT



SHEET PLAN ST

194+00 I.R. 90 STA0 00+ 181

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30 18-22 23-24 25-27

ITEM
LEGEND
RESURFACING OTYS.
GUARDRAIL OTYS.
PVMT. MARKING OTYS.

PT Sta. 205+76.43 NOISE BARRIER (TYP) G-11 B 0 G-12 MATCH LINE STA. 207+00 SEE SHEET 35 MATCH LINE STA. 194+00 SEE SHEET 33 S. WATERLOO RD.

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SHEET TO 194+00 PLAN

-90-23.93

CUY

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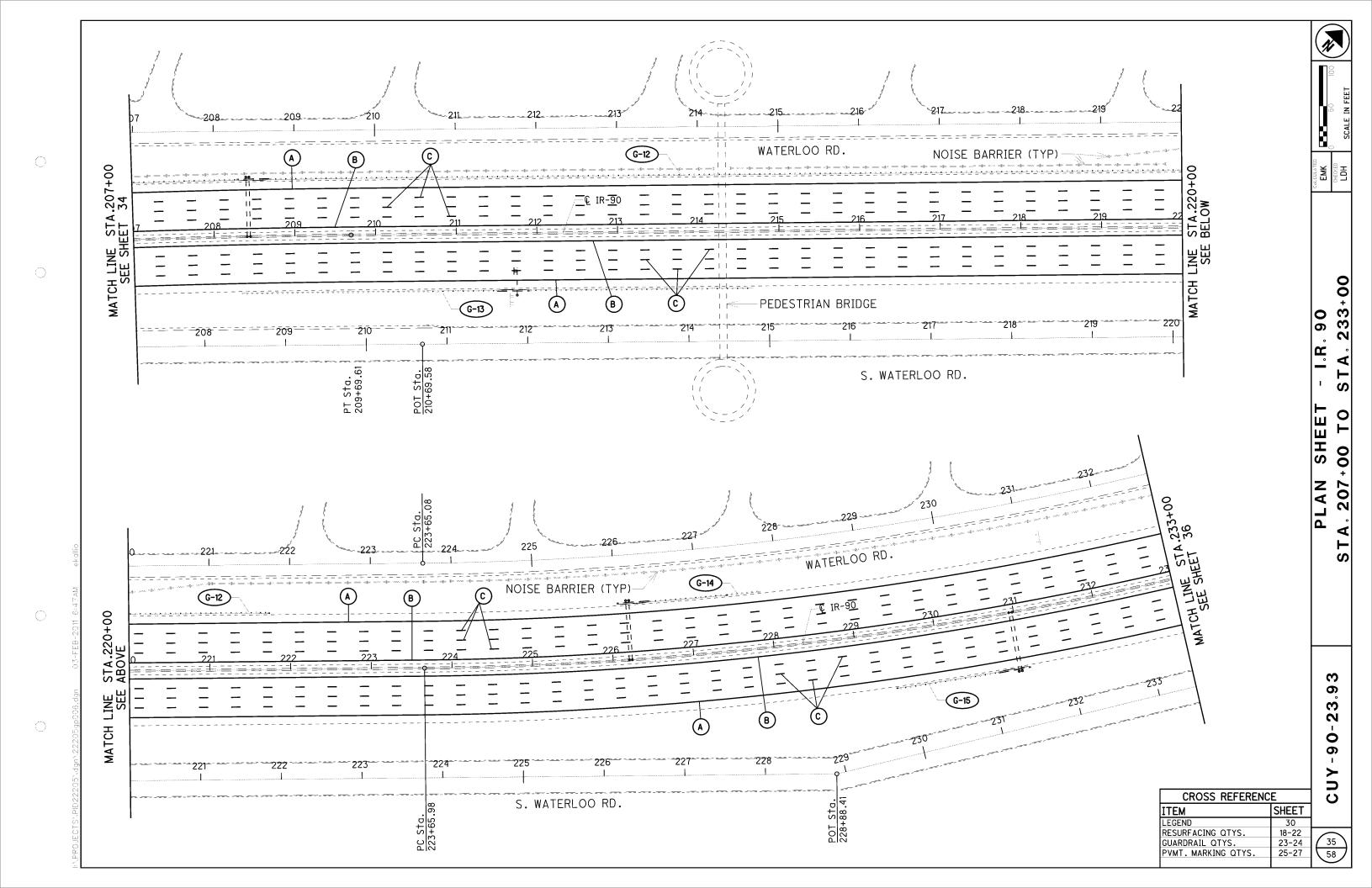
30 18-22 23-24 25-27

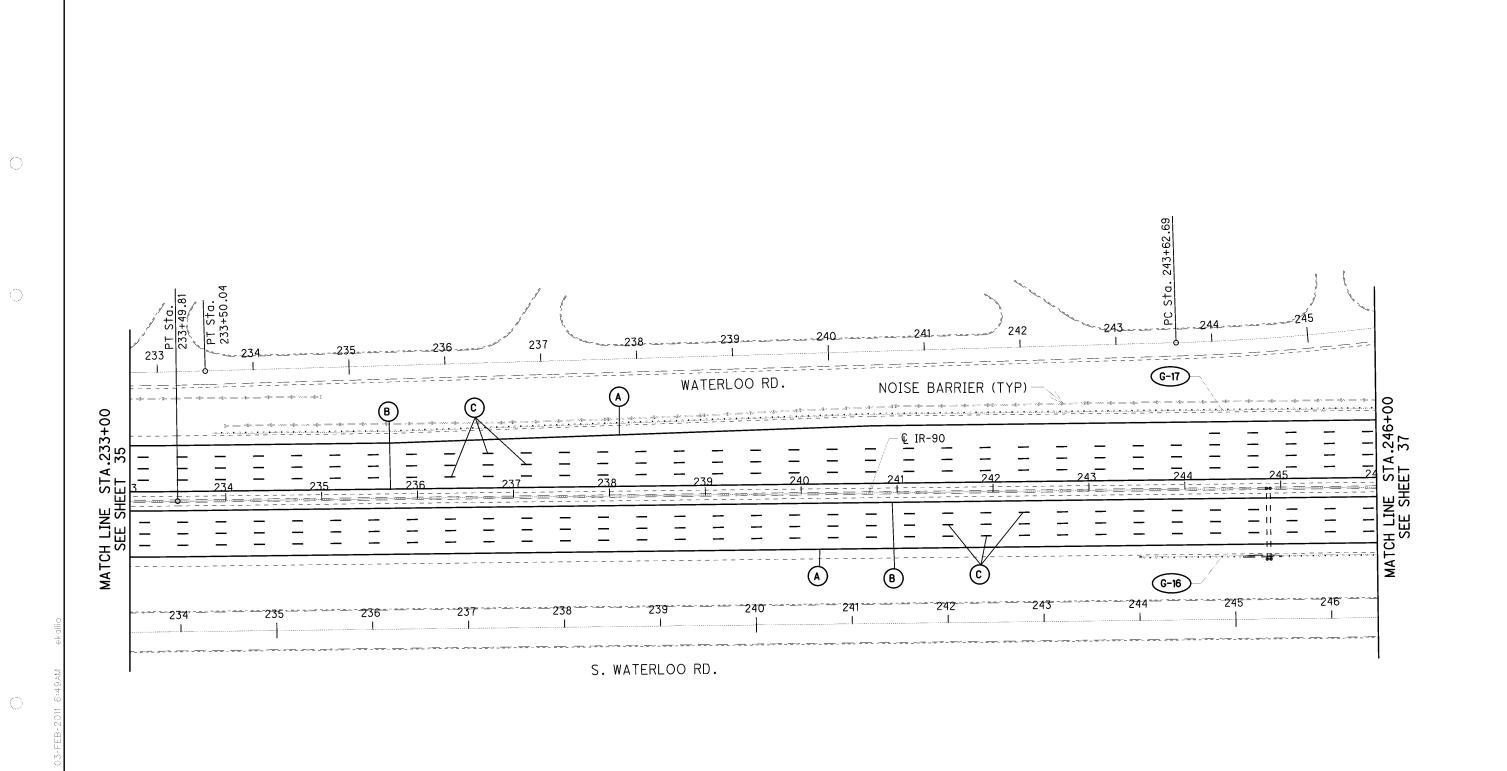
CROSS REFERENCE

ITEM
LEGEND
RESURFACING QTYS.
GUARDRAIL QTYS.
PVMT. MARKING QTYS.

+00 I.R. 90 207







CROSS REFERENC	E	
ITEM	SHEET	
LEGEND	30	L
RESURFACING QTYS.	18-22	Γ
GUARDRAIL QTYS.	23-24	ı
PVMT. MARKING QTYS.	25-27	ı

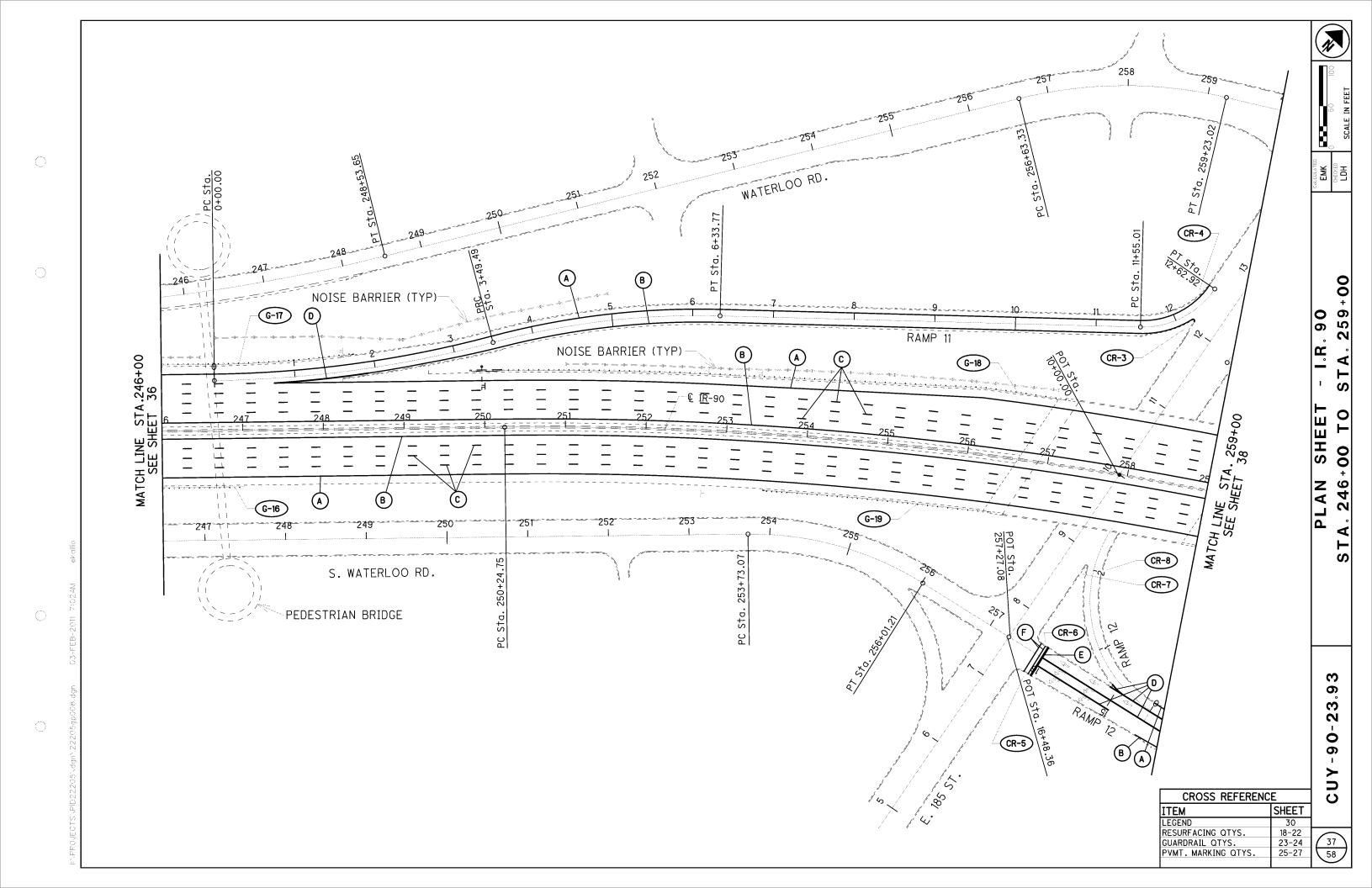
CUY-90-23.93

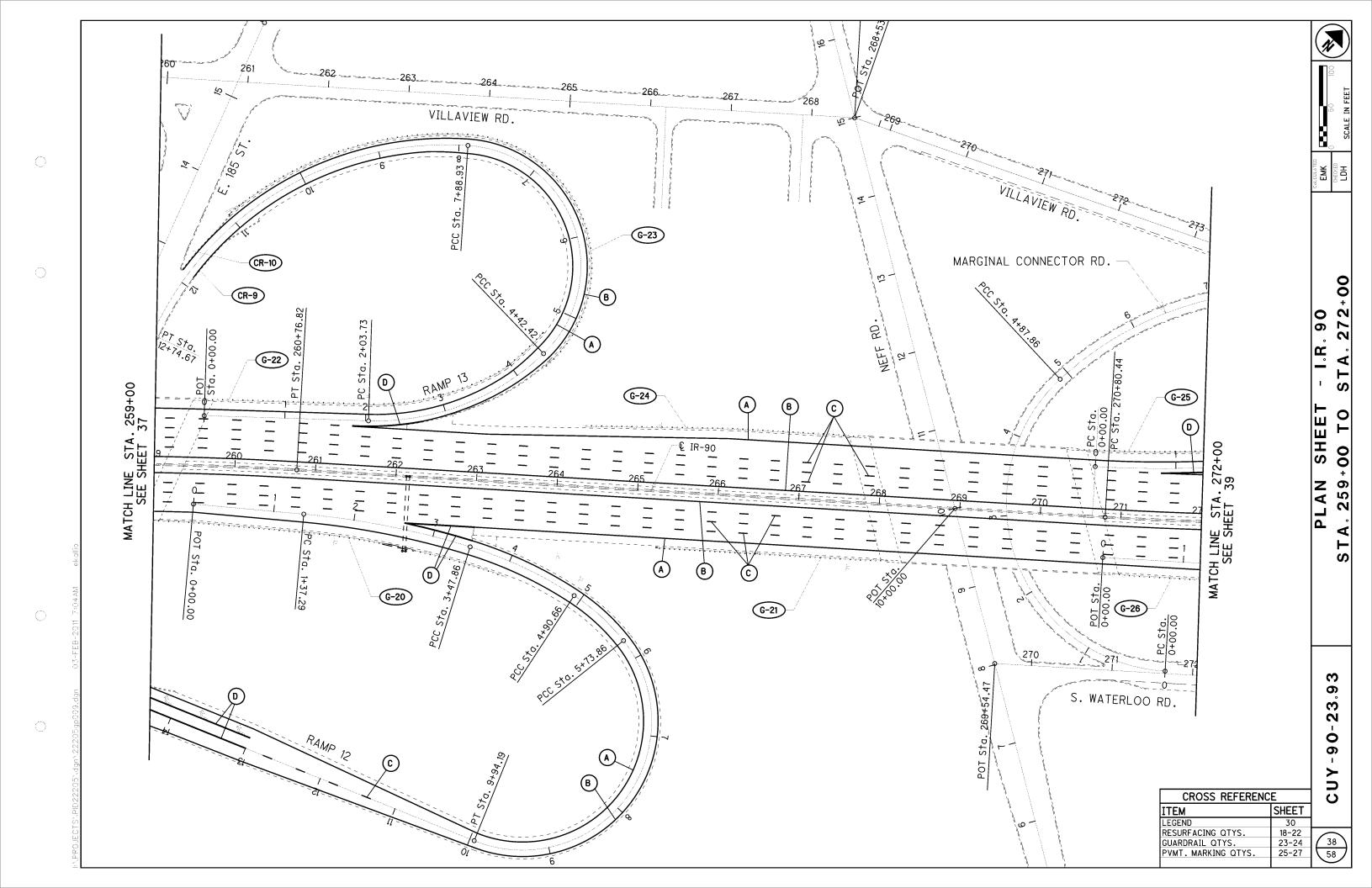
SHEET

246+00

Τ0

233+00





MARGINAL CONNECTOR RD. G-25 G-29 MATCH LINE STA. 272+00 SEE SHEET 38 VILLAVIEW RD. RAMP 14 MATCH LINE STA. 285+00 SEE SHEET 40 PC Sta. 1+51.96 1 RAMP 14A G-27 RAMP 15 **B** 280 S. WATERLOO RD. PT Sta. 7+64.15 POT Sta. 278+49.17 CROSS REFERENCE ITEM
LEGEND
RESURFACING OTYS.
GUARDRAIL OTYS.
PVMT. MARKING OTYS.

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I.R. 90 SHEET PLAN

285+00 STA TO 00+

-90-23.93

CUY

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30 18-22 23-24 25-27

CROSS REFERENCE	Œ
ITEM	SHEET
LEGEND	30
RESURFACING QTYS.	18-22
GUARDRAIL QTYS.	23-24
PVMT. MARKING QTYS.	25-27

285+00 PLAN CUY-90-23.93

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298+00 I.R. 90 SHEET TO

CROSS REFERENC	E	
ЕМ	SHEET	
GEND	30	
SURFACING QTYS.	18-22	
ARDRAIL QTYS.	23-24	
MT. MARKING QTYS.	25-27	

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ROSS REFERENC	Ε	ပြ
	SHEET]
D	30	
FACING QTYS.	18-22	
RAIL QTYS.	23-24	41
MARKING QTYS.	25-27	58
		\sim

SHEET 298+00 TO PLAN

311+00

RAMP 7E LAKELAND BLVD. (WB) NOISE BARRIER (TYP) MATCH LINE STA. 324+00 SEE SHEET 43 MATCH LINE STA. 311+00 SEE SHEET 41 B G-35 RAMP 6E LAKELAND BLVD. (EB)

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90-23.93 CUY

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30 18-22 23-24 25-27

CROSS REFERENCE

ITEM
LEGEND
RESURFACING OTYS.
GUARDRAIL OTYS.
PVMT. MARKING OTYS.

STASHEET TO 00 PLAN

324+00 I.R. 90

90-23.93

CUY

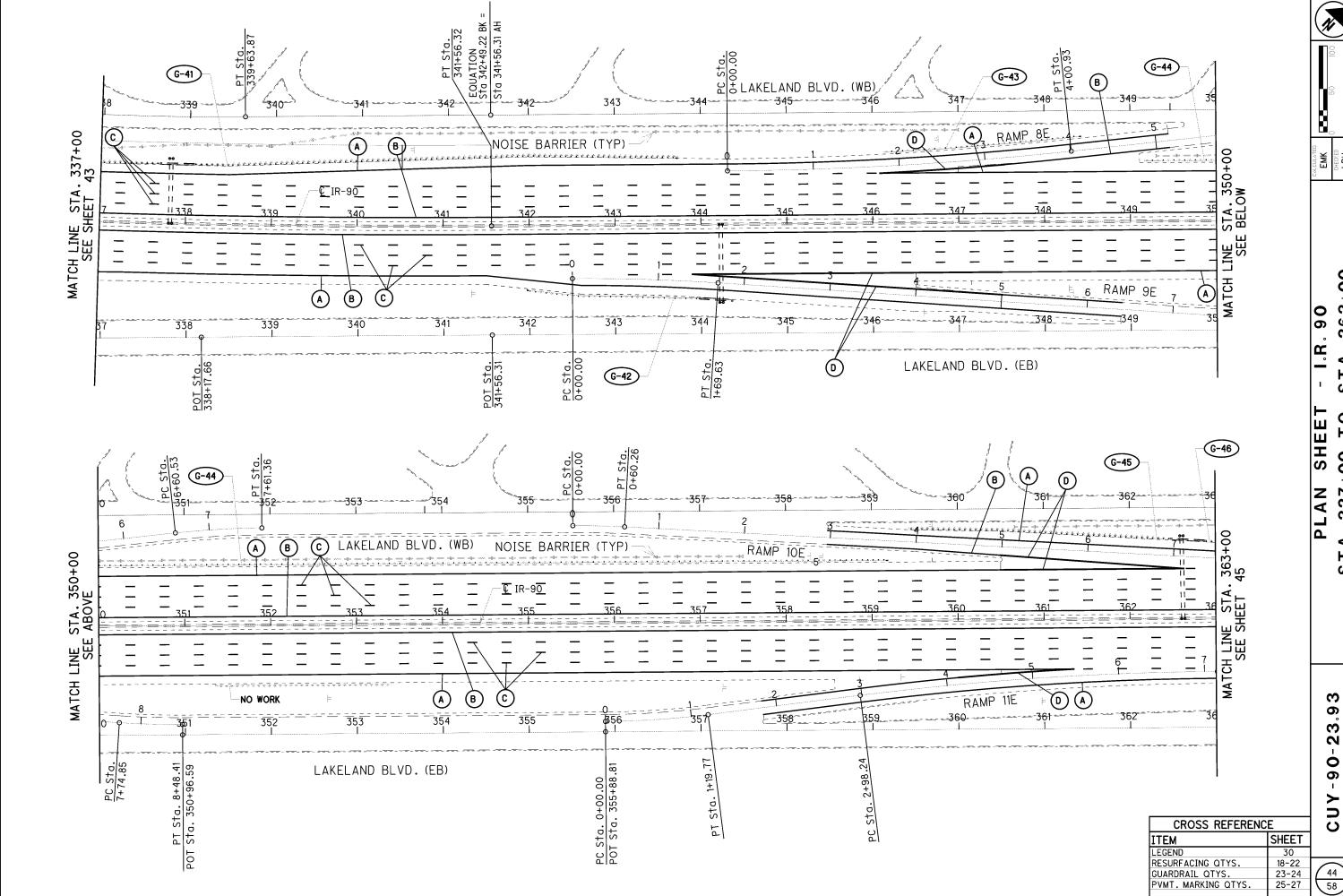
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30 18-22 23-24 25-27

CROSS REFERENCE

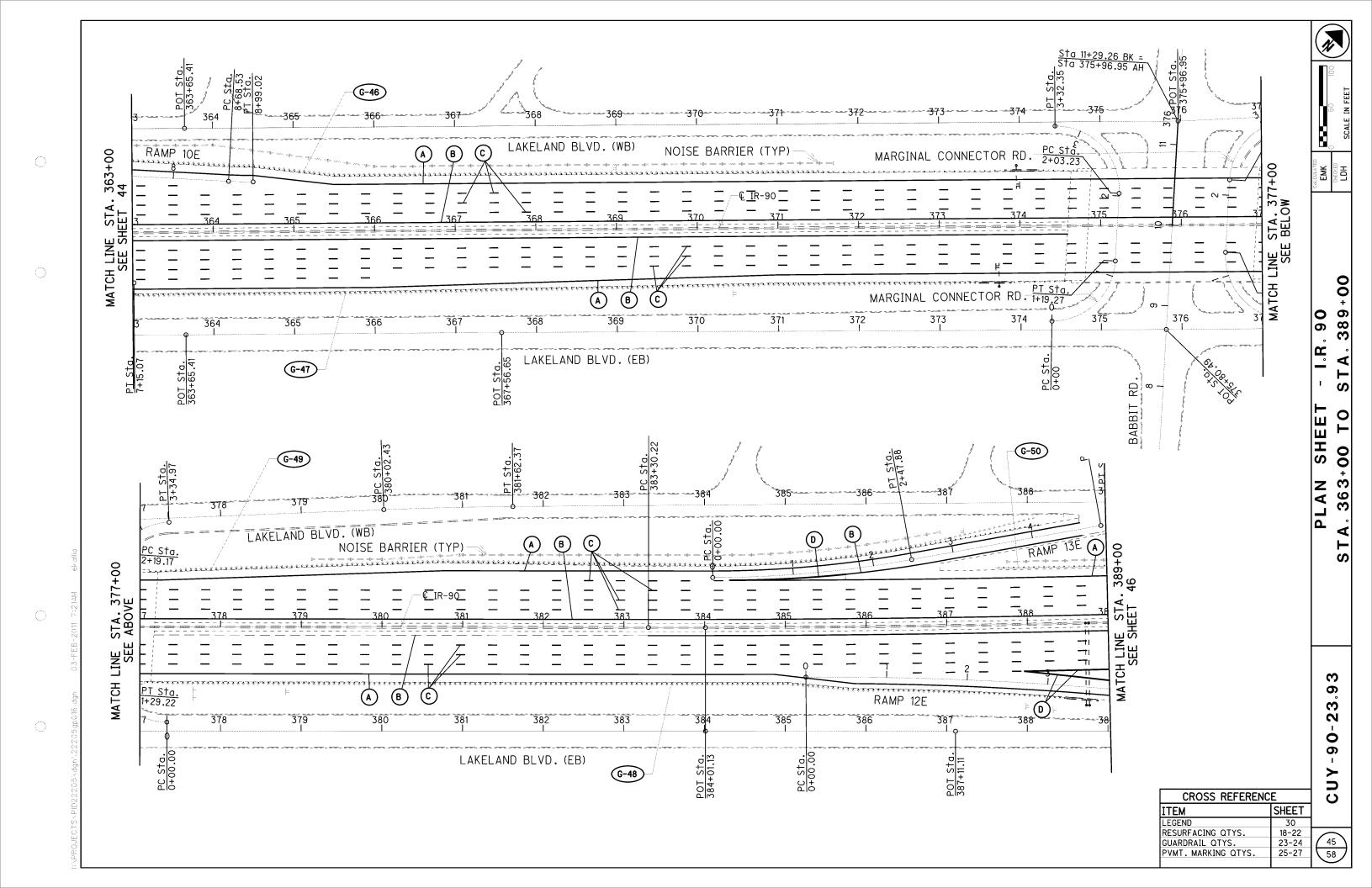
ITEM
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RESURFACING OTYS.
GUARDRAIL OTYS.
PVMT. MARKING OTYS.

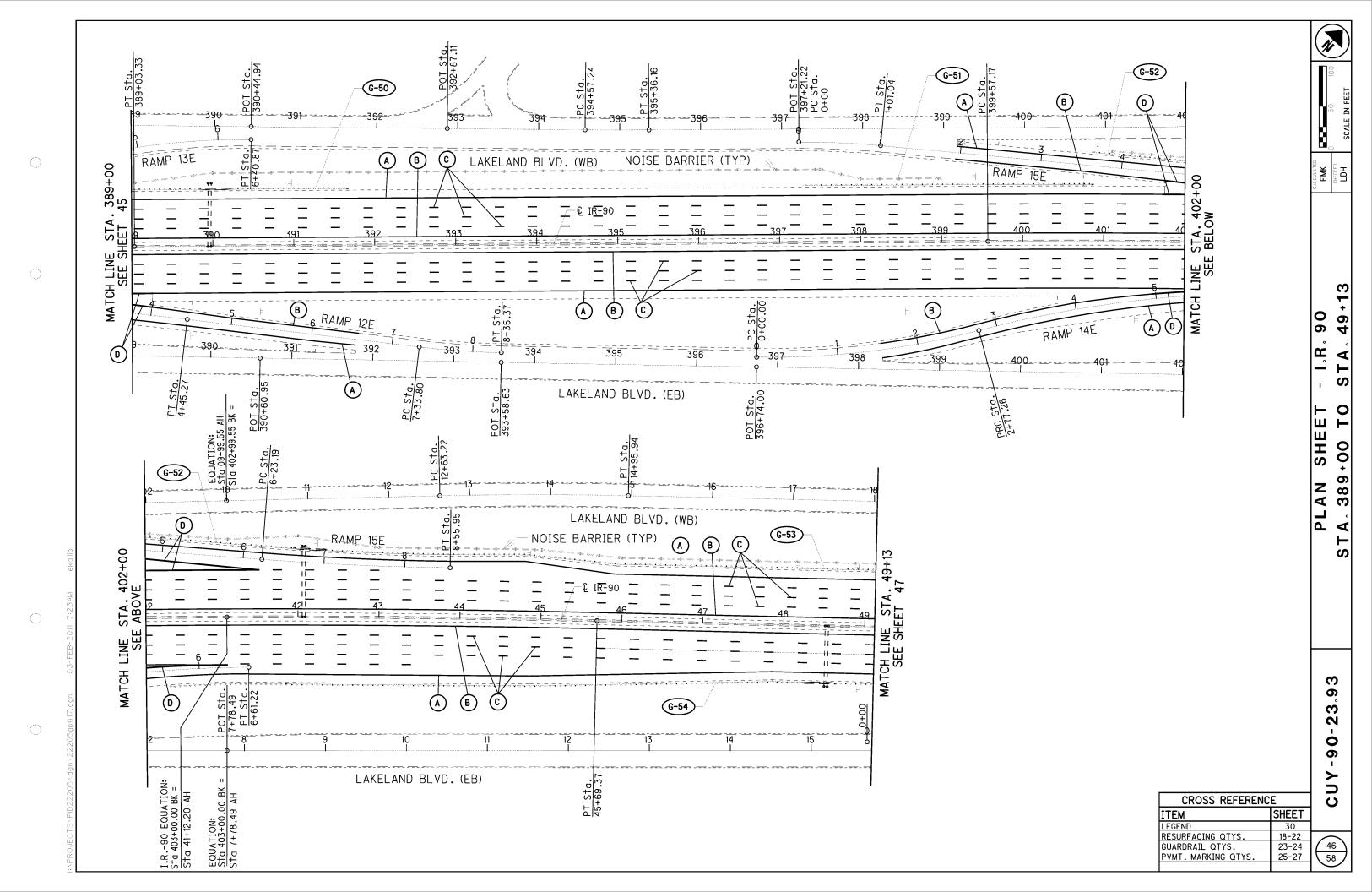
I.R. 90 STA SHEET 0 00 PLAN 324

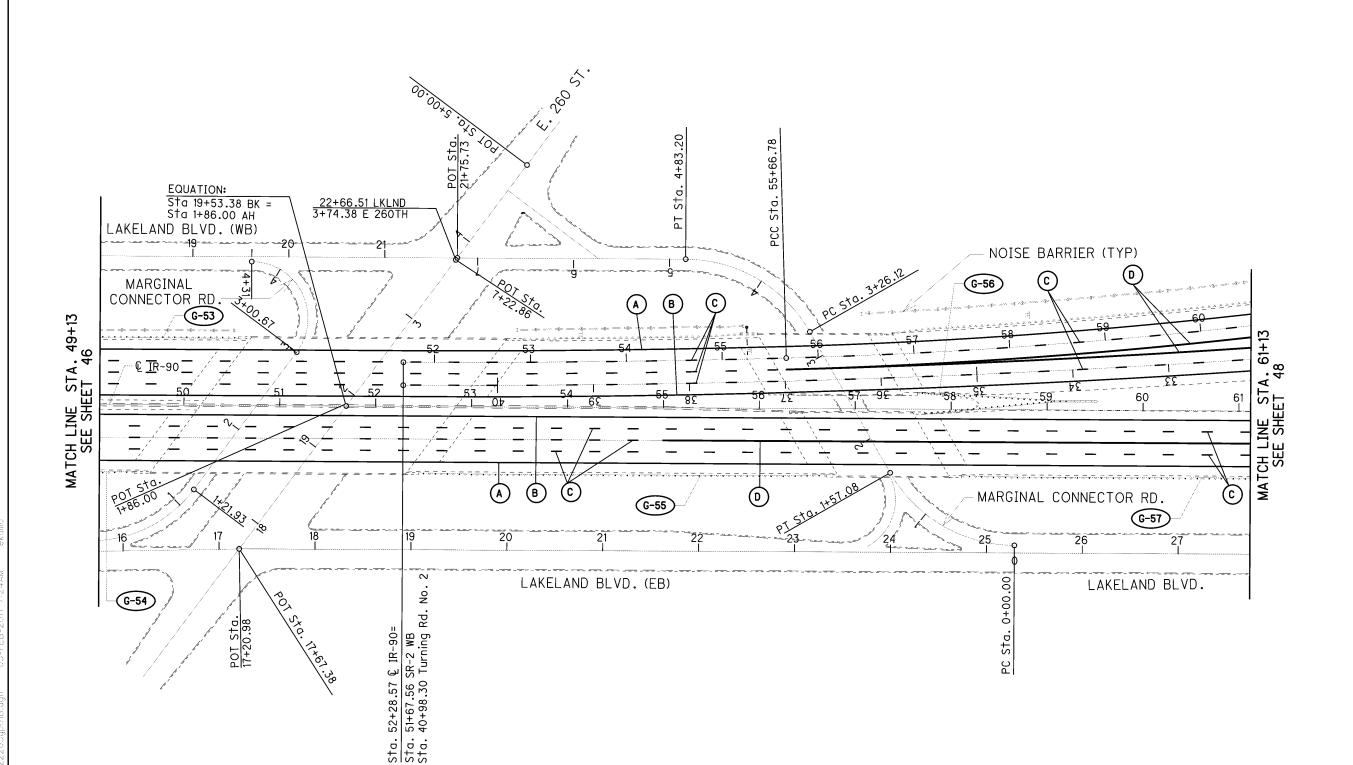


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363+00

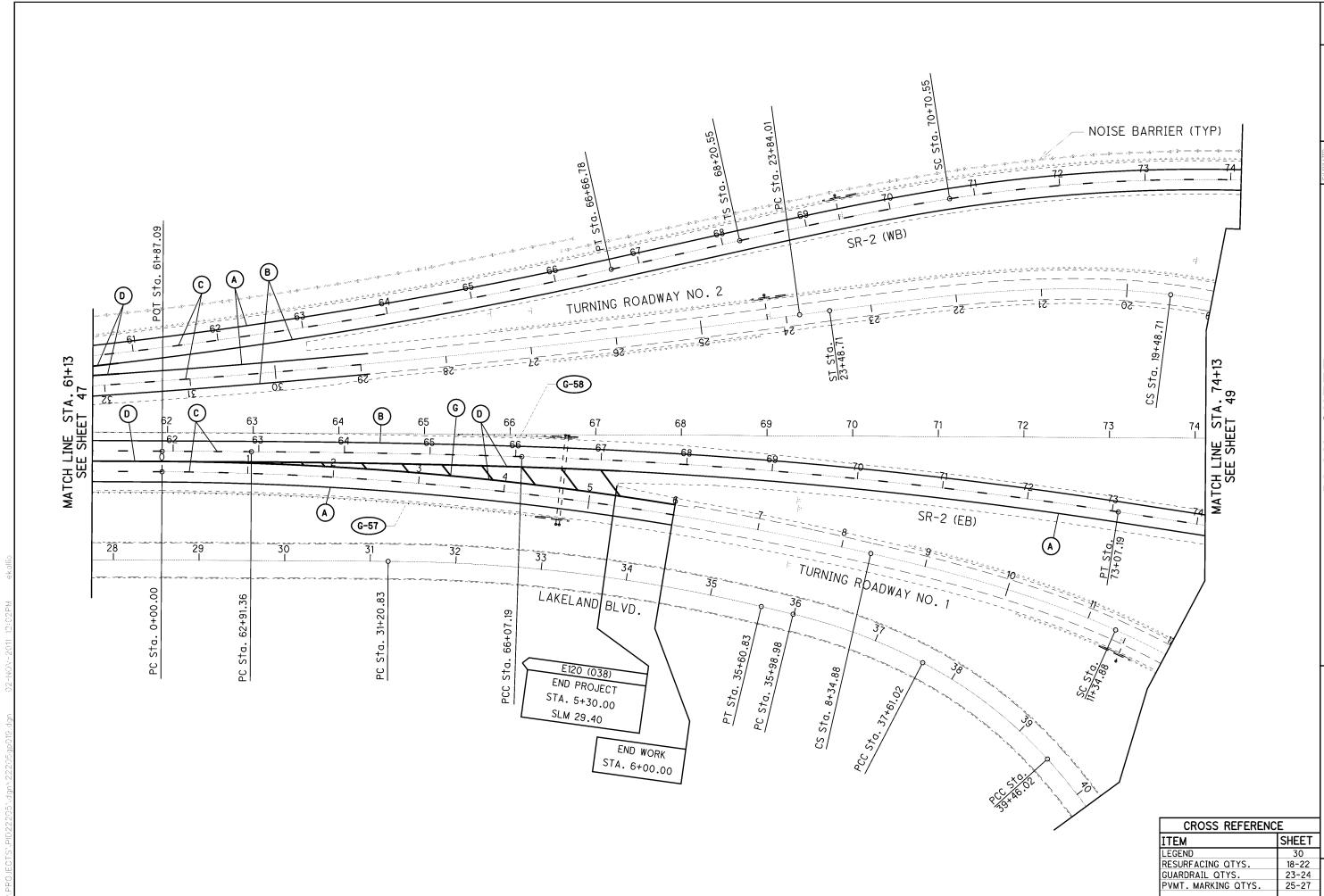






CROSS REFERENCE ITEM
LEGEND
RESURFACING OTYS.
GUARDRAIL OTYS.
PVMT. MARKING OTYS. SHEET 30 18-22 23-24 25-27

SHEE. 0 PLAN 3 6



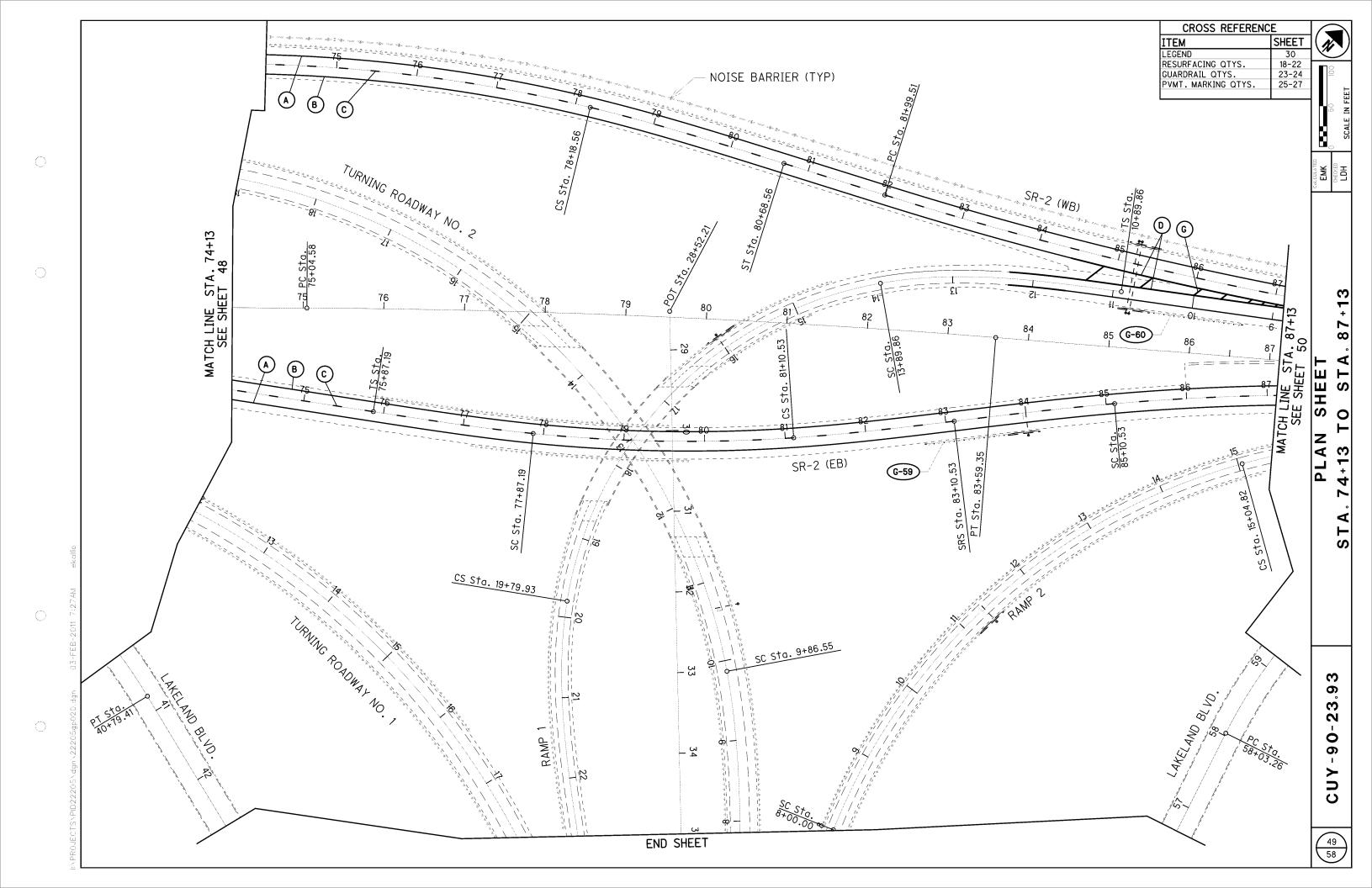
SHEET STA0 PLAN 61+13 STA

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NOISE BARRIER (TYP) SR-2 (WB) END WORK MATCH LINE STA. 87+13 SEE SHEET 49 STA. 100+70.00 SR-2 SR-2 (EB) MATCH LINE STA. 101+00 END SHEET RAMP 2 \bigcirc **B** LAKELAND BLVD. ST Sta. 90+85.53 PT Sta. 63+97.02 SC Sta. 18+04.82

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CROSS REFERENCE ITEM
LEGEND
RESURFACING OTYS.
GUARDRAIL OTYS.
PVMT. MARKING OTYS. 30 18-22 23-24 25-27

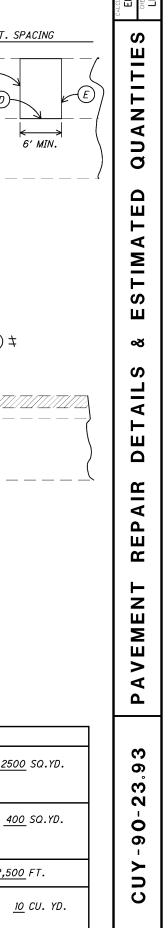
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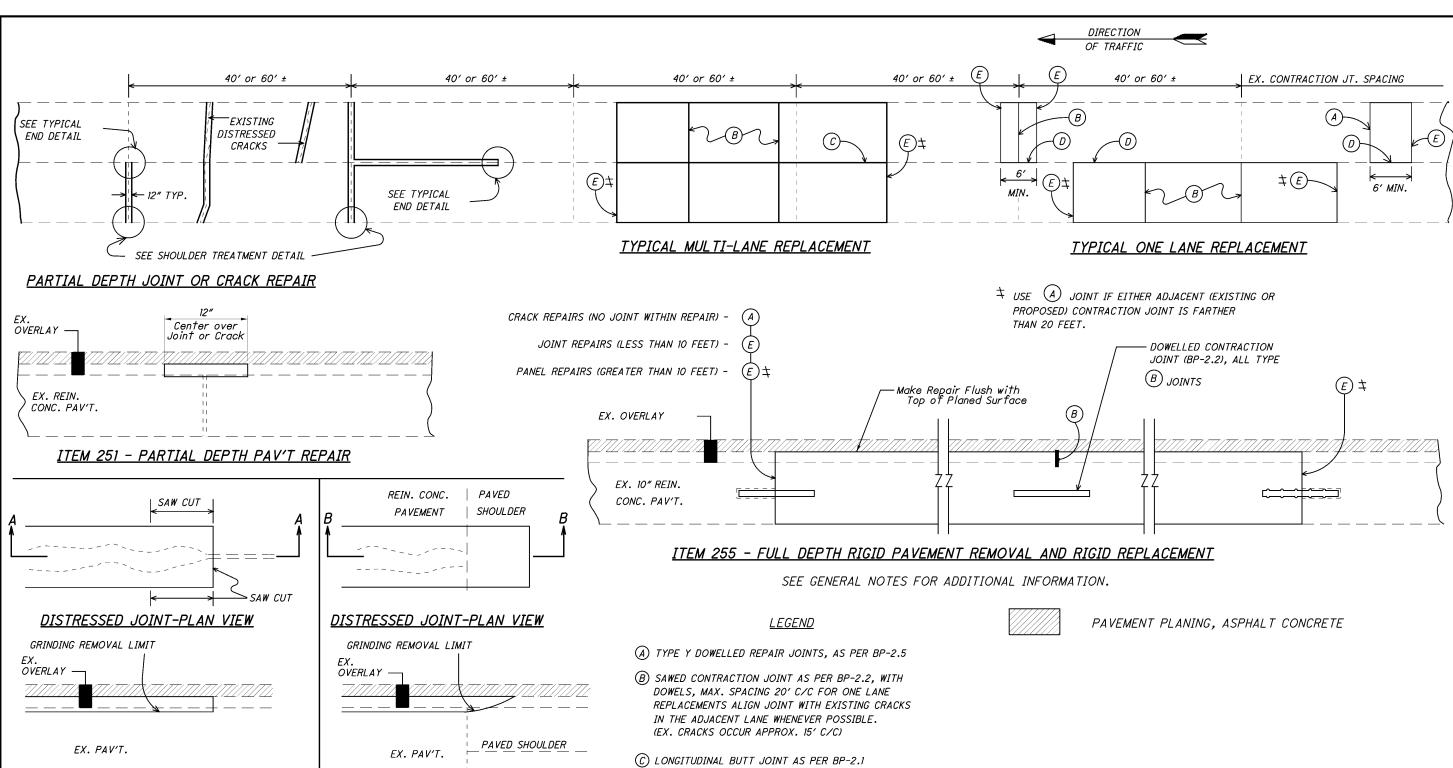
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101+00 SHEET STA 0 PLAN +13







<u>SECTION A-A</u>

TYPICAL END DETAIL

NO SEPARATE PAYMENT WILL BE MADE FOR THESE SAW CUTS SECTION B-B
SHOULDER TREATMENT DETAIL

MEASURED QUANTITY SHALL NOT INCLUDE THE PAVED SHOULDER AREA (USING HOOK BOLTS)

(D) TYPE D JOINT AS PER BP-2.1 FOR PATCHES

TYPE D JOINT AS PER BP-2.1 FOR PATCHES 10' OR GREATER IN LENGTH

E TYPE T TIED REPAIR JOINT, AS PER BP-2.5

* QUANTITY ESTIMATES ARE BASED ON VISUAL INSPECTION. AN ADDITIONAL 5% WAS ADDED TO THE REPAIR AREA TO COMPENSATE FOR ANY ROADWAY DETERIORATION THAT MAY OCCUR BETWEEN THE TIME OF PLAN PREPARATION AND ACTUAL CONSTRUCTION.

SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.

ESTIMATED QUANTITIES CUY. CO. *

ITEM 251 - PARTIAL DEPTH PAVEMENT
REPAIR, AS PER PLAN A 1600 SQ. YD.

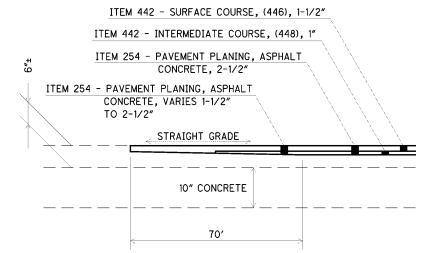
ITEM 251 - PARTIAL DEPTH PAVEMENT
REPAIR, AS PER PLAN B 3000 SQ. YD.

ESTIMATE	D QUANTITIES *	
ITEM 255	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS FS, AS PER PLAN A	<u>2500</u> SO.YD.
ITEM 255	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS FS, AS PER PLAN B	<u>400</u> SQ.YD.
ITEM 255	FULL DEPTH PAVEMENT SAWING	<u>12,500</u> FT.
ITEM 203	EXCAVATION	<u>ю</u> си. YD.
ITEM 304	AGGREGATE BASE	<u>10</u> CU. YD.

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2-1/2" OVERLAY MEETING EXISTING OVERLAY

(BEGINNING & END OF PROJECT AND END OF RAMPS)

ITEM 442 - SURFACE COURSE, (446), 1-1/2" ITEM 442 - INTERMEDIATE COURSE, (448), 1" ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE, 2-1/2" ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE, VARIES 2-1/2" TO 1-1/2" APPROACH ROADWAY SLAB DECK 70′

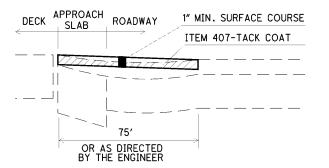
TYPICAL OVERLAY DETAIL AT BRIDGES

STRAIGHT GRADE - THE ASPHALT TRANSITIONS
SHALL BE CONSIDERED UNACCEPTABLE IF THE
FINAL GRADE VARIES FROM THE DESIRED
STRAIGHT GRADE BY GREATER THAN 3/8
INCHES ANYWHERE THROUGHOUT THE LENGTH
OF THE TRANSITION. THIS TOLERANCE IS
REDUCED TO 1/4 INCH FOR THE FIRST 5 FEET ADJACENT TO AN EXPANSION JOINT.

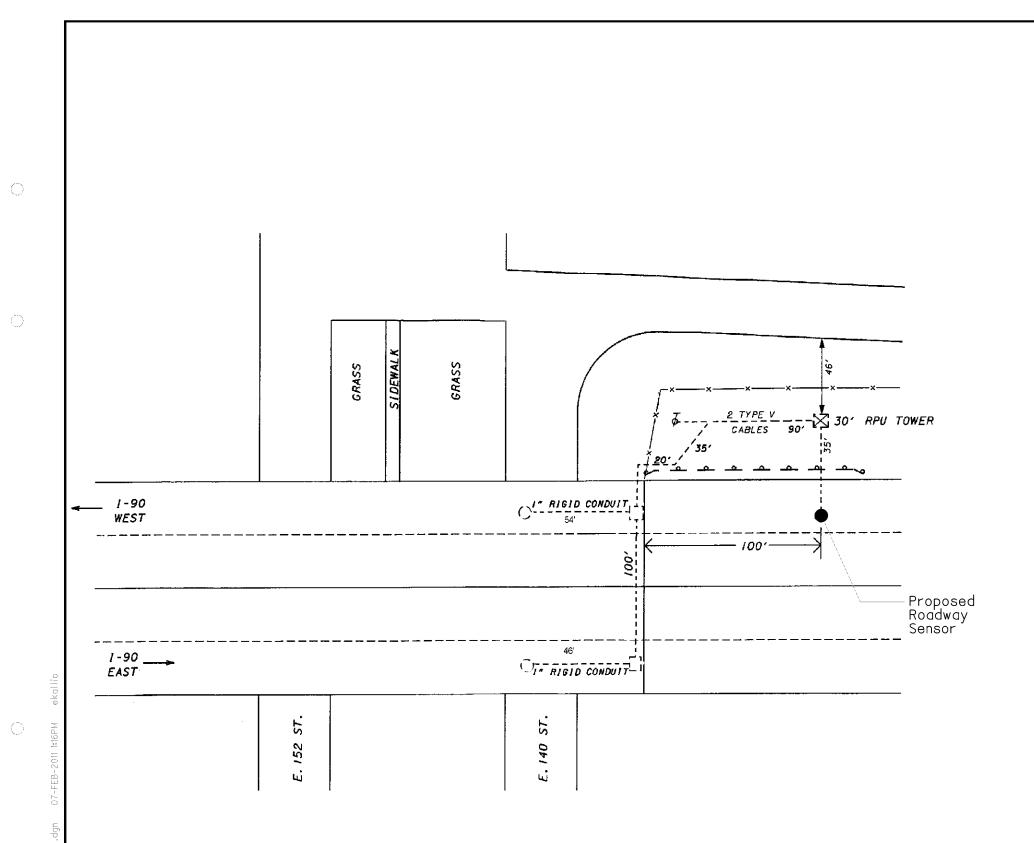
PAYMENT WILL BE HELD FOR 1 C.Y. OF ASPHALT PER FOOT OF PAVING WIDTH AT EACH TRANSITION LOCATION UNTIL THE TRANSITION IS SHOWN TO BE ACCEPTABLE.
THE CONTRACTOR IS TO PROVIDE THE
NECESSARY SURVEY WORK TO SHOW THAT
THESE STRAIGHT GRADES ARE MET ALONG EACH EDGE LINE AND LANE LINE.

ALL UNACCEPTABLE ASPHALT TRANSITIONS SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE. THE REPAIR METHOD SHALL BE AS FOLLOWS:

- A. DETERMINE FINAL GRADE LINE BY EXTENDING A STRAIGHT LINE FROM THE TOP OF THE BRIDGE END DAM JOINT TO A POINT 75' AWAY ON THE TOP OF RESURFACING.
- B. REMOVE ASPHALT CONCRETE EXACTLY 1" BELOW THE FINAL GRADE.
- C. PLACE ITEM 407 TACK COAT AND ITEM 446 ASPHALT CONCRETE, TO DESIRED GRADE.
- D. SURVEY TRANSITION TO VERIFY THAT THE REPAIR IS WITHIN THE ALLOWABLE TOLERANCE.



CORRECTION OF UNACCEPTABLE ASPHALT TRANSITIONS



<u>Item Special - Misc.: Roadway Weather Sensor</u>

Included in this item of work is the furnishing and installation of a new G10WX Complete Sensor - 915 Mhz - 2 Temperature Probes, Lid and external. In addition, the contractor shall furnish all additional parts, i.e. Radio Module, Antenna, Lightning Arrestor and RF Antenna Cable as required by the manufacturer to insure the RPU is upgraded to properly communicate with the new wireless Groundhog pavement sensor.

In general, the intent is to install the new sensor in the same area as the existing sensor. However, the Project Engineer shall contact the District Roadway Services Dept to verify location prior to installation.

The installation of this pavement sensor and related components shall be done in accordance with the manufacturer's recommendations.

Item Special - Misc.: Roadway Sensor Commissioning

This item shall be used to calibrate the new pavement sensor and related RPU components to insure the new sensor is calibrated and functioning properly and in accordance with all manufacturer specifications.

Item Special - Misc.: Roadway Sensor Removed and Disposed

This item shall include any additional costs to disconnect and/or remove and/or dispose of the existing pavement sensor and cable. Prior to planing operations the Project Engineer shall contact the District Roadway Services manager to have the pavement sensor disconnected from the RPU circuit board.

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ITEM 606 - ANCHOR ASSEMBLY, TYPE B

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS, OR AN APPROVED EQUAL AS LISTED ON ROADWAY ENGINEERINGING'S WEB PAGE AT WWW.DOT.STATE.OH.US/DRRC/ UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS:

1. THE SRT-350, GUARDRAIL END MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE SRT-350 SYSTEM IS CONSIDERED TO BE 37'-6" [11.43 m], INCLUSIVE OF THREE 12'-6" [3.81 m] LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. # DRAWING NAME DWG./REV. DATE ODOT APPROVAL DATE

SLOTTED RAIL TERMINAL POST LAYOUT AND ERECTION DETAILS SS444 SS444M

7/12/99 REV. 1

8/27/99

SRT-350 (12.5, 8 POST)

7/12/99

3/6/98

SLOTTED RAIL TERMINAL SRT-350 POST LAYOUT AND ERECTION SS425M

OHIO. 44224. (TELEPHONE: 330-346-0721).

6/21/97 REV.1

DETAILS (12.5, 9 POST) 2. THE FLEAT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 2516 MALLORY LANE, STOW,

THE LENGTH OF THE FLEAT-350 IS CONSIDERED TO BE 37'-6" [11.43 m], INCLUSIVE OF THREE 12'-6" [3.81 m] LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

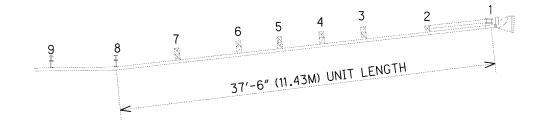
DWG.#	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
FLT-M	FLARED NERGY ASORBING TERMINAL (FLEAT-350) ASSEMBLY	4/16/98	7/31/98
FLT HINGED CRT	FLARED ENERGY ASORBING TERMINAL (POSTS 1 AND 2 ARE STEEL HINGED)	5/4/06	5/23/06
FLT-SP	FLARED ENERGY ASORBING TERMINAL (A SEVEN POST OPTION USING STANDARD STEEL POSTS)	3/30/09	3/4/09

REFER TO THE MANUFACTURER'S INSTRUCTION REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4-INCHES [100 mm] ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 27-3/4-INCHES [706 mm] FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4-INCHES [100 mm] ABOVE THE GROUND LINE.

THE FACE OF THE TYPE B IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19: APPROXIMATELY 36"W X 12" H (915 mm W X 305 mm H) FOR THE SRT-350 AND 14" W X 20" H (350 mm W X 500 mm H) FOR THE FLEAT.

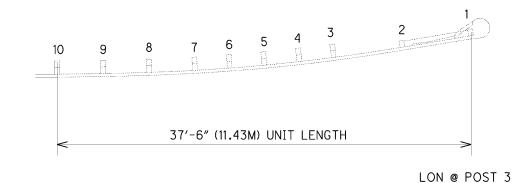
PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE B, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.



LON @ POST 3

POSTS #8 & #9 ARE INCLUDED FOR PAYMENT WITH STANDARD GUARDRAIL

FLEAT-350



SRT-350

POST #10 IS INCLUDED FOR PAYMENT WITH STANDARD GUARDRAIL

NCHRP REPORT 350 COMPLIANCE

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THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS, OR AN APPROVED EQUAL AS LISTED ON ROADWAY ENGINEERINGING'S WEB PAGE AT WWW.DOT.STATE.OH.US/DRRC/ UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS:

ITEM 606 - ANCHOR ASSEMBLY, TYPE E

1. THE ET-2000 (1997) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE ET-2000 (1997) SYSTEM IS CONSIDERED TO BE 50'-0" [15.24 m], INCLUSIVE OF TWO 25'-0" [7.62 m] LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG.#	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DA
SS142	ET2000 PLUS 50'-0" PLAN, ELEVATION & SECTION 25'-0" RAIL, SLEEVE W/PL POSTS 1-4	4/12/00	7/31/00
SS141	ET2000 PLUS PLAN, ELEVATION & SECTION 25'-0" RAIL, HBA POSTS 1-4	2/29/00	7/31/00
SS158	ET2000 PLUS 50'-0" WITH 12'-6" PANELS & HBA POSTS 1-4 PLAN, ELEVATION & SECTION	5/22/00	7/31/00
SS330	ET2000 PLUS 50'-0" WITH FOUR FOUNDATION TUBES AND FOUR CRT POSTS	3/28/06	3/29/06
SS373	ET2000 PLUS 50'-0" WITH 7 SYT POSTS AND ONE HBA POST	6/20/09	1/20/09

2. THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 2516 MALLORY LANE, STOW, OHIO, 44224, (TELEPHONE: 330-346-0721).

THE LENGTH OF THE SKT-350 SYSTEM IS CONSIDERED TO BE 50'-0" [15.24 m], INCLUSIVE OF FOUR 12'-6" [3.81 m] LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

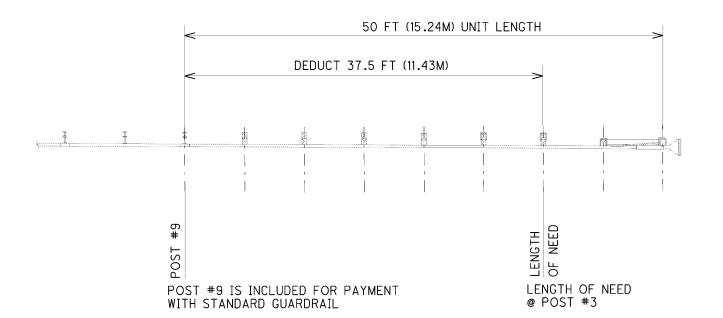
DWG.#	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SKT-4M	SEQUENTIAL KINKING TERMINAL (SKT-350) ASSEMBLY WITH 4 FOUNDATION TUBES	12/11/97	3/6/98
SKT HINGED CRT	SEQUENTIAL KINKING TERMINAL (SKT-350) FOUR POSTS ARE STEEL HINGED AND FIVE POSTS ARE CRT	4/30/06	5/23/06
SKT-SP	SEQUENTIAL KINKING TERMINAL SKT-350) A SEVEN POST OPTION USING STANDARD STEEL POST	3/30/09	3/4/09

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 18" X 18" [450 mm X 450 mm.], OR 12" [30 mm] X 18" [450 mm] IF APPLIED TO A RECTANGULAR ET-2000 "PLUS" EXTRUDER HEAD.

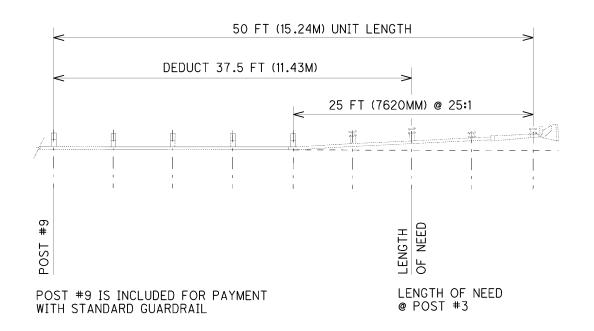
REFER TO THE MANUFACTURER'S INSTRUCTION REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4-INCHES [100 mm] ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 27-3/4-INCHES [706 mm] FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4-INCHES [100 mm] ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.



ET-2000



SKT-350

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY ONE OF THE FOLLOWING IMPACT ATTENUATORS, OR AN APPROVED EQUAL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE AT WWW.DOT.STATE.OH.US/DRRC/UNDER ROADSIDE SAFETY DEVICES FOR APPROVED IMPACT ATTENUATORS:

1) THE C-A-T MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE C-A-T SYSTEM IS CONSIDERED TO BE 31'-3" [9525 mm] LONG. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVEDSHOP DRAWINGS:

DWG.#	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SS245M	CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS FOR USE AS A LONGITUDINAL MEDIAN BARRIER TERMINAL OR CRASH CUSHION ATTENUATOR	4/10/97	3/6/98
SS224M	C-A-T TRANSITION TO MEDIAN BARRIER GUARDRAIL PLAN, ELEVATION & SECTIONS	4/26/96	3/6/98
SS226M	C-A-T TRANSITION TO VERTICAL WALL OR PIER PLAN,ELEVATION & SECTIONS	4/26/96	3/6/98

THE BRAKEMASTER MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., ONE EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750).

THE LENGTH OF THE BRAKEMASTER SYSTEM IS CONSIDERED TO BE 32'-8" [9957 mm] LONG. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

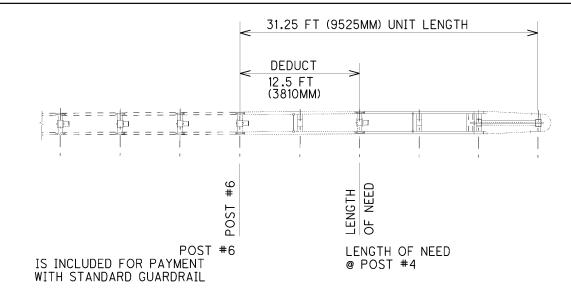
DWG.#	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
92-00-01	BRAKEMASTER GENERAL ASSEMBLY (UNIDIRECTIONAL SYSTEM)	3/6/97	3/6/98
92-00-81	BRAKEMASTER (UNIDIRECTIONAL) WITH FOUNDATION TUBES	2/29/00	3/6/98
92-00-02	BRAKEMASTER GENERAL ASSEMBLY (BIDIRECTIONAL SYSTEM)	4/12/00	3/6/98
92-00-82	BRAKEMASTER (BIDIRECTIONAL) WITH FOUNDATION TUBES	5/22/00	3/6/98
9202024	ANCHOR ASSEMBLY, FOUNDATION TUBE, 6 * FT., BRS	12/11/97	3/6/98

THE FLEAT-MT MANUFACTURED BY ROAD SYSTEMS, INC. (RSI), 3616 OLD HOWARD COUNTY AIRPORT ROAD, BIG SPRINGS, TX, 79720 (TELEPHONE 915-263-2435) AND AVAILABLE FROM RSI'S LIST OF APPROVED DISTRIBUTORS.

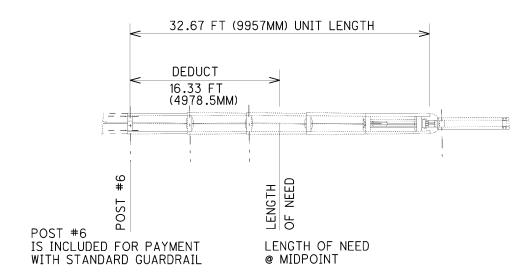
THE LENGTH OF THE FLEAT-MT SYSTEM IS CONSIDERED TO BE 37'-6" [11430 mm] LONG. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS AND THE MANUFACTURERS INSTALLATION MANUAL.

DWG. #	DRAWING NAME	DWO	G./REV. DATE	ODOT APPROVAL DATE
MEDFLT-W-US	FLARED ENERGY ABSORBING TERMINAL FLEAT-MT ASSEMBLY FOR WOOD BREAKAWAY POST SYSTEM	_	4/10/02	1/6/03
MEDFLT-S-US	FLARED ENERGY ABSORBING TERMINAL FLEAT-MT ASSEMBLY FOR STEEL BREAKAWAY POST SYSTEM	-	4/10/02	1/6/03

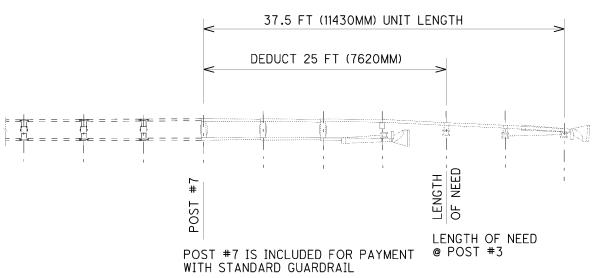
THE FACE OF THE TYPE 1 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 36" X 12" [915 mm W X 305 mm H] (ONE 9" X 18" [225 mm W X 450 mm H FOR EACH FLEAT-MT IMPACT HEAD). PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 1-98 [(UNIDIRECTIONAL OR BIDIRECTIONAL)], EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED TRANSITIONS, HARDWARE, REFLECTIVE SHEETING AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.



C-A-T



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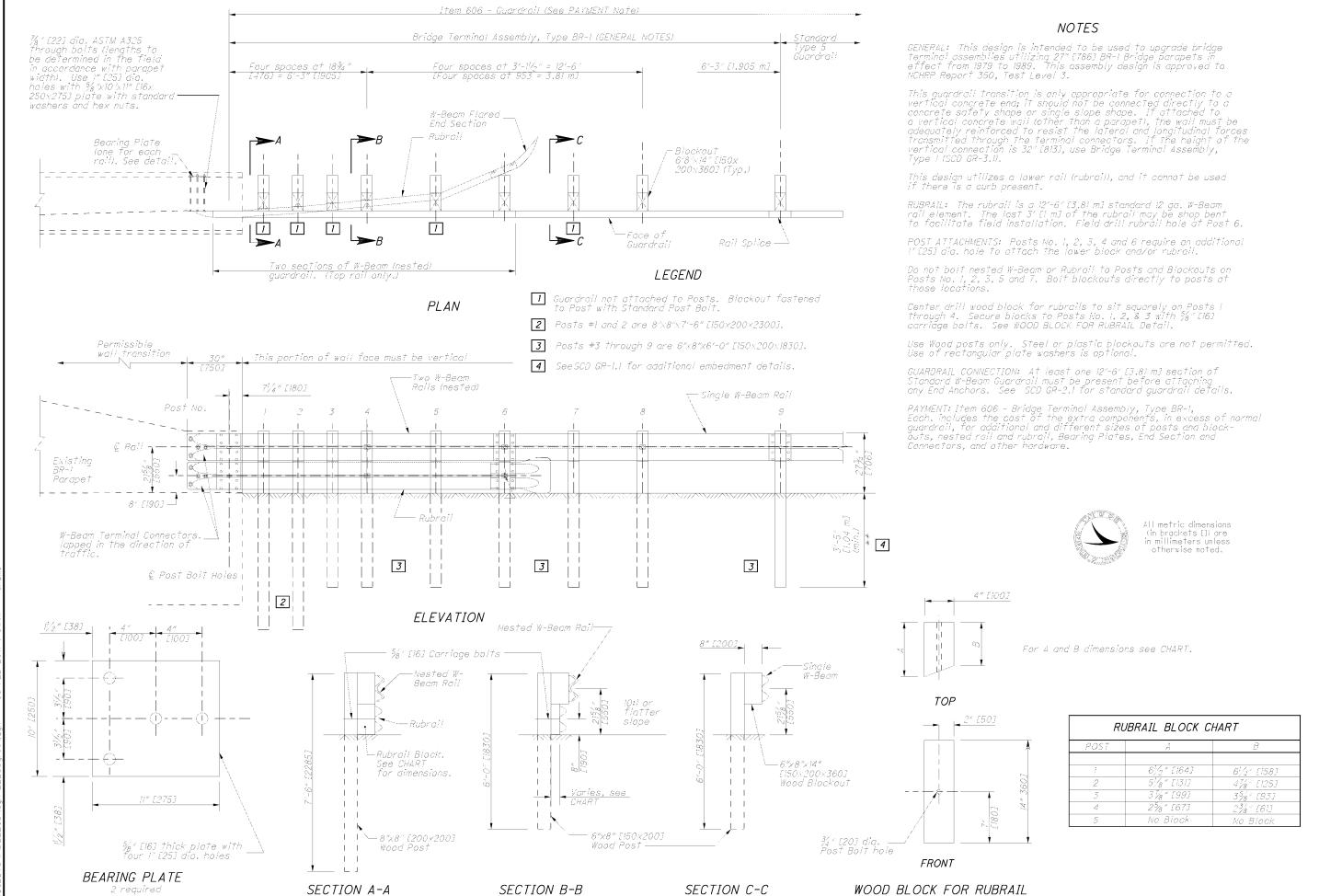
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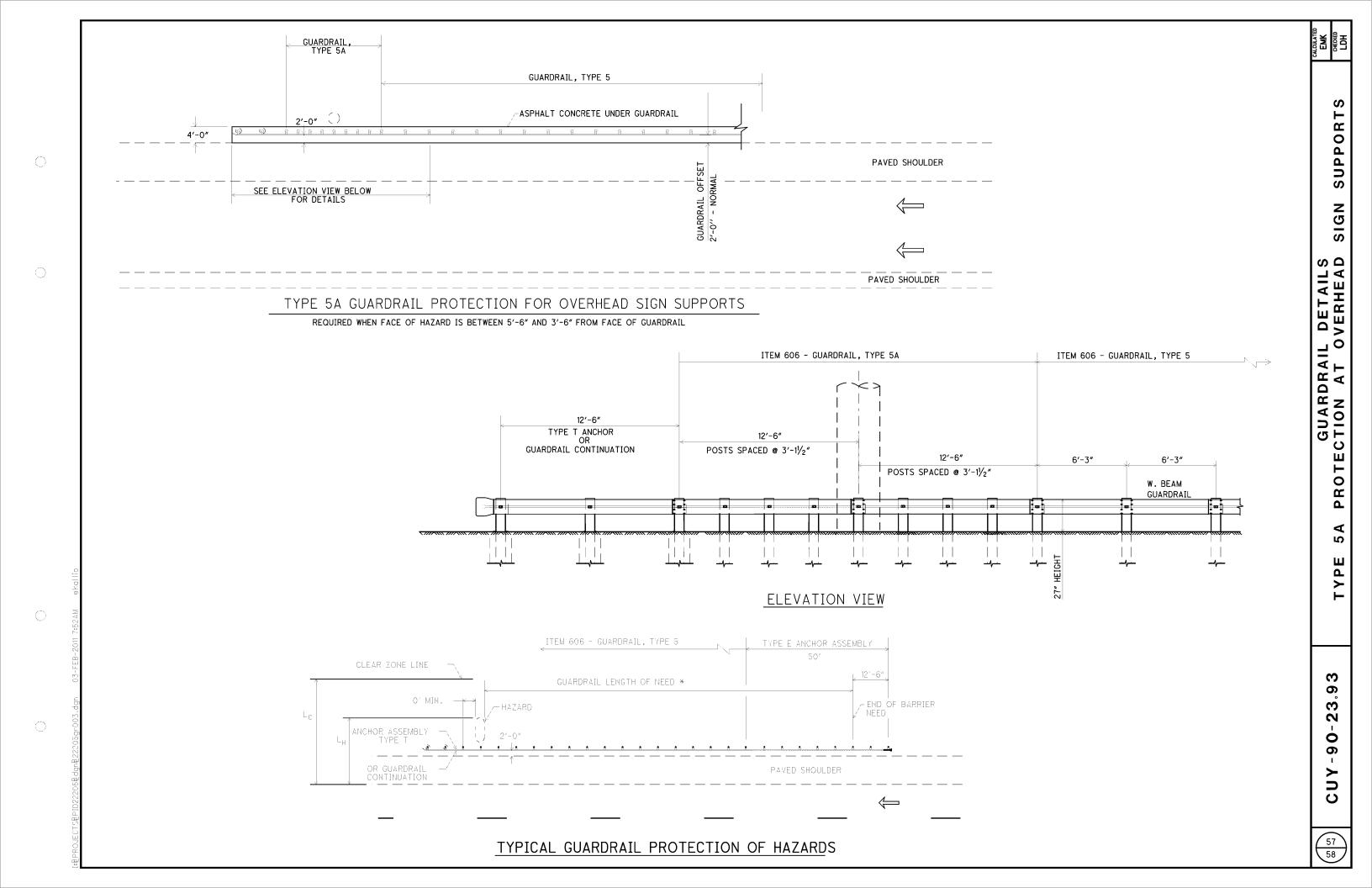
23.9

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CUY



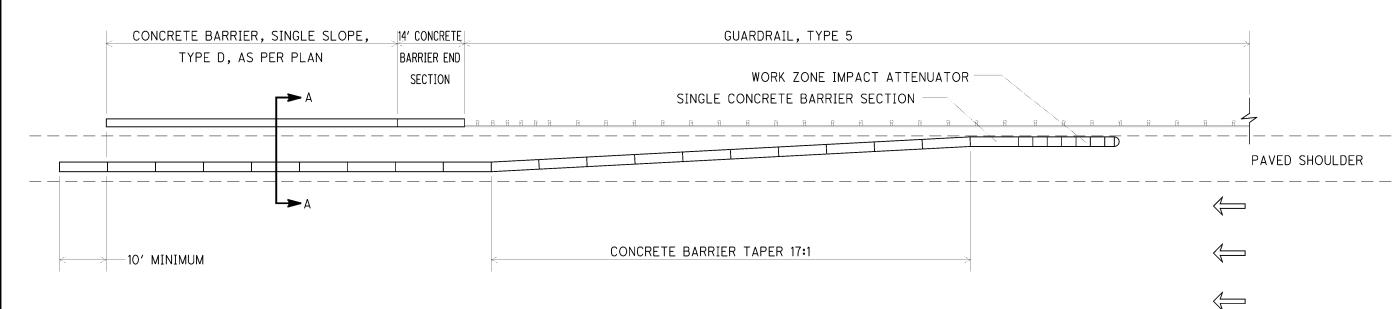


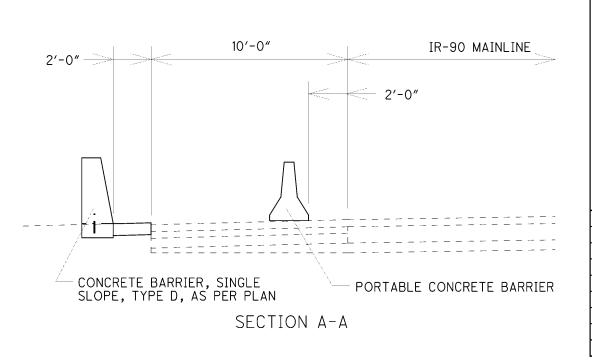




CUY-90-23.93





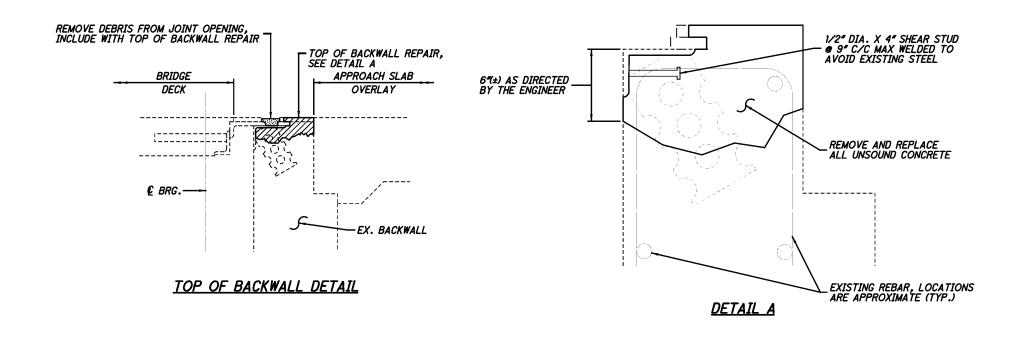


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				614	614	614	622
SHEET NUMBER	LOCATION	DIRECTION OF LANES	SIDE OF LANES	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	BARRIER REFLECTOR, TYPE B	OBJECT MARKER	PORTABLE CONCRETE BARRIER, 32"
				EACH	EACH	EACH	FOOT
30	ID 00 FD STA 175 - 74 TO STA 170 - 75	- FD	DT	1	7	7	7.40
30, 31	IR-90, EB, STA 135+74 TO STA 139+35 IR-90, EB, STA 139+65 TO STA 142+46	EB WB	RT RT	1	5	5	340 260
				·			
	TOTAL C. TO OFNEDAL CUMMADY			0	10	10	600
	TOTALS TO GENERAL SUMMARY			2	12	12	600

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							ITEM SPECIAL EXT: 51912300	ITEM SPECIAL EXT: 51911720	
LOCATION	BRIDGE NO. SFN DESCRIPTION	STRUCTURE TYPE	STRUCTURE LIMITS	ROADWAY WIDTH	NUMBER OF LANES ON	SKEW	PATCHING CONCRETE BRIDGE DECK - TYPE B (SEE NOTE 3)	PATCHING CONCRETE STRUCTURE, MISC.: TOP OF BACKWALL REPAIR (SEE NOTE 3)	FOR LOCATION, SEE SHEET NO.
			(FT.)	(FT.)			(SQ. YD.)	(FT.)	
1	CUY-90-2410 1808672 IR-90 OVER E 140TH ST	4 Span Continuous Steel Beam	248.0'	140.0'	4 (WB) 4 (EB)	20°00'00"	2 (WB) 4 (EB)	0 (WB) 0 (EB)	2
2	CUY-90-2463 1808702 IR-90 OVER E 152ND ST	4 Span Continuous Steel Beam	265.0'	140.0'	4 (WB) 4 (EB)	29°00'00"	38 (WB) 38 (EB)	0 (WB) 36 (EB)	2
3	CUY-90-2616 1808869 IR-90 OVER E 185TH ST	3 Span Continuous Steel Beam	224.0*	152.0'	4 (WB) 4 (EB) 1 WB RAMP	25°00'00"	91 (WB) 19 (EB)	0 (WB) 0 (EB)	3
4	CUY-90-2639 1808850 IR-90 OVER NEFF RD	4 Span Continuous Steel Beam	245.0°	152.0'	4 (WB) 4 (EB) 1 WB RAMP	18°00'00"	37 (WB) 150 (EB)	0 (WB) 0 (EB)	3
5	CUY-90-2674 1808885 IR-90 OVER E 200TH ST	3 Span Continuous Steel Beam	177.0'	164.0'	4 (WB) 4 (EB) 1 EB RAMP 1 WB RAMP	16°00'00"	33 (WB) 82 (EB)	0 (WB) 0 (EB)	3
6	CUY-90-2754 1808915 IR-90 OVER E 222ND ST	4 Span Continuous Steel Beam	231.0*	164.0'	4 (WB) 4 (EB) 1 EB RAMP 1 WB RAMP	35°00'00"	0 (WB) 0 (EB)	38 (WB) 30 (EB)	3
7	CUY-90-2840 1808974 IR-90 OVER BABBITT RD	3 Span Continuous Steel Beam	209.0'	140.0'	4 (WB) 4 (EB)	4*00'00"	0 (WB) 0 (EB)	0 (WB) 18 (EB)	3
8	CUY-90-2910 1809008 IR-90 OVER E 260TH ST	5 Span Continuous Steel Beam	266.0'	VARIES, 140.0'	4 (WB) 4 (EB)	37°00'00"	0 (WB) 0 (EB)	26 (WB) 8 (EB)	3
9	CUY-90-2922 L 1809067 IR-90 WB OVER N LAKELAND BLVD CONNECTOR	3 Span Continuous Concrete Slab	116.0	VARIES, 62.0'	4	30°00'00"	64	0	3
10	CUY-90-2922 R 1809091 IR-90 EB OVER N LAKELAND BLVD CONNECTOR	3 Span Continuous Concrete Slab	116.0'	66.0'	4	30°00'00"	26	0	3
					TOTALS TO GEN	ERAL SUMMARY	584	156	



NOTES

- 1. FOR GENERAL NOTES, SEE SHEET 11
- 2. FOR GENERAL SUMMARY, SEE SHEET 29
- 3. PATCHING LOCATIONS SHALL BE FIELD DETERMINED AND AS DIRECTED BY THE ENGINEER.

TOP OF BACKWALL REPAIR NOTES

- 1. EXISTING STRUCTURE DETAILS SHOWN ARE GENERAL IN NATURE AND MAY VARY FROM STRUCTURE TO STRUCTURE. REFER TO GENERAL NOTES FOR ADDITIONAL INFORMATION.
- 2. MATERIAL FOR TOP OF BACKWALL REPAIR SHALL BE ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK TYPE B.
- 3. ALL LABOR, MATERIAL, EQUIPMENT & INCIDENTALS REQUIRED TO PERFORM THE TOP OF THE BACKWALL REPAIR SHALL BE PAID UNDER ITEM SPECIAL - PATCHING CONCRETE STRUCTURE MISC.: TOP OF BACKWALL REPAIR.