71-21

OCT 17 1995

DESIGN DESIGNATION	
ADT 1991	97,360
ADT 2011	120,730
DHV	12,073
DIR. DIST.	50%
TRUCK TRAFFIC	8.3%
DESIGN SPEED	70 MPH
POSTED SPEED	55 MPH
FUNCTIONAL CLASSIFICATION	INTERSTATE
DESIGN EXCEPTION	-------

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CITY OF EUCLID CUYAHOGA COUNTY
CUY.-90-(27.54) (28.40) (29.10) (29.22 L&R)
CITY OF WILLOUGHBY HILLS LAKE COUNTY
LAK.-271- 1.27

FREEWAY BRIDGE REPAIR PROJECT

IM-90-1(150)40

All references to Federal number IR-90-1(150)40 appearing in this plan shall be considered to read IM-90-1(150)40

FHWA REGION	STATE	PROJECT	
5	OHIO	IM-90-1(150)40	

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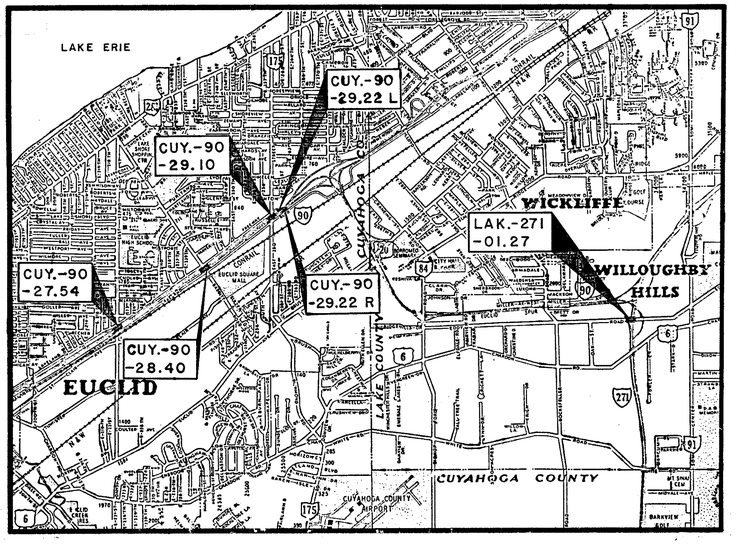
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

INDEX OF SHEETS



LOCATION MAP

1000 0 1000 2000 3000 4000
SCALE IN FEET

PLANS 20 0 20 40
SCALE IN FEET

PORTION TO BE IMPROVED
COUNTY ROAD
INTERSTATE ROUTE
STATE ROADS
U.S. ROUTES
OTHER ROADS

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 Revised Code of Ohio.

1991 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY, EXCEPT AS NOTED ON SHEET 76, AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

DATE 9/9/91
APPROVED Bryan J. Hoodin
DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

DATE 1/21/92
APPROVED B.D. Hamblamm / WTC
ENGINEER, BUREAU OF BRIDGES AND STRUCTURAL DESIGN

DATE 2-20-92
APPROVED
DEPUTY DIRECTOR PLANNING AND DESIGN

DATE 2/20/92
APPROVED
DIRECTOR, DEPARTMENT OF TRANSPORTATION

CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line or
Fence Line (existing) (proposed)
Center Line 352 353
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light

Limited Access (only) LA
Right of Way (only) RW
Limited Access & Right of Way LA & RW
Existing Right of Way
Property Line (in existing fence)
Railroad or
Guardrail (existing) (proposed)

LINE DATA

STRUCTURE NO.	FEATURE	PROJECT LIMITS	
CUY.-90-2754	E. 222ND ST.	BEGIN PROJECT	STA. 329+15.98
		SUSPEND PROJECT	STA. 331+97.46 = 281.48 LIN. FT.
CUY.-90-2840	BABBITT RD.	RESUME PROJECT	STA. 374+59.47
		SUSPEND PROJECT	STA. 377+17.97 = 258.50 LIN. FT.
CUY.-90-2910	E. 260th ST.	RESUME PROJECT	STA. 49+92.48
		SUSPEND PROJECT	STA. 53+08.78 = 316.30 LIN. FT.
CUY.-90-2922 L & R	LAKELAND RD.	RESUME PROJECT	STA. 56+17.13
		END PROJECT	STA. 57+82.87 = 165.74 LIN. FT.
LAK.-271-127	EDDY RD.	RESUME WORK	STA. 14+91.50
		END WORK	STA. 21+19.50

LENGTH OF PROJECT = 1,022.02 LIN. FT. OR 0.194 MILES

WORK LENGTH

BEGIN WORK	STA. 314+22	
		8878.00 LIN. FT.
STA. EQUATION	STA. 403+00 BACK = STA. 41+12.20 AHEAD	
		1116.37 LIN. FT.
STA. EQUATION	STA. 52+28.57 BACK = STA. 51+67.56 AHEAD	
		1817.44 LIN. FT.
SUSPEND WORK	STA. 69+85	
RESUME WORK	STA. 14+91.50	
END WORK	STA. 21.19.50	628.00 LIN. FT.

LENGTH OF WORK = 12,439.81 LIN. FT. OR 2.356 MILES

5448

FILE NO.	CUYAHOGA COUNTY	CUY.-90-(27.54)(28.40)(29.10) (29.22 L) (29.22 R)
	DATE OF LETTING	
	CONTRACT NO.	LAK.-271-1.27

PREPARED AND RECOMMENDED BY
EUTHENICS INC.
Consulting Engineers
CLEVELAND, OHIO
D.W. KAMINSKI

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (I) OF THE REVISED CODE OF OHIO, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL-800-362-2764 (Toll Free)
OHIO UTILITIES
PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

STANDARD CONSTRUCTION DRAWINGS

		GR-1.1	5-6-91	MC-9	1-30-84	TC-18.24	4-25-79
BP-3	12-6-76	GR-2.1	5-6-91	MC-9.2	5-6-91	TC-18.26	5-31-79
BP-5	10-01-87	GR-3.1	5-6-91	MC-11	8-01-78	TC-31.21	3-06-79
BP-7	10-01-87	GR-4.2	5-6-91	MT-95.32	8-25-89	TC-32.11	3-21-79
BP-11	1-30-84	HL-10.12	5-01-87	MT-95.30	10-10-88	TC-35.10	8-29-84
		HL-20.14	5-01-87	MT-98.12	8-25-89	TC-72.20	2-26-82
		HL-30.31	5-01-87	MT-98.13	8-25-89		
CB-2-2A & B	5-01-79	HL-30.32	5-01-87	MT-98.15	8-25-89	RB-1-55	2-2-59
		GR-3.2	5-6-91	MT-99.10	11-14-86	SD-1-69 (SHEET 1)	6-12-69
F-1	11-10-83	MC-4	7-26-76	MT-102.10	8-25-89		
F-3	5-01-76	MC-5	6-12-75	MC-9A	1-11-85	EXJ-4-87 (SHEET 1,2,4 & 5)	1-5-89
GR-1.2	5-6-91	MC-7	10-15-76				

SUPPLEMENTAL SPECIFICATIONS			
NUMBER	DATE	NUMBER	DATE
836	11-12-85	902	8-31-79
845	05-31-88	921	12-4-72
802	4-13-90	923	1-10-69
852	06-10-87		
850	05-31-88		
942	3-18-92		
953	08-21-80		
952	12-14-88		
944	3-18-92		
820	3-18-92		

REVISED 7-9-92
REVISED 4-20-92

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

SCHEMATIC PLAN

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

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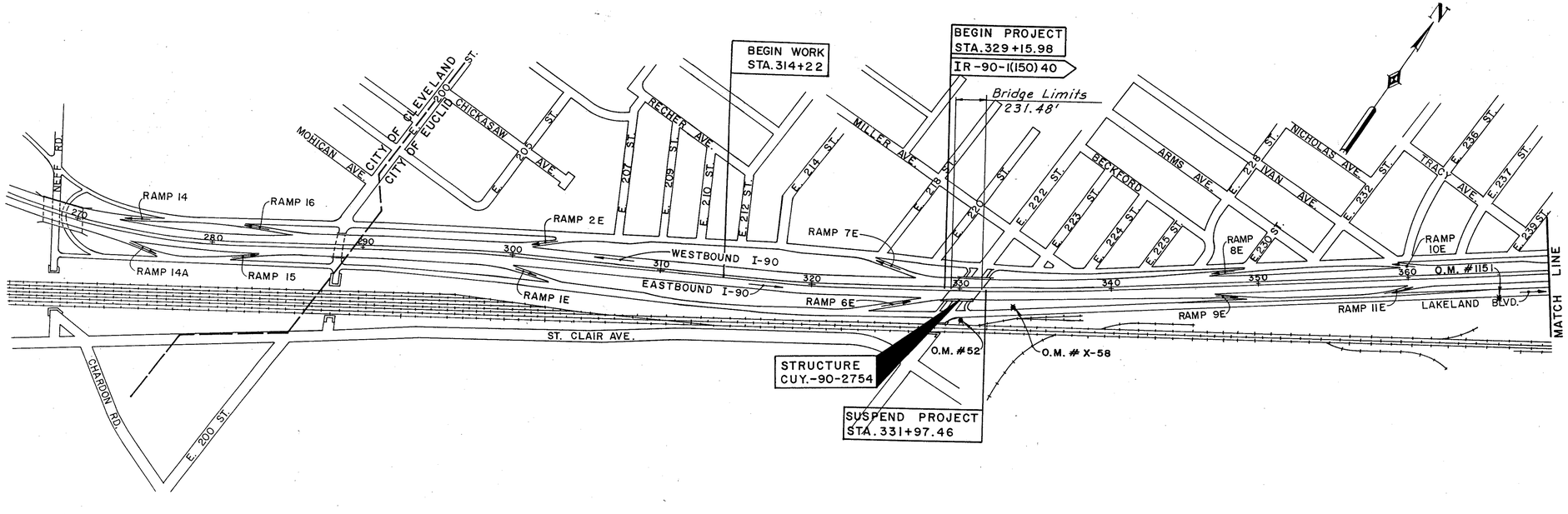
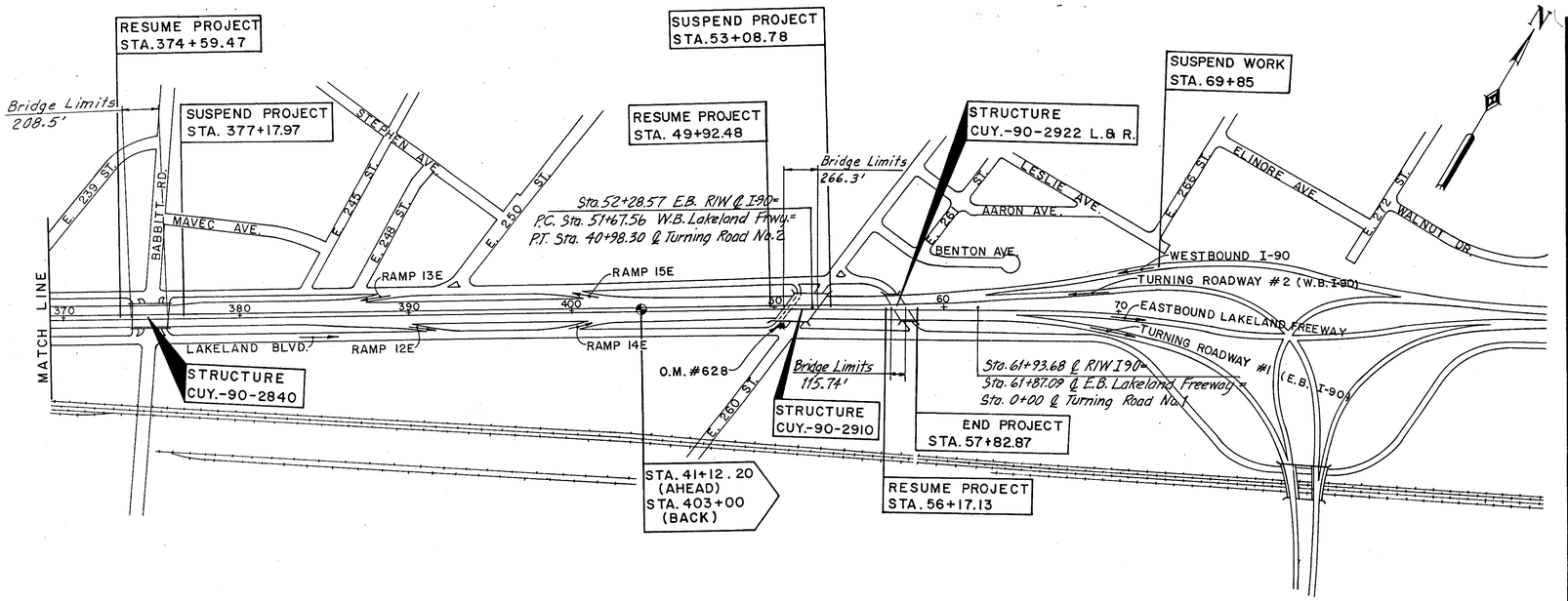
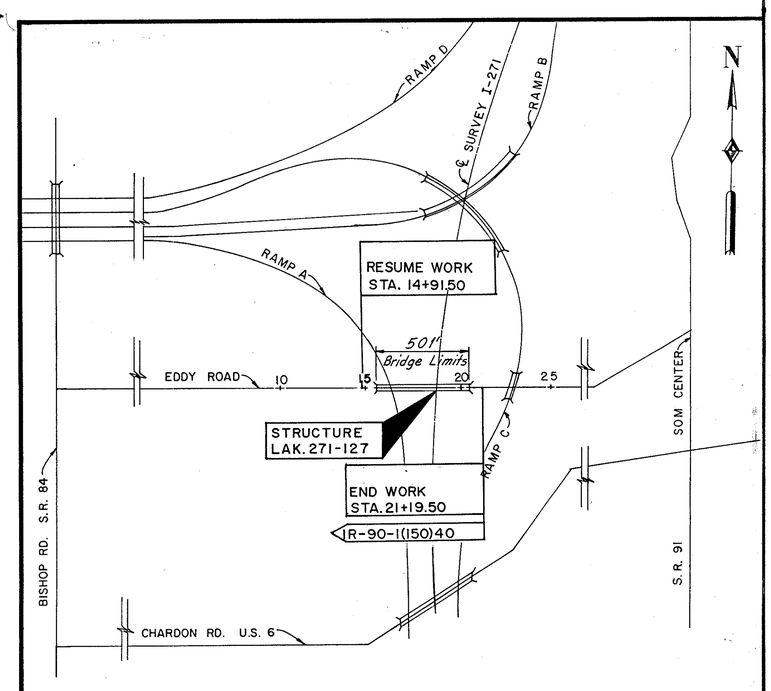
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

0 200 400 800 1600
SCALE







B.M.-O.M. # 52 Elev.638.076
Approximately 69' East of ℄ of East 222nd. St. and 27' South of ℄ of Lakeland Blvd. East of angle point produced West 25.55' Northeast of N.& V. in O.B.T. Pole # 13396 on top of Bank on East side of East 222nd. St. 11.56' Northwest of Northwest corner front of brick bldg. (State Plastic Inc.)

B.M.-O.M. # X-58 Elev. 636.428
Approximately 27' North of ℄ of Lakeland Blvd. and 430' Northeast of ℄ of East 222nd. St. in North Walk of Lakeland and 89.2' Southwest of ℄ of East 223rd. St. 59.96' North of top and center of Hydrant on South Side of Lakeland.

O.M. # 628 Elev.641.143
Approximately 35' West of ℄ East 260th. St. and 27' North of ℄ Lakeland Blvd.,31.30' Northwest of Monument at ℄ of Intersection, 12.23' Northeast of C.E.I. Pole # 234811 on Northwest corner.

B.M.-O.M. # 1151 Elev.638.447
Approximately 26' South of ℄ of Lakeland Blvd. and 50' West of ℄ of East 239th. St. and 30' Southwest of N. & V. in O.B.T. Pole # 13430. 24.60' Northwest of Northwest corner of brick residence # 23890 Lakeland.

FHWA REGION	STATE	PROJECT	
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CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

GENERAL

~~FIELD OFFICE~~

~~The Contractor shall provide a field office having a minimum of 400 Sq. Ft. of floor space. Payment be at the lump sum price bid for Item 619 - Field Office.~~

RIGHT-OF-WAY

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

CONTINGENCY QUANTITIES

The Contractor shall not order materials or perform work listed in the General Summary 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 at the Engineer's discretion shall be made a matter of record by incorporation into the final change order governing completion of this project.)

COOPERATION BETWEEN CONTRACTORS

The Contractor shall cooperate and coordinate his operations with the Contractors on other projects that may be in force during the life of this contract. No waiver of any provisions of 105.07 of the construction and material specifications is intended.

COST PARTICIPATION

The quantities which appear in the plans have been placed in one of the following participation areas.

1. Normal Participation
2. 50% Federal; 50% State
3. 100% State

UNDERGROUND UTILITIES

The locations of the underground utilities shown on the plans are as obtained from the owners of the utility as required by Section 153.64 OCR.

UTILITIES

The following is believed to be the list of Utility Owners within the limits of construction:

City of Cleveland
Department of Public Utilities
Division of Water and Heat
1201 Lakeside Avenue
Cleveland, Ohio 44114
Phone: 664-3346

Cleveland Electric Illuminating Company
The Illuminating Building
55 Public Square
Cleveland, Ohio 44113
Phone: 623-1350

Ohio Bell Telephone Company
820 West Superior Avenue
Cleveland, Ohio 44143
Phone: 822-6241

East Ohio Gas Company
1201 East 55th Street
Cleveland, Ohio 44103
Phone: 361-2753

Cleveland Public Power
601 Lakeside Avenue - City Hall
Cleveland, Ohio
Phone: 664-2000

Ohio Department of Transportation
10100 Broadway Avenue
Garfield Heights, Ohio 44105
Phone: 641-1926

City of Euclid
Public Service Director
585 E. 222 Street
Cleveland, Ohio 44126
Phone: 289-2701

Viacom Cablevision
7 Severance Circle
Cleveland, Ohio 44118
Phone: 382-5421

GENERAL

ITEM SPECIAL - LAW ENFORCEMENT OFFICER WITH PATROL CAR

The Contractor shall provide and pay all cost for the services of law enforcement officers and patrol cars for the exclusive purpose of controlling traffic whenever a change in traffic pattern takes place. The Engineer shall determine the number of officers and cars required for this purpose. The officers shall move their patrol cars as necessary to maximize their effect on traffic. The Contractor shall make all arrangements regarding scheduling of and payment for the law enforcement officers and patrol cars. Payment for the above shall be included in the unit price bid for Item Special - Law Enforcement Officer with Patrol Car. The following estimated quantity has been carried to the General Summary for use as directed by the Engineer:

Item Special - Law Enforcement Officer with Patrol Car 200 Hours

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/or from field observations and measurements. Consequently, they are indicative of the existing structure and the proposed work but shall be considered tentative and approximate. The Contractor is referred to CMS Sections 102.5 and 105.2.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the existing structure by the Contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

Plans of existing structures are available for examination at the Ohio Department of Transportation, District 12 Office, 5500 Transportation Boulevard, Garfield Heights, Ohio 44125-8003.

EQUIPMENT AND MATERIAL STORAGE

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

(1) Stored or parked vehicles, materials and equipment shall be located behind existing permanent guardrail or not less than 30 feet beyond the traveled way.

(2) Any removed items shall not be stored on the right-of-way for more than thirty days.

(3) All disturbed areas shall be returned to their original condition at no expense to the State.

ROADWAY

ITEM 202 - FENCE REMOVED

A. Description

This item shall conform to Item 202 with the following additions:

(1) The work shall consist of the removal and disposal of the existing chain link fence between structures CUY-90-2922 L & R.

(2) The removal shall include all fence, posts and attachments to the bridges.

B. Basis of Payment

Payment shall be made at the contract unit price bid per linear feet for Item 202 - Fence Removed.

ITEM 606 - GUARDRAIL

All guardrail work to include bridge terminal assemblies shall be completed prior to implementing pertinent traffic control phases.

PAVEMENT

ASPHALT APPROACHES AT BRIDGES

The final grade of the asphalt overlay on the approach slab shall be determined by extending the bridge structure grade across the approach slab. Maximum variation from set grade shall not exceed + 1/4 inch at the roadway end of the approach slab. Transitioning from that point shall proceed at a rate of 25 feet per inch as per BP-5. The Contractor shall establish controls at 25 foot intervals both across the approach slab and in the transition area. Variations from the set grade across the approach slab in excess of 1/4 inch shall deem the work unacceptable, at which time a minimum of 1 inch of asphalt on the approach slab shall be removed and replaced at no additional cost to the State.

ITEM 407 - TACK COAT

The rate of application of 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.

JOINT SEALERS

All references to 705.01 or 705.02, appearing on standard drawings or on the plans, shall be considered to read 705.04.

ITEM 622 - CONCRETE BARRIER, TYPE A-50, AS PER PLAN

A. Description

This item shall conform to Item 622 with the following additions:

1. This item pertains to the median transition from the bridge barrier to the existing median barrier off the bridge. See details on Sheets 31, 40, 50 and 57.
2. Included is the removal of the existing barrier median behind the abutment backwall to the limits shown in the plans.
3. Rebuilding of the transition barrier as per plan to include a new Class C concrete barrier, footing and wall, reinforcing dowel bars and 3/4" preformed expansion joint material. Any damage to median shoulder shall be included in this item for payment.

ITEM 305- 9" CONCRETE BASE, AS PER PLAN

ALL CEMENT USED FOR THIS ITEM SHALL MEET THE REQUIREMENTS OF 499.032 CLASS FS CONCRETE TO EXPEDITE PLACEMENT. SEE THE MAINTENANCE OF TRAFFIC NOTES AND PLANS FOR DETAILS AND WORK RESTRICTIONS.

GENERAL NOTES

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

4/76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

PAVEMENT

STATION MARKING

The Contractor shall impress station numbers into the top of the concrete barrier before it takes its final set.

The numbers shall be 3 to 4 inches in height and 0.25 inch in depth. The station numbers shall be placed parallel with the pavement edge on each side of the barrier and centered on the top portion of the barrier.

Payment shall be included in the contract price bid per Item 622 - Concrete Barrier, Type A-50, As Per Plan.

The location shown in the Plans shall be verified by the Contractor and approved by the Engineer.

B. Basis of Payment

Payment shall be made at the contract unit price bid per linear foot for Bid Item 622 - Concrete Barrier, Type A-50, As Per Plan and shall be payment in full for all materials, labor and equipment necessary to complete the work as specified.

ITEM SPECIAL - PRESSURE RELIEF JOINTS, TYPE C

This item shall be as per BP-11 of the Standard Drawings.

Measurement of the pressure relief joint for pay purposes shall be along the centerline of the joint, edge to edge of pavement or back to back of curbs. Payment shall be per linear foot for Item Special - Pressure Relief Joint, Type C, which shall include all materials necessary to complete the joint except for the aggregate drains or pipe underdrains which shall be constructed and paid for under Item 605.

EROSION CONTROL

CONCRETE SLOPE PROTECTION

Concrete slope protection for CUY-90-2910 shall include the following:

(1) Removal of existing concrete slope protection (6" ± Thick).

(2) Excavation and embankment: the excavation of material for the purpose of providing a firm, dry base for the concrete slope protection, the removal of the washed out soil at the base of the slope protection, and the placing of embankment material to fill eroded areas under and adjacent to the proposed concrete slope protection.

(3) Proposed slope protection. The installation of the new welded steel wire fabric reinforced slope protection, as shown including welded steel wire fabric, 709.10. The wire fabric shall be continuous across all joints in the concrete slope protection. Geotextile fabric (See Plan Note), joint and crack sealing, curb and pipe underdrain.

All costs of removing existing concrete, the washed out soil, excavating material for the proposed widening shall be included under Item 202 - Concrete Slope Protection Removed, As Per Plan. All costs of constructing the new slope protection, including all necessary embankment, welded steel wire fabric, filter fabric and representative, joint and crack sealing and reinforcing steel shall be included under Item 601 - Concrete Slope Protection, As Per Plan.

GEOTEXTILE FABRIC

The fabric is to be placed under the proposed concrete slope protection around the aggregate drains for the pressure relief joints and around the proposed unclassified pipe underdrains as shown on the Plans.

The fabric shall meet the requirements of Specification 712.09 Type B (Nonwoven). Field splices shall consist of 12" overlap secured in any manner suitable to the Engineer that will assure the overlap is maintained. Overlap closure at the top of the trench shall be 18", secured as above. If the trench width is less than 18", the overlap shall equal the trench width.

All costs for supplying and installing the geotextile fabric shall be included under Item 601 - Concrete Slope Protection, As Per Plan or Item 605 - Aggregate Drain or Item 605 - 6" Unclassified Pipe Underdrain.

STRUCTURES

DESIGN SPECIFICATIONS

These structures conform to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1989, including the Ohio "Supplement" to these Specifications.

The Design Data is as follows:

Design Loading	-	HS 20-44 Case I and the Alternate Military Loading
Concrete Class S	-	Compressive Strength 4,500 p.s.i. (Superstructure)
Concrete Class C	-	Unit Stress 1,333 p.s.i. (Substructure)
Structural Steel	-	A 36 - Unit Stress 20,000 p.s.i.
Reinforcing Steel	-	ASTM A615, A616 or A617 - Grade 60 Minimum Yield Strength 60,000 p.s.i.
Deck Protection Method	-	Sealing of Concrete Surfaces, All Structures Epoxy Coated Reinforcing Steel, Top and Bottom Mat, BR No. CUY-90-2754, 2840 and 2910
		1-1/4" Latex Modified Concrete Overlay, CUY-90-2922 L and R
		1-3/4" Superplasticized Dense Concrete Overlay, BR No. LAK-271-127

Monolithic wearing surface is assumed, for design purposes to be 1" thick.

SUPPLEMENTAL SPECIFICATIONS

References shall be made to Supplemental Specifications:

No. 836 - Concrete Curing Membrane Dated 11-12-85

No. 845 - Bridge Deck Repair and Overlay with Latex Modified Concrete Dated 5-31-88

No. 850 - Bridge Deck Repair and Overlay with Superplasticized Dense Concrete Dated 5-31-88

No. 852 - Grout Anchoring with Polyester and Vinylester Mortars Dated 6-10-87

No. 952 - Polyester, Vinylester and Epoxy Mortars for Anchoring Dated 12-14-88

No. 953 - Latex for Concrete Modification Dated 8-21-80

STRUCTURES

REFERENCE DRAWINGS

Reference shall be made to Standard Drawings:

RB-1-55 Dated (Revised) 2-2-59
SD-1-69 Dated 6-12-69 (Sheet 1 of 4)
EXJ-4-87 Dated 1-5-89 (Sheets 1,2, 4 and 5 of 5)

PROPOSED WORK

The work to be done under this contract is as shown on the Construction Plans and, in general, includes the following:

BR-CUY-90-2754, 2840 and 2910

1. New reinforced concrete deck and parapets.
2. New strip seal expansion joints.
3. Sounding, repair and sealing existing reinforced concrete substructure units.
4. Reset bearings shown in the plans.
5. Replace end crossframes shown in the plans for BR-CUY-90-2840 only.
6. Asphalt concrete resurfacing on approaches.

BR-CUY-90-2922 L and R

1. Overlay decks with 1 1/4" latex modified concrete.
2. New reinforced concrete parapets.
3. Sounding, repair and sealing existing reinforced concrete substructure units.
4. Sounding and low pressure injecting of delaminated deck bottom concrete.
5. Asphalt concrete resurfacing on approaches.

BR-CUY-271-1.27

1. Overlay decks with 1 3/4" superplasticized dense concrete.
2. Modify existing end dams for strip seal.
3. Install fence on existing parapets.
4. Sounding, repair and sealing existing reinforced concrete substructure units.
5. Sounding and low pressure injecting of delaminated deck bottom concrete.
6. Reset abutment bearings.
7. Asphalt concrete resurfacing on approaches.

ITEM 202 - PORTIONS OF STRUCTURES REMOVED, AS PER PLAN

A. Description

Work to be paid for under this item shall include the removal of structural components as detailed in the Plans and as directed by the Engineer. These removals are included in, but not necessarily limited to, the following list:

1. Concrete Superstructure Deck Removed: The work on structures CUY-90-2754/2840 and 2910 includes the removal and disposal of the entire reinforced concrete deck to include the end dam, curb plates, asphalt wearing surface, light pole pilasters, parapets, concrete counter weights and safety curbs. The work on structures CUY-90-2922 L & R includes the removal of the parapets and safety curbs on the bridge as shown on the Plans.

2. Wingwall Removed: Shall include the careful removal and disposal of the wingwall, and wingwall parapets as per plan on structures CUY-90-2754/2840/2910/and 2922 L & R.

   The Contractor shall submit to the Engineer for approval a method for maintaining existing electrical wires in the parapets prior to removal of the parapets, for structures CUY-90-2754/2840/2910 and 2922 L & R.

GENERAL NOTES

STRUCTURES

3. End Cross Frame Removal: Shall include the careful removal and disposal of the end cross frames as shown on the Plans for structure CUY-90-2840.

4. Portions of Backwall Removed: Shall include the removal of the concrete to the limits shown in the plans and includes the removal of the existing asphalt wearing surface, end dam angle and anchors, and median barrier on backwall. The existing vertical rebar shall remain, the horizontal rebar shall be disposed of.

Only pneumatic or hand tools that will give results satisfactory to the Engineer shall be used in the removal of concrete. Extreme care shall be taken to avoid damaging the existing structural steel and reinforcing steel which is to remain in place. The weight of the hammer shall not be more than 60 pounds for removal within 6 inches of portions to be preserved. Outside the 6 inch limit hammers not to exceed 90 pounds may be used with the approval of the Engineer. Any salvaged reinforcing steel which is made unusable by the Contractor's concrete removal operations shall be replaced with new steel at his cost.

Removal of existing superstructure concrete shall be by means of equipment and procedures, approved by the Engineer, which are chosen and employed so as to prevent damage, such as saw cuts and dents, to the existing steel and to provide protection for the roadway below. The Contractor shall submit a demolition plan to the Engineer for his approval prior to the start of any removal operations.

The aluminum bridge rail curved terminal pieces with end plates shall remain the property of the State of Ohio and shall be stored on the project site for ODOT pickup.

All loose concrete encountered during deck bottom soundings shall be removed and disposed of under Item 202, Portions of Structures Removed, As Per Plan.

B. Basis of Payment

Payment for completed work shall be made at the contract unit prices bid for:

Item 202 - Portions of Structures Removed, As Per Plan	Lump Sum
Item 202 - End Cross Frame Removed	Each

ITEM 202 - SCUPPERS ABANDONED

This item consists of abandoning 33 scuppers on CUY-90-2922 L & R as shown on the Plans. These scuppers shall be filled with latex modified concrete. Prior to this, the scuppers shall be plugged by a plate welded, as per plan.

All costs for labor, materials and equipment necessary to complete this item of work shall be included in the unit price bid per each for Item 202 - Scuppers Abandoned.

ITEM 202 - SCUPPERS REMOVED

A. Description

This item shall conform to Item 202 and pertains to the removal and disposal of the scuppers on CUY-90-2910 to include all supports. The Contractor shall carefully remove the scuppers and scupper supports from the exiting beams. Any damage to existing material to remain in place due to the Contractor's removal operation shall be repaired to the satisfaction of the Engineer at the cost of the Contractor.

B. Basis of Payment

Payment shall be made at the contract unit price bid per each for Item 202 - Scuppers Removed and shall include all labor, materials and equipment necessary to complete the work as specified.

ITEM 202 - BRIDGE DRAINAGE SYSTEM REMOVED

A. Description

This item shall conform to Item 202 and shall be removed to the limits shown on the Plans. The item pertains to the removal of the scupper collection system on structure No. CUY-90-2754/2840, and includes the 10" Ø horizontal steel pipe collector, all scuppers, downspouts and the 5/8" Ø U-Bolt connectors. The Contractor shall carefully remove the drainage system from the existing beams. Any damage to existing material to remain in place due to the Contractor's removal operation shall be repaired to the satisfaction of the Engineer at the cost of the Contractor. The 3 x 5 x 5/16 angle supports shall be left in place. The existing downspout thru the abutment bridge seat shall be plugged at the bridge seat. The entire cost for the plug, in place, shall be included in this removal item.

B. Basis of Payment

Payment for completed work shall be made at the contract unit price bid per linear foot measured along the 10" horizontal collector pipe for Item 202 - Bridge Drainage System Removed and shall include all materials, equipment and labor necessary to complete the work as shown in the Plans and specified herein.

STRUCTURES

ITEM 509 - REINFORCING STEEL, AS PER PLAN

This item shall be used to replace reinforcing steel which is bent, elongated, missing or extremely corroded. Bars shall be the same size as the original bars and shall be placed as near as possible to their original location. Bars shall be lapped according to Section 509.08. Payment for this item shall include the cost of all materials and labor necessary to complete the above work, including removal of existing steel. Any existing reinforcing bars which are to be incorporated into the new work and which are made unuseable by the Contractor's removal operations shall be replaced with new steel at his cost.

Any existing reinforcing bars deemed by the Engineer to be unusable because of corrosion shall be replaced with new steel. The following estimated quantity of reinforcing steel is to be used where and as directed by the Engineer:

Item 509 - Reinforcing Steel, As Per Plan (GRADE 60) 600 Pounds

TYING REBARS

The purpose of this item is to tie exposed steel reinforcing bars which are in cross contact or lapped. Tack welding shall not be permitted. This work shall be performed where and as directed by the Engineer to restrict the relative movement of the reinforcing bars.

Payment for this work, including extra removal of concrete as required to permit tying shall be included in the unit price bid for Item 845 - Latex Modified Concrete Overlay (Variable Thickness).

ITEM 510 - DOWEL HOLES, AS PER PLAN

The work shall conform to Supplemental Specifications 852 and 952, except that payment shall conform to Item 510.

ITEM 511 - CLASS S OR CLASS C CONCRETE FOR STRUCTURES

A. Description

This item shall consist of furnishing and placing portland cement concrete in accordance with Item 511 with the following additions:

1. Class S concrete, Superstructure, As Per Plan shall be used for the replacement and repairs of the following:

(a) Structural decks on structures CUY-90-2754, 2840 and 2910 to include the parapets.

(b) Parapets on structures CUY-2922 L & R.

2. Placement Limitation: Concrete shall not be placed if the ambient air temperature or predicted ambient air temperature during the duration of the pour if 80^{o} F or greater.

Placement of concrete shall be completed under favorable atmospheric conditions. Favorable atmospheric conditions exist when the surface evaporation rate is affected by the ambient air temperature, concrete temperature, relative humidity, and wind velocity is 0.1 pounds per square foot per hour or less. Figure (1) shall be used to determine graphically the surface evaporation rate. Figure (1) may be found on Page 11 of Supplemental Specifications 845. Favorable atmospheric conditions may require replacement during late evenings (6:00 P.M. to Official Sunset), night (Official Sunset to Official Sunrise) or early morning (Sunrise to 800 A.M.). Placement during these times will be considered to meet the requirements for favorable atmospheric conditions provided that the temperature limitation above is met.

If placement of the concrete is to be made at night, the Contractor shall submit a plan which provides adequate lighting for the work area at least fifteen (15) calendar days in advance and receive written approval from the Engineer before placing the concrete.

3. A set retarder (705.12) shall be required when an ambient air temperature of 60^{o} F or greater is predicted.

4. Curing: The bridge deck shall be water cured per CMS 511.14 Method (A) using continuous sprinkling and no plastic sheeting.

An evaporation retardant and finishing aid may be used at the Contractor's option prior to the tining operation. Any product used for such purpose shall be specifically marketed to said use. (Plain water is not acceptable). The application rate shall not exceed the hourly surface evaporation rate as determined by Figure 1 in SS 845 on Page 11.

Immediately after the texturing operation the Contractor shall spray an evaporation retardant over the textured area. The application rate shall be as per the manufacturer's recommendations. The wet burlap cure shall follow this operation as closely as possible.

Sidewalks, curbs and parapets may be membrane cured per SS 836 unless otherwise noted.

5. Pour Sequence: In order to prevent water from entering the fresh concrete all pours shall be made "Upgrade" whenever possible. All other provisions of 511 shall remain in effect.

6. Class C concrete shall be used for the replacement and repairs of the following:

(a) Backwall repairs and median at backwall replacement.

(b) All wingwall parapets.

All concrete surfaces that will be in contact with new concrete shall be thoroughly sandblasted and air cleaned.

B. Method of Measurement

The yardage shall be the number of cubic yards determined by calculations from plan dimensions, in place, completed and accepted.

C. Basis of Payment

Payment for completed work shall be made at the contract unit prices bid for:

Item 511 - Class S Concrete, Superstructure, As Per Plan	Cu. Yds.
Item 511 - Class C Concrete, Abutments, As Per Plan	Cu. Yds.

ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN

A. Description

This item shall consist of replacing, as directed by the Engineer, existing end cross frames and incidental steel that are severely rusted or corroded as shown on the Plans or as directed by the Engineer, in accordance with Item 513. Steel to be replaced shall be of the same size as that of the existing, ASTM A-36.

Structural steel under this item will not require shop drawings prior to fabrication. The Contractor shall make necessary measurements and prepare sketches, drawings, tables, etc. The Engineer shall have authority and responsibility for ensuring that the fabricated steel is acceptable. Technical assistance will be provided on request by the Bureau of Bridges. Mill test reports and shipping documents shall be submitted to the Engineer for review and approval prior to incorporating steel items into the work, as required by 501.07. After fabrication the Contractor shall submit shop drawings to the Engineer for review and approval to ensure that the drawings depict the steel as actually incorporated into the work. The Engineer will then send one approved set to the Bureau of Bridges for information. Pay weights shall be computed in compliance with 513 of the Construction and Material Specifications and submitted to the Engineer for his review and approval. The fabricator shall furnish a 35 millimeter microfilm copy of each shop drawing, which shall be mounted on an aperture card as specified in 501.05.

B. Basis of Payment

Payment will be made at the contract unit price bid per pound for Item 513 - Structural Steel For Rehabilitation, As Per Plan and shall be payment in full for all material, labor and equipment necessary to complete the work as specified.

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STRUCTURES

ITEM 514 - FIELD PAINTING OF RESET BEARINGS

This item shall consist of preparing and coating the reset bearings including any areas damaged by the Contractor's operations.

Surface preparation shall consist of abrasive blasting the area to be coated to an SA 2 1/2 near-white condition. Blasting abrasives containing more than 1% free silica shall not be allowed. These areas shall be coated the same day that they are blasted.

The prepared areas shall be coated with one coat of a high solids epoxy at least 5 mils thick. The high solids epoxy shall be applied by brush. The color of the high solids epoxy shall closely match that color which is existing.

The high solids epoxy shall be one of the following products:

1. Ameron Amerlock 400.
2. Valspar High Solids Epoxy 76 Series.
3. Tnemec's Chembuild Series 135.

Cost for furnishing all materials, labor and equipment necessary to complete this item shall be included in the lump sum bid price for this item:

Item 514 - Field Painting of Reset Bearings — Lump Sum

ITEM SPEC.- POURED POLYURETHANE JOINT SEAL

A. Description

The material for this item is a two-part, cold applied, chemically curing self leveling elastomeric, polyurethane joint sealant. It shall be "FX-551" as manufactured by Fox Industries Incorporated, "UREXPAN NR-200" as manufactured by Pecora Corporation or an approved equal. It shall be used as a second seal on top of the bituminous impregnated foam joint seal, as shown on the Plans or on top of the preformed expansion joint material. The installed and cured material shall be 1/2 inch deep and shall be bonded to the sides of the joint. Any unbonded section shall be removed and replaced at the Contractor's expense. Dams as required to contain the poured sealer shall be incidental to this item of work.

B. Basis of Payment

Payment for all necessary labor, materials and equipment shall be included in the unit cost per linear foot of Item Spec. Poured Polyurethane Joint Seal.

ITEM 516 - VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS, AS PER PLAN

A. Description

This item shall include all work required to install joint seals in the bridge deck, curbs, sidewalks, and parapets at locations as detailed in these Plans, provide and install all studs, steel plates, steel bars, bolts, steel retainers, neoprene strip seal, and any additional labor, equipment, and materials necessary to complete this work.

Structural steel under this item will not require shop drawings prior to fabrication. The Contractor shall make necessary measurements and prepare sketches, drawings, tables, etc. The Engineer shall have authority and responsibility for ensuring that the fabricated steel is acceptable. Technical assistance will be provided on request by the Bureau of Bridges. Mill test reports and shipping documents shall be submitted to the Engineer for review and approval prior to incorporating steel items into the work, as required by 501.07. After fabrication the Contractor shall submit shop drawings to the Engineer for review and approval to ensure that the drawings depict the steel as actually incorporated into the work. The Engineer will then send one approved set to the Bureau of Bridges for information. The fabricator shall furnish a 35 millimeter microfilm copy of each shop drawing, which shall be mounted on an aperture card as specified in 501.05.

STRUCTURES

B. Materials

The joint seal system shall be a strip seal consisting of steel retainers and a neoprene strip seal gland as manufactured by Watson Bowman & Acme Corporation, 95 Pineview Drive, Amherst, New York 14120 (716) 691-7566; Structural Accessories, Incorporated, South Main Street, P. O. Box 10, Terryville, Connecticut 06786 (203) 589-8826, or an approved equal. An adhesive shall be used to facilitate placement of the neoprene gland. All materials shall be stored and incorporated in the work as recommended by the manufacturer. A manufacturer's representative shall be present at the job site until such time as he and the Engineer are sure that the Contractor is qualified in all aspects of joint sealing.

C. Physical Properties

1. The steel retainer shall conform to ASTM A242 or A36, (Low Profile).
2. The adhesive shall be a one-part moisture curing polyurethane and hydrocarbon mixture as recommended by the strip seal manufacturer.
3. The neoprene gland shall conform to the physical properties specified for AASHTO M220 except for the recovery test.

D. Installation

The Contractor shall install steel retainers in maximum lengths to minimize welded butt joints. After all other work on the structure is complete, the Contractor shall sandblast clean the steel retainer surfaces which will contact the neoprene gland. After an air blast and application of the adhesive, the Contractor shall install the neoprene gland. The neoprene gland shall be one continuous piece across the roadway.

E. Method of Measurement

Footage under this item shall be the linear feet of strip seal measured along the centerline of the neoprene gland completed, installed and accepted by the Engineer.

F. Basis of Payment

The accepted quantities of sealed joints shall be paid for at the contract unit price bid per linear foot, which price and payment shall be full compensation for all necessary removals, furnishings and placing all materials, and all labor and equipment necessary to complete the sealing of expansion joints on the bridge as shown.

Payment will be made under the following:

Item 516 - Vertical Extension of Structural Expansion Joints, As Per Plan — Lin. Ft.

ITEM 516 - STRUCTURAL EXPANSION JOINTS INCLUDING STEEL RETAINER AND STRIP SEAL GLAND, AS PER PLAN

A. Description

This item shall include all work required to install joint seals and end dams in the bridge deck, curbs and parapets at locations as detailed in these Plans, provide and install all studs, end dam plates, angles, channels, end crossframe gusset plate, bevel fill plates, steel retainers, neoprene strip seal, and any additional labor, equipment and materials necessary to complete this work.

STRUCTURES

Structural steel under this item will not require shop drawings prior to fabrication. The Contractor shall make necessary measurements and prepare sketches, drawings, tables, etc. The Engineer shall have authority and responsibility for ensuring that the fabricated steel is acceptable. Technical assistance will be provided on request by the Bureau of Bridges. Mill test reports and shipping documents shall be submitted to the Engineer for review and approval prior to incorporating steel items into the work, as required by 501.07. After fabrication the Contractor shall submit shop drawings to the Engineer for review and approval to ensure that the drawings depict the steel as actually incorporated into the work. The Engineer will then send one approved set to the Bureau of Bridges for information. The fabricator shall furnish a 35 millimeter microfilm copy of each shop drawing, which shall be mounted on an aperture card as specified in 501.05.

B. Materials

The joint seal system shall be a strip seal consisting of steel retainers and a neoprene strip seal gland as manufactured by Watson Bowman & Acme Corporation, 95 Pineview Drive, Amherst, New York 14120 (716) 691-7566; D.S. Brown Company, P. O. Box 158, North Baltimore, Ohio 45872 (419) 237-3561; Structural Accessories, Incorporated, South Main Street, P. O. Box 10, Terryville, Connecticut 06786 (203) 589-8826, or an approved equal. An adhesive shall be used to facilitate placement of the neoprene gland. All materials shall be stored and incorporated in the work as recommended by the manufacturer. A manufacturer's representative shall be present at the job site until such time as he and the Engineer are sure that the Contractor is qualified in all aspects of joint sealing. The end dam plates, angles, bevel fill plates, and anchors shall be in accordance with the requirements of Item 513. Portions of the end dams in contact with concrete shall not be painted. All other portions shall be cleaned and painted in accordance with Item 514 and included herein for payment.

C. Physical Properties

1. The steel retainer shall conform to ASTM A242 or A36.
2. The adhesive shall be a one-part moisture curing polyurethane and hydrocarbon mixture as recommended by the strip seal manufacturer.
3. The neoprene gland shall conform to the physical properties specified for AASHTO M220 except for the recovery test.
4. The steel plates, angles, bevel fill plates and anchors shall conform to ASTM A242 or A36.

D. Installation

The Contractor shall install steel retainers in maximum lengths to minimize welded butt joints. A butt joint will be required at the apex of the roadway as per plan. After all other work on the structure is complete, the Contractor shall sandblast clean the steel retainer surfaces which will contact the neoprene gland. After an air blast and application of the adhesive, the Contractor shall install the neoprene gland. The neoprene gland shall be one continuous piece across the roadway.

E. Method of Measurement

Footage under this item shall be the linear feet of strip seal measured along the centerline of the neoprene gland completed, installed and accepted by the Engineer.

F. Basis of Payment

The accepted quantities of end dam and sealed joints shall be paid for at the contract unit price bid per linear foot, which price and payment shall be full compensation for all necessary removals, furnishing and placing all materials, and all labor and equipment necessary to complete the end dam and sealing of expansion joints on the bridge as shown.

Payment will be made under the following:

Item 516 - Structural Expansion Joints Including Steel Retainer and Strip Seal Gland, As Per Plan — Lin. Ft.

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STRUCTURES

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN
ITEM SPECIAL - PNEUMATICALLY PLACED MORTAR (SEE NOTE IN PROPOSAL)

These items shall be used as directed by the Engineer to repair damaged concrete areas. Generally, pneumatically placed mortar shall be used where the surface to be repaired cannot readily be formed and poured or the repair depth is less than 3 inches. Item 519 shall be used where the repair depth is 3 inches or greater and the surface can be readily formed and poured. All surfaces to be patched and the exposed reinforcing steel within shall be thoroughly cleaned by sandblasting prior to the cleaning specified by 519.04 and 520.05. Cleaning shall precede application of the patching material or erection of the forms by not more than 24 hours.

SEALING OF CONCRETE SURFACES

A. Description

An epoxy sealer shall be applied to the exposed concrete surfaces of the bridges as listed below. See the proposal for sealer material and surface preparation requirements, and application rates and procedures.

(1) Superstructure surfaces, as shown in the plans

(2) Piers including caps and columns.

(3) Abutments including backwalls and wingwalls, as shown in the plans.

B. Method of Measurement

The quantity shall be the actual area in square yards of surfaces sealed and shall include surface preparation, material, application, and prequalification testing cost.

C. Basis of Payment

Payment for completed work will be made at the contract prices for:

Item Special - Sealing of Concrete Surfaces (Epoxy) Sq. Yd.

ITEM 516 - RESET BEARING

A. Description

Resetting bearings shall be accomplished as per the Plans. Any damage due to the Contractor's operations to structural members, connections or parts, abutment bearing seats or backwalls that are to remain as part of the permanent construction shall be corrected and/or repaired by the Contractor at his expense to the satisfaction of the Engineer. The Contractor's detailed procedures for resetting the bearings shall be submitted to the Engineer for review.

B. Basis of Payment

Payment shall be at the contract unit price bid per each for Item 516 - Reset Bearing. This price shall be payment in full for all material, equipment and labor necessary to complete the work as specified.

STRUCTURES

ITEM SPECIAL - SOUNDING CONCRETE BRIDGE COMPONENTS

This work shall consist of supplying the materials, labor and equipment necessary for sounding concrete bridge components in order that the Engineer may outline the spalled and delaminated areas to be removed. The Contractor shall sound the concrete components listed below with hammers and the Engineer shall outline all unsound areas for concrete restoration. The footage under this item shall be the number of square feet of concrete surface that are satisfactorily sounded and accepted. The accepted quantities of sounding will be paid for at the contract unit price per square foot, which price and payment shall be full compensation for furnishing all material, labor and equipment necessary for sounding concrete bridge components. Payment will be made as specified below for sounding the following concrete components:

(1) Curbs and parapets (top and roadway faces only) structures LAK-271-0127 only.

(2) Piers including caps and stems.

(3) Abutments including seats, backwalls and wingwalls.

Item Special - Sounding Concrete Bridge Components Sq. Ft.

ITEM SPECIAL - MEDIAN BARRIER SEAL

A. Description

This work shall include furnishing and installing a neoprene seal along the top of the bridge median barrier in accordance with the plans and specifications for structure nos. CUY-90-2754/2840/2910.

B. Material

(1) The neoprene pieces shall meet the following specifications:

Property	Requirement	ASTM Method
Tensile Strength, Min., PSI	2000	D-412-62T
Elongation at Break, Min.	250%	D-412-51T
Hardness, Durometer A	60 ±5	D-2240 Modified
Ozone Resistance, 20% Elongation 300 PPHM 40°C (104°F) (70 Hrs) Wipe Surfaces with Solvent to Remove Contamination	No Cracks	D-1149
Heat Aging 70 Hrs @ 212°F		D-573
Tensile Strength, Max. % Decrease	-20	
Elongation, Max. % Decrease	-20	
Hardness, Max. Change	±10/-0	
Oil Swell, ASTM Oil #3 70 Hrs @ 212°F Max. Weight Increase at Specific Gravity 1.35 ±3	+45	D-471
Compression Set, 70 Hrs. @ 212°	40% Max.	D-395(B)
Low Temperature	Not Brittle	D-746
Resistance to Salt, Variation of Volume in % 70 Hrs. @ 40° C in CaCl Solution	-5% to +10%	

(2) Adhesives shall be Sikadur 31 manufactured by the Sika Chemical Company of Lyndhurst, New Jersey, Fel-Poxy FP-01 manufactured by the Felt Products Manufacturing Company of Skokie, Illinois, or an approved equal. Adhesives shall be stored at temperatures between 50°F and 80°F and shall be used within 270 days after the date of manufacture.

(3) Trowelable mortar shall be Sikatop 122 and 123, Thermal-Chem Product No. 304, Polycarb Mark 193,4 and 194, Five Star Highway Patch, UPCO Bostick 964, Euclid Chemical EUCO Verticoat, Master Builders Set Vertipatch or Duraltop and Duralpatch Gel. The material shall be tinted to cure to the color of the existing concrete. All materials shall be stored, incorporated in the work, and cured as recommended by the manufacturer.

C. Requirements

The median seal shall be continuous along the length of the bridge. Elastomeric sheets shall be as long as practical with field splices bonded together with adhesive.

STRUCTURES

D. Surface Preparation

(1) Neoprene: To avoid the subsequent contamination of prepared surfaces, all surfaces of the neoprene shall be cleaned with methyl ethyl keton (MEK), toluene (T) or other approved solvent using clean disposable cloths. Then not more than 7 days prior to the seal installation, a thin (1/8" min. thickness) coating of cyclizing paste* shall be applied to the bonding surfaces. After 25 to 40 minutes, the paste shall be washed from the surfaces with clean water.

*Cyclizing paste is a mixture of one pound of Pittsburgh Plate Glass Industries' Hisil 223 or an approved alternate and six pounds of concentrated sulfuric acid (18 molar). To mix the paste, add Hisil to acid slowly while stirring mixture to achieve a smooth viscous paste. Note: Since concentrated sulfuric acid is very corrosive and Hisil is an extremely fine non-toxic powder, rubber gloves and glasses should be used by those using the paste while gloves, glasses and a respirator should be used by those mixing the paste.

(2) Concrete: The concrete surface shall be thoroughly cleaned to remove dust, curing compound, laitance and other foreign materials by means of sandblasting followed by air brooming or power sweeping to remove dust and sand from the surface and opened pores.

E. Field Bonding

Immediately prior to adhesive application, bonding surfaces shall be clean, dry and warmer than 45° F and shall be maintained above 45°F until the adhesive has cured.

Adhesive components shall be combined in the exact ratios recommended by the adhesive manufacturer and shall be carefully and thoroughly mixed to ensure a uniform material free from entrapped air. The bonding procedures and rate of application shall be in accordance with the adhesive manufacturer's instructions and recommendations. For proper control during curing, light pressure should be maintained until the adhesive has cured.

F. Measurement and Payment

Median barrier seal shall be measured by the linear foot completed in place and paid for at the contract unit price bid per linear foot for Item Special - Median Barrier Seal. This price shall be payment in full for furnishing all materials, to include the neoprene sheets, trowelable mortar, adhesives, cyclizing paste and flat head stainless steel screws with sleeve anchors and equipment and labor to complete the work as specified.

ITEM SPECIAL - SOUNDING CONCRETE DECK BOTTOMS

This work shall consist of supplying the materials, labor and equipment necessary for sounding deck bottoms on structures I-90-2922 L & R and LAK-271-0127 in order that the Engineer may outline the spalled and delaminated areas. After all overlay removal operations are completed the contractor shall sound the entire deck bottom with hammers and the Engineer shall outline all unsound areas for epoxy injection. The footage under this item shall be the number of square feet of deck bottom that are satisfactorily sounded and accepted. The accepted quantities of sounding will be paid for at the contract unit price per square foot, which price and payment shall be full compensation for furnishing all material, labor and equipment necessary for sounding concrete bridge components. Payment will be made as specified below for sounding the concrete deck bottoms. Payment will be made under:

Item Special - Sounding Concrete Deck Bottoms Sq. Ft.

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ITEM SPECIAL - LOW PRESSURE EPOXY INJECTING DELAMINATED CONCRETE

A. Description

This work shall consist of low pressure epoxy injection of delaminated bottom cover concrete of bridge decks in accordance with these Specifications, in reasonably close conformity with the Plans and manufacturer's recommendations as directed by the Engineer.

B. Materials

The injection resin shall be Thermal-Chem Injection Resin Product No. 2, Duracrete LV, Poly-Carb Mark-10 Injection Resin or Sikadur 52 Injection Resin. The bonder shall be Duracrete Gel, Thermal-Chem Bonder Product No. 4, Poly-Carb Mark 8 Non-Sag Epoxy Bonder or Sikadur Hi-Mod Gel (Sikastix 31). All materials shall be stored and incorporated in the work as recommended by the manufacturer. A manufacturer's representative shall be present at the job site until such time as he and the Engineer are sure that the Contractor is qualified in all aspcts of epoxy pressure grouting.

C. Preparation

Ports shall be installed in clean holes which are vacuum drilled (to prevent fines being impacted in the crack) 3-inches up into the deck bottom so that the epoxy will penetrate the hollow plane. The first port shall be located near the edge of the outlined unsound area. Additional ports shall be placed at distances slightly greater than the distance from the first port to the void edge. Port placement must ensure that the grout face reaches the edge of the void before reaching the next port. Ports and visible cracks shall be sealed with the bonder to prevent emission of injection resin. The bonder shall cure 24 hours prior to injection of epoxy resin.

D. Inlection

The deck shall be injected only when it is dry and its temperature is above 50^{0} F. The injection resin shall be at 70^{0} F prior to mixing the components.

The epoxy injection equipment shall be capable of injecting the material into the ports at low pressures of 14 to 20 psi. The injection equipment shall be capable of metering, mixing, injecting and measuring the flow of the epoxy resin according to the manufacturer's specifications.

The injection shall commence at the edge of the delamination and continue until the epoxy resin appears at the next port. Most incompletely filled voids are caused by the operator stopping the injection process prematurely; therefore, a steady, low pressure shall be maintained on the epoxy until a steady clear flow appears at the next port. Then the injection nozzle shall be removed and the port closed. The injection shall be continued from port to port until the void is completely filled. Since the grout face is moving under viscous flow conditions which are governed by fluid surface friction, the injection process is slow. Regardless, injection pressure shall be 20 psi maximum so that bottom cover concrete is not blown off. Progress of the epoxy shall be checked with a tapping hammer.

E. Testing the Iniection Void

The outlined injected voids shall be sounded with a hammer by the Engineer and the remaining unsound areas shall be ported and reinjected at no additional cost to the State. All ports shall be cut off flush with the bottom surface of the concrete deck. All equipment, labor and material required by the Engineer to accomplish this work shall be supplied by the Contractor.

F. Method of Measurement

The footage under this item shall be the number of square feet of delaminated deck bottom concrete that are satisfactorily low pressure epoxy injected and accepted.

G. Basis of Payment

The accepted quantities of low pressure epoxy injected concrete will be paid for at the contract unit price per square foot, which price and payment shall be full compensation for furnishing and placing all materials, sounding the injected areas, supplying the manufacturer's representative and all other material, labor and equipment necessary to complete this work according to Specifications.

Payment will be made under:

Item Special - Low Pressure Epoxy injecting Delaminated Concrete	Sq. Ft.

PRECOMPRESSED JOINT SEAL (BITUMEN IMPREGNATED FOAM)

A. Description

This work shall consist of sealing cast in place joints in the approach pavement of the bridge, and sealing of vertical expansion joints in the abutments using precompressed bitumen impregnated foam in accordance with these Specifications, in reasonably close conformity with the plans and manufacturer's specifications and recommendations and as directed by the Engineer.

B. Material

The material shall be precompressed self-adhesive bitumen impregnated foam joint sealant such as Emseal PCSA, Permaband 8100 or an approved equal. Emseal U.S.A. is located at 344 Mill Road in Stamford CT. 06903 and has a telephone number of (203) 322-3828. Permaband is available from Permaquick (Canada) Ltd., which is located at 3043 Universal Drive, Mississauga, Ontario L4X2E2, telephone number (416) 625-9444.

All materials shall be stored and incorporated in the work as recommended by the manufacturer.

C. Surface Preparation

The cast in place joint faces and abutment expansion joints to which the seal must adhere shall be sandblasted clean and be free of foreign material such as dirt, dust, grease from oil, release agents, preformed expansion joint filler and any other material detrimental to adhesion of the sealant.

D. Application

Joint seals shall be installed only when the concrete is dry and its temperature is above 50 degrees F. The concrete surfaces shall be primed as recommended by the manufacturer. The foam joint seal shall be removed from the packaging and its narrow edge inserted into the joint opening. The depth face with the self adhesive backing shall be pressed against one side of the joint so that the foam is held in place while it recovers.

At temperatures above 70 degrees F, the material will recover in a few hours. At temperatures below 70 degrees F, the recovery shall be accelerated by heating the material by open flame, gas burner, infra-red lamp or hot air blower.

A continuous length of joint seal shall be achieved by joining individual strips only by means of scarfed joints cut at 45 degrees or less relative to the sides of the joint. The scarfed edges must be pushed well past one another. The seal shall not be pulled or stretched so that gaps between successive lengths are prevented.

E. Method of Measurement

Footage under this item shall be the linear feet of bitumen impregnated foam seal installed in the open joints that are complete, in place, and accepted.

F. Basis of Payment

The accepted quantities of sealed joints shall be paid for at the contract unit price per linear foot, which price and payment shall be full compensation for preparing the surfaces, removing existing expansion joint materials, furnishing and placing all materials, labor and equipment necessary to complete the joint seal according to specifications.

Payment will be made under:

Item Special - Joint Seal (8" x 4" Precompressed Bitumen Impregnated Foam)	Lin. Ft.
Item Special - Joint Seal (9" x 5" Precompressed Bitumen Impregnated Foam)	Lin. Ft.
Item Special - Joint Seal (2" x 2" Precompressed Bitumen Impregnated Foam)	Lin. Ft.

ITEM SPECIAL - END CROSS FRAME REPAIRS

A. Description

This item shall consists of replacing cracked welds in the end cross frames as shown in the plans and as directed by the Engineer.

The work shall include the removal of existing welds, rewelding in accordance to Item 513, cleaning and painting in the area disturbed by the welding operation using System A in accordance with Item 514.06.

The Contractor shall carefully remove existing broken or cracked welds. Any damage to the existing material to remain in place due to the Contractor's removal operations shall be repaired to the satisfaction of the Engineer at the cost of the Contractor.

B. Basis of Payment

Payment shall be made at the contract unit price bid each for Bid Item Special End Cross Frame Repairs and shall be payment in full for all materials, labor and equipment necessary to complete the work as specified.

PROTECTION OF PUBLIC

The Contractor shall submit to the Director a complete schedule of construction operations along with plans detailing and illustrating his proposed methods for preventing debris from falling on the roadway below. These plans must be submitted and approved prior to commencing the work. No removal work shall be started without prior approval of the Engineer.

If the Contractor's plans for preventing debris from falling on the roadway below are deemed inadequate by the Engineer, closures to protect pedestrian and vehicular traffic will be required at no additional cost to the State.

LIMITS OF OPERATIONS

The Contractor's activities and work schedule shall be constrained by the following special limitations:

(1) No lane closures shall be implemented or in place during the period beginning November 15th ending April 15th.

(2) No latex modified concrete overlay operations or superplasticized dense concrete operations or concrete patching and sealing operations shall be performed during the period beginning October 15th and ending April 15th.

CUYAHOGA/LAKE COUNTY
CUY/LAK-90/271-
27.54/1.27

OHIO
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FEDERAL PROJECT

8A
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GENERAL NOTES

ITEM 517 - RAILING,CONCRETE

A. DESCRIPTION: THIS ITEM SHALL CONSIST OF REPLACING EXISTING CURB STYLE WINGWALL PARAPETS TO ATTAIN A DEFLECTOR PARAPET SHAPE USING CAST IN PLACE CONCRETE AS SHOWN ON SHT. 63A.

B. REMOVAL: THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING ALUMINUM RAILING AND POSTS. HE SHALL DELIVER AND UNLOAD ALL TURNED DOWN RAILING END PANELS AT A DESIGNATED AREA AT THE STATE MAINTENANCE YARD ON SOM CENTER ROAD IN MAYFIELD, OHIO (SEE SHEET). THE EXISTING BE REMOVED TO PROVIDE CLEARANCE FOR PLACING CONCRETE AS DETAILED IN THE PLANS. THE WINGWALL PARAPET AND CURB SHALL BE REMOVED WITHIN THE WINGWALL AS DETAILED IN THE PLANS. ALL LOOSE OR UNSOUND PARAPET CONCRETE SHALL ALSO BE REMOVED. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT DAMAGE OR SHATTER THE CONCRETE THAT IS TO REMAIN, AND WILL NOT CUT, ELONGATE OR DAMAGE THE REINFORCING STEEL IN ANY WAY. CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAT THE NOMINAL 35-POUND CLASS.

ALL LOOSE AND UNSOUND CONCRETE IN THE AREA OF THE PARAPET TO BE FACED SHALL BE REMOVED. ALL REMAINING SOUND CONCRETE SHALL BE MECHANICALLY SCARIFIED 1/4" DEEP. DELIVERY AND UNLOADING RAILING SHALL BE PAID FOR IN THE LIN. FT. UNIT PRICE OF ITEM SPECIAL - DELIVERY AND UNLOADING OF ALUMINIUM POSTS AND RAILS.

C. DOWEL HOLES AND REINFORCING STEEL: DOWEL HOLES SHALL BE DRILLED AS SHOWN ON THE PLANS. THE GROUT SHALL CONSIST OF CEMENT AND WATER USING TYPE I, TYPE III, OR SHRINKAGE COMPENSATING CEMENT. CLEAN HOLES SAHLL BE SATURATED THOROUGHLY WITH WATER FOR A MINIMUM OF 5 MINUTES PRIOR TO PLACING GROUT. IMMEDIATLY PRIOR TO GROUTING, ALL FREE STANDING WATER SAHLL BE REMOVED FROM HOLES. AFTER INITIAL MIXING, THINNING OR RETEMPERING OF GROUT WITH EXTRA WATER SHALL NOT BE ALLOWED. HARDENED OR SET GROUT WHICH HAS BECOME TOO STIFF OR DRY TO PROVIDE A GOOD BOND SHALL BE DISCARDED. DOWELS SHALL NOT BE INSTALLED IF THE MEAN AIR OR GROUT TEMPERATURES ARE LESS THAN 45 F. FURTHERMORE, AFTER PLACING, THE FRESH GROUT SHALL BE MAINTAINED AT A TEMPERATURE OF NOT LESS THAN 45 F FOR HOURS, AND AT NOT LESS THANRE 40 F FOR AN ADDITIONAL 4 DAYS. THE TEMPERATURE OF MIXED GROUT,OR IMMEDIATELY BEFORE PLACING, SHALL BE NOT LESS THAN 50 F NOR MORE THAN 90 F. THE CEMENT GROUT SHALL BE CURED CONTINUOUSLY WITH EITHER WET RAGS OR A SATISFACTORY CURING COMPOUND (WHICH MUST BE SUBSEQUENTLY REMOVED) FOR A MINIMUM PERIOD OF 3 DAYS WITHOUT DISTURBING THE DOWELS.

THE HOLES NEED TO BE ONLY 1/8" LARGER THAN THE DOWEL DIAMETER. GROUT ANCHORING USING NON SHRINKING EPOXY MORTAR AS PER SS 852 AND 952 MAY BE USED IN LIEU OF THE ABOVE REQUIREMENTS WITH THE EXCEPTION THAT THE HOLE SIZE SHALL BE 3/4" DIA. POLYESTER VINYLESTER RESIN ANCHORS AS PER SS 852 AND 952 MAY BE USED IN LIEU OF EPOXY SECURED ANCHORS.

ALL REINFORCING STEEL IS INCLUDED UNDER THIS ITEM OF WORK.

D. SURFACE PREPARATION: THE PARAPET SURFACE SHALL BE THOROUGHLY CLEANED BY SANDBLASTING FOLLOWED BY AN AIR BLAST. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL. THE SURFACE SHALL BE MADE FREE OF SPALLS, LAITANCE AND ALL TRACES OF FOREIGN MATERIAL. IF NECESSARY, DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING TO ENSURE THE REMOVAL OF CONTAMINANTS THAT ARE DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

E. MATERIALS

REINFORCING STEEL EPOXY COATED	509
CONCRETE	511, CLASS C

F. PARAPET AND MEDIAN DEFLECTION JOINTS

DEFLECTION JOINTS SHALL BE PLACED IN THE NEW CONCRETE PARAPETS AT THE SAME LOCATION AS THE EXISTING ONES.

DEFLECTION JOINTS SHALL BE MADE VERTICALLY OR AT RIGHT ANGLES TO THE DECK BY SAWING. THE SAWING SHALL BE DONE AFTER THE CONCRETE HAS TAKEN ITS INITIAL SET AND BEFORE ANY SHRINKAGE CRACKS CAN DEVELOP. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO INSURE THAT THE CUT OF THE JOINT IS STRAIGHT, TRUE AND ALIGNED ON ALL FACES OF THE PARAPET FACING. THE NEED FOR A GUIDE ON THE BACK SIDE MAY BE ELIMINATED IF THE INITIAL CUT ON THE FRONT SIDE OF THE PARAPET FACING IS AT LEAST TWO-THIRDS OF THE WAY THROUGH THE PARAPET FACING. THE REAR CUT WOULD THEN BE GUIDED BY THE SLOT OF THE FIRST CUT AND BY THE EXISTING DEFLECTION JOINT SLOT. A SAW BLADE SUFFICIENTLY LARGE ENOUGH TO SAW THROUGH THE ENTIRE PARAPET WOULD BE ACCEPTABLE, BUT THE MINIMUM DEPTH OF THE SAW CUT SHALL BE THREE INCHES. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, NOT TO EXCEED ONE QUARTER INCH. THE OUTSIDE ONE INCH OF THE PERIMETER OF THE DEFLECTION JOINT SHALL BE SEALED WITH A POLYURETHANE OR POLYMERIC JOINT SEALANT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-S-00227E. THE BOTTOM ONE QUARTER INCH OF BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET FACING SHOULD BE LEFT UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

G. CONCRETE CURING : SEE SS 836.

H. METHOD OF MEASUREMENT: THE QUANTITY SHALL BE THE ACTUAL LENGTH OF THE RAILING FACED, MEASURED FROM END OF WINGWALL TO END OF WINGWALL. THIS ITEM SHALL INCLUDE THE FURNISHING OF ALL LABOR EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS WORK. ALL COSTS OF REMOVAL, DOWEL HOLES, REINFORCING STEEL, CONCRETE, INSTALLING DEFLECTION JOINTS, AND CONSTRUCTING WINGWALL TRANSITIONS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
517	L.F.	RAILING,CONCRETE

GENERAL NOTES

MAINTAINING TRAFFIC

ITEM 614 - MAINTAINING TRAFFIC

A. GENERAL

The Contractor shall conduct his operations to make the proposed deck repair with a minimum of hazard, delay and inconvenience to the motorists using the highway affected by the work done under this contract. Furthermore, in addition to the construction and material specifications, the following specific provisions are mandatory:

(1) Notification: Since functional traffic control is a major concern on this project it is essential that the motoring public be adequately forewarned of future lane closures and traffic constrictions. Therefore, the Contractor shall submit a schedule to the Ohio Department of Transportation indicating the location and date of each lane closure at least 1 week prior to the implementation of any such closures. The Contractor shall also notify pertinent city's police, fire and service departments 72 hours in advance of implementing said closures.

(2) Night Time Work: (Defined between the hours of 9:30 P.M. to 6:30 A.M.) Night time removal operations will not be permitted. *except as required for the berm replacement operations as shown on Sheet 11 of 76.*

(3) Restrictions: All through traffic lanes shall be kept open at all times except as noted herein and in the Traffic Control Sheets. LAK-271-1.27 (Eddy Road) shall be detoured as shown on Sheet 76. Construction of LAK-271-1.27 is restricted between June 15, 1993 and August 15, 1993.

Through traffic lanes maintained according to the Traffic Control Sheet shall constitute the minimum lanes open from 3:00 P.M. to 6:00 P.M. and from 6:00 A.M. to 9:00 A.M. weekdays and during the hours of increased traffic generated by special events *and holidays. See note on sheet 10.*

During temporary pavement marking operations and closure implementations 3-lane traffic may be restricted to one through lane and 4-lane traffic to two through lanes on the existing pavement only during daylight on Saturday and Sunday and from 9:00 A.M. to 3:00 P.M. weekdays. Constriction of 3 lanes to one lane and 4 lanes to two lanes shall be kept to a minimum and shall be done only at the discretion of the Engineer, and does not apply to LAK-271-1.27.

Not withstanding the above, no traffic lane closures, except those shown on the Traffic Control Sheets, shall occur during increased traffic volumes caused by special events* The Contractor shall not route traffic on both sides of a lane closure. *and holidays.

The Contractor shall furnish, erect and maintain all signs needed for maintenance of traffic.

B. TRAFFIC CONTROL SYSTEMS

When Required: Whenever any part of the traveled surface is being worked on or otherwise not suitable for safe and convenient use by vehicles, traffic control devices sufficient to protect such areas to assure the safe and convenient passage of vehicular traffic shall be installed and maintained. Such traffic control devices and the manner in which they are used shall be consistent with these plans and the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, hereinafter referred to as the "Manual". The traffic control device system shall constitute the minimum provisions for traffic control for each particular situation. Whenever the Engineer deems it necessary especially where a grade, curve or merge exists, he may direct that additional or alternative devices be used. Also the Contractor shall provide sufficient additional barricades, etc. to protect the fresh concrete during the curing period from any vehicles which drive around or through the traffic control.

Conditions: During all parts of this project, signing, barricades, temporary pavement markings, etc. shall be located as indicated on the Plans. The number of lanes and the minimum lane widths maintained shall be as indicated on the traffic control sheets.

Advance Warning Signs: All advance warning signs for any condition which restricts traffic shall be erected before any such restriction is put into effect. All such signs shall be covered or removed from the view of traffic whenever they are not applicable.

Flashing Arrow Requirement: Whenever any part of the traveled surface is closed, the motorists shall be warned and directed by the Contractor through the use of one flashing arrow for each lane closed in addition to those provisions set forth in the "Manual" and Standard Drawing TC-35.10.

Failure to Comply: If there is any failure to comply with provisions for traffic control set out in these plans and notes, or with the provisions of the "Manual" the highway in the vicinity of the work area shall not be considered in a condition for the safe and convenient use by traveling public. Any failure to keep the highway in the vicinity of the working area in a condition for the safe and convenient use by the traveling public shall be considered a breach of this contract. Work shall be suspended until the Contractor complies with the provisions of the aforementioned items.

C. TRAFFIC CONTROL MATERIAL

Signs: Sign dimensions and specifications, including letter sizes shall be as provided in the "Manual", or in sign design drawings provided by the Department of Transportation. The signs shall be subject to approval by the Engineer prior to the start of the project.

Sign Supports: Sign supports shall be of sufficient size and height as to support the signs at the height indicated in the "Manual". Supports shall also be adequate in mass and stability to prevent signs from being blown over by wind or vehicular generated air turbulence.

Lighting Devices: Type "A" flashing barricade warning lights shall be mounted on noted signs at all times.

Flashing Arrows: The electric flashing arrow shall be of Type A, as shown on Standard Construction Drawing TC-35.10. Payment for this shall be included under Item 614 - Maintaining Traffic.

Drums: Drums shall be located as shown on the traffic control plans. All costs for installing, maintaining and subsequent removal of said drums shall be included in the lump sum bid price for Item 614 - Maintaining Traffic.

Payment: All costs for the above maintenance of traffic work including signs, sign supports, temporary sign overlays, drums, etc. unless noted in the plans, shall be included in the lump sum price bid for Item 614 - Maintaining Traffic.

Replacement Signs: Flat sheet signs furnished by the Contractor in accordance with the requirement of the Plans, Specifications and Proposal which become damaged by traffic for reasons beyond the control of the Contractor shall be replaced in kind when ordered by the Engineer.

Payment for the new signs shall be made at the price bid per square foot for Item Special - Replacement Signs, and shall include the cost of removing and disposing of the damaged signs, hardware and supports, and providing necessary replacement hardware supports, overlays, etc. Replacement signs shall be new but other materials may be used, subject to approval by the Engineer.

An estimated quantity of Item Special - Replacement Signs has been carried to the General Summary:

Item Special - Replacement Signs 200 Sq. Ft.

Replacement Drums: Drums furnished by the Contractor in accordance with the requirement of the Plans, Specifications and Proposal which become damaged by traffic for reasons beyond the control of the Contractor shall be replaced in kind when ordered by the Engineer and paid for under Item Special - Replacement Drums. Payment for each drum shall include (1) the cost of removing and disposing the damaged drum and (2) providing, maintaining and removing new drums in accordance with the contract requirements for the original drums. (Replacement lights shall not be paid for separately but considered incidental to this item or Item 614 - Maintaining Traffic) An estimated quantity of Item Special - Replacement Drums has been carried to the General Summary:

Item Special - Replacement Drums 300 Each

ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC

This item shall be used to repair holes in the bridge decks, roadway surface and berms which are damaged during the closure. The Contractor shall use this item to maintain the highway according to Section 614.02. The Contractor shall perform the above work during the hours as per Traffic Control Plans and shall not close more than one additional lane to do this work. The following estimated quantity is included in the General Summary for the maintenance of traffic as outlined above to be used as directed by the Engineer on all parts of this project:

Item 404 - Bituminous Concrete For Maintaining Traffic 100 Cu. Yds.

~~ADDITIONAL WORK LIMITATIONS~~

~~THE CONTRACTOR SHALL NOT BEGIN WORK ON WESTBOUND IR-90 UNTIL AFTER JUNE 1, BECAUSE OF THE ADJACENT PROJECT(PROJECT 660-90) WORK REQUIREMENTS. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE ADJACENT PROJECT AS STATED IN THE GENERAL NOTES AND 105.04, COOPERATION BETWEEN CONTRACTORS. EASTBOUND I-90 WORK SHALL FOLLOW NORMAL TIME RESTRICTION AS STATED IN THE GENERAL NOTES.~~

WINTER TRAFFIC LIMITATIONS ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOV. 15 AND APRIL 15. NOV. 15 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH SECTION 108.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR EACH CALENDAR DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

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5	OHIO	IR-90-1(150)40	

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CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

MAINTAINING TRAFFIC

PORTABLE CONCRETE BARRIER

All portable concrete barriers shall be pin connected and have tapered end terminals. Portable concrete barriers on bridges (See details on Sheeet 64) shall be anchored. The barrier shall be in place prior to commencing deck removal or overlay operations. Measurement shall be based upon the length of barrier installed under each maintenance of traffic phase. The following estimated quantities have been carried to the General Summary:

	Phase I		Phase II	
Structure No.	Roadway	Bridge	Roadway	Bridge
CUY-90-2754	990	460	960	460
CUY-90-2840	1,020	420	990	420
CUY-90-2910	820	540	810	540
CUY-90-2922 L	430	-	410	-
CUY-90-2922 R	620	-	620	-
	3,880 L.F.	1,420 L.F.	3,790 L.F.	1,420 L.F.

Payment for the precast barrier off the bridge shall be made at the contract unit bid price per linear foot for Item 622 - Portable Concrete Barrier, 32" and payment for precast barrier on the bridge shall be made at the contract unit bid price per linear foot for Item 622 - Portable Concrete Barrier, Type BRD, Anchored, which shall include removal of the anchors and repair of the deck surface to the satisfaction of the Engineer.

ITEM 614 - WORK ZONE SPEED LIMIT SIGN

The Contractor shall furnish, install, maintain, cover during suspension of work, and remove work zone speed limit signs and supports (R-10-48) (45 MPH) within the work limits in accordance with the following requirements.

The Contractor shall cover or remove any existing speed limit or minimum speed signs within the reduced speed zone. These signs shall be restored during suspension or termination of the reduced speed limit. The expense of covering or removal and restoration of existing speed limit or minimum speed signs is incidental to the pay item for the work zone speed limit signs.

The work zone speed limit signs may be erected and covered prior to starting work or may be erected uncovered no more than 4 hours before the actual start of work. The signs shall be removed or covered no later than 4 hours following restoration of all lanes of traffic with no restrictions or sooner as directed by the Engineer.

The Contractor shall erect a work zone speed limit sign in advance of any lane restriction expected to last at least 30 days or as directed by the Engineer. The sign shall be mounted on both sides of divided highways, 500 feet in advance of the lane reduction taper. The sign shall be mounted on the right side, 250 feet in advance of the lane reduction taper on undivided highways. The sign shall be repeated, on the side nearest traffic, every 1 mile for 55 MPH zones and every 1/2 mile for 45 MPH zones. These signs shall also be erected immediately after each entrance ramp within the zone. A sign to indicate the resumption of the statutory speed limit shall be erected at the end of any reduced speed zone. This sign shall be a R-8A.

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 730.19 and U.S. Department of Transportation Supplemental Specifications for Type III-C Sheeting, FP-85. Work zone speed limit signs shall be mounted on two (2) Item 630 Ground Mounted Supports, No. 4 posts.

Work zone speed limit sign and supports will be measured as the number of sign installations, including the sign and necessary supports. If a sign and support combination is removed and reerected at another location within the project due to changes in the speed zone 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, erection, maintenance, covering during suspension of work, and removal of the signs and supports. An estimated quantity of Item 614 - Work Zone Speed Limit Sign has been carried to the General Summary:

Item 614 - Work Zone Speed Limit Sign 28 Each

MAINTENANCE OF TRAFFIC NOTES CONTINUED ON SHEET 11.

REVISED 7-9-92

TRAFFIC CONTROL

ITEM 642 - REMOVAL OF PAVEMENT MARKING

The Contractor shall remove temporary edge lines, temporary channelizing lines, temporary transverse lines and temporary dotted lines after completion of Phase II construction as directed by th Engineer. A quantity of 51,000 linear feet of Item 642, Removal of Pavement Marking has been included in the General Summary for this item of work (*FROM SHEET 15*).

LAYOUT OF PAVEMENT MARKINGS

The Contractor shall be responsible, with the assistance of the Engineer, for all the layout and locations of the various pavement markings.

ITEM 630 - REMOVAL OF OVERHEAD MOUNTED SIGN SUPPORT AND REERECTION, AS PER PLAN

Included in this item of work per Specification 630 shall be the removal of the existing sign, sign lighting (luminaries, ballasts, luminarie support assembly), sign attachment assemblies and overpass mounted sign support and subsequent reerection. These items may be effectively removed, at the option of the Contractor, as a complete unit attached to the sign and reerected.

Payment shall be per each unit of sign, lighting, sign attachment assembly, overpass mounted sign support removed and reerection of same, which price shall include all necessary equipment, labor, material and hardware to perform this item of work including new expansion double wedge anchor bolts.

Any sign and/or sign lighting and/or supports damaged by the Contractor deemed unusable by the Engineer shall be replaced in kind with a new sign and/or sign lighting and/or support at no expense to the State.

ITEM 630 - REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION, AS PER PLAN

Included in this item of work per Specification 630 shall be the removal of the existing sign including sign lighting and related items, and sign attachment assemblies, and subsequent reerection of sign and sign lighting.

Payment shall be per each unit of sign, lighting, and sign attachment assembly removed and reerection of same, which price shall include all necessary equipment, labor, material and hardware to perform this item of work.

Any sign and/or sign lighting damaged by the Contractor deemed unusable by the Engineer shall be replaced in kind with a new sign and/or lighting at no expense to the State.

ITEM 630 - SIGN ERECTED, EXTRUSHEET, AS PER PLAN

As shown in the plans, an existing sign and sign lighting unit is missing from its support attached to the south parapet at the East 260th Street Overpass. The Contractor shall erect an existing sign and sign lighting fixture at this location. The sign and light fixture is stored at the ODOT Warrensville Yard located at 25609 Emery Road, Telephone No. 292-5841. The Contractor shall notify the Warrensville Yard 48 hours prior to pickup.

Payment for the above work shall be at the contract unit price bid per each of Item 630 - Sign Erected, Extrusheet, As Per Plan, which price shall include pickup of the sign at the service garage, transportation to the work site, erection of the sign, sign lighting, brackets, equipment, labor and all incidentals to complete the work.

ITEM 631 - SIGN SERVICE, AS PER PLAN

This work shall consist of meeting the requirements of 631 except payment for the 2" conduit and trenching will not be included with this item. The proposed 2" conduit and trenching will be paid under Item 625. Payment for the proposed 1-1/2" conduit riser from the proposed Type II Junction Box to the existing sign switch box will be included with this item of work. See Sheet 25A for details.

ITEM 631 - REMOVAL OF SIGN WIRING AND DISPOSAL

This item of work shall consist of the removal and disposal of the existing sign wiring and hardware, back to the sign switch box. The electrical power shall be safely terminated within the switch enclosure. Hardware includes the rigid or flex conduits, junction boxes, ballasts, clamps, elbows, and miscellaneous hardware. All threaded pipe couplings or nipples shall be covered with threaded end caps.

Payment for this item shall be paid per each of Item 631 - Removal of Sign Wiring and Disposal which payment shall include all necessary labor, material, and equipment required to perform the work noted herein.

ITEM 631 - REMOVAL OF SIGN SERVICE AND DISPOSAL

This item of work shall consist of the removal and disposal of the existing sign service from the sign switch box to the nearest pull box. Included in this item is the removal of the junction box mounted under the bridge slab including mounting hardware. The removal includes the conduit from the existing pull box to the existing junction box attached to the underside of the bridge slab which includes the sign service wiring. The remaining portion of the conduit attached to the underside of the bridge slab from the existing junction box to the abutment shall also be removed and capped at the abutment face and shall be included with this item for payment.

Sign service cables shall be pulled back to the nearest pull box and disconnected from the highway lighting duct cable. Care must be taken not to permanently disrupt the continuity of the highway lighting circuits. The existing cable splice kits in the pull box shall be removed to disconnect the sign service cables from the highway lighting cables.

Payment for this item shall be paid per each of Item 631 - Removal of Sign Service and Disposal which payment shall include all necessary labor, material, and equipment required to perform the work noted herein.

STRUCTURE MOUNTED SIGN SUPPORT

All hardware, including expansion bolts shall be stainless steel. All expansion bolts shall be new.

TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

REFERENCES TO SUPPLEMENTAL SPECIFICATIONS 857, 858, 861, 957, 958 AND 961 ON THE TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS IN THESE PLANS SHALL BE CONSIDERED TO READ AS RESPECTIVE REFERENCES TO ITEMS 630, 631, 633, 730, 731 AND 733.

HOLIDAYS AND SPECIAL EVENTS

No traffic lane closures, except those shown on the Traffic Control sheets, shall occur during the following designated holidays or events:

Memorial Day Weekend
Labor Day Weekend
Fourth of July Weekend
Cleveland Browns Football Games
Cleveland National Air Show
Cleveland Gran Prix

There shall not be any extensions due to weather or material delays whatsoever.

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

GENERAL NOTES

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CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

LIGHTING

POWER SERVICE

The power supplying agency for the highway lighting on this project is:

Cleveland Electric Illuminating Company
55 Public Square
Cleveland, Ohio 44113
Phone: 622-9800 Ext. 3451

ITEM 625 - JUNCTION BOX, AS PER PLAN

The Contractor shall remove the existing junction box located on the outside of the south side parapet of bridge CUY-90-2922 R when the existing parapet is reconstructed, and shall reerect the junction box after the proposed parapet is built. The junction box services the underpass lighting for bridge CUY-90-2922 L & R and receives cables from an existing light pole on Lakeland Boulevard.

Payment for the above work shall be paid per each of Item 625 - Junction Box, As Per Plan which payment shall include the removal of the junction box, storage, the removal of all supports and conduits, dismantling existing cables, reerecting the junction box, any new supports and conduits, new cable as needed, connector kits, and all testing, hardware and incidentals needed to reconnect the existing underpass lighting.

ITEM 625 - LIGHTING MISC.: NEW IDENTIFICATION OF EXISTING LIGHT POLE

The Contractor shall renumber and reletter the existing light poles with new circuit numbers and pole numbers as indicated in the plans. All work shall be in accordance with item 625. The existing circuit number and pole number shall be removed and replaced with the new identification number.

Payment shall be made at the contract unit price bid per each, which price shall include the removal of the old identification number and replacement with the new number, the equipment, labor, materials and all incidentals to complete the work.

ITEM 625 - DISCONNECT TOWER FROM LIGHTING CIRCUIT, AS PER PLAN

This item of work shall consist of removing the circuit cable to be deactivated from the live side of the connector kits, plugging the unused opening of the connector kits, excavating at the outside end of tower foundation conduit, removing the disconnected cables from the conduit, capping the conduit and filling and restoring the excavation site to the satisfaction of the Engineer.

Payment shall be made at the contract price bid per each, which price shall include equipment, labor, materials and all incidentals to complete the work in an acceptable manner.

ITEM 625 - CONNECT EXTENDED CURCUIT FROM TOWER, AS PER PLAN

This item of work shall consist of cutting off and discarding existing tower connector kits in such manner as to permit sufficient remaining cable to connect existing and new circuit cables to tower wiring by means of Type III unfused connector kits in both phase and neutral splices.

Payment shall be made at the contract price bid per each, which price shall include equipment, labor, materials and all incidentals to complete the work in an acceptable manner.

ITEM 625 - RECONNECT TOWER TO EXTENDED CURCUIT, AS PER PLAN

This item of work shall consist of connecting the extended circuit to the existing tower by feeding cables through foundation conduit and splicing the extension cables to tower cables by means of Type III unfused connector kits.

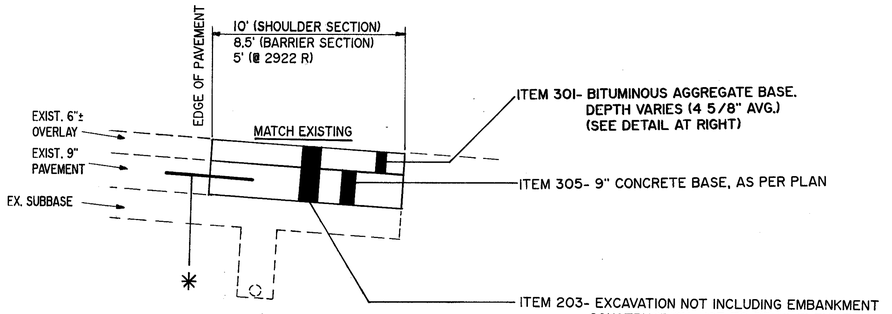
Payment shall be made at the contract price bid per each, which price shall include equipment, labor, materials and all incidentals to complete the work in an acceptable manner.

MAINTENANCE OF TRAFFIC (CONT'D.)

GENERAL CONSTRUCTION SEQUENCE

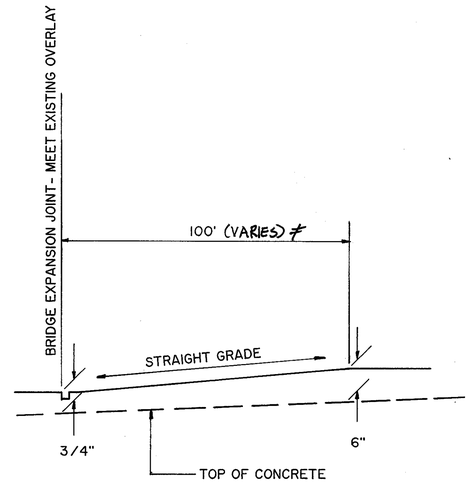
PRIOR TO IMPLEMENTING PHASE I OF THE MAINTENANCE OF TRAFFIC PLANS, THE MEDIAN BERM SHALL BE REPLACED WITH CONCRETE BASE AS SHOWN BELOW. DURING THIS PRELIMINARY PHASE, ONLY ONE(1) LANE SHALL BE PERMITTED TO BE TEMPORARILY CLOSED. CLOSURES SHALL BE IMPLEMENTED AS SHOWN ON STANDARD CONSTRUCTION DRAWING MT-95.30 USING DRUMS, SIGNS, AND A FLASHING ARROW BOARD ONLY. THIS PRELIMINARY PHASE SHALL ONLY BE IMPLEMENTED AT NIGHT BETWEEN THE HOURS OF 9:00 P.M. AND 6:00 A.M. OR DAYTIME BETWEEN THE HOURS OF 9:00 A.M. AND 3:00 P.M. NORMAL TRAFFIC PATTERNS SHALL BE IN EFFECT AT ALL OTHER TIMES. OPEN EXCAVATIONS SHALL NOT BE PERMITTED ADJACENT TO NORMAL TRAFFIC FLOW.

DURING PHASE I, ALL OUTSIDE (RIGHT) BERMS SHALL BE REPLACED AS SHOWN BELOW IN COMPLIANCE WITH STANDARD PHASE I TRAFFIC RESTRICTIONS.



BERM REPLACEMENT DETAIL
WITH GRADED SHOULDER

* TIE BARS FOR BERMS SHALL BE 24" LONG #5 BARS GROUTED INTO 12" DEEP, 3/4" DIAMETER DRILLED HOLES USING GROUT MEETING THE REQUIREMENTS OF SS 952. DEPTH AND SPACING SHALL BE AS SHOWN ON STD. CONST. DWG. BP-3.



ASPHALT FEATHER AT BRIDGE

(SEE SHT. 63 FOR FURTHER FEATHER DETAILS) ≠

614 BARRIER REFLECTORS

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING BARRIER REFLECTORS (TYPE A) ON GALVANIZED STEEL GUARDRAIL AND/OR BARRIER REFLECTORS (TYPE B) ON CONCRETE BARRIERS IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.

MATERIAL

THE BARRIER REFLECTOR SHALL BE AS MANUFACTURED BY STIMSONITE, REFLEXITE OR AN APPROVED FUNCTIONAL EQUIVALENT AS DESCRIBED BELOW:

STIMSONITE– MODEL 965 (WHITE & YELLOW) OR
REFLEXITE– MODEL 650 (WHITE & YELLOW)

THE ADHESIVE SHALL BE FRANKLIN PANEL AND METAL FRAMING ADHESIVE AS MANUFACTURED BY FRANKLIN CHEMICAL INDUSTRIES, PR–365 AS MANUFACTURED BY PRODUCTS RESEARCH AND CHEMICAL CORPORATION OR AN APPROVED EQUAL.

ALL ADHESIVES SHALL HAVE A SHELF LIFE OF 6 MONTHS AT 75 DEGREES F STORAGE MINIMUM GUARANTEED.

LAYOUT

THE CONTRACTOR SHALL LAYOUT ALL LOCATIONS TO ASSURE PROPER PLACEMENT. THE LAYOUT SHALL BE APPROVED BY THE ENGINEER BEFORE INSTALLATIONS ARE STARTED. THE LAYOUT SHALL BE INCIDENTAL TO THE INSTALLATION OPERATION.

INSTALLATION

1) ON CONCRETE BARRIERS THE HEIGHT OF THE TOP OF THE REFLECTOR SHALL BE 26 INCHES ABOVE THE NEAR EDGE OF PAVEMENT, BUT IN NO CASE SHALL THE TOP OF THE REFLECTOR BE LESS THAN 3 INCHES BELOW THE TOP OF THE CONCRETE BARRIER. ATTACHMENT SHALL BE BY THE ABOVE REFERENCED ADHESIVE AND APPLIED PER MANUFACTURER'S RECOMMENDATION.

2) GUARDRAIL REFLECTORS SHALL BE INSTALLED WITHIN THE CONCAVE SURFACE OF THE GUARDRAIL. ATTACHMENT MAY BE BY BRACKET WHICH FITS UNDER THE HEAD OF THE CENTER GUARDRAIL BOLT OR BY THE ABOVE REFERENCED ADHESIVE AND APPLIED PER MANUFACTURER'S RECOMMENDATION.

3) THE ABOVE REFERENCED ADHESIVE SHALL BE FLASHED WHEN APPLIED TO ACHIEVE MAXIMUM BONDING STRENGTH.

4) WHEN MOUNTED ON A FLAT SURFACE, THE REFLECTOR SHOULD BE TILTED UPWARD FROM THE VERTICAL OR PLUMB POSITION 2–3 DEGREES TO FACILITATE "RAIN WASHING" OF THE REFLECTOR FACE.

5) TWO–LANE HIGHWAY – WHITE UNITS SHALL BE PLACED ON THE RIGHT SIDE OF APPROACHING TRAFFIC.

FOUR–LANE DIVIDED HIGHWAY – WHITE UNITS SHALL BE PLACED ON THE RIGHT SIDE OF APPROACHING TRAFFIC AND YELLOW ON THE LEFT.

BASIS OF PAYMENT

BASIS OF PAYMENT SHALL BE AT THE UNIT PRICE BID FOR EACH REFLECTOR AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE AND INCIDENTALS REQUIRED TO PERFORM THE WORK.

ITEM	UNIT	DESCRIPTION
614	EACH	BARRIER REFLECTOR, TYPE A
614	EACH	BARRIER REFLECTOR, TYPE B

A: BARR–REF

STATIONING (FROM–TO)		(SIDE)	SPACING	TYPE A W	TYPE A Y	TYPE B RURAL W	TYPE B RURAL Y	TYPE B CITY W	TYPE B CITY Y			REMARKS
329+10	335+70	Lt.	50'			14						
324+03	338+80	Lt.	50'				30					
323+30	337+10	Rt.	50'				28					
325+40	332+30	Rt.	50'			14						
374+20	381+20	Lt.	50'			15						
369+35	383+07	Lt.	50'				28					
368+83	382+52	Rt.	50'				28					
371+00	377+70	Rt.	50'			14						
49+90	60+20	Lt.	50'			25						
45+10	60+20	Lt.	50'		5		25					
43+12	58+30	Rt.	50'				31					
46+05	58+55	Rt.	50'			26						
			'									
326+50	336+60	Lt.	50'	6		15						
329+20	335+90	Lt.	50'				14					
325+60	332+20	Rt.	50'				14					
326+00	334+00	Rt.	50'	6		11						
			50'									
360+00	379+85	Lt.	50'	35		5						
374+00	380+10	Lt.	50'				14					
371+10	377+10	Rt.	50'				14					
368+90	383+20	Rt.	50'	24		5						
45+10	62+10	Lt.	50'	26		10						
49+90	60+30	Lt.	50'				21					
46+10	58+30	Rt.	50'				25					
44+80	62+50	Rt.	50'	26		10						
TOTALS				123	5	164	272					
				128		436						

OHIO
FHWA REGION 5
12
76
IR-90-1(150)40
FEDERAL PROJECT

CUYAHOGA COUNTY / LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

614 BARRIER REFLECTORS

STANDARD NO.

DESIGNED	DRAWN	CHECKED	DATE
	Autocad		5-12-87

GENERAL NOTES

SUB – SUMMARIES

*NOTE:
WATERPROOFING REMOVAL IS INCLUDED WITH ITEM 202
WEARING COURSE REMOVED FOR PAYMENT AND IS A SEPERATE
OPERATION FROM THE SCARIFICATION FOR THE LATEX MODIFIED
OR SUPERPLASTICISED DENSE CONCRETE OVERLAY.

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

13/76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

** –QTY. FOR BERM REPLACEMENT
BETWEEN CUY-90-2910 AND CUY-90-2922 L/R

		ROADWAY																STRUCTURES										
		202	202	202	202	202	202	202	203	254			606	606	606	606	608			202	202	202	202	202	202			509		510	511
		GUARDRAIL REMOVED	WEARING COURSE REMOVED	CONCRETE BARRIER REMOVED	FENCE REMOVED	CURB REMOVED	WALK REMOVED	CONCRETE SLOPE PROTECTION REMOVED, AS PER PLAN	EXCAVATION, NOT INCLUDING EMBANK. CONST.	PAVEMENT PLANING, BITUMINOUS			ANCHOR ASSEMBLY, TYPE T	GUARDRAIL, TYPE 5	BRIDGE TERMINAL ASSEMBLIES, TYPE I	BRIDGE TERMINAL ASSEMBLY, TYPE 2	4" CONCRETE WALK			BRIDGE DRAINAGE SYSTEM REMOVED	PORTIONS OF STRUCTURES REMOVED, AS PER PLAN	END CROSS FRAMES REMOVED	SCUPPERS ABANDONED	* WEARING COURSE REMOVED	SCUPPERS REMOVED			EPOXY COATED REINFORCING STEEL		DOWEL HOLES, AS PER PLAN	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN
BRIDGE NO.	SHEET NO.	LIN.FT.	SQ.YD.	LIN.FT.	LIN.FT.	LIN.FT.	SQ.FT.	SQ.YD.	CU. YD.	SQ.YD.			EACH	LIN.FT.	EACH	EACH	SQ.FT.			LIN.FT.	LUMP SUM	EACH	EACH	SQ.YD.	EACH			POUND		EACH	CU.YD.
CUY-90-2754	(26-34)	100				506	3,588		274	1,843				100	2	2	3,588			164	Lump Sum							287,577			1,299
CUY-90-2840	(35-43)	100				214			274	1,596				100	2	2				140	Lump Sum	22						217,107			1,081
CUY-90-2910	(44-53)	125					2,654	1,262	274	1,608				125	2	2	1,680				Lump Sum				16			275,302		178	1,308
CUY-90-2922 L	(54-59)	60	1065	40	31				137					100.	2	1					Lump Sum		13	805				5506		228	33
CUY-90-2922 R	(54-59)	100	1061						111				1	100	1	2					Lump Sum		20	819				6000.		232	33
LAK-271-127	(60-62)		168						222**																						
TOTAL		485	2,294	40	31	720	6,242	1,262	1292	5,047			1	525	9	9	5,268			304	Lump Sum	22	33	1624	16			791,492.		638	3,754

		STRUCTURES																												
		511	513	514	514		516	SPECIAL	513	517	516	519	SPECIAL	607	607		845	845			850	850	850		SPECIAL	SPECIAL	SPECIAL	516	SPECIAL	SPECIAL	SPECIAL
		CLASS C CONCRETE, ABUTMENTS	STRUCTURAL STEEL, FOR REHABILITATION, AS PER PLAN	FIELD PAINTING OF NEW STEEL, SYSTEM A	FIELD PAINTING OF RESET BEARINGS		VERTICAL EXTENTION OF STRUCTURAL EXPANSION JOINTS, AS PER PLAN	POURED POLYURETHANE JOINT SEAL	STRUCTURAL STEEL, MISC.; TEMPORARY SUPPORT	RAILING, CONCRETE	STRUCTURAL EXPANSION JOINTS INCLUDING STEEL RETAINER & STRIP SEAL GLAND, AS PER PLAN	PATCHING CONCRETE STRUCTURES, AS PER PLAN	PNEUMATICALLY PLACED MORTAR (See Payment Note)	FENCE, TYPE CL. AS PER PLAN	FENCE, TYPE CL. AS PER PLAN. TYPE IPV		LATEX MODIFIED CONCRETE OVERLAY, (1 1/4" THICK)	LATEX MODIFIED CONCRETE OVERLAY, (VARIABLE THICKNESS)			SUPERPLASTICIZED DENCE CONCRETE OVERLAY (VARIABLE THICKNESS)	SUPERPLASTICIZED DENCE CONCRETE OVERLAY, (1 3/4" THICK)	850 7E37 SLABS		END CROSS FRAME REPAIRS	MEDIAN BARRIER SEAL	SEALING OF CONCRETE SURFACES (EPOXY) (See Payment Note)	516 RESET BEARING	SOUNDING CONCRETE BRIDGE COMPONENTS	SOUNDING CONCRETE DECK BOTTOMS	LOW PRESSURE EPOXY INJECTING DELAMINATED CONCRETE
BRIDGE NO.	SHEET NO.	CU.YD.	POUND	POUND	LUMP SUM		LIN.FT.	LIN.FT.	LUMP SUM		LIN.FT.	SQ.FT.	SQ.FT.	LIN.FT.	LIN.FT.		SQ.YD.	CU.YD.			CU.YD.	SQ.YD.			EACH	LIN.FT.	SQ.YD.	EACH	SQ.FT.	SQ.FT.	SQ.FT.
CUY-90-2754	(26-34)	47			Lump Sum					41	402	155	2,180													227	3,381	55	21,287		
CUY-90-2840	(35-43)	37	4,136	4,136	Lump Sum					32	279	170	495													206	2,522	32	14,460		
CUY-90-2910	(44-53)	42			Lump Sum				Lump Sum	32	351	75	240												17	262	3,224	64	18,547		
CUY-90-2922 L	(54-59)	13						147		25			150	31			834	28									689		3,144	7,090	1,092
CUY-90-2922 R	(54-59)	13						150		13			70				848	28									697		3,153	7,229	605
LAK-271-127	(60-62)				Lump Sum		48	56					140		1,047						44	1,333	Lump Sum				2,019	8	11,118	13,158	250
TOTAL		152	4,136	4,136	Lump Sum		48	353	Lump Sum	143.	1,032	400	3,275	31	1,047		1,682	56			44	1,333	Lump Sum		17	695	12,532	159	71,709	27,477	1,947

SUB – SUMMARIES

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

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CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

**- QTY. FOR BERM REPLACEMNT
BETWEEN CUY-90-2910 AND CUY-90-2922 L/R

		STRUCTURES								PAVEMENT														EROSION CONTROL				
		SPECIAL	SPECIAL	SPECIAL						301		305			404	407					609	622			SPECIAL	203	601	601	601	601
		JOINT SEAL (8" X 4" PRECOMPRESSED BITUMEN IMPREGNATED FOAM)	JOINT SEAL (9" X 5" PRECOMPRESSED BITUMEN IMPREGNATED FOAM)	JOINT SEAL (2" X 2" PRECOMPRESSED BITUMEN IMPREGNATED FOAM)						BITUMINOUS AGGREGATE BASE		9" CONCRETE BASE, AS PER PLAN			ASPHALT CONCRETE, AC-20	TACK COAT					CURB, TYPE 6	CONCRETE BARRIER, TYPE A-50, AS PER PLAN			PRESSURE RELIEF JOINTS, TYPE C	EMBANKMENT	CONCRETE SLOPE PROTECTION, AS PER PLAN	CRUSHED AGGREGATE SLOPE PROTECTION	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	PAVED GUTTER, TYPE 2, AS PER PLAN
BRIDGE NO.	SHEET NO.	LIN.FT.	LIN.FT.	LIN.FT.						CU. YD.		SQ. YD.			CU.YD.	GAL.					LIN.FT.	LIN.FT.			LIN.FT.	CU.YD.	SQ.YD.	SQ.YD.	CU.YD.	LIN.FT.
CUY-90-2754	(26-34)									106		822			151	185					641	73			237	13				
CUY-90-2840	(35-43)	30	30							106		822			132	160					214	49			193					
CUY-90-2910	(44-53)									106		822			132	164					52	108			193		1,262			370
CUY-90-2922 L	(54-59)			150						53		411			42	108					33				97			18	14	
CUY-90-2922 R	(54-59)			152						43		333			42	108					52	8			97			16	12	
LAK-271-127	(60-62)														14	34														
										111 **		665 **																		
TOTALS																														
		30	30	302						525		3875			513	759					992	238			817	13	1,262	34	26	370

		EROSION CONTROL						DRAINAGE																							
		659	659	660				603	604	605	605																				
		SEEDING AND MULCHING	WATER	REINFORCED SODDING				12" CONDUIT, TYPE B	CATCH BASIN, NO.2-2-A	6" UNCLASSIFIED PIPE UNDERDRAINS	AGGREGATE DRAINS																				
BRIDGE NO.	SHEET NO.	SQ.YD.	M. GAL.	SQ.YD.				LIN.FT.	EACH	LIN.FT.	LIN.FT.																				
CUY-90-2754	(26-34)	20	1	93							72																				
CUY-90-2840	(35-43)										72																				
CUY-90-2910	(44-53)			73				100	2	370	72																				
CUY-90-2922 L	(54-59)										40																				
CUY-90-2922 R	(54-59)										40																				
LAK-271-127	(60-62)																														
TOTALS																															
		20	1	166				100	2	370	296																				

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

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CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

ITEM 614 PHASE I TEMPORARY EDGE LINES

Station From	Station To	Location	Calculations	Lin. Ft.
I-90 E.B.				
320+82	323+30	Rt	32330-32082	248
323+30	337+10	Rt. & Lt.	(33710-32330)×2	2760
337+10	339+58	Rt.	33958-33710	248
364+45	365+53	Rt.	36553-36445	108
365+53	367+40	Rt.	(36740-36553)×2	374
367+40	368+83	Rt.	36883-36740	143
368+83	382+50	Rt. & Lt	(38250-36883)×2	2734
382+50	384+22	Rt.	38422-38250	172
401+70	403+00	Rt.	40300-40170	130
41+12	43+12	Rt.	4312-4112	200
43+12	61+30	Rt. & Lt	(6130-4312)×2	3636
61+30	61+94	Rt.	6194-6130	64
61+87	66+93		6693-6187	506
I-90 W.B.				
321+55	324+03	Lt.	32403-32155	248
324+03	325+87	Lt. & Rt	(32587-32403)×2	368
325+87	326+95	Lt.	32695-32587	108
326+95	338+80	Lt. & Rt.	(33880-32695)×2	2370
366+05	369+35	Lt.	36935-36605	330
369+35	384+00	Lt. & Rt.	(38400-36935)×2	2930
384+00	386+37	Lt.	38637-38400	237
45+10	45+55	Lt.	4555-4510	45
45+55	52+29	Lt. & Rt.	(5229-4555)×2	1348
51+68	61+58	Lt. & Rt.	(6158-5168)×2	1980
61+58	64+35	Lt.	6435-6158	277
Turning Road No. 1				
5+30	7+00	Lt.	700-530	170
Turning Road No. 2				
29+90	30+50	Rt.	3050-2990	60
Total			4.13 Miles	21794

ITEM 614 PHASE I TEMPORARY CHANNELIZING LINE

Station From	Station To	Location	Calculations	Lin. Ft.
I-90 E.B.				
320+82	339+58	Rt.	(33958-32082)×2	3752
364+45	365+53	Rt.	36553-36445	108
365+53	367+40	Rt.	(36740-36553)×3	561
367+40	385+82	Rt.	(38582-36740)×2	3684
401+70	403+00	Rt.	(40300-40170)×2	260
41+12	61+94	Rt.	(6194-4112)×2	4164
61+87	63+95	Rt.	(6395-6187)×2	416
63+95	64+60	Rt.	(6460-6395)×4	260
64+60	66+93	Rt.	(6693-6460)×3	699
66+93	67+20	Rt.	6720-6693	27
I-90 W.B.				
321+55	325+87	Lt.	(32587-32155)×2	864
325+87	326+87	Lt.	(32687-32587)×3	300
326+87	328+20	Lt.	(32820-32687)×4	532
328+20	341+27	Lt.	(34127-32820)×2	2614
366+05	386+37	Lt.	(38637-36605)×2	4064
41+80	52+29	Lt.	(5229-4180)×2	2098
51+68	57+20	Lt.	(5720-5168)×2	1104
57+20	62+15	Lt.	(6215-5720)×3	1485
62+15	63+25		6325-6215	110
Total				27102

ITEM 614 PHASE I TEMPORARY TRANSVERSE LINES, WHITE

Station From	Station To	Location	Calculations	Lin. Ft.
I-90 E.B.				
63+95	67+20	Lt.	Avg. 27×20	540
Total				540

SCALE
MADE. JEW DATE 12-15-87
TRCD. JEW DATE 12-21-87
CKD. DATE

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

ITEM 614 - PHASE II TEMPORARY EDGE LINES

Station From	Station To	Location	Calculations	Lin. Ft.
I-90 E.B.				
320+80	323+60	Lt.	32360-32080	280
323+60	337+70	Rt & Lt	(33770-32360)×2	2820
364+00	368+90	Lt	36890-36400	490
368+90	383+20	Rt. & Lt	(38320-36890)×2	2860
383+20	386+50	Lt.	38650-38320	330
401+00	403+00	Lt.	40300-40100	200
41+12	44+80	Lt	4480-4112	368
44+80	61+94	Rt. & Lt.	(6194-4480)×2	3428
61+87	62+50	Rt. & Lt.	(6250-6187)×2	126
62+50	67+20	Lt	6270-6250	470
I-90 W.B.				
320+80	324+50	Rt.	32450-32080	370
324+50	325+90	Rt. & Lt.	(32590-32450)×2	280
325+90	326+83	Rt.	32683-32590	93
326+83	336+60	Rt. & Lt.	(33660-32683)×2	1954
336+60	341+27	Rt.	34127-33660	467
365+20	368+50	Rt.	36850-36520	330
368+50	379+83	Rt. & Lt.	(37983-36850)×2	2266
379+83	387+80	Rt.	38780-37983	797
41+60	44+90	Rt.	4490-4160	330
44+90	52+29	Rt. & Lt.	(5229-4490)×2	1478
51+68	62+15	Rt. & Lt.	(6215-5168)×2	2094
Turning Road No. 1				
5+30	7+00	Lt.	700-530	170
Turning Road No. 2				
29+40	30+50	Lt.	3050-2940	110
Lakeland Freeway W.B.				
62+15	63+20	Lt.	6320-6215	105
62+15	64+30	Rt.	6430-6215	215
Total			4.25 Miles	22431

ITEM 614 - PHASE II TEMPORARY CHANNELIZING LINES, WHITE

Station From	Station To	Location	Calculations	Lin. Ft.
I-90 E.B.				
320+80	339+58	Rt.	(32958-32080)×2	3756
364+00	386+50	Rt.	(38650-36400)×2	4500
401+00	403+00	Rt.	(40300-40100)×2	400
41+12	61+94	Rt.	(6194-4112)×2	4164
61+87	64+55	Rt.	(6455-6187)×2	536
64+55	67+20	Rt.	(6720-6455)×4	1060
I-90 W.B.				
321+55	325+90	Lt.	(32590-32155)×2	870
325+90	327+10	Lt.	(32710-32590)×3	360
327+10	341+27	Lt.	(34127-32710)×2	2834
365+20	387+80	Lt.	(38780-36520)×2	4520
41+60	52+29	Lt.	(5229-4160)×2	2138
51+68	58+00	Lt.	(5800-5168)×2	1264
57+25	62+15	Lt.	(6215-5725)×3	1470
Total				27872

ITEM 614-PHASE II TEMPORARY TRANSVERSE LINES, WHITE

Station From	Station To	Location	Calculations	Lin. Ft.
I-90 E.B.				
64+55	67+20	Rt.	Avg. 22×20	440
Total				440

ITEM 614 PHASE II TEMPORARY DOTTED LINES CLASS I 740.05 TYPE C

Station From	Station To	Location	Calculations	Lin. Ft.
I-90 WB.				
327+10	329+00	Lt.	32900-32710	190
Total				190

ITEM 614-TEMPORARY PAVEMENT MARKINGS, CLASS II

Lane Line, Premarking	8.06 Miles
Channelizing Line, Premarking	2851 Lin. Ft.

ITEM 642 - EDGE LINES, WHITE (FINAL)

Station From	Station To	Location	Calculations	Lin. Ft.
I-90 E.B.				
320+70	326+77	Rt.	32677-32070	607
326+77	328+40	Rt.	(32840-32677)×2	326
328+40	339+60	Rt.	33960-32840	1120
368+85	383+20	Rt	38320-36885	1435
44+80	61+94	Rt.	6194-4480	1714
61+87	67+20	Rt.	6720-6187	533
I-90 W.B.				
321+50	325+85	Lt.	32585-32150	435
326+95	336+60	Lt.	33660-32695	965
365+50	379+80	Lt.	37980-36550	1430
44+90	52+29	Lt.	5229-4490	739
51+68	62+15	Lt.	6215-5168	1047
Turning Road No.1				
5+30	7+00	Rt	700-530	170
Turning Road No.2				
23+80	30+50	Lt	3050-2380	670
Lakeland Freeway W.B.				
62+15	63+25	Lt.	6325-6215	110
Ramp TE				
3+40	4+35	Lt	435-340	95
Eddy Road				
14+91.5	21+19.5	Rt.& Lt.	(2119.5-1491.5)×2	1256
Total			2.40 Miles	12652

ITEM 642- EDGE LINES, YELLOW (FINAL)

Station From	Station To	Location	Calculations	Lin. Ft.
I-90 E.B.				
320+70	339+60	Rt.	33960-32070	1890
364+00	386+50	Rt.	38650-36400	2250
401+70	403+00	Rt.	40300-40170	130
41+12	61+94	Rt.	6194-4112	2082
61+87	67+20	Rt.	6720-6187	533
I-90 W.B.				
321+50	341+30	Lt.	34130-32150	1980
365+20	387+80	Lt.	38780-36520	2260
41+60	62+65	Lt.	6265-4160	2105
Turning Road No. 1				
5+30	7+00	Rt.	700-530	170
Turning Road No.2				
23+80	30+50	Lt.	3050-2380	670
Ramp TE				
3+40	4+35	Lt	435-340	95
Total			2.68 Miles	14165

ITEM 642-CENTERLINES; SOLID DOUBLE (FINAL)

Station From	Station To	Location	Calculations	Lin. Ft.
Eddy Road				
14+91.5	21+19.5	℄	(2119.5-1491.5)×1	628
Total			0.12 Miles	628

ITEM 642- 8"CHANNELIZING LINES, WHITE (FINAL)

Station From	Station To	Location	Calculations	Lin. Ft.
I-90 E.B.				
326+77	328+40	Rt.	32840-32677	163
61+87	67+20	Rt.	(6720-6187)×2	1066
I-90 W.B.				
325+85	326+95	Lt.	32695-32585	110
326+95	328+40	Lt.	(32840-32695)×2	290
55+70	62+65	Lt.	(6265-5570)×2	1390
Total				3019

ITEM 642- 4"LANE LINES (10'PAINTED, 30'OPENING) (FINAL)

Station From	Station To	Location	Calculations	Lin. Ft.
I-90 E.B.				
314+22	328+40	Rt.	(32840-31422)×3	4254
328+40	331+15	Rt.	(33115-32840)×4	1100
331+15	339+60	Rt.	(33960-33115)×3	2535
364+00	386+50	Rt.	(38650-36400)×3	6750
401+70	403+00	Rt.	(40300-40170)×3	390
41+12	61+94	Rt.	(6194-4112)×3	6246
61+87	67+20	Rt.	(6720-6187)×2	1066
I-90 W.B.				
321+50	328+40	Lt.	(32840-32150)×3	2070
328+40	330+35	Lt.	(33035-32840)×4	780
330+35	341+30	Lt.	(34130-33035)×3	3285
365+20	387+80	Lt.	(38780-36520)×3	6780
41+60	52+29	Lt.	(5229-4160)×3	3207
51+68	55+67	Lt.	(5567-5168)×3	1197
55+67	62+15	Lt	(6215-5567)×2	1296
Lakeland Freeway W.B.				
62+15	69+85	Lt.	(6985-6215)×1	770
Turning Road No. 1				
5+30	7+00	℄	(700-530)×1	170
Turning Road No.2				
23+80	30+50	℄	(3050-2380)×1	670
Total			8.06 Miles	42566

ITEM 642 - TRANSVERSE LINES, WHITE (FINAL)

Station From	Station To	Location	Calculations	Lin. Ft.
I-90 E.B.				
61+87	67+20		39×14.2 (Avg.)	554
I-90 W.B.				
326+95	328+40		12×12.3 (Avg.)	148
Total				702

ITEM 642 REMOVAL OF PAVEMENT MARKINGS

Phase II Temporary Edge Line	4.25 Miles
Phase II Temporary Channelizing Line, White	27872 Lin. Ft.
Phase II Temporary Transverse Line, White	440 Lin. Ft.
Phase II Temporary Dotted Line, Class I, 740.05, Type C	190 Lin. Ft.
TOTAL	51,000 Lin. Ft.

TEMPORARY AND FINAL STRIPING SUB-SUMMARY

ESTIMATED QUANTITIES

REF. NO.	STATION From	STATION To	Sheet No.	625 CABLE SPLICING KIT EACH	625 1-1/2" DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES LIN. FT	625 CONDUIT, 2", 713.04 LIN. FT	625 TRENCH, 24" DEEP LIN. FT.	625 JUNCTION BOX, TYPE II EACH	625 JUNCTION BOX, AS PER PLAN EACH	625 PULL BOX REMOVED EACH	625 LIGHTING, MISC.: NEW IDENTIFICATION OF EXISTING LIGHT POLE EACH	625 NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE (2 REQUIRED) LIN. FT	625 DISCONNECT TOWER FROM LIGHTING CIRCUIT, AS PER PLAN EACH	625 CONNECT EXTENDED CIRCUIT FROM TOWER, AS PER PLAN EACH	625 RECONNECT TOWER TO EXTENDED CIRCUIT, AS PER PLAN EACH	630 EXISTING SIGN SIZE (EFFECTIVE) L X H	630 EXISTING SIGN (OVERALL) L X H	630 EXISTING SIGN SIZE (ACTUAL) L X H	630 REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION, AS PER PLAN EACH	630 REMOVAL OF OVERHEAD MOUNTED SIGN SUPPORT AND DISPOSAL TYPE TC-18.24 EACH	630 REMOVAL OF OVERHEAD MOUNTED SIGN SUPPORT AND DISPOSAL TYPE TC-18.26 EACH	630 REMOVAL OF OVERHEAD MOUNTED SIGN SUPPORT AND REERECTION TYPE TC-18.24, AS PER PLAN EACH	630 SIGN ERECTED, EXTRUSHEET, AS PER PLAN EACH	630 OVERPASS STRUCTURE MOUNTED SIGN SUPPORT TYPE TC-18.26 DESIGN 9 EACH	630 OVERPASS STRUCTURE MOUNTED SIGN SUPPORT TYPE TC-18.26 DESIGN 10 EACH	630 REMOVAL OF OVERHEAD MTD. SIGN SUPPORT AND RE-ERECTION, TYPE TC-12.24, AS PER PLAN (DESIGN #8) EACH	630 CONCRETE FOR ANCHOR BASED FOUNDATIONS C.Y.	631 SIGN SERVICE EACH	631 SIGN SERVICE, AS PER PLAN EACH	631 SIGN WIRED, OVERPASS STRUCTURE MOUNTED EACH	631 REMOVAL OF SIGN WIRING AND DISPOSAL EACH	631 REMOVAL OF SIGN SERVICE AND DISPOSAL EACH	631 REMOVAL OF LUMINAIRE AND STORAGE EACH	625 GROUND ROD EACH
L-1	329+50	330+50	21	2		100	42					220																							
L-2	330+50		21					1																											
L-3	330+50	332+95	21			245	44			1																									
L-4	328+48	330+60	21			212	22			1																									
L-5	330+60		21					1																											
L-6	330+60	331+92	21	2		132	63					284																							
L-7	368+80	374+55	23		585		575							1																					
L-8	373+90		23							1																									
L-9	374+55		23								1		1		1																				
L-10	374+50	375+50	23			100	23			1																									
L-11	Not Used																																		
L-12	375+50	377+35	23	2		185	23	1				410																							
L-13	373+75	376+30	23			185	22			2																									
L-14	Not Used																																		
L-15	376+30	377+30	23	2		100	22	1				220																							
L-16	45+88	50+70	24		492		482							1																					
L-17	50+70		24								1		1		1																				
L-18	50+28	51+60	24			132	25			1																									
L-19	51+60		24					1																											
L-20	51+60	54+00	24	2		240	37					500																							
L-21	43+80	49+30	24		560		550							.1																					
L-22	49+00		24	2																															
L-23	49+00	51+80	24			280	45					580																							
L-24	49+30		24								1		1		1																				
L-25	51+80		24					1																											
L-26	51+80	52+95	24	2		115	49					250																							
L-27	57+57		24						1																										
L-28	54+97	56+96	24	4		199	48					418																							
L-29	56+19	58+98	24	4		279	94					578																							
Sign No.																																			
1A	N.B. E.222	on Bridge	21													9'x5.5'	9'x6.5'	9'x6'	1		1			1					1	1	1	1			
1B	N.B. E.222	on Bridge	21													12'x3'	12'x4'	12'x3.5'	1		1				1					1	1				
2A	S.B. E.222	on Bridge	21													9'x5.5'	9'x6.5'	9'x6'	1		1			1					1	1	1	1			
2B	S.B. E.222	on Bridge	21													12'x3'	12'x4'	12'x3.5'	1		1				1					1	1				
3A	N.B. Babbitt	on Bridge	23													12'x4.5'	12'x5.5'	12'x5'				1								1	1	1	1		
3B	N.B. Babbitt	on Bridge	23													4'x4.5'	4'x5.5'	4'x5'				1									1	1			
4A	S.B. Babbitt	on Bridge	23													12'x4.5'	12'x5.5'	12'x5'				1								1	1	1	1		
4B	S.B. Babbitt	on Bridge	23													4'x4.5'	4'x5.5'	4'x5'				1									1	1			
4C	S.B. Babbitt	on Bridge	23													4'x4.5'	4'x5.5'	4'x5'				1									1	1			
5A	N.B. S.R.175	on Bridge	24													8'x6'	8'x7'	8'x6.5'	1		1			1					1	1	1	1			
5B	N.B. S.R.175	on Bridge	24													12'x4'	12'x5'	12'x4.5'					54.0		1						1				
6A	S.B. S.R.175	on Bridge	24													8'x5'	8'x6'	8'x5.5'	1		1			1					1	1	1	1			
6B	S.B. S.R.175	on Bridge	24													12'x4'	12'x5'	12'x4.5'	1		1				1					1	1				
3C	N.B. Babbitt	on Bridge	23																	1											1		1		
7	STA 55+40	55+82	24													16' x 11'	16' x 12'	16' x 11.5'	1								1	3.97	1			1		1	
TOTAL				22	1,637	2,504	2,166	6	1	7	3	3,460	3	3	3				8	1	7	5	54.0	4	4	1	3.97	1	6	13	13	7	1	1	

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

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CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

SCALE NONE
MADE JEN DATE 1-15-88
TRCD. JEN DATE 1-15-88
CKD. ____ DATE ____

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

GENERAL SUMMARY

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

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CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

SHEET NUMBER														COST PARTICIPATION		ITEM	EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REF. SHEET
														NORMAL PARTICIPATION	NORMAL PARTICIPATION					ROADWAY	
															485	202	38000	485	LIN.FT.	GUARDRAIL REMOVED	
															2294	202	23500	2294	SQ.YD.	WEARING COURSE REMOVED	
															40	202	30700	40	LIN. FT.	CONCRETE BARRIER REMOVED	
															31	202	75000	31	LIN.FT.	FENCE REMOVED	
															720	202	32000	720	LIN.FT.	CURB REMOVED	
															6242	202	30000	6242	SQ.FT.	WALK REMOVED	
															1262	202	98300	1262	SQ.YD.	REMOVAL MISCELLANEOUS: CONCRETE SLOPE PROTECTION, AS PER PLAN	4
															13	203	20000	13	CU.YD.	EMBANKMENT	
															1292	203	12000	1292	CU. YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
															1	606	26500	1	EACH	ANCHOR ASSEMBLY, TYPE T	
															525	606	13000	525	LIN.FT.	GUARDRAIL, TYPE 5	
															9	606	35000	9	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
															9	606	35100	9	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
															5268	608	10000	5268	SQ. FT.	4" CONCRETE WALK	
																				PAVEMENT	
															5047	254	01000	5047	SQ.YD.	PAVEMENT PLANING, BITUMINOUS	
															525	301	10002	525	CU. YD.	BITUMINOUS AGGREGATE BASE, AC-20	
															3875	305	13001	3875	SQ. YD.	9" CONCRETE BASE, AS PER PLAN	3
															513	404	20000	513	CU.YD.	ASPHALT CONCRETE, AC-20	
															759	407	10000	759	GAL.	TACK COAT	
															485	609	26001	485	LIN. FT.	CURB, TYPE 6, AS PER PLAN	
															507	609	26000	507	LIN.FT.	CURB, TYPE 6	
															238	622	23305	238	LIN.FT.	CONCRETE BARRIER, TYPE A-50, AS PER PLAN	3
															817	SPECIAL	45132000	817	LIN.FT.	PRESSURE RELIEF JOINT, TYPE C	

GENERAL SUMMARY

FHWA REGION	STATE	PROJECT	
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CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

SHEET NUMBER	COST PARTICIPATION NORMAL PARTICIPATION	ITEM EXT.	ITEM	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REF. SHEET
						EROSION CONTROL	
54	34	601	20000	34	SQ.YD.	CRUSHED AGGREGATE SLOPE PROTECTION	
54	26	601	32200	26	CU.YD.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
45	370	601	38401	370	LIN.FT.	PAVED GUTTER, TYPE 2, AS PER PLAN	45
45	1262	601	21001	1,262	SQ.YD.	CONCRETE SLOPE PROTECTION, AS PER PLAN	4, 45
26	20	659	10000	20	SQ.YD.	SEEDING AND MULCHING	
26	1	659	35000	1	M. GAL.	WATER	
26, 44	166	660	20000	166	SQ.YD.	REINFORCED SODDING	
						DRAINAGE	
45	100	603	04400	100	LIN.FT.	12" CONDUIT, TYPE B	
45	2	604	04100	2	EACH	CATCH BASIN, NO. 2-2A	
45	370	605	13300	370	LIN.FT.	6" UNCLASSIFIED PIPE UNDERDRAIN	
26, 35, 44, 54	296	605	31100	296	LIN.FT.	AGGREGATE DRAIN	
						LIGHTING	
16	22	625	01500	22	EACH	CABLE SPLICING KIT	
16	3,460	625	23200	3,460	LIN. FT.	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	
16	1,637	625	24100	1,637	LIN. FT.	1 1/2" DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES	
16	2,504	625	25400	2,504	LIN. FT.	CONDUIT, 2", 713.04	
16	2,166	625	29002	2,166	LIN. FT.	TRENCH, 24" DEEP	
16	6	625	29900	6	EACH	JUNCTION BOX, TYPE II	
16	1	625	29901	1	EACH	JUNCTION BOX, AS PER PLAN	11
16	7	625	31500	7	EACH	PULL BOX REMOVED	
16	3	625	98000	3	EACH	LIGHTING MISC.: NEW IDENTIFICATION OF EXISTING LIGHT POLE	11
16	3	625	98000	3	EACH	LIGHTING MISC.: DISCONNECT TOWER FROM LIGHTING CURCUIT, AS PER PLAN	11
16	3	625	98000	3	EACH	LIGHTING MISC.: CONNECT EXTENDED CIRCUIT FROM TOWER, AS PER PLAN	11
16	3	625	98000	3	EACH	LIGHTING MISC.: RECONNECT TOWER TO EXTENDED CIRCUIT, AS PER PLAN	11

GENERAL SUMMARY

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

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CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

SHEET NUMBER																															COST PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REF. SHEET
5	13	27	28	30	31	32	33	34	36	37	39	40	41	42	43	45	46	49	50	51	52	53	54	55	56	58	59	60	61		NORMAL PARTICIPATION	50% FED. 50% STATE	100% STATE						
																																				STRUCTURES	
			L.S.	L.S.	L.S.		L.S.			L.S.	L.S.	L.S.		L.S.			L.S.	L.S.	L.S.		L.S.			L.S.	L.S.					Lump Sum			202	11201	LUMP SUM	LUMP SUM	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	4
																							1624							1624			202	23500	1,624	SQ. YD.	WEARING COURSE REMOVED	
													22																	22			202	98100	22	EACH	REMOVAL MISCELLANEOUS: END CROSS FRAME REMOVED	
																									33					33			202	98100	33	EACH	REMOVAL MISCELLANEOUS: SCUPPER ABANDONED	
																				16										16			202	98100	16	EACH	REMOVAL MISCELLANEOUS: SCUPPER REMOVED	
						164							140																	304			202	98200	304	LIN. FT.	REMOVAL MISCELLANEOUS: BRIDGE DRAINAGE SYSTEM REMOVED	
600																														600			509	11401	600	POUND	REINFORCING STEEL, GRADE 60, AS PER PLAN	5
					638		286,939					504			216,603				584			274,718					14506			791492			509	15800	791492	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	
																178								460					638			510	11101	638	EACH	DOWEL HOLE, AS PER PLAN	
				1299							1081							1308						66						3754			511	31501	3754	CU. YD.	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN	5
			16		31					15		22					14		28					26						152			511	45701	152	CU. YD.	CLASS C CONCRETE, ABUTMENT AS PER PLAN	5
		2353	73	955					1599	70	853					2049	65	1110						112	1274				2019	12,532			SPECIAL	51267502	12,532	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY)	
													4136																	4136			513	16590	4,136	POUND	STRUCTURAL STEEL, MISC.: FOR REHABILITATION, AS PER PLAN C.Q.	5
						55							32							64								8		159			516	46700	159	EACH	RESET BEARING	
																				L.S.										LUMP SUM			513	16600	LUMP SUM	LUMP SUM	STRUCTURAL STEEL, MISC.: TEMPORARY SUPPORT	
													4136																	4136			514	01500	4,136	POUND	FIELD PAINTING OF NEW STRUCTURAL STEEL, SYSTEM A	
						L.S.							L.S.							L.S.								L.S.		Lump Sum			514	27704	LUMP SUM	LUMP SUM	FIELD PAINTING OF RESET BEARINGS, SYSTEM A	
							402							279							351									1032			516	11201	1,032	LIN. FT.	STRUCTURAL EXPANSION JOINT INCLUDING STEEL RETAINER & STRIP	6
																																	516	11801	48	LIN. FT.	SEAL GLAND, AS PER PLAN	
																													48	48							VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN	6
	143																													143			517	74500	143	LIN. FT.	RAILING, CONCRETE	8A
																297		56												353			SPECIAL	51614010	353	LIN. FT.	POURED POLYURETHANE JOINT SEAL	6
															14,319			13,158														27,477	SPECIAL	51910000	27,477	SQ. FT.	SOUNDING CONCRETE DECK BOTTOM	
		21,287							14,460						6297			11,118														71,709	SPECIAL	51910004	71,709	SQ. FT.	SOUNDING CONCRETE BRIDGE COMPONENT	
		155							170							75															400		519	11101	400	SQ. FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN C.Q.	7
															1697				250												1947	SPECIAL	51912602	1,947	SQ. FT.	LOW PRESSURE EPOXY INJECTING OF DELAMINATED CONCRETE C.Q.	
		2180							495						220	240		140													3275		SPECIAL	52011100	3,275	SQ. FT.	PNEUMATICALLY PLACED MORTAR, (SEE NOTE IN PROPOSAL) C.Q.	
																				17										17			SPECIAL	53000400	17	EACH	END CROSS FRAME REPAIRS	
				227							206							262													695			SPECIAL	53001300	695	LIN. FT.	STRUCTURE MISC.: MEDIAN BARRIER SEAL	
									30																					30			SPECIAL	53001300	30	LIN. FT.	STRUCTURE MISC.: JOINT SEAL (8" X 4" PRECOMPRESSED BITUMEN IMPREGNATED FOAM)	
									30																					30			SPECIAL	53001300	30	LIN. FT.	STRUCTURE MISC.: JOINT SEAL (9" X 5" PRECOMPRESSED BITUMEN IMPREGNATED FOAM)	
																302														302			SPECIAL	53001300	302	LIN. FT.	STRUCTURE MISC.: JOINT SEAL (2" X 2" PRECOMPRESSED BITUMEN IMPREGNATED FOAM)	
														31																31			607	20001	31	LIN. FT.	FENCE, TYPE CL., AS PER PLAN	57
																													1047	1047			607	20001	1,047	LIN. FT.	FENCE, TYPE CL., AS PER PLAN, TYPE IPV	62
															1682															1682			845	10300	1,682	SQ. YD.	LATEX MODIFIED CONCRETE OVERLAY, (1 1/4" THICK)	
															69															69			845	11000	69	CU. YD.	LATEX MODIFIED CONCRETE OVERLAY, VARIABLE THICKNESS	
																													1333	1333			850	12000	1,333	SQ. YD.	SUPERPLASTICIZED DENSE CONCRETE OVERLAY, (1 3/4" THICK)	
																													35	35			850	20000	35	CU. YD.	SUPERPLASTICIZED DENSE CONCRETE OVERLAY, (VARIABLE THICKNESS)	
																														Lump Sum			850	40000	Lump Sum	Lump Sum	TEST SLAB	

C.Q. = INCLUDES CONTINGENCY QUANTITY

MADE	
CHECKED	

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

CUYAHOGA COUNTY / LAKE COUNTY
CUY- 90 - (27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.- 271-1.27

GENERAL SUMMARY

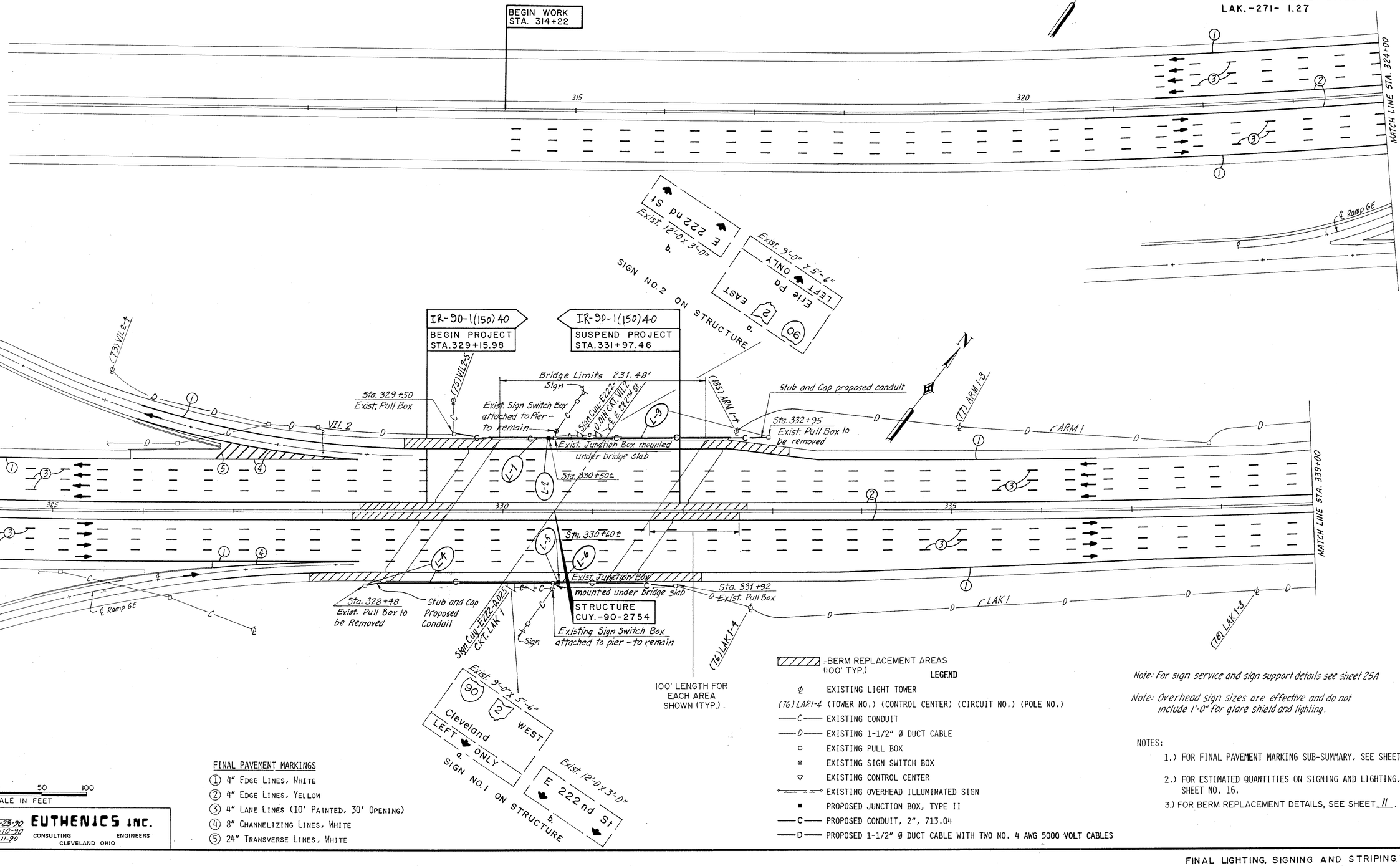
SHEET NUMBER (3 9 10 12 15 16 65 76)	COST PARTICIPATION NORMAL PARTICIPATION	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REF. SHEET
						TRAFFIC CONTROL	
5.08	5.08	642	00102	5.08	MILE.	EDGE LINE, TYPE 2	
8.06	8.06	642	00202	8.06	MILE	LANE LINE, TYPE 2	
0.12	0.12	642	00302	0.12	MILE	CENTER LINE, TYPE 2	
3,019	3,019	642	00402	3,019	LIN. FT.	CHANNELIZING LINE, TYPE 2	
702	702	642	00702	702	LIN. FT.	TRANSVERSE LINE, TYPE 2	
51,000	51,000	642	30000	51,000	LIN. FT.	REMOVAL OF PAVEMENT MARKING	
4	4	630	00000	4	CU.YD.	CONCRETE FOR ANCHOR BASED FOUNDATION	
4	4	630	77900	4	EACH	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.26, DESIGN 9	
4	4	630	78000	4	EACH	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.26, DESIGN 10	
54.0	54.0	630	81201	54.0	SQ. FT.	SIGN ERECTED, EXTRUSHEET, AS PER PLAN	10
6	8	630	87101	8	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION, AS PER PLAN	10&16
5	5	630	89601	5	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN SUPPORT AND REERECTION, TYPE TC-18.24, AS PER PLAN	10&16
1	1	630	89806	1	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN SUPPORT AND DISPOSAL, TYPE TC-18.24	
7	7	630	89808	7	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN SUPPORT AND DISPOSAL, TYPE TC-18.26	
1	1	630	97700	1	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN SUPPORT AND RE-ERECTION, TYPE TC-12.24, APP	10 & 16
1	1	631	84000	1	EACH	SIGN SERVICE	
6	6	631	84001	6	EACH	SIGN SERVICE, AS PER PLAN	10,16 & 25A
13	13	631	84400	13	EACH	SIGN WIRED, OVERPASS STRUCTURE MOUNTED	
13	13	631	94408	13	EACH	REMOVAL OF SIGN WIRING AND DISPOSAL	
7	7	631	94412	7	EACH	REMOVAL OF SIGN SERVICE AND DISPOSAL	
1	1	631	94000	1	EACH	REMOVAL OF LUMINAIRE AND STORAGE	
1	1	625	32000	1	EACH	GROUND ROD	
						MAINTAINING TRAFFIC	
100	100	404	35000	100	CU. YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	
500	500	607	30000	500	LIN. FT.	FENCE, SNOW	
28	28	614	12470	28	EACH	WORK ZONE SPEED LIMIT SIGN	
200	200	SPECIAL	61412500	200	SQ. FT.	REPLACEMENT SIGN	
300	300	SPECIAL	61412600	300	EACH	REPLACEMENT DRUM	
128	128	614	13200	128	EACH	BARRIER REFLECTOR, TYPE A	
436	436	614	13300	436	EACH	BARRIER REFLECTOR, TYPE B	
8.06	8.06	614	20400	8.06	MILE	TEMPORARY LANE LINE, CLASS II	
8.38	8.38	614	22300	8.38	MILE	TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C	
54,974	54,974	614	23600	54,974	LIN. FT.	TEMPORARY CHANNELIZING LINE, CLASS I, 740.05, TYPE C	
2,851	2,851	614	23604	2,851	LIN. FT.	TEMPORARY CHANNELIZING LINE, CLASS II	
190	190	614	24600	190	LIN. FT.	TEMPORARY DOTTED LINE, CLASS I, 740.05, TYPE C	
980	980	614	25600	980	LIN. FT.	TEMPORARY TRANSVERSE LINE, CLASS I, 740.05, TYPE C	
7,670	7,670	622	40020	7,670	LIN. FT.	PORTABLE CONCRETE BARRIER, 32"	
2,840	2,840	622	40050	2,840	LIN. FT.	PORTABLE CONCRETE BARRIER, TYPE BRD, ANCHORED	
312	312	630	81304	312	EACH	SIGN ERECTED, TEMPORARY OVERLAY	
6	6	630	89894	6	EACH	REMOVAL OF TEMPORARY OVERLAY SIGN	
200	200	SPECIAL	61411100	200	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
Lump	Lump Sum	614	11000	LUMP SUM		MAINTAINING TRAFFIC	
Lump	Lump Sum	619	15010	LUMP SUM		FIELD OFFICE, TYPE B	
	Lump Sum	623	10000	LUMP SUM		CONSTRUCTION LAYOUT STAKES	
	Lump Sum	624	10000	LUMP SUM		MOBILIZATION	

SCALE
MADE JEN DATE 4-20-90
TRCD. EEF DATE 6-21-90
CHKD. EPS DATE 6-28-90

EUTHENICS INC.
CONSULTING ENGINEERS
975 Keynote Circle, Cleveland, Ohio 44131

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



50 0 50 100
SCALE IN FEET

SCALE As Shown
MADE EPS DATE 6-28-90
TRCD. EEF DATE 7-10-90
CKD. JEN DATE 7-11-90

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

FINAL PAVEMENT MARKINGS

1. 4" Edge Lines, White
2. 4" Edge Lines, Yellow
3. 4" Lane Lines (10' Painted, 30' Opening)
4. 8" Channelizing Lines, White
5. 24" Transverse Lines, White

-BERM REPLACEMENT AREAS (100' TYP.)

LEGEND

- ℄ EXISTING LIGHT TOWER
- (76) LAR1-4 (TOWER NO.) (CONTROL CENTER) (CIRCUIT NO.) (POLE NO.)
- —C— EXISTING CONDUIT
- —D— EXISTING 1-1/2" Ø DUCT CABLE
- ▫ EXISTING PULL BOX
- ⊠ EXISTING SIGN SWITCH BOX
- ▽ EXISTING CONTROL CENTER
- EXISTING OVERHEAD ILLUMINATED SIGN
- ■ PROPOSED JUNCTION BOX, TYPE II
- —C— PROPOSED CONDUIT, 2", 713.04
- —D— PROPOSED 1-1/2" Ø DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES

Note: For sign service and sign support details see sheet 25A

Note: Overhead sign sizes are effective and do not include 1'-0" for glare shield and lighting.

NOTES:

1.) FOR FINAL PAVEMENT MARKING SUB-SUMMARY, SEE SHEET NO. 15.

2.) FOR ESTIMATED QUANTITIES ON SIGNING AND LIGHTING, SEE SHEET NO. 16.

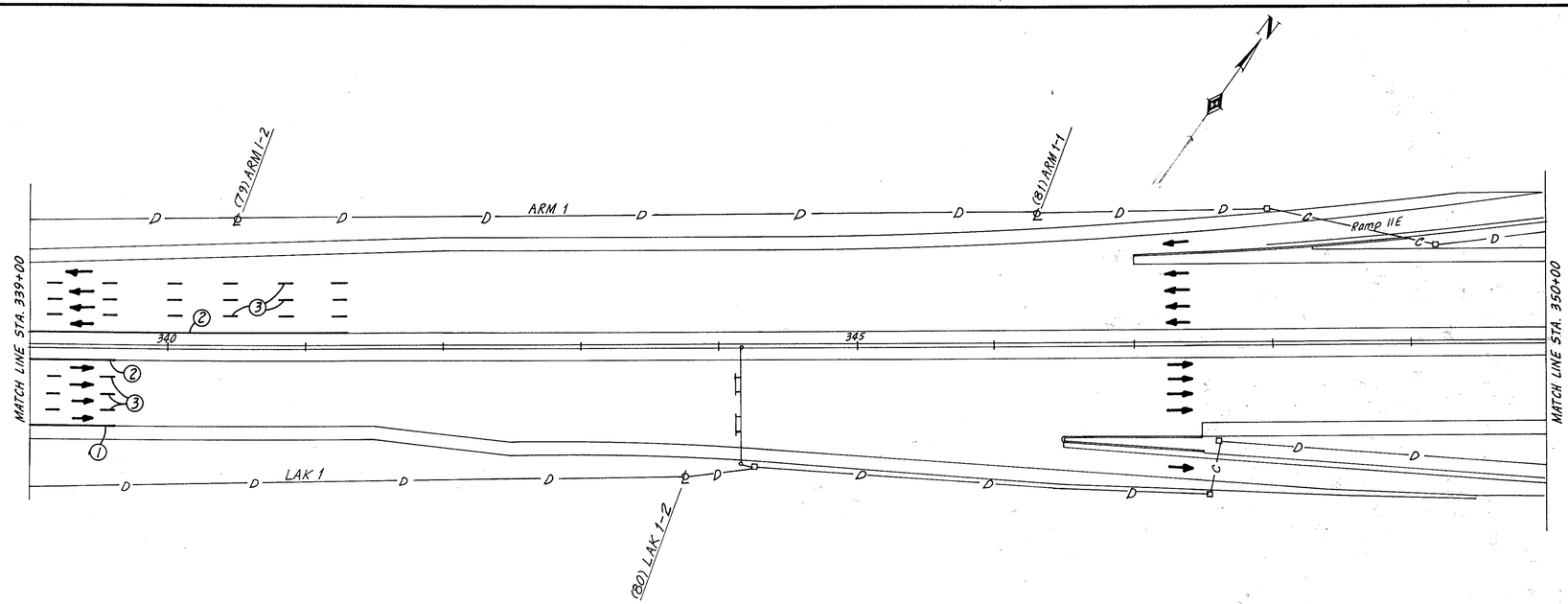
3.) FOR BERM REPLACEMENT DETAILS, SEE SHEET 11.

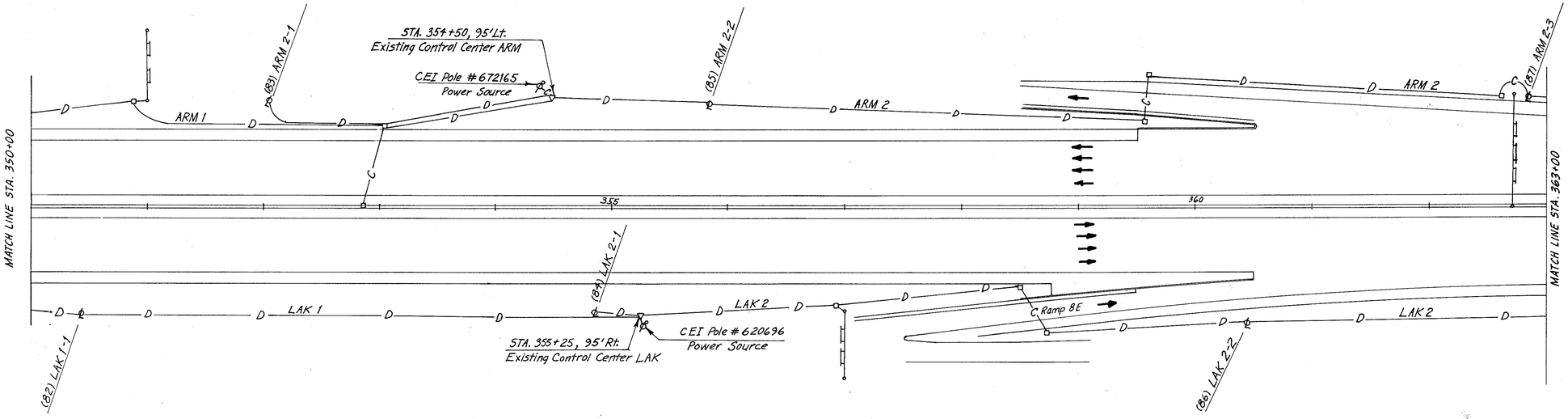
FINAL LIGHTING, SIGNING AND STRIPING PLAN

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

22
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27





LEGEND

- ⊄ EXISTING LIGHT TOWER
- (76) LAR1-4 (TOWER NO.) (CONTROL CENTER) (CIRCUIT NO.) (POLE NO.)
- —C— EXISTING CONDUIT
- —D— EXISTING 1-1/2" Ø DUCT CABLE
- ▫ EXISTING PULL BOX
- ⊠ EXISTING SIGN SWITCH BOX
- ▽ EXISTING CONTROL CENTER
- EXISTING OVERHEAD ILLUMINATED SIGN
- ■ PROPOSED JUNCTION BOX, TYPE II
- —C— PROPOSED CONDUIT, 2", 713.04
- —D— PROPOSED 1-1/2" Ø DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES

FINAL PAVEMENT MARKINGS

1. 4" EDGE LINES, WHITE
2. 4" EDGE LINES, YELLOW
3. 4" LANE LINES (10' PAINTED, 30' OPENING)
4. 8" CHANNELIZING LINES, WHITE
5. 24" TRANSVERSE LINES, WHITE

NOTES:
1.) FOR FINAL PAVEMENT MARKING SUB-SUMMARY SEE SHEET NO. 15.

50 0 50 100
SCALE IN FEET

SCALE As Shown
MADE. EPS DATE 6-28-90
TRCD. EEF DATE 7-10-90
CKD. JEN DATE 7-11-90

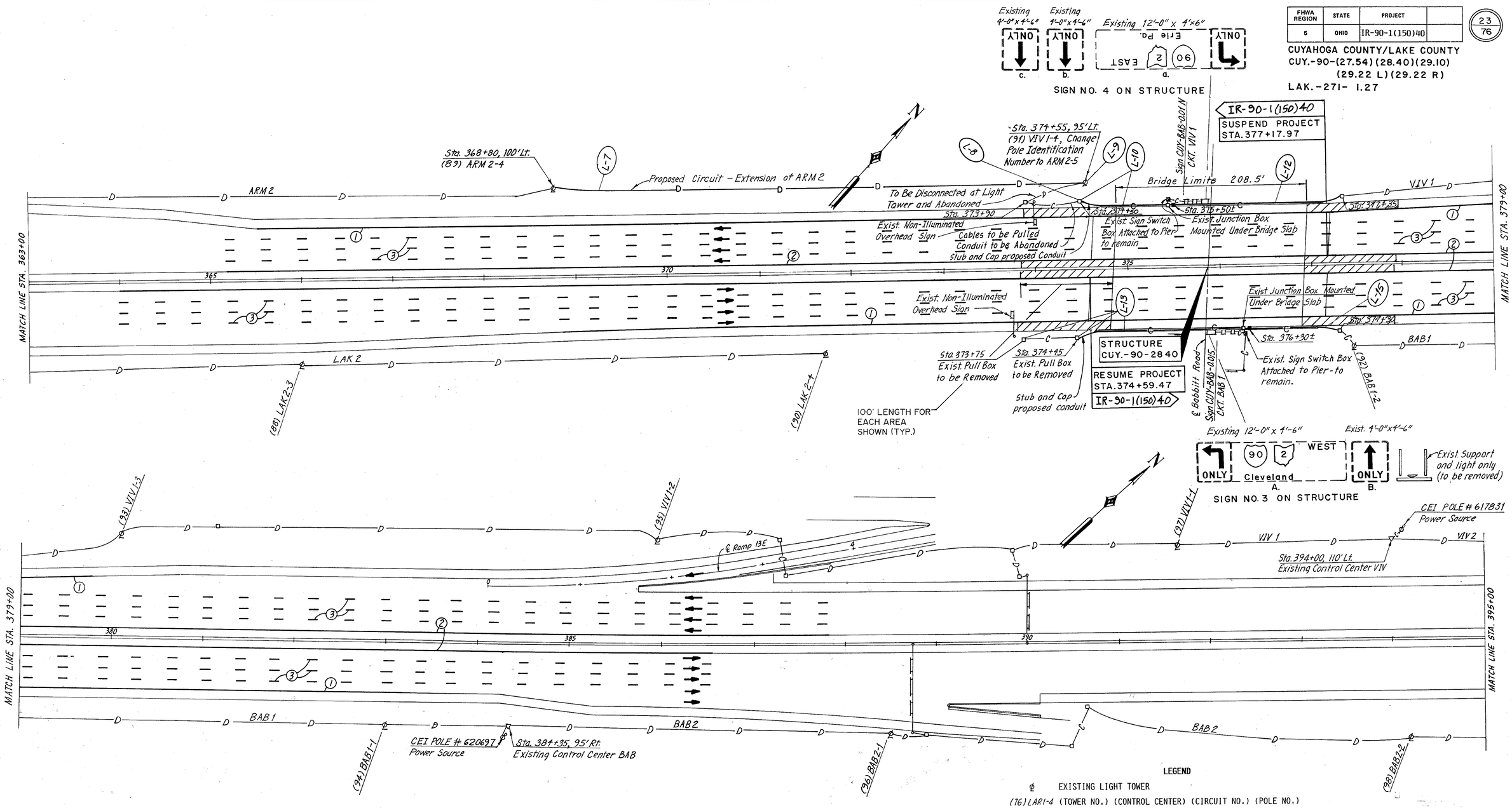
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

FINAL LIGHTING, SIGNING AND STRIPING PLAN

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

23
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



50 0 50 100
SCALE IN FEET

SCALE As Shown
MADE. EPS DATE 6-29-90
TRCD. EEF DATE 7-11-90
CKD. JEM DATE 7-11-90

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

FINAL PAVEMENT MARKINGS

1. 4" Edge Lines, White
2. 4" Edge Lines, Yellow
3. 4" Lane Lines (10' Painted, 30' Opening)
4. 8" Channelizing Lines, White
5. 24" Transverse Lines, White

NOTES:

1.) FOR FINAL PAVEMENT MARKING SUB-SUMMARY, SEE SHEET 15.
2.) FOR ESTIMATED QUANTITIES ON SIGNING AND LIGHTING, SEE SHEET 16.
3.) FOR BERM REPLACEMENT DETAILS, SEE SHEET 11.

Note: For sign service and sign support details see sheet 25A.

Note: Overhead sign sizes are effective and do not include 1'-0" for glare shield and lighting.

LEGEND

- ℄ EXISTING LIGHT TOWER
- (76) LAR1-4 (TOWER NO.) (CONTROL CENTER) (CIRCUIT NO.) (POLE NO.)
- —C— EXISTING CONDUIT
- —D— EXISTING 1-1/2" Ø DUCT CABLE
- ▫ EXISTING PULL BOX
- ⊠ EXISTING SIGN SWITCH BOX
- ▽ EXISTING CONTROL CENTER
- EXISTING OVERHEAD ILLUMINATED SIGN
- ■ PROPOSED JUNCTION BOX, TYPE II
- —C— PROPOSED CONDUIT, 2", 713.04
- —D— PROPOSED 1-1/2" Ø DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES

▨ -BERM REPLACEMENT AREAS (100' TYP.)

FINAL LIGHTING, SIGNING AND STRIPING PLAN

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

MATCH LINE STA. 395+00

D VIV 2 D (99) VIV 2-1 D D D D

Sta. 41+12.20 ℄ I-90 Ahead =
Sta. 403+00.00 ℄ I-90 Back

(100) VIV 2-2

D VIV 2 D D D D D VIV 2 D D

Sta. 45+88, 111' Lt.
(103) VIV 2-3

Proposed Circuit
Extension of VIV 2

L-16

400 42 45 48

MATCH LINE STA. 49+00

D D BAB 2 D D

Ramp 14E

(100) BAB 2-3

D D D D BAB 2

Sta. 43+80, 110 Rt.
(102) BAB 2-4

D D D Proposed Circuit Extension of BAB 2

L-21

Sta. ~~18+50~~, Sign CUY 90-2853
Existing Overhead Illuminated
Sign to remain on Circuit TRY 1
To be disconnected at light
Tower and abandoned

L-22

CONNECT RELOCATED SUPPORT TO EXISTING P.B. UNDER ITEM 631- SIGN SERVICE

SIGN NO. 7 - RELOCATE EXISTING SIGN AND SUPPORT (SEE SIGN SUPPORT ELEVATION) REMOVE EXISTING SIGN SERVICE

EXIT 185A
175
E. 260 th St.
Babbit Rd.
NEXT RIGHT
16' x 11'

Exist. 12'-0" x 4'-0"
SOUTH
175
b.
SIGN NO. 6 ON STRUCTURE

Exist. 8'-0" x 5'-0"
LEFT ONLY
Lakeland Blvd.
a.

IR-90-1(150) 40
RESUME PROJECT
STA. 49+92.48

IR-90-1(150) 40
SUSPEND PROJECT
STA. 53+08.78

IR-90-1(150) 40
END PROJECT
STA. 57+82.87

IR-90-1(150) 40
RESUME PROJECT
STA. 56+17.13

℄ N. LAKELAND BLVD.

100' LENGTH FOR EACH AREA SHOWN (TYP.)

Sta. 61+00, 85' Lt.
Existing Control Center
BEN

CEI Pole # 627851
Power Source

(114) BEN 1-1

Sta. 50+70, 118' Lt., (105) BEN 1-3
Change pole identification number to VIV 2-4

L-17

Bridge Limits 266.3'

℄ E. 260th St.

Sign CUY-SR175-0.06N
CKT. BEN 1
Sta. 52+28.57 E.B. RIW ℄ I-90 =
P.C. Sta. 51+67.56 W.B. Lakeland Frwy. =
P.T. Sta. 40+98.30 ℄ Turning Road No. 2

Existing Sign Switch Box attached to pier, (No junction box-this bridge)

To be disconnected at light Tower and abandoned

Sta. 50+28

Stub and Cap Proposed Conduit

Sta. 51+60±

L-18 L-19 L-20

(EX. P.B.)

Sta. 51+97

(107) BEN 1-2

STA. 55+40

STA. 55+82± (ADJACENT TO WINGWALL)

Sta. 54+00
BEN 1

L-28

Sta. 56+96

BEN 1

Bridge Limits 115.74'

BEN 2

Sta. 61+93.68 ℄ RIW I-90 =
Sta. 61+87.09 ℄ E.B. Lakeland =
Sta. 0+00 ℄ Turning Rd. No. 1

MATCH LINE STA. 49+00

L-23 L-24 L-25 L-26

Sta. 52+95

TRY 1

Sta. 56+19

Sta. 58+98

MATCH LINE STA. 61+93 ℄ E.B. LAKELAND FREEWAY

Sta. 49+00

Sta. 49+30, 100' Rt.
(104) TRY 1-4
Change pole identification number to BAB 2-5

Sign CUY-SR175-0.00N
CKT. TRY 1

STRUCTURE
CUY.-90-2910

Existing Sign Switch Box attached to pier, (No junction box-this bridge)

STRUCTURE
CUY.-90-2922 L & R

L-29 L-27

Existing Junction Box for underpass lighting attached to side of concrete parapet

Existing light pole on Lakeland Blvd.

Existing aerial lighting cable to service underpass lighting of N. Lakeland Blvd.

(108) TRY 1-3

(108) TRY 1-2

Note: Existing sign 5b is missing. See General Note "Item 630, Sign Erected, Extrusheel, As Per Plan." The five Z bars attached to the parapet are to be removed with the parapet and no additional payment is to be made.

Exist. 8'-0" x 6'-0"
90
2
Cleveland
Erie Pa.
LEFT ONLY
a.

Exist. 12'-0" x 4'-0"
175
NORTH
b.
SIGN NO. 5 ON STRUCTURE

Note: Overhead sign sizes are effective and do not include 1'-0" For glare shield and lighting.

Note: For sign service and sign support details see sheet 25A & 25B

-BERM REPLACEMENT AREAS (100' TYP.)

50 0 50 100
SCALE IN FEET

SCALE As Shown
MADE. EPS DATE 6-29-90
TRCD. EEF DATE 7-11-90
CKD. JEN DATE 7-12-90

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

NOTES:

1.) FOR FINAL PAVEMENT MARKING SUB-SUMMARY, SEE SHEET 15.
2.) FOR ESTIMATED QUANTITIES ON SIGNING AND LIGHTING, SEE SHEET 16.
3.) FOR BERM REPLACEMENT DETAILS, SEE SHEET 11.
4.) EXISTING TOWER LIGHTS, 106(TRY 1-3) AND 107(BEN 1-2), WILL REQUIRE BEING OUT OF SERVICE DURING PARAPET WORK ON BR. NO. CUY-90-2922 L.& R. ONLY ONE TOWER AT A TIME SHALL BE OUT OF SERVICE.
5.) THE PROPOSED EXTENSION OF CIRCUITS BAB2 AND VIV2 TO EXISTING TOWER LIGHTS 104(EXISTING TRY 1-4) AND 105(EXISTING BEN 1-3) SHALL BE COMPLETED BEFORE DEMOLITION OF THE EXISTING PARAPETS ON BR. NO. CUY-90-2910.

LEGEND

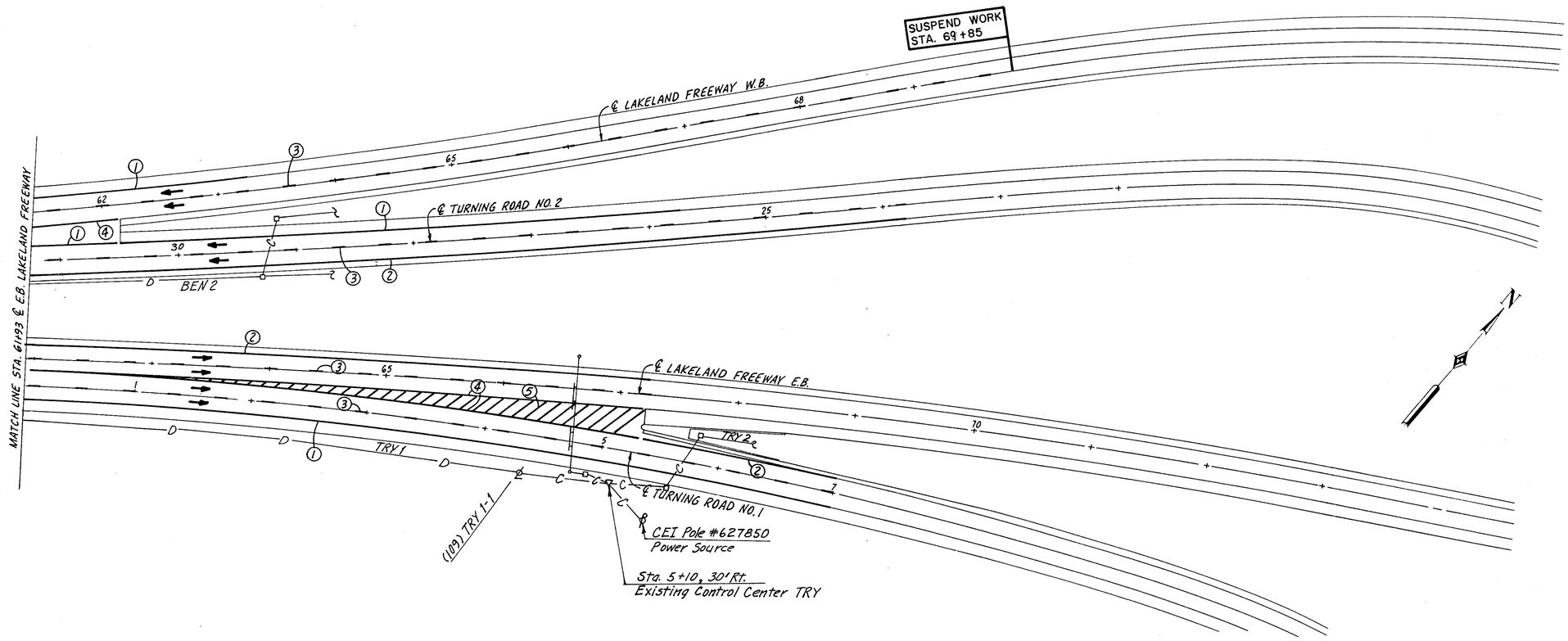
- ℄ EXISTING LIGHT TOWER
- (76) LAR1-4 (TOWER NO.) (CONTROL CENTER) (CIRCUIT NO.) (POLE NO.)
- —C— EXISTING CONDUIT
- —D— EXISTING 1-1/2" Ø DUCT CABLE
- ▫ EXISTING PULL BOX
- ⊠ EXISTING SIGN SWITCH BOX
- ▽ EXISTING CONTROL CENTER
- EXISTING OVERHEAD ILLUMINATED SIGN
- ■ PROPOSED JUNCTION BOX, TYPE II
- —C— PROPOSED CONDUIT, 2", 713.04
- —D— PROPOSED 1-1/2" Ø DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES

FINAL LIGHTING, SIGNING AND STRIPING PLAN

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

25
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



FINAL PAVEMENT MARKINGS

1. 4" EDGE LINES, WHITE
2. 4" EDGE LINES, YELLOW
3. 4" LANE LINES (10' PAINTED, 30' OPENING)
4. 8" CHANNELIZING LINES, WHITE
5. 24" TRANSVERSE LINES, WHITE

50 0 50 100
SCALE IN FEET

SCALE As Shown
MADE. EPS DATE 6-29-90
TRCD. EEF DATE 7-11-90
CKD. JFN DATE 7-12-90

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

LEGEND

- ℄ EXISTING LIGHT TOWER
- (76)LAR1-4 (TOWER NO.) (CONTROL CENTER) (CIRCUIT NO.) (POLE NO.)
- ——C—— EXISTING CONDUIT
- ——D—— EXISTING 1-1/2" Ø DUCT CABLE
- ▫ EXISTING PULL BOX
- ⊠ EXISTING SIGN SWITCH BOX
- ▽ EXISTING CONTROL CENTER
- EXISTING OVERHEAD ILLUMINATED SIGN
- ■ PROPOSED JUNCTION BOX, TYPE II
- ——C—— PROPOSED CONDUIT, 2", 713.04
- ——D—— PROPOSED 1-1/2" Ø DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES

NOTES:

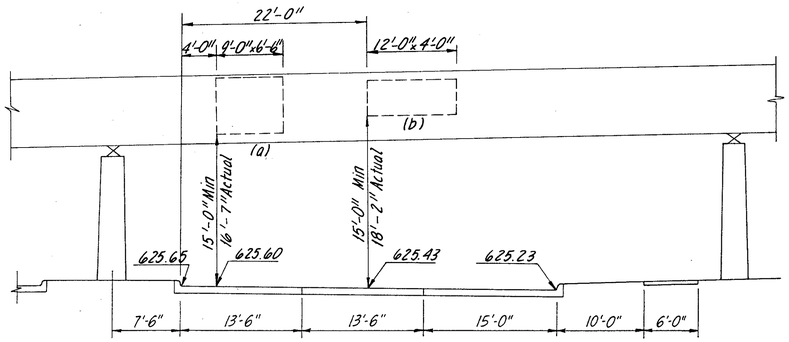
1.) FOR FINAL PAVEMENT MARKING SUB-SUMMARY, SEE SHEET NO.15.

FINAL LIGHTING, SIGNING AND STRIPING PLAN

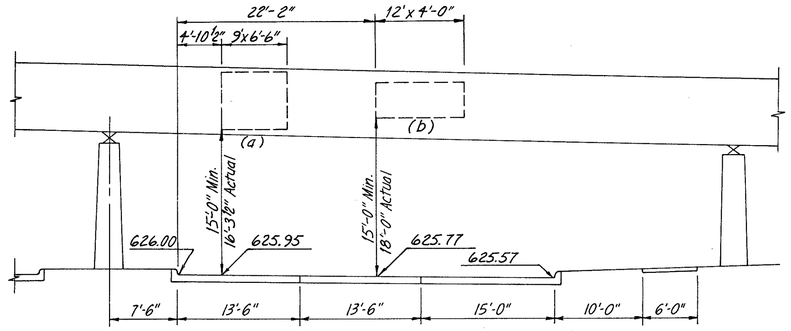
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

25A
76

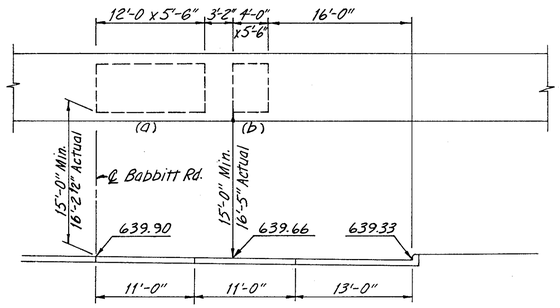
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



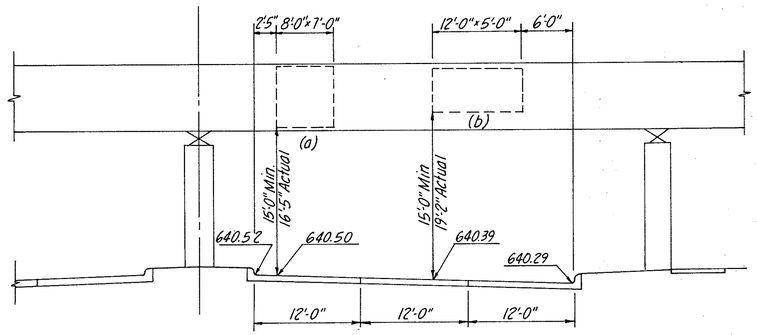
SIGN. NO.1
N.B. E.222ND ST.
MOUNTED ON STRUCTURE



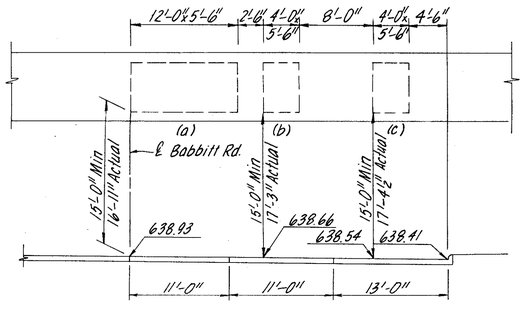
SIGN NO. 2
S.B. E.222nd ST.
MOUNTED ON STRUCTURE



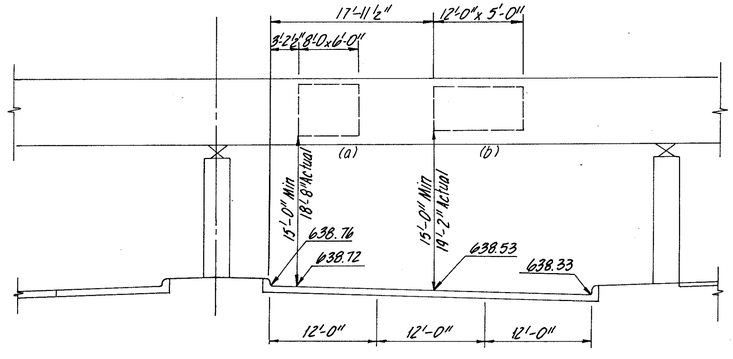
SIGN NO. 3
N.B. BABBITT RD.
MOUNTED ON STRUCTURE



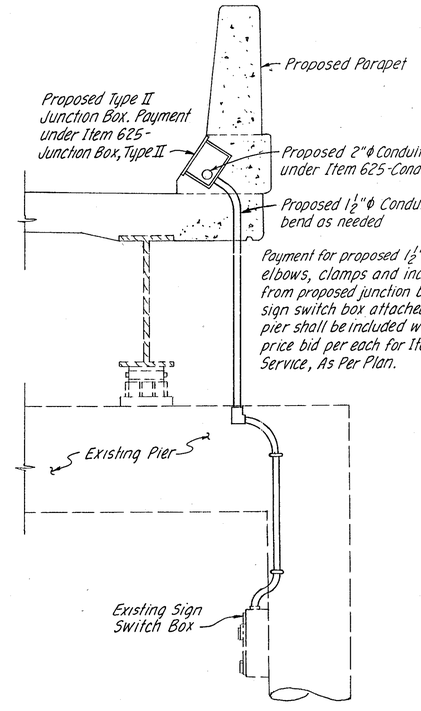
SIGN NO. 5
N.B. S.R. 175
MOUNTED ON STRUCTURE



SIGN NO.4
S.B. BABBITT RD.
MOUNTED ON STRUCTURE



SIGN NO.6
S.B. SR. 175
MOUNTED ON STRUCTURE



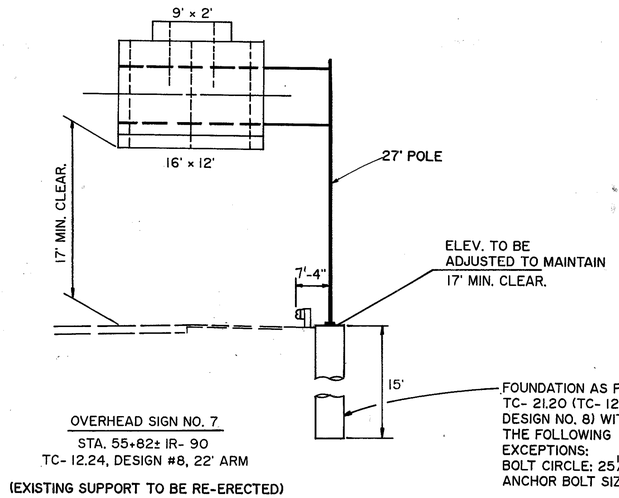
SIGN SERVICE AND ELECTRICAL QUANTITIES
No Scale

Note: Overhead sign sizes are overall and include 1'-0" for glare shield and lighting.

Note: Proposed actual clearance heights shown on details may be adjusted in field to conform with proposed parapet as directed by Engineer.

SCALE
MADE JEW DATE 6-30-90
TRCD. SMM DATE 7-2-90
CHKD. JEW DATE 7-3-90

EUTHENICS INC.
CONSULTING ENGINEERS
975 Keynote Circle, Cleveland, Ohio 44131



OVERHEAD SIGN NO. 7

STA. 55+82± IR- 90
TC- 12.24, DESIGN #8, 22' ARM

(EXISTING SUPPORT TO BE RE-ERECTED)

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

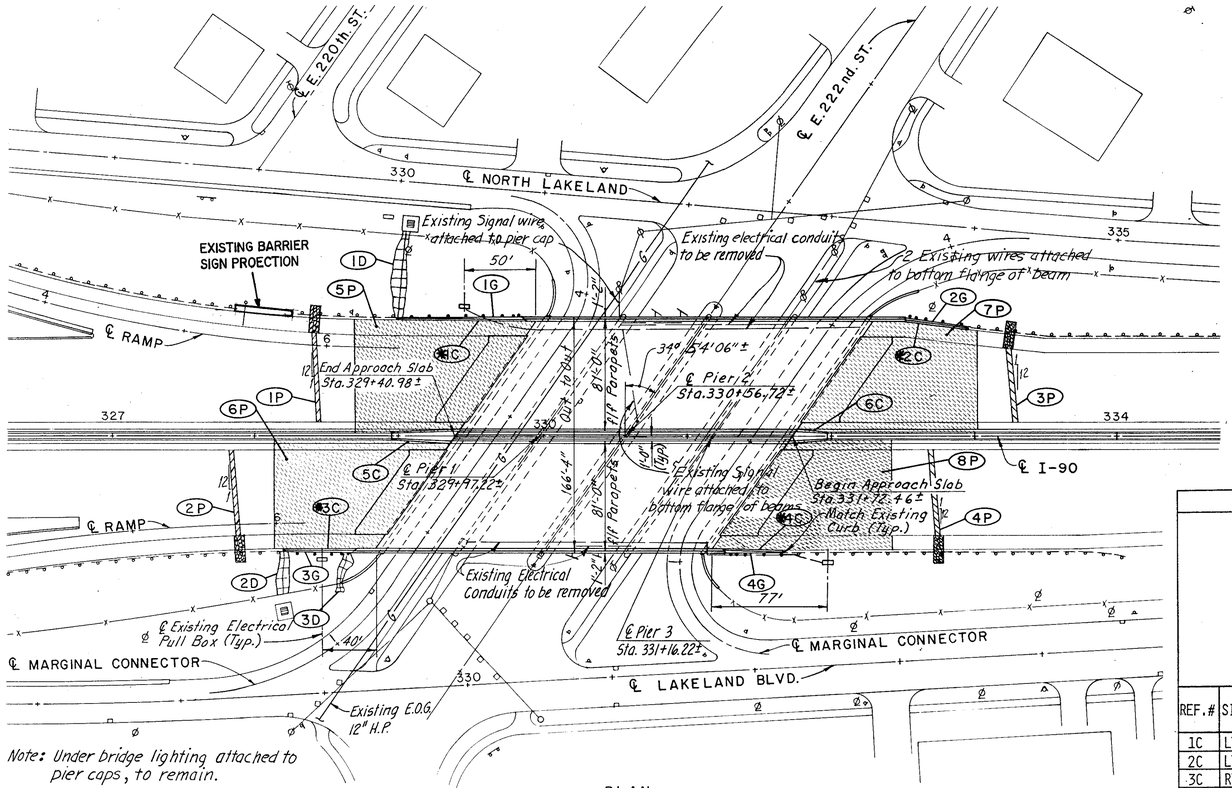
26
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

SITE BENCH MARK
T.B.M. DRILL HOLE IN TOP OF NORTHWEST WINGWALL AT EXPANSION JOINT STA. 329+99.71 ℄ I-90, 82.0' LEFT, ELEV. 647.20

MODIFIED STRUCTURE
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK, PIERS AND ABUTMENTS
SPANS: 53'-6"±, 59'-6"±, 59'-6"±, 53'-6"±
ROADWAY: 81'-0" FACE TO FACE OF PARAPETS EASTBOUND & WESTBOUND
SKEW: 34°-54'-06"± L.F.
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLAB: AS-1-54 (25'-0" LONG)
ALIGNMENT: TANGENT

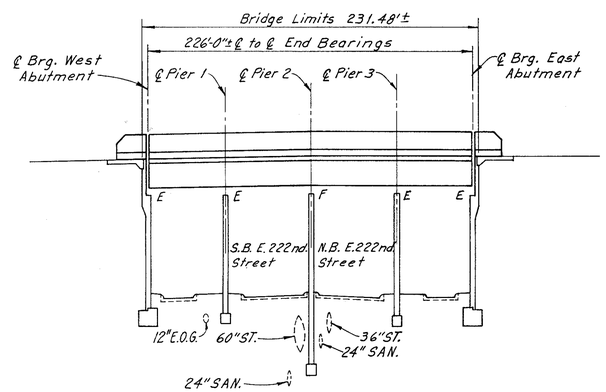
EXISTING STRUCTURE
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK, PIERS AND ABUTMENTS
SPANS: 53'-6"±, 59'-6"±, 59'-6"±, 53'-6"±
ROADWAY: 164'-0"± FACE TO FACE OF PARAPETS
LOADING: CF-2000-57 (ADEQUATE FOR AASHO ALTERNATE LOADING)
SKEW: 34°-54'-06"± L.F.
WEARING SURFACE: ASPHALT
APPROACH SLAB: AS-1-54 (25'-0" LONG)
ALIGNMENT: TANGENT



Note: Under bridge lighting attached to pier caps, to remain.

Signal wires are property of the City of Euclid.

PLAN
Scale: 1" = 50'



ELEVATION
Scale: 1" = 50' Horiz.
1" = 10' Vert.

*- TYPE 6 CURB SHALL HAVE A 3" CURB REVEAL

ESTIMATED QUANTITIES																			
ITEM NO.			202		202	254	203	404	407	605	606	606	609	622	659	659	660	SPECIAL	606
REF.#	SIDE	LOCATION	CURB REMOVED		GUARDRAIL REMOVED	PAVEMENT PLANING, BITUMINOUS	EMBANKMENT	ASPHALT CONCRETE, AC-20	TACK COAT	AGGREGATE DRAINS	BRIDGE TERMINAL ASSEMBLY, TYPE 1	GUARDRAIL, TYPE 5	CURB, TYPE 6 * AS PER PLAN	CONCRETE BARRIER, TYPE A-50, AS PER PLAN	SEEDING AND MULCHING	WATER	REINFORCED SODDING	PRESSURE RELIEF JOINTS, TYPE C	BRIDGE TERMINAL ASSEMBLY, TYPE 2
			LIN.FT.		LIN.FT.	SQ. YD.	CU.YD.	CU. YD.	GAL.	LIN.FT.	EACH	LIN.FT.	LIN.FT.	LIN.FT.	SQ.YD.	M. GAL.	SQ.YD.	LIN.FT.	
1C	LT.	STA. 329+05 TO STA. 329+90											85						
2C	LT.	STA. 332+50 TO STA. 332+94	44										44						
3C	RT.	STA. 328+20 TO STA. 328+70											50						
4C	RT.	STA. 331+27 TO STA. 331+67	40										40						
5C	C	STA. 328+95 TO STA. 329+40.8												45.8					
6C	C	STA. 331+72.4 TO STA. 332+00												27.6					
1G	LT.	STA. 329+65 TO STA. 329+90			25							25							1
2G	LT.	STA. 332+50 TO STA. 332+75			25						1	25							
3G	RT.	STA. 328+45 TO STA. 328+70			25						1	25							
4G	RT.	STA. 331+27 TO STA. 331+52			25							25							1
1P	LT.	STA. 328+44 ±10'								18								62	
2P	RT.	STA. 327+85 ±10'								18								62	
3P	LT.	STA. 333+23 ±10'								18								52	
4P	RT.	STA. 332+72 ±10'								18								61	
1D	LT.	STA. 329+00															56		
2D	RT.	STA. 328+20															37		
3D	RT.	STA. 328+65					13								20	1			
5P	LT.	STA. 328+70 TO STA. 329+70				468		38	47										
6P	RT.	STA. 328+12 TO STA. 329+12				468		38	47										
7P	LT.	STA. 332+01 TO STA. 333+01				439		37	44										
8P	RT.	STA. 331+44 TO STA. 332+44				468		38	47										
TOTAL TO SUB-SUMMARIES, SHEETS 13&14			84		100	1843	13	151	185	72	2	100	219	73	20	1	93	237	2

NOTES:

FOR LIMITS AND DETAILS OF REINFORCED SODDING AT THE ENDS OF THE TYPE 6 CURB SEE OHIO STANDARD CONSTRUCTION DRAWING MC-7.

FOR DETAILS OF PROPOSED LIGHTING, SEE SHEET 21.

FOR WEARING COURSE REMOVAL AND REPLACEMENT ON THE APPROACH ROADWAYS SEE DETAILS ON SHEET 63 & 63A.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

GENERAL PLAN AND ELEVATION

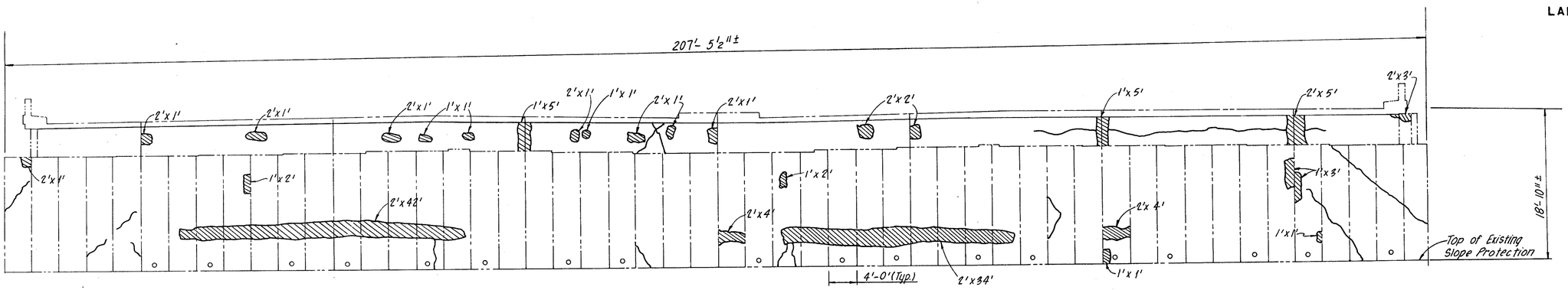
I-90 OVER EAST 222rd. STREET
BR. NO.-CUY.-90-2754
CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 11-87	Date 11-87	Date 11-87	Date 4-91	Sheet 1/9

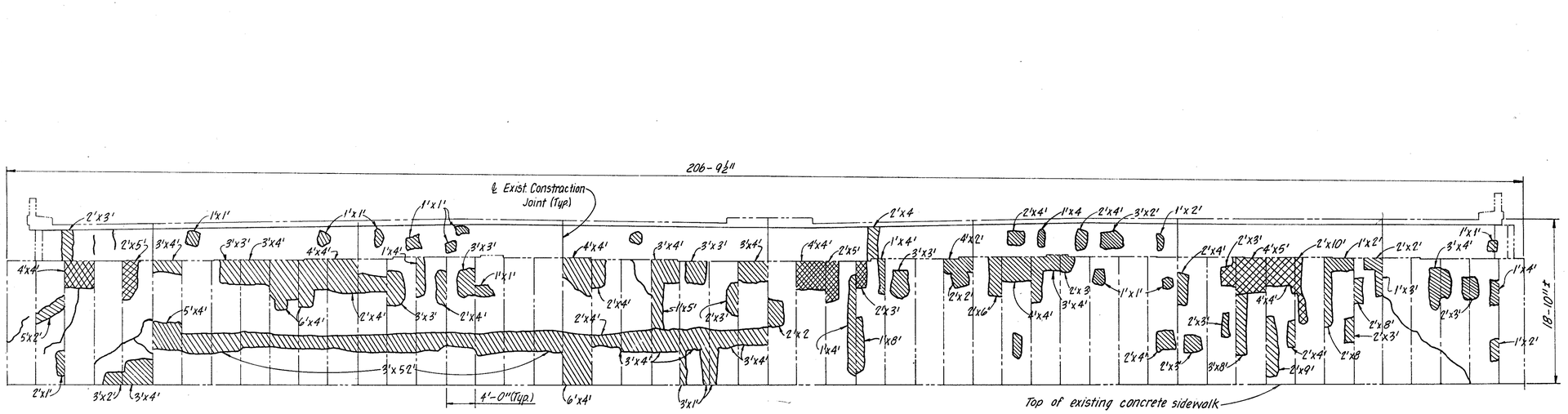
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

26 A
76

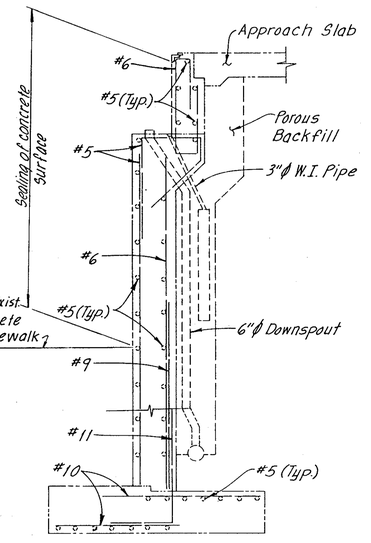
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



EAST ABUTMENT



WEST ABUTMENT



EXISTING TYPICAL SECTION

NOTE:
FOR ESTIMATED QUANTITY TABLE SEE SHEET 27.

DENOTES ITEM SPECIAL, PNEUMATICALLY PLACED MORTAR.

DENOTES ITEM 519, PATCHING CONCRETE STRUCTURES, AS PER PLAN.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

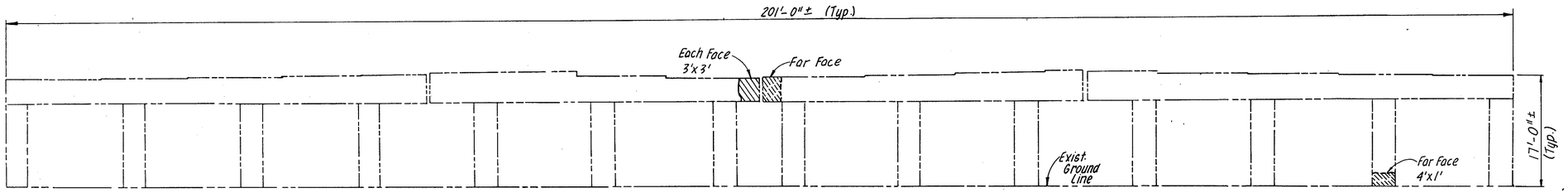
ABUTMENT REPAIR DETAILS

I-90 OVER EAST 222nd. STREET
BR. NO.-CUY.-90-2754
CUYAHOGA COUNTY OHIO

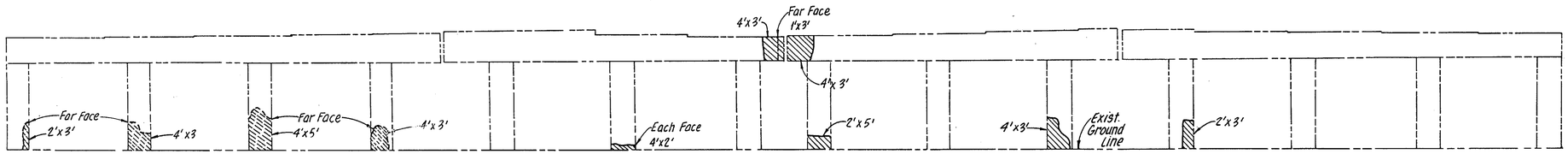
Made LJD	Trcd. REC	Ckd. KRD	Rev. RAB	Revised
Date 11-89	Date 8-90	Date 8-90	Date 4-91	Sheet 1A/9

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

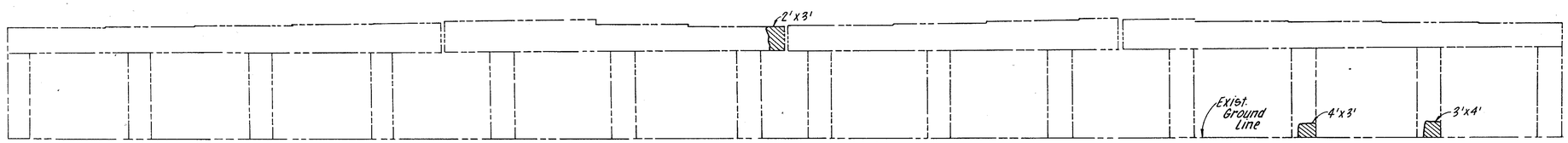
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



PIER 1
(Looking East)



PIER 2
(Looking East)



PIER 3
(Looking East)

NOTE:
FOR ESTIMATED QUANTITY TABLE SEE SHEET 27.

DENOTES ITEM SPECIAL, PNEUMATICALLY PLACED MORTAR.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

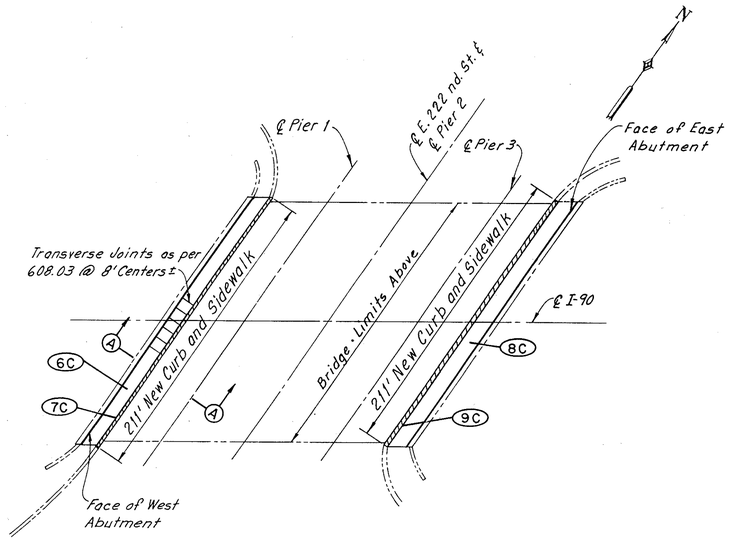
PIER REPAIR DETAIL

I-90 OVER EAST 222nd. STREET
BR. NO.-CUY.-90-2754
CUYAHOGA COUNTY OHIO

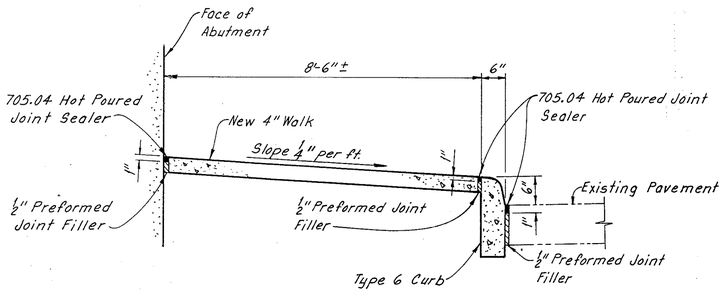
Made LJD	Trcd. REC	Ckd. KRD	Rev. RAB	Revised
Date 11-89	Date 8-90	Date 8-90	Date 4-91	Sheet 18/9

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



PLAN VIEW
UNDER BRIDGE



SECTION A-A

NOTE: 705.04 HOT POURED JOINT SEALER TO BE INCLUDED WITH ITEM 608, 4" CONCRETE WALK FOR PAYMENT.

ITEM NO.			202	202				519	SPECIAL		608	609		SPECIAL			SPECIAL		
ESTIMATED QUANTITIES			CURB REMOVED	WALK REMOVED				PATCHING CONCRETE STRUCTURES, AS PER PLAN C.Q.	PNEUMATICALLY PLACED MORTAR C.Q.		4" CONCRETE WALK	CURB, TYPE 6		SOUNDING CONCRETE BRIDGE COMPONENTS			SEALING OF CONCRETE SURFACES (EPOXY)		
REF.#	SIDE	LOCATION	LIN.FT.	SQ.FT.				SQ.FT.	SQ.FT.		SQ.FT.	LIN.FT.		SQ.FT.			SQ.YD.		
6C	LT.	WEST SIDEWALK		1794							1794								
7C	LT.	WEST CURB	211									211							
8C	RT.	EAST SIDEWALK		1794							1794								
9C	RT.	EAST CURB	211									211							
	LT.	WEST ABUTMENT						150	1100					4,992			549		
	RT.	EAST ABUTMENT						5	850					5,078			559		
	LT.	PIER 1							50					3,739			415		
	℄	PIER 2							140					3,739			415		
	RT.	PIER 3							90					3,739			415		
TOTAL TO SUB-SUMMARIES, SHEETS 13 &14			422	3,588				155	2,180		3,588	422		21,287			2,353		

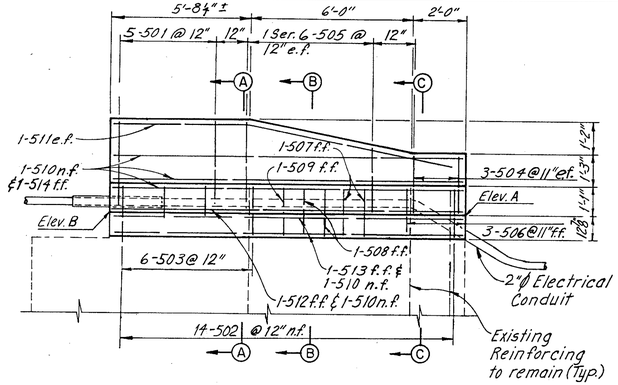
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

SUBSTRUCTURE DETAILS

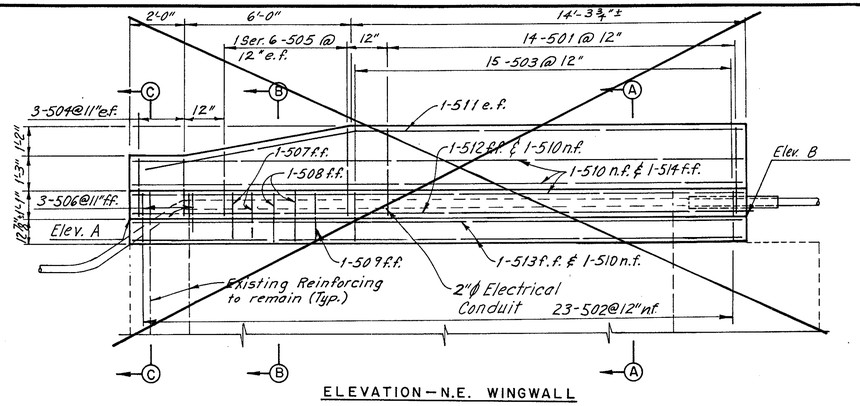
I-90 OVER EAST 222nd. STREET
BR. NO.-CUY.-90-2754

CUYAHOGA COUNTY OHIO

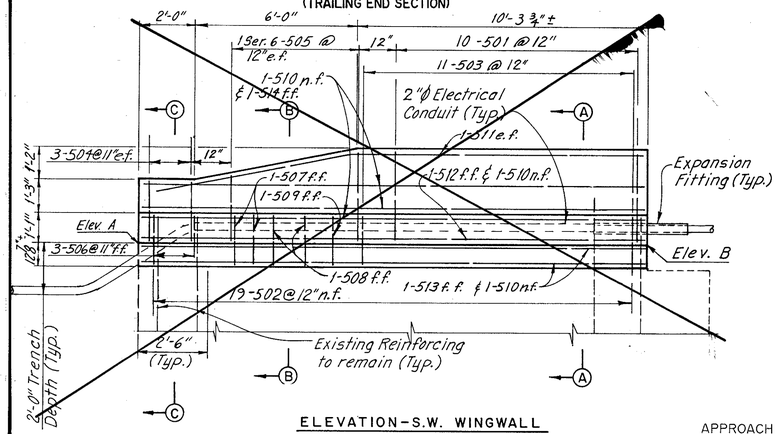
Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 11-87	Date 11-87	Date 11-87	Date 4-91	Sheet 2/9



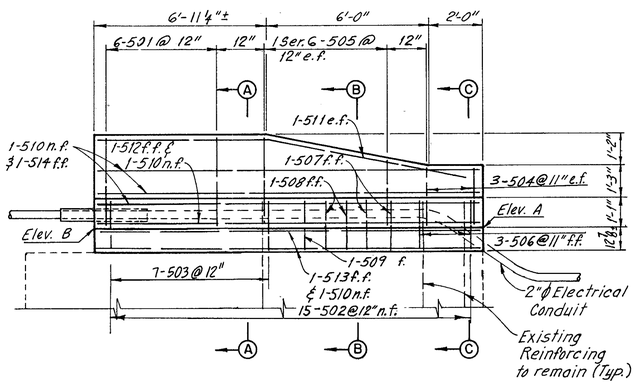
ELEVATION – S.E. WINGWALL
(TRAILING END SECTION)



ELEVATION – N.E. WINGWALL

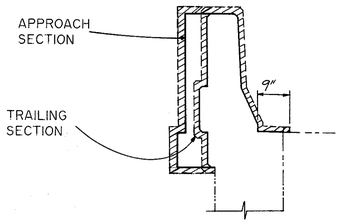


ELEVATION – S.W. WINGWALL



ELEVATION – N.W. WINGWALL
(TRAILING END SECTION)

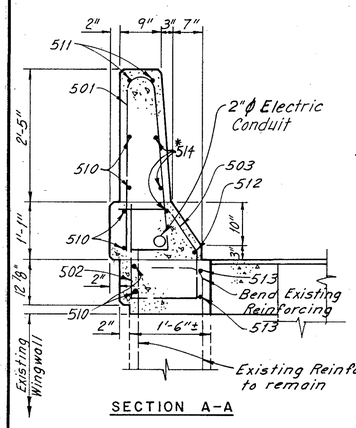
NOTE:
FOR 2" DIAMETER ELECTRICAL CONDUIT EXPANSION FITTING DETAILS, SEE OHIO STANDARD CONSTRUCTION DRAWING HL-30,31.



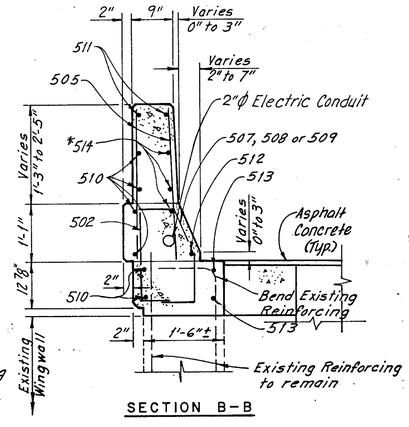
LIMITS OF SEALING CONCRETE SURFACES

LOCATION	ELEVATION * A	ELEVATION * B
North West Wingwall	644.88	645.15
* South West Wingwall	644.62	644.66
* North East Wingwall	645.10	645.21
South East Wingwall	645.57	645.59

* ELEVATIONS FOR APPROACH SECTIONS ARE REFERENCED THE SAME AS TRAILING SECTIONS

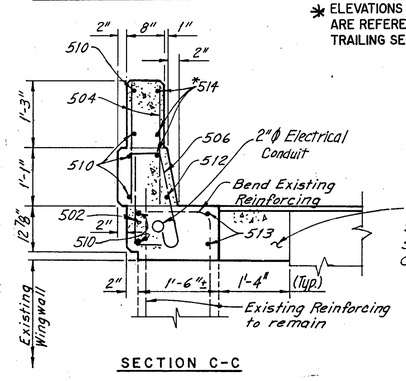


SECTION A-A



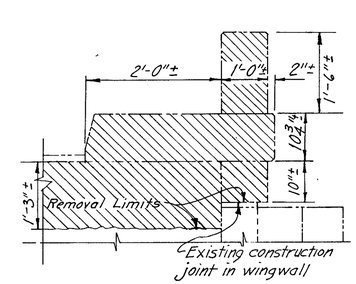
SECTION B-B

* bend in field as required



SECTION C-C

Concrete fill in area of existing safety curb removed. Payment shall be included in Item 511 Class C Concrete, Abutments, (Typ.).

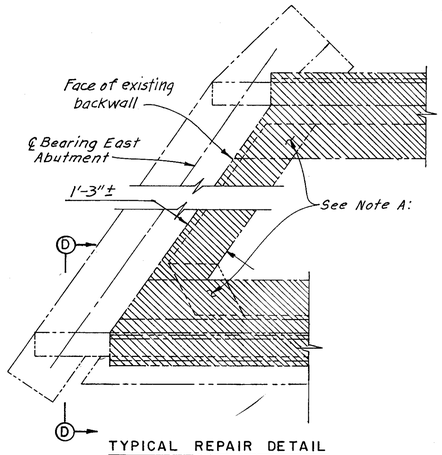


VIEW D-D

NOTES:
FOR ATTACHMENT OF BRIDGE TERMINAL ASSEMBLIES, SEE STD. CONST. DWG. GR-3.1 OR GR-3.2

ALL REINFORCING BAR MARKS SHALL BE PREFIXED AS FOLLOWS:
NWW = NORTHWEST WINGWALL SWW = SOUTHWEST WINGWALL
NEW = NORTHEAST WINGWALL SEW = SOUTHEAST WINGWALL
FOR REINFORCEMENT SCHEDULE SEE SHEET 9/9 .
THE FOLLOWING ABBREVIATIONS ARE USED:
E.F. = EACH FACE F.F. = FAR FACE N.F. = NEAR FACE
(TYP.) = TYPICAL ELEV. = ELEVATION

WINGWALL APPROACH SECTIONS (AS NOTED ABOVE) SHALL BE INSTALLED AS SHOWN ON SHT 63A . WORK FOR THESE WINGWALLS ONLY SHALL BE PAID FOR UNDER ITEM 517- RAILING, CONCRETE (L.F.). SEE THE GENERAL NOTES FOR FURTHER DETAILS.



TYPICAL REPAIR DETAIL AT ABUTMENT BACKWALL
(East Abutment shown, West Abutment similar)

NOTE A:
REMOVE EXISTING CONCRETE SAFETY CURB TO EXISTING CONSTRUCTION JOINT IN WINGWALL. PAYMENT FOR REMOVAL SHALL BE INCLUDED UNDER ITEM 202, PORTION OF STRUCTURE REMOVED, AS PER PLAN. NEW CONCRETE SHALL BE PAID FOR UNDER ITEM 511 CLASS C CONCRETE, ABUTMENTS.

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

28
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

ITEM NO.			202		517	511		SPECIAL		
ESTIMATED QUANTITIES			PORTIONS OF STRUCTURES REMOVED, AS PER PLAN.		RAILING, CONCRETE	CLASS C CONCRETE, ABUTMENTS.		SEALING OF CONCRETE SURFACES (EPOXY)		
REF.#	SIDE	LOCATION	LUMP SUM		L.F.	CU.YD.		SQ.YD.		
		WINGWALL (ALL)	Lump Sum			16		73		
		WINGWALL (NE)			22'-3"					
		WINGWALL (SW)			18'-3"					
TOTAL TO SUB-SUMMARIES SHEET 13			Lump Sum		40.5'	16		73		

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

WINGWALL DETAILS

I-90 OVER EAST 222nd. STREET
BR. NO.-CUY.-90-2754
CUYAHOGA COUNTY OHIO

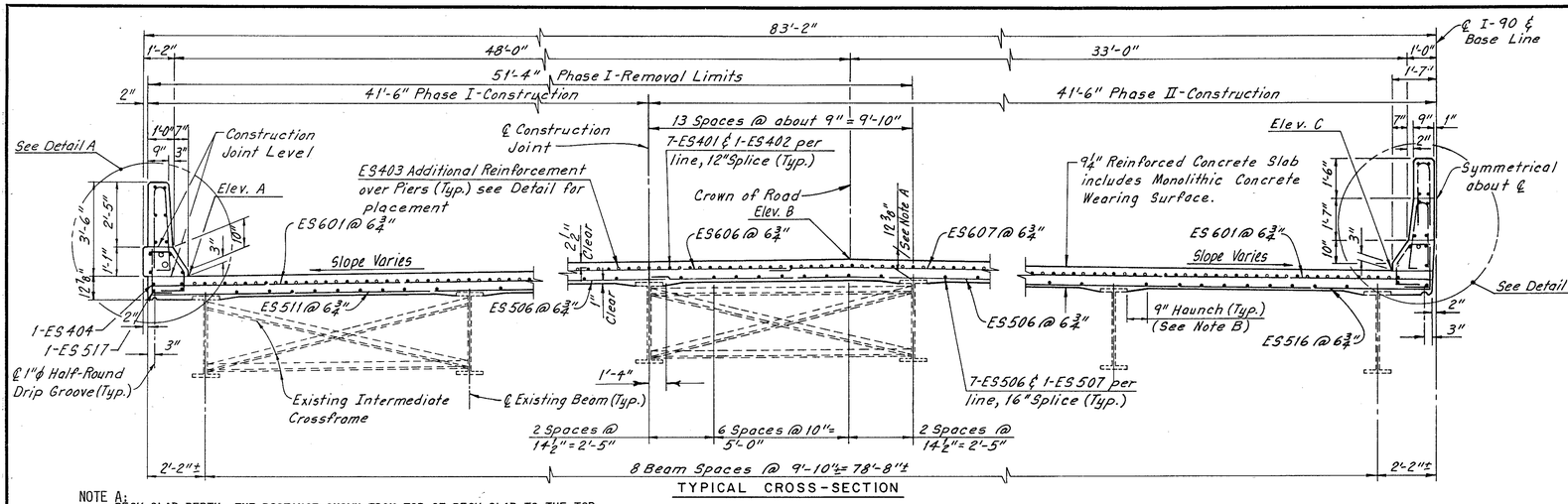
Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 11-87	Date 11-87	Date 11-87	Date 4-91	Sheet 3/9

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

29
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

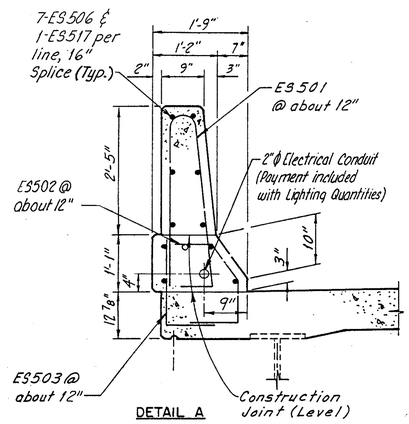
REQUIRED LAP LENGTHS
NO. 5 BARS 1'-4" MINIMUM
NO. 6 BARS 1'-5" MINIMUM



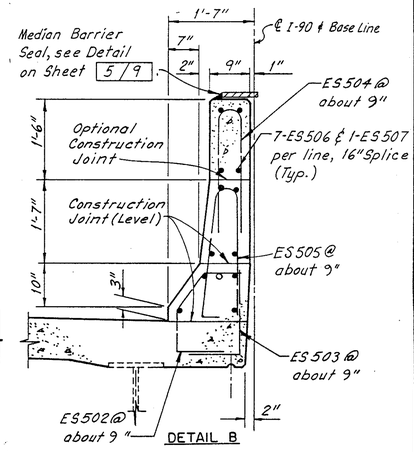
TYPICAL CROSS-SECTION

NOTE A:
DECK SLAB DEPTH: THE DISTANCE SHOWN FROM TOP OF DECK SLAB TO THE TOP OF THE STEEL BEAM IS THE AVERAGE DIMENSION. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED ON THIS DIMENSION EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARELLEL TO THE FINISHED GRADE.

NOTE B:
A HAUNCH WIDTH OF 9" SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6" AND 12" (PROVIDED THAT THE SLOPE SHALL BE NOT MORE THAN 1:4 FOR A HAUNCH LESS THAN 9" WIDTH).



DETAIL A

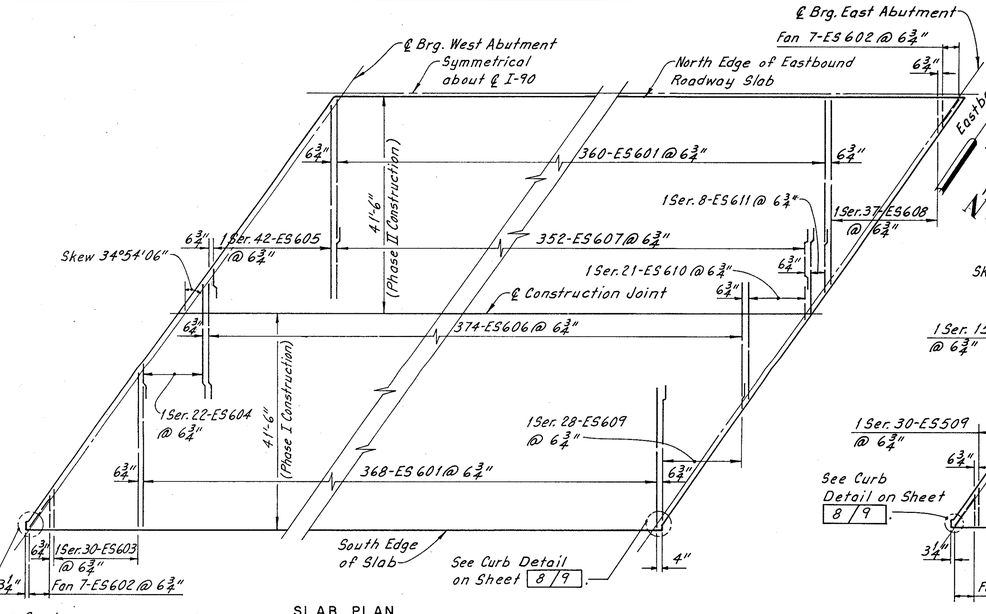


DETAIL B

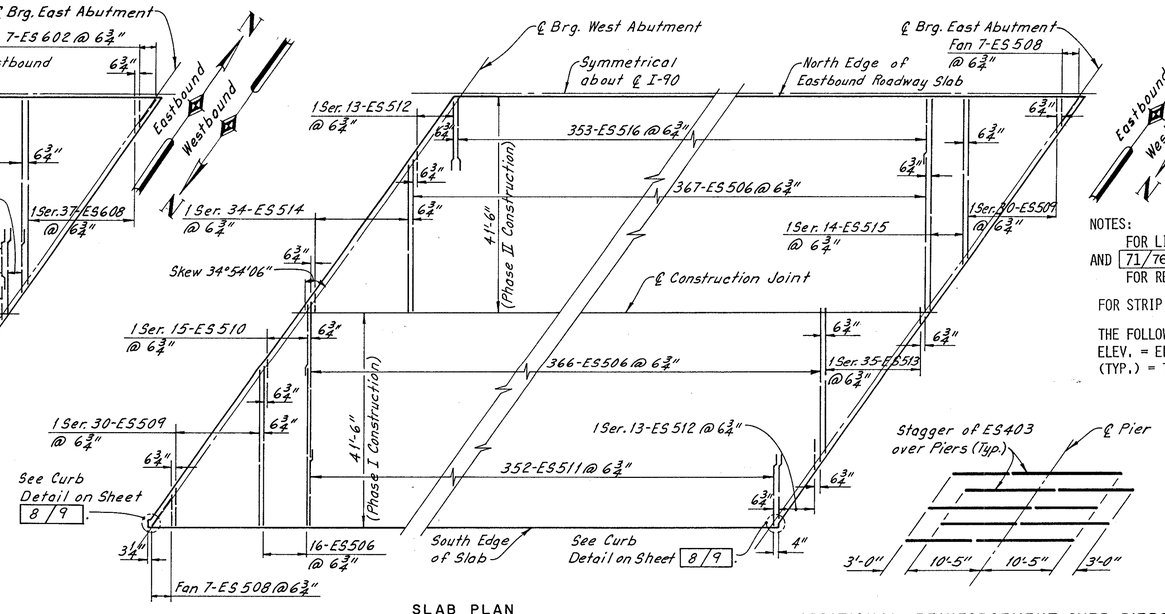
NOTE:
THE ELEVATIONS SHOWN ARE THOSE WHICH ARE REQUIRED BEFORE CONCRETE IS PLACED. PROPER ALLOWANCES HAVE BEEN MADE FOR THE DEAD LOAD DEFLECTIONS CAUSED BY DEAD WEIGHT OF CONCRETE. THE ABOVE ELEVATION AT THE ABUTMENT MAY HAVE TO BE ADJUSTED TO MATCH THE EXISTING ROADWAY GRADE OF THE STRUCTURE.

ELEVATIONS (TOP OF PORTLAND CEMENT)

ELEV.	SPAN I				SPAN 2				SPAN 3				SPAN 4				ELEV.
	℄ BRG. W. ABUT.	1/4	1/2	3/4	℄ BRG. PIER 1	1/4	1/2	3/4	℄ BRG. PIER 2	1/4	1/2	3/4	℄ BRG. PIER 3	1/4	1/2	3/4	℄ BRG. E. ABUT.	
EASTBOUND																	
A	644.67	644.75	644.82	644.87	644.94	645.02	645.10	645.16	645.22	645.30	645.37	645.40	645.44	645.48	645.52	645.54	645.60	A
B	645.41	645.50	645.59	645.66	645.73	645.80	645.85	645.92	645.96	646.01	646.03	646.05	646.13	646.17	646.15	646.14	646.11	B
C	645.17	645.22	645.32	645.37	645.40	645.46	645.53	645.59	645.63	645.66	645.67	645.67	645.68	645.70	645.70	645.69	645.67	C
WESTBOUND																	
A	645.16	645.20	645.25	645.27	645.28	645.29	645.32	645.35	645.34	645.34	645.33	645.30	645.29	645.28	645.27	645.25	645.22	A
B	645.66	645.77	645.80	645.84	645.88	645.95	646.01	646.06	646.08	646.09	646.09	646.10	646.10	646.11	646.11	646.11	646.09	B
C	645.10	645.20	645.27	645.33	645.39	645.45	645.51	645.54	645.58	645.63	645.67	645.69	645.68	645.68	645.68	645.66	645.64	C



SLAB PLAN
(Top Reinforcement)



SLAB PLAN
(Bottom Reinforcement)

ADDITIONAL REINFORCEMENT OVER PIERS

NOTES:
FOR LIMITS OF PHASE CONSTRUCTION SEE SHEETS 66/76 AND 71/76 IN THE MAINTENANCE OF TRAFFIC PLANS.
FOR REINFORCEMENT SCHEDULE SEE SHEET 9/9.

FOR STRIP SEAL EXPANSION JOINT DETAILS, SEE SHEET 8/9.

THE FOLLOWING ABBREVIATIONS ARE USED:
ELEV. = ELEVATION BRG. = BEARING
(TYP.) = TYPICAL

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

TYPICAL CROSS-SECTION AND SLAB PLAN
I-90 OVER EAST 222nd. STREET
BR. NO.-CUY.-90-2754

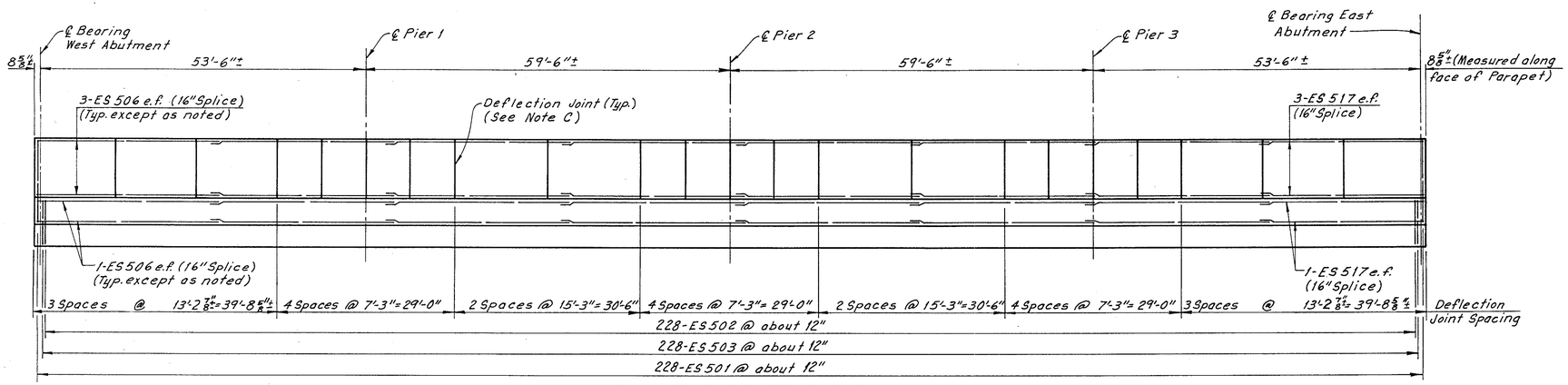
CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 11-87	Date 11-87	Date 11-87	Date 4-91	Sheet 4/9

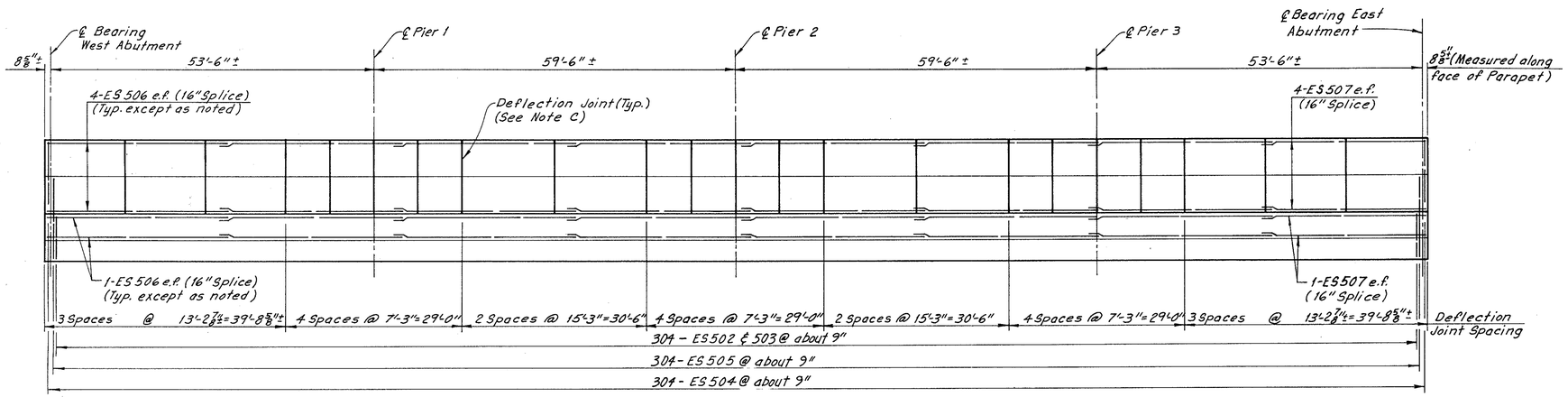
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

30
76

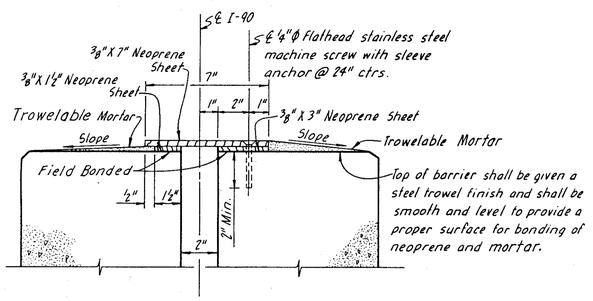
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



SOUTH CURB & PARAPET ELEVATION
(North Curb & Parapet opposite hand)



NORTH MEDIAN CURB & PARAPET ELEVATION
(South Median Curb & Parapet opposite hand)



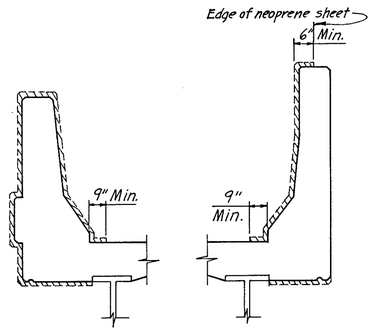
MEDIAN BARRIER SEAL

NOTES:

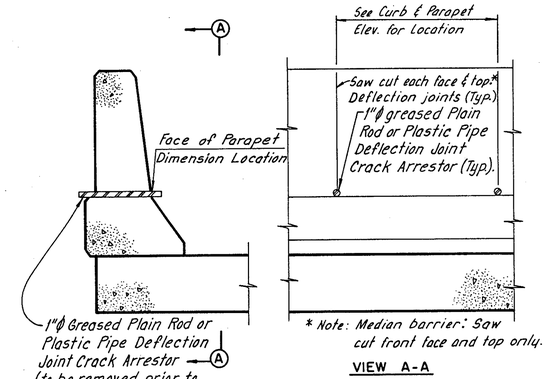
PAYMENT FOR THE TROWELABLE MORTAR SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL- MEDIAN BARRIER SEAL.

BARRIER SEAL SHALL BE CONTINUOUS. PAYMENT FOR THE STAINLESS STEEL SCREWS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL-MEDIAN BARRIER SEAL.

ESTIMATED QUANTITIES			ITEM NO.	202		511		SPECIAL	SPECIAL
				PORTIONS OF STRUCTURES REMOVED, AS PER PLAN.		CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN		SEALING OF CONCRETE SURFACES (EPOXY)	MEDIAN BARRIER SEAL
REF.#	SIDE	LOCATION		LUMP SUM		CU.YD.		SQ.YD.	LIN.FT.
		SUPERSTRUCTURE		Lump Sum		1299		955	227
TOTAL TO SUB-SUMMARIES SHEETS 13&14				Lump Sum		1299		955	227



LIMITS OF SEALING CONCRETE SURFACES



VIEW A-A

TYPICAL CRACK ARRESTOR DETAIL

NOTE C:

PARAPET DEFLECTION JOINTS LOCATED AS PER PLAN SHALL BE MADE VERTICALLY OR A RIGHT ANGLES TO THE DECK BY SAWING. THE SAWING SHALL BE DONE AFTER THE CONCRETE HAS TAKEN ITS INITIAL SET AND BEFORE ANY SHRINKAGE CRACKS COULD DEVELOP. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO INSURE THAT THE CUT JOINT IS STRAIGHT, TRUE AND ALIGNED ON BOTH FACES OF THE PARAPET. THE DEPTH OF SAW CUT SHALL BE A MINIMUM OF 1" INCH. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, NOT TO EXCEED ONE QUARTER INCH. THE OUTSIDE ONE INCH OF THE PERIMETER OF THE DEFLECTION JOINT SHALL BE SEALED WITH A POLYURETHANE OR POLYMERIC JOINT SEALANT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-S-00227E. SAW CUTTING THE DEFLECTION JOINTS AND SEALANT SHALL BE INCLUDED IN ITEM 511, CLASS S CONCRETE SUPERSTRUCTURE, AS PER PLAN FOR PAYMENT.

NOTES:

FOR REINFORCEMENT SCHEDULE SEE SHEET 9/9 .
THE FOLLOWING ABBREVIATIONS ARE USED:
E.F. = EACH FACE (TYP.) = TYPICAL CTRS. = CENTERS

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

PARAPET DETAILS

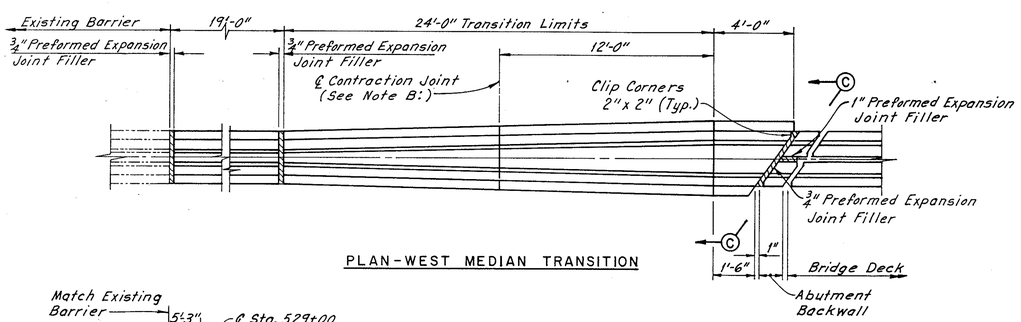
I-90 OVER EAST 222nd. STREET
BR. NO.-CUY.-90-2754
CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 11-87	Date 11-87	Date 11-87	Date 4-91	Sheet 5/9

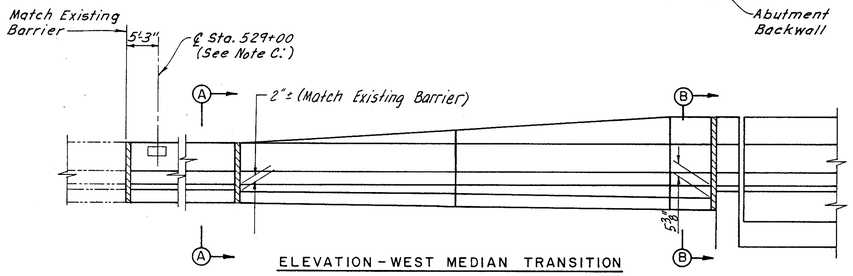
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

31
76

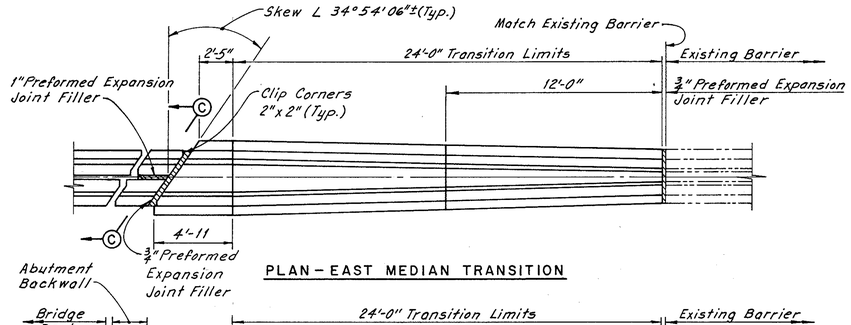
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



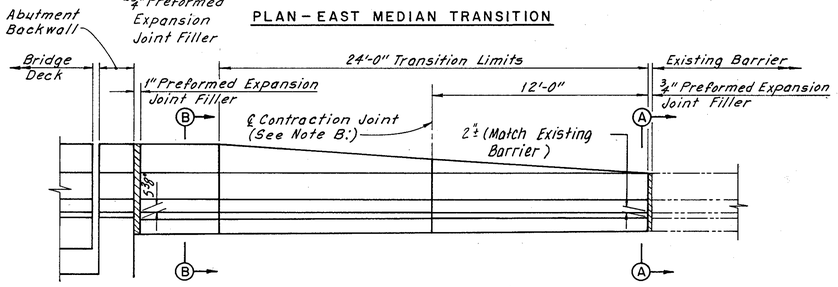
PLAN-WEST MEDIAN TRANSITION



ELEVATION-WEST MEDIAN TRANSITION



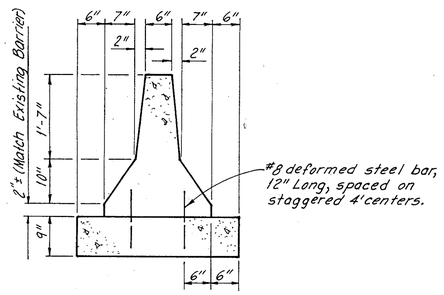
PLAN-EAST MEDIAN TRANSITION



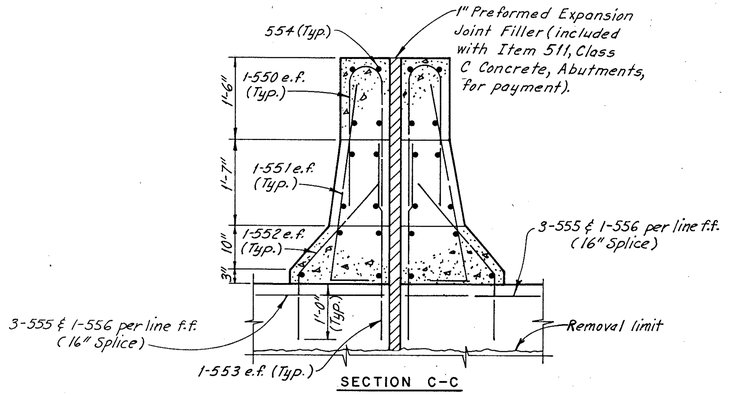
ELEVATION-EAST MEDIAN TRANSITION

NOTE B:
CONSTRUCTION JOINTS MAY BE CONSTRUCTED WITH METAL INSERTS INSIDE THE FORMS, PREFORMED FULL WIDTH JOINT FILLER, A GROOVING TOOL, OR BY SAWING. INSERTS OR TOOLED OR SAWED JOINTS SHALL HAVE A 1 1/2" MIN. DEPTH. ALL JOINTS SHALL BE CONSTRUCTED FOR THE FULL HEIGHT OF THE BARRIER INCLUDING THE BASE.

NOTE C:
THE STATION SHALL BE IMPRESSED IN THE GREEN CONCRETE ON BOTH SIDES AT THE TOP OF THE BARRIER.
THE COST SHALL BE INCLUDED IN THE UNIT PRICE PER LINEAR FOOT BID FOR ITEM 622 CONCRETE BARRIER, TYPE A-50, AS PER PLAN.

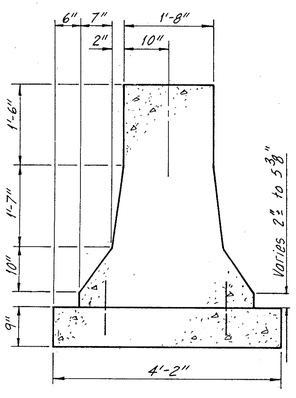


SECTION A-A

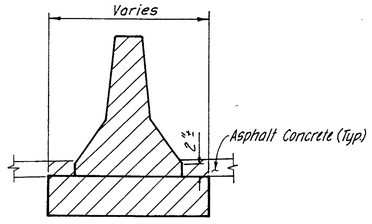


SECTION C-C

(CONCRETE BARRIER MEDIAN ON BACKWALL IS INCLUDED FOR PAYMENT UNDER ITEM 511 - CLASS C CONCRETE, ABUTMENTS)



SECTION B-B



EXISTING BARRIER MEDIAN REMOVAL LIMITS

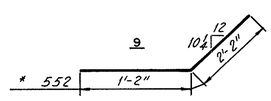
(INCLUDED FOR PAYMENT UNDER ITEM 622-CONCRETE BARRIER, TYPE A-50, AS PER PLAN.)

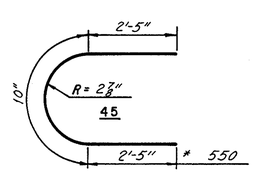
REINFORCEMENT SCHEDULE					
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
ABUTMENT BACKWALL AT MEDIAN					
* 550	8	5'-8"	45		*47
* 551	8	4'-0"	49		*33
* 552	8	3'-3"	9		*27
* 553	8	3'-7"	Str.		*30
* 554	48	1'-3"	Str.		*63
* 555	12	30'-0"	Str.		*375
* 556	4	15'-0"	Str.		*63
*TOTAL WEIGHT EPOXY COATED =					*638

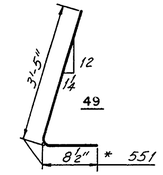
*INDICATES EPOXY COATED BARS.

ITEM NO.	202		509		511			
ESTIMATED QUANTITIES	PORTIONS OF STRUCTURES REMOVED, AS PER PLAN		EPOXY COATED REINFORCING STEEL		CLASS C CONCRETE, ABUTMENTS			
REF.# SIDE LOCATION	LUMP SUM		POUND		CU.YD.			
℄ ABUTMENT BACKWALL AND BARRIER MEDIAN	Lump Sum		638		31			
TOTAL TO SUB-SUMMARIES SHEET 13	Lump Sum		638		31			

BENDING DIAGRAMS







NOTE:
THE FOLLOWING ABBREVIATIONS ARE USED:
E.F. = EACH FACE (TYP.) = TYPICAL

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

MEDIAN TRANSITION DETAILS

I-90 OVER EAST 222nd. STREET

BR. NO.-CUY.-90-2754

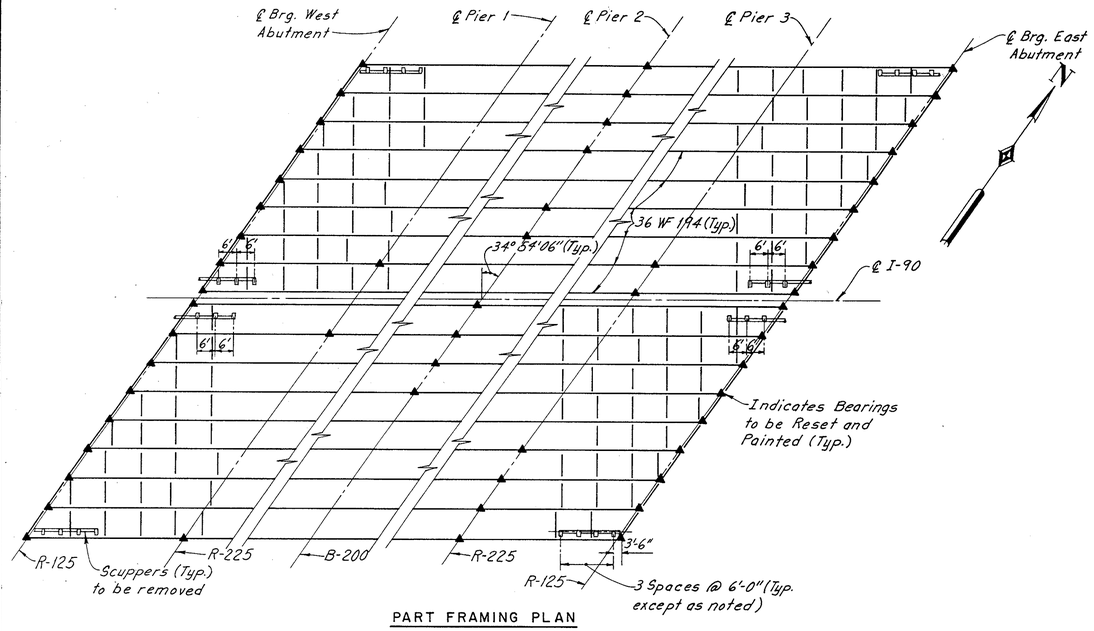
CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 11-87	Date 11-87	Date 11-87	Date 4-91	Sheet 6/9

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

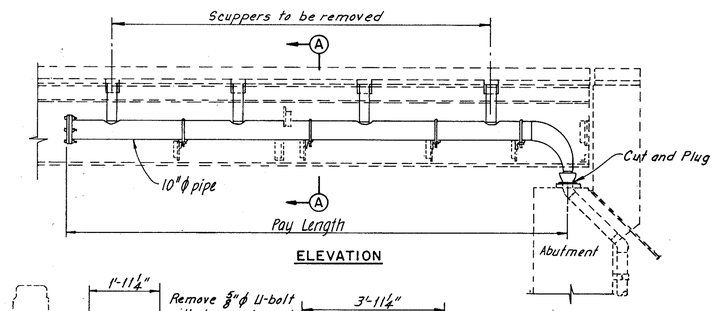
32
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

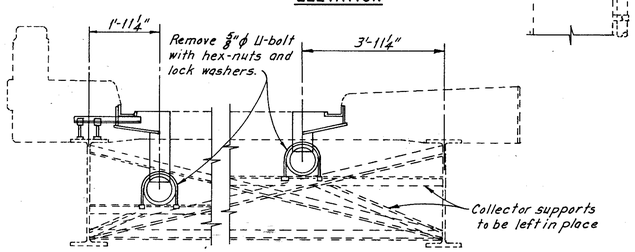


PART FRAMING PLAN

NOTE:
RESET, SANDBLAST AND PAINT BEARINGS INDICATED. FOR DETAILS SEE SHEET CD 1 .



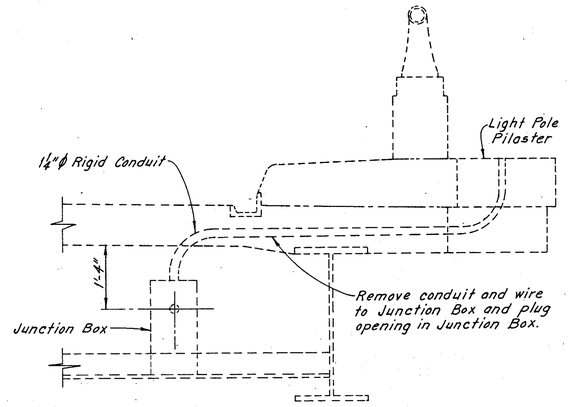
ELEVATION



OUTSIDE CURB MEDIAN

SECTION A-A

BRIDGE DRAINAGE SYSTEM REMOVAL LIMITS



TYPICAL EXISTING ELECTRICAL CONDUIT DETAIL REMOVAL LIMITS
(Included with Deck Removal for payment)

ITEM NO.			202		514				516	
ESTIMATED QUANTITIES			BRIDGE DRAINAGE SYSTEM REMOVED		FIELD PAINTING OF RESET BEARINGS				RESET BEARINGS	
REF.#	SIDE	LOCATION	LIN.FT.		LUMP SUM				EACH	
		WEST ABUTMENT	82		Lump Sum				18	
		EAST ABUTMENT	82		Lump Sum				18	
		PIER 1			Lump Sum				3	
		PIER 2			Lump Sum				10	
		PIER 3			Lump Sum				6	
		NORTH PARAPET								
		SOUTH PARAPET								
TOTAL TO SUB-SUMMARIES SHEET 13			164		Lump Sum				55	

NOTE:
THE FOLLOWING ABBREVIATIONS ARE USED:
BRG. = BEARING (TYP.) = TYPICAL

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

MISCELLANEOUS DETAILS

I-90 OVER EAST 222nd. STREET
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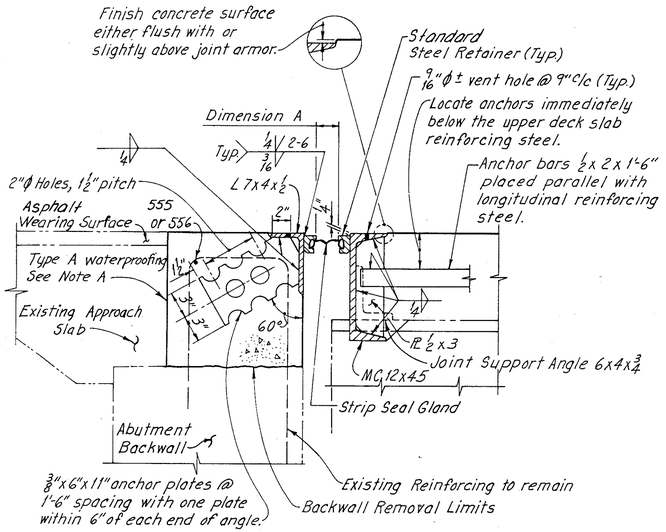
CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 11-87	Date 11-87	Date 11-87	Date 4-91	Sheet 7/9

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

33
76

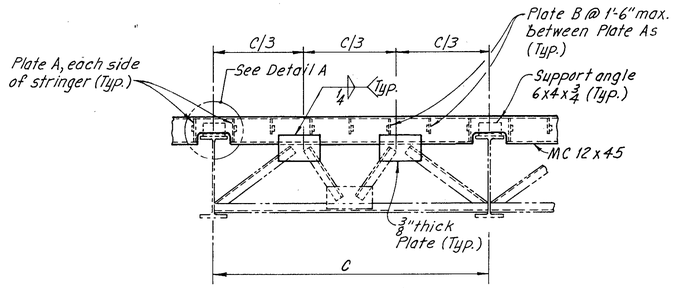
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



PROPOSED EXPANSION JOINT DETAIL

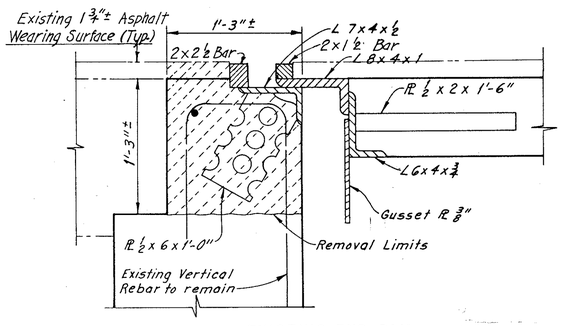
NOTE A:
TYPE A WATERPROOFING INCLUDED WITH ITEM 511 CLASS C CONCRETE, ABUTMENTS, FOR PAYMENT.
FOR BACKWALL REINFORCEMENT SCHEDULE SEE SHEET 6/9.

DIMENSION "A" (INCHES)	
F°	
90 -	1-15/16
80	2
70	2-1/16
60	2-3/16
50	2-1/4
40	2-5/16
30	2-3/8

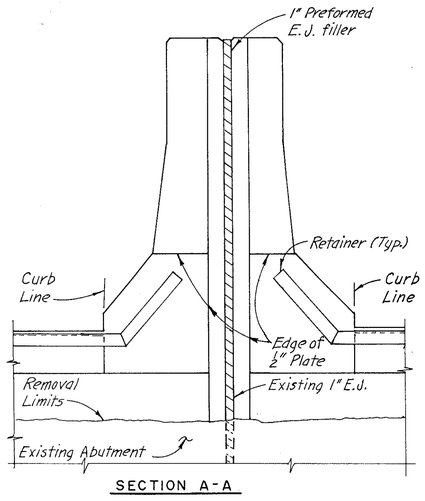


END CROSSFRAME DETAIL

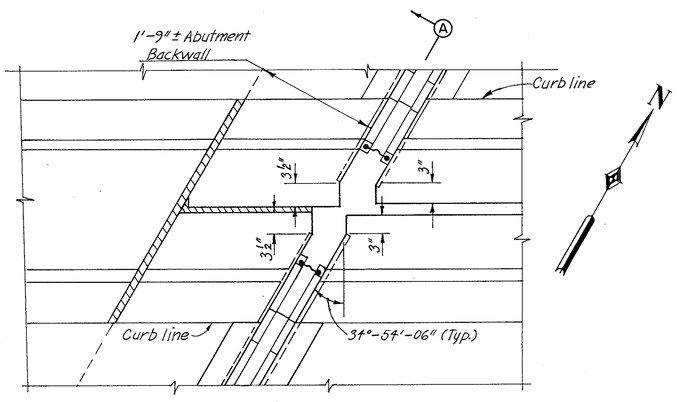
FOR ADDITIONAL END CROSSFRAME DETAILS, SEE STANDARD DRAWING SD-1-69, SHEET 1 OF 4. PAYMENT FOR THE NEW GUSSET PLATES AND ALL WELDS SHALL BE INCLUDED WITH ITEM 516, STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS (4").



EXISTING END DAM
Removal Limits



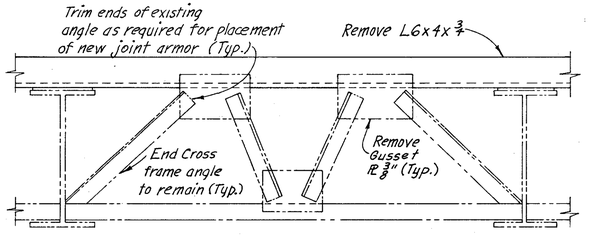
SECTION A-A



PARTIAL PLAN AT MEDIAN BARRIER
(West shown, East opposite hand)

NOTES:
STUD ANCHORS SHALL BE LOW CARBON STEEL ASTM A-108, SPLIT RETAINER, ANCHORS AND STAINLESS STEEL CAP SCREWS SHALL BE INCLUDED WITH ITEM 516 STRUCTURAL EXPANSION JOINTS INCLUDING STEEL RETAINERS AND STRIP SEAL GLANDS FOR PAYMENT.

FOR ADDITIONAL STRIP SEAL EXPANSION JOINT DETAILS, SEE STANDARD DRAWING EXJ-4-87 SHEETS 1, 2, 4 AND 5 OF 5.



EXISTING END CROSS FRAME DETAIL REMOVAL LIMITS

NOTE:
REMOVAL OF EXISTING CONCRETE, END DAM ANGLES BARS, GUSSET PLATES AND TRIMMING ANGLES SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 202, PORTIONS OF STRUCTURES REMOVED, AS PER PLAN.

ESTIMATED QUANTITIES

REF.#	SIDE	LOCATION	ITEM NO. 202 PORTIONS OF STRUCTURES REMOVED, AS PER PLAN				ITEM NO. 516 STRUCTURAL EXPANSION JOINTS INCLUDING STEEL RETAINER & STRIP SEAL GLAND, AS PER PLAN		
			Lump Sum				LIN.FT.		
		EAST ABUTMENT	Lump Sum				201		
		WEST ABUTMENT	Lump Sum				201		
TOTAL TO SUB-SUMMARIES SHEET 13			Lump Sum				402		

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MISCELLANEOUS DETAILS

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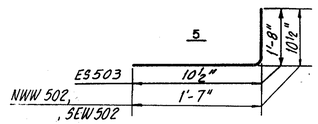
Date 11-87	Date 11-87	Date 11-87	Date 4-91	Sheet 8/9

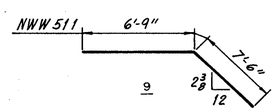
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
SUPERSTRUCTURE					
ES401	1,526	30'-0"	Str.		30,581
ES402	216	24'-1"	Str.		3,475
ES403	648	23'-10"	Str.		10,317
ES404	2	24'-6"	Str.		33
ES501	456	6'-11"	58		3290
ES502	1004	3'-0"	43		3329
ES503	1064	2'-5"	5		2682
ES504	608	4'-9"	45		3012
ES505	608	5'-3"	58		3329
ES506	2,870	30'-0"	Str.		89,802
ES507	174	26'-5"	Str.		4,794
ES508	28	5'-6"	Str.		161
ES509	4 Ser. 30	6'-3" / 29'-8"	Str.	9 11/16"	2,248
ES510	2 Ser. 15	2'-8" / 13'-11"	Str.	9 5/8"	259
ES511	704	14'-0"	Str.		10,280
ES512	4 Ser. 13	2'-5" / 10'-1"	Str.	9 5/8"	393
ES513	2 Ser. 35	2'-3" / 29'-6"	Str.	9 5/8"	1,159
ES514	2 Ser. 34	2'-11" / 29'-6"	Str.	9 5/8"	1,150
ES515	2 Ser. 14	40'-7" / 30'-1"	Str.	9 11/16"	1,032
ES516	706	12'-6"	Str.		9,204
ES517	22	26'-10"	Str.		616
ES601	1,456	27'-3"	Str.		59,593
ES602	28	5'-6"	Str.		231
ES603	2 Ser. 30	6'-3" / 29'-8"	Str.	9 11/16"	1,618
ES604	2 Ser. 22	4'-7" / 21'-1"	Str.	9 11/16"	848
ES605	2 Ser. 42	3'-0" / 36'-7"	Str.	9 13/16"	2,497
ES606	748	21'-1"	Str.		23,687
ES607	704	11'-2"	Str.		11,808
ES608	2 Ser. 37	6'-2" / 35'-3"	Str.	9 11/16"	2,302
ES609	2 Ser. 28	3'-11" / 25'-9"	Str.	9 11/16"	1,248
ES610	2 Ser. 21	6'-7" / 22'-9"	Str.	9 11/16"	925
ES611	2 Ser. 8	10'-2" / 15'-6"	Str.	9 5/8"	308
TOTAL WEIGHT EPOXY COATED =					286,211
NORTHWEST WINGWALL					
NWW501	6	6'-11"	58		43
NWW502	15	2'-4"	5		37
NWW503	7	3'-2"	43		23
NWW504	6	2'-0"	Str.		13
NWW505	2 Ser. 6	2'-2" / 3'-2"	Str.	2 3/8	33
NWW506	3	2'-11"	61		9
NWW507	2	2'-7"	43		5
NWW508	2	2'-10"	43		6
NWW509	1	3'-0"	43		3
NWW510	6	14'-7"	Str.		91
NWW511	2	14'-3"	9		30
NWW512	1	13'-8"	19		14
NWW513	2	13'-9"	Str.		29
NWW514	3	14'-2"	Str.		44
TOTAL WEIGHT EPOXY COATED =					380

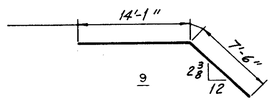
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
NORTHEAST WINGWALL *					
NEW501	14	6'-11"	58		
NEW502	23	2'-4"	5		
NEW503	15	3'-2"	43		
NEW504	6	2'-0"	Str.		
NEW505	2 Ser. 6	2'-2" / 3'-2"	Str.	2 3/8	
NEW506	3	2'-11"	61		
NEW507	2	2'-7"	43		
NEW508	2	2'-10"	43		
NEW509	1	3'-0"	43		
NEW510	6	22'-0"	Str.		
NEW511	2	21'-7"	9		
NEW512	1	22'-9"	19		
NEW513	2	22'-10"	Str.		
NEW514	3	22'-4"	Str.		
TOTAL WEIGHT EPOXY COATED =					
SOUTHWEST WINGWALL *					
SWW501	10	6'-11"	58		
SWW502	19	2'-4"	5		
SWW503	11	3'-2"	43		
SWW504	6	2'-0"	Str.		
SWW505	2 Ser. 6	2'-2" / 3'-2"	Str.	2 3/8	
SWW506	3	2'-11"	61		
SWW507	2	2'-7"	43		
SWW508	2	2'-10"	43		
SWW509	1	3'-0"	43		
SWW510	6	18'-0"	Str.		
SWW511	2	17'-7"	9		
SWW512	1	18'-9"	19		
SWW513	2	18'-10"	Str.		
SWW514	3	18'-4"	Str.		57
TOTAL WEIGHT EPOXY COATED =					489
SOUTHEAST WINGWALL					
SEW501	5	6'-11"	58		36
SEW502	14	2'-4"	5		34
SEW503	6	3'-2"	43		20
SEW504	6	2'-0"	Str.		13
SEW505	2 Ser. 6	2'-2" / 3'-2"	Str.	2 3/8	33
SEW506	3	2'-11"	61		9
SEW507	2	2'-7"	43		5
SEW508	2	2'-10"	43		6
SEW509	1	3'-0"	43		3
SEW510	6	13'-4"	Str.		83
SEW511	2	13'-0"	9		27
SEW512	1	12'-5"	19		13
SEW513	2	12'-6"	Str.		26
SEW514	3	12'-11"	Str.		40
TOTAL WEIGHT EPOXY COATED =					348

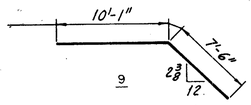
*—THESE WINGWALLS SHALL BE INCLUDED FOR PAYMENT BY LINEAL FOOT UNDER ITEM 517- RAILING, CONCRETE (SEE SHT. 8A.)

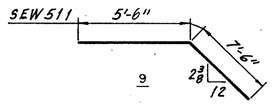
BENDING DIAGRAMS

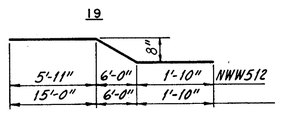


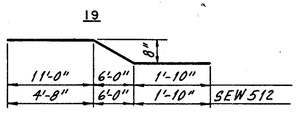


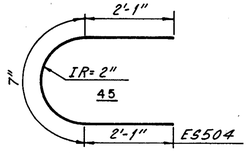


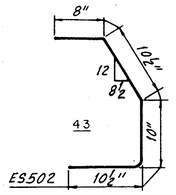


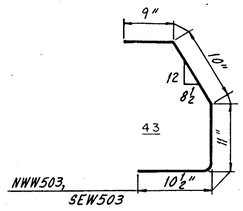


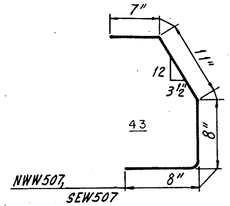


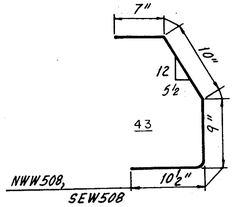


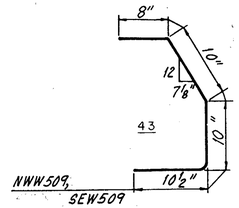


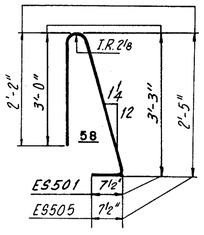


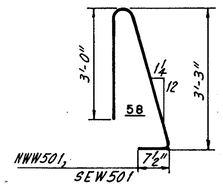


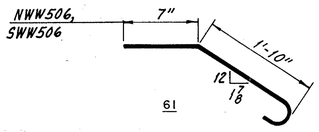












NOTE:
ALL REINFORCING STEEL SHALL BE EPOXY CODATED.

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

34
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

REINFORCEMENT SCHEDULE

I-90 OVER EAST 222nd. STREET
BR. NO.-CUY.-90-2754
CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 11-87	Date 11-87	Date 11-87	Date 4-91	Sheet 9 / 9

h1-y

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

35
76

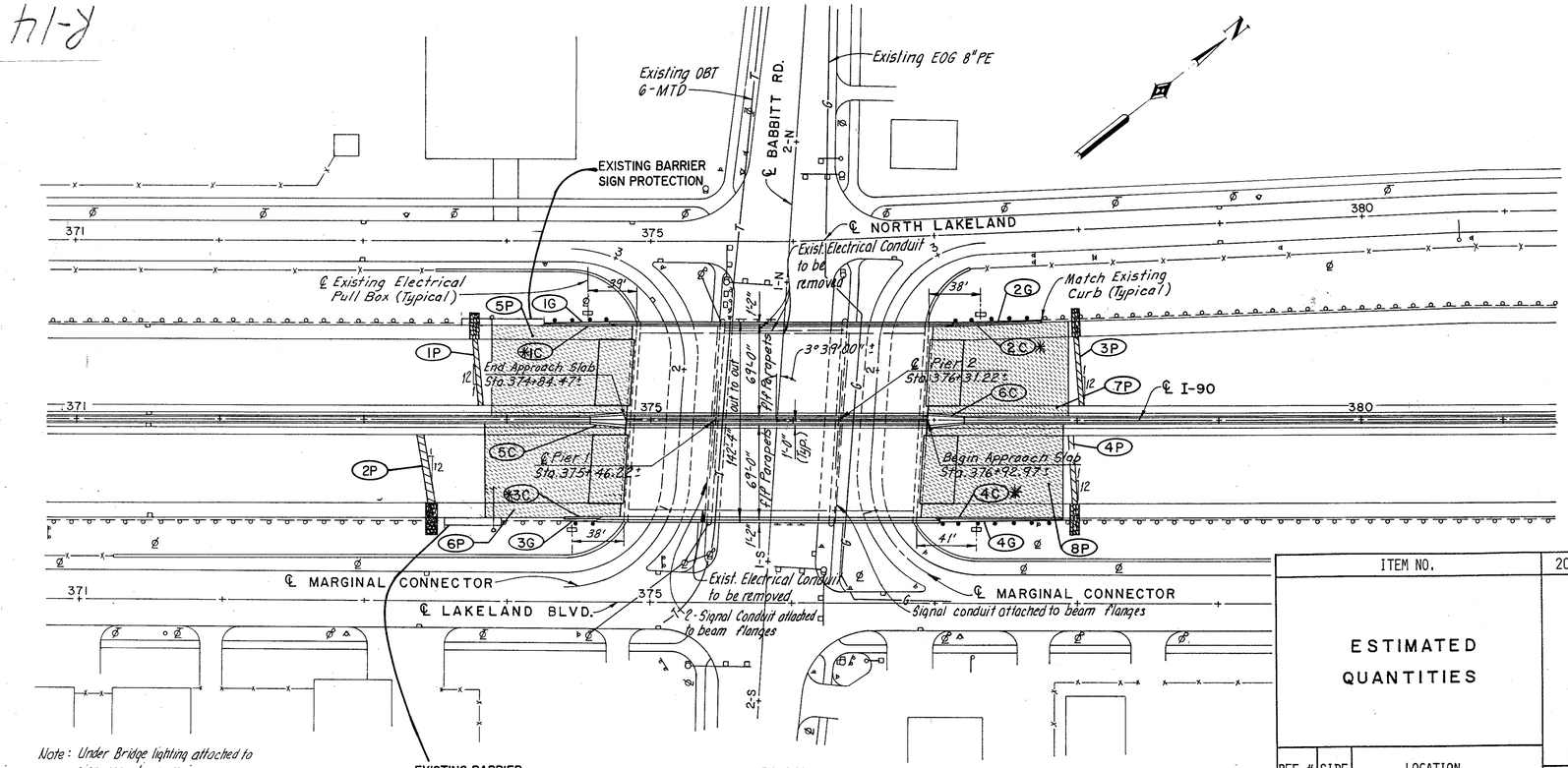
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

SITE BENCH MARK
T.B.M. DRILL HOLE IN TOP OF NORTHWEST WINGWALL AT EXPANSION JOINT STA. 374 + 90.19 ℄ I-90, 70.0' LEFT ELEVATION 661.37

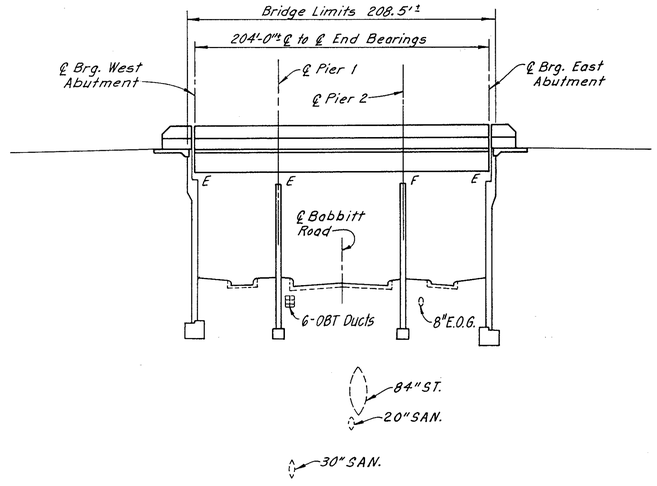
MODIFIED STRUCTURE DATA
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK, PIERS AND ABUTMENTS
SPANS: 59'-6"± 85'-0"± 59'-6"±
ROADWAY: 69'-0" FACE TO FACE OF PARAPETS EASTBOUND & WESTBOUND
SKEW: 3°39'00"± L.F.
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLAB: AS-1-54 (25'-0" LONG)
ALIGNMENT: TANGENT

EXISTING STRUCTURE
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK, PIERS AND ABUTMENTS
SPANS: 59'-6"± 85'-0"± 59'-6"±
ROADWAY: 140'-0"± FACE TO FACE OF PARAPETS
LOADING: CF-2000-57 (ADEQUATE FOR AASHO ALTERNATE LOADING)
SKEW: 3°39'00"± L.F.
WEARING SURFACE: ASPHALT
APPROACH SLAB: AS-1-54 (25'-0" LONG)
ALIGNMENT: TANGENT

*- TYPE 6 CURB SHALL HAVE A 3" CURB REVEAL.



PLAN
Scale: 1"=50'



ELEVATION
Scale: 1"=50' Horiz.
1"=10' Vert.

ITEM NO.			202		202	254	404	407		606	605	606	606	609	622		SPECIAL
ESTIMATED QUANTITIES			CURB REMOVED		GUARDRAIL REMOVED	PAVEMENT PLANING, BITUMINOUS	ASPHALT CONCRETE, AC-20	TACK COAT		BRIDGE TERMINAL ASSEMBLY, TYPE 2	AGGREGATE DRAINS	BRIDGE TERMINAL ASSEMBLY, TYPE 1	GUARDRAIL, TYPE 5	CURB, TYPE 6 * AS PER PLAN	CONCRETE BARRIER, TYPE A-50, AS PER PLAN		PRESSURE RELIEF JOINTS, TYPE C
REF.#	SIDE	LOCATION	LIN.FT.		LIN.FT.	SQ.YD.	CU.YD.	GAL.		EACH	LIN.FT.	EACH	LIN.FT.	LIN.FT.	LIN.FT.		LIN.FT.
1C	LT.	STA.374+22 TO STA.374+74	44											44			
2C	LT.	STA.377+12 TO STA.377+73	61											61			
3C	RT.	STA.374+42 TO STA.374+65	23											23			
4C	RT.	STA.377+05 TO STA.377+91	86											86			
5C	℄	STA.374+60 TO STA.374+84.4													24.4		
6C	℄	STA.376+93 TO STA.377+17.5													24.5		
1G	LT.	STA.374+49 TO STA.374+74			25					1			25				
2G	LT.	STA.377+12 TO STA.377+37			25							1	25				
3G	RT.	STA.374+40 TO STA.374+65			25							1	25				
4G	RT.	STA.377+05 TO STA.377+30			25					1			25				
1P	LT.	STA.373+80 ± 10'									18						48.2
2P	RT.	STA.373+48 ± 10'									18						48.2
3P	LT.	STA.378+00 ± 10'									18						48.2
4P	RT.	STA.377+98 ± 10'									18						48.2
5P	LT.	STA.373+87 TO STA.374+87				399	33	40									
6P	RT.	STA.373+82 TO STA.374+82				399	33	40									
7P	LT.	STA.376+95 TO STA.377+95				399	33	40									
8P	RT.	STA.376+91 TO STA.377+91				399	33	40									
TOTAL TO SUB-SUMMARIES			214		100	1596	132	160		2	72	2	100	214	49		193

NOTE: FOR DETAILS OF PROPOSED LIGHTING SEE SHEET 23.
FOR WEARING COURSE REMOVAL AND REPLACEMENT ON THE APPROACH ROADWAYS SEE DETAIL ON SHEET 63.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

GENERAL PLAN AND ELEVATION

I-90 OVER BABBITT ROAD

BR. NO.-CUY.-90-2840

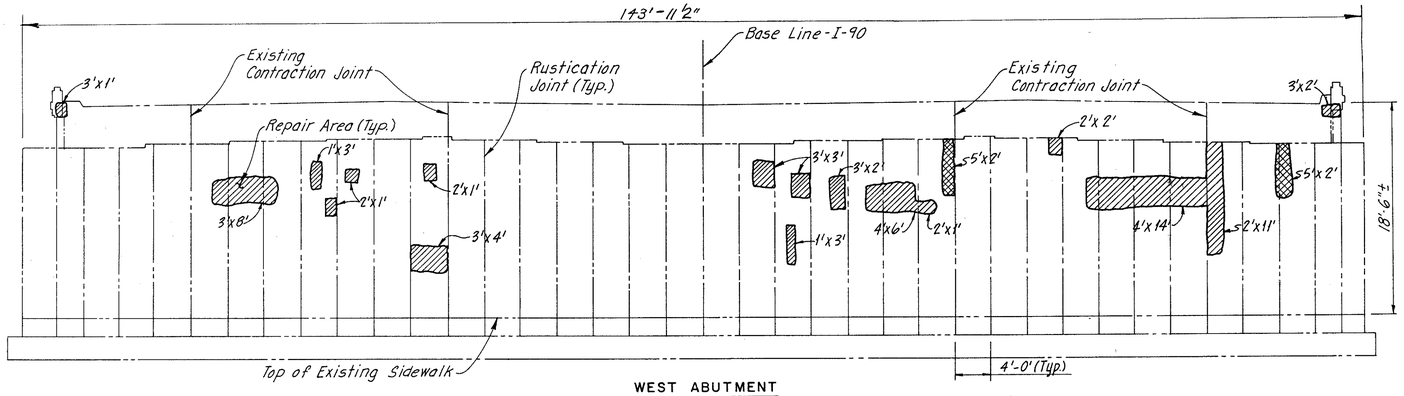
CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 9-87	Date 9-87	Date 9-87	Date 4-91	Sheet 1/9

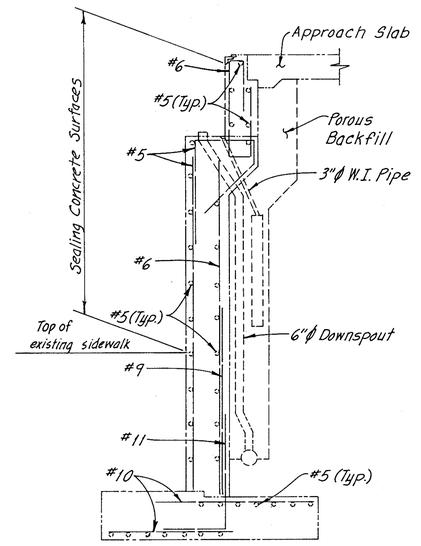
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

35A
76

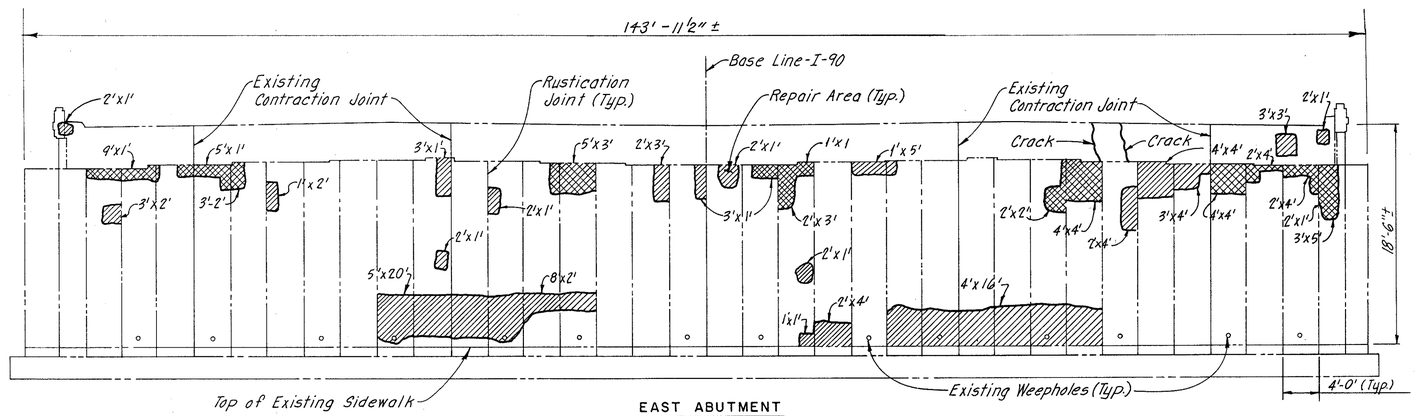
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



WEST ABUTMENT



EXISTING TYPICAL SECTION



EAST ABUTMENT

NOTE:
FOR ESTIMATED QUANTITY TABLE SEE SHEET 36.

DENOTES ITEM SPECIAL, PNEUMATICALLY PLACED MORTAR.

DENOTES ITEM 519, PATCHING CONCRETE STRUCTURES, AS PER PLAN.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

ABUTMENT REPAIR DETAILS

I-90 OVER BABBITT ROAD

BR. NO.-CUY.-90-2840

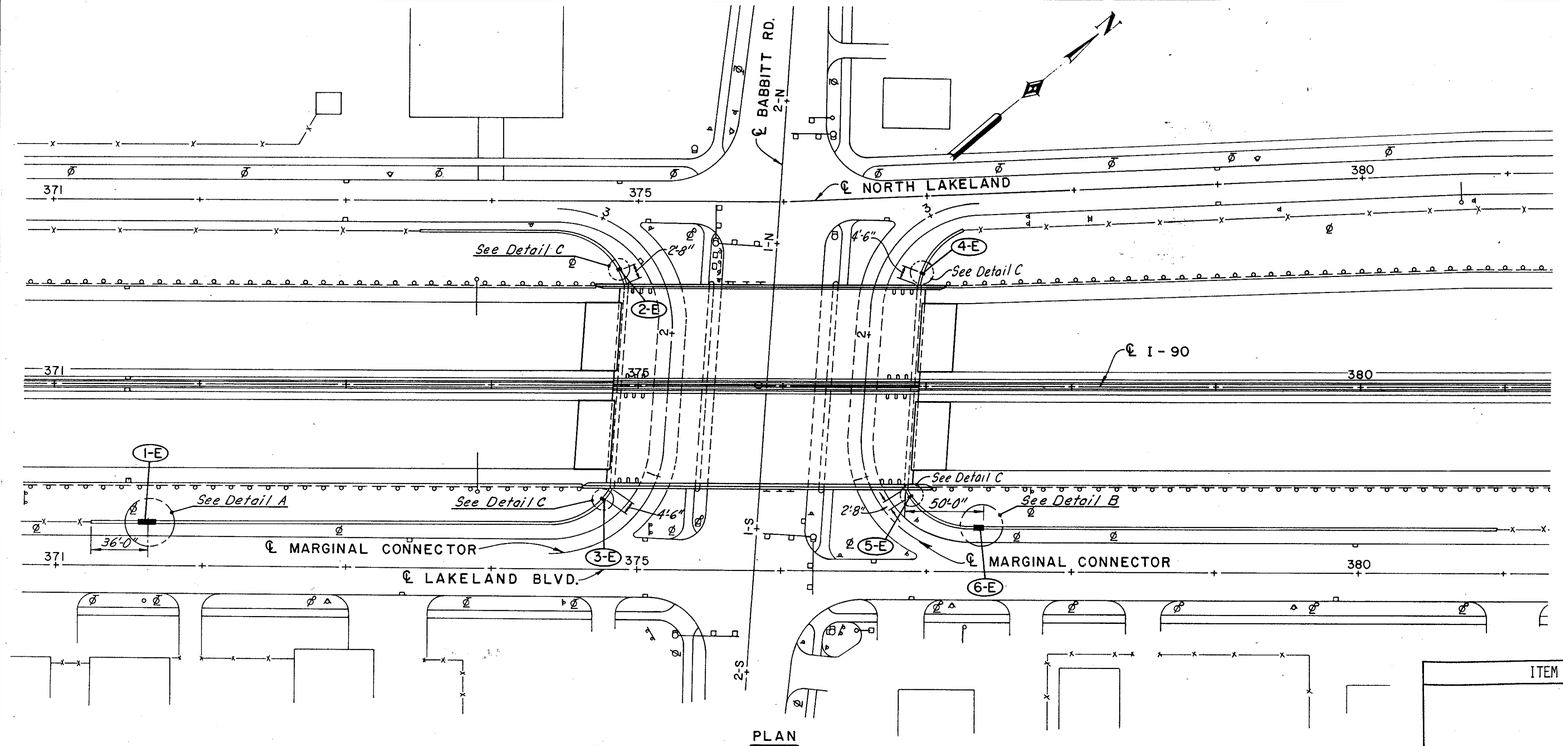
CUYAHOGA COUNTY

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 10-89	Date 10-89	Date 10-89	Date 4-91	Sheet 1A/9

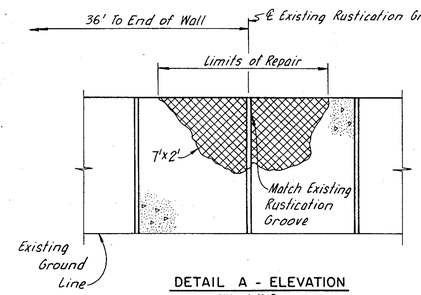
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

36
76

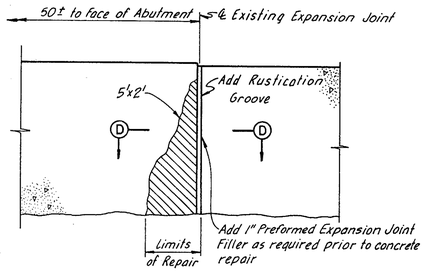
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



PLAN

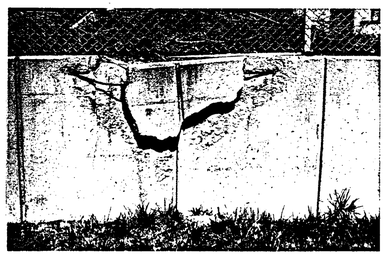


DETAIL A - ELEVATION
SW Wall Repair

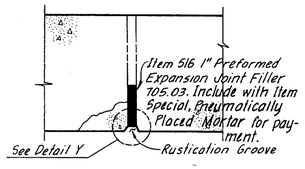


DETAIL B - ELEVATION
SE Wall Repair

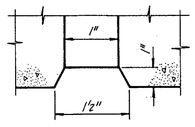
PHOTOGRAPH OF EXISTING WALL REPAIR
AT DETAIL B



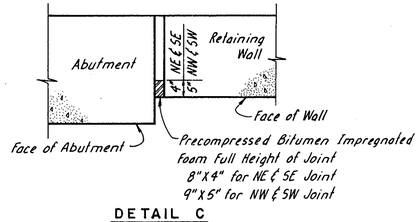
PHOTOGRAPH OF EXISTING WALL REPAIR
AT DETAIL A



SECTION D-D



DETAIL Y



DETAIL C
VERTICAL JOINT DETAIL

ITEM NO.				519	SPECIAL		SPECIAL			SPECIAL	SPECIAL	SPECIAL
ESTIMATED QUANTITIES				PATCHING CONCRETE STRUCTURES, AS PER PLAN C.O.	PNEUMATICALLY PLACED MORTAR C.O.		SOUNDING CONCRETE BRIDGE COMPONENTS			SEALING CONCRETE SURFACES (EPOXY)	JOINT SEAL (8" X 4" PRECOMPRESSED BITUMEN IMPREGNATED FOAM)	JOINT SEAL (9" X 5" PRECOMPRESSED BITUMEN IMPREGNATED FOAM)
REF.#	SIDE	LOCATION		SQ.FT.	SQ.FT.		SQ.FT.			SQ.YD.	LIN.FT.	LIN.FT.
1E	RT.	STA.371+50		20								
2E	LT.	STA.1+N ℄ BABBITT										15
3E	LT.	STA.1+S ℄ BABBITT										15
4E	RT.	STA.1+N ℄ BABBITT									15	
5E	RT.	STA.1+S ℄ BABBITT									15	
6E	RT.	STA.377+30			15							
		WEST ABUTMENT		20	210		3834			422		
		EAST ABUTMENT		130	270		3822			421		
		PIER 1					3402			378		
		PIER 2					3402			378		
TOTAL TO SUB-SUMMARIES SHEETS 13 & 14				170	495		14,460			1,599	30	30

NOTE:

DENOTES ITEM SPECIAL, PNEUMATICALLY PLACED MORTAR.

DENOTES ITEM 519, PATCHING CONCRETE STRUCTURES, AS PER PLAN.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

MISCELLANEOUS REPAIR DETAILS

I-90 OVER BABBITT ROAD

BR. NO.-CUY.-90-2840

CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 9-87	Date 9-87	Date 9-87	Date 4-91	Sheet 2/9

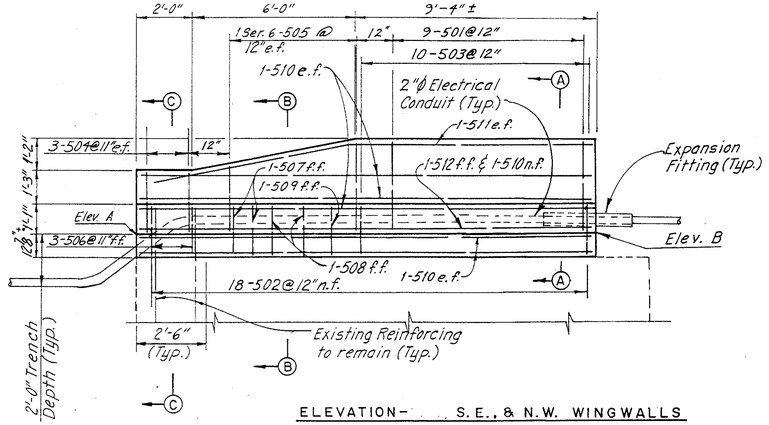
LOCATION	ELEVATION A	ELEVATION B
North West Wingwall	659.28	659.35
*South West Wingwall	659.29	659.37
*North East Wingwall	659.34	659.57
South East Wingwall	659.35	659.46

*-ELEVATIONS FOR APPROACH SECTIONS ARE REFERENCED THE SAME AS TRAILING SECTIONS.

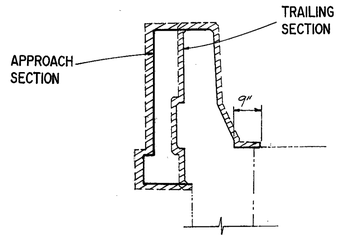
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

37
76

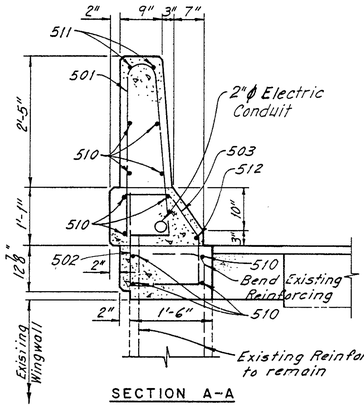
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



ELEVATION- S.E., & N.W. WINGWALLS
(N.W. & S.E. OPPOSITE HAND)
(TRAILING END SECTION)



LIMITS OF SEALING CONCRETE SURFACES



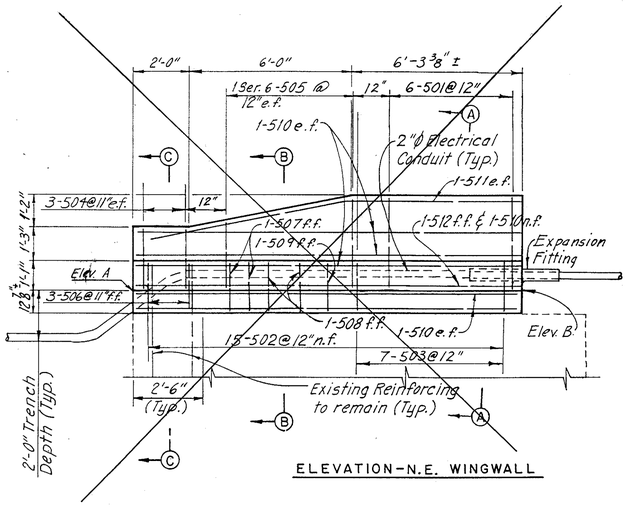
SECTION A-A

ITEM NO.				202			511		517		SPECIAL	
ESTIMATED QUANTITIES				PORTIONS OF STRUCTURES REMOVED, AS PER PLAN.			CLASS C CONCRETE, ABUTMENTS		RAILING FACED, AS PER PLAN		SEALING OF CONCRETE SURFACES (EPOXY)	
REF.#	SIDE	LOCATION		LUMP SUM			CU.YD.		L.F.		SQ.YD.	
		WINGWALL (ALL)		LUMP SUM			15				70	
		WINGWALL (NE)							14'-3"			
		WINGWALL (SW)							17'-4"			
TOTAL TO SUB-SUMMARY SHEET 13				LUMP SUM			15		31.58'		70	

WINGWALL APPROACH SECTIONS (AS NOTED ABOVE) SHALL BE INSTALLED AS SHOWN SHT 63A. WORK FOR THESE WINGWALLS ONLY SHALL BE PAID FOR UNDER ITEM 517- RAILING, CONCRETE (L.F.). SEE THE GENERAL NOTES FOR FURTHER DETAILS.

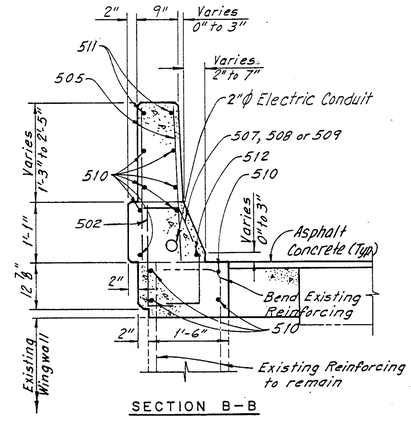
NOTES:

FOR ATTACHMENT OF BRIDGE TERMINAL ASSEMBLIES, SEE STD. CONST. DWG. GR-3.1 OR GR-3.2

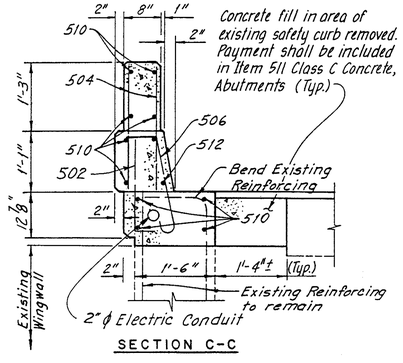


ELEVATION-N.E. WINGWALL

NOTE:
FOR 2" DIAMETER ELECTRICAL CONDUIT EXPANSION FITTING DETAILS, SEE OHIO STANDARD CONSTRUCTION DRAWING HL-30,31.



SECTION B-B



SECTION C-C

REMOVAL LIMITS OF THE EXISTING BACKWALL, SAFETY CURB AND PARAPETS ARE SIMILAR TO THE DETAILS SHOWN ON SHEET 28.

ALL REINFORCING BAR MARKS SHALL BE PREFIXED AS FOLLOWS:
NWW = NORTHWEST WINGWALL SWW = SOUTHWEST WINGWALL
NEW = NORTHEAST WINGWALL SEW = SOUTHEAST WINGWALL
FOR REINFORCEMENT SCHEDULE SEE SHEET 9/9 .
THE FOLLOWING ABBREVIATIONS ARE USED:
E.F. = EACH FACE F.F. = FAR FACE N.F. = NEAR FACE
(TYP.) = TYPICAL ELEV. = ELEVATION

NOTE: BEND 510 IN FIELD WHERE NECESSARY.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

WINGWALL DETAILS

I-90 OVER BABBITT ROAD

BR. NO.-CUY.-90-2840

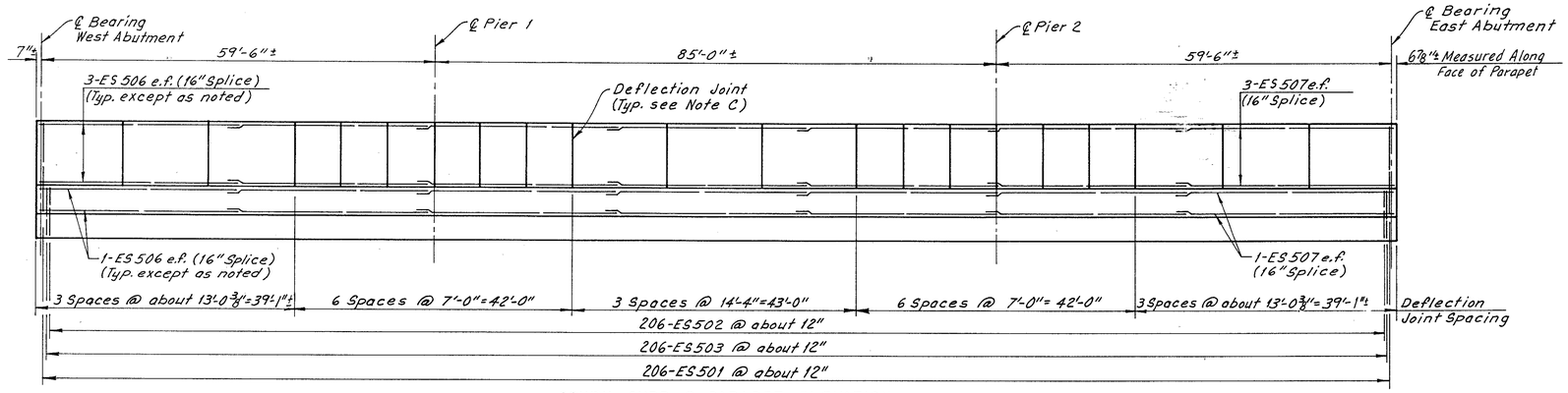
CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 9-87	Date 9-87	Date 9-87	Date 4-91	Sheet 3/9

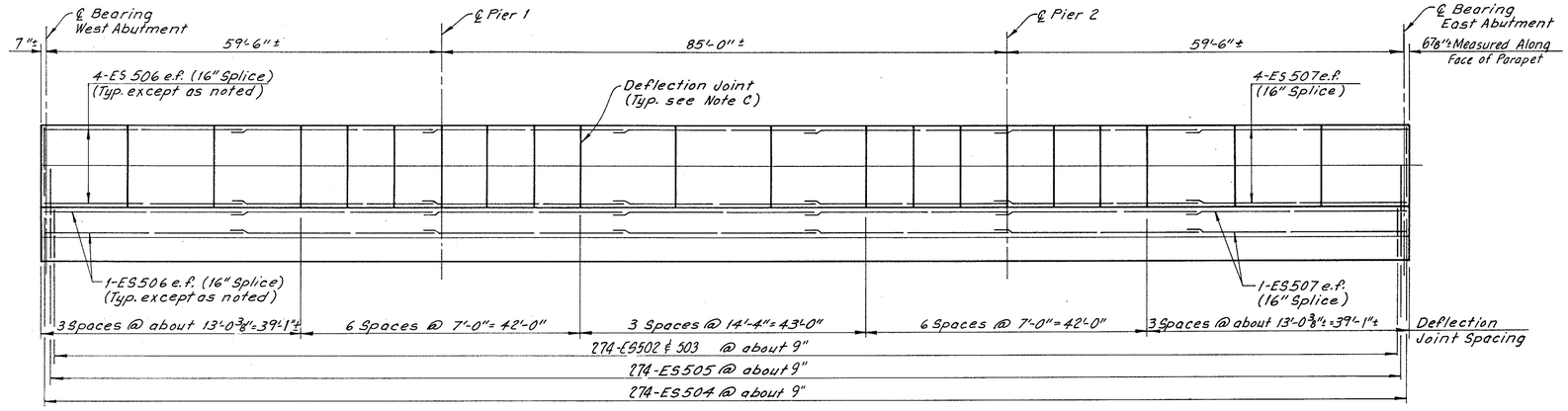
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

39
76

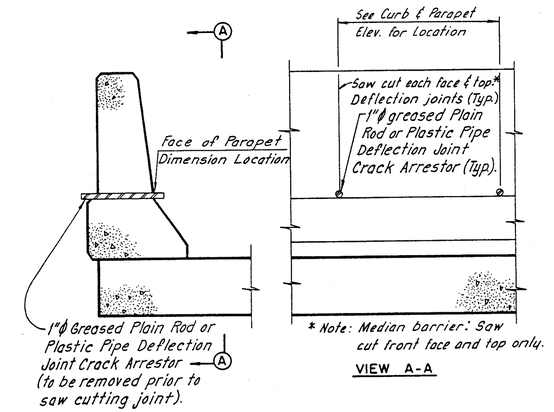
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



SOUTH CURB & PARAPET ELEVATION
(North Curb & Parapet opposite hand)



NORTH MEDIAN CURB & PARAPET ELEVATION
(South Median Curb & Parapet opposite hand)



VIEW A-A

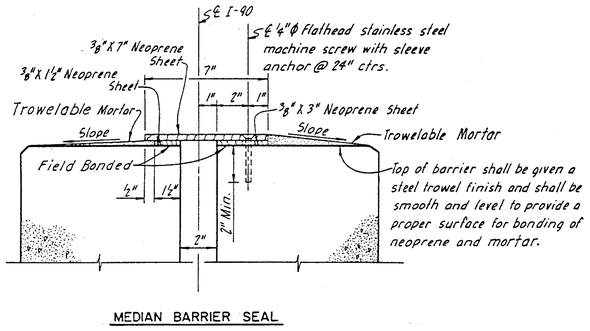
TYPICAL CRACK ARRESTOR DETAIL

NOTE C:

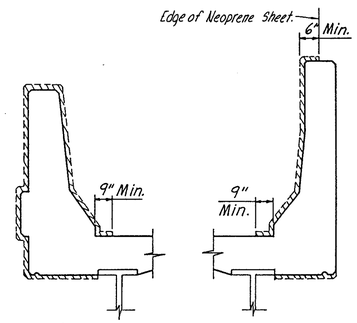
PARAPET DEFLECTION JOINTS LOCATED AS PER PLAN SHALL BE MADE VERTICALLY OR A RIGHT ANGLES TO THE DECK BY SAWING. THE SAWING SHALL BE DONE AFTER THE CONCRETE HAS TAKEN ITS INITIAL SET AND BEFORE ANY SHRINKAGE CRACKS COULD DEVELOP. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO INSURE THAT THE CUT JOINT IS STRAIGHT, TRUE AND ALIGNED ON BOTH FACES OF THE PARAPET. THE DEPTH OF SAW CUT SHALL BE A MINIMUM OF 1" INCH. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, NOT TO EXCEED ONE QUARTER INCH. THE OUTSIDE ONE INCH OF THE PERIMETER OF THE DEFLECTION JOINT SHALL BE SEALED WITH A POLYURETHANE OR POLYMERIC JOINT SEALANT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-S-00227E. SAW CUTTING THE DEFLECTION JOINTS AND SEALANT SHALL BE INCLUDED IN ITEM 511, CLASS S CONCRETE SUPERSTRUCTURE, AS PER PLAN FOR PAYMENT.

NOTES:

FOR REINFORCEMENT SCHEDULE SEE SHEET 9/9 .
THE FOLLOWING ABBREVIATIONS ARE USED:
E.F. = EACH FACE (TYP.) = TYPICAL CTRS. = CENTERS



MEDIAN BARRIER SEAL



LIMITS OF SEALING CONCRETE SURFACES

NOTES:

PAVEMENT FOR THE TROWELABLE MORTER SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL-MEADIAN BARRIER SEAL.

BARRIER SEAL SHALL BE CONTINUOUS. PAYMENT FOR THE STAINLESS STEEL SCREWS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL-MEDIAN BARRIER SEAL.

ITEM NO.			202		511		SPECIAL	SPECIAL			
ESTIMATED QUANTITIES			PORTIONS OF STRUCTURES REMOVED, AS PER PLAN.		CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN		SEALING OF CONCRETE SURFACES (EPOXY)	MEDIAN BARRIER SEAL			
REF.#	SIDE	LOCATION	LUMP SUM		CU.YD.		SQ.YD.	LIN.FT.			
		SUPERSTRUCTURE	LUMP SUM		1081		853	206			
TOTAL TO SUB-SUMMARIES SHEETS 13 & 14			LUMP SUM		1081		853	206			

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

PARAPET DETAILS

I-90 OVER BABBITT ROAD

BR. NO.-CUY.-90-2840

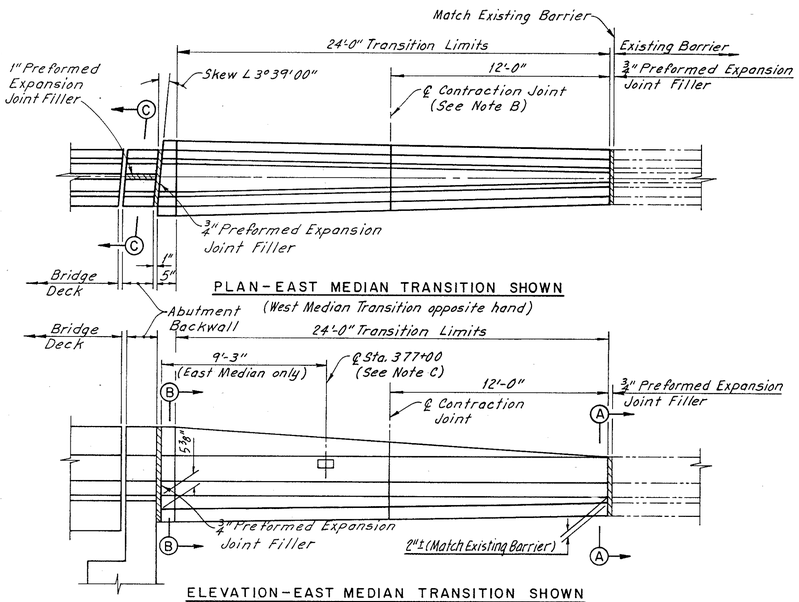
CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 9-87	Date 9-87	Date 9-87	Date 4-91	Sheet 5/9

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

40
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



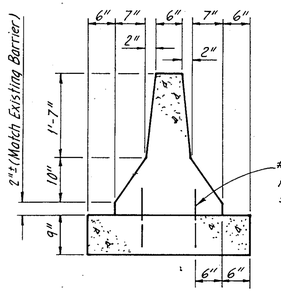
PLAN - EAST MEDIAN TRANSITION SHOWN
(West Median Transition opposite hand)

ELEVATION - EAST MEDIAN TRANSITION SHOWN
(West Median Transition opposite hand)

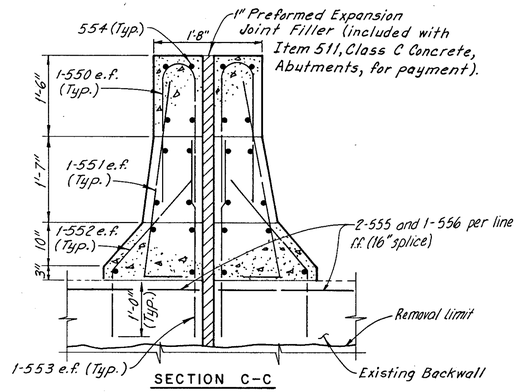
NOTE B:
CONSTRUCTION JOINTS MAY BE CONSTRUCTED WITH METAL INSERTS INSIDE THE FORMS, PREFORMED FULL WIDTH JOINT FILLER, A GROOVING TOOL, OR BY SAWING. INSERTS OR TOOLED OR SAWED JOINTS SHALL HAVE A 1 1/2" MIN. DEPTH. ALL JOINTS SHALL BE CONSTRUCTED FOR THE FULL HEIGHT OF THE BARRIER INCLUDING THE BASE.

NOTE C:
THE STATION SHALL BE IMPRESSED IN THE GREEN CONCRETE ON BOTH SIDES AT THE TOP OF THE BARRIER.
THE COST SHALL BE INCLUDED IN THE UNIT PRICE PER LINEAR FOOT BID FOR ITEM 622 CONCRETE BARRIER, TYPE A-50, AS PER PLAN.

ITEM NO.			202				511		509	
ESTIMATED QUANTITIES			PORTIONS OF STRUCTURES REMOVED, AS PER PLAN.				CLASS C CONCRETE, ABUTMENTS		EPOXY COATED REINFORCING STEEL	
REF.#	SIDE	LOCATION	LUMP SUM				CU.YD.		POUND	
	℄	ABUTMENT BACKWALL AND								
		BARRIER MEDIAN	LUMP SUM				22		504	
TOTAL TO SUB-SUMMARIES SHEET 13			LUMP SUM				22		504	

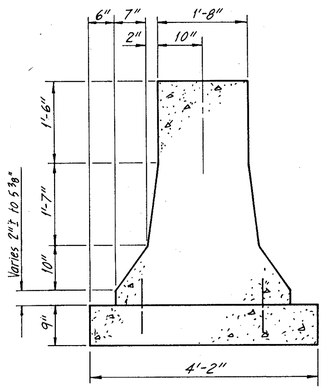


SECTION A-A

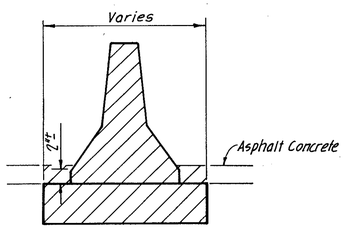


SECTION C-C

(CONCRETE BARRIER MEDIAN ON BACKWALL IS INCLUDED FOR PAYMENT UNDER ITEM 511-CLASS C CONCRETE, ABUTMENTS)



SECTION B-B



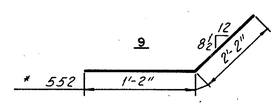
EXISTING BARRIER MEDIAN REMOVAL LIMITS

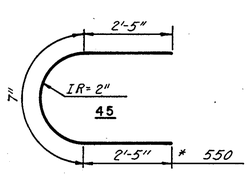
(INCLUDED FOR PAYMENT UNDER ITEM 622-CONCRETE BARRIER, TYPE A-50, AS PER PLAN.)

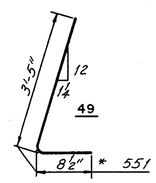
REINFORCEMENT SCHEDULE					
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
ABUTMENT BACKWALL AT MEDIAN					
* 550	8	5'-5"	45		*45
* 551	8	4'-0"	49		*33
* 552	8	3'-3"	9		*27
* 553	8	3'-7"	Str.		*30
* 554	48	1'-3"	Str.		*63
* 555	8	30'-0"	Str.		*250
* 556	4	13'-6"	Str.		*56
*TOTAL WEIGHT EPOXY COATED =					*504

*INDICATES EPOXY COATED BARS.

BENDING DIAGRAMS







NOTE:
THE FOLLOWING ABBREVIATIONS ARE USED:
E.F. = EACH FACE (TYP.) = TYPICAL

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

MEDIAN TRANSITION DETAILS

I-90 OVER BABBITT ROAD

BR. NO.-CUY.-90-2840

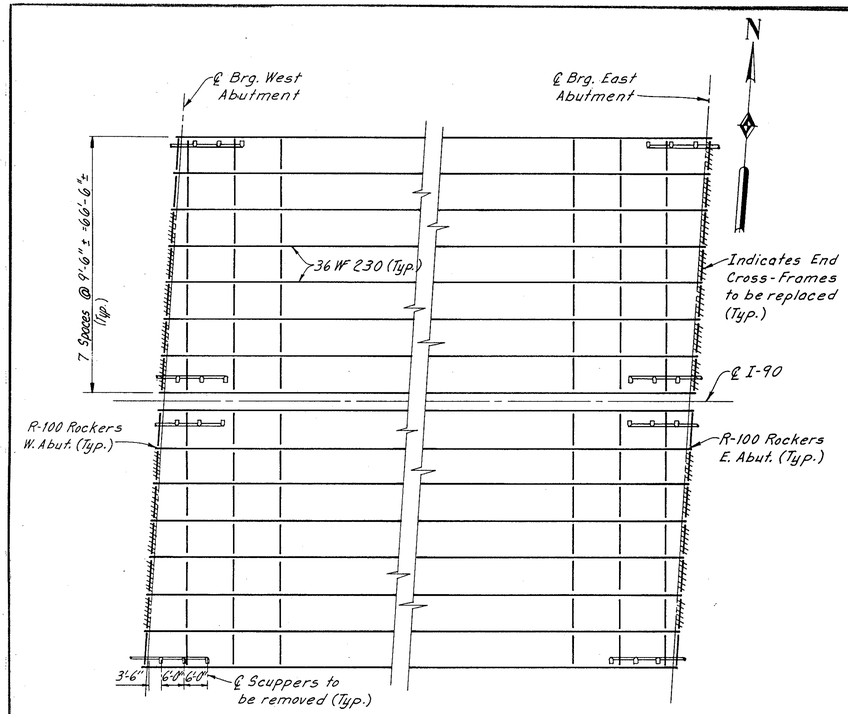
CUYAHOGA COUNTY OHIO

Made LVD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 9-87	Date 9-87	Date 9-87	Date 4-91	Sheet 6/9

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

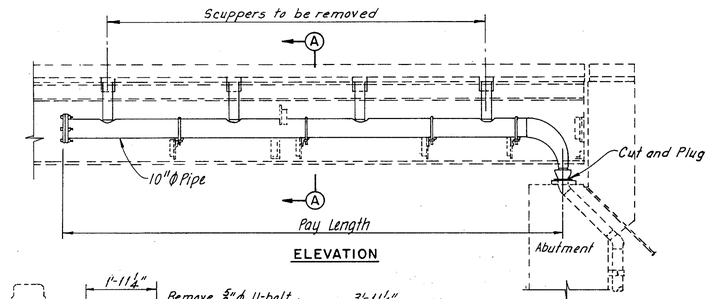
41
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



PART FRAMING PLAN

NOTES:
RESET, SANDBLAST AND PAINT ALL ROCKERS AT BOTH ABUTMENTS.
FOR DETAILS SEE SHEET CD 1 .



BRIDGE DRAINAGE SYSTEM REMOVAL LIMITS

ITEM NO.			202	202		513	514	514		516	
ESTIMATED QUANTITIES			BRIDGE DRAINAGE SYSTEM REMOVED	END CROSS-FRAMES REMOVED		STRUCTURAL STEEL, FOR REHABILITATION, AS PER C.O. PLAN	FIELD PAINTING OF NEW STRUCTURAL STEEL SYSTEM A	FIELD PAINTING OF RESET BEARINGS		RESET BEARINGS	
REF.#	SIDE	LOCATION	LIN.FT.	EACH		POUND	POUND	LUMP SUM		EACH	
		WEST ABUTMENT	70	10		1880	1880	LUMP SUM		16	
		EAST ABUTMENT	70	12		2256	2256	LUMP SUM		16	
TOTAL TO SUB-SUMMARIES SHEET 13			140	22		4136	4136	LUMP SUM		32	

NOTES:
FOR THE LIMITS OF REMOVAL AND END CROSSFRAME DETAIL FOR END CROSSFRAMES NOT REPLACED SEE SHEET 33.
FOR DETAILS OF END CROSSFRAMES TO BE REPLACED SEE STANDARD DRAWING EXJ-4-87 SHEET 1 OF 5.
THE END CROSSFRAMES TO BE REPLACED SHALL BE FABRICATED TO FIELD MEASURED DIMENSIONS. PAYMENT FOR THE END CROSSFRAMES SHALL BE INCLUDED IN ITEM 513 - STRUCTURAL STEEL FOR REHABILITATION, AS PER PLAN.
THE FOLLOWING ABBREVIATIONS ARE USED:
BRG. = BEARING (TYP.) = TYPICAL
W. ABUT. = WEST ABUTMENT MAX. = MAXIMUM
E. ABUT. = EAST ABUTMENT

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

SUPERSTRUCTURE DETAILS

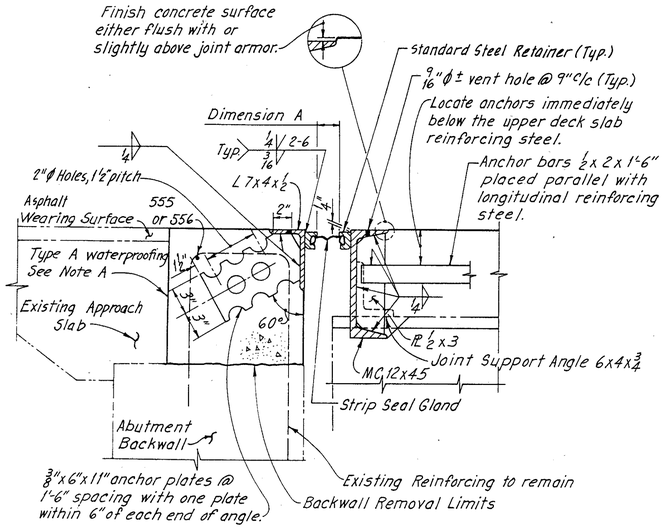
I-90 OVER BABBITT ROAD
BR. NO.- CUY.-90-2840
CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 9-87	Date 9-87	Date 9-87	Date 4-91	Sheet 7/9

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

42
76

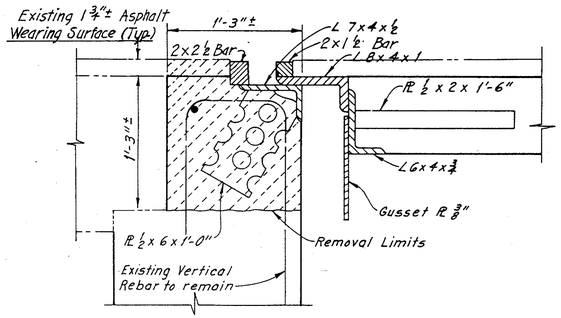
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



PROPOSED EXPANSION JOINT DETAIL

DIMENSION "A" (INCHES)		
F°	WEST ABUTMENT	EAST ABUTMENT
90	1-3/4	2-1/16
80	1-7/8	2-1/8
70	1-15/16	2-1/8
60	2-1/16	2-3/16
50	2-3/16	2-1/4
40	2-5/16	2-1/4
30	2-7/16	2-5/16

NOTE A:
TYPE A WATERPROOFING INCLUDED WITH ITEM 511 CLASS C CONCRETE, ABUTMENTS, FOR PAYMENT.
FOR BACKWALL REINFORCEMENT SCHEDULE SEE SHEET 6/9.



EXISTING END DAM
Removal Limits

ITEM NO.			202					516		
ESTIMATED QUANTITIES			PORTIONS OF STRUCTURES REMOVED, AS PER PLAN					STRUCTURAL EXPANSION JOINTS INCLUDING STEEL RETAINER & STRIP SEAL GLAND, A.P.P.		
REF.#	SIDE	LOCATION	LUMP SUM					LIN.FT.		
		EAST ABUTMENT	LUMP SUM					139.5		
		WEST ABUTMENT	LUMP SUM					139.5		
TOTAL TO SUB-SUMMARIES			LUMP SUM					279		

NOTES:
STUD ANCHORS SHALL BE LOW CARBON STEEL ASTM A-108, SPLIT RETAINER, ANCHORS AND STAINLESS STEEL CAP SCREWS SHALL BE INCLUDED WITH ITEM 516 STRUCTURAL EXPANSION JOINTS INCLUDING STEEL RETAINERS AND STRIP SEAL GLANDS FOR PAYMENT.

FOR ADDITIONAL STRIP SEAL EXPANSION JOINT DETAILS, SEE STANDARD DRAWING EXJ-4-87 SHEETS 1, 2, 4 AND 5 OF 5.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

MISCELLANEOUS DETAILS

I-90 OVER BABBITT ROAD
BR. NO.-CUY.-90-2840

CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 9-87	Date 9-87	Date 9-87	Date 4-91	Sheet 8/9

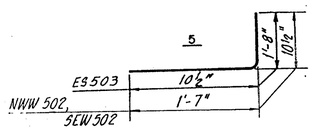
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
SUPERSTRUCTURE					
ES401	1,068	30'-0"	Str.		21,403
ES402	178	30'-10"	Str.		3,666
ES403	352	34'-0"	Str.		7995
ES501	412	7'-2"	58		3,080
ES502	960	3'-0"	43		3004
ES503	960	2'-5"	5		2420
ES504	548	4'-9"	45		2715
ES505	548	5'-3"	58		3001
ES506	1,068	30'-0"	Str.		33,418
ES507	44	33'-1"	Str.		1,518
ES508	704	32'-1"	Str.		23,558
ES509	704	39'-9"	Str.		27,187
ES510	134	32'-10"	Str.		4,589
ES601	1,408	36'-0"	Str.		76,133
TOTAL WEIGHT EPOXY COATED =					215,687
NORTHWEST WINGWALL					
NWW501	9	6'-11"	58		65
NWW502	18	2'-4"	5		44
NWW503	10	3'-2"	43		33
NWW504	6	2'-0"	Str.		13
NWW505	2 Ser. 6	2'-2" / 3'-2"	Str.	2 3/8	33
NWW506	3	2'-11"	61		9
NWW507	2	2'-7"	43		5
NWW508	2	2'-10"	43		6
NWW509	1	3'-0"	43		3
NWW510	11	16'-11"	Str.		194
NWW511	2	16'-8"	9		35
NWW512	1	16'-11"	19		18
TOTAL WEIGHT EPOXY COATED =					458
NORTHEAST WINGWALL *					
NEW501	6	6'-11"	58		43
NEW502	15	2'-4"	5		37
NEW503	7	3'-2"	43		23
NEW504	6	2'-0"	Str.		13
NEW505	2 Ser. 6	2'-2" / 3'-2"	Str.	2 3/8	33
NEW506	3	2'-11"	61		9
NEW507	2	2'-7"	43		5
NEW508	2	2'-10"	43		6
NEW509	1	3'-0"	43		3
NEW510	11	13'-10"	Str.		159
NEW511	2	13'-8"	9		29
NEW512	1	13'-11"	19		15
TOTAL WEIGHT EPOXY COATED =					375

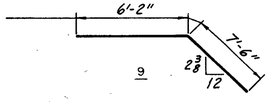
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
SOUTHWEST WINGWALL *					
NWW501	9	6'-11"	58		65
NWW502	18	2'-4"	5		44
NWW503	10	3'-2"	43		33
NWW504	6	2'-0"	Str.		13
NWW505	2 Ser. 6	2'-2" / 3'-2"	Str.	2 3/8	33
NWW506	3	2'-11"	61		9
NWW507	2	2'-7"	43		5
NWW508	2	2'-10"	43		6
NWW509	1	3'-0"	43		3
NWW510	11	16'-11"	Str.		194
NWW511	2	16'-8"	9		35
NWW512	1	16'-11"	19		18
TOTAL WEIGHT EPOXY COATED =					458
SOUTHEAST WINGWALL					
NWW501	9	6'-11"	58		65
NWW502	18	2'-4"	5		44
NWW503	10	3'-2"	43		33
NWW504	6	2'-0"	Str.		13
NWW505	2 Ser. 6	2'-2" / 3'-2"	Str.	2 3/8	33
NWW506	3	2'-11"	61		9
NWW507	2	2'-7"	43		5
NWW508	2	2'-10"	43		6
NWW509	1	3'-0"	43		3
NWW510	11	16'-11"	Str.		194
NWW511	2	16'-8"	9		35
NWW512	1	16'-11"	19		18
TOTAL WEIGHT EPOXY COATED =					458

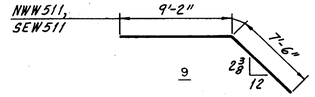
* -THESE WINGWALLS SHALL BE INCLUDED FOR PAYMENT BY LINEAL FOOT UNDER ITEM 517- RAILING, CONCRETE (SEE SHT 8A.)

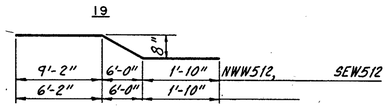
NOTE:
ALL REINFORCING STEEL SHALL BE EPOXY COATED.

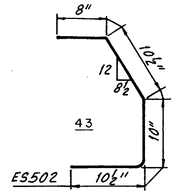
BENDING DIAGRAMS

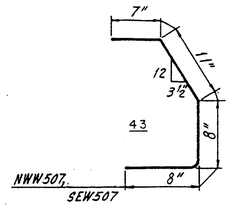


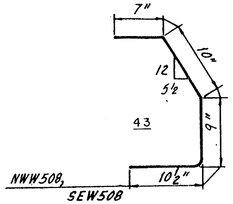


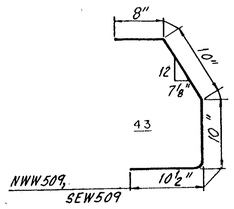


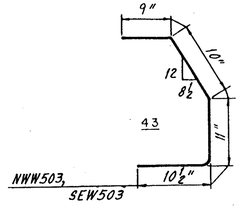


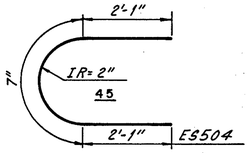


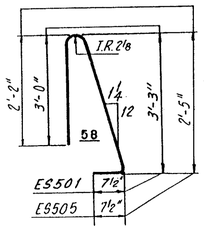


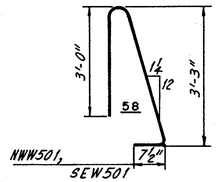


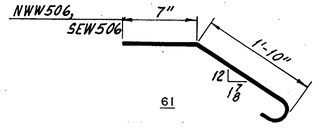












FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

43
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

REINFORCEMENT SCHEDULE

I-90 OVER BABBITT ROAD

BR. NO.-CUY.-90-2840

CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 9-87	Date 9-87	Date 9-87	Date 4-91	Sheet 9 / 9

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

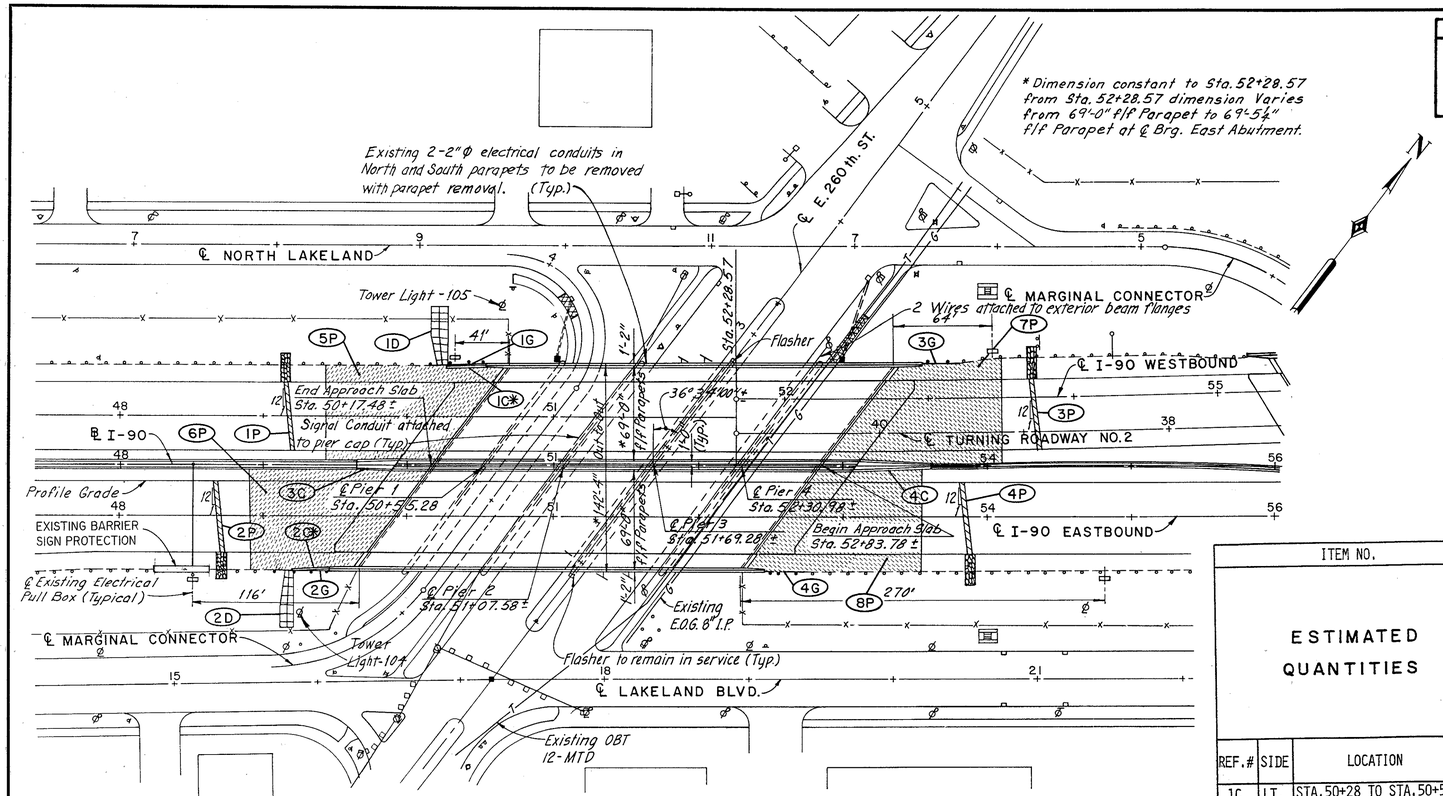
44
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

SITE BENCH MARK
TBM DRILL HOLE IN TOP OF NORTHWEST WINGWALL AT EXPANSION JOINT STA. 50+70.96 ℄ I-90, 70.0' LEFT ELEVATION 661.58

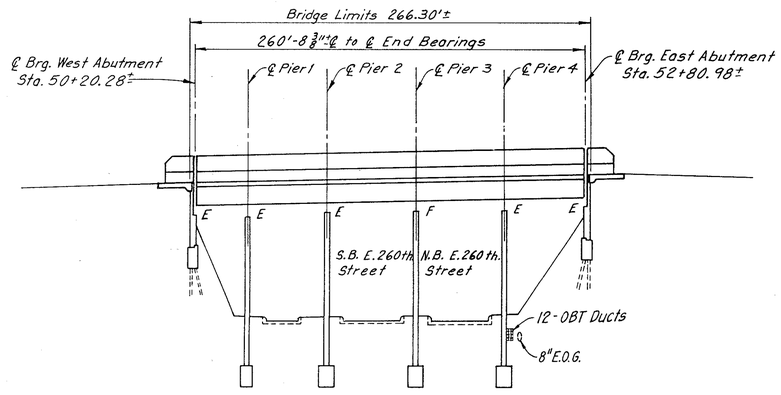
EXISTING STRUCTURE
TYPE: CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 35'-0"±,52'-3"±,61'-9"±,61'-9"±,50'-0"± CENTER TO CENTER BEARINGS
ROADWAY: VARIABLE
LOADING: CF-2000-57 (ADEQUATE FOR AASHO ALTERNATE LOADING)
SKEW: 36°-34'-00"±L.F.
WEARING SURFACE: ASPHALT
APPROACH SLAB: AS-1-54 (25'-0" LONG)
ALIGNMENT: TANGENT AND 0°-28'-00"± CURVE

MODIFIED STRUCTURE
TYPE: CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 35'-0"±,52'-3"±,61'-9"±,61'-9"±,50'-0"± CENTER TO CENTER BEARINGS
ROADWAY: VARIABLE
SKEW: 36°-34'-00"± L.F.
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLAB: AS-1-54 (25'-0" LONG)
ALIGNMENT: TANGENT AND 0°-28'-00"± CURVE



NOTE: UNDER BRIDGE LIGHTING ATTACHED TO PIER CAPS, TO REMAIN.

PLAN
Scale: 1"=50'



ELEVATION
Scale: 1"=50' Horiz.
1"=10' Vert.

* - TYPE 6 CURB SHALL HAVE A 3" REVEAL

ITEM NO.			202	254	404	407	606	605	606	606	609	622			660	SPECIAL	
ESTIMATED QUANTITIES			GUARDRAIL REMOVED	PAVEMENT PLANING, BITUMINOUS	ASPHALT CONCRETE, AC-20	TACK COAT	BRIDGE TERMINAL ASSEMBLY, TYPE 2	AGGREGATE DRAINS	BRIDGE TERMINAL ASSEMBLY, TYPE 1	GUARDRAIL, TYPE 5	CURB, TYPE 6 * AS PER PLAN	CONCRETE BARRIER, TYPE A-50, AS PER PLAN			REINFORCED SODDING	PRESSURE RELIEF JOINTS, TYPE C	
REF.#	SIDE	LOCATION	LIN.FT.	SQ.YD.	CU.YD.	GAL.	EACH	LIN.FT.	EACH	LIN.FT.	LIN.FT.	LIN.FT.			SQ.YD.	LIN.FT.	
1C	LT.	STA.50+28 TO STA.50+54									26						
2C	RT.	STA.49+21 TO STA.49+47									26						
3C	℄	STA.49+62.6 TO STA.50+17.4										54.8					
4C	℄	STA.52+83.8 TO STA.53+36.7										52.9					
1G	LT.	STA.50+16.5 TO STA.50+54		37.5			1			37.5							
2G	RT.	STA.49+09.5 TO STA.49+47		37.5					1	37.5							
3G	LT.	STA.53+55 TO STA.53+80		25					1	25							
4G	RT.	STA.52+45 TO STA.52+70		25			1			25							
1P	LT.	STA.49+18 ±10'						18								48.2	
2P	RT.	STA.48+70 ±10'						18								48.2	
3P	LT.	STA.54+35 ±10'						18								48.2	
4P	RT.	STA.53+85 ±10'						18								48.2	
1D	LT.	STA.50+25													36.5		
2D	RT.	STA.49+18													36.5		
5P	LT.	STA.49+44 TO STA.50+44		402	33	41											
6P	RT.	STA.48+91 TO STA.49+91		402	33	41											
7P	LT.	STA.53+11 TO STA.54+11		402	33	41											
8P	RT.	STA.52+57 TO STA.53+57		402	33	41											
TOTAL TO SUB-SUMMARIES, SHEETS 13 & 14			125	1608	132	164	2	72	2	125	52	108			73	193	

NOTES:

FOR LIMITS AND DETAILS OF REINFORCED SODDING AT THE ENDS OF THE TYPE 6 CURB SEE OHIO STANDARD CONSTRUCTION DRAWING MC-7.

TOWER LIGHTS 104 AND 105 SHALL BE CONNECTED INTO ADJOINING CIRCUITS BEFORE REMOVING EXISTING PARAPETS.

FOR DETAILS OF PROPOSED LIGHTING SEE SHEET 24.

FOR WEARING COURSE REMOVAL AND REPLACEMENT ON THE APPROACH ROADWAYS SEE DETAIL ON SHEET 63.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

GENERAL PLAN AND ELEVATION

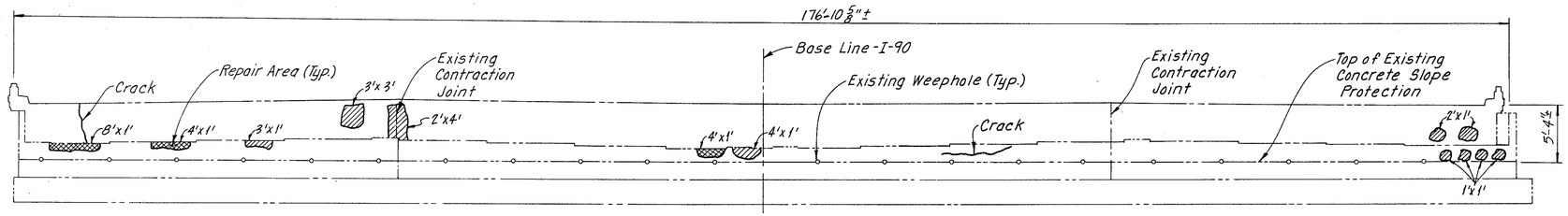
I-90 OVER EAST 260th. STREET
BR. NO.-CUY.-90-2910

CUYAHOGA COUNTY OHIO

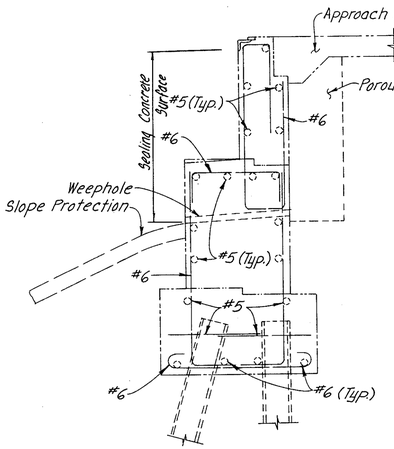
Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 10-87	Date 10-87	Date 10-87	Date 4-91	Sheet 1/10

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

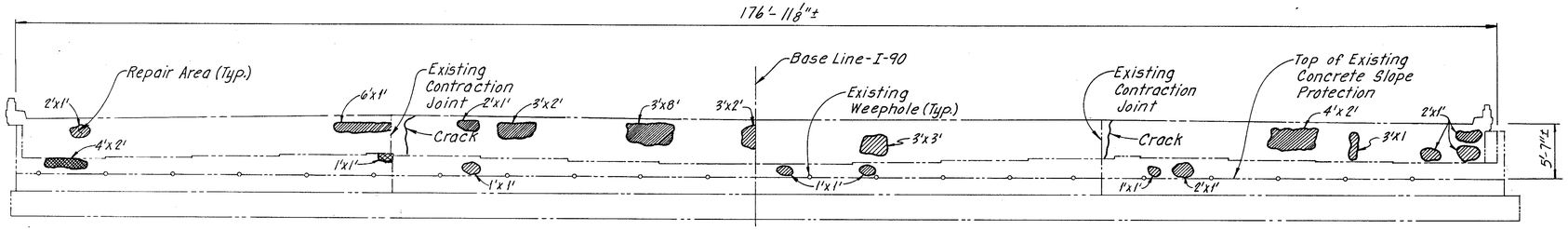
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



WEST ABUTMENT



SECTION A-A



EAST ABUTMENT

NOTE:
FOR ESTIMATED QUANTITY TABLE SEE SHEET 45.

DENOTES ITEM SPECIAL, PNEUMATICALLY PLACED MORTAR.

DENOTES ITEM 519, PATCHING CONCRETE STRUCTURES, AS PER PLAN.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

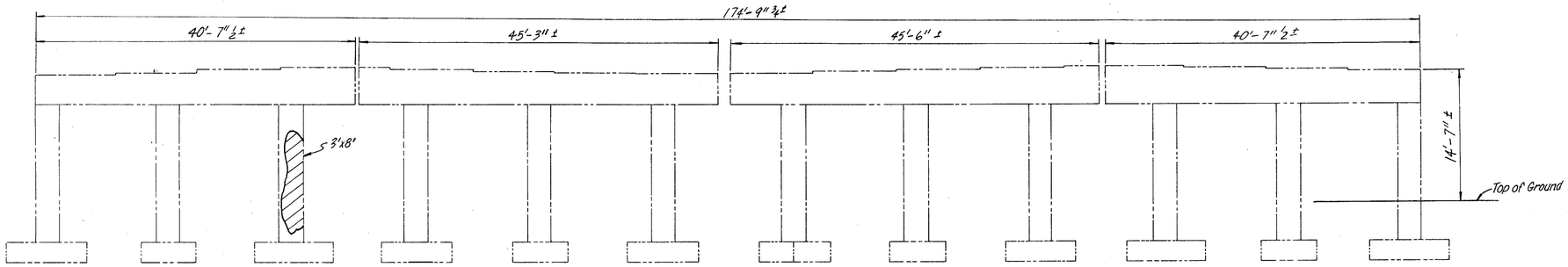
ABUTMENT REPAIR DETAILS

I-90 OVER EAST 260th. STREET
BR. NO.-CUY.-90-2910
CUYAHOGA COUNTY

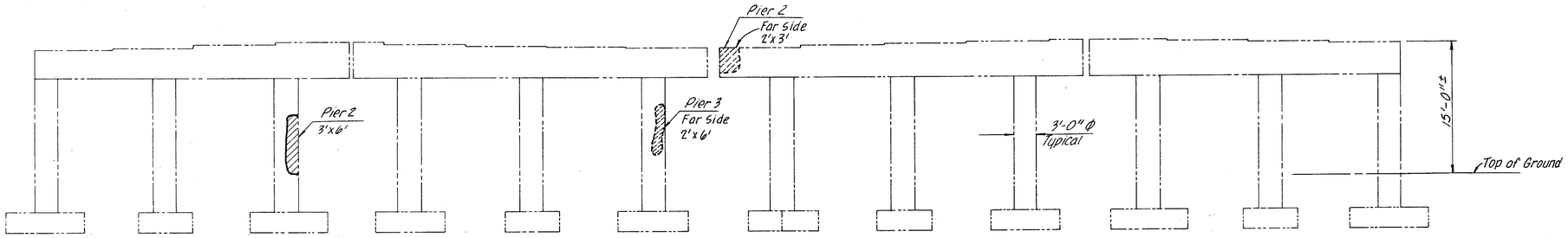
Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 6-89	Date 8-89	Date 8-89	Date 4-91	Sheet 1A/10

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

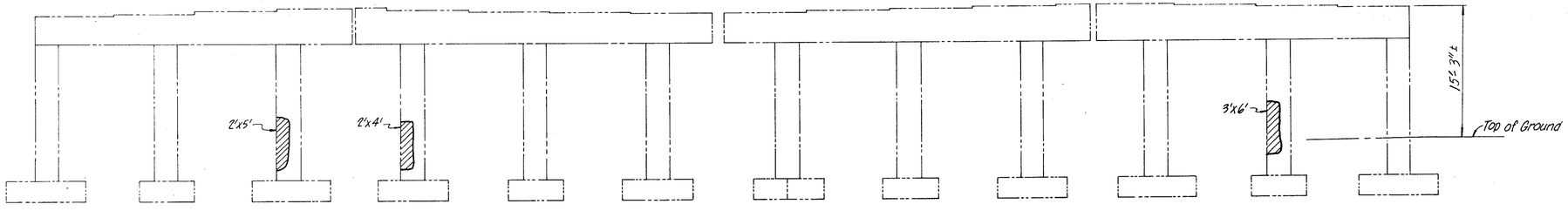
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



PIER 1
(Looking West)



PIER 2 AND PIER 3
(Looking East)



PIER 4
(Looking East)

NOTE:
FOR ESTIMATED QUANTITY TABLE SEE SHEET 45.

DENOTES ITEM SPECIAL, PNEUMATICALLY PLACED MORTAR.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

PIER REPAIR DETAILS

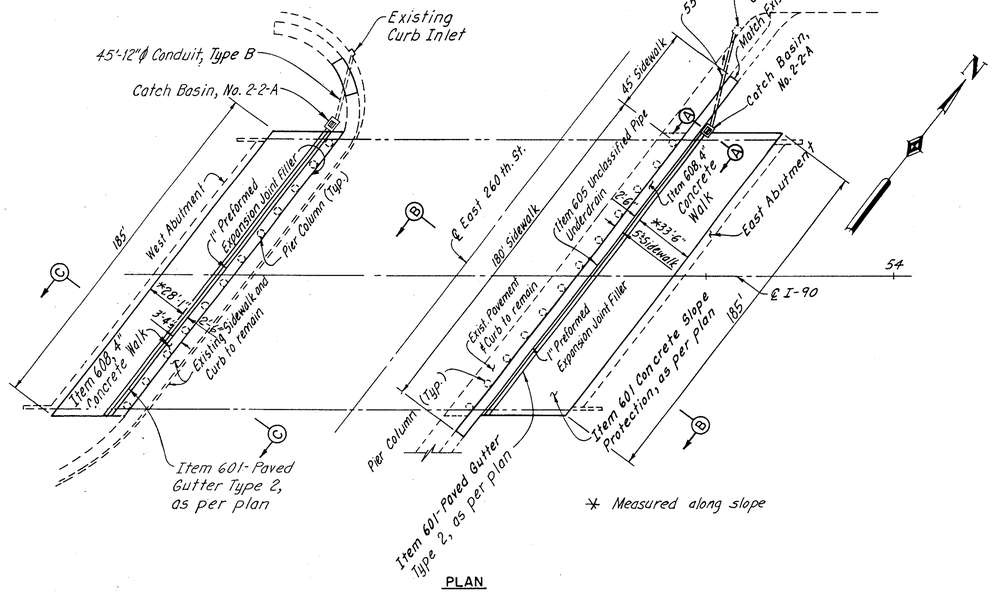
I-90 OVER EAST 260th. STREET
BR. NO.-CUY.-90-2910
CUYAHOGA COUNTY

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 6-89	Date 8-89	Date 8-89	Date 4-91	Sheet 18/10

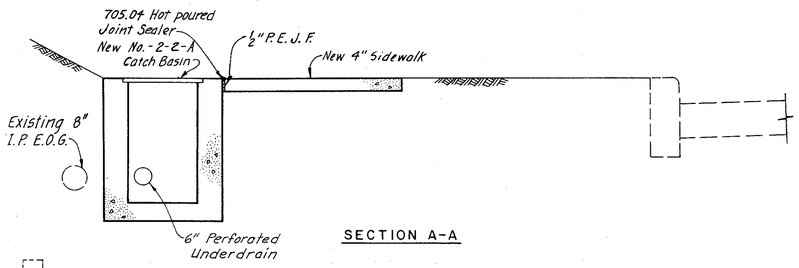
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

45
76

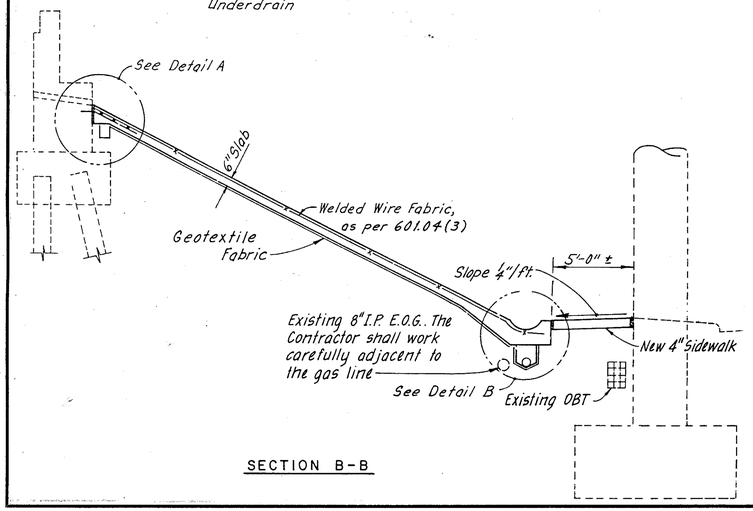
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



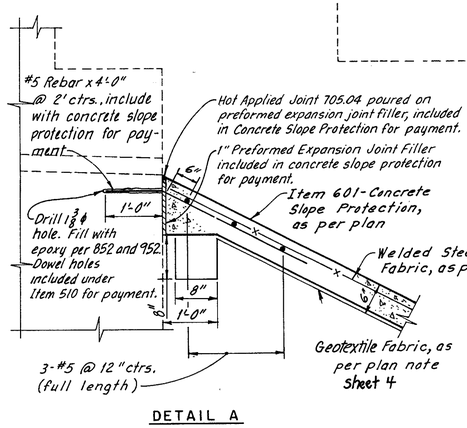
PLAN



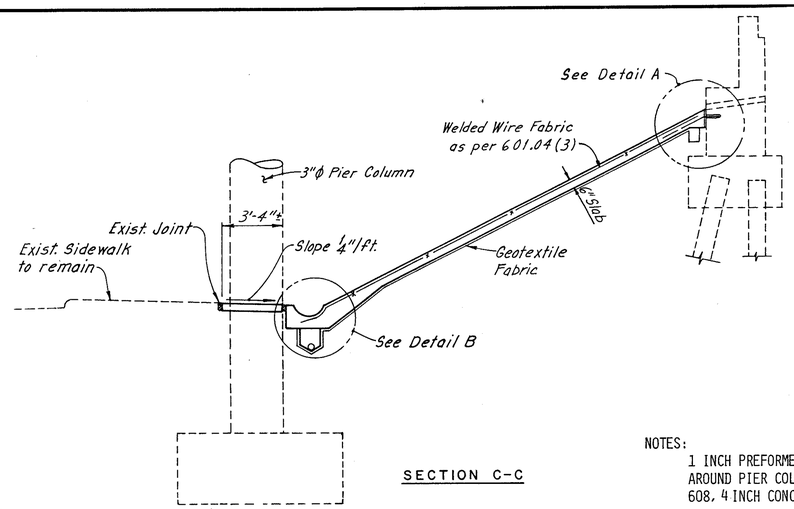
SECTION A-A



SECTION B-B

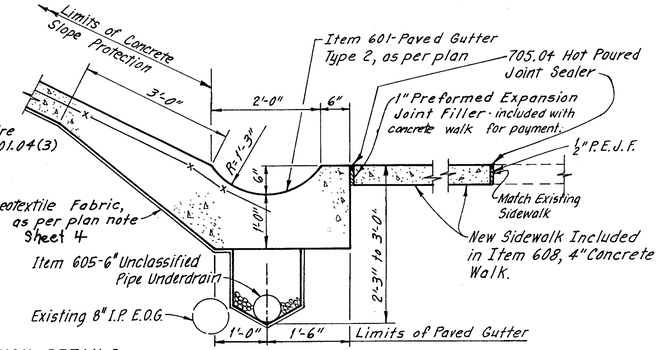


DETAIL A



SECTION C-C

SLOPE PROTECTION DETAILS
EAST 260th STREET



DETAIL B
(West shown, East opposite hand)

NOTES:
1 INCH PREFORMED EXPANSION JOINT FILLER MUST BE PLACED AROUND PIER COLUMNS. PAYMENT SHALL BE INCLUDED IN ITEM 608, 4 INCH CONCRETE WALK.

705.04 HOT POURED JOINT SEALER TO BE INCLUDED WITH ITEM 608, 4 INCH CONCRETE WALK, FOR PAYMENT, EXCEPT AS NOTED.

NOTES:
WELDED WIRE FABRIC SHALL BE CONTINUOUS ACROSS ALL JOINTS.
THE FOLLOWING ABBREVIATIONS ARE USED:
STD. = STANDARD (TYP.) = TYPICAL
MOD. = MODIFIED CTRS. = CENTERS
P.E.J.F. = PREFORMED EXPANSION JOINT FILLER
EXIST. = EXISTING

ESTIMATED QUANTITIES

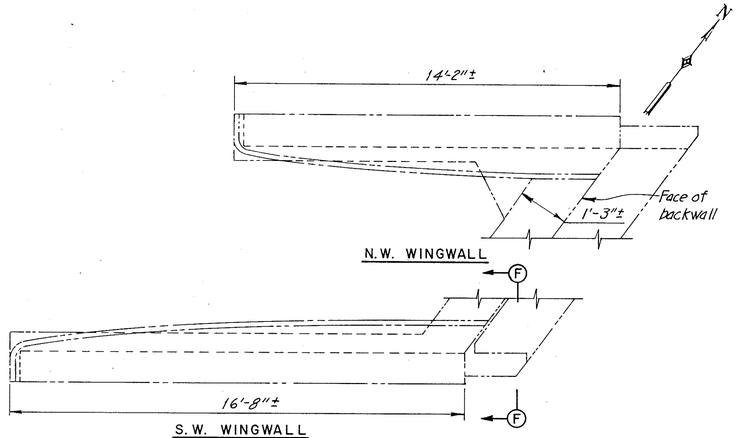
ITEM NO.			202	202	510		519	SPECIAL		601	601	603	604	605	608	SPECIAL		SPECIAL	
REF.#	SIDE	LOCATION	WALK REMOVED	CONCRETE SLOPE PROTECTION REMOVED, AS PER PLAN	DOWEL HOLES AS PER PLAN		PATCHING CONCRETE STRUCTURES, AS PER PLAN	PNEUMATICALLY PLACED MORTAR		CONCRETE SLOPE PROTECTION, AS PER PLAN	PAVED GUTTER, TYPE 2, AS PER PLAN	12" CONDUIT, TYPE B	CATCH BASIN, NO.2-2-A	6" UNCLASSIFIED PIPE UNDERDRAIN	4" CONCRETE WALK	SOUNDING CONCRETE BRIDGE COMPONENTS		SEALING OF CONCRETE SURFACES (EPOXY)	
			SQ.FT.	SQ.YD.	EACH		SQ.FT.	SQ.FT.		SQ.YD.	LIN.FT.	LIN.FT.	EACH	LIN.FT.	SQ.FT.	SQ.FT.		SQ.YD.	
		WEST ABUTMENT	1079	577	89		55	40		577	185	45	1	185	555	1,349		144	
		EAST ABUTMENT	1575	685	89		20	90		685	185	55	1	185	1125	1,397		149	
		PIER 1						40								3,951		439	
		PIER 2						25								3,951		439	
		PIER 3						5								3,951		439	
		PIER 4						40								3,951		439	
TOTAL TO SUB-SUMMARIES SHEETS 13&14			2654	1262	178		75	240		1,262	370	100	2	370	1,680	18,597		2049	

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

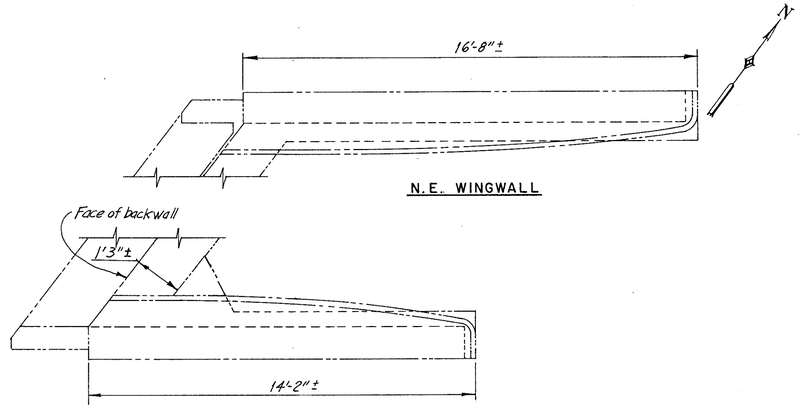
SUBSTRUCTURE DETAILS

I-90 OVER EAST 260th. STREET
BR. NO.-CUY.-90-2910
CUYAHOGA COUNTY OHIO

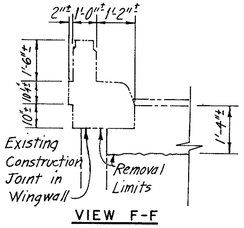
Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 10-87	Date 10-87	Date 10-87	Date 4-91	Sheet 2 / 10



PLAN VIEW OF EXISTING
WINGWALL PARAPET REMOVAL LIMITS
(West Abutment)



PLAN VIEW OF EXISTING
WINGWALL PARAPET REMOVAL LIMITS
(East Abutment)



VIEW F-F

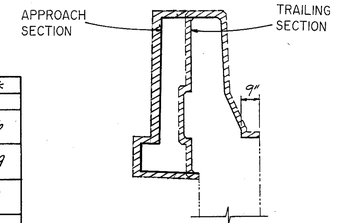
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

46
76

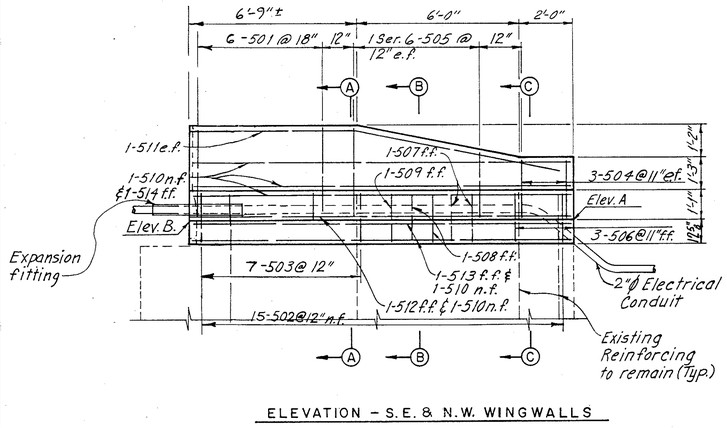
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

LOCATION	ELEVATION* A	ELEVATION* B
North West Wingwall	659.28	659.56
* South West Wingwall	658.45	658.69
* North East Wingwall	659.81	660.09
South East Wingwall	660.83	660.78

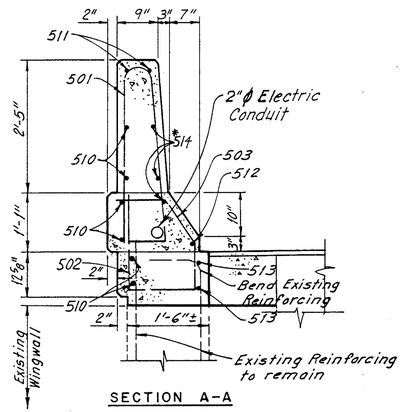
*-ELEVATIONS FOR APPROACH SECTIONS ARE REFERENCED THE SAME AS TRAILING SECTIONS.



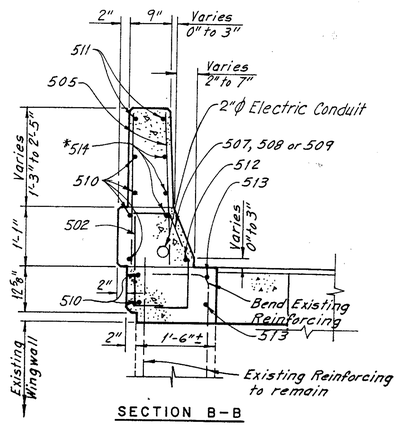
LIMITS OF SEALING
CONCRETE SURFACES



ELEVATION - S.E. & N.W. WINGWALLS
(TRAILING END SECTION)



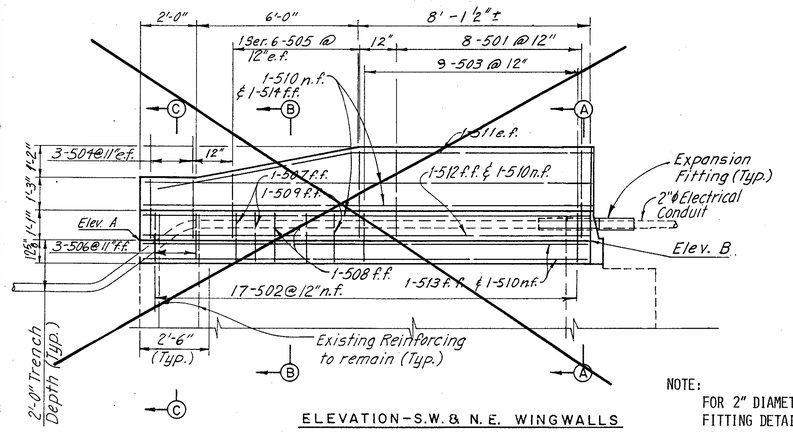
SECTION A-A



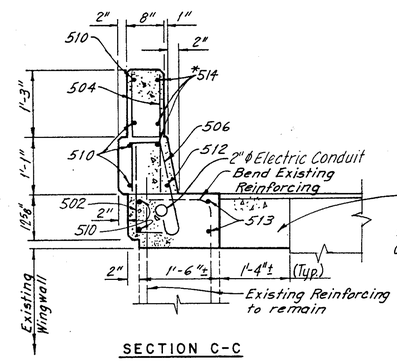
SECTION B-B

ITEM NO.				202			511		517		SPECIAL	
ESTIMATED QUANTITIES				PORTIONS OF STRUCTURES REMOVED, AS PER PLAN			CLASS C CONCRETE, ABUTMENTS		RAILING, CONCRETE		SEALING OF CONCRETE SURFACES (EPOXY)	
REF.#	SIDE	LOCATION		LUMP SUM			CU.YD.		L.F.		SQ.YD.	
		WINGWALL (ALL)		LUMP SUM			14				65	
		WINGWALL (NE)							16'-1"			
		WINGWALL (SW)							16'-1"			
TOTAL TO SUB-SUMMARY SHEETS 13&14				LUMP SUM			14		32.16'		65	

NOTES:
FOR ATTACHMENT OF BRIDGE TERMINAL ASSEMBLIES
SEE STD. CONST. DWG. GR-3.1 OR GR-3.2



ELEVATION-S.W. & N.E. WINGWALLS



SECTION C-C

Concrete fill in area of existing safety curb removed. Payment shall be included in item 511 Class C Concrete, Abutments, (Typ.)

NOTE:
FOR 2" DIAMETER ELECTRICAL CONDUIT EXPANSION FITTING DETAILS, SEE OHIO STANDARD CONSTRUCTION DRAWING HL-30.31.

ALL REINFORCING BAR MARKS SHALL BE PREFIXED AS FOLLOWS:
NWW = NORTHWEST WINGWALL SWW = SOUTHWEST WINGWALL
NEW = NORTHEAST WINGWALL SEW = SOUTHEAST WINGWALL
FOR REINFORCEMENT SCHEDULE SEE SHEET 10/10.
THE FOLLOWING ABBREVIATIONS ARE USED:
E.F. = EACH FACE F.F. = FAR FACE N.F. = NEAR FACE
(TYP.) = TYPICAL ELEV. = ELEVATION

WINGWALL APPROACH SECTIONS (AS NOTED ABOVE) SHALL BE INSTALLED AS SHOWN ON SHT 63A. WORK FOR THESE WINGWALLS ONLY SHALL BE PAID FOR UNDER ITEM 517- RAILING, CONCRETE (L.F.). SEE THE GENERAL NOTES FOR FURTHER DETAILS.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

WINGWALL DETAILS

I-90 OVER EAST 260th. STREET
BR. NO.-CUY.-90-2910
CUYAHOGA COUNTY OHIO

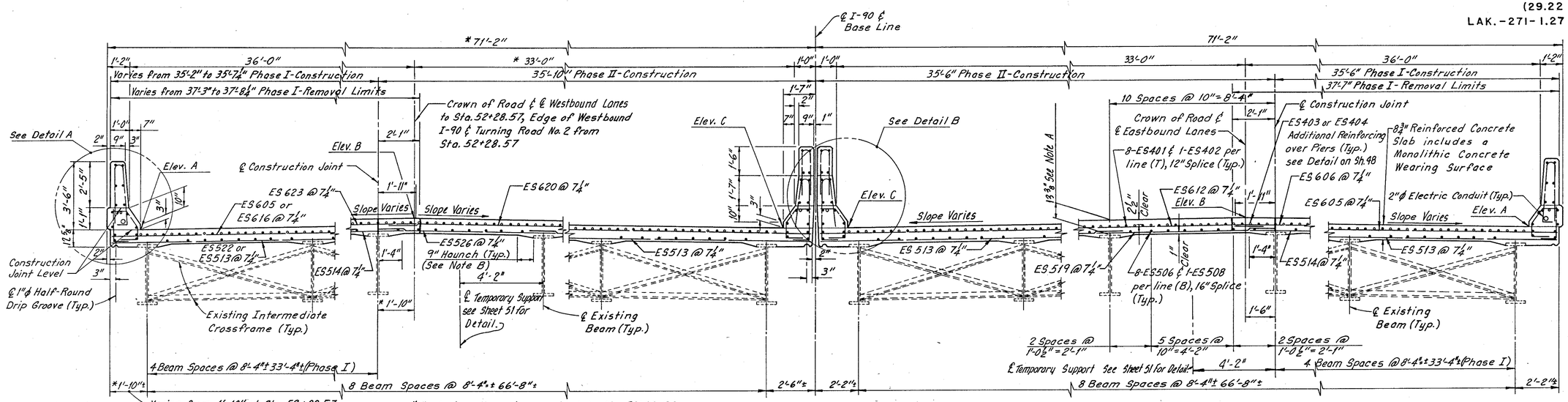
Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 10-87	Date 10-87	Date 10-87	Date 4-91	Sheet 3/10

REQUIRED LAP LENGTHS
NO. 5 BARS 1'-4" MINIMUM
NO. 6 BARS 1'-5" MINIMUM

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

47
76

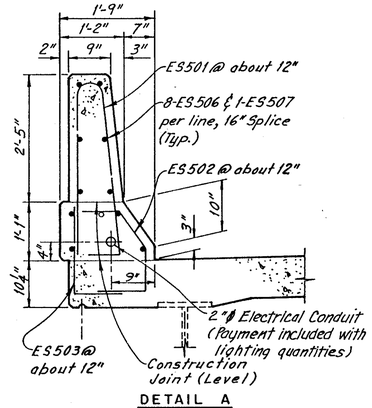
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



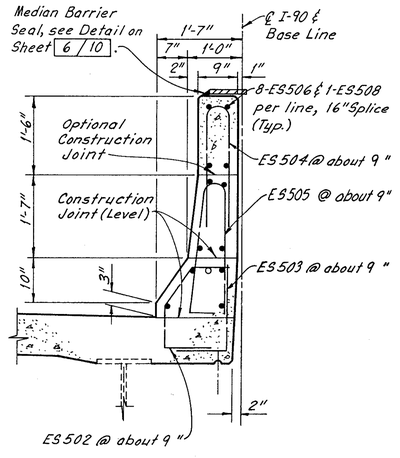
TYPICAL CROSS SECTION

ELEVATIONS (TOP OF PORTLAND CEMENT)																	
	SPAN 1			SPAN 2				SPAN 3				SPAN 4				SPAN 5		
ELEV.	℄ BRG. W. ABUT.	½	℄ BRG. PIER 1	¼	½	¾	℄ BRG. PIER 2	¼	½	¾	℄ BRG. PIER 3	¼	½	¾	℄ BRG. PIER 4	½	℄ BRG. E. ABUT.	ELEV.
EASTBOUND																		
A	658.71	658.91	659.08	659.21	659.33	659.44	659.57	659.73	659.89	660.04	660.12	660.23	660.33	660.44	660.53	660.64	660.76	A
B	659.48	659.63	659.74	659.86	659.99	660.13	660.23	660.31	660.45	660.56	660.64	660.70	660.75	660.80	660.84	660.93	660.99	B
C	659.20	659.38	659.53	659.65	659.76	659.87	659.96	660.05	660.17	660.27	660.34	660.40	660.42	660.48	660.51	660.52	660.57	C
WESTBOUND																		
A	659.58	659.77	659.90	660.00	660.07	660.11	660.18	660.27	660.33	660.36	660.37	660.37	660.35	660.35	660.32	660.24	660.11	A
B	659.90	660.05	660.16	660.26	660.35	660.44	660.52	660.62	660.67	660.70	660.74	660.77	660.79	660.79	660.78	660.79	660.76	B
C	659.29	659.44	659.59	659.71	659.78	659.82	659.90	660.01	660.11	660.19	660.29	660.37	660.42	660.47	660.54	660.65	660.54	C

NOTE:
THE ELEVATIONS SHOWN ARE THOSE WHICH ARE REQUIRED BEFORE CONCRETE IS PLACED. PROPER ALLOWANCES HAVE BEEN MADE FOR THE DEAD LOAD DEFLECTIONS CAUSED BY DEAD WEIGHT OF CONCRETE. THE ABOVE ELEVATION AT THE ABUTMENT MAY HAVE TO BE ADJUSTED TO MATCH THE EXISTING ROADWAY GRADE OF THE STRUCTURE.



DETAIL A



DETAIL B

NOTE A:
DECK SLAB DEPTH: THE DISTANCE SHOWN FROM TOP OF DECK SLAB TO THE TOP OF THE STEEL BEAM IS THE AVERAGE DIMENSION. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED ON THIS DIMENSION EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE.

NOTE B:
A HAUNCH WIDTH OF 9" SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6" AND 12" (PROVIDED THAT THE SLOPE SHALL BE NOT MORE THAN 1:4 FOR A HAUNCH LESS THAN 9" WIDTH).

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

TYPICAL CROSS SECTION

I-90 OVER EAST 260th. STREET
BR. NO.-CUY.-90-2910

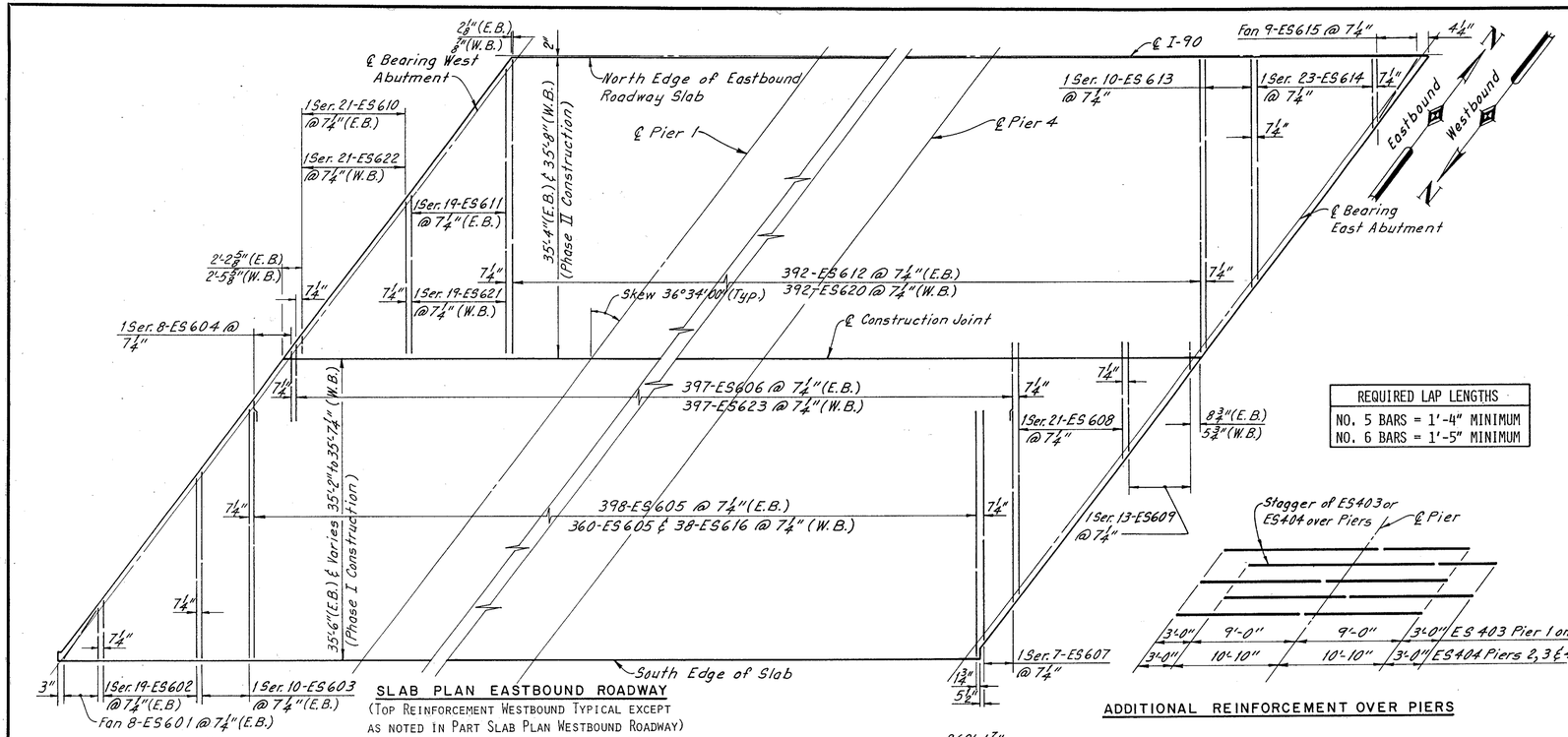
CUYAHOGA COUNTY · OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 10-87	Date 10-87	Date 10-87	Date 4-91	Sheet 4/10

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

48
76

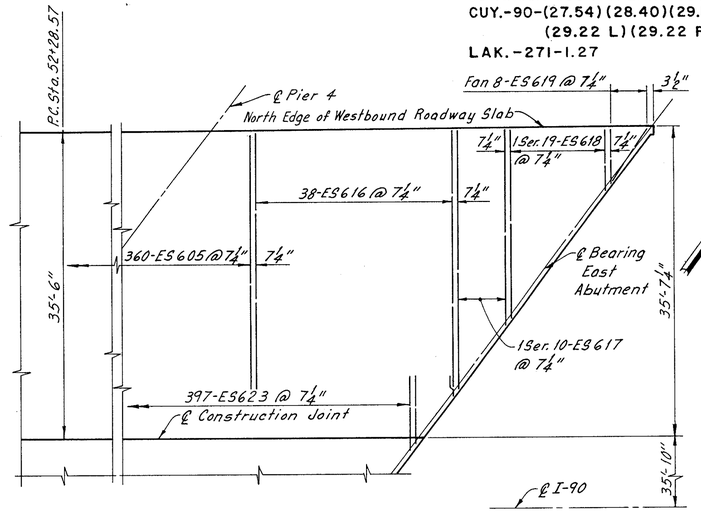
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



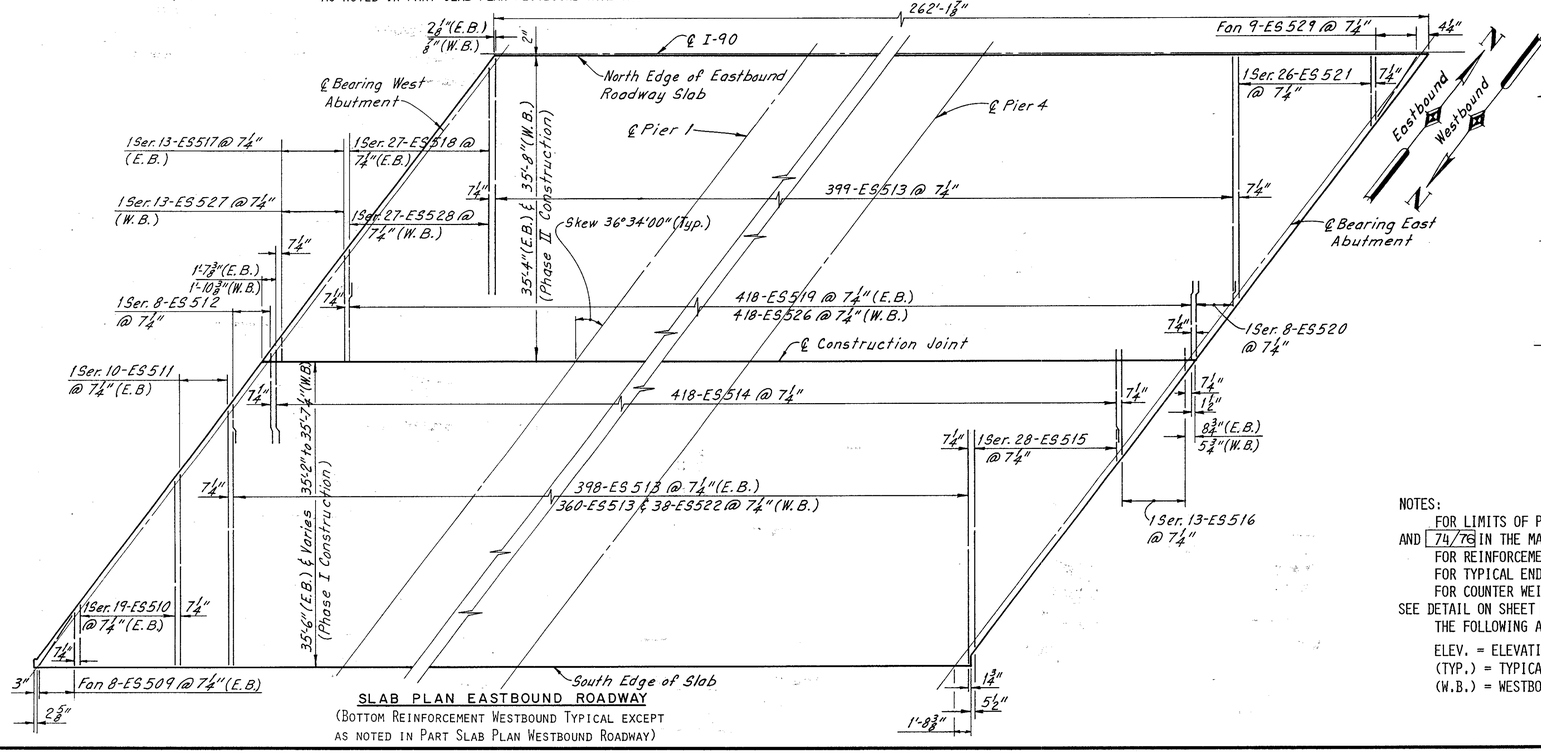
SLAB PLAN EASTBOUND ROADWAY
(Top Reinforcement Westbound Typical except as noted in Part Slab Plan Westbound Roadway)

REQUIRED LAP LENGTHS
NO. 5 BARS = 1'-4" MINIMUM
NO. 6 BARS = 1'-5" MINIMUM

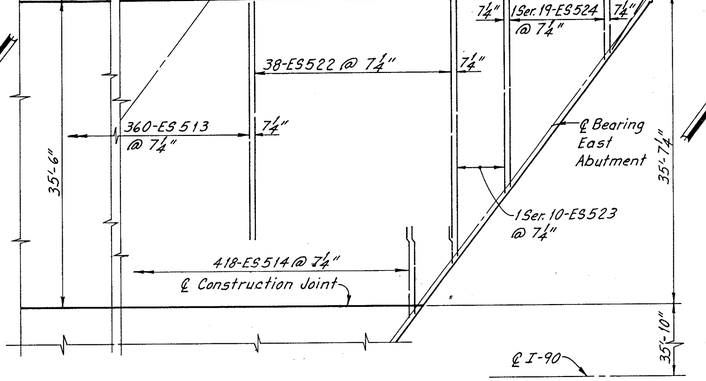
ADDITIONAL REINFORCEMENT OVER PIERS



PART SLAB PLAN WESTBOUND ROADWAY
(Top Reinforcement)



SLAB PLAN EASTBOUND ROADWAY
(Bottom Reinforcement Westbound Typical except as noted in Part Slab Plan Westbound Roadway)



PART SLAB PLAN WESTBOUND ROADWAY
(Bottom Reinforcement)

NOTES:
FOR LIMITS OF PHASE CONSTRUCTION SEE SHEETS 69/76 AND 74/76 IN THE MAINTENANCE OF TRAFFIC PLANS.
FOR REINFORCEMENT SCHEDULE SEE SHEET 10/10.
FOR TYPICAL END DAM DETAIL SEE SHEET 9/10.
FOR COUNTER WEIGHT DETAIL AT WEST END OF SLAB SEE DETAIL ON SHEET 8/10.
THE FOLLOWING ABBREVIATIONS ARE USED:
ELEV. = ELEVATION BRG. = BEARING
(TYP.) = TYPICAL (E.B.) = EASTBOUND
(W.B.) = WESTBOUND

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

SLAB PLAN

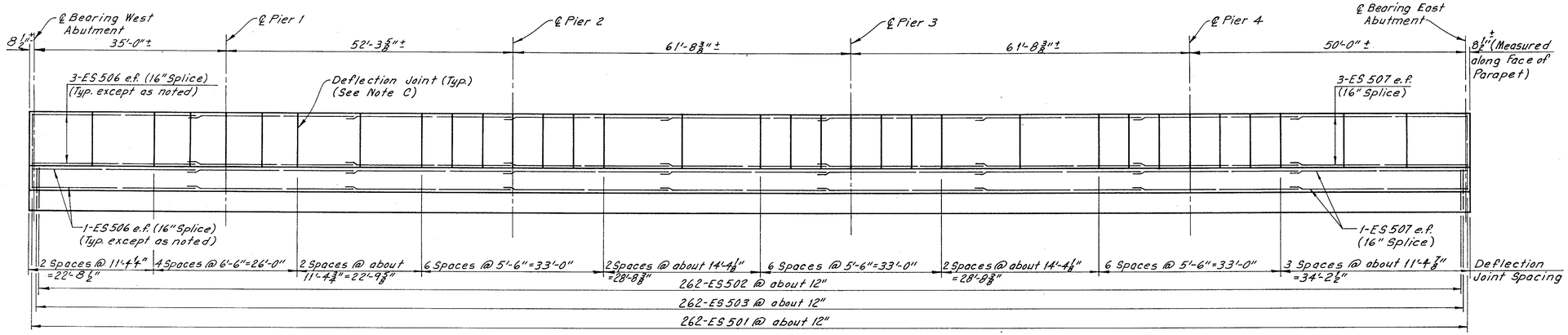
I-90 OVER EAST 260th. STREET
BR. NO.-CUY.-90-2910
CUYAHOGA COUNTY OHIO

Made JSC	Trcd. JSC	Ckd. LJD	Rev. RAB	Revised
Date 10-87	Date 10-87	Date 10-87	Date 4-91	Sheet 5/10

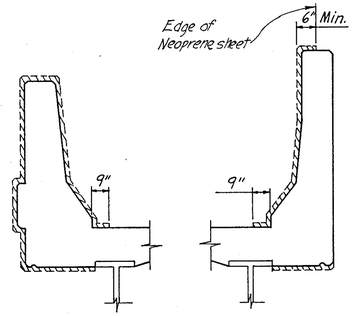
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

49
76

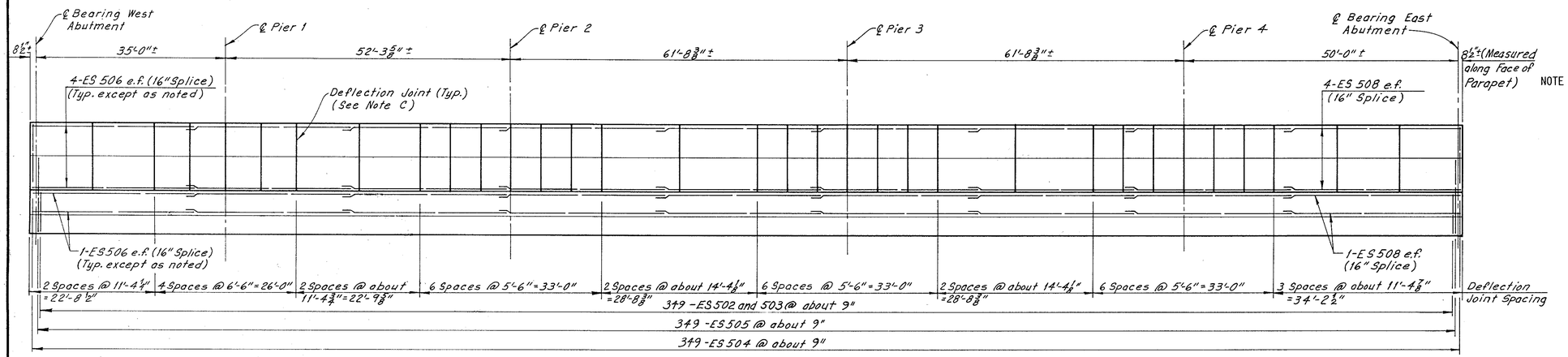
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



NORTH CURB & PARAPET ELEVATION
(South Curb & Parapet opposite hand)



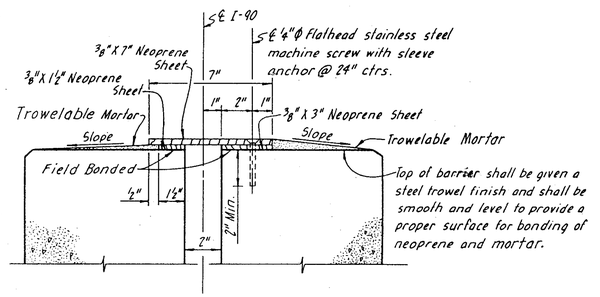
LIMITS OF SEALING CONCRETE SURFACES



NORTH MEDIAN CURB & PARAPET ELEVATION
(South Median Curb & Parapet opposite hand)

NOTE C:
PARAPET DEFLECTION JOINTS LOCATED AS PER PLAN SHALL BE MADE VERTICALLY OR A RIGHT ANGLES TO THE DECK BY SAWING. THE SAWING SHALL BE DONE AFTER THE CONCRETE HAS TAKEN ITS INITIAL SET AND BEFORE ANY SHRINKAGE CRACKS COULD DEVELOP. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO INSURE THAT THE CUT JOINT IS STRAIGHT, TRUE AND ALIGNED ON BOTH FACES OF THE PARAPET. THE DEPTH OF SAW CUT SHALL BE A MINIMUM OF 1 INCH. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, NOT TO EXCEED ONE QUARTER INCH. THE OUTSIDE ONE INCH OF THE PERIMETER OF THE DEFLECTION JOINT SHALL BE SEALED WITH A POLYURETHANE OR POLYMERIC JOINT SEALANT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-S-00227E. SAW CUTTING THE DEFLECTION JOINTS AND SEALANT SHALL BE INCLUDED IN ITEM 511, CLASS S CONCRETE SUPERSTRUCTURE, AS PER PLAN FOR PAYMENT.

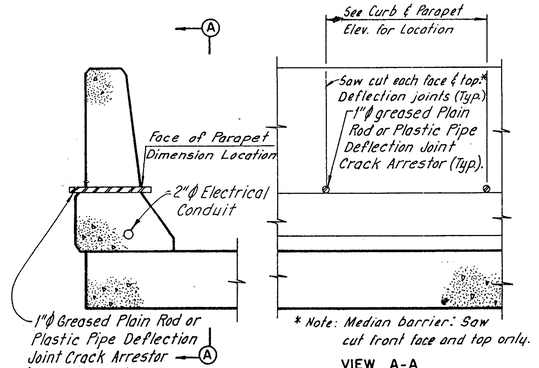
NOTES:
FOR REINFORCEMENT SCHEDULE SEE SHEET 10/10.
THE FOLLOWING ABBREVIATIONS ARE USED:
E.F. = EACH FACE (TYP.) = TYPICAL CTRS. = CENTERS



MEDIAN BARRIER SEAL

NOTES:
PAYMENT FOR THE TROWELABLE MORTAR SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL - MEDIAN BARRIER SEAL.

BARRIER SEAL SHALL BE CONTINUOUS. PAYMENT FOR THE STAINLESS STEEL SCREWS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL - MEDIAN BARRIER SEAL.



VIEW A-A

TYPICAL CRACK ARRESTOR DETAIL

ESTIMATED QUANTITIES			ITEM NO.	202		511			SPECIAL		SPECIAL	
				PORTIONS OF STRUCTURES REMOVED, AS PER PLAN		CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN			MEDIAN BARRIER SEAL		SEALING OF CONCRETE SURFACES (EPOXY)	
REF.#	SIDE	LOCATION		LUMP SUM		CU.YD.			LIN.FT.		SQ.YD.	
		SUPERSTRUCTURE		LUMP SUM		1308			262		1110	
TOTAL TO SUB-SUMMARIES SHEETS 13 & 14				LUMP SUM		1308			262		1110	

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

PARAPET DETAILS

I-90 OVER EAST 260th. STREET
BR. NO.-CUY.-90-2910

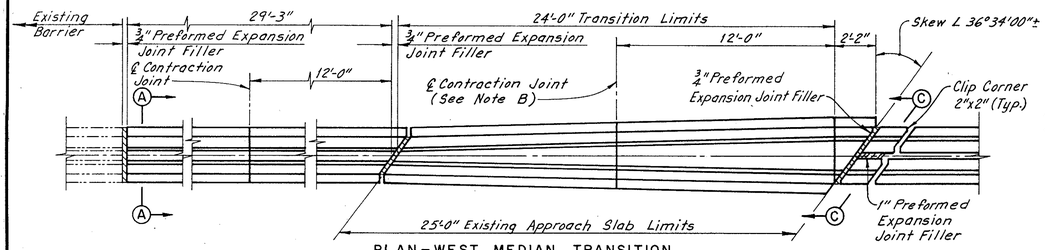
CUYAHOGA COUNTY OHIO

Made	Trcd.	Ckd.	Rev.	Revised
LJD	JSC	JSC	RAB	
Date 10-87	Date 10-87	Date 10-87	Date 4-91	Sheet 6/10

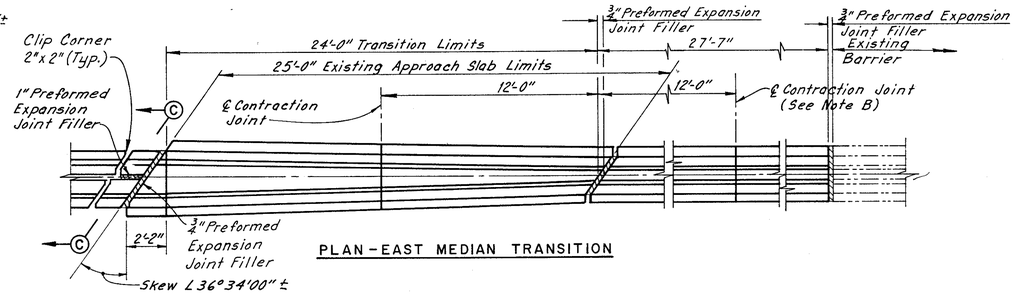
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

50
76

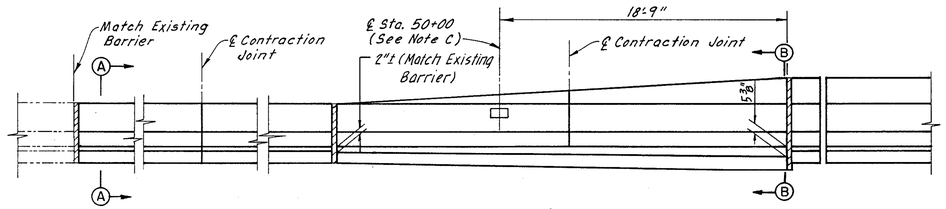
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



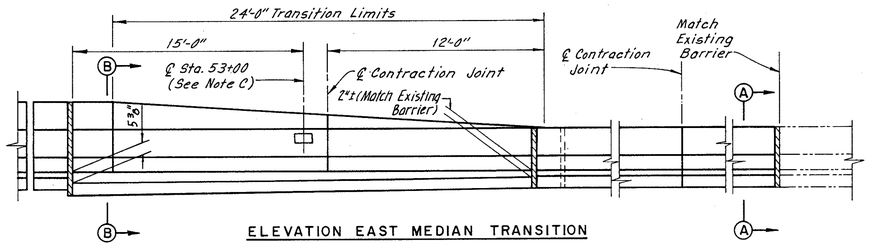
PLAN - WEST MEDIAN TRANSITION



PLAN - EAST MEDIAN TRANSITION

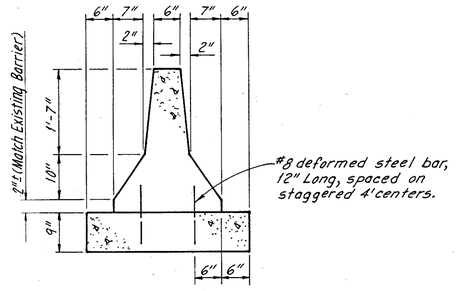


ELEVATION - WEST MEDIAN TRANSITION

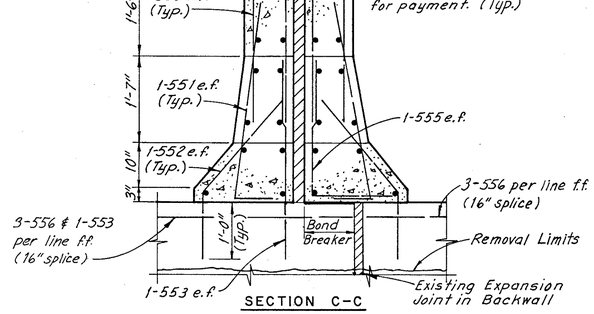


ELEVATION EAST MEDIAN TRANSITION

NOTE B:
CONSTRUCTION JOINTS MAY BE CONSTRUCTED WITH METAL INSERTS INSIDE THE FORMS, PREFORMED FULL WIDTH JOINT FILLER, A GROOVING TOOL, OR BY SAWING. INSERTS OR TOOLED OR SAWED JOINTS SHALL HAVE A 1 1/2" MIN. DEPTH. ALL JOINTS SHALL BE CONSTRUCTED FOR THE FULL HEIGHT OF THE BARRIER INCLUDING THE BASE.



SECTION A-A

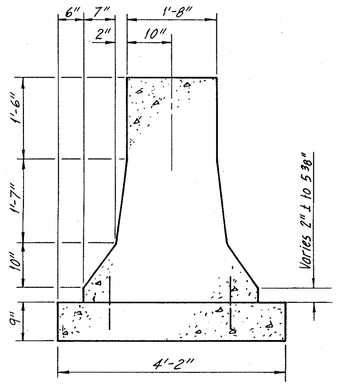


SECTION C-C

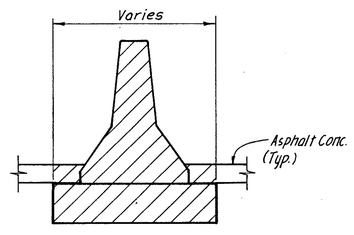
(CONCRETE BARRIER MEDIAN ON BACKWALL IS INCLUDED FOR PAYMENT UNDER ITEM 511 - CLASS C CONCRETE ABUTMENTS)

NOTE C:
THE STATION SHALL BE IMPRESSED IN THE GREEN CONCRETE ON BOTH SIDES AT THE TOP OF THE BARRIER.
THE COST SHALL BE INCLUDED IN THE UNIT PRICE PER LINEAR FOOT BID FOR ITEM 622 CONCRETE BARRIER, TYPE A-50, AS PER PLAN.

ITEM NO.	202				511		509	
ESTIMATED QUANTITIES	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				CLASS C CONCRETE, ABUTMENTS		EPOXY COATED REINFORCING STEEL	
REF.# SIDE LOCATION	LUMP SUM				CU.YD.		POUND	
℄ ABUTMENT BACKWALL AND BARRIER MEDIAN	LUMP SUM				28		584	
TOTAL TO SUB-SUMMARIES SHEET 13	LUMP SUM				28		584	



SECTION B-B



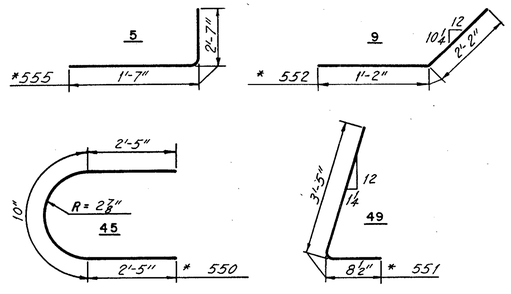
EXISTING BARRIER MEDIAN REMOVAL LIMITS

(INCLUDED FOR PAYMENT UNDER ITEM 622-CONCRETE BARRIER, TYPE A-50, AS PER PLAN.)

REINFORCEMENT SCHEDULE					
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
ABUTMENT BACKWALL AT MEDIAN					
* 550	8	5'-8"	45		*47
* 551	8	4'-0"	49		*33
* 552	8	3'-3"	9		*27
* 553	6	3'-7"	Str.		*22
* 554	48	1'-3"	Str.		*63
* 555	4	4'-2"	5		*17
* 556	12	30'-0"	Str.		*375
*TOTAL WEIGHT EPOXY COATED =					*584

*INDICATES EPOXY COATED BARS.

BENDING DIAGRAMS



NOTE:
THE FOLLOWING ABBREVIATIONS ARE USED:
E.F. = EACH FACE (TYP.) = TYPICAL

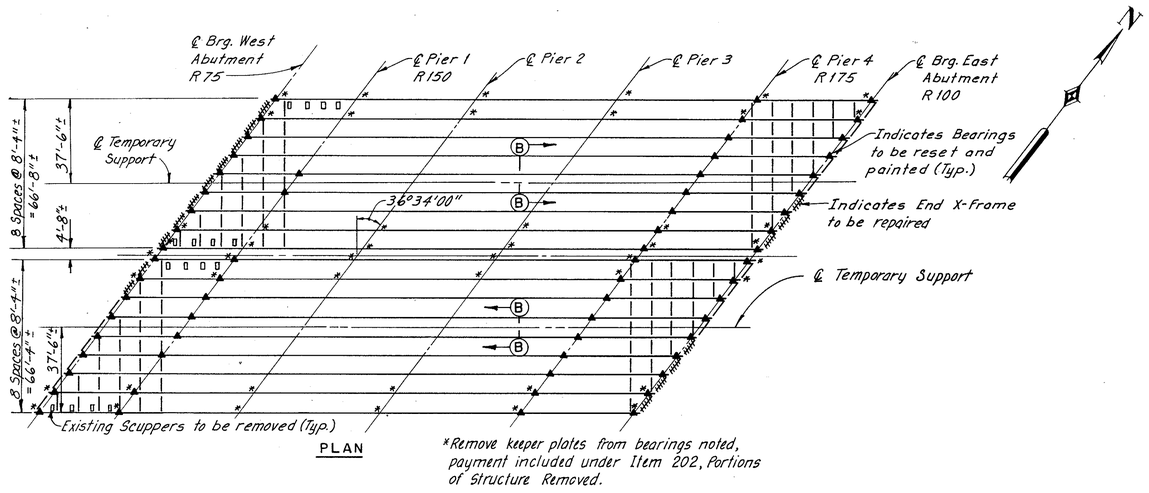
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

MEDIAN TRANSITION DETAILS

I-90 OVER EAST 260th. STREET
BR. NO.-CUY.-90-2910

CUYAHOGA COUNTY OHIO

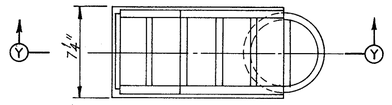
Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 10-87	Date 10-87	Date 10-87	Date 4-91	Sheet 7/10



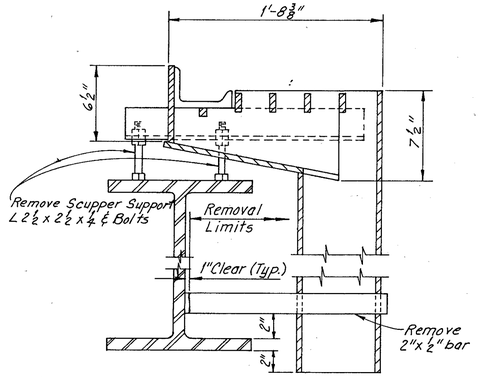
PLAN

*Remove keeper plates from bearings noted, payment included under Item 202, Portions of Structure Removed.

NOTE:
RESET, SANDBLAST AND PAINT BEARINGS INDICATED. FOR DETAILS SEE SHEET 63 .



SCUPPER PLAN



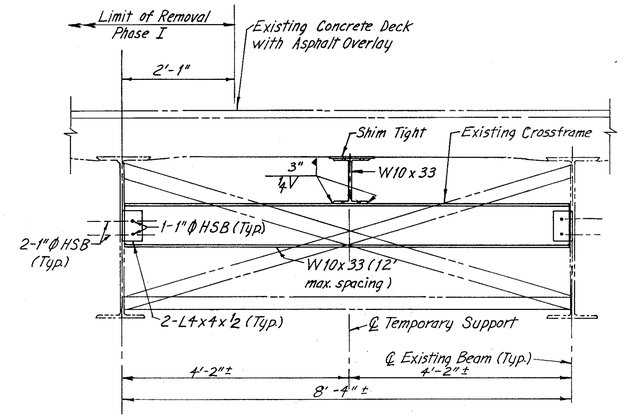
SECTION Y-Y

SCUPPER REMOVAL
(16 Each)
(Cuy-90-2910 only)

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

51
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



SECTION B-B

NOTES:

THE TEMPORARY SUPPORT SHALL BE IN PLACE BEFORE PHASE I DEMOLITION. THE LONGITUDINAL W 10 X 33 SHALL BE SUPPORTED AT EACH ABUTMENT.

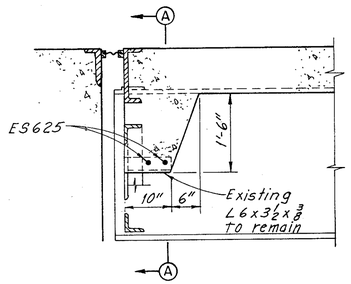
THE TEMPORARY SUPPORT SHALL BE REMOVED DURING PHASE II CONSTRUCTION WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC. BOLT HOLES IN THE EXISTING BEAMS SHALL BE PAINTED IN ACCORDANCE WITH ITEM 514.06 USING SYSTEM A THREE (3) COAT SYSTEM.

PAYMENT FOR THE TEMPORARY SUPPORT SHALL BE MADE AT THE CONTRACT UNIT PRICE BID LUMP SUM FOR ITEM 513 - STRUCTURAL STEEL, MISC.: TEMPORARY SUPPORT AND SHALL INCLUDE ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK AS SPECIFIED.

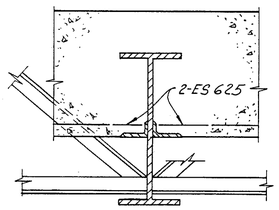
FOR THE LIMITS OF REMOVAL OF THE EXISTING END CROSSFRAME AND FOR END CROSSFRAME DETAILS SEE SHEET 33.

END CROSSFRAMES TO BE REPAIRED SHALL HAVE ALL BROKEN OR CRACKED WELDS REPLACED WITH 1/4" FILLET WELDS. PAYMENT SHALL BE INCLUDED UNDER ITEM SPECIAL, END CROSSFRAME REPAIRS.

THE FOLLOWING ABBREVIATIONS ARE USED:
BRG. = BEARING (TYP.) = TYPICAL



COUNTER WEIGHT DETAIL
(At West Abutments only)



SECTION A-A

ITEM NO.			202	514	513			SPECIAL	516		
ESTIMATED QUANTITIES			SCUPPERS REMOVED	FIELD PAINTING OF RESET BEARINGS	STRUCTURAL STEEL, MISC. TEMPORARY SUPPORT			END CROSS FRAME REPAIRS	RESET BEARINGS		
REF.#	SIDE	LOCATION	EACH	LUMP SUM	LUMP SUM			EACH	EACH		
		WEST ABUTMENT	16	Lump Sum				10	18		
		EAST ABUTMENT		Lump Sum				7	18		
		MEDIAN									
		PIER 1		Lump Sum					10		
		PIER 2									
		PIER 3									
		PIER 4		Lump Sum					18		
		SUPERSTRUCTURE			Lump Sum						
TOTAL TO SUB-SUMMARIES SHEET 13			16	Lump Sum	Lump Sum			17	64		

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

MISCELLANEOUS DETAILS

I-90 OVER EAST 260th. STREET

BR. NO.-CUY.-90-2910

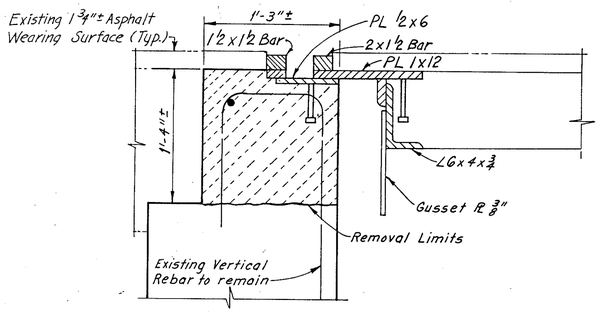
CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 10-87	Date 10-87	Date 10-87	Date 4-91	Sheet 8/10

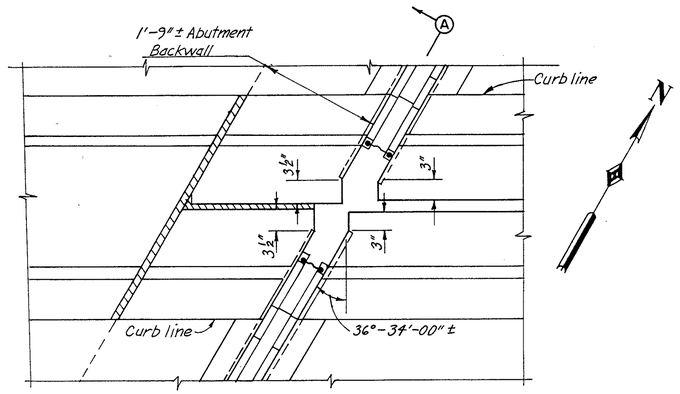
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

52
76

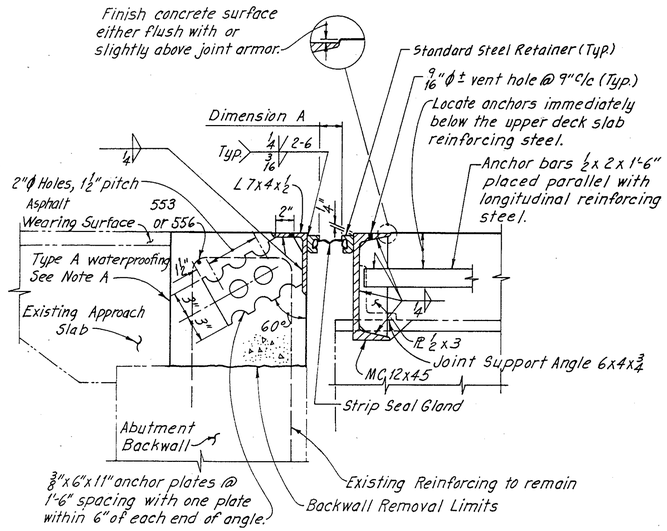
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



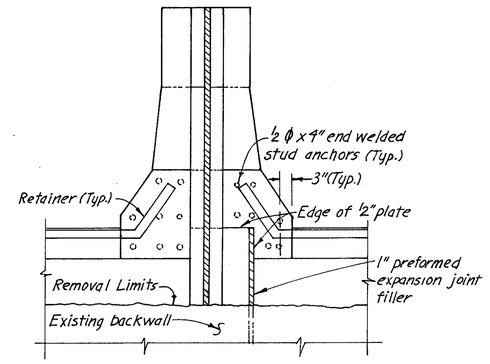
EXISTING END DAM
Removal Limits



PARTIAL PLAN AT MEDIAN BARRIER
(West shown, East opposite hand)



PROPOSED EXPANSION JOINT DETAIL



SECTION A-A

NOTE A:
TYPE A WATERPROOFING INCLUDED WITH ITEM 511 CLASS C CONCRETE, ABUTMENTS, FOR PAYMENT.
FOR BACKWALL REINFORCEMENT SCHEDULE SEE SHEET 7/10.

DIMENSION "A" (INCHES)		
F°	WEST ABUTMENT	EAST ABUTMENT
90	1-13/16	1-15/16
80	1-15/16	2
70	2	2-1/16
60	2-1/8	2-1/8
50	2-3/16	2-3/16
40	2-5/16	2-5/16
30	2-3/8	2-3/8

ESTIMATED QUANTITIES

REF.#	SIDE	LOCATION	ITEM NO. 202 PORTIONS OF STRUCTURES REMOVED, AS PER PLAN					ITEM NO. 516 STRUCTURAL EXPANSION JOINTS INCLUDING STEEL RETAINER & STRIP SEAL GLAND, A.P.P.		
			LUMP SUM					LIN.FT.		
		EAST ABUTMENT	LUMP SUM					176		
		WEST ABUTMENT	LUMP SUM					175		
TOTAL TO SUB-SUMMARIES			LUMP SUM					351		

NOTES:
STUD ANCHORS SHALL BE LOW CARBON STEEL ASTM A-108.
SPLIT RETAINER, ANCHORS AND STAINLESS STEEL CAP SCREWS SHALL BE INCLUDED WITH ITEM 516 STRUCTURAL EXPANSION JOINTS (INCLUDING STEEL RETAINERS AND STRIP SEAL GLANDS) FOR PAYMENT.

FOR ADDITIONAL STRIP SEAL EXPANSION JOINT DETAILS, SEE STANDARD DRAWING EXJ-4-87 SHEETS 1, 2, 4 AND 5 OF 5.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

MISCELLANEOUS DETAILS

I-90 OVER EAST 260th. STREET
BR. NO.-CUY.-90-2910

CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 10-87	Date 10-87	Date 10-87	Date 4-91	Sheet 9/10

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
SUPERSTRUCTURE					
ES401	1,360	30'-0"	Str.		27,254
ES402	170	29'-10"	Str.		3,388
ES403	168	21'-0"	Str.		2357
ES404	504	24'-8"	Str.		8305
ES501	524	6'-11"	58		3780
ES502	1222	3'-0"	43		3824
ES503	1222	2'-5"	5		3080
ES504	698	4'-9"	45		3458
ES505	698	5'-3"	58		3822
ES506	1,440	30'-0"	Str.		45,058
ES507	20	32'-11"	Str.		687
ES508	160	32'-6"	Str.		5,424
ES509	8	6'-5"	Str.		54
ES510	1Ser. 19	7'-3" / 21'-10"	Str.	9 3/4"	288
ES511	1Ser. 10	22'-8" / 30'-0"	Str.	9 3/4"	275
ES512	2Ser. 8	4'-6" / 10'-2"	Str.	9 3/4"	122
ES513	1,556	27'-8"	Str.		44,901
ES514	836	10'-4"	Str.		9,010
ES515	2Ser. 28	25'-9" / 3'-9"	Str.	9 3/4"	862
ES516	2Ser. 13	11'-11" / 24'-2"	Str.	9 3/4"	191
ES517	1Ser. 13	2'-10" / 12'-7"	Str.	9 3/4"	105
ES518	1Ser. 27	5'-11" / 27'-1"	Str.	9 3/4"	465
ES519	418	8'-10"	Str.		3,851
ES520	2Ser. 8	8'-0" / 2'-3"	Str.	9 7/8"	86
ES521	2Ser. 26	27'-10" / 7'-6"	Str.	9 3/4"	958
ES522	38	27'-11"	Str.		1,106
ES523	1Ser. 10	30'-0" / 22'-8"	Str.	9 3/4"	275
ES524	1Ser. 19	21'-10" / 7'-2"	Str.	9 3/4"	287
ES525	8	6'-10"	Str.		57
ES526	418	9'-2"	Str.		3,996
ES527	1Ser. 13	3'-2" / 12'-11"	Str.	9 3/4"	109
ES528	1Ser. 27	6'-3" / 27'-5"	Str.	9 3/4"	474
ES529	18	6'-8"	Str.		125
ES601	8	6'-5"	Str.		77
ES602	1Ser. 19	7'-2" / 21'-10"	Str.	9 3/4"	414
ES603	1Ser. 10	22'-8" / 30'-0"	Str.	9 3/4"	396
ES604	2Ser. 8	2'-3" / 7'-11"	Str.	9 3/4"	122
ES605	758	30'-0"	Str.		34,155
ES606	397	8'-8"	Str.		5,168
ES607	2Ser. 7	28'-1" / 23'-2"	Str.	9 3/4"	539
ES608	2Ser. 21	29'-8" / 13'-5"	Str.	9 3/4"	1,359
ES609	2Ser. 13	12'-7" / 2'-10"	Str.	9 3/4"	301
ES610	1Ser. 21	2'-3" / 18'-6"	Str.	9 3/4"	327
ES611	1Ser. 19	19'-4" / 34'-0"	Str.	9 3/4"	761
ES612	392	34'-7"	Str.		20,362
ES613	2Ser. 10	33'-6" / 26'-2"	Str.	9 3/4"	896
ES614	2Ser. 23	25'-5" / 7'-6"	Str.	9 3/4"	1,137
ES615	18	6'-8"	Str.		180
ES616	38	30'-3"	Str.		1,727
ES617	1Ser. 10	30'-0" / 22'-8"	Str.	9 3/4"	396
ES618	1Ser. 19	21'-10" / 7'-2"	Str.	9 3/4"	414
ES619	8	6'-10"	Str.		82
ES620	392	34'-11"	Str.		20,558

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
ES621	1Ser. 19	19'-8" / 34'-4"	Str.	9 3/4"	771
ES622	1Ser. 21	2'-7" / 18'-10"	Str.	9 3/4"	338
ES623	397	8'-4"	Str.		4,969
ES625	32	10'-0"	Str.		481
TOTAL WEIGHT EPOXY COATED =					273,964
NORTHWEST WINGWALL					
NWW501	6	6'-11"	58		43
NWW503	7	3'-2"	43		23
NWW504	6	2'-0"	Str.		13
NWW505	2Ser. 6	2'-2" / 3'-2"	Str.	2 3/8"	33
NWW506	3	2'-11"	61		9
NWW507	2	2'-7"	43		5
NWW508	2	2'-10"	43		6
NWW509	1	3'-0"	43		3
NWW510	6	14'-5"	Str.		90
NWW511	2	13'-10"	9		29
NWW512	1	13'-5"	19		14
NWW513	2	13'-6"	Str.		28
NWW514	3	14'-0"	Str.		44
NWW502	15	2'-4"	5		37
TOTAL WEIGHT EPOXY COATED =					377
NORTHEAST WINGWALL ✳					
NEW501	8	6'-11"	58		58
NEW503	9	3'-2"	43		30
NEW504	6	2'-0"	Str.		13
NEW505	2Ser. 6	2'-2" / 3'-2"	Str.	2 3/8"	33
NEW506	3	2'-11"	61		9
NEW507	2	2'-7"	43		5
NEW508	2	2'-10"	43		6
NEW509	1	3'-0"	43		3
NEW510	6	15'-9"	Str.		99
NEW511	2	15'-5"	9		32
NEW512	1	16'-7"	19		17
NEW513	2	16'-8"	Str.		35
NEW514	3	16'-0"	Str.		50
NEW502	17	2'-4"	5		41
TOTAL WEIGHT EPOXY COATED =					
SOUTHWEST WINGWALL ✳					
SWW501	8	6'-11"	58		58
SWW503	9	3'-2"	43		30
SWW504	6	2'-0"	Str.		13
SWW505	2Ser. 6	2'-2" / 3'-2"	Str.	2 3/8"	33
SWW506	3	2'-11"	61		9
SWW507	2	2'-7"	43		5
SWW508	2	2'-10"	43		6
SWW509	1	3'-0"	43		3
SWW510	6	15'-9"	Str.		99
SWW511	2	15'-5"	9		32
SWW512	1	16'-7"	19		17
SWW513	2	16'-8"	Str.		35
SWW514	3	16'-0"	Str.		50
SWW502	17	2'-4	5		41
TOTAL WEIGHT EPOXY COATED =					

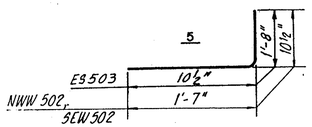
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
SOUTHEAST WINGWALL					
SEW501	6	6'-11"	58		43
SEW503	7	3'-2"	43		23
SEW504	6	2'-0"	Str.		13
SEW505	2Ser. 6	2'-2" / 3'-2"	Str.	2 3/8"	33
SEW506	3	2'-11"	61		9
SEW507	2	2"-7"	43		5
SEW508	2	2'-10	43		6
SEW509	1	3'-0"	43		3
SEW510	6	14'-5"	Str.		90
SEW511	2	13'-10"	9		29
SEW512	1	13'-5"	19		14
SEW513	2	13'-6"	Str.		28
SEW514	3	14'-0"	Str.		44
SEW502	15	2'-4"	5		37
TOTAL WEIGHT EPOXY COATED =					377

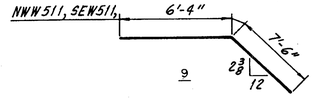
NOTE:
ALL REINFORCING STEEL SHALL BE EPOXY COATED.

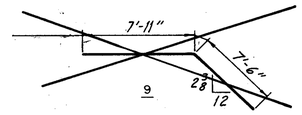
THESE WINGWALLS SHALL BE INCLUDED FOR PAYMENT BY LINEAL FOOT UNDER ITEM 517- RAILING, CONCRETE (SEE SHT 8A.)

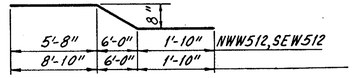
✳ - THESE WINGWALLS SHALL BE INCLUDED FOR PAYMENT BY LINEAL FOOT UNDER ITEM 517- RAILING, CONCRETE (SEE SHT 8A.)

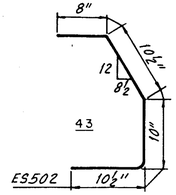
BENDING DIAGRAMS

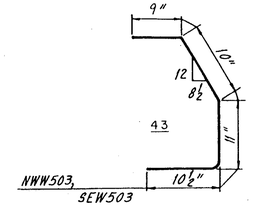


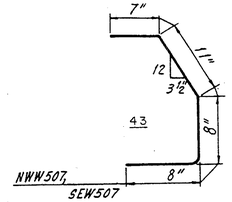


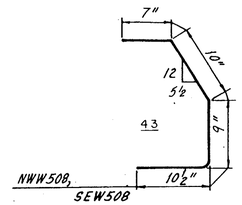


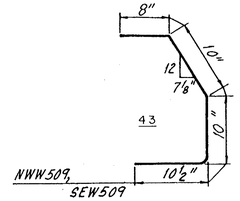


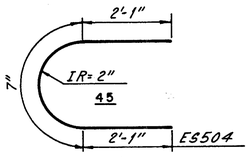


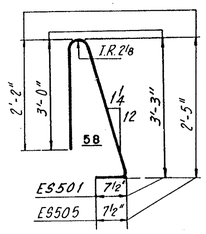


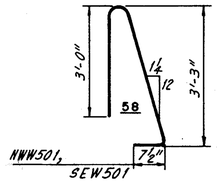


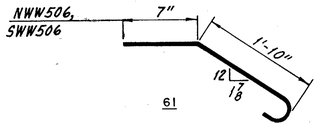












FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

53
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

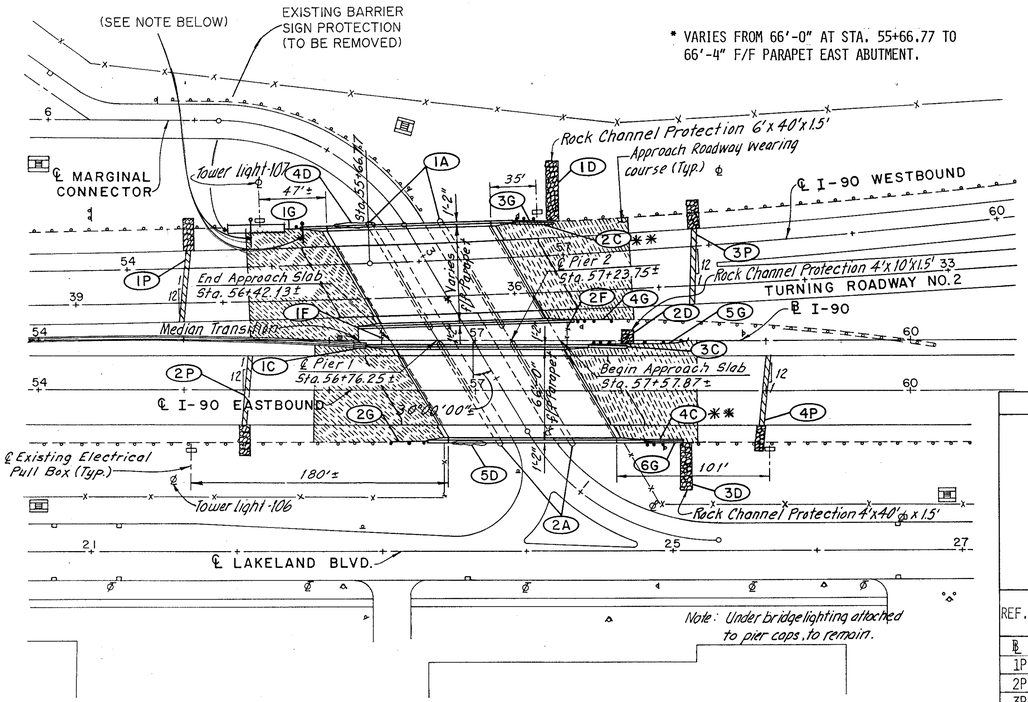
REINFORCEMENT SCHEDULE

I-90 OVER EAST 260th. STREET

BR. NO.-CUY.-90-2910

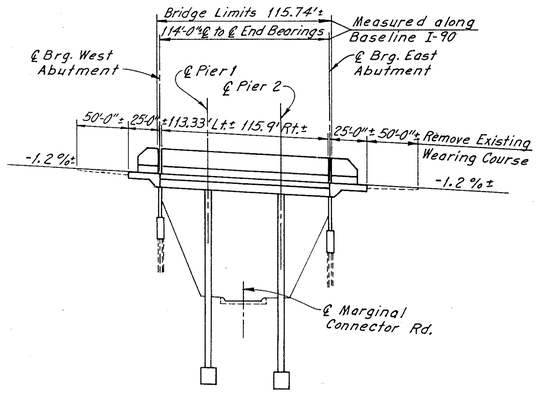
CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 10-87	Date 10-87	Date 10-87	Date 4-91	Sheet 10/10



PLAN
Scale: 1"=50'

NOTE: THE EXISTING SIGN SUPPORT AT STA. 55+40± SHALL BE RELOCATED. SEE SHT. 24&25B FOR FURTHER INSTRUCTIONS.



ELEVATION
Scale: 1"=50' Horiz.
1"=10' Vert.

EXISTING STRUCTURE
TYPE: CONTINUOUS REINFORCED CONCRETE SLAB, WITH REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 33'-3⅜, 47'-6⅛, 33'-3⅜ CENTER TO CENTER BEARINGS
ROADWAY: EASTBOUND 66'-0"± FACE TO FACE OF PARAPETS WESTBOUND VARIABLE WIDTH
LOADING: CF-2000-57 (ADEQUATE FOR AASHO ALTERNATE LOADING)
SKEW: 30°-00'-00" R.F.
WEARING SURFACE: ASPHALT
APPROACH SLAB: AS-1-54 (25'-0" LONG)
ALIGNMENT: EASTBOUND TANGENT WESTBOUND 0°-28'-00"± & 1°-00'-00"± CURVE LEFT
SUPERELEVATION: WESTBOUND VARIABLE

MODIFIED STRUCTURE
TYPE: CONTINUOUS REINFORCED CONCRETE SLAB, WITH REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 33'-3⅜, 47'-6⅛, 33'-3⅜ CENTER TO CENTER BEARINGS
ROADWAY: EASTBOUND 66'-0"± FACE TO FACE OF PARAPETS WESTBOUND VARIABLE WIDTH
SKEW: 30°-00'-00"± R.F.
WEARING SURFACE: 1 1/4" LATEX MODIFIED CONCRETE
APPROACH SLAB: AS-1-54 (25'-0" LONG)
ALIGNMENT: EASTBOUND TANGENT WESTBOUND 0°-28'-00"± & 1°-00'-00"± CURVE LEFT
SUPERELEVATION: WESTBOUND VARIABLE

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

54
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

**- TYPE 6 CURB SHALL HAVE A 6" REVEAL

ESTIMATED QUANTITIES

ITEM NO.			202	202	202	202	202	404		601	601	605	606	606	606	607	609	622	407	606	SPECIAL
REF.#	SIDE	LOCATION	CONCRETE BARRIER REMOVED	WEARING COURSE REMOVED	FENCE REMOVED	GUARDRAIL REMOVED	*WEARING COURSE REMOVED	*ASPHALT CONCRETE AC-20		ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	CRUSHED AGGREGATE SLOPE PROTECTION	AGGREGATE DRAINS	ANCHOR ASSEMBLY, TYPE T	BRIDGE TERMINAL ASSEMBLY, TYPE 1	GUARDRAIL, TYPE 5	FENCE, TYPE CL. AS PER PLAN	CURB, TYPE 6 **	CONCRETE BARRIER, TYPE A-50, AS PER PLAN	*TACK COAT	BRIDGE TERMINAL ASSEMBLY, TYPE 2	PRESSURE RELIEF JOINTS, TYPE C
			L.F.	SQ.YD.	LIN.FT.	LIN.FT.	SQ.YD.	CU.YD.		CU.YD.	SQ.YD.	LIN.FT.	EACH	EACH	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	GAL.	EACH	LIN.FT.
℄ I-90																					
1P	LT.	STA.55+00 ± 10'										20									48.5
2P	RT.	STA.55+45 ± 10'										20									48.5
3P	LT.	STA.58+55 ± 10'										20									48.5
4P	RT.	STA.59+00 ± 10'										20									48.5
		LEFT BRIDGE		805			1065	42											108		
		RIGHT BRIDGE		819			1061	42											108		
1D	LT.	STA.57+59								14											
2D	RT.	STA.58+06								3											
3D	RT.	STA.58+45								9											
4D	LT.	UNDER BRIDGE									18										
5D	RT.	UNDER BRIDGE									16										
1F	℄	STA.56+37			13											13					
2F	℄	STA.57+65			18											18					
1G	LT.	STA.55+30 TO STA.55+80	40			10									50					1	
2G	RT.	STA.56+43 TO STA.56+68				25								1	25						
3G	LT.	STA.57+26 TO STA.57+51				25								1	25						
4G	LT.	STA.57+70 TO STA.57+95				25								1	25						
5G	RT.	STA.57+80 TO STA.58+30				50							1		50					1	
6G	RT.	STA.58+19 TO STA.58+44				25									25					1	
1C	RT.	STA.56+18.5 TO STA.56+26																7.5			
2C	LT.	STA.57+26 TO STA.57+59															33				
3C	RT.	STA.57+80 TO STA.58+06															26				
4C	RT.	STA.58+19 TO STA.58+45															26				
1A		PIERS, LEFT BRIDGE																			
2A		PIERS, RIGHT BRIDGE																			
TOTAL TO SUB-SUMMARIES LEFT BRIDGE			40	805	31	60	1065	42		14	18	40		2	100	31	33		108	1	97
TOTAL TO SUB-SUMMARIES RIGHT BRIDGE				819		100	1061	42		12	16	40	1	1	100		52	8	108	2	97

NOTES:

*FOR WEARING COURSE REMOVAL AND REPLACEMENT ON THE APPROACH ROADWAYS SEE DETAIL ON SHEET 63 .

FOR FENCE DETAILS SEE SHEET 476 .

FOR MEDIAN TRANSITION DETAIL SEE SHEET 476 .

FOR SUB-SUMMARIES SEE SHEETS 13 AND 14.

TOWER LIGHTS 106 AND 107 WILL REQUIRE BEING OUT OF SERVICE DURING PARAPET WORK. ONLY ONE TOWER AT A TIME SHALL BE OUT OF SERVICE.

FOR DETAILS OF PROPOSED LIGHTING SEE SHEET 24.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

GENERAL PLAN AND ELEVATION

I-90 OVER N. LAKELAND BLVD.
BR. NO.-CUY.-90-2922 L.& R.

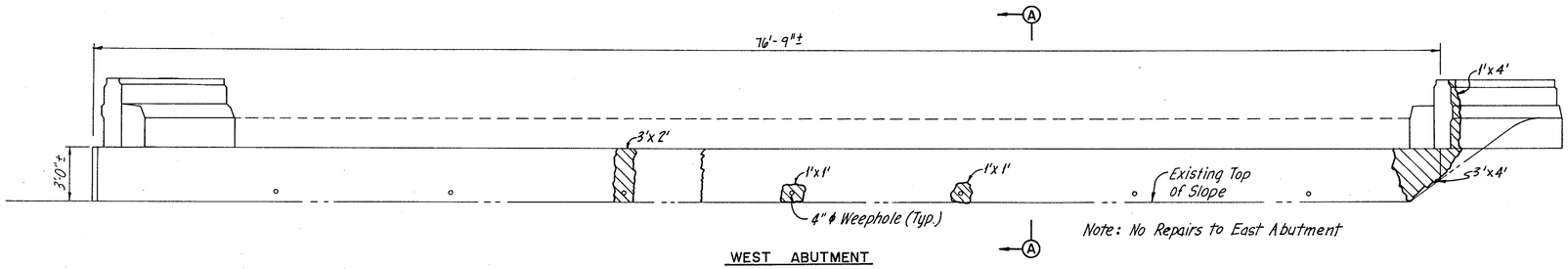
CUYAHOGA COUNTY OHIO

Mode LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 1-88	Date 1-88	Date 1-88	Date 4-91	Sheet 1/6

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

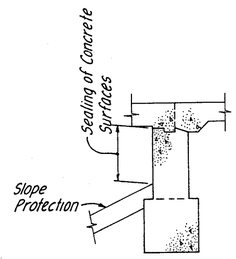
54 A
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



WEST ABUTMENT

PIER 2
(Looking East)



SECTION A-A
EXISTING TYPICAL SECTION

NOTE:
FOR ESTIMATED QUANTITY TABLE SEE SHEET 56.

DENOTES ITEM SPECIAL, PNEUMATICALLY PLACED MORTAR.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

ABUTMENT AND PIER REPAIR DETAILS

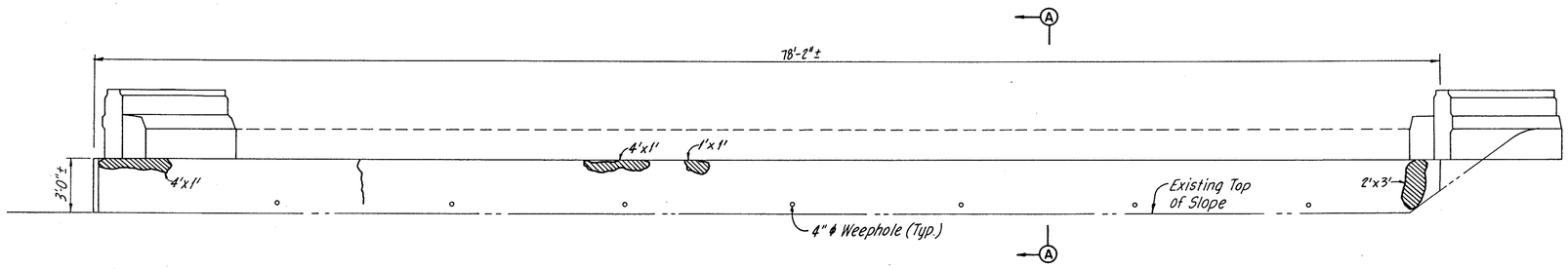
I-90 OVER N. LAKELAND BLVD.
BR. NO.-CUY.-90-2922 L.
CUYAHOGA COUNTY

Mode LJD	Trcd. REC	Ckd. KRD	Rev. RAB	Revised
Date 1-88	Date 8-90	Date 8-90	Date 4-91	Sheet 1A16

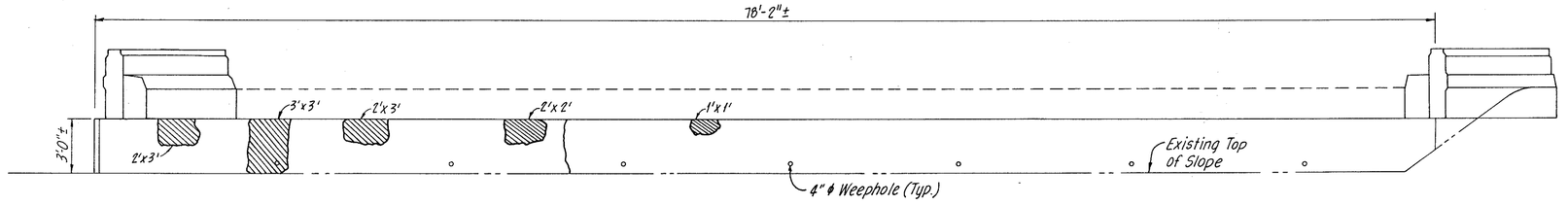
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

54B
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

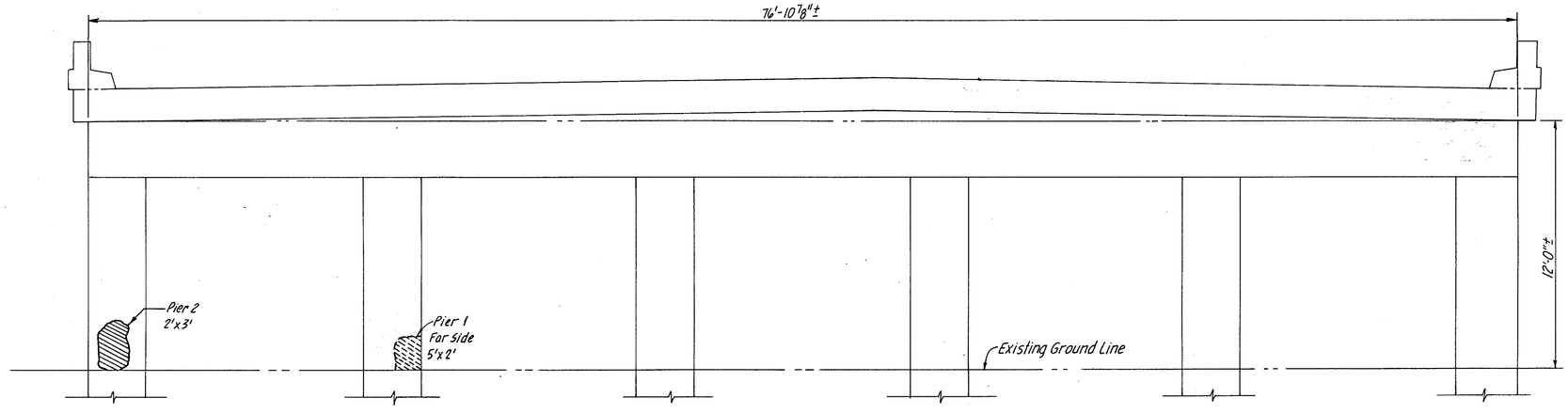


WEST ABUTMENT



EAST ABUTMENT

SECTION A-A
EXISTING TYPICAL SECTION



PIER 1 AND 2
(Looking East)

NOTE:
FOR ESTIMATED QUANTITY TABLE SEE SHEET 56.

DENOTES ITEM SPECIAL, PNEUMATICALLY PLACED MORTAR.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

ABUTMENT AND PIER REPAIR DETAILS
I-90 OVER N. LAKELAND BLVD.
BR. NO.-CUY.-90-2922R.

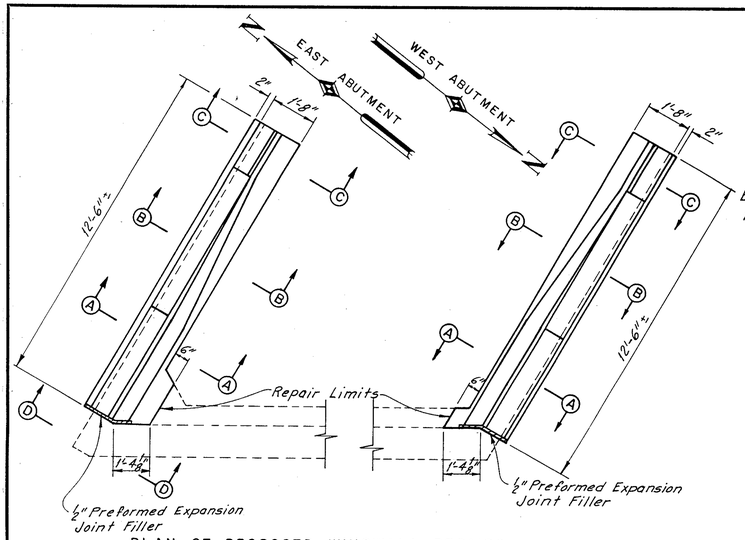
CUYAHOGA COUNTY OHIO

Mode LJD	Trcd. REC	Ckd. KRD	Rev. RAB	Revised
Date 1-88	Date 8-90	Date 8-90	Date 4-91	Sheet 18/6

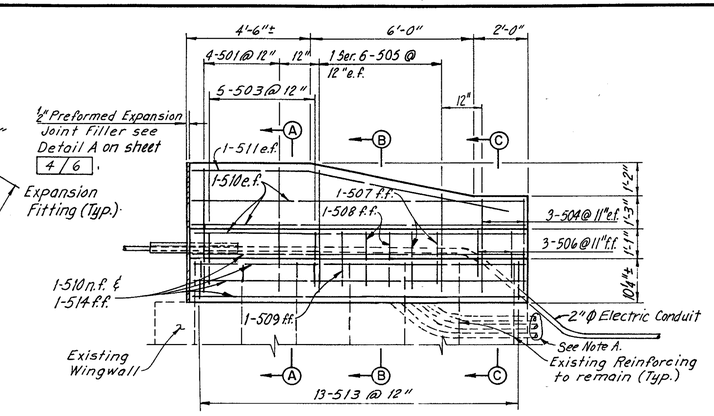
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

55
76

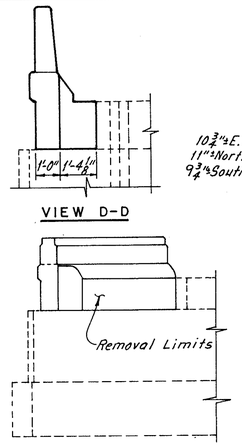
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

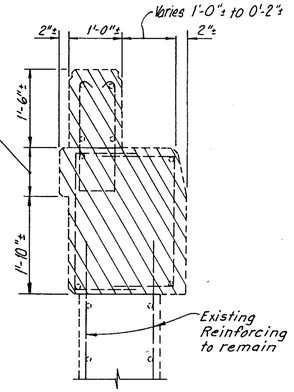


PLAN OF PROPOSED WINGWALL REPAIRS

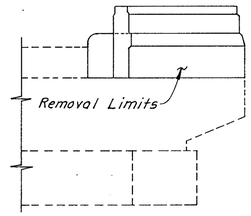


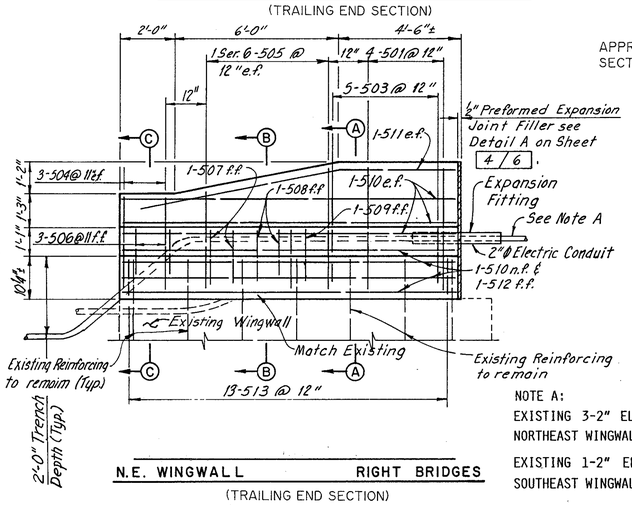
N.W. WINGWALL LEFT BRIDGE ONLY
S.E. WINGWALL RIGHT BRIDGES
(TRAILING END SECTION)



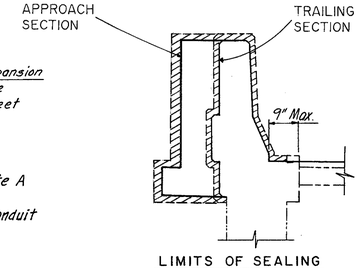


TYPICAL WINGWALL REMOVAL LIMITS





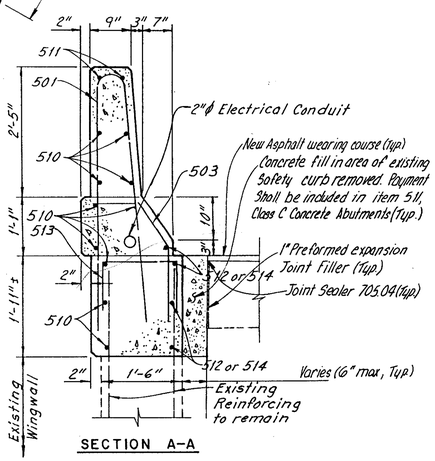
N.E. WINGWALL RIGHT BRIDGES
(TRAILING END SECTION)

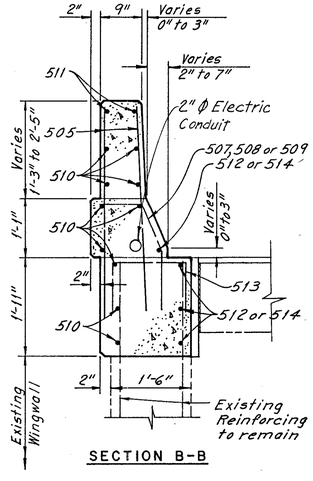


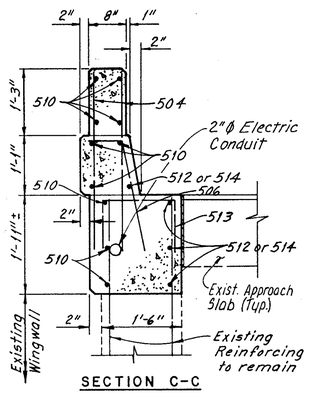
LIMITS OF SEALING CONCRETE SURFACES

PLAN VIEW OF EXISTING
WINGWALL PARAPET REMOVAL LIMITS

EXISTING WINGWALL ANGLES		
BRIDGE	WINGWALL	θ
LEFT	N.E.	27°32'30"±
	S.E.	27°16'00"±
	N.W.	28°17'50"±
	S.W.	28°07'40"±
RIGHT	N.E.	30°00'00"±
	S.E.	30°00'00"±
	N.W.	30°00'00"±
	S.W.	30°00'00"±







NOTE A:
EXISTING 3-2" ELECTRICAL CONDUITS, LEFT BRIDGE NORTHWEST AND NORTHEAST WINGWALLS, TO BE ABANDONED.

EXISTING 1-2" ELECTRICAL CONDUIT RIGHT BRIDGE SOUTHWEST AND SOUTHEAST WINGWALLS, TO BE ABANDONED.

ITEM NO.			202		511		517			SPECIAL
ESTIMATED QUANTITIES			PORTIONS OF STRUCTURES REMOVED, AS PER PLAN.		CLASS C CONCRETE, ABUTMENTS		RAILING, CONCRETE			SEALING OF CONCRETE SURFACES (EPOXY).
REF.#	SIDE	LOCATION	LUMP SUM		CU.YD.		L.F.			SQ.YD.
CUY-90-29.22L		WINGWALLS (ALL)	LUMP SUM		13					56
		WINGWALL (NE)					12'-6"			
		WINGWALL (SE)					12'-6"			
TOTAL TO SUB-SUMMARIES LEFT BRIDGE			LUMP SUM		13		25'			56
CUY-90-29.22R		WINGWALLS (ALL)	LUMP SUM		13					56
		WINGWALL (SW)					12'-6"			
TOTAL TO SUB-SUMMARIES RIGHT BRIDGE			LUMP SUM		13		12.5'			56

NOTES:

FOR DETAILS OF SOUTHWEST WINGWALL LEFT BRIDGE AND NORTHWEST WINGWALL RIGHT BRIDGE SEE SHEET 4/6 .

FOR ATTACHMENT OF BRIDGE TERMINAL ASSEMBLIES, SEE STD. CONST. DWG. GR-3.1 OR GR-3.2 .

PREFORMED EXPANSION JOINT FILLER AND JOINT SEALER SHALL BE INCLUDED IN ITEM 511, CLASS C CONCRETE, ABUTMENTS FOR PAYMENT.

ALL REINFORCING BAR MARKS SHALL BE PREFIXED AS FOLLOWS:

NWLB = NORTHWEST WINGWALL LEFT BRIDGE
NELB = NORTHEAST WINGWALL LEFT BRIDGE
SELB = SOUTHEAST WINGWALL LEFT BRIDGE
NERB = NORTHWEST WINGWALL RIGHT BRIDGE
SWRB = SOUTHWEST WINGWALL RIGHT BRIDGE
SERB = SOUTHEAST WINGWALL RIGHT BRIDGE

FOR REINFORCEMENT SCHEDULE SEE SHEET 6/6 .

THE FOLLOWING ABBREVIATIONS ARE USED:

W.B. = WESTBOUND E.B. = EASTBOUND
E.F. = EACH FACE F.F. = FAR FACE
N.F. = NEAR FACE (TYP.) = TYPICAL

WINGWALL APPROACH SECTIONS (AS NOTED ABOVE) SHALL BE INSTALLED AS SHOWN ON SHT 63A. WORK FOR THESE WINGWALLS ONLY SHALL BE PAID FOR UNDER ITEM 517- RAILING, CONCRETE (L.F.). SEE THE GENERAL NOTES FOR FURTHER DETAILS.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

WINGWALL DETAILS

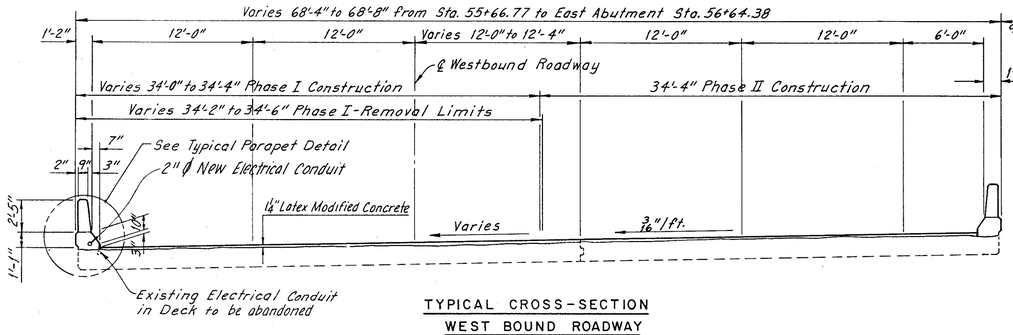
I-90 OVER N. LAKELAND BLVD.
BR. NO.-CUY.-90-2922 L & R.
CUYAHOGA COUNTY OHIO

Mode LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 1-88	Date 1-88	Date 1-88	Date 4-91	Sheet 2/6

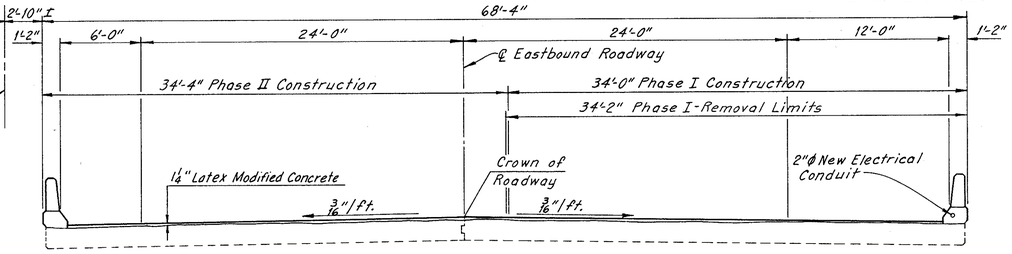
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

56/76

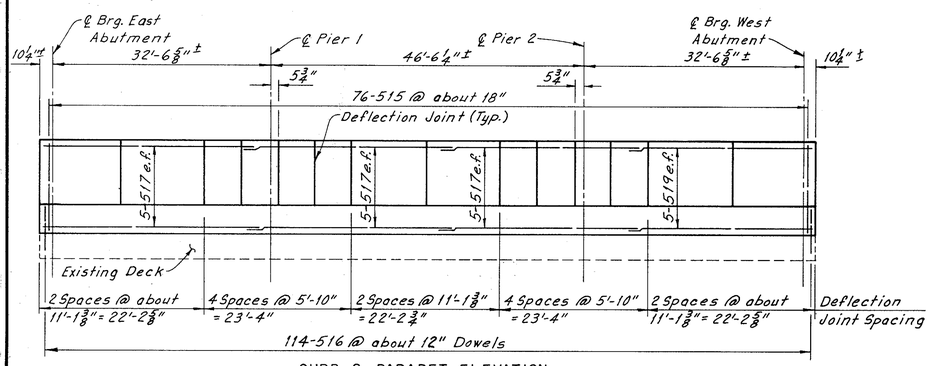
CUYAHOGA COUNTY/LAKE COUNTY.
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



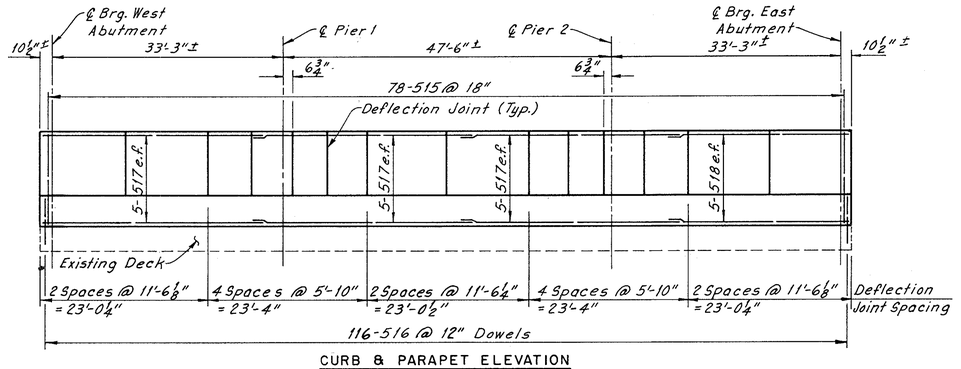
TYPICAL CROSS-SECTION
WEST BOUND ROADWAY



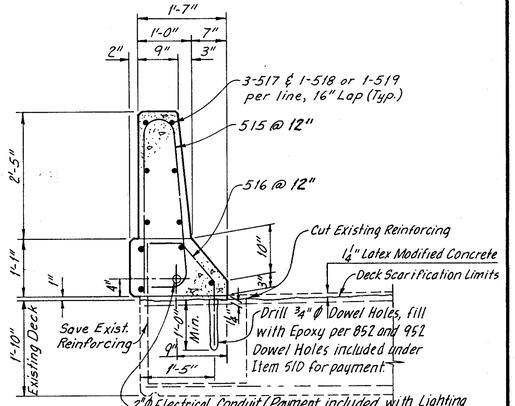
TYPICAL CROSS-SECTION
EAST BOUND ROADWAY



CURB & PARAPET ELEVATION
WESTBOUND LANES - LEFT BRIDGE



CURB & PARAPET ELEVATION
EASTBOUND LANES - RIGHT BRIDGE



TYPICAL PARAPET DETAIL

NOTES:

FOR LIMITS OF PHASE CONSTRUCTION SEE SHEETS 69/76 AND 74/76 IN THE MAINTENANCE OF TRAFFIC PLANS.

FOR TYPICAL CRACK ARRESTOR DETAIL AND NOTE C SEE SHEET 5/6.

FOR REINFORCEMENT SCHEDULE SEE SHEET 6/6.

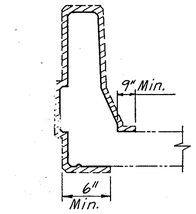
EXISTING SCUPPERS IN DECK SLAB TO BE ABANDONED, SEE DETAIL ON SHEET 5/6.

ALL REINFORCING BAR MARKS SHALL BE PREFIXED AS FOLLOWS:
NPLB = NORTH PARAPET LEFT BRIDGE
SPLB = SOUTH PARAPET LEFT BRIDGE
NPRB = NORTH PARAPET RIGHT BRIDGE
SPRB = SOUTH PARAPET RIGHT BRIDGE

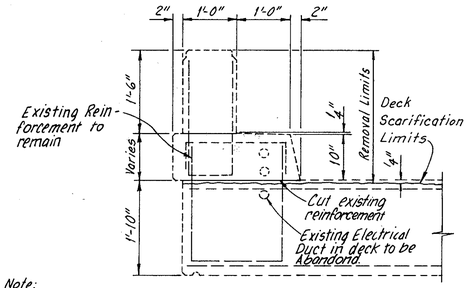
THE FOLLOWING ABBREVIATIONS ARE USED:
BRG. = BEARING E.F. = EACH FACE
(TYP.) = TYPICAL EXIST. = EXISTING

ESTIMATED QUANTITIES

ITEM NO.			202	202	510	511		SPECIAL			845	845		SPECIAL		SPECIAL	SPECIAL	SPECIAL
REF.#	SIDE	LOCATION	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	SCUPPERS ABANDONED	DOWEL HOLES, AS PER PLAN	CLASS S CONCRETE SUPERSTRUCTURE, AS PER PLAN		PNEUMATICALLY PLACED MORTAR C.Q.			LATEX MODIFIED CONCRETE OVERLAY, (1 1/4" THICK)	LATEX MODIFIED CONCRETE OVERLAY, (VARIABLE THICKNESS)		SOUNDING CONCRETE DECK BOTTOMS		SOUNDING CONCRETE BRIDGE COMPONENTS	LOW PRESSURE EPOXY INJECTING DELAMINATED CONCRETE C.Q.	SEALING OF CONCRETE SURFACES (EPOXY)
			LUMP SUM	EACH	EACH	CU.YD.		SQ.FT.			SQ.YD.	CU.YD.		SQ.FT.		SQ.FT.	SQ.FT.	SQ.YD.
CUY-90-29.22L		BRIDGE DECK	LUMP SUM	13	228	33					834	42		7090			1092	288
		ABUTMENTS						40								496		51
		PIERS						110								2648		294
TOTAL TO SUB-SUMMARIES LEFT BRIDGE			LUMP SUM	13	228	33		150			834	42		7090		3144	1092	633
CUY-90-29.22R		BRIDGE DECK	LUMP SUM	20	232	33					848	27		7229			605	295
		ABUTMENTS						50								505		52
		PIERS						20								2648		294
TOTAL TO SUB-SUMMARIES RIGHT BRIDGE			LUMP SUM	20	232	33		70			848	27		7229		3153	605	641



LIMITS OF SEALING CONCRETE SURFACES



Note:
Exist 3 Ducts in North Parapet Left Bridge.
Exist 1 Duct in South Parapet Right Bridge.

PARAPET REMOVAL LIMITS

(ON STRUCTURE)

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

TYPICAL CROSS SECTIONS

I-90 OVER N. LAKELAND BLVD.

BR. NO.-CUY.-90-2922 L & R.

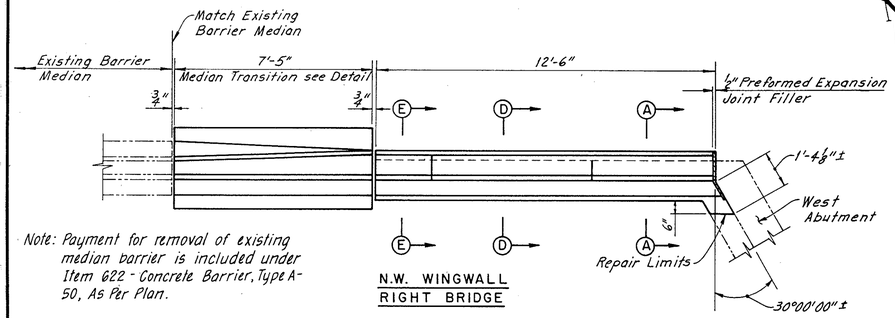
CUYAHOGA COUNTY OHIO

Mode	LJD	Trcd.	JSC	Ckd.	JSC	Rev.	RAB	Revised	
Date	1-88	Date	1-88	Date	1-88	Date	4-91	Sheet	3/6

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

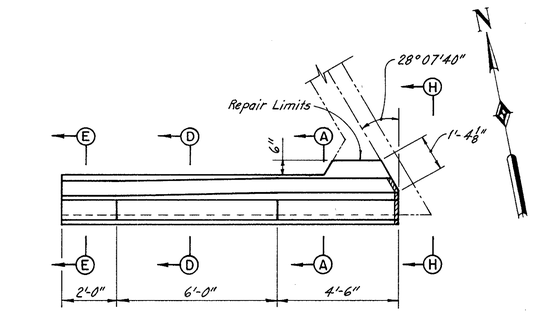
57
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

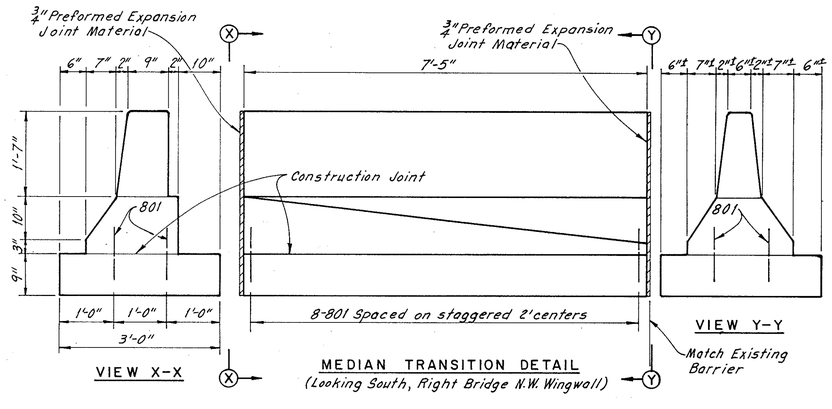


Note: Payment for removal of existing median barrier is included under Item 622 - Concrete Barrier, Type A-50, As Per Plan.

N.W. WINGWALL
RIGHT BRIDGE

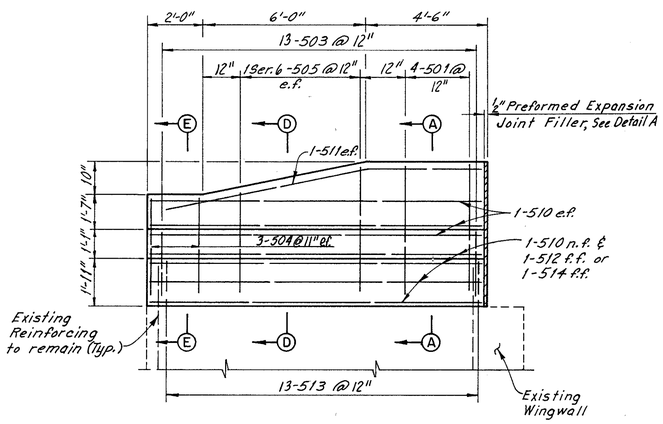


S.W. WINGWALL
LEFT BRIDGE

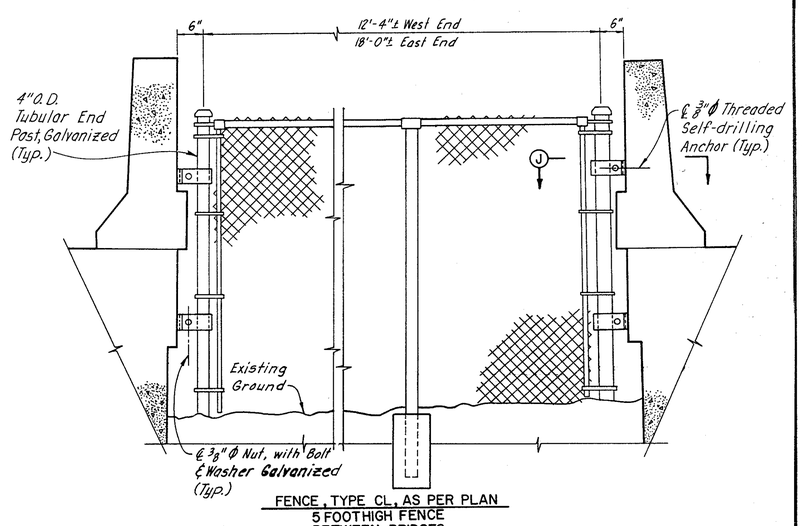


VIEW X-X

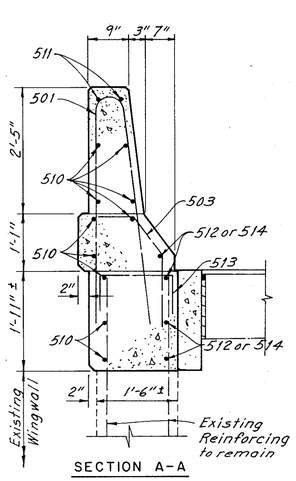
MEDIAN TRANSITION DETAIL
(Looking South, Right Bridge N.W. Wingwall)



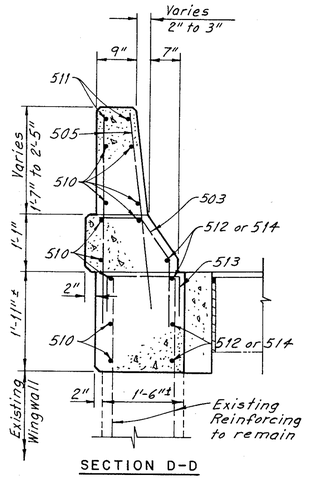
LEFT BRIDGE S.W. WINGWALL SHOWN
RIGHT BRIDGE N.W. WINGWALL SIMILAR



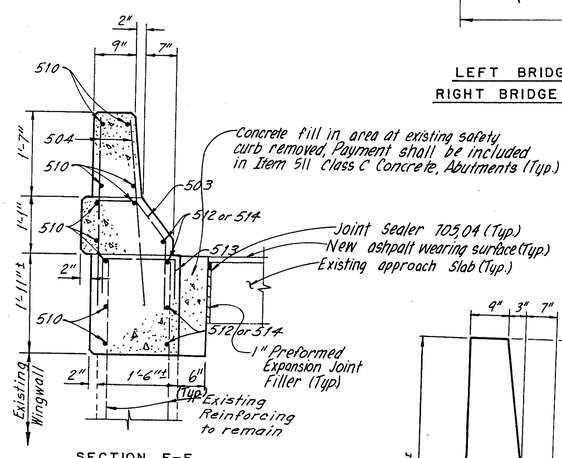
FENCE, TYPE CL, AS PER PLAN
5 FOOT HIGH FENCE
BETWEEN BRIDGES



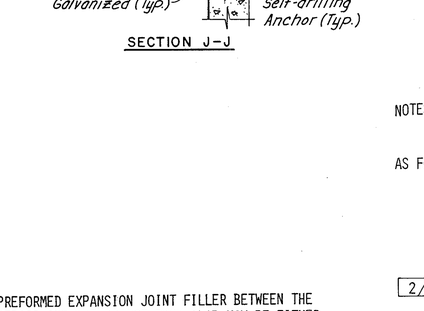
SECTION A-A



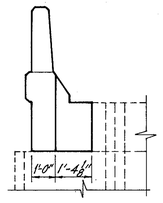
SECTION D-D



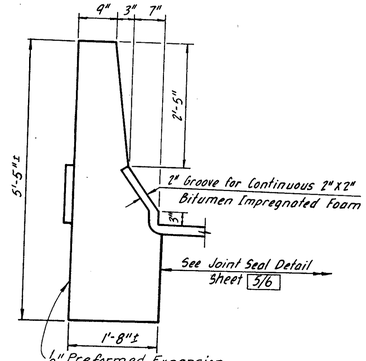
SECTION E-E



SECTION J-J



VIEW H-H



DETAIL A
(Preformed Joint Filler)

NOTE B:
THE PREFORMED EXPANSION JOINT FILLER BETWEEN THE WINGWALL REPAIR AND THE BRIDGE DECK SLAB MAY BE EITHER 1/2" GRAY SPONGE RUBBER OR 1/2" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153.

TO INSURE A NEAT APPEARANCE THE PREFORMED EXPANSION JOINT FILLER SHALL BE THE FULL WIDTH AND HEIGHT OF THE WINGWALL REPAIR EXCLUDING THE 2" GROOVE FOR THE 2" X 2" BITUMEN IMPREGNATED FOAM AS SHOWN.

THE PREFORMED EXPANSION JOINT FILLER IS INCLUDED FOR PAYMENT WITH THE WINGWALL REPAIRS UNDER ITEM 511 CLASS C CONCRETE ABUTMENT.

FILLER SHALL BE FLUSH WITH SURFACE OF CONCRETE AND EXPOSED EDGES SHALL BE FREE OF MORTAR.

NOTES:
FOR REINFORCEMENT SCHEDULE SEE SHEET 6/6.
ALL REINFORCING BAR MARKS SHALL BE PREFIXED AS FOLLOWS:
SWLB = SOUTHWEST WINGWALL LEFT BRIDGE
NWRB = NORTHWEST WINGWALL RIGHT BRIDGE
THE FOLLOWING ABBREVIATIONS ARE USED:
E.F.= EACH FACE F.F. = FAR FACE
N.F. = NEAR FACE (TYP.) = TYPICAL
FOR QUANTITIES AND ADDITIONAL NOTES SEE SHEET 2/6.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

MISCELLANEOUS DETAILS

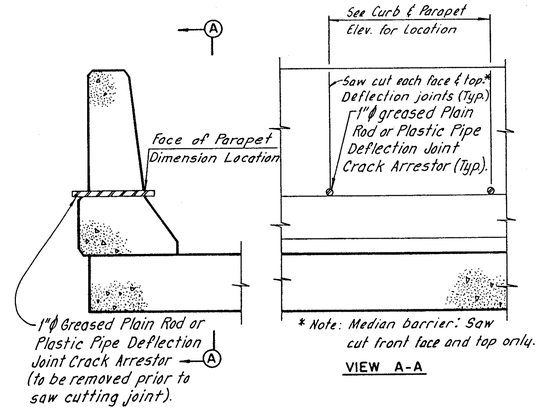
I-90 OVER N. LAKELAND BLVD.
BR. NO.-CUY.-90-2922 L & R.
CUYAHOGA COUNTY OHIO

Mode	Trcd.	Ckd.	Rev.	Revised
LJD	JSC	JSC	RAB	
Date 1-88	Date 1-88	Date 1-88	Date 4-91	Sheet 4/6

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

58
76

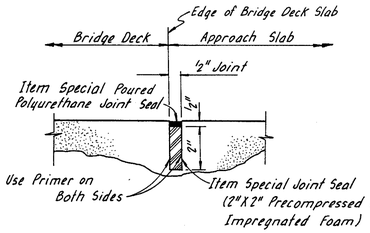
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



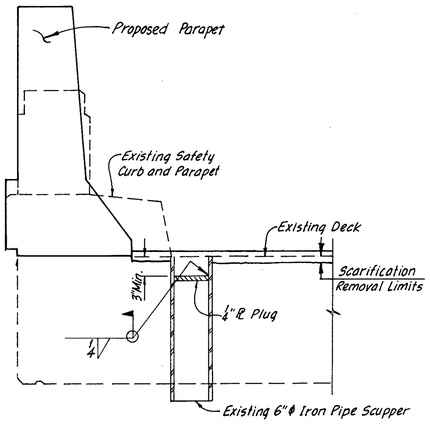
TYPICAL CRACK ARRESTOR DETAIL

NOTE C:

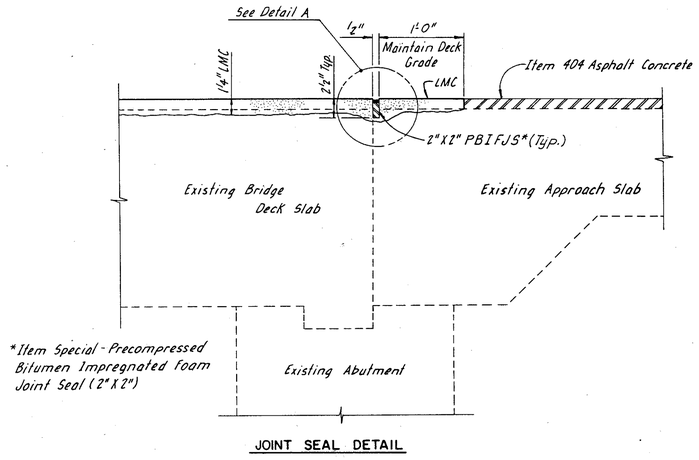
PARAPET DEFLECTION JOINTS LOCATED AS PER PLAN SHALL BE MADE VERTICALLY OR A RIGHT ANGLES TO THE DECK BY SAWING. THE SAWING SHALL BE DONE AFTER THE CONCRETE HAS TAKEN ITS INITIAL SET AND BEFORE ANY SHRINKAGE CRACKS COULD DEVELOP. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO INSURE THAT THE CUT JOINT IS STRAIGHT, TRUE AND ALIGNED ON BOTH FACES OF THE PARAPET. THE DEPTH OF SAW CUT SHALL BE A MINIMUM OF 1 INCH. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, NOT TO EXCEED ONE QUARTER INCH. THE OUTSIDE ONE INCH OF THE PERIMETER OF THE DEFLECTION JOINT SHALL BE SEALED WITH A POLYURETHANE OR POLYMERIC JOINT SEALANT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-S-00227E, SAW CUTTING THE DEFLECTION JOINTS AND SEALANT SHALL BE INCLUDED IN ITEM 511, CLASS S CONCRETE SUPERSTRUCTURE, AS PER PLAN FOR PAYMENT.



DETAIL A



EXISTING SCUPPER PLUG DETAIL
(Typical for 33)



JOINT SEAL DETAIL

ITEM NO.						SPECIAL		SPECIAL		
ESTIMATED QUANTITIES						POURED POLYURETHANE JOINT SEAL		JOINT SEAL (2" X 2" PRECOMPRESSED BITUMEN IMPREGNATED FOAM)		
REF.#	SIDE	LOCATION				LIN.FT.		LIN.FT.		
CUY-90-29.22L						147		150		
TOTAL TO SUB-SUMMARIES LEFT BRIDGE						147		150		
CUY-90-29.22R						150		152		
TOTAL TO SUB-SUMMARIES RIGHT BRIDGE						150		152		

NOTE:
THE FOLLOWING ABBREVIATIONS ARE USED:
LMC = LATEX MODIFIED CONCRETE
PBIFJS = PRECOMPRESSED BITUMEN IMPREGNATED FOAM JOINT SEAL
(TYP.) = TYPICAL MIN. = MINIMUM

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

MISCELLANEOUS DETAILS

I-90 OVER N. LAKELAND BLVD.
BR. NO.-CUY.-90-2922 L & R.
CUYAHOGA COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 1-88	Date 1-88	Date 1-88	Date 4-91	Sheet 5/6

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
NORTH PARAPET LEFT BRIDGE					
NPLB515	114	7'-1"	58		842
NPLB516	114	2'-5"	48		287
NPLB517	30	30'-0"	Str.		939
NPLB519	10	27'-0"	Str.		282
TOTAL WEIGHT EPOXY COATED =					2,350
SOUTH PARAPET LEFT BRIDGE					
SPLB515	114	7'-1"	58		842
SPLB516	114	2'-5"	48		287
SPLB517	30	30'-0"	Str.		939
SPLB519	10	27'-0"	Str.		282
TOTAL WEIGHT EPOXY COATED =					2,350
NORTH PARAPET RIGHT BRIDGE					
NPRB515	116	7'-1"	58		857
NPRB516	116	2'-5	48		292
NPRB517	30	30'-0"	Str.		939
NPRB518	10	29'-5"	Str.		307
TOTAL WEIGHT EPOXY COATED =					2,395
SOUTH PARAPET RIGHT BRIDGE					
SPRB515	116	7'-1"	58		857
SPRB516	116	2'-5"	48		292
SPRB517	30	30'-0"	Str.		939
SPRB518	10	29'-5"	Str.		307
TOTAL WEIGHT EPOXY COATED =					2,395
NORTHWEST WINGWALL LEFT BRIDGE					
NWLB501	4	9'-7"	62		40
NWLB503	5	2'-9"	48		14
NWLB504	6	3'-6"	Str.		22
NWLB505	2 Ser. 6	3'-6" / 4'-8"	Str.	2 13/16	51
NWLB506	3	2'-7"	9		8
NWLB507	2	2'-10"	48		6
NWLB508	2	2'-9"	48		6
NWLB509	1	2'-9"	48		3
NWLB510	10	12'-2"	Str.		127
NWLB511	2	11'-8"	9		24
NWLB513	13	3'-9"	6		51
NWLB514	4	12'-5"	Str.		52
TOTAL WEIGHT EPOXY COATED =					404
NORTHEAST WINGWALL LEFT BRIDGE *					
NELB501	4	9'-7"	62		40
NELB503	5	2'-9"	48		14
NELB504	6	3'-6"	Str.		22
NELB505	2 Ser. 6	3'-6" / 4'-8"	Str.	2 13/16	51
NELB506	3	2'-7"	9		8
NELB507	2	2'-10	48		6
NELB508	2	2'-9"	48		6
NELB509	1	2'-9"	48		3
NELB510	10	12'-2"	Str.		127

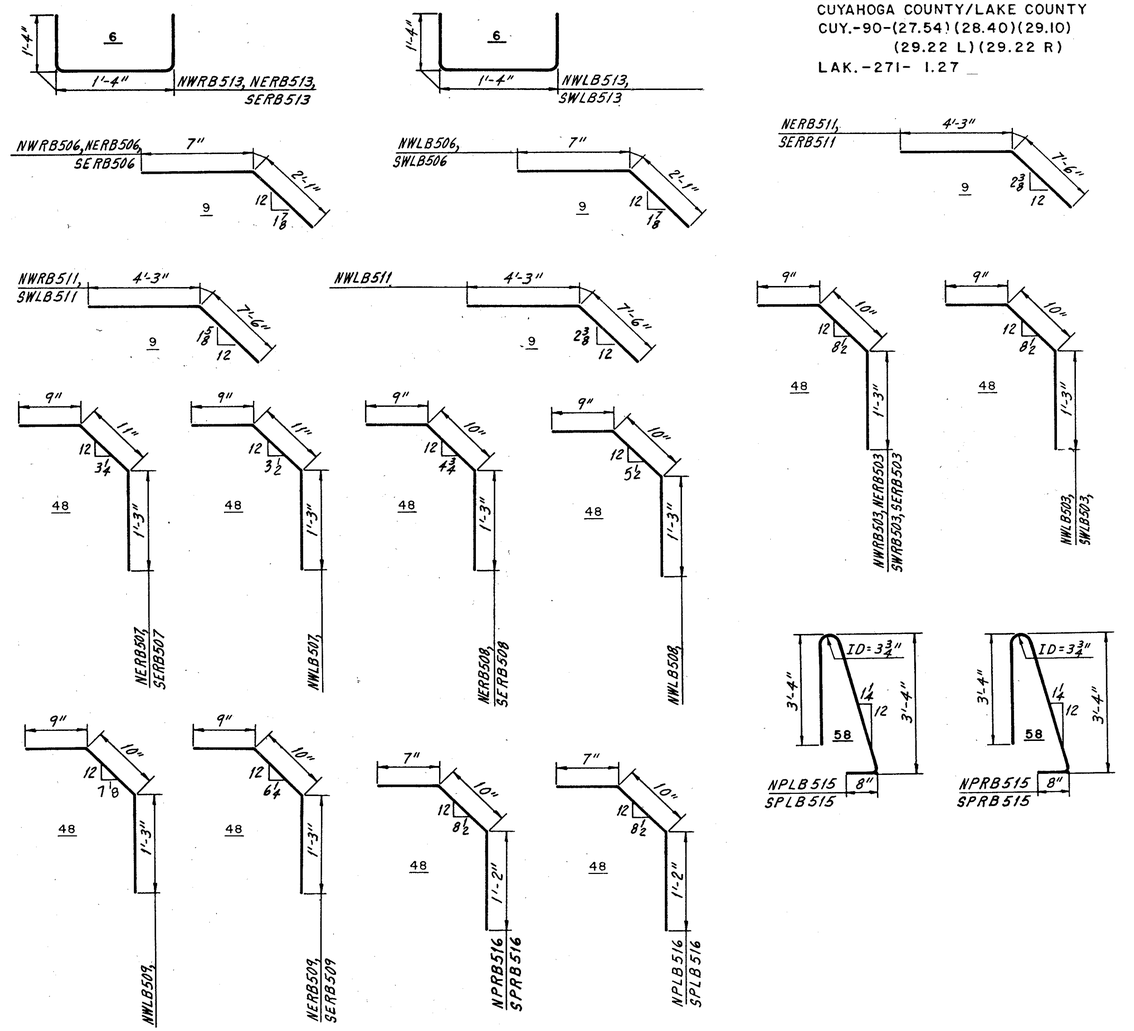
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
NELB511	2	11'-8"	9		24
NELB512	4	11'-11"	Str.		50
NELB513	13	3'-9"	6		51
TOTAL WEIGHT EPOXY COATED =					
SOUTHWEST WINGWALL LEFT BRIDGE					
SWLB501	4	9'-7"	62		40
SWLB503	13	2'-9"	48		37
SWLB504	6	3'-6"	Str.		22
SWLB505	2 Ser. 6	3'-6" / 4'-8"	Str.	2 13/16	51
SWLB510	10	12'-2"	Str.		127
SWLB511	2	11'-8"	9		24
SWLB512	4	11'-11"	Str.		50
SWLB513	13	3'-9"	6		51
TOTAL WEIGHT EPOXY COATED =					402
SOUTHEAST WINGWALL LEFT BRIDGE *					
SELB501	4	9'-7"	62		40
SELB503	5	2'-9"	48		14
SELB504	6	3'-6"	Str.		22
SELB505	2 Ser. 6	3'-6" / 4'-8"	Str.	2 13/16	51
SELB506	3	2'-7"	9		8
SELB507	2	2'-10"	48		6
SELB508	2	2'-9"	48		6
SELB509	1	2'-9"	48		3
SELB510	10	12'-2"	Str.		127
SELB511	2	11'-8"	9		24
SELB513	13	3'-9"	6		51
SELB514	4	12'-5"	Str.		52
TOTAL WEIGHT EPOXY COATED =					
NORTHWEST WINGWALL RIGHT BRIDGE					
NWRB501	4	9'-7"	62		40
NWRB503	13	2'-9"	48		37
NWRB504	6	3'-6"	Str.		22
NWRB505	2 Ser. 6	3'-6" / 4'-8"	Str.	2 13/16	51
NWRB510	10	12'-2"	Str.		127
NWRB511	2	11'-8"	9		24
NWRB513	13	3'-9"	6		51
NWRB514	4	12'-5"	Str.		52
TOTAL WEIGHT EPOXY COATED =					404
NORTHEAST WINGWALL RIGHT BRIDGE					
NERB501	4	9'-7"	62		40
NERB503	5	2'-9"	48		14
NERB504	6	3'-6"	Str.		22
NERB505	2 Ser. 6	3'-6" / 4'-8"	Str.	2 13/16	51
NERB506	3	2'-7"	9		8
NERB507	2	2'-10"	48		6
NERB508	2	2'-9"	48		6
NERB509	1	2'-9"	48		3
NERB510	10	12'-2"	Str.		127

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
NERB511	2	11'-8"	9		24
NERB512	4	11'-11"	Str.		50
NERB513	13	3'-9"	6		51
TOTAL WEIGHT EPOXY COATED =					402
SOUTHWEST WINGWALL RIGHT BRIDGE *					
SWRB501	4	9'-7"	62		40
SWRB503	5	2'-9"	48		14
SWRB504	6	3'-6"	Str.		22
SWRB505	2 Ser. 6	3'-6" / 4'-8"	Str.	2 13/16	51
SWRB506	3	2'-7"	9		8
SWRB507	2	2'-10"	48		6
SWRB508	2	2'-9"	48		6
SWRB509	1	2'-9"	48		3
SWRB510	10	12'-2"	Str.		127
SWRB511	2	11'-8"	9		24
SWRB512	4	11'-11"	Str.		50
SWRB513	13	3'-9"	6		51
TOTAL WEIGHT EPOXY COATED =					
SOUTHEAST WINGWALL RIGHT BRIDGE					
SERB501	4	9'-7"	62		40
SERB503	5	2'-9"	48		14
SERB504	6	3'-6"	Str.		22
SERB505	2 Ser. 6	3'-6" / 4'-8"	Str.	2 13/16	51
SERB506	3	2'-7"	9		8
SERB507	2	2'-10"	48		6
SERB508	2	2'-9"	48		6
SERB509	1	2'-9"	48		3
SERB510	10	12'-2"	Str.		127
SERB511	2	11'-8"	9		24
SERB513	13	3'-9"	6		51
SERB514	4	12'-5"	Str.		52
TOTAL WEIGHT EPOXY COATED =					404

NOTE:
ALL REINFORCING STEEL SHALL BE EPOXY COATED.

* - THESE WINGWALLS SHALL BE INCLUDED FOR PAYMENT BY LINEAL FOOT UNDER ITEM 517- RAILING, CONCRETE (SEE SHT 8A.)

BENDING DIAGRAMS



FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

59/76

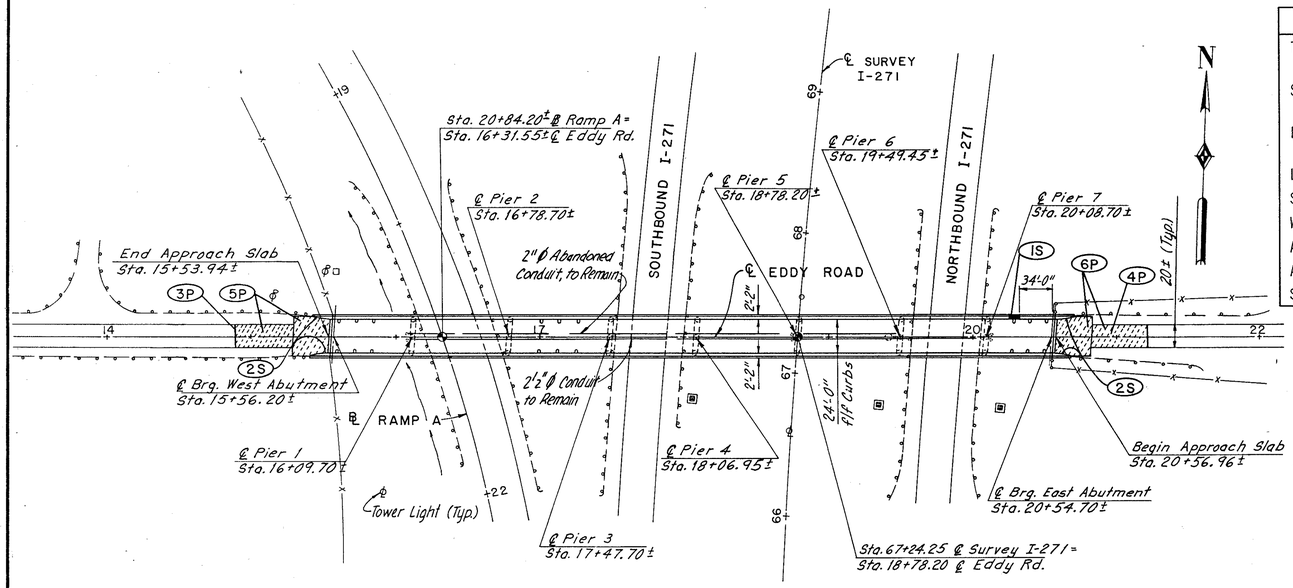
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- I.27

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

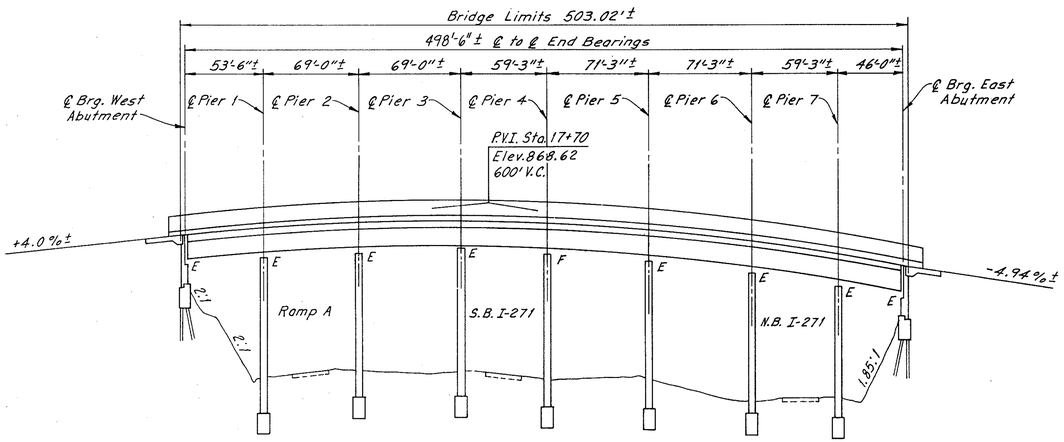
REINFORCEMENT SCHEDULE

I-90 OVER N. LAKELAND BLVD.
BR. NO.-CUY.-90-2922 L.& R.
CUYAHOGA COUNTY OHIO

Mode	Trcd.	Ckd.	Rev.	Revised
LJD	JSC	JSC	RAB	
Date 1-88	Date 1-88	Date 1-88	Date 4-91	Sheet 6/6



PLAN
Scale: 1"=50'



ELEVATION
Scale: 1"=50' Horiz.
1"=10' Vert.

EXISTING STRUCTURE
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 53'-6"±, 69'-0"±, 69'-0"±, 59'-3"±, 71'-3"±, 71'-3"±, 59'-3"±, 46'-0"±
ROADWAY: 24'-0"± FACE TO FACE OF 2'-2"± SAFETY CURBS
LOADING: CF-130-57
SKEW: 4°-34'-23"± L.F.
WEARING SURFACE: 3/4" MONOLITHIC CONCRETE
APPROACH SLAB: SPECIAL DESIGN (25'-0" LONG)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE

MODIFIED STRUCTURE
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 53'-6"±, 69'-0"±, 69'-0"±, 59'-3"±, 71'-3"±, 71'-3"±, 59'-3"±, 46'-0"±
ROADWAY: 24'-0"± FACE TO FACE OF 2'-2"± SAFETY CURBS
SKEW: 4°-34'-23"± L.F.
WEARING SURFACE: 1 3/4" SUPERPLASTICIZED DENSE CONCRETE
APPROACH SLAB: SPECIAL DESIGN (25'-0" LONG)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

60/76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27

ESTIMATED QUANTITIES

ITEM NO.			202		404	407	516	SPECIAL	SPECIAL				SPECIAL		SPECIAL		
REF.#	SIDE	LOCATION	WEARING COURSE REMOVED SQ.YD.		ASPHALT CONCRETE AC-20 CU.YD.	TACK COAT GAL.		POURED POLYURETHANE JOINT SEAL LIN.FT.	PNEUMATICALLY PLACED MORTAR C.Q. SQ.FT.				SOUNDING CONCRETE BRIDGE COMPONANTS SQ.FT.		SOUNDING CONCRETE DECK BOTTOMS SQ.FT.		
3P	℄	STA.14+91.5 TO STA.15+29	84														
4P	℄	STA.20+82 TO STA.21+19.5	84														
5P	℄	STA.14+91.5 TO STA.15+54			7	17											
6P	℄	STA.20+57 TO STA.21+19.5			7	17											
1S	LT.	STA.20+15 TO STA.20+25							10								
2S	LT.& RT.	WEST APPROACH SLAB						28									
2S	LT.& RT.	EAST APPROACH SLAB						28									
		DECK BOTTOM													13,158		
		PIERS											5060				
		PARAPETS & CURBS											5472				
		WEST ABUTMENT							85				293				
		EAST ABUTMENT							49				293				
TOTAL TO SUB-SUMMARY SHEETS 13&14			168		14	34		56	140				11,118		13,158		

NOTES:
FOR WEARING COURSE REMOVAL AND REPLACEMENT ON THE APPROACH ROADWAYS SEE DETAIL ON SHEET 63 .
FOR DETOUR DETAILS SEE SHEET 77/76 .
FOR DETAIL OF TYPICAL JOINT REPAIR AT APPROACH SLABS SEE SHEET 2/3 .

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

GENERAL PLAN AND ELEVATION

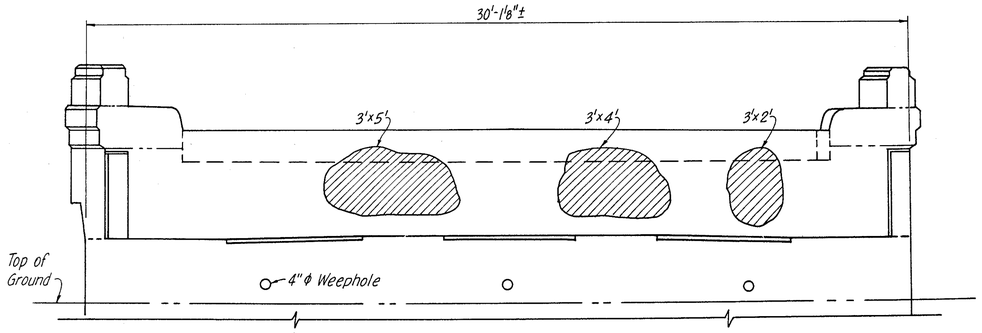
EDDY ROAD OVER I-271
BR. NO.-LAK.-271-127
LAKE COUNTY OHIO

Mode LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 11-87	Date 11-87	Date 11-87	Date 4-91	Sheet 1/3

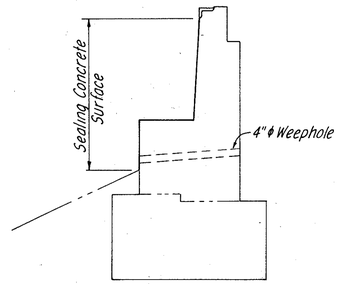
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

60A
76

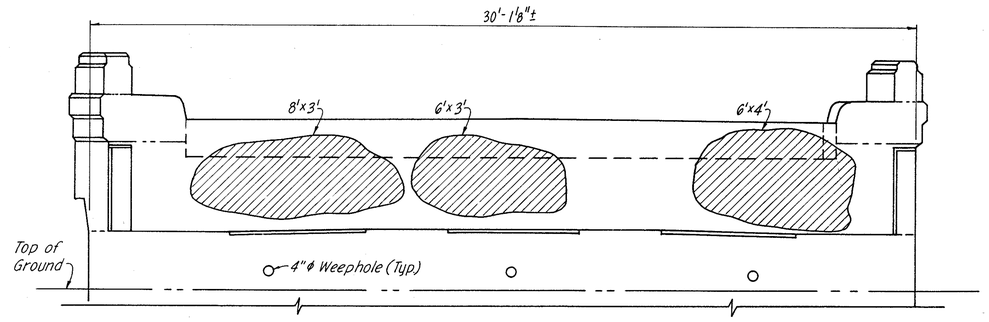
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



EAST ABUTMENT



EXISTING TYPICAL SECTION



WEST ABUTMENT

NOTE:
FOR ESTIMATED QUANTITY TABLE SEE SHEET 60.

DENOTES ITEM SPECIAL, PNEUMATICALLY PLACED MORTAR.

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

ABUTMENT REPAIR DETAILS

EDDY ROAD OVER I-271

BR. NO.-LAK.-271-127

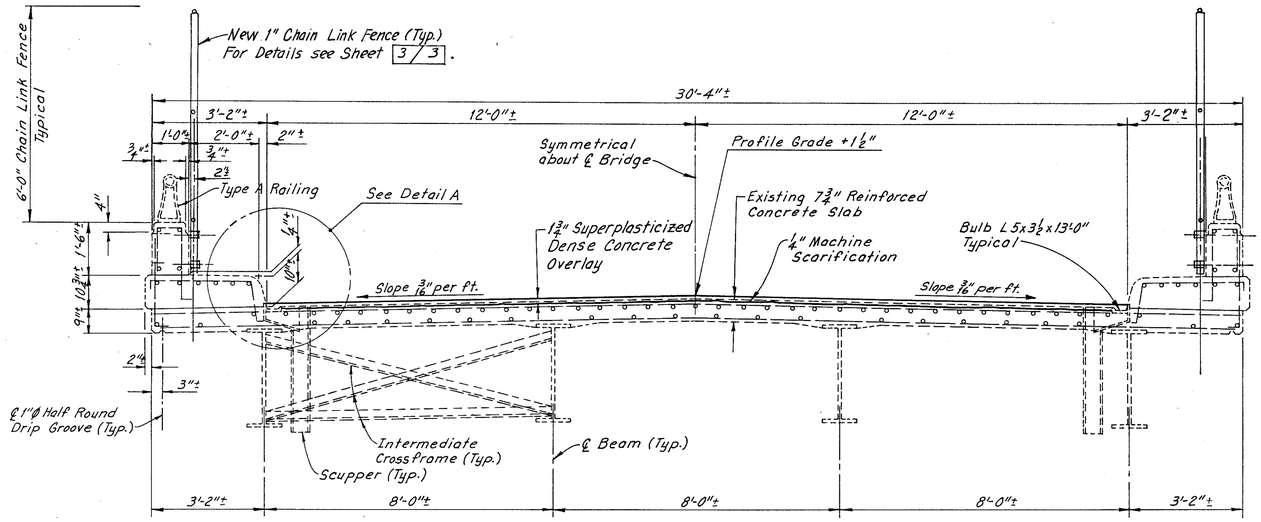
LAKE COUNTY OHIO

Made LJD	Trcd. REC	Ckd. KRD	Rev. RAB	Revised
Date 11-89	Date 8-90	Date 8-90	Date 4-91	Sheet 1A3

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

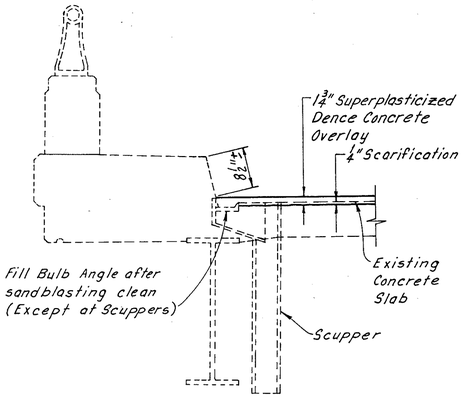
61
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

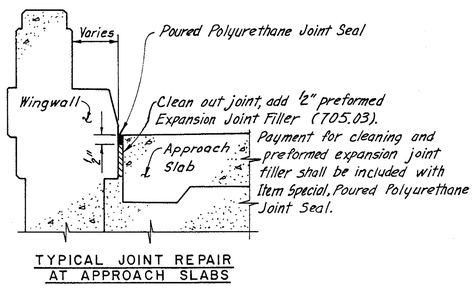


TYPICAL CROSS-SECTION

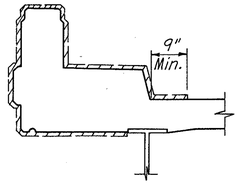
ITEM NO.			516	514	607	850	850		516	SPECIAL	SPECIAL	
ESTIMATED QUANTITIES			VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS, AS PER PLAN	FIELD PAINTING OF RESET BEARINGS	FENCE TYPE CL, MODIFIED, AS PER PLAN, TYPE 1PV	SUPERPLASTICIZED DENCE CONCRETE OVERLAY, (VARIABLE THICKNESS)	SUPERPLASTICIZED DENCE CONCRETE OVERLAY, (1 3/4" THICK)		RESET BEARINGS	SEALING OF CONCRETE SURFACES (EPOXY)	LOW PRESSURE EPOXY INJECTING DELAMINATED CONCRETE	
REF.#	SIDE	LOCATION	LIN.FT.	LUMP SUM	LIN.FT.	CU.YD.	SQ.YD.		EACH	SQ.YD.	SQ.FT.	
		WEST ABUTMENT	24	Lump Sum	23				4	25		
		EAST ABUTMENT	24	Lump Sum	23				4	25		
		BRIDGE DECK			1,001	35	1,333				250	
		PIERS								562		
	LT.& RT.	CURBS & PARAPETS								1107		
TOTAL TO SUB-SUMMARIES SHEETS 13 & 14			48	Lump Sum	1,047	35	1,333		8	2019	250	



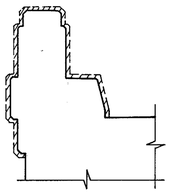
DETAIL A



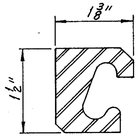
TYPICAL JOINT REPAIR AT APPROACH SLABS



SEALING OF CONCRETE SURFACES – LIMITS

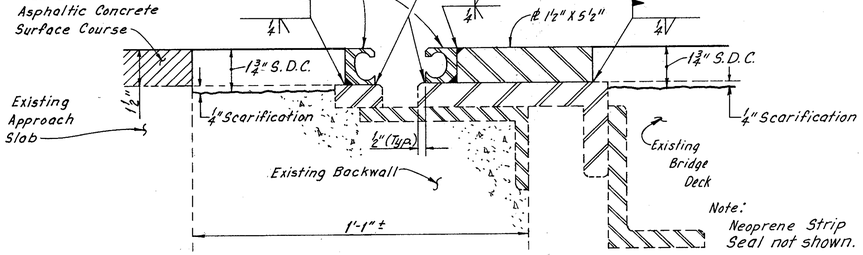


SEALING OF CONCRETE SURFACES – WINGWALLS



TYPE E RETAINER
Low Profile

NEOPRENE STRIP SEAL
(4 inches)



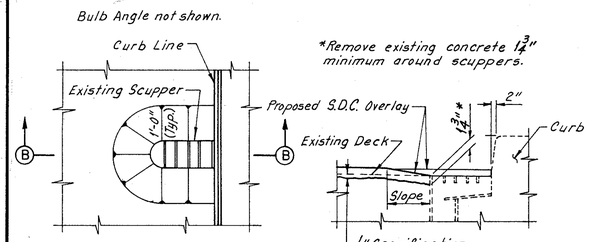
VERTICAL EXTENSION OF EXPANSION JOINT

NOTE:
POURED POLYURETHANE JOINT SEAL SHALL BE POURED INTO THE NEOPRENE GLAND TO THE TOP OF RETAINER AT BOTH ENDS OF THE EXPANSION JOINT ONE FOOT FROM THE CURB PLATE TO THE FACE OF THE CURB PLATE. PAYMENT INCLUDED WITH EXPANSION JOINT.

NOTES:
FOR RESET BEARING DETAILS AT THE ABUTMENTS SEE SHEET 63.

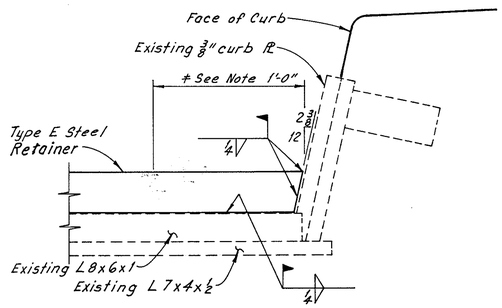
SEALING OF CONCRETE SURFACES FOR ABUTMENTS SHALL INCLUDE FACE OF BACKWALL, BRIDGE SEAT AND ONE FOOT DOWN FACE OF BREASTWALL. SEALING OF CONCRETE SURFACES FOR PIERS SHALL INCLUDE THE TOTAL SURFACE OF THE PIER.

THE FOLLOWING ABBREVIATIONS ARE USED:
SDC = SUPERPLASTICIZED DENCE CONCRETE
(TYP.) = TYPICAL



PLAN VIEW
SECTION B-B

TYPICAL OVERLAY DETAIL AT SCUPPERS



SECTION OF TYPE E RETAINER AT CURB

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

SUPERSTRUCTURE DETAILS

EDDY ROAD OVER I-271

BR. NO.-LAK.-271-127

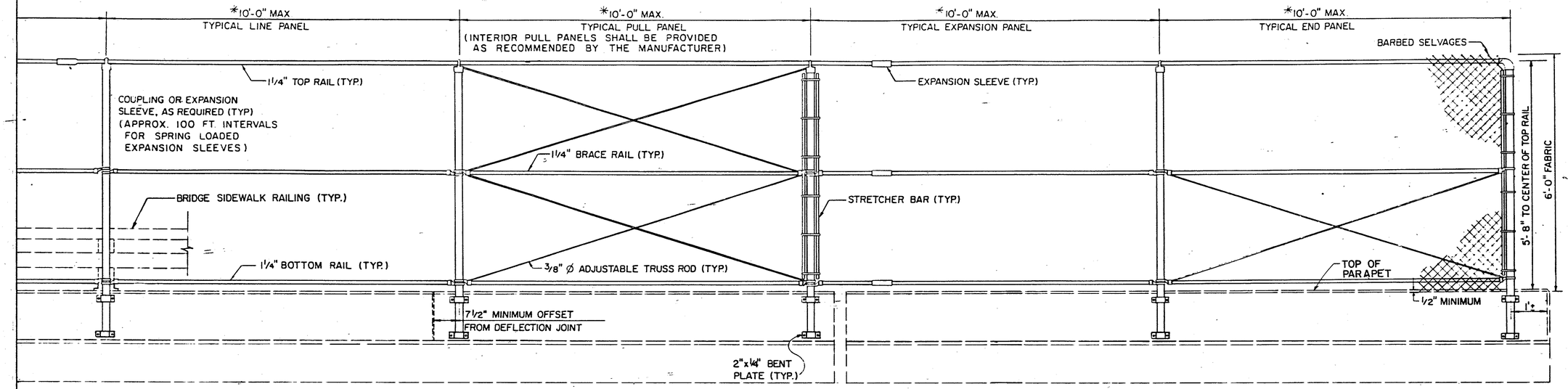
LAKE COUNTY OHIO

Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 11-87	Date 11-87	Date 11-87	Date 4-91	Sheet 2/3

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

62
76

CUYAHOGA COUNTY / LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271-1.27



*TO MATCH ALUMINUM POST SPACING (TYP.), EXCEPT AS SHOWN BELOW AT EXPANSION JOINTS.

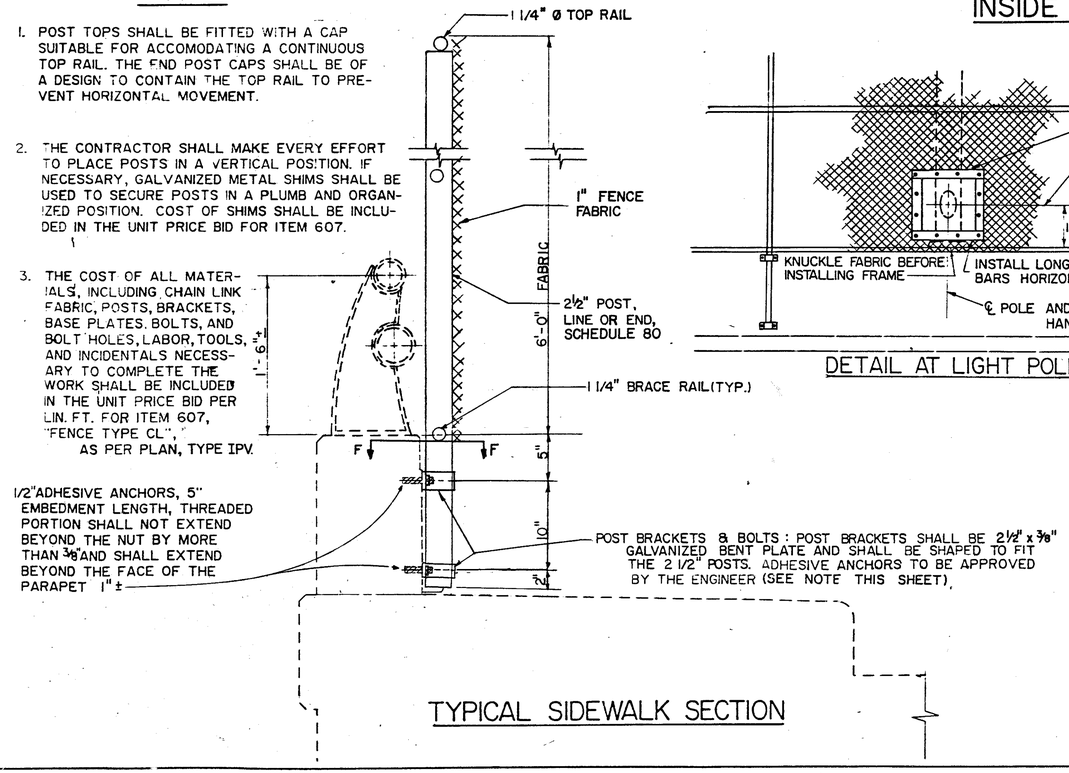
INSIDE ELEVATION

NOTES:

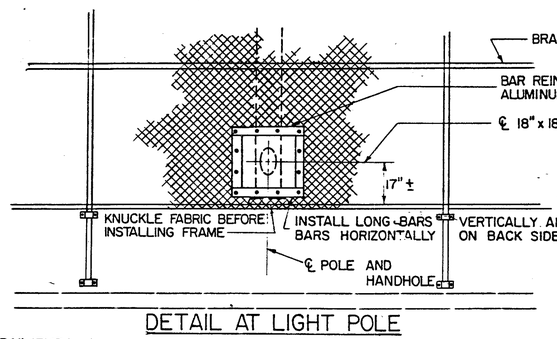
1. POST TOPS SHALL BE FITTED WITH A CAP SUITABLE FOR ACCOMODATING A CONTINUOUS TOP RAIL. THE END POST CAPS SHALL BE OF A DESIGN TO CONTAIN THE TOP RAIL TO PREVENT HORIZONTAL MOVEMENT.

2. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PLACE POSTS IN A VERTICAL POSITION. IF NECESSARY, GALVANIZED METAL SHIMS SHALL BE USED TO SECURE POSTS IN A PLUMB AND ORGANIZED POSITION. COST OF SHIMS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 607.

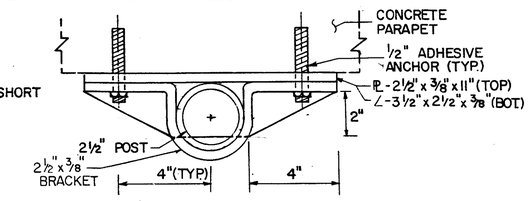
3. THE COST OF ALL MATERIALS, INCLUDING CHAIN LINK FABRIC, POSTS, BRACKETS, BASE PLATES. BOLTS, AND BOLT HOLES, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER LIN. FT. FOR ITEM 607, "FENCE TYPE CL____", AS PER PLAN, TYPE IPV.



TYPICAL SIDEWALK SECTION



DETAIL AT LIGHT POLE



SECTION F-F

THE 1/2" ADHESIVE ANCHORS SHALL BE, HAS 12-612 WITH HBP M12-172 CARTRIDGE AS MANUFACTURED BY HILTY FASTENING SYSTEMS, P.O. BOX 45400, TULSA, OKLAHOMA 74145 (918) 627-9711, 6513 A 307 STANDARD CARBON STEEL CHEM-STUD ANCHOR RODS WITH A 6503 CHEM-STUD CAPSULE AS MANUFACTURED BY THE RAWLPLUG OHIO COMPANY, 125 WEST BRIDGE DRIVE, BEREA, OHIO 44017 (216) 243-9832, Z126-M12 STUD ASSEMBLY WITH A M12-12 PARABOND CAPSULE AS MANUFACTURED BY MOLLY PARABOND CAPSULE ANCHORS, 504 MT. LAUREL AVENUE, TEMPLE, PENNSYLVANIA 19560 (215) 927-5764, AN ENGINEER APPROVED ADHESIVE ANCHOR EQUAL OR ACCORDING TO SS-852.

ITEM 607 - FENCE, TYPE CL_____ AS PER PLAN, TYPE IPV

THIS ITEM INCLUDES THE FURNISHING OF ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE FENCING. TENSION BANDS SHALL BE A MINIMUM OF 12 GAUGE STEEL BY 7/8 INCHES WIDE ASSEMBLED WITH 5/16 INCH DIAMETER BY 1 1/4 INCH GALVANIZED OR CADMIUM PLATED BOLTS. ONE TENSION BAND SHALL BE REQUIRED FOR EACH FOOT OF FABRIC HEIGHT. FENCE POSTS AND BRACKETS SHALL BE ALIGNED VERTICALLY. RAILS SHALL BE PARALLEL TO GRADE. THE FABRIC AND RAILS SHALL BE FREE TO EXPAND OR CONTRACT ACROSS BRIDGE EXPANSION JOINTS. MATERIALS AND WORKMANSHIP SHALL MEET THE REQUIREMENTS OF ITEM 607 EXCEPT THAT ALUMINUM ALLOY POSTS SHALL NOT BE USED. FABRIC TIES SHALL BE SPACED 14 INCH C/C MAXIMUM ON LINE OR END POSTS AND 24 INCH C/C MAXIMUM ON ALL RAILS. ALL POSTS AND PIPE SIZES ARE NOTED IN TERMS OF THE NOMINAL INSIDE DIAMETER OF STANDARD WEIGHT PIPE, SCHEDULE 40, UNLESS OTHERWISE INDICATED. HARDWARE SHALL BE THAT OF THE CHAIN LINK FENCE INDUSTRY STANDARD. BASE PLATES AND MISCELLANEOUS BRACKETS FOR STEEL POSTS MAY BE OF ANY COMMERCIALLY WELDABLE STEEL HAVING A YIELD STRENGTH OF 33,000 P.S.I. ALUMINUM COATED STEEL FABRIC (AASHTO M-181, TYPE II) SHALL BE USED. POSTS SHALL HAVE A YIELD STRESS OF 30 K.S.I. HANDHOLES AT EACH LIGHT-POLE SHALL BE INCLUDED IN THIS ITEM OF WORK.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

TYPE I PV — 11-16-87
FENCE DETAILS — 11-24-87
EDDY ROAD OVER I-271

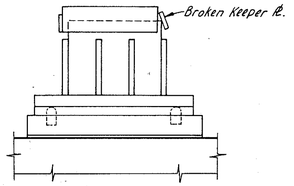
BR. NO.-LAK-271-127
LAKE COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DWL			L.A.M.	ENF		D.W.L.

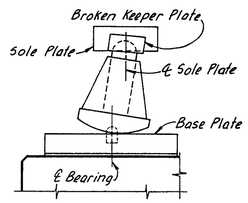
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

63
76

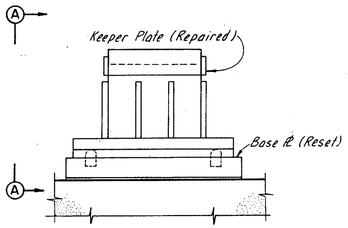
CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



EXISTING FRONT ELEVATION



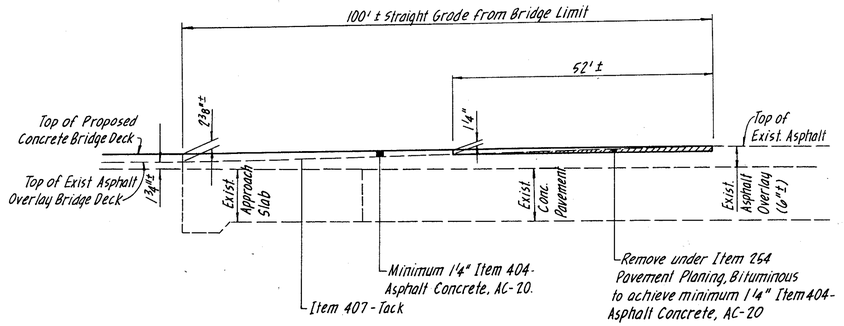
EXISTING SIDE ELEVATION



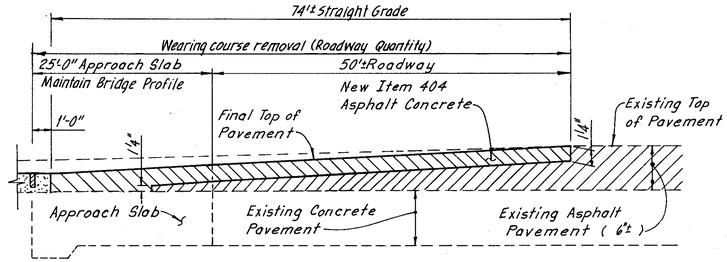
MODIFIED FRONT ELEVATION

PROCEDURE FOR RESETTING BEARINGS

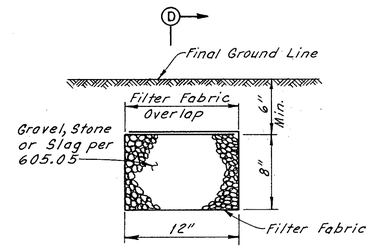
1. RAISE THE ENTIRE SUPERSTRUCTURE AT THE ABUTMENT(A MAXIMUM OF 1/4") OR PIER(A MAXIMUM OF 1/16") UNTIL THERE IS NO CONTACT BETWEEN THE SOLE PLATE AND THE BEARING. CLEAN BEARING.
2. RESET THE ROCKER AND BASE PLATE OR BASE PLATE ONLY IN FINAL POSITION BY CENTERING THE BASE PLATE UNDER THE SOLE PLATE BOTH IN THE LONGITUDINAL AND TRANSVERSE DIRECTION.
3. AT THE ABUTMENTS IF THE BACKWALL INTERFERES WITH THE POSITIONING OF THE BASE PLATE CLIP THE CORNER OF THE BASE PLATE TO ALLOW 1 INCH CLEARANCE BETWEEN THE BACKWALL AND THE EDGE OF THE BASE PLATE.
4. REWELD KEEPER PLATE TO SOLE PLATE AS REQUIRED WITH A 5/16" FILLET WELD, EXCEPT AS NOTED TO REMOVE KEEPER PLATES ON SHEET 51.
5. ANY DAMAGE TO STRUCTURAL MEMBERS, CONNECTIONS, ABUTMENT BEARING SEAT OR BACKWALL SHALL BE CORRECTED AND/OR REPAIRED BY THE CONTRACTOR AT HIS EXPENSE TO THE SATISFACTION OF THE ENGINEER.



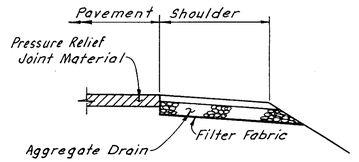
LIMITS OF ITEM 254 AND ITEM 404
REPAIR ON APPROACH ROADWAY
(STRUCTURE NO CUY-90-2754,2840 AND 2910)



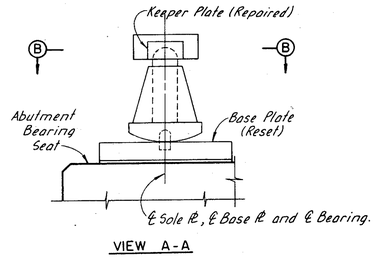
LIMITS OF ITEM 202 AND ITEM 404
REPAIR ON APPROACH ROADWAY
(Structure No. Cuy.-90-2922 L & R)



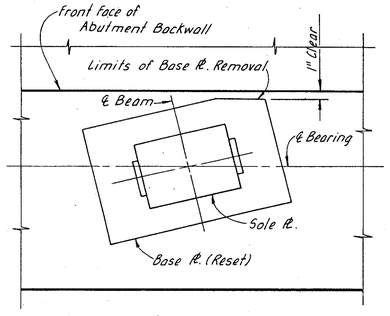
TYPICAL DETAIL
AGGREGATE DRAIN



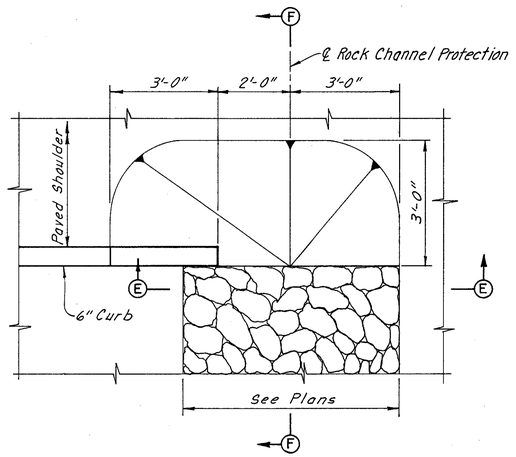
SECTION D-D



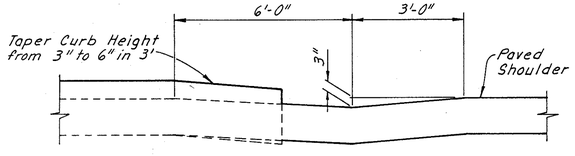
VIEW A-A



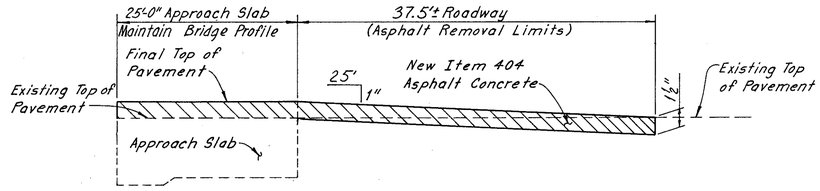
VIEW B-B
TRIMMING BASE PLATE



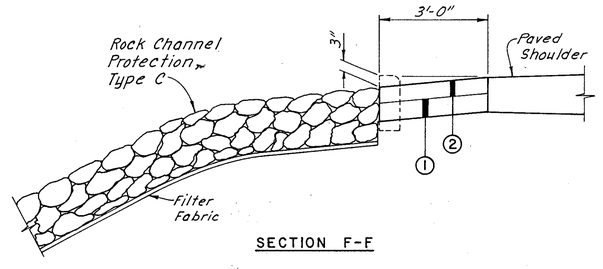
PLAN VIEW - ROCK CHANNEL PROTECTION, TYPE C
(Structure Cuy.-90-2922 L & R)



SECTION E-E



LIMITS OF ITEM 202 AND ITEM 404
REPAIR ON APPROACH ROADWAY
(Structure No. Lak.-271-127)



SECTION F-F

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

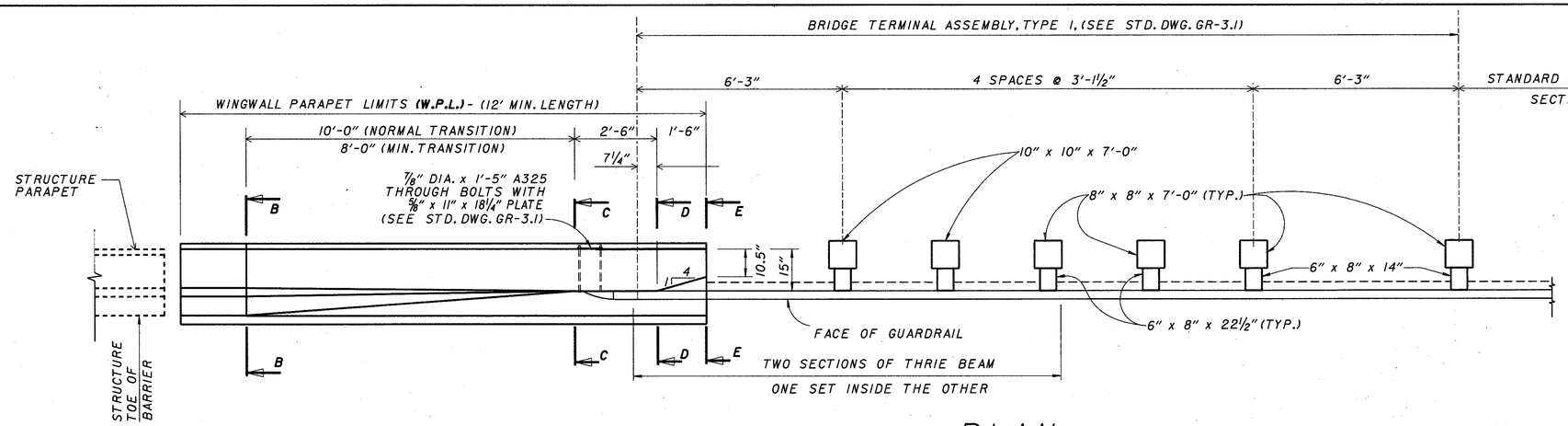
COMMON DETAILS

CUYAHOGA COUNTY OHIO

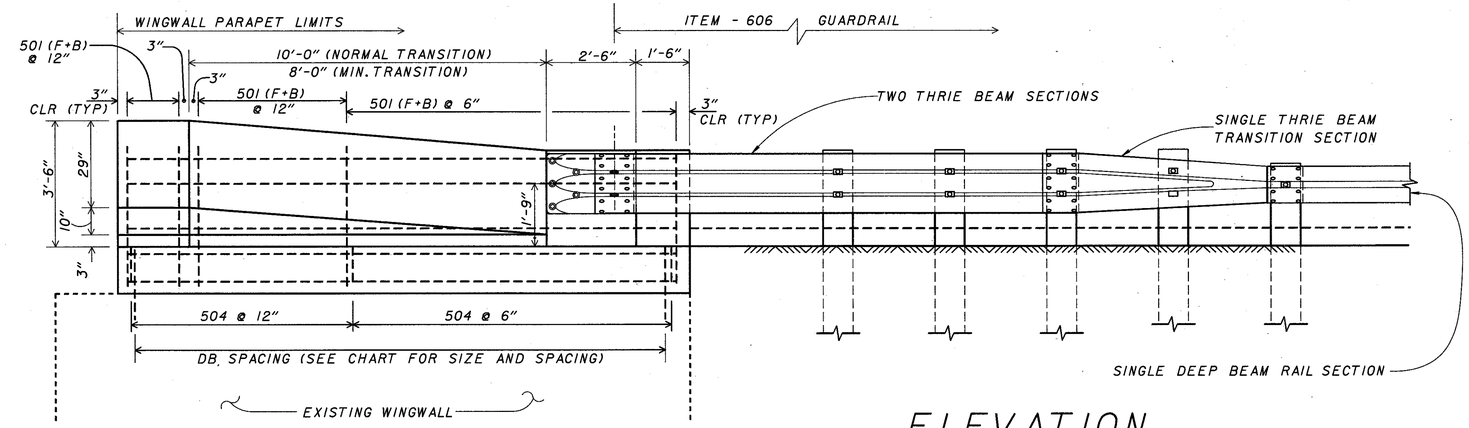
Made LJD	Trcd. JSC	Ckd. JSC	Rev. RAB	Revised
Date 11-87	Date 11-87	Date 11-87	Date 4-91	Sheet CD1

CUYAHOGA COUNTY LAKE COUNTY CUY/LAK-90/271-27.54/1.27	OHIO FHWA REGION 5 FEDERAL PROJECT	63A 76

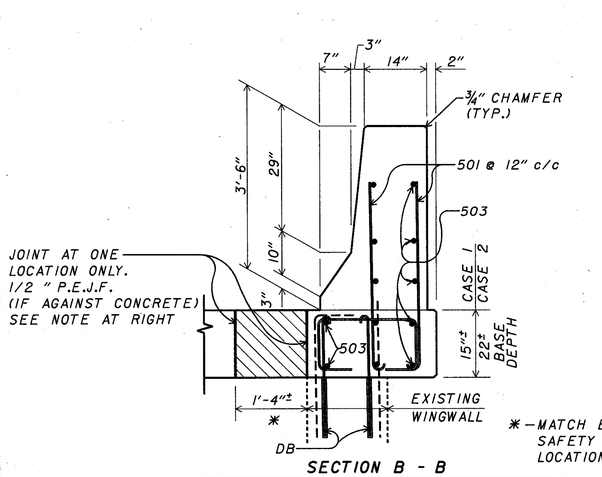
BRIDGE TERMINAL ASSEMBLY, TYPE 1, (SEE STD. DWG. GR-3.1)



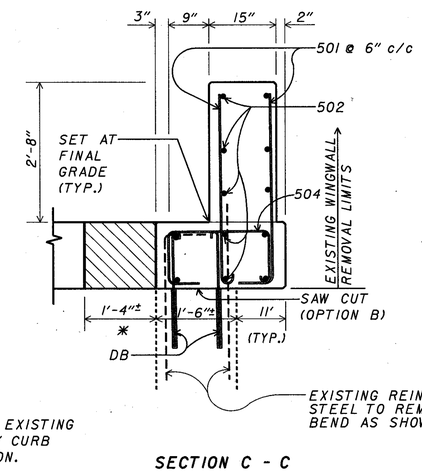
PLAN

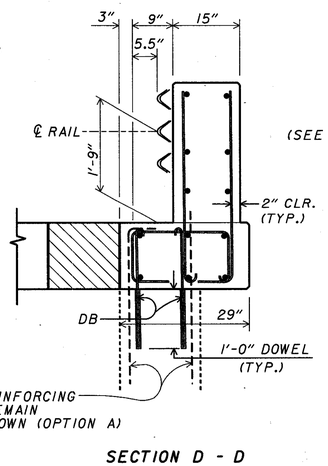


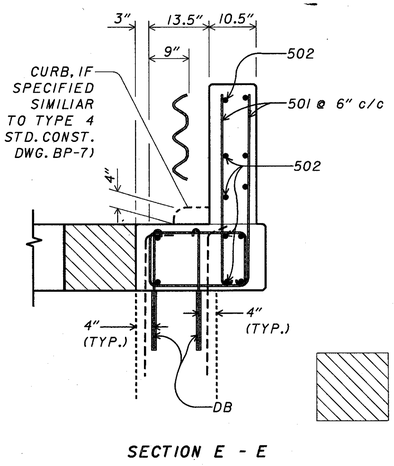
ELEVATION



*—MATCH EXISTING SAFETY CURB LOCATION.







INDICATES VARIABLE WIDTH AREA TO BE CAST INTEGRAL AND PAID FOR WITH BASE SECTION (UNREINFORCED), APPROACH SLAB, OR CONCRETE SHOULDER.

GENERAL NOTES

DESIGN DATA: CONCRETE SHALL BE CLASS C, REINFORCING STEEL SHALL BE GRADE 60 AND EPOXY COATED.

CONTRACTOR OPTION:
THE CONTRACTOR SHALL HAVE THE OPTION OF EITHER SAW CUTTING THE WINGWALL PARAPET OFF (OPTION B) OR CHIPPING THE WINGWALL CONCRETE AWAY TO LEAVE THE EXISTING REINFORCING STEEL AS SHOWN BELOW (OPTION A). FOR BOTH OPTIONS THE WINGWALL CONCRETE SHALL BE REMOVED TO THE NEAREST CONSTRUCTION JOINT (CASE 1 OR CASE 2) AS SHOWN BELOW. THE CONTRACTOR MAY USE ANY OF THE COMBINATIONS LISTED BELOW AS LONG AS THE REINFORCING GUIDELINES ARE STRICTLY FOLLOWED.

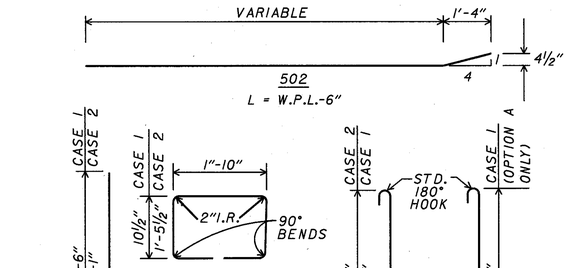
FOR FURTHER INFORMATION, SEE THE GENERAL NOTES. ALL WORK IS TO BE INCLUDED UNDER ITEM 517 - RAILING CONCRETE.

REINFORCEMENT:

PLACE AS FOLLOWS:

DB SPACING CHART		
	OPTION A (EXISTING REINFORCING STEEL TO REMAIN)	OPTION B (SAW CUT WINGWALL PARAPET AS SHOWN)
CASE 1 (15"- BASE DEPTH)	*5 BAR (F) @9" c/c	*6 BAR @ 9" c/c (F), 18"c/c (B)
CASE 2 (22"- BASE DEPTH)	*6 BAR (F) @12" c/c	*6 BAR @ 8" c/c (F), 18"c/c (B)

ESTIMATING INFORMATION		OPTION A	OPTION B
REINFORCING STEEL (LBS/FT.)	CASE 1	37.14	41.07
	CASE 2	41.58	47.29
CONCRETE (CY/FT.)	CASE 1	0.267	0.267
	CASE 2	0.319	0.319
DOWEL HOLES (EACH/FT.)	CASE 1	1.33	2
	CASE 2	1	2.17



BENDING DIAGRAMS

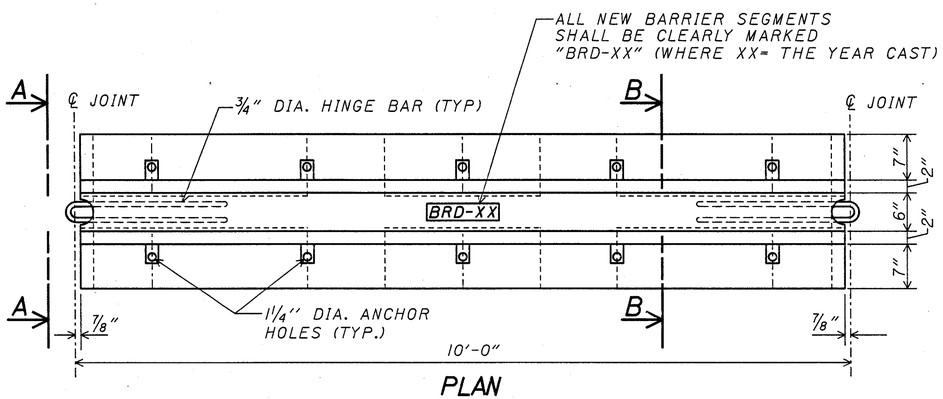
OCTOBER 11, 1991

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

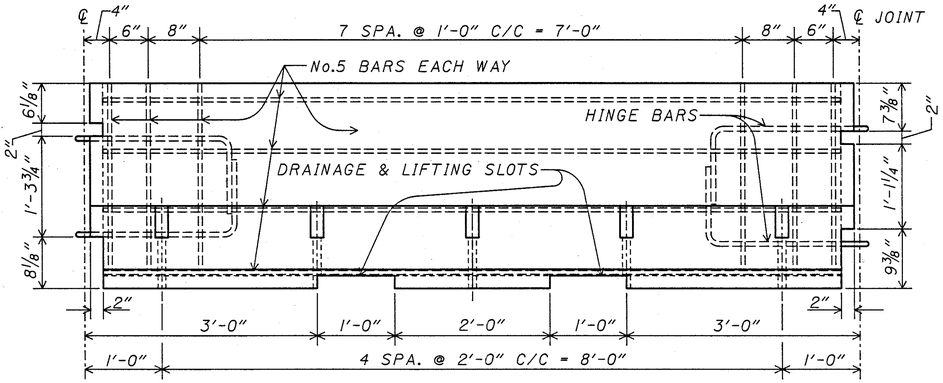
32"/42" WINGWALL/PARAPET TRANSITION WITH TAPERED BOTTOM (WITH OR WITHOUT CURBS)

OHIO

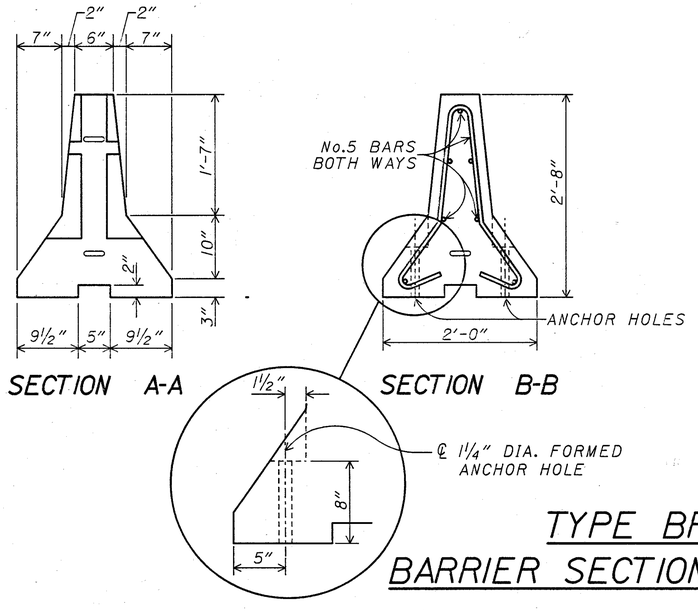
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
LDH	JAG	ENF		
DATE	DATE	DATE	DATE	SHEET



PLAN



ELEVATION



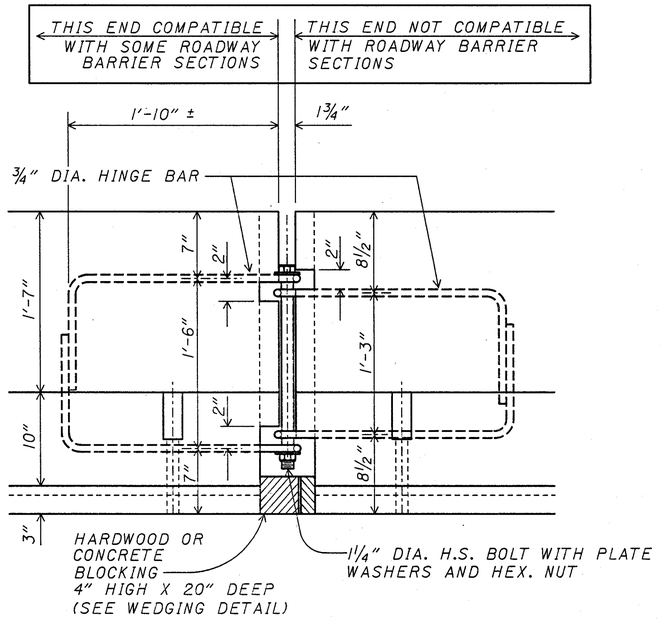
SECTION A-A

SECTION B-B

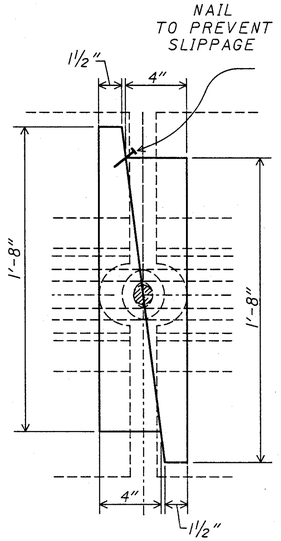
TYPE BRD BARRIER SECTIONS

MATERIAL REQUIREMENTS:

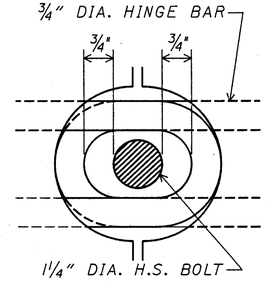
1. THE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI. AND SHALL CONTAIN A CALCIUM NITRITE CORROSION INHIBITING ADMIXTURE. THE ADMIXTURE SHALL BE ADDED TO THE CONCRETE AT THE RATE OF 4.0 GALLONS PER CUBIC YARD OF CONCRETE AND SHALL BE ADDED AS AN AQUEOUS SOLUTION, SUCH AS W.R. GRACE'S DCI CORROSION INHIBITOR (30% SOLIDS) OR APPROVED EQUAL. THE WATER IN SUCH SOLUTION SHALL BE COUNTED AS MIXING WATER FOR THE PURPOSE OF DETERMINING THE WATER TO CEMENT RATIO OF THE CONCRETE. THE CALCIUM NITRITE MUST BE ADDED TO THE MIX IMMEDIATELY AFTER THE AIR-ENTRAINING AND RETARDING ADMIXTURES HAVE BEEN INTRODUCED TO THE BATCH.
2. ALL REINFORCING STEEL AND STEEL ROD CONNECTING LOOPS SHALL BE GRADE 60 REINFORCING STEEL WITH A MINIMUM YIELD STRENGTH OF 60,000 PSI.



DETAIL AT HINGED CONNECTION

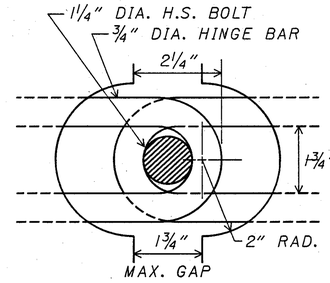


BARRIER WEDGING DETAIL (HARDWOOD)



INITIAL JOINT

BARRIER SEGMENTS SHOULD INITIALLY BE PLACED CLOSER TOGETHER SO THAT BOLTS CAN BE EASILY INSERTED THROUGH HINGE BAR LOOPS.



FINAL JOINT

BARRIER JOINTS MUST BE FULLY OPEN BEFORE OPENING IS BLOCKED WITH CONCRETE OR HARDWOOD.

COMMON NOTES:

ALL PORTABLE CONCRETE BARRIERS ON STRUCTURES

BRIDGE DECK SURFACE PREPARATION

1. THE BRIDGE DECK SURFACE AREA ON WHICH THE PRECAST CONCRETE BARRIER SEGMENTS WILL REST SHALL BE CLEARED OF ALL LOOSE SAND, GRAVEL, DIRT AND DEBRIS.
2. ANY IRREGULARITIES IN THE BRIDGE DECK AREA, UNLESS JUDGED BY THE ENGINEER TO BE INCONSEQUENTIAL, SHALL BE LEVELED WITH GROUT AND/OR ASPHALT.
3. ASPHALT ROLL ROOFING SHALL BE PLACED ON THOSE BRIDGE DECK AREAS, AS JUDGED BY THE ENGINEER, TO HAVE A SURFACE ROUGHNESS WHICH WOULD INHIBIT FRICTION CONTACT BETWEEN BARRIER SEGMENTS AND DECK.

BOLTED JOINT CONNECTIONS

4. WHEN STANDARD MC-9.2 BARRIER SECTIONS OR TYPE BRD BARRIER SECTIONS ARE USED ON STRUCTURES, THEY SHALL BE BOLTED TOGETHER AND BLOCKED AS SHOWN ABOVE (BOLTING AND BLOCKING DIMENSIONS FOR MC-9.2 BARRIER MAY VARY FROM THOSE SHOWN).

PORTABLE BARRIER, TYPE BRD, ANCHORED

ALL ANCHORS SHALL BE 1" DIAMETER, HIGH STRENGTH, THRU BOLTS OR APPROVED RESIN ANCHORS. WHEN RESIN ANCHORS ARE USED, THEY MUST BE EMBEDDED A MINIMUM OF 6" INTO FIRM CONCRETE. THE NUMBER OF ANCHORS SHALL BE AS SHOWN BELOW AND SHALL BE PLACED SYMMETRICALLY ABOUT THE TRANSVERSE ℄ OF BARRIER SECTION ON THE ROADWAY SIDE OF THE BARRIER.

BRIDGE NO.	TRAFFIC CONTROL PHASE	NO. ANCHORS / 10' SECTION
CUY-90-2754	I AND II	3
CUY-90-2840	I AND II	3
CUY-90-2910	I AND II	3

Note: For the locations of portable concrete barriers on bridges see Traffic Control Sheets.
Payment for the portable concrete barriers on bridges shall be made at the contract price for Item 622-Portable Concrete Barrier, Type BRD, Anchored, which shall include removal of the anchors and repair of the deck surface to the satisfaction of the Engineer. The quantity for Portable Concrete Barrier, Type BRD, Anchored is shown in the Maintenance of Traffic General Summary.

2/7/91

FHWA REGION	STATE	PROJECT
5	OHIO	IR-90-1(150)40

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

Station	Side	Phase I Temporary Signs																													
		614-Maintaining Traffic																										630			614
		OW-96-48 48"x60"	OW-120-36 Mod. 36"x36"	OW-122-48 Mod 48"x48"	M-38-24 24"x12"	M-37-24 24"x12"	OW-127-36 36"x36"	IM-40-24 24"x12"	M-40-24 24"x12"	OW-134-48 48"x48"	M-26-21 21"x15"	OW-143-24 24"x24"	Street Name Sign	OC-10-48 48"x24"	OC-45-48 48"x60"	IM-26-21 21"x15"	IM-39-24 24"x12"	M-2-24-2 24"x12"	M-5-24-2 24"x24"	M-26-21 21"x15"	M-39-24 24"x12"	OM-23-24 24"x12"	IM-21-21 21"x15"	R-15-48 Mod 48"x30"	M-21-21 21"x15"	Flashing Arrow	M-2-24-3 30"x24"	Overlay B/O 14'-0"x3'-0"	Overlay B/O 17'-0"x3'-0"	Overlay B/O 21'-0"x3'-0"	R-8A-48 48"x36"
263+40 I-90 EB.	Rt. & Lt.									2																					
283+40 I-90 EB.	Rt. & Lt.									2																					
294+20 I-90 E.B	Rt. & Lt.			2																											
304+20 I-90 E.B.	Rt & Lt			2																											
309+20 I-90 E.B.	Rt. & Lt.			2								2																			
314+65 I-90 E.B.	Rt																									1					
9+15 E.222 ST.	Rt.							1	1									1	1				1		1						
10+85 E.222 ST.	Lt.																1	1	1		1		1		1						
311+40 I-90 W.B.	Lt.													1																	
328+05 I-90 W.B.	Lt.	1																													
309+40 I-90 W.B.	Lt.																														1
337+10 I-90 W.B.	Lt.											1			1																
9+10 Babbitt Rd.	Rt.							1	1									1	1				1		1						
10+85 Babbitt Rd.	Lt.																1	1	1		1		1		1						
315+00 South Marginal Road	Rt. & Lt.						2																								
319+00 South Marginal Road	Rt. & Lt.		2																												
322+70± South Marginal Road	Overhead																											1			
331+00 South Marginal Road	Rt. & Lt.															2	2	2	2	2	2	4									
74+00 Lakeland Freeway E.B.	Rt.																														1
1+00 Ramp 6E	℄																							1							
5+00 Ramp 8E	Rt. & Lt.									2																					
2+50 Ramp 11E	Rt. & Lt.									2																					
4+00 Ramp 13E	Rt. & Lt.									2																					
2+50 Ramp 14E	Rt. & Lt.									2																					
72+00 Lakeland Freeway E.B.	Rt.													1																	
9+30 E.260TH ST.	Rt.					1					1							1	1				1		1		1				
10+75 E.260TH ST.	Lt.				1						1		1												1		1				
11+00 Turning Road No.1	Rt.													1																	
8+30 Turning Road No.2	Rt. & Lt.									2																					
13+30 Turning Road No.2	Rt. & Lt.			2																											
18+30 Turning Road No.2	Rt. & Lt.			2								2																			
23+80 Turning Road No.2	Lt.																									1					
79+30 Lakeland Freeway W.B.	Rt. & Lt.									2		2																			
84+00 Lakeland Freeway W.B	Rt. & Lt.									2																					
48+50 Lakeland Freeway E.B.	Overhead																												1	1	
13+00 Turning Road No.1	Rt.																														1
TOTAL		1	2	10	1	1	2	2	2	18	2	7	1	3	1	2	4	7	7	2	4	4	5	1	6	2	2	1	1	1	3

Station	Side	Phase II Temporary Signs																									
		614-Maintaining Traffic																							630		
		OW-96-48 48"x60"	OW-120-36 Mod 36"x36"	OW-122-48 Mod 48"x48"	OW-123-48 Mod 48"x48"		OW-127-36 36"x36"			OW-134-48 48"x48"		OW-143-24 24"x24"	W-28-24 24"x24"	OC-10-48 48"x24"	OC-45-48 48"x60"	IM-26-21 21"x15"	IM-39-24 24"x12"	M-2-24-2 24"x24"	M-5-24-2 24"x24"	M-26-21 21"x15"	M-39-24 24"x12"	OM-23-24 24"x12"	R-8A-48 48"x36"	R-75-48 Mod 48"x30"	Flashing Arrow	Overlay B/O 17'-0"x3'-0"	Overlay B/O 21'-0"x3'-0"	Overlay B/O 14'-0"x3'-0"
263+40 I-90 E.B.	Rt. & Lt.									2																		
283+40 I-90 E.B.	Rt. & Lt.									2																		
297+40 I-90 E.B.	Rt. & Lt.				2																							
307+40 I-90 E.B.	Rt & Lt.				2																							
312+00 I-90 E.B.	Rt. & Lt.				2							2																
317+40 I-90 E.B.	Lt.																								1			
309+40 I-90 W.B.	Lt.																						1					
311+40 I-90 W.B.	Lt.													1														
315+00 South Marginal Road	Rt. & Lt.						2																					
319+00 South Marginal Road	Rt. & Lt.		2																									
322+70± South Marginal Road	Overhead																											1
331+00 South Marginal Road	Rt. & Lt.															2	2	2	2	2	2	4						
1+00 Ramp 6E	℄																							1				
5+00 Ramp 8E	Rt. & Lt.									2																		
2+50 Ramp 11E	Rt. & Lt.									2																		
4+00 Ramp 13E	Rt. & Lt.									2																		
2+50 Ramp 14E	Rt. & Lt.									2																		
72+00 Lakeland Freeway E.B.	Rt.													1														
11+00 Turning Road No.1	Rt.													1														
13+00 Turning Road No.1	Rt.																						1					
8+30 Turning Road No.2	Rt. & Lt.									2																		
13+30 Turning Road No.2	Rt. & Lt.				2																							
18+30 Turning Road No.2	Rt. & Lt.				2							2																
23+30 Turning Road No.2	Rt.																								1			
79+30 Lakeland Freeway W.B.	Rt. & Lt.									2		2																
84+00 Lakeland Freeway W.B.	Rt. & Lt.									2																		
48+50 Lakeland Freeway E.B.	Overhead																									1	1	
74+00 Lakeland Freeway E.B.	Rt.																						1					
TOTAL			2		10		2			18		6		3		2	2	2	2	2	2	4	3	1	2	1	1	1

SCALE None
MADE JEN DATE 12-16-87
TRCD. JEN DATE 12-21-87
CKD. EFS DATE 12-29-87

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

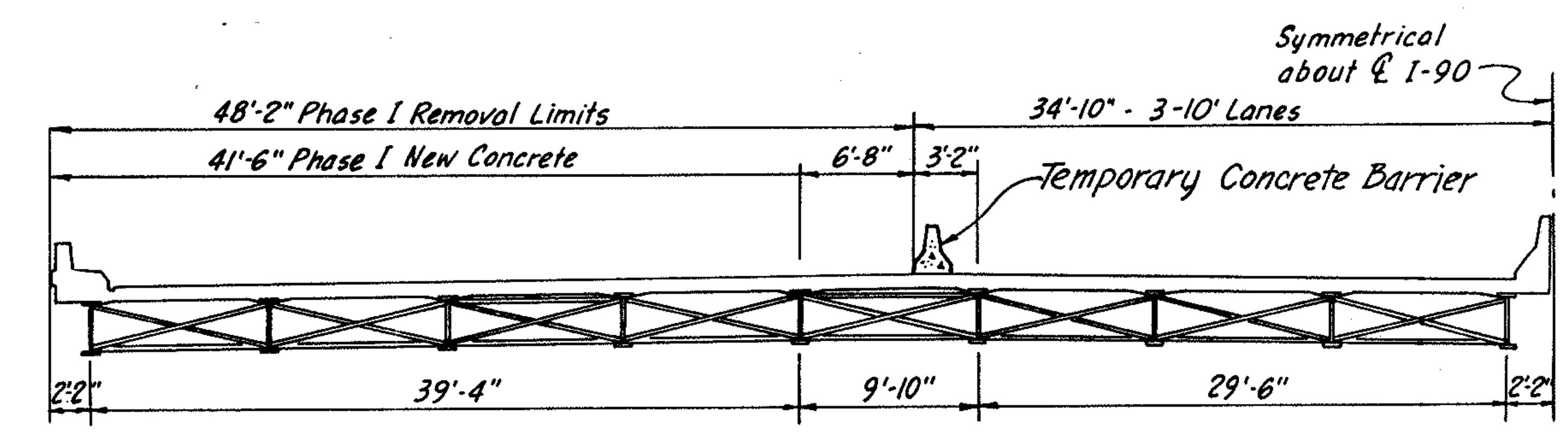
66 / 76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

Note:
See Work Zone Speed Limit Sign note on Sheet in the General Notes for placement of additional work zone speed limit signs by the Contractor.

RESUME LEGAL SPEED
R-8A-48
309+40
END ROAD WORK
OC-10
311+40
315
€ I-90
320
321+55
4-12' Lanes
MATCH LINE STA. 324+00
Flashing Arrow
314+65
314+22
4-12' Lanes
320+82
3-12' Lanes
323+30
3-10'-6" Lanes
Begin Taper
RAMP 6E
Drums Spaced at 25'
€ SOUTH MARGINAL ROAD
DETOUR AHEAD
RAMP CLOSED AHEAD
RAMP CLOSED
R-15-48 MOD.
EXIT
OW-96-48
Bridge Limits 231.48'
150' Barrier Taper (Typ.)
333+98
3-10'-6" Lanes
Begin Taper
EXIT RAMP OPEN AHEAD
25 MPH
OC-45-48
OW-143-24
337+10
338+80
3-10'-6" Lanes
End Taper
40' Temp. Concrete Barrier
Temporary Concrete Barrier on Bridge
Temporary Concrete Barrier (Typ.)
End Terminal (Typ.)
Taper 55:1
325
330
335
MATCH LINE STA. 339+00
MATCH LINE STA. 324+00
324+03
3-10'-6" Lanes
Begin Taper
328+00
328+85
3-10' Lanes
End Taper
Temporary Concrete Barrier on Bridge
40' Temporary Concrete Barrier
Drums Spaced at 50' (Typ.)
20' Temporary Concrete Barrier
Drums
328+12
3-10'-6" Lanes
End Taper
€ E. 222nd St.
331+00
332+30
3-10'-6" Lanes
Begin Taper
337+10
3-10'-6" Lanes
End Taper
DETOUR
EAST
WEST
ROAD WORK AHEAD
RIGHT LANE CLOSED 2000 FT
RIGHT LANE CLOSED 1000 FT
RIGHT LANE CLOSED 500 FT
45 MPH
SEE NEXT ENTRANCE
Erie Pa.

NOTE: INSIDE (MEDIAN) BERMS SHALL BE REPLACED PRIOR TO IMPLEMENTING PHASE I, SEE MAINTENANCE OF TRAFFIC NOTES ON SHEET 9 & 11 AND LIMITS ON SHEET 11 FOR FURTHER INFORMATION.



PHASE I CONSTRUCTION
EAST 222ND STREET

50 0 50 100
SCALE IN FEET

TEMPORARY PAVEMENT MARKINGS

1. 4" Edge Lines, White
2. 4" Edge Lines, Yellow
3. 8" Channelizing Lines, White
4. 24" Transverse Lines, White

NOTE:
FOR TEMPORARY STRIPING SUB-SUMMARY SEE SHEET NO. 15.
FOR TEMPORARY SIGNING SUB-SUMMARY SEE SHEET NO. 65.
FOR DETAILS OF TEMPORARY CONCRETE BARRIERS ON BRIDGE SEE SHEET NO. 64.

SCALE As Shown
MADE. JEN DATE 11-7-87
TRCD. JEN DATE 12-15-87
CKD. EPS DATE 12-29-87

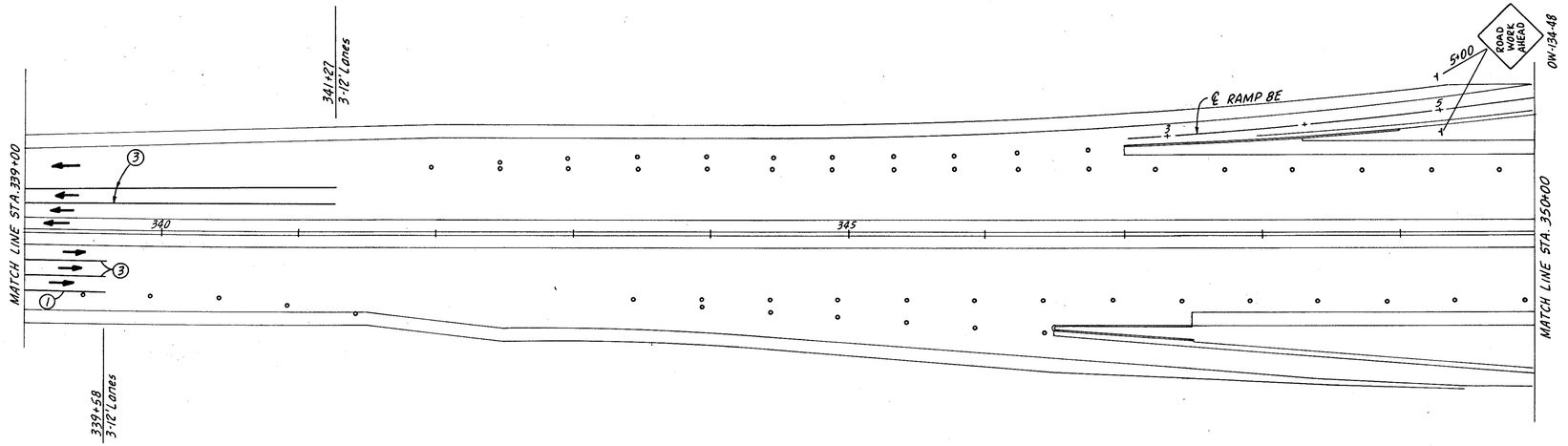
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

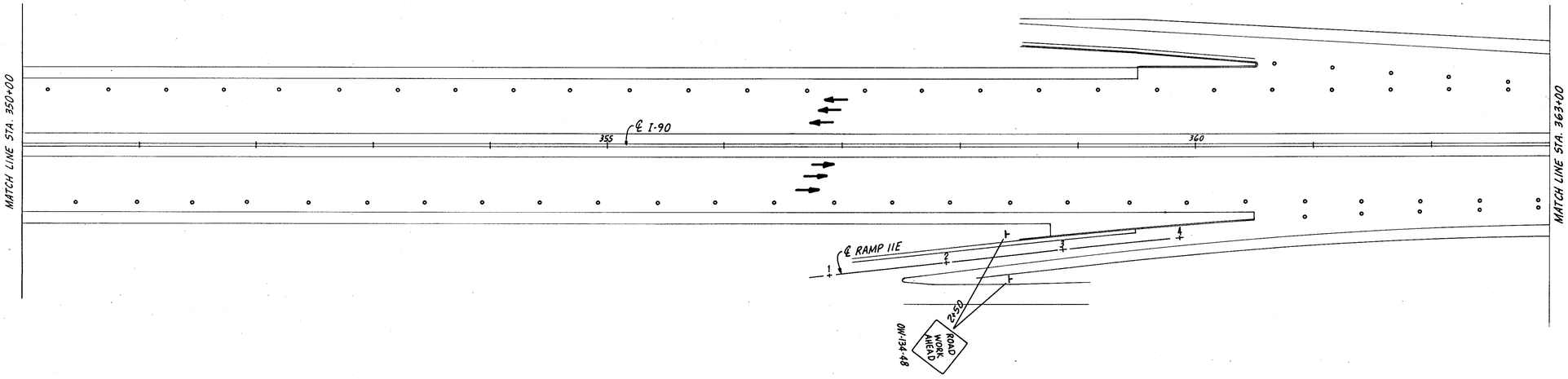
PHASE I MAINTENANCE OF TRAFFIC

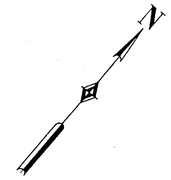
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

67
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27







TEMPORARY PAVEMENT MARKINGS

(1) 4" EDGE LINES, WHITE
(2) 4" EDGE LINES, YELLOW
(3) 8" CHANNELIZING LINES, WHITE
(4) 24" TRANSVERSE LINES, WHITE

50 0 50 100
SCALE IN FEET

SCALE As Shown
MADE. JEN DATE 11-7-87
TRCD. JEN DATE 12-15-87
CKD. EPS DATE 12-29-87

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

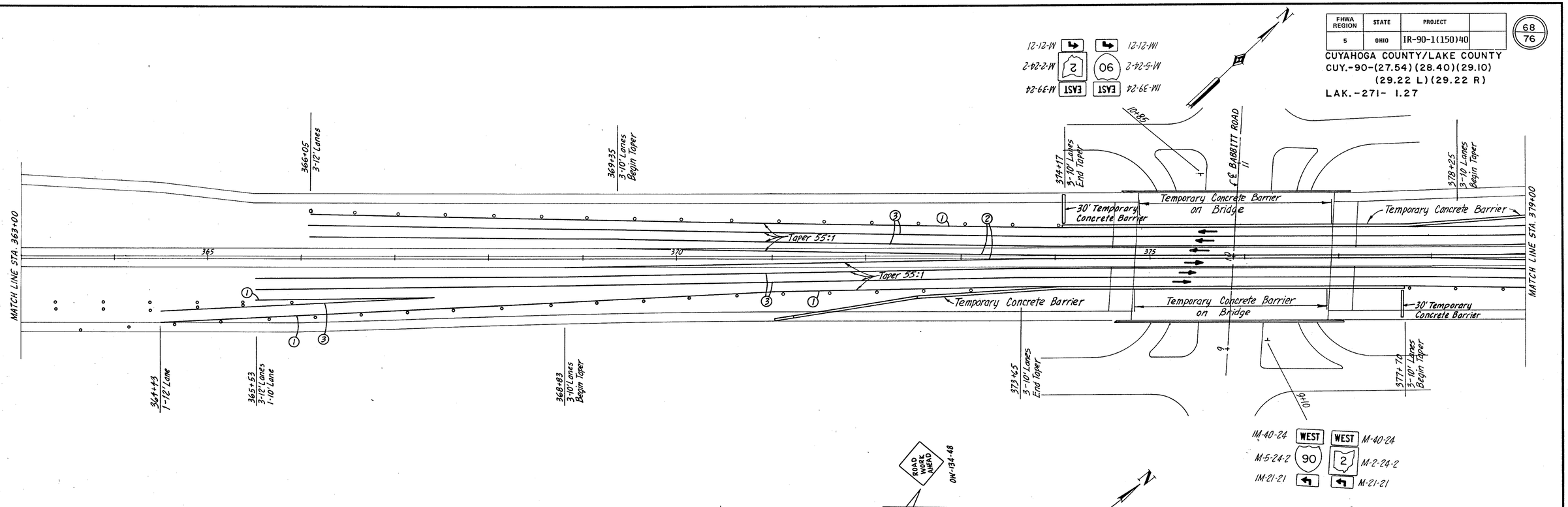
NOTE:
FOR TEMPORARY STRIPING SUB-SUMMARY SEE SHEET No. 15.
FOR TEMPORARY SIGNING SUB-SUMMARY SEE SHEET No. 65.

PHASE I MAINTENANCE OF TRAFFIC

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

68
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

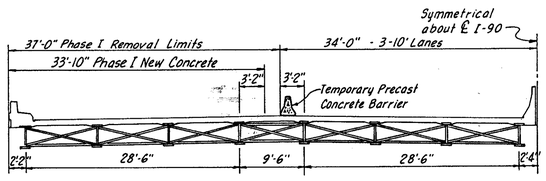


NOTE: INSIDE (MEDIAN) BERMS SHALL BE REPLACED PRIOR TO IMPLEMENTING PHASE I. SEE MAINTENANCE OF TRAFFIC NOTES ON SHEET 9 & 11 AND LIMITS ON SHEET 11 FOR FURTHER INFORMATION.

TEMPORARY PAVEMENT MARKINGS

1. 4" EDGE LINES, WHITE
2. 4" EDGE LINES, YELLOW
3. 8" CHANNELIZING LINES, WHITE
4. 24" TRANSVERSE LINES, WHITE

50 0 50 100
SCALE IN FEET



PHASE I CONSTRUCTION
BABBITT ROAD

NOTE:
FOR TEMPORARY STRIPING SUB-SUMMARY SEE SHEET NO. 15.
FOR TEMPORARY SIGNING SUB-SUMMARY SEE SHEET NO. 65.
FOR DETAILS OF TEMPORARY CONCRETE BARRIERS ON BRIDGE SEE SHEET NO. 64.

SCALE As Shown
MADE. JEN DATE 11-7-87
TRCD. JEN DATE 12-15-87
CKD. EFS DATE 12-23-87

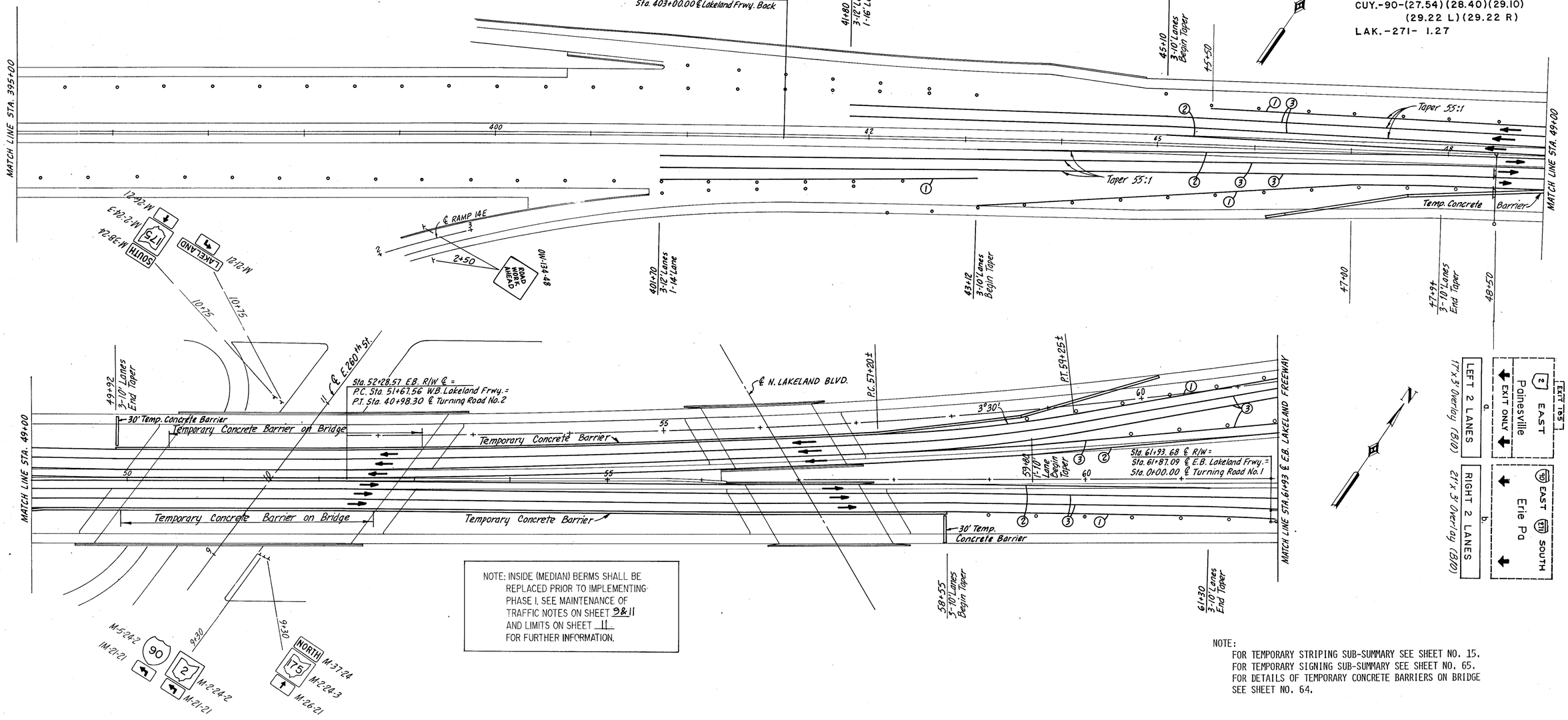
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

PHASE I MAINTENANCE OF TRAFFIC

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

69
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



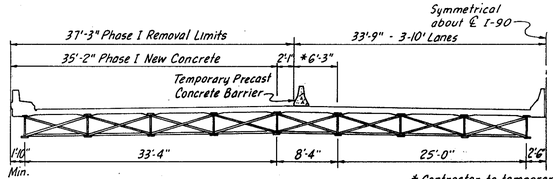
NOTE: INSIDE (MEDIAN) BERMS SHALL BE REPLACED PRIOR TO IMPLEMENTING PHASE I. SEE MAINTENANCE OF TRAFFIC NOTES ON SHEET 9&11 AND LIMITS ON SHEET 11 FOR FURTHER INFORMATION.

NOTE:
FOR TEMPORARY STRIPING SUB-SUMMARY SEE SHEET NO. 15.
FOR TEMPORARY SIGNING SUB-SUMMARY SEE SHEET NO. 65.
FOR DETAILS OF TEMPORARY CONCRETE BARRIERS ON BRIDGE SEE SHEET NO. 64.

TEMPORARY PAVEMENT MARKINGS

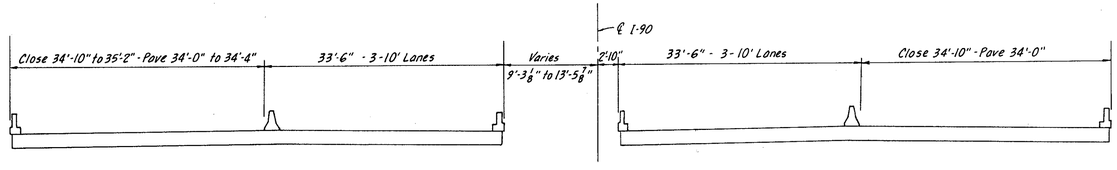
1. 4" EDGE LINES, WHITE
2. 4" EDGE LINES, YELLOW
3. 8" CHANNELIZING LINES, WHITE
4. 24" TRANSVERSE LINES, WHITE

50 0 50 100
SCALE IN FEET



PHASE I CONSTRUCTION
EAST 260TH STREET

*Contractor to temporarily support slab during Phase I Construction.



WESTBOUND

PHASE I CONSTRUCTION
LAKELAND BOULEVARD

EASTBOUND

SCALE As Shown
MADE. JEN DATE 11-7-87
TRCD. JEN DATE 12-15-87
CKD. EPS DATE 12-21-87

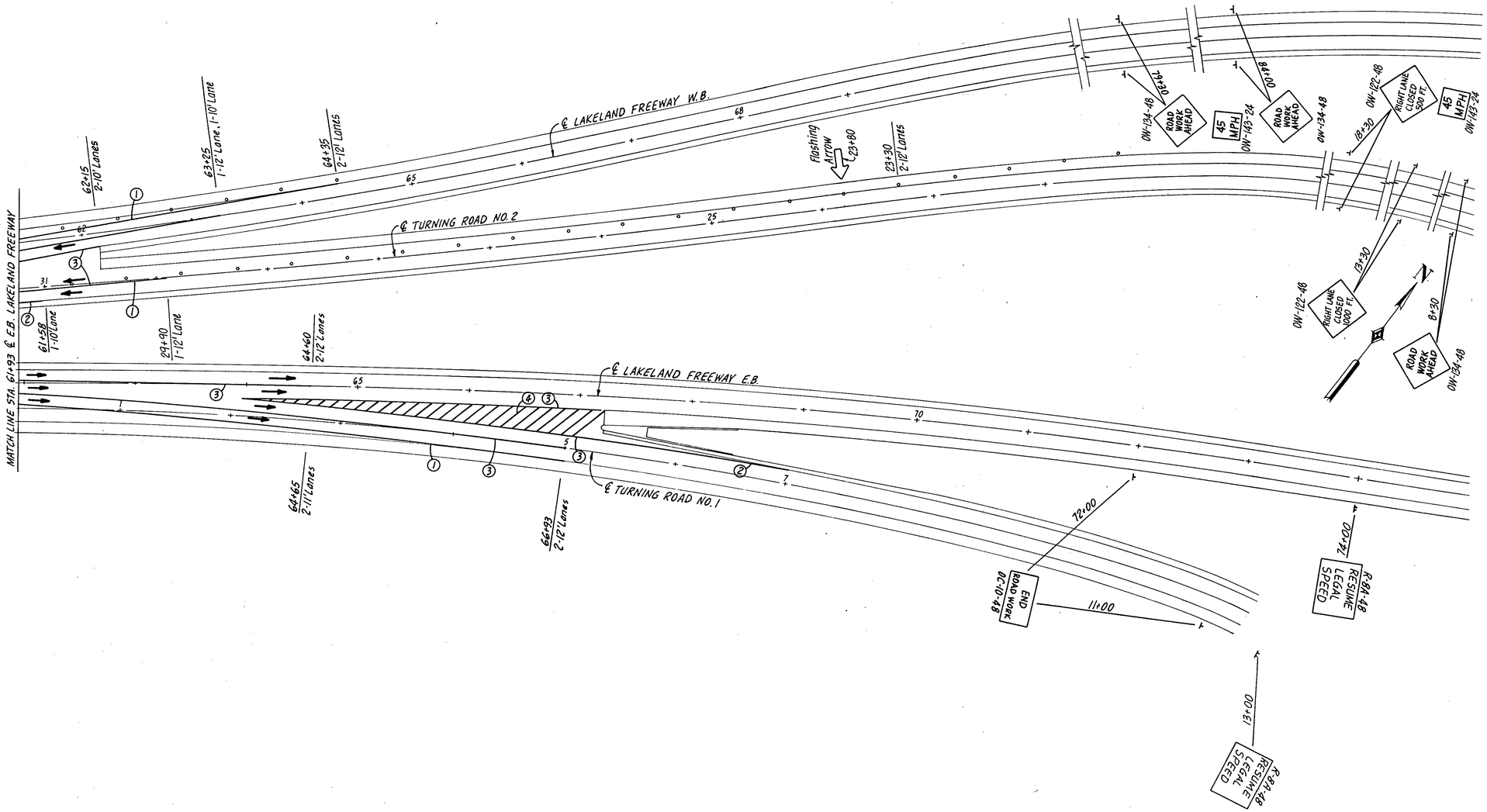
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

PHASE I MAINTENANCE OF TRAFFIC

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

70
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



TEMPORARY PAVEMENT MARKINGS

(1) 4" EDGE LINES, WHITE
(2) 4" EDGE LINES, YELLOW
(3) 8" CHANNELIZING LINES, WHITE
(4) 24" TRANSVERSE LINES, WHITE

50 0 50 100
SCALE IN FEET

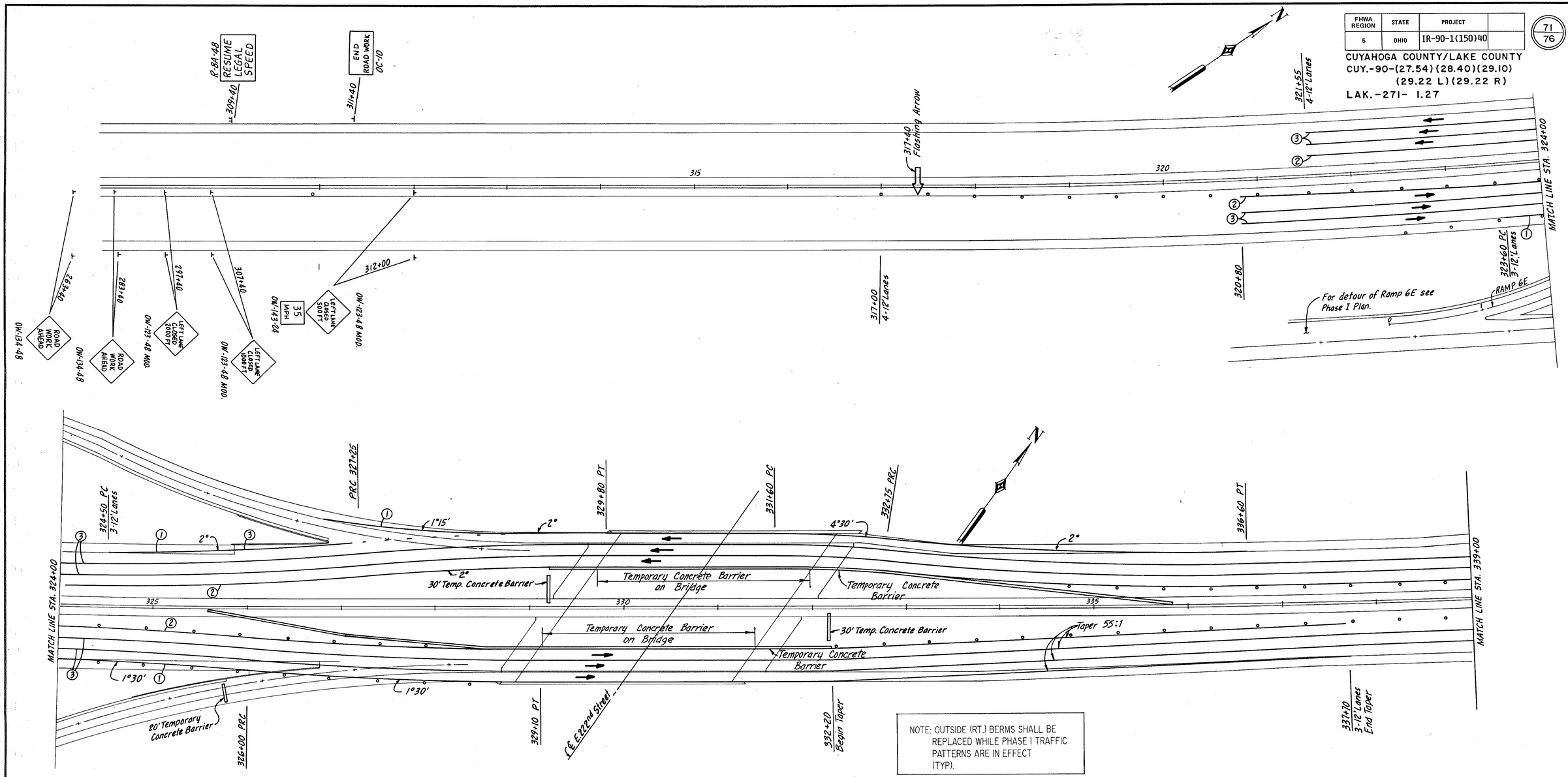
SCALE As Shown
MADE. JEN DATE 11-7-87
TRCD. JEN DATE 12-15-87
CKD. EFS DATE 12-23-87

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

NOTE:
FOR TEMPORARY STRIPING SUB-SUMMARY SEE SHEET NO. 15.
FOR TEMPORARY SIGNING SUB-SUMMARY SEE SHEET NO. 65.

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

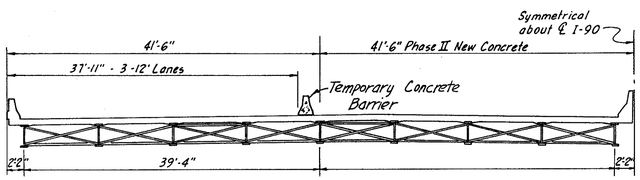


NOTE: OUTSIDE (RT.) BERMS SHALL BE REPLACED WHILE PHASE I TRAFFIC PATTERNS ARE IN EFFECT (TYP).

TEMPORARY PAVEMENT MARKIN`S

1. 4" EDGE LINES, WHITE
2. 4" EDGE LINES, YELLOW
3. 8" CHANNELIZING LINES, WHITE
4. 24" TRANSVERSE LINES, WHITE

50 0 50 100
SCALE IN FEET



PHASE II CONSTRUCTION
EAST 222ND STREET

NOTE:
FOR TEMPORARY STRIPING SUB-SUMMARY SEE SHEET NO. 15.
FOR TEMPORARY SIGNING SUB-SUMMARY SEE SHEET NO. 65.
FOR DETAILS OF TEMPORARY CONCRETE BARRIERS ON BRIDGE SEE SHEET NO. 64.

SCALE As Shown
MADE. JEN DATE 11-6-87
TRCD. JEN DATE 12-16-87
CKD. EPS DATE 12-30-87

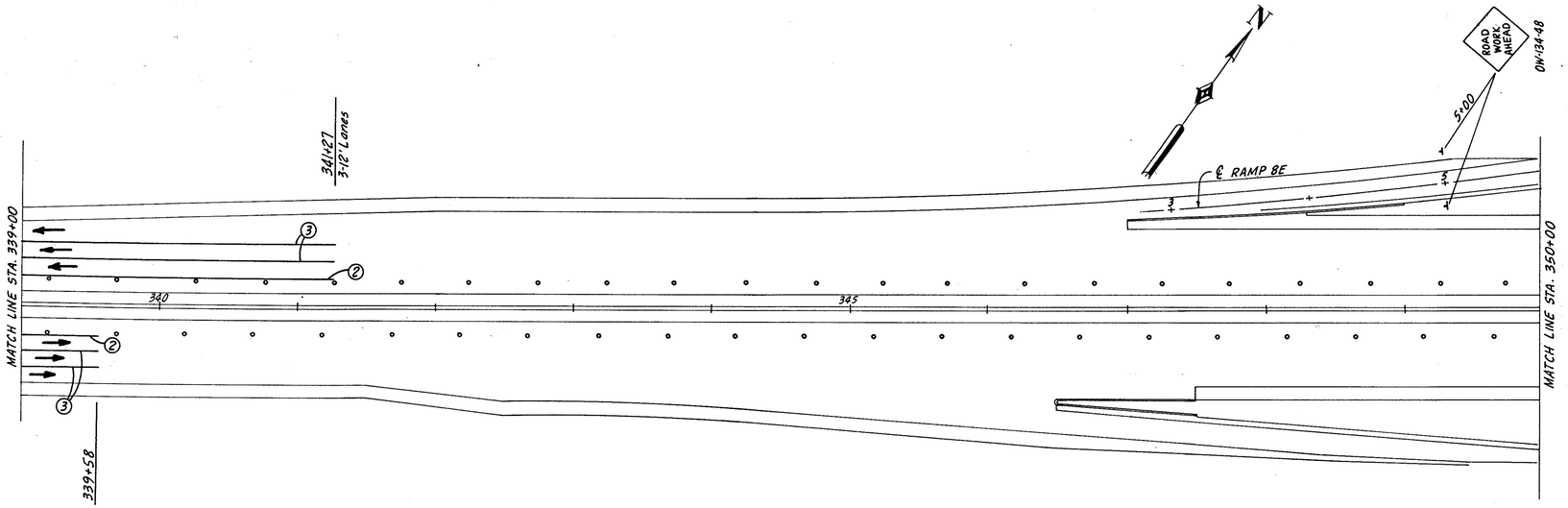
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

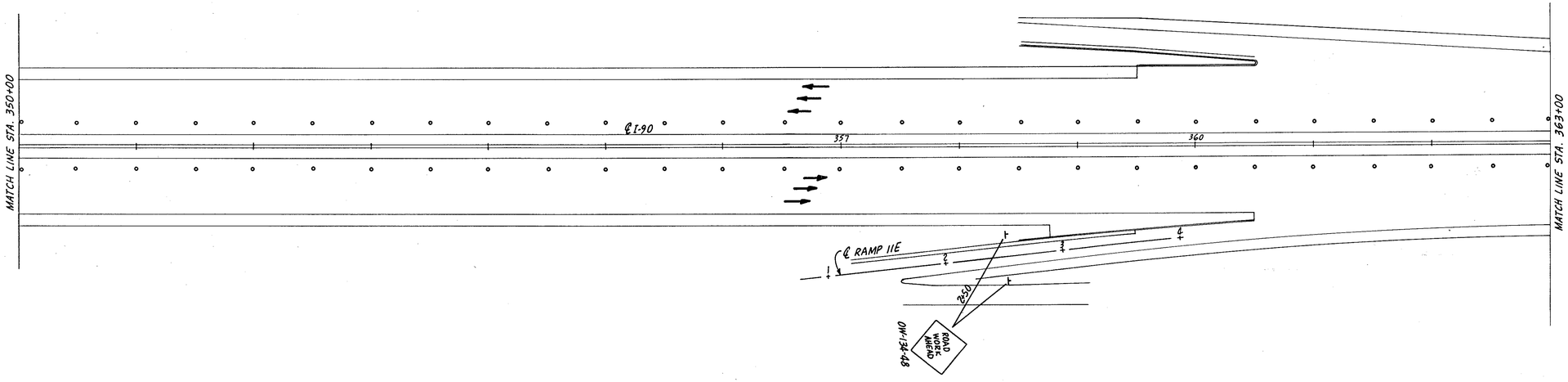
PHASE II MAINTENANCE OF TRAFFIC

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

72
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27





TEMPORARY PAVEMENT MARKINGS

1. 4" Edge Lines, White
2. 4" Edge Lines, Yellow
3. 8" Channelizing Lines, White
4. 24" Transverse Lines, White

50 0 50 100
SCALE IN FEET

SCALE As Shown
MADE. JEN DATE 11-6-87
TRCD. JEN DATE 12-16-87
CKD. EPS DATE 12-29-87

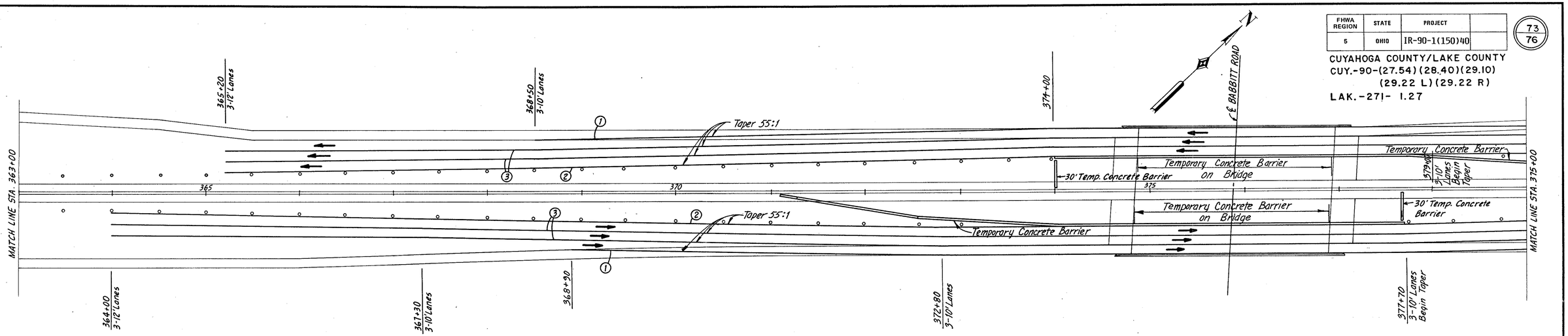
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

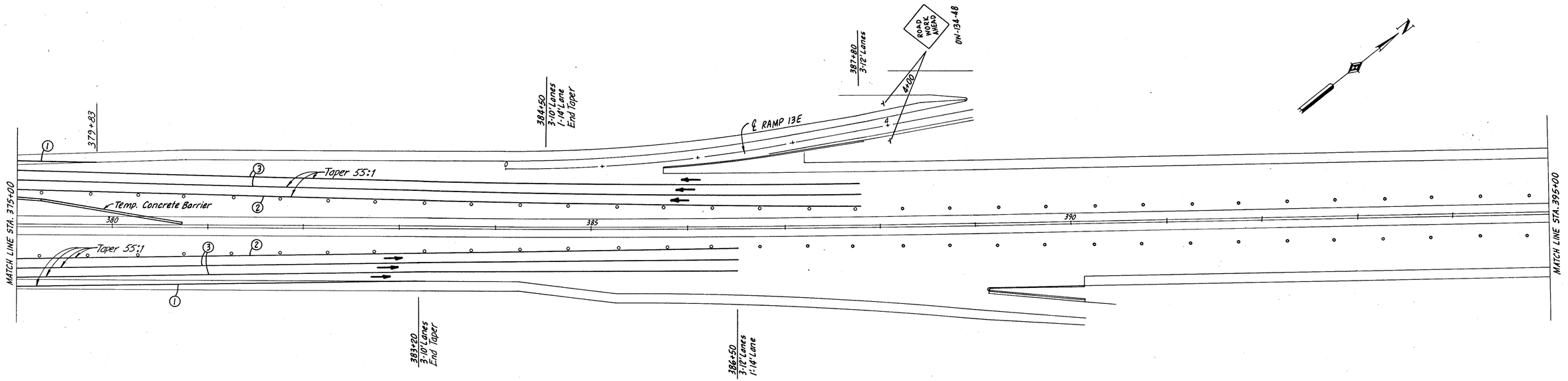
NOTE:
For Temporary Striping Sub-summary see Sheet No. 15.
For Temporary Signing Sub-summary see Sheet No. 65.

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

73
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27

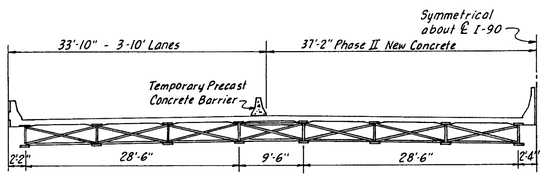




NOTE: OUTSIDE (RT.) BERMS SHALL BE REPLACED WHILE PHASE I TRAFFIC PATTERNS ARE IN EFFECT (TYP).

TEMPORARY PAVEMENT MARKINGS

1. 4" EDGE LINES, WHITE
2. 4" EDGE LINES, YELLOW
3. 8" CHANNELIZING LINES, WHITE
4. 24" TRANSVERSE LINES, WHITE



PHASE II CONSTRUCTION
BABBITT ROAD

NOTE:
FOR TEMPORARY STRIPING SUB-SUMMARY SEE SHEET NO. 15.
FOR TEMPORARY SIGNING SUB-SUMMARY SEE SHEET NO. 65.
FOR DETAILS OF TEMPORARY CONCRETE BARRIERS ON BRIDGE SEE SHEET NO. 64.

50 0 50 100
SCALE IN FEET

SCALE As Shown
MADE. JEN DATE 11-6-87
TRCD. JEN DATE 12-16-87
CKD. EFS DATE 12-30-87

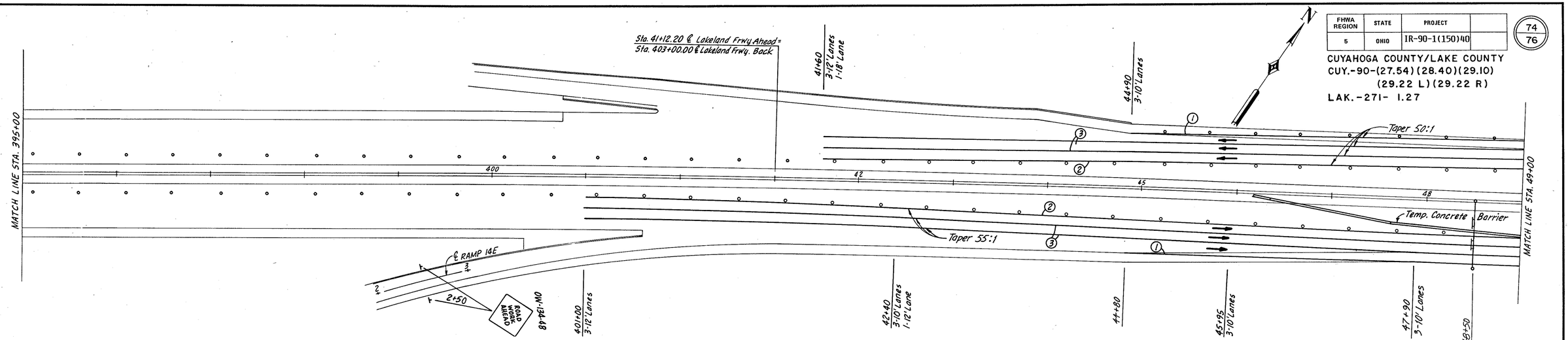
EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

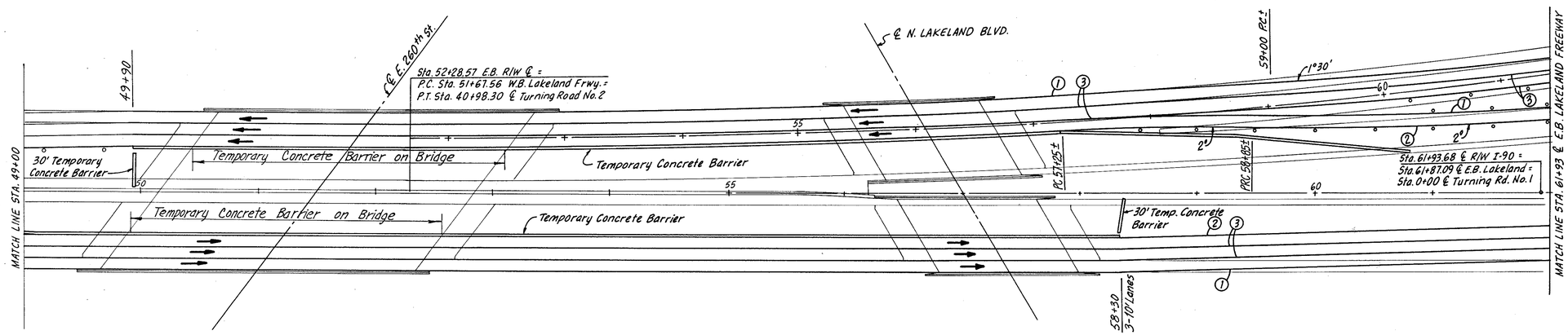
PHASE II MAINTENANCE OF TRAFFIC

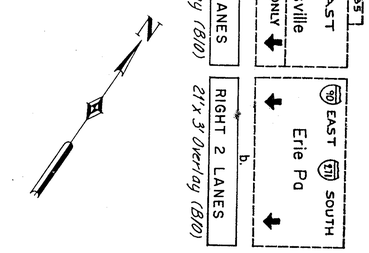
FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

74
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



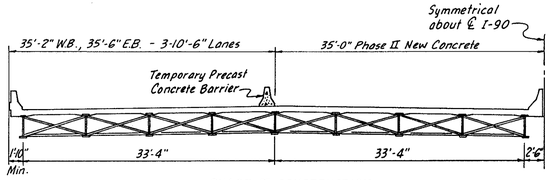




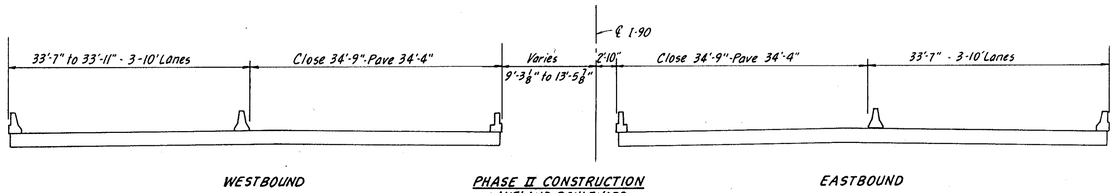
NOTE: OUTSIDE (RT.) BERMS SHALL BE REPLACED WHILE PHASE I TRAFFIC PATTERNS ARE IN EFFECT (TYP).

TEMPORARY PAVEMENT MARKINGS

1. 4" EDGE LINES, WHITE
2. 4" EDGE LINES, YELLOW
3. 8" CHANNELIZING LINES, WHITE
4. 24" TRANSVERSE LINES, WHITE



PHASE II CONSTRUCTION
EAST 260TH STREET



WESTBOUND

PHASE II CONSTRUCTION
LAKELAND BOULEVARD

EASTBOUND

NOTE:
FOR TEMPORARY STRIPING SUB-SUMMARY SEE SHEET NO. 15.
FOR TEMPORARY SIGNING SUB-SUMMARY SEE SHEET NO. 65.
FOR DETAILS OF TEMPORARY CONCRETE BARRIERS ON BRIDGE SEE SHEET NO. 64.

50 0 50 100
SCALE IN FEET

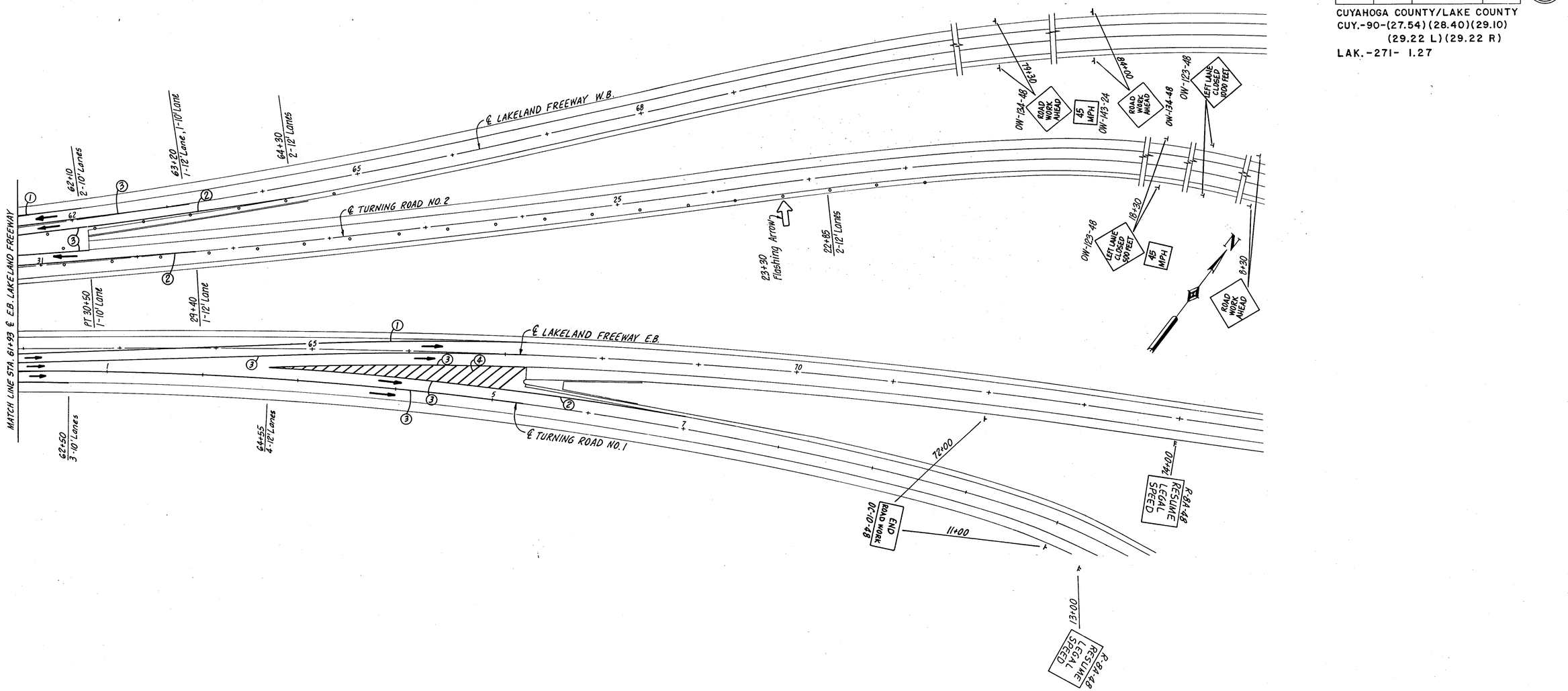
SCALE As Shown
MADE. JEN DATE 11-6-87
TRCD. JEN DATE 12-16-87
CKD. EPS DATE 12-23-87

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

PHASE II MAINTENANCE OF TRAFFIC

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



TEMPORARY PAVEMENT MARKINGS

① 4" Edge Lines, White
② 4" Edge Lines, Yellow
③ 8" Channelizing Lines, White
④ 24" Transverse Lines, White

50 0 50 100
SCALE IN FEET

SCALE As Shown
MADE. JEN DATE 11-6-87
TRCD. JEN DATE 12-16-87
CKD. EJS DATE 12-23-87

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

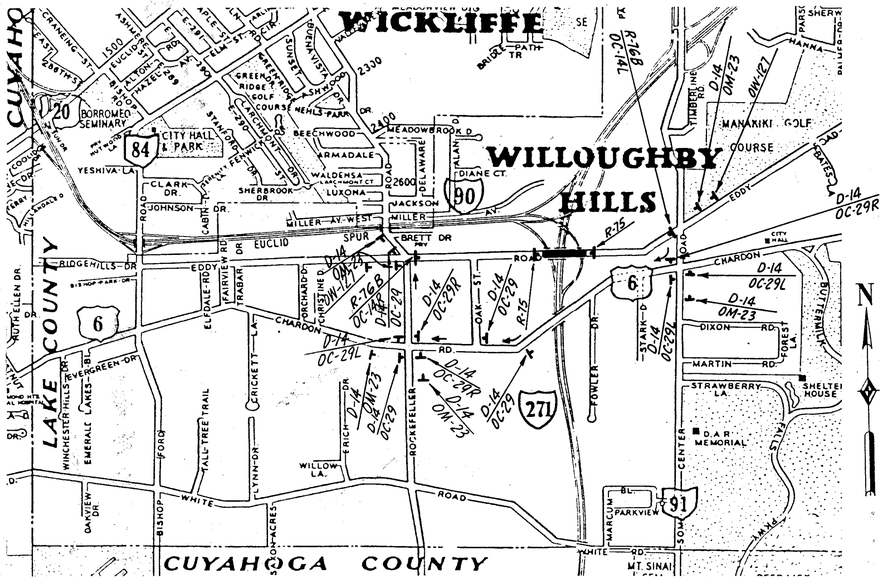
NOTE:
For Temporary Striping Sub-summary see Sheet No. 15.
For Temporary Signing Sub-summary see Sheet No. 65.

PHASE II MAINTENANCE OF TRAFFIC

FHWA REGION	STATE	PROJECT	
5	OHIO	IR-90-1(150)40	

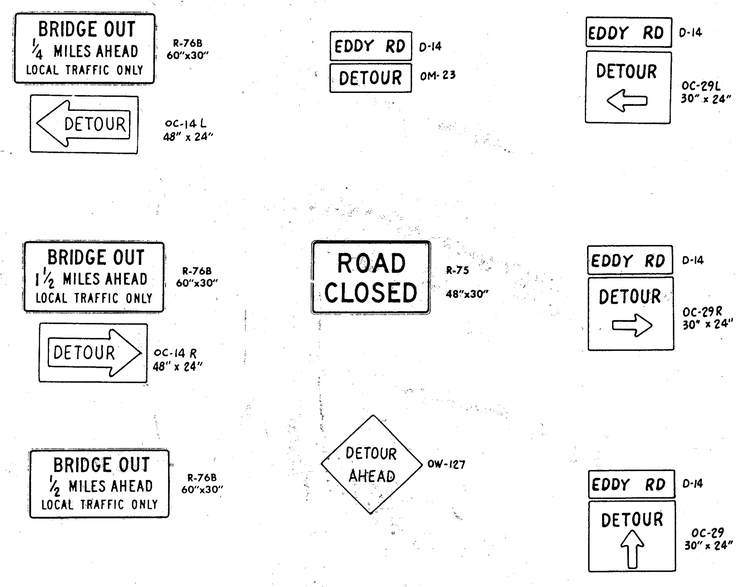
76
76

CUYAHOGA COUNTY/LAKE COUNTY
CUY.-90-(27.54)(28.40)(29.10)
(29.22 L)(29.22 R)
LAK.-271- 1.27



EDDY ROAD DETOUR PLAN
No Scale

Note: For Pavement Marking Sub-summary see Sheet 15.



SCALE NONE
SKADE. JEN DATE 1-17-88
TRCD. JEN DATE 1-17-88
CKD. LVD DATE 1-17-88

EUTHENICS INC.
CONSULTING ENGINEERS
CLEVELAND OHIO

GENERAL

The Contractor shall construct detour route only between June 15, 1992 and August 15, 1992. All work on LAK-271-1.27 Project shall begin after June 15, 1991 and be completely finished and approved by the Engineer before August 15, 1992.

SAFE PEDESTRIAN TRAFFIC

The Contractor's attention is directed to the need for providing adequate protection for pedestrian traffic across the existing Eddy Road Bridge during construction work. The Contractor shall provide and maintain such temporary protection facilities as the Engineer deems necessary to accommodate, in a reasonable and safe manner, all pedestrian traffic.

The following estimated quantities have been included in the General Summary and are to be used as directed by the Engineer to maintain safe pedestrian traffic.

Item 607	Fence, Snow	500 Lin. Ft.

ITEM 607 FENCE, SNOW

Snow fence required for the maintenance of safe pedestrian traffic shall meet the following specifications in addition to the requirements of Item 607:

1. Wood pickets shall be of spruce, poplar or jack pine and shall have one coat of red paint.
2. Wood pickets shall have a minimum thickness of one-half (1/2") inch, a minimum width of one and one-half (1-1/2") inches and a minimum length of four (4') feet.
3. Wood pickets shall be woven into place with five (5) double strands of 12-1/2 gauge low carbon galvanized wire. Spacing between pickets shall be a maximum of two (2") inches.
4. The fence shall be installed in accordance with Item 607 using steel line posts per Section 710.00. Payment for furnishing, installation, maintenance and subsequent removal including all incidentals necessary to complete this item shall be paid for in the unit price bid per linear foot of Item 607 Fence, Snow.