COL -30-32.19	OHIO
	FHWA REGION 5
FR-78(10)	FEDERAL PROJECT

1/76

FR-78(10)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

COL-30-32.19

ST. CLAIR & LIVERPOOL TOWNSHIPS
CITY OF EAST LIVERPOOL
COLUMBIANA COUNTY

DESIGN DESIGNATION

Current ADT 1980	10320
Design Year ADT 2000	26016
DHV	4162
DDHV	60%
Truck	10%

V-municipal-50 MPH V-Rual 60 MPH

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)

INDEX OF SHEETS

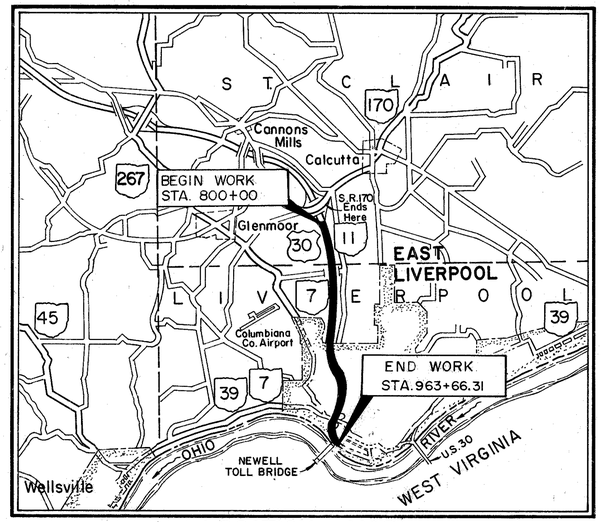
Sheet №46 Not Used

LINE DATA

PROJECT LENGTH = 0.00 Lin. Ft. or 0.00 Miles
LENGTH OF WORK
From Sta. 800+00 to Sta. 888+00 (Rural)
Length of Work (Rural) = 8800 Lin. Ft. or 1.667 mi.
From Sta. 888+00 to Sta. 963+66.31 (Municipal)
Length of Work (Municipal) = 7566.31 Lin. Ft. or 1.433 mi.
Add Work For S.R. 7 (Municipal)
From Sta. 166+85 to 181+00 (Municipal)
Length of Work (Municipal) 1415 Lin. Ft or 0.268 mi.

Total Length of Work (Rural) 8800 Lin. Ft. or 1.667 mi.
Total Length of Work (Municipal) 8981.31 Lin. Ft. or 1.701 mi.

NET LENGTH OF WORK (Rural & Municipal) 17,781.31 Lin. Ft. or 3.368 mi.



LOCATION MAP

SCALE IN MILES
0 ½ 1 2 3 4

Portion to be improved
State & Federal Routes
Other Roads

SCALES

Plan 0 50' 100'
Plan 0 20' 40'

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 provision of Section 5511.02 of the Revised Code of Ohio.

1983 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth on these plans and estimates.

Approved Robert M. Hunt
Date 5-4-82 District Deputy Director of Transportation

Approved Robert B Chenfie
Date 3-7-83 Engineer, Bureau of Bridges & Structural Design

Approved Wayne H. Kauble
Date 4-25-83 Chief Engineer, Planning and Design

Approved Warren J. Smith
Date 4-25-83 Director, Department of Transportation

SUPPLEMENTAL SPECIFICATIONS			
839	11-25-70		
803	5-27-83		
836	3-12-75		
845	1-13-84		
933	8-21-80		
953	8-21-80		

Plan Prepared By:

DISTRICT ELEVEN
OHIO DEPARTMENT OF
TRANSPORTATION

SEAL

Project: COL-30-32.19
Date of Letting ____ 19__, Contract No. ____

D0300 Rev. 9-3-75

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS									
BP-5	7-16-81	MC-1	6-13-69	TC-35.10	10-5-77	TC-12.30	6-10-81	A-1-69 Sh-3	6-12-69
BP-7	12-6-76			TC-41.10	12-23-81	TC-18.26	5-31-79	AS-1-81	11-27-81
		MC-4	7-26-76	TC-41.20	3-26-79	TC-21.20	5-31-79	BR-1	5-29-79
GR-1	2-5-82	MC-9	11-1-77	TC-41.50	3-26-79	TC-21.41	3-1-79	SD-1-69 Sh-2	6-12-69
GR-2B	2-5-82	MC-9A	5-1-81	TC-42.10	8-19-77	TC-22-20	3-1-79	AR-1-57	4-2-62
GR-3A	2-5-82			TC-42.20	3-26-79				
GR-3B	2-5-82	I-3A & B	4-1-80	TC-51.10	3-30-79				
GR-4	2-5-82	I-3C & D	4-1-80	TC-51.11	4-3-79	TC-41.40	6-18-79	HL-9	3-22-77
GR-4A	2-5-82			TC-52.10	4-3-79			HL-10	6-1-79
GR-5	2-5-82			TC-52.20	4-3-79	HL-1	9-6-73	HL-11	6-1-79
						HL-2	7-27-73	HL-12	4-6-73
				TC-61.10	4-5-82	HL-3	7-27-73	HL-15	1-21-76
						HL-8	1-21-76	HL-16	4-6-73

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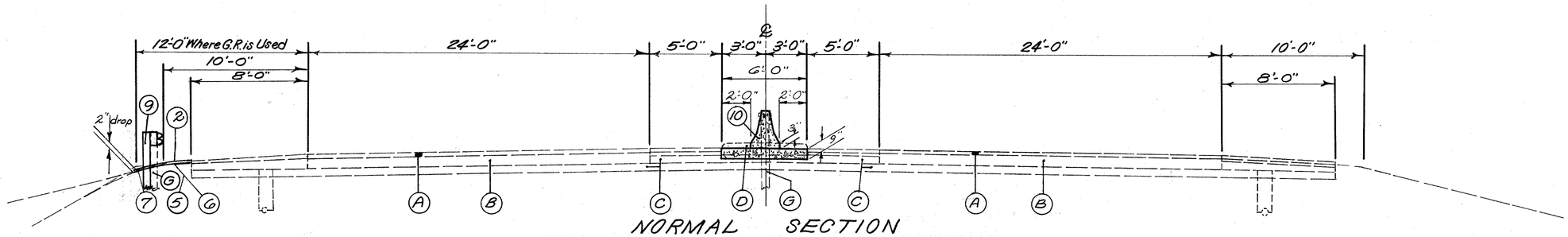
FHWA REGION	STATE	PROJECT	
5	OHIO		

2

COL-30-32.19

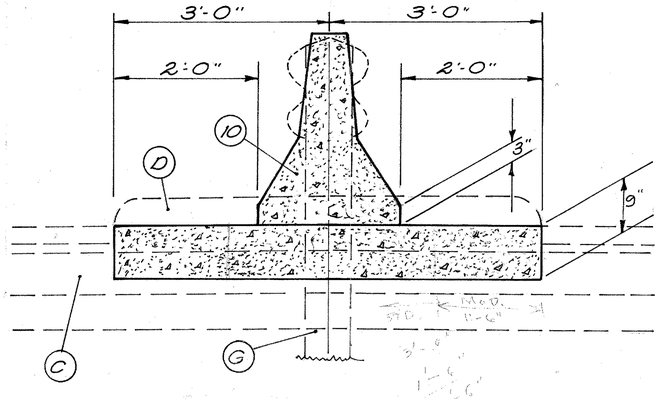
TYPICAL SECTION

Scale: 0' 2' 4'



NORMAL SECTION

STA. 801+00	To	STA. 820+00	— 1950
STA. 830+00	To	STA. 833+00	— 300
STA. 842+00	To	STA. 855+00	— 1300
STA. 877+00	To	STA. 888+00	— 1100
			4600



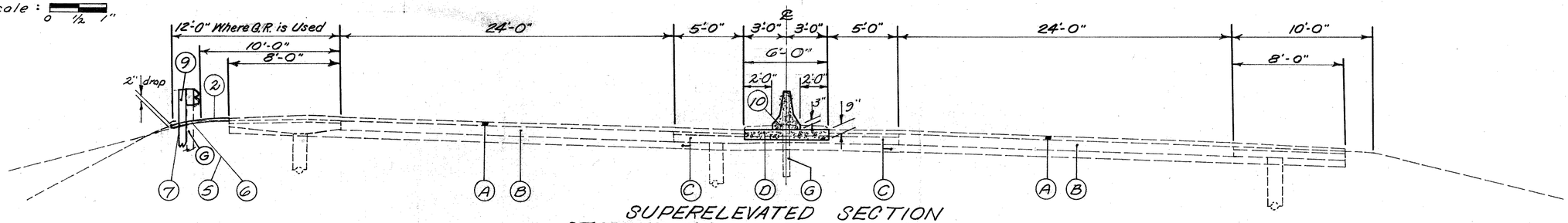
TYPE "A" MODIFIED CONCRETE BARRIER

Scale: 0 1/2 1"

-LEGEND-

- (A)---Existing Asphalt Concrete Surface
- (B)--Existing Rigid Pavement
- (C)----Existing Subbase
- (D)--Existing Concrete Median
- (E)----Existing Concrete Curb
- (F)--Existing Concrete Median Pavement
- (G)----Existing Guardrail

- (1)--ITEM NOT USED
- (2)----ITEM 404-2" Asphalt Concrete AC-20
- (3)--ITEM 407 Tack Coat Applied at the rate of 0.10 Gal. per Sq. Yd.
- (4)--ITEM 407 Cover Aggregate, at 11lbs. per Sq. Yd.
- (5)----ITEM 408 Bituminous Prime Coat, As per plan Applied at the rate of 0.20 Gal. per Sq. Yd.
- (6)--ITEM SPECIAL Soil Sterilizer (See General Notes)
- (7)----ITEM 203 Linear Grading (See General Notes)
- (8)--ITEM 310 Subbase, Type 1
- (9)----ITEM 606 Guardrail, Type 5
- (10)--ITEM 622 Concrete Barrier, See Plan For Type
- (11)----ITEM 659 Seeding and Mulching (See General Note)



SUPERELEVATED SECTION

STA. 800+00	To	STA. 801+00	— 100
STA. 820+00	To	STA. 826+04.25	— 604.25 Bridge & Approach Slabs
STA. 827+88.75	To	STA. 830+00	— 211.25
STA. 833+00	To	STA. 842+00	— 900.00
STA. 855+00	To	STA. 877+00	— 2200.00
			4015.50

TYPE "A" MODIFIED CONCRETE BARRIER

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TYPICAL SECTIONS

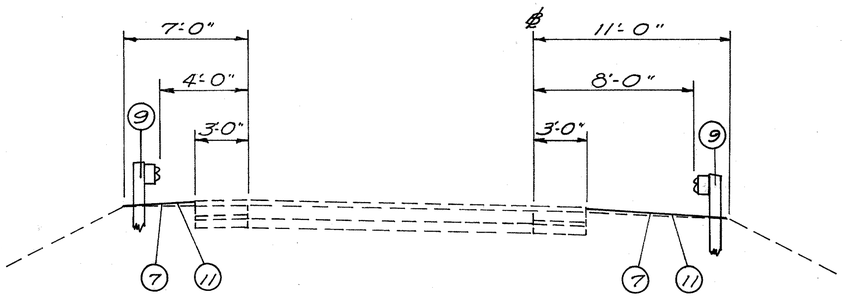
TYPICAL SECTION

FHWA REGION	STATE	PROJECT	
5	OHIO		

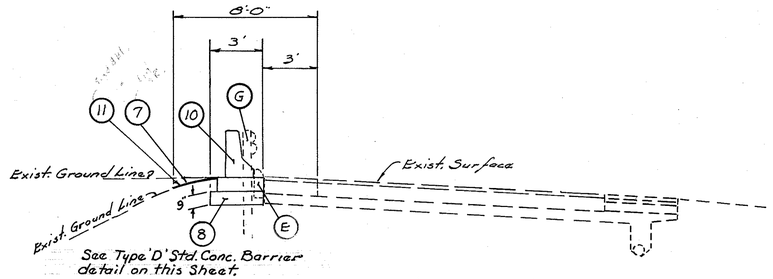
3

COL-30-32.19

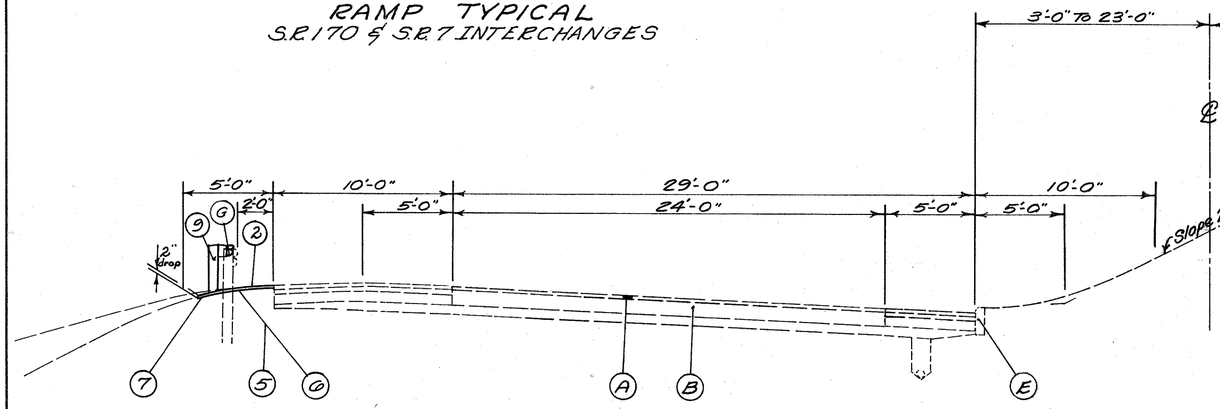
Scale: 0' 2' 4'

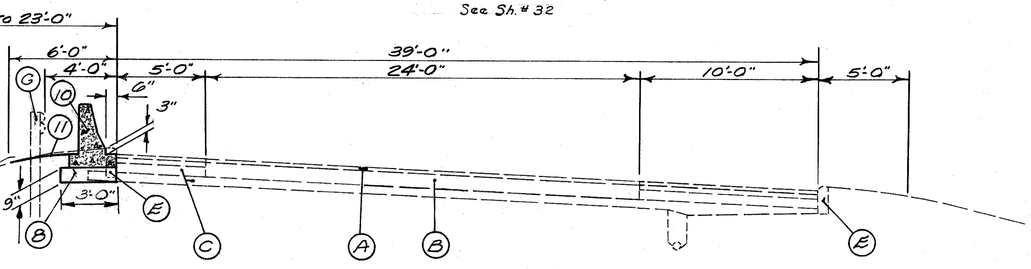


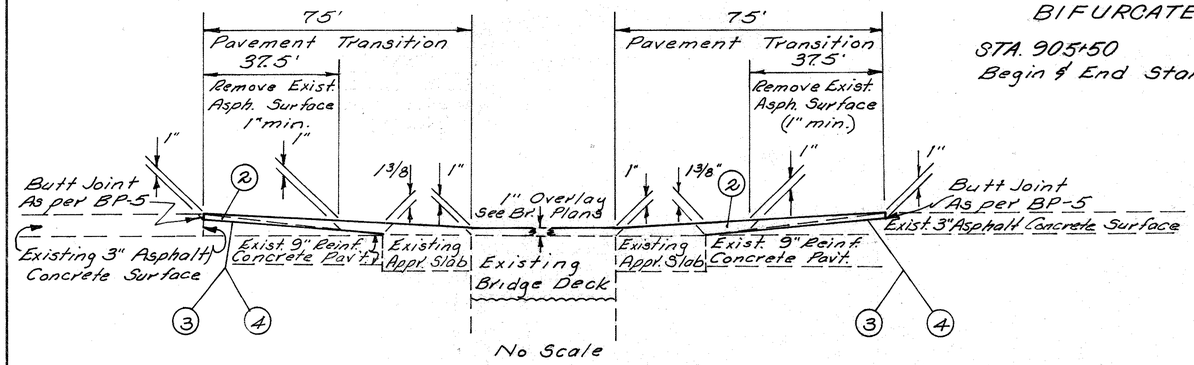
RAMP TYPICAL
S.R. 170 & S.R. 7 INTERCHANGES



RAMP 'D' TYPICAL
STA 1+51 TO STA 2+91
See Sh. # 32





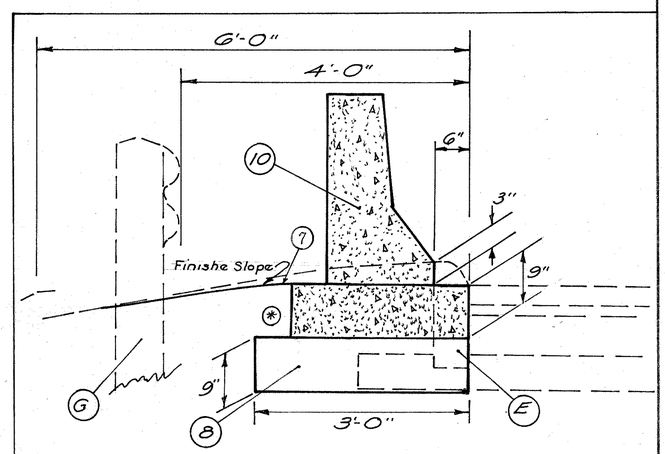


PAVEMENT TRANSITION DETAIL AT
BR. Nos. COL-30-32.69 & COL-30-35.00
East & West Bound Lanes

BIFURCATED SECTION

STA. 905+50 To STA. 937+00
Begin & End Standard Type D Concrete Barrier = 3150 Lin. Ft.

See Sheet No. 2 For Legend



Bifurcated Section

TYPE "D" STANDARD
CONCRETE BARRIER
Scale: 0 1/2 1"

(*) Backfill for Barrier Construction included with Linear Grading. See General Note on Sheet No. 5

TYPE "D" STANDARD
CONCRETE BARRIER

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TYPICAL SECTIONS

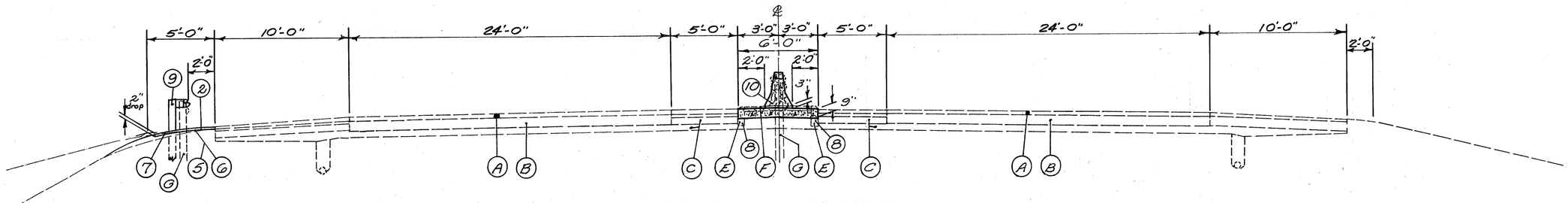
TYPICAL SECTION

FHWA REGION	STATE	PROJECT	
5	OHIO		

4

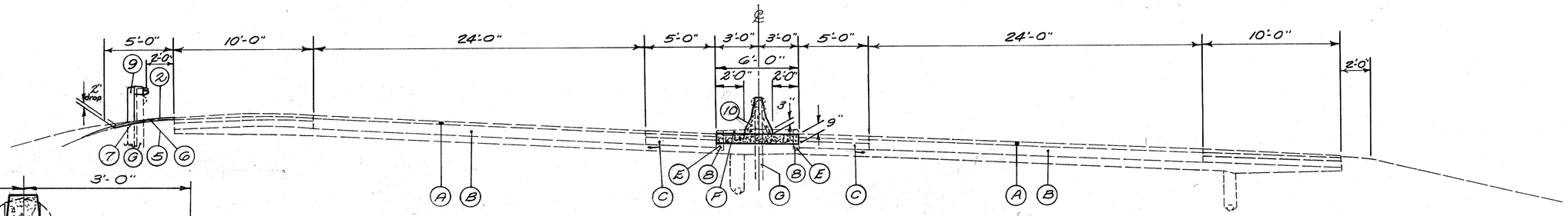
COL-30-32.19

Scale: 0 2' 4'



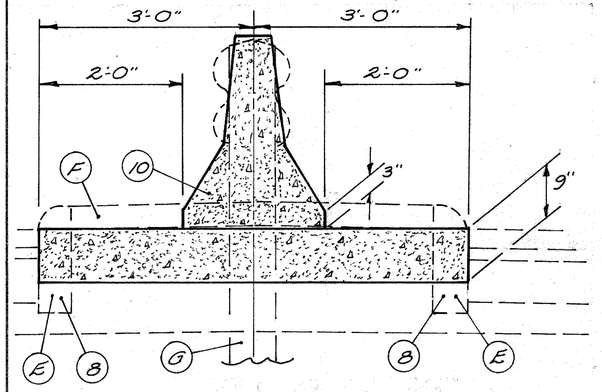
NORMAL SECTION

STA. 888+00	To	STA. 896+49.04
STA. 947+72.24	To	STA. 947+96.97
STA. 947+96.97	To	STA. 952+00.05 (Bridge & Approach Slabs)



SUPERELEVATED SECTION

STA. 896+49.04	To	STA. 900+50 (Curve Lt.)
STA. 943+50	To	STA. 944+41.05 (Curve Rt.) and Begin Bridge Pier Transition for 9th St. Overhead
STA. 946+84.05	To	STA. 947+72.24 (Curve Rt.)
STA. 952+00.05	To	STA. 952+47.00 (Curve Lt.) and Begin Sign Support Transition.
STA. 953+57.00	To	STA. 956+00 (Cont Curve Lt.)



TYPE "A" MODIFIED CONCRETE BARRIER

Scale: 0 1/2 1"

See Sheet No. 2 For Legend

TYPE "A" MODIFIED CONCRETE BARRIER

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TYPICAL SECTIONS

FHWA REGION	STATE	PROJECT		5
5	OHIO			

COL-30-32.19

GENERAL NOTES

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

CONTINGENCY QUANTITIES

The Contractor shall not order materials or perform work for plan items set up 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 incorpation into the final change order governing completion of this project.

LOCATION OF GUARDRAIL:

The location of guardrail runs as shown in these plans are subject to adjustment to assure that the planned installations will afford maximum protection for traffic.

GUARD RAIL OVER CULVERT:

When sufficient post depth is not available due to a culvert, the guard rail posts directly over the culvert shall not be driven but set in holes. If the distance between the ground line and the top of the culvert is less than 3 ft., the post shall be encased in a minimum of 4" thickness of Class C concrete for the full depth of the post. Payment for the above shall be included in the unit price bid for Item 606, Guard Rail, Type 5, As Per Plan.

PUBLIC SAFETY:

No hazard shall be left unprotected except for the actual time necessary to remove, grade, install asphalt concrete shoulder protection (Where specified) and reinstall guard rail in a Continuous operation. The removal of all guard rail shall at all times be as directed by the Engineer. No guard rail shall be removed until the replacement material is on the site, ready for installation. Failure to comply with this requirement shall be deemed sufficient cause to order work suspended on this project until such time the Engineer is assured of said compliance.

GUARD RAIL REMOVED FOR STORAGE:

Guardrail designated for removal on this project shall be carefully dismantled and the salvageable rail elements stored for removal by State forces. All posts, blocks, bolts, damaged rail and other material not considered salvageable shall be disposed of as directed. All post holes shall be carefully filled and tamped, and the site cleaned and restored.

Site restoration will include grading of the shoulder in the area of the guardrail removed to provide proper shoulder drainage and smooth shoulder slopes where traffic or weather may have built a ridge of earth and debris under the guardrail. The graded or disturbed area shall be reseeded except where 404 is to be constructed, on area under the new guardrail 4' wide, measured from one foot in front of the rail (or centered under guardrail barrier design) shall not be seeded.

Payment for all of the above shall be of the unit price bid for 202 Guardrail Removed for Storage measured by the linear foot center to center of terminal posts or center of bridge connection splices.

SEEDING:

Quantities for seeding are calculated for the soil areas between the work limits, as shown on the Typical Sections and Cross Sections.

MANHOLES, CATCH BASINS AND INLETS REMOVED OR ABANDONED:

The casting shall be carefully removed and stored for removal by State forces.

Payment for all of the above shall be included in the unit price bid for the pertinent 202 Item.

PREVIOUS CONSTRUCTION PLANS:

The following construction plans are available for reference by contacting the District 11 office in New Philadelphia, Ohio:

COL-30-32.19 ---------- 1962
COL-30-33.86 ---------- 1960
COL-30-32.19 RESURFACE -- 1981

UTILITY OWNERSHIP:

The following utilities and owners are located within the work limits of this project.

Columbia Gas of Ohio Inc.
99 North Front St.
Columbus, Ohio 43215 - 614-460-2400
Ohio Bell Telephone Co.
2405 Market St.
Youngstown, Ohio 44507-216-744-6450
Ohio Power Co.
301 Cleveland Ave S.W.
Canton, Ohio 44701-216-456-8173
C.A.T.V. of Ohio Valley, Inc.
415 Market St.
East Liverpool, Ohio 43920-216-385-4854
Sanitary Sewers
East Liverpool, Ohio 43920-216-386-6581

MONUMENTS:

Monuments shall be constructed in accordance with details shown on Standard Drawing MC-1, for locations See Sheet No. 6

ITEM SPECIAL-LAW ENFORCEMENT OFFICER WITH PATROL CAR:

In addition to the requirements of Item 614 and sheet No. 661, a uniformed special duty Law Enforcement Officer (L.E.O.) and an offical Patrol Car with emergency flashers operating shall be provided in the following situations:

(1.) During the initial first day set-up period and last day tear-down period of a lane closure and channelization of directional traffic into a reduced number of lanes.

A flashing arrow panel in accordance with Standard Drawing TC-35.10 shall replace the L.E.O. with Patrol Car between the set-up and tear-down periods. A down-stream extension of such an arrangement shall not require the presence of a L.E.O. with Patrol Car.

(2.) When the beginning point of a lane closure is shifted substantially or a new lane closure is initiated in another part of the project.

The above requirements do not preclude the Contractors use of L.E.O. for other purposes in the project area. However, when such usage is at the option of the Contractor, payment for the L.E.O.'s services involved shall be included in the LUMP SUM bid for Item 614 Maintaining Traffic.

For additional Traffic Maintenance Notes, See Sheet No. 6

ITEM SPECIAL-LAW ENFORCEMENT OFFICER WITH PATROL CAR
Rural = 30 Hours & Municipal = 70 Hours = 100 HOURS

UTILITIES NOTIFICATION

At least two working days prior to commencing construction operations in an area which may involve underground utility facilities, the Contractor shall notify the Project Engineer, the registered utility protection service and the owners of each underground utility facility shown in the plans.

The owner of the underground utility facility shall, within forty-eight hours, excluding Saturdays, Sundays and Legal Holidays, after notice is received, stake, mark or otherwise designate the location of the underground utility facilities in the construction area in such a manner as to indicate their course together with the approximate depth at which they were installed. The marking or locating shall be coordinated to stay approximately two days ahead of the planned construction.

ITEM 622-TEMPORARY CONCRETE BARRIER:

This item shall consist of furnishing, erecting, maintaining, re-setting and subsequently removing the temporary concrete barrier in accordance with Standard Drawing MC-9 and sheet Nos. 8, 9 & 10. When traffic is changed from one pair of lanes to the other, the temporary concrete barrier shall be re-set as shown on these plans.

Upon completion of the work, the temporary concrete barrier shall become the property of the contractor and shall be removed from the Right of Way.

Payment for all the above shall be included in the contract unit price bid for Item 622-Temporary Concrete Barrier.

ITEM 407 TACK COAT:

The Tack Coat and Cover Aggregate operation shall be as determined at a pre-construction conference as per 407.05.

Plan Quantities indicate average application rates of 0.10 gallons per square of Tack Coat and 7 pounds per square yard of Cover Aggregate.

SHOULDER TREATMENT AND 408 PRIME COAT AS PER PLAN:

A 4.0'ft width adjacent to the existing outside paved shoulder in guardrail areas shall be paved with a 2" inch compacted course of Item 404 Asphalt Concrete as shown on the Typical Section.

Prior to placing this material a Soil Sterilizer using one of the following brands, shall be applied at the rate recommended by the manufacturer.

(1) Paraquat C.L. by Ortho
(2) Promitel 25E by Ciba-Geigy
(3) Krovar by Diamond Shamrock or an approved equal.

Item 408 Bituminous Prime Coat shall be applied at the rate of 0.2 gal. per sq.yd. prior to placing the 404 Asphalt Concrete.

After the 404 Asphalt Concrete has been placed and compacted, holes for guardrail posts shall then be bored thru the 404 and the posts installed. The disturbed area around each post shall then be back-filled with 404.

Payment for all of the above described resurfacing shall be included in Item 404 Asphalt Concrete, As Per Plan, with the following exceptions:

The Soil Sterilant and Prime Coat shall be paid for at the unit price bid for Item 408 Bituminous Prime Coat, As Per Plan. Payment for Guardrail shall be paid for the unit price bid for Item 606 Guardrail, Type 5, As Per Plan.

ITEM 203 LINEAR GRADING, AS PER PLAN:

This work shall include all excavation and embankment required to construct the Asphalt Concrete shoulder treatment in specified outside shoulder areas and grading beyond the existing paved shoulders on the ramps and curbed areas in accordance with the Typical Sections, calculations and as specified herein.

Any excess turf, material build up or excavated material shall be removed and disposed of by the contractor or wasted over fill slopes at the direction of the Engineer.

Payment for the described work will be made under the appropriate linear grading items as follows:

(1) Item 203-Linear Grading, Method 1, This item shall apply to mainline and speed change lanes beyond the existing paved shoulders where guardrail is to be construction and the Asphalt Concrete shoulder treatment is to be Constructed.

(2) Item 203 Linear Grading, Method 2 This item shall apply to all ramps and curbed area where guardrail or Type D Concrete Barrier is to be Constructed.

The method of measurement shall be considered as one station per 100 linear feet measured separately for each side of mainline and each side of the ramps.

Payment for all the above described work shall be included in the unit price bid per station for the appropriate method of Item 203 Linear Grading, As Per Plan.

Rev. 5-23-84

Col. By	Date
DAE.	8-12-81
Ckd. By	Date
R.E.M.	8-14-81

FHWA REGION	STATE	PROJECT	
5	OHIO		

6

COL-30-32.19

GENERAL NOTES

MEDIAN INLET DRAINAGE:

Information pertaining to existing drainage structures and pipes shown on the plans has been obtained by diligent field checks and searches of available records.

It is believed to be essentially correct but if discrepancies arise, the intent of the plan is as follows.

(1) Flow in all operating pipes and underdrains must be maintained.

(2) No undesignated pipe or underdrain shall be plugged unless it is determined to the satisfaction of the Engineer, that the line in question can be safely abandoned.

Several of the median drainage details cover multiple locations. These details have been consolidated due to general similarities and show general methods of treatment intended such as Standard Construction Drawing I-3A & I-3C, rather than precise details at each individual location.

Any operating pipes encountered in the median which are not shown on the plans shall be connected to the system.

Adjustment shall be made as directed by the Engineer for any discrepancies due to variations in pipe size or arrangement or structural deviations.

The above connections and adjustments shall be performed in a manner acceptable to the Engineer using on appropriate plan pay item. Additional quantities thus required shall be measured and paid for at the Unit Price Bid for the appropriate item.

ITEM 606 GUARDRAIL, TYPE 5, AS PER PLAN:

This work shall consist of constructing the Type 5 guardrail as per Standard Construction Drawing GR-2B and shall include boring thru the 404 berm treatment a depth of 6" at each post location.

Payment for the above described work shall be included in the unit price bid for Item 606 Guardrail, Type 5, as per plan.

MAINTAING TRAFFIC:

Traffic shall be maintained in each direction at all times, the length of restricted traffic zones shall be kept to a minimum and in all cases, subject to the approval of the Engineer.

At least one lane of traffic shall be maintained in each direction through the temporary cross-overs, phase 1 & 2, as shown on sheet Nos 8,-10

The work on Bridge No COL-30-3269 will require the removal of the existing concrete median and barrier guardrail from STA. 823+00 thru STA. 831+00, excluding the approach slabs and bridge limits. The contractors attention is directed to four (4) existing median inlets, located at STA. 824+00, 826+00, 828+50 and 829+50. Caution will be exercised in removal of the inlets, temporarily plug the outlet pipes and reference the locations for the proposed median inlets, payment for the removal items are included in the plans for the pertinent items.

After the work is completed on the bridge and approach slabs and the cross-overs removed, a portion of the temporary concrete barrier used for traffic control shall be used where the existing median was removed (see stations above) until such time as progress of the project requires removal and construction of the proposed concrete median barrier. The temporary connecting of the existing barrier guardrail to the temporary concrete median barrier will be done as directed by the Engineer.

Traffic control for Bridge No COL-30-3500 east bound lanes and Bridge No COL-7-0626L (Ramp D) is as shown on sheet No 7&15 Traffic control Ramp A&C, the west bound lanes of Bridge No COL-30-3500 and the cross overs for Bridge No COL-30-3269 are in phases. When flows are changed from one phase to the other phase, all signs and supports shall be removed and reset at locations shown on sheet Nos 9-10 & 12-14

In addition to the requirements of the Ohio Manual of Uniform Traffic Control Devices, the contractor shall erect all signs accordance with requirements shown on sheet Nos 7-14 for directing traffic.

Signs shall be erected 6 feet from the edge of the traveled lane at a minimum height of 5 feet above the edge of the traveled lane. Signs on sheet Nos 14 shall be supported by using portable supports. All signs and supports will be furnished and erected by the contractor, any replacements needed will also be furnished and erected by the contractor. All signs and supports not listed in the plans, shall be supported by methods as approved by the Engineer.

MAINTAINING TRAFFIC - CONT.

The traffic control shown in the plans are considered minimum treatment and additional treatment may be required by the Engineer. If traffic experience indicates the need for additional warning signals, lights and signs, they shall be provided consistent with requirements of Item 614 Maintaining Traffic.

The payment for providing all traffic control including the furnishing, erecting, maintaining, removing, re-setting of lights, signs and supports and final removal of all signs, shall be included in the Lump Sum bid for Item 614 Maintaining Traffic. No additional payment will be made for re-erection of signs lost due to vandalism or accidents.

An estimated quantity of 404 Asphalt Concrete, For Maintaining Traffic, has been included for use on the shoulder areas located at the following bridges -- COL-30-3269, COL-30-3500 and COL-7-0626L (Ramp D). ITEM 404 Bituminous Concrete, For Maintaining Traffic 60 Cu. Yds. (Rural = 20 Cu.Yds. & Municipal 40 Cu. Yds)

IMPACT ATTENUATOR ASSEMBLY:

The contractor shall furnish and install an Impact Attenuator Device ahead of Mainline Sta. 947+32 Rt. The attenuation device shall be designed for the Sand Barrel System. For details see sheet No 32 and note in the proposal.

The basis of payment shall be at the contract price for:

ITEM	QUANTITY	UNIT	DESCRIPTION
Special	1	Each	Impact Attenuator Assembly, Sand Barrel System

INLET, STANDARD No. I-3A, AS PER PLAN

These inlets are to be constructed in areas where Concrete Barrier, Type A, Modified As Per Plan is being used. The Standard No. I-3A Inlet shall be modified by increasing the base of the concrete barrier from a 3' width to a 6' width. The cost of the additional width of the base thru the length of the inlet shall be included in the unit price bid for Item 604 Inlet, Standard No. I-3A, As Per Plan.

COOPERATION:

The Contractor is hereby advised that Project Col-30-28.91 adjacent to this project may be constructed concurrently with this project. The Contractor on this project shall schedule his work and cooperate with the Contractor on the adjacent project in the area of overlapping work so that unnecessary delays, interference and inconvenience shall be held to an absolute minimum.

Any cost incurred in complying with the above requirements shall be included in the various bid items for this project and no additional compensation will be allowed.

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 ORC.

RE-ESTABLISHMENT OF EXISTING CONTROL MONUMENTS

The Right of Way control monuments, location on or near the centerline of S.R. 30 and identified on the following centerline survey plats as recorded in the plat book records of Columbiana County:

COL-30 - 31.46 (Const. Plan 32.19) Vol 5 Page 39
COL-30 - 33.86 Vol 5 Page 99

RIGHT OF WAY CONTROL MONUMENT

At the Stations shown on this table, shall be preserved in the following manner:

The Contractor shall establish appropriate survey control at locations that will remain undisturbed during construction of this project. Survey control shall be set prior to any work on the existing median.

Upon completion of all other plan work, the Survey control shall be used to set the Reference Monuments.

The setting of monuments shall be performed under the direct supervision of a Registered Professional Surveyor.

All monuments which are set, which differ from those listed on the table, shall be recorded by filing an affidavit with the District Deputy Director, O.D.O.T., District 11, New Philadelphia, Ohio. Listing the changes.

All monuments shall be set at the Off-sets shown on this table perpendicular to the lines shown on the centerline survey plats of the original construction plans. Copies of the centerline survey plats listed above may be obtained from the Columbiana County courthouse Lisbon Ohio or the Ohio Department of Transportation, District 11, New Philadelphia, Ohio. 44663

	REPLACEMENT REFERENCE CENTERLINE MONUMENTS Station	Each	Off-Set Left	Off-Set Right
Rural	S.T. 801+47.37	2	44	46
	P.O.T. 805+00	2	44	65
	P.O.T. 810+00	2	62	60
	P.O.T. 815+00	2	52	48
	T.S. 819+60	2	45	42
	S.C. 823+60	2	44	44
	C.S. 826+12.50	2	44	44
	S.T. 830+12.50	2	44	44
	P.C. 833+82.50	2	44	44
	P.O.C. 837+50.00	2	44	44
	P.T. 841+35.83	2	44	44
	P.O.T. 846+00	2	44	44
	P.O.T. 851+00	2	44	44
	T.S. 855+33.39	2	44	44
	S.C. 859+33.39	2	44	44
	C.S. 861+33.60	2	44	44
	S.T. 865+33.60	2	44	44
	P.C. 867+64.11	2	44	44
	P.O.C. 873+00	2	44	44
	P.T. 875+74.11	2	44	44
	P.O.T. 882+00	2	44	44
	P.O.T. 887+98.52	2	46	44
Municipal	T.S. 899+11.04	2	48	44
	P.O.T. 907+67.62	1	65.15	—
	P.O.T. 912+87.78	1	64.06	—
	P.O.T. 923+90.50	1	66.88	—
	P.O.T. 928+78.67	1	89.48	—
	P.O.T. 945+92.24	2	61	58
	P.O.T. 952+46.90	2	66	46
	TOTAL	54		

The following Quantities have been carried to the General Summary for the work described above:

Item 604 Reference Monuments, Standard 54 Each
(Rural = 44 Monuments & Municipal = 10 Monuments)

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FHWA REGION	STATE		
5	OHIO		

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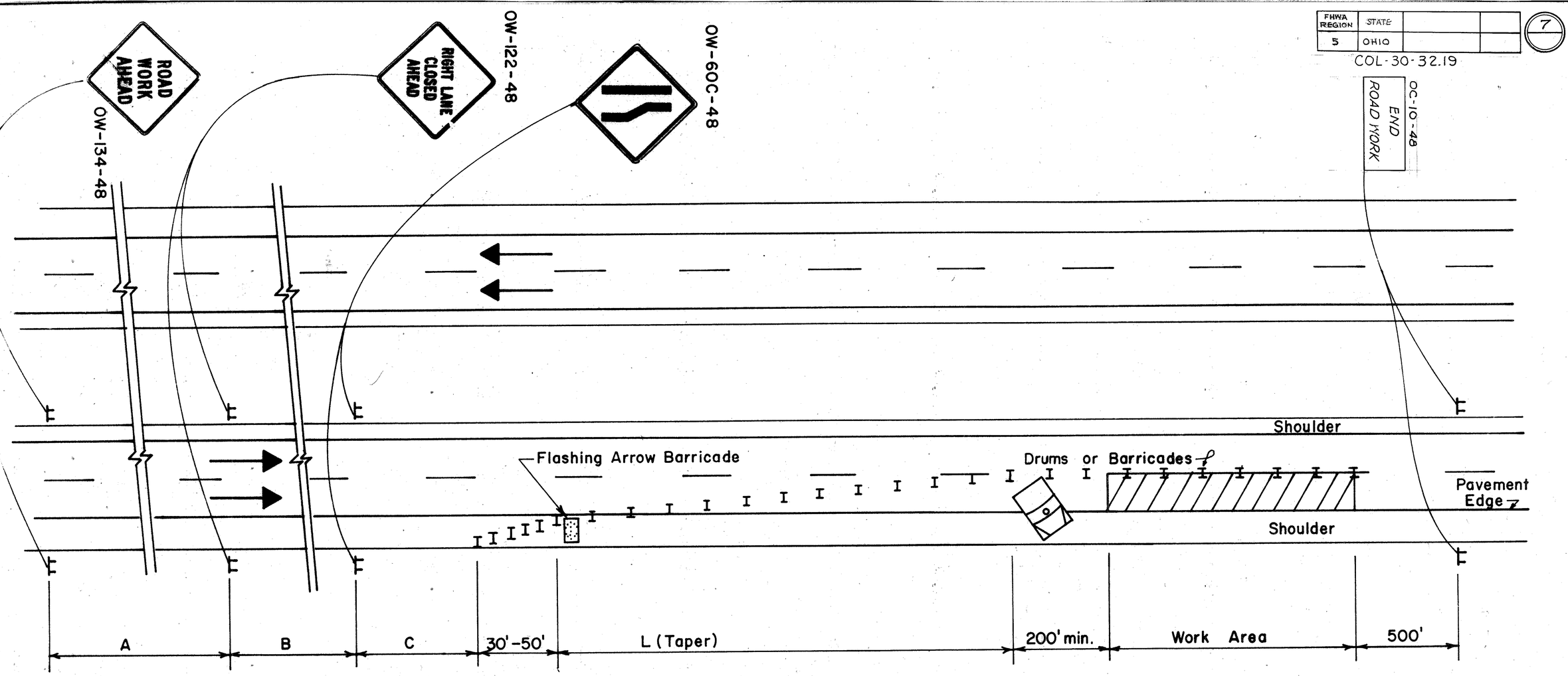
COL-30-32.19



GENERAL NOTES

1. THIRTEEN (13) DRUMS OR BARRICADES SHALL BE USED TO FORM THE LANE TRANSITION TAPER IN ADVANCE OF THE WORK AREA. FIVE (5) CHANNELIZING DEVICES SHALL BE USED TO FORM THE TAPER ON THE SHOULDER. CONES, DRUMS, OR BARRICADES SHALL BE SPACED AT 50 FOOT CENTERS FOR THE FIRST 1000 FEET OF THE WORK AREA AND AT A MAXIMUM OF 100 FEET FOR THE BALANCE OF THE WORK AREA. CONES MAY BE SUBSTITUTED FOR THE BARRICADES OR STEEL DRUMS FOR THE LANE CLOSURES DURING DAYLIGHT HOURS ONLY.

2. WHEN WORK IS BEING PERFORMED IN THE LANE ADJACENT TO THE MEDIAN ON A DIVIDED HIGHWAY, "OW-123-48" SIGNS SHALL BE SUBSTITUTED FOR "OW-122-48" SIGNS AND THE OW-60D SIGNS SHALL BE SUBSTITUTED FOR THE OW-60C SIGNS.

3. THE WORK TRUCK SHOWN AT THE BEGINNING OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER MEN ARE WORKING WITHIN THE WORK AREA. THIS TRUCK SHALL BE MOVED FROM THE PAVEMENT WHENEVER WORKMEN ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF THE WORK TRUCK SHOWN WHEN APPROVED BY THE ENGINEER.

4. ~~THE FLASHING ARROW BARRICADE SHALL BE IN ACCORDANCE WITH APPLICATION STANDARD DRAWING 7D-1.~~

5. TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 50' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 200' CENTER TO CENTER WITHIN THE LIMITS OF THE WORK AREA.

DISTANCE	A	B	C	L
URBAN	200	200	200	425
MAJOR STANDARD	500	500	500	600
FREEWAY AND EXPRESSWAY	2600	1600	1000	720

OHIO DEPARTMENT OF TRANSPORTATION

CLOSING ONE LANE OF A FOUR LANE DIVIDED HIGHWAY

DATE 7/77 7/80

DR. GBD CK. RLB. Rev. 5-23-84

QUANTITIES	
Calc. By: JCN	Chkd By: REM
Date: 10-23-81	Date: 10-24-81

FHWA REGION	STATE	PROJECT	
5	OHIO		

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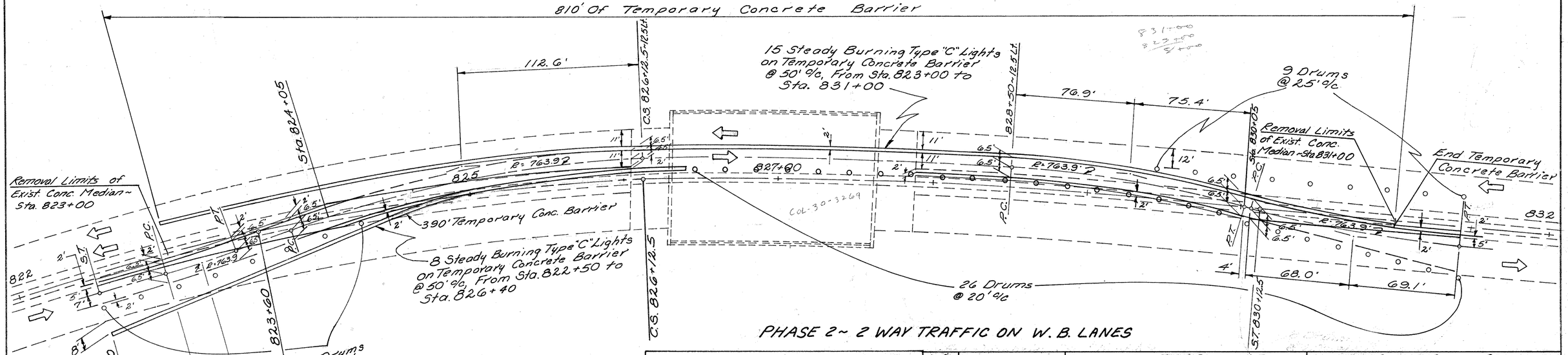
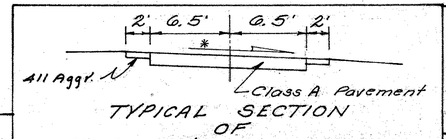
COL-30-32.19



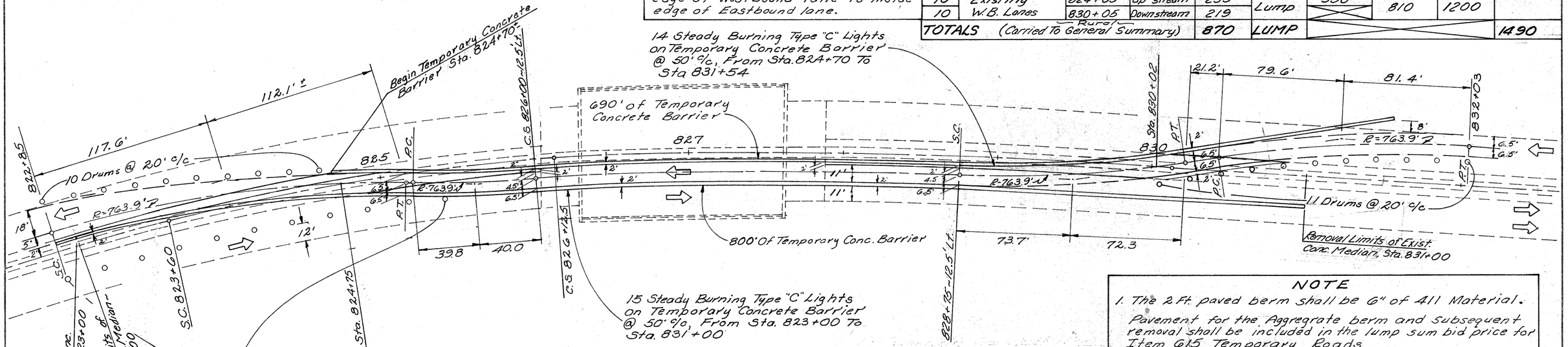
PHASE 2 ~ 2 WAY TRAFFIC ON W.B. LANES



TYPICAL SECTION OF TEMPORARY PAVEMENT

* Pavement is sloped from inside edge of Westbound lane to inside edge of Eastbound lane.

Temp. Cross-Over Detail Sheet No.	TWO-WAY TRAFFIC MAINTAINED ON	TEMPORARY CROSS-OVER PAVEMENT DATA: CROSS-OVER LOCATION AND TYPE — Station	Type	ITEM 615 Temporary Pavement Class A Sq. Yds.	ITEM 615 Temporary Roads LUMP	TEMPORARY CONCRETE BARRIER DATA: ITEM 622 Temporary Conc. Barrier Reqd. On Right Side of Up-Stream & Down-stream Cross-Over LIN. FT.	Separating Opposing Two-Way Traffic LIN. FT.	SUBTOTAL LIN. FT.	ITEM 622 Temporary Concrete Barrier LIN. FT.
9	Existing E.B. Lanes	824+75	Downstream	225	LUMP	690	800	1490	1490
9		830+02	Up-stream	171					
10	Existing W.B. Lanes	824+05	Up-stream	255	LUMP	390	810	1200	
10		830+05	Downstream	219					
TOTALS (Carried to General Summary)				870	LUMP				1490



NOTE

1. The 2 Ft. paved berm shall be 6" of 411 Material. Pavement for the Aggregrate berm and subsequent removal shall be included in the lump sum bid price for Item 615 Temporary Roads.
2. The traffic shall be channelized in accordance with Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, current edition, lastest revision.

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PHASE 1 ~ 2 WAY TRAFFIC ON E.B. LANES

TEMPORARY CROSS-OVER PAVEMENT DETAIL

FHWA REGION	STATE	PROJECT	
5	OHIO		

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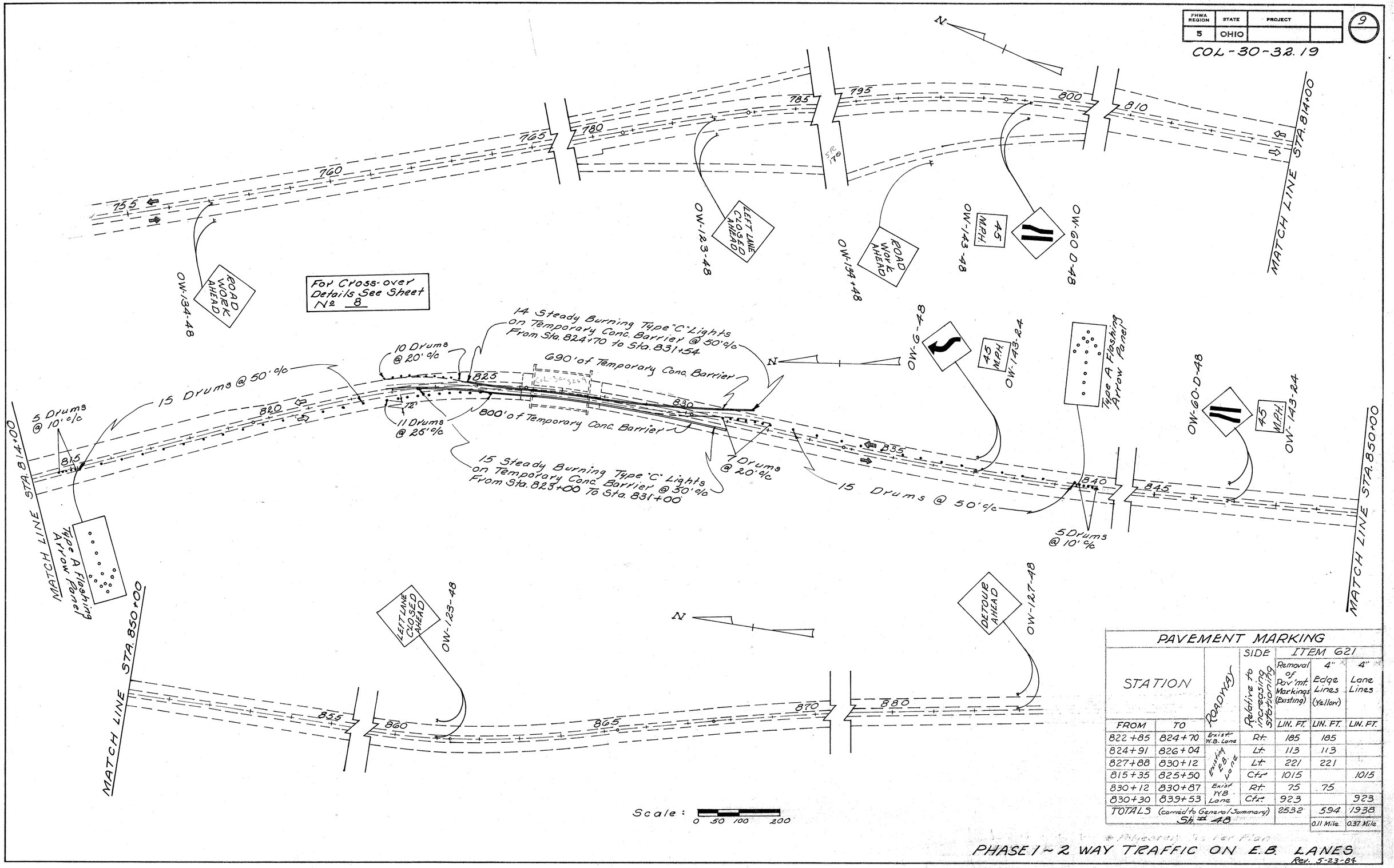
COL-30-32.19



PAVEMENT MARKING

STATION FROM	STATION TO	ROADWAY	SIDE Relative to increasing stationing	ITEM 621 Removal of Pav't Mkgs (Existing)	4" Edge Lines (Yellow)	4" Lane Lines
				LIN. FT.	LIN. FT.	LIN. FT.
822+85	824+70	Exist. W.B. Lane	Rt.	185	185	
824+91	826+04	Existing E.B. Lane	Lt.	113	113	
827+88	830+12		Lt.	221	221	
815+35	825+50		Ctr*	1015		1015
830+12	830+87	Exist. W.B. Lane	Rt.	75	75	
830+30	839+53		Ctr*	923		923
TOTALS (carried to General Summary) Sh. # 48				2532	594	1938
					0.11 Mile	0.37 Mile

* Appears on Typ. Sec. Plan

PHASE I ~ 2 WAY TRAFFIC ON E.B. LANES

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TEMPORARY CROSS-OVER DETAILS

FHWA REGION	STATE	PROJECT	
5	OHIO		

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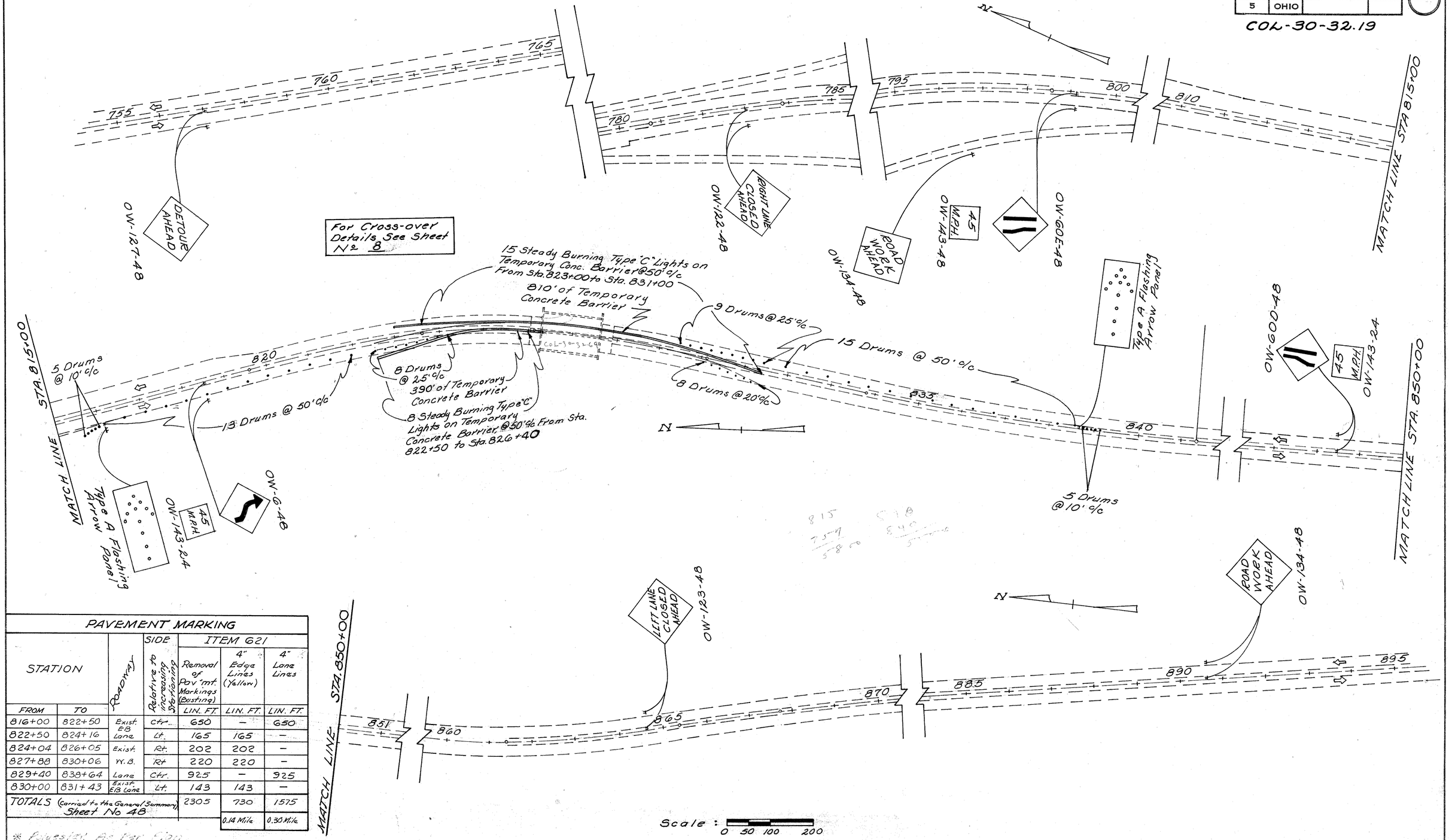
COL-30-32.19



PAVEMENT MARKING

STATION FROM	STATION TO	ROADWAY	SIDE Relative to increasing Stationing	ITEM 621 Removal of Pav'mt. Markings (Existing) LIN. FT.	ITEM 621 4" Edge Lines (Yellow) LIN. FT.	ITEM 621 4" Lane Lines LIN. FT.
816+00	822+50	Exist. E.B. Lane	Ctr.	650	—	650
822+50	824+16		Lt.	165	165	—
824+04	826+05	Exist. W.B.	Rt.	202	202	—
827+88	830+06		Rt.	220	220	—
829+40	838+64	Lane	Ctr.	925	—	925
830+00	831+43	Exist. E.B. Lane	Lt.	143	143	—
TOTALS (carried to the General Summary) Sheet No 48				2305	730	1575
					0.14 Mile	0.30 Mile

* Reflectorized As Per Plan

PHASE 2 ~ 2 WAY TRAFFIC ON W.B. LANES

Rev. 5-23-89

TEMPORARY CROSS-OVER DETAILS

Quantities	
Calc. by Date J.C.N. 10-20-81	Chk'd. by Date R.E.M. 11-3-81

FHWA REGION	STATE	PROJECT	
5	OHIO		

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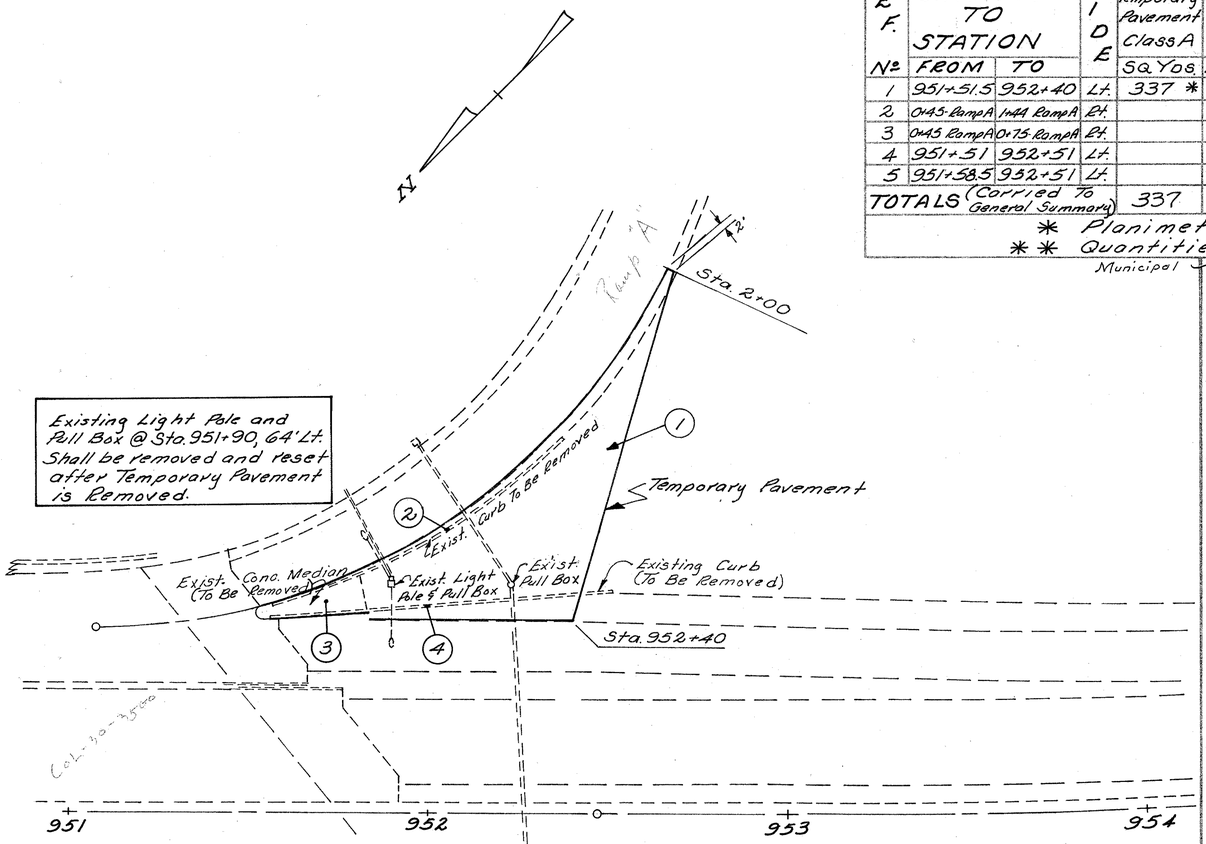
REF. №	STATION FROM	STATION TO	SIDE	615 Temporary Pavement Class A (SQ. YDS.)	615 Temporary Roads (LUMP SUM)	202 Curb Removed (LIN. FT.)	202 Concrete Median Pavement Removed (SQ. YDS.)	609 Curb Type 8 (LIN. FT.)
1	951+51.5	952+40	Lt.	337 *	Lump			
2	0+45 Ramp A	1+44 Ramp A	Rt.			101 **		
3	0+45 Ramp A	0+75 Ramp A	Rt.				24 **	
4	951+51	952+51	Lt.			100 **		
5	951+58.5	952+51	Lt.					93
TOTALS (Carried To General Summary)				337	Lump	201	24	93

* Planimetered Area

** Quantities From Existing Plan

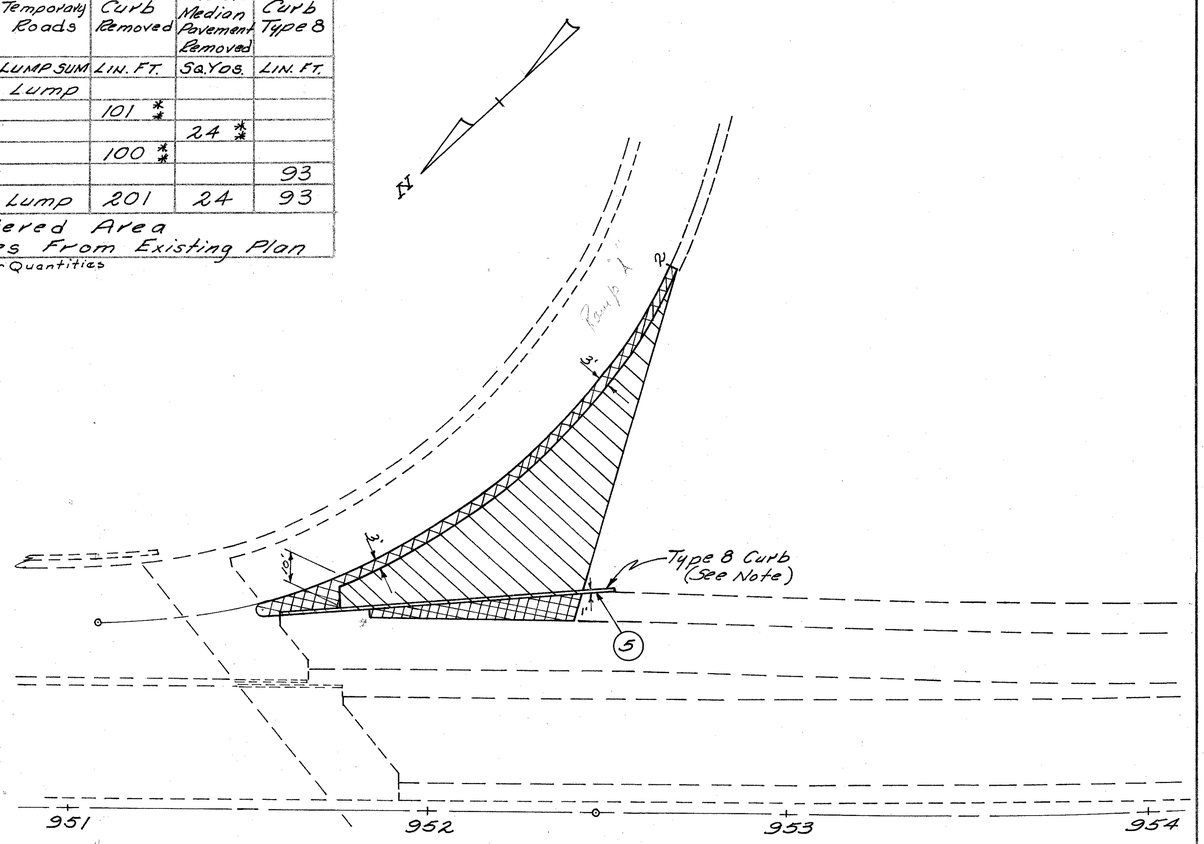
Municipal Quantities



Existing Pull Box at Sta. 952+23, 63' Lt. shall be removed to a depth equal to the bottom of the temporary pavement surface course, then a 4' x 4' x 5/8" steel plate shall be placed over the pull box and the surface course layed in place.
After the temporary pavement is removed the remainder of the existing pull box shall be removed. A new pull box shall be constructed in the same location.

TEMPORARY PAVEMENT DETAIL

Scale: 0 20 40



Area of Temporary Pavement To Be Removed

Area of Temporary Pavement To Remain In Place As Per Detail Above.

Note: New Type 8 Curb will be placed 54.45' Left of Sta. 951+58.5 To 62 feet Left of Sta. 952+51

TEMPORARY PAVEMENT REMOVAL DETAIL

Scale: 0 20 40

Rev. 5-23-84

TEMPORARY PAVEMENT DETAILS

FHWA REGION	STATE	PROJECT	
5	OHIO		

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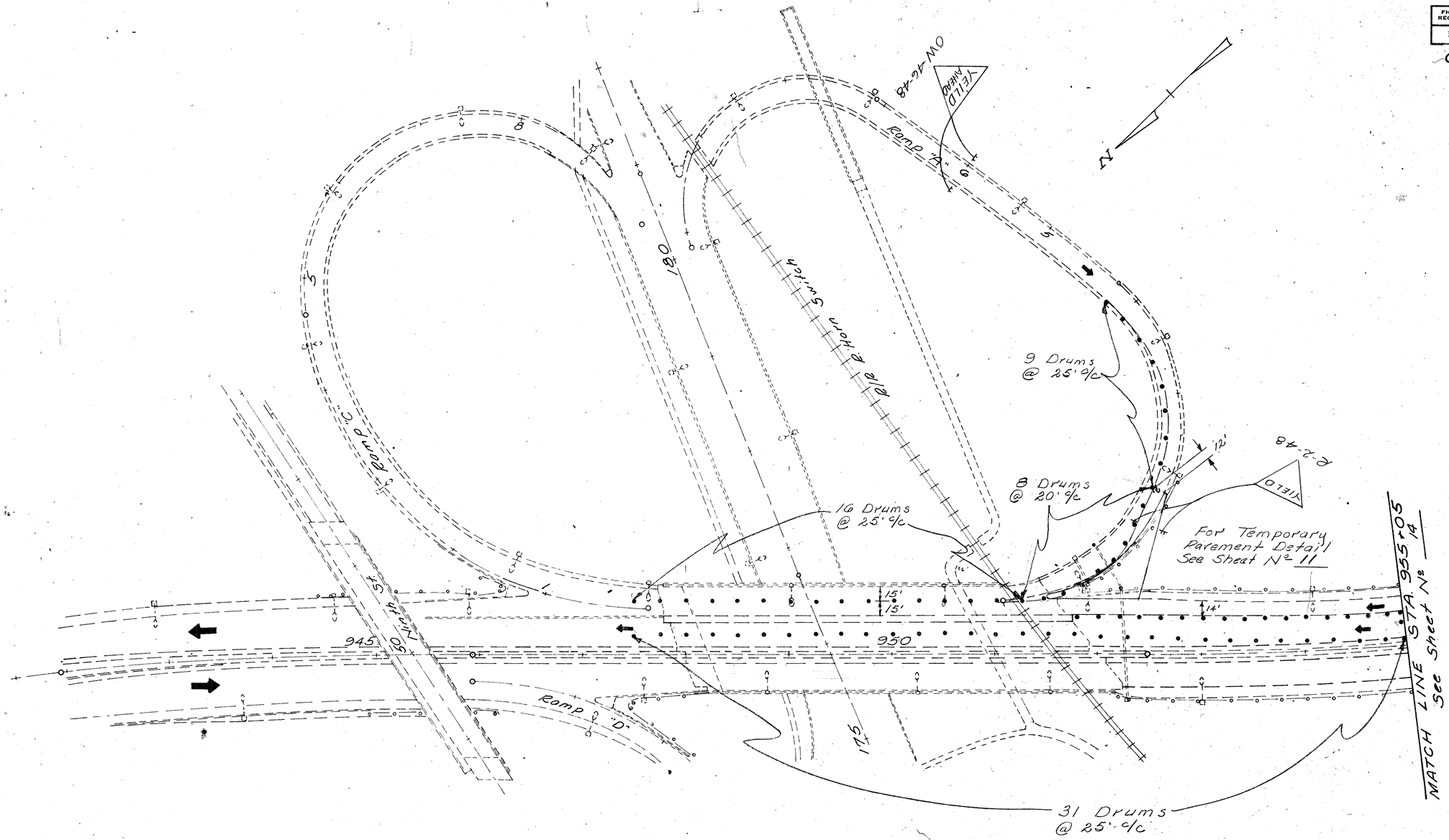
COL-30-32.19



PHASE "1"

Rev. 5-23-84

FHWA REGION	STATE	PROJECT		
5	OHIO			

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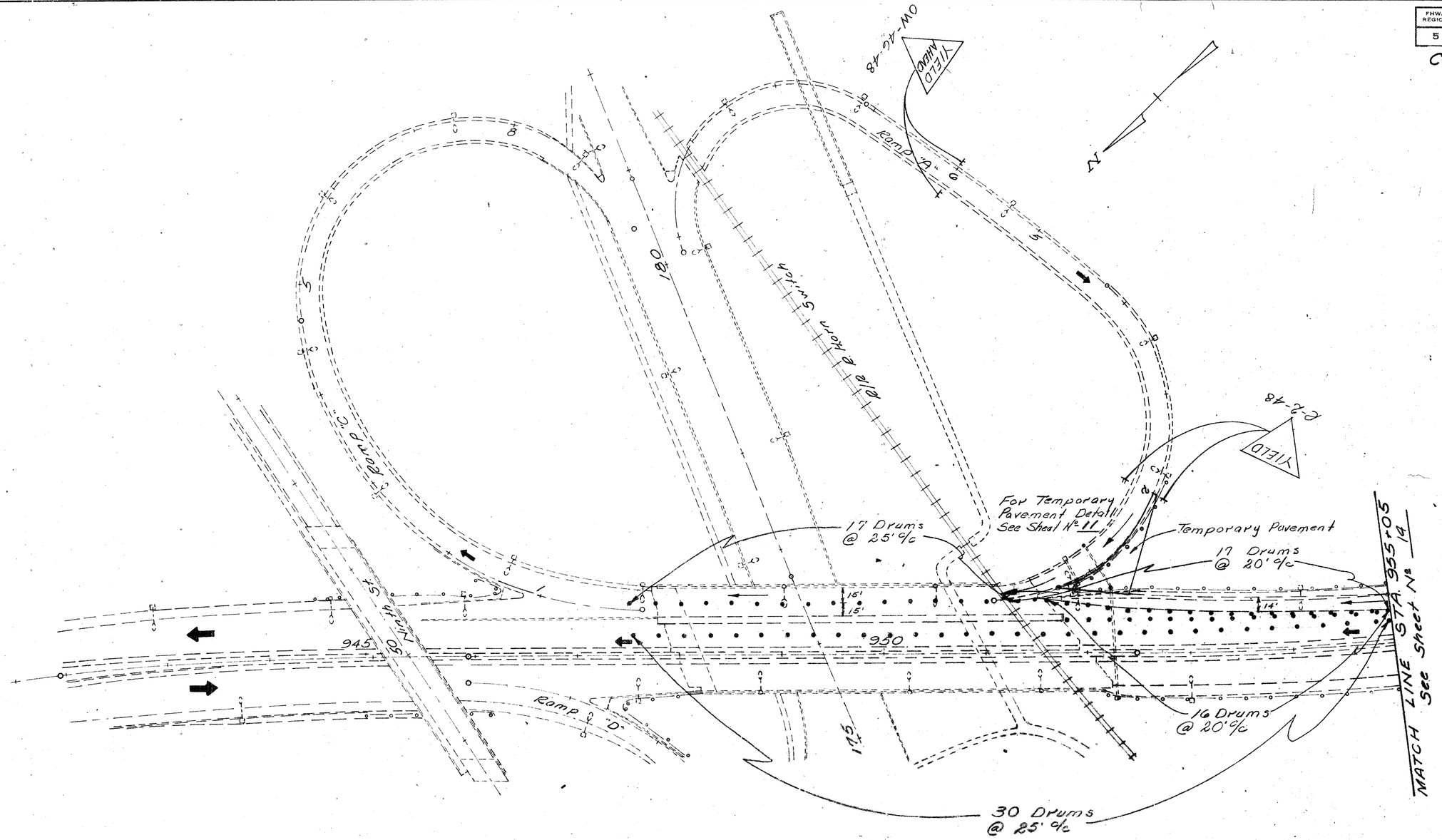
COL-30-32.19



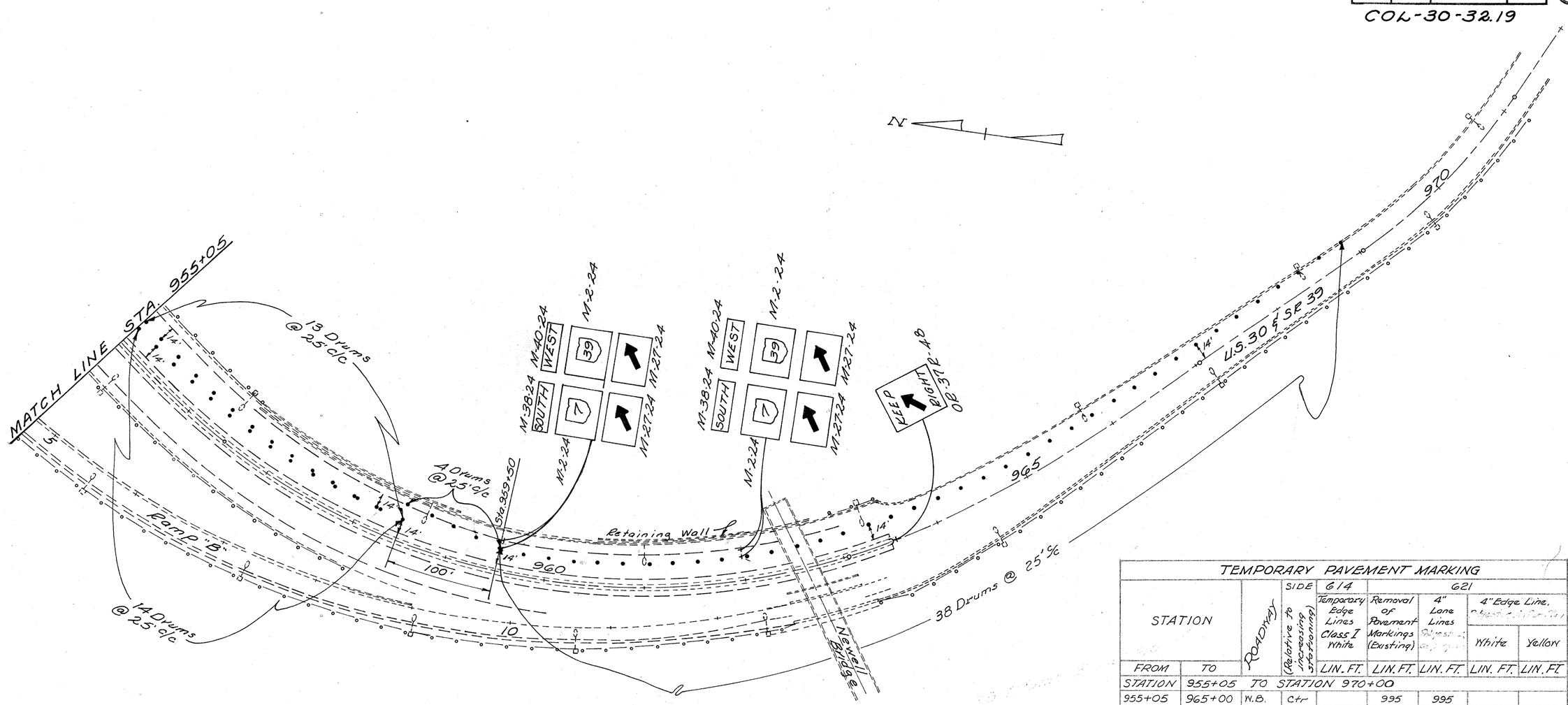
PHASE "2"

Rev. 5-23-84

FHWA REGION	STATE	PROJECT	
5	OHIO		

14

COL-30-32.19



Scale: 0 25 50 100

TEMPORARY PAVEMENT MARKING								
STATION		ROADWAY	SIDE (Relative to increasing stationing)	614	621			
				Temporary Edge Lines Class I White	Removal of Pavement Markings (Existing)	4" Lane Lines	4" Edge Line,	
							White	Yellow
FROM	TO			LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.
STATION	955+05	TO STATION 970+00						
955+05	965+00	W.B.	Ctr		995	995		
955+05	958+50	W.B.	Ctr	345				
955+05	958+50	Decel lane	Rt.	345	345	345		
959+50	968+90	W.B.	Ctr.	925				
PHASE '1'								
951+85	955+05	W.B.	Ctr.		320	320		
			Ctr Rt	320				
951+80	955+05	Decel Lane	Rt	325	325	325		
951+60	952+40	Decel Lane	Lt		80		80	
0+40	2+00	Ramp A	Rt		160			160
0+30	4+20		Rt-Lt	390				
PHASE '2'								
951+85	955+05	WBL	Ctr	320				
952+40	955+05	Decel Lane	Lt		265		265	
951+60	955+05		Rt	345				
951+50	955+05		Lt	355				
				3670	2490	1985	345	160
TOTALS (Carried to the General Summary) Sheet No 48				3670	2490	0.38 Miles	505	
							0.10 Miles	

Col. By	Ckd By
J.C.N.	D.A.E.
Date: 10-23-81	Date: 10-26-81

MAINTENANCE OF TRAFFIC Rev. 5-23-84

STA. 955+05 TO STA. 970+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

COL-30-32.19

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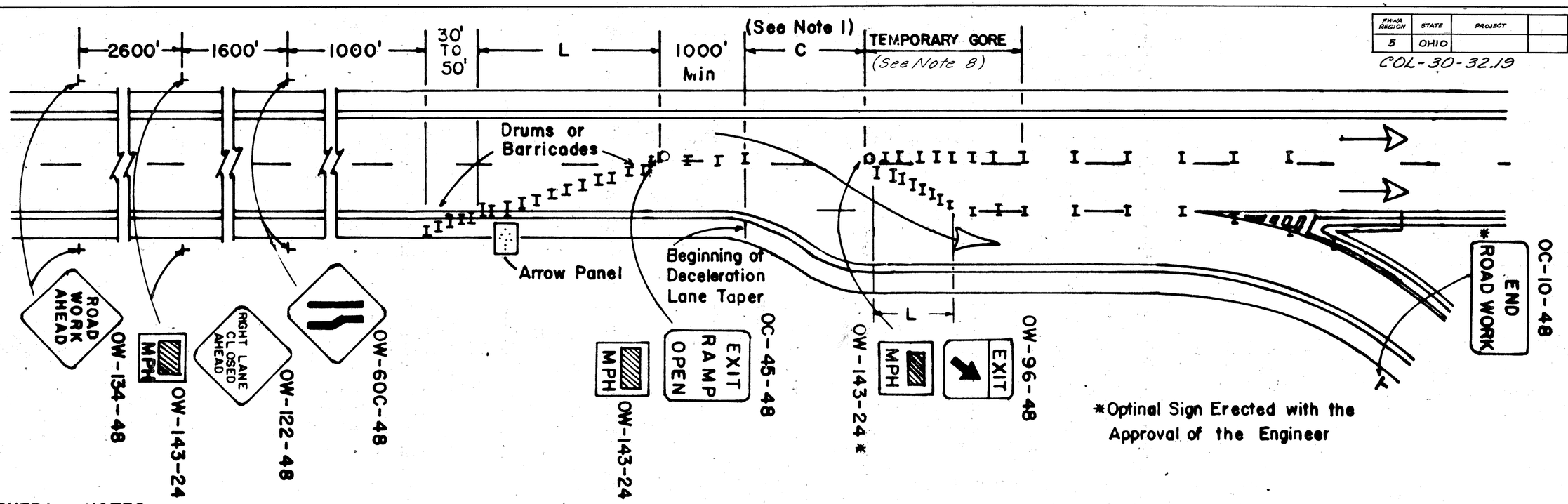

GENERAL NOTES

1. **THIS WORK AREA TRAFFIC CONTROL APPLICATION SHALL ONLY BE USED WHEN THE DISTANCE "C" IS 100 FEET OR GREATER. WHEN "C" IS LESS THAN 100 FEET, THE TRAFFIC CONTROL SHOWN ON THE "LANE CLOSURE BEFORE EXIT GORE" DETAIL SHOULD BE USED, OR THE EXIT SHOULD BE CLOSED, OR THE TRAFFIC CONTROL ON THIS DRAWING MAY BE USED WITH APPROVAL OF THE ENGINEER. WHEN THE EXIT IS CLOSED, APPROPRIATE DETOUR SIGNS SHALL BE PROVIDED.**

2. WHEN WORK IS BEING PERFORMED IN ONLY THE LANE ADJACENT TO THE MEDIAN ON A DIVIDED HIGHWAY, REFER TO THE TYPICAL WORK AREA TRAFFIC CONTROL SHOWN IN FIGURE C-21 OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

3. THE WORK TRUCK SHOWN AT THE BEGINNING OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER MEN ARE WORKING WITHIN THE WORK AREA. THIS TRUCK SHALL BE MOVED FROM THE PAVEMENT WHENEVER WORKMEN ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF THE WORK TRUCK SHOWN WHEN APPROVED BY THE ENGINEER. A TRUCK MOUNTED IMPACT ATTENUATOR MAY BE EMPLOYED.

4. THE FLASHING ARROW PANEL SHALL BE IN ACCORDANCE WITH *TC-35.10.*

5. THIRTEEN (13) DRUMS OR BARRICADES SHALL BE USED TO FORM THE LANE TRANSITION TAPER IN ADVANCE OF THE WORK AREA. FIVE (5) CHANNELIZING DEVICES SHALL BE USED TO FORM THE TAPER ON THE SHOULDER. CONES, DRUMS, OR BARRICADES SHALL BE SPACED AT 50 FOOT CENTERS. CONES MAY BE SUBSTITUTED FOR BARRICADES OR **DRUMS FOR THE LANE** CLOSURES DURING DAYLIGHT HOURS ONLY.

6. TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 50' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 200' CENTER TO CENTER WITHIN THE LIMITS OF THE WORK AREA.

7. TAPER FORMULAE:

   $L = S \times W$ FOR SPEEDS OF 45 OR MORE.
   $L = WS^2/60$ FOR SPEEDS OF 40 OR LESS.

   WHERE:

   L = MINIMUM LENGTH OF TAPER.
   S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85 PERCENTILE SPEED.
   W = WIDTH OF OFFSET.

8. WHEN CREATING A TEMPORARY GORE, CHANNELIZING DEVICES SHOULD BE SPACED 25' CENTER TO CENTER SO AS TO CREATE A "SOLID GORE" **EFFECT.**

9. THE SPACINGS BETWEEN CONSTRUCTION AND MAINTENANCE SIGNS SHOWN ON THIS DETAIL MAY REQUIRE ADJUSTMENTS (INCREASES OR DECREASES) TO ASSURE THAT THEY ARE POSITIONED NO CLOSER THAN 200 FEET TO EXISTING SIGNS AS DETERMINED BY THE ENGINEER.

OHIO DEPARTMENT OF TRANSPORTATION

LANE CLOSURE AT EXIT GORE

DATE 8-3-79

Rev. 5-23-84

FHWA REGION	STATE	PROJECT	
5	OHIO		

10

COL-30-32.19

CALC. JCN DATE 8-21-81
CHK. MPO DATE 8-25-81
Rev. W.S.R. Date 5-11-84
Chkd. J.C.N. Date 5-11-84

ITEM 203-LINEAR GRADING, METHOD 1, AS PER PLAN & ITEM 404 ~ ASPHALT CONCRETE

	GUARD RAIL Nº	LOCATION From	LOCATION To	SIDE	LENGTH Lin. Ft.	WIDTH Ft.	AREA Sq. Yd.	203 Linear Grading, Method 1, As Per Plan Station	408 Bituminous Prime Coat @ 0.02 Gal/SY Gals.	404 THICKNESS In.	404 Asphalt Concrete, As Per Plan Cu. Yd.
Rural	5	808+02.72	812+54.73	Lt.	453.08	5.64+4.82 = 4.82	243	4.53	4.85	2	13.5
		812+54.73	826+32.5	Lt.	1378.66	4	613	13.79	12.25	2	34.0
	7	811+71.5	812+96.5	Rt.	125	4	56	1.25	1.11	2	3.1
	8	824+22.39	826+28.7	Rt.	200	4	89	2.00	1.78	2	4.9
	9	827+61.3	872+53.05	Lt.	4375	4	1944	43.75	38.89	2	108.0
	11	827+63.8	827+88.8	Rt.	25	4	11	0.25	0.22	2	0.6
	13	836+35.91	837+59.82	Rt.	125	4	56	1.25	1.11	2	3.1
	14	840+25.91	841+50	Rt.	125	4	56	1.25	1.11	2	3.1
	15	850+61.83	859+31	Rt.	875	4	389	8.75	7.78	2	21.6
	16	865+10	866+35	Rt.	125	4	56	1.25	1.11	2	3.1
	17	875+75	905+47.94	Lt.	2962.5	4	1317	29.63	26.33	2	73.1
	18	880+60	881+85	Rt.	125	4	56	1.25	1.11	2	3.1
Municipal	20	891+90	893+15	Rt.	125	4	56	1.25	1.11	2	3.1
	21	896+22	897+47	Rt.	125	4	56	1.25	1.11	2	3.1
	23	906+90	908+15	Rt.	125	4	56	1.25	1.11	2	3.1
	24	913+00	921+67.45	Lt.	887.5	4	394	8.88	7.89	2	21.9
	25	924+75	940+67.45	Lt.	1625	4	722	16.25	14.44	2	40.1
	29	945+00	946+12.5	Rt.	112.5	5+4 / 2 = 4.5	56	1.13	1.13	2	3.1
	30	944+50.62	945+47.4	Lt.	97	4	43	0.97	0.86	2	2.4
	41	952+63.72	956+55	Lt.	375	4	167	3.75	3.33	2	9.3
	43	952+10.53	958+11.72	Rt.	637.5	4	283	6.38	5.67	2	15.7
	44	9+00 Ramp B	12+59.49 Ramp B	Rt.	375	4	167	3.75	3.33	2	9.3
TOTALS (Carried To General Summary)				Rural				108.95	97.65		271.2
				Municipal				44.86	39.98		111.1

ITEM 203 ~ LINEAR GRADING METHOD 2, AS PER PLAN

	GUARD RAIL Nº	LOCATION From	LOCATION To	SIDE	LENGTH Lin. Ft.	203 Linear Grading, Method 2, As Per Plan Station
Rural	1	14+75-SR 170	4+26 Ramp 'D'	Rt.	512.50	5.13
	2	7+61-Ramp 'D'	10+00 "	Rt.	237.50	2.38
	4	1+75-Ramp 'A'	12+89.01 Ramp 'A'	Rt.	1112.50	11.13
	5	10+93.18 "	16+98.94 "	Lt.	605.76	6.06
	6	803+66	805+16	Rt.	150.00	1.50
Municipal	26	935+70.74	937+25.82	Rt.	150.00	1.50
	27	936+75.82	938+25.00	Lt.	150.00	1.50
	29	944+25	945+00	Rt.	75.00	0.75
	30	945+47.40	946+12.27	Lt.	64.87	0.65
	34	947+40.63	947+79.86	Lt	50.00	0.50
	35	2+89.77 Ramp 'D'	948+22.36	Lt & Rt	218.75	2.17
	37	176+60-SR 7	178+10-SR 7	Lt.	150.00	1.50
	38	176+35-SR 7	177+10-SR 7	Rt.	75.00	0.75
	39	951+24.36-US30	1+19 - Ramp 'A'	Lt.	87.50	0.88
	44	2+96.6-Ramp 'B'	9+00.1-Ramp 'B'	Rt.	612.50	6.13
	47	963+03.5	963+66.31	Lt.	62.50	0.63
	50	178+80-SR 7	180+30-SR 7	Rt.	150.00	1.50
	51	2+85.87-Ramp 'D'	3+39.37-Ramp 'D'	Rt.	50.00	0.50
	52	5+57.69-Ramp 'D'	8+57.69-Ramp 'D'	Lt.	300.00	3.00
	53	6+03.89-Ramp 'D'	7+03.89-Ramp 'D'	Rt.	100.00	1.00
TOTAL (Carried To General Summary)						26.2 Rural / 22.96 Municipal

ITEM 659-SEEDING & MULCHING

	ROAD OR RAMP	LOCATION From	LOCATION To	SIDE	LENGTH Lin. Ft.	WIDTH Ft.	AREA Sq. Yd.	659 Seeding And Mulching Sq. Yd.
Municipal	US. 30	900+43	903+11.04	Med.	268.17	5.5	163.88	164
		903+11.04	903+67.62	Med.	56.59 x 14.37.18 = 56.77 14.32.40	5.5	34.69	35
		903+67.62	907+50	Med.	383.47 Spiral	5.5	234.34	234
		907+50	907+67.62	Med.	17.62 Spiral	5.5	10.77	11
		907+67.62	912+87.78	Med.	520.16	5.5	317.88	318
		912+87.78	913+25	Med.	37.21 Spiral	5.5	22.74	23
		913+25	916+87.78	Med.	361.12 Spiral	5.5	220.68	221
		916+87.78	917+25	Med.	37.22 x 14.14.93 = 36.77 14.32.40	5.5	22.47	22
		917+25	919+90.59	Med.	265.59 x 14.14.65 = 262.30 14.32.40	5.5	160.29	160
		919+90.59	923+90.59	Med.	397.52 Spiral	5.5	242.93	243
		923+90.59	928+78.67	Med.	488.08	5.5	298.27	298
		928+78.67	930+00	Med.	121.13 Spiral	5.5	74.02	74
		930+00	932+78.67	Med.	277.79 Spiral	5.5	169.72	170
		932+78.67	941+92.24	Med.	913.57 x 16.29.07 = 909.14 16.37.72	5.5	555.59	556
		941+92.24	943+50	Med.	157.74 Spiral	5.5	96.40	96
		935+70.74	937+25.82	Rt.	150.00	6.5	108.33	108
		936+75.82	938+75	Lt.	150.00	5.5	91.67	92
		944+25	945+00	Rt.	75.00	12.75 / 2 = 9.75	81.25	81
		945+47.40	946+23	Lt.	75.60	11.5 x 15 / 2 = 11.75	98.10	99
		947+40.63	947+79.86	Lt.	50.00	14+9 / 2 = 11.5	63.89	64
		951+86.50	952+63.72	Lt.	78.00	7.0	60.67	61
		963+03.50	963+66.31	Lt.	62.50	6+14 / 2 = 10.0	69.44	69
Rural	SR 170 Interchange Ramp 'D'	1+75	12+89.01	Rt.	1112.50	6.0	741.67	742
		10+93.18	16+98.94	Lt.	605.76	10.0	673.07	673
		14+75-SR 170	4+26-Ramp 'D'	Rt.	512.50	10.0	569.44	569
		7+61	10+00	Rt.	237.50	10.0	263.89	264
		14+50	16+00	Rt.	150.00	10.0	166.67	167
Municipal	S.R. 7 Interchange Ramp 'A'	173+27	173+52	Rt.	50.00	5.0	27.78	28
		176+35	177+10	Rt.	75.00	5.0	41.67	42
		176+60	178+10	Lt.	150.00	5.0	83.33	83
		178+28	18+30	Rt.	200.00	12.5+9 / 2 = 10.5	233.33	233
	Ramp 'C'	0+18	1+19	Lt.	87.50	6+14 / 2 = 10.0	97.22	97
	Ramp 'B'	0+77	2+24	Rt.	150.00	8.0	133.33	133
	Ramp 'D'	9+20.50	9+33.50	Rt.	37.50	8.0	33.33	33
		2+96.60	9+00	Rt.	612.50	10.0	680.56	681
		1+39	1+89	Lt.	50.00	7.0	38.89	39
		1+52	2+89.77	Lt.	150.00	9.0	150.00	150
		2+85.87	3+39.32	Rt.	50.00	11+7 / 2 = 9.0	50.00	50
		5+57.69	8+57.69	Lt.	300.00	6.0	200.00	200
		6+03.89	7+03.89	Rt.	100.00	10.0	111.11	111
	US-30	947+33	948+22.36	Rt.	89.36	10+5 / 2 = 7.5	74.47	75
TOTALS (carried to General Summary)							Rural	2415
							Municipal	5154

FERTILIZER & LIMING

ITEM 659 ~ COMMERCIAL FERTILIZER

2415 / 5154 Sq. Yds. x 9 x 20 / 2,000 x 1,000 =
Rural ~ 0.22 TONS
Municipal ~ 0.46 TONS

ITEM 659 ~ AGRICULTURAL LIMING

2415 / 5154 Sq. Yds. x 9 x 100 / 2,000 x 1,000 =
Rural ~ 1.09 TONS
Municipal ~ 2.32 TONS

Carried To General Summary

PAVEMENT TRANSITION QUANTITIES

	BRIDGE Nº	STATION From	STATION To	LENGTH Lin. Ft.	WIDTH Feet	AREA Sq. Yds.	LANE OR RAMP	202 Wearing Course Removed Sq. Yds.	407 Tack Coat @ 0.10 Gals. Per Sq. Yd. Gals.	407 Cover Aggregate @ 7 lbs. Per Sq. Yd. Tons	404 THICKNESS Ins.	404 Asphalt Concrete Cu. Yds.
Rural	COL-30-32.69	825+54.25	825+91.75	37.5	78	32.5	East & West Bound Lanes	32.5	32.5	1.14	1	9.0
		825+91.25	826+04.25	12.5	78	108.0		———	10.8	0.38	1+1.38 / 2 = 1.19	3.6
		826+04.25	826+29.25	25.0	78+77 / 2 = 77.5	215.0		———	21.5	0.75	1.38+1 / 2 = 1.19	7.1
		827+63.75	827+88.75	25.0	78+77 / 2 = 77.5	215.0		———	21.5	0.75	1.38+1 / 2 = 1.19	7.1
		827+88.75	828+01.25	12.5	78	108.0		———	10.8	0.38	1.38+1 / 2 = 1.19	3.6
		828+01.25	828+38.75	37.5	78	325		32.5	32.5	1.14	1	9.0
Municipal	COL-30 - 35.00			Planimetered Area = 152 S.Y.			M.L. Rt.	152.0	15.2	0.53	1	4.2
		947+46.97	947+84.47	Planimetered Area = 133 S.Y.			M.L. Lt.	133.0	13.3	0.47	1	3.7
				Planimetered Area = 129 S.Y.			A&C Lane	129.0	12.9	0.45	1	3.6
				Planimetered Area = 51 S.Y.			M.L. Rt.	———	5.1	0.18	1.38+1 / 2 = 1.19	1.7
		947+84.47	947+96.97	Planimetered Area = 43 S.Y.			M.L. Lt.	———	4.3	0.15	1.38+1 / 2 = 1.19	1.4
				Planimetered Area = 42 S.Y.			R&C Lane	———	4.2	0.15	1.38+1 / 2 = 1.19	1.4
				Planimetered Area = 97 S.Y.			M.L. Rt.	———	9.7	0.34	1.38+1 / 2 = 1.19	3.2
		947+96.97	948+21.97	Planimetered Area = 99 S.Y.			M.L. Lt.	———	9.9	0.35	1.38+1 / 2 = 1.19	3.3
				Planimetered Area = 94 S.Y.			A&C Lane	———	9.4	0.33	1.38+1 / 2 = 1.19	3.1
				Planimetered Area = 93 S.Y.			M.L. Rt.	———	9.3	0.33	1.38+1 / 2 = 1.19	3.1
		951+75.05	952+00.05	Planimetered Area = 88 S.Y.			M.L. Lt.	———	8.8	0.31	1.38+1 / 2 = 1.19	2.9
				Planimetered Area = 82 S.Y.			Ramp 'A'	———	8.2	0.29	1.38+1 / 2 = 1.19	2.7
				Planimetered Area = 67 S.Y.			M.L. Rt.	———	6.7	0.23	1.38+1 / 2 = 1.19	2.2
		952+00.05	952+12.55	Planimetered Area = 83 S.Y.			M.L. Lt.	———	8.3	0.29	1.38+1 / 2 = 1.19	2.7
				Planimetered Area = 22 S.Y.			Ramp A	———	2.2	0.08	1.38+1 / 2 = 1.19	0.7
				Planimetered Area = 168 S.Y.			M.L. Rt.	168.0	16.8	0.59	1	4.7
		952+12.55	952+50.05	Planimetered Area = 219 S.Y.			M.L. Lt.	219.0	21.9	0.77	1	6.1
				Planimetered Area = 61 S.Y.			Ramp 'A'	61.0	6.1	0.21	1	1.7
	COL-7-06.26	2+37.4	2+75.96	38.56 x 318.4 = 37.5 321.4	24	100	Ramp 'D'	100.0	10.0	0.35	12.75 / 2 = 1.625	4.5
		2+75.96	2+88.81	12.85 x 318.4 = 12.6 321.4	24	33		———	3.3	0.12	2.25+2.67 / 2 = 2.46	2.3
		2+88.81	3+13.81	Planemetered Area = 82 S.Y.				———	8.2	0.29	2.67+2.5 / 2 = 2.585	5.9
		5+55.14	5+80.14	Planimetered Area = 68 S.Y.				———	6.8	0.24	2.5+2.67 / 2 = 2.585	4.9
		5+80.14	5+92.64	12.5	24	33		———	3.3	0.12	2.67+2.25 / 2 = 2.46	2.3
		5+92.64	6+30.14	37.5	24	100		100.0	10.0	0.35	2.25+1 / 2 = 1.625	4.5
TOTALS (Carried To General Summary)							Rural	650	129.6	4.54		39.4
							Municipal	1062	213.9	7.52		76.8

ITEM 310 SUBBASE, TYPE 1

STATION TO STATION FROM	STATION TO TO	* Length LIN. FT.	Width LIN. FT.	Area Sq. Yds.	Thickness Inches	Subbase Type 1 Cu. Yds.
905+30	905+50	20	3.5+3 / 2 = 3.25	7	9	1.8
905+50	937+00	3150	3	1050	9	262.5
937+00	937+20	20	3+3.5 / 2 = 3.25	7	9	1.8
1+51-Ramp 'D'	2+91-Ramp 'D'	140	3	47	9	11.7
TOTAL (Quantities carried to General Summary)				Municipal		277.8

* Lengths from Concrete Barrier, Type D
Quantities on sheet Nº 18

Rev. 5-23-84

CALCULATIONS

GUARDRAIL SUMMARY

CALC. JCN DATE 8-11-81
CHKD. MPO DATE 8-14-81
Rev. J.C.N. Date 5-10-84
Chk'd. W.S.R. Date 5-10-84

FHWA REGION	STATE	PROJECT	
5	OHIO		

COL-30-32.19

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Rural / Municipal

REF. Nº	DETAIL OR PLAN SHEET Nº	STATION From	STATION To	SIDE	202 Guardrail Removed For Storage Lin. Ft.	202 Guardrail Barrier Design Removed For Storage Lin. Ft.	202 Guardrail Post Removed Each	606 Guardrail Type 5, As Per Plan Lin. Ft.	606 Guardrail Barrier Design Type 5 Lin. Ft.	606 Anchor Assembly Type A Each	606 Anchor Assembly Type T Each	606 Bridge Terminal Assembly Type D Ea.	606 Bridge Terminal Assembly Type E Ea.	606 Bridge Terminal Assembly Type J Ea.	606 Bridge Terminal Assembly Type C Ea.
1	21	14+75 – SR 170	4+26 – Ramp 'D'	Rt.	512.5			475		1	1				
2	21	7+61 – Ramp 'D'	10+00 – Ramp 'D'	Rt.	237.5			200		1	1				
3	21-23	800+00	826+29.98	℄		2629.98									
4	21	1+75 – Ramp 'A'	12+89.01 – Ramp 'A'	Rt.	1112.5			1075		1	1				
5	21-23	11+05 – Ramp 'A'	826+29 – U.S. 30	Lt.	2437.5										
		10+93.10 – Ramp 'A'	826+32.5 – U.S. 30	Lt.				2425			1			1	
6	21 & 22	804+57	804+95	Rt.	37.5										
		803+66	805+16	Rt.				112.5		1	1				
7	22	812+48	812+98	Rt.	50										
		811+46.5	812+96.5	Rt.				112.5		1	1				
8	23	823+94	826+25	Rt.	225										
		823+97.39	826+28.7	Rt.				200		1					1
9	23-26	827+64	831+25.7	Lt.	362.5										
		833+91.5	870+48	Lt.	3637.5										
		827+61.3	871+78.05	Lt.				4375		1					1
10	23	827+63.02	829+95.02	℄		232									
11	23	827+68	827+93	Rt.	25										
		827+63.8	827+88.8	Rt.				12.5			1			1	
12	23-27	830+24	887+74	℄		5750									
13	24	837+14	837+39	Rt.	25										
		836+10.91	837+59.82	Rt.				112.5		1	1				
14	24	840+90	841+43	Rt.	50										
		840+00.91	841+50	Rt.				112.5		1	1				
15	25	850+60	859+31	Rt.	875										
		850+36.83	859+31	Rt.				862.5		1	1				
16	26	865+72	866+34.5	Rt.	62.5										
		864+85	866+35	Rt.				112.5		1	1				
17	26-28	875+75	905+72	Lt.	2987.5										
		875+75	905+72.94	Lt.				2950		1	1				
18	27	881+25.5	881+75.5	Rt.	50										
		880+35	881+85	Rt.				112.5		1	1				
19	27 & 28	888+14.5	904+85	℄		1670.5									
20	27	892+68	893+09	Rt.	37.5										
		891+65	893+15	Rt.				112.5		1	1				
21	28	895+97	897+47	Rt.			2	112.5		1	1				
22	28-31	904+85	942+00	Rt.	3700										
23	28	907+73.9	908+11.4	Rt.	37.5										
		906+65	908+15	Rt.				112.5		1	1				
24	29	911+61.6	913+00	Lt.			11								
		913+00	921+42.3	Lt.	862.5										
		913+00	921+92.45	Lt.				875		1	1				
25	29-31	924+75	940+92.93	Lt.	1650			1612.5		1	1				
26	30	936+58	937+09	Rt.	50										
		935+70.74	937+25.82	Rt.				112.5		1	1				
27	30	936+75.82	938+75	Lt.				112.5		1	1				
28	31	942+00	945+00	℄		300									
29	31 & 32	944+92	946+18	Rt.	125										
		944+50	946+12.5	Rt.				150		1	1				
30	31 & 32	944+52	946+23	Lt.	175										
		944+50.62	946+12.27	Lt.				125		1	1				
31	31	945+00	945+62.5	℄	125										
32	31 & 32	945+62.5	948+10	℄		247.5									
33	32	1+39 – Ramp 'C'	1+89 – Ramp 'C'	Lt.	50										
34	32	947+40.5	947+78	Lt.	37.5										
		947+40.63	947+79.86	Lt.				25			1			1	
35	32	947+32.5	948+22	Rt.	75										
		947+46.5	948+23.53	Rt				76.53					1	1	
36	32	1+52 – Ramp 'D'	2+87 – Ramp 'D'	Lt.	150										
37	32	176+82 – S.R. 7	177+32 – S.R. 7	Lt.	50										
		176+60 – S.R. 7	178+10 – S.R. 7	Lt.				112.5		1	1				
38	32	176+38 – S.R. 7	176+88	Rt.	50										
		176+35 – S.R. 7	177+10 – S.R. 7	Rt.				37.5		1	1				
39	32	951+25 – U.S. 30	0+83 – Ramp 'A'	Lt.	50										
		951+23.19 – U.S. 30	1+19 – Ramp 'A'	Lt.				62.5		1				1	
40	32-33	951+80	956+00	℄		420.0									
41	32 & 33	851+86.5	956+55	Lt.	450										
		952+63.72	956+56.87	Lt.				362.5			1			1	
42	32 & 33	0+80 – Ramp 'A'	2+24 – Ramp 'A'	Rt.	150										
43	33 & 34	952+12.5	958+10	Rt.	625										
		952+08.80	958+11.72	Rt.				612.5			1			1	
44	33 & 34	3+00 – Ramp 'B'	12+59 – Ramp 'B'	Rt.	987.5										
		2+96.6 – Ramp 'B'	12+60.66 – Ramp 'B'	Rt.				962.5		1					1
45	33 & 42	956+00	956+37.5	℄		37.5			37.5						
47	34	963+03.5	963+40	Lt.	37.5										
		962+78.5	963+66.31	Lt.				50		1	1				
49	36	9+20.5 – Ramp 'A'	9+33.5 – Ramp 'A'	Rt.	37.5										
50	36	178+28 – S.R. 7	180+30 – S.R. 7	Rt.	200										
		178+80 – S.R. 7	180+30 – S.R. 7	Rt.				112.5		1	1				
51	32 & 38	2+87.5 – Ramp 'D'	3+37.5 – Ramp 'D'	Rt.	50										
		2+85.87 – Ramp 'D'	3+40.49 – Ramp 'D'	Rt.				25		1			1		
52	38	5+58 – Ramp 'D'	8+58 – Ramp 'D'	Lt.	300										
		5+55.96 – Ramp 'D'	8+57.69 – Ramp 'D'	Lt.				287.5			1			1	
53	38	6+04 – Ramp 'D'	7+04 – Ramp 'D'	Rt.	100										
		6+02.16 – Ramp 'D'	7+03.89 – Ramp 'D'	Rt.				87.5			1			1	
54	38	173+27 – S.R. 7	173+52 – S.R. 7	Rt.	50										
TOTALS (Quantities Carried to General Summary)				Rural =	12,687.5	8611.98	0	13250.0	0	13	13	0	0	2	2
				Municipal =	10212.5	2675.5	13	6139.03	37.5	16	18	2	2	5	1

Rev. 5-23-84

GUARDRAIL SUMMARY

SUBSUMMARIES

Quantities	
Calc. by: Date J.C.N. 8-7-81	Chk'd. by: Date D.A.E. 8-10-81
Rev. By Date J.C.N. 5-10-84	Chk'd. By Date W.S.R. 5-10-84

FHWA REGION	STATE	PROJECT	
5	OHIO		

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COL-30-32.19

ITEM 622 CONCRETE BARRIER

	LOCATION		COMENTS	Detail Sheet Nº Or Standard Drawing Nº	ITEM 622 Concrete Barrier Type A	ITEM 622 Concrete Barrier Type A, Modified As Per Plan	ITEM 622 Concrete Barrier Type D
	FROM	TO			LIN. FT.	LIN. FT.	LIN. FT.
Rural	800+00	826+04.25	Modified Type A Barrier	2		2604.25	
	826+04.25	827+88.75	Br. Nº Col-30-3269	Thru	Parapet in Bridge	Railing Included in Quantities	
	827+88.75	888+00	Modified Type A Barrier	2		6011.25	
Municipal	888+00	900+43	Modified Type A Barrier	2		1243.00	
	900+43	901+03	Transition	42		60.00	
	901+03	905+30	Std. Type A Barrier	MC-9	427.00		
	905+30	905+50	Transition	43	20.00		
	905+50	937+00	Std. Type D Barrier	MC-9			31.50
	937+00	937+20	Transition	43	20.00		
	937+20	942+90	Std. Type A Barrier	MC-9	570.00		
	942+90	943+50	Transition	44		60.00	
	943+50	944+41.05	Modified Type A Barrier	4		91.05	
	944+41.05	945+11.05	Std. Transition	MC-9		70.00	
	945+11.05	945+54.05	Br. Nº Col-30-3495 Pier Columns	MC-9		43.00	
	945+54.05	946+24.05	Std. Transition	MC-9		70.00	
	946+24.05	947+96.97	Modified Type A Barrier	4		172.92	
	947+96.97	952+00.05	Br. Nº Col-30-35.00	Thru	Parapet In Bridge	Railing Included Quantities	
	952+00.05	952+45	Modified Type A Barrier	4		44.95	
	952+45	952+95	Std. Transition	MC-9		50.00	
	952+95	953+05	Barrier Wall Assy. for Sign Support	TC-21.31	Included In Barrier	Cost of Wall Assembly	
	953+05	953+55	Std. Transition	MC-9		50.00	
	953+55	956+00	Modified Type A Barrier	4		245.00	
	1+51- Ramp "D"	2+91- Ramp "D"	Std. Type D Barrier	326/MC-9			140
	CONCRETE BARRIER SUBTOTAL			RURAL	0	8615.50	0
	CONCRETE BARRIER SUBTOTAL			MUNIC.	1037.0	2,199.92	3290.0
DEDUCTIONS	Deduct For Standard I-3A Median Inlet, As Per Plan 14 Each x 20 Lin. Ft./Each = 280 Lin. Ft.					RURAL -280.00	
	Deduct For Standard I-3A Median Inlet Modified 1 Each x 13.5 Lin. Ft./Each = 13.5 Lin. Ft.					MUNIC. -13.50	
	Deduct For Standard I-3 Median Inlet Modified D 2 Each x 20 Lin. Ft./Each = 40 Lin. Ft.						MUNIC. -40.00
	Deduct For Standard I-3A Median Inlet As Per Plan 1 Each x 20 Lin. Ft./Each = 20 Lin. Ft.					MUNIC. -20.00	
CONCRETE BARRIER TOTALS				Rural	0	8,335.50	0
				Municipal	1037.00	2,166.42	3250.00

Quantities Carried To General Summary

CONCRETE MEDIAN REMOVED

LOCATION		LENGTH	WIDTH	ITEM 202 Concrete Median Pavement Removed	Curb Removed	
FROM	TO	LIN. FT.	LIN. FT.	SQ. YDS.	LIN. FT.	
800+00	826+04.29	2604.29	6.0	1736		Rural
826+04.29	827+88.75	Bridge Nº COL-30-3269				
827+88.75	830+00	211.25	6.0	141		
830+00	830+22.2	Existing Median Cross Over				
830+22.2	887+80.8	5758.6	6.0	3839		
887+80.8	888+00.5	Existing Median Cross Over				
888+00.5	899+25	1124.5 (1124.5x2=2249)	5.0	625	2249	Municipal
899+25	900+43	118 (118x2=236)	$\frac{6+10}{2}$=8.0	105	236	
900+43	943+50	4307			4307	
943+50	945+00	150 (150x2=300)	$\frac{10+6}{2}$=8.0	133	300	
945+00	947+96.97	296.97 (296.97x2=593.94)	5.0	165	594	
947+96.97	952+00.05	Bridge Nº COL-30-3500				
952+00.05	956+37.5	437.45 (437.45x2=874.9)	5.0	243	875	
TOTALS			Rural	5716	0	
			Municipal	1271	8561	

Quantities Carried To General Summary

MEDIAN DRAINAGE ITEM

PLAN SHEET Nº	REF. Nº	DETAIL SHEET Nº	STRUCTURE LOCATION	I-3 Grade Side Of ℄	*Max. Depth of Exist. Drainage Struc.	ITEM 604 I-3 Median Inlets: I-3A As Per Plan EACH	ITEM 604 I-3 Median Inlets: I-3 D Mod. EACH	ITEM 603 CONDUIT Type B: 6" LF	12" LF	15" LF	18" LF	30" LF	ITEM-202 Manhole Removed EACH	Inlet Removed EACH	Pipe Removed 15" & Under LIN. FT.	Pipe Removed Over 15" LIN. FT.	
21	1-MD		800+75	Lt.	5.0	1		4	4	4				1	12		Rural
22	2-MD		804+91	Lt.	8.2	1				4		8	1		4	8	
23	3-MD		824+00	Lt.	5.0	1			4					1	4		
23	4-MD		826+00	Lt.	5.0	1		8	8					1	16		
23	5-MD		828+50	Lt.	5.0	1			4					1	4		
23	6-MD		829+50	Lt.	5.0	1		4	8					1	12		
24	7-MD		837+00	Rt.	5.0	1			4					1	4		
24	8-MD		840+50	Rt.	5.0	1			4					1	4		
24	9-MD		841+50	Rt.	4.6	1		4	4					1	8		
25	10-MD		862+00	Rt.	5.0	1			4					1	4		
26	11-MD		865+00	Rt.	5.0	1		4	4					1	8		
26	12-MD		870+50	Lt.	5.0	1			4					1	4		
26	13-MD		874+50	Lt.	5.0	1			4					1	4		
26	14-MD		876+00	Lt.	8.4	1		4				8		1	4	8	
28	15-MD		900+70	Rt.	5.5	1					8			1		8	Municipal
28	16-MD	40	905+70	Rt.	6.8		1	4	4					1	8		
28	17-MD	40	907+75	Rt.	4.1		1	4	4					1	8		
31	18-MD	41	945+24.25	For Quantities, See Sheet Nº 41													
TOTALS						Rural		14	0	28	56	8	0	16	1	13	92	16	
						Municipal		1	2	8	8	0	8	0	0	3	16	8	

Quantities Carried To General Summary

* Maximum Depth Of Existing Drainage Structure Measured From ℄ Of Window To Invert Of R.S. Inlet or Manhole

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Cal. By DAE 10-23-81
Ck'd By REM 10-24-81
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Ck'd By WSR 5-11-84

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

19

COL-30-32.19

GENERAL SUMMARY

SHEET NUMBERS

ITEM	RURAL 5	6	8	11	16	17	18	41	42	43	45	47	MUNICIPAL 5	6	8	11	16	17	18	41	42	43	45	47	ITEM	SUB TOTAL Rural	SUB TOTAL Municipal	TOTAL QUANT.	UNIT	DESCRIPTION
																														ROADWAY
202							92												16	18					202	92	34	126	Lin.Ft.	Pipe Removed, 15" and Under
202							16												8						202	16	8	24	Lin.Ft.	Pipe Removed, Over 15"
202					650												1062								202	650	1062	1712	Sq.Yd.	Wearing Course Removed
202																201			8561				10	417	202		9189	9189	Lin.Ft.	Curb Removed
202							5716									24			1271					28	202	5716	1323	7039	Sq.Yd.	Concrete Median Pavement Removed
202																								2	202		2	2	Each	Paved Shoulder Inlets Abandoned
202						12687.5												10212.5							202	12687.5	10212.5	22900	Lin.Ft.	Guardrail Removed For Storage
202						8612												2675.5							202	8612	2676	11288	Lin.Ft.	Guardrail Barrier Design Removed For Storage
202																		13							202		13	13	Each	Guardrail Post Removed
202							1																		202	1		1	Each	Manhole Removed
202							13												3	1					202	13	4	17	Each	Inlet Removed
203					109												45								203	109	45	154	Sta.	Linear Grading, Method 1, As per Plan
203					26												23								203	26	23	49	Sta.	Linear Grading, Method 2, As per Plan
203																								62	203		62	62	Cu.Yds.	Excavation Not Including Embankment Construction
404		20												40											404	20	40	60	Cu.Yd.	Bituminous Concrete For Maintaining Traffic.
604		44												10											604	44	10	54	Each	Reference Monument Standard
606																		37.5							606		37.5	37.5	Lin.Ft.	Guardrail, Barrier Design, Type 5
606						13250												6139.03							606	13250.00	6139.03	19389.03	Lin.Ft.	Guardrail, Type 5, As Per Plan
606						13												16							606	13	16	29	Each	Anchor Assembly, Standard, Type A
606						13												18							606	13	18	31	Each	Anchor Assembly, Standard, Type T
606						2												1							606	2	1	3	Each	Bridge Terminal Assembly, Standard Type C
606																		2							606		2	2	Each	Bridge Terminal Assembly, Standard Type D
606																		2							606		2	2	Each	Bridge Terminal Assembly, Standard Type E
606						2												5							606	2	5	7	Each	Bridge Terminal Assembly, Standard Type J
612																				25					612		25	25	Sq.Yds.	Concrete Median, As per Plan
615		870												337											615	870	337	1207	Sq.Yd	Temporary Pavement, Class A
615		Lump												Lump											615	Lump	Lump	Lump	Lump	Temporary Roads
Spec.														1											Special		1	1	Each	Impact Attenuator Assembly, Sand Barrel System
																														EROSION CONTROL
659					24.15												51.54								659	24.15	51.54	75.69	Sq.Yd.	Seeding and Mulching
659					0.22												0.46								659	0.22	0.46	0.68	Ton	Commercial Fertilizer
659					1.09												2.32								659	1.09	2.32	3.41	Ton	Agricultural Liming

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FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

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COL-30-32.19

GENERAL SUMMARY

SHEET NUMBERS

ITEM	RURAL															MUNICIPAL															ITEM	SUB TOTAL Rural	SUB TOTAL Municipal	TOTAL QUANT.	UNIT	DESCRIPTION
	5	6	8	11		16	17	18		41	42	43		45	47	5	6	8	11		16	17	18		41	42	43		45	47						
																																			PAVEMENT
301																									2		5		6	31		301		44	44	Cu.Yd.	Bituminous Aggregate Base; AC-20, RT-11 or RT-12
310																					278									15		310		293	293	Cu.Yd.	Subbase, Type 1
402																									1		2		2	9		402		14	14	Cu.Yd.	Asphalt Concrete, AC-20
404						40															77				1		1		2	8		404	40	89	129	Cu.Yd.	Asphalt Concrete, AC-20
404						272															111											404	272	111	383	Cu.Yd.	Asphalt Concrete, AC-20, As Per Plan
407						130															214									2		407	130	216	346	Gal.	Tack Coat
407						5															8											407	5	8	13	Ton	Cover Aggregate
408						98															40											408	98	40	138	Gal.	Bituminous Prime Coat, As Per Plan
609																														10		609		10	10	Lin.Ft.	Curb, Standard Type 6
609																			93													609		93	93	Lin.Ft.	Curb, Standard Type 8
622																							1037									622		1037	1037	Lin.Ft.	Concrete Barrier, SSH Type A
622								8336.5															2166.42									622	8335.5	2166.42	10501.92	Lin.Ft.	Concrete Barrier, SSH Type A, Modified As Per Plan
622																							3250									622		3250	3250	Lin.Ft.	Concrete Barrier, SSH Type D
622			1490																													622	1490		1490	Lin.Ft.	Temporary Concrete Barrier
																																			DRAINAGE
603								28															8									603	28	8	36	Lin.Ft.	6" Conduit, Type B
603								56															8		21							603	56	29	85	Lin.Ft.	12" Conduit, Type B
603								8																								603	8		8	Lin.Ft.	15" Conduit, Type B
603																							8									603		8	8	Lin.Ft.	18" Conduit, Type B
603								16																								603	16		16	Lin.Ft.	30" Conduit, Type B
604																									1							604		1	1	Each	Inlet, Standard No. I-3A, Modified As Per Plan
604								14															1									604	14	1	15	Each	Inlet, Standard Nº I-3A, As Per Plan
604																							2									604		2	2	Each	Inlet, Standard Nº I-3D, Modified As Per Plan
Spec.	30															70																Special	30	70	100	Hour	Law Enforcement Officer with Patrol Car
614		Lump															Lump															614	Lump	Lump	Lump	Lump	Maintaining Traffic
623																																623	Lump	Lump	Lump	Lump	Construction Lay-Out Stakes
624	Lump															Lump																624	Lump	Lump	Lump	Lump	Mobilization
																																619	Lump	Lump	Lump	Lump	Field Office

TRAFFIC CONTROL
(For Quantities See Sheet Nº 48)

LIGHTING
(For Quantities See Sheet Nº 60)

STRUCTURES OVER 20' SPAN

COL-30-3269	See Sheet Nº 69
COL-30-3500	See Sheet Nº 72
COL-7-0626L	See Sheet No 74

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FHWA REGION	STATE	PROJECT	
5	OHIO		

21

COL-30 32.19

N

BEGIN WORK
STA. 800+00
S.L.M. 32.19

END SHEET STA. 804+00

"RAMP A"

Ramp "D"

S.R. 170

Calcutta

To Calcutta

C.S. 798+47.37

ST. 801+47.37

CURVE DATA:
PI - 791+60.35
Δ = 44°13'Rt.
D = 2°30'
L = 300'
Es = 183.64'
Ts = 10 81.65'
Vr = 1408.67'
R = 2291.83'

SIGN LEGEND
(Applies To Sheet Nos 21 thru 39.)

~ New Signs

~ Existing Sign (To be removed)

~ Existing Sign (To be removed and reerected)

FOR PLAN QUANTITIES, SEE SHEET NOS. 19 & 20

For Guardrail Quantities, See Sheet No. 17
For Median Drainage Quantities, See Sheet No. 18
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STA. 800+00 TO STA. 804+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

22

COL-30-32.19

N

EXIT

GF 72"x60"
807+00
Erect New Sign on New Support

EXIT

807+00
2-4" Post Driven
Remove Sign & Support

805+52
1-4" Post Driven
Remove Sign & Support

PT 15+92.52

PC 16+98.94

816+90
1-3" Post Driven
No Work
To Be Removed By Others

ROUGH ROAD

RAMP "A"

RAMP "D"

805 806 807 808 809 810 811 812 813 814 815 816 817 818

13 14 15 16 17 18 20 21 22 23

YIELD

805+52
2-4" Post Driven
Remove Sign & Support

BEGIN SHEET STA. 804+00

END SHEET STA. 819+00

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STA. 804+00 TO STA. 819+00

FHWA REGION	STATE	PROJECT		23
5	OHIO			

COL-30-32.19

N
BEGIN SHEET STA. 819+00
END SHEET STA. 834+00
T.S. 819+60.00
S.C. 823+60.00
C.S. 826+12.5
S.T. 830+12.50
P.C. 833+82.50
Ramp "A"
Hill Ave
Calcutta
E. Palestine
GE 13'×10'
820+00 Erect New Sign on New Supports
13.5'×7.0'
E. PALESTINE
RIGHT LANE
824+96
2-1.5'×2.5' Conc. Base
Remove Existing Overhead Sign & Support
NEXT RIGHT
GE ~ 13'×10'
830+00
Erect New Sign on New Supports
EMERGENCY AND AUTHORIZED VEHICLES ONLY
829+97
1-3# Post, Driven
Remove Sign & Support
CURVE DATA:
P.I. - 824+92.96
Δ = 26°06' Rt.
D = 4°00'
Ls = 427.5'
Es = 532.96'
Ts = 252.50'
L = 1432.40'
R = 1432.40'
EAST
SOUTH
822+66
3-4# Post, Driven
Remove Signs & Supports
M-39-30
M-1-30
M-38-30
M-2-30
822+66
Erect New Signs on New Supports
SPEED LIMIT 55
827+75
1-8# Post Driven
Remove Sign & Support
R-10-36
827+75
Erect New Sign on New Support
830+23
1-3# Post Driven
Remove Sign & Support

For Bridge No. Col-30-3269 (Hill Ave.) Maintenance of Traffic, See Sheet Nos. 8-10
For Bridge No. Col-30-3269 (Hill Ave.) Plan Sheets, See Sheet Nos. 57-58 & 59

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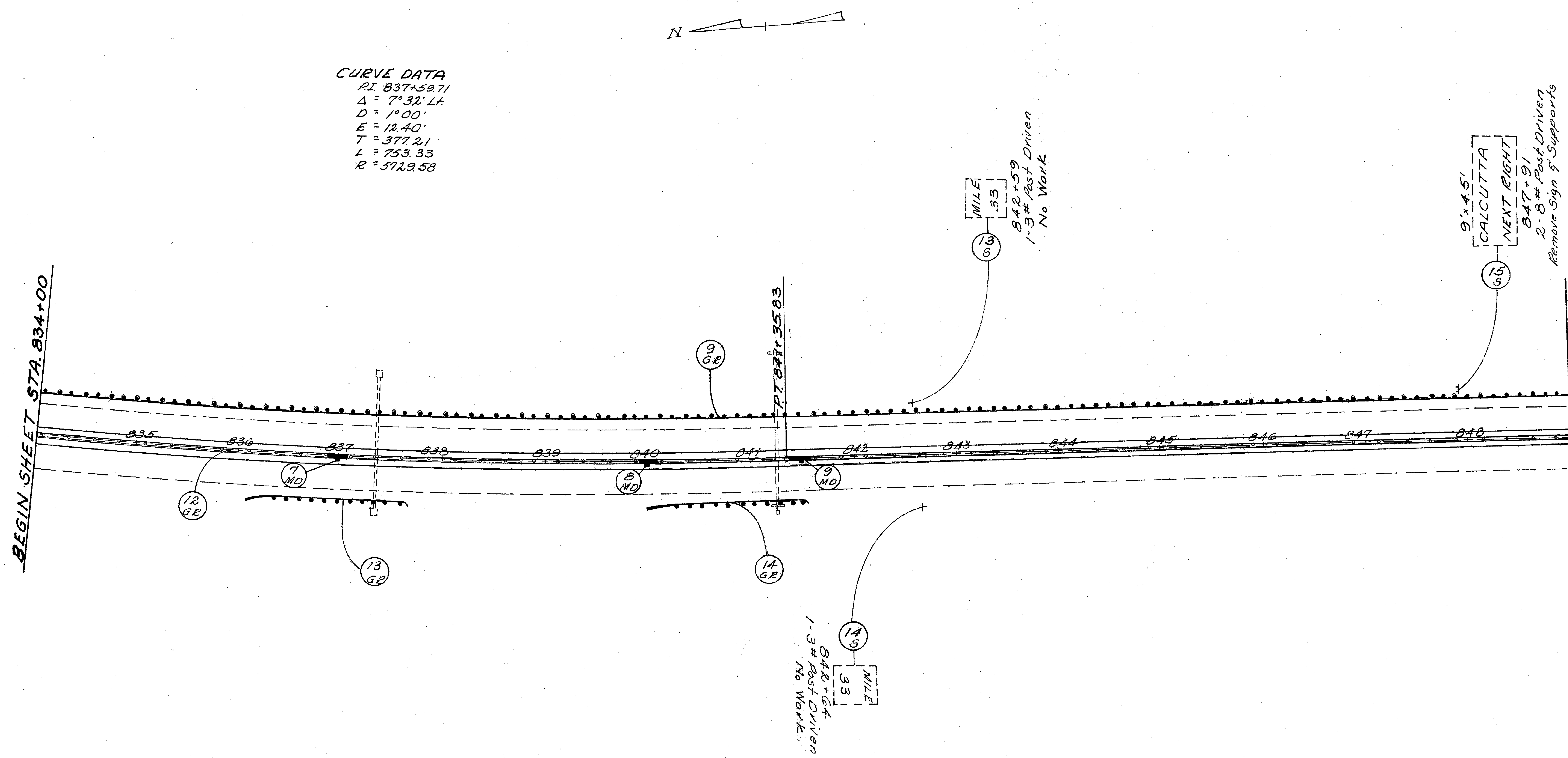
STA. 819+00 TO STA. 834+00

FHWA REGION	STATE	PROJECT		
5	OHIO			

COL-30-32.19



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STA 834+00 TO STA 849+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

25

COL-30-32.19

N

BEGIN SHEET STA. 849+00

END SHEET STA. 864+00

CURVE DATA:
PI - 860+38.82
Δ = 24°00'30" Lt.
D = 4°00'
Ls = 400'
Es = 36.78'
Ts = 505.43'
L = 200.21'
R = 1432.40'

170
E. PALESTINE
EXIT 1 MILE
EXIT 1+98
8G0+17 Beams
2-W8×17 Supports
Remove Sign & Supports

170
Calcutta
E. Palestine
EXIT 1 MILE
13×10'
8G0+98
8G0 New Sign on
Erect New Supports

16 GR

12 GR

9 GR

15 GR

10 MO

T.S. 855+33.39

S.C. 859+33.39

C.S. 861+33.60

850 851 852 853 854 855 856 857 858 859 860 861 862 863

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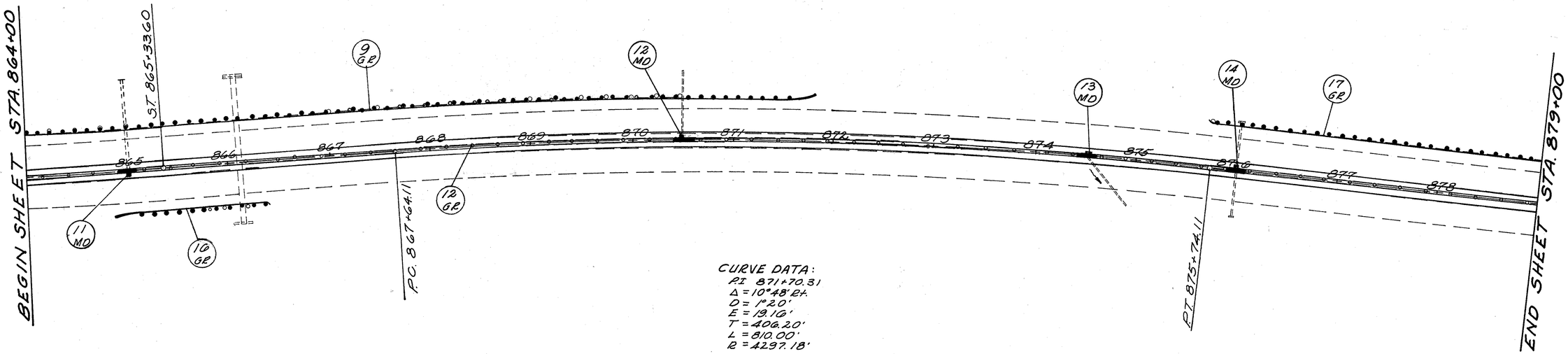
STA. 849+00 TO STA. 864+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

26

COL-30-32.19

N



CURVE DATA:
PI 871+70.31
Δ = 10°48'24"
D = 1°20'
E = 19.16'
T = 406.20'
L = 810.00'
R = 4297.18'

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STA. 864+00 TO STA. 879+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

27

COL-30-32.19

N

SPEED LIMIT 55
R10-36
887+39
2-G# Post Driven
Remove Sign & Support
Erect New Sign on New Supports

SPEED LIMIT 55
887+39
2-G# Post Driven
Remove Sign & Support

18 G

17 GE

CORPORATION LINE

BEGIN SHEET STA. 879+00

END SHEET STA 895+00

880 881 882 883 884 885 886 887 888 889 890 891 892 893 894

M.H.

18 GE

12 GE

17 G

NO U TURN
887+39
1-3# Post
Remove Sign & Support

19 G

MAINTENANCE AND EMERGENCY VEHICLES ONLY
887+81
1-3# Post
Remove Sign & Support

EAST LIVERPOOL

20 G

93' x 30'
EAST LIVERPOOL
COR. LIMIT
888+00
2-G# Post Driven
Remove Sign & Support

EAST LIVERPOOL
CORP. LIMIT
GN-9'x3'
888+00
Erect New Sign on New Supports

19 GE

21 G

2- 3" Sq. Post
No Work
892+92

22 G

EAST LIVERPOOL
JAMES BENNETT
Founded
OHIO POTTERY
INDUSTRY

SOUTH WEST
7 Wellsville 39
EXIT 1 MILE
GB-12x9.5'
892+75
Erect New Sign on New Supports

20 GE

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STA. 879+00 TO STA. 895+00

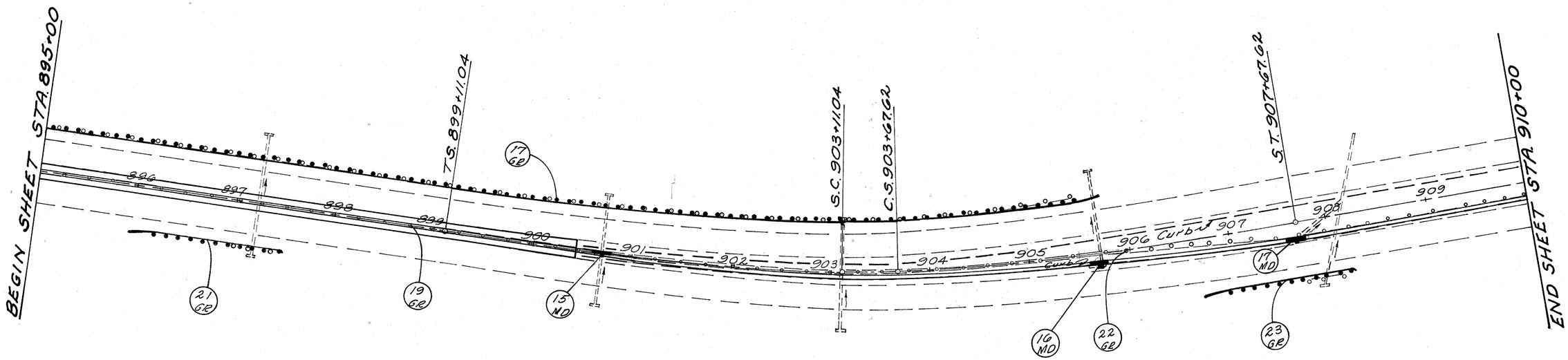
FHWA REGION	STATE	PROJECT	
5	OHIO		

28

COL-30-32.19

N

SPIRAL CURVE
P.I. 903+41.90
Δ = 18°15'47" LT.
D = 4°00'
Ls = 400'
R = 1432.40'
LC = 399.65'
ST = 133.58'
LT = 266.94'



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STA. 895+00 TO STA. 910+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

29

COL-30-32.19

N

14'x4'
16
43
Lisbon
Youngstown
GJ
916+00
Erect New Sign On
New Supports

56 S

24 GE

BEGIN SHEET STA. 910+00

911 912 913 914 Curb 915 916 917 918 919 920 921 922 Curb 923 924

22 GE

T.S. 912+87.78

S.C. 916+87.78

SPIRAL CURVE
P.I. 918+47.45
Δ = 28°06'45" Rt.
D = 4°00'
Ls = 400.00'
R = 1432.40'
L.C. = 399.65
S.T. = 133.58
L.T. = 266.94

C.S. 919+90.59

S.T. 923+90.59

23 GE

END SHEET STA. 925+00

23 S

35 MPH ZONE AHEAD
918+25
1-3rd Post Driven
Remove Sign & Support

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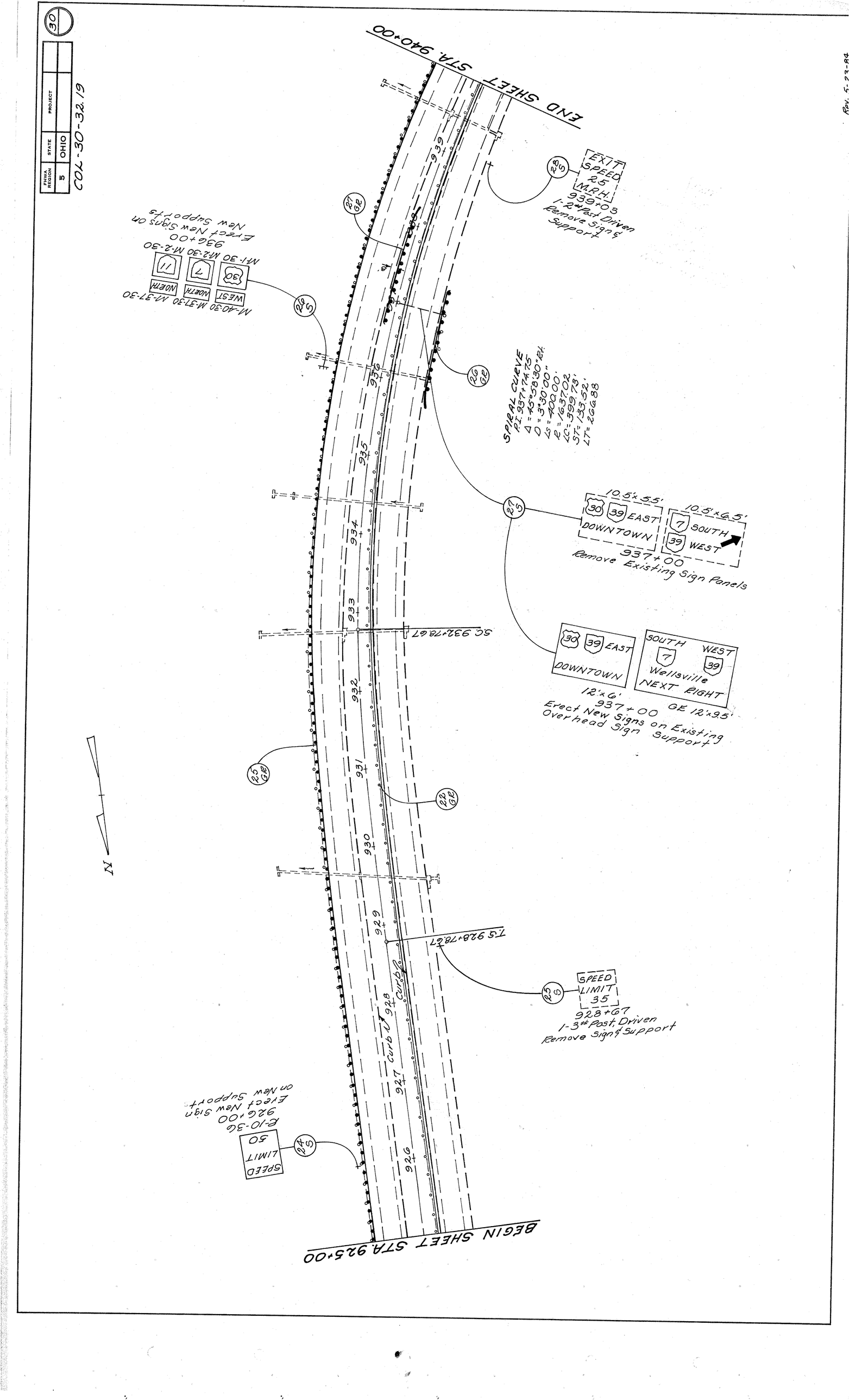
STA 910+00 TO STA 925+00


30
FHWA REGION 5
STATE OHIO
PROJECT
COL-30-32.19
END SHEET STA. 940+00
939
938
937
936
935
934
933
932
931
930
929
928
927
926
EXIT SPEED 25 M.P.H.
939+03
1-2" Post Driven
Remove Sign & Support
28 S
22 GE
SPIRAL CURVE
R1 937+74.75
Δ = 45°58'30" Rt.
D = 3°30'00"
Ls = 400.00'
R = 1637.02'
Lc = 399.73'
ST = 133.52'
LT = 266.88
26 GE
M-40-30 M-37-30 M-37-30
WEST NORTH NORTH
30 7 11
M-1-30 M-2-30 M-2-30
936+00
Erect New Signs On New Supports
26 S
10.5'x5.5'
30 39 EAST DOWNTOWN
10.5'x6.5'
7 SOUTH
39 WEST
937+00
Remove Existing Sign Panels
27 S
SC 932+78.67
30 39 EAST DOWNTOWN
SOUTH 7 WEST 39
Wellsville NEXT RIGHT
12'x6' GE 12'x9.5'
937+00
Erect New Signs on Existing Overhead Sign Support
23 GE
22 GE
N
T.S 928+78.67
85 S
SPEED LIMIT 35
928+67
1-3# Post Driven
Remove Sign & Support
curve 928+
curve 927+
E-10-30
926+00
Erect New Sign on New Supports
SPEED LIMIT 50
24 S
BEGIN SHEET STA 925+00
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FHWA REGION	STATE	PROJECT	
5	OHIO		

31

COL-30-32.19

BEGIN SHEET STA. 940+00

END SHEET STA. 946+00

RAMP "D"

Curb ℄

941

942

943

944

945

Curb R

N

DETOUR 45

940+26 Driven
1-2"ø Post
No Work

29 S

25 GR

22 GR

SPEED LIMIT 50

30 S

940+88
940 #Post Driven
1-4" ø Post
Remove Sign & Support

SPIRAL CURVE
P.I. 937+74.75 Rt.
Δ = 45°58'30" Rt.
D = 3°30'00"
Ls = 400.00'
R = 1637.02'
LC = 399.73'
ST = 133.52'
LT = 266.88

31 S

STEUBENVILLE
WELLSVILLE

941+36
3-8"ø Post Driven
Remove Sign & Supports

C.S. 941+92.24

32 S

W-97-48
942+00
Erect New Sign on
New Supports

EXIT
25
MPH

28 GR

33 S

SLIPPERY
WHEN
WET

943+31
1-3"ø Post Driven
Remove Sign & Support

NINTH ST. 15

941+50 GR
37.50 Offset

WEST 30

NORTH 7

NORTH 11

35 S

945+92
Mounted on Exist. Light Pole
Remove Existing Signs

Ramp D

0'

943+97.27
GR Offset

30 GR

18 MD

31 GR

32 GR

944+50
37.50 Offset

34 S

SOUTH WEST
Wellsville
7
39

GF 14" x 75
945+30
Erect New Sign on
Existing 9th St. Bridge

29 GR

945+50
54' Offset

ST. 945+92.24
16"
PC. 0+00 Ramp D

Scale : 0 20' 40'

Rev. 5-23-84

STA 940+00 TO STA 946+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

COL-30-32.19

For Ramp C&D Curb & Conc. Median Removals, See Sheet No 47

Rev. 5-23-84

STA. 946+00 TO STA. 952+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

33

COL-30-32.19

BEGIN SHEET STA. 952+00

END SHEET STA. 958+00

RAMP "A"

RAMP "B"

Decel. Lane

Concrete Retaining Wall Type 6 Curb

S.C. 956+46.90

952

953

954

955

956

957

958

42 GR

44 G

45 G

40 GR

41 GR

43 GR

45 GR

44 GR

46 G

38 G

39 G

W-49 E-48
952+00
Erect New Sign On New Supports

SOUTH 7 WEST 39
LISBON 30
YOUNGSTOWN 7 11
953+00
Existing Overhead Sign Support
Remove Existing Sign Panels

SOUTH 7 WEST 39
Wellsville
WEST NORTH 7 11
30
953+00
17'x5' GF 12'x9.5'
Erect New Signs On Existing Overhead Sign Support

REDUCE SPEED 35 AHEAD
P-11A-36
957+00
Erect New Sign On New Supports

REDUCE SPEED 35 AHEAD
P-11A-36
1+00
Erect New Sign on New Supports

NO LEFT TURN
1+19
1-4" Post Driven
Remove Sign & Support

Scale: 0' 20' 40'

Rev. 5-23-84

STA. 952+00 TO STA. 958+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

34

COL-30-32.19

BEGIN SHEET STA. 958+00

STEUBENVILLE WELLSVILLE
959+10
3-8# Post Driven
Remove Sign & Supports

WEST 39
SOUTH 7
Wellsville NEXT
WEST NORTH 7 7 30
GE 12'x9.5' Existing
GG 13'x5.5' 963+00 Sign Supports
Erect New Sign
Overhead

N

SPIRAL CURVE
PI Sta. 961+30.24
Δ = 90°00' Rt.
D = 8°30'00"
Ls = 400.00'
R = 674.02'
LC = 398.44'
ST = 134.46'
LT = 267.91'

8.5'x9' SOUTH 7
8.5'x9' WEST 39
KEEP RIGHT
963+00 Sign Support
WEST NORTH 30 7 7
Existing Overhead Sign Portal
Remove Sign

END WORK
STA. 963+66.31
SLM 35.29

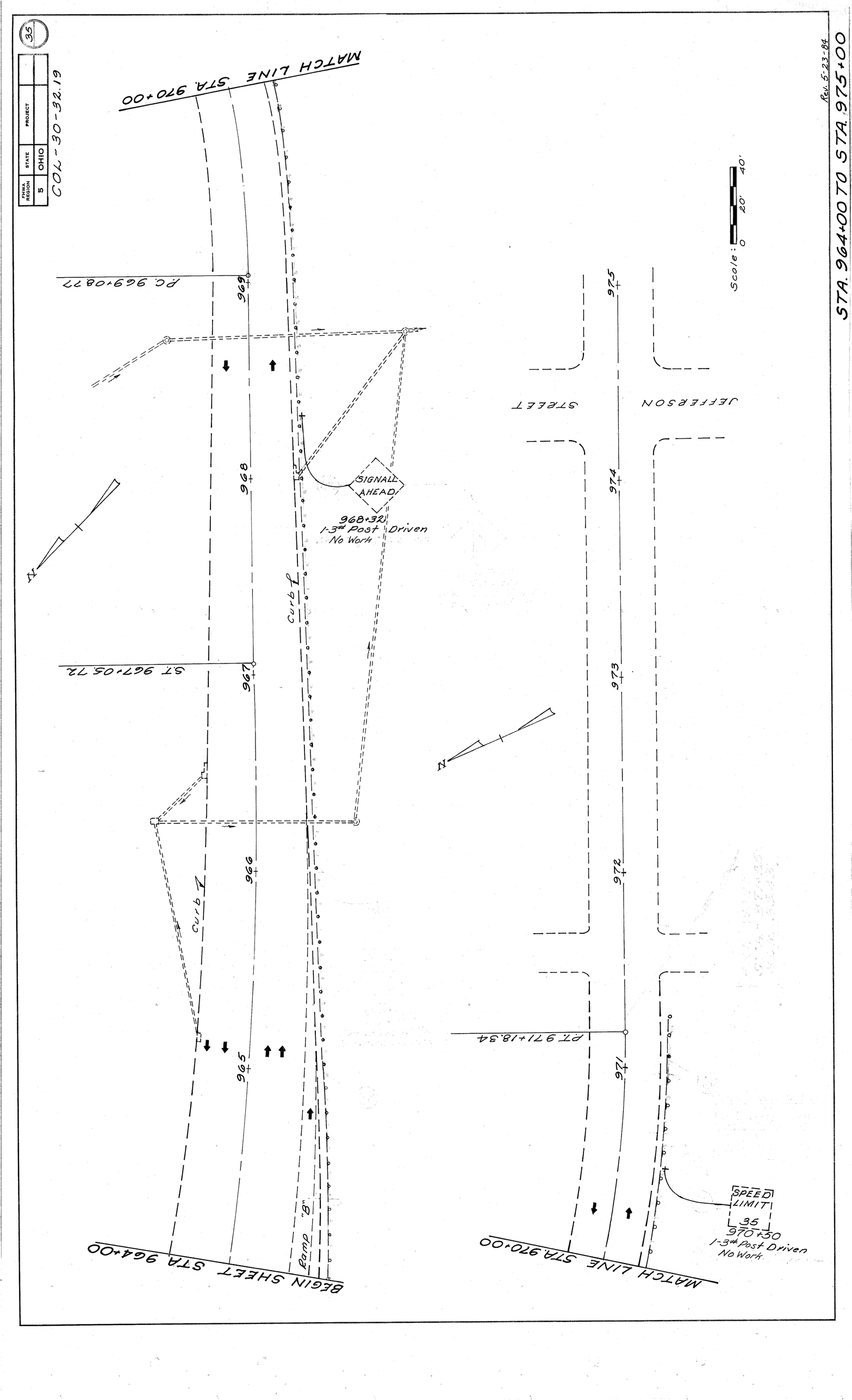
END SHEET STA. 964+00

Concrete Retaining Wall
Type G Curb
959
960
961
962
RAMP "B"
Curb
NH
43 GE
44 GE
47 GB
47 GS
48 GS
49 GS
50 GS
47 GB
963+41.25
47'0ff-set
963+66.31
49'0ff-set
KEEP RIGHT
963+55 2 Driven
963 Post
2-3# Posts
No Work
O.C.S. 963+05.72
963+35.44 Offset
END WORK STA. 964+00
NEWELL BRIDGE
ROAD NARROWS
SPEED LIMIT 35
963+95
1-3# Post Driven
No Work
NO LEFT TURN
963+00
Mounted On Existing
Overhead Sign Support
No Work
I-3# Post Driven
8+95
Remove Sign & Support
W-49R-48
958+00
Erect New Sign
On New Supports
E.2-48
8+85
Erect New Sign On
New Supports
YIELD
YIELD
MH

Scale: 0 20' 40'

Rev. 5-23-84

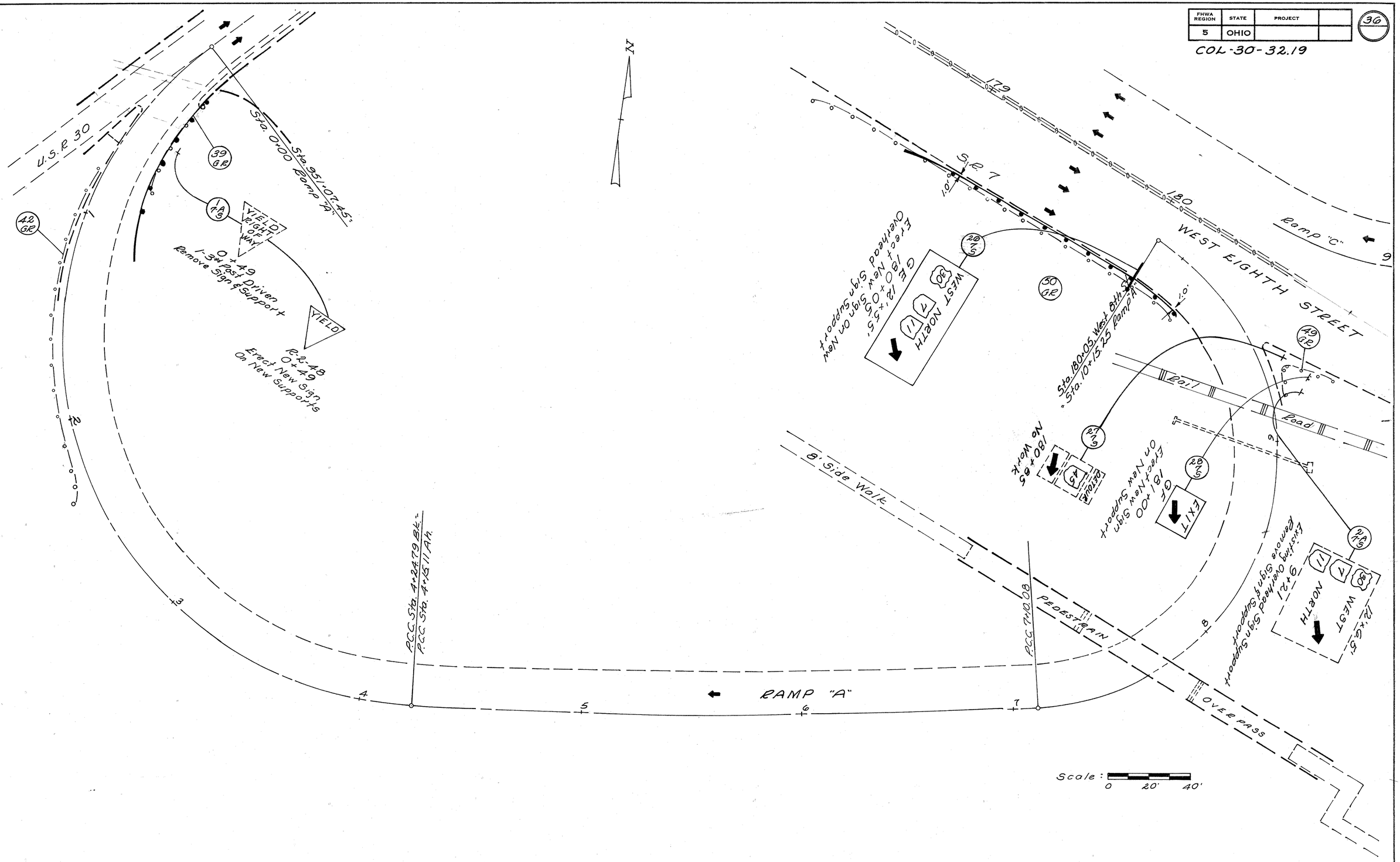
STA. 958+00 TO STA. 964+00


35
FHWA REGION 5
STATE OHIO
PROJECT COL-30-32.19
Rev. 5-23-84
STA. 964+00 TO STA. 975+00
MATCH LINE STA. 970+00
Scale: 0 20' 40'
JEFFERSON STREET
PC. 969+08.77
ST. 967+05.72
PT. 971+18.34
SIGNALL AHEAD
968+32
1-3" Post Driven
No Work
Curb R
Curb L
Ramp "B"
SPEED LIMIT
35
970+50
1-3" Post Driven
No Work
BEGIN SHEET STA. 964+00
MATCH LINE STA. 970+00
965
966
967
968
969
971
972
973
974
975
N

FHWA REGION	STATE	PROJECT	
5	OHIO		

36

COL-30-32.19



Rev. 5-23-84

RAMP "A" STA. 0+00 TO STA. 10+15.25

FHWA REGION	STATE	PROJECT	
5	OHIO		

37

COL-30-32.19

RAMP "C"

946+

947+

U.S.R. 30 & S.R. 11

S.R. 7

30 GR

33 GR

34 GR

37 GR

N Sta. 947+63.15 = Ramp "C" Sta. 0+00

P.C.C. Sta. 4+76.50 Bk.: P.C.C. Sta. 4+64.81 Ahd.

W-45-48 Erect New Signs On New Supports

5+93 1-3# post Driven Remove Sign & Support

STOP AHEAD

W-1C-5

WRONG WAY R-41A-36

5+93 Erect New Sign On New Support

N-17-21 UCT

M-2-30-3 179+00 Erect New Signs On Existing Light Pole

Remove Existing Light Pole

JCT

267

179+00 Mounted On Existing Light Pole Remove Existing Signs

R-1-3G Erect New Signs on New Supports

STOP

DO NOT ENTER R-41B-30

ONE WAY R-43L-36

DBLE WAY R-43Z-36

8+25 1-3# post Driven Remove Sign & Support

8+71 1-3# post Driven Remove Sign & Support

8+25 Erect New Sign On New Support

8+71 Erect New Signs On New Supports

P.T. Sta. 9+60.74 West Eighth St.

5' Side Walk

Overhead Sign See Sh# — For Legend

177 178 179 180 181

WEST EIGHTH STREET

S.R. 7

10 Ramp "A"

END WORK ON S.R. 7 STA. 181+00

Scale: 0 20' 40'

Rev. 5-23-84

RAMP "C" STA. 0+00 TO STA. 9+60.74

FHWA REGION	STATE	PROJECT	
5	OHIO		

38

COL-30-32.19

M-1-30
M-30-24
M-2-30
M-25-24
M-2-30
M-29-24
173+70 Erect New Signs On Existing Signal Pole

173+70 Mounted On Signal Pole Remove Signs

WEST EAST

173+50 Mounted On Overhead Sign Support Remove Signs & Support

173+50 No Work

1-3"ø 172+48 Post Driven Rem. Signs & Support

M-2-30
M-27-24
M-2A-108
173+50 Erect New Signs on New Supports

M-2-30-3
M-2A-24

NO TURN ON RED 7 to 9 AM 2:30-4 PM
172+25 1-3"ø Post Driven Remove Sign & Support

NEWELL BRIDGE AUTOS TO PITTSBURG AND EAST
171+86 1-3"ø Post Driven Remove Sign & Support

EAST LIVERPOOL HIGH SCHOOL
171+37 1-3"ø Post Driven Remove Sign & Support

M-2-30
M-19-24
170+50 Erect New Signs On Existing Light Pole Mounted On Light Pole, Rem. Signs & Bracket

5' Conc. Walk

175
174
173
172
171
170
SR 7

M-2-30-3
174+30 Erect New Signs On Exist. Signal Pole

174+25 No Work

STOP
173+40 No Work

Concrete Walk

Sheet 32

MATCH LINE STA. 3+00

3+13.12 26' Offset PT. STA. 3+28.5

Mounted On Light Pole Rem. Signs & Bracket

KEEP RIGHT
173+60 No Work

STOP AHEAD
1-3"ø Post Driven
No Work

Existing Light Pole
Erect New Signs
M-2-30-3
M-2A-24

Existing Light Pole
Erect New Signs
M-2-30-3
M-2A-24

Mounted On Light Pole Remove Signs & Bracket

SOUTH WEST
M-2-24
M-2A-24

WEST SOUTH
M-2-24

172+12 Erect New Signs

171+70 Mounted On Light Pole Remove Signs & Bracket

52 GR
53 GR
51 GR

4'
8'
RAMP "D"

WRONG WAY
R-41A-36
8'x50
Erect New Signs On New Supports

END SHEET STA. 9+00 - STA 169+00

Scale: 0 20 40

SR. 267 LISBON ROAD

Rev. 5-23-84

RAMP "D" STA. 3+00 To STA. 9+00

FHWA REGION	STATE	PROJECT		
5	OHIO			

COL-30-32.19

BEGIN SHEET STA. 9+00, S.R.7 STA. 169+00
LISBON 17
YOUNGSTOWN 44
PITTSBURGH 40
K.S.U. CAMPUS
168+33
2-4# Post Driven
Remove Signs & Supports
D-1-72
D-1-72
D-1-72
Existing 6'x1'
LISBON 17
YOUNGSTOWN 44
PITTSBURGH 40
K.S.U. Campus
168+33
Erect New Signs & Reerect
K.S.U. Sign on New Supports
DETOUR
166+85
No Work
N
JCT.
267
166+85
1-3# Post Driven
NO WORK
JUNIOR
HIGH SCHOOL
5' Conc. Walk
SR 7
168
Conc. Divisor
167
166
165
164
S.R. 7 & S.R. 39
5' Conc. Walk
5' Conc. Walk
5' Conc. Walk
5' Conc. Walk
BEGIN WORK ON S.R.7
STA. 166+85
RAMP "D"
10
TO WELLSVILLE
STOP
9+89
1-3# Post Driven
No Work
STOP
9+89
1-3# Post Driven
No Work
DO NOT ENTER
167+35
1-3# Post Driven
No Work
NO U TURN
DETOUR
165+99
1-3# Post Driven
No Work
Scale:
0
20'
40

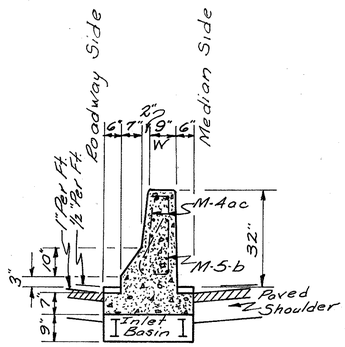
Rev. 5-23-84

RAMP "D" STA. 9+00 TO STA. 10+63

FHWA REGION	STATE	PROJECT	
5	OHIO		

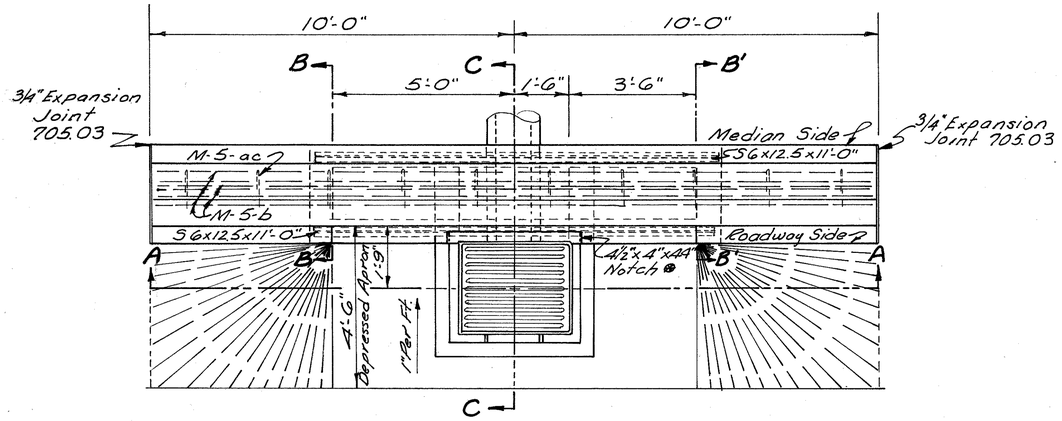
40

COL-30-32.19



SECTION B-B

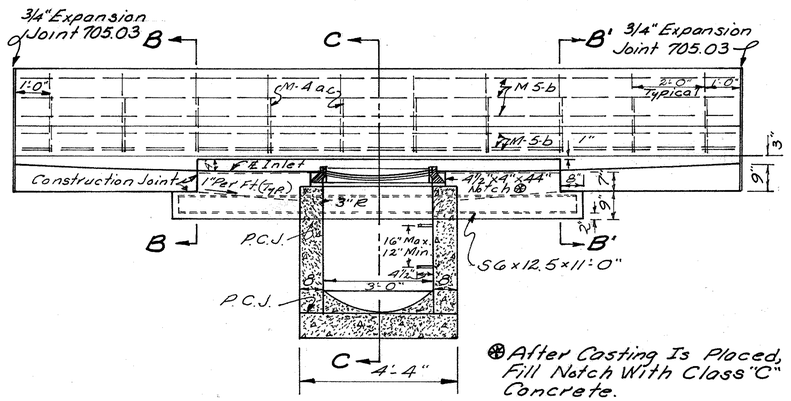
SECTION B'-B' SIMILAR BUT REVERSED



PLAN

SECTION C-C

STEEL LIST								
INLET Nº	W	M-4-ac		M-5-b		SG x 12.5	
		Nº	Lin. Ft.	Nº	Lin. Ft.	Nº	Lin. Ft.
I-3D	9"	10	6'-11"	11	19'-8"	2	11'-0"



⊛ After Casting Is Placed, Fill Notch With Class "C" Concrete.

ELEVATION A-A

Scale: 0 2 4

For Details Not Shown, Refer To Standard Drawing I-3

Rev. 5-23-84

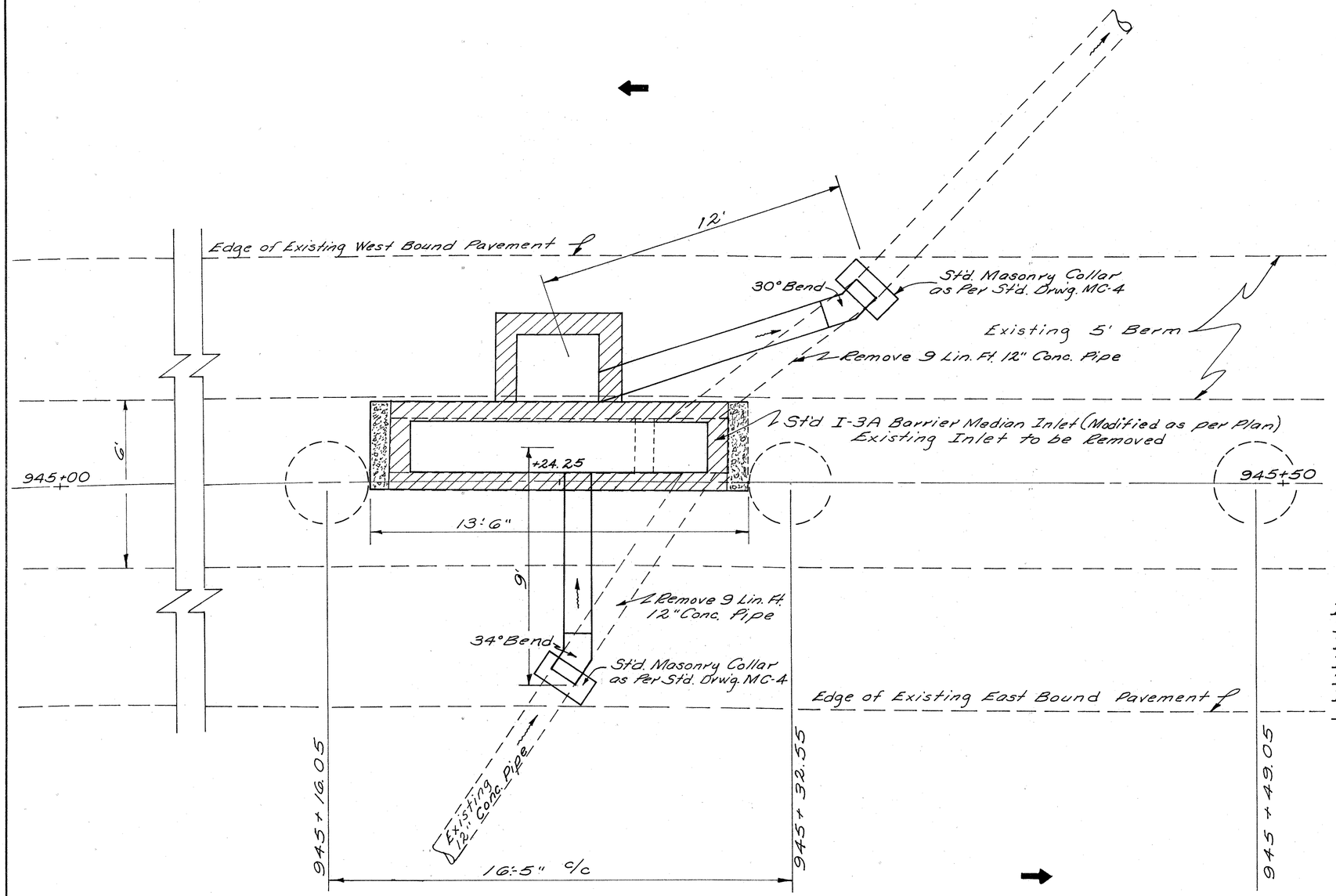
I-3D INLET, MODIFIED . . . AS PER PLAN

QUANTITIES	
Cal. by D.A.E.	Chk. by R.E.M.
Date 10-27-81	Date 10-28-81

FHWA REGION	STATE	PROJECT	
5	OHIO		

41

COL-30-32.19



Note: Berm replacement area estimated to be 80 Sq. Yds.
Replacement Composition shall be the Same as Shown on Sheet Nº 43

Item 301 (80 × .05 ÷ 27) = 1.5 Cu.Yds.
Item 402 (80 × 0.1458 ÷ 27) = 0.43 Cu.Yds.
Item 404 (80 × 0.1041 ÷ 27) = 0.31 Cu.Yds.

QUANTITIES

Item	202	Pipe Removed 12"	18 Lin. Ft.
Item	202	Inlet Removed	1 Each
Item	603	12" Conduit, Type B With Bedding	2.1 Lin. Ft.
Item	604	I-3A Barrier Median Inlet (Mod'f. as per Plan)	1 Each
Item	301	6" Bituminous Aggregate Base	2.0 Cu. Yds.
Item	402	1 3/4" Asphalt Concrete	0.5 Cu. Yds.
Item	404	1 1/4" Asphalt Concrete	0.5 Cu. Yds.

Quantities Carried To General Summary

Bends	30°	1 Each
Bends	34°	1 Each

18
MD

STA. 945 + 24.25
I-3A BARRIER MEDIAN INLET, MODIFIED A.P.P. Rev. 5-23-84

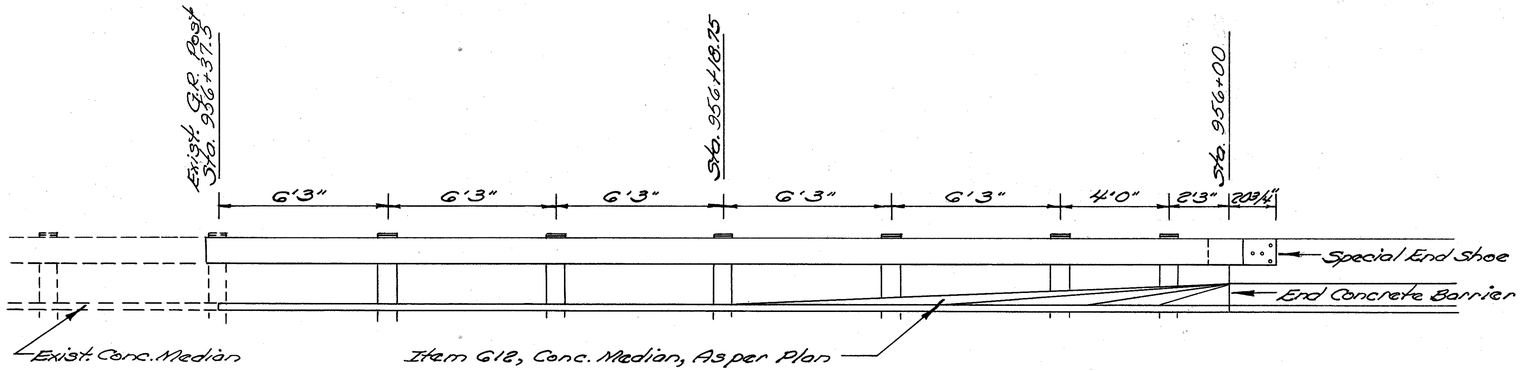
MEDIAN DRAINAGE DETAIL

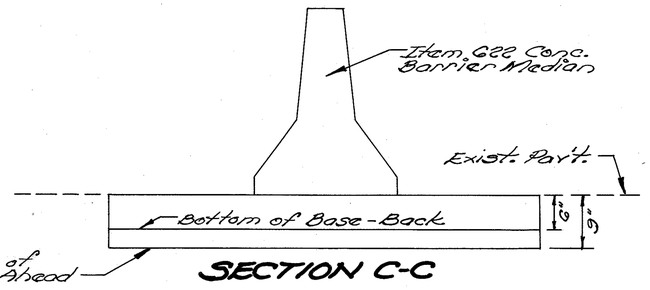
FHWA REGION	STATE	PROJECT	
5	OHIO		

COL-30-32.13

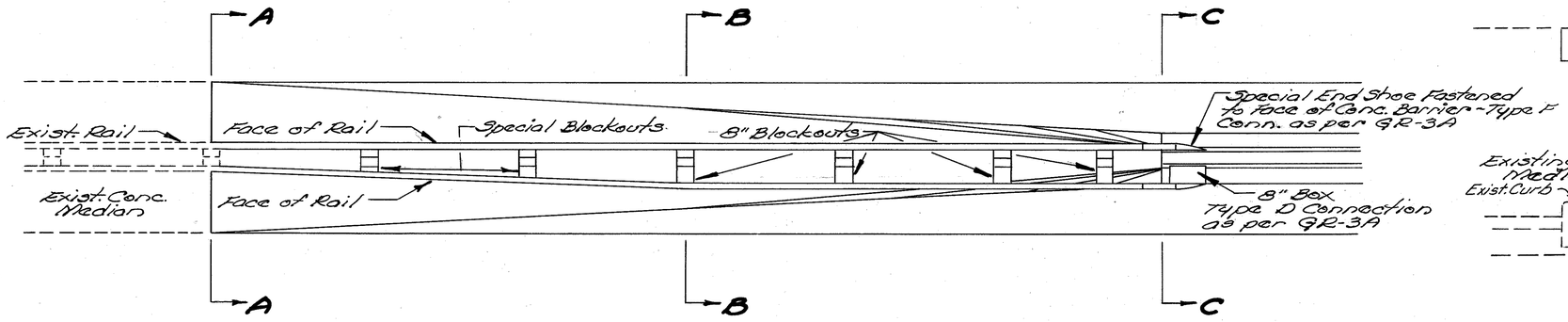
42

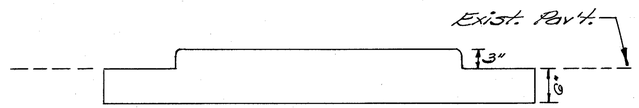
GUARDRAIL TO CONCRETE BARRIER CONNECTION DETAILS



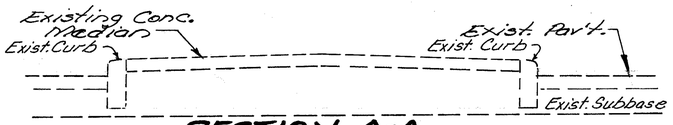


SECTION C-C





SECTION B-B



SECTION A-A

NOTE: Cost of all connections included in the unit price bid per lin. ft. for Item 622, Concrete Barrier, Type A, Modified.

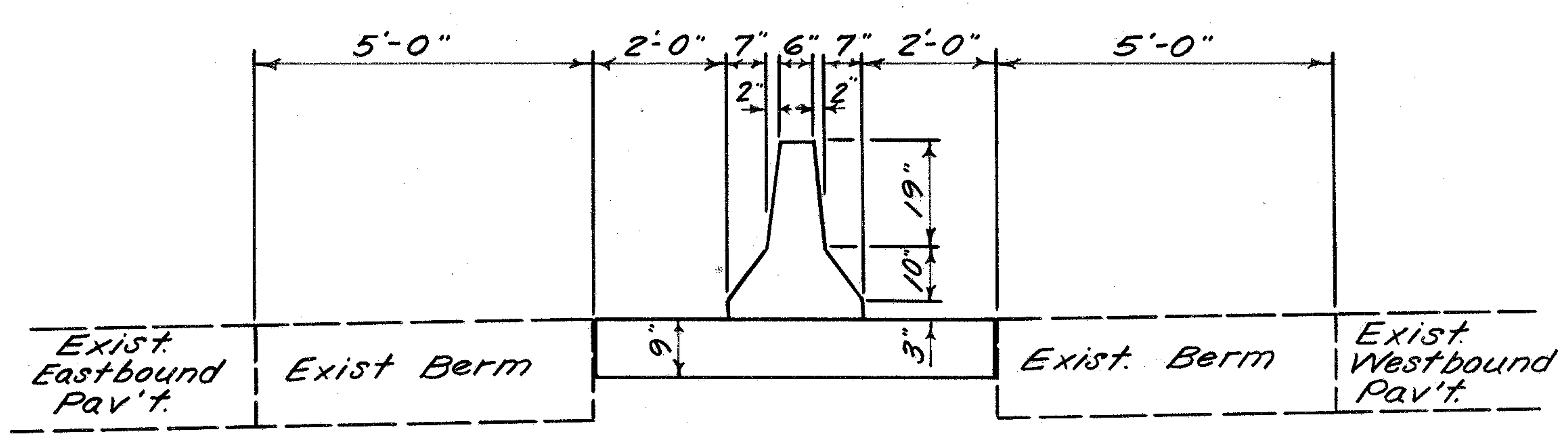
NOTE: Transition 612 Concrete Median to meet Concrete Barrier Median.

QUANTITIES

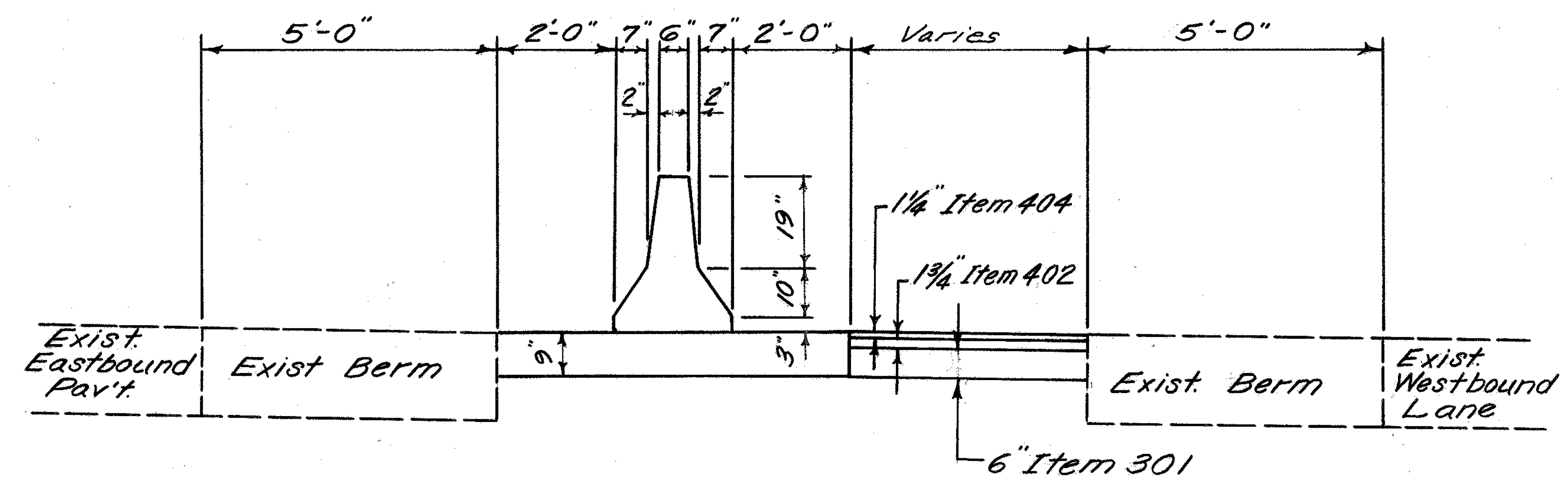
Item 612 - Concrete Median, As Per Plan = 25 Sq. Yd.
(37.5 Ft. × 6 Ft. ÷ 9 = 25 Sq. Yd.

Quantities Carried To General Summary
Guardrail Quantities Carried On Sheet No. 17

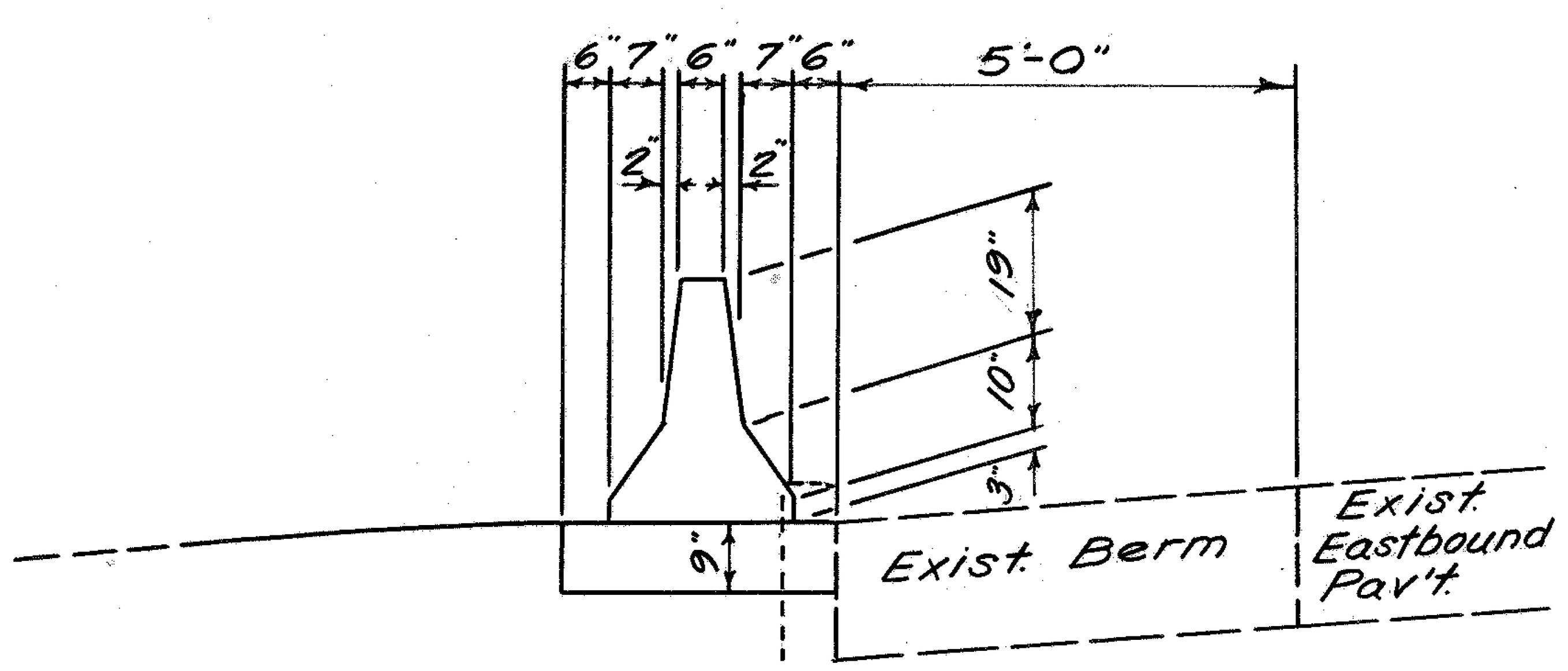
Rev. 5-23-84



SECTION A-A



SECTION B-B



SECTION C-C

QUANTITIES

Item 301 ~ Bituminous Aggregate Base	4.4	Cu. Yd.	[(118')($\frac{0+4}{2}$)($\frac{6}{12}$) ÷ 27 = 4.37 C.Y.]
Item 402 ~ Asphalt Concrete	1.3	Cu. Yd.	[(118')($\frac{0+4}{2}$)($\frac{1.75}{12}$) ÷ 27 = 1.27 C.Y.]
Item 404 ~ Asphalt Concrete	0.9	Cu. Yd.	[(118')($\frac{0+4}{2}$)($\frac{1.25}{12}$) ÷ 27 = 0.91 C.Y.]

Quantities Carried To General Summary.

Note: Concrete Barrier Quantities Carried on Sheet № 18.

Cal. By	CK'd By
J.C.N	DAE
9-24-81	10-23-81

CONCRETE BARRIER DETAIL
STA. 899+25 TO STA. 901+03

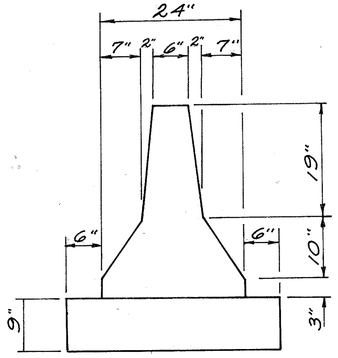
Rev. 5-23-84

CONCRETE BARRIER TRANSITION DETAIL

FHWA REGION	STATE	PROJECT	
5	OHIO		

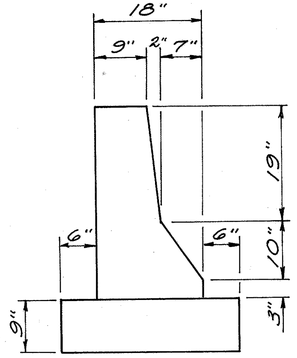
44

COL-30-32.19



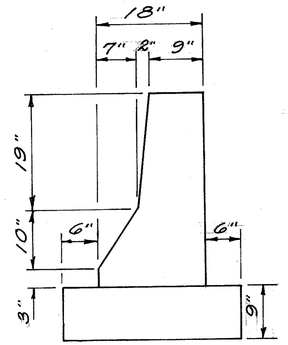
SECTION A-A

Scale: 0 1/2 1'



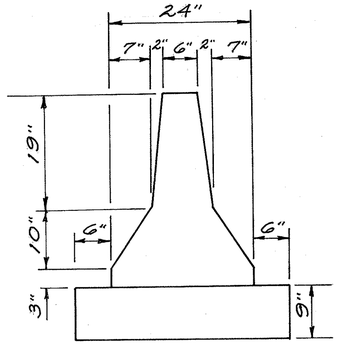
SECTION B-B

Scale: 0 1/2 1'



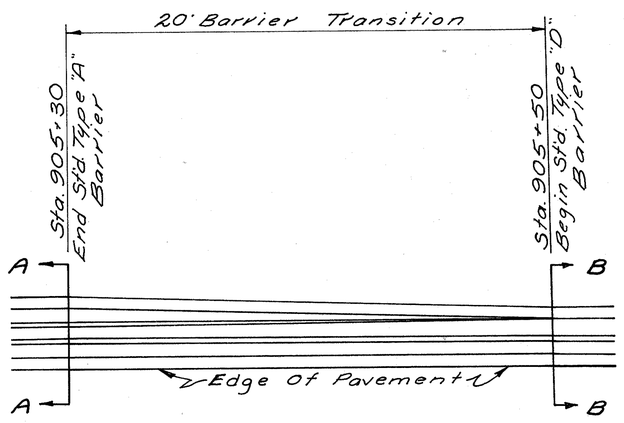
SECTION 'A'-'A'

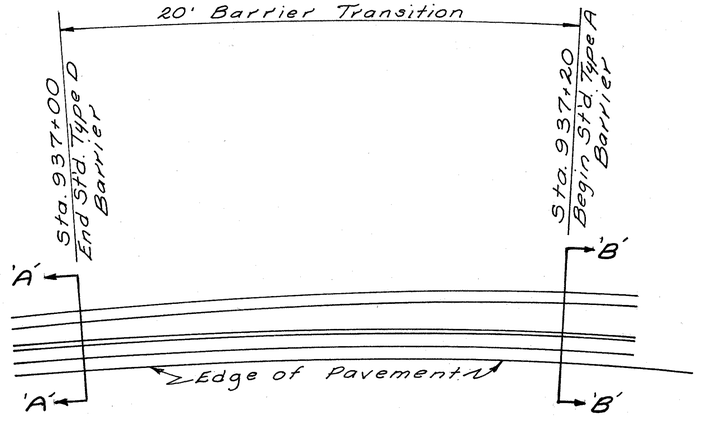
Scale: 0 1/2 1'



SECTION 'B'-'B'

Scale: 0 1/2 1'





STA. 905+30 TO STA. 905+50
STA. 937+00 TO STA. 937+20

Rev. 5-23-84

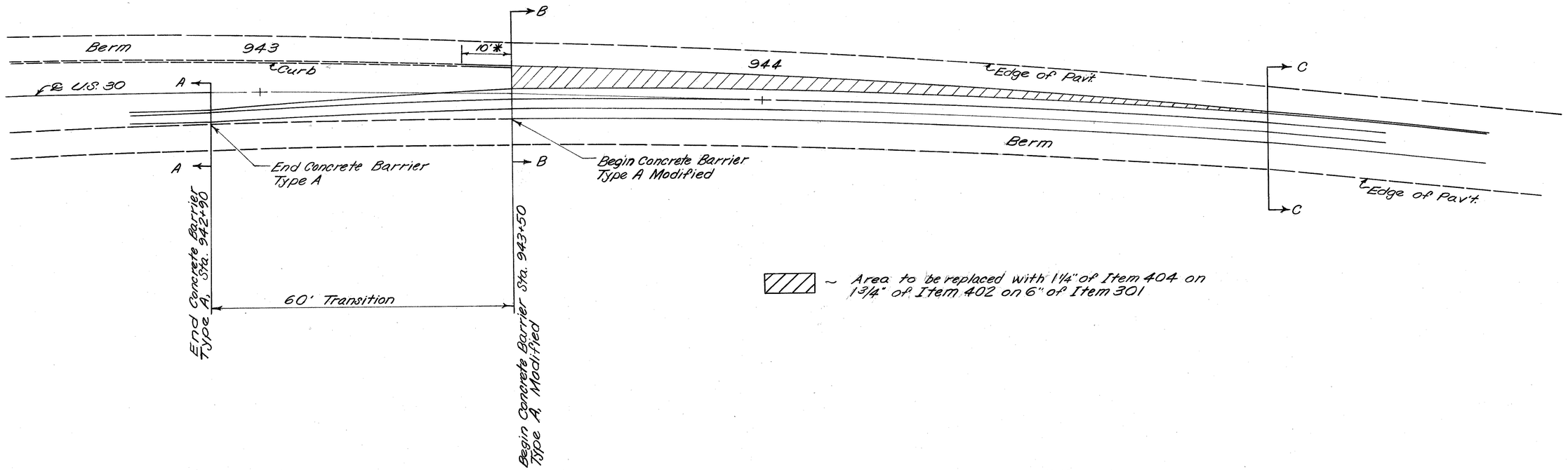
CONCRETE BARRIER TRANSITION DETAILS

FHWA REGION	STATE	PROJECT	
5	OHIO		

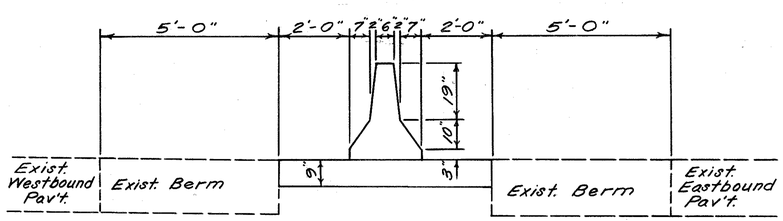
45

COL-30-32.19

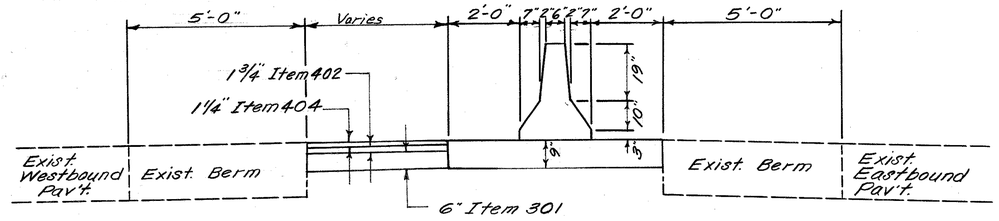
*Remove 10 L.F. of Curb and replace with 10 L.F. of Type 6 Curb with a curb Height Transition of 2" To 6" In 10 Ft.



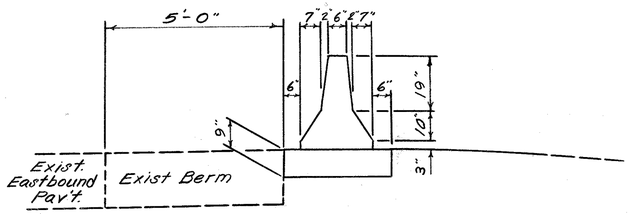
▨ ~ Area to be replaced with 1¼" of Item 404 on 1¾" of Item 402 on 6" of Item 301



SECTION C-C



SECTION B-B



SECTION A-A

QUANTITIES

Item 202 - Curb Removed	10	Lin. Ft.	
Item 301 - Bituminous Aggregate Base	5.6	Cu. Yd.	[*33.36 SY ($\frac{1\frac{1}{2}}{12}$) ÷ 3 = 5.56 C.Y.]
Item 402 - Asphalt Concrete	1.6	Cu. Yd.	[*33.36 SY ($\frac{4.75}{12}$) ÷ 3 = 1.62 C.Y.]
Item 404 - Asphalt Concrete	1.2	Cu. Yd.	[*33.36 SY ($\frac{4\frac{1}{2}}{12}$) ÷ 3 = 1.16 C.Y.]
Item 609 - Curb, Type 6	10	Lin. Ft.	

*Planimetered Area

Quantities Carried To General Summary (Municipal)

Note: Concrete Barrier Quantities Carried on Sheet No 18.

Cal. By	Ck'd By
J.C.N. 9-24-81	D.A.E. 10-23-81

CONCRETE BARRIER DETAIL STA. 942+90 TO STA. 945+00

Rev. 5-23-84

CONCRETE BARRIER TRANSITION DETAIL

FHWA REGION	STATE	PROJECT	
5	OHIO		

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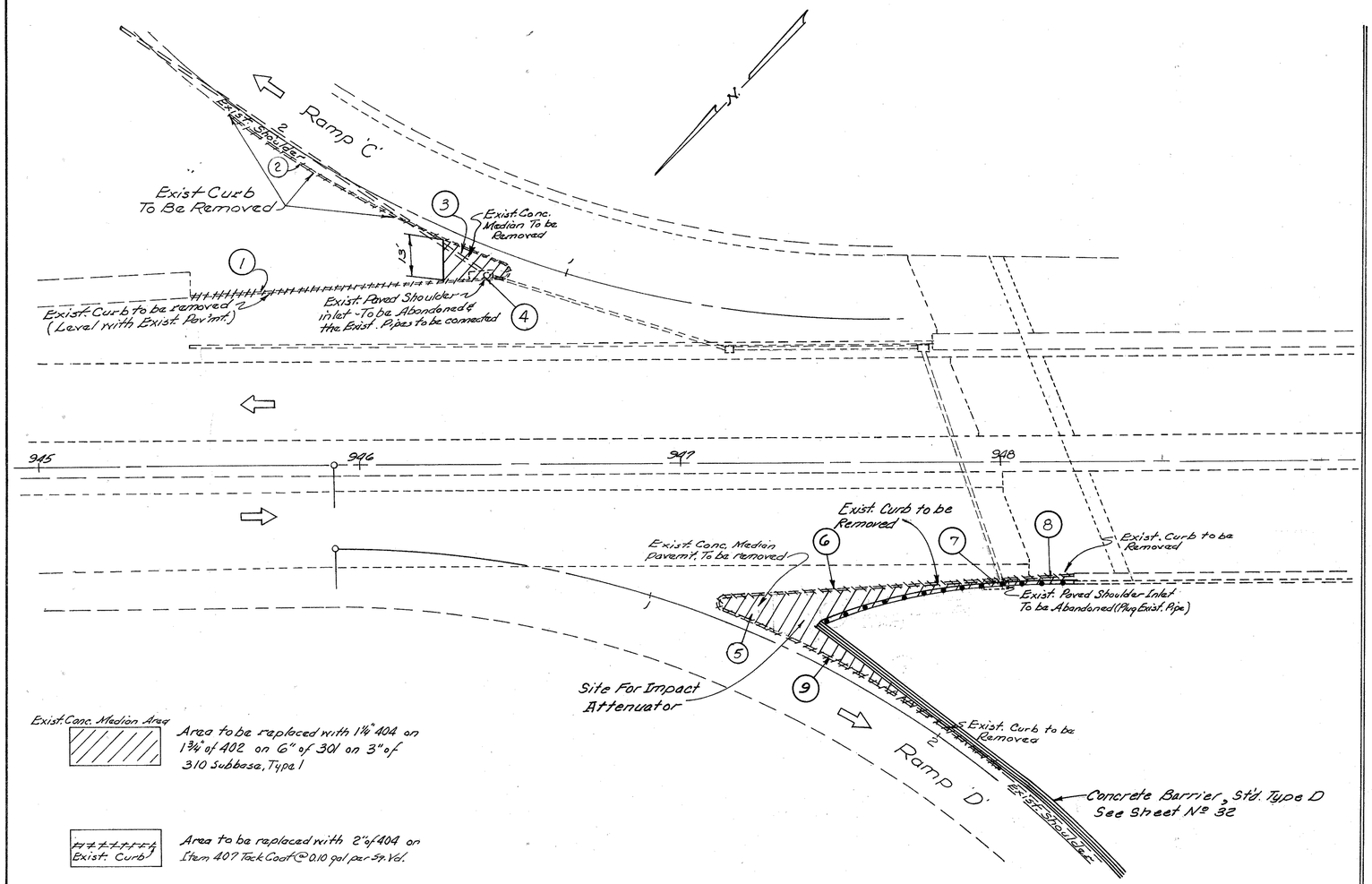
COL-30-32.19



Exist. Conc. Median Area — Area to be replaced with 1¾" 404 on 1¾" of 402 on 6" of 301 on 3" of 310 Subbase, Type 1

Exist. Curb — Area to be replaced with 2" of 404 on Item 407 Tack Coat @ 0.10 gal per Sq. Yd.

NOTE:- Remove existing curb (Ref. Nos 1 & 6) level with the exist. paved berms and resurface with 2" of Item 404 Asphalt Concrete. Remove the remainder of the existing curb (Ref. Nos 2-4 & 8) and the exist. conc. median, excavating to a depth of 14" ± . Replacing the above excavated areas with 1¾" of Item 404 Asphalt Concrete on 1¾" of Item 402 Asphalt Concrete on 6" of Item 301 Bituminous Aggregate Base on 3" of Item 310 Subbase Type 1. The existing paved shoulder inlet at Ramp 'C' shall be abandoned and the exist. pipes connected. The exist. paved shoulder inlet at Ramp 'D' shall be abandoned and the exist. pipe pluged.

REMOVALS

REF. Nº	STATION TO STATION FROM	TO	SIDE	ITEM 202 Concrete Median Pavement Removed SQ. YDS.	Curb Removed LIN. FT.	Paved Shoulder Inlet Abandoned EACH
1	945+47.4	946+47	Lt.		102	
2	1+19-Ramp 'C'	2+16-Ramp 'C'	Lt.		100	
3	1+17-Ramp 'C'	1+37-Ramp 'C'	Lt.	14.8		
4	946+40		Lt.			1
5	1+21-Ramp 'D'	1+38-Ramp 'D'	Lt.	13.2		
6	947+13	948+08	Rt.		100	
7	948+00		Rt.			1
8	948+08	948+21	Rt.		13	
9	1+22-Ramp 'D'	2+21-Ramp 'D'	Lt.		102	
TOTALS (Carried to General Summary)				28.0	417	2

PAVEMENT REPLACEMENT QUANTITIES

STATION FROM	STATION TO	SIDE	LENGTH LIN. FT.	WIDTH FT.	AREA SQ. YDS	RAMP	301 THICKNESS INS.	301 Bituminous Aggregate Base CU. YDS.	310 THICKNESS INS.	310 Subbase Type 1 CU. YDS.	407 Tack Coat @ 0.10 Gals. per Sq. Yd. GALS.	407 Cover Aggregate @ 71 lbs. per Sq. Yd. TONS	402 THICKNESS INS.	402 Asphalt Concrete AC-20 CU. YDS.	404 THICKNESS INS.	404 Asphalt Concrete AC-20 CU. YDS.	203 THICKNESS INS.	203 Excavation CU. YDS.
945+47.4-US-30	946+47-US-30	Lt.	102	1.0	11	Ramp 'C'	—	—	—	—	1.1	0.04	—	—	2	0.6	—	—
1+19-Ramp 'C'	2+16-Ramp 'C'	Lt.	100	1.0	11		6	1.9	3	0.9	—	—	1.75	0.5	1.25	0.4	—	—
1+17-Ramp 'C'		Lt	Planimetered Area = 21 S.Y.				6	3.5	3	1.8	—	—	1.75	1.0	1.25	0.7	14	8.2
1+21-Ramp 'D'		Lt	Planimetered Area = 139 S.Y.			Ramp 'D'	6	23.2	3	11.6	—	—	1.75	6.8	1.25	4.8	14	54.0
947+13-US-30	948+08-US-30	Rt.	100	1.0	11		—	—	—	—	1.1	0.04	—	—	2.0	0.6	—	—
948+08-US-30	948+21-US-30	Rt	13	1.0	1		6	0.2	3	0.1	—	—	1.75	0.1	1.25	0.1	—	—
1+22-Ramp 'D'	2+21-Ramp 'D'	Lt.	102	1.0	11		6	1.9	3	0.9	—	—	1.75	0.6	1.25	0.4	—	—
TOTALS (Carried to the General Summary) Municipal							30.7		15.3		2.2	0.08	9.0		7.6		62.2	

Col. By	Ckd By
J.C.N.	R.E.M.
Date 10-13-81	Date 10-27-81

Rev. 5-23-84

PAVEMENT REPLACEMENT DETAIL

Rev. By JCN Date 5-10-84
Ch'kd. By W.S.R. Date 5-10-84
CALC. BY J.C.N. DATE 11-13-81
CHKD. BY D.A.E. DATE 11-16-81

OHIO
FHWA REGION 5

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COL-30-32.19

GENERAL SUMMARY

SHEET NUMBERS

ITEM	RURAL 9	RURAL 10	RURAL 49	RURAL 56	MUNICIPAL 14	MUNICIPAL 52	MUNICIPAL 56	RURAL SUB TOTAL	MUNICIPAL SUB TOTAL	ITEM	TOTAL QUANT.	UNIT	TRAFFIC CONTROL DESCRIPTION
630			34			51		34	51	630	85	EACH	Removal Of Ground Mounted Sign and Storage
630						4			4	630	4	EACH	Removal Of Ground Mounted Sign and Re-erection
630			2			3		2	3	630	5	EACH	Removal Of Ground Mounted Major Sign and Storage
630			28			29		28	29	630	57	EACH	Removal Of Ground Mounted Post Support
630			2					2		630	2	EACH	Removal Of Ground Mounted Beam Support
630			1			13		1	13	630	14	EACH	Removal Of Overhead Mounted Sign and Storage
630			1			4		1	4	630	5	EACH	Removal Of Overhead Mounted Support and Storage
630			164			376		164	376	630	539	Sq. Ft.	Signs, Flat Sheet: Type G
630			532			1453		532	1453	630	1985	Sq. Ft.	Signs, Extrusheet Type G
630						9			9	630	9	Each	Sign Attachment Assembly
630						13			13	630	13	Each	Sign Support Assembly, Pole Mounted
630						1			1	630	1	Each	Overpass Structure Mounted Sign Support, Type 18.26, Design 10
630						2			2	630	2	Each	Barrier Wall Assembly, Type 21.41, Design 2
630			21			49		21	49	630	70	Lin. Ft.	Ground Mounted Supports No 2 Post
630			43			213		43	213	630	256	Lin. Ft.	Ground Mounted Supports No 3 Post
630			192			328		192	328	630	520	Lin. Ft.	Ground Mounted Supports No 4 Post
630			14			15		14	15	630	29	Lin. Ft.	One-Way Support No 4 Post
630			34			151		34	151	630	185	Lin. Ft.	Ground Mounted Supports, S4x7.7
630			38			112		38	112	630	150	Lin. Ft.	Ground Mounted Supports, W10x11.5
630			49			44		49	44	630	93	Lin. Ft.	Ground Mounted Supports, W 8x17
630			115					115		630	115	Lin. Ft.	Ground Mounted Supports, W 10x21
630			53					53		630	53	Lin. Ft.	Ground Mounted Supports, W 12x31
630						1			1	630	1	Each	Overhead Sign Support, Type 12.30, Design 4, 20' Arm
630						1			1	630	1	Each	Overhead Sign Support, Type 12.30, Design 5, 18' Arm
630			4			12		4	12	630	16	Each	Breakaway Beam Connections
630						5.84			5.84	630	5.84	Cu. Yds.	Concrete For Anchor Base Foundations
630			12.86			11.50		12.86	11.50	630	24.36	Cu. Yds.	Concrete For Embedded Foundations
202				34				34		202	34	Each	Delineators Removed and Disposed Of
620				22				22		620	22	Each	Delineators, Type C, Flexible Post Mounted, As Per Plan
620				6				6		620	6	Each	Delineators, Type D, Flexible Post Mounted, As Per Plan
621	0.11	0.14		0.14	0.10		0.46	0.39	0.56	621	0.95	Mile	Edge Line
621	0.37	0.30		0.07	0.38		0.15	0.74	0.53	621	1.27	Mile	4" Lane Line
621							629		629	621	629	Lin. Ft.	Curb Marking
621	2532	2305			2490			4837	2490	621	7327	Lin. Ft.	Removal of Pavement Marking
614					3670				3670	614	3670	Lin. Ft.	Temporary Edge Line, Class I (Tape)

Rev. 5-23-84

*-Relative to Traffic Direction

TRAFFIC CONTROL QUANTITIES

QUANTITIES
Cal. By J.C.N. Date 11-5-81
Ckd By D.A.E. Date 11-6-81

FHWA REGION	STATE	PROJECT
5	OHIO	

SHEET No	REF. No	STATION	SIDE ℄	WORK REQUIRED	SIGN CODE	SIGN DIMENSION	SIGN CLEARANCE	SUPPORT LENGTHS *			ITEM 630																										
											Removal of G.M. Sign and Storage	Removal of G.M. Sign & Re-erection	Removal of G.M. Major Sign & Storage	Removal of G.M. Post Support	Removal of G.M. Beam Support	Removal of Overhead Mounted Sign and Storage	Removal of Overhead Sign & Support and Storage	Signs Flat Sheets	Signs Extrusheet Sheet	Sign Attachment Assembly	Breakaway Beam Connections	Sign Support Assembly Pole Mounted	Overpass Structure Mounted Sign Support, Type 18.26 Design 10	Barrier Wall Assembly Type 21.41 Design 2	G.M. Supports No 2 Post	G.M. Supports No 3 Post	G.M. Supports No 4 Post	One Way Support, No 4 Post	G.M. Supports, S 4x7.7	G.M Supports, W10x11.5	G.M. Supports, W 8x17	G.M. Supports, W10x21	G.M. Supports W12x31	Overhead Sign Support, Type 12.30, Design 5, 18' Arm	Overhead Sign Support, Type 12.30, Design 4, 20' Arm	Concrete For Anchor Base Foundations	Concrete For Embedded Foundations
						INCHES	FEET	LT.	CNTR.	RT.	Each	Each	Each	Each	Each	Each	Each	Sq.Ft	Sq.Ft	Each	Each	Each	Each	Each	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Each	Each	Cu.Yd.	Cu.Yd
				RURAL																																	
21	1-170-AS	0+59	Rt.	Remove Sign & Support							1			1																							
"	"	"	"	Erect New Signs on New Support	R-1-36	36"x36"	12		14.0									9.0									14.0										
"	"	"	"	" " " " " "	R-41B-30	30"x30"												6.25																			
21	2-170-AS	0+59	Lt.	Remove Sign & Support							1			1																							
"	"	"	"	Erect New Signs on New Support	R-1-36	36"x36"	12		14.0									9.0										14.0									
"	"	"	"	" " " " " "	R-41-30	30"x30"												6.25																			
"	"	"	"	" " " " " "	R-43L-36	36"x12"												3.0																			
"	"	"	"	" " " " " "	R-43R-36	36"x12"												3.0																			
21	3-170-AS	0+72	Rt.	Remove Sign & Supports							1			2																							
21	4-170-AS	2+29	Lt.	" " " Support							1			1																							
"	"	"	"	Erect New Sign on New Support	R-41A-36	36"x24"	12		12.8									6.0								12.8											
21	5-170-AS	2+29	Rt.	Remove Sign & Support							1			1																							
"	"	"	"	Erect New Sign on New Support	R-41A-36	36"x24"	12		15.5									6.0									15.5										
21&53	6-170-AS	8+00	Lt.	Remove Signs & Support							2			1																							
"	"	"	"	Erect New Signs on New Supports	O-4B	132"x48"	16	19.0		19.0									44.0		2				7.0					38.0							2.20
"	"	"	"	" " " " " "	M-2-30-3	37½"x30"												7.81																			
"	"	"	"	" " " " " "	M-24-24	24"x18"												3.0																			
21	7-170-AS	11+25	Lt.	Remove Sign & Support							1			1																							
"	"	"	"	Erect New Sign on New Supports	W-45-48	48"x48"	13	16.5		17.2								16.0									33.7										
21	1-170-DS	0+53	Rt.	Remove Signs & Supports							5			2																							
"	"	"	"	Erect New Signs on New Supports	M-52A-108	108"x30"	13	23.2		25.7									22.5						6.2						48.9						2.20
"	"	"	"	" " " " " "	M-52-A-108	108"x30"													22.5																		
"	"	"	"	" " " " " "	M-52A-108	108"x30"													22.5																		
"	"	"	"	" " " " " "	M-2-30-3	37½"x30"												7.81																			
"	"	"	"	" " " " " "	M-24-24	24"x18"												3.0																			
21	2-170-DS	2+32	Rt.	Remove Sign & Support							1			1																							
"	"	"	"	Erect New Sign on New Support	R-15A-36	36"x36"	13		15.3									9.0									15.3										
21	1-S	801+27	Rt.	Remove Sign & Support							1			1																							
"	"	"	"	Erect New Sign on New Supports	W-49R-48	48"x48"	13	16.2		16.5								16.0									32.7										
22	2-S	805+52	Rt.	Remove Sign & Support							1			1																							
22	3-S	805+52	Lt.	Remove Signs & Support							5			1																							
22&53	4-S	807+00	Lt.	Remove Sign & Supports							1			2																							
"	"	"	"	Erect New Sign on New Supports	GF	72"x60"	16	16.6		16.5									30.0		2								33.1								0.54
22	5-S	816+90	Lt.	No Work																																	
23	6-S	820+00	Lt.	Erect New Sign on New Supports	GE	156"x120"	14	26.3		30.6									130.0													56.9					2.46
23	7-S	822+66	Rt	Remove Signs & Supports							6			3																							
"	"	"	"	Erect New Signs on New Supports	M-1-30	30"x30"	18	16.9	10.4	13.9								6.25							7.0		47.2										
"	"	"	"	" " " " " "	M-39-30	30"x15"												3.13																			
"	"	"	"	" " " " " "	M-2-30	30"x30"												6.25																			
"	"	"	"	" " " " " "	M-38-30	30"x15"												3.13																			
"	"	"	"	" " " " " "	M-2-30	30"x30"												6.25																			
"	"	"	"	" " " " " "	M-38-30	30"x15"												3.13																			
23	8-S	824+96	Lt.	Remove Sign & Support												1	1																				
23	9-S	827+75	Rt.	Remove Sign & Support							1			1																							
"	"	"	"	Erect New Sign on New Supports	R-10-36	36"x48"	16	15.2		15.0								12.0								30.2											
23	10-S	829+97	℄	Remove Sign & Support							1			1																							
23	11-S	830+00	Lt.	Erect New Sign on New Supports	GE	156"x120"	14	27.0		30.8									130.0													57.8					2.46
23	12-S	830+83	℄	Remove Sign & Support							1			1																							
24	13-S	842+59	Lt.	No Work																																	
24	14-S	842+64	Rt.	No Work																																	
24	15-S	847+91	Lt.	Remove Sign & Supports									1	2																							
25	16-S	860+98	Lt.	Remove Sign & Supports									1		2																						
"	"	"	"	Erect New Sign on New Supports	GB	156"x120"	16	19.1		33.3									130.0														52.4				3.0
27	17-S	887+36	℄	Remove Sign & Support							1			1																							
27	18-S	887+39	Lt.	Remove Sign & Supports							1			2																							
"	"	"	"	Erect New Sign on New Supports	R-10-36	36"x48"	16	16.1		16.7								12.0									32.8										
27	19-S	887+81	℄	Remove Sign & Support							1			1																							
TOTAL RURAL QUANTITIES (Carried to General Summary)											34	–	2	28	2	1	1	163.26	531.5	–	4	–	–	–	20.2	43.0	191.2	14.0	33.1	38.0	48.9	114.7	52.4	–	–	–	12.86

Rev. 5-23-84 TRAFFIC CONTROL QUANTITIES

*-Relative to Traffic Direction

TRAFFIC CONTROL QUANTITIES

QUANTITIES	
Cal. By J.C.N. Date 11-5-81	Ckd By D.A.E. Date 11-10-81
Rev. By JCN Date 5-10-84	Ckd. By WSR Date 5-10-84

FHWA REGION	STATE	PROJECT	
5	OHIO		

COL-30-32.19

SHEET Nº	REF. Nº	STATION	SIDE ℄	WORK REQUIRED	SIGN CODE	SIGN DIMENSION (INCHES)	SIGN CLEARANCE (FEET)	SUPPORT *LENGTHS* LT.	CNTR.	RT.	ITEM 630: Removal of G.M. Sign and Storage (Each)	Removal of G.M. Sign & Re-erection (Each)	Removal of G.M. Major Sign & Storage (Each)	Removal of G.M. Post Support (Each)	Removal of G.M. Beam Support (Each)	Removal of Overhead Mounted Sign and Storage (Each)	Removal of Overhead Sign & Support and Storage (Each)	Signs Flat Sheets (Sq.Ft)	Signs Extrusheet Sheet (Sq.Ft)	Sign Attachment Assembly (Each)	Breakaway Beam Connections (Each)	Sign Support Assembly Ble Mounted (Each)	Overpass Structure Mounted Sign Support, Type 18,22 Design 10 (Each)	Barrier Wall Assembly Type 21,41 Design 2 (Each)	G.M. Supports Nº 2 Post (Lin.Ft)	G.M. Supports Nº 3 Post (Lin.Ft)	G.M. Supports Nº 4 Post (Lin.Ft)	One Way Support, Nº 4 Post (Lin.Ft)	G.M. Supports, S 4X7.7 (Lin.Ft)	G.M. Supports, W10x11.5 (Lin.Ft)	G.M. Supports, W 8x17 (Lin.Ft)	G.M. Supports, W10 x 21 (Lin.Ft)	G.M. Supports W 12x31 (Lin.Ft)	Overhead Sign Support, Type 12,30, Design 5, 18' Arm (Each)	Overhead Sign Support, Type 12,30, Design 4, 20' Arm (Each)	Concrete For Anchor Base Foundations (Cu.Yd.)	Concrete For Embedded Foundations (Cu.Yd)
		MUNICIPAL																																			
27 & 53	20-S	888+00	Rt.	Rmv. Sign & Supports							1			2																							
"	"	"	"	Erect New Sign On New Supports	GN	108"x36"	22	13.7		12.4									27.0		2								26.1								0.54
27	21-S	892+75	Rt.	Erect New Sign On New Supports	GB	144"x114"	21	23.0		20.5									114.0												43.5						2.20
27	22-S	892+92	Rt.	No Work																																	
29	23-S	918+25	Rt.	Rmv. Sign & Support							1			1																							
30	24-S	926+00	Lt.	Erect New Sign On New Supports	R-10-36	36"x48"	16	15.0		15.7								12.0								30.7											
30	25-S	928+67	Rt.	Rmv. Sign & Support							1			1																							
30	26-S	936+00	Lt.	Erect New Signs On New Supports	M-1-30	30"x30"	16	14.4	14.5	14.6								6.25							7.7		43.5										
"	"	"	"	" " " " " "	M-40-30	30"x15"												3.13																			
"	"	"	"	" " " " " "	M-2-30	30"x30"												6.25																			
"	"	"	"	" " " " " "	M-37-30	30"x15"												3.13																			
"	"	"	"	" " " " " "	M-2-30	30"x30"												6.25																			
"	"	"	"	" " " " " "	M-37-30	30"x15"												3.13																			
30 & 53	27-S	937+00	Rt.	Rmv. Signs												2																					
"	"	"	"	Erect New Signs On Exist. Support	GE	144"x114"													114.0	1																	
"	"	"	"	" " " " " "		144"x72"													72.0	1																	
30	28-S	939+03	Rt.	Rmv. Sign & Support							1			1																							
31	29-S	940+26	Lt.	No Work																																	
31	30-S	940+88	Lt.	Rmv. Sign & Support							1			1																							
31	31-S	941+36	Rt.	Rmv. Sign & Supports									1	3																							
31	32-S	942+00	Rt.	Erect New Sign On New Supports	W-97-48	48"x48"	12	15.0		15.5								20.0									30.5										
31	33-S	943+31	Rt.	Rmv. Sign & Support							1			1																							
31 & 55	34-S	945+30	Rt.	Erect New Sign On Exist. Bridge	GF	168"x90"													105.0				1														
31	35-S	945+92	Lt.	Rmv. Signs							6																										
32	36-S	946+00	Lt.	Rmv. Sign & Support												1	1																				
32 & 53	37-S	946+10	Lt.	Erect New Sign On New Supports	GF	72"x60"	9	16.2		16.3									30.0		2								32.5								0.54
32	38-S	946+18	Lt.	No Work																																	
32 & 53	39-S	947+60	Lt.	Erect New Sign On New Support	GF	168"x90"													105.0															1		2.92	
32	40-S	947+33	Rt.	No Work																																	
32	41-S	947+46	Rt.	Rmv. Sign & Support												1	1																				
32	42-S	947+55	Rt.	Erect New Sign On New Supports	GF	72"x60"	16	16.6		16.7									30.0										33.3								0.54
32	43-S	948+79	Rt.	Rmv. Signs							3																										
33	44-S	952+00	Lt.	Erect New Sign On New Supports	W-49R-48	48"x48"	16	15.7		15.8								16.0									31.5										
33 & 54	45-S	953+00	Lt.	Rmv. Signs												2																					
"	"	"	"	Erect New Signs On Exist. Support	GG	156"x66"													127.5	1																	
"	"	"	"	" " " " " "	GF	168"x90"													114.0	1																	
33	46-S	957+00	Rt.	Erect New Sign On New Supports	R-11A-36	36"x48"	16	15.5		16.3								12.0									31.8										
34	47-S	959+10	Lt.	Rmv. Sign & Supports									1	3																							
34	48-S	963+00	℄	No Work																																	
34 & 54	49-S	963+00	Lt.	Rmv. Signs												2																					
"	"	"	"	Erect New Signs On Exist. Support	GG	156"x66"													71.5	1																	
"	"	"	"	" " " " " "	GE	144"x114"													114.0	1																	
34	50-S	963+52	℄	No Work																																	
29	56-S	916+00	Lt.	Erect New Sign On New Supports	GJ	168"x48"	16	18.7		18.5									56.0											37.2							2.20
34	57-S	958+00	Rt.	Erect New Sign On New Supports	W-49R-48	48"x48"	16	17.7		18.7								16.0									36.4										
36	1-7-A-S	0+49	Lt.	Rmv. Sign & Support							1			1																							
"	"	"	"	Erect New Sign On New Supports	R-2-48	48"x48"	10	15.2		16.0								6.93								31.2											
36	2-7-A-S	9+21	Rt.	Rmv. Sign & Support												1	1																				

*-Relative to Traffic Direction

TRAFFIC CONTROL QUANTITIES

QUANTITIES	
Col. By J.C.N.	Ck'd By D.A.E.
Date 11-5-81	Date 11-10-81

FHWA REGION	STATE	PROJECT	
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COL-30-32.19

SHEET Nº	REF. Nº	STATION	SIDE ℄	WORK REQUIRED	SIGN CODE	SIGN DIMENSION	SIGN CLEARANCE	SUPPORT LENGTHS * LT.	CNTR.	RT.	ITEM 630: Removal of G.M. Sign and Storage	Removal of G.M. Sign & Re-erection	Removal of G.M. Major Sign & Storage	Removal of G.M. Post Support	Removal of G.M. Beam Support	Removal of Overhead Mounted Sign and Storage	Removal of Overhead Sign & Support and Storage	Signs Flat Sheets	Signs Extrusheet Sheet	Sign Attachment Assembly	Breakaway Beam Connections	Sign Support Assembly Ble. Mounted	Overpass Structure Mounted Sign Support, Type 18.24 Design 10	Barrier Wall Assembly Type 21.41 Design 2	G.M. Supports Nº 2 Post	G.M. Supports Nº 3 Post	G.M. Supports Nº 4 Post	One Way Support, Nº 4 Post	G.M. Supports, S 4x7.7	G.M. Supports, W10x11.5	G.M. Supports, W 8x17	G.M. Supports, W 10x21	G.M. Supports W 12x31	Overhead Sign Support, Type 12.30, Design 5, 18' Arm	Overhead Sign Support, Type 12.30, Design 4, 20' Arm	Concrete for Anchor Base Foundations	Concrete for Embedded Foundations
						Inches	Feet				Each	Each	Each	Each	Each	Each	Each	Sq.Ft	Sq.Ft	Each	Each	Each	Each	Each	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Each	Each	Cu.Yd.	Cu.Yd
MUNICIPAL ~ CONT.																																					
32	1-7-B-S	0+65	RT.	Rmv. Sign & Support							1			1																							
"	"	"	"	Erect New Sign on New Supports	R-2-48	48"x48"	3	13.3		13.5								6.93								26.8											
33	2-7-B-S	7+00	RT.	Erect New Sign on New Supports	R-11A-36	36"x48"	12	15.7		16.5								12.0									32.2										
33	3-7-B-S	7+19	RT.	Rmv. Sign & Support							1			1																							
34	4-7-B-S	8+85	RT.	Rmv. Sign & Support							1			1																							
"	"	"	"	Erect New Sign on New Supports	R-2-48	48"x48"	12	15.6		16.5								6.93								32.1											
37	1-7-C-S	5+93	RT.	Rmv. Sign & Support							1			1																							
"	"	"	"	Erect New Signs on New Supports	W-45-48	48"x48"	12	16.7		17.0								16.0									33.7										
"	"	"	"	" " " " " "	R-41A-36	36"x24"												6.0																			
37	2-7-C-S	5+93	LT.	Erect New Sign on New Support	R-41A-36	36"x24"	16		12.5									6.0								12.5											
37	3-7-C-S	8+25	RT.	Rmv. Sign & Support							1			1																							
"	"	"	"	Erect New Signs on New Support	R-1-36	36"x36"	12		14.2									9.0										14.2									
"	"	"	"	" " " " " "	R-41B-30	30"x30"												6.25																			
"	"	"	"	" " " " " "	R-43L-36	36"x12"												3.0																			
"	"	"	"	" " " " " "	R-43R-36	36"x12												3.0																			
37	4-7-C-S	8+27	LT.	Rmv. Sign & Support							1			1																							
"	"	"	"	Erect New Signs on New Support	R-1-36	36"x36"	16		14.3									9.0									14.3										
"	"	"	"	" " " " " "	R-41B-30	30"x30"												6.25																			
32	1-7-D-S	1+70	Lt.	Erect New Sign on New Support	W-33-30	30"x36"	12		13.0									7.5								13.0											
32	2-7-D-S	2+10	LT.	Erect New Sign on New Support	W-33-30	30"x36"	12		15.0									7.5									15.0										
32	3-7-D-S	2+50	LT.	Erect New Sign on New Support	W-33-30	30"x36"	12		14.0									7.5									14.0										
32	4-7-D-S	2+88	LT.	Erect New Sign on New Support	W-33-30	30"x36"	12		15.5									7.5									15.5										
38	5-7-D-S	5+74	LT.	No Work																																	
38	6-7-D-S	8+50	LT.	Erect New Sign on New Support	R-41A-36	36"x24"	12		13.1									6.0								13.1											
38	7-7-D-S	8+50	RT.	Erect New Sign on New Support	R-41A-36	36"x24"	12		13.3									6.0								13.3											
39	8-7-D-S	9+89	LT.	No Work																																	
39	9-7-D-S	9+89	RT.	No Work																																	
39	1-7-S	165+99	LT.	No Work																																	
39	2-7-S	166+85	RT.	Rmv. Signs & Support (No work							2			1																							
"	"	"	"	Erect New Signs on New Supports	[illegible]	[illegible]	[illegible]		[illegible]									[illegible]									[illegible]										
"	"	"	"	" " " " " "	[illegible]	[illegible]												[illegible]																			
39	3-7-S	166+85	RT.	No Work																																	
39	4-7-S	167+35	LT.	Rmv. Sign & Support (No work							1			1																							
"	"	"	"	Erect New Sign on New Support	[illegible]	[illegible]	1		[illegible]									[illegible]								[illegible]											
39	5-7-S	168+33	RT.	Rmv. Signs & Supports							3			2																							
"	"	"	"	Rmv. & Re-erect R.S.U. Sign on New Supports								1																									
"	"	"	"	Erect New Signs on New Supports	D-1-72	72"x12"	0.5	14.8		14.8								6.0									29.6										
"	"	"	"	" " " " " "	D-1-72	72"x12"												6.0																			
"	"	"	"	" " " " " "	D-1-72	72"x12"												6.0																			
38	6-7-S	170+50	RT.	Rmv. Signs							2																										
"	"	"	"	Erect New Signs on Exist. Pole	M-2-30	30"x30"												6.25				2			4.1												
"	"	"	"	" " " " " "	M-19-24	24"x18"												3.0																			
38	7-7-S	171+57	RT.	Rmv. Sign & Support							1			1																							
38	8-7-S	171+86	RT.	Rmv. Sign & Support							1			1																							
38	9-7-S	172+12	LT.	Rmv. Signs							4																										
"	"	"	"	Erect New Signs on Exist. Pole	M-2-24	24"x24"												4.0				2			5.3												
"	"	"	"	" " " " " "	M-38-24	24"x12"												2.0																			
"	"	"	"	" " " " " "	M-2-24	24"x24"												4.0																			
"	"	"	"	" " " " " "	M-40-24	24"x12"												2.0																			
38	10-7-S	172+25	RT.	Rmv. Sign & Support							1			1																							
38	11-7-S	172+48	RT.	Rmv. Signs & Support							2			1																							

*-Relative to Traffic Direction

TRAFFIC CONTROL QUANTITIES

Quantities	
Cal. By J.C.N. Date 11-6-81	Ckd. By D.A.E. Date 11-10-81
Rev. By J.C.N. Date 5-11-84	Ckd. By W.S.R. Date 5-11-84

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ITEM 630

Sheet No.	Ref. No.	Station	Side ℄	Work Required	Sign Code	Sign Dimension (Inches)	Sign Clearance (Feet)	Support Lengths* Lt.	Support Lengths* Cntr.	Support Lengths* Rt.	Removal of G.M. Sign and Storage (Each)	Removal of G.M. Sign & Re-erection (Each)	Removal of G.M. Major Sign & Storage (Each)	Removal of G.M. Post Support (Each)	Removal of G.M. Beam Support (Each)	Removal of Overhead Mounted Sign and Storage (Each)	Removal of Overhead Sign & Support and Storage (Each)	Signs Flat Sheets (Sq.Ft)	Signs Extrusheet Sheet (Sq.Ft)	Sign Attachment Assembly (Each)	Breakaway Beam Connections (Each)	Sign Support Assembly Pole Mounted (Each)	Overpass Structure Mounted Sign Support, Type 18.26 Design 10 (Each)	Barrier Wall Assembly Type 21.41 Design 2 (Each)	G.M. Supports No. 2 Post (Lin.Ft.)	G.M. Supports No. 3 Post (Lin.Ft.)	G.M. Supports No. 4 Post (Lin.Ft.)	One Way Support, No. 4 Post (Lin.Ft.)	G.M. Supports, S4x7.7 (Lin.Ft.)	G.M. Supports, W10x11.5 (Lin.Ft.)	G.M. Supports, W8x17 (Lin.Ft.)	G.M. Supports, W10x21 (Lin.Ft.)	G.M. Supports W12x31 (Lin.Ft.)	Overhead Sign Support, Type 12.30, Design 5, 18' Arm (Each)	Overhead Sign Support, Type 12.30, Design 4, 20' Arm (Each)	Concrete for Anchor Base Foundations (Cu.Yd.)	Concrete for Embedded Foundations (Cu.Yd)
Municipal (Cont.)																																					
38	12-7-S	173+40	Lt.	No Work																																	
38	13-7-S	173+50	Rt.	No Work																																	
38 & 55	14-7-S	173+50	Rt.	Erect New Signs On New Supports	M-52A-108	108"x30"	6	13.5		13.5									22.5		2					12.0			27.0								0.54
"	"	"	"	" " " " " "	M-2-30	30"x30"												6.25																			
"	"	"	"	" " " " " "	M-27-24	24"x18"												3.0																			
"	"	"	"	" " " " " "	M-2-30-3	37½"x30"												7.81																			
"	"	"	"	" " " " " "	M-24-24	24"x18"												3.0																			
38	15-7-S	173+50	Rt.	Rmv. Signs & Support							4					1	1																				
38	16-7-S	173+70	Rt.	Rmv. Signs							6																										
"	"	"	"	Erect New Signs On Exist. Pole	M-1-30	30"x30"												6.25				3			13.9												
"	"	"	"	" " " " " "	M-30-24	24"x18"												3.0																			
"	"	"	"	" " " " " "	M-2-30	30"x30"												6.25																			
"	"	"	"	" " " " " "	M-25-24	24"x18"												3.0																			
"	"	"	"	" " " " " "	M-2-30	30"x30"												6.25																			
"	"	"	"	" " " " " "	M-29-24	24"x18"												3.0																			
38	17-7-S	173+60	Lt.	No Work																																	
38	18-7-S	174+25	Lt.	No Work																																	
38	19-7-S	174+30	Lt.	Erect New Signs On Exist. Pole	M-2-30-3	37½"x30"												7.81				2			4.1												
"	"	"	"	" " " " " "	M-24-24	24"x18"												3.0																			
38	20-7-S	174+69	Lt.	Rmv. Signs							2																										
"	"	"	"	Erect New Signs On Exist. Pole	M-2-30-3	37½"x30"												7.81				2			4.1												
"	"	"	"	" " " " " "	M-24-24	24"x18"												3.0																			
32	21-7-S	173+98	Rt.	Rmv. Sign & Support							1			1																							
"	"	"	"	Erect New Sign On New Support	R-37R-36	36"x48"	8	14.0		14.0								12.0								28.0											
32	22-7-S	174+26	Rt.	No Work																																	
32 & 44	23-7-S	176+85	Lt. & Rt.	Rmv. Signs												3																					
"	"	"	"	Erect New Signs On Exist. Support	GG	108"x78"													58.5	1																	
"	"	"	"	" " " " " "	GG	96"x84"													56.0	1																	
"	"	"	"	" " " " " "	GG	84"x72"													42.0	1																	
32	24-7-S	177+83	Rt.	Rmv. Signs & Supports									1	2																							
"	"	"	"	Rmv. & Re-erect Detour S.R.45 Signs								3																									
"	"	"	"	Erect New Sign On New Supports	D-4B	144"x48"	12	18.0		18.5									48.0		2				6.0					36.5							2.20
37	25-7-S	179+00	Lt.	Rmv. Signs							2																										
"	"	"	"	Erect New Signs On Exist. Pole	M-2-30-3	37½"x30"												7.81				2			3.8												
"	"	"	"	" " " " " "	M-17-21	21"x15"												2.19																			
36 & 55	26-7-S	180+05	Rt.	Erect New Sign On New Support	GE	144"x66"													66.0																1	2.92	
36	27-7-S	180+85	Rt.	No Work																																	
36 & 55	28-7-S	181+00	Rt.	Erect New Sign On New Supports	GF	72"x60"	6	16.0		16.0									30.0		2								32.0								0.54
32	29-7-S	175+28	Rt.	Erect New Sign On New Supports	GE	120"x60"	12	18.5		19.0									50.0		2									37.5							2.20
Total Municipal Quantities (Carried To General Summary)											51	4	3	29		13	4	374.05	1453	9	12	13	1	2	49.0	212.7	328.0	14.2	150.9	111.2	43.5			1	1	5.84	11.50

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FED. RD. DIVISION	STATE	PROJECT		53
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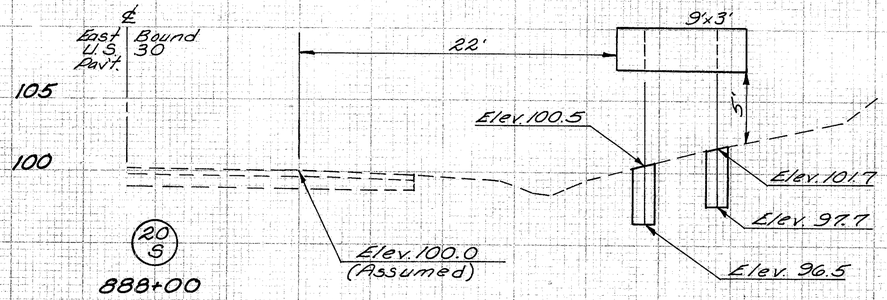

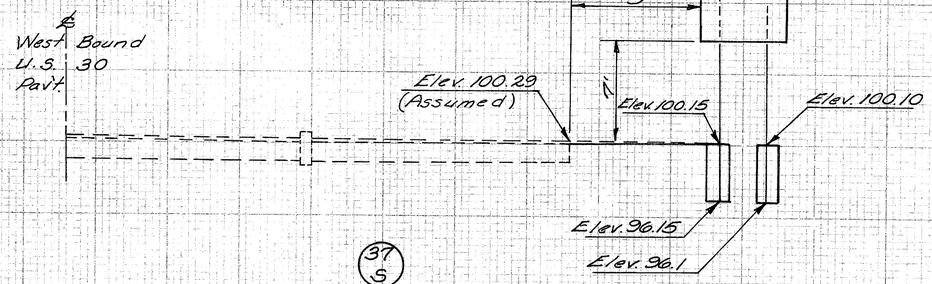

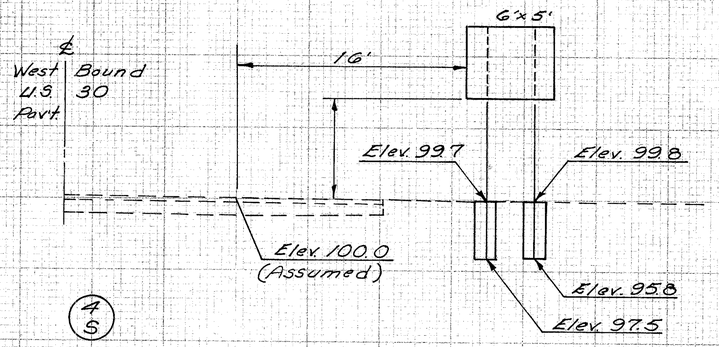

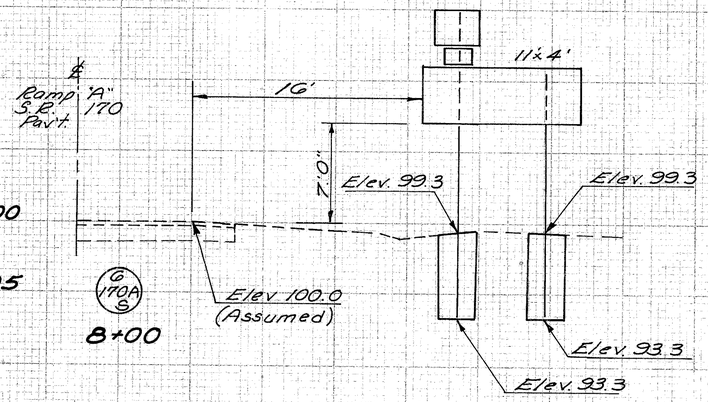

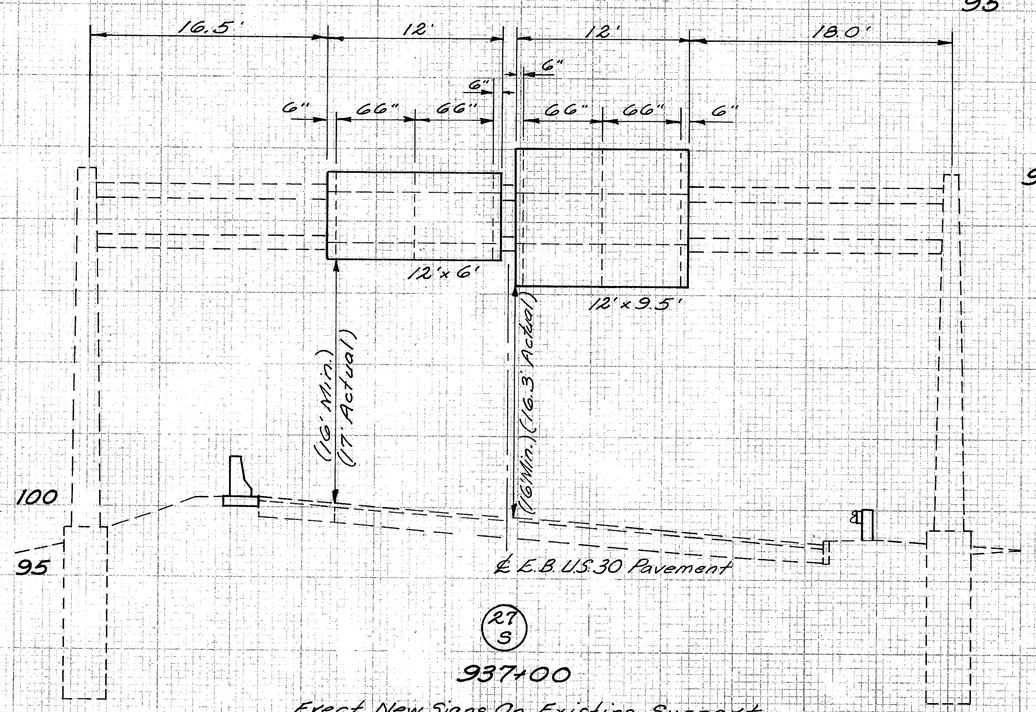

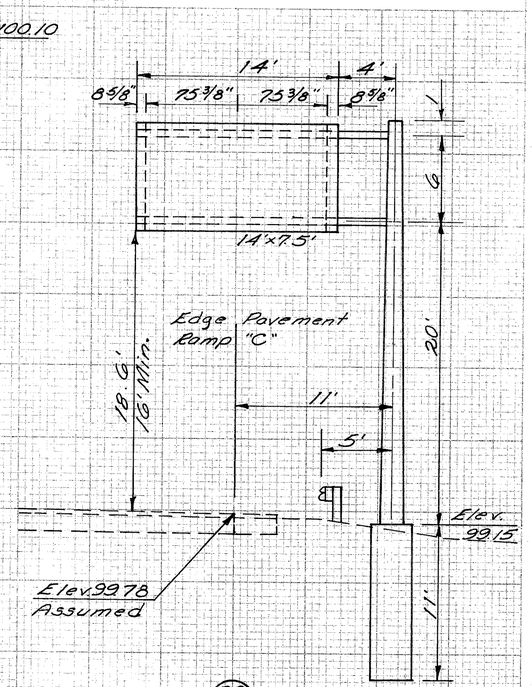

ELEVATION VIEWS

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FED. RD. DIVISION	STATE	PROJECT		
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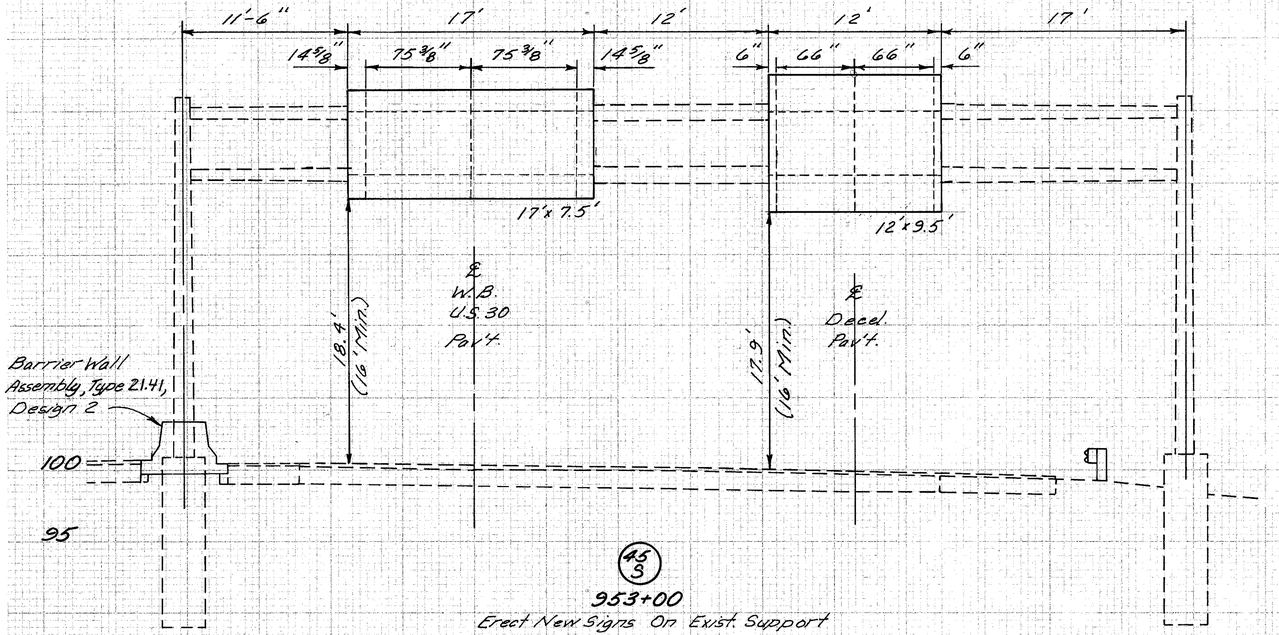
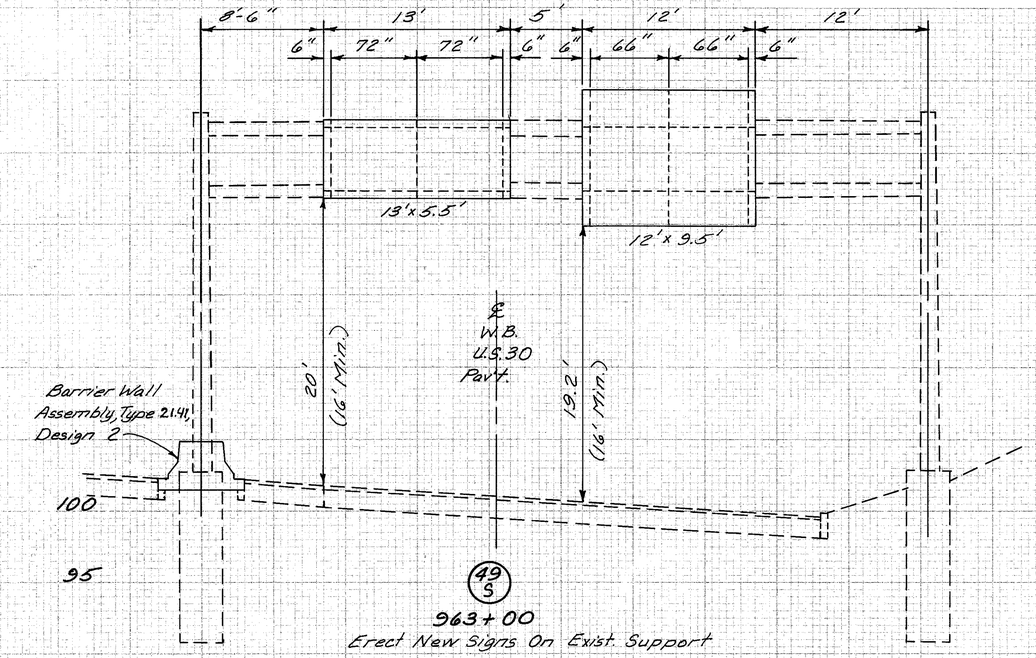


45 / 3

953+00

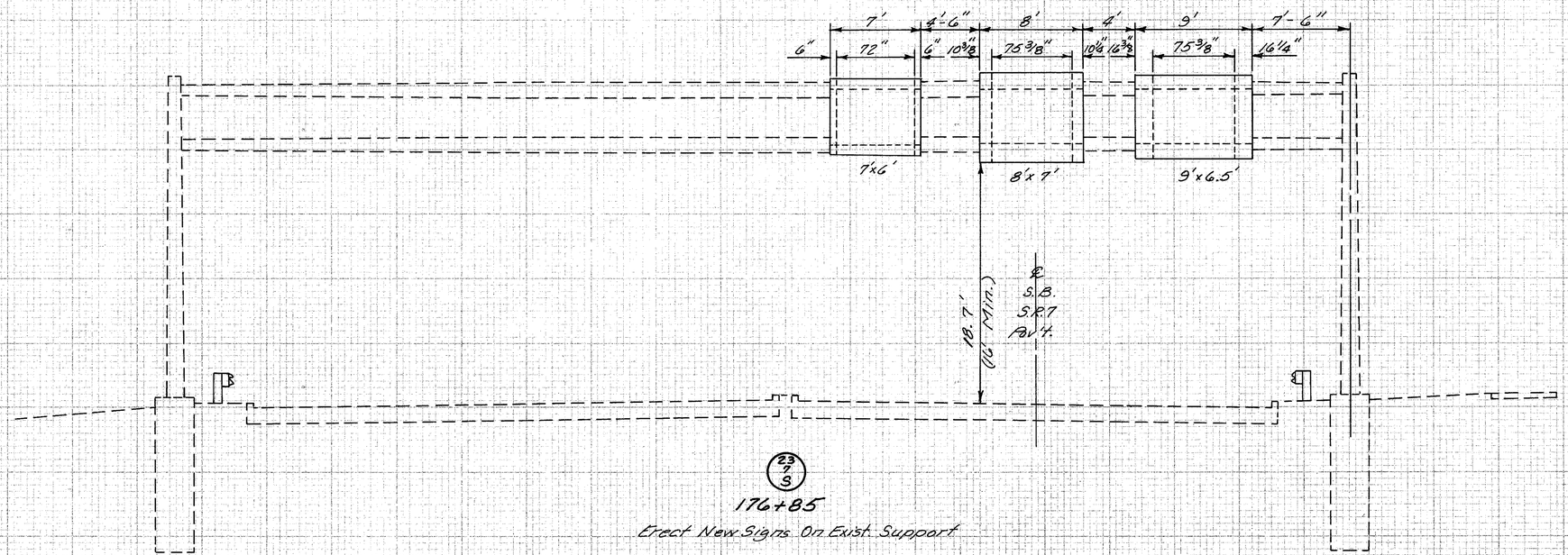
Erect New Signs On Exist. Support



49 / 5

963+00

Erect New Signs On Exist. Support



23 / 7 / 3

176+85

Erect New Signs On Exist. Support

ELEVATION VIEWS

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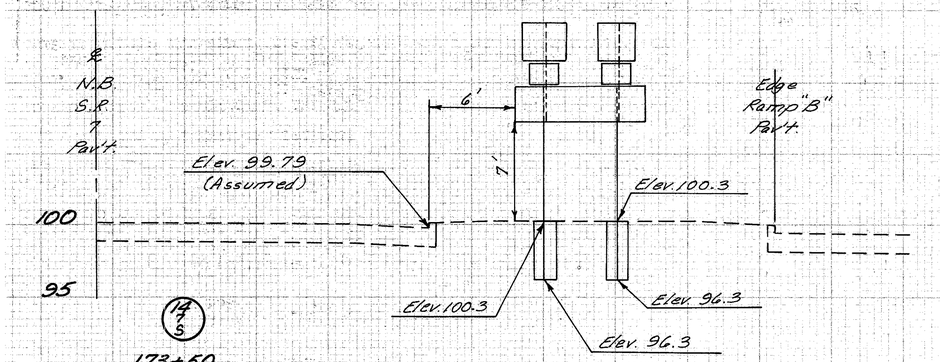

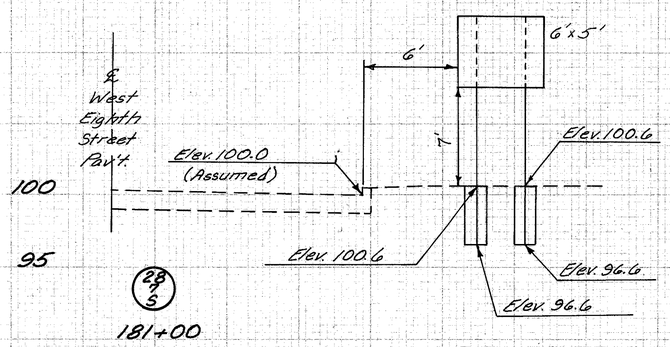

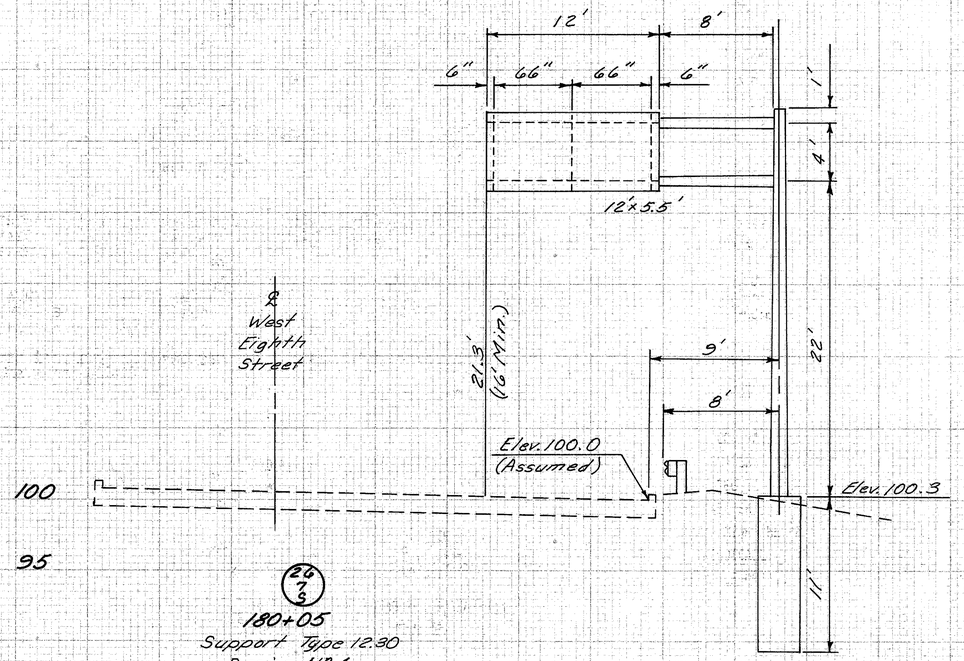

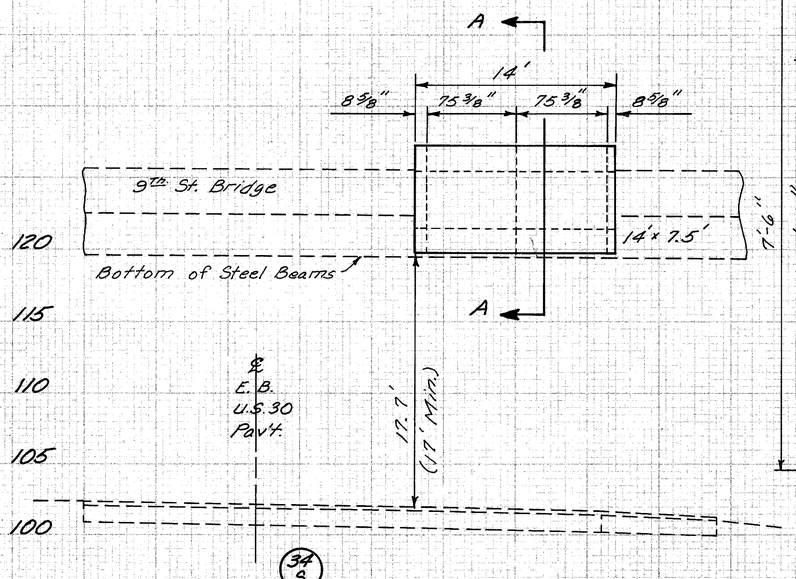

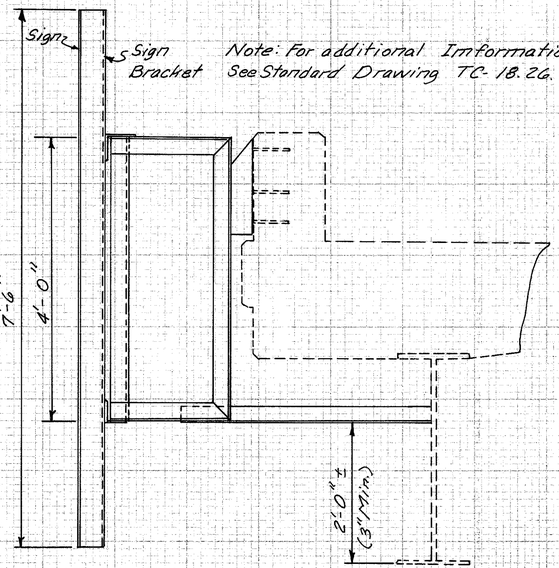

Note: For additional Information, See Standard Drawing TC-18.26.

SECTION A-A

ELEVATION VIEWS

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FHWA REGION	STATE	PROJECT		
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COL-30-32.19

620 DELINEATORS, BY TYPE, FLEXIBLE POST MOUNTED, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING DELINEATORS AS SPECIFIED. THE REFLECTORS SHALL BE EITHER TYPE C OR D AND SHALL BE APPROXIMATELY 3 INCHES BY 6 INCHES WITH A MINIMUM AREA OF 18 SQUARE INCHES. THE REFLECTOR SHALL BE REFLECTIVE SHEETING BONDED DIRECTLY TO THE DELINEATOR POST (NOT SCREWED OR BOLTED).

THE SEAL TEST AS DESCRIBED IN 620.03 SHALL NOT APPLY.

THE FLEXIBLE POSTS SHALL BE WHITE NON-METALLIC, ULTRAVIOLET RESISTANT, AND DESIGNED TO WITHSTAND REPEATED AUTOMOBILE IMPACTS AT 55 MPH AND RETURN TO A VERTICAL POSITION WITH LITTLE OR NO DAMAGE TO THE VEHICLE. THE POSTS SHALL BE CAPABLE OF BEING HAND DRIVEN. WHERE ADVERSE SOIL CONDITIONS CAUSE THE DELINEATOR POST TO EXCEED 1/4 INCH PER FOOT OUT OF PLUMB IN ANY DIRECTION, THE CONTRACTOR MAY DRIVE A PILOT SHAFT BEFORE DRIVING THE POST.

FLEXIBLE DELINEATOR POSTS SHALL BE PREQUALIFIED BY THE DEPARTMENT AND BE ONE OF THE FOLLOWING DESIGNS OR APPROVED EQUAL:

1. DESIGN 1 FLEXIBLE POST SHALL BE MANUFACTURED FROM LEXAN WITH A 24 INCH LENGTH OF NO. 1 STEEL DRIVE POST BOLTED TO THE BOTTOM OF THE FLEXIBLE PORTION. THE TOTAL LENGTH OF THE COMPOSITE POST SHALL BE 78 INCHES. THE WIDTH OF THE POST SHALL BE 3.25 INCHES.

2. DESIGN 2 FLEXIBLE POST SHALL BE MANUFACTURED FROM FIBERGLASS REINFORCED PLASTIC WITH A T CROSS-SECTION. THE POST SHALL BE 72 INCHES LONG AND 3.60 INCHES WIDE.

3. DESIGN 3 FLEXIBLE POST SHALL BE MANUFACTURED FROM FIBERGLASS REINFORCED PLASTIC WITH A CURVED CROSS-SECTION. THE POST SHALL BE 72 INCHES LONG AND 3.60 INCHES WIDE.

4. DESIGN 4 FLEXIBLE POST SHALL BE MANUFACTURED FROM FIBERGLASS REINFORCED PLASTIC WITH A CURVED CROSS-SECTION. THE POST SHALL BE 27 INCHES LONG AND 3.25 INCHES IN WIDTH. THESE POSTS MAY BE INSTALLED BY THE CONTRACTOR IN LIEU OF DESIGNS 1, 2 OR 3 WHEN DELINEATORS WOULD BE PLACED BEHIND GUARDRAIL. THESE POSTS SHALL BE INSTALLED ON THE FRONT OF THE WOODEN GUARDRAIL BLOCKOUTS FACING APPROACHING TRAFFIC BY INSTALLING EITHER TWO 5/16 INCH DIAMETER BY 1 1/2 INCH LONG, ZINC COATED LAG SCREWS WITH ZINC COATED 5/16 INCH FLAT WASHERS OR TWO 5/16 INCH DIAMETER BY 1 1/2 INCH LONG, ZINC COATED INDENTED HEX WASHERHEAD LAG SCREWS.

THE APPROVED LIST OF PREQUALIFIED FLEXIBLE POST MANUFACTURERS MAY BE OBTAINED FROM THE ENGINEER OF TRAFFIC, 25 SOUTH FRONT STREET, COLUMBUS, OHIO 43215.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR EACH DELINEATOR WHICH SHALL INCLUDE FURNISHING AND INSTALLING THE POST AND ALL NECESSARY HARDWARE, LABOR AND EQUIPMENT.

620 EACH DELINEATORS, TYPE (C OR D), FLEXIBLE POST MOUNTED, AS PER PLAN.

ITEM 620-DELINEATORS						202
INTERCHANGE	LOCATION		RAMP	Type C, Flexible Post Mounted	Type D, Flexible Post Mounted	Delineators Removed & Disposed of
	From	To		Each	Each	Each
SR 170	1+00 Ramp A	820+00 0530	'A'	13		17
	1+80	12+00	'D'		6	6
	12+00	29+00		9		11
TOTAL RURAL Quantities				22	6	34

(Quantities Carried to General Summary)

ITEM 202 DELINEATORS, REMOVED AND DISPOSED OF:
Delineators and posts shall be removed and disposed of in accordance with Item 202.
Payment will be at the contract unit price bid for each delineator and post removed and disposed of.

TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS:
Reference to supplemental specifications 857, 858, 859, 957, 958 & 959 on the Traffic Control Standard Construction Drawings in these plans shall be considered to read as respective references to items 630, 631, 632, 730, 731, & 732.

SIGNS FOR MAINTENANCE OF TRAFFIC
All maintenance of traffic signs shall be type 'B' reflective sheeting.

ITEM 621 PAVEMENT MARKINGS							
BRIDGE No.	LOCATION FROM	LOCATION TO	LANE	4" Edge Line Yellow Lin. Ft.	4" Edge Line White Lin. Ft.	4" Lane Line Lin. Ft.	Curb Marking (White) Lin/Ft
RURAL							
COL-30-32.69	826+04.25	827+88.75	E.B. Lane Lt.	184.5			
			E.B. Lane CTR.			184.5	
			E.B. Lane Rt.		184.5		
			W.B. Lane Lt.	184.5			
			W.B. Lane CTR.			184.5	
			W.B. Lane Rt.		184.5		
MUNICIPAL							
COL-30-35.00	947+96.97	952+00.05	E.B. Lane Lt.	403.08			
			E.B. Lane CTR.			403.08	
			E.B. Lane Rt.		403.08		
			Dead Line Lt.		403.08		
			Dead Line Rt.	403.08			
			W.B. Lane Lt.		403.08		
			W.B. Lane CTR.			403.08	
			W.B. Lane Rt.	403.08			
	945+47.40	951+76.40	Lt.				629
TOTAL RURAL QUANTITIES (Carried To General Summary)				369.0	369.0	369.0	
				0.14 Miles		0.07Mi	
TOTAL MUNICIPAL QUANTITIES (Carried To General Summary)				1209.24	1209.24	806.16	629
				0.46 Miles		0.15Mi.	

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614 TEMPORARY PAVEMENT MARKINGS

GENERAL

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND WHEN NECESSARY, REMOVE TEMPORARY RETROREFLECTIVE PAVEMENT MARKINGS ON EXISTING, RECONSTRUCTED, RESURFACED OR TEMPORARY ROADS WITHIN THE WORK LIMITS, IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE MARKINGS SHALL BE MAINTAINED IN GOOD CONDITION DURING THE REQUIRED SERVICE PERIOD TO PROVIDE DAY AND NIGHT VISIBILITY. THE MARKINGS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER TO MAINTAIN REQUIRED VISIBILITY AT NO ADDITIONAL COST TO THE STATE.

MATERIALS

UNLESS OTHERWISE INDICATED ON THE PLANS, TEMPORARY PAVEMENT MARKINGS MAY BE OF PAINT OR PAVEMENT MARKING TAPE.

A. PAINT

PAINT SHALL COMPLY WITH 708.14 AND SHALL BE APPLIED IN ACCORDANCE WITH 621 EXCEPT AS MODIFIED HEREIN.

B. PAVEMENT MARKING TAPE

FLEXIBLE RETROREFLECTIVE PREFORMED PRESSURE SENSITIVE TAPE SHALL HAVE STRAIGHT EDGES AND BE FREE OF CRACKS. THE TAPE SHALL CONSIST OF PIGMENT AND FILLERS WITH SUFFICIENT BINDER AND PLASTICIZER TO RETAIN GLASS BEADS HAVING A REFRACTIVE INDEX MEETING THE MINIMUM REFLECTIVE INTENSITY STANDARD STATED IN THE MANUFACTURERS INFORMATION. THE TAPE SHALL BE FLEXOLITE "WET REFLECTIVE", 3M "SCOTCHLANE", OR AN APPROVED EQUAL.

THE GLASS BEADS SHALL BE DISTRIBUTED UNIFORMLY THROUGHOUT THE TAPE WITH SUFFICIENT SURFACE BEADS TO PROVIDE OPTIMUM REFLECTORIZATION AT ALL TIMES.

PAVEMENT MARKING TAPE SHALL COMPLY WITH THE COLOR REQUIREMENTS OF 708.14.

THE TAPE SHALL HAVE A PRECOATED ADHESIVE LAYER FOR PAVEMENT APPLICATION WITHOUT THE USE OF HEAT, SOLVENTS OR ADDITIONAL ADHESIVES. THE ADHESIVE SHALL BE SUFFICIENT TO RETAIN COMPLETE MARKINGS ON THE PAVEMENT SURFACE THROUGHOUT THE USEFUL LIFE OF THE MARKINGS.

IN ADDITION TO THE FOREGOING, ALL TEMPERATURE APPLICATION REQUIREMENTS AND OTHER APPLICABLE MANUFACTURERS MATERIAL AND APPLICATION INSTRUCTIONS SHALL BE FOLLOWED.

LAYOUT

THE TEMPORARY MARKINGS SHALL BE ACCURATELY LAID OUT IN CONFORMANCE WITH 621.051 AND SHALL BE LOCATED IN A TRUE LINE ON THE CENTER LINE, LANE LINE, EDGE LINE, OR CHANNELIZING LINE WHERE PERMANENT MARKINGS WOULD LIE UNLESS OTHERWISE SPECIFIED IN THE PLANS.

PLACEMENT

TEMPORARY MARKINGS SHALL BE PLACED IN ACCORDANCE WITH (LAYOUTS ON SHEETS 12) AND THE FOLLOWING REQUIREMENTS, UNLESS OTHERWISE SPECIFIED IN THE PLANS.

TEMPORARY MARKINGS SHALL BE COMPLETE AND IN PLACE ON ALL PAVEMENT PRIOR TO EXPOSING IT TO TRAFFIC. WHEN TEMPORARY MARKINGS ARE NO LONGER NEEDED, THEY SHALL BE REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH 621.134 AND NECESSARY PAVEMENT MARKINGS INSTALLED BEFORE THE FLOW OF TRAFFIC IS CHANGED TO THE NEXT PHASE OR RETURNED TO ITS NORMAL CHANNEL.

WHERE PAVEMENT MARKINGS ARE CALLED FOR IN THE PLANS, THE CONTRACTOR SHALL FURNISH AND PLACE THE PERMANENT MARKINGS WITHING 30 CALENDAR DAYS FOLLOWING COMPLETION OF ALL SURFACE COURSES IN A SINGLE ROADWAY OR PRIOR TO THE END OF THE CONSTRUCTION SEASON, WHICHEVER COMES FIRST. PERMANENT MARKINGS SHALL NOT BE PLACED OVER ANY CLASS I, TAPE MARKINGS.

A. CLASS I MARKINGS

CLASS I MARKINGS SHALL BE AS DEFINED IN 621, EXCEPT AS FOLLOWS:

1) LANE LINES SHALL BE 4-INCHES IN WIDTH.
2) TRANSVERSE LINES SHALL BE 8-INCHES IN WIDTH.
3) STOP LINES SHALL BE 12-INCHES IN WIDTH.
4) CROSS WALK LINES SHALL BE 8-INCHES IN WIDTH.

GORE MARKINGS SHALL CONSIST OF TWO CHANNELIZING LINES PLACED AT THE THEORETICAL OR TEMPORARY GORE OF RAMPS AND DIVERGING OR CONVERGING ROADWAYS.

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 16 GALLONS PER MILE FOR SOLID 4-INCH LINES, 24 GALLONS PER MILE FOR SOLID 6-INCH LINES, 48 GALLONS PER MILE FOR SOLID 12-INCH LINES, AND 4 GALLONS PER MILE FOR 4-INCH DASHED LINES.

B. CLASS II MARKINGS

CENTER LINES SHALL CONSIST OF SINGLE, YELLOW 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

LANE LINES SHALL CONSIST OF WHITE 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

CHANNELIZING LINES SHALL CONSIST OF WHITE 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 20-FOOT INTERVALS.

GORE MARKINGS SHALL BE TWO CONTINUOUS, WHITE 50-FOOT BY 4-INCH LINES PLACED AT THE THEORETICAL GORE OF AN EXIT RAMP OR DIVERGING ROADWAYS.

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 16 GALLONS PER MILE FOR GORE MARKINGS, 0.8 GALLONS PER MILE FOR CHANNELIZING LINE, AND 0.4 GALLONS PER MILE FOR LANE LINE AND CENTER LINE.

CONFLICTING MARKINGS

THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL EXISTING CONFLICTING MARKINGS VISIBLE TO THE TRAVELING PUBLIC DURING DAYLIGHT OR NIGHTTIME HOURS IN ACCORDANCE WITH 621.134. THE COST FOR REMOVAL OF CONFLICTING MARKINGS SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS.

METHOD OF MEASUREMENT

TEMPORARY PAVEMENT MARKINGS WILL BE MEASURED COMPLETE IN PLACE, BY CLASS AND MATERIAL, IN THE UNITS DESIGNATED. DASHED LINE QUANTITIES WILL BE THE LENGTH OF THE COMPLETED STRIPE, INCLUDING GAPS, INTERSECTIONS, AND OTHER SECTIONS OF PAVEMENT NOT NORMALLY MARKED, IN ACCORDANCE WITH 621.15.

TEMPORARY PAVEMENT MARKINGS WILL INCLUDE THE LAYOUT, APPLICATION AND REMOVAL OF THE MARKINGS, WHEN REQUIRED.

BASIS OF PAYMENT

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 PLACEMENT, MAINTENANCE AND NECESSARY REMOVAL OF THE MARKINGS.

ITEM	UNIT	DESCRIPTION
614	MILES	TEMPORARY LANE LINES, CLASS _____, (PAINT OR TAPE)
614	MILES	TEMPORARY CENTER LINES, CLASS ____, (PAINT OR TAPE)
614	MILES/LIN. FT.	TEMPORARY CHANNELIZING LINES, CLASS ____, (PAINT OR TAPE)
614	MILES	TEMPORARY EDGE LINES, CLASS I, (PAINT OR TAPE)
614	LIN. FT.	TEMPORARY GORE MARKING, CLASS II, (PAINT OR TAPE)
614	LIN. FT.	TEMPORARY STOP LINES, CLASS I, (PAINT OR TAPE)
614	LIN. FT.	TEMPORARY CROSSWALK LINES, CLASS I, (PAINT OR TAPE)
614	EACH	TEMPORARY LANE ARROWS, CLASS I, (PAINT OR TAPE)
614	EACH	TEMPORARY WORD "ONLY" ON PAVEMENT, 72-INCH, CLASS I, (PAINT OR TAPE)
614	LIN. FT.	TEMPORARY TRANSVERSE LINES, CLASS I, (PAINT OR TAPE)

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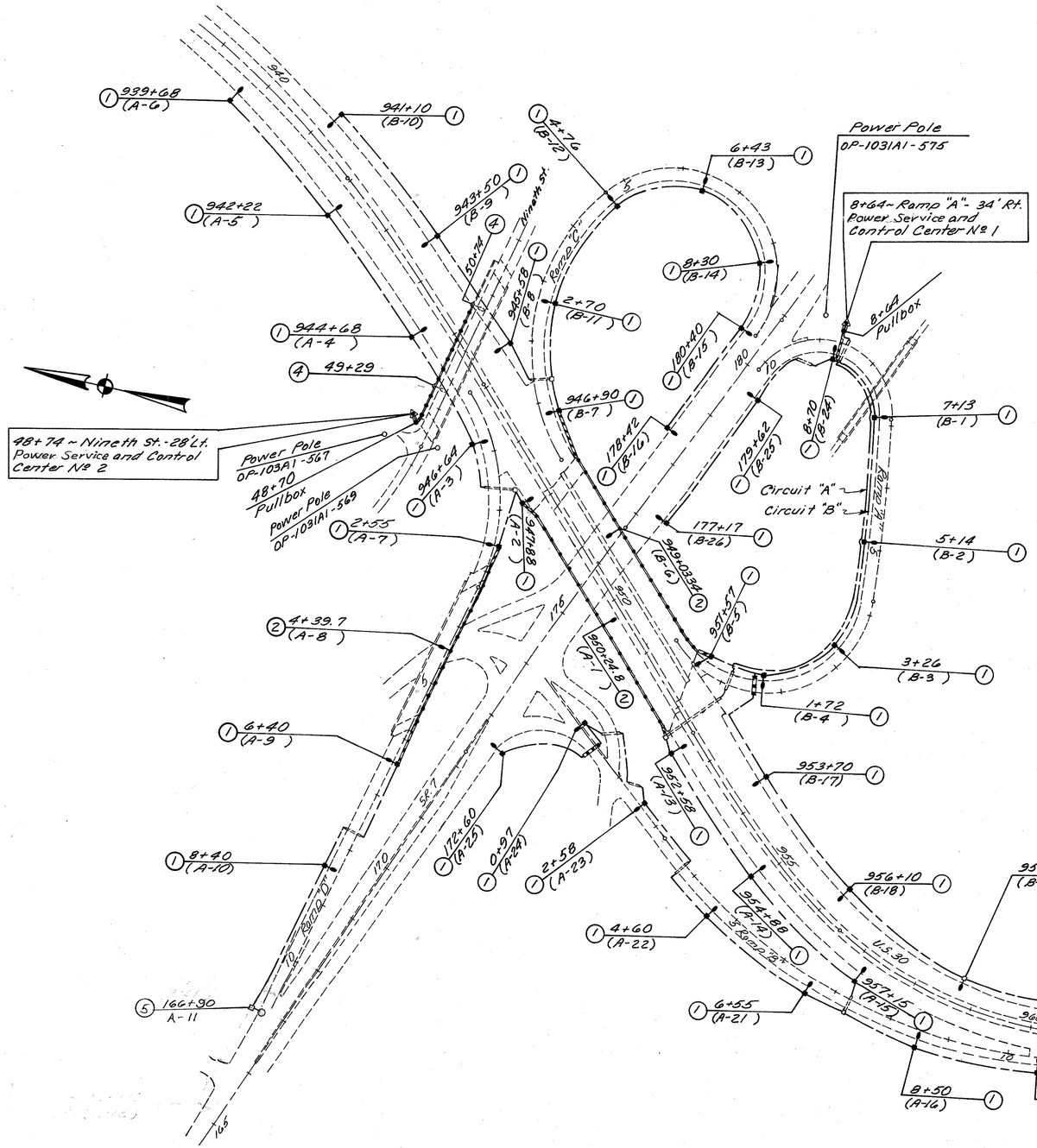

~ LEGEND ~

- Station (Circuit-Pole №) (1) ~ New light pole and foundation.
- Station (Circuit-Pole №) (2) ~ Remove existing light pole and install new light pole on existing bridge parapet anchor bolt assembly.
- Station (Circuit-Pole №) (3) ~ Remove existing light pole and install new light pole on existing retaining wall anchor bolt assembly.
- ~ Existing pullbox to be reused.
- Station Pullbox ~ Pullbox, 18" Circular.
- ~ Existing 2-1/c №6 Distribution Cable To Remain and To Be Reused.
- ~ 1½" Duct-Cable with two №4 AWG, 5,000 Volt Cable.
- ~ Two 1/c №4 AWG, 5,000 Volt Distribution Cable.
- ~ Existing 4" Single Duct to be reused.
- ~ 2" Conduit, 713.04.
- ~ 2½" Conduit, 713.04.
- ~ 3" Conduit, 713.04.
- ~ 3" Conduit, Concrete Encased, 713.04.
- ~ 3" Conduit Jacked Under Pavement, 713.04.
- ~ Power Service and Control Center.
- Station (4) ~ Existing light pole to remain in place, remove existing luminaire and replace with new 120 Volt luminaire.
- Station (5) ~ Existing light pole to remain in place.
- Buried Cable Splicing Kits (6) ~ Cable shall be spliced together by using cable splicing kits and then buried.

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SCHEMATIC CIRCUIT PLAN

LIGHTING GENERAL NOTES

SPECIFICATIONS:
These notes are supplemental to Items 625 and 713 of the State of Ohio Department of Transporation Construction and Materials Specifications.
Reference shall be made to Standard Construction Drawings listed on the Title Sheet of these plans.

625.03 GENERAL:
The power supply agency for this project is:
Ohio Power Co.
301 Cleveland Ave. S.W.
Canton, Ohio 44701
This project has been designed on the basis of 5% voltage drop with a maximum uniformity of 4.0 to 1 for conventional units.
Service: 480 Volts, 2-wire, grounded neutral. (The Interchange)
: 120 Volts, 2-wire, grounded neutral. (Nineth St.)

625.07 - 713.11 LUMINAIRES:
Style B luminaires shall have a single rating of 120 or 480 volt, 200 watt, integral regulator ballasts for use with high pressure sodium lamps and shall be General Electric M400, Westinghouse OV-25-TUDOR, ITT American 400, or equal approved by the Engineer.
Style C luminaires shall have single rated 480 volt, 310 watt, integral regulator ballasts for use with high pressure sodium lamps and shall be General Electric M-1000, Westinghouse OV-50, ITT American 1000, or equal approved by the Engineer.
The high pressure sodium ballast, including starting aids, must protect itself against normal lamp failure modes. The ballast shall be capable of operation with the lamp in an open or short circuit condition for six months without significant loss of ballast life.
The luminaire manufacturer shall supply ballast electrical data and lamp operating volt-watt traces for nominal and plus or minus ten percent (±10%) rated line voltage to verify ballast performance and compliance with lamp specifications, for the rated life of the lamp.

713.14 LAMPS:
High pressure sodium lamps shall be General Electric "Lucalox", Westinghouse "Ceramalux", Sylvania "Lumalux", or equal approved by the Engineer. 150 watt HPS lamps shall be of the 100 volt design, ANSI S56.

UNDERDRAINS FOR PULLBOXES:
Reference is made to Standard Drawing HL-10 for details of draining pull boxes. Underdrains for pull boxes shall be used as directed by the Engineer and shall be provided where the length required for a satisfactory outlet does not exceed approximately 20 feet. An estimated quantity of "30 linear feet of Item 605, 4" shallow pipe underdrains" is included in the Lighting General Summary for this purpose.

ITEM 625 ~ CABLE SPLICING KIT:
This item shall consist of providing and installing an approved cable splicing kit as described in paragraph 5 of Section 713.15 of the ODOT Construction and Material Specifications. The cost of all materials, labor, and equipment necessary for this item shall be included in the unit price bid for each "Item 625 ~ Cable Splicing Kit."

HIGH VOLTAGE DIRECT CURRENT TEST:
A high voltage direct current test, as described in Supplemental Specification 839, shall be performed on all (secondary feeder cable), (Distribution cable), and (duct cable) systems to be installed on this project. The test shall not be performed until after all new construction, such as guardrail, fence, delineator posts, sign supports, etc., in the immediate vicinity of the location of the cable run being tested, has been completed. The test shall be run on the new cable before it is connected to the existing cable at the south end of the project in both the north and southbond lanes.

PADLOCKS AND KEYS:
Padlocks furnished shall be either brass or bronze, equal to Master No. 4BKA or Wilson Bohannan 660A, and shall be keyed in accordance with Construction Specification 631.08, paragraph 3. Payment shall be included in the bid for the items being locked.

REMOVAL OF EXISTING CONTROL CENTER:
This item of work shall consist of removal of the existing control equipment cabinets, conduit supports and foundations to a minimum of one foot below grade and restoration of the disturbed area. All material removed shall become the property of the Contractor and any material required to restore the disturbed area shall be furnished by the Contractor as part of this item. Payment will be made for each control center removed.

REMOVAL OF EXISTING POWER SERVICE:
This item of work shall consist of removal of the existing service pole, disconnect switch & conductor to a minimum of one foot below grade. Also included is arranging for the Ohio Power Company to disconnect the existing electrical service and remove the existing overhead service drop. All material removed shall become the property of the Contractor and any material required for restoration of the disturbed area shall be furnished by the Contractor as part of this item. Payment will be made for each service pole removed.

REMOVAL OF EXISTING LIGHT POLE:
This item of work shall consist of removing the existing light pole complete with bracket arm, transformer base (if used), luminaire, and pole and bracket cable. All materials removed shall become the property of the Contractor. Payment will be made for each light pole removed.

REMOVAL OF EXISTING LIGHT POLE FOUNDATION:
This item of work shall include the removal of the existing light pole foundation to a minimum of one foot below grade and the restoration of the disturbed area. All material removed shall become the property of the Contractor and any material required to restore the disturbed area shall be provided by the Contractor as part of this item. Payment will be made for each light pole foundation removed.

REMOVAL OF EXISTING PULLBOX:
This item of work shall consist of removal of the existing pullbox and contents and restoration of the disturbed area. All removed material shall become the property of the Contractor and any material required to restore the disturbed area shall be provided by the Contractor as part of this item. Payment will be made for each pullbox removed.

CLEANING OF EXISTING CONDUIT AND PULLBOX:
The removal of debris and necessary refurbishment by cleansing, and replacement of broken or missing parts of any conduits on pullboxes to be reused shall be incidental to the various items of work bid.

RESTORATION OF BRIDGE PARAPET AFTER LIGHT POLE IS REMOVED:
Where a light pole is removed from a bridge parapet and no replacement pole is to be installed, the conduit and anchor bolts shall be cut off flush with the concrete surface and the unused conduit plugged for at least three inches with non shrinking concrete. The gap parapet rail shall be closed by welding a new piece of horizontal aluminium rail. (See detail at right.) The welding shall be done by using a proper process for welding aluminium. Payment will be made for each restoration.

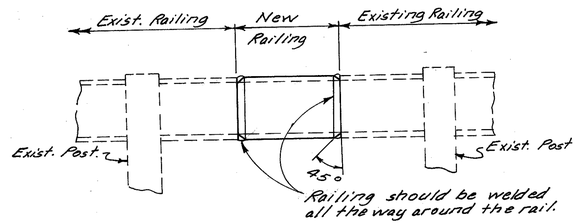
REMOVAL OF EXISTING LUMINAIRE:
This item of work shall consist of removal of the existing luminaires from the light poles on the Ninth St. Bridge. All materials removed shall become the property of the Contractor. Payment will be made for each luminaire removed.

RECONNECTION OF EXISTING CIRCUIT:
This item of work shall consist of disconnecting the existing feed to the lights on the Ninth Street bridge and removing the circuit wiring from the existing pole bases to the first pullbox off the north end of the bridge. Also included is extending the existing conduit on the south end of the bridge to the new pullbox at the new service pole and control center for Ninth Street bridge lighting, installing new distribution cable from the new control center to the pole bases and reconnecting to the existing lighting. Also included is the removal of the existing luminaires and replaced with new luminaires, style B, type II 200 watt H.P.S., 120 volts. Payment will be incidental to the various bid items included in the plan.

REMOVAL OF EXISTING CIRCUIT CABLE:
This item of work shall include the removal of existing circuit cable from pole bases, pullboxes, bridge conduits, and burried conduits so that new cable can be installed. The material removed shall become the property of the contractor. Payment will be made for each foot of cable removed.

ITEM 625 - CONDUIT JACKED UNDER PAVEMENT, AS PER PLAN:
This item shall consist of furnishing and installing conduit of the size or sizes indicated under existing pavement and contiguous shoulders by an approved method such as "drilling" or "jacking".
The Contractor shall place the conduit with the least amount of disturbance to the existing pavement, subbase, berm pavement, or shoulder of the roadway. All push pits or any necessary excavations shall be backfilled and restored in accordance with 625.01.
Measurement of the conduit shall be the actual amount of lineal feet installed under pavement and shoulders, measured in place, as accepted by the Engineer. The unit price bid for Item 625 "Conduit Jacked Under Pavement, as per plan" shall be full compensation for excavation, drilling or jacking, backfilling, compaction, and all labor, material, equipment, and incidentals necessary to complete the work as specified.

MAINTENANCE OF EXISTING LIGHTING:
The contractor shall construct the new lighting system in such a manner that the roadway will be without lighting for a minimum amount of time.



Typical Parapet Rail Gap Closing

POWER SERVICE AND CONTROL CENTER # 2 (NIN TH ST.):
The existing service on Nineth St. is a 120 volt system. The new control center service shall have a rating of 120 Volts. The photo electric cell and the contacter coil in the control center shall have a rating of 120 volts.

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GENERAL SUMMARY

QUANTITIES	
Calc. By: J.C.N.	Chkd. By: M.J.R.
Date: 4-28-82	Date: 4-29-82
Rev. By: J.C.N.	Chkd. By: W.S.R.
Date: 5-8-84	Date: 5-8-84

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ITEM	SHEET NUMBER 59	65	66	67	All *MUNICIPAL* ITEM	TOTAL* QUANT.	UNIT	DESCRIPTION	
								~ LIGHTING ~	1
									2
									3
Special		35	13	3	Special	51	Each	Remove Existing Light Pole And Luminaire	4
Special		30	12	3	Special	45	Each	Remove Existing Light Pole Foundation	5
Special		38	12	5	Special	55	Each	Remove Existing Pullbox	6
Special		1			Special	1	Each	Remove Existing Control Center	7
Special		1			Special	1	Each	Remove Existing Power Service	8
Special		1680	137	51	Special	1868	Lin.Ft.	Remove Existing Circuit Cable	9
Special		3			Special	3	Each	Restoration Of Existing Bridge Parapet	10
Special		2			Special	2	Each	Remove Existing Luminaire	11
									12
605	30				605	30	Lin.Ft.	4" Shallow Pipe Underdrain	13
									14
									15
625		3			625	3	Each	Light Pole Design, AT 8B 41.7	16
625		3			625	3	Each	Light Pole Design, ST 8B 41.7	17
625		1			625	1	Each	Light Pole Design, A 10B 40	18
625		12		2	625	14	Each	Light Pole Design, AT 10B 41.7	19
625									20
625			4		625	4	Each	Light Pole Design, AT 12B 41.7	21
625		1			625	1	Each	Light Pole Design, ST 12B 41.7	22
625		2			625	2	Each	Light Pole Design, A 15B 40	23
625		2	3		625	5	Each	Light Pole Design, AT 15B 41.7	24
625		8	4		625	12	Each	Light Pole Design, AT 18B 41.7	25
									26
625		29	10	2	625	41	Each	Light Pole Foundation, 24"x 8'	27
									28
625		14	3	2	625	19	Each	Luminaire, Style B Type III, 200 Watt High Pressure Sodium, 7.13.11, 480 Volt	29
625		18	8		625	26	Each	Luminaire, Style C Type III, 310 Watt High Pressure Sodium, 7.13.11 480 Volt	30
625		2			625	2	Each	Luminaire, Style B Type II, 200 Watt High Pressure Sodium, 7.13.11, 120 Volt	31
									32
625		29	10	2	625	41	Each	Ground Rod, 7.13.16	33
625		2			625	2	Each	Pullbox, Metal, 7.13.09	34
625		4691	2082	389	625	7162	Lin.Ft.	Trench, 24" Deep	35
									36
									37
625		177			625	177	Lin.Ft.	Conduit, 2" 7.13.04	38
625		39		84	625	123	Lin.Ft.	Conduit, 2½" 7.13.04	39
625		6			625	6	Lin.Ft.	Conduit, 3" 7.13.04	40
625		18			625	18	Lin.Ft.	Conduit, 3" 7.13.04, Concrete Encased	41
625		88			625	88	Lin.Ft.	Conduit, 3" 7.13.04, Jacked Under Pavement, As Per Plan	42
									43
									44
625		3464	1254	208	625	4926	Lin.Ft.	N°10 AWG, Pole And Bracket Cable	45
625		5844	2345	355	625	8544	Lin.Ft.	1½" Duct-Cable With 2-N°4 AWG 5,000 Volt Cable	46
625		3074		290	625	3304	Lin.Ft.	N°4 AWG 5,000 Volt Distribution Cable	47
									48
									49
625		34	11	2	625	47	Each	Connector Kit, Type II	50
625		34	11	2	625	47	Each	Connector Kit, Type III	51
									52
625		16	5	2	625	23	Each	Cable Splicing Kit	53
									54
		2							55
625		2			625	2	Each	Control Center	56
625					625	2	Each	Power Service	57
									58
									59
625		Lump			839	Lump	Lump	High Voltage Test	60
									61
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LIGHTING QUANTITIES SUB-SUMMARY

Quantities	
Calc. Date	Chk'd. Date
J.C.N. 4-26-82	M.J.R. 4-29-82

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REF. NO.	STATION TO STATION	SIDE	SPECIAL								625																						839
			Remove Existing Light Pole and Luminaire	Remove Existing Light Pole Foundation	Remove Existing Pullbox	Remove Existing Control Center	Remove Existing Power Service	Remove Existing Circuit Cable	Restoration Of Existing Bridge Parapet	Remove Existing Luminaire	Light Pole Design, AT 8B 41.7	Light Pole Design, ST 8B 41.7	Light Pole Design, A 10B 40	Light Pole Design, AT 10B 41.7	Light Pole Design, ST 10B 41.7	Light Pole Design, AT 12B 41.7	Light Pole Design, ST 12B 41.7	Light Pole Design, A 15B 40	Light Pole Design, AT 15B 41.7	Light Pole Design, AT 18B 41.7	Light Pole Foundation 24"x8"	Luminaire, Style B FLT 200 Watt H.P.S. 480 Volt 713.11	Luminaire, Style C FLT 310 Watt H.P.S. 480 Volt 713.11	Luminaire, Style B FLT 200 Watt H.P.S. 120 Volt 713.11	Ground Rod, 713.16	Pullbox, Metal, 713.09	Trench, 24" Deep	Conduit, 2" 713.04	Conduit, 2½" 713.04	Conduit, 3" 713.04	Conduit, 3" 713.04 Concrete Encased	Conduit, 3" 713.04 Jacked Under Pavement, As Per Plan		1/c #10 AWG, Pole And Bracket Cable	¼" Duct-Cable With 2 #6 & 4 AWG 5000 Volt Cable	#4 AWG 5000 Volt Distribution Cable	Connector Kit, Type II	Connector Kit, Type III	Cable Splicing Kit	Control Center	Power Service	High Voltage Direct Current Test
			Each	Each	Each	Each	Each	Lin.Ft.	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.		Lin.Ft.	Lin.Ft.	Lin.Ft.	Each	Each	Each	Each	Each	Lump
1	939+24 ~ U.S. 30	Rt.	1	1	1															1	1		1		1														
2	939+68 ~ U.S. 30	Rt.																														120			1	1			
3	939+68 To 942+22 ~ U.S. 30	Rt.																								248							258						
4	942+22 ~ U.S. 30	Rt.																		1	1		1		1							120			1	1			
5	941+70 ~ U.S. 30	Rt.	1	1	1																					241							251						
6	942+22 To 944+68 ~ U.S. 30	Rt.																		1	1		1		1							120			1	1			
7	944+68 ~ U.S. 30	Rt.																								198							208						
8	943+70 ~ U.S. 30	Rt.	1	1	1															1	1		1		1							114			1	1			
9	944+68 To 946+64 ~ U.S. 30	Rt.																								76							140						
10	946+64 ~ U.S. 30	Rt.																								97							107						
11	1+25 ~ Ramp 'D'	Rt.	1	1	1															1	1		1		1							104			1	1			
12	1+62 ~ Ramp 'D'	Rt.			1																																		
13	947+60 ~ U.S. 30	Rt.	1	1																						39		39					398						
14	946+64 To 947+62 ~ U.S. 30	Rt.						54																		100							204						
15	947+62 - U.S. 30 To 2+55 - Ramp 'D'	Rt. - Lt.																																					
16	2+55 ~ Ramp 'D'	Lt.												1						1	1		1			25							35						
17	2+85 ~ Ramp 'D'	Lt.	1	1	1						1									1			1		1							100			1	1			
18	2+55 To 4+39.7 ~ Ramp 'D'	Lt.						150																		30							40						
19	4+39.7 ~ Ramp 'D'	Lt.											1									1				38	38						496						
20	4+39.7 To 5+38 ~ Ramp 'D'	Lt.						97																		110									1	1			
21	947+62 ~ U.S. 30	Rt.																		1	1		1		1							120			1	1			
22	947+62 To 947+88 ~ U.S. 30	Rt.																								147							152						
23	947+88	Rt.									1									1	1		1		1							100			1	1			
24	948+79.4 ~ U.S. 30	Rt.	1					10	1																	7.18			31				906						
25	947+88 To 950+24.8 - U.S. 30	Rt.						205																		197			26				233						
26	950+24.8 ~ U.S. 30	Rt.	1					10										1								167							226						
27	951+53.97 ~ U.S. 30	Rt.	1					10	1											1						100									1	1			
28	950+24.8 To 953+28 - U.S. 30	Rt.						181																		103							108						
29	952+28 ~ U.S. 30	Rt.																		1	1		1		1							120			1	1			
30	952+28 To 952+58 ~ U.S. 30	Rt.																								246							256						
31	952+58 ~ U.S. 30	Rt.																		1	1		1		1							120			1	1			
32	953+00 ~ U.S. 30	Rt.	1	1	1																					212							222						
33	952+58 To 954+00 - U.S. 30	Rt.																		1	1		1		1							120			1	1			
34	952+28 - U.S. 30 To 8+44 - Ramp 'A'	Rt.						147																		70							113						
35	1+10 ~ Ramp 'A'	Lt.			1																																		
36	172+60 ~ SR 7	Rt.																1								124							134						
37	172+60 - S.R. 7 To 0+97 - Ramp 'B'	Rt. - Lt.																		1	1		1			104									1	1			
38	0+65 ~ Ramp 'B'	Rt.	1	1	1																					189							199						
39	0+68 ~ Ramp 'B'	Lt.			1																																		
40	0+97 To 2+58 ~ Ramp 'B'	Lt.						49																		167							226						
41	0+97 ~ Ramp 'B'	Lt.									1									1	1		1			100									1	1			
42	1+27 ~ Ramp 'B'	Lt.			1																																		
43	1+44 ~ Ramp 'B'	Lt.			1																																		
44	2+05 ~ Ramp 'B'	Lt.	1	1	1																																		
45	2+17 ~ Ramp 'B'	Lt.			1																																		
46	2+33 ~ Ramp 'B'	Lt.			1																																		
47	2+58 ~ Ramp 'B'	Lt.												1						1	1		1			104									1	1			
48	2+58 To 3+62 ~ Ramp 'B'	Lt.																								103							108						
49	940+60 ~ U.S. 30	Lt.	1	1	1																																		
50	941+10 ~ U.S. 30	Lt.																		1	1		1		1							120			1	1			
51	941+10 To 943+50 - U.S. 30	Lt.																								246							256						
52	942+90 ~ U.S. 30	Lt.	1	1	1															1	1		1		1							120			1	1			
53	943+50 ~ U.S. 30	Lt.																								212							222						
54	943+50 To 945+58 ~ U.S. 30	Lt.																		1	1		1		1							120			1	1			
55	944+60 ~ U.S. 30	Lt.	1	1	1																																		
56	945+58 ~ U.S. 30	Lt.																		1	1		1		1							120			1	1			
57	945+58 - U.S. 30 To 1+38 - Ramp 'C'	Lt. - Rt.						33																		70							113						
58	945+90 ~ U.S. 30	Lt.	1	1	1																																		
59	1+38 ~ Ramp 'C'	Lt.			1																																		
60	1+38 ~ Ramp 'C'	Rt.																																					
61	1+38 To 2+70 ~ Ramp 'C'	Rt.																								124							134						
62	1+40 ~ Ramp 'C'	Rt.	1	1																																			
63	2+70 ~ Ramp 'C'	Rt.												1						1	1		1			104									1	1			
64	2+70 To 4+76 ~ Ramp 'C'	Rt.																								189							199						
65	2+90 ~ Ramp 'C'	Lt.	1	1	1																																		
66	0+97 ~ Ramp 'B'	Lt.					1																																

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LIGHTING QUANTITIES SUB-SUMMARY

Quantities	
Calc. Date	Chk'd. Date
J.C.N. 4-26-82	M.J.R. 4-29-82

FED. RD. DIVISION	STATE	PROJECT	
	OHIO		

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REF. NO.	STATION TO STATION	SIDE	SPECIAL: Remove Existing Light Pole and Luminaire (Each)	Remove Existing Light Pole Foundation (Each)	Remove Existing Pullbox (Each)	Remove Existing Control Center (Each)	Remove Existing Power Service (Each)	Remove Existing Circuit Cable (Lin.Ft.)	Restoration Of Existing Bridge Parapet (Each)	Remove Existing Luminaire (Each)	625: Light Pole Design, AT 8B 41.7 (Each)	Light Pole Design, ST 8B 41.7 (Each)	Light Pole Design, A 10B 40 (Each)	Light Pole Design, AT 10B 41.7 (Each)	Light Pole Design, ST 10B 41.7 (Each)	Light Pole Design, AT 12B 41.7 (Each)	Light Pole Design, ST 12B 41.7 (Each)	Light Pole Design, A 15B 40 (Each)	Light Pole Design, AT 15B 41.7 (Each)	Light Pole Design, AT 18B 41.7 (Each)	Light Pole Foundation 24"x8" (Each)	Luminaire, Style B T-III, 200 Watt H.P.S., 480 Volt, 713.11 (Each)	Luminaire, Style C FEL, 310 Watt H.P.S., 480 Volt, 713.11 (Each)	Luminaire, Style B T-III, 200 Watt H.P.S., 120 Volt, 713.11 (Each)	Ground Rod, 713.16 (Each)	Pullbox, Metal, 713.09 (Each)	Trench, 24" Deep (Lin.Ft.)	Conduit, 2" 713.04 (Lin.Ft.)	Conduit, 2½" 713.04 (Lin.Ft.)	Conduit, 3" 713.04 (Lin.Ft.)	Conduit, 3" 713.04 Concrete Encased (Lin.Ft.)	Conduit 3" 713.04 Jacked Under Pavement, As Per Plan (Lin.Ft.)	839: No 10 AWG, Pole And Bracket Cable (Lin.Ft.)	1½" Duct - Cable With 2 No 4 AWG 5000 Volt Cable (Lin.Ft.)	No 4 AWG 5000 Volt Distribution Cable (Lin.Ft.)	Connector Kit, Type II (Each)	Connector Kit, Type III (Each)	Cable Splicing Kit (Each)	Control Center (Each)	Power Service (Each)	High Voltage Direct Current Test (Lump)
67	4+40 ~Ramp 'C'	Lt.	1	1	1																																				
68	4+76 ~Ramp 'C'	Rt.												1							1	1		1																	
69	4+76 To 6+43 ~Ramp 'C'	Rt.																								149								104						
70	5+90 ~Ramp 'C'	Lt.	1	1	1																														159					
71	6+43 ~Ramp 'C'	Rt.												1							1	1		1										104						
72	6+43 To 8+30 ~Ramp 'C'	Rt.																								157									167					
73	7+40 ~Ramp 'C'	Lt.	1	1	1																													104						
74	8+30 ~Ramp 'C'	Rt.												1							1	1		1																	
75	8+30 ~Ramp 'C' To 180+40 ~S.R. 7	Rt. Lt.																								127									137					
76	181+30 ~S.R. 7	Lt.	1	1	1																													100						
77	180+40 ~S.R. 7	Lt.										1									1	1		1																	
78	180+40 To 178+42 ~S.R. 7	Lt.																								198									208					
79	179+00 ~ S.R. 7	Lt.	1	1	1																													100						
80	178+42 ~S.R. 7	Lt.										1									1	1		1																	
81	177+00 ~ S.R. 7	Lt.	1	1	1																					50									60					
82	1+38 ~Ramp To 946+90 ~U.S. 30	Rt. Lt.																																						
83	946+90 ~U.S. 30	Lt.												1							1	1		1										104						
84	946+30 To 949+03.34 ~U.S. 30	Lt.						125																		89	89									448					
85	947+65 ~U.S. 30	Lt.	1	1	1																																				
86	949+03.34 ~U.S. 30	Lt.	1					10										1						1										110						
87	949+03.34 To 951+57 ~U.S. 30	Lt.						231																		28	28									538					
88	950+50.52 ~U.S. 30	Lt.	1					10	1																															
89	951+57 ~U.S. 30	Lt.																			1	1		1										120						
90	951+57 ~U.S. 30 To 1+62 ~Ramp 'A'	Lt.																								85									95					
91	1+62 ~Ramp 'A'	Lt.																																				2		
92	1+62 ~Ramp 'A' To 953+70 ~U.S. 30	Lt.																								166						31			207					
93	953+70 ~U.S. 30	Lt.																	1			1		1										114						
94	953+70 To 954+00 ~U.S. 30	Lt																								30									35					
95	0+84 ~Ramp 'A'	Lt.			1																																		
96	951+90 ~U.S. 30	Lt.	1	1	1																																			
97	1+62 To 1+72 ~Ramp 'A'	Lt.																								9									19					
98	1+72 ~Ramp 'A'	Lt.												1							1	1		1										104						
99	1+72 To 3+26 ~Ramp 'A'	Lt.																																	140					
100	2+20 ~Ramp 'A'	Rt.	1	1	1																																			
101	3+26 ~Ramp 'A'	Lt.												1							1	1		1										104						
102	3+26 To 5+14 ~Ramp 'A'	Lt.																																	184					
103	3+55 ~Ramp 'A'	Rt.	1	1	1																																			
104	5+14 ~Ramp 'A'	Lt.												1							1	1		1										104						
105	5+14 To 7+13 ~Ramp 'A'	Lt.																																	208					
106	5+35 ~Ramp 'A'	Rt.	1	1	1																																			
107	7+13 ~Ramp 'A'	Lt.												1							1	1		1										104						
108	7+13 To 8+54 ~Ramp 'A'	Lt.																																	120					
109	7+15 ~Ramp 'A'	Rt.	1	1	1																																			
110	8+50 ~Ramp 'A'	Rt.	1	1																																				
111	8+54 ~Ramp 'A'	Lt.																																				2		
112	8+54 To 8+70 ~Ramp 'A'	Lt.																								5									25					
113	8+70 ~Ramp 'A'	Lt.												1							1	1		1										104						
114	8+70 ~Ramp 'A' To 179+62 ~S.R. 7	Lt. Rt.						25																		132									167					
115	9+16 ~Ramp 'A'	Lt.			1																																		
116	9+45 ~Ramp 'A'	Lt			1																																		
117	180+00 ~S.R. 7	Rt.	1	1	1																																			
118	179+62 ~S.R. 7	Rt.											1								1	1		1										100						
119	179+62 To 177+17 ~S.R. 7	Rt.																								245									255					
120	178+00 ~ S.R. 7	Rt.	1	1	1																																			
121	177+17 ~S.R. 7	Rt.											1								1	1		1										100						
122	8+54 To 8+64 ~Ramp 'A'	Lt. Rt.						35																		10									70					
123	8+64 ~Ramp 'A'	Rt																							1	10					10				80			4	1	1	Lump
124	50+74 ~Nineth St.	Lt.						90		1														1											310					
125	50+74 To 49+29 ~Nineth St.	Lt.						145																																
126	49+29 ~ Nineth St.	Lt.						10		1														1											138					
127	49+29 To 48+70 ~Nineth St.	Lt.						53																		6			6								2		
128	48+70 ~Nineth St.	Lt.																							1															
129	48+70 To 48+74 ~Nineth St.	Lt.																								8					8				36					
130	48+74 ~ Nineth St.	Lt.																																				1	1	Lump
131	951+54 ~ U.S. 30	Lt.				1																																	
132	TOTAL SHEET No 65		35	30	38	1	1	1680	3	2		3	3	1	12			1	2	2	8	29	14	18	2	29	2	469	177	39	6	18	88		3464	5844	3074	34	34	16	2	2	Lump

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LIGHTING QUANTITIES SUB-SUMMARY

Quantities	
Calc. Date J.C.N. 4-26-82	Chk'd. Date M.J.R. 4-29-82
Rev. Date J.C.N. 5-8-84	Chk'd. Date W.S.R. 5-8-84

FED. RD. DIVISION	STATE	PROJECT	
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REF. NO.	STATION TO STATION	S I D E	SPECIAL: Remove Existing Light Pole and Luminaire, Each	SPECIAL: Remove Existing Light Pole Foundation, Each	SPECIAL: Remove Existing Pullbox, Each	SPECIAL: Remove Existing Control Center, Each	SPECIAL: Remove Existing Power Service, Each	SPECIAL: Remove Existing Circuit Cable, Lin.Ft.	SPECIAL: Restoration Of Existing Bridge Parapet, Each	SPECIAL: Remove Existing Luminaire, Each	625: Light Pole Design, AT 8B 41.7, Each	625: Light Pole Design, ST 8B 41.7, Each	625: Light Pole Design, A 10B 40, Each	625: Light Pole Design, AT 10B 41.7, Each	625: Light Pole Design, ST 10B 41.7, Each	625: Light Pole Design, AT 12B 41.7, Each	625: Light Pole Design, ST 12B 41.7, Each	625: Light Pole Design, A 15B 40, Each	625: Light Pole Design, AT 15B 41.7, Each	625: Light Pole Design, AT 18B 41.7, Each	625: Light Pole Foundation 24"x8', Each	625: Luminaire, Style B, F-III, 200 Watt H.P.S., 480 Volt, 7.13.11, Each	625: Luminaire, Style C, F-III, 310 Watt H.P.S., 480 Volt, 7.13.11, Each	625: Luminaire, Style B, F-II, 200 Watt H.P.S., 120 Volt, 7.13.11, Each	625: Ground Rod, 7.13.16, Each	625: Pullbox, Metal, 7.13.09, Each	625: Trench, 24" Deep, Lin.Ft.	625: Conduit, 2", 7.13.04, Lin.Ft.	625: Conduit, 2½", 7.13.04, Lin.Ft.	625: Conduit, 3", 7.13.04, Lin.Ft.	625: Conduit, 3" 7.13.04, Concrete Encased, Lin.Ft.	625: Conduit 3" 7.13.04 Backed Under Pavement, As Per Plan, Lin.Ft.	839: No. 10 AWG, Pole And Bracket Cable, Lin.Ft.	839: 1½" Duct Cable With 2#14 & 4 AWG 5,000 Volt Cable, Lin.Ft.	839: No. 4 AWG 5,000 Volt Distribution Cable, Lin.Ft.	839: Connector Kit, Type II, Each	839: Connector Kit, Type III, Each	839: Cable Splicing Kit, Each	839: Control Center, Each	839: Power Service, Each	839: High Voltage Direct Current Test, Lump
			Each	Each	Each	Each	Each	Lin.Ft.	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Lump
133	954+00 To 956+10 ~ U.S. 30	Lt.																											198								203								
134	954+10 ~ U.S. 30	Lt.	1	1	1																																								
135	956+10 ~ U.S. 30	Lt.																	1			1		1			1		240								114				1	1			
136	956+10 To 958+70 ~ U.S. 30	Lt.																																			250								
137	956+40 ~ U.S. 30	Lt.	1	1	1																																							
138	958+70 ~ U.S. 30	Lt.	1					10								1								1												108				1	1			
139	958+70 To 960+42 ~ U.S. 30	Lt.																											165								175								
140	960+42 ~ U.S. 30	Lt.																		1	1			1			1									120				1	1			
141	960+42 To 963+10 ~ U.S. 30	Lt.						65																					190								265								
142	961+00 ~ U.S. 30	Lt.	1	1																																								
143	963+10 ~ U.S. 30	Lt.																		1	1			1			1									120				1	1			
144	963+10 To 963+30 ~ U.S. 30	Lt.																											20								30								
145	963+30 ~ U.S. 30	Lt.	1	1	1																																					2			
146																																													
147																																													
148																																													
149																																													
150																																													
151																																													
152	954+00 To 954+88 ~ U.S. 30	Rt.																											91								96								
153	954+88 ~ U.S. 30	Rt.																		1	1			1			1									120				1	1			
154	954+88 To 957+15 ~ U.S. 30	Rt.																											240								250								
155	955+25 ~ U.S. 30	Rt.	1	1	1																																							
156	957+15 ~ U.S. 30	Rt.																		1	1			1			1									120				1	1			
157	957+15 ~ U.S. 30 To 7+28 ~ Ramp 'B'	Rt.						31																					26								67								
158	957+55 ~ U.S. 30	Rt.	1	1	1																																							
159	7+28 ~ Ramp 'B'	Lt.			1																																							
160	7+28 ~ Ramp 'B'	Rt.																																								1			
161	3+62 To 4+60 ~ Ramp 'B'	Lt. Rt.						31																					101								137								
162	3+78 ~ Ramp 'B'	Lt.			1																																							
163	3+80 ~ Ramp 'B'	Rt.	1	1	1																																							
164	4+60 ~ Ramp 'B'	Rt.														1								1	1			1								108				1	1			
165	4+60 To 6+55 ~ Ramp 'B'	Rt.																											201								211								
166	5+55 ~ Ramp 'B'	Rt.	1	1	1																																							
167	6+55 ~ Ramp 'B'	Rt.														1								1	1			1								108				1	1			
168	6+55 To 7+28 ~ Ramp 'B'	Rt.																											73								83								
169	7+28 To 8+50 ~ Ramp 'B'	Rt.																											127								137								
170	7+30 ~ Ramp 'B'	Rt.	1	1																																								
171	8+50 ~ Ramp 'B'	Rt.														1								1	1			1								108				1	1			
172	8+50 ~ Ramp 'B' To 960+22 ~ U.S. 30	Rt.																											201								211								
173	9+05 ~ Ramp 'B'	Rt.	1	1	1																																							
174	960+22 ~ U.S. 30	Rt.																		1				1			1									114				1	1			
175	960+22 To 962+06 ~ U.S. 30	Rt.																											200								211								
176	10+65 ~ Ramp 'B'	Rt.	1	1	1																																							
177	962+06 ~ U.S. 30	Rt.																		1				1			1									114				1	1			
178	962+06 To 962+15 ~ U.S. 30	Rt.																											9								19								
179	962+15 ~ U.S. 30	Rt.	1	1	1																																					2			
180																																													
181																																													
182																																													
183																																													
184																																													
185																																													
186	TOTAL SHEET No. 66		13	12	12			137								4				3	4	10	3	8		10		2082								1254	2345		11	11	5			

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LIGHTING QUANTITIES SUB-SUMMARY

Quantities	
Calc. Date	Chk'd. Date
J.C.N. 42688	M.J.R 4-29-82

FED. RD DIVISION	STATE	PROJECT	
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REF. NO.	STATION TO STATION	SIDE	SPECIAL								625																							839
			Remove Existing Light Pole and Luminaire	Remove Existing Light Pole Foundation	Remove Existing Pullbox	Remove Existing Control Center	Remove Existing Power Service	Remove Existing Circuit Cable	Restoration Of Existing Bridge Parapet	Remove Existing Luminaire	Light Pole Design, AT 8B 41.7	Light Pole Design, ST 8B 41.7	Light Pole Design, A 10B 40	Light Pole Design, AT 10B 41.7	Light Pole Design, ST 10B 41.7	Light Pole Design, AT 12B 41.7	Light Pole Design, ST 12B 41.7	Light Pole Design, A 15B 40	Light Pole Design, AT 15B 41.7	Light Pole Design, AT 18B 41.7	Light Pole Foundation 24"x8'	Luminaire, Style B 1-HPS 200 Watt H.P.S. 480 Volt 713.11	Luminaire, Style C 1-HPS 310 Watt H.P.S. 480 Volt 713.11	Luminaire, Style B 1-HPS 200 Watt H.P.S. 120 Volt 713.11	Ground Rod 713.16	Pullbox, Metal 713.09	Trench, 24" Deep	Conduit 2" 713.04	Conduit 2½" 713.04	Conduit 3" 713.04	Conduit 3" 713.04 Concrete Encased	Conduit 3" 713.04 Jacked Under Pavement, As Per Plan		No 1 0 AWG Pole And Bracket Cable	½" Dust Cable With 2 #14 4 AWG 5,000 Volt Cable	No 4 AWG 5000 Volt Distribution Cable	Connector Kit Type II	Connector Kit Type III	Cable Splicing Kit	Control Center	Power Service	High Voltage Direct Current Test
			Each	Each	Each	Each	Each	Lin.Ft.	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Each	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.		Lin.Ft.	Lin.Ft.	Lin.Ft.	Each	Each	Each	Each	Each	Lump
187	5+38 TO 6+40 ~Ramp 'D'	Lt.						21																		84		84								230					
188	5+95 ~Ramp 'D'	Lt.	1	1	1																																				
189	6+40 ~Ramp 'D'	Lt.												1							1	1			1																
190	6+40 TO 8+40 ~Ramp 'D'	Lt. Rt.						30																		200										240					
191	7+42 ~Ramp 'D'	Rt.	1	1	1																																				
192	7+70 ~Ramp 'D'	Lt.			1																																				
193	7+70 ~Ramp 'D'	Rt.			1																																				
194	8+40 ~Ramp 'D'	Rt.												1							1	1			1																
195	8+40 TO 9+45 Ramp 'D'	Rt.																								105										115					
196	9+45 ~Ramp 'D'	Rt.	1	1	1																																		2		
201	TOTAL SHEET No. 67		3	3	5			51						2							2	2				389		84						208	355	230	2	2	2			

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~ LEGEND ~

- Station ~ Offset from Curb/Pav't. Edge - Base Type ① Wattage, IES, Arm, Mtg. Ht. (Circuit No.) ~ New Light Pole and Foundation
- Station ~ Offset from Pav't. Edge - Base Type ② Wattage, IES, Arm, Mtg. Ht. (Circuit No.) ~ Remove Existing Light Pole and Install New Light Pole on Exist. Bridge Parapet Anchor Bolt Assembly.
- Station ~ Offset From Pav't. Edge - Base Type ③ Wattage, IES, Arm, Mtg. Ht. (Circuit No.) ~ Remove Existing Light Pole and Install New Light Pole on Exist. Retaining Wall Anchor Bolt Assembly.
- Station ④ ~ Remove Existing Light Pole, Foundation and Pullbox.
- Station ⑤ ~ Remove Existing Light Pole and Foundation.
- Station ⑥ ~ Remove Existing Light Pole From Existing Bridge Parapet.
- ⑧ ~ Existing Light Pole To Remain
- ~ 1½" Duct-Cable with two No 4 AWG, 5000 Volt Cable.
- ~ Two 1/c No 4 AWG, 5000 Volt Distribution Cable.
- ~ 2" Conduit, 713.04
- ~ 2½" Conduit, 713.04
- ~ 3" Conduit, 713.04
- ~ 3" Conduit, Jacked Under Pavement, 713.04
- ~ 3" Conduit, Concrete Encased, 713.04
- ~ Existing Double Duct (2-2½" Steel Conduits, Concrete Encased), To Be Abandoned.
- ~ Existing Single Duct (4" Asbestos, Concrete Encased)
- ~ Existing 2-1/c No 6 Distribution Cable, To Be Abandoned.
- ~ Existing 2-1/c No 6 Distribution Cable To Remain and To Be Reused.
- ~ Existing Power Service
- ~ Existing Control Center
- ~ Power Service and Control Center
- Station ~ Exist. Pullbox To Remain in Place and Reused.
- Station ~ Remove Existing Pullbox
- Station ~ Offset from Pav't. Edge Pullbox ~ Pullbox, 18" Circular
- Station ⑦ Wattage, IES ~ Existing Light Pole To Remain In Place, Remove Existing Luminaire and replace with New 120 Volt Luminaire.
- Buried Cable Splicing Kits ⑨ ~ Cables shall be spliced together by using Cable Splicing Kits then buried

U.S. 30 Curve Data
PI Sta. 937+74.75
Δ = 45°58'30" Rt.
Dc = 3°30'00"
Ls = 400.00'
Rc = 1637.02'
Δc = 31°58'30"
Lc = 913.57'
L.C. = 399.73'
Qs = 7°00'00"
L.T. = 266.88'
S.T. = 133.52'
Yc = 16.27'
Xc = 399.40'
Ts = 896.08'
Es = 145.64'

RAMP "C" Curve Data	RAMP "C" Curve Data	RAMP "A" Curve Data	RAMP "A" Curve Data	S.R. 7 Curve Data
PI. Sta. 2+88.40	PI. Sta. 19+73.82	PI. Sta. 5+62.71	PI. Sta. 10+99.06	PI. Sta. 174+50.52
Δ = 81°20'29" Rt.	Δ = 167°08'41" Rt.	Δ = 5°53'56" Lt.	Δ = 145°42'36" Lt.	Δ = 2°57'00" Rt.
D = 17°04'14"	T = 1509.01'	D = 2°00'00"	T = 388.98'	D = 0°40'00"
T = 288.40'	L = 495.93'	T = 147.60'	L = 305.17'	T = 221.30'
L = 476.50'	E = 1348.56'	L = 294.97'	E = 286.86'	L = 442.50'
E = 106.88'	R = 170.00'	E = 3.80'	R = 120.00'	E = 2.85'
R = 335.64'		R = 2864.79'		R = 8594.37'

RAMP "A" Curve Data	RAMP "D" Curve Data
PI Sta. 4+76.74	PI. Sta. 1+79.61
Δ = 139°54'18" Lt.	Δ = 57°29'47" Rt.
T = 476.74'	D = 17°30'00"
L = 424.79'	T = 179.61'
E = 333.52'	L = 328.55'
R = 173.97'	E = 46.03'
	R = 327.40'

Note: All Guardrail Shown is New Guardrail

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U.S. 30 & S.R. 7 ~ LIGHTING PLAN ~ STA. 939+00 TO STA. 954+00

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MATCH LINE - U.S. 30 - STA. 954+00 (See Sheet No 65)

954+10

954+88 ~16'~ AT 310 III 18-41.7 (A-19)

3+78

3+80

4+60 ~12'~ AT 200 III 12-41.7 (A-22)

955+10 ~14'~ AT 310 III 15-41.7 (B-18)

956+40

955+25

957+15 ~16'~ AT 310 III 18-41.7 (A-15)

5+65

Ramp "B"

6+55 ~12'~ AT 200 III 12-41.7 (A-21)

To Remain In Place

7+28

7+30

8+50 ~12'~ AT 200 III 12-41.7 (A-16)

9+05

958+70 ~2.78'~ AT 310 III 12-41.7 (B-19)

Retaining Wall

SC 956+46.90

957+55

960+42 ~16'~ AT 310 III 18-41.7 (B-20)

961+00

10+65

960+22 ~12'~ AT 310 III 15-41.7 (A-17)

962+06 ~12'~ AT 310 III 15-41.7 (A-18)

963+10 ~16.5'~ AT 310 III 18-41.7 (B-21)

963+50

Buried Cable Splicing Hits

963+05.72

962+15

Tenvel Bridge

964+50

965+80

967+10

968+40

969+75

970+75

P.T. 971+18.34

P.C. 969+03.77

S.T. 967+05.72

U.S. 30
Curve Data
PI Sta. 970+12.33
Δ = 21°27'24" Lt.
D = 10°00'00"
T = 108.56'
L = 214.57'
E = 10.19'
R = 572.96'

U.S. 30
Curve Data
PI Sta. 961+30.24
Δ = 90°00'00" Lt.
D_c = 8°30'00"
L_s = 400.00'
R_s = 674.07'
Δ_c = 56°00'00"
L_c = 658.82'
L.C. = 398.44'
Q_s = 17°00'00"
L.T. = 267.91'
S.T. = 134.46'
X_c = 396.48'
Y_c = 99.31'
T_s = 883.34'
E_s = 293.15'

RAMP "B"
Curve Data
PI Sta. 8+59.81
Δ = 62°42'00" Lt.
D = 6°30'00"
T = 537.00'
L = 964.62'
E = 150.69'
R = 881.47'

Note: All Guardrail Shown is New Guardrail.

For Legend, See Sheet No 65

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U.S. 30 - LIGHTING PLAN - STA. 954+00 TO STA. 970+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

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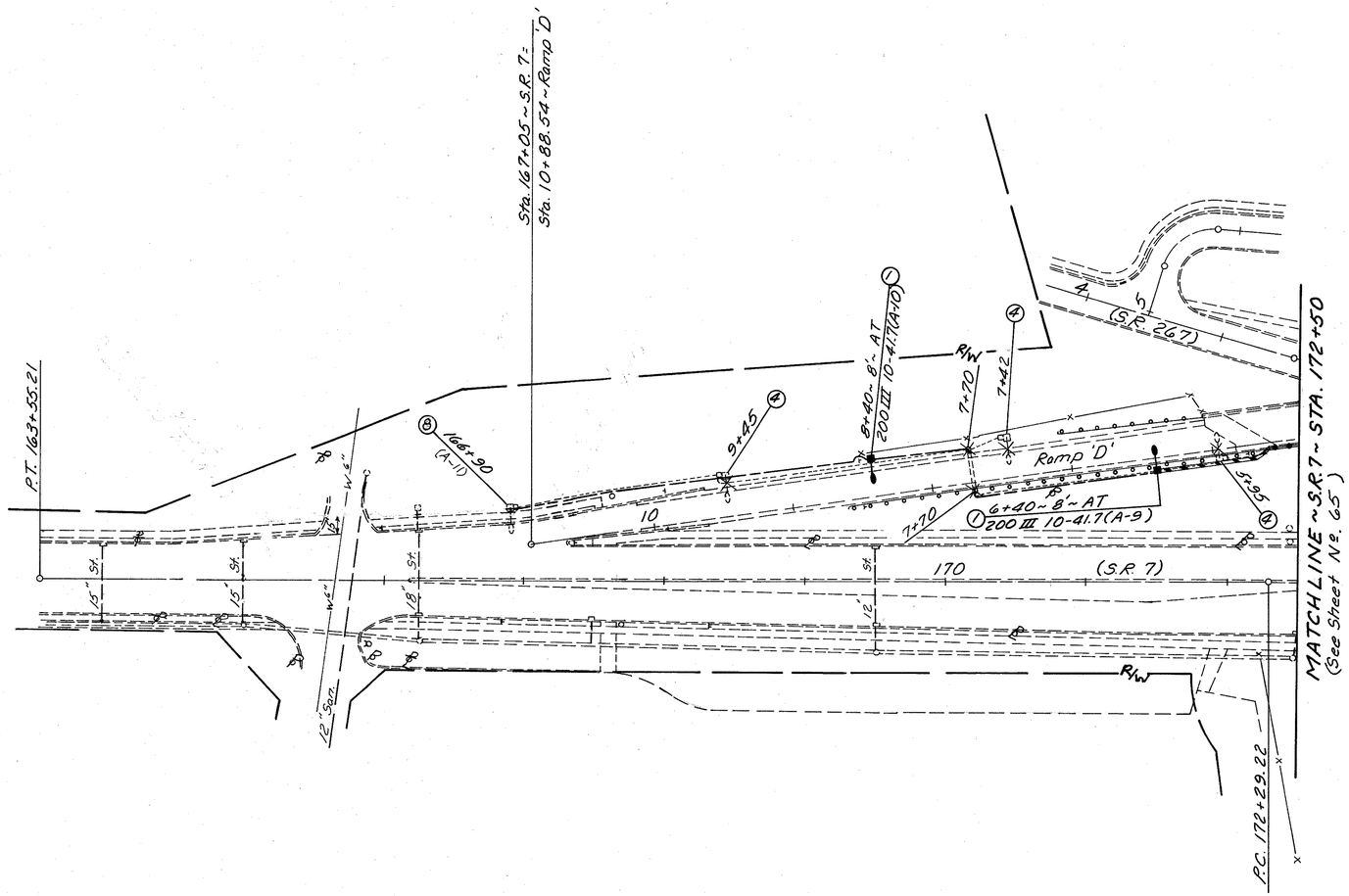

Note: All Guardrail shown is New Guardrail.

For Legend, See Sheet No. 65

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S.R. 7 ~ LIGHTING PLAN ~ STA. 163+50 TO STA. 172+50

FHWA REGION	STATE	PROJECT	
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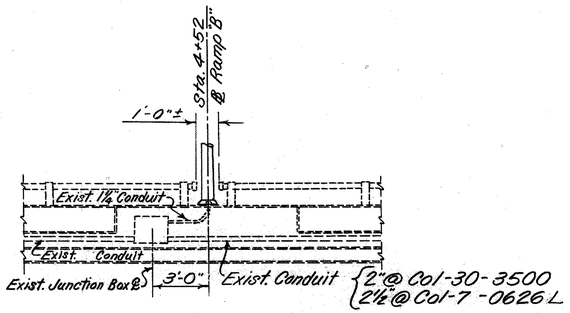
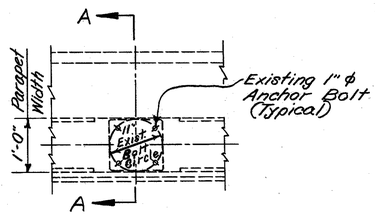
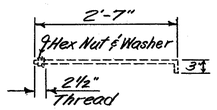


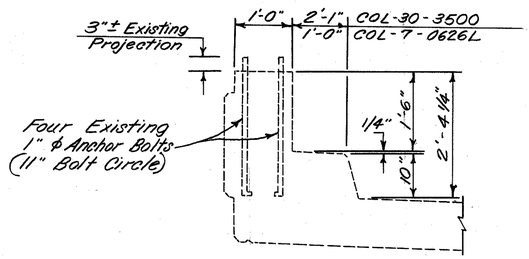
OUTSIDE FASCIA ELEVATION
VIEW OF PARAPET AT LIGHT POLE



EXISTING ANCHOR
BOLT LAYOUT



EXISTING ANCHOR
BOLT DETAIL



SECTION A-A

LIGHT POLE DATA

Reference Letter	Design Number	Foundation Anchor Bolts: Size Diameter X Length	Foundation Anchor Bolts: Bolt Circle Diameter	Transformer Base Style
A	AT8B 41.7	1" x 40"	15"	AT-A
B	ST 8B 41.7	1" x 40"	15"	ST
C	A 10B 40D	1" x 34"	11"	None
D	AT 10B 41.7	1" x 40"	15"	AT-A
E	ST 10B 41.7	1" x 40"	15"	ST
F	AT 12B 41.7	1" x 40"	15"	AT-A
G	ST 12B 41.7	1" x 40"	15"	ST
H	A 15B 40D	1" x 34"	11"	None
I	AT 15B 41.7	1" x 40"	15"	AT-A
J	AT 18B 41.7	1" x 40"	15"	AT-A

CONTROL CENTER DATA

Control Center	Connected Load KVA	Service Entrance Conductor Size-AWG	Enclosure Rating Amps.	Circuit Number	Circuit Load Amps	Circuit Fuse Size Amps.	Circuit Cond. Size AWG	C.T. Rating VA	Power Service
Nº 1 (Ramp "A", Sta. 8+64 34' Rt.)	9.0	4	60	A	18.5	30	4	300	480 V 1 Ø 2W Grounded
				B	18.85	30	4		
Nº 2 (Nineth St. Sta. 48+74 28' Left.)	0.5	4	60	A	20	30	4		120V 1Ø, 2W Grounded

Note: For additional control center details, see standard construction drawings HL-15 & HL-16.

DETAILS FOR LIGHT POLES MOUNTED ON EXISTING BRIDGES
NO SCALE

COL-30-3500 : STA. 949+03.34 Lt., POLE DESIGN A 15B 40D, (CIRCUIT B, POLE Nº 6)
: STA. 950+24.8 Rt., POLE DESIGN A 15B 40D, (CIRCUIT A, POLE Nº 1)
COL-7-0626L : STA. 4+39.7, Lt., POLE DESIGN A 10B 40D, (CIRCUIT A, POLE Nº 8)

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LIGHTING DETAILS

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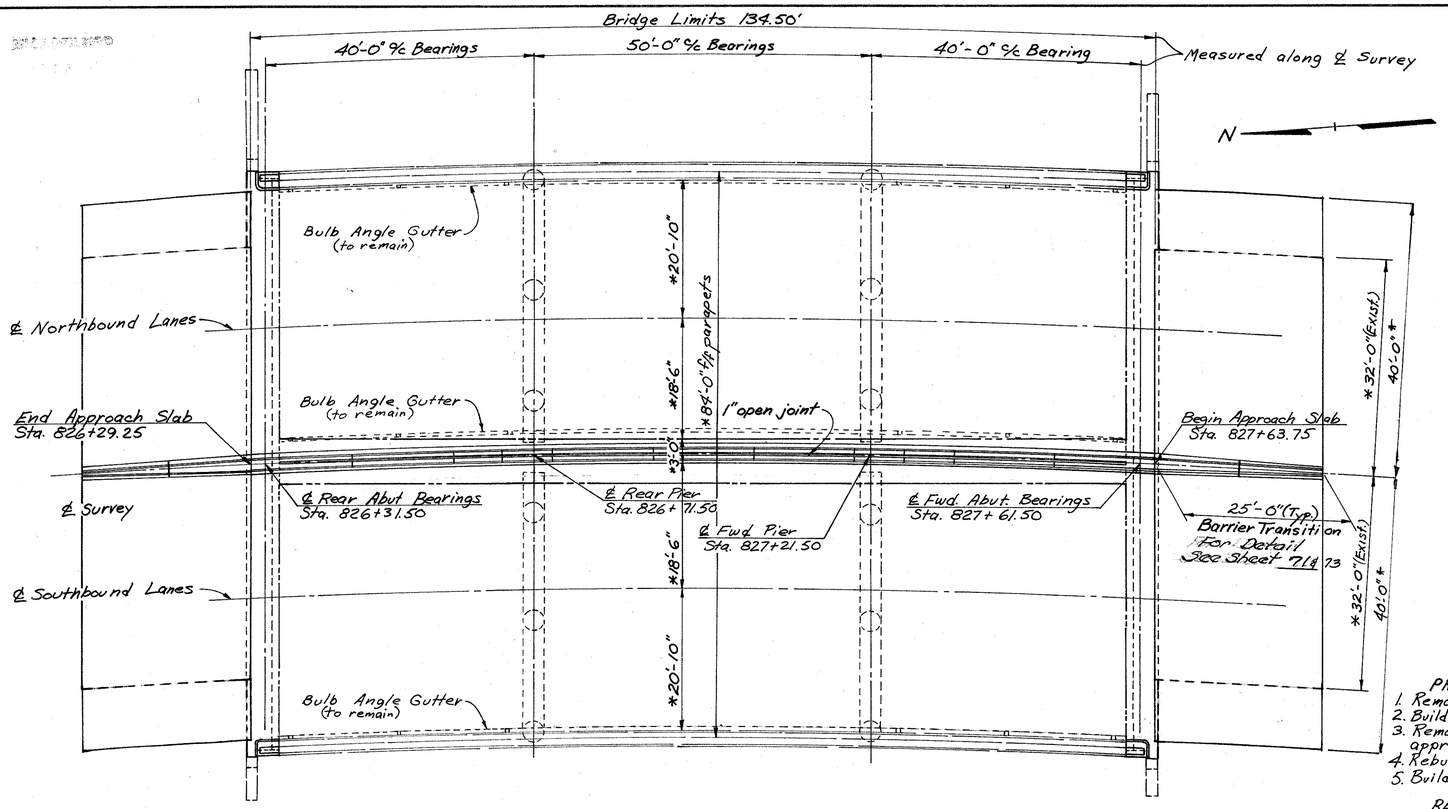
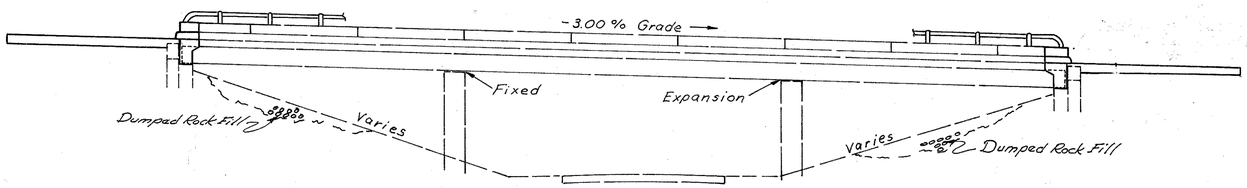


GENERAL PLAN

* Radial dimensions



ELEVATION

NOTE:-An estimated quantity of Item 601 Dumped Rock Fill, Type D, has been included in the Bridge Quantities for filling eroded areas in the back slope. The material shall be placed so as to insure a reasonably smooth and continous surface conforming to the existing slope shown above.

EXISTING STRUCTURE
TYPE: Continuous Steel Beam
SPANS: 40'-50'-40' % Bearings
ROADWAY: 2@37'-10" between curbs with 6' Median with Guardrail
ALIGNMENT: Spiral to 4°R.C.
SKEW: 0°
WEARING SURFACE: 1" Monolithic Concrete

PROPOSED STRUCTURE
TYPE: Continuous Steel Beam with Integral Abutments
SPANS: 40'-50'-40' % Bearings
ROADWAY: 2 @ 39'-4" between curbs with 3' Concrete Median Barrier
ALIGNMENT: Spiral to 4°R.C.
SKEW: 0°
WEARING SURFACE: 1¼" Latex Modified Concrete Overlay

* All Quantities are Rural

BRIDGE QUANTITIES

Item	Total*	Unit	Description
202	Lump Sum	L.S.	Portions of structure removed
202	132.5	Lin. ft.	Guardrail removed for storage
203	20	Cu. yds.	Embankment
503	63	Cu. yds.	Unclassified excavation
509	19,268	Lbs.	Reinforcing steel, grade 60
510	154	Each	Dowel holes
511	113	Cu. yds.	Class S concrete, Superstructure and integral abutments
511	29	Cu. yds.	Class S concrete, Bridge median barrier
512	59	Sq. yds.	Type 'B' waterproofing
516	217	Sq. ft.	1" Preformed expansion joint filler
518	54	Cu. yds.	Porous backfill
518	213	Lin. ft.	6" perforated, helical corrugated metal pipe, 707.01
518	39	Lin. ft.	6" non-perforated, helical corrugated metal pipe, including specials, 707.01
519	20	Sq. ft.	Patching concrete structures
601	40	Cu. yds.	Dumped Rock Fill, Type D
611	445	Sq. yds.	Reinforced concrete approach slabs, 15" thick
622	50	Lin. ft.	Concrete Barrier, Type "A"; as per plan.
845	1,147	Sq. yds.	Latex modified concrete, overlay, 1¼" thick
845	19	Cu. yds.	Latex modified concrete, variable thickness
845	2	Cu. yds.	Latex modified concrete, full depth

GENERAL NOTES

PROPOSED WORK:
1. Remove existing centerline guardrail, curbs and deck to center of inside beams.
2. Build new deck to centerline of survey and new concrete median barrier.
3. Remove existing backwalls, end cross frames, portions of deck, and entire approach slabs.
4. Rebuild abutments as integral and rebuild portions of deck and approach slabs.
5. Build concrete transition barrier between bridge and roadway barrier.

REFERENCE shall be made to Standard Drawings:

AS-1-81	dated 11-27-81	A-1-69 sheet 3 of 4	dated 6-12-69
BR-1	dated 5-29-79	GR-3A	dated 2-5-82

DESIGN DATA:
Concrete, Class S - Comp. stress 4500 p.s.i. for superstructure
Concrete, Class C - Comp. stress 4000 p.s.i. for substructure
Reinforcing steel - ASTM A615, A616, or A617, grade 60, yield stress 60,000 p.s.i. min.
Deck Protective Method - Latex modified concrete overlay

DESIGN SPECIFICATIONS: The proposed work conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1977, including the 1978, 1979 and 1980 Interim Specification and the Ohio "Supplement" to these specifications.

EXISTING STRUCTURE VERIFICATION: Details and dimensions pertaining to the existing structure, have been obtained from old plans and/or field data. Consequently, they are indicative of the existing structure and proposed work but they shall be considered tentative and approximate. The Contractor is referred to CMS Sections 102.05 and 105.02. All project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

ITEM 202, PORTIONS OF STRUCTURE REMOVED: This item shall include removal of all reinforced concrete portions of the deck, curbs, railing, abutments, and approach slabs as shown on the plans; the removal of the end dam, end cross frames and portions of bulb angles; and the removal and later reattachment of existing aluminum railings where required.

MAINTENANCE OF TRAFFIC: Traffic on Hill Ave. shall be maintained at all times for two lanes of traffic with a minimum horizontal width of 26'-0" and a minimum vertical clearance of 13'-8". For maintaining traffic on the mainline during refurbishing on this structure See Sheet Nos. 8-9&10

NOTE: COL-30-32.19 is a designated East and West route, reference to 'Northbound' is Westbound, and reference to 'Southbound' is Eastbound in these plans.

WORK PROCEDURE:
NORTHBOUND LANES -
1. Close northbound lanes to traffic, after placing temporary concrete barrier in Southbound lanes.
2. Remove existing guardrail, curb, and portion of deck to centerline of inside beam.
3. Remove existing backwalls and approach slab and portions of deck and end cross frames.
4. Build new abutments integral with the superstructure to be replaced.
5. Build new bridge parapet railing median barrier and new approach slabs.
6. Scarify remaining portion of deck and place latex modified concrete overlay for the entire deck.

SOUTHBOUND LANES -
1. Close southbound lanes to traffic.
2. Remove existing curb and portions of deck to centerline of inside beam.
3. Remove portions of deck, approach slabs, backwalls and end cross frames.
4. Build new abutments integral with the superstructure to be replaced.
5. Build new approach slabs and bridge parapet railing and median barrier.
6. Scarify remaining portions of deck and place latex modified concrete overlay for the entire deck.

Build transition barrier between bridge and roadway barrier.

ITEM 203 EMBANKMENT shall be placed, as directed by the Engineer, to restore slopes damaged by erosion or the proposed construction.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BUREAU OF MAINTENANCE

1/3

PLAN & ELEVATION, GENERAL NOTES, AND QUANTITIES
BRIDGE NO. COL-30-3269
over HILL AVE.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Dist. 11						5-23-84
J.L.O.	J.L.O.	J.L.O.				

FHWA REGION	STATE	PROJECT	
5	OHIO		

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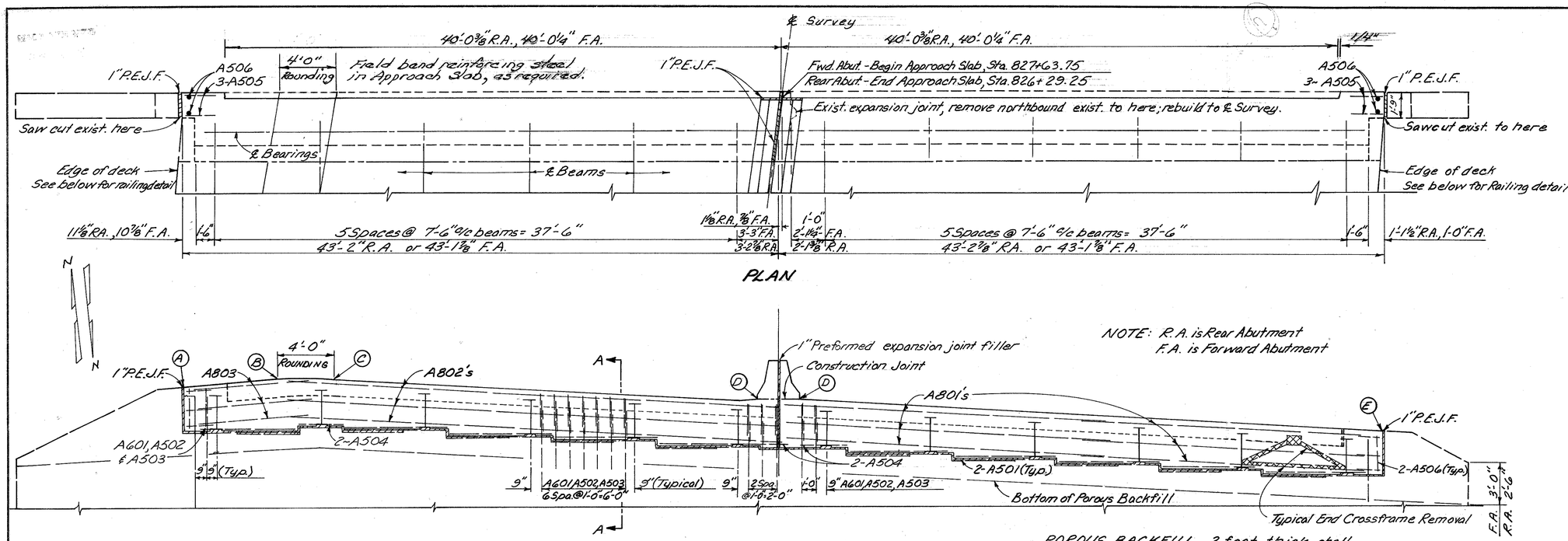
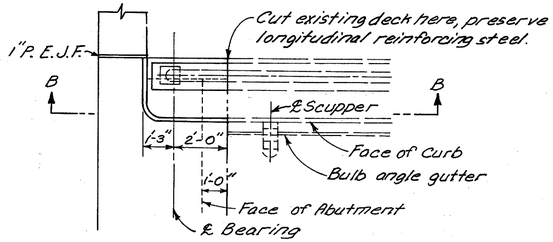


PLAN

NOTE: R.A. is Rear Abutment
F.A. is Forward Abutment

ELEVATION - FORWARD ABUTMENT
REAR ABUTMENT, OPPOSITE HAND

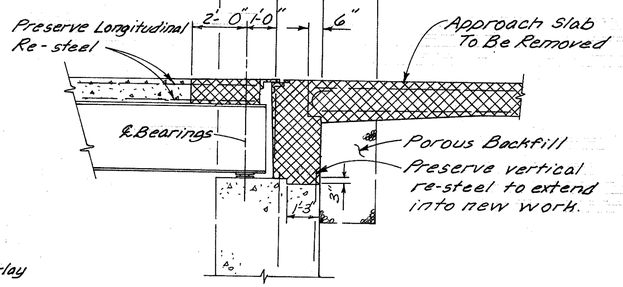
POROUS BACKFILL, 2 feet thick, shall extend up to the plane of the subgrade and laterally to the ends of the wing walls.



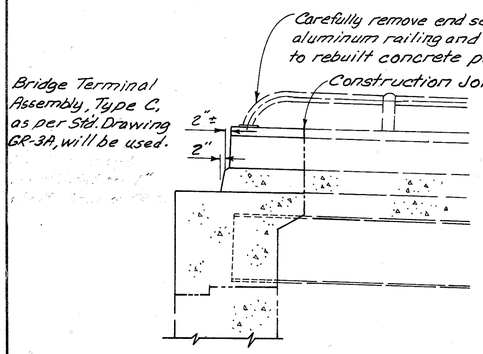
PART PLAN AT OUTSIDE RAILING

TABLE OF ELEVATIONS *					
LOCATION	A	B	C	D	E
REAR ABUTMENT	998.06	998.42	998.40	996.28	993.19
FORWARD ABUTMENT	993.26	993.65	993.66	992.24	990.11

* Elevations are 1 1/4" below final grade @ ℄ Bearings

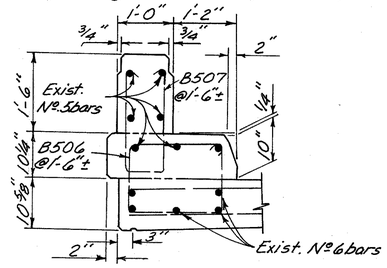


TYPICAL REMOVAL AT ABUTMENTS
(Cross-hatched area to be removed)

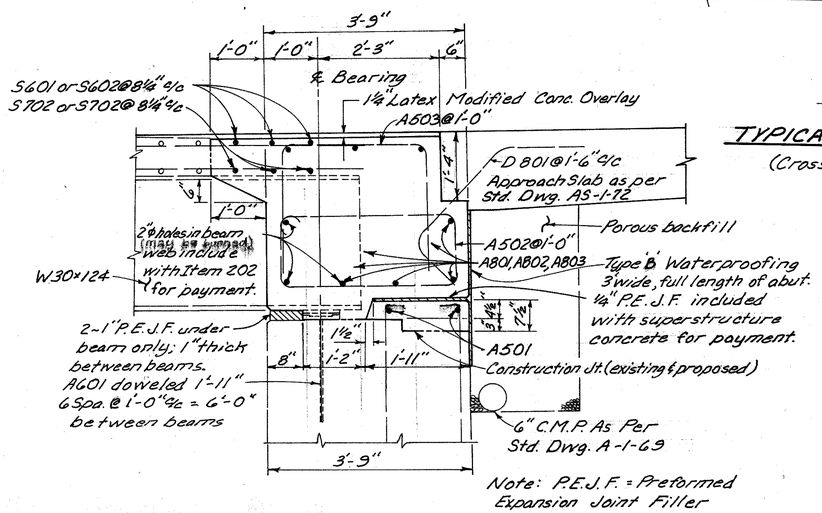


SECTION B-B
Reinforcing Steel Not Shown
Concrete is included in class C concrete, superstructure and integral abutments.

Anchor bolts for end plate of railing shall be galvanized steel 3/4 dia. 1'-0" long, as per 517.05. Payment shall be included for Item 517, Lin. Ft., Railing (Aluminum, rebuilt).



DETAIL 'B'



SECTION A-A

Note: P.E.J.F. = Preformed Expansion Joint Filler

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BUREAU OF MAINTENANCE

2/3

ABUTMENT DETAILS

BRIDGE NO. COL-30-3269
over HILL AVE.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Dist. 11						5-23-84
JLO	JLO					

FHWA REGION	STATE	PROJECT	
5	OHIO		

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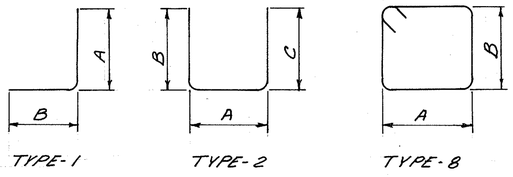
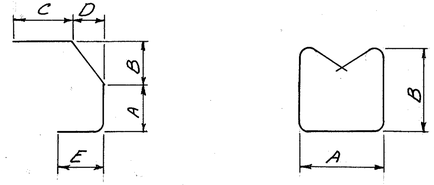
REINFORCING STEEL LIST

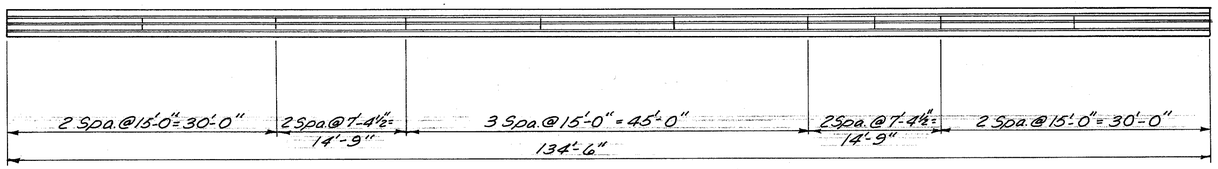
MARK	NUMBER REAR	NUMBER FWD.	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E
ABUTMENT											
A501	20	20	40	7'-2"	299	Str.					
A502	77	77	154	9'-8"	1,553	8	3'-3"	1'-4"			
A503	77	77	154	7'-2"	1,151	2	2'-9"	2'-4"	2'-4"		
A504	6	6	12	3'-0"	38	Str.					
A505	12	12	24	2'-4"	58	Str.					
A506	4	4	8	2'-11"	24	Str.					
A601	77	77	154	4'-0"	925	Str.					
A801	18	18	36	22'-0"	2,115	Str.					
A802	9	9	18	33'-4"	1,602	Str.					
A803	9	9	18	9'-8"	465	Str.					
D801	52	52	104	5'-0"	1,388	16	2'-6"	1'-1"	0	1'-1"	1'-1"
SUPERSTRUCTURE											
S601	3	3	6	43'-7"	393	Str.					
S602	3	3	6	41'-7"	375	Str.					
S701	3	3	6	43'-4"	531	Str.					
S702	3	3	6	41'-4"	507	Str.					
BARRIER											
	LEFT	RIGHT	TOTAL								
B501	88	88	176	3'-0"	551	16	11½"	8½"	6½"	6"	10½"
B502	88	88	176	4'-0"	734	1	3'-1½"	1'-0"			
B503	21	21	42	14'-6"	635	Str.					
B504	12	12	24	6'-10"	171	Str.					
B505	88	88	176	2'-6"	459	Str.					
B506	4	4	8	6'-2"	51	8	1'-6"	1'-4"			
B507	4	4	8	4'-11"	41	18	8"	1'-10"			
B601		366	366	2'-10"	1557	Str.					
B602	32	32	64	34'-2"	3284	Str.					
B603	6	6	12	20'-0"	361	Str.					



TYPE-1 TYPE-2 TYPE-8

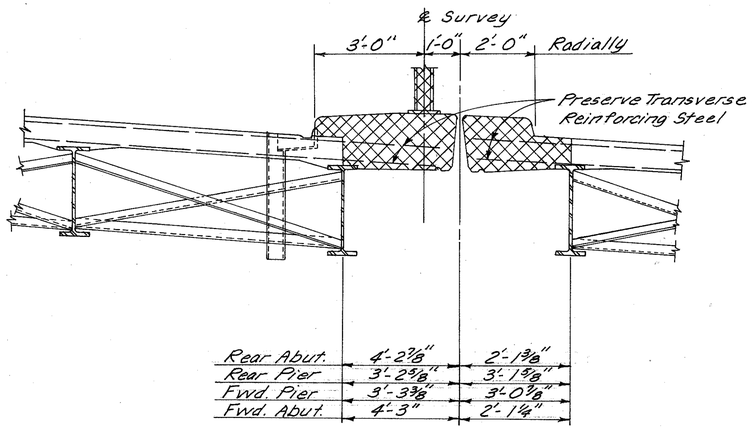


TYPE-16 TYPE-18



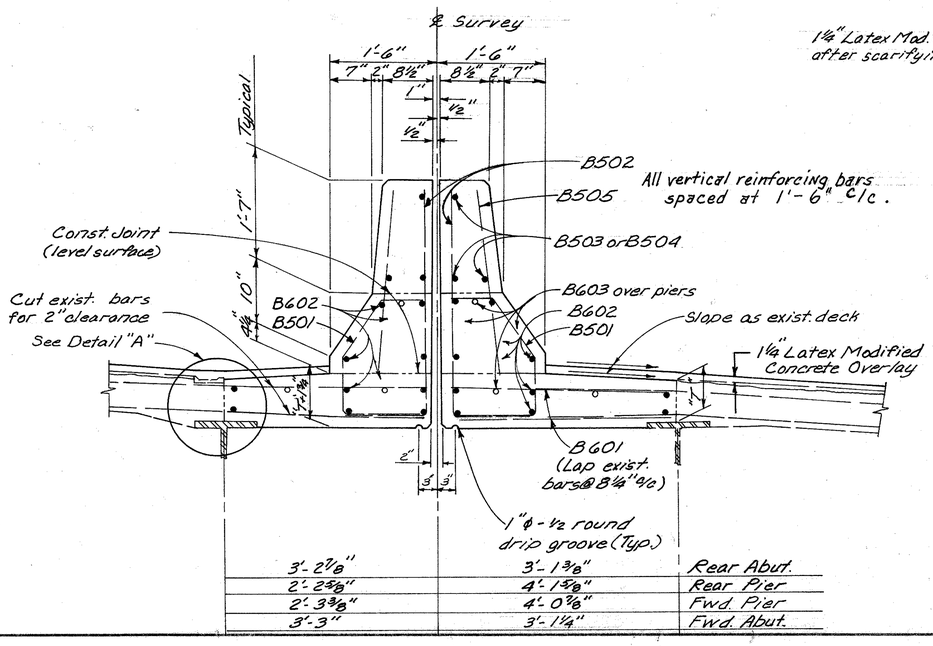
DEFLECTION JOINT SPACING

Deflection Joint as per Std. Dwg. BR-1

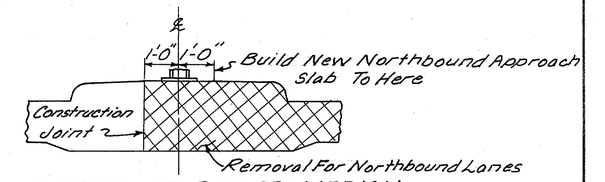


EXISTING MEDIAN BARRIER SHOWING REMOVAL

MEDIAN BARRIER DETAILS

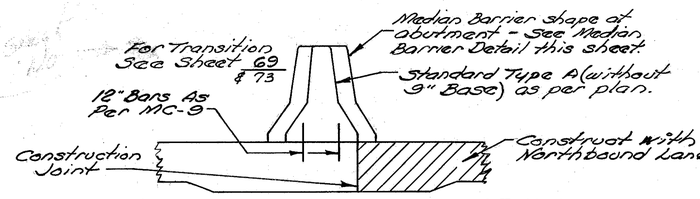


3'-2⅞"	3'-1⅜"	Rear Abut.
2'-2⅝"	4'-1⅜"	Rear Pier
2'-3⅜"	4'-0⅜"	Fwd. Pier
3'-3"	3'-1¼"	Fwd. Abut.

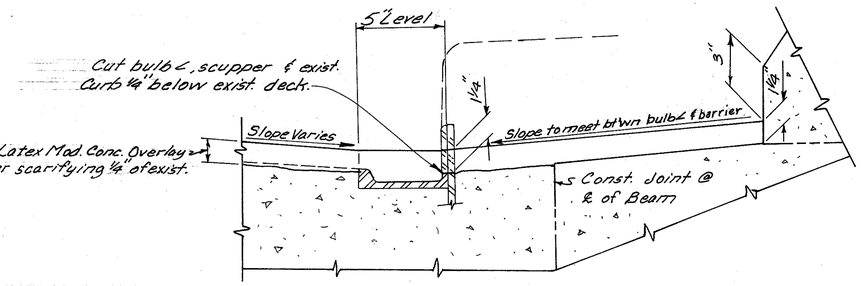


DETAIL OF RAISED MEDIAN ON EXISTING APPROACH SLABS

NOTE: B501 bars shall extend 1'-8" beyond the construction joint to lap bars placed in construction of southbound approach slab.



APPROACH SLAB BARRIER DETAIL



DETAIL "A"

Existing Slab Thickness over Beams *		
Location	℄ Brgs. Piers	℄ Brgs. Abuts.
"T"	"9"	8¾"

* This is the design dimension. Deviations from it may be necessary because the top flange may not have the exact camber or conformation required.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BUREAU OF MAINTENANCE

3/3

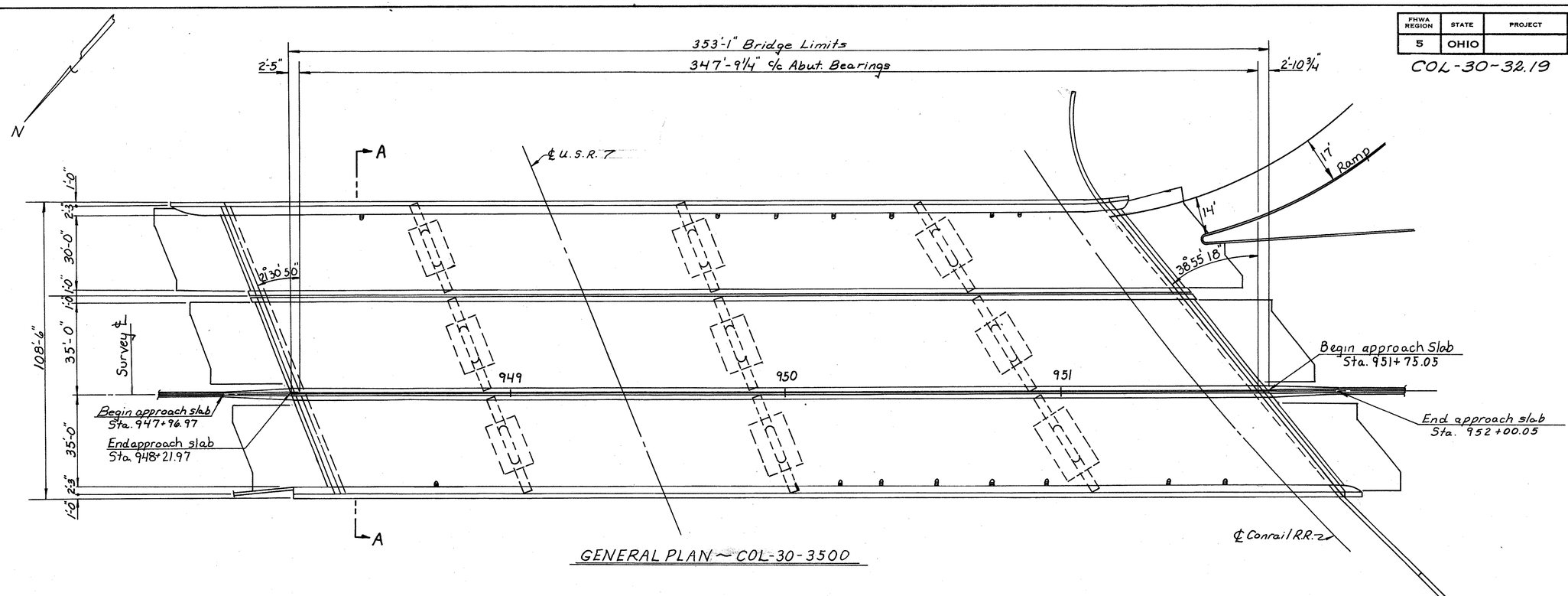
MEDIAN BARRIER DETAILS AND REINFORCING STEEL LIST
BRIDGE NO. COL-30-3269
over HILL AVE.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Dist. 11 JLO	JLO		SLU			5-23-84

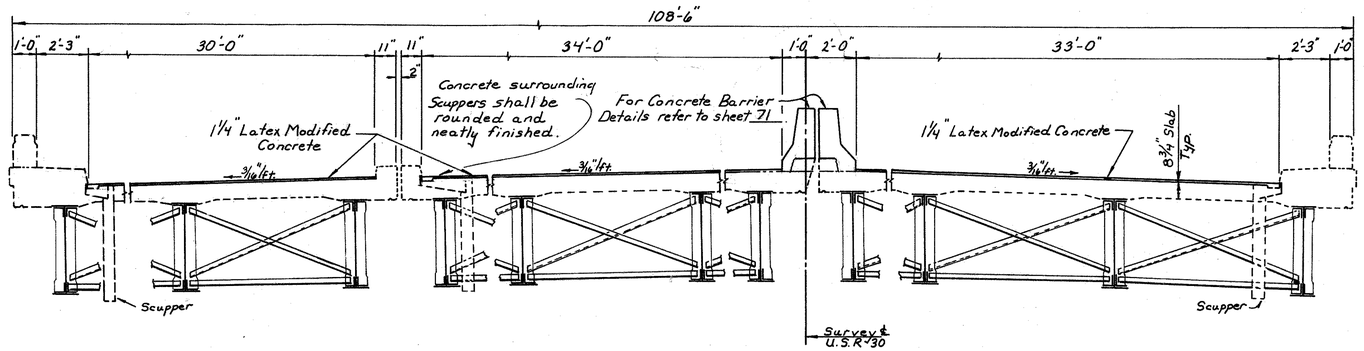
FHWA REGION	STATE	PROJECT	
5	OHIO		

72

COL-30-32.19



GENERAL PLAN — COL-30-3500



SECTION A-A

GENERAL NOTES

WORK REQUIRED:

- Replace guardrail barrier with concrete barrier as per plan
- Item 519, Patching of concrete structures has been included for the repair of the portion of deck on centerline needing repair.
- Scarify the deck to a depth of ¼" and place 1¼" of Latex Modified Concrete Overlay as per Item 845
- Extend structural expansion joints to accommodate the concrete overlay. See BP-5 and sh. 71.

FABRICATOR CERTIFICATION as specified in Item 501.04 is not required.

REFERENCE shall be made to Standard Drawings:
MC-9 dated 11-1-77 SD-1-69 sheet 2 of 4 dated 6-12-69
BR-1 dated 5-29-79

All Quantities are Municipal

QUANTITIES

ITEM		202	202	509	510	511	513	516	519	622	845		
DESCRIPTION	Resurface Area	Portions of Structure Removed	Guardrail Removal	Reinforcing Steel, Grade 60	Dowel holes	Class S Concrete	Structural Steel	Vert. extention of struct. exp. joints sealed as per plan	Patching Concrete Structures	Concrete Barrier Transition to type "A"	LATEX MODIFIED CONCRETE 1¼" Thick	Variable Thickness	Full Depth
UNIT OF MEASURE	Sq. Yds.	Lump Sum	Lin. ft.	Lbs.	Each	Cu. Yds.	Lbs.	Lin. ft.	Sq. ft.	Lin. ft.	Sq. Yds.	Cu. Yds.	Cu. Yds.
TOTALS	3,689.7	Lump Sum	353	10,555	1,396	55	750	230	10	50	3,690	51	5

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BUREAU OF MAINTENANCE

1 / 2

GENERAL PLAN, TYPICAL SECTION, And ESTIMATED QUANTITIES

Bridge No. COL-30-3500

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Dist II SLU.	SLU.		JLO			5-23-84

FHWA REGION	STATE	PROJECT	
5	OHIO	,	

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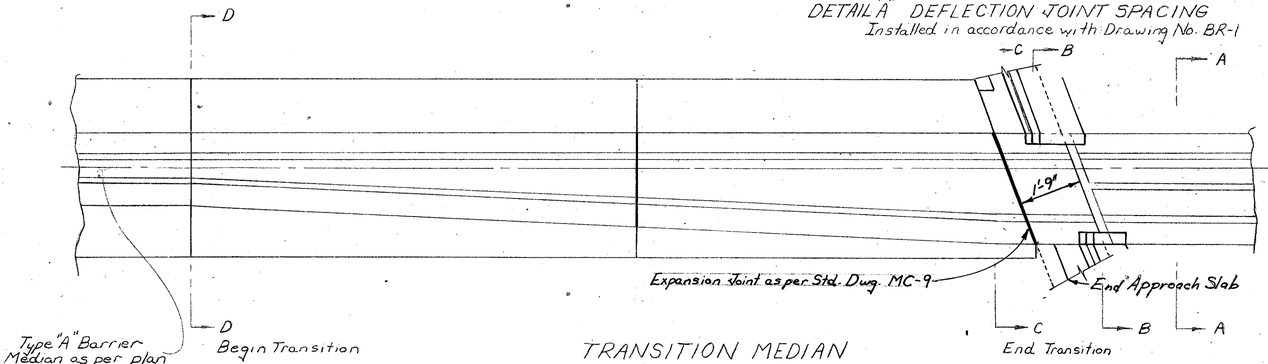
COL-30-32.19

℄ PIER NO.1 ℄ PIER NO.2 ℄ PIER NO.3

3 Spa. @ 15'-0" = 45'-0" Re Steel S501 | 6 Spa. @ 7'-6" = 45'-0" S 502 | 3 Spa. @ 15'-0" = 45'-0" S501 | 8 Spa. @ 7'-6" = 60'-0" S 502 | 3 Spa. @ 15'-0" = 45'-0" S501 | 6 Spa. @ 7'-6" = 45'-0" S502 | 4 Spa. @ 15'-0" = 60'-0" S501 | 8'-1" S503

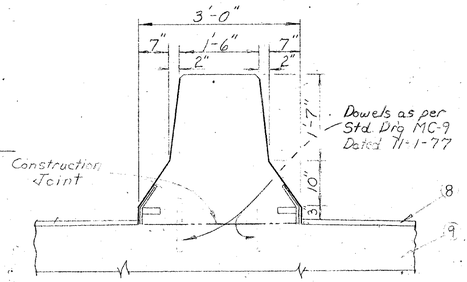
DETAIL "A" DEFLECTION JOINT SPACING

Installed in accordance with Drawing No. BR-1

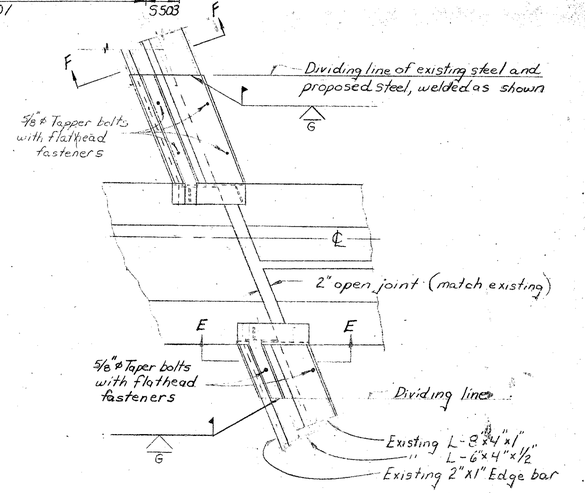


TRANSITION MEDIAN

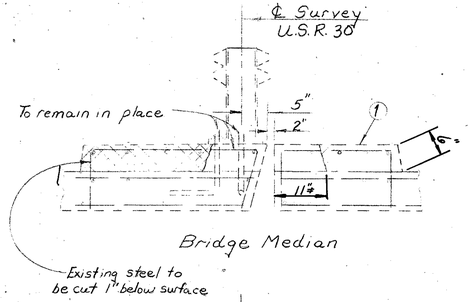
North shown, South similar, but opposite hand.



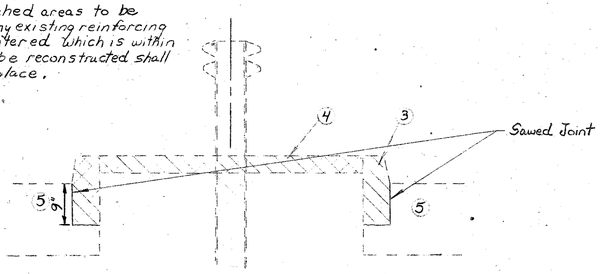
SECTION B-B



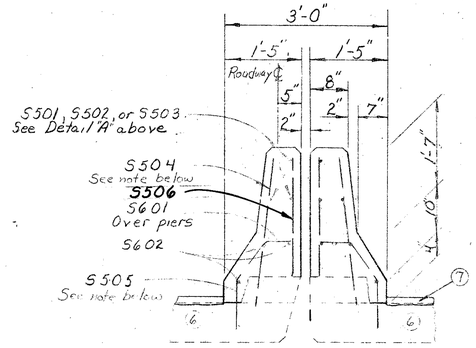
PART PLAN OF CURB PLATES



Note: Hatched areas to be removed. Any existing reinforcing steel encountered which is within the area to be reconstructed shall be left in place.



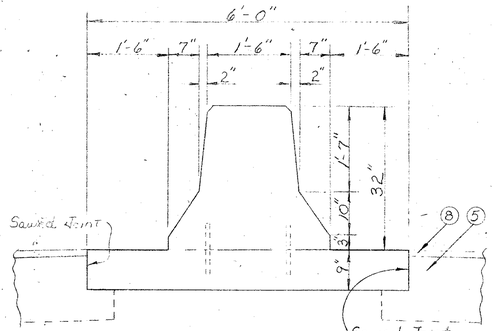
Approach Median



Typical from Sta. 948+23.49 to Sta. 951+73.23

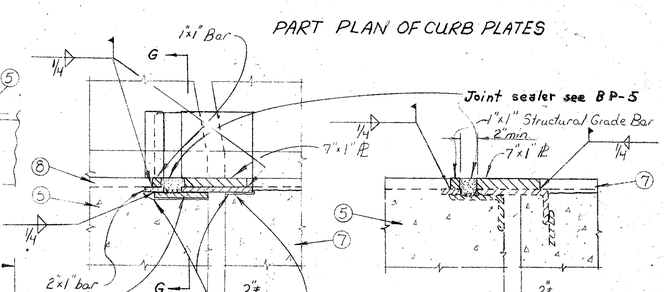
SECTION A-A

Note: Vertical steel shall be doweled 6" into existing concrete and be in accordance with Item 510. Steel spacing shall match existing steel at 1'-0"±. Care should be taken to protect slab reinforcing steel when drilling dowel holes.



SECTION C-C

Typical at Sta. 948+21.81 and Sta. 951+74.94

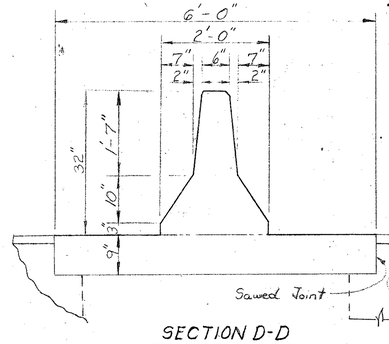


SECTION F-F

SECTION E-E

Areas marked thus shall be sandblasted and wiped clean. Joints shall be filled before rest forms.

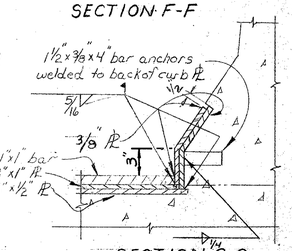
*** Bond to this surface shall be prevented by use of foil or other suitable bond-breaker barrier satisfactory to the Engineer. Care shall be taken not to displace barrier when filling the joint.



SECTION D-D

Sta. 947+98.31 and 951+98.44

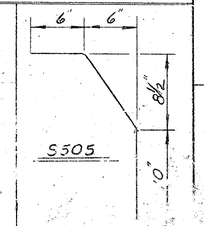
Refer to Std. Drwg. SD-1-69, sheet 2 of 4, for curb plate details not shown.



SECTION G-G

REINFORCING STEEL LIST

MARK	NUMBER	LENGTH	WEIGHT	TYPE
S501	78	14'-6"	1180	Str.
S502	120	7'-0"	876	Str.
S503	6	7'-7"	47	Str.
S504	698	2'-7"	1881	Str.
S505	698	2'-1"	1517	Bent
S506	**698**	**2'-1"**	**1517**	**Str.**
S601	6	34'-0"	306	Str.
S602	54	39'-10"	3231	Str.



KEY

① Existing Bridge Deck
② Abutment Median
③ Concrete [illegible]
④ Concrete [illegible]
⑤ Concrete [illegible]
⑥ Bridge Deck
⑦ 1¼" Latex Modified Concrete Overlay
⑧ Bituminous Asphalt Overlay, Proposed (Thickness Varies from 1" to 3")
⑨ Abutment

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

2/2

CONCRETE BARRIER MEDIAN DETAILS

Bridge No. COL-30-3500

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SLU	SLU		JLO			5-23-84

FHWA REGION	STATE	PROJECT	
5	OHIO		

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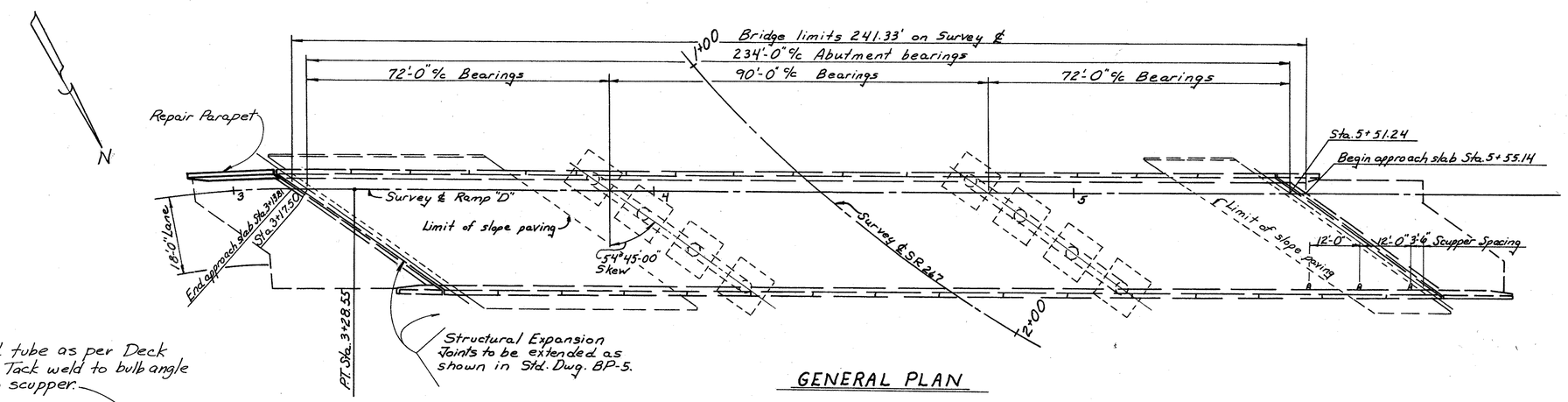
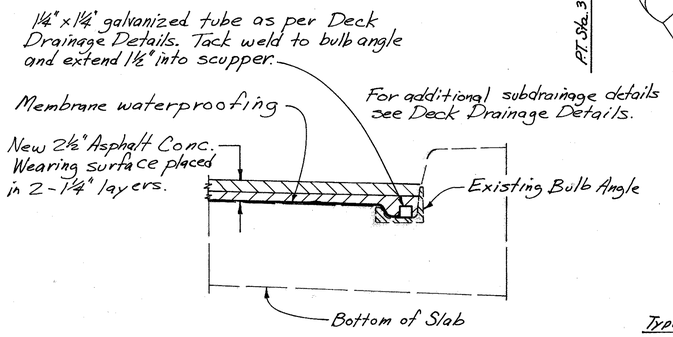
COL-30-32.19

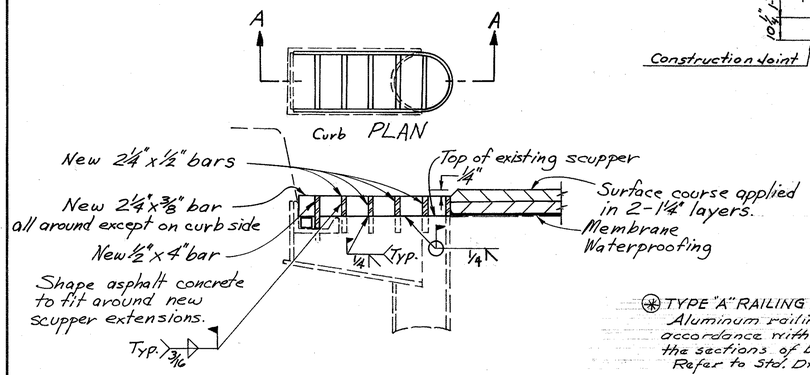


GENERAL PLAN

Bridge № COL-7-0626L



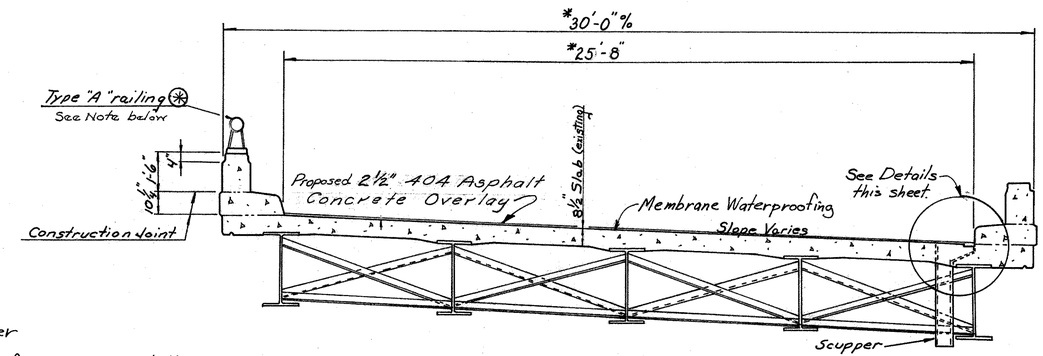
DETAIL AT CURB



SECTION A-A

SCUPPER DETAIL

Payment for vertical extension of the scuppers, which includes the furnishing of all materials, labor, equipment, tools & incidentals shall be made under Item 513.



TYPICAL SECTION

✱ TYPE "A" RAILING NOTE:
Aluminum railing shall be installed in accordance with Item 517.05 to replace the sections of bridge rail that are missing. Refer to Std. Dwg. AR-1-57 revised 2-2-59

GENERAL NOTES

WORK REQUIRED:
- The Contractor shall rebuild the left rear concrete approach parapet as per plan
- The deck is to have a 2½" overlay of Item 404 Asphalt Concrete AC-20 with Membrane Water Proofing.
- Structural expansion joints shall be extended as per Std. Dwg. BP-5. Scuppers shall be extended as per plan.

FABRICATOR CERTIFICATION as specified in 501.04 is not required.

REFERENCE shall be made to Standard Drawings: BP-5 dated 7-16-81 and AR-1-57 dated 2-2-59

NOTE

✱ This is the nominal dimension.

All Quantities are Municipal

QUANTITIES

ITEM		202	509	511	518	516	516	517	407		404	**ITEM SPECIAL		518
DESCRIPTION	Resurface Area	Portions of Structure Removed	Reinforcing Steel, Grade 60	Class C Concrete	Vertical Extension of Scuppers	¾" Prefmd Expansion Jt. Filler	Vert. extention of Expan. Joints, Sealed as per plan	Aluminum Railing	Tack Coat .005 Gal./SY	Cover Aggr. @ 7 lb per S.Y.	Asphalt Concrete	Patching Conc. Bridge Deck Type II	Membrane Water-proofing	Subdrainage for AC W.S.
UNIT OF MEASURE	Sq. Ft.	——	Lbs.	Cu. Yds.	Ea.	Sq. ft.	Lin. Ft.	Lin. Ft.	Gal.	Ton	Cu. Yds.	Sq Yds.	Sq. Yds.	Lin. ft.
TOTALS	6099	Lump Sum	410	4.5	3	21	89	30	34	2.4	47.0	27.0	678.0	235
												** See Proposal Note		

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BUREAU OF MAINTENANCE

1/3

GENERAL PLAN, TYPICAL SECTION, AND ESTIMATED QUANTITIES

Bridge No. COL-7-0626L

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE REVISED
Dist. 11 SLW	SLW		JLO		5-23-84

FHWA REGION	STATE	PROJECT	
5	OHIO		

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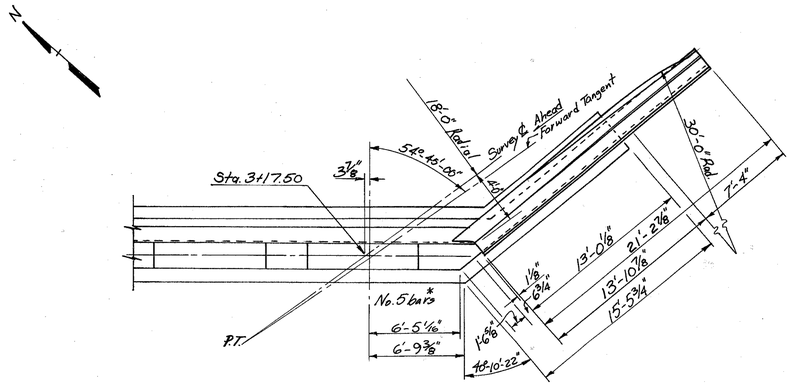
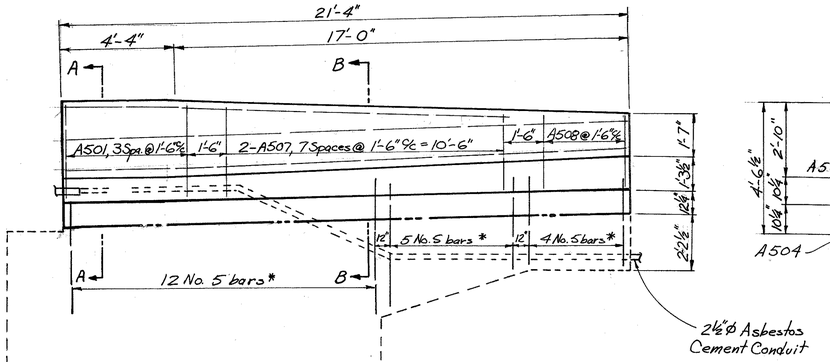
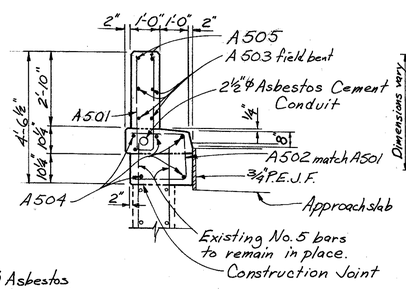
COL-30-32.19



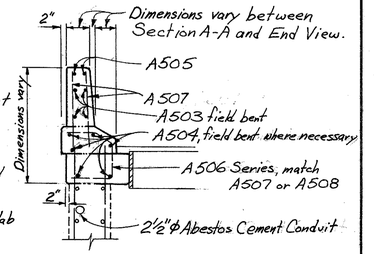
HALF PLAN



Note: Care should be taken to avoid damaging the Conduit.

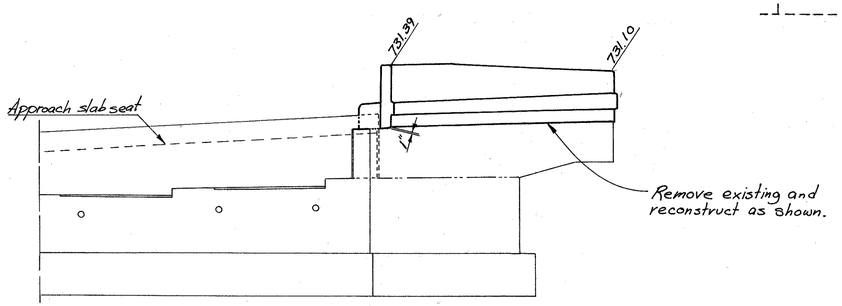


SECTION A-A



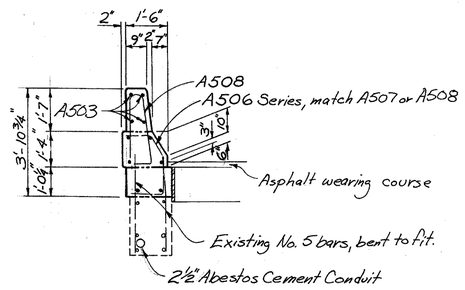
SECTION B-B

* Indicates existing reinforcing steel



HALF ELEVATION

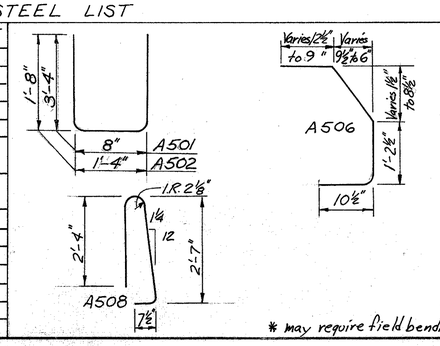
WING ELEVATION



END VIEW

REINFORCING STEEL LIST

MARK	NUMBER	LENGTH	WEIGHT	TYPE
A501	4	7'-1"	30	Bent
A502	4	4'-5"	18	Bent
A503 *	4	21'-0"	88	Str.
A504 *	6	21'-0"	131	Str.
A505 *	2	16'-6"	34	Str.
A506	Series of 11	Varies 3'-8" to 3'-5½"	41	Bent
A507	2 series of 8 = 16	Varies 2'-9" to 3'-4"	51	Str.
A508	3	5'-7"	17	Bent



* may require field bending

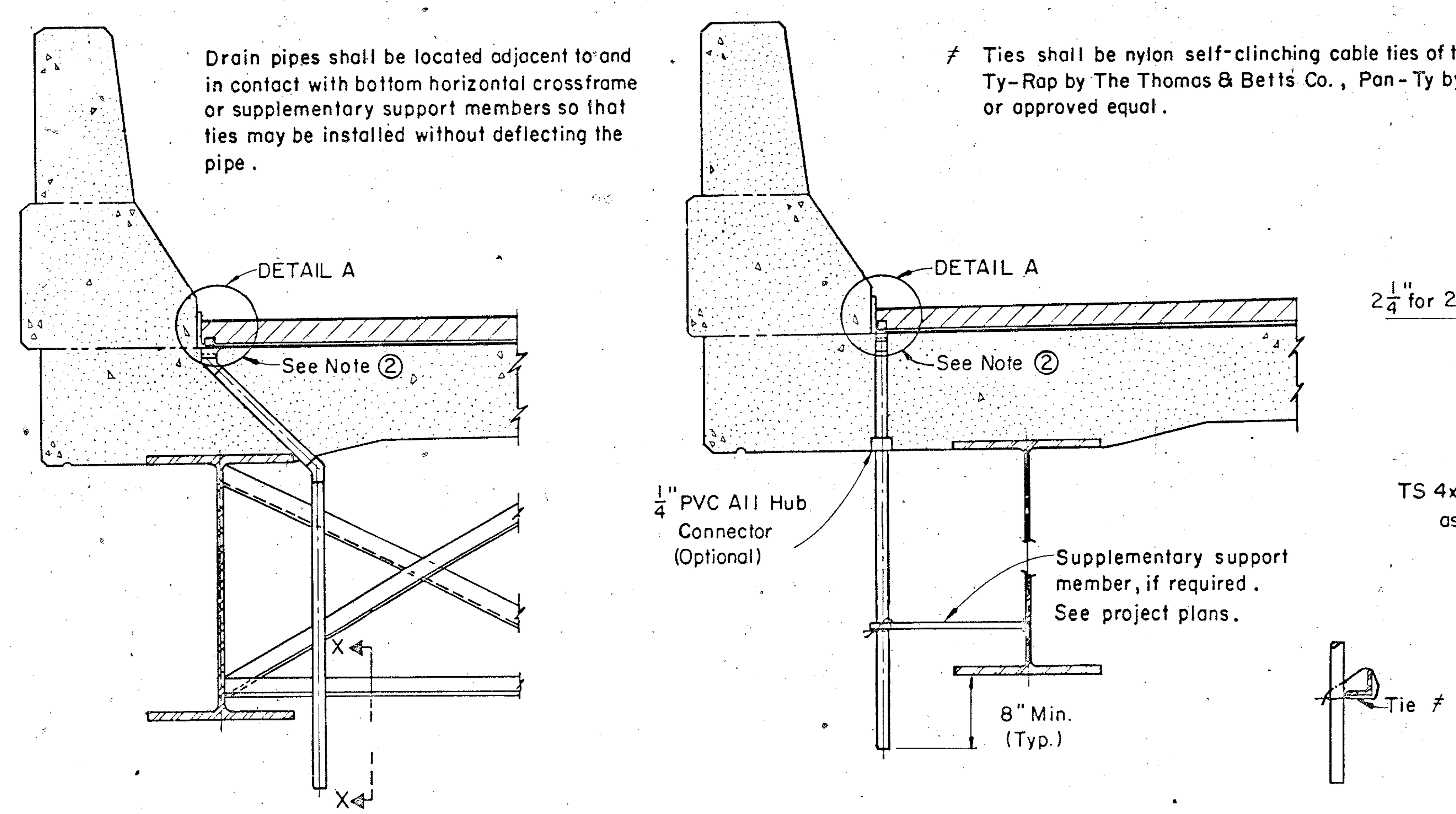
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BUREAU OF MAINTENANCE

2/3

ABUTMENT DETAILS and REINFORCING STEEL LIST

Bridge No. COL-7-0626L

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Dist. 11 JLO	JLO		WRG			5-23-84

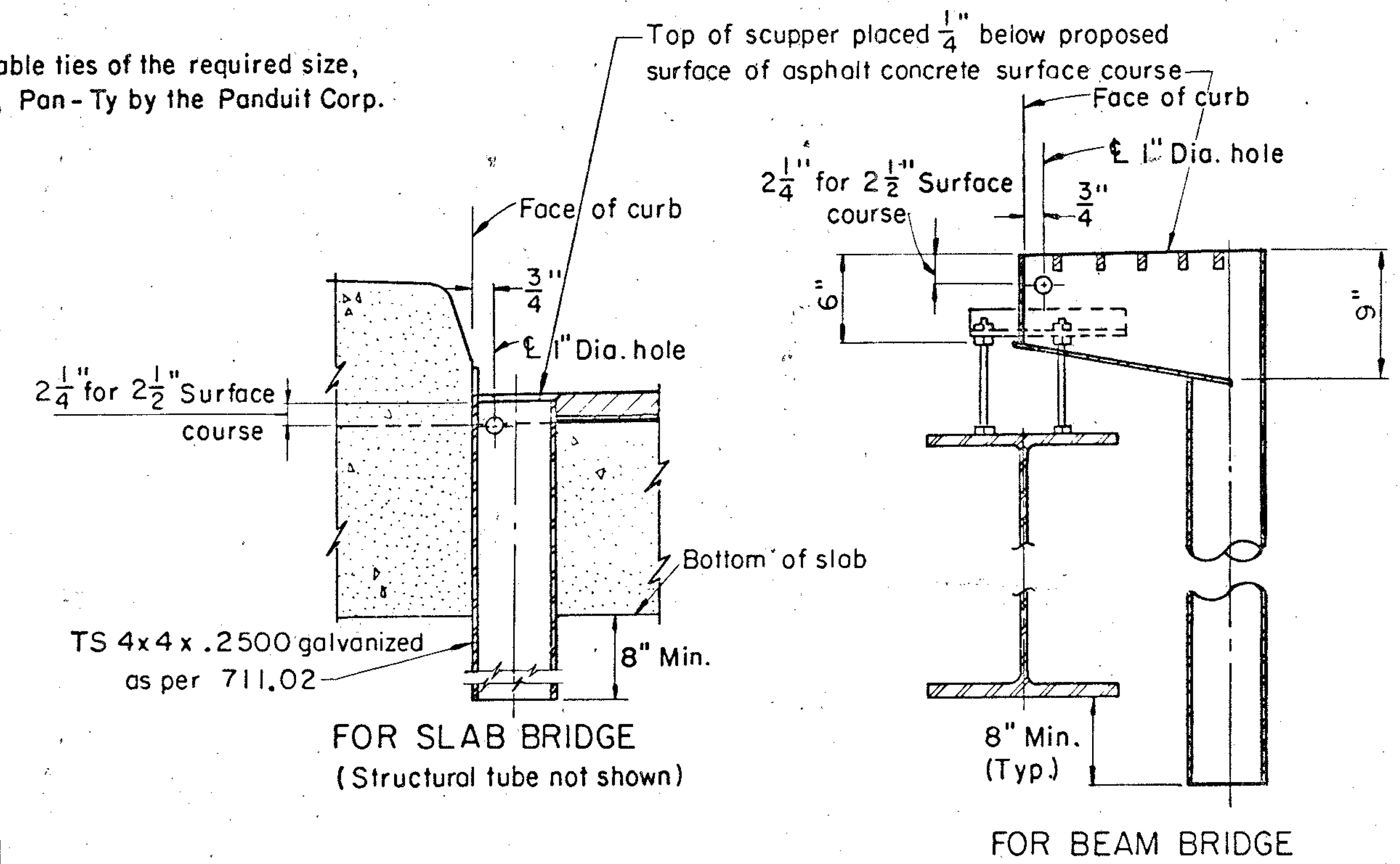


FACE OF CURB LOCATED ON CENTERLINE OF STRUCTURAL STEEL

FACE OF CURB LOCATED OFF CENTER LINE OF STRUCTURAL STEEL

SECTION X-X

DRAINAGE TUBE ARRANGEMENT



FOR SLAB BRIDGE (Structural tube not shown)

FOR BEAM BRIDGE

SCUPPER DETAILS

(Scupper details conform to SD-1-69 except as noted)

SUBDRAINAGE FOR ASPHALT CONCRETE SURFACE COURSE:

The subdrainage system shall consist of plastic pipes and fittings, structural tubes and fasteners. The pipe location requirements of 518.07 shall apply: the pipes shall be placed within one foot of each expansion joint; the pipe shall be extended or located in such a manner as to cause the discharge to fall clear of bridge seats and structural members; no pipes shall be placed within 4 feet of a pavement or a sidewalk, or over or within 10 feet of the centerline of a railroad track. In addition, the pipes shall be spaced approximately at six foot intervals but may be shifted 2 feet maximum longitudinally to permit tying to crossframes or other support members, as required. Pipes shall not be placed along curb lines where the deck configuration does not permit water to accumulate.

The structural tube may be placed in any convenient length using butt joints. The price bid per linear foot for this drainage system shall include all PVC pipe and fittings, structural tubes and all incidentals and all labor necessary to complete the item. The quantity will be the actual length of structural tube required. Payment will be made at the contract price for Item 518, Lin. Ft. Subdrainage for wearing course, as per plan.

The 404 shall be $2\frac{1}{2}$" placed in two $1\frac{1}{4}$" courses.

① - $1\frac{1}{4}$" x $1\frac{1}{4}$" galvanized, perforated structural tube with $\frac{11}{32}$" ± dia. holes 1" on centers on all four sides as shown. Cut $1\frac{1}{2}$" ± x $1\frac{1}{4}$" opening in bottom, centered over each PVC drain pipe. The steel for the structural tube shall conform to the following:
PREGALVANIZED, ASTM A446, Grade A Steel, Galvanizing as per ASTM A525.
POSTGALVANIZED, ASTM A569 or A366, Galvanizing as per 711.02.
The minimum steel thickness shall be 0.105".
Any damaged galvanizing shall be repaired as per AASHO M36.
Install tubes with $\frac{1}{8}$" expansion opening between pieces.

② - 45° ELBOW AND/OR $1\frac{1}{4}$" PVC DRAIN PIPE. Position accurately to match $1\frac{1}{2}$" x $1\frac{1}{4}$" openings in perforated tube. Place membrane carefully at the pipe openings, making sure to completely seal around the lip of the pipe but taking care not to plug or constrict the opening. The drain pipe and elbow shall conform to the dimensional and marking requirements of ASTM D2661 or ASTM D2665.
The elbow shall be used only as required when the face of curb is located on or near the centerline of structural steel. Where the elbow is not adequate to provide clearance between the PVC pipe and the structural steel, the elbow shall be canted as required and cut on a line $\frac{1}{4}$" below and parallel with the deck surface. The solvent cement for the pipe and fittings shall be a type suitable for the plastic used.

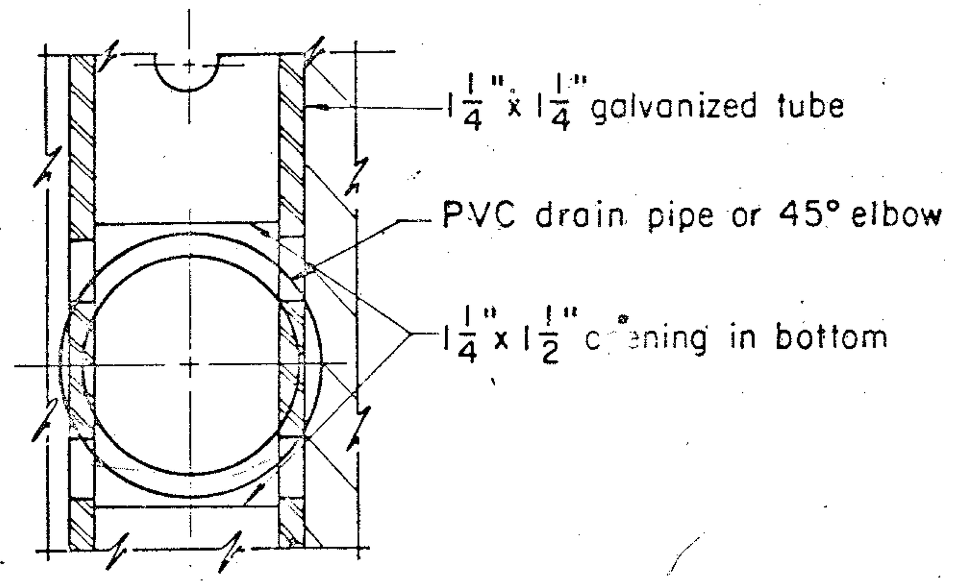
③ - $1\frac{1}{4}$" x $\frac{5}{32}$" x $\frac{1}{4}$" flat head drive pin and washer. (Length x Shank Dia x Head Dia.)
Fastening of the structural tube by methods other than shown shall be subject to approval by the Engineer. (Driving pins into bridge deck is prohibited, except for fastening drip strips.)

④ - L $1\frac{1}{4}$" x $1\frac{1}{4}$" x $\frac{1}{8}$", 3" long, clipped and galvanized, or bent galvanized steel plate 2" x 3" x 0.105" thick. Attach to curb at approximately 5'-0" c/c except near joints, where the angle shall be placed within 6" of the end of each tube section.

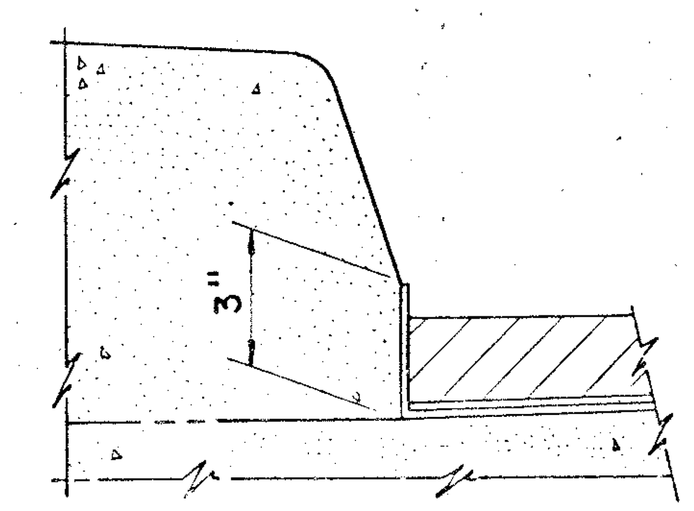
⑤ - $\frac{1}{2}$" x $\frac{1}{8}$" x $\frac{1}{4}$" flat head drive pin and washer driven thru angle and tube.

Note: Wherever "PVC" appears it shall be considered to read "PVC" or "ABS".

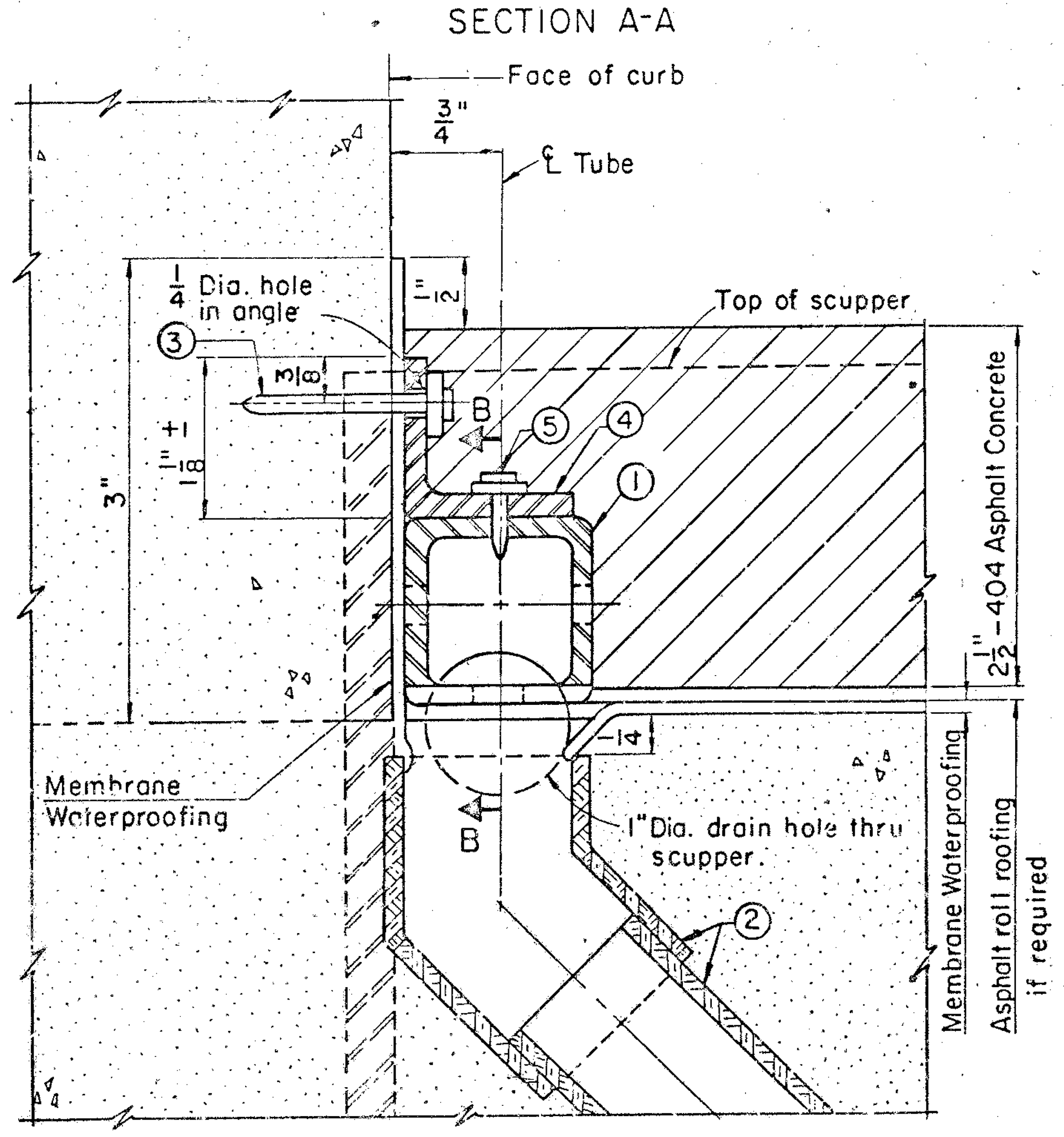
DRIP STRIP: Prior to applying deck membrane waterproofing, a bent drip strip shall be installed along the edges of the deck as shown. The strips shall be fastened at 1'-6" c/c maximum with $1\frac{1}{4}$" x $\frac{5}{32}$" x $\frac{1}{4}$" flat head drive pin and washer. (Length x Shank Dia. x Head Dia.) or #10 galvanized screws and expansion anchors, subject to the approval of the Engineer. The strips shall be placed the full length of the deck, ending at the face of the abutment wingwall or steel end dam angle. Where splices are required a 3" (Min.) lap shall be used with a fastener through the lap. Steel for galvanized strips shall be 8" x 0.105" and shall meet the requirements of ASTM A568. Galvanizing shall be in accordance with 711.02. Stainless steel shall be 20 gauge ASTM A167, Type 304, mill finish. Payment shall be at the contract price bid for item Special, Sq. Ft., Steel Drip Strip, which shall include all materials, labor, tools and incidentals necessary to complete the item.



SECTION A-A

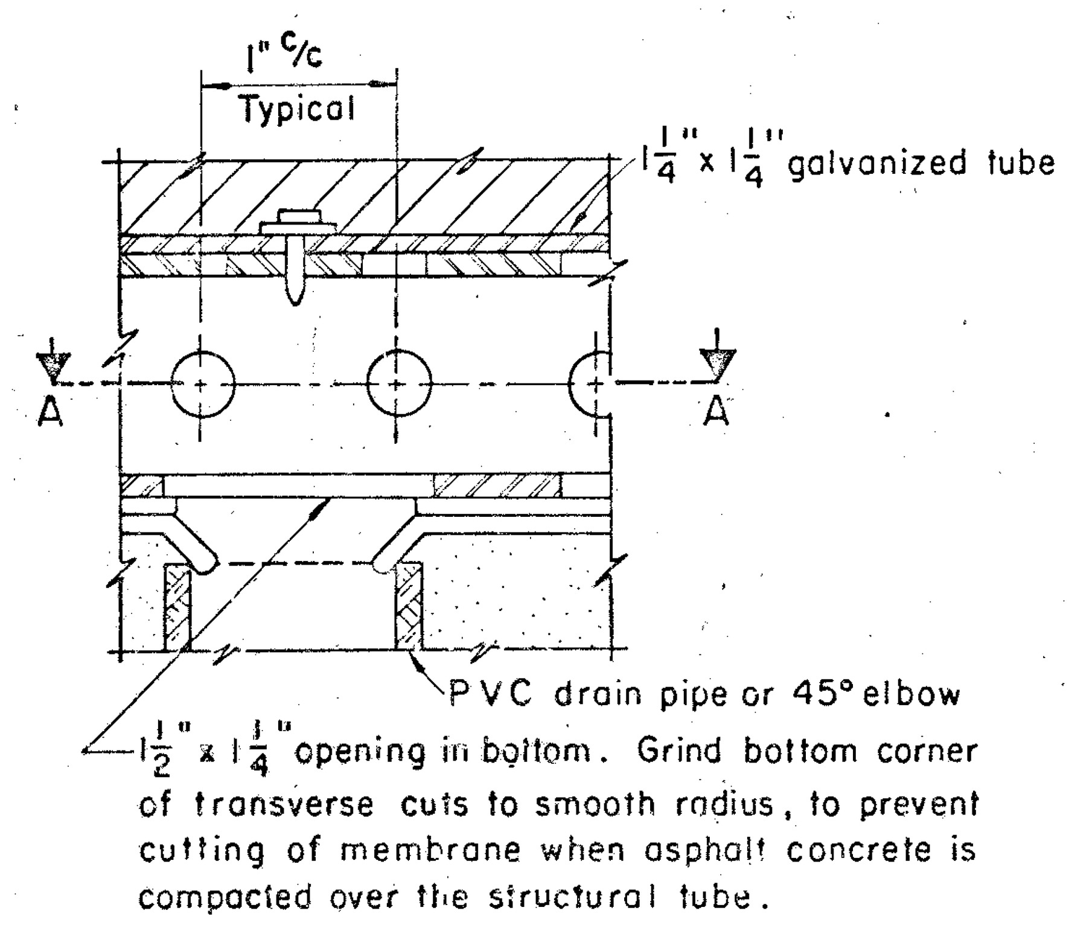


SHAPE OF SIDEWALK CURB

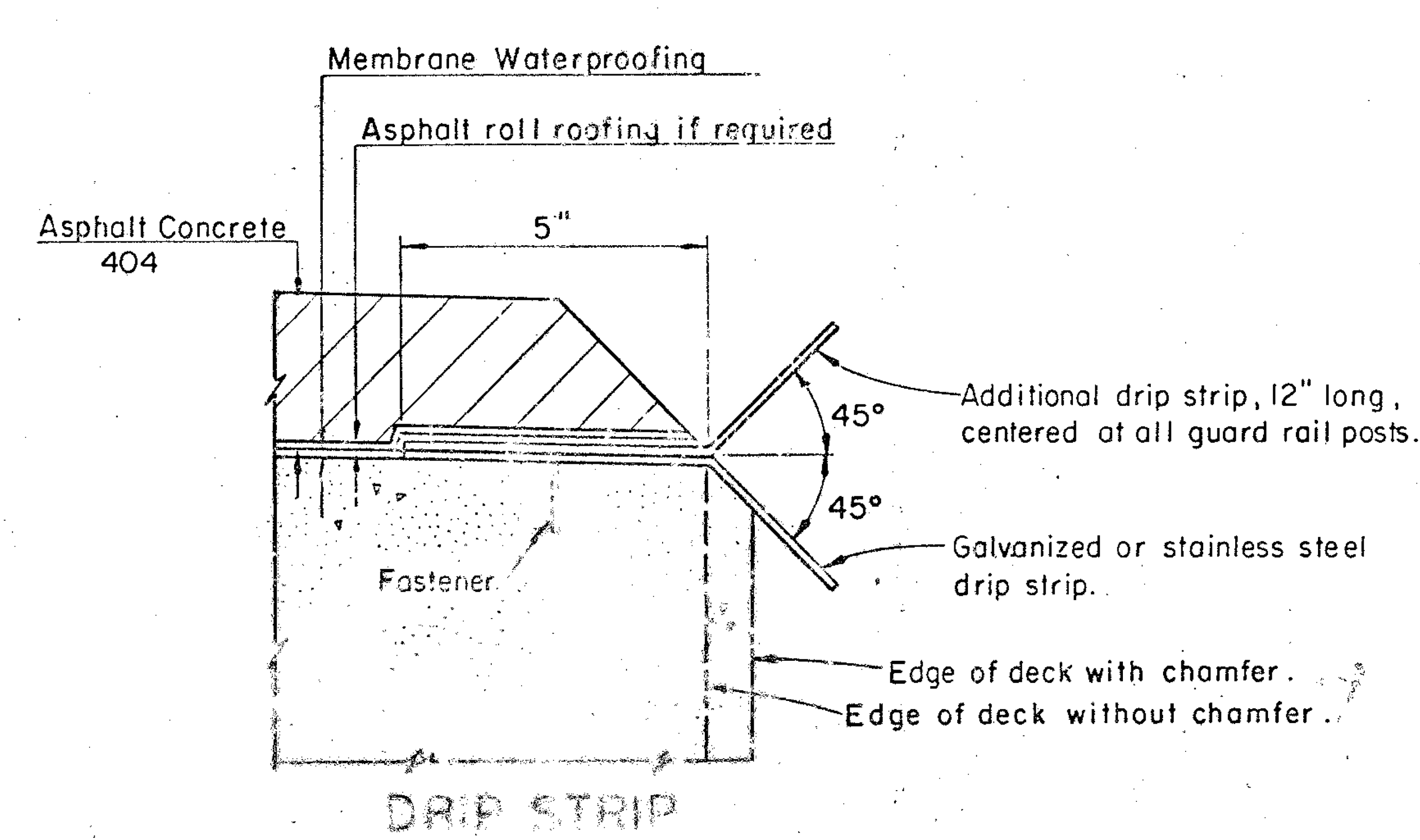


DETAIL A

SUBDRAINAGE FOR 2 1/2" SURFACE COURSE



SECTION B-B



DRIP STRIP

BRIDGES WITHOUT CURBS

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

3/3

DECK DRAINAGE DETAILS FOR BRIDGES WITH ASPHALT CONCRETE SURFACE COURSE

BRIDGE NO. COL-7-0626L

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DLM	GFJ	——	DWI	WJJ	2-27-79	2-27-79 5-23-74