OHIO TURNPIKE COMMISSION

THE JAMES W. SHOCKNESSY OHIO TURNPIKE

CONTRACT RMP 43-82-04
DECK REPLACEMENT AND WIDENING
CUYAHOGA RIVER BRIDGE

MILEPOST 177.2

STATION 253+54.00 TO STATION 290+07.00

ORIGINAL CONTRACT SECTIONS C-14,C-15A,C-15B AND C-16

SUMMIT COUNTY

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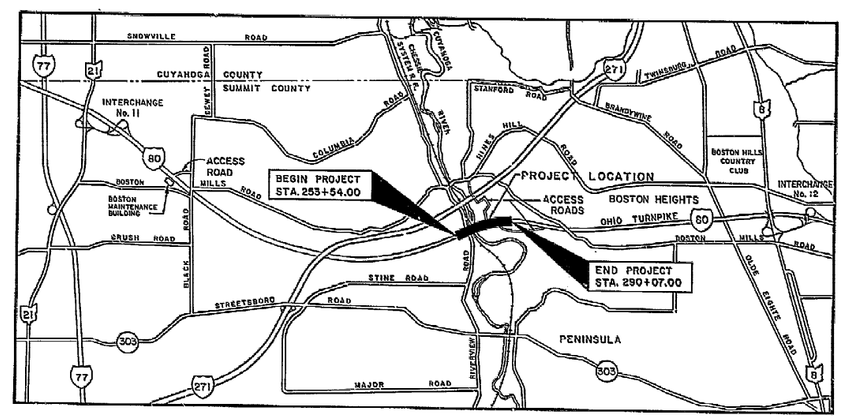

SCALE IN MILES
0 1 2

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	OHIO TURNPIKE COMMISSION STANDARD CRACK AND JOINT DETAIL	

APPROVED FOR
THE OHIO TURNPIKE COMMISSION
BY
G. Allen Plain
CHIEF ENGINEER
11-15-82
DATE

Plan Prepared By:
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND, OHIO
HNTB

Ralph E. Robison
RALPH E. ROBISON

STATE OF OHIO
RALPH E. ROBISON
29717
REGISTERED PROFESSIONAL ENGINEER

GENERAL SUMMARY

SHEET NUMBER 2	3	4		7	TOTAL QUANT.	UNIT	ITEM	DESCRIPTION
						LUMP	103.05	PREMIUM FOR CONTRACT PERFORMANCE BOND AND PAYMENT BOND
						LUMP	201	CLEARING AND GRUBBING
	503	298			801	S.Y.	202	PAVEMENT REMOVED
	2	1			3	EACH	202	INLET REMOVED
2000		152			2152	S.Y.	SP202A	ASPHALT SURFACE REMOVED
				245	245	C.Y.	203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
200				30	230	C.Y.	203	EMBANKMENT
100	60	39		206	405	C.Y.	310	SUBBASE, TYPE II
	49	29			78	C.Y.	402	ASPHALT CONCRETE
55	57	28			140	C.Y.	404	ASPHALT CONCRETE
80					80	C.Y.	404	ASPHALT CONCRETE LEVELING COURSE FOR MAINTAINING TRAFFIC
120	24	12			156	GAL.	SP407	TACK COAT
	126	81			207	GAL.	SP408	PRIME COAT
200	144	112			456	GAL.	SP414	BITUMINOUS MATERIAL FOR SHOULDER SURFACE TREATMENT
800	575.4	446			1821.4	S.Y.	SP414	AGGREGATE FOR SHOULDER SURFACE TREATMENT
	391	193			584	S.Y.	451	10-IN. REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
	51	24			75	L.F.	516	CONCRETE EXPANSION JOINT
		20			20	L.F.	603	12" CONDUIT TYPE C
31		1			32	C.Y.	601	ROCK CHANNEL PROTECTION, TYPE C, WITHOUT BEDDING
	2	2			4	EACH	604	STANDARD NO. 3A CATCH BASIN
	588	513			1101	L.F.	SP606	GUARDRAIL, TYPE 5
	1				1	EACH	606	ANCHOR ASSEMBLY, STANDARD TYPE T
	4	4			8	EACH	606	BRIDGE TERMINAL ASSEMBLY, STANDARD TYPE A
	617	513			1130	L.F.	SP606	REMOVAL AND DISPOSAL OF EXISTING GUARDRAIL
	262	71			333	L.F.	SP605	AGGREGATE DRAIN, TYPE I
	135	26			161	L.F.	SP605	AGGREGATE DRAIN, TYPE II
	60	60			120	L.F.	609	CURB, STANDARD TYPE 2-A
	341	116			457	L.F.	SP609	ASPHALT CONCRETE CURB, AC-20, STANDARD TYPE 1
	147	147			294	S.Y.	611	REINFORCED CONCRETE APPROACH SLAB (T=12")
						LUMP	SP614	MAINTAINING TRAFFIC
20					20	S.Y.	SP 617	SHOULDER PREPARATION
2					2	C.Y.	SP 617	COMPACTED AGGREGATE
0.1					0.1	M.GAL.	SP 617	WATER
						LUMP	SP619	FIELD OFFICE
9500					9500	L.F.	SP 622	TEMPORARY CONCRETE BARRIER
						LUMP	623	CONSTRUCTION LAYOUT STAKES
						LUMP	624	MOBILIZATION
105					105	TON	SP 627	STONE SHOULDER PROTECTION
				36	36	C.Y.	653	TOP SOIL FURNISHED AND PLACED
				646	646	S.Y.	659	SEEDING AND MULCHING
				0.06	0.1	TON	659	COMMERCIAL FERTILIZER
				0.03	0.1	TON	659	AGRICULTURAL LIMING
	33				33	S.Y.	660	REINFORCED SODDING
								STRUCTURE QUANTITIES - SEE SHEET 12

GENERAL NOTES

ITEM 201 - CLEARING AND GRUBBING

THE CONTRACTOR SHALL SCALP AREAS WHERE EXCAVATION OR EMBANKMENT IS TO BE MADE IN ACCORDANCE WITH SECTION 201.04 OF THE SPECIFICATIONS.

ITEM 203 - EMBANKMENT

THE FOLLOWING ESTIMATED QUANTITY OF EMBANKMENT, TO BE USED AS DIRECTED BY THE ENGINEER, FOR THE REPLACEMENT OF ERODED SLOPES HAS BEEN CARRIED IN THE GENERAL SUMMARY:

ITEM 203 - EMBANKMENT 200 C.Y.

ITEM 310 - SUBBASE, TYPE II

THE FOLLOWING ESTIMATED QUANTITY OF SUBBASE HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR PREPARING BASE COURSE FOR CONSTRUCTION OF THE NEW PAVEMENT.

ITEM 310 - SUBBASE, TYPE II 100 C.Y.

BENCHING OF SIDE SLOPES

IN ORDER TO FACILITATE THE PLACEMENT OF COMPACTED SUBBASE AND EMBANKMENT FOR SHOULDER WIDENING ON EXISTING SIDE SLOPES, THE CONTRACTOR SHALL CONSTRUCT AN APPROXIMATE 8:1 BENCH AS SHOWN ON THE CROSS SECTIONS. PAYMENT FOR THE ABOVE IS INCLUDED IN ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

THE ROUNDED CORNERS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS SECTIONS EVEN THOUGH OTHERWISE SHOWN.

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 INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

LOCATION OF GUARDRAIL

THE LOCATION OF GUARDRAIL RUNS, AS SHOWN IN THE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

CONNECTIONS TO PROPOSED CATCH BASINS

WHERE CATCH BASINS ARE TO BE CONSTRUCTED, THE CONTRACTOR SHALL CONNECT THE EXISTING OR PROPOSED PIPE INTO THE PROPOSED CATCH BASIN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE THE EXISTING PIPE AS TO LINE AND GRADE BEFORE HE STARTS TO CONSTRUCT THE PROPOSED CATCH BASIN. THE COST OF THESE OPERATIONS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 604 - STANDARD NO. 3A CATCH BASIN.

ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C, WITHOUT BEDDING

THE ABOVE ITEM WILL BE USED TO CONSTRUCT 5'X5'X18" SPLASH PADS FOR EROSION CONTROL AT THE SCUPPER OUTLET POINTS AS SHOWN IN THE STRUCTURE PLANS. THE FOLLOWING ESTIMATED QUANTITY OF ROCK CHANNEL PROTECTION HAS BEEN CARRIED FROM THE STRUCTURE PLANS TO THE GENERAL SUMMARY:

ITEM 601 - ROCK CHANNEL PROTECTION TYPE C, WITHOUT BEDDING 31 C.Y.

ELEVATION DATUM

ALL ELEVATIONS SHOWN ON THESE PLANS ARE BASED ON THE U.S. GEODETIC SURVEY AND ARE IN FEET ABOVE SEA LEVEL.

ITEM SP 622 - TEMPORARY CONCRETE BARRIER

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR MAINTAINING TRAFFIC DURING CONSTRUCTION AS SHOWN ON THE PLANS:

ITEM SP 622 - TEMPORARY CONCRETE BARRIER 9,500 L.F.

ITEM SP 617 - RECONDITIONING SHOULDERS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE ON THE AREAS ADJACENT TO THE EDGE OF THE PROPOSED SHOULDERS WITHOUT GUARDRAIL AS SHOWN ON THE PLANS:

ITEM SP 617 - SHOULDER PREPARATION	20 S.Y.
ITEM SP 617 - COMPACTED AGGREGATE	2 C.Y.
ITEM SP 617 - WATER	0.1 M.GAL.

ITEM SP 627 - STONE SHOULDER PROTECTION

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE ON THE AREAS ADJACENT TO THE EDGE OF THE PROPOSED SHOULDERS WITH GUARDRAIL AS SHOWN ON THE PLANS:

ITEM SP 627 - STONE SHOULDER PROTECTION 105 TON

ASPHALT OVERLAY EXTENSION

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY, TO BE USED AS DIRECTED BY THE ENGINEER, TO PROVIDE FOR EXTENDING THE LIMITS OF ASPHALT CONCRETE OVERLAY TO ENSURE A SMOOTH FINISHED SURFACE PROFILE:

ITEM SP 202A- ASPHALT SURFACE REMOVAL	2,000 S.Y.
ITEM SP 404 - ASPHALT CONCRETE	55 C.Y.
ITEM SP 407 - TACK COAT	120 GAL.
ITEM SP 414 - BITUMINOUS MATERIAL FOR SHOULDER SURFACE TREATMENT	200 GAL.
ITEM SP 414 - AGGREGATE FOR SHOULDER SURFACE TREATMENT	800 S.Y.

REFURBISHING EXISTING CROSSOVERS

EXISTING CROSSOVERS WHERE INDICATED ON THE PLANS, ARE TO BE REFURBISHED AND SURFACED WITH AN ASPHALT OVERLAY (MIN. 1-IN. THICKNESS) AS DIRECTED BY THE ENGINEER.

PAYMENT FOR ALL LABOR AND MATERIALS NECESSARY FOR THE REFURBISHING AND MAINTENANCE OF EXISTING CROSSOVERS, EXCEPT FOR ASPHALT OVERLAYS, SHALL BE INCLUDED UNDER ITEM 614 - MAINTAINING TRAFFIC.

PAYMENT FOR ASPHALT OVERLAYS AT THE EXISTING CROSSOVERS SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 404 - ASPHALT CONCRETE LEVELING COURSE FOR MAINTAINING TRAFFIC.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY, TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 404 - ASPHALT CONCRETE LEVELING COURSE FOR MAINTAINING TRAFFIC 80 C.Y.

REVISIONS
MADE BY: RLN DATE: 07-05-83
Checked BY: KYB DATE: 07-05-83

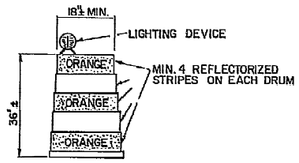
NO.	REVISIONS	BY	DATE
1	Full Width Pavement and Shoulder Replacement at NW, SW, & NE Approach	RLN	7-5-83

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY AND GENERAL NOTES
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED C.D.	CHECKED A.H.S.
DRAWN T.D.	IN CHARGE D.D.S.
DATE: 10-28-82	SCALE: None
RMP: 43-82-04	SHEET 2 OF 43



TRAFFIC DRUM:

THE TRAFFIC DRUM SHALL BE A TWO PIECE BREAKAWAY DESIGN THAT WILL MAINTAIN ITS INTEGRITY UPON IMPACT THROUGH A TEMPERATURE RANGE OF -15°F TO +125°F. THE DRUM SHALL BE CONSTRUCTED OF A HIGHLY RESILIENT PLASTIC SO THAT IT WILL SNAP BACK INTO ITS DESIGN SHAPE IMMEDIATELY AFTER IMPACT. THE BASE PORTION SHALL BE OF A TRAYTYPE CONSTRUCTION SO THAT BALLAST CAN EASILY BE ADDED FOR ADDITIONAL STABILITY. THE DRUM SHALL HAVE A MAXIMUM OF TWO FLAT SIDES TO MINIMIZE ROLLING IF IT IS HIT. THE EXTERIOR VERTICAL SURFACE SHALL BE A TELESCOPING DESIGN SUCH THAT A MINIMUM OF FOUR (4) - 6 INCH WIDE REFLECTIVE STRIPES CAN BE ATTACHED.

THE DRUM SHALL HAVE A MINIMUM OF TWO (2) -6 INCH WHITE AND A MINIMUM OF TWO (2) -6 INCH ORANGE HIGH INTENSITY REFLECTIVE SHEETING STRIPES.

THE UPPER PORTION OF THE DRUM SHALL BE DESIGNED SO THAT ONE (1) LIGHTING DEVICE CAN BE ATTACHED TO THE DRUM. THE LIGHTING DEVICES SHALL BE USED ON ALL DRUMS AND SHALL BE TYPE "C" STEADY BURN LIGHTS. LIGHTING DEVICES ARE TO BE OPERATED FROM DUSK TO DAWN.

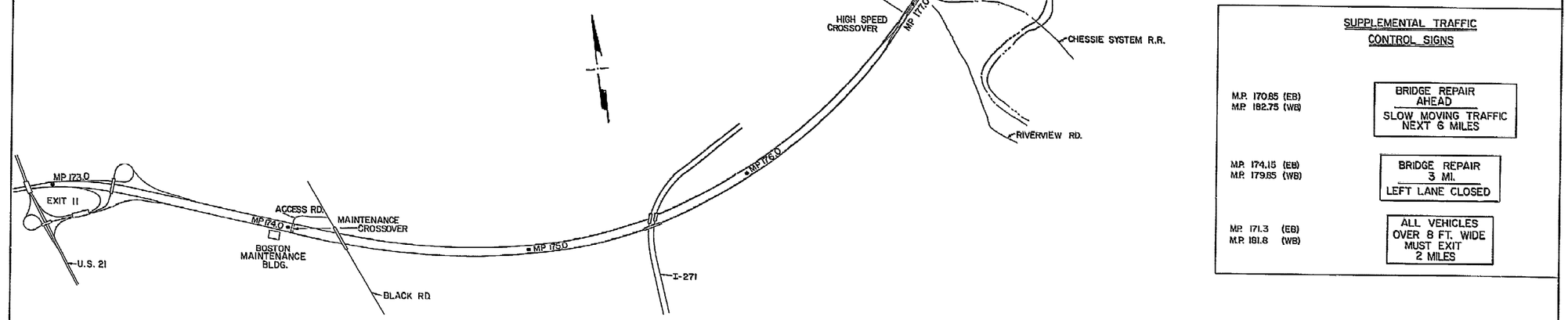
GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES, DRUMS, TRAFFIC CONTROL SIGNS, FLAGGERS, ETC., AS SHOWN AND LOCATED ON THE TRAFFIC CONTROL DRAWINGS SHALL BE INCORPORATED AS INDICATED FOR THE VARIOUS TYPES OF STANDARD WORK AREAS UNDER NORMAL TRAFFIC CONDITIONS. IF SPECIAL TRAFFIC CONDITIONS EXIST, THESE TRAFFIC CONTROL PLANS MAY HAVE TO BE MODIFIED. HOWEVER, NO MODIFICATIONS TO THE LAYOUT OF THE TRAFFIC CONTROL DEVICES SHOWN ON THE TRAFFIC CONTROL DRAWINGS IS TO BE MADE UNLESS APPROVED BY THE CHIEF ENGINEER.
2. AREAS DESIGNATED AS CONTRACTOR'S DUMP AREA NO'S. 1, 2 AND 3 ARE AVAILABLE TO THE CONTRACTOR FOR DISPOSAL, BY BURIAL, OF CONCRETE REMOVED FROM THE BRIDGE DECKS. AREA NO. 3 IS LOCATED BENEATH THE BRIDGES BETWEEN PIERS NO. 5 AND NO. 11. FOR DETAILS SEE SUPPLEMENTAL SPECIFICATION SP 2028 - PORTIONS OF STRUCTURES REMOVED.

LEGEND

- RUMBLE STRIPS (FURNISHED AND INSTALLED BY O.T.C.)
- TRAFFIC SIGN ON BREAK-AWAY POSTS (FURNISHED AND INSTALLED BY O.T.C.)
- TRAFFIC SIGN ON WOOD BLOCKS (FURNISHED AND INSTALLED BY O.T.C.)
- REFLECTORIZED TRAFFIC DRUMS*
- LOCALIZED WORK AREA
- FLAGGER LOCATION (ALL WORKING HOURS)
- FLAGGER LOCATION (REQ'D AS CONSTR. OPERATIONS DICTATE)
- FLASHING ARROW BAR WITH HI-LO INTENSITY SWITCH FOR DAY-NIGHT OPERATIONS*

* NOTE: TRAFFIC DEVICES THAT THE CONTRACTOR IS TO FURNISH AND MAINTAIN AS SHOWN ON THE TRAFFIC CONTROL DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS.



SUPPLEMENTAL TRAFFIC CONTROL SIGNS

M.P. 170.85 (EB) M.P. 182.75 (WB)	BRIDGE REPAIR AHEAD SLOW MOVING TRAFFIC NEXT 6 MILES
M.P. 174.15 (EB) M.P. 179.65 (WB)	BRIDGE REPAIR 3 MI. LEFT LANE CLOSED
M.P. 171.3 (EB) M.P. 181.8 (WB)	ALL VEHICLES OVER 8 FT. WIDE MUST EXIT 2 MILES

REV.	ADDED SUPPLEMENTAL SIGNS	1-26-83

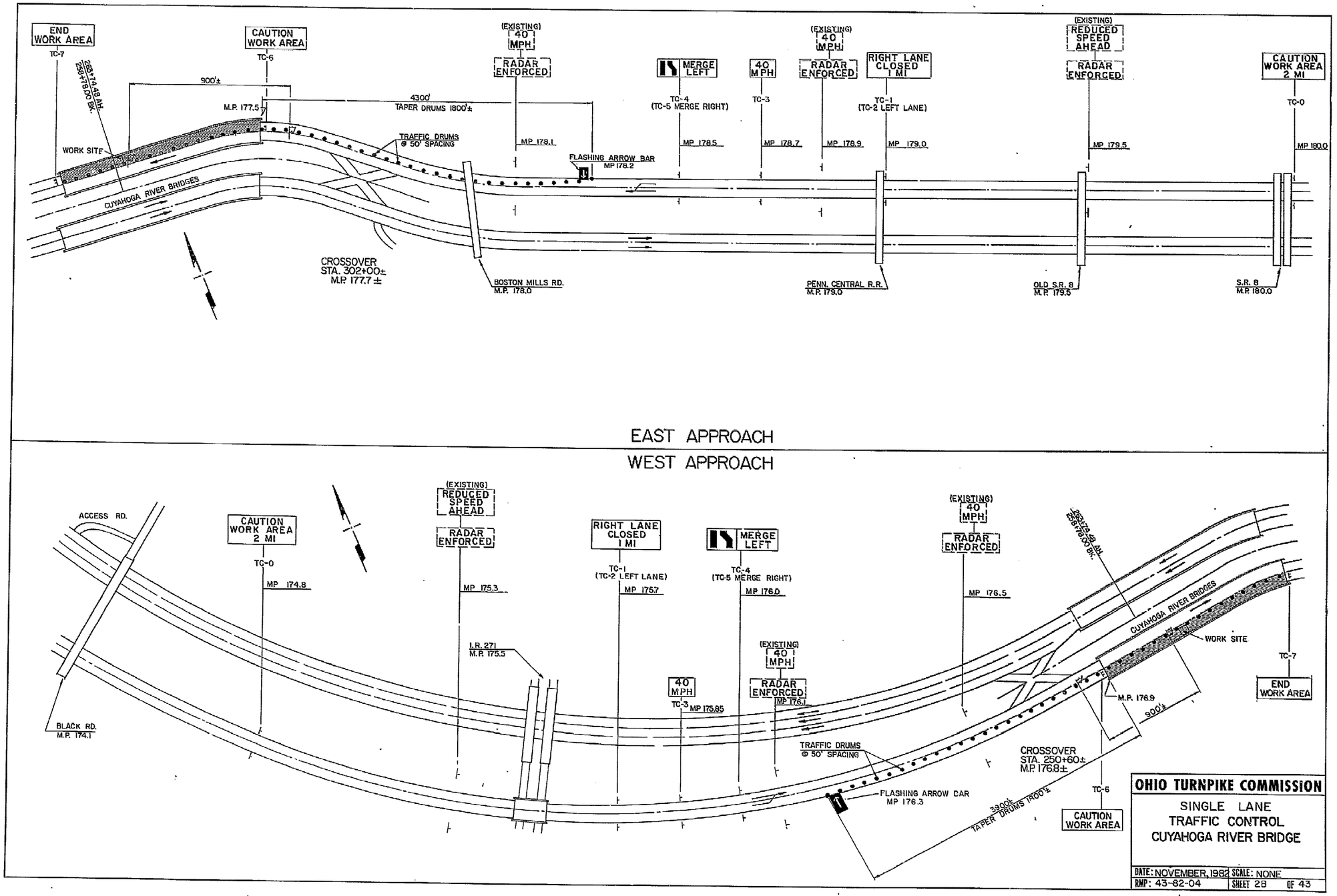
OHIO TURNPIKE COMMISSION

TRAFFIC DETAILS

& LOCATION PLAN

DATE: NOVEMBER 1982 | SCALE: 1" = 1000'

RMP: 43-82-04 | SHEET 2A OF 43



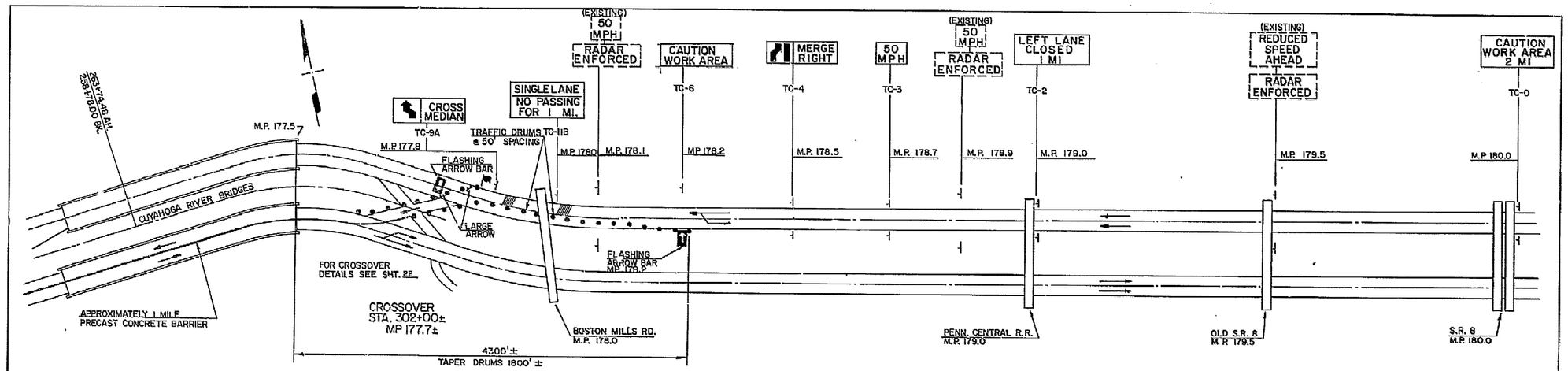
EAST APPROACH

WEST APPROACH

OHIO TURNPIKE COMMISSION

SINGLE LANE
TRAFFIC CONTROL
CUYAHOGA RIVER BRIDGE

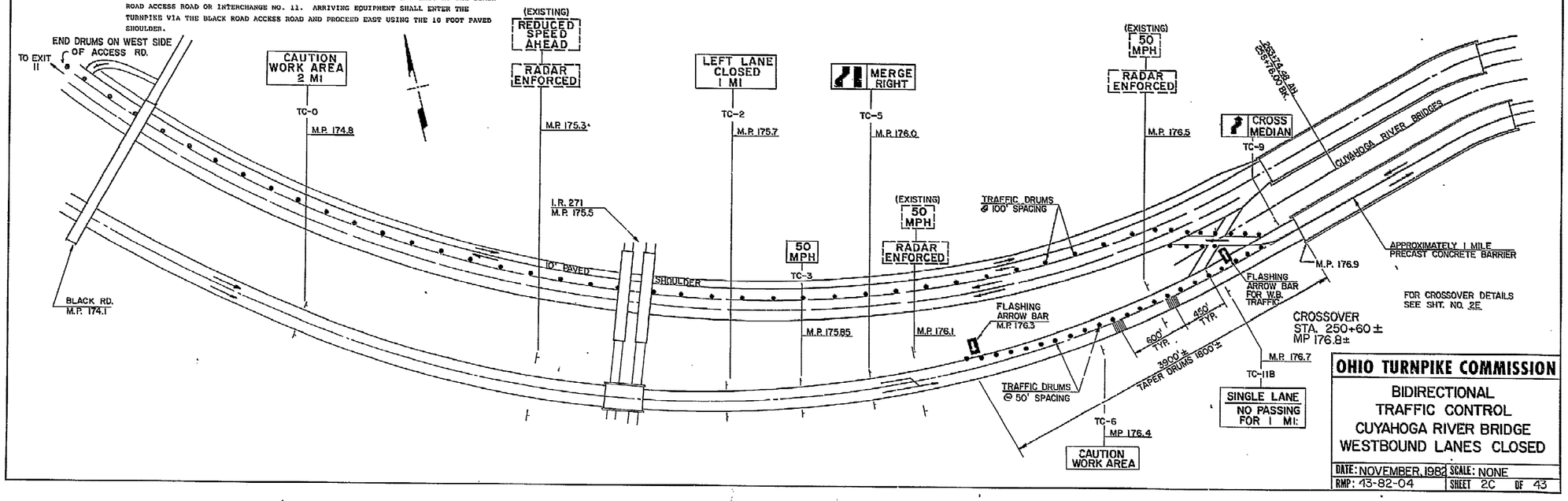
DATE: NOVEMBER, 1982 | SCALE: NONE
RMP: 43-82-04 | SHEET 28 OF 43



EAST APPROACH

WEST APPROACH

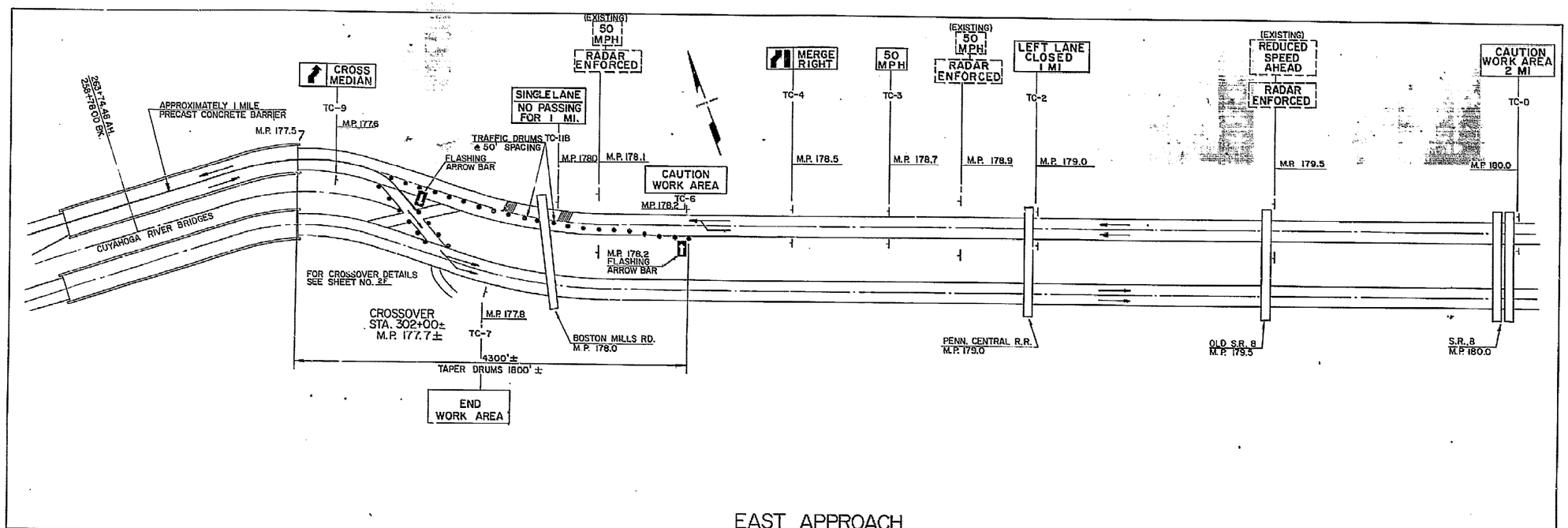
NOTE: THE NORTHERN MOST WESTBOUND LANE AND PAVED SHOULDER ARE AVAILABLE FOR CONTRACTOR'S ACCESS TO AND FROM THE WESTBOUND STRUCTURE. EQUIPMENT LEAVING THE PROJECT SITE SHALL PROCEED WESTBOUND ON THE NORTHERN MOST WESTBOUND LANE AND EXIT AT THE BLACK ROAD ACCESS ROAD OR INTERCHANGE NO. 11. ARRIVING EQUIPMENT SHALL ENTER THE TURNPIKE VIA THE BLACK ROAD ACCESS ROAD AND PROCEED EAST USING THE 10 FOOT PAVED SHOULDER.



OHIO TURNPIKE COMMISSION

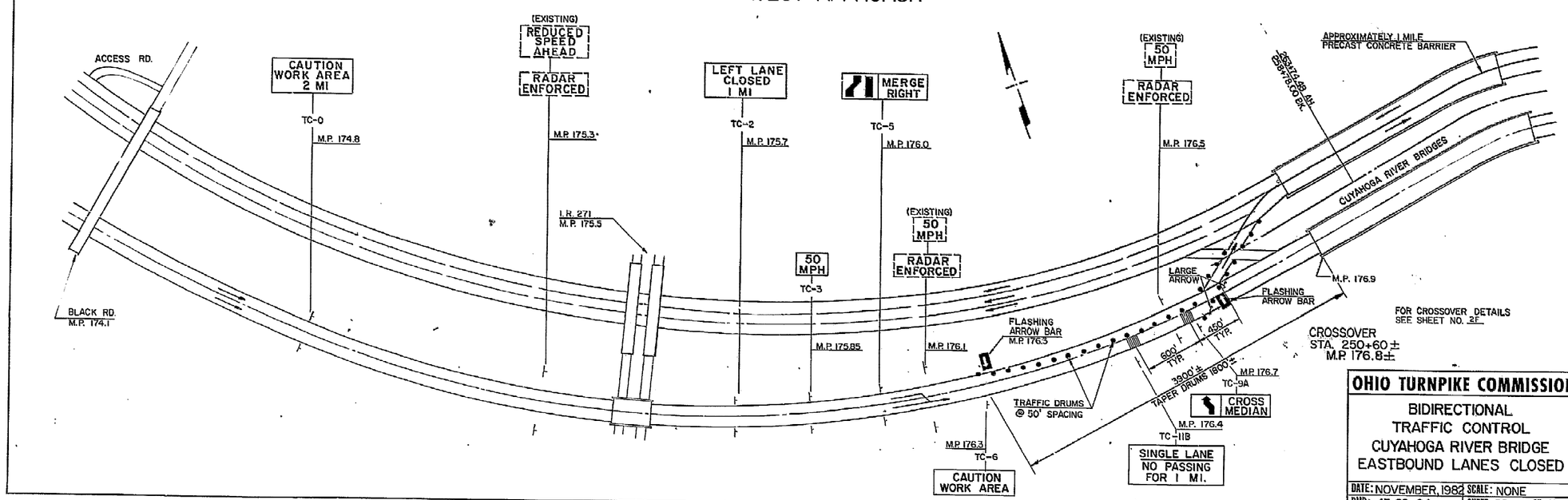
BIDIRECTIONAL
TRAFFIC CONTROL
CUYAHOGA RIVER BRIDGE
WESTBOUND LANES CLOSED

DATE: NOVEMBER, 1982 | SCALE: NONE
RMP: 13-82-04 | SHEET 2C OF 43



EAST APPROACH

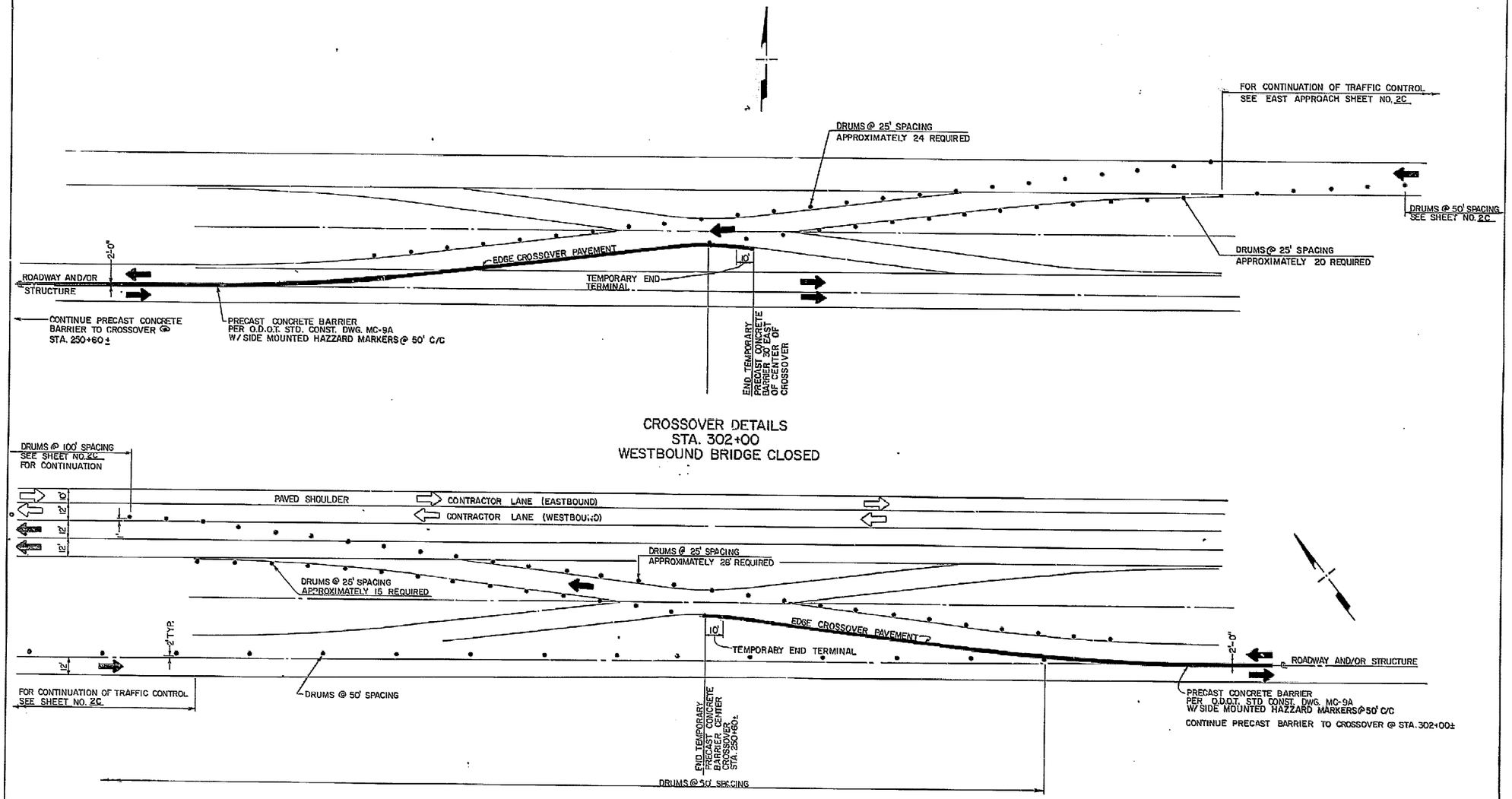
WEST APPROACH



OHIO TURNPIKE COMMISSION

BIDIRECTIONAL
TRAFFIC CONTROL
CUYAHOGA RIVER BRIDGE
EASTBOUND LANES CLOSED

DATE: NOVEMBER, 1982 SCALE: NONE
RMP: 43-82-04 SHEET 2D OF 43

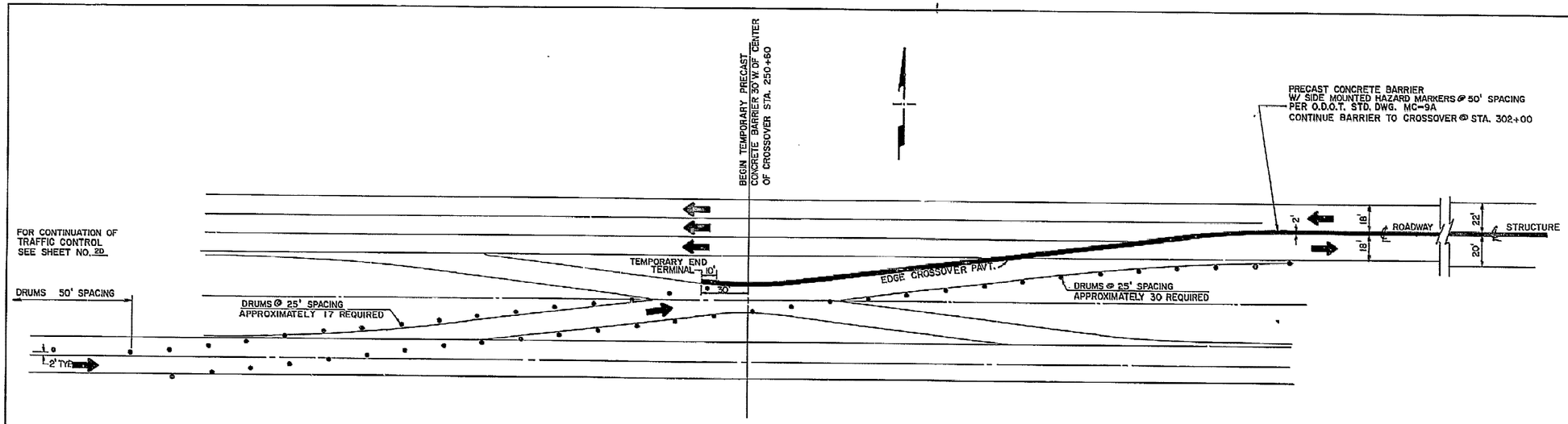


OHIO TURNPIKE COMMISSION

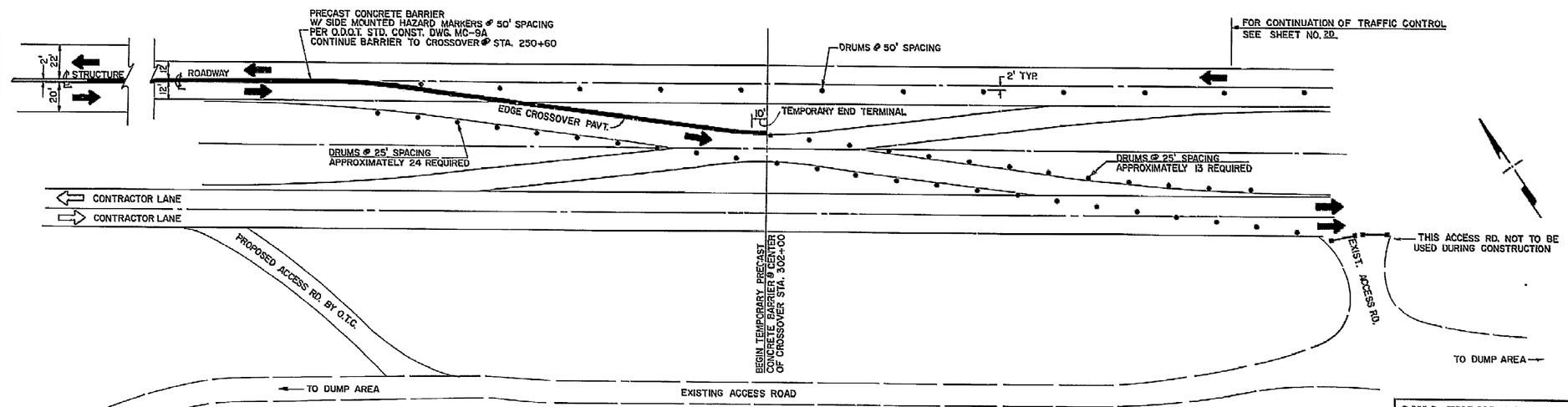
CROSSOVER DETAILS

WESTBOUND BRIDGE CLOSED

DATE: NOVEMBER 1982	SCALE: 1" = 30'
RMP: 43-82-04	SHEET 2E OF 43



CROSSOVER DETAILS @
STA. 250+60 ±
EASTBOUND BRIDGE CLOSED



CROSSOVER DETAILS @
STA. 302+00 ±
EASTBOUND BRIDGE CLOSED

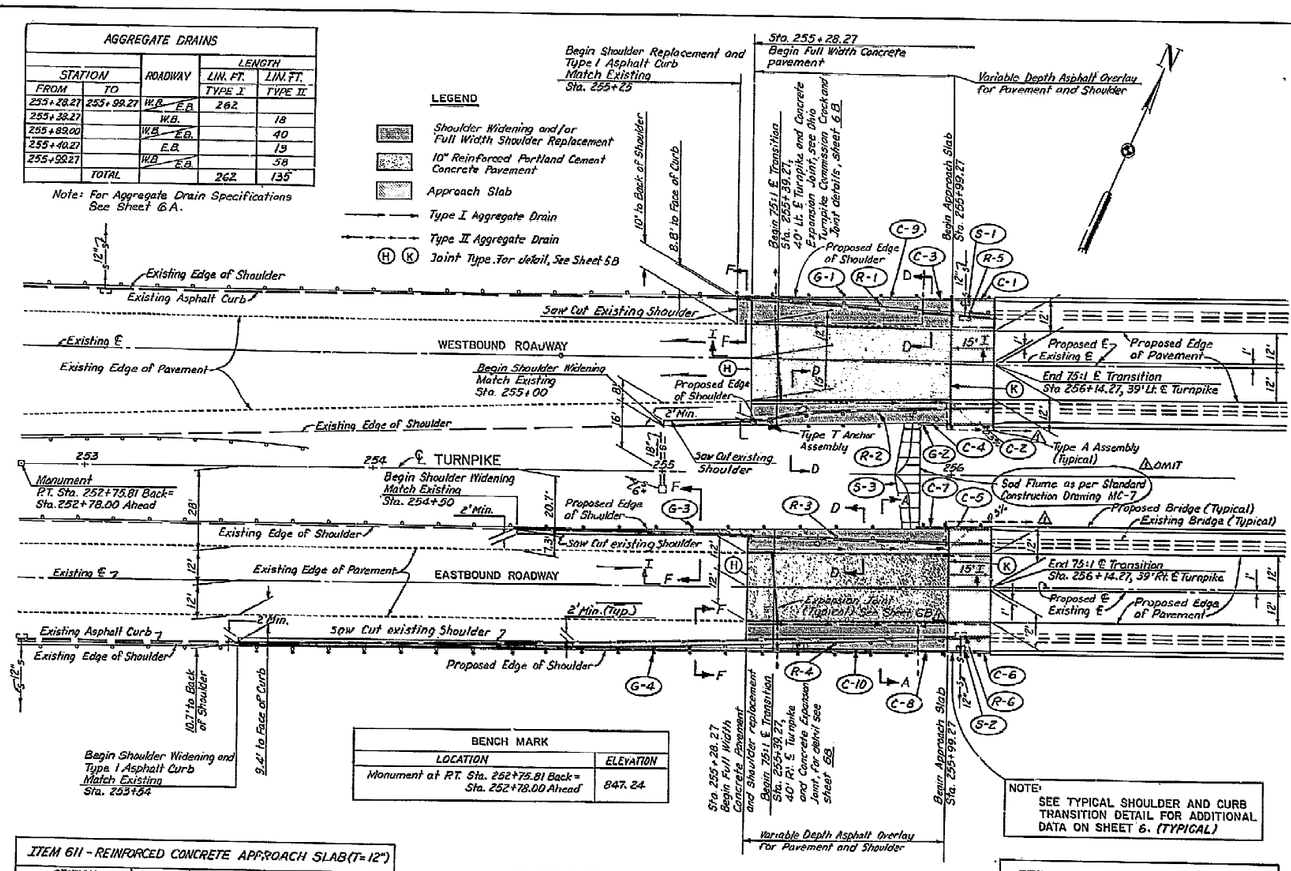
OHIO TURNPIKE COMMISSION

CROSSOVER DETAILS
EASTBOUND LANES CLOSED

DATE: NOVEMBER, 1982	SCALE: 1" = 30'
RMP: 43-82-04	SHEET 2F OF 43

AGGREGATE DRAINS				
STATION		ROADWAY	LENGTH LIN. FT.	LENGTH LIN. FT.
FROM	TO		TYPE I	TYPE II
255+28.27	255+99.27	W.B. E.B.	262	
255+38.27		W.B.		18
255+89.00		W.B. E.B.		40
255+40.27		E.B.		19
255+99.27		W.B. E.B.		58
TOTAL			262	135

Note: For Aggregate Drain Specifications See Sheet 6A.



BENCH MARK	
LOCATION	ELEVATION
Monument at P.T. Sta. 252+75.81 Back= Sta. 252+78.00 Ahead	847.24

NOTE: SEE TYPICAL SHOULDER AND CURB TRANSITION DETAIL FOR ADDITIONAL DATA ON SHEET 6. (TYPICAL)

PLAN–WEST APPROACH ROADWAYS

20 0 20 40 60 80

SCALE IN FEET

ITEM 611 - REINFORCED CONCRETE APPROACH SLAB (T=12")					
STATION FROM	STATION TO	ROADWAY	L FT.	W FT.	AREA S.Y.
255+99.27	256+14.27	W.B.	15	44.17	73.6
255+99.27	256+14.27	E.B.	15	44.17	73.6
TOTAL					147.2

ITEM 202 - PAVEMENT REMOVED					
STATION FROM	STATION TO	ROADWAY	L FT.	W FT.	AREA S.Y.
255+99.27	256+14.27	W.B.	15	30	50
255+99.27	256+14.27	E.B.	15	35***	58.5
255+28.27	255+99.27	E.B.	71	24	189.3
255+28.27	255+99.27	W.B.	71	26	205.1
TOTAL					503

*** Average Width

CURB							
REF. NO.	℄ STATION FROM	℄ STATION TO	SIDE	ROADWAY	609 Curb Standard Type 2A		SP 609 Asphalt Conc. Curb AC-20 Standard Type I
					LIN. FT.		LIN. FT.
C-1	255+99.27	256+14.27	Lt.	W.B.	15		
C-2	255+99.27	256+14.27	Lt.	W.B.	15		
C-3	255+88.27	255+99.27	Lt.	W.B.			11
C-4	255+88.27	255+99.27	Lt.	W.B.			11
C-5	255+98.27	256+14.27	Rt.	E.B.	15		
C-6	255+98.27	256+14.27	Rt.	E.B.	15		
C-7	255+88.27	255+99.27	Rt.	E.B.			11
C-8	255+88.27	255+99.27	Rt.	E.B.			11
C-9	255+25	255+88.27	Lt.	W.B.			63
C-10	255+54	255+88.27	Rt.	E.B.			234
		TOTAL			60		341

GUARDRAIL								
REF. NO.	℄ STATION FROM	℄ STATION TO	SIDE	ROADWAY	SP606 Removal & Disposal of Existing Guardrail	SP606 Guardrail Type 5	606 Anchor Assembly Type T	606 Bridge Terminal Assembly Type A
					LIN. FT.	LIN. FT.	EACH	EACH
R-1	255+14	256+14.27	Lt.	W.B.	100			
G-1	255+14	256+14.27	Lt.	W.B.		100		1
R-2	255+36.7	256+14.27	Lt.	W.B.	79			
G-2	255+39	256+14.27	Lt.	W.B.		50	1	1
R-3	254+39	256+14.27	Rt.	E.B.	175			
G-3	254+39	256+14.27	Rt.	E.B.		175		1
R-4	253+61.5	256+14.27	Rt.	E.B.	262.5			
G-4	253+51.5	256+14.27	Rt.	E.B.		262.5		1
		TOTAL			616.5	587.5	1	4

DRAINAGE								
REF. NO.	℄ STATION FROM	℄ STATION TO	SIDE	ROADWAY	604 Std. No. 3A Catch Basin	202 Inlet Removed	202 Pipe Removed	660 Reinforced Sodding
					EACH	EACH	LIN. FT.	S.Y.
S-1	256+04		W.B.	Lt.	* 1			
S-2	256+04		E.B.	Rt.	** 1			
R-5	256+04		W.B.	Lt.		1	6 *	
R-6	256+04		E.B.	Rt.		1	6 **	
S-3	255+80	255+89	W.B. Lt. E.B. Rt.					33
		TOTAL			2	2		33

REVISIONS
MADE BY: RLN DATE: 07-05-83
CHECKED BY: KBV DATE: 07-05-83

* Connect existing pipe into the proposed catch basin N.G. Elev.= 842.11 Inv. Elev.= 839.51

** Connect existing pipe into the proposed catch basin N.G. Elev.= 842.08 Inv. Elev.= 839.48

* Payment included with (S-1)

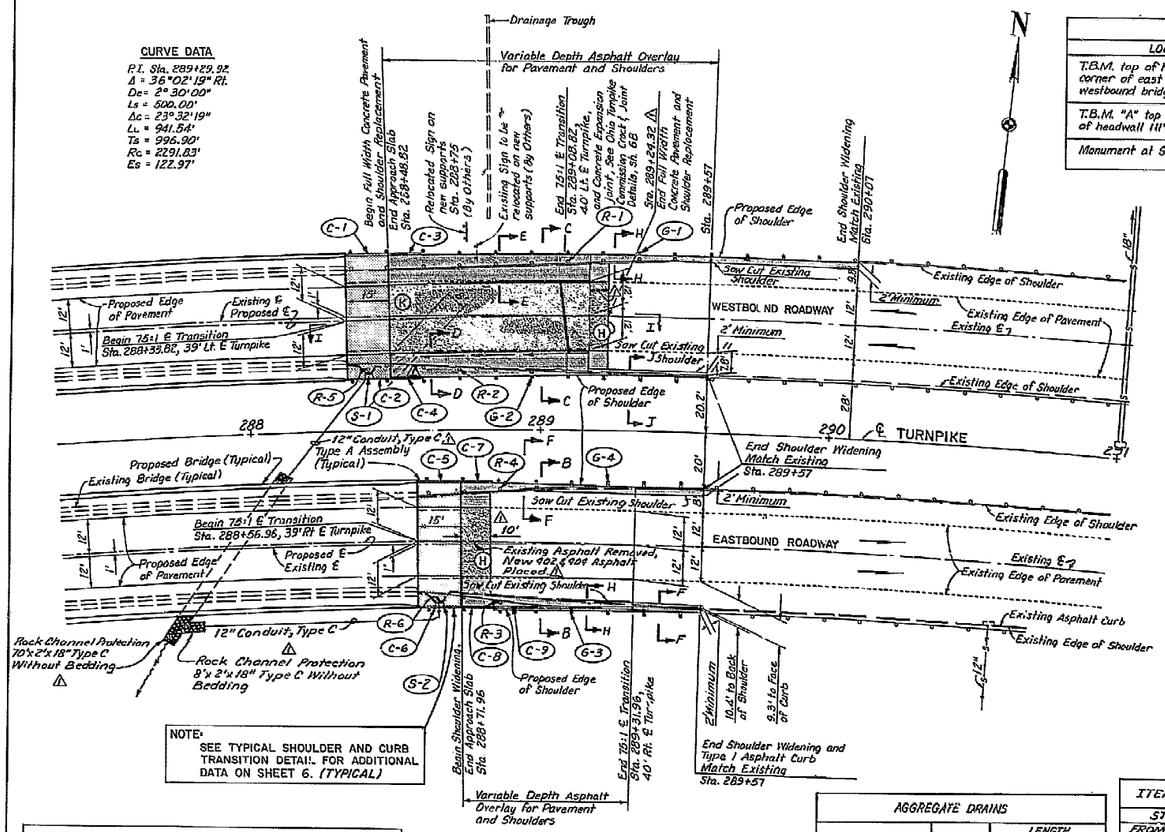
** Payment included with (S-2)

*** Average Width
††† Variable

| PAVEMENT QUANTITIES | | | | | | | |

CURVE DATA

P.I. Sta. 289+29.92
Δ = 36°02'19" Rt.
Dc = 2°30'00"
Ls = 500.00'
Δc = 23°32'19"
Lc = 941.54'
Ts = 996.90'
Rc = 2291.83'
Es = 122.97'



NOTE:
SEE TYPICAL SHOULDER AND CURB TRANSITION DETAIL FOR ADDITIONAL DATA ON SHEET 6. (TYPICAL)

PLAN-EAST APPROACH ROADWAYS

20 0 20 40 60 80
SCALE IN FEET

BENCH MARKS	
LOCATIONS	ELEVATIONS
T.B.M. top of hub at northeast corner of east abutment of westbound bridge.	790.78
T.B.M. "A" top of southwest corner of headwall 111' left of Sta. 291+00	779.74
Monument at Sta. 298+74.56	796.00

ITEM 611 - REINFORCED CONCRETE APPROACH SLAB (T=12")

STATION FROM	STATION TO	ROADWAY	L FT.	W FT.	AREA S.Y.
288+33.82	288+48.82	W.B.	15	44.17	73.6
288+56.96	288+71.96	E.B.	15	44.17	73.6
	TOTAL				147.2

AGGREGATE DRAINS

STATION FROM	STATION TO	ROADWAY	LENGTH LIN.FT. TYPE I	LENGTH LIN.FT. TYPE II
288+48.82	289+19.82	W.B.	71	
288+27.00	288+48.82	W.B.		26
	TOTAL		71	26

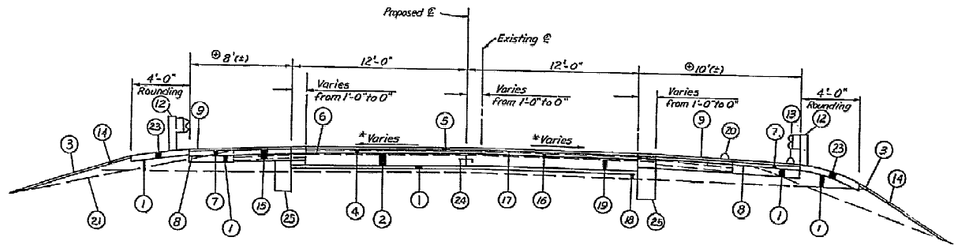
ITEM 202 - PAVEMENT REMOVED

STATION FROM	STATION TO	ROADWAY	L FT.	W FT.	AREA S.Y.
288+33.82	288+48.82	W.B.	15	30	50
288+56.96	288+71.96	E.B.	15	35.6**	59.3
288+48.82	289+19.82	W.B.	71	24	189.3
	TOTAL				297.6

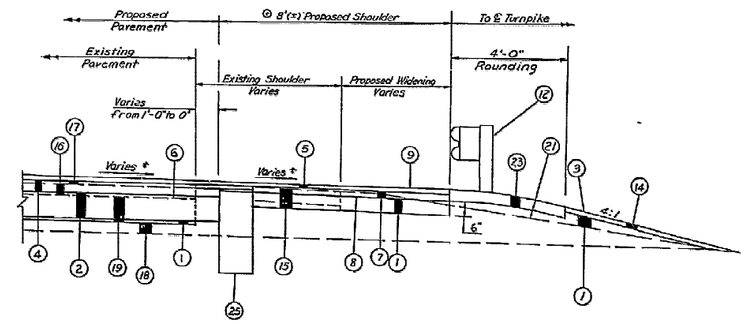
**Average Width

PAVEMENT QUANTITIES

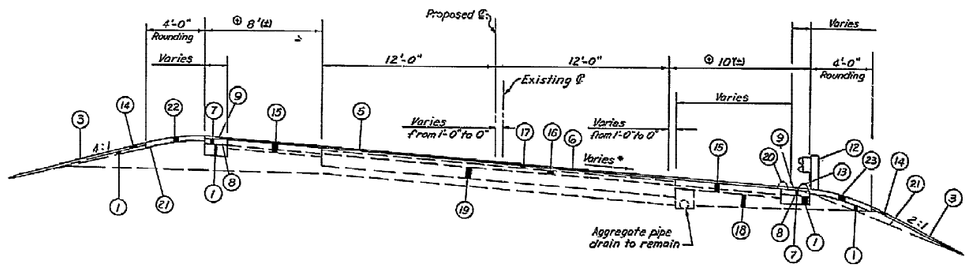
℄ STATION FROM	℄ STATION TO	SIDE	ROADWAY	L FT.	W FT.	D IN.	SP202 A Asphalt Surface Removal S.Y.	310 Subbase Type II C.Y.	402 Asphalt Concrete C.Y.	404 Asphalt Concrete C.Y.	SP407 Tack Coat @0.06 G/S.Y. Gal.	SP408 Prime Coat @0.35 G/S.Y. Gal.	SP414 Bit. Material for Shoulder Surface Treat. @0.25 G/S.Y. Gal.	SP414 Aggregate for Shoulder Surface Treatment S.Y.	451 4" Reinforced Portland Cement Concrete Pavement S.Y.	REMARKS
289+57	289+71.96	E.B.	Rt.	3	3**	3	152	4.0								Existing Full Width
289+57	289+71.96	E.B.	Rt.	6	2.5**	6										Outside Shoulder
289+57	289+71.96	E.B.	Rt.	6	2**	6		2.1								Inside Shoulder
289+57	289+71.96	E.B.	Rt.	3	2**	3			2.0							Outside Shoulder
289+57	289+71.96	E.B.	Rt.	1.75	2**	3			0.7							Inside Shoulder
289+57	289+71.96	E.B.	Rt.	1.25	24.5	3			9.4	216						Proposed Roadway
289+57	289+71.96	E.B.	Rt.	1	42	3							8.5			Proposed Full Width
289+57	289+71.96	E.B.	Rt.	1	2.5**	6							2.9			Outside Shoulder
289+57	289+71.96	E.B.	Rt.	1	2**	6								181		Inside Shoulder
289+57	289+71.96	E.B.	Rt.	1	2**	6										Outside Shoulder
289+57	289+71.96	E.B.	Rt.	1	2**	6										Proposed Roadway
289+57	289+71.96	E.B.	Rt.	1	2**	6										Both Shoulder
289+57	289+71.96	E.B.	Rt.	1	2**	6										Existing Full Width
289+57	289+71.96	E.B.	Rt.	1	2**	6										Outside Shoulder
289+57	289+71.96	E.B.	Rt.	1	2**	6										Inside Shoulder
289+57	289+71.96	E.B.	Rt.	1	2**	6										Proposed Roadway
289+57	289+71.96	E.B.	Rt.	1	2**	6										Proposed Full Width
289+57	289+71.96	E.B.	Rt.	1	2**	6										Outside Shoulder
289+57	289+71.96	E.B.	Rt.	1	2**	6										Inside Shoulder
289+57	289+71.96	E.B.	Rt.	1	2**	6										Outside Shoulder
289+57	289+71.96	E.B.	Rt.	1.75	2**	3										Proposed Roadway
289+57	289+71.96	E.B.	Rt.	1.25	24.5	3										Both Shoulder
289+57	289+71.96	E.B.	Rt.	1	42	3										" "
289+57	289+71.96	E.B.	Rt.	1	2.5**	6										Inside Shoulder
289+57	289+71.96	E.B.	Rt.	1	2**	6									



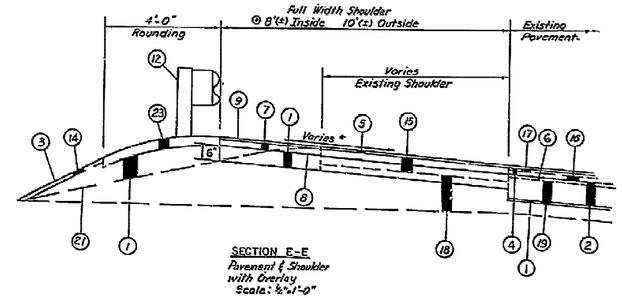
SECTION A-A
Eastbound Roadway - West Approach
Scale ⅛"=1'-0"



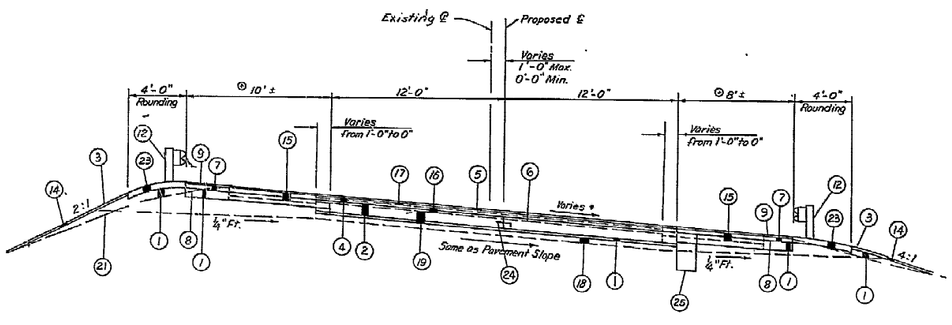
SECTION D-D
Pavement & Shoulder
with Overlay
Scale: ½"=1'-0"



SECTION B-B
Eastbound Roadway - East Approach
Scale ½"=1'-0"



SECTION E-E
Pavement & Shoulder
with Overlay
Scale: ½"=1'-0"



SECTION C-C
Westbound Roadway - East Approach
Scale: ½"=1'-0"

LEGEND

1	ITEM 310	SUBBASE, TYPE II
2	ITEM 451	10" REINFORCED CONCRETE PAVEMENT
3	ITEM 659	SEEDING AND MULCHING
4	ITEM 402	1-3/4" ASPHALT CONCRETE BASE
5	ITEM 404	VARIABLE DEPTH ASPHALT CONCRETE OVERLAY
6	ITEM SP 407	TACK COAT
7	ITEM 402	3" ASPHALT CONCRETE FOR SHOULDER
8	ITEM SP 408	PRIME COAT
9	ITEM SP 414	SURFACE TREATMENT FOR SHOULDER
10	ITEM 451	TYPE D JOINT (5/8"Ø HOOK BOLTS, 30" C-C)
11	ITEM SP 606	EXISTING TYPE 5 GUARDRAIL
12	ITEM SP 606	PROPOSED TYPE 5 GUARDRAIL
13	ITEM SP 609	ASPHALT CONCRETE CURB
14	ITEM 653	2" TOPSOIL
15	EXISTING	ASPHALT CONCRETE BASE (SHOULDERS)
16	EXISTING	ASPHALT CONCRETE BASE COURSE (PAVEMENT)
17	EXISTING	ASPHALT CONCRETE SURFACE COURSE (PAVEMENT)
18	EXISTING	SUBBASE
19	EXISTING	REINFORCED CONCRETE PAVEMENT
20	EXISTING	ASPHALT CONCRETE CURB
21	EXISTING	GROUND SURFACE TO BE SCALPED PRIOR TO PLACEMENT OF EMBANKMENT OR SUBBASE REQUIRED TO WIDEN SHOULDER
22	ITEM 616	RECONDITIONED SHOULDER (4-IN. DEPTH)
23	ITEM 627	STONE SHOULDER PROTECTION (4-IN. DEPTH)
24	ITEM 451	TYPE L JOINT (#5 BAR X 4' LG. 30" C-C)
25	ITEM SP 605	TYPE I AGGREGATE DRAIN

* See Pavement and Shoulder Elevation Tables, Sheet 6.

⊕ See Typical Shoulder and Curb Transition Detail for Shoulder Widths, Sheet 6.

Note:
For locations of sections see sheets 3 & 4.
Item SP 606 - Existing Type 5 Guardrail not shown on Sections. See Plan Sheets 3 & 4 for locations.

REVISIONS
MADE BY: RLN DATE: 07-05-83
CHECKED BY: KBV DATE: 07-05-83

NO.	REVISIONS	BY	DATE
1	Full Width Pavement and Shoulder Replacement at NW, SW, & NE Approaches	RLN	7-5-83

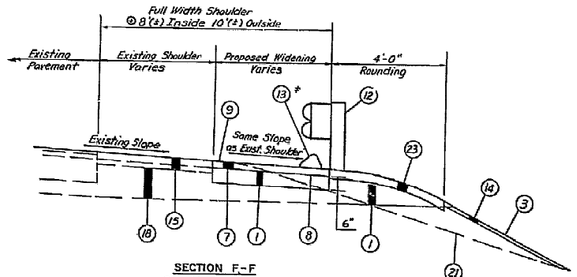
OHIO TURNPIKE COMMISSION

ROADWAY SECTIONS

OHIO TURNPIKE OVER CUYAHOGA RIVER

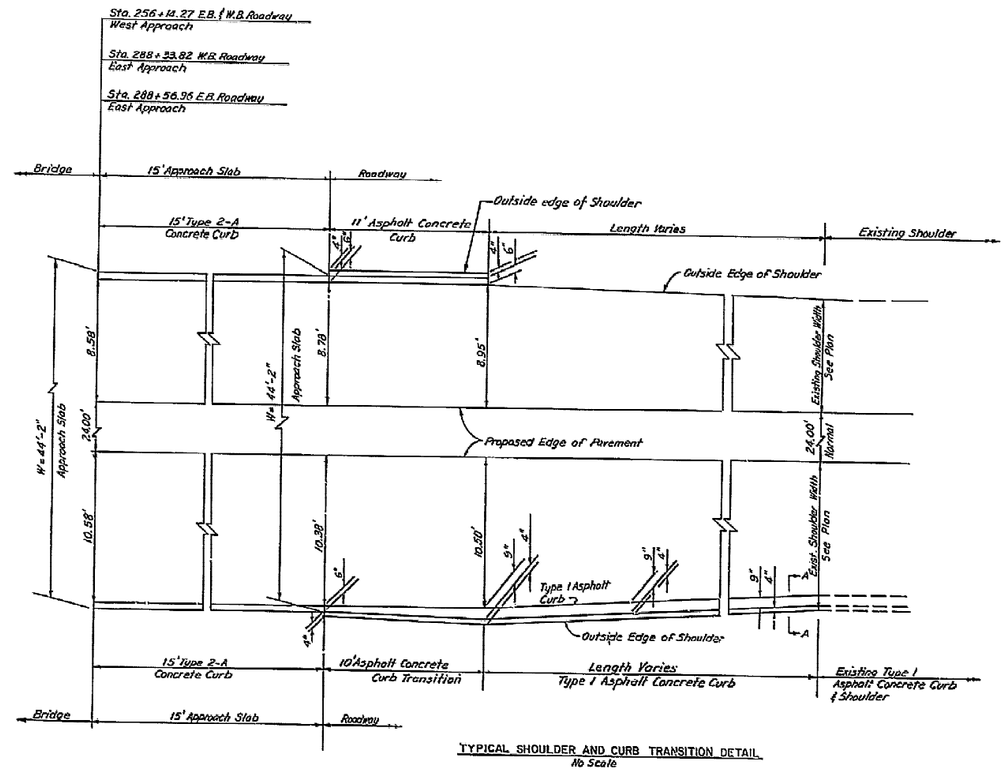
HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED C.D.	CHECKED AHS
DRAWN T.D.	IN CHARGE DDS
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 5 OF 43

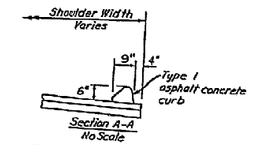


SECTION F-F
Shoulder Widening without Overlay
Scale ½"=1'-0"

Note:
For location of sections see sheets 3 and 4.
For legend see sheet 5
* See Pavement and Shoulder Elevation Tables
⊕ See Typical Shoulder and Curb Transition Detail for Shoulder Widths
Asphalt Curb only where called for. See Plan Sheets 3 and 4 for locations where required.
Profile Grade Elevation is at Top of Overlay.

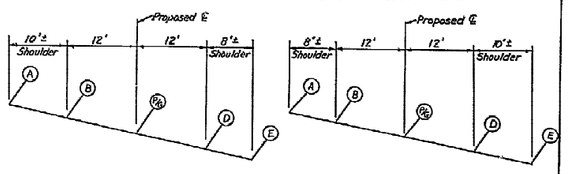


TYPICAL SHOULDER AND CURB TRANSITION DETAIL
No Scale



Section A-A
No Scale
(See Ohio Department of Transportation BP-5)

PAVEMENT AND SHOULDER ELEVATION TABLE – EAST APPROACH



WESTBOUND

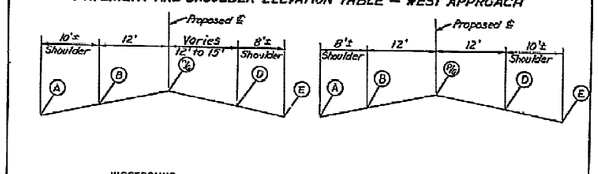
STATION	ELEVATION A	B	P/G	D	E
288+33.82	791.68	790.85	789.85	788.85	788.18
288+57	791.58	790.77	789.76	788.77	788.14
288+75	791.50	790.71	789.67	788.70	788.07
289+07	791.35	790.61	789.54	788.59	788.04
289+25	791.27	790.55	789.46	788.52	787.95
289+57	791.13	790.44*	789.32*	788.41*	787.87*
289+75	791.17	—	—	—	—
290+07	791.25*	—	—	—	—

EASTBOUND

STATION	ELEVATION A	B	P/G	D	E
288+56.96	791.36	790.69	789.69	788.69	787.86
288+75	791.19	790.51	789.54	788.49	787.73
289+07	790.89	790.19	789.26	788.14	787.49
289+25	790.72	790.01	789.10	787.95	787.36
289+31.96	790.65*	789.94*	789.04*	787.87*	787.30
289+57	—	—	—	—	787.12*

* Match Existing Elevation

PAVEMENT AND SHOULDER ELEVATION TABLE – WEST APPROACH



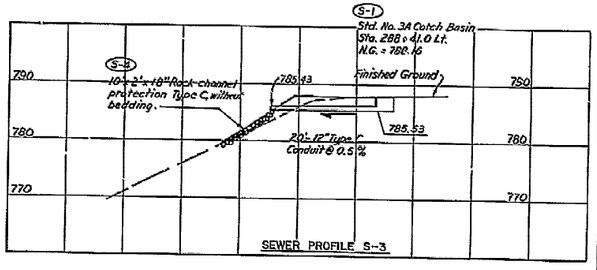
WESTBOUND

STATION	ELEVATION A	B	P/G	D	E
256+14	841.90	842.06	842.25	842.06	841.93
256+00	842.23	842.36	842.55	842.32	842.21
256+75	842.82	842.90	843.09	842.97	842.81
255+50	843.40	843.43	843.62	843.62	843.40
255+39	843.66	843.69	843.86	843.51	843.62
255+25	843.68*	—	—	—	843.94
255+00	—	—	—	—	844.48*
255+28.27	843.67	844.00*	844.14*	844.16*	843.87

EASTBOUND

STATION	ELEVATION A	B	P/G	D	E
256+14	841.93	842.06	842.25	842.06	841.90
256+00	842.21	842.33	842.52	842.34	842.16
256+75	842.72	842.82	843.01	842.84	842.64
255+50	843.22	843.30	843.50	843.35	843.11
255+39	843.44	843.52	843.71	843.57	843.32
255+25	843.62	—	—	—	843.78
255+00	844.10	—	—	—	844.26
254+50	845.29*	—	—	—	845.21
254+00	—	—	—	—	846.16
253+54	—	—	—	—	847.04*
255+28.27	843.58	843.75*	843.95*	843.80*	843.67

* Match Existing Elevation



SEWER PROFILE S-3

REVISIONS
MADE BY: RLN DATE: 07-05-83
CHECKED BY: KBV DATE: 07-05-83

NO.	REVISIONS	BY	DATE
1	Full Width Pavement & Shoulder Replacement at NW, SW, & NE Approaches	RLN	7-5-83

OHIO TURNPIKE COMMISSION

ROADWAY SECTIONS, SHOULDER & CURB DETAILS AND PAVEMENT ELEVATIONS
OHIO TURNPIKE OVER CUYAHOGA RIVER
HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED C.D.	CHECKED A.H.S.
DRAWN T.D.	IN CHARGE D.D.S.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 6 OF 43

ITEM SP 605 - AGGREGATE DRAINS

A. EXCAVATION

TRENCHES FOR AGGREGATE DRAINS SHALL BE EXCAVATED TO THE WIDTH AND DEPTH AND AT THE LOCATIONS SHOWN ON THE PLANS OR ORDERED BY THE ENGINEER. THE BOTTOM OF THE TRENCH ADJACENT TO THE CONCRETE PAVEMENT SHALL GENERALLY FOLLOW THE GRADE OF THE BOTTOM OF THE SLAB, EXCEPT THAT A UNIFORM GRADE SHALL BE PROVIDED BETWEEN OUTLET TRENCHES. OUTLET TRENCHES SHALL SLOPE AS SHOWN ON THE PLANS. THE BOTTOM OF ALL TRENCHES SHALL BE FREE FROM LOOSE PARTICLES OF SOIL. THE TRENCHES SHALL BE EXCAVATED SO AS TO MAKE A CLEAN EXPOSURE OF THE GRANULAR PAVEMENT COURSES TO BE DRAINED.

B. PLACING AND BACKFILLING

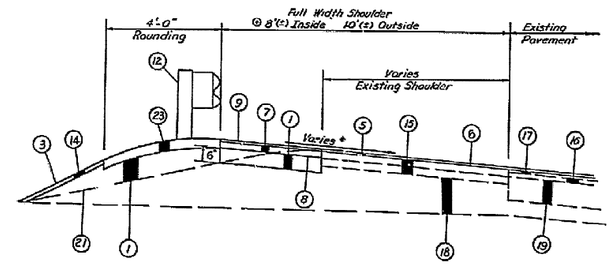
AGGREGATE FOR THE DRAINS SHALL BE DURABLE NO. 6 SIZE CRUSHED GRAVEL, STONE OR SLAG IN ACCORDANCE WITH ITEM 703.01 GRADATION OF THE SPECIFICATIONS. THE AGGREGATE SHALL BE PLACED TO THE DIMENSIONS SHOWN ON THE PLANS.

THE EXISTING BITUMINOUS SHOULDER AND THE AREA OVER THE PAVEMENT SLAB SHALL BE RESTORED BY PLACING UPON THE COMPACTED AGGREGATE AND THE EXISTING CONCRETE, ASPHALT CONCRETE BASE COURSE MATERIAL, CONFORMING TO ITEM 402 OF THE SPECIFICATIONS, EXCEPT THAT THE MATERIAL NEED NOT BE PLACED WITH A PAVER AND MAY BE COMPACTED WITH MECHANICAL TAMPERS.

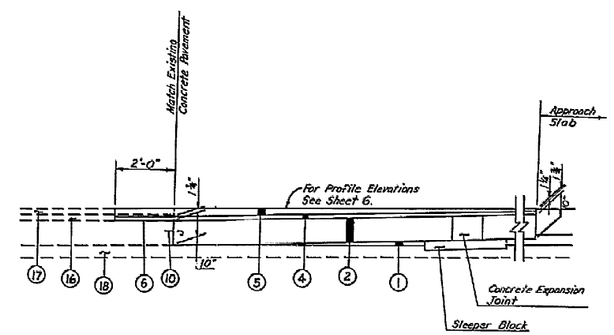
C. BASIS OF PAYMENT

WORK UNDER AGGREGATE DRAINS, TYPE I, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT, AND WORK UNDER AGGREGATE DRAINS, TYPE II, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LIN.FT. INSTALLED, WHICH PRICES AND PAYMENTS SHALL BE FULL COMPENSATION FOR EXCAVATION, FURNISHING AND PLACING THE AGGREGATE MATERIAL, PRIME COAT, ASPHALT CONCRETE, WHICH PRICE SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO PERFORM THE WORK COMPLETE AND ACCEPTED.

ITEM	UNIT	DESCRIPTION
SP 605	L.F.	AGGREGATE DRAIN, TYPE I
SP 605	L.F.	AGGREGATE DRAIN, TYPE II



SECTION H-H
Shoulder Widening
with Overlay
Scale: ½"=1'-0"



SECTION I-I
New Pavement Construction

Note:
For Legend See Sheet 5.
For location of cross sections See Sheets 7,8 & 9.

REVISIONS
MADE BY: RLN DATE: 07-05-83
CHECKED BY: KBV DATE: 07-05-83

NO.	REVISIONS	BY	DATE
	Full Width Pavement & Shoulder Replacement at NW, SW, & NE Approaches	RLN	7-5-83

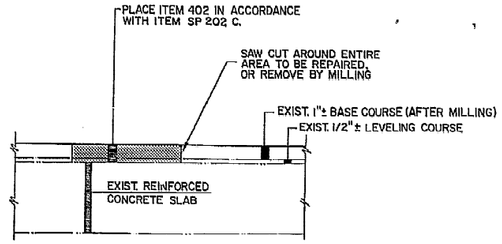
OHIO TURNPIKE COMMISSION

ROADWAY SECTIONS AND GENERAL NOTES

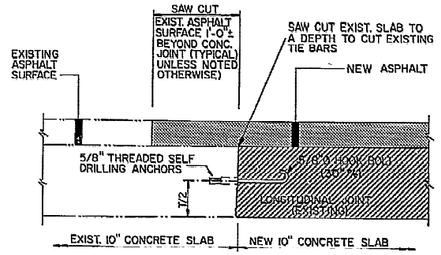
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

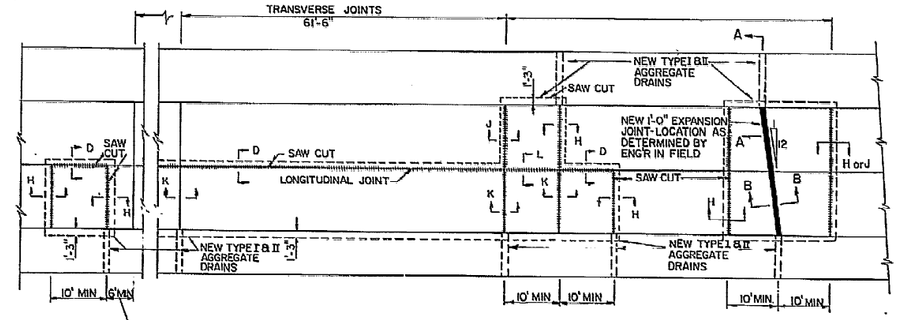
DESIGNED C.D.	CHECKED R.L.N.
DRAWN T.D.	IN CHARGE D.D.S.
DATE: 10-28-82	SCALE:
RMP: 43-82-04	SHEET 6A OF 43



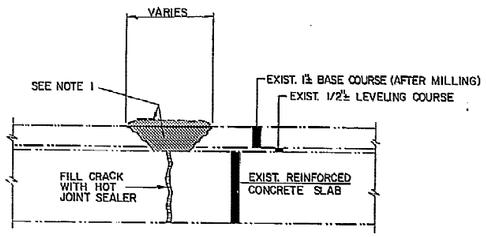
ASPHALT BASE COURSE REPAIRS



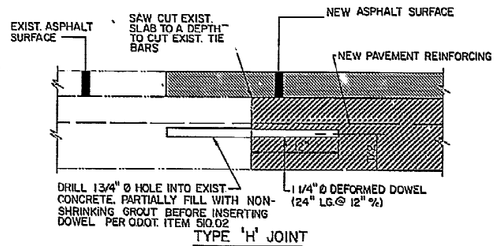
TYPE 'D' JOINT



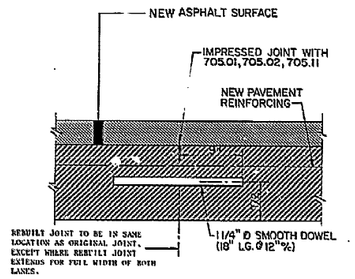
CONCRETE JOINT ARRANGEMENT PLAN



TRANSVERSE & LONGITUDINAL CRACK & JOINT REPAIRS



TYPE 'H' JOINT



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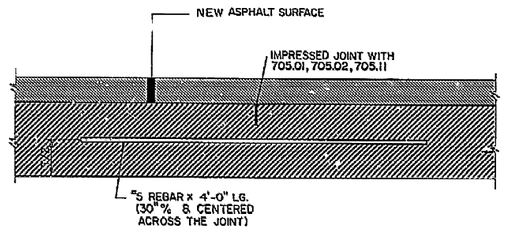
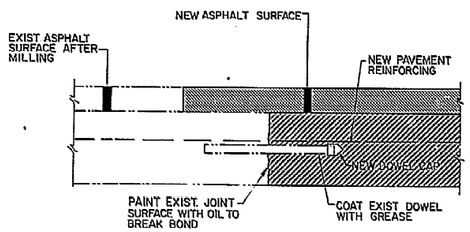


TYPE 'L' JOINT



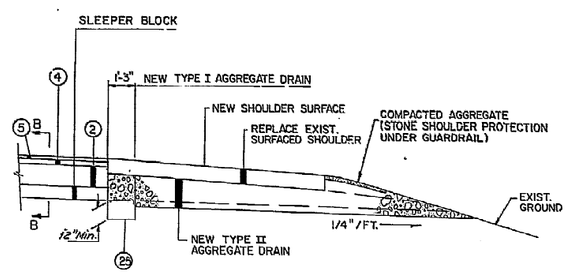
TYPE 'J' JOINT

CRACK & JOINT REPAIR NOTES

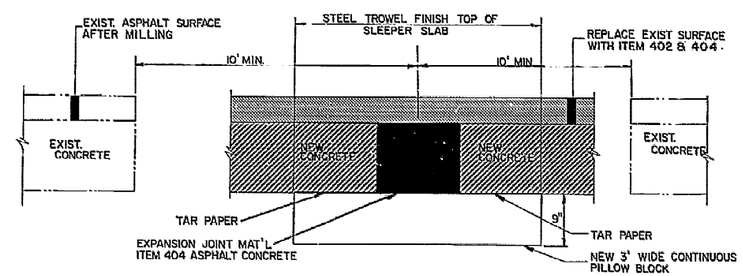
1. CONTRACTOR IS TO REMOVE ALL EXISTING BITUMINOUS JOINT MATERIAL THAT MAY BE FOUND IN CRACKS AND/OR JOINTS. TACK COAT EXISTING CRACKED SURFACE AND OVERFILL WITH SAND ASPHALT FOR CRACKS 1" OR LESS IN WIDTH. CRACKS GREATER THAN 1" IN WIDTH SHALL BE OVERFILLED WITH ITEM 404 ASPHALT CONCRETE. THE SAND ASPHALT AND ITEM 404 OVERFILL SHALL BE AS REQUIRED TO ATTAIN A MINIMUM OF 95% COMPACTION AND IN NO CASE SHALL THE ASPHALT PLACED IN CRACKS OVERFLOW THE EXTREMITIES OF THE EXISTING CRACK. OVERFILL AFTER COMPACTION SHALL NOT EXCEED 1/4".

   WHERE DIRECTED BY THE ENGINEER, OPEN CRACKS 1" OR LESS WHICH ARE NOT SPALLING AND TOO NARROW FOR SAND ASPHALT PATCH SHALL BE FILLED WITH HOT JOINT SEALER.

   HAIRLINE CRACKS THAT APPEAR ON THE SURFACE AFTER MILLING SHALL NOT BE REPAIRED UNLESS OTHERWISE ORDERED BY THE ENGINEER. WHEN SO ORDERED HAIRLINE CRACKS SHALL BE FILLED WITH HOT JOINT SEALER.
2. DETAIL OF LONGITUDINAL PAVEMENT SHOULDER JOINT SIMILAR.



SECTION A-A



SECTION B-B

NOTE:

1. EXPANSION "BLOW-UPS" WHICH MAY DEVELOP DURING CONSTRUCTION SHALL BE CONSTRUCTED BY THE CONTRACTOR AS PER DETAIL (SECTION B.B) OR AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE MADE ON THE BASIS OF "DIRECT COSTS" PLUS 15% FOR OVERHEAD AND PROFIT. "DIRECT COSTS" SHALL BE DEFINED UNDER SECTION C.9.03-5 OF THE GENERAL CONDITIONS.
2. FOR DETAILS NOT SHOWN SEE O.D.O.T. STANDARD CONSTRUCTION DRAWINGS BP-3 & BP-4

OHIO TURNPIKE COMMISSION

CRACK & JOINT DETAILS

DATE:	SCALE:
RMP: 43-82-04	SHEET 6B OF 43

STATION	Length FT.	Width FT.	659 Seeding & Mulching S.Y.	653 2" Topsoil C.Y.
253+54	96	0	43	2
254+50	50	8	81	5
255+00	50	21	184	10
255+50	50	41	280	15
256+00	14.27	52	81	5
256+14.27	8(1)	50	24 SS	2 SS
256+23 (±)		0		
288+22 (±)	11	0	21 SS	1 SS
288+33.82	24	22	87 / 22 SS	5 / 1 SS
288+56.96	50	54	203	11
289+07	50	19	89	5
289+57	50	13	36	2
290+07		0		
TOTAL			1151 *	64 **

SS = Spill Slope Quantities E.B. & W.B. Roadways ① ② ③ & ④

SS = Spill Slope Quantities ⑤ & ⑥ W.B. Roadway

SS = Spill Slope Quantities ⑦ & ⑧ E.B. Roadway

* Deduct 485 S.Y. for Item SP 627
Deduct 20 S.Y. for Item SP 617 — 1154 - 505 = 646 S.Y.
Deduct Total 505 S.Y.

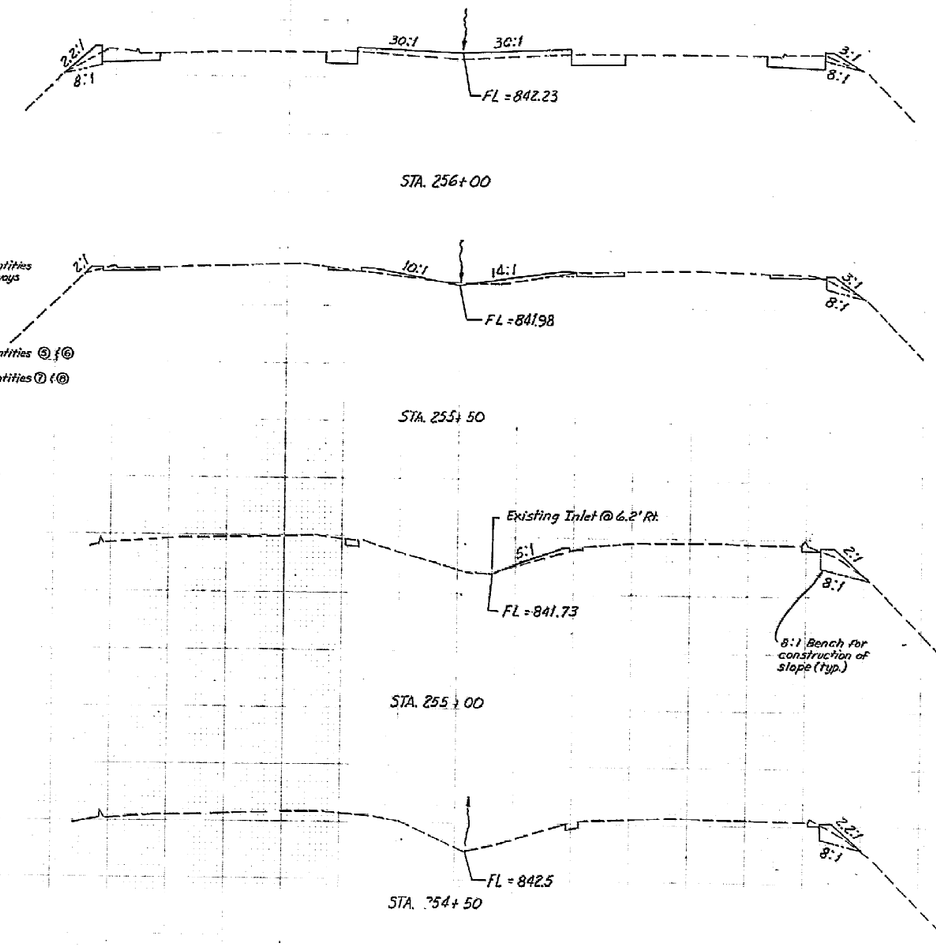
** Deduct 27 C.Y. for Item SP 627
Deduct 1 C.Y. for Item SP 617 — 64 - 28 = 36 C.Y.
Deduct Total 28 C.Y.

ITEM 659 – COMMERCIAL FERTILIZER

Quantity = $\frac{646 \times 9 \times 20}{1000 \times 2000}$ = 0.06 Ton

ITEM 659 – AGRICULTURAL LIMING

Quantity = $\frac{646 \times 9 \times 10}{1000 \times 2000}$ = 0.03 Ton



Item 310 Subbase — Item 203 Embankment

STATION	END AREA Exc. S.F.	END AREA Fill S.F.	VOLUME Exc. C.Y.	VOLUME Fill C.Y.
253+54	0	0 / 0	14	14 / 0
254+50	8	8 / 0	17	15 / 3
255+00	10	8 / 3	18	21 / 3
255+50	9	14 / 0	42	41 / 0
256+00	36	30 / 0	16	12 / 0
256+14.27 Bk.	26	15 / 0		
Spill Slopes ①②③&④			1	0 / 2
Spill Slopes ⑤&⑥			1	0 / 4
Spill Slopes ⑦&⑧			2	0 / 4
288+33.82 Ah.	20	15 / 0	19	11 / 0
288+56.96 Bk.	22	9 / 0		
288+56.96 Ah.	40	28 / 15	47	37 / 14
289+07	11	12 / 0	15	6 / 0
289+57	5	2 / 0	6	2 / 0
290+07	2	0 / 0		
TOTAL			198	159 / 30

ADDITIONAL EXCAVATION FOR FULL WIDTH SHOULDER CONSTRUCTION

Additional Excavation
Sta. 255+28.27 to Sta. 255+99.27 = 71'
2 x 71' x 6' Avg. Width x 0.75' = 23.7 C.Y.

Additional Excavation
Sta. 288+48.82 to Sta. 289+19.92 = 71'
2 x 71' x 6' Avg. Width x 0.75' = 23.7 C.Y.

Notes
1.) For Spill Slope Calculations See Sheet 8.

HORIZONTAL 10 0 10 20
VERTICAL 5 0 5 10
SCALE IN FEET

REVISIONS
MADE BY: RLN DATE: 07-05-83
CHECKED BY: KBV DATE: 07-05-83

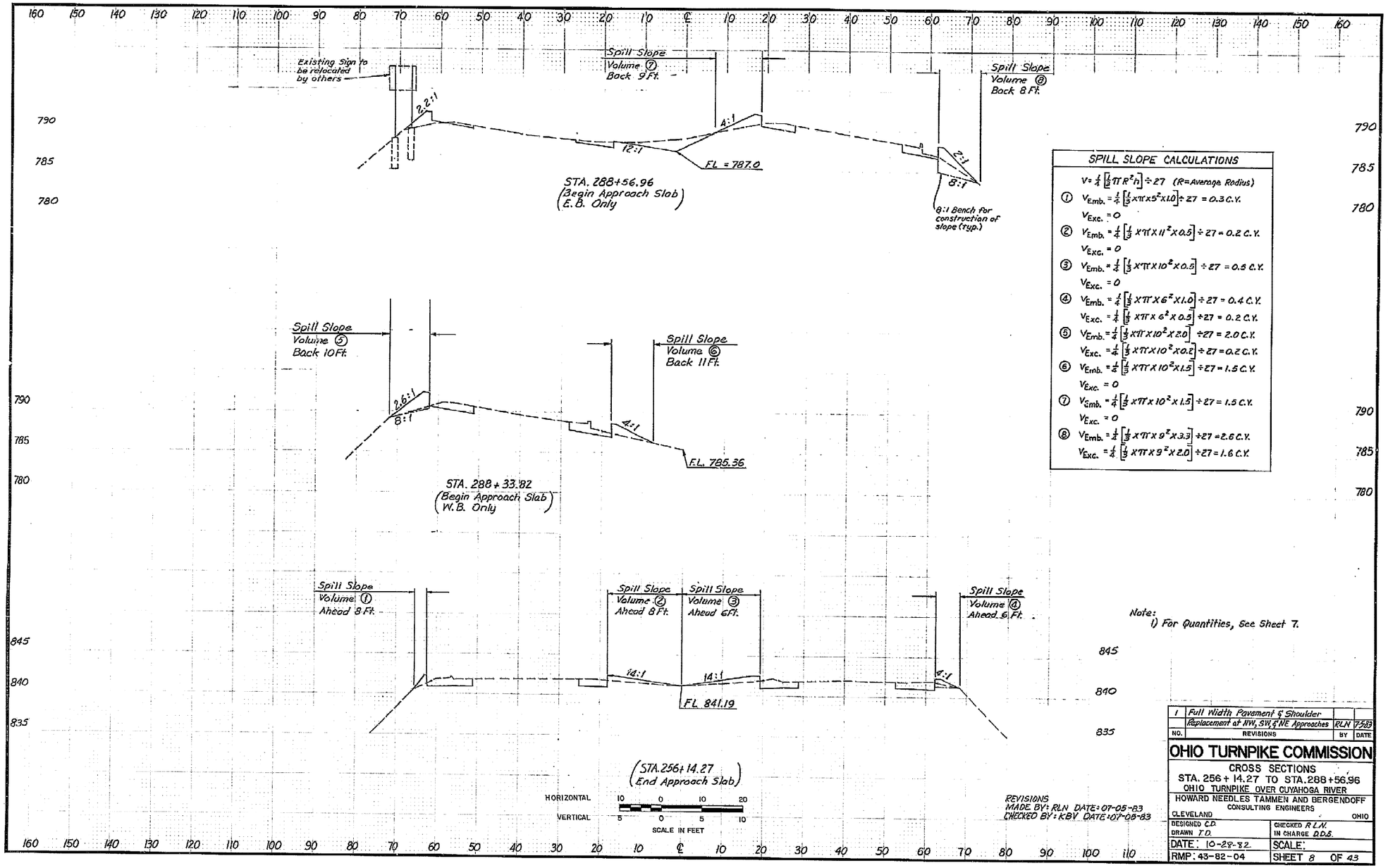
NO.	REVISIONS	BY	DATE
1	Full Width Pavement & Shoulder Replacement at NW, SW, & NE Approaches	RLN	7-5-83

OHIO TURNPIKE COMMISSION

CROSS SECTIONS
STA. 254 + 50 TO STA. 256 + 00
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED C.D. — CHECKED R.L.N.
DRAWN T.D. — IN CHARGE D.D.S.
DATE: 10-28-82 — SCALE:
RMP: 43-82-04 — SHEET 7 OF 43



SPILL SLOPE CALCULATIONS

$V = \frac{1}{4}\left[\frac{1}{3}\pi R^2 h\right] \div 27$ (R = Average Radius)

① $V_{Emb.} = \frac{1}{4}\left[\frac{1}{3} \times \pi \times 5^2 \times 1.0\right] \div 27 = 0.3$ C.Y.
$V_{Exc.} = 0$

② $V_{Emb.} = \frac{1}{4}\left[\frac{1}{3} \times \pi \times 11^2 \times 0.5\right] \div 27 = 0.2$ C.Y.
$V_{Exc.} = 0$

③ $V_{Emb.} = \frac{1}{4}\left[\frac{1}{3} \times \pi \times 10^2 \times 0.5\right] \div 27 = 0.5$ C.Y.
$V_{Exc.} = 0$

④ $V_{Emb.} = \frac{1}{4}\left[\frac{1}{3} \times \pi \times 6^2 \times 1.0\right] \div 27 = 0.4$ C.Y.
$V_{Exc.} = \frac{1}{4}\left[\frac{1}{3} \times \pi \times 6^2 \times 0.5\right] \div 27 = 0.2$ C.Y.

⑤ $V_{Emb.} = \frac{1}{4}\left[\frac{1}{3} \times \pi \times 10^2 \times 2.0\right] \div 27 = 2.0$ C.Y.
$V_{Exc.} = \frac{1}{4}\left[\frac{1}{3} \times \pi \times 10^2 \times 0.2\right] \div 27 = 0.2$ C.Y.

⑥ $V_{Emb.} = \frac{1}{4}\left[\frac{1}{3} \times \pi \times 10^2 \times 1.5\right] \div 27 = 1.5$ C.Y.
$V_{Exc.} = 0$

⑦ $V_{Emb.} = \frac{1}{4}\left[\frac{1}{3} \times \pi \times 10^2 \times 1.5\right] \div 27 = 1.5$ C.Y.
$V_{Exc.} = 0$

⑧ $V_{Emb.} = \frac{1}{4}\left[\frac{1}{3} \times \pi \times 9^2 \times 3.3\right] \div 27 = 2.6$ C.Y.
$V_{Exc.} = \frac{1}{4}\left[\frac{1}{3} \times \pi \times 9^2 \times 2.0\right] \div 27 = 1.6$ C.Y.

Note:
1) For Quantities, See Sheet 7.

REVISIONS
MADE BY: RLN DATE: 07-05-83
CHECKED BY: KBV DATE: 07-08-83

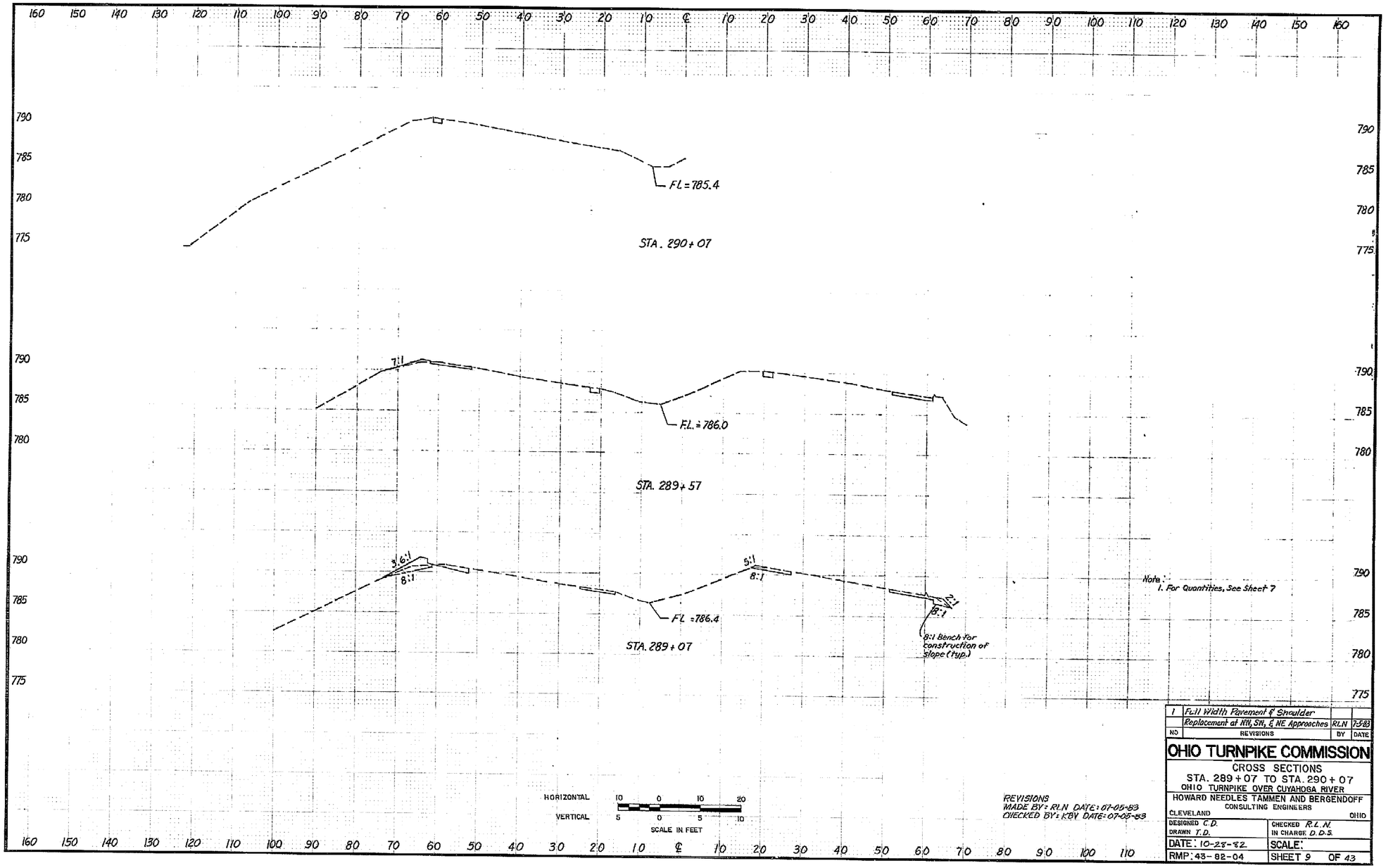
NO.	REVISIONS	BY	DATE
1	Full Width Pavement & Shoulder Replacement at NW, SW, & NE Approaches	RLN	7-5-83

OHIO TURNPIKE COMMISSION

CROSS SECTIONS
STA. 256 + 14.27 TO STA. 288 + 56.96
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED C.D.	CHECKED R.L.N.
DRAWN T.D.	IN CHARGE D.D.S.
DATE: 10-28-82	SCALE:
RMP: 43-82-04	SHEET 8 OF 43



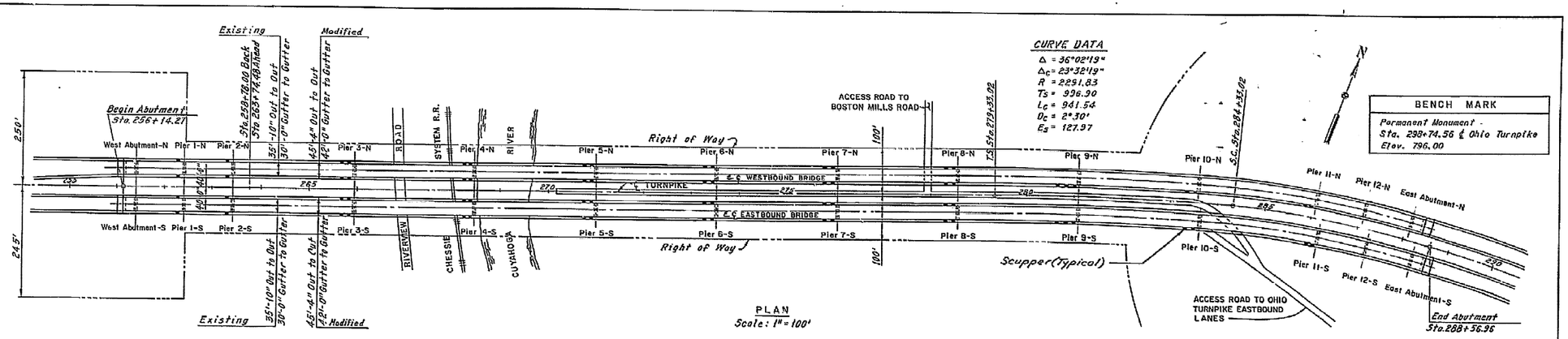
NO	REVISIONS	BY	DATE
1	Full Width Pavement & Shoulder Replacement at NW, SW, & NE Approaches	RLN	7-5-83

OHIO TURNPIKE COMMISSION

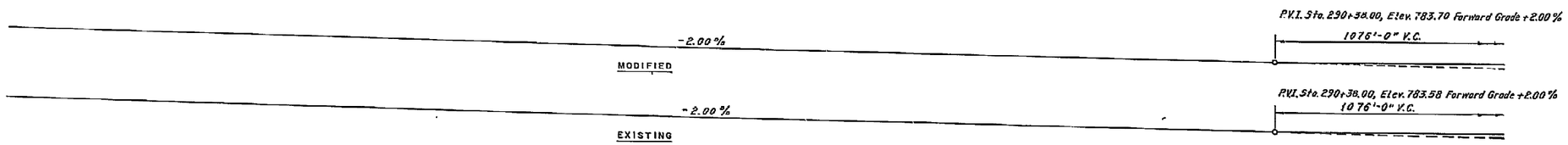
CROSS SECTIONS
STA. 289+07 TO STA. 290+07
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

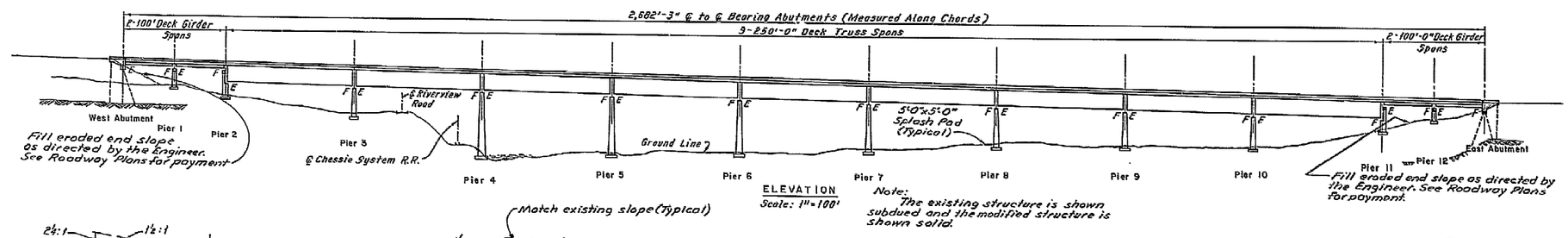
DESIGNED C.D.	CHECKED R.L.N.
DRAWN T.D.	IN CHARGE D.D.S.
DATE: 10-28-82	SCALE:
RMP: 43-82-04	SHEET 9 OF 43



PLAN
Scale: 1" = 100'

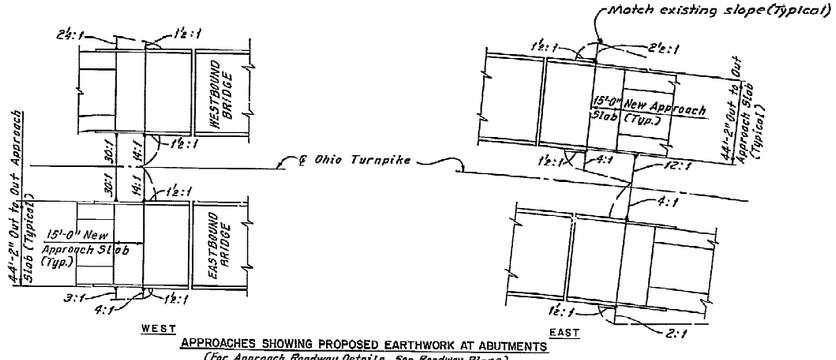


PROFILE GRADES
No Scale



ELEVATION
Scale: 1" = 100'

Note:
The existing structure is shown subdued and the modified structure is shown solid.



APPROACHES SHOWING PROPOSED EARTHWORK AT ABUTMENTS
(For Approach Roadway Details, See Roadway Plans)
Scale: 1" = 30'

FOUNDATION DATA

The substructure foundations shall be founded on HP 14x73 steel piling driven to a minimum bearing capacity of 65 tons per pile and having the following estimated pay length per pile:

West Abutments	
Abutments	75 ft.
Grade Beam	87 ft.
East Abutments	
Westbound Bridge	
Abutment	37 ft.
Grade Beam	54 ft.
Eastbound Bridge	
Abutment	41 ft.
Grade Beam	54 ft.

EXISTING STRUCTURE

Type: Simple span deck truss and deck girder spans with reinforced concrete deck and substructure.
Spans: 2-100 ft. multiple girder spans: 9-250 ft. truss spans: 2-100 ft. multiple girder spans.
Roadway: 30'-0" curb to curb with two 1'-6" safety walks, concrete parapets and metal railing.
Loading: CF 2000.
Skew: None.
Wearing Surface: 1" Monolithic Concrete.
Approach Slab: 15' Long.
Alignment: Tangent to spiral to 2°30' Curve.
Superelevation: Varies.

MODIFIED STRUCTURE

Same as existing structure except as noted.

Roadway: 43'-2" face to face of parapets.
Loading: HS20-44 and the alternate military loading (Case I).
Wearing Surface: 1" Monolithic Concrete.
Approach Slab: (AS-1-81) 15'-0" long.

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

GENERAL PLAN AND ELEVATION
OHIO TURNPIKE OVER CUYAHOGA RIVER
HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED C.K.B.	CHECKED D.H.S.
DRAWN C.K.B. & C.P.	IN CHARGE C.A.B
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 10 OF 43

1. PROPOSED WORK

The decks of the Ohio Turnpike Bridges over the Cuyahoga River shall be replaced with widened decks under this contract. A general summary of the work for each bridge in connection with the deck replacement and widening is listed below. Details of the work are covered in the Plans and Specifications.

A. Remove and dispose of the existing reinforced concrete deck including safety walks and railing.

B. At each abutment, remove the entire structural slab, curbs and parapeys. Extend the abutments and construct a new structural slab and wingwalls. Repair the abutment backwalls.

C. Construct cantilever extensions to Piers 1, 2, 11 and 12.

D. Reset the rocker bearings at the west abutment.

E. In the truss spans:
(1) Replace floorbeam expansion bearings.
(2) Straighten interior floorbeams as required.
(3) Remove the existing deck expansion joints including end floorbeams.
(4) Extend interior floorbeams.
(5) Modify framing at existing Pier 4 expansion joint.
(6) Install new end floorbeams. Relocate existing fascia stringers to the new fascia and install new stringers as replacements.
(7) Replace the rivets with high strength bolts, as required, at stringer to floorbeam connections.

F. In the girder spans:
(1) Remove the existing deck expansion joints.
(2) Install new fascia girders and crossframes.

G. Install new deck expansion joints.

H. Install drainage system.

I. Construct new cast-in-place reinforced concrete deck including concrete barriers.

J. Modify approach roadway. (See Roadway Plans)

2. DESIGN SPECIFICATIONS

Standard Specifications for Highway Bridges adopted by the American Association of State Highway and Transportation Officials, Dated 1977, including the 1978, 1979, 1980 and 1981 Interim Specifications and the Ohio "Supplement" to these specifications. The design provides for a 1-in. monolithic wearing surface with no provisions for a future wearing surface. The design load is HS-20-44 Case I and the Alternate Military Loading.

The classes of concrete and the grades of structural steel and reinforcing steel, together with the strength for each are as follows:

Concrete Class S (Superstructure & Abutment Deck)	- Compressive Strength 4,500 psi
Concrete Class S (Lightweight) (Barrier Curbs)	- Unit Stress 1500 psi
Concrete Class C (Substructure)	- Unit Stress 1,333
Structural Steel	- ASTM A36 - Unit Stress, 20,000 psi
Reinforcing Steel	- ASTM A615, A616, A617 - Grade 60, Unit Stress 24,000 psi

3. PLANS OF EXISTING BRIDGE

Construction plans, including shop drawings, for the existing bridges are on file at the Commission's Principal Office, 682 Prospect Street, Berea, Ohio and are available for reference. The Contractor shall familiarize himself with all pertinent drawings.

4. EXISTING STRUCTURE VERIFICATION

Dimensions given are measured horizontally and at 68°F except for longitudinal dimensions between the centerline of abutment bearings are measured parallel to grade.

Details and dimensions shown on these plans pertaining to the existing structure have been obtained from design plans and/or shop drawings of the existing bridge. Consequently, details and dimensions are indicative of the existing structure and the proposed work but shall be considered tentative and approximate. Some variation from plan dimensions are expected. The Contractor shall be responsible for proper fit-up between the proposed and existing construction. Adequate measurements shall be made in the field prior to fabrication or installation of any part to insure that all parts can be properly assembled as specified in these plans.

Shall dimensional discrepancies in Spans 9 through 13 have been noted between the original design drawings and shop drawings. The lengths of the new exterior stringers and new girders as shown herein have been determined by extrapolation from dimensions given on the original shop drawings.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the structure by the Contractor. However, all project work shall be based on actual details and dimensions which have been verified by the Contractor in the field. Any additional cost resulting from variations from plan dimensions is the responsibility of the Contractor and no additional payment will be awarded by the Commission.

5. REINFORCING STEEL

All bars are designated on the plans by bar numbers. The bar size is indicated by the first digit of three-digit numbers and by the first two digits of four-digit numbers.

All bar dimensions are given out to out.

The clear distance between reinforcing steel and face of concrete shall be 2-in. unless otherwise noted on the plans.

6. PAINTING STRUCTURAL STEEL

All new structural steel and areas of damaged paint on existing structural steel resulting from the modification of the structure shall be painted in accordance with Item SP 514.

7. BONDING NEW CONCRETE TO EXISTING CONCRETE

Polysulfide-epoxy resin adhesive shall be used for bonding at all locations where new concrete is placed in contact with existing concrete. The adhesive for all applications except where mortar is placed pneumatically against existing concrete, shall be Dural 104 as manufactured by Dural International Corp., Deerpark, New York, Thiobond No. 100 as manufactured by Steelcoat Manufacturing Company, St. Louis, MO., Ceilcoat 348 Adhesive, as manufactured by the Ceilcoat Company, Berea, Ohio, Resimeld R-7689-G as manufactured by the H.B. Fuller Company or adhesive meeting the requirements of AASHTO M-235-73. The adhesive to be used in conjunction with pneumatically placed mortar or in the event of application at less than 60°F or more than 100°F, will require a slightly modified material depending on the recommendations of the manufacturer.

Preparation of the existing concrete shall be in accordance with the manufacturer's recommendation. Just prior to application, the prepared surface shall be washed with water to remove all dust. When the surface is damp or dry, the adhesive shall be applied by thorough brushing onto the surface to a thickness of not less than 15 mils with the coverage averaging at least one gallon per 100 sq.ft. If the adhesive sets and is no longer tacky, a second coat shall be applied. The adhesive shall be thoroughly mixed and health precautions observed, all in accordance with the manufacturer's recommendation.

No separate payment will be made for bonding new concrete to old using polysulfide-epoxy resin adhesive, but this work shall be included in the unit price bid for the pertinent concrete or patching item. This price shall include all labor, material and equipment including cleaning and preparing of the existing surface.

8. DECK FLOOR SURVEY

Girder Spans

After all deck concrete within a span has been removed and before any deck concrete has been placed within that span, the Contractor shall make a detailed survey of elevations along the top flange of each existing girder. Based on this survey and the anticipated deflections due to the weight of concrete, the Contractor shall determine the depth of concrete required over each existing girder to provide the top of pavement elevations as shown in the plans. The calculated depths of concrete shall be submitted in triplicate to the Engineer for approval.

Truss Spans

The Contractor shall verify the theoretical truss deflections due to removal of the existing deck, safety walk and railing. Prior to the removal of the deck and with no live load on the structure, the Contractor shall remove concrete cores as required to determine the top of flange elevations of Stringers C and F (Westbound Bridge) and Stringers L and P (Eastbound Bridge) at Floorbeams 5, 6 and 7 in each span. The elevation at the same points shall be determined after the deck has been removed and the difference in the elevations so determined shall be compared to the theoretical truss deflections shown in the plans. All data shall be furnished to the Engineer.

After all deck concrete within a span has been removed and before any deck concrete has been placed within that span, the Contractor shall make a detailed survey of the floor system to determine the elevation of the top of stringer flange at each floorbeam in each span. Based on this survey, the Contractor shall determine the depth of concrete required over each stringer at each floorbeam to provide the deck elevations as shown in the plans. The deflections of the trusses under the proposed dead load are shown in the plans. Floorbeam deflections under the proposed dead load are essentially zero. The calculated depths of concrete shall be submitted in triplicate to the Engineer for approval.

The cost of the above work shall be included with Item 623, Construction Layout Stakes, for payment.

9. CONCRETE DECK

The final surface of the roadway shall conform as nearly as practicable to the elevations shown in the plans.

Construction of the new deck shall incorporate the following requirements:
(1) In each span, the existing deck shall be completely removed before the new deck is placed.
(2) Blockouts shall be provided in the new deck, 5-ft, on each side of the expansion joints. The expansion joints shall be set after the deck (with the exception of the blocked out areas) is poured on each side of the joint blockouts, after which the joint extrusions shall be set at the proper elevations and openings, and the concrete pours in the blocked out areas shall then be completed. ⚠ *Waived at Contractors Request for Joints on Eastbound Bridge and at Pier 12N and East Abutment on Westbound Bridge.*
(3) In each span, the new deck shall be placed full width between fascias and continuous between expansion joint and blockouts.

The Contractor shall submit his proposed deck placement sequence to the Engineer for approval.

10. DRILLING BOLT HOLES IN EXISTING STRUCTURAL STEEL

The drilling of bolt holes in existing structural steel, as specified herein or as required for the reconstruction, shall be included with the unit price bid for Item 513, New Structural Steel, AISC Category III (ASTM A36), for payment.

11. FLOORBEAM HOLD-DOWN BOLTS (TRUSS SPANS)

At Existing Floorbeams

Floorbeam hold-down bolts may be removed to facilitate replacement of the floorbeam bearings. These bolts shall be reinstalled after the new deck has been placed. In addition any bent, otherwise damaged or missing bolts shall be replaced as directed by the Engineer.

At New Floorbeams

New floorbeams shall be secured to the truss using the existing hold-down bolts as approved by the Engineer. Holes for these bolts in the bottom flange of the new floorbeams shall be field drilled after the new deck has been placed and shall match the corresponding holes in the top chord of the truss.

The cost for the above work shall be included with the unit price bid for Item 513, New Structural Steel, for payment.

12. HOLES IN STRUCTURAL MEMBERS

Unfilled holes in existing structural members resulting from removing and not replacing fasteners shall be painted in accordance with Item SP514
This work shall be included for payment with the unit price bid for Item SP514 Field Painting of New Structural Steel.

13. FOUNDATIONS

Piles at the West Abutment shall be driven to refusal on bedrock. Refusal shall be considered as obtained by penetrating soft bedrock for several inches with a minimum resistance of 20 blows per inch or refusal shall be considered as obtained after the pile has contacted hard bedrock and the pile has then received at least 20 blows.

The design load for all piling (West Abutment and East Abutment) is 65 tons per pile.

14. ITEMS NOT INCLUDED IN BRIDGE PLANS

The following items are not included in the Bridge Plans. See Roadway Plans for details.

(1) Approach Slabs
(2) Approach Roadways

NO.	REVISIONS	BY	DATE
⚠	As Built	K.D.I.	12/85

OHIO TURNPIKE COMMISSION

GENERAL NOTES

OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED CKB	CHECKED CAB
DRAWN CKB	IN CHARGE CAB
DATE: 10-28-82	SCALE:
RMP: 43-82-04	SHEET 11 OF 43

ESTIMATED QUANTITIES

ITEM	TOTAL	UN'T	DESCRIPTION	EASTBOUND BRIDGE ABUTMENTS	EASTBOUND BRIDGE PIERS	EASTBOUND BRIDGE SUPERSTR.	EASTBOUND BRIDGE GENERAL	EASTBOUND BRIDGE TOTAL	WESTBOUND BRIDGE ABUTMENTS	WESTBOUND BRIDGE PIERS	WESTBOUND BRIDGE SUPERSTR.	WESTBOUND BRIDGE GENERAL	WESTBOUND BRIDGE TOTAL
SP202B	Lump Sum	Lump Sum	Portions of Structures Removed	—	—	—	Lump Sum	Lump Sum	—	—	—	Lump Sum	Lump Sum
503	Lump Sum	Lump Sum	Cofferdams, Cribs and Sheeting	—	—	—	Lump Sum	Lump Sum	—	—	—	Lump Sum	Lump Sum
503	282	C. Y.	Unclassified Excavation	130	—	—	—	130	152	—	—	—	152
505	Lump Sum	Lump Sum	Test Pile	Lump Sum	—	—	—	Lump Sum	Lump Sum	—	—	—	Lump Sum
507	1,550	L. F.	Steel Piles, HP 14 x 73	746	—	—	—	746	804	—	—	—	804
509	695,316	Lb.	Reinforcing Steel	18,055	10,913	318,522	—	347,490	18,391	10,913	318,522	—	347,826
SP509A	1,142,230	Lb.	Epoxy Coated Reinforcing Steel	9,090	—	562,025	—	571,115	9,090	—	562,025	—	571,115
SP509B	4000	Lb.	Replacement Reinforcing Steel	—	—	—	2000	2,000	—	—	—	2,000	2,000
SP511	1,164	C. Y.	Lightweight Concrete, Barriers	10	—	572	—	582	10	—	572	—	582
511	6,164	C. Y.	Class S Concrete, Superstructure Deck	—	—	3,072	—	3,072	—	—	3,092	—	3,092
511	176	C. Y.	Class S Concrete, Abutment Slabs	88	—	—	—	88	88	—	—	—	88
511	133	C. Y.	Class C Concrete, Piers	—	66	—	—	66	—	67	—	—	67
511	173	C. Y.	Class C Concrete, Abutments Above Footings	83	—	—	—	83	90	—	—	—	90
511	27	C. Y.	Class C Concrete, Footings	10	—	—	—	10	17	—	—	—	17
512	223	S. Y.	Type A Waterproofing	112	—	—	—	112	111	—	—	—	111
513	2,160,800	Lb.	New Structural Steel, AISC Category III (ASTM A36)	—	—	1,080,400	—	1,080,400	—	—	1,080,400	—	1,080,400
SP514	2,160,800	Lb.	Field Painting of New Structural Steel	—	—	1,080,400	—	1,080,400	—	—	1,080,400	—	1,080,400
518	105	C. Y.	Porous Backfill	52	—	—	—	52	53	—	—	—	53
518	70	Each	Scuppers, Including Supports	—	—	35	—	35	—	—	35	—	35
518	3,260	L. F.	8" Φ Standard Pipe Downspout, Plastic Pipe 711.29,	—	—	—	1,620	1,620	—	—	—	1,640	1,640
			Including Fittings, Supports and Accessories										
SP524	726	Each	Grout Anchoring	200	157	—	—	357	212	157	—	—	369
SP525	500	S.F.	Repair of Abutments	350	—	—	—	350	150	—	—	—	150
SP526	72	Each	Repair At Bearing Areas	—	36	—	—	36	—	36	—	—	36
SP527	Lump Sum	Lump Sum	Falsework And Temporary Bracing	—	—	—	Lump Sum	Lump Sum	—	—	—	Lump Sum	Lump Sum
SP528	Lump Sum	Lump Sum	Dismantle, Move, Alter and/or Recondition and Erect Reused	—	—	Lump Sum	—	Lump Sum	—	—	Lump Sum	—	Lump Sum
			Structural Steel										
SP529	240	Each	Straightening of Existing Floorbeams	—	—	120	—	120	—	—	120	—	120
SP530	4,300	Each	Replace Existing Rivets With New High Strength Bolts	—	—	2,150	—	2,150	—	—	2,150	—	2,150
SP531	12	Each	Reset Rocker Bearings	6	—	—	—	6	6	—	—	—	6
SP532	292	Each	Self-Lubricating Bronze Expansion Bearing Assembly	—	—	146	—	146	—	—	146	—	146
SP533	28	Each	Continuous Seal in Structural Steel Joint	—	—	14	—	14	—	—	14	—	14
SP535	36,300	S. Y.	Chem-Trete BSM 40 Weatherproofing	510	240	17,400	—	18,150	510	240	17,400	—	18,150

Notes:

Item 202, Portions of Structures Removed, includes, but is not limited to the following approximate quantities:

	Westbound Bridge	Eastbound Bridge
Structural Steel	328,700 Lb.	328,700 Lb.
Concrete	3,200 C. Y.	3,200 C. Y.
Railing	5,470 L. F.	5,470 L. F.
Permanent Deck Forms	—	3,150 S. F.

The payment quantity for Item 513, New Structural Steel AISC Category III (ASTM A36), shall be the quantity of new structural steel incorporated into the completed construction. The payment quantity shall not include existing structural steel which is to be removed and reused in the completed structure. Payment for this work and any other work on the existing structural steel not covered elsewhere shall be considered as included in the lump sum bid for SP528, Dismantle, move, alter, and or recondition and erect reused structural steel. Approximately 320,400 lbs. of existing structural steel in each bridge will be removed and reused, exclusive of steel removed for erection purposes.

NO.	REVISIONS	BY	DATE

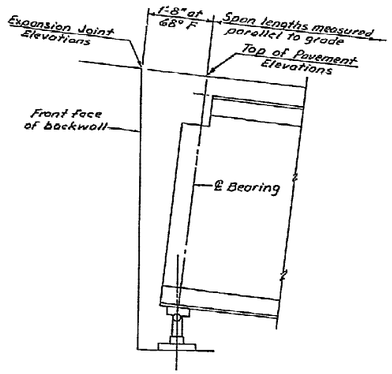
OHIO TURNPIKE COMMISSION

ESTIMATED QUANTITIES

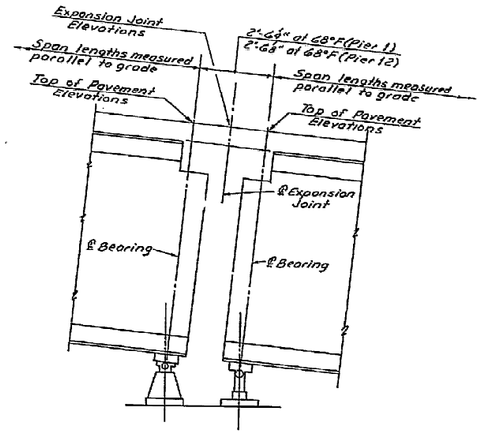
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

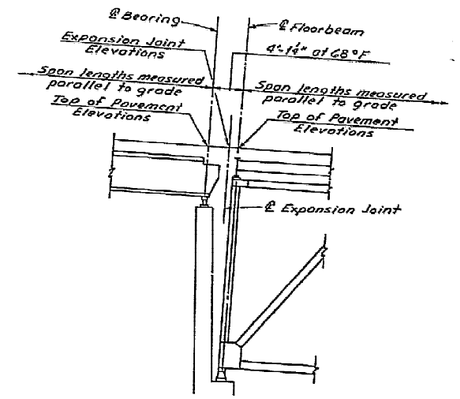
DESIGNED C.K.B.	CHECKED R.H.W.
DRAWN C.K.B.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: No Scale
RMP: 43-82-04	SHEET 12 OF 43



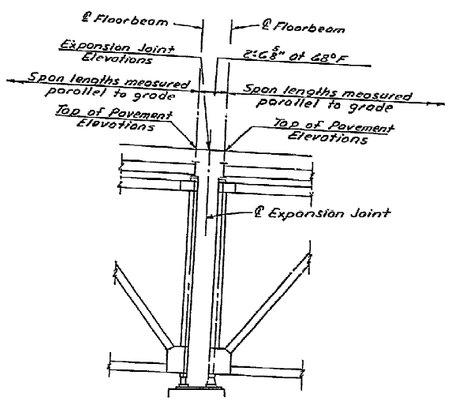
WEST ABUTMENT



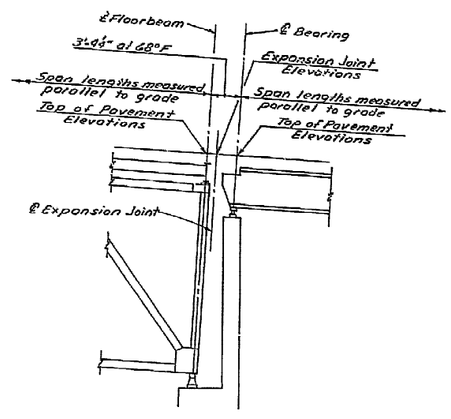
PIERS 1 AND 12



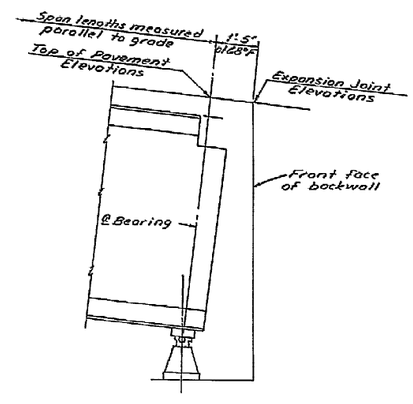
PIER 2



PIERS 3 thru 10



PIER 11



EAST ABUTMENT

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

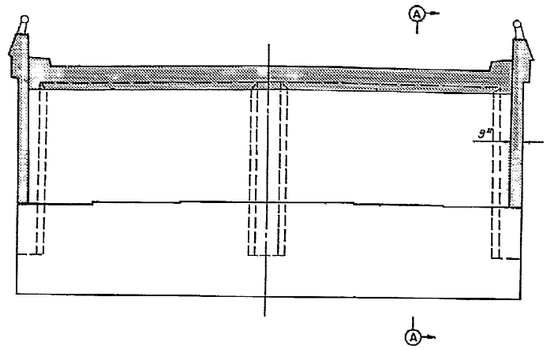
SCHEMATIC LAYOUTS SHOWING VERTICAL AND HORIZONTAL CONTROLS

OHIO TURNPIKE OVER GUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS

CLEVELAND OHIO

DESIGNED C.K.B	CHECKED D.H.S.
DRAWN R.D.J.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: No Scale
RMP: 43-82-04	SHEET 13 OF 43



ELEVATION
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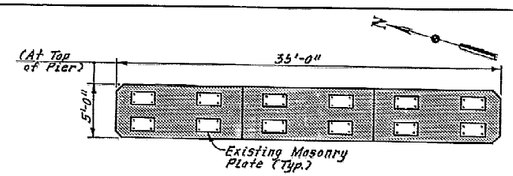
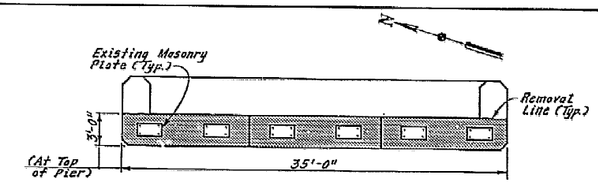


PLAN



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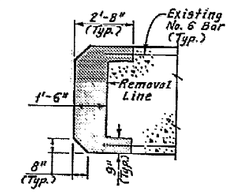

SECTION D-D
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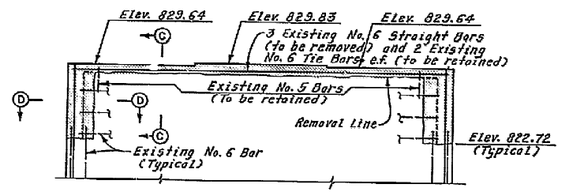

ELEVATION
PIER 1
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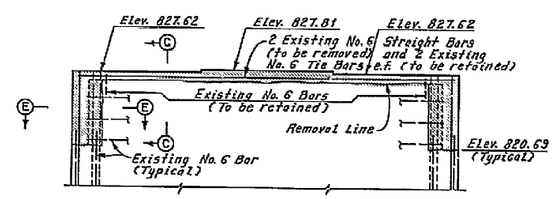
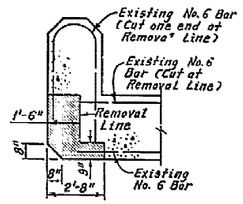
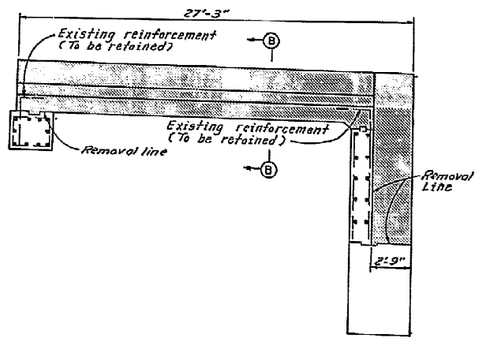


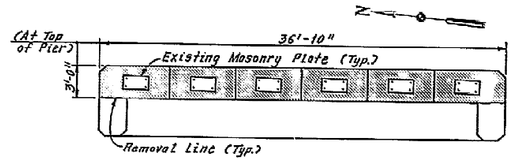
ELEVATION
PIER 2
Scale: 3/16" = 1'-0"



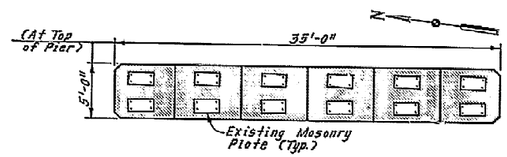
SECTION E-E
Scale: 3/8" = 1'-0"



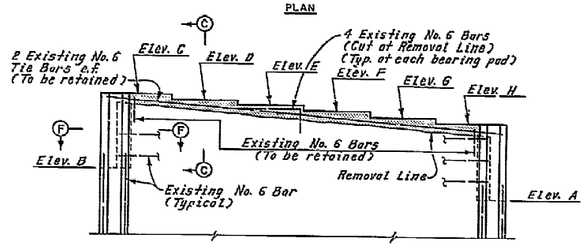
SECTION A-A
(Piles not shown)
Scale: 1/4" = 1'-0"



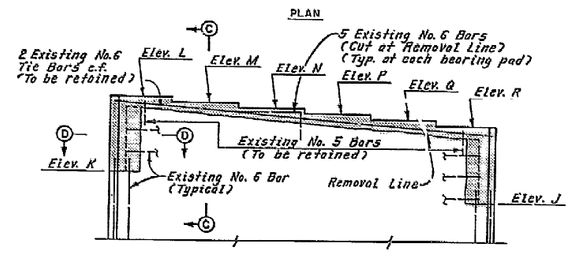
PLAN



PLAN



ELEVATION
PIER 11
Scale: 3/16" = 1'-0"



ELEVATION
PIER 12
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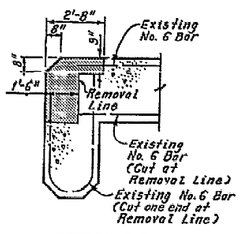
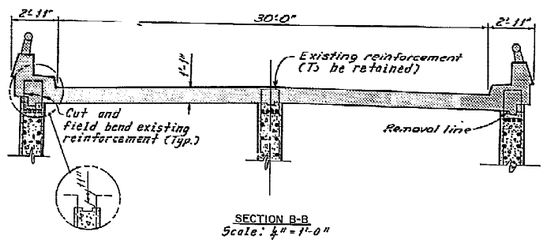
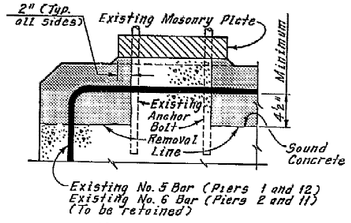


SECTION F-F
Scale: 3/8" = 1'-0"



SECTION B-B
Scale: 1/4" = 1'-0"

ABUTMENTS



PART SECTION C-C
Scale: 1½" = 1'-0"
(Existing longitudinal reinforcement not shown)

TABLE OF ELEVATIONS					
ELEV.	WESTBOUND	EASTBOUND	ELEV.	WESTBOUND	EASTBOUND
A	774.06	773.82	J	772.64	772.42
B	776.93	776.69	K	775.50	775.28
C	785.84	785.61	L	782.43	782.21
D	783.34	783.11	M	781.93	781.71
E	782.84	782.61	N	781.43	781.21
F	782.34	782.11	P	780.93	780.71
G	781.84	781.61	Q	780.43	780.21
H	781.34	781.11	R	779.93	779.71

Notes:

Indicates removal.

Retain pier reinforcement 1'-3" beyond removal limits, except as noted.

Reinforcement embedded beneath pier masonry plates, and noted to be removed, shall be cut at the edge of the masonry plate. The remaining portion of reinforcing bar shall be left in place.

The following abbreviations are used:

Typ. = Typical
Min. = Minimum
Elev. = Elevation
e.f. = each face

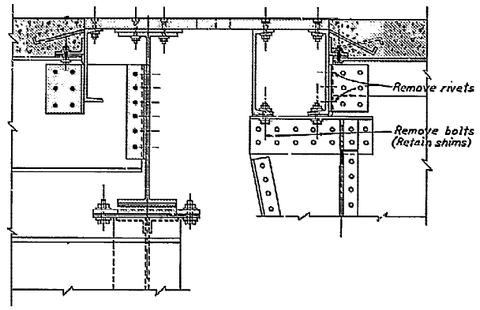
PIERS

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

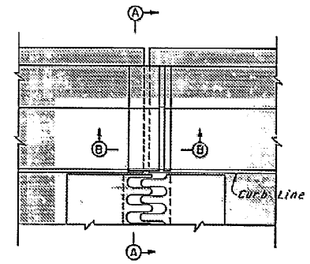
ABUTMENT AND PIER REMOVAL DETAILS
OHIO TURNPIKE OVER CUYAHOGA RIVER
HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED F.S.J.		CHECKED D.H.S.	
DRAWN C.K.B. & W.E.B.		IN CHARGE C.A.B.	
DATE: 10-28-82		SCALE: As Shown	
RMP: 43-82-04		SHEET 14 OF 43	



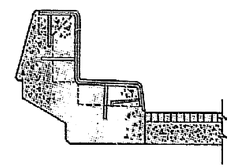
TRUSS SPANS GIRDER SPANS

Scale : 1" = 1'-0"



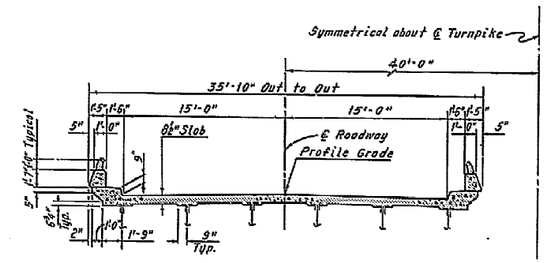
PLAN

Scale: 3/4" = 1'-0"



SECTION A-A

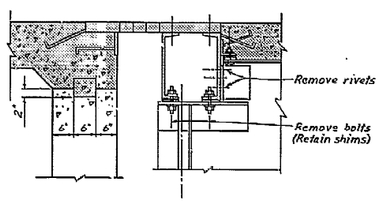
Scale: 3/4" = 1'-0"



DECK SECTION

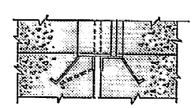
Scale: 1/16" = 1'-0"

(Girder Spans Shown, Truss Spans Similar)



ABUTMENTS

Scale: 3/4" = 1'-0"



SECTION B-B

Scale: 3/4" = 1'-0"

CURBS

Note: Indicates removal.

DECK EXPANSION JOINTS

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

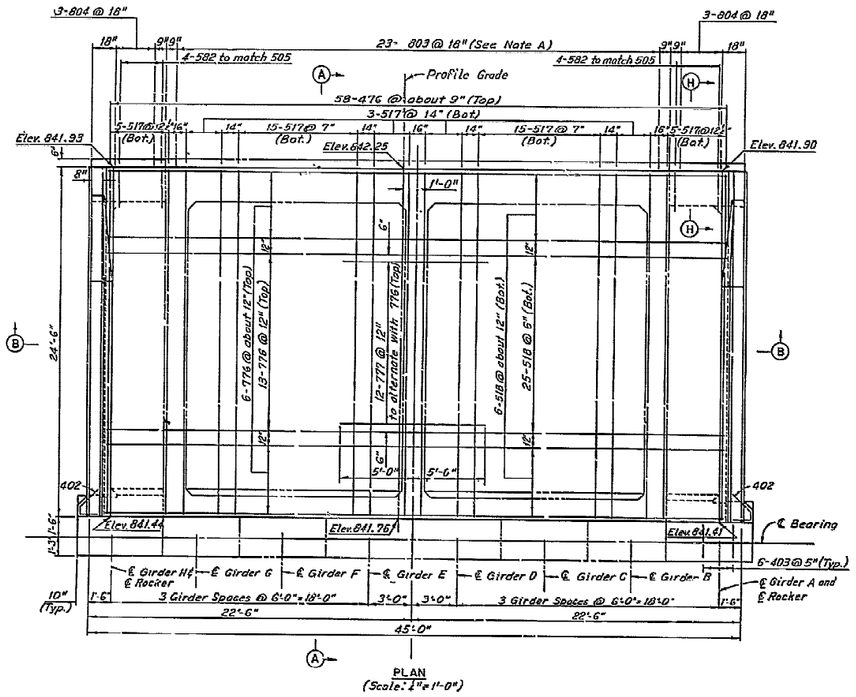
DECK AND EXPANSION JOINT REMOVAL DETAILS

OHIO TURNPIKE OVER CUYAHOGA RIVER

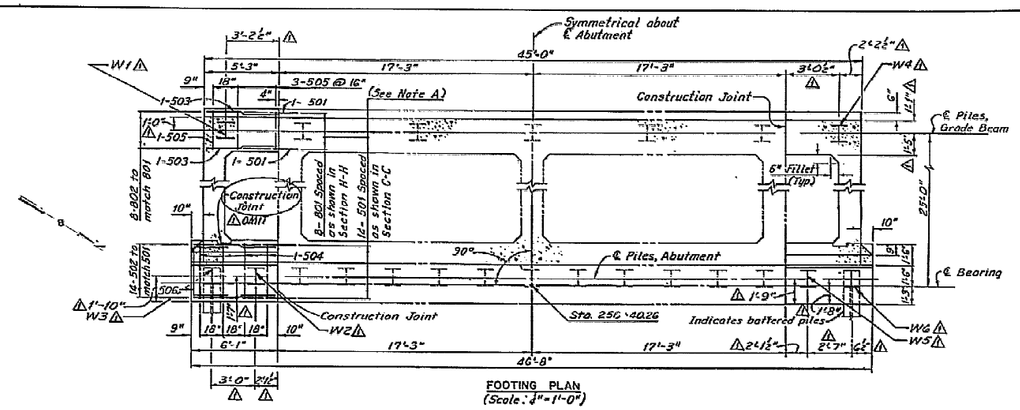
HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS

CLEVELAND OHIO

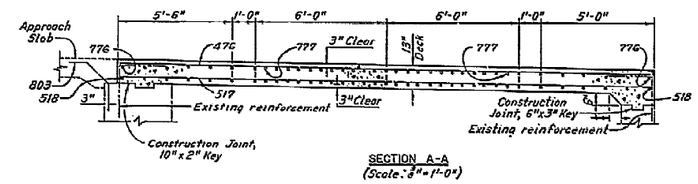
DESIGNED C.K.B.	CHECKED D.H.S.
DRAWN C.K.B.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 15 OF 43



PLAN
(Scale: 1" = 1'-0")



FOOTING PLAN
(Scale: 1/4" = 1'-0")



SECTION A-A
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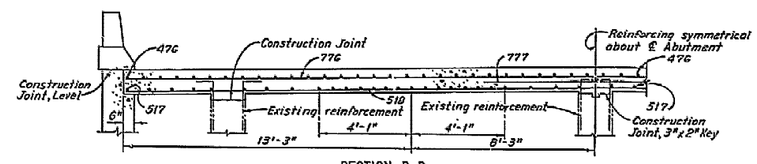

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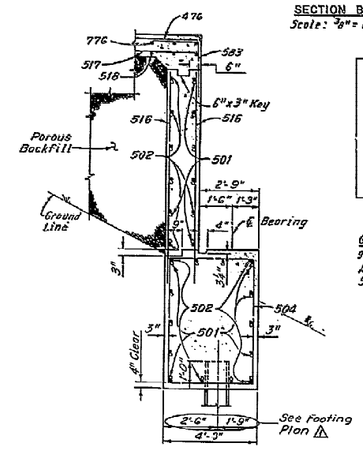

SECTION C-C
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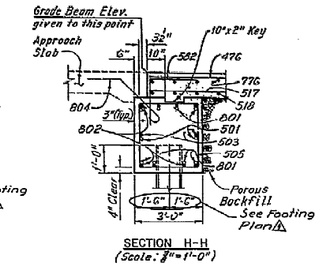
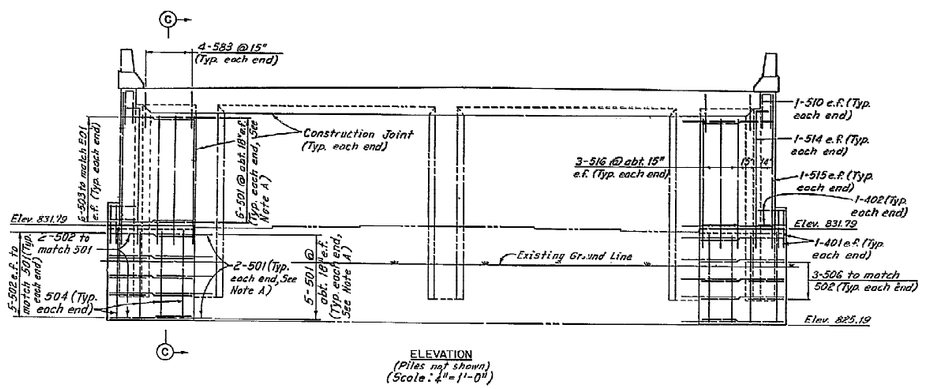


SECTION H-H
(Scale: 3/8" = 1'-0")

REQUIRED LAP LENGTHS	
No. 5 Bars	2'-5" Minimum
No. 8 Bars	4'-10" Minimum
No. 9 Bars	6'-1" Minimum

Note A:
The bars listed below shall be doweled into the existing structure and meet the following requirements:

Bar No.	Embedment Length
501	1'-3"
801	1'-3"
803	9"



ELEVATION
(Piles not shown)
(Scale: 1/4" = 1'-0")

Note:
Reinforcing bar marks shall be prefixed as follows:

401-475 = WA	476-499 = EWA
501-575 = WA	576-599 = EWA
601-675 = WA	676-699 = EWA
701-775 = WA	776-799 = EWA
801-875 = WA	
901-975 = WA	

Notes:

——— Indicates existing structure.

All new piles are HP14x73 with a design capacity of 65 tons per pile.

All battered piles shall be battered 3 in 12 in the direction shown.

The back face of the abutment extension and wingwalls shall be coated with Type A waterproofing, extending from the bottom of the pile cap to the bottom of the deck slab.

Porous backfill shall be placed between the existing wingwalls and the new wingwalls extending from the existing ground line to the bottom of the deck slab.

The Contractor shall provide and place all necessary backfill between existing wingwalls to bring the fill to the level of the proposed slab prior to placing the new deck slab. Include with Item SP2025, Portions of Structure Removed, for payment.

The abutment slab including barriers shall be water cured in accordance with 511.14, Method (a).

All exposed surfaces of the abutments including barriers and top of deck surface shall be weatherproofed with silane in accordance with SP535.

For Abutment Removal Details, see Sheet 14.

For Reinforcement Schedule, see Sheet 42.

The following abbreviations are used:

e.f. = each face
Elev. = Elevation
abt. = about
Typ. = Typical
Bot. = Bottom

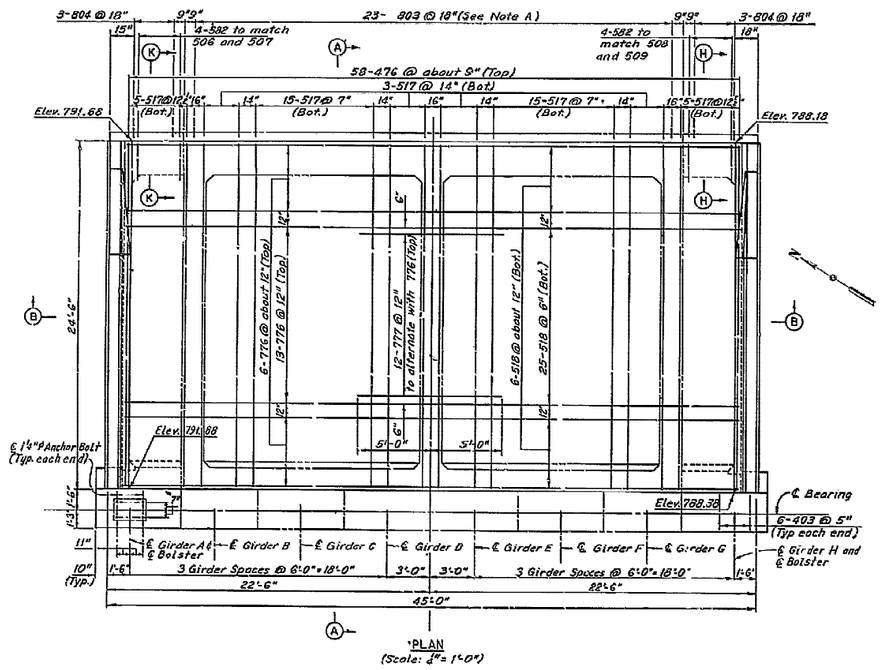
NO.	REVISIONS	BY	DATE
1	As Built	K.D.T.	1/2/85

OHIO TURNPIKE COMMISSION

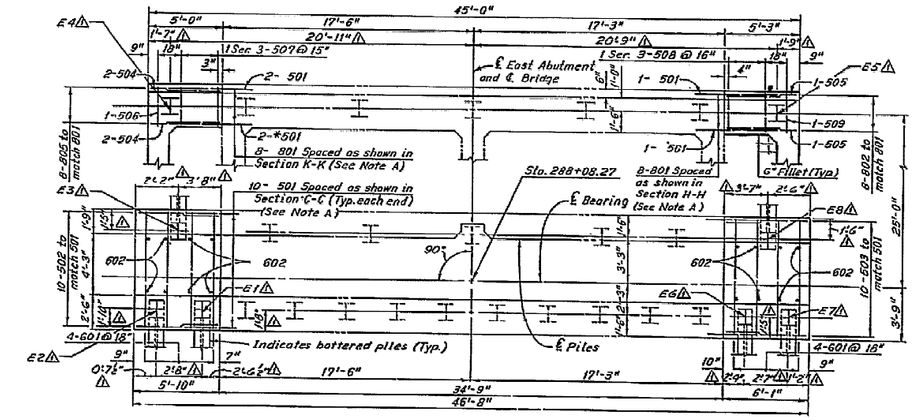
WEST ABUTMENT
WESTBOUND BRIDGE
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED	D.H.S.	CHECKED	C.F.
DRAWN	J.T.	IN CHARGE	C.A.B.
DATE:	10-28-82	SCALE:	As Shown
RMP:	43-82-04	SHEET	16 OF 43



PLAN
(Scale: 1/4" = 1'-0")



FOOTING PLAN
(Scale: 1/4" = 1'-0")

Note:
Reinforcing bar marks shall be prefixed as follows:

401-475 = EA	476-499 = EEA
501-575 = EA	576-599 = EEA
601-675 = EA	676-699 = EEA
701-775 = EA	776-799 = EEA
801-875 = EA	
901-975 = EA	

REQUIRED LAP LENGTHS	
No. 5 Bars	2'-5" Minimum
No. 8 Bars	4'-10" Minimum
No. 9 Bars	6'-1" Minimum

Notes:

——— Indicates existing structure.

All new piles are HP14x73 with a design capacity of 65 tons per pile.

All battered piles shall be battered 3 in 12 in the direction shown.

The back face of the abutment extension and wingwalls shall be coated with Type A waterproofing, extending from the top of the footing to the bottom of the deck slab.

For Sections A-A and B-B, see Sheet 16.

For additional notes, see Sheet 16.

For Abutment Removal Details, see Sheet 14.

For Reinforcement Schedule, see Sheet 42.

The following abbreviations are used:

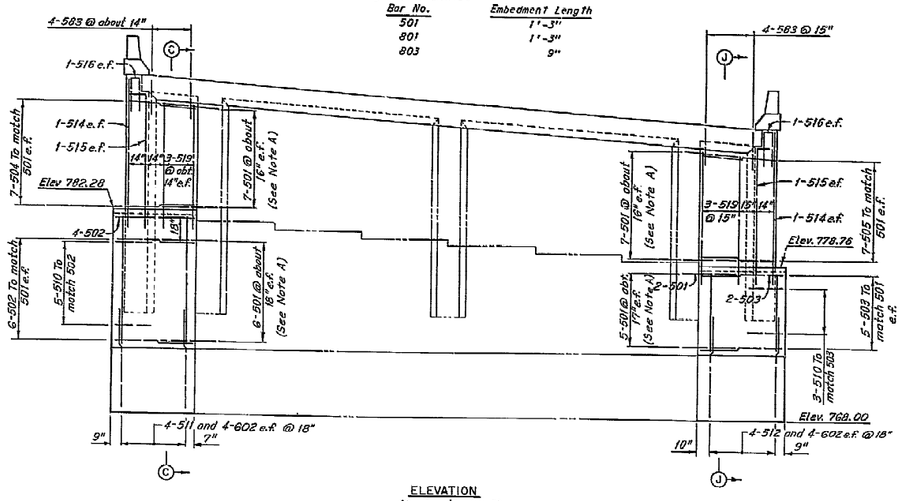
e.f.	= each face
Elev.	= Elevations
abt.	= about
Typ.	= Typical
Bot.	= Bottom
Ser.	= Series

Reinforcing steel in the vicinity of the bearing area shall be accurately placed to avoid interference with the drilling of bearing anchor holes or the pre-setting of bearing anchors.

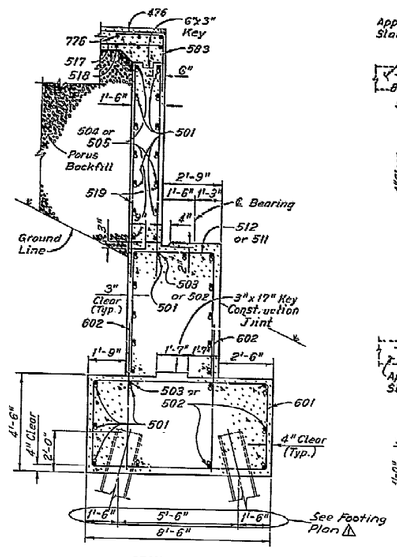
At the option of the Contractor, bearing anchors (or formed holes) located and supported by templates, may be cast-in-place.

Note A:
The bars listed below shall be doweled into the existing structure and meet the following requirements:

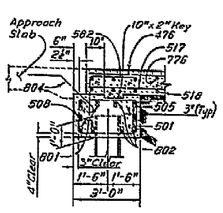
Bar No.	Embedment Length
501	1'-3"
801	1'-3"
803	9"



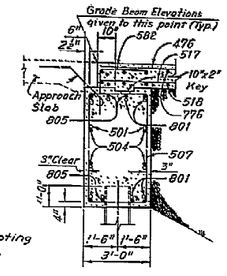
ELEVATION
(Scale: 1/4" = 1'-0")
(Piles not shown)



SECTION J-J
(Section C-C similar)
(Scale: 3/8" = 1'-0")



SECTION H-H
Scale: 3/8" = 1'-0"



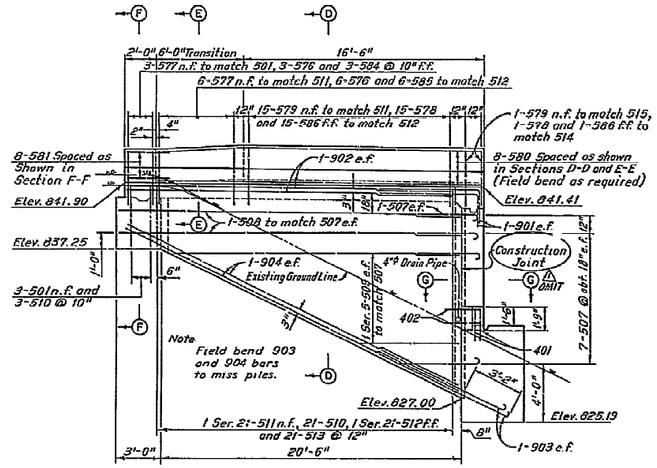
SECTION K-K
Scale: 3/8" = 1'-0"

NO	REVISIONS	BY	DATE
1	As Built	K.D.L.	12-85

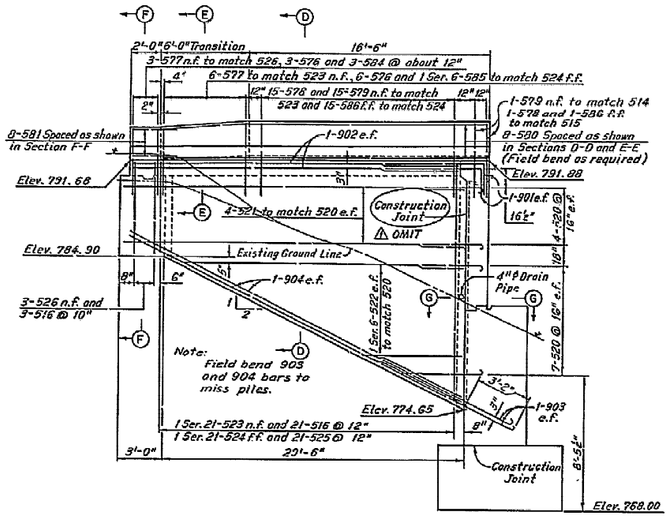
OHIO TURNPIKE COMMISSION

EAST ABUTMENT
WESTBOUND BRIDGE
OHIO TURNPIKE OVER CUYAHOGA RIVER
HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

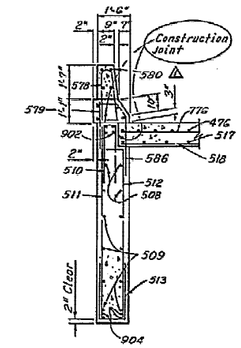
DESIGNED D.H.S.	CHECKED C.P.
DRAWN J.T.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 17 OF 43



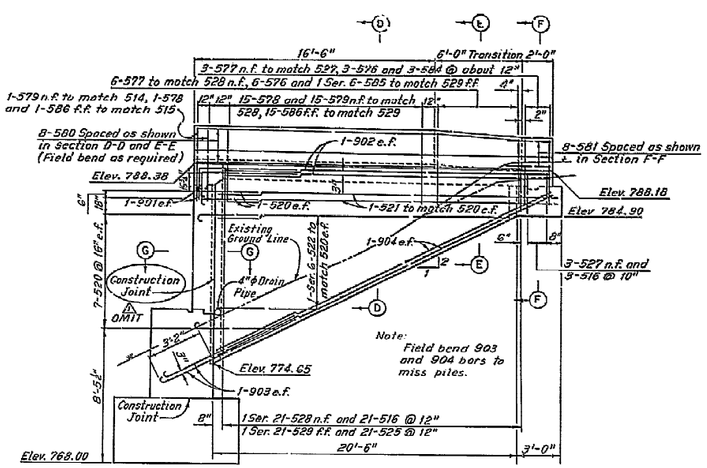
SOUTHWEST WINGWALL ELEVATION
(Piles Not Shown, Northwest Wingwall Similar)
(Scale: 1/8" = 1'-0")



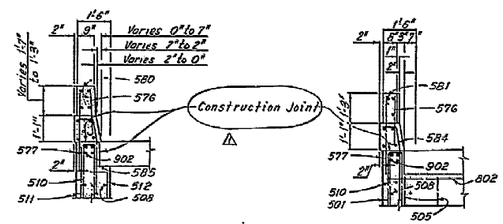
NORTHEAST WINGWALL ELEVATION
(Piles Not Shown)
Scale: 1/4" = 1'-0"



SECTION D-D
(Scale: 3/8" = 1'-0")
(Southwest Wingwall shown Northwest, Northeast and Southeast similar)

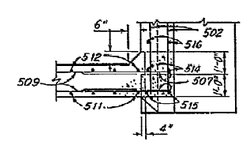


SOUTHEAST WINGWALL ELEVATION
(Piles Not Shown)
Scale: 1/4" = 1'-0"



PART SECTION E-E
(Scale: 3/8" = 1'-0")
(Southwest Wingwall shown Northwest, Northeast and Southeast Wingwalls similar)

PART SECTION F-F
(Scale: 3/8" = 1'-0")



SECTION G-G
(Scale: 3/8" = 1'-0")
(Southwest wingwall shown Northwest, Southeast and Northeast wingwalls similar)

REQUIRED LAP LENGTHS	
No. 5 Bars	2'-5" Minimum
No. 8 Bars	4'-10" Minimum
No. 9 Bars	6'-1" Minimum

Note:
For Reinforcing Bar Mark prefixes, see Sheets 16 and 17.

Notes:

For curb and parapet transition at the end of wingwalls, see Standard Drawing BR-1, dated 5-29-79.

Concrete insert assemblies, as shown on Standard Construction Drawings GR-1 and GR-3, shall be provided for attachment of guardrail terminal connectors. Include with Item 511, for payment.

The 4" ϕ drain pipes thru the wingwalls shall be galvanized steel pipe. Galvanizing shall be done in accordance with 711.02. The pipes shall be included in the unit price bid for Item 511, Class C Concrete, Abutments Above Footings, for payment.

For Reinforcement Schedule, see Sheet 42.

The following abbreviations are used:

n.f. = near face	Elev. = Elevation
f.f. = far face	Ser. = Series
e.f. = each face	Typ. = Typical
abt. = about	

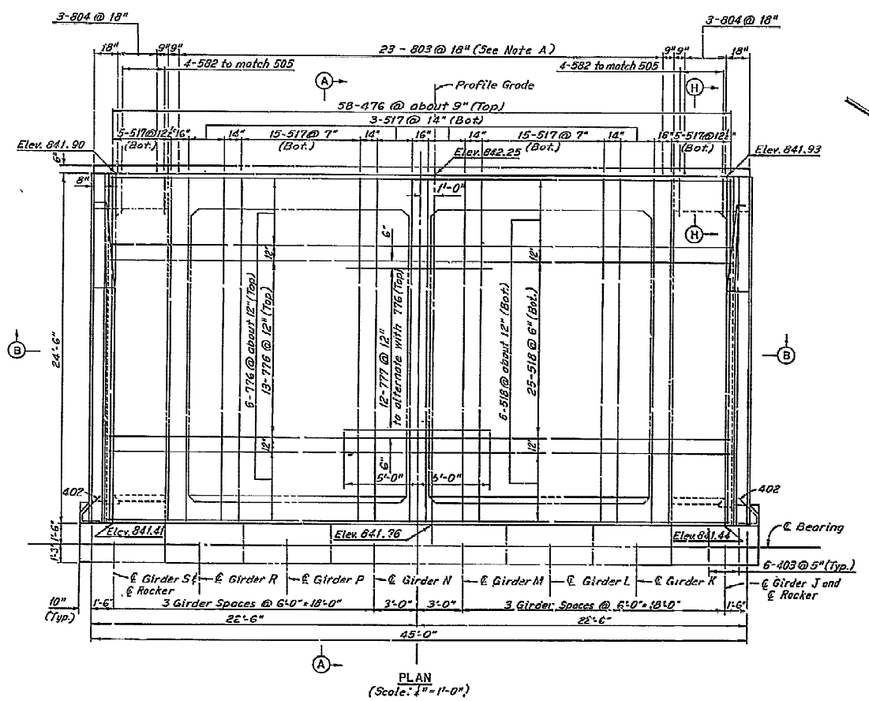
NO.	REVISIONS	BY	DATE
1	As Built	K.D.I.	4-7-85

OHIO TURNPIKE COMMISSION

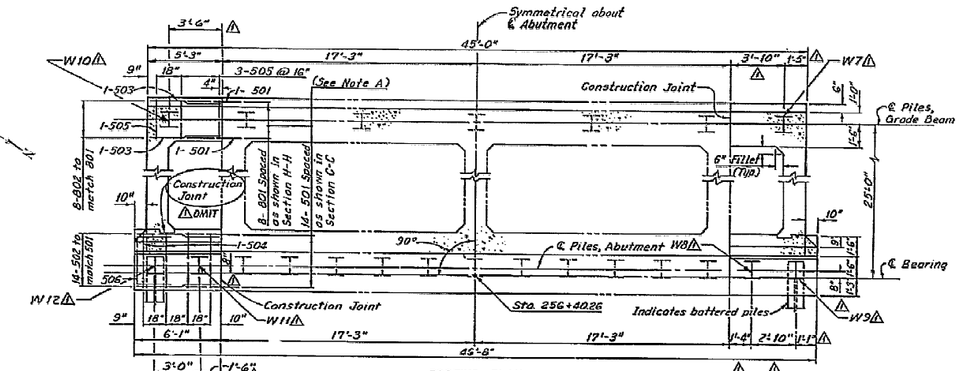
WINGWALL DETAILS
WESTBOUND BRIDGE
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

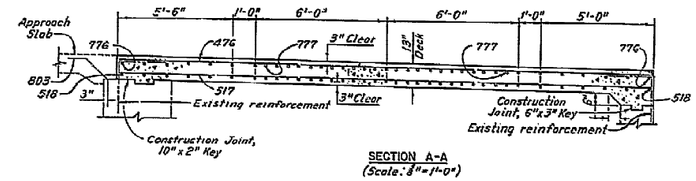
DESIGNED D.H.S.	CHECKED C.F.
DRAWN J.T.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 18 OF 43



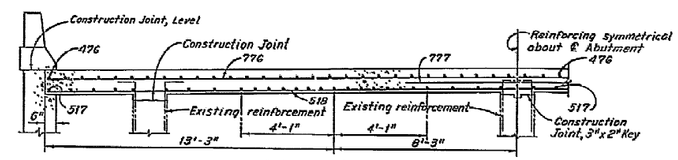
PLAN
(Scale: ¼" = 1'-0")



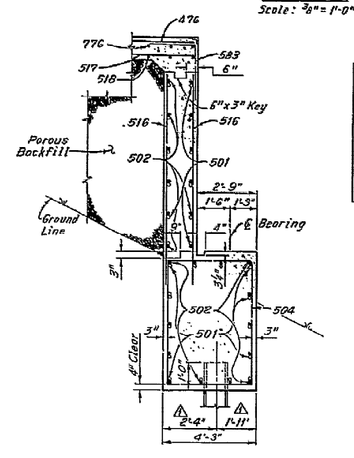
FOOTING PLAN
(Scale: ¼" = 1'-0")



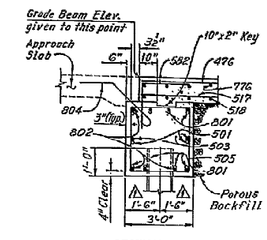
SECTION A-A
(Scale: ⅜" = 1'-0")



SECTION B-B
Scale: ⅜" = 1'-0"



SECTION C-C
(Scale: ⅜" = 1'-0")



SECTION H-H
(Scale: ⅜" = 1'-0")

REQUIRED LAP LENGTHS	
No. 5 Bars	2'-5" Minimum
No. 8 Bars	4'-10" Minimum
No. 9 Bars	6'-1" Minimum

Note A:
The bars listed below shall be doweled into the existing structure and meet the following requirements:

Bar No.	Embedment Length
501	1'-3"
801	1'-3"
803	9"

Note:
Reinforcing bar marks shall be prefixed as follows:

401-475 = WA	476-499 = EWA
501-575 = WA	576-599 = EWA
601-675 = WA	676-699 = EWA
701-775 = WA	776-799 = EWA
801-875 = WA	
901-975 = WA	

Notes:

———— Indicates existing structure.

All new piles are HP14x73 with a design capacity of 65 tons per pile.

All battered piles shall be battered 3 in 12 in the direction shown.

The back face of the abutment extension and wingwalls shall be coated with Type A waterproofing, extending from the bottom of the pile cap to the bottom of the deck slab.

Porous backfill shall be placed between the existing wingwalls and the new wingwalls extending from the existing ground line to the bottom of the deck slab.

The Contractor shall provide and place all necessary backfill between existing wingwalls to bring the fill to the level of the proposed slab prior to placing the new deck slab. Include with Item SP2023, Portions of Structure Removed, for payment.

The abutment slab including barriers shall be water cured in accordance with 511.14, Method (a).

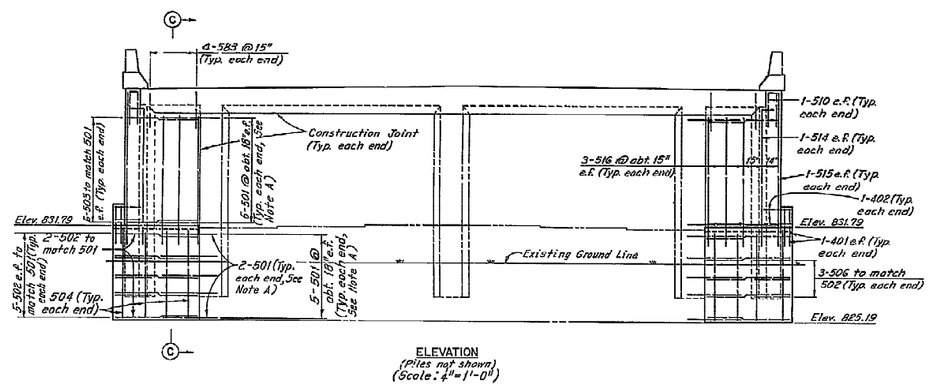
All exposed surfaces of the abutments including barriers and top of deck surface shall be weatherproofed with silane in accordance with SP535.

For Abutment Removal Details, see Sheet 14.

For Reinforcement Schedule, see Sheet 43.

The following abbreviations are used:

e.f. = each face
Elev. = Elevation
abt. = about
Typ. = Typical
Bot. = Bottom



ELEVATION
(Piles not shown)
(Scale: ¼" = 1'-0")

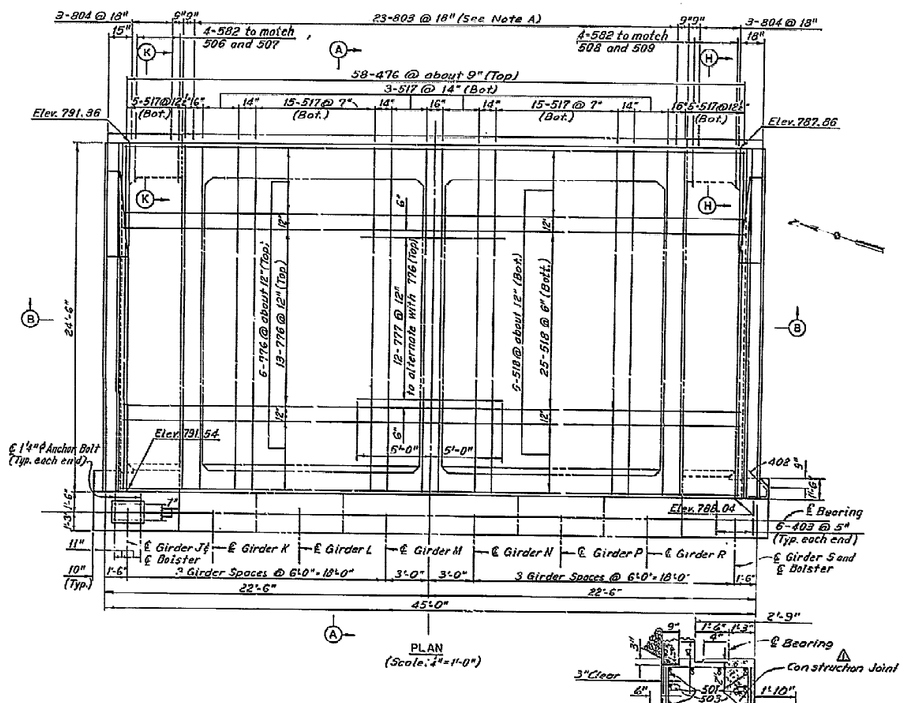
NO.	REVISIONS	BY	DATE
1	As Built	K.D.I.	1-21-85

OHIO TURNPIKE COMMISSION

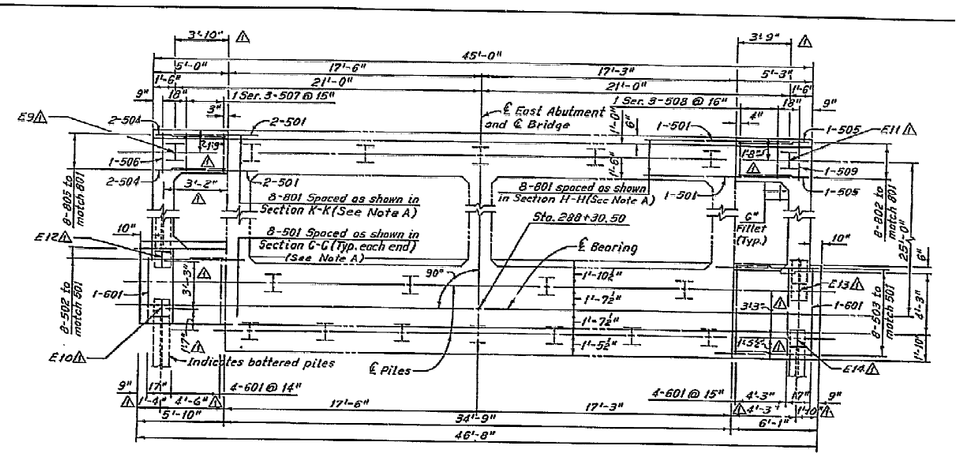
WEST ABUTMENT
EASTBOUND BRIDGE
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED	DHS	CHECKED	C.P.
DRAWN	JT	IN CHARGE	C.A.B.
DATE: 10-23-82		SCALE: AS SHOWN	
RMP: 43-82-04		SHEET 19 OF 43	



PLAN
(Scale: ¼" = 1'-0")

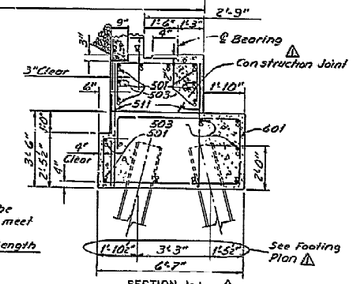


FOOTING PLAN
Scale: ¼" = 1'-0"

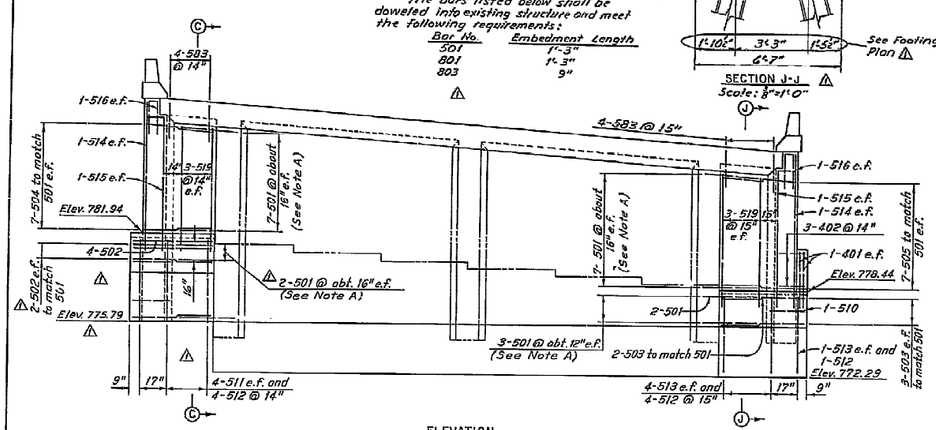
REQUIRED LAP LENGTHS	
No. 5 Bars	2'-5" Minimum
No. 8 Bars	4'-10" Minimum
No. 9 Bars	6'-1" Minimum

Note A:
The bars listed below shall be doweled into existing structure and meet the following requirements:

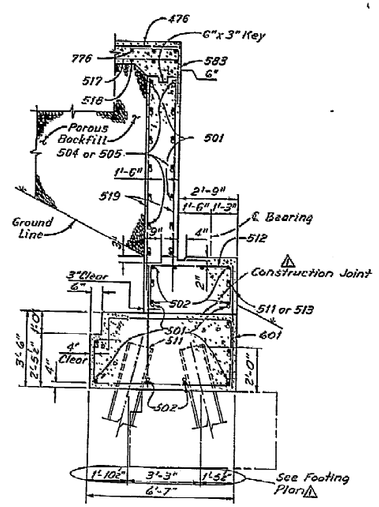
Bar No.	Embedment Length
501	1'-3"
801	1'-3"
803	9"



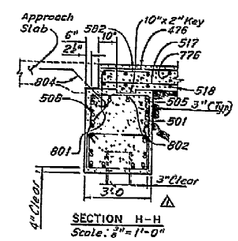
SECTION J-J
Scale: ⅛" = 1'-0"



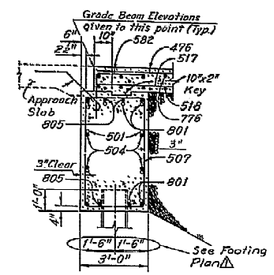
ELEVATION
Scale: ¼" = 1'-0"



SECTION C-C
Scale: ⅛" = 1'-0"



SECTION H-H
Scale: ⅛" = 1'-0"



SECTION K-K
Scale: ⅛" = 1'-0"

Note:
Reinforcing bar marks shall be prefixed as follows:

401-475 = EA	476-499 = EEA
501-575 = EA	576-599 = EEA
601-675 = EA	676-699 = EEA
701-775 = EA	776-799 = EEA
801-875 = EA	
901-975 = EA	

Notes:

——— Indicates existing stru

All new piles are HP14x73 with a c capacity of 65 tons per pile.

All battered piles shall be batter 3 in 12 in the direction shown.

The back face of the abutment exte and wingwalls shall be coated with Type waterproofing, extending from the top o footing to the bottom of the deck slab.

For Sections A-A and B-B, see Shee

For additional notes, see Sheet 19.

For Abutment Removal Details, see Sheet 14.

For Reinforcement Schedule, see Sheet 43.

The following abbreviations are us

e.f.	= each face
Elev.	= Elevations
abt.	= about
Typ.	= Typical
Bot.	= Bottom
Ser.	= Series

Reinforcing steel in the vicinity the bearing area shall be accurately plo to avoid interference with the drilling bearing anchor holes or the pre-setting bearing anchors.

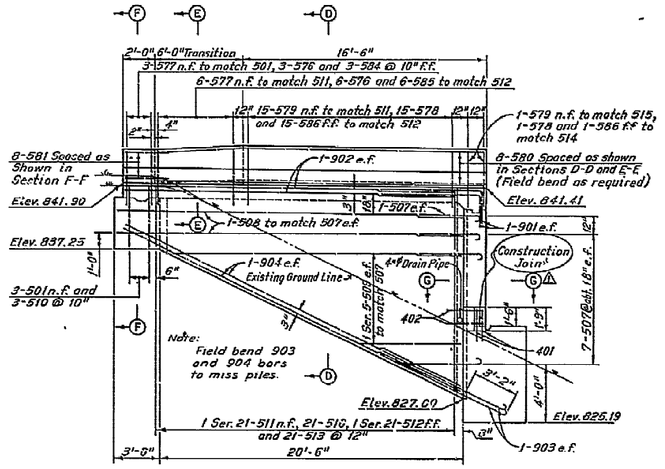
At the option of the Contractor, bearing anchors (or formed holes) locate and supported by templates, may be cast-in-place.

NO.	REVISIONS
1	As Built

OHIO TURNPIKE COMMIS

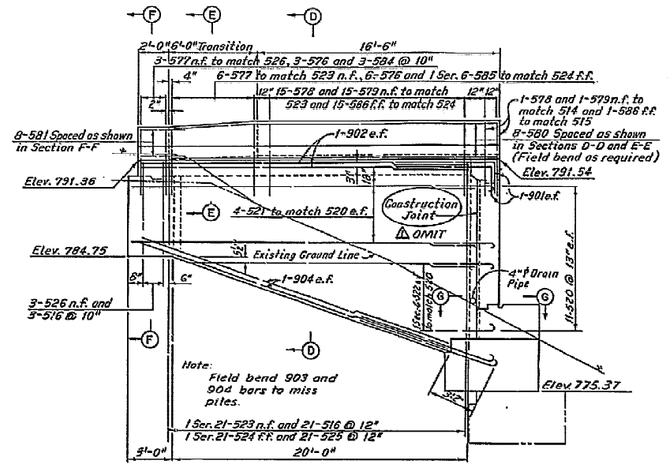
EAST ABUTMENT
EASTBOUND BRIDGE
OHIO TURNPIKE OVER CUYAHOGA RIV
HOWARD NEEDLES TAMMEN AND BERG
CONSULTING ENGINEERS
CLEVELAND

DESIGNED	D.H.S.	CHECKED	C.P.
DRAWN	J.T.	IN CHARGE	C.A.
DATE:	10-28-82	SCALE:	As Sho
RMP:	43-82-04	SHEET	20



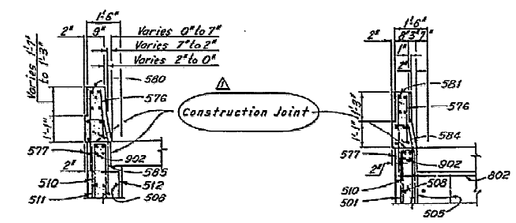
SOUTHWEST WINGWALL ELEVATION

(Piles Not Shown, Northwest Wingwall Similar)
(Scale: 1/4" = 1'-0")



NORTHEAST WINGWALL ELEVATION

(Piles Not Shown)
Scale: 1/4" = 1'-0"

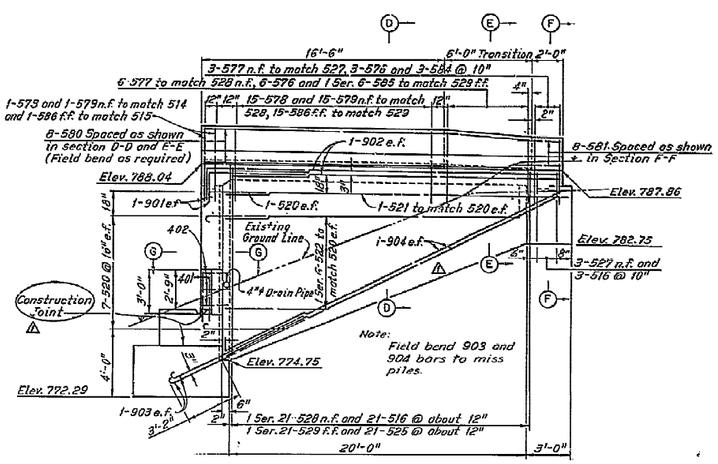


PART SECTION E-E
(Scale: 3/8" = 1'-0")
(Southwest Wingwall shown Northwest, Northeast and Southeast Wingwall similar)

PART SECTION F-F
(Scale: 3/8" = 1'-0")

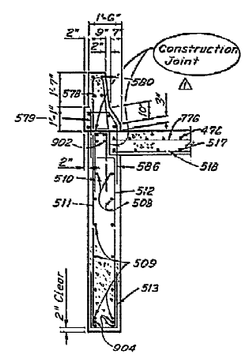
Note:
For Reinforcing Bar Mark prefixes, see Sheets 19 and 20.

REQUIRED LAP LENGTHS	
No. 5 Bars	2'-5" Minimum
No. 8 Bars	4'-10" Minimum
No. 9 Bars	6'-1" Minimum

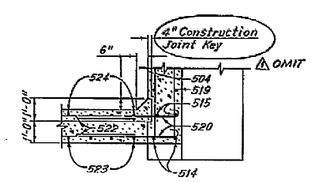


SOUTHEAST WINGWALL ELEVATION

(Piles Not Shown)
Scale: 1/4" = 1'-0"



SECTION D-D
(Scale: 3/8" = 1'-0")
(Southwest Wingwall shown Northwest, Northeast and Southeast similar)



SECTION G-G
Scale: 3/8" = 1'-0"
(Northeast Wingwall shown, Southeast, Northwest and Southwest Wingwalls similar)

Notes:

For curb and parapet transition at the end of wingwalls, see Standard Drawing BR-1, dated 5-29-79.

Concrete insert assemblies, as shown on Standard Construction Drawings GR-1 and GR-3, shall be provided for attachment of guardrail terminal connectors. Include with Item 511, for payment.

The 4"ϕ drain pipes thru the wingwalls shall be galvanized steel pipe. Galvanizing shall be done in accordance with 711.02. The pipes shall be included in the unit price bid for Item 511, Class C Concrete, Abutments Above Footings, for payment.

For Reinforcement Schedule, see Sheet 43.

The following abbreviations are used:

n.f. = near face	Elev. = Elevation
f.f. = far face	Ser. = Series
e.f. = each face	Typ. = Typical
abt. = about	

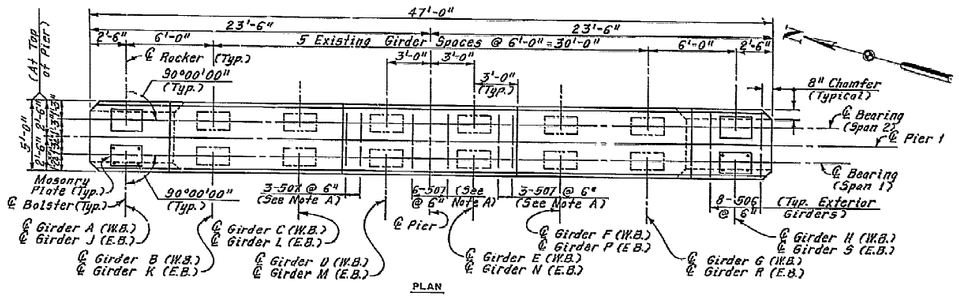
NO.	REVISIONS	BY	DATE
1	As Built	K.D.I.	4-7-86

OHIO TURNPIKE COMMISSION

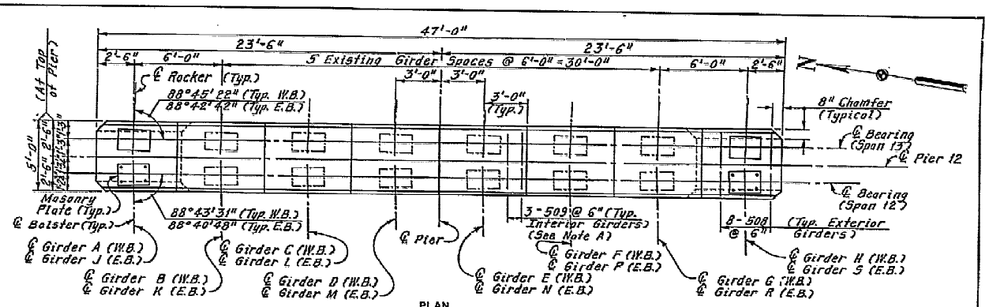
WINGWALL DETAILS
EASTBOUND BRIDGE
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

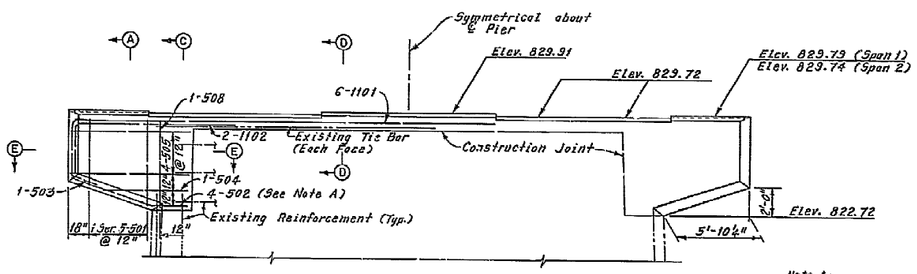
DESIGNED DHS	CHECKED C.P.
DRAWN JT	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: AS SHOWN
RMP: 43-82-04	SHEET 21 OF 43



PLAN



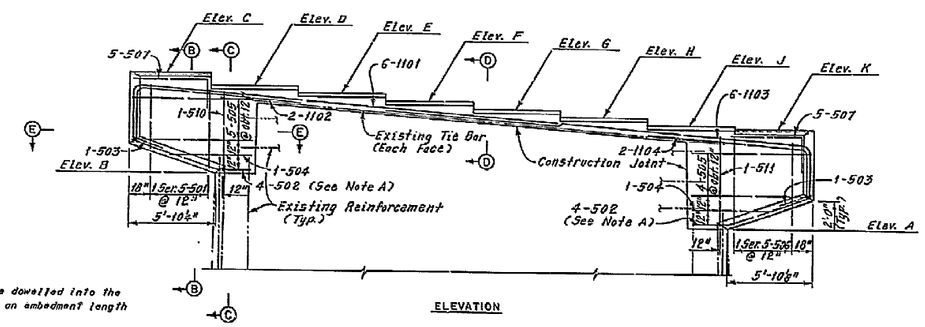
PLAN



ELEVATION

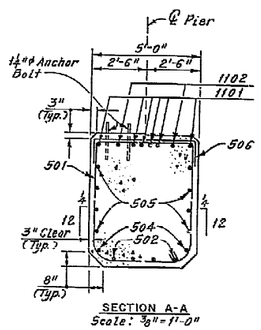
PIER 1
Scale: ¼" = 1'-0"

Note A:
These bars shall be doweled into the existing structure with an embedment length of 1'-0".

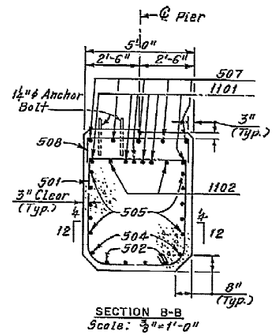


ELEVATION

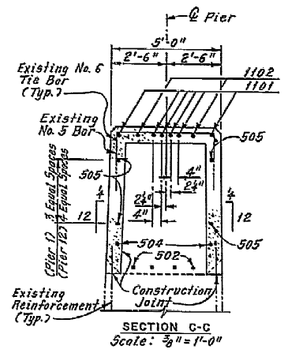
PIER 12
Scale: ¼" = 1'-0"



SECTION A-A
Scale: ⅜" = 1'-0"

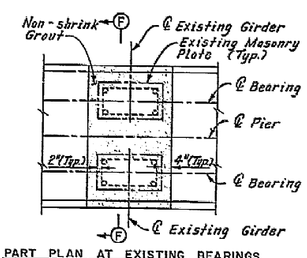


SECTION B-B
Scale: ⅜" = 1'-0"

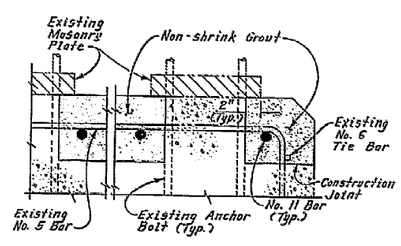


SECTION C-C
Scale: ⅜" = 1'-0"

REQUIRED LAP LENGTH	
No. 5 Bar	= 1'-9" Minimum
No. 11 Bar	= 11'-10" Minimum



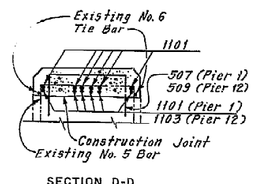
PART PLAN AT EXISTING BEARINGS
Scale: ½" = 1'-0"
(Pier 1 shown, Pier 12 similar)



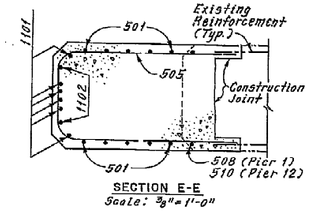
PART SECTION F-F
Scale: 1½" = 1'-0"

TABLE OF ELEVATIONS		
ELEV.	WESTBOUND	EASTBOUND
A	772.64	772.42
B	775.50	775.28
C-Span 12	783.33	782.95
C-Span 13	783.30	782.92
D	782.50	782.28
E	782.00	781.78
F	781.50	781.28
G	781.00	780.78
H	780.50	780.28
J	780.00	779.78
K-Span 12	773.83	773.45
K-Span 13	773.80	773.42

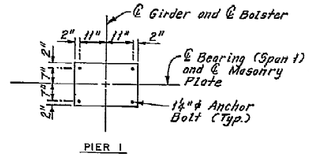
Note: All reinforcing bar marks shall be prefixed as follows:
Pier 1 = PA
Pier 12 = PD



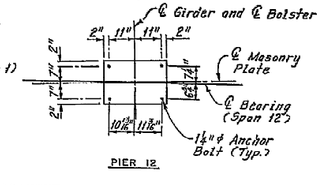
SECTION D-D
Scale: ⅜" = 1'-0"



SECTION E-E
Scale: ⅜" = 1'-0"



PIER 1



PIER 12

ANCHOR BOLT PLACEMENT
Scale: ½" = 1'-0"

Notes:

——— indicates existing structure.

For removal details, see Sheet 14.

Non-shrink grout at the bearing areas shall be placed after the concrete adjacent to the bearing areas has been placed and cured.

Drilling and grouting each 1102 and 1104 bar under the existing bearing will be paid for under SP524, Grout Anchoring.

All new concrete surfaces shall be weatherproofed with stone in accordance with SP535.

The following abbreviations are used:

W.B. = Westbound	Elev. = Elevation
E.B. = Eastbound	abt. = about
Typ. = Typical	Ser. = Series

For Reinforcement Schedules, see Sheets 42 and 43.

NO.	REVISIONS	BY	DATE

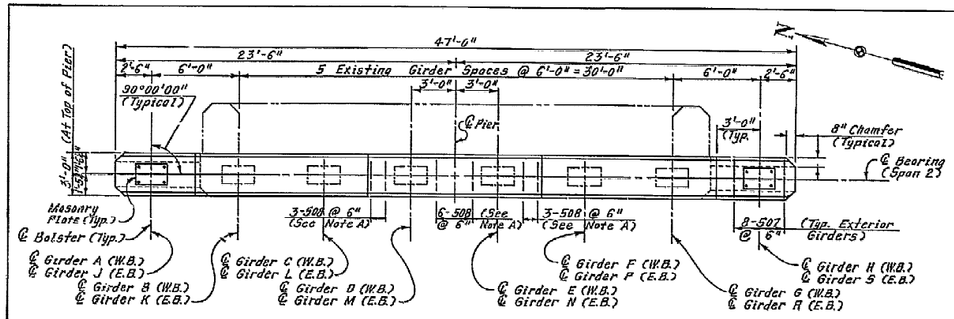
OHIO TURNPIKE COMMISSION

PIERS 1 AND 12 MODIFICATIONS

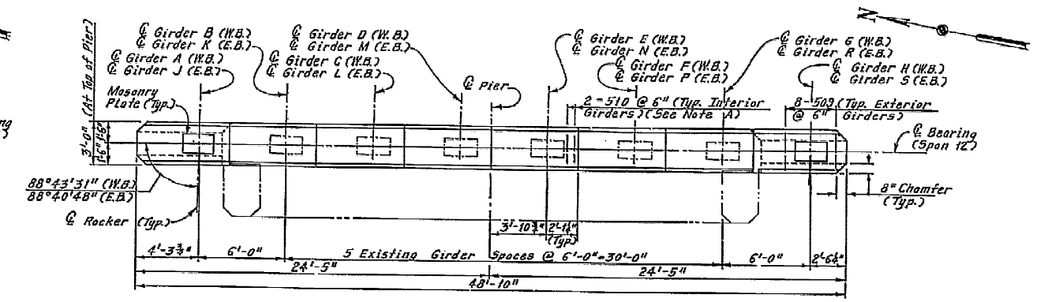
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

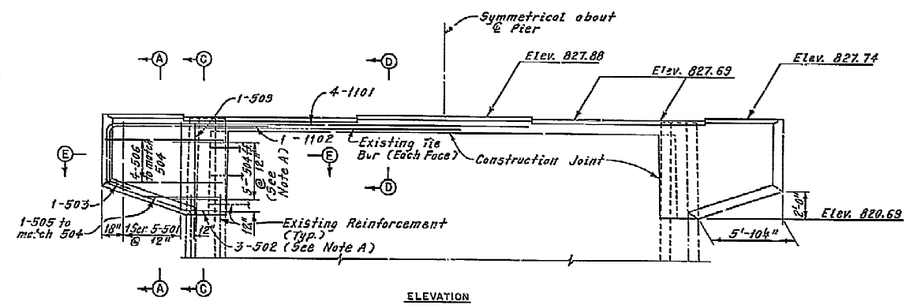
DESIGNED	F.S.J.	CHECKED	D.H.S.
DRAWN	W.E.B.	IN CHARGE	C.A.B.
DATE:	10-28-82	SCALE:	As Shown
RMP:	43-82-04	SHEET 22	OF 43



PLAN

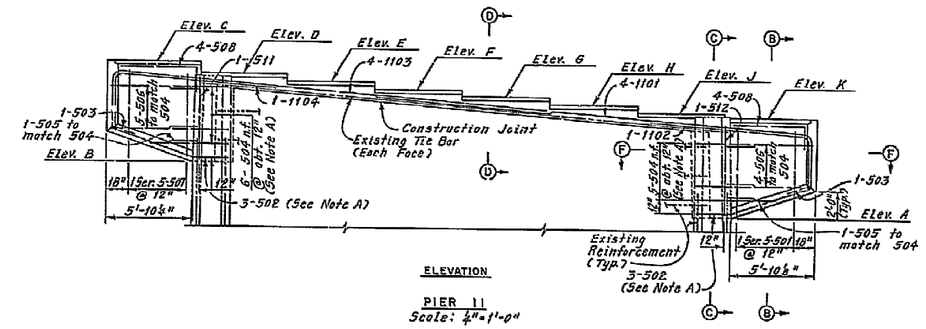


PLAN



ELEVATION

PIER 2
Scale: ¼" = 1'-0"



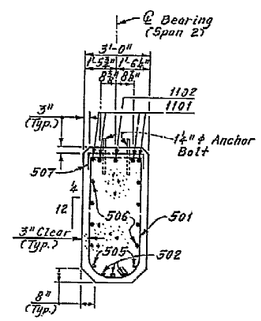
ELEVATION

PIER 11
Scale: ¼" = 1'-0"

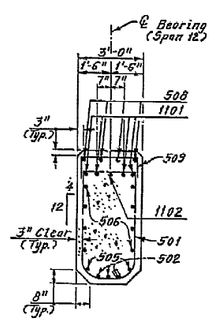
Note A:
These bars shall be dowelled into the existing structure with an embedment length of 1'-0".

REQUIRED LAP LENGTH
No. 5 Bar = 1'-9" Minimum
No. 11 Bar = 11'-10" Minimum

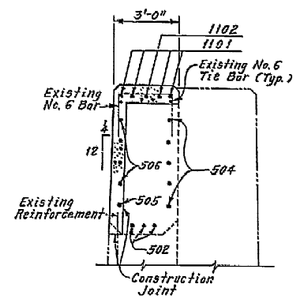
TABLE OF ELEVATIONS		
ELEV.	WESTBOUND	EASTBOUND
A	774.06	773.82
B	776.93	776.69
C	784.71	784.32
D	783.93	783.69
E	783.43	783.19
F	782.93	782.69
G	782.43	782.19
H	781.93	781.69
J	781.43	781.19
K	781.22	780.82



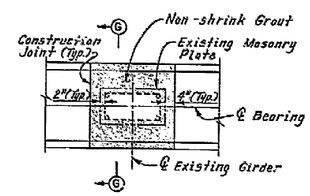
SECTION A-A
Scale: ⅜" = 1'-0"



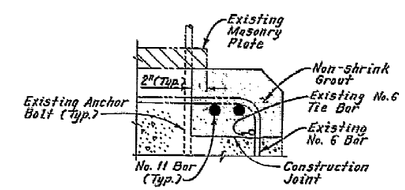
SECTION B-B
Scale: ⅜" = 1'-0"



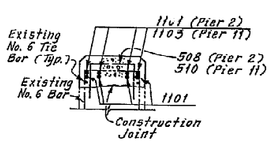
SECTION C-C
Scale: ⅜" = 1'-0"



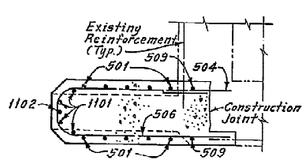
PART PLAN AT EXISTING BEARINGS
Scale: ½" = 1'-0"
(Pier 2 shown, Pier 11 similar)



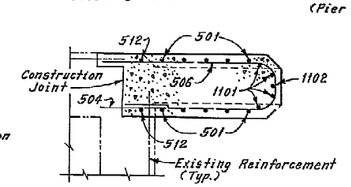
PART SECTION G-G
Scale: 1½" = 1'-0"



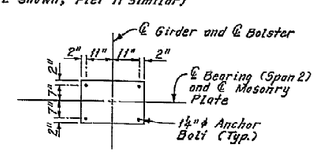
SECTION D-D
Scale: ⅜" = 1'-0"



SECTION E-E
Scale: ⅜" = 1'-0"



SECTION F-F
Scale: ⅜" = 1'-0"



ANCHOR BOLT PLACEMENT
(Pier 2)
Scale: ½" = 1'-0"

Notes:

——— indicates existing structure.

For removal details, see Sheet 14.

Non-shrink grout at the bearing areas shall be placed after the concrete adjacent to the bearing areas has been placed and cured.

Drilling and grouting each 1102 and 1104 bar under the existing bearing will be paid for under SP524, Grout Anchoring.

All new concrete surfaces shall be weatherproofed with stone in accordance with SP535.

The following abbreviations are used:

W.B. = Westbound	Elev. = Elevation
E.B. = Eastbound	abt. = about
Typ. = Typical	Ser. = Series
f.f. = far face	n.f. = near face

For Reinforcement Schedules, see Sheets 42 and 43.

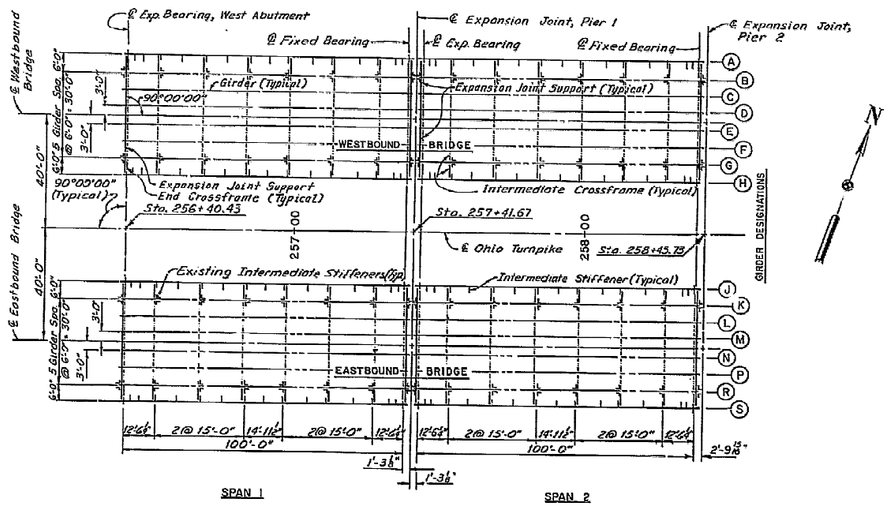
Note: All reinforcing bar marks shall be prefixed as follows:
Pier 2 = PB
Pier 11 = PC

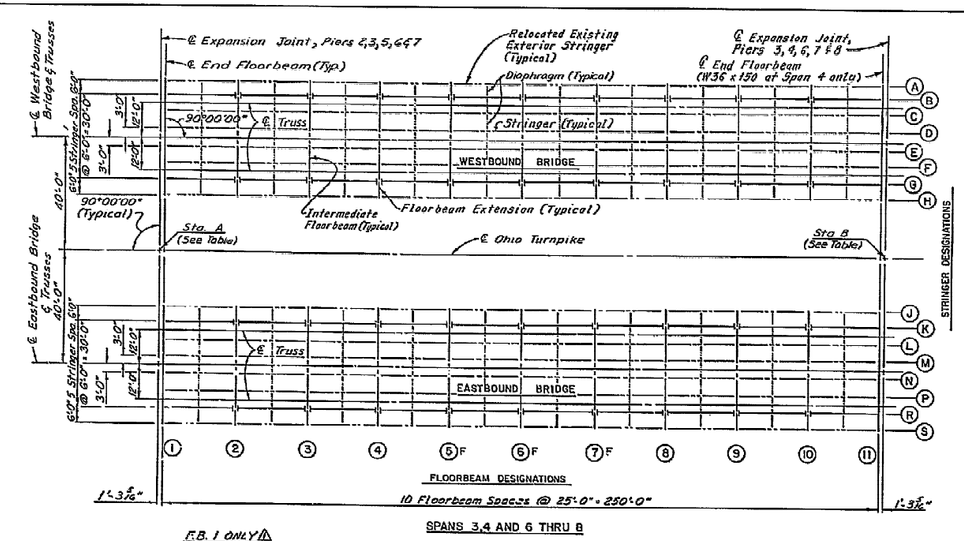
NO.	REVISIONS	BY	DATE

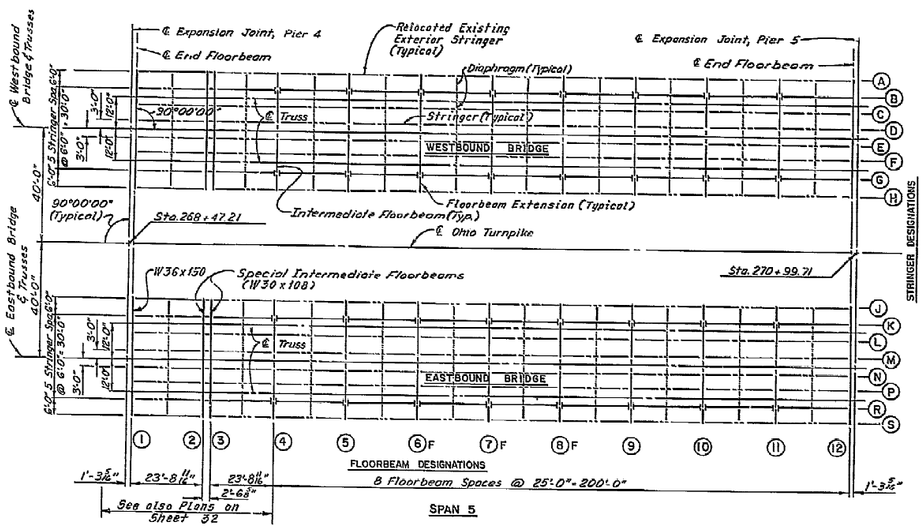
OHIO TURNPIKE COMMISSION

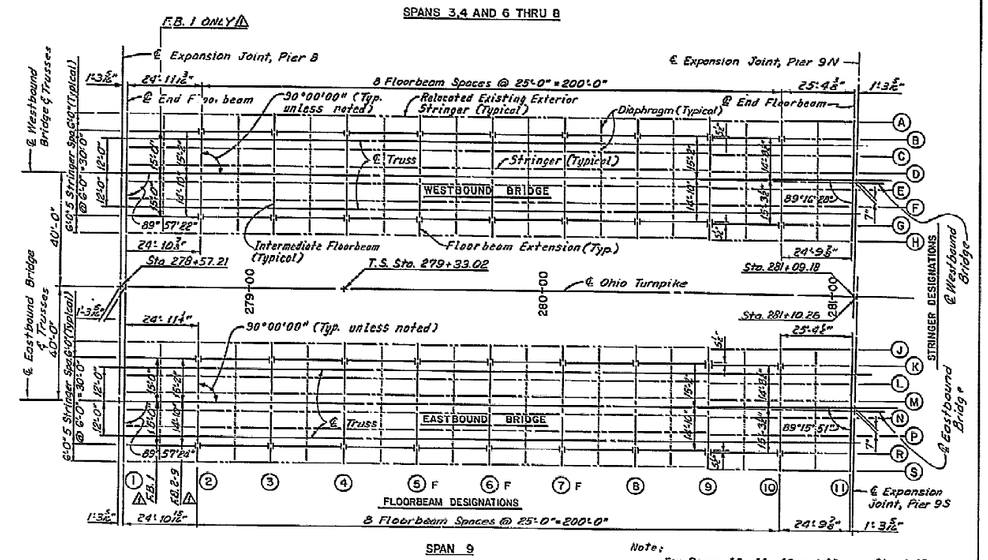
PIERS 2 AND 11 MODIFICATIONS
OHIO TURNPIKE OVER CUYAHOGA RIVER
HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED	F.S.J.	CHECKED	D.H.S.
DRAWN	W.E.B.	IN CHARGE	C.A.B.
DATE:	10-28-82	SCALE:	As Shown
RMP:	43-82-04	SHEET	23 OF 43









Note:
For Spans 10, 11, 12 and 13, see Sheet 25.

TRUSS SPAN FLOOR FRAME MEMBERS (TYPICAL UNLESS NOTED)		
	EXISTING	NEW
INTERMEDIATE FLOORBEAMS	W36x150	W36x150
END FLOORBEAMS	W36x150	W30x191
STRINGERS	W24x76	W24x76
DIAPHRAGMS	C12x20.7	C12x20.7

TABLE OF STATIONS		
SPAN	STATION A	STATION B
3	256+45.73	265+94.71
4	265+94.71	268+47.21
6	270+99.71	273+52.21
7	273+52.21	276+04.71
8	276+04.71	278+57.21

BRIDGE LAYOUT AND FRAMING PLAN NOTES:

——— Indicates existing structural members.
——— Indicates new and/or modified structural members.
—⊗— Indicates floorbeam extension field splice.
○ F Indicates fixed bearings for floorbeams. All other floorbeam bearings are expansion bearings.

The existing exterior stringers in Truss Spans 3 thru 11, except as shown, shall be repositioned as the exterior stringers on the widened structure.

Dimensions from ℄ Expansion Joints to ℄ Bearings, or ℄ Floorbeams are given at 68° F. and are measured parallel to grade.

The dimension from ℄ Floorbeam 1 to ℄ Floorbeam 11 measured along ℄ Trusses in Spans 9 thru 11 is 250'-0".

The dimension between ℄ End Bearings measured along ℄ Girders between Girders D and E or M and N in Spans 12 and 13 is 100'-0".

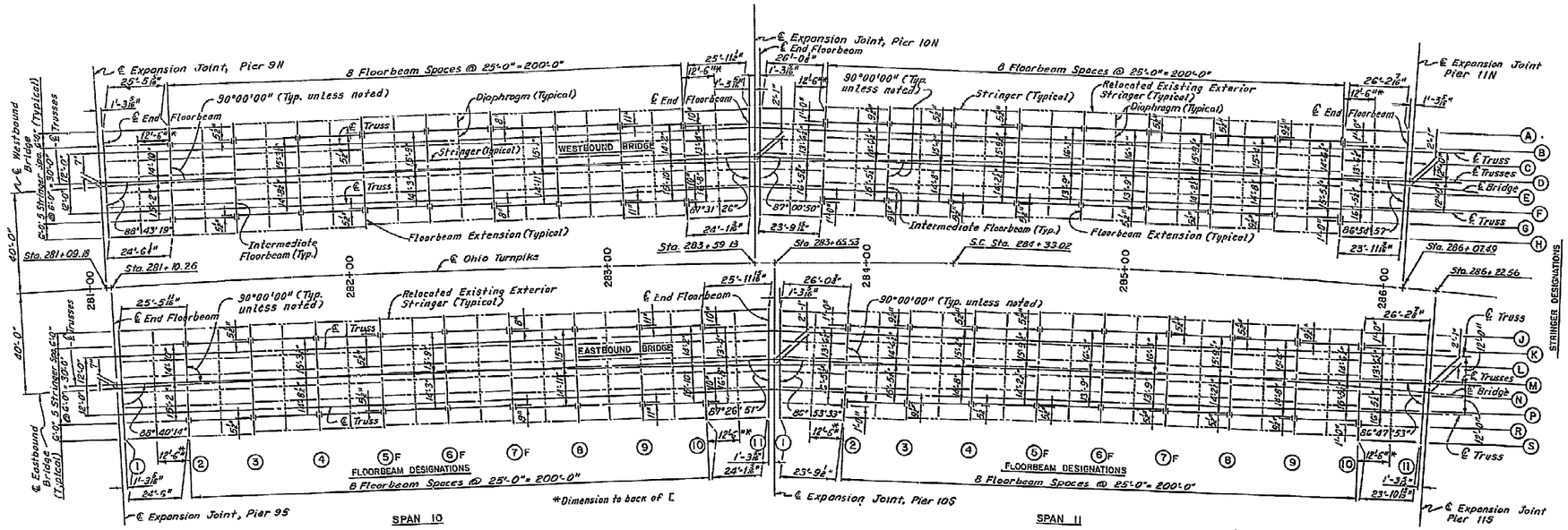
NO.	REVISIONS	BY	DATE
1	As Built	K.D.I.	1-21-85

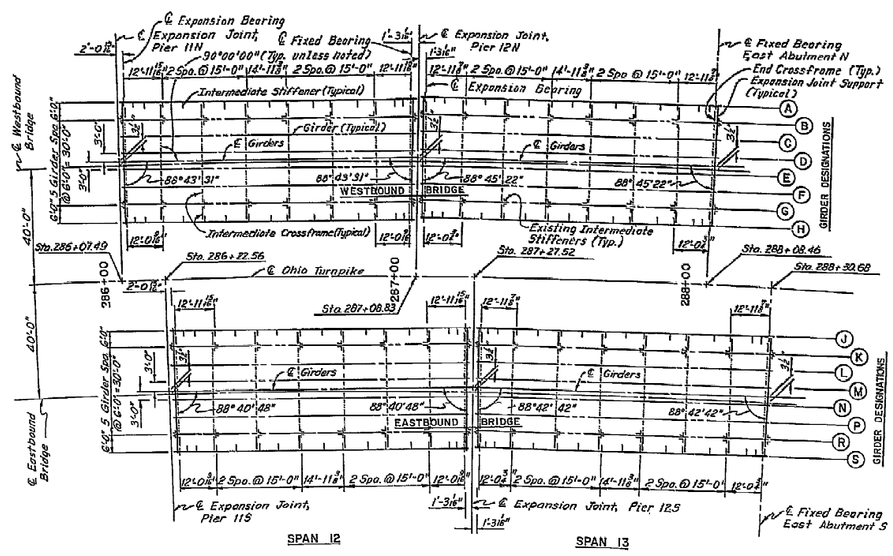
OHIO TURNPIKE COMMISSION

BRIDGE LAYOUT AND FRAMING PLANS
SPANS 1 THRU 9
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED C.K.B.	CHECKED A.J.
DRAWN J.T.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: 1" = 20'
RMP: 43-82-04	SHEET 24 OF 43





TRUSS SPAN FLOOR FRAME MEMBERS		
	Existing	New
Intermediate Floorbeams	W36 x 150	W36 x 150
End Floorbeams	W36 x 150	W30 x 191
Stringers	W24 x 76	W24 x 76
Diaphragms	C12 x 20.7	C12 x 20.7

Note:
For Bridge Layout and Framing Plan Notes, see Sheet 24.

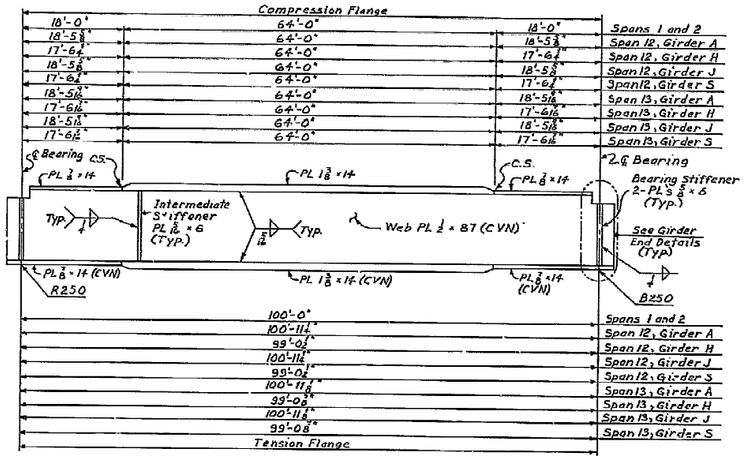
NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

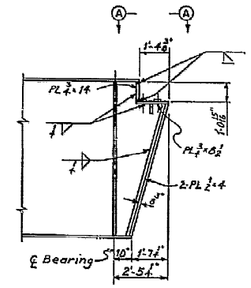
BRIDGE LAYOUT AND FRAMING PLANS
SPANS 10 THRU 13
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

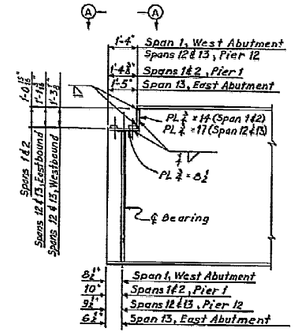
DESIGNED C.K.B.	CHECKED A.J.
DRAWN J.T.	IN CHARGE C.A.B.
DATE: 10-20-82	SCALE: 1" = 20'
RMP: 43-82-04	SHEET 25 OF 43



TYPICAL GIRDER ELEVATION
No Scale

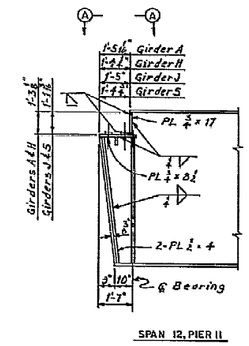


SPAN 2, PIER 2



SPAN 1
SPAN 2, PIER 1
SPAN 12, PIER 12
SPAN 13

GIRDER END DETAILS
Scale: 3/8" = 1'-0"
(Dimensions measured along ℄ Web)



SPAN 12, PIER 11

GIRDER NOTES:
ALL STRUCTURAL STEEL SHALL BE ASTM A36.

THE GIRDERS SHALL BE FABRICATED TO LINES PARALLEL TO PROFILES FORMED BY TOP OF PAVEMENT ELEVATIONS DIRECTLY OVER GIRDERS, PLUS THE CAMBER REQUIRED TO COMPENSATE FOR DEAD LOAD DEFLECTION.

TOP AND BOTTOM FLANGE PLATES ARE TO BE THE SAME AND SHALL BE SPLICED AT POINTS SHOWN ON THE GIRDER ELEVATION. THE WEB PLATES MAY BE SHOP SPLICED AS REQUIRED BY AVAILABLE PLATE LENGTHS. THE LOCATION OF WEB SHOP SPLICES AND THE LOCATIONS AND DETAILS OF ANY ADDITIONAL SHOP FLANGE SPLICES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING OF MATERIAL.

WHERE A SHAPE OR PLATE IS LABELED "CVN", THE MATERIAL SHALL MEET MINIMUM NOTCH TOUGHNESS REQUIREMENTS IN ACCORDANCE WITH 711.01.

GRINDING OF BUTT WELDS IS NOT REQUIRED.

BEARING STIFFENERS SHALL BE PLACED IN PAIRS ON ALL GIRDERS WITH THE INTERIOR STIFFENERS PARALLEL TO CENTER-LINE BEARINGS. THEY SHALL BE SET NORMAL TO GRADE AND SHALL BE MILLED TO BEAR TO THE BOTTOM FLANGE AND HAVE A TIGHT FIT AT THE TOP FLANGE OR SUPPORT BEARING PLATE.

ALL INTERMEDIATE STIFFENERS SHALL BE PLACED SINGLY ON THE INTERIOR SIDE OF THE WEB AND SHALL BE WELDED TO THE WEB WITH CONTINUOUS FILLET WELDS ON BOTH SIDES OF THE STIFFENERS AND SHALL BE MILLED TO BEAR TO THE TOP FLANGE. THE INTERMEDIATE STIFFENERS SHALL BE PLACED NORMAL TO THE GIRDER FLANGE, AS SHOWN ON THE FRAMING PLAN, AND SHALL BE EQUALLY SPACED BETWEEN CROSSFRAMES OR CROSSFRAMES AND BEARING STIFFENERS. A STIFFENER SHALL BE PLACED EQUALLY SPACED BETWEEN THE BEARING STIFFENER AND THE ADJACENT INTERMEDIATE STIFFENER.

C.S. INDICATES BUTT WELD SUBJECT TO COMPRESSIVE STRESS ONLY.

ALL BOLTS SHALL BE 7/8-IN. Ø ASTM A325 HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

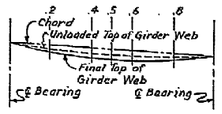
DEFLECTION OF EXISTING GIRDER (NEW DECK)						
END BRG.	.2	.4	.5	.6	.8	END BRG.
0	1/16	1/8	1/16	1/4	1/16	0

DEFLECTION AND CAMBER TABLE							
SPANS 1 AND 2 (GIRDERS A, H, J and S)							
	END BRG.	.2	.4	.5	.6	.8	END BRG.
1	0	1/16	1/4	1/4	1/4	1/16	0
2	0	1/16	1/8	1/16	1/8	1/16	0
4	0	1/8	3/8	1/16	3/8	1/8	0

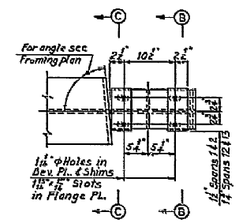
DEFLECTION AND CAMBER TABLES							
SPANS 12 AND 13 (GIRDERS A, H, J and S)							
	PIER 11	.2	.4	.5	.6	.8	PIER 12
1	0	1/16	1/4	1/4	1/4	1/16	0
2	0	1/16	1/8	1/16	1/8	1/16	0
3	0	-1/16	-1/8	-1/16	-1/8	-1/16	0
4	0	-1/16	-1/4	-1/4	-1/4	-1/16	0

Notes:
Line 1 denotes deflection due to weight of steel.
Line 2 denotes deflection due to remaining dead load.
Line 3 denotes adjustment required for vertical curve.
Line 4 denotes shop camber.
Values given in the tables are to the nearest 1/16 inch.

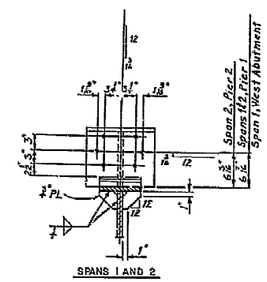
CAMBER DIAGRAM
SPANS 1 AND 2
No Scale



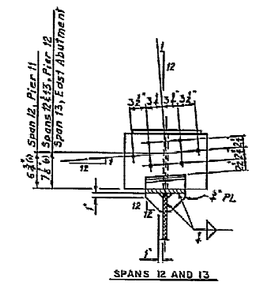
CAMBER DIAGRAM
SPANS 12 AND 13
No Scale



VIEW A-A
Scale: 1" = 1'-0"

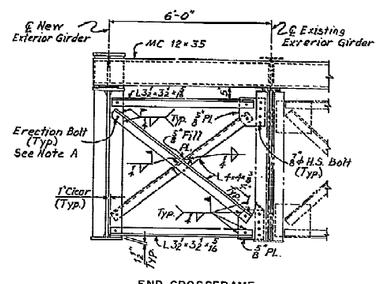


SPANS 1 AND 2

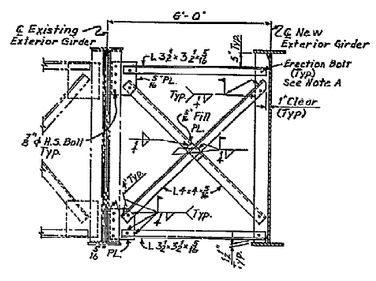


SPANS 12 AND 13

SECTION C-C
Scale: 1" = 1'-0"

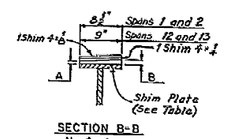


END CROSSFRAME
(Deck slab not shown)
Scale: 1/2" = 1'-0"



INTERMEDIATE CROSSFRAME
(Deck slab not shown)
Scale: 1/2" = 1'-0"

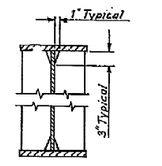
Note A:
Use 3/4" Φ erection bolts. Provide 13/16" Φ holes in crossframes and 15/16" Φ holes in girder stiffeners and 1/2" PL.



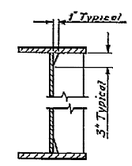
SECTION B-B
No Scale

SHIM DIMENSIONS		A	B
SPAN 1	West Abut.	1/2"	3/4"
	Pier 1	1/2"	3/4"
SPAN 2	Pier 1	1/2"	3/4"
	Pier 2	1/2"	3/4"
SPAN 12	Pier 11	1 1/4"	2"
	Pier 12	1 3/4"	2 3/4"
SPAN 13	Pier 12	1 3/4"	2 3/4"
	East Abut.	1 3/4"	2 3/4"

Note:
Theoretical shim thicknesses are shown. Shim thicknesses shall be adjusted as required for fit-up.



BEARING STIFFENER
No Scale



INTERMEDIATE STIFFENER
No Scale

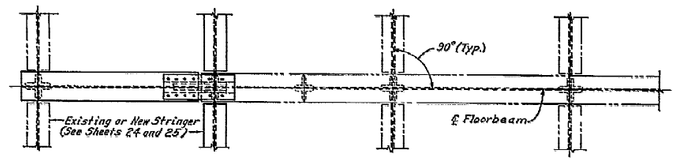
Notes:
For details of rocker and bolsters, see Ohio Standard Drawing RB-1-55.
For framing plans, see sheets 24 and 25.

NO.	REVISIONS	BY	DATE

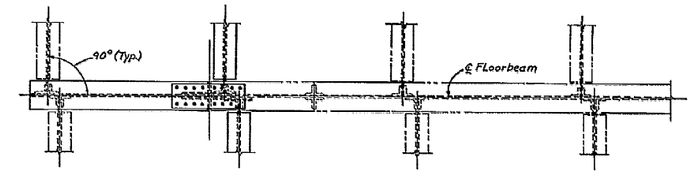
OHIO TURNPIKE COMMISSION

GIRDER DETAILS
SPANS 1, 2, 12 AND 13
OHIO TURNPIKE OVER CUYAHOGA RIVER
HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

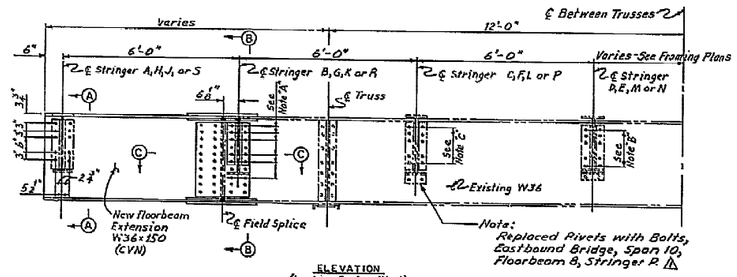
DESIGNED F.S.J.	CHECKED A.J.
DRAWN R.P.T.	IN CHARGE CAB
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 26 OF 43



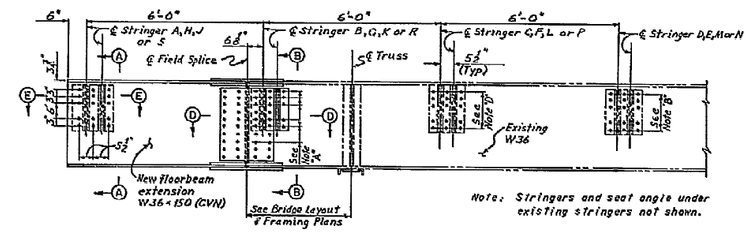
PLAN
Scale: 1/2" = 1'-0"



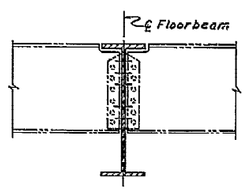
PLAN
Span 10 - Floorbeams 3 and 5 shown
Span 11 - Floorbeams 4 and 5 shown
Others Similar
Scale: 1/2" = 1'-0"



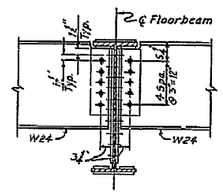
ELEVATION
(Looking East or West)
Scale: 1/2" = 1'-0"



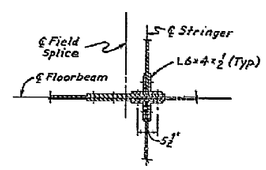
ELEVATION
(Looking East or West)
Scale: 1/2" = 1'-0"



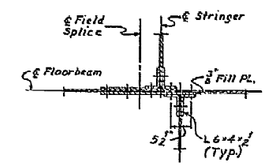
SECTION A-A
Scale: 3/4" = 1'-0"



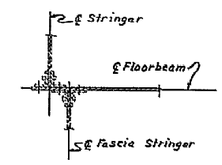
SECTION B-B
Scale: 3/4" = 1'-0"



SECTION C-C
Scale: 3/4" = 1'-0"



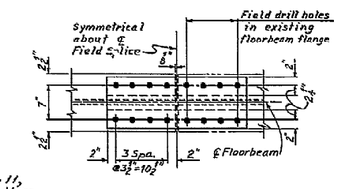
SECTION D-D
Scale: 3/4" = 1'-0"



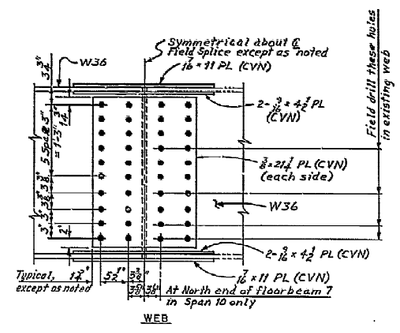
SECTION E-E
Scale: 3/4" = 1'-0"

SPANS 3,4,6,7 and 8 — FLOORBEAMS 2 THRU 10
SPAN 5 — FLOORBEAMS 4 THRU 11
SPAN 9 — FLOORBEAMS 2 THRU 8 and 10
SPAN 10 — FLOORBEAMS 2,4,6 and 8
SPAN 11 — FLOORBEAM 6

SPAN 9 — FLOORBEAM 9
SPAN 10 — FLOORBEAMS 3 and 5
SPAN 11 — FLOORBEAMS 4,5,7 and 8



FLANGE



WEB

△1 Note:
Eastbound Bridge, Span 11, Floorbeam 6, South side bottom flange splice PL's connected to existing floor beam with 6-1"ϕ high strength Bolts (A325).

FLOORBEAM FIELD SPLICE
Scale: 1" = 1'-0"

Notes:

A. Spacing to match existing holes in floorbeam web.
B. Replace existing web rivets with bolts. No replacement is required for the Eastbound Bridge at Floorbeams 10 and 11 in Span 5 and Floorbeam 2 in Span 6.
C. Replace existing web rivets with bolts at Floorbeam 6, Stringers C and L in Spans 10 and 11.
D. Replace existing web rivets with bolts at Stringers C and L at Floorbeam 5 in Span 10 and at Floorbeams 4, 5, 7 and 8 in Span 11

——— Indicates existing members.
All bolts shall be 7/8"ϕ High Strength Bolts (A325).

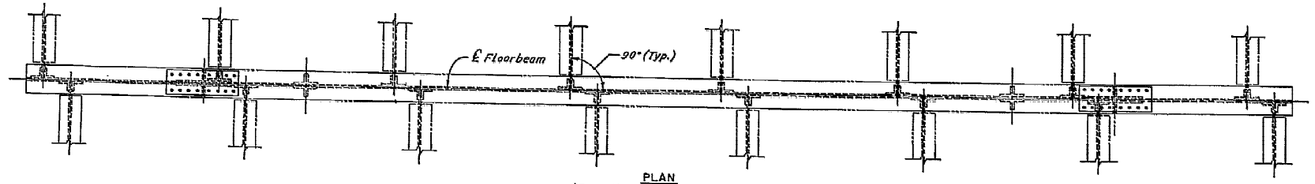
For Bridge Layout and Framing Plans, see Sheets 24 and 25.

NO	REVISIONS	BY	DATE
△1	As Built	K.D.I.	12-1-85

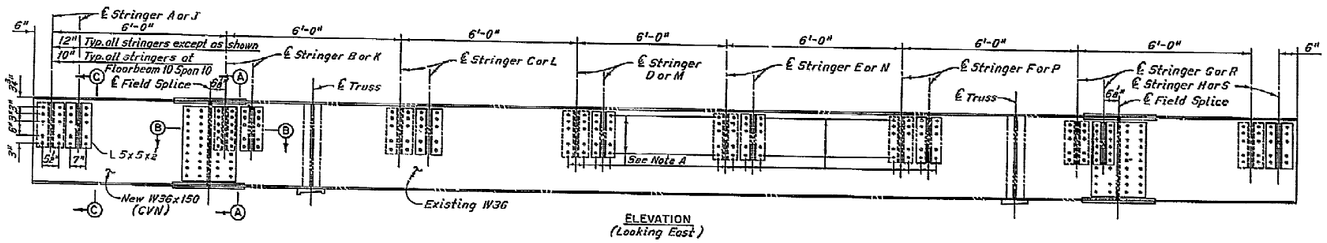
OHIO TURNPIKE COMMISSION

MODIFIED INTERMEDIATE FLOORBEAM DETAILS
OHIO TURNPIKE OVER CUYAHOGA RIVER
HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED D.H.S.	CHECKED A.J.
DRAWN D.H.S.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 27 OF 43

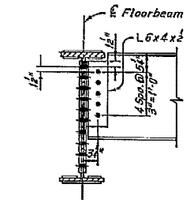


PLAN
(Span 11 - Floorbeam 2 shown
Spans 10 and 11 - Floorbeam 10 Similar)

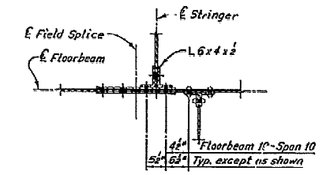


ELEVATION
(Looking East)

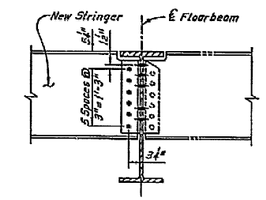
SPAN 10 - FLOORBEAM 10
SPAN 11 - FLOORBEAMS 2 AND 10
Scale: ½"=1'-0"



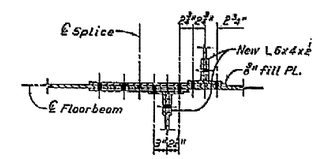
SECTION A-A
Scale: ½"=1'-0"



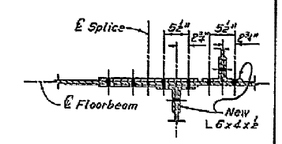
SECTION B-B
Scale: ½"=1'-0"



SECTION C-C
Scale: ½"=1'-0"

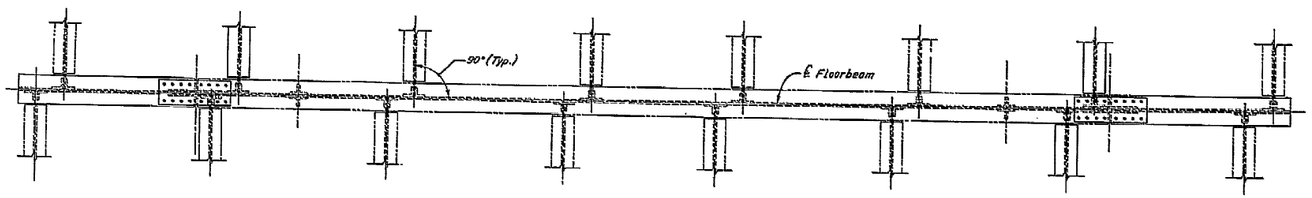


SPAN 10 - FLOORBEAM 7

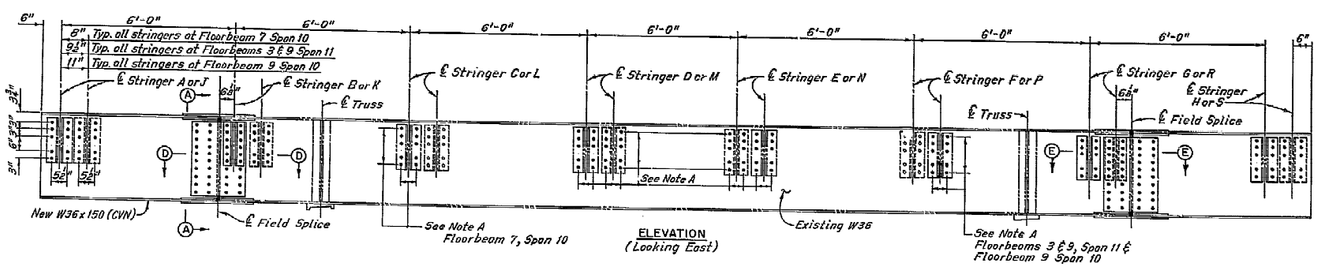


SPAN 10 - FLOORBEAM 9
SPAN 11 - FLOORBEAMS 3 & 9

SECTION D-D
Scale: 1"=1'-0"

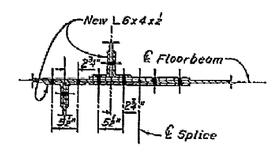


PLAN
(Span 10 - Floorbeams 7 and 9 shown
Span 11 - Floorbeam 9 shown
Span 11 - Floorbeam 3 similar)

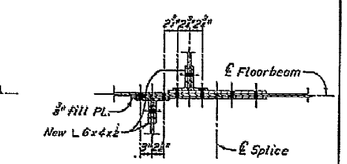


ELEVATION
(Looking East)

SPAN 10 - FLOORBEAMS 7 AND 9
SPAN 11 - FLOORBEAMS 3 AND 9
Scale: ½"=1'-0"



SPAN 10 - FLOORBEAM 9
SPAN 11 - FLOORBEAMS 3 & 9



SPAN 10 - FLOORBEAM 7

SECTION E-E
Scale: 1"=1'-0"

Notes:
Note A Replace existing web rivets with ¾"ϕ High Strength Bolts.
For field splice details and additional notes, see Sheet 27.

NO.	REVISIONS	BY	DATE

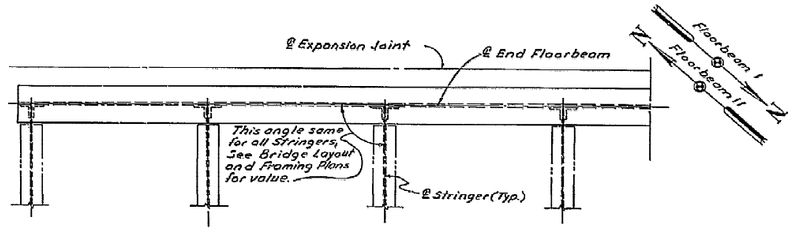
OHIO TURNPIKE COMMISSION

MODIFIED INTERMEDIATE FLOORBEAM DETAILS

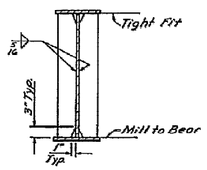
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

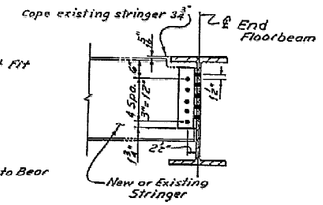
DESIGNED D.H.S.	CHECKED A.J.
DRAWN D.H.S.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 28 OF 43



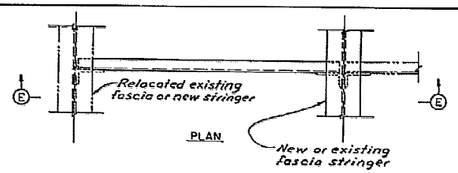
PART PLAN



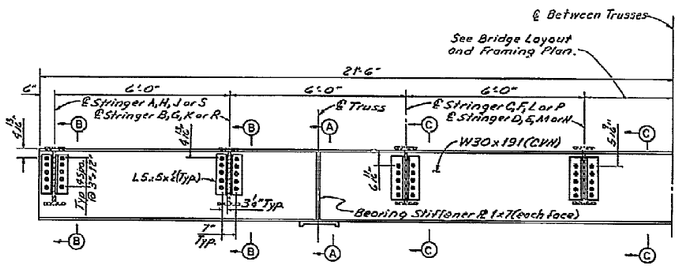
SECTION A-A
No Scale



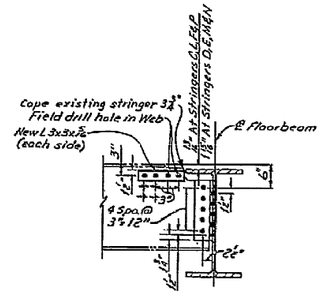
SECTION B-B
Scale ¾"=1'-0"



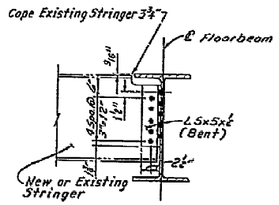
PLAN



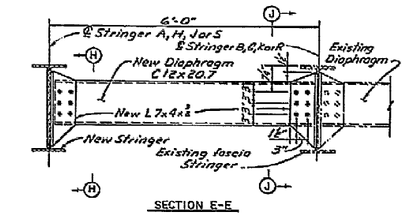
ELEVATION
SPANS 3,6,7 & 8 - FLOORBEAMS I & II
SPANS 4 & 9 - FLOORBEAM I
SPAN 5 - FLOORBEAM 12
Scale: ¼"=1'-0"



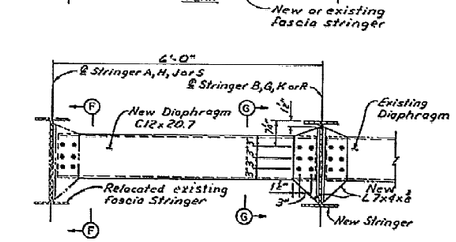
SECTION C-C
Scale: ¾"=1'-0"



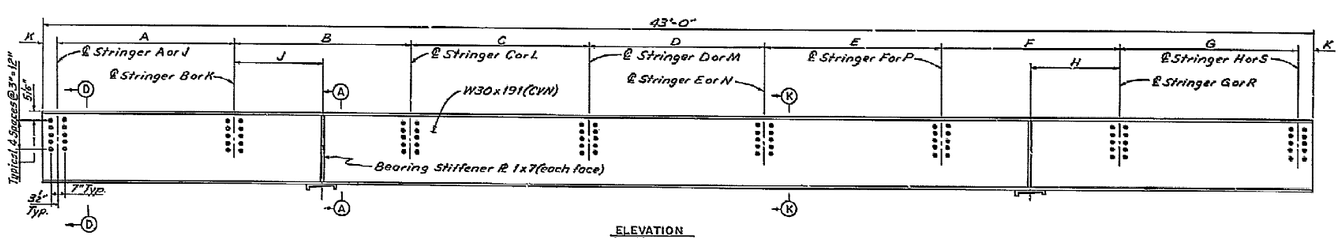
SECTION D-D
(At Stringers, Outside Trusses)
Scale: ¾"=1'-0"



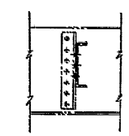
SECTION E-E



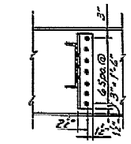
SECTION E-E



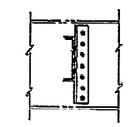
ELEVATION
(Looking East)
(Stringers & Stringer to Floorbeam Connection Angles not shown)
SPANS 10 & 11 - FLOORBEAMS I & II
SPAN 9 - FLOORBEAM II
Scale: ¼"=1'-0"



SECTION F-F



SECTION G-G
SECTION H-H (Opposite Hand)



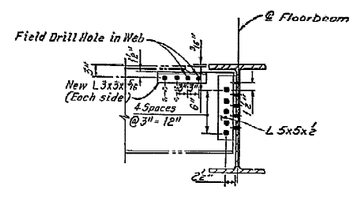
SECTION J-J
(For Dimensions See SECTION G-G)

DIAPHRAGM
Scale: ¾"=1'-0"

Notes:
——— Indicates existing members.
All bolts shall be ¾"ø High Strength Bolts (A325).
For location of new end floorbeams and diaphragms, see Sheets 24 and 25.

SPAN	FLOORBEAM	DIMENSION									
		A	B	C	D	E	F	G	H	J	K
9	11	6'-0⅛"	6'-0⅛"	6'-0"	6'-0"	6'-0"	6'-0⅛"	6'-0⅛"	3'-2⅞"	2'-9⅞"	5¾"
10	1	6'-0⅛"	6'-0⅛"	6'-0"	6'-0"	6'-0"	6'-0⅛"	6'-0⅛"	3'-1⅞"	2'-10⅞"	5¾"
	11	6'-0⅛"	6'-0⅛"	6'-0⅛"	6'-0⅛"	6'-0⅛"	6'-0⅛"	6'-0⅛"	4'-5⅛"	1'-5⅞"	5¾"
11	1	6'-0⅛"	6'-0⅛"	6'-0⅛"	6'-0⅛"	6'-0⅛"	6'-0⅛"	6'-0⅛"	4'-2⅞"	1'-8⅞"	5¾"
	11	6'-0⅛"	6'-0⅛"	6'-0⅛"	6'-0⅛"	6'-0⅛"	6'-0⅛"	6'-0⅛"	4'-2⅞"	1'-8⅞"	5¾"

END FLOORBEAMS



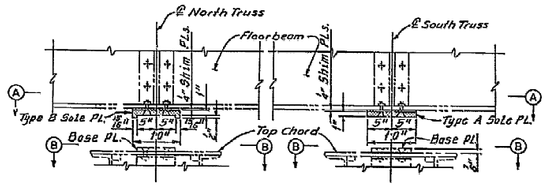
SECTION K-K
(Typical existing stringers between trusses)
Scale: ¾"=1'-0"

NO	REVISIONS	BY	DATE

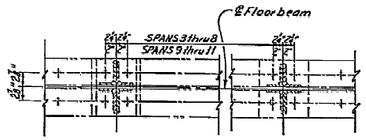
OHIO TURNPIKE COMMISSION

NEW END FLOORBEAM AND DIAPHRAGM DETAILS
OHIO TURNPIKE OVER CUYAHOGA RIVER
HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

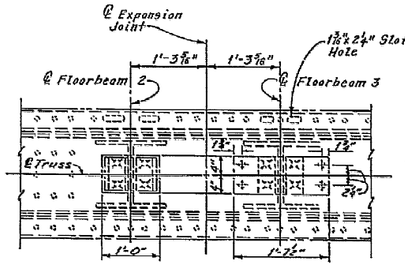
DESIGNED D.H.S.	CHECKED A.J.
DRAWN R.D.J.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 29 OF 43



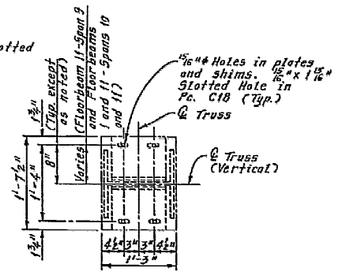
ELEVATION
(SPANS 3, 4, 5, 6, 7 & 8)



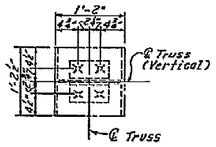
SECTION A-A



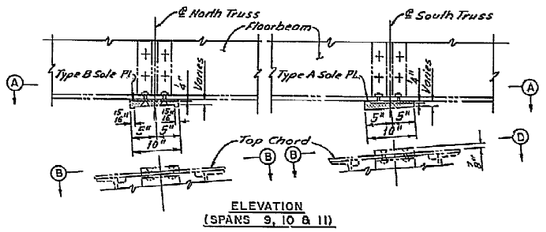
VIEW C-C
(North Truss Shown, South Truss Opposite Hand)



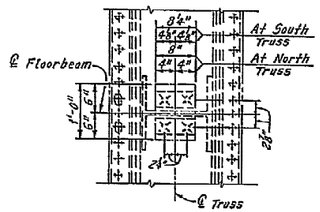
VIEW D-D



VIEW E-E

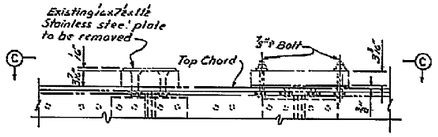


ELEVATION
(SPANS 9, 10 & 11)



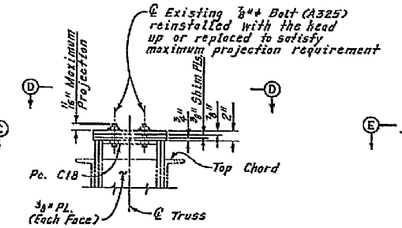
VIEW B-B

FLOORBEAMS 2, 3, 4, 8, 9 & 10—ALL SPANS EXCEPT SPAN 5
FLOORBEAMS 4, 5, 9, 10 & 11—SPAN 5

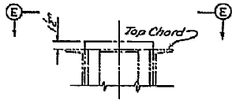


ELEVATION

FLOORBEAMS 2 & 3 - SPAN 5



ELEVATION
(ALL SPANS EXCEPT FLOORBEAM 11 - SPAN 4)

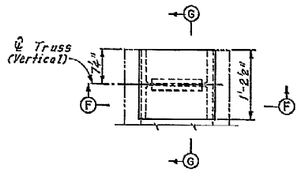


ELEVATION
(FLOORBEAM 11 - SPAN 4)

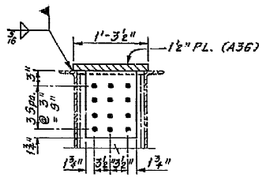
FLOORBEAMS 1 & 11 - ALL SPANS

EXISTING FLOORBEAM EXPANSION BEARING DETAILS

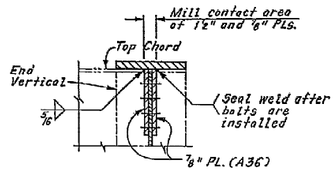
Scale: 1" = 1'-0"



PLAN

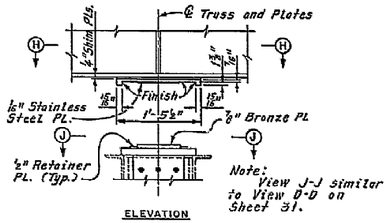


SECTION F-F

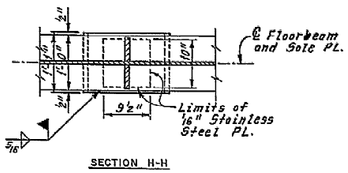


SECTION G-G

ADDITIONS TO EXISTING TRUSS



ELEVATION



SECTION H-H

BEARING DETAILS

Notes:

Indicates removal.
Indicates existing structure.

All bolts shall be 7/8" ϕ High Strength Bolts (A325).
For location of floorbeams, see Bridge Layout and Framing Plans, Sheets 24 and 25.
For modified expansion bearing details, see Sheet 31.
The following abbreviation is used:
typ. = typical

NEW EXPANSION BEARING AT FLOORBEAM 1 - SPAN 5

Scale: 1" = 1'-0"

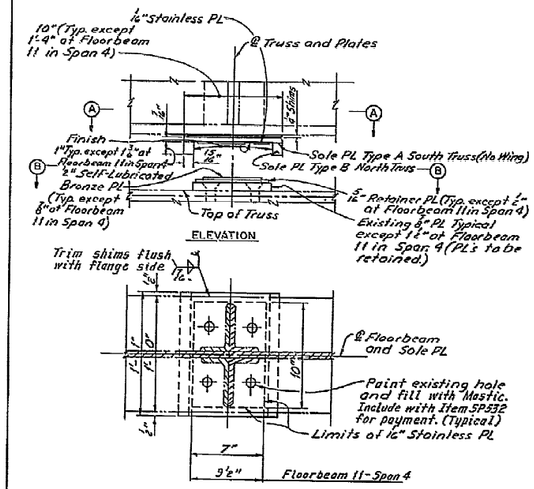
NO.	REVISIONS	BY	DATE

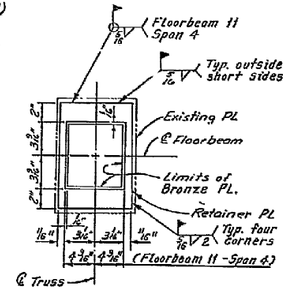
OHIO TURNPIKE COMMISSION

EXISTING & MODIFIED FLOORBEAM EXPANSION BEARING DETAILS
OHIO TURNPIKE OVER CUYAHOGA RIVER

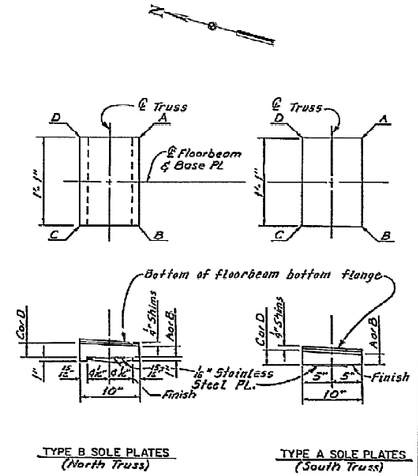
HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED D.Y.S.	CHECKED A.J.
DRAWN D.H.S.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 30 OF 43





SPANS 3,4,6,7 & 8 - FLOORBEAMS 2,3,4,8,9 AND 10
SPAN 5 - FLOORBEAMS 4,5,9,10 AND 11
SPAN 4 - FLOORBEAM 11 (SIMILAR & AS NOTED)
Scale: 2" = 1'-0"

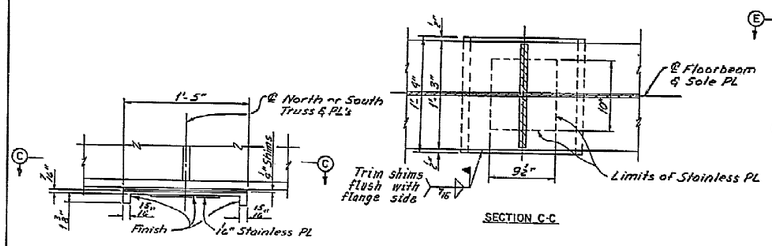


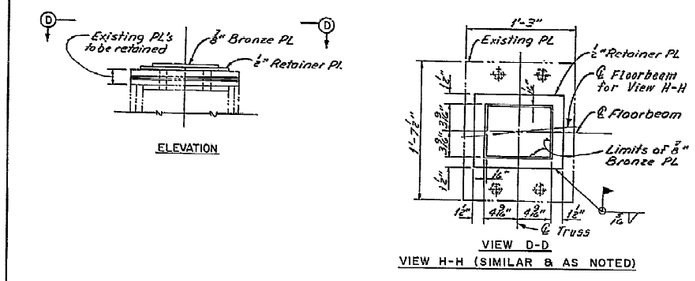
Note: For details not shown, see Section A-A and View B-B.

SPANS 9,10 & 11 - FLOORBEAMS 2,3,4,8,9 AND 10
Scale: 1½"=1'-0"

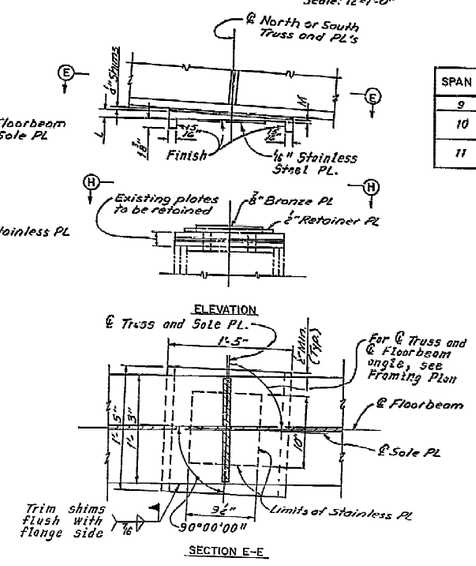
EXPANSION BEARING SOLE PLATES WESTBOUND BRIDGE						
SPAN	FLOORBEAM	SOLE PLATE TYPE	DIMENSION (INCHES) A	B	C	D
9	2	A	3/8	3/8	3/8	3/8
		B	5/8	5/8	5/8	5/8
	3	A	1 1/16	1 3/32	1 3/32	1 3/32
		B	7/8	7/8	7/8	7/8
	4	A	1 3/8	1 3/8	1 3/8	1 3/8
		B	5/8	5/8	5/8	5/8
	8	A	2 3/32	2 3/32	2 3/32	2 3/32
		B	1	1	1 1/8	1 1/8
	9	A	1 3/8	1 3/8	1 3/8	1 3/8
		B	3/8	3/8	5/8	1 1/16
	10	A	1 3/8	1 3/8	1 3/8	1 3/8
		B	3/8	3/8	1 1/16	1 1/16
10	2	A	1 3/32	1 3/32	1 3/32	1 3/32
		B	1 1/8	1 1/8	1 1/8	1 1/8
	3	A	1 3/8	1 3/8	1 3/8	1 3/8
		B	1 3/8	1 3/8	1 3/8	1 3/8
	4	A	1 3/8	1 3/8	1 3/8	2
		B	1 1/16	1 1/8	2	2
	8	A	3 3/8	3 3/8	3 3/8	3 3/8
		B	2 3/8	2 3/8	3 3/8	3 3/8
	9	A	3 3/8	3 3/8	4 3/8	4 3/8
		B	3 3/8	3 3/8	4 3/8	4 3/8
	10	A	4 3/8	4 3/8	5 3/8	5 3/8
		B	4 1/8	4 1/8	5 1/8	5 1/8
11	2	A	3 3/8	3 3/8	4 3/8	4 3/8
		B	5 1/8	5 1/8	5 15/16	5 15/16
	3	A	2 3/8	2 3/8	3 3/8	3 3/8
		B	4 1/8	4 1/8	5 5/16	5 5/16
	4	A	1 3/8	1 3/8	1 3/8	1 3/8
		B	3 5/8	3 5/8	4 5/8	4 5/8
	8	A	5/8	5/8	1 3/8	1 3/8
		B	1 1/8	1 1/8	2 1/16	2 1/16
	9	A	1 3/8	1 3/8	2 3/8	2 3/8
		B	2 1/8	2 1/8	3 1/16	3 1/16
	10	A	3 3/8	3 3/8	4 3/8	4 3/8
		B	3 1/16	3 1/16	4 1/8	4 1/8

EXPANSION BEARING SOLE PLATES EASTBOUND BRIDGE						
SPAN	FLOORBEAM	SOLE PLATE TYPE	DIMENSION (INCHES) A	B	C	D
9	2	A	11/16	11/16	11/16	11/16
		B	7/8	7/8	7/8	7/8
	3	A	1 1/16	1 1/16	1 1/4	1 1/4
		B	7/8	7/8	7/8	7/8
	4	A	1 1/4	1 1/4	1 3/8	1 3/8
		B	5/8	5/8	3/4	3/4
	8	A	2 3/32	2 3/32	2 5/32	2 5/32
		B	1 1/16	1 1/16	1 1/8	1 1/8
	9	A	1 3/8	1 3/8	2 3/8	2 3/8
		B	1 1/16	1 1/16	1 1/16	1 1/16
	10	A	1 1/4	1 1/4	1 1/4	1 1/4
		B	1 1/16	1 1/16	1 1/16	1 1/16
10	2	A	1 3/8	1 1/4	1 3/8	1 1/4
		B	1 1/4	1 1/4	1 9/16	1 9/16
	3	A	1 3/8	1 1/4	1 3/8	1 3/8
		B	1 3/4	1 11/16	1 5/8	1 5/8
	4	A	1 3/8	1 3/8	1 5/8	1 5/8
		B	1 3/8	1 11/16	1 5/8	1 5/8
	8	A	2 5/8	2 3/4	3 1/4	3 3/8
		B	2 3/8	2 11/16	3 1/8	3 1/8
	9	A	3 5/16	3 1/2	4 5/16	4 1/2
		B	3 1/16	3 1/16	4 1/16	4 1/16
	10	A	4 3/16	4 3/16	5 1/16	5 1/16
		B	4 1/16	4 1/16	5 1/16	5 1/16
11	2	A	3 3/8	3 3/8	4 1/4	4 1/4
		B	4 1/8	4 1/8	5 1/16	5 1/16
	3	A	2 1/8	2 1/8	2 3/8	2 3/8
		B	4 1/16	4 1/16	4 3/16	4 3/16
	4	A	1	1	1 1/8	1 1/8
		B	3 1/4	3 1/4	4 1/16	4 1/16
	8	A	1	1	1 1/8	1 1/8
		B	1 1/16	1 1/8	2 1/16	2 1/16
	9	A	2 1/4	2 1/4	2 3/8	2 3/8
		B	2 1/16	2 1/16	3 1/8	3 1/8
	10	A	3 3/8	3 3/8	4 1/4	4 1/4
		B	4	4	4 1/16	4 1/16



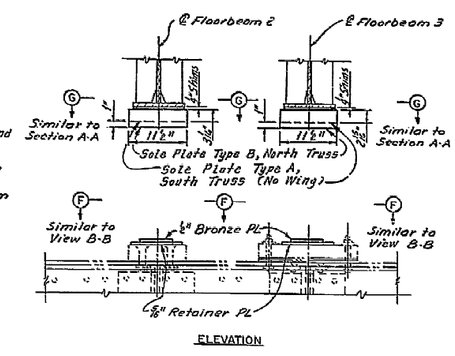


SPANS 3,6,7 & 8 - FLOORBEAMS 1 AND 11
SPANS 4 & 9 - FLOORBEAM 1
SPAN 5 - FLOORBEAM 12
Scale: 1½" = 1'-0"



SPANS 10 & 11 - FLOORBEAMS 1 AND 11
SPAN 9 - FLOORBEAM 11
Scale: 1½" = 1'-0"

SPAN	FLOORBEAM	DIMENSION L	M
9	11	15/16"	7/16"
10	1		
	11	1 11/16"	7/16"
11	1		
	11	1 15/32"	15/32"



SPAN 5 - FLOORBEAMS 2 AND 3
Scale: 1"=1'-0"

Notes:

The Self-Lubricating Bronze Expansion Bearing Assembly shall consist of the sole plate, stainless steel plate, bronze plate and retainer plate, and shall be in accordance with SP532. The ¼" shims shall be included for payment with Item 513, New Structural Steel.

Special care shall be taken during the installation of the bearing assembly not to contaminate the sliding surfaces. During field welding of the sole plate and the retainer plate, special care shall be taken to prevent warping of the plates and not to allow the temperature of the bronze plate to rise above 350°F.

In any truss span, the new deck concrete shall not be placed until after all the new bearing assemblies are installed in that span.

Theoretical shim dimensions are given. Actual shim dimensions shall be adjusted as required to insure uniform bearing on the bronze plate.

The following abbreviations are used:

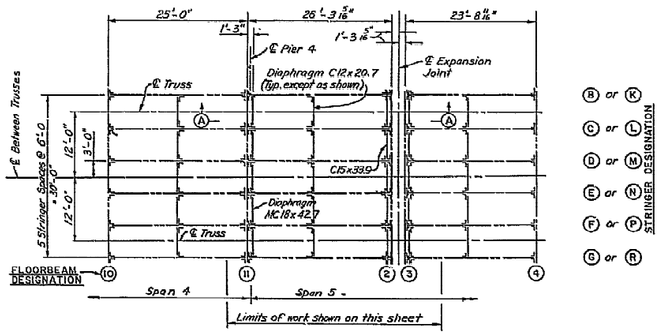
Typ. = Typical
Min. = Minimum

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

MODIFIED FLOORBEAM EXPANSION BEARING DETAILS
OHIO TURNPIKE OVER CUYAHOGA RIVER
HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED	D.H.S.	CHECKED	A.J.
DRAWN	D.H.S.	IN-CHARGE	C.A.B.
DATE: 10-28-82		SCALE: As Shown	
RMP: 43-82-04		SHEET 31 OF 43	



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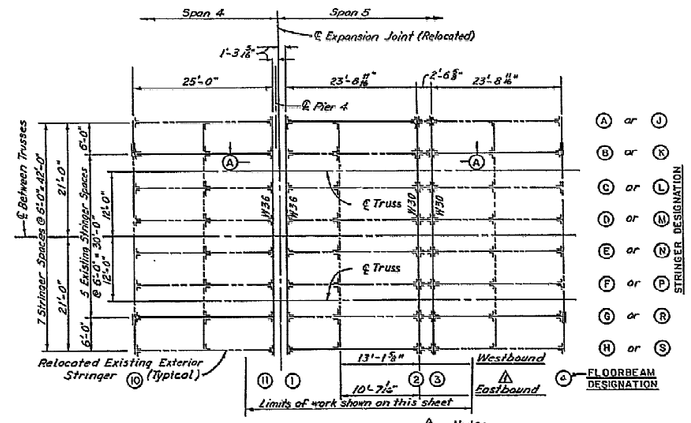


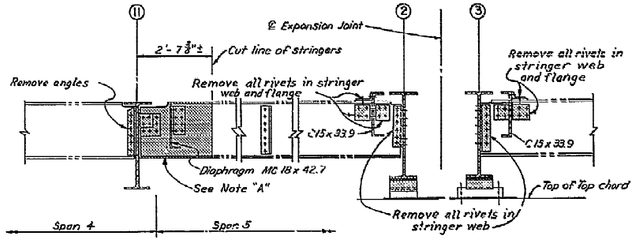
MODIFIED

Note:
New Steel Furnished For Stringers, Westbound Bridge, Span 5 Between Floorbeams 1 and 2. Steel From Westbound Bridge Was Modified and Reused In Eastbound Bridge, Span 5 Between Floorbeams 1 and 2.

FLOOR SYSTEM AT PIER 4
Scale: 1"=10'

SUGGESTED CONSTRUCTION SEQUENCE

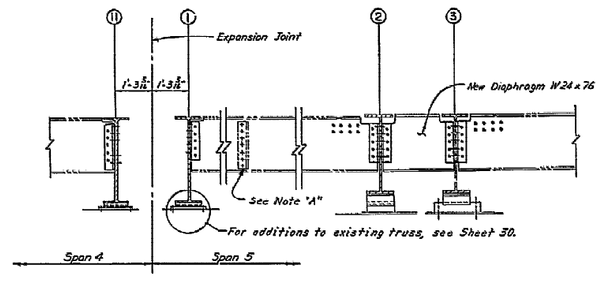
1. DISCONNECT, REMOVE AND DISPOSE OF ALL PARTS OF EXPANSION JOINT.
2. TEMPORARILY SUPPORT STRINGERS ON BOTH SIDES OF FLOORBEAM 11 AND ONE SIDE OF FLOORBEAMS 2 AND 3. SUPPORT EXTERIOR DIAPHRAGM C 12, X 20.7 AS REQUIRED.
3. REMOVE RIVETS AT LOCATIONS AS SHOWN IN EXISTING SECTION A-A.
4. REMOVE AND DISPOSE OF DIAPHRAGMS MC 18 X 42.7 AND BACK-UP CHANNELS C 15 X 33.9 INCLUDING CONNECTION ANGLES AT EXPANSION JOINT. REMOVE AND DISPOSE OF SEGMENT OF STRINGERS BETWEEN FLOORBEAMS 11 AND 2 AS SHOWN.
5. REMOVE AND DISPOSE OF FLOORBEAMS 11, 2 AND 3.
6. COPE STRINGER AND FIELD DRILL HOLES IN WEB AT END ADJACENT TO NEW FLOORBEAM 1.
7. INSTALL NEW BEARINGS.
8. INSTALL NEW FLOORBEAMS 11, 1, 2 AND 3
9. RECONNECT ALL STRINGERS TO FLOORBEAMS WITH 7/8-IN. Ø HIGH STRENGTH BOLTS (A325) AND INSTALL NEW DIAPHRAGMS BETWEEN FLOORBEAMS 2 AND 3.
10. INSTALL NEW DIAPHRAGMS BETWEEN NEW AND EXISTING STRINGERS.
11. REMOVE TEMPORARY SUPPORTS INSTALLED IN STEP 2.



EXISTING
(Floorbeam bearing at Floorbeam 11 and Deck Expansion Joint, Not Shown)

Note A:
Contractor has the option of providing new stringers instead of cutting and reworking existing stringers between Floorbeams (11) and (2). Payment will be based on Plan Details.

SECTION A-A
Scale: 1/2"=1'-0"



MODIFIED
(Expansion Joint parts not shown)

Notes:
——— Indicates existing structural members.
▒ Indicates removal.
For details of Span 4-Floorbeam 11, Span 5-Floorbeams 1, 2 and 3 and Diaphragms between Floorbeams 2 and 3, see Sheet 33.
For new bearing details, see Sheets 30 and 31.

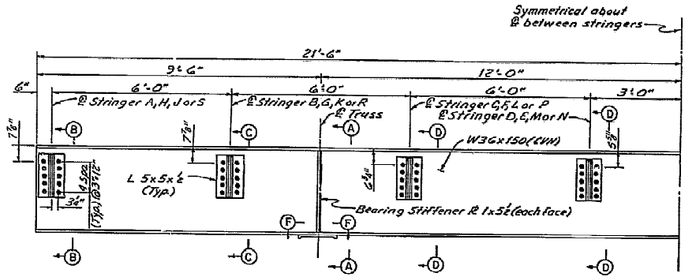
NO.	REVISIONS	BY	DATE
1	As Built	K.D.I.	1-21-88

OHIO TURNPIKE COMMISSION

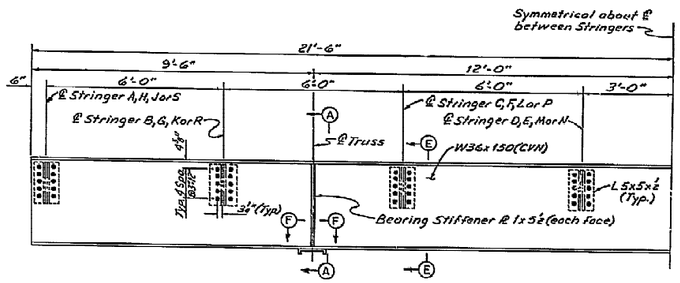
FLOOR SYSTEM MODIFICATION
(EXISTING PIER 4 DECK JOINT)
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

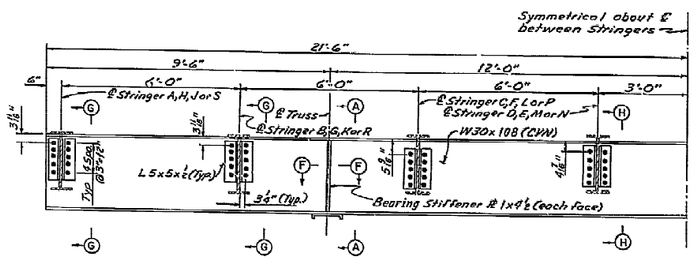
DESIGNED D.H.S.	CHECKED A.J.
DRAWN D.H.S.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 32 OF 43



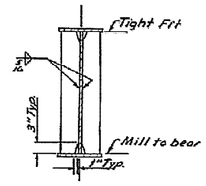
SPAN 4 - FLOORBEAM II
(Looking East)
Scale: ¼"=1'-0"



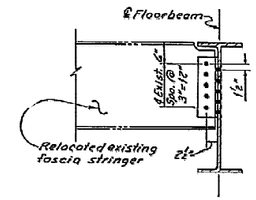
SPAN 5 - FLOORBEAM I
(Looking East)
Scale: ¼"=1'-0"



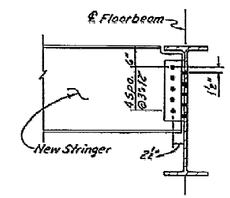
SPAN 5 - FLOORBEAMS 2 & 3
(FLOORBEAM 2 - LOOKING EAST)
(FLOORBEAM 3 - LOOKING WEST)
Scale: ¼" = 1'-0"



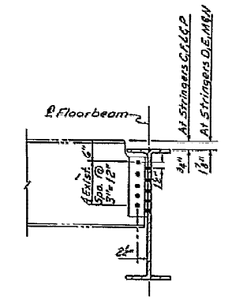
SECTION A-A
No Scale



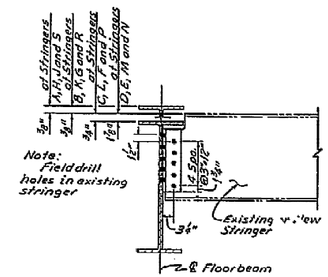
SECTION B-B
Scale: ¾"=1'-0"



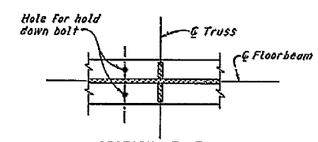
SECTION C-C
Scale: ¾"=1'-0"



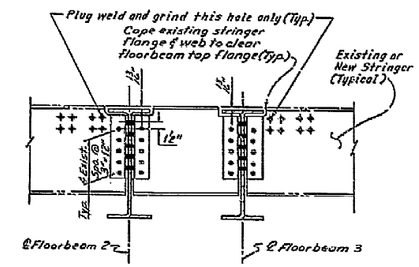
SECTION D-D
Scale: ¾"=1'-0"



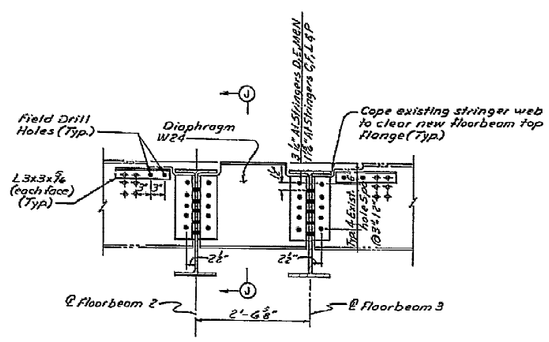
SECTION E-E
Scale: ¾"=1'-0"



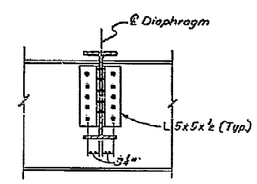
SECTION F-F
Scale: ¾"=1'-0"



SECTION G-G
(For diaphragm details not shown, see Section H-H)
Scale: ¾"=1'-0"



SECTION H-H
Scale: ¾"=1'-0"



SECTION J-J
Scale: ¾"=1'-0"

Notes:
- - - - Indicates existing members.
All bolts shall be ⅞" ϕ High Strength Bolts (A325).
For Framing Plan, see Sheet 32.

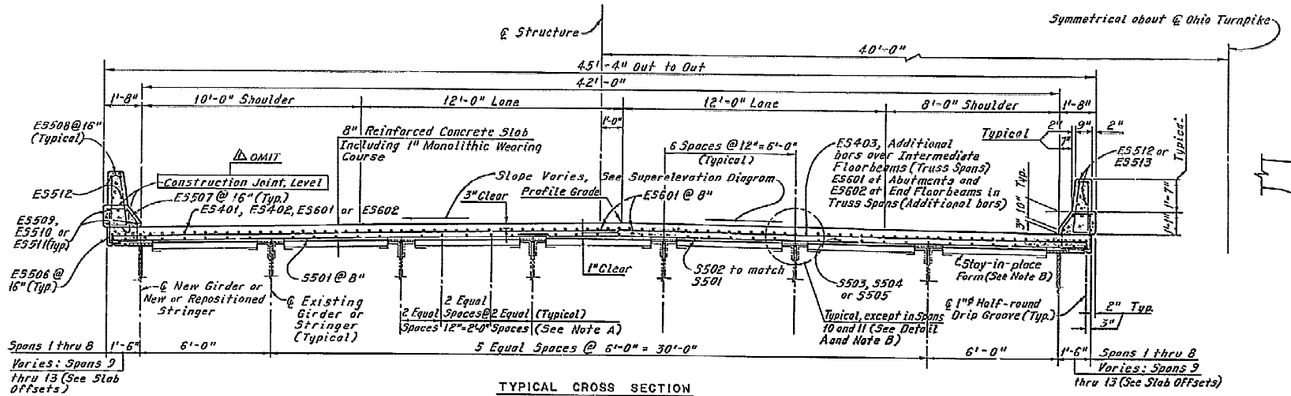
NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

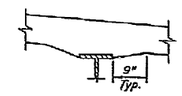
FLOOR SYSTEM MODIFICATION
(EXISTING PIER 4 DECK JOINT)
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED D.H.S.	CHECKED A.J.
DRAWN D.H.S.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 33 OF 43



TYPICAL CROSS SECTION
(Girder Span Shown, Truss Span Similar)
Scale: 3/8" = 1'-0"



DETAIL A
Scale: 3/4" = 1'-0"

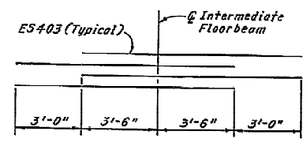
DECK REINFORCEMENT			
Location	Spans 1, 2, 12 and 13	Spans 3 thru 8	Spans 9 thru 11
Bar Mark	No. of Bars	No. of Bars	No. of Bars
ES401	47 Lines of 2	47 Lines of 7	47 Lines of 7
ES402	47 (Spans 1 and 13)	—	—
ES402	94 (Spans 2 and 12)	—	—
ES403	—	432	432
S501	156	379	383
S502	156	379	383
S503	39 Lines of 3	39 Lines of 8	46 Lines of 8
S504	39	—	—
S505	—	39	46
ES506	158	380	384
ES507	158	380	384
ES508	158	380	384
ES509	6 Lines of 4	16 Lines of 4	16 Lines of 4
ES510	8	—	—
ES511	—	8	8
ES512	58 (Spans 1 and 2)	136	136
ES512	28 (Spans 12 and 13)	—	—
ES513	28 (Spans 12 and 13)	—	—
ES601	312 (Spans 2 and 12)	758	766
ES601	405 (Spans 1 and 13)	—	—
ES602	—	186	186

Notes:
The number of bars shown in the "Deck Reinforcement Table" is for one span.
The spacing of the transverse deck slab reinforcement in Spans 9 thru 13 is measured along the North edge of slab.

Note A:
In Spans 9 thru 11, the longitudinal reinforcement in the bottom of the deck slab shall be uniformly spaced at 12" across the full width of the deck.

REMOVABLE FORMS USED ALL SPANS △1

Note B:
Removable forms shall be used in Spans 10 and 11. At the option of the Contractor, removable forms may be used in all spans. Concrete haunch to be used with removable forms is shown in Detail A. Payment for Item 511 will be based on use of stay-in-place forms, except in Spans 10 and 11.



PLACEMENT OF ADDITIONAL
REINFORCEMENT OVER INTERMEDIATE FLOORBEAMS
No Scale

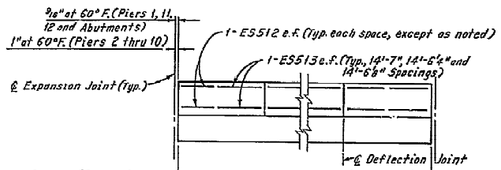
SUPERPLASTICIZER WAS NOT USED △1

Note:
At the option of the Contractor and as approved by the Engineer, a superplasticizing admixture (high range water reducer) meeting the requirements of ASTM C494, Type F may be added to the deck concrete mix. A manufacturer's technical representative for the superplasticizing admixture shall be notified when the admixture is selected and shall be present during mixing of the superplasticizer and placement of the deck unless his presence is waived by the Engineer. Operations and procedures which are considered by the representative as being detrimental to the integrity of the deck will not be permitted.

REQUIRED LAP LENGTHS
No. 4 Bar = 1'-6" Minimum
No. 5 Bar = 1'-10" Minimum
No. 6 Bar = 2'-2" Minimum

Notes:
The bridge deck including barriers shall be water cured in accordance with 511.14, Method (a).
The top deck surface, all exposed surfaces of the concrete barrier, the exposed side surfaces of the deck and the bottom surface of the deck outside the exterior stringers or girders shall be weatherproofed with silane in accordance with SP535.
For Stay-in-place Deck Form Details, Slab Offsets and Sections at Deck Joints, see Sheet 35.
For Reinforcement Schedules, see Sheets 42 and 43.
The following abbreviations are used:

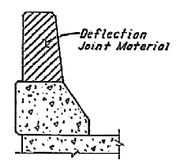
ES = Epoxy Coated Bars
S = Non-Epoxy Coated Bars
Typ. = Typical
W.B. = Westbound
E.B. = Eastbound
e.f. = each face
ft. = foot



Span 1 (Typical)		7 Spaces @ about 14'-8 5/8" = 102'-9 3/4"
Span 2 (Typical)		7 Spaces @ about 14'-10 1/4" = 103'-11 5/8"
Span 3 (Typical)		17 Spaces @ about 14'-10 5/8" = 252'-5"
Spans 4 thru 8 (Typ.)		17 Spaces @ about 14'-10 5/8" = 252'-4 5/8"
Span 9	(W.B., North)	17 Spaces @ about 14'-10 5/8" = 252'-7 5/8"
	(W.B., South)	17 Spaces @ about 14'-10" = 252'-1 1/4"
	(E.B., North)	17 Spaces @ about 14'-10 5/8" = 252'-8 1/4"
	(E.B., South)	17 Spaces @ about 14'-10" = 252'-1 7/8"
Span 10	(W.B., North)	17 Spaces @ about 14'-11 1/4" = 253'-10 1/2"
	(W.B., South)	17 Spaces @ about 14'-9 1/4" = 251'-1 1/8"
	(E.B., North)	17 Spaces @ about 14'-11 1/4" = 253'-10 1/4"
	(E.B., South)	17 Spaces @ about 14'-9 1/4" = 251'-11 7/8"
Span 11	(W.B., North)	17 Spaces @ about 14'-11 5/8" = 254'-8 5/8"
	(W.B., South)	17 Spaces @ about 14'-8 5/8" = 250'-3 7/8"
	(E.B., North)	17 Spaces @ 14'-11 5/8" = 254'-10 1/4"
	(E.B., South)	17 Spaces @ about 14'-8 5/8" = 250'-2 3/4"
Span 12	(W.B., North)	7 Spaces @ about 14'-10 1/4" = 103'-11 5/8"
	(W.B., South)	7 Spaces @ about 14'-7" = 102'-1 1/4"
	(E.B., North)	7 Spaces @ about 14'-10 1/4" = 103'-11 5/8"
	(E.B., South)	7 Spaces @ about 14'-7" = 102'-0 3/4"
Span 13	(W.B., North)	7 Spaces @ about 14'-9 3/8" = 103'-5 3/8"
	(W.B., South)	7 Spaces @ about 14'-6 1/4" = 101'-7 1/8"
	(E.B., North)	7 Spaces @ about 14'-9 3/8" = 103'-5 3/8"
	(E.B., South)	7 Spaces @ about 14'-6 5/8" = 101'-7 5/8"

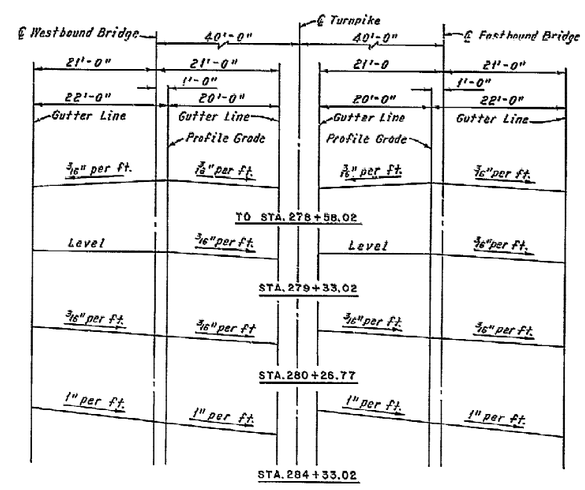
Note: Dimensions given are along Gutterline.

ELEVATION
CONCRETE BARRIER AND DEFLECTION JOINT
No Scale



DEFLECTION JOINT

Notes:
The deflection joints in the barrier curb may be either 1" gray sponge rubber or 1" gray cellular polyvinyl chloride (PVC) sponge. Either material shall meet the requirements of AASHTO M-153, Type 1, except the density of the PCV sponge shall not be less than 20 lbs. per cu. ft.
Barrier curbs shall be placed in alternate sections by the use of bulkheads. Closing sections shall be placed after the removal of bulkheads and after placement of sponge filler. The filler shall be attached to the face of the concrete on one side, flush with the surface of concrete and exposed edges shall be free of mortar.
Include with Item SP511, Lightweight Concrete, Barriers, for payment.



SUPERELEVATION DIAGRAM
No Scale

NO.	REVISIONS	BY	DATE
△1	As Built	V.D.I.	4-21-85

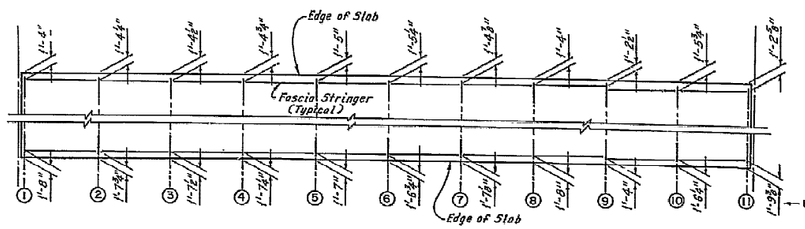
OHIO TURNPIKE COMMISSION

DECK DETAILS

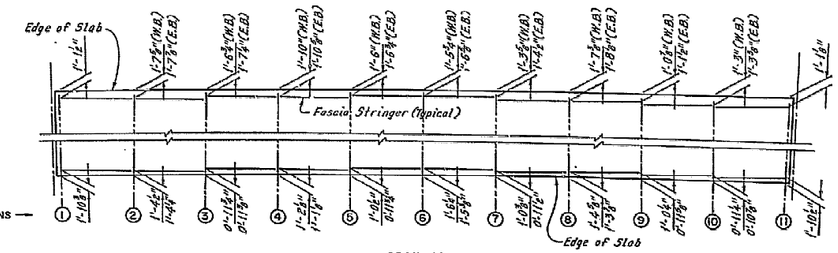
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

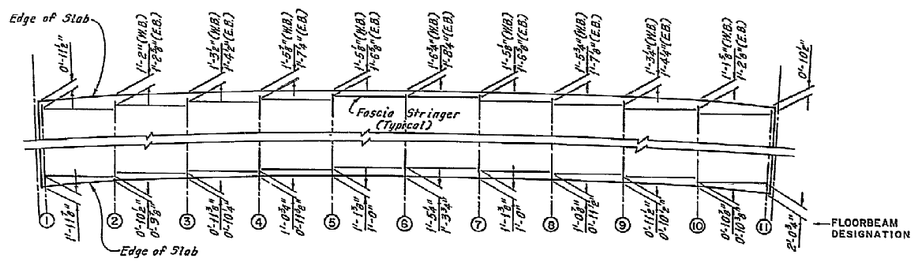
DESIGNED F.S.J.	CHECKED C.K.B.
DRAWN C.F.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 34 OF 43



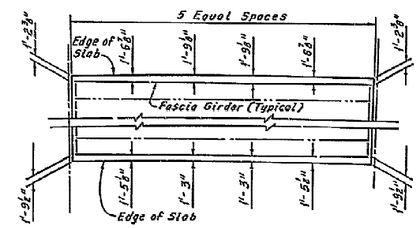
SPAN 9



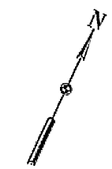
SPAN 10



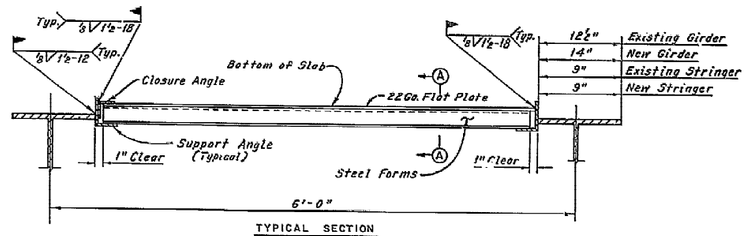
SPAN 11



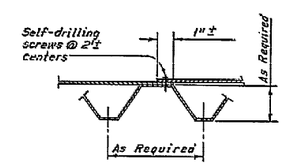
SPANS 12 AND 13



SLAB OFFSETS
No Scale

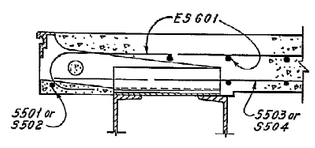


TYPICAL SECTION
Scale: 1½"=1'-0"

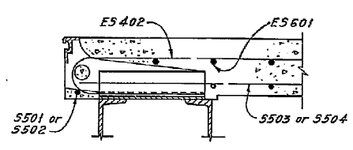


SECTION A-A
Scale: 3"=1'-0"

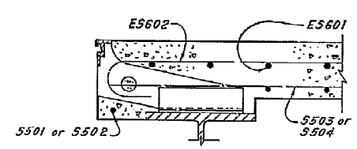
STAY-IN-PLACE DECK FORMS
(Typical except Spans 10 and 11)
NOT USED



ABUTMENTS



GIRDER SPANS



TRUSS SPANS

SECTIONS AT DECK JOINTS
(Stay-in-Place Forms Not Shown)
Scale: 1½"=1'-0"

NO	REVISIONS	BY	DATE
1	As Built	K.D.I.	12-1-85

OHIO TURNPIKE COMMISSION

DECK DETAILS

OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED F.S.J.	CHECKED C.K.B.
DRAWN C.P.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 35 OF 43

SPANS 1 AND 2

	Girder	Bearing	.2	.4	.5	.6	.8	Bearing
Span 1	A	841.38	840.98	840.58	840.38	840.18	839.78	839.38
	B	841.47	841.07	840.67	840.47	840.27	839.87	839.47
	C	841.57	841.17	840.77	840.57	840.37	839.97	839.57
	D	841.66	841.26	840.86	840.66	840.46	840.06	839.66
	P.G.	841.72	841.32	840.92	840.72	840.52	840.12	839.72
	E	841.69	841.29	840.89	840.69	840.49	840.09	839.69
	F	841.60	841.20	840.80	840.60	840.40	840.00	839.60
	G	841.50	841.10	840.70	840.50	840.30	839.90	839.50
	H	841.41	841.01	840.61	840.41	840.21	839.81	839.41
Span 2	A	839.33	838.93	838.53	838.33	838.13	837.73	837.33
	B	839.42	839.02	838.62	838.42	838.22	837.82	837.42
	C	839.52	839.12	838.72	838.52	838.32	837.92	837.52
	D	839.61	839.21	838.81	838.61	838.41	838.01	837.61
	P.G.	839.67	839.27	838.87	838.67	838.47	838.07	837.67
	E	839.64	839.24	838.84	838.64	838.44	838.04	837.64
	F	839.55	839.15	838.75	838.55	838.35	837.95	837.55
	G	839.45	839.05	838.65	838.45	838.25	837.85	837.45
	H	839.38	838.98	838.58	838.38	838.18	837.78	837.38

SPANS 3,4 AND 5

	Stringer Floorbeam	A	B	C	D	P.G.	E	F	G	H
Span 3	1	837.25	837.34	837.43	837.53	837.59	837.56	837.47	837.37	837.28
	2	836.75	836.84	836.93	837.03	837.09	837.06	836.97	836.87	836.78
	3	836.25	836.34	836.43	836.53	836.59	836.56	836.47	836.37	836.28
	4	835.75	835.84	835.94	836.03	836.09	836.06	835.97	835.87	835.78
	5	835.25	835.34	835.44	835.53	835.59	835.56	835.47	835.37	835.28
	6	834.75	834.84	834.94	835.03	835.09	835.06	834.97	834.87	834.78
	7	834.25	834.34	834.44	834.53	834.59	834.56	834.47	834.37	834.28
	8	833.75	833.84	833.94	834.03	834.09	834.06	833.97	833.87	833.78
	9	833.25	833.34	833.44	833.53	833.59	833.56	833.47	833.37	833.28
	10	832.75	832.84	832.94	833.03	833.09	833.06	832.97	832.87	832.78
	11	832.25	832.34	832.44	832.53	832.59	832.56	832.47	832.37	832.28
Span 4	1	832.20	832.29	832.38	832.48	832.54	832.51	832.42	832.32	832.23
	2	831.70	831.79	831.88	831.98	832.04	832.01	831.92	831.82	831.73
	3	831.20	831.29	831.38	831.48	831.54	831.51	831.42	831.32	831.23
	4	830.70	830.79	830.89	830.98	831.04	831.01	830.92	830.82	830.73
	5	830.20	830.29	830.39	830.48	830.54	830.51	830.42	830.32	830.23
	6	829.70	829.79	829.89	829.98	830.04	830.01	829.92	829.82	829.73
	7	829.20	829.29	829.39	829.48	829.54	829.51	829.42	829.32	829.23
	8	828.70	828.79	828.89	828.98	829.04	829.01	828.92	828.82	828.73
	9	828.20	828.29	828.39	828.48	828.54	828.51	828.42	828.32	828.23
	10	827.70	827.79	827.89	827.98	828.04	828.01	827.92	827.82	827.73
	11	827.20	827.29	827.39	827.48	827.54	827.51	827.42	827.32	827.23
Span 5	1	827.15	827.24	827.33	827.43	827.49	827.46	827.37	827.27	827.18
	2	826.67	826.77	826.86	826.95	827.02	826.99	826.89	826.80	826.70
	3	826.62	826.72	826.81	826.90	826.97	826.93	826.84	826.75	826.65
	4	826.15	826.24	826.33	826.43	826.49	826.46	826.37	826.27	826.18
	5	825.65	825.74	825.84	825.93	825.99	825.96	825.87	825.77	825.68
	6	825.15	825.24	825.34	825.43	825.49	825.46	825.37	825.27	825.18
	7	824.65	824.74	824.84	824.93	824.99	824.96	824.87	824.77	824.68
	8	824.15	824.24	824.34	824.43	824.49	824.46	824.37	824.27	824.18
	9	823.65	823.74	823.84	823.93	823.99	823.96	823.87	823.77	823.68
	10	823.15	823.24	823.34	823.43	823.49	823.46	823.37	823.27	823.18
	11	822.65	822.74	822.84	822.93	822.99	822.96	822.87	822.77	822.68
	12	822.15	822.24	822.34	822.43	822.49	822.46	822.37	822.27	822.18

SPANS 6,7 AND 8

	Stringer Floorbeam	A	B	C	D	P.G.	E	F	G	H
Span 6	1	822.10	822.19	822.28	822.38	822.44	822.41	822.32	822.22	822.13
	2	821.60	821.69	821.78	821.88	821.94	821.91	821.82	821.72	821.63
	3	821.10	821.19	821.28	821.38	821.44	821.41	821.32	821.22	821.13
	4	820.60	820.69	820.79	820.88	820.94	820.91	820.82	820.72	820.63
	5	820.10	820.19	820.29	820.38	820.44	820.41	820.32	820.22	820.13
	6	819.60	819.69	819.79	819.88	819.94	819.91	819.82	819.72	819.63
	7	819.10	819.19	819.29	819.38	819.44	819.41	819.32	819.22	819.13
	8	818.60	818.69	818.79	818.88	818.94	818.91	818.82	818.72	818.63
	9	818.10	818.19	818.29	818.38	818.44	818.41	818.32	818.22	818.13
	10	817.60	817.69	817.79	817.88	817.94	817.91	817.82	817.72	817.63
	11	817.10	817.19	817.29	817.38	817.44	817.41	817.32	817.22	817.13
Span 7	1	817.05	817.14	817.23	817.33	817.39	817.36	817.27	817.17	817.08
	2	816.55	816.64	816.73	816.83	816.89	816.86	816.77	816.67	816.58
	3	816.05	816.14	816.23	816.33	816.39	816.36	816.27	816.17	816.08
	4	815.55	815.64	815.74	815.83	815.89	815.86	815.77	815.67	815.58
	5	815.05	815.14	815.24	815.33	815.39	815.36	815.27	815.17	815.08
	6	814.55	814.64	814.74	814.83	814.89	814.86	814.77	814.67	814.58
	7	814.05	814.14	814.24	814.33	814.39	814.36	814.27	814.17	814.08
	8	813.55	813.64	813.74	813.83	813.89	813.86	813.77	813.67	813.58
	9	813.05	813.14	813.24	813.33	813.39	813.36	813.27	813.17	813.08
	10	812.55	812.64	812.74	812.83	812.89	812.86	812.77	812.67	812.58
	11	812.05	812.14	812.24	812.33	812.39	812.36	812.27	812.17	812.08
Span 8	1	812.00	812.09	812.18	812.28	812.34	812.31	812.22	812.12	812.03
	2	811.50	811.59	811.68	811.78	811.84	811.81	811.72	811.62	811.53
	3	811.00	811.09	811.18	811.28	811.34	811.31	811.22	811.12	811.03
	4	810.50	810.59	810.69	810.78	810.84	810.81	810.72	810.62	810.53
	5	810.00	810.09	810.19	810.28	810.34	810.31	810.22	810.12	810.03
	6	809.50	809.59	809.69	809.78	809.84	809.81	809.72	809.62	809.53
	7	809.00	809.09	809.19	809.28	809.34	809.31	809.22	809.12	809.03
	8	808.50	808.59	808.69	808.78	808.84	808.81	808.72	808.62	808.53
	9	808.00	808.09	808.19	808.28	808.34	808.31	808.22	808.12	808.03
	10	807.50	807.59	807.69	807.78	807.84	807.81	807.72	807.62	807.53
	11	807.00	807.09	807.19	807.28	807.34	807.31	807.22	807.12	807.03

SPANS 9,10 AND 11

	Stringer Floorbeam	Gutter	A	B	C	D	Lane Line	E	F	G	H	Gutter
Span 9	1	806.95	806.95	807.04	807.13	807.23	807.29	807.26	807.17	807.07	806.98	806.98
	2	806.56	806.56	806.62	806.65	806.75	806.79	806.76	806.67	806.57	806.48	806.48
	3	806.18	806.18	806.21	806.24	806.27	806.29	806.26	806.17	806.07	805.98	805.98
	4	805.79	805.79	805.79	805.79	805.79	805.79	805.76	805.67	805.57	805.48	805.48
	5	805.38	805.38	805.36	805.33	805.31	805.29	805.26	805.17	805.07	804.98	804.98
	6	804.98	804.98	804.93	804.88	804.83	804.79	804.76	804.67	804.57	804.48	804.48
	7	804.57	804.57	804.50	804.42	804.35	804.29	804.26	804.17	804.08	803.98	803.98
	8	804.16	804.17	804.07	803.97	803.87	803.80	803.76	803.66	803.56	803.46	803.46
	9W	803.76	803.76	803.64	803.51	803.39	803.30	803.26	803.14	803.01	802.88	802.88
	9E	803.76	803.75	803.63	803.50	803.38	803.30	803.25	803.13	803.00	802.87	802.88
	10	803.35	803.35	803.20	803.05	802.90	802.80	802.75	802.60	802.45	802.30	802.30
	11	802.94	802.95	802.78	802.60	802.43	802.30	802.25	802.08	801.90	801.73	801.72
Span 10	1	802.90	802.91	802.74	802.56	802.38	802.51	802.20	802.03	801.85	801.67	801.66
	2	802.49	802.49	802.29	802.08	801.88	801.76	801.68	801.48	801.29	801.09	801.09
	3W	802.09	802.07	801.84	801.62	801.39	801.26	801.16	800.94	800.71	800.49	800.51
	3E	802.09	802.08	801.85	801.63	801.41	801.26	801.18	800.95	800.73	800.51	800.51
	4	801.68	801.67	801.42	801.17	800.92	800.76	800.67	800.42	800.16	799.91	799.93
	5W	801.28	801.26	800.98	800.71	800.43	800.27	800.15	799.88	799.60	799.32	799.35
	5E	801.28	801.28	801.00	800.73	800.45	800.27	800.18	799.90	799.62	799.35	799.35
	6	800.88	800.88	800.58	800.28	799.97	799.77	799.67	799.37	799.07	798.77	798.77
	7W	800.48	800.49	800.16	799.83	799.51	799.28	799.18	798.85	798.52	798.20	798.19
	7E	800.48	800.45	800.12	799.80	799.47	799.28	799.19	798.82	798.49	798.16	798.19
	8	800.08	800.07	799.72	799.36	799.01	798.78	798.66	798.31	797.95	797.60	797.60
	9W	799.67	799.70	799.32	798.95	798.57	798.29	798.19	797.81	797.43	797.05	797.02
	9E	799.67	799.64	799.27	798.89	798.51	798.29	798.13	797.75	797.37	796.99	797.02
	10W	799.27	799.29	798.89	798.48	798.08	797.80	797.68	797.27	796.87	796.46	796.45
	10E	799.27	799.23	798.83	798.43	798.03	797.80	797.52	797.22	796.81	796.41	796.45
	11	798.86	798.89	798.46	798.04	797.62	797.30	797.19	796.76	796.38	795.91	795.89
Span 11	1	798.82	798.86	798.43	798.00	797.58	797.25	797.15	796.72	796.29	795.86	795.83
	2W	798.40	798.35	797.91	797.46	797.01	796.76	796.57	796.12	795.67	795.23	795.28
	2E	798.40	798.43	797.98	797.53	797.08	796.76	796.64	796.19	795.75	795.30	795.28
	3W	798.00	797.96	797.49	797.01	796.54	796.27	796.07	795.60	795.12	794.65	794.70
	3E	798.00	798.02	797.55	797.07	796.60	796.27	796.13	795.66	795.19	794.71	794.70
	4W	797.60	797.56	797.07	796.57	796.07	795.78	795.57	795.08	794.58	794.08	794.12
	4E	797.60	797.60	797.10	796.61	796.11	795.78	795.61	795.12	794.62	794.12	794.12
	5W	797.11	797.08	796.58	796.08	795.59	795.29	795.09	794.59	794.09	793.59	793.62
	5E	797.11	797.12	796.62	796.12	795.62	795.29	795.13	794.63	794.13	793.65	793.62
	6	796.63	796.62	796.12	795.62	795.12	794.79	794.62	794.12	793.62	793.12	793.13
	7W	796.14	796.15	795.65	795.14	794.64	794.30	794.14	793.64	793.14	792.64	792.63
	7E	796.14	796.11	795.61	795.11	794.61	794.30	794.10	793.60	793.10	792.60	792.63
	8W	795.67	795.67	795.17	794.67	794.17	793.83	793.67	793.16	792.66	792.16	792.16
	8E	795.67	795.63	795.13	794.63	794.13	793.83	793.63	793.12	792.62	792.12	792.16
	9W	795.22	795.24	794.74	794.24	793.73	793.38	793.23	792.73	792.23	791.72	791.70
	9E	795.22	795.18	794.67	794.17	793.67	793.38	793.17	792.66	792.16	791.66	791.70
	10W	794.80	794.83	794.33	793.82	793.32	792.95	792.82	792.31	791.81	791.30	791.27
	10E	794.80	794.74	794.24	793.74	793.23	792.95	792.73	792.23	791.72	791.22	791.27
	11	794.38	794.43	793.93	793.43	792.93	792.55	792.43	791.93	791.43	790.93	790.88

SPANS 12 AND 13

	Girder	Bearing	.2	.4	.5	.6	.8	Bearing
Span 12	Gutter	794.33	794.02	793.73	793.59	793.45	793.19	792.94
	A	794.35	794.02	793.72	793.58	793.45	793.21	792.99
	B	793.85	793.52	793.22	793.09	792.95	792.71	792.49
	C	793.35	793.02	792.72	792.59	792.45	792.21	791.99
	D	792.85	792.52	792.22	792.09	791.95	791.71	791.49
	E	792.35	792.02	791.72	791.59	791.45	791.21	790.99
	F	791.85	791.52	791.22	791.09	790.95	790.71	790.49
	G	791.35	791.02	790.72	790.59	790.45	790.21	789.99
	H	790.85	790.52	790.23	790.09	789.95	789.71	789.49
	Gutter	790.83	790.52	790.23	790.09	789.95	789.69	789.44
Span 13	Gutter	792.91	792.68	792.46	792.36	792.26	792.07	791.89
	A	792.93	792.68	792.45	792.34	792.25	792.07	791.93
	B	792.43	792.18	791.95	791.84	791.75	791.57	791.43
	C	791.93	791.68	791.45	791.34	791.25	791.07	790.93
	D	791.43	791.18	790.95	790.84	790.75	790.57	790.43
	E	790.93	790.68	790.45	790.34	790.25	790.07	789.93
	F	790.43	790.18	789.95	789.84	789.75	789.57	789.43
	G	789.94	789.69	789.45	789.34	789.25	789.07	788.93
	H	789.44	789.18	788.95	788.84	788.75	788.57	788.43
	Gutter	789.41	789.18	788.96	788.86	788.76	788.57	788.39

Notes:

Pavement elevations are given at the top of concrete.
For Bridge Layout and Framing Plans, see Sheets 24 and 25.
The following abbreviations are used:
P.G.=Profile Grade
E=East
W=West

TRUSS DEFLECTIONS
SPANS 1 THRU 4 AND 6 THRU 11

Floorbeam	1	2	3	4	5	6	7	8	9	10	11
1	0"	-3/4"	-1 1/4"	-1 1/4"	-1 9/16"	-1 9/16"	-1 9/16"	-1 1/4"	-1"	-3/4"	0"
2	0"	5/8"	1 3/16"	1 3/16"	1 7/16"	1 7/16"	1 7/16"	1 3/16"	1 3/16"	5/8"	0"
3	0"	5/8"	1 1/4"	1 3/16"	1 7/16"	1 7/16"	1 5/16"	1 3/16"	1 1/4"	5/8"	0"
4	0"	9/16"	1 1/16"	1 1/16"	1 3/16"	1 3/16"	1 1/16"	1 1/16"	1 1/16"	5/8"	0"

TRUSS DEFLECTIONS
SPAN 5

Floorbeam	1	2	3	4	5	6	7	8	9	10	11	12
1	0"	-3/4"	-1 1/4"	-1 9/16"	-1 9/16"	-1 9/16"	-1 9/16"	-1 9/16"	-1 1/4"	-1"	-3/4"	0"
2	0"	5/8"	1 1/16"	1 3/16"	1 3/16"	1 3/16"	1 7/16"	1 7/16"	1 3/16"	1 3/16"	5/8"	0"

Notes:

Line 1 denotes upward deflection due to removal of existing deck.
Line 2 denotes downward deflection due to placement of new deck and barrier curb. (Spans 1 thru 9)
Line 3 denotes downward deflection due to placement of new deck and barrier curb. (North Truss, Spans 10 and 11)
Line 4 denotes downward deflection due to placement of new deck and barrier curb. (South Truss, Spans 10 and 11)

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

PAVEMENT ELEVATIONS
WESTBOUND BRIDGE
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED CKB & DHS	CHECKED RPT
DRAWN CKB	IN CHARGE CAB
DATE: 10-28-82	SCALE:
RMP: 43-82-04	SHEET 36 OF 43

SPANS 1 AND 2

	Girder	Bearing	.2	.4	.5	.6	.8	Bearing
Span 1	J	841.4[illegible]	841.01	840.61	840.41	840.21	839.81	839.41
	K	841.50	841.10	840.70	840.50	840.30	839.90	839.50
	L	841.60	841.20	840.80	840.60	840.40	840.00	839.60
	M	841.69	841.29	840.89	840.69	840.49	840.09	839.69
	P.G.	841.72	841.32	840.92	840.72	840.52	840.12	839.72
	N	841.66	841.26	840.86	840.66	840.46	840.06	839.66
	P	841.57	841.17	840.77	840.57	840.37	839.97	839.57
	R	841.47	841.07	840.67	840.47	840.27	839.87	839.47
	S	841.38	840.98	840.58	840.38	840.18	839.78	839.38
Span 2	J	839.36	839.06	838.56	838.36	838.16	837.76	837.36
	K	839.45	839.05	838.65	838.45	838.25	837.85	837.45
	L	839.55	839.15	838.75	838.55	838.35	837.95	837.55
	M	839.64	839.24	838.84	838.64	838.44	838.04	837.64
	P.G.	839.67	839.27	838.87	838.67	838.47	838.07	837.67
	N	839.61	839.21	838.81	838.61	838.41	838.01	837.61
	P	839.52	839.12	838.72	838.52	838.32	837.92	837.52
	R	839.42	839.02	838.62	838.42	838.22	837.82	837.42
	S	839.33	838.93	838.53	838.33	838.13	837.73	837.33

SPANS 3,4 AND 5

	Stringer / Floorbeam	J	K	L	M	P.G.	N	P	R	S
Span 3	1	837.20	837.37	837.47	837.56	837.59	837.53	837.43	837.34	837.25
	2	836.78	836.87	836.97	837.06	837.09	837.03	836.93	836.84	836.75
	3	836.28	836.37	836.47	836.56	836.59	836.53	836.43	836.34	836.25
	4	835.78	835.87	835.97	836.06	836.09	836.03	835.94	835.84	835.75
	5	835.28	835.37	835.47	835.56	835.59	835.53	835.44	835.34	835.25
	6	834.78	834.87	834.97	835.06	835.09	835.03	834.94	834.84	834.75
	7	834.28	834.37	834.47	834.56	834.59	834.53	834.44	834.34	834.25
	8	833.78	833.87	833.97	834.06	834.09	834.03	833.94	833.84	833.75
	9	833.28	833.37	833.47	833.56	833.59	833.53	833.44	833.34	833.25
	10	832.78	832.87	832.97	833.06	833.09	833.03	832.94	832.84	832.75
	11	832.28	832.37	832.47	832.56	832.59	832.53	832.44	832.34	832.25
Span 4	1	832.23	832.32	832.42	832.51	832.54	832.48	832.38	832.29	832.20
	2	831.73	831.82	831.92	832.01	832.04	831.98	831.88	831.79	831.70
	3	831.23	831.32	831.42	831.51	831.54	831.48	831.38	831.29	831.20
	4	830.73	830.82	830.92	831.01	831.04	830.98	830.89	830.79	830.70
	5	830.23	830.32	830.42	830.51	830.54	830.48	830.39	830.29	830.20
	6	829.73	829.82	829.92	830.01	830.04	829.98	829.89	829.79	829.70
	7	829.23	829.32	829.42	829.51	829.54	829.48	829.39	829.29	829.20
	8	828.73	828.82	828.92	829.01	829.04	828.98	828.89	828.79	828.70
	9	828.23	828.32	828.42	828.51	828.54	828.48	828.39	828.29	828.20
	10	827.73	827.82	827.92	828.01	828.04	827.98	827.89	827.79	827.70
	11	827.23	827.32	827.42	827.51	827.54	827.48	827.39	827.29	827.20
Span 5	1	827.18	827.27	827.37	827.46	827.49	827.43	827.33	827.24	827.15
	2	826.70	826.80	826.89	826.99	827.02	826.95	826.85	826.77	826.67
	3	826.65	826.75	826.84	826.93	826.97	826.90	826.81	826.72	826.62
	4	826.18	826.27	826.37	826.46	826.49	826.43	826.33	826.24	826.15
	5	825.68	825.77	825.87	825.96	825.99	825.93	825.84	825.74	825.65
	6	825.18	825.27	825.37	825.46	825.49	825.43	825.34	825.24	825.15
	7	824.68	824.77	824.87	824.96	824.99	824.93	824.84	824.74	824.65
	8	824.18	824.27	824.37	824.46	824.49	824.43	824.34	824.24	824.15
	9	823.68	823.77	823.87	823.96	823.99	823.93	823.84	823.74	823.65
	10	823.18	823.27	823.37	823.46	823.49	823.43	823.34	823.24	823.15
	11	822.68	822.77	822.87	822.96	822.99	822.93	822.84	822.74	822.65
	12	822.18	822.27	822.37	822.46	822.49	822.43	822.34	822.24	822.15

SPANS 6,7 AND 8

	Stringer / Floorbeam	J	K	L	M	P.G.	N	P	R	S
Span 6	1	822.13	822.22	822.32	822.41	822.44	822.38	822.28	822.19	822.10
	2	821.63	821.72	821.82	821.91	821.94	821.88	821.78	821.69	821.60
	3	821.13	821.22	821.32	821.41	821.44	821.38	821.28	821.19	821.10
	4	820.63	820.72	820.82	820.91	820.94	820.88	820.78	820.69	820.60
	5	820.13	820.22	820.32	820.41	820.44	820.38	820.28	820.19	820.10
	6	819.63	819.72	819.82	819.91	819.94	819.88	819.78	819.69	819.60
	7	819.13	819.22	819.32	819.41	819.44	819.38	819.28	819.19	819.10
	8	818.63	818.72	818.82	818.91	818.94	818.88	818.78	818.69	818.60
	9	818.13	818.22	818.32	818.41	818.44	818.38	818.28	818.19	818.10
	10	817.63	817.72	817.82	817.91	817.94	817.88	817.79	817.69	817.60
	11	817.13	817.22	817.32	817.41	817.44	817.38	817.29	817.19	817.10
Span 7	1	817.08	817.17	817.27	817.36	817.39	817.33	817.23	817.14	817.05
	2	816.58	816.67	816.77	816.86	816.89	816.83	816.73	816.64	816.55
	3	816.08	816.17	816.27	816.36	816.39	816.33	816.23	816.14	816.05
	4	815.58	815.67	815.77	815.86	815.89	815.83	815.73	815.64	815.55
	5	815.08	815.17	815.27	815.36	815.39	815.33	815.23	815.14	815.05
	6	814.58	814.67	814.77	814.86	814.89	814.83	814.73	814.64	814.55
	7	814.08	814.17	814.27	814.36	814.39	814.33	814.23	814.14	814.05
	8	813.58	813.67	813.77	813.86	813.89	813.83	813.73	813.64	813.55
	9	813.08	813.17	813.27	813.36	813.39	813.33	813.23	813.14	813.05
	10	812.58	812.67	812.77	812.86	812.89	812.83	812.73	812.64	812.55
	11	812.08	812.17	812.27	812.36	812.39	812.33	812.23	812.14	812.05
Span 8	1	812.03	812.12	812.22	812.31	812.34	812.28	812.18	812.09	812.00
	2	811.53	811.62	811.72	811.81	811.84	811.78	811.68	811.59	811.50
	3	811.03	811.12	811.22	811.31	811.34	811.28	811.18	811.09	811.00
	4	810.53	810.62	810.72	810.81	810.84	810.78	810.69	810.59	810.50
	5	810.03	810.12	810.22	810.31	810.34	810.28	810.19	810.09	810.00
	6	809.53	809.62	809.72	809.81	809.84	809.78	809.69	809.59	809.50
	7	809.03	809.12	809.22	809.31	809.34	809.28	809.19	809.09	809.00
	8	808.53	808.62	808.72	808.81	808.84	808.78	808.69	808.59	808.50
	9	808.03	808.12	808.22	808.31	808.34	808.28	808.19	808.09	808.00
	10	807.53	807.62	807.72	807.81	807.84	807.78	807.69	807.59	807.50
	11	807.03	807.12	807.22	807.31	807.34	807.28	807.19	807.09	807.00

SPANS 12 AND 13

	Girder	Bearing	.2	.4	.5	.6	.8	Bearing
Span 12	Gutter	793.92	793.62	793.33	793.19	793.05	792.90	792.55
	J	793.94	793.62	793.32	793.18	793.05	792.81	792.60
	K	793.44	793.12	792.82	792.68	792.55	792.31	792.10
	L	792.94	792.62	792.32	792.18	792.05	791.81	791.60
	M	792.44	792.12	791.82	791.68	791.55	791.31	791.10
	N	791.94	791.62	791.32	791.18	791.05	790.81	790.60
	P	791.44	791.12	790.82	790.68	790.55	790.32	790.10
	R	790.94	790.62	790.32	790.18	790.05	789.82	789.60
	S	790.44	790.12	789.82	789.68	789.55	789.32	789.10
	Gutter	790.42	790.12	789.83	789.69	789.56	789.30	789.05
Span 13	Gutter	792.52	792.30	792.09	791.99	791.89	789.71	791.55
	J	792.55	792.29	792.07	791.97	791.88	791.71	791.58
	K	792.05	791.79	791.57	791.47	791.38	791.21	791.08
	L	791.55	791.29	791.07	790.97	790.88	790.71	790.58
	M	791.05	790.79	790.57	790.47	790.38	790.21	790.08
	N	790.55	790.29	790.07	789.97	789.88	789.71	789.58
	P	790.05	789.79	789.57	789.47	789.38	789.21	789.08
	R	789.55	789.29	789.07	788.97	788.88	788.71	788.58
	S	789.05	788.79	788.57	788.47	788.38	788.21	788.08
	Gutter	789.02	788.80	788.59	788.49	788.39	788.21	788.05

SPANS 9,10 AND 11

	Stringer / Floorbeam	Gutter	J	K	L	M	Lane Line	N	P	R	S	Gutter
Span 9	1	806.98	806.98	807.07	807.16	807.26	807.29	807.23	807.14	807.04	806.95	806.95
	2	806.58	806.58	806.64	806.71	806.77	806.79	806.73	806.64	806.54	806.45	806.45
	3	806.19	806.19	806.22	806.25	806.28	806.29	806.23	806.14	806.04	806.95	806.95
	4	805.79	805.79	805.79	805.79	805.79	805.79	805.73	805.64	805.54	805.45	805.45
	5	805.38	805.38	805.35	805.32	805.30	805.29	805.23	805.14	805.05	804.95	804.95
	6	804.98	804.98	804.91	804.86	804.81	804.79	804.73	804.64	804.54	804.45	804.45
	7	804.54	804.54	804.47	804.39	804.31	804.29	804.23	804.13	804.04	803.95	803.94
	8	804.12	804.13	804.03	804.92	803.82	803.79	803.72	803.62	803.52	803.42	803.42
	9W	803.71	803.71	803.59	803.46	803.33	803.29	803.21	803.08	802.95	802.83	802.82
	9E	803.71	803.70	803.58	803.45	803.32	803.29	803.20	803.07	802.94	802.82	802.82
	10	803.29	803.29	803.14	802.99	802.83	802.78	802.68	802.53	802.38	802.23	802.23
	11	802.87	802.88	802.70	802.53	802.35	802.28	802.17	802.00	801.82	801.65	801.64
Span 10	1	802.82	802.84	802.65	802.48	802.30	802.23	802.12	801.94	801.76	801.58	801.57
	2	802.80	802.39	802.19	801.99	801.79	801.73	801.59	801.39	801.18	800.98	800.99
	3W	801.98	801.96	801.73	801.50	801.28	801.22	801.05	800.82	800.59	800.37	800.39
	3E	801.98	801.98	801.75	801.52	801.29	801.22	801.07	800.84	800.61	800.38	800.39
	4	801.56	801.55	801.29	801.04	800.79	800.72	800.53	800.28	800.03	799.77	799.79
	5W	801.14	801.12	800.84	800.56	800.28	800.21	800.00	799.72	799.44	799.17	799.19
	5E	801.14	801.14	800.85	800.58	800.30	800.21	800.02	799.74	799.47	799.19	799.19
	6	800.72	800.72	800.42	800.11	799.81	799.71	799.50	799.20	798.89	798.59	798.53
	7W	800.30	800.31	799.98	799.65	799.32	799.20	798.99	798.66	798.33	797.99	797.99
	7E	800.30	800.27	799.94	799.61	799.28	799.20	798.95	798.62	798.29	797.96	797.99
	8	799.89	799.88	799.52	799.16	798.80	798.70	798.45	798.09	797.73	797.37	797.38
	9W	799.47	799.49	799.11	798.72	798.34	798.19	797.95	797.57	797.19	796.81	796.78
	9E	799.47	799.43	799.05	798.67	798.28	798.19	797.90	797.52	797.13	796.75	796.78
	10W	799.05	799.06	798.65	798.24	797.83	797.68	797.43	797.01	796.60	796.19	796.18
	10E	799.05	799.00	798.60	798.19	797.78	797.68	797.37	796.96	796.55	796.14	796.18
	11	798.63	798.68	798.21	797.78	797.35	797.18	796.91	796.48	796.05	795.62	795.60
Span 11	1	798.57	798.61	798.18	797.75	797.31	797.13	796.88	796.44	796.00	795.57	795.53
	2W	798.13	798.08	797.63	797.17	796.72	796.62	796.27	795.81	795.36	794.90	794.96
	2E	798.13	798.15	797.70	797.25	796.80	796.62	796.35	795.89	795.44	794.98	794.96
	3W	797.71	797.66	797.18	796.70	796.22	796.12	795.74	795.26	794.78	794.10	794.35
	3E	797.71	797.72	794.24	796.76	796.29	796.12	795.81	795.32	794.84	794.36	794.35
	4W	797.28	797.21	796.71	796.22	795.73	795.61	795.23	794.73	794.23	793.73	793.78
	4E	797.28	797.25	796.75	796.26	795.76	795.61	795.27	794.77	794.27	793.77	793.78
	5W	796.75	796.71	796.21	795.72	795.22	795.10	794.72	794.22	793.72	793.22	793.26
	5E	796.75	796.75	796.25	795.76	795.26	795.10	794.76	794.26	793.76	793.26	793.26
	6	796.25	796.23	795.73	795.24	794.74	794.59	794.24	793.74	793.23	792.73	792.75
	7W	795.75	795.74	795.25	794.75	794.25	794.09	793.75	793.24	792.74	792.24	792.24
	7E	795.75	795.71	795.21	794.71	794.21	794.09	793.71	793.21	792.70	792.20	792.24
	8W	795.27	795.27	794.77	794.27	793.77	793.61	793.27	792.76	792.26	791.75	791.76
	8E	795.27	795.23	794.73	794.23	793.73	793.61	793.23	792.72	792.22	791.71	791.76
	9W	794.82	794.83	794.33	793.83	793.33	793.16	792.83	792.33	791.82	791.31	791.30
	9E	794.82	794.77	794.27	793.77	793.27	793.16	792.77	792.26	791.75	791.25	791.30
	10W	794.39	794.42	793.92	793.42	792.92	792.72	792.42	791.97	791.40	790.90	790.87
	10E	794.39	794.34	793.84	793.34	792.83	792.72	792.33	791.83	791.32	790.81	790.87
	11	793.97	794.03	793.53	793.03	792.54	792.32	793.02	791.53	791.03	790.52	790.48

Notes:

Pavement elevations are given at the top of concrete.
For Bridge Layout and Framing Plans, see Sheets 24 and 25.
The following abbreviations are used:
P.G.=Profile Grade
E=East
W=West

TRUSS DEFLECTIONS
SPANS 1 THRU 4 AND 6 THRU 11

Floorbeam	1	2	3	4	5	6	7	8	9	10	11
1	0"	-2 1/4"	-1 1/4"	-1 1/4"	-1 3/8"	-1 3/8"	-1 3/8"	-1 1/4"	-1"	-3/4"	0"
2	0"	5/8"	1 3/8"	1 3/8"	1 7/8"	1 7/8"	1 7/8"	1 3/8"	1 3/8"	5/8"	0"
3	0"	5/8"	1 1/4"	1 3/8"	1 7/8"	1 15/16"	1 7/8"	1 3/8"	1 1/4"	5/8"	0"
4	0"	3/8"	1 1/8"	1 3/8"	1 13/16"	1 13/16"	1 13/16"	1 3/8"	1 1/8"	3/8"	0"

TRUSS DEFLECTIONS
SPAN 5

Floorbeam	1	2	3	4	5	6	7	8	9	10	11	12
1	0"	-1/4"	-1/4"	-1/4"	-1/4"	-1 3/8"	-1 3/8"	-1 3/8"	-1 1/4"	-1"	-3/4"	0"
2	0"	5/8"	5/8"	1 3/16"	1 3/8"	1 3/8"	1 3/8"	1 3/8"	1 3/16"	5/8"	5/8"	0"

Notes:

Line 1 denotes upward deflection due to removal of existing deck.
Line 2 denotes downward deflection due to placement of new deck and barrier curb. (Spans 1 thru 9)
Line 3 denotes downward deflection due to placement of new deck and barrier curb. (North Truss, Spans 10 and 11)
Line 4 denotes downward deflection due to placement of new deck and barrier curb. (South Truss, Spans 10 and 11)

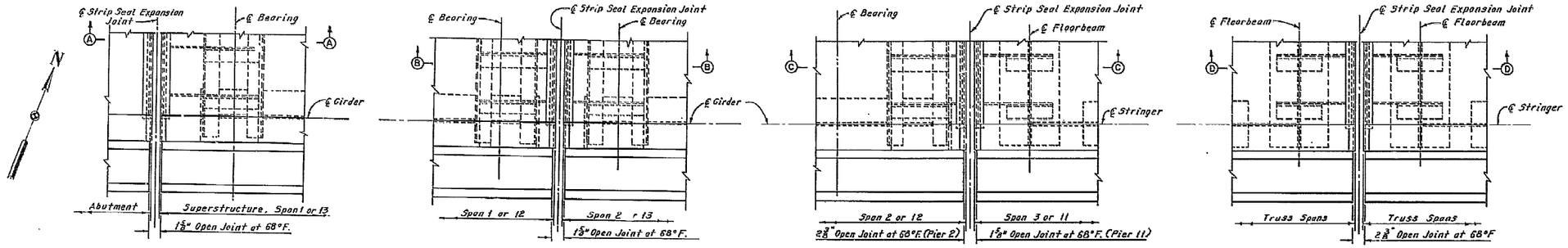
NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

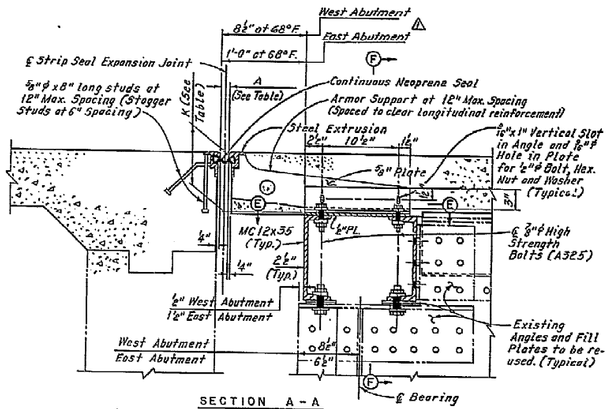
PAVEMENT ELEVATIONS
EASTBOUND BRIDGE
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

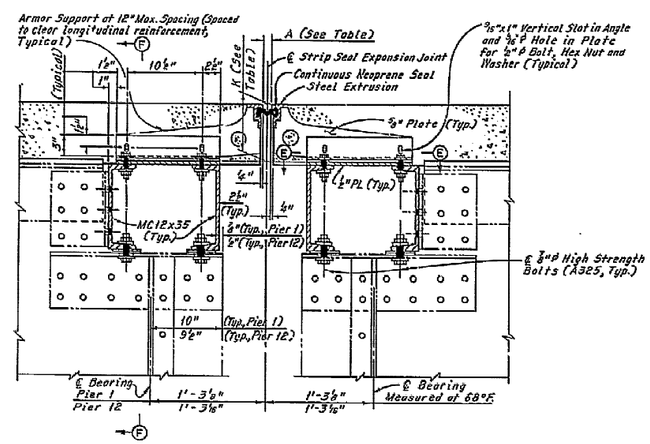
DESIGNED CKB & DHS	CHECKED RPT
DRAWN CKB	IN CHARGE CAB
DATE: 10-28-82	SCALE:
RMP: 43-82-04	SHEET 37 OF 43



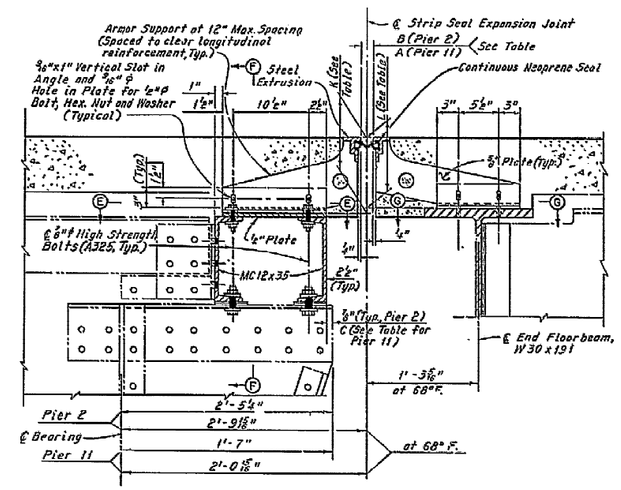
PLANS
Scale: 1" = 1'-0"



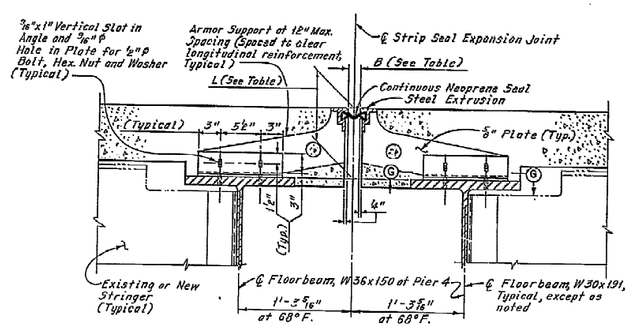
SECTION A-A
(Girders B thru G, Westbound and K thru N, P and R, Eastbound)
Scale: 1½" = 1'-0"



SECTION B-B
(Girders B thru G, Westbound and K thru N, P and R, Eastbound)
Scale: 1½" = 1'-0"



SECTION C-C
(Girders and Stringers B thru G, Westbound and K thru N, P and R, Eastbound)
Scale: 1½" = 1'-0"



SECTION D-D
(Stringers B thru G, Westbound and K thru N, P and R, Eastbound)
Scale: 1½" = 1'-0"

Note:
Acme extrusion and seal shown in Sections A-A, B-B, C-C and D-D, Wabo extrusion and seal, similar. Stay-in-place deck forms, not shown in Sections.

NOT USED ⚠

DIMENSIONS A & B		
Temp.	A	B
30°F	1 3/16"	2 3/16"
40°F	1 3/16"	2 3/16"
50°F	1 1/16"	2 3/16"
60°F	1 1/16"	2"
70°F	1 1/16"	1 15/16"
80°F	1"	1 5/16"
90°F	15/16"	1 5/16"

DIMENSION C		
	Girder	C
Westbound	B	1½"
	C	1½"
	D	1½"
	E	1"
	F	1"
	G	¾"
Eastbound	K	1½"
	L	1½"
	M	1½"
	N	1½"
	P	1½"
	R	1½"

| DIMENSION K
Expansion Joints W. Abutment thru 2			
Westbound Bridge		Eastbound Bridge	
North Lane	South Lane	North Lane	South Lane
9"	9⅜"	9⅜"	9"

| DIMENSION L
Expansion Joints 2 thru 8					
Westbound Bridge			Eastbound Bridge		
North Gutter	Profile Grade	South Gutter	North Gutter	Profile Grade	South Gutter
7¾"	11⅞"	8⅛"	8⅛"	11⅞"	7¾"

| DIMENSION K
Expansion Joints 11 thru E. Abutment		
Expansion Joint	Westbound Bridge	Eastbound Bridge
11	10⅞"	8⅞"
12	10⅞"	8⅞"
E. Abut.	10⅞"	8⅞"

| DIMENSION L
Expansion Joints 9 thru 11		
Expansion Joint	Westbound Bridge	Eastbound Bridge
9	9¼"	8½"
10	9¾"	8"
11	9⅞"	7⅞"

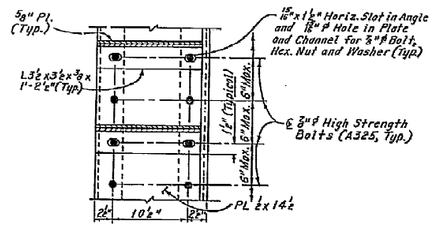
Notes:
———— Indicates existing structure.
Support plates, angles, studs and bolts are included with Item 513, New Structural Steel, for payment.
For Sections E-E, F-F and G-G, Extrusion Support Plate Detail, Expansion Joint Elevations and Barrier Curb Detail, see Sheet 39.
For Bridge Layout and Framing Plan, see Sheets 24 and 25.
For expansion joint channel support details at Girders A and H (Westbound) and Girders J and S (Eastbound), see Sheet 26.

NO.	REVISIONS	BY	DATE
⚠	As Built	K.O.I.	12/85

OHIO TURNPIKE COMMISSION

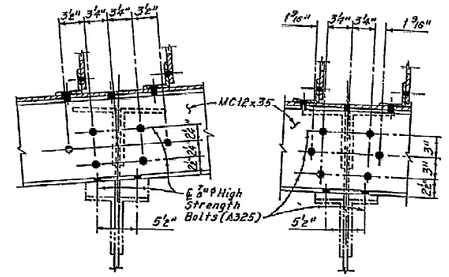
EXPANSION JOINT DETAILS
OHIO TURNPIKE OVER CUYAHOGA RIVER
HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED D.H.S.	CHECKED C.K.B.
DRAWN C.P.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 38 OF 43



SECTION E-E

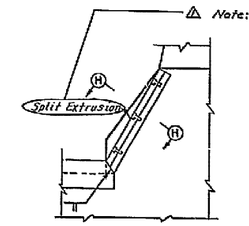
Scale: 1'-2"=1'-0"



EAST ABUTMENT, PIER 11 AND PIER 12 — WEST ABUTMENT, PIER 1 AND PIER 2

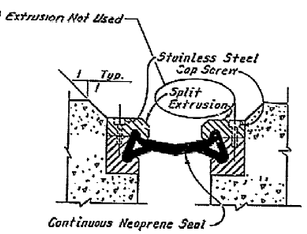
SECTION F-F

Scale: 1'-2"=1'-0"



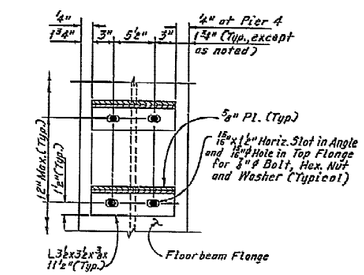
BARRIER CURB DETAIL

No Scale



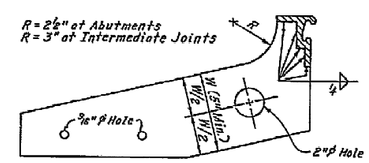
SECTION H-H

No Scale



SECTION G-G

Scale: 1'-2"=1'-0"



EXTRUSION SUPPORT PLATE

No Scale

SEAL STRIP DETAIL

(Acme A5200, Wabo S200 or approved equal at Abutments, Piers 1, 11 and 12 Acme A5400, Wabo S400 or approved equal at Piers 2 thru 10)

No Scale

Note:
Seal Strips Mfg. By The D.S. Brown Co., North Baltimore, Ohio

Note:
For location of Sections E-E, F-F and G-G and additional notes, see Sheet 38.

EXPANSION JOINT ELEVATIONS						
Location	WESTBOUND BRIDGE			EASTBOUND BRIDGE		
	North Gutter	Profile Grade	South Gutter	North Gutter	Profile Grade	South Gutter
West Abut.	841.41	841.76	841.44	841.44	841.76	841.41
Pier 1	839.35	839.70	839.39	839.39	839.70	839.35
Pier 2	837.27	837.62	837.30	837.30	837.62	837.27
Pier 3	832.22	832.57	832.25	832.25	832.57	832.22
Pier 4	827.17	827.52	827.20	827.20	827.52	827.17
Pier 5	822.12	822.47	822.15	822.15	822.47	822.12
Pier 6	817.07	817.42	817.10	817.10	817.42	817.07
Pier 7	812.02	812.37	812.05	812.05	812.37	812.02
Pier 8	806.97	807.32	807.00	807.00	807.32	806.97
Pier 9	802.92	802.28	801.69	802.85	802.26	801.61
Pier 10	798.84	797.28	795.86	798.59	797.15	795.56
Pier 11	794.36	792.53	790.86	793.95	792.29	790.46
Pier 12	792.93	791.09	789.43	792.54	790.87	789.04
East Abut.	791.88	790.03	788.38	791.54	789.87	788.04

Note:
Elevations given are theoretical top of deck at ℄ of Strip Seal Expansion Joint. (See Sheets 36 and 37.)

NO	REVISIONS	BY	DATE
1	As Built	K.D.I.	4-21-83

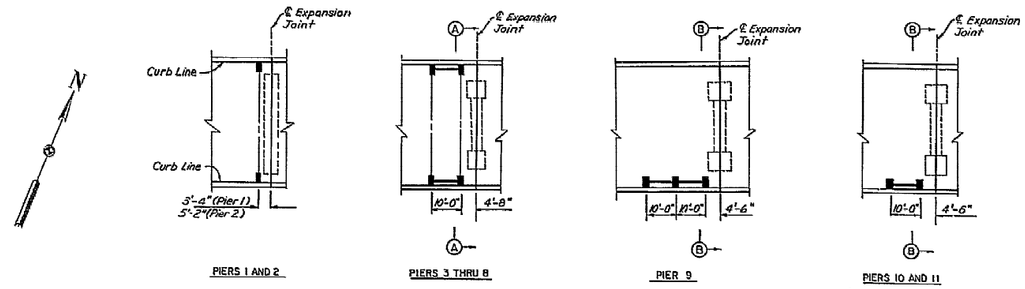
OHIO TURNPIKE COMMISSION

EXPANSION JOINT DETAILS

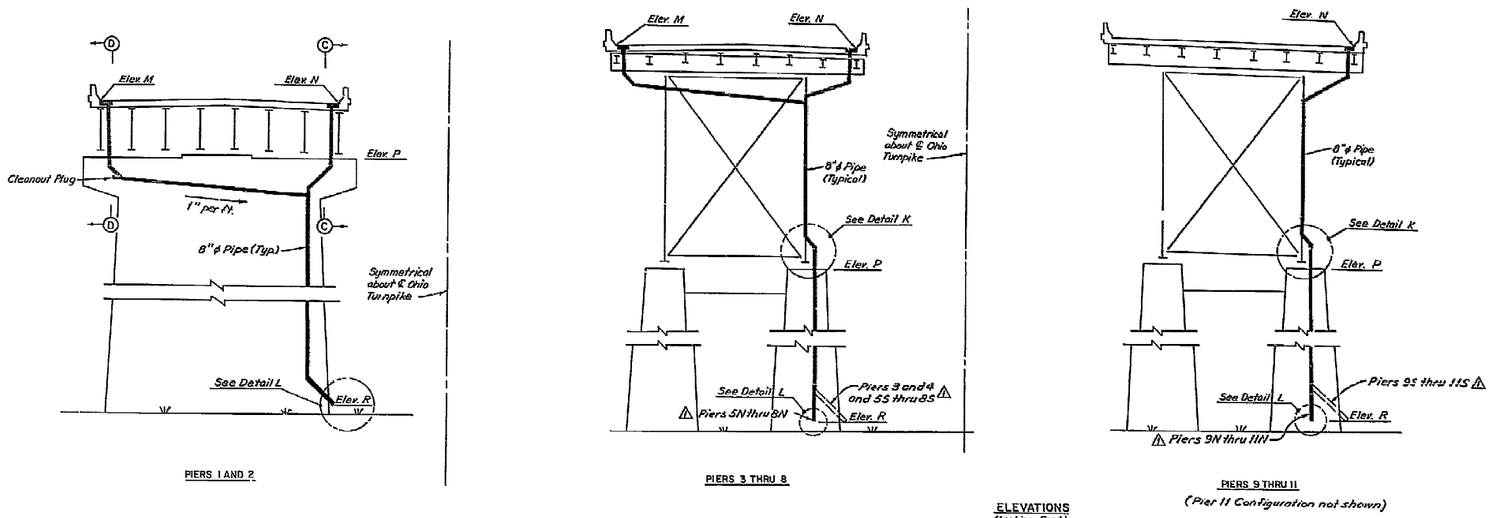
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED D.H.S.	CHECKED C.K.B.
DRAWN C.P.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-82-04	SHEET 39 OF 43



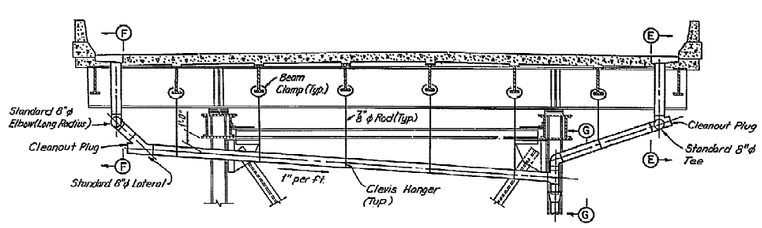
SCUPPER LOCATIONS
Scale: 1" = 20'



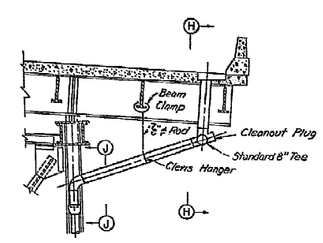
ELEVATIONS
(Looking East)
Scale: 1" = 10'

TABLE OF ELEVATIONS					
ELEVATION		M	N	P	R
EASTBOUND BRIDGE	Pier 1	839.42	839.45	829.79	793 ±
	Pier 2	837.38	837.41	827.14	777 ±
	Pier 3	832.32	832.35	791.15	741 ±
	Pier 4	827.27	827.30	786.11	670 ±
	Pier 5	822.22	822.25	781.05	665 ±
	Pier 6	817.17	817.20	776.00	671 ±
	Pier 7	812.12	812.15	770.95	679 ±
	Pier 8	807.07	807.10	765.90	696 ±
	Pier 9	——	801.71	760.67	691 ±
	Pier 10	——	795.67	754.76	694 ±
	Pier 11	——	790.53	749.73	738 ±
WESTBOUND BRIDGE	Pier 1	839.42	839.45	829.79	793 ±
	Pier 2	837.38	837.41	827.74	773 ±
	Pier 3	832.32	832.35	791.15	741 ±
	Pier 4	827.27	827.30	786.11	665 ±
	Pier 5	822.22	822.25	781.05	665 ±
	Pier 6	817.17	817.20	776.00	671 ±
	Pier 7	812.12	812.15	770.95	679 ±
	Pier 8	807.07	807.10	765.90	696 ±
	Pier 9	——	801.80	760.69	691 ±
	Pier 10	——	795.97	754.90	694 ±
	Pier 11	——	790.93	750.03	723 ±

Note: Elevations M & N shown are for the first scupper adjacent to pier.



SECTION A-A
Scale: 1/4" = 1'-0"



SECTION B-B
Scale: 1/4" = 1'-0"

Notes:
For Sections C-C, D-D, E-E, F-F, G-G, H-H and J-J, see Sheet 41.
For scupper and pipe support details, see Sheet 41.

NO	REVISIONS	BY	DATE
1	As Built	K.D.J.	1/12/85

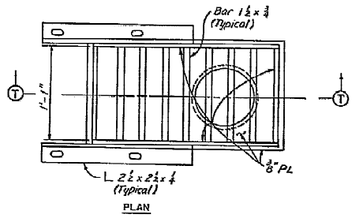
OHIO TURNPIKE COMMISSION

DRAINAGE DETAILS

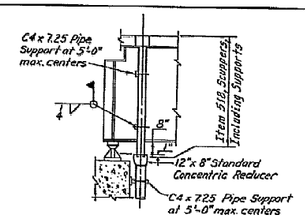
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

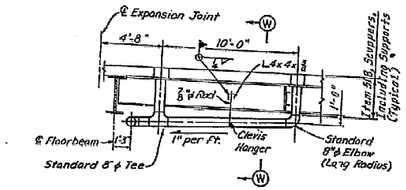
DESIGNED C.K.B.	CHECKED D.H.S.
DRAWN C.K.B.	IN CHARGE C.A.B.
DATE: 10-28-82	SCALE: As Shown
RMP: 43-02-04	SHEET 40 OF 43



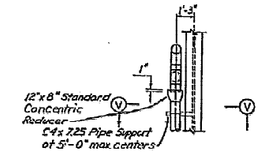
PLAN



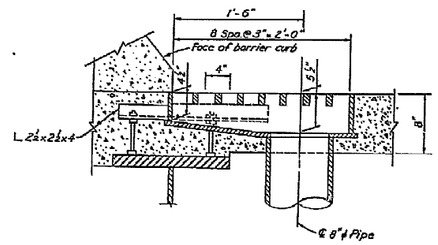
SECTION C-C
(Section D-D, Similar)
Scale: ¼" = 1'-0"



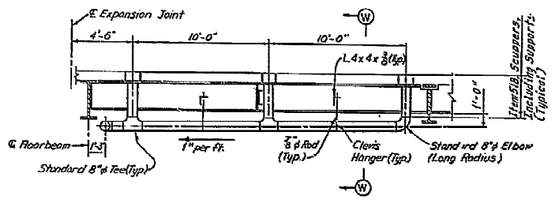
SECTION E-E
SECTION H-H (PIERS 10 AND 11)
(Section F-F, Similar)
Scale: ¼" = 1'-0"



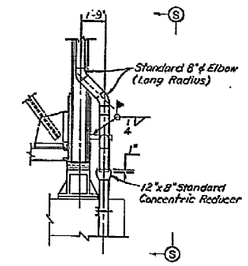
SECTION G-G
(Section J-J similar)
Scale: ¼" = 1'-0"



SECTION T-T
(Stay-in-place form not shown)
SCUPPER
Scale: 1½" = 1'-0"
(For additional scupper details, see Ohio Standard Drawing SD-1-69, Sheet 3 of 4.)



SECTION H-H
(Pier 9)
Scale: ¼" = 1'-0"



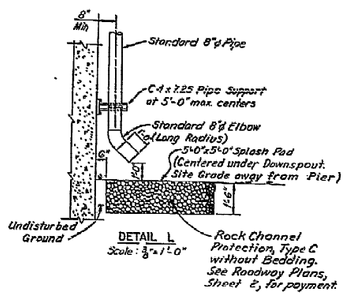
DETAIL K
Scale: ¼" = 1'-0"

DRAINAGE NOTES:

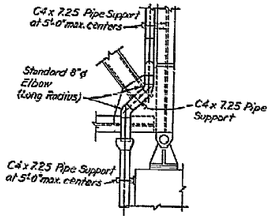
THE SCUPPERS AND SCUPPER SUPPORTS SHALL BE HOT-DIPPED GALVANIZED LOW OR MILD CARBON STEEL AVAILABLE COMMERCIALLY. THIS MATERIAL WILL BE EXCLUDED FROM THE REQUIREMENTS OF 501.07 FOR TEST REPORTS. THE 8-IN. ϕ PIPES INCLUDING SPECIALS SHALL MEET THE REQUIREMENTS OF 711.29. EXPANSION FITTINGS SHALL BE PROVIDED AS REQUIRED TO ACCOMMODATE THE THERMAL MOVEMENT OF THE PLASTIC PIPE. JOINTS SHALL BE MADE IN ACCORDANCE WITH THE PERTINENT ASTM SPECIFICATION. SUPPORT MATERIAL FOR ATTACHING PIPES SHALL BE ASTM A36 AND SHALL BE PAINTED IN ACCORDANCE WITH SP514.

THE SCUPPER ANGLES ARE INCLUDED W..H ITEM 518, SCUPPERS INCLUDING SUPPORTS, FOR PAYMENT.

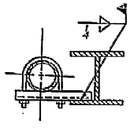
THE 8-IN. ϕ PIPE INCLUDING FITTINGS, SUPPORTS AND ACCESSORIES SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM 518, 8-IN. ϕ STANDARD PIPE DOWNSPOUTS, PLASTIC PIPE 711.29, INCLUDING FITTINGS SUPPORTS AND ACCESSORIES.



DETAIL L
Scale: ⅜" = 1'-0"

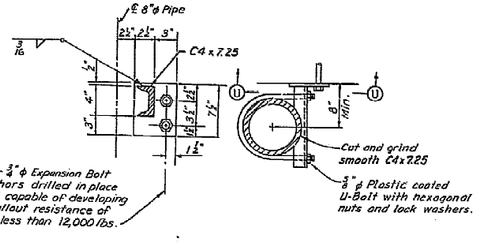


VIEW S-S
Scale: ¼" = 1'-0"



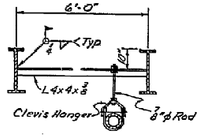
SECTION V-V
(For additional details, see "Pipe Support on Substructure")

Notes:
For location of Sections C-C, D-D, E-E, F-F, G-G, H-H and J-J, see Sheet 40.



SECTION U-U PLAN

PIPE SUPPORT ON SUBSTRUCTURE
No Scale



SECTION W-W
Scale: ⅜" = 1'-0"

NO	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

DRAINAGE DETAILS

OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED	C.K.B.	CHECKED	D.H.S.
DRAWN	C.K.B.	IN CHARGE	C.A.B.
DATE:	10-28-82	SCALE:	As Shown
RMP:	43-82-04	SHEET	41 OF 43

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
WEST ABUTMENT					
NON-EPOXY COATED					
WA401	8	2'-6"	Str.		13
WA402	4	4'-6"	124		12
WA403	12	2'-10"	105		23
WA501	62	4'-0"	Str.		259
WA502	28	5'-9"	Str.		168
WA503	28	4'-9"	Str.		139
WA504	12	19'-10"	109		248
WA505	8	11'-8"	109		97
WA506	6	9'-5"	105		59
WA507	32	5'-1"	101		170
WA508	8	22'-9"	Str.		190
WA509	4 Ser. 5	6'-0" / 18'-0"	Str.	3'-0"	250
WA510	46	5'-10"	105		280
WA511	2 Ser. 21	4'-0" / 3'-9"	Str.	5 3/4"	389
WA512	2 Ser. 21	3'-9" / 15'-4"	104	5 3/4"	374
WA513	42	6'-4"	105		277
WA514	4	10'-5"	104		43
WA515	4	11'-0"	Str.		46
WA516	12	9'-3"	Str.		116
WA517	52	24'-0"	Str.		1,302
WA518	37	42'-9"	Str.		1,650
WA801	16	7'-9"	Str.		331
WA802	16	4'-9"	Str.		203
WA803	23	3'-1"	147		189
WA804	6	4'-7"	107		73
WA901	8	9'-9"	104		265
WA902	8	22'-0"	Str.		598
WA903	8	11'-6"	101		313
WA904	8	25'-0"	Str.		680
		TOTAL WEIGHT =			8757

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
EPOXY COATED					
EWA476	58	24'-0"	Str.		930
EWA576	18	2'-8"	101		50
EWA577	18	4'-9"	Str.		89
EWA578	34	5'-3"	160		186
EWA579	34	3'-6"	Str.		124
EWA580	16	22'-3"	Str.		371
EWA581	16	4'-6"	Str.		75
EWA582	8	4'-9"	104		40
EWA583	8	5'-3"	104		44
EWA584	6	3'-8"	162		23
EWA585	2 Ser. 6	3'-8" / 5'-10"	162	3/8"	47
EWA586	34	3'-10"	162		136
EWA776	25	42'-9"	Str.		2,185
EWA777	12	10'-0"	Str.		245
		TOTAL WEIGHT =			4,545

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
EAST ABUTMENT					
NON-EPOXY COATED					
EA403	12	2'-10"	105		23
EA501	78	4'-0"	Str.		325
EA502	26	5'-6"	Str.		149
EA503	22	5'-9"	Str.		132
EA504	18	4'-6"	Str.		84
EA505	16	4'-9"	Str.		79
EA506	1	15'-9"	109		16
EA507	1 Ser. 3	15'-9" / 15'-4"	109	2"	47
EA508	1 Ser. 3	9'-3" / 9'-6"	109	2"	29
EA509	1	8'-10"	109		9
EA510	8	9'-5"	105		79
EA511	4	21'-7"	105		90
EA512	4	14'-7"	105		61
EA514	4	11'-0"	Str.		46
EA515	4	10'-7"	104		44
EA516	52	5'-10"	105		316
EA517	52	24'-0"	Str.		1,302
EA518	37	42'-9"	Str.		1,650
EA519	12	9'-6"	Str.		119
EA520	40	5'-1"	101		212
EA521	12	22'-0"	Str.		285
EA522	4 Ser. 6	5'-3" / 16'-6"	Str.	2'-7 1/2"	297
EA523	1 Ser. 21	6'-3" / 16'-6"	Str.	6 1/4"	249
EA524	1 Ser. 21	6'-0" / 16'-3"	104	6 1/4"	244

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
EA525	42	6'-4"	105		277
EA526	3	6'-3"	Str.		20
EA527	3	2'-9"	Str.		9
EA528	1 Ser. 21	2'-9" / 13'-0"	Str.	6 1/4"	172
EA529	1 Ser. 21	2'-6" / 12'-9"	104	6 1/4"	167
EA601	8	23'-11"	109		287
EA602	16	7'-0"	Str.		169
EA801	16	7'-9"	Str.		331
EA802	8	4'-9"	Str.		101
EA803	23	3'-1"	147		189
EA804	8	4'-7"	107		98
EA805	8	4'-6"	Str.		96
EA901	8	9'-9"	104		265
EA902	8	22'-0"	Str.		598
EA903	8	10'-3"	101		290
EA904	9	25'-0"	Str.		680
		TOTAL WEIGHT =			9,635

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
EPOXY COATED					
EEA476	58	24'-0"	Str.		930
EEA576	18	2'-8"	101		50
EEA577	18	4'-9"	Str.		89
EEA578	34	5'-3"	160		186
EEA579	34	3'-6"	Str.		124
EEA580	16	22'-3"	Str.		371
EEA581	16	4'-6"	Str.		75
EEA582	8	4'-9"	104		40
EEA583	8	5'-3"	104		44
EEA584	6	3'-8"	162		23
EEA585	2 Ser. 6	3'-8" / 5'-10"	162	3/8"	47
EEA586	34	3'-10"	162		136
EEA776	25	42'-9"	Str.		2,185
EEA777	12	10'-0"	Str.		245
		TOTAL WEIGHT =			4,545

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
PIER I					
PA501	2 Ser. 5	18'-3" / 21'-3"	170	8"	209
PA502	8	8'-6"	108		71
PA503	2	6'-0"	105		13
PA504	2	13'-6"	144		28
PA505	8	19'-11"	171		166
PA506	16	6'-0"	105		100
PA507	12	6'-10"	105		86
PA509	2	21'-9"	170		45
PA1101	12	33'-4"	104		2,125
PA1102	4	15'-5"	104		328
		TOTAL WEIGHT =			3,171

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
PIER 2					
PB501	2 Ser. 5	18'-3" / 21'-3"	170	8"	169
PB502	6	8'-6"	108		53
PB503	2	4'-1"	105		9
PB504	10	3'-0"	Str.		31
PB505	2	10'-4"	144		22
PB506	8	16'-10"	171		140
PB507	16	4'-0"	105		67
PB508	12	4'-5"	105		55
PB509	2	17'-11"	170		37
PB1101	8	33'-4"	104		1,417
PB1102	2	15'-5"	104		164
		TOTAL WEIGHT =			2,164

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
PIER II					
PC501	1 Ser. 5	15'-9" / 18'-3"	170	10"	80
PC502	6	8'-6"	108		53
PC503	2	4'-1"	105		9

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
PC504	11	3'-0"	Str.		34
PC505	2	10'-4"	144		22
PC506	9	16'-10"	171		158
PC507	1 Ser. 5	15'-2" / 17'-7"	170	6"	86
PC508	8	7'-5"	104		62
PC509	16	4'-0"	105		67
PC510	12	4'-7"	105		57
PC511	1	17'-7"	170		18
PC512	1	17'-3"	170		18
PC1101	4	33'-8"	108		715
PC1102	1	14'-8"	108		78
PC1103	4	34'-11"	148		742
PC1104	1	15'-11"	148		85
		TOTAL WEIGHT =			2,284

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
PIER 12					
PD501	1 Ser. 5	18'-3" / 21'-3"	170	6"	107
PD502	8	8'-6"	108		71
PD503	2	6'-0"	105		13
PD504	2	13'-6"	144		28
PD505	9	19'-11 1/2"	171		187
PD506	1 Ser. 5	17'-3" / 20'-11"	170	10"	100
PD507	10	6'-6"	104		68
PD508	16	6'-0"	105		100
PD509	18	6'-6"	105		122
PD510	1	21'-7"	170		23
PD511	1	21'-3"	170		22
PD1101	6	34'-0"	148		1,094
PD1102	2	15'-11"	148		160
PD1103	6	32'-9"	108		1,044
PD1104	2	14'-8"	108		156
		TOTAL WEIGHT =			3,294

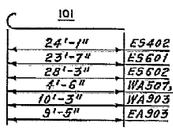
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
SUPERSTRUCTURE					
NON-EPOXY COATED					
S501	4047	20'-3"	Str.		85,476
S502	4047	26'-3"	Str.		110,802
S503	3444	30'-0"	Str.		107,763
S504	156	19'-3"	Str.		3,132
S505	372	29'-3"	Str.		11,349
		TOTAL WEIGHT =			318,522

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
EPOXY COATED					
ES401	3337	30'-0"	Str.		66,873
ES402	282	24'-7"	101		4,631
ES403	3888	10'-0"	Str.		25,972
ES506	4064	2'-3"	104		8,537
ES507	4064	3'-0"	142		12,716
ES508	4064	5'-3"	160		22,253
ES509	672	30'-0"	Str.		21,027
ES510	32	19'-3"	Str.		642
ES511	72	20'-3"	Str.		2,197
ES512	1392	14'-6"	Str.		21,052
ES513	56	14'-3"	Str.		832
ES601	8280	24'-3"	101		301,587
ES602	1674	28'-11"	101		72,707
		TOTAL WEIGHT =			562,026

BAR BENDING DIAGRAMS

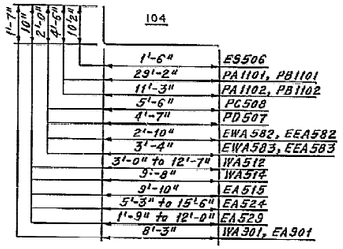
101

24'-1"	ES402
23'-7"	ES601
28'-3"	ES602
5'-6"	WA507, EA520
10'-3"	WA903
9'-5"	EA903

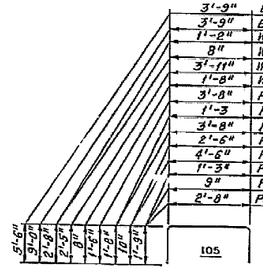


104

1'-6"	ES506
29'-2"	PA1101, PB1101
11'-3"	PA1102, PB1102
5'-6"	PC508
4'-7"	PD507
2'-10"	EWA582, EEA582
3'-4"	EWA583, EEA583
3'-0" to 12'-7"	WA512
3'-8"	WA514
9'-10"	EA515
5'-3" to 15'-6"	EA524
1'-9" to 12'-0"	EA523
8'-3"	WA301, EA301



3'-9"	EA512
3'-9"	EA511
1'-2"	WA513, EA525
8"	WA510, EA516
3'-11"	WA506, EA510
1'-8"	WA403, EA403
3'-8"	PD509
1'-3	PB508
3'-8"	PA507
2'-6"	PB507, PC509
4'-6"	PA506, PD508
1'-3"	PC510
9"	PB503, PC503
2'-8"	PA503, PD503



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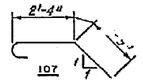
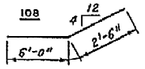


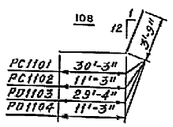
107

108



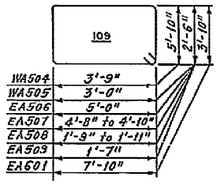
108

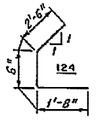
PC1101	30'-3"
PC1102	11'-3"
PD1103	29'-4"
PD1104	11'-3"



109

WA504	3'-9"
WA505	3'-0"
EA506	5'-0"
EA507	4'-8" to 4'-10"
EA508	1'-9" to 1'-11"
EA509	1'-7"
EA601	7'-10"





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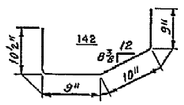
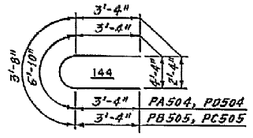
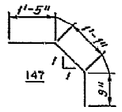
142





144

3'-4"	PA504, PD504
3'-4"	PB505, PC505



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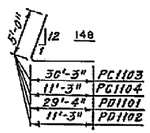
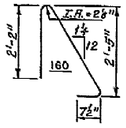


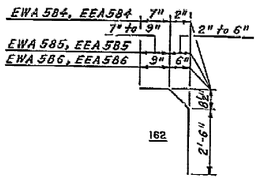
148

30'-3"	PC1103
11'-3"	PC1104
29'-4"	PD1101
11'-3"	PD1102

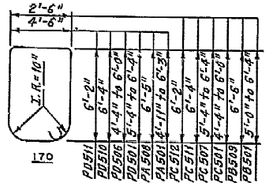


160

EWA 584, EEA584 , 7", 2"
7" to 9"
EWA 585, EEA585 — 2" to 6"
EWA 586, EEA586 — 9", 6"



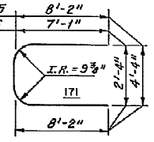
162



170

PB511	6'-2"
PD510	6'-4"
PD516	4'-4" to 6'-9"
PD501	5'-4" to 8'-4"
PA508	6'-5"
PA501	6'-11" to 6'-3"
PC512	6'-2"
PC511	6'-4"
PC507	5'-4" to 6'-4"
PC501	6'-4" to 6'-9"
PB509	6'-6"
PB501	5'-0" to 6'-4"

PA505, PD505 — 8'-2"
PB506, PC506 — 7'-1"



171

REINFORCING STEEL SAMPLES

Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

NO	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

REINFORCEMENT SCHEDULE
WESTBOUND BRIDGE
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED RPT	CHECKED CKB
DRAWN RPT	IN CHARGE CAB
DATE: 10-28-82	SCALE:
RMP: 43-82-04	SHEET 42 OF 43

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
WEST ABUTMENT					
NON-EPOXY COATED					
WA401	8	2'-6"	Str.		13
WA402	4	4'-6"	124		12
WA403	12	2'-10"	105		23
WA501	62	4'-0"	Str.		259
WA502	26	5'-9"	Str.		168
WA503	28	4'-9"	Str.		139
WA504	12	19'-10"	109		248
WA505	8	11'-8"	109		97
WA506	6	9'-5"	105		59
WA507	32	5'-1"	101		170
WA509	8	20'-9"	Str.		190
WA509	4 Ser. 5	6'-0" - 18'-0"	Str.	3'-0"	250
WA510	46	5'-10"	105		280
WA511	2 Ser. 21	4'-0" - 3'-6"	Str.	1/8"	389
WA512	2 Ser. 21	3'-3" - 13'-6"	104	5 1/2"	374
WA513	42	6'-4"	105		277
WA514	4	10'-5"	104		43
WA515	4	11'-3"	Str.		46
WA516	12	9'-3"	Str.		116
WA517	52	24'-0"	Str.		1,302
WA518	37	42'-9"	Str.		1,650
WA801	16	7'-9"	Str.		331
WA802	16	4'-9"	Str.		203
WA803	23	3'-1"	147		189
WA804	6	4'-7"	107		73
WA901	8	9'-9"	104		265
WA902	8	22'-0"	Str.		598
WA903	8	11'-5"	101		313
WA904	8	25'-0"	Str.		680
		TOTAL WEIGHT =			8757

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
EPOXY COATED					
EWA476	58	24'-0"	Str.		930
EWA576	18	2'-8"	101		50
EWA577	18	4'-9"	Str.		89
EWA578	34	5'-3"	160		186
EWA579	34	3'-6"	Str.		124
EWA580	16	22'-3"	Str.		371
EWA581	16	4'-6"	Str.		75
EWA582	8	4'-9"	104		40
EWA583	8	5'-3"	104		44
EWA584	6	3'-8"	162		23
EWA585	2 Ser. 6	3'-8" - 3'-10"	162	1/8"	47
EWA586	34	3'-10"	162		136
EWA776	25	42'-9"	Str.		2,185
EWA777	12	10'-0"	Str.		245
		TOTAL WEIGHT =			4,545

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
EAST ABUTMENT					
NON-EPOXY COATED					
EA401	4	3'-9"	Str.		10
EA402	3	4'-6"	124		9
EA403	12	2'-10"	105		23
EA501	66	4'-0"	Str.		275
EA502	20	5'-6"	Str.		115
EA503	16	5'-9"	Str.		96
EA504	18	4'-6"	Str.		84
EA505	16	4'-9"	Str.		79
EA506	1	15'-4"	109		16
EA507	1 Ser. 3	14'-3" - 18'-6"	109	2"	46
EA508	1 Ser. 3	6'-10" - 9'-2"	109	2"	28
EA509	1	8'-6"	109		9
EA510	4	9'-5"	105		39
EA511	10	9'-0"	Str.		94
EA512	10	7'-7"	105		79
EA513	10	5'-6"	Str.		57
EA514	4	11'-0"	Str.		46
EA515	4	10'-7"	104		45
EA516	52	5'-10"	105		316
EA517	52	24'-0"	Str.		1,302
EA518	37	42'-9"	Str.		1,650
EA519	12	9'-6"	Str.		119
EA520	38	5'-1"	101		201
EA521	10	22'-9"	Str.		237

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS.)
EA522	4 Ser. 6	5'-3" - 18'-6"	Str.	2 1/2"	297
EA523	1 Ser. 21	4'-0" - 14'-3"	Str.	6 1/2"	244
EA524	1 Ser. 21	3'-9" - 16'-0"	104	6 1/2"	238
EA525	42	6'-4"	105		277
EA526	3	6'-0"	Str.		19
EA527	3	2'-9"	Str.		9
EA528	1 Ser. 21	2'-6" - 12'-5"	Str.	6 1/2"	167
EA529	1 Ser. 21	2'-3" - 12'-6"	104	6 1/2"	161
EA601	10	19'-2"	112		288
EA801	16	7'-9"	Str.		331
EA802	8	4'-9"	Str.		101
EA803	23	3'-1"	147		189
EA804	6	4'-7"	107		73
EA805	8	4'-6"	Str.		96
EA901	8	9'-9"	104		265
EA902	8	22'-0"	Str.		598
EA903	8	10'-8"	101		290
EA904	8	25'-0"	Str.		680
		TOTAL WEIGHT =			9,298

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
EPOXY COATED					
EEA476	58	24'-0"	Str.		930
EEA576	18	2'-8"	101		50
EEA577	18	4'-9"	Str.		89
EEA578	34	5'-3"	160		186
EEA579	34	3'-6"	Str.		124
EEA580	16	22'-3"	Str.		371
EEA581	16	4'-6"	Str.		75
EEA582	8	4'-9"	104		40
EEA583	8	5'-3"	104		44
EEA584	6	3'-8"	162		23
EEA585	2 Ser. 6	3'-8" - 3'-10"	162	1/8"	47
EEA586	34	3'-10"	162		136
EEA776	25	42'-9"	Str.		2,185
EEA777	12	10'-0"	Str.		245
		TOTAL WEIGHT			4,545

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
PIER I					
PA501	2 Ser. 5	18'-3" - 23'-5"	170	8"	209
PA502	8	8'-6"	109		71
PA503	2	6'-0"	105		13
PA504	2	13'-6"	144		28
PA505	8	19'-11"	171		166
PA506	16	6'-0"	105		100
PA507	12	6'-10"	105		86
PA509	2	21'-9"	170		45
PA1101	12	33'-4"	104		2,125
PA1102	4	15'-5"	104		328
		TOTAL WEIGHT =			3,171

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
PIER 2					
PB501	2 Ser. 5	14'-11" - 19'-2"	170	8"	169
PB502	6	8'-6"	109		53
PB503	2	4'-7"	105		9
PB504	10	3'-0"	Str.		37
PB505	2	10'-4"	144		22
PB506	8	16'-10"	171		140
PB507	16	4'-0"	105		67
PB508	12	4'-5"	105		55
PB509	2	17'-11"	170		37
PB1101	8	33'-4"	104		1,417
PB1102	2	15'-5"	104		164
		TOTAL WEIGHT =			2,164

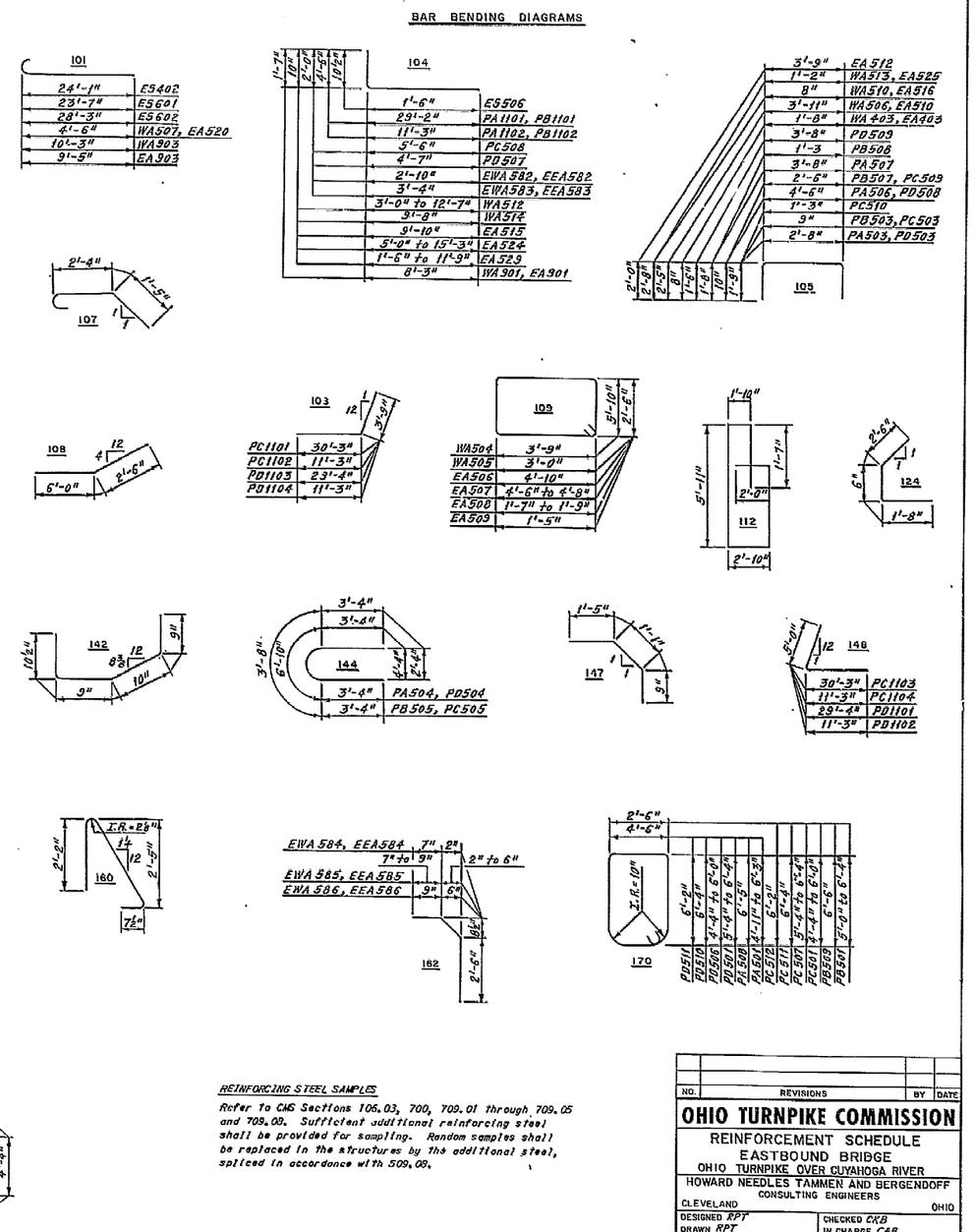
MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
PIER 11					
PC501	1 Ser. 5	13'-2" - 15'-11"	170	10"	80

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
PC502	6	8'-6"	109		53
PC503	2	4'-7"	105		9
PC504	11	3'-0"	Str.		34
PC505	2	10'-4"	144		22
PC506	9	16'-10"	171		158
PC507	1 Ser. 5	15'-2" - 17'-7"	170	6"	86
PC508	8	7'-5"	104		62
PC509	16	4'-0"	105		67
PC510	12	4'-7"	105		57
PC511	1	17'-7"	170		18
PC512	1	17'-3"	170		18
PC1101	4	33'-8"	109		715
PC1102	1	14'-8"	109		78
PC1103	4	34'-11"	109		742
PC1104	1	15'-11"	109		85
		TOTAL WEIGHT =			2,284

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
PIER 12					
PD501	1 Ser. 5	19'-2" - 22'-5"	170	6"	107
PD502	8	8'-6"	109		71
PD503	2	6'-0"	105		13
PD504	2	13'-6"	144		28
PD505	9	19'-11"	171		187
PD506	1 Ser. 5	17'-2" - 20'-11"	170	10"	100
PD507	10	6'-6"	104		68
PD508	16	6'-0"	105		100
PD509	18	6'-6"	105		122
PD510	1	21'-7"	170		23
PD511	1	21'-3"	170		22
PD1101	6	34'-0"	148		1,094
PD1102	2	15'-11"	148		169
PD1103	6	32'-9"	109		1,044
PD1104	2	14'-8"	109		156
		TOTAL WEIGHT =			3,294

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
SUPERSTRUCTURE					
NON-EPOXY COATED					
SS01	4047	20'-3"	Str.		85,476
SS02	4047	26'-3"	Str.		110,802
SS03	3444	30'-0"	Str.		107,763
SS04	156	19'-3"	Str.		3,132
SS05	372	29'-3"	Str.		11,349
		TOTAL WEIGHT =			318,522

MARK	NO.	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)
EPOXY COATED					
ES401	3337	30'-0"	Str.		66,873
ES402	282	28'-7"	101		4,631
ES403	3888	10'-0"	Str.		25,972
ES506	4054	2'-3"	104		9,537
ES507	4054	3'-0"	142		12,716
ES508	4054	5'-3"	160		22,253
ES509	672	30'-0"	Str.		21,027
ES510	32	19'-3"	Str.		642
ES511	72	29'-3"	Str.		2,197
ES512	1392	14'-6"	Str.		21,052
ES513	56	14'-3"	Str.		832
ES601	8280	24'-3"	101		301,587
ES602	1674	28'-11"	101		72,707
		TOTAL WEIGHT =			562,026



REINFORCING STEEL SAMPLES

Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.09. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.09.

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

REINFORCEMENT SCHEDULE
EASTBOUND BRIDGE
OHIO TURNPIKE OVER CUYAHOGA RIVER

HOWARD NEEDLES TAMMEN AND BERGENDOFF
CONSULTING ENGINEERS
CLEVELAND OHIO

DESIGNED RPT	CHECKED CKB
DRAWN RPT	IN CHARGE CAB
DATE: 10-28-82	SCALE:
RMP: 43-82-04	SHEET 43 OF 43