OHIO TURNPIKE AND
INFRASTRUCTURE COMMISSION

ADDENDUM NO. 1
ISSUED: FEBRUARY 23, 2023

to
LOI NO. 3-2023

REQUEST FOR LETTERS OF INTEREST (LOIs)
FOR PROFESSIONAL ENGINEERING SERVICES
FOR PROJECT NO. 71-23-04

ISSUED: FEBRUARY 13, 2023

LETTERS OF INTEREST DUE DATE: 5:00 P.M. (Eastern) MARCH 6, 2023

ATTENTION OF RESPONDENTS IS DIRECTED TO:

Original Construction Plans, Rehabilitation Plans, and Third Lane Plans for:
MP 191.4

Plan Sets are for Reference Only

ANSWERS TO QUESTIONS RECEIVED THROUGH 5:00 PM ON FEBRUARY 22, 2023:

Issued by the Ohio Turnpike and Infrastructure Commission through Aimee W. Lane, Esq., Director of Contracts Administration

Aimee W. Lane
________________________________ February 23, 2023
Aimee W. Lane, Esq., Date
Director of Contracts Administration

<u>ANSWERS TO QUESTIONS RECEIVED THROUGH 5:00 P.M. ON FEBRUARY 22, 2023</u>:

Q#1 Please send copies of the existing plans for the following bridges:

- **Milepost 191.4 - Mainline Bridge over the Cuyahoga River in Portage County**

A#1 All original and rehabilitation plan sets available have been included with Addendum No. 1.

END OF ADDENDUM NO. 1

OFFICE COPY

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OHIO TURNPIKE COMMISSION SEAL 1949

OHIO TURNPIKE COMMISSION

THE JAMES W. SHOCKNESSY OHIO TURNPIKE

THIRD LANE CONSTRUCTION

CONTRACT 77-97-04 PART A
MP. 187.43 TO MP. 191.22
STA. 91+00.00 TO STA. 290+99.12 BACK
PORTAGE COUNTY

CONTRACT 77-97-04 PART B
MP. 191.22 TO MP. 193.38
STA. 291+20.00 AHEAD TO STA. 405+00.00
PORTAGE COUNTY

RECOMMENDED FOR APPROVAL
BY
URS GREINER, INC.
[signature]
REVIEW CONSULTANT
1-23-97
DATE

APPROVED FOR
THE OHIO TURNPIKE COMMISSION
BY
David W. Ransburg
CHIEF ENGINEER
1/24/97
DATE

No.	REVISION	BY	DATE
1	ADDENDUM 1	JAN	1/22/97

GENERAL SUMMARY

SHEET NUMBER: PART A — A15	SHEET NUMBER: PART B — B15	ITEM	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
					ROADWAY	
	LUMP	201	Lump Sum		Clearing and Grubbing	
8		202	8	Sq. Yd.	Approach Slab Removed	
	LUMP	202	Lump Sum		Structure Removed	
	28	202	28	Lin. Ft.	Concrete Barrier Removed	
	144	202	144	Lin. Ft.	Concrete Barrier Removed, As Per Plan	B8
	62	202	62	Lin. Ft.	Curb Removed	
3971	1087	202	5,058	Lin. Ft.	Pipe Removed, 24" and Under	
393		202	393	Lin. Ft.	Pipe Removed Over 24"	
88		202	88	Lin. Ft.	Barrier Removed	
4977	2482	202	7,459	Lin. Ft.	Guardrail Removed	
⚠ 1100	200	202	1300	Lin. Ft.	Guardrail Removed for Reuse	
	16	202	16	Each	Guard Post Removed	
5	5	202	10	Each	Anchor Assembly Removed, Type T	
	7	202	7	Each	Catch Basin Removed	
1		202	1	Each	Inlet Removed	
100	164	202	264	Lin. Ft.	Fence Removed	
737		202	737	Lin. Ft.	Fence Removed for Reuse	
2181		202	2,181	Lin. Ft.	Gutter Removed	
6		202	6	Lin. Ft.	Gutter Removed, As Per Plan	A10
2618	1048	202	3,666	Lin. Ft.	Existing Conduit Cleaned, As Per Plan	A10/B10
	13	202	13	Each	Bridge Terminal Assembly Removed	
	3	202	3	Each	Flood Gate Removed	
1		202	1	Each	Flood Gate Removed, As Per Plan	A10
	516	SPECIAL	516	Lin. Ft.	Pipe Cleanout, 15" to 36"	B9
199	367	SP 202J	566	Lin. Ft.	Plug and Fill Existing Conduit	
11	7	SP 202K	18	Each	Anchor Assembly, Syro Steel ET-2000, Removed for Storage	
8	6	SP 202L	14	Each	Anchor Assembly, Syro Steel ET-2000, Removed and Reset	
⚠ 36623	25583	203	62206	Cu. Yd.	Excavation Not Including Embankment Construction	
23095	9639 ⚠	203	32734 ⚠	Cu. Yd.	Embankment	

NO.	REVISION	BY	DATE
⚠	ADDENDUM 1, QUANTITY REVISIONS	JAN	1/24/97

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

DATE: JAN. 7, 1997 | SCALE: N.T.S.

77-97-04 | SHEET 2 OF 39

GENSUM1.DWG DCA DRAWN BY: NEL 1/7/97; REV. BY JAN 1/23/97

GENERAL SUMMARY

			PART A							PART B									
SHEET NUMBER															ITEM	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
			A15	A17						B15									
																		ROADWAY (CONTINUED)	
			50							23					203	73	Hour	Proof Rolling	
			△ 128791							72,569					203	△ 201360	Sq. Yd.	Subgrade Compaction	
										1721					203	1,721	Lin. Ft.	Ditch Cleanout	B7
			2926												203	2,926	Lin. Ft.	Ditch Cleanout, As Per Plan	A8
			17700							9500					SP 205	27,200	Sq. Yd.	Lime Modified Subgrade	
			17700							9500					SP 205	27,200	Sq. Yd.	Cement Modified Subgrade	
			855							475					SP 205	1,330	Ton	Lime	
			1106							594					SP 205	1700	Ton	Cement	
			5							5					SP 205	10	M Gal.	Water	
			12							12					604	24	Each	Monument Assembly	
			5962.5							343.75					606	6,307	Lin. Ft.	Guardrail, Type 5, Using Steel Posts	
			7												606	7	Each	Anchor Assembly, Type T	
			6							4					606	10	Each	Bridge Terminal Assembly, Type 1, Using Steel Posts	
										2					606	2	Each	Bridge Terminal Assembly, Type 1, Using Steel Posts, As Per Plan	B8
			4							1					606	5	Each	Bridge Terminal Assembly, Type 2	
			△ 1,100							200					SP 606	△ 1,300	Lin. Ft.	Guardrail Rebuilt, Type 5	
			100							100					SP 606	200	Each	Guardrail Post, Steel, 9 Ft.	
			654												607	654	Lin. Ft.	Fence Rebuilt, Type 47	
			83												607	83	Lin. Ft.	Fence, Rebuilt, Type CL	
			628												607	628	Lin. Ft.	Fence, Type 47, As Per Plan	
			10												607	10	Lin. Ft.	Fence, Type CL	
			112							108					622	220	Lin. Ft.	Concrete Barrier, Type D, As Per Plan	B8
			12000							7006					622	19,006	Lin. Ft.	Concrete Barrier, Type B-50, As Per Plan	
			6646							3502					622	10,148	Lin. Ft.	Concrete Barrier, Type C-50, As Per Plan	B8
				0.4											SP 853A	0.4	Cu. Yd.	Low Strength Mortar Backfill, Type 2	
										1					SPECIAL	1	Each	Inertia Barrier Removed	B8
			1												SPECIAL	1	Each	Inertia Barrier	
			20,000							10800					SPECIAL	30800	Sq. Yd.	Geogrid	

NO.	REVISION	BY	DATE
1	ADDENDUM 1, QUANTITY REVISIONS	JAN	1/24/97

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

DATE: JAN. 7, 1997 SCALE: N.T.S.

77-97-04 SHEET 2A OF 39

GENSUM2.DWG OCA DRAWN BY: nel 1/7/97; REV. BY jan 1/23/97

GENERAL SUMMARY

PART A | PART B

SHEET NUMBER

			A16						B16					ITEM	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
																	EROSION CONTROL	
			380						1500					207	1,880	Sq. Yd.	Temporary Seeding and Mulching	
			13514						2185					207	15,699	Lin. Ft.	Filter Fabric Fence	
			10303						1236					207	11,539	Cu. Yd.	Temporary Benches, Dams and Sediment Basins	
			662											207	662	Lin. Ft.	Temporary Dikes	
			708						312					207	1,020	Sq. Yd.	Temporary Ditch Protection	
			632						539					207	1,171	Each	Straw or Hay Bales	
									312					601	312	Lin. Ft.	Paved Gutter, Broken In-Place	B10
									48					601	48	Lin. Ft.	Paved Gutter, As Per Plan	B10
			3023											601	3,023	Lin. Ft.	Paved Gutter, Type 1-2, As Per Plan	A9
			34											601	34	Lin. Ft.	Paved Gutter, Type 1-4, As Per Plan	A9
			25											601	25	Lin. Ft.	Paved Gutter, Type 1-6, As Per Plan	A9
			22											601	22	Cu. Yd.	Rock Channel Protection, Type A with Filter	
			144						130					601	274	Cu. Yd.	Rock Channel Protection, Type B with Filter	
			18						93					601	111	Cu. Yd.	Rock Channel Protection, Type C with Filter	
			144											601	144	Cu. Yd.	Rock Channel Protection, Type C	
									247					601	247	Cu. Yd.	Rock Channel Protection, Type C without Filter	
			1900						7520					659	9,420	Sq. Yd.	Seeding and Mulching	
			95						375					659	470	Sq. Yd.	Repair Seeding and Mulching	
									0.75					659	0.75	Ton	Commercial Fertilizer	
									3.38					659	3.38	Ton	Agriculatural Liming	
			5						19					659	24	M. Gal.	Water	
			2838											660	2,838	Sq. Yd.	Sodding	
									1245					670	1,245	Sq. Yd.	Ditch Erosion Protection	
			63											SPECIAL	63	Cu. Yd.	Gabion System	
			145											SPECIAL	145	Lin. Ft.	Field Paving of Conduit Invert	

NO.	REVISION	BY	DATE

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

DATE: JAN. 7, 1997 | SCALE: N.T.S.

77-97-04 | SHEET 3 OF 39

GENSUM1.DWG DCA DRAWN BY: nel 1/7/97

GENERAL SUMMARY

			PART A							PART B									
SHEET NUMBER															ITEM	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
			A16	A17						B17	B18								
																		DRAINAGE	
											540				516	540	Lin. Ft.	PVC Waterstop	
											841				516	841	Sq. Ft.	1/4" Preformed Expansion Joint Filler	
				295											SP 516A	295	Lin. Ft.	Crack Repair Using Epoxy Injection	
				238											SP 516A	238	Lin. Ft.	Crack Repair Using Non-Shrink, Non-Metallic Grout	
				196							2434				SP 519A	2,630	Sq. Ft.	Patching Overhead Concrete Structures	
											7360				SP 519B	7,360	Pound	Grout Subsealing of Culvert Walls and Ceilings	
											36				SP 536	36	Sq. Yd.	Concrete Weatherproofing, Substructure	
			2												602	2	Cu. Yd.	Concrete Masonry	
										14.9					602	14.9	Cu. Yd.	Concrete Masonry, As Per Plan	B104
			50							350					603	400	Lin. Ft.	6" Conduit, Type B	
			2245							1258					603	3,503	Lin. Ft.	6" Conduit, Type B, 707.17 Non-Perforated	
																		ASTM D 3034 (SDR-35), SS931 or SS944	
			50							100					603	150	Lin. Ft.	6" Conduit, Type E	
										250					603	250	Lin. Ft.	6" Conduit, Type F	
		⚠	730							467					603	⚠ 1197	Lin. Ft.	6" Conduit, Type F, 707.17 Non-Perforated	
																		ASTM D 3034 (SDR-35), SS931 or SS944	
										150					603	150	Lin. Ft.	8" Conduit, Type B	
										150					603	150	Lin. Ft.	8" Conduit, Type F	
			204												603	204	Lin. Ft.	12" Conduit, Type C, 706.02	
										871					603	871	Lin. Ft.	12" Conduit, Type F, 707.05 Type C	
			902							170					603	1,072	Lin. Ft.	15" Conduit, Type B, 706.02	
			128												603	128	Lin. Ft.	Conduit, Bored or Jacked, 15", Type B, 706.02	
			106												603	106	Lin. Ft.	15" Conduit, Type C, 706.02	
			1307							1468					603	2,775	Lin. Ft.	18" Conduit, Type B, 706.02	
			16												603	16	Lin. Ft.	18" Conduit, Type C, 706.02	
										45					603	45	Lin. Ft.	18" Conduit, Type F, 707.05 Type C	
										156					603	156	Lin. Ft.	Conduit, Bored or Jacked, 18", Type B, 706.02	

GENSUM4.DWG DCA DRAWN BY: nel 1/7/97; REV. BY jgn 1/23/97

NO.	REVISION	BY	DATE
1	ADDENDUM 1, QUANTITY REVISIONS	JAN	1/24/97

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

DATE: JAN. 7, 1997 | SCALE: N.T.S.

77-97-04 | SHEET 3A OF 39

GENERAL SUMMARY

			PART A							PART B									
SHEET NUMBER																			
			A16	A17							B17				ITEM	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
																		DRAINAGE (CONTINUED)	
			851								490				603	1,341	Lin. Ft.	21" Conduit, Type B, 706.02	
			1238								141				603	1,379	Lin. Ft.	24" Conduit, Type B, 706.02	
			8												603	8	Lin. Ft.	24" Conduit, Type C, 706.02	
											35				603	35	Lin. Ft.	24" Conduit, Type F, 707.05 Type C	
											98				603	98	Lin. Ft.	Conduit, Bored or Jacked, 24", Type B, 706.02	
			1143												603	1,143	Lin. Ft.	27" Conduit, Type B, 706.02	
											48				603	48	Lin. Ft.	30" Conduit, Type A, SS-946	
											152				603	152	Lin. Ft.	30" Conduit, Type A, SS-946, As Per Plan	B9
			39												603	39	Lin. Ft.	30" Conduit, Type B, 706.02	
											48				603	48	Lin. Ft.	36" Conduit, Type A, 706.02	
			24												603	24	Lin. Ft.	42" Conduit, Type B, 706.02	
			24												603	24	Lin. Ft.	42" Conduit, Type C, 706.02	
			22												603	22	Lin. Ft.	48" Conduit, Type A, 706.02	
			30												603	30	Lin. Ft.	48" Conduit, Type B, 706.02, D-1500	
			16												603	16	Lin. Ft.	54" Conduit, Type A, 706.02	
											307				603	307	Lin. Ft.	72" Conduit, Type A, 707.04 (1") (0.138) As Per Plan	B9
											2				SP 604	2	Each	Catch Basin, No. CB-1R, As Per Plan	B99
				1											SP 604	1	Each	Catch Basin, No. 2-2B	
				1											SP 604	1	Each	Catch Basin, No. 4 w/o Apron	
				12							19				SP 604	31	Each	Inlet, No. 3B50 Double Grate	
				2											SP 604	2	Each	Inlet, No. 3B50 Double Grate with Special Connections	
				1											SP 604	1	Each	Inlet, No. 3B50 Double Grate, As Per Plan	A10
				11							2				SP 604	13	Each	Inlet, No. 3C50 Double Grate	
											2				SP 604	2	Each	Inlet, No. 3C50 Double Grate, As Per Plan	B109
				5											SP 604	5	Each	Inlet, No. 3C50 Double Grate with Special Connections	
				15											SP 604	15	Each	MANHOLE, N°3	

GENSUM5.DWG DCA DRAWN BY: nel 1/7/97; REV. BY jan 1/23/97

NO.	REVISION	BY	DATE
1	ADDENDUM 1, QUANTITY REVISIONS	JAN	1/24/97

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

DATE: JAN. 7, 1997 SCALE: N.T.S.

77-97-04 SHEET 4 OF 39

GENERAL SUMMARY

			PART A								PART B								
SHEET NUMBER															ITEM	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
			A17	A18							B17	B18							
																		DRAINAGE (CONTINUED)	
											31631				SP 605	31,631	Lin. Ft.	6" Shallow Pipe Underdrain, 707.15, with Fabric Wrap	
			928												SP 605	928	Lin. Ft.	6" Shallow Pipe Underdrain, 707.15, with Fabric Wrap (18")	
			62199												SP 605	61,299	Lin. Ft.	6" Shallow Pipe Underdrain, 707.15, with Fabric Wrap (30")	
			56												SP 605	56	Lin. Ft.	6" Unclassified Pipe Underdrain	
											3000				SP 605	3,000	Lin. Ft.	6" Unclassified Pipe Underdrain, 707.15, with Fabric Wrap	
			50								250				SP 605	300	Lin. Ft.	Aggregate Drain, Type I, with Fabric Wrap	
											280				SP 605	280	Lin. Ft.	Aggregate Drain, Type II	
			50								250				SP 605	300	Lin. Ft.	Aggregate Drain, Type II, with Filter Wrap	
			184												SPECIAL	184	Lin. Ft.	36" Conduit Liner, As Per Plan	A112
			246												SPECIAL	246	Lin. Ft.	42" Conduit Liner, As Per Plan	A112
			190												SPECIAL	190	Lin. Ft.	54" Conduit Liner, As Per Plan	A112
			210												SPECIAL	210	Lin. Ft.	66" Conduit Liner, As Per Plan	A112
			4								14				SPECIAL	18	Each	12" Precast Flared End Section	A10
			10								3				SPECIAL	13	Each	15" Precast Flared End Section	A10
			1								3				SPECIAL	4	Each	18" Precast Flared End Section	A10
			1								2				SPECIAL	3	Each	24" Precast Flared End Section	A10
			2												SPECIAL	2	Each	48" Precast Flared End Section	A10
			1												SPECIAL	1	Each	54" Precast Flared End Section	A10
												60			SPECIAL	60	Lin. Ft.	Sealing Reinforced Concrete Pipe Joints	B11
												99			SPECIAL	99	Lin. Ft.	Handrail	B10
			14								13				SPECIAL	27	Each	Precast Reinforced Concrete Outlet	A10
																		PAVEMENT	
				55883								26163			254	82,046	Sq. Yd.	Pavement Planing, Bituminous	
				33097								18550			SP 302	51,647	Cu. Yd.	Bituminous Aggregate Base, PG 64-22	
				30527								20595			SP 304	51,122	Cu. Yd.	Aggregate Base	
				15325								8386			SP 402	23,711	Cu. Yd.	Asphalt Concrete Base Course or Recycled Asphalt Concrete Base Course, PG 64-28	
				6025								3287			SP 404	9312	Cu. Yd.	Asphalt Concrete Surface Course, Using Crushed Slag, PG 64-28	

NO.	REVISION	BY	DATE
1	ADDENDUM 1, QUANTITY REVISIONS	JAN	10/24/97

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

DATE: JAN. 7, 1997 — SCALE: N.T.S.
77-97-04 — SHEET 4A OF 39

GENSUM6.DWG DCA DRAWN BY: nel 1/7/97; REV. BY jan 1/23/97

GENERAL SUMMARY

PART A		PART B						
SHEET NUMBER				ITEM	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
A18	A19	B18	B19					
							PAVEMENT (CONTINUED)	
13,390		2627		SP 407	16017	Gallon	Tack Coat	
48,487		27400		SP 408	75,887	Gallon	Prime Coat	
31				SP 516B	31	Lin. Ft.	Sealing of Construction Joint	
318		2523		SP 609	2841	Lin. Ft.	Asphalt Concrete Curb, PG 64-22, Standard Type I	
191		282		SP 611	473	Sq. Yd.	Class S Concrete, Approach Slab, Using Shrinkage Compensating Cement (T=10")	
6412		8762		SP 617	15,174	Sq. Yd.	Shoulder Preparation	
712		974		SP 617	1,686	Cu. Yd.	Compacted Aggregate	
14		22		SP 617	36	M. Gal.	Water	
1827		1189		SP 627	3016	Ton	Stone Shoulder Protection	
6754				SP 629	6754	Sq. Yd.	Geotextile Fabric	
							TRAFFIC CONTROL	
	492		274	SP 626	766	Each	Raised Pavement Marker - Stimsonite Model 101LP One-Way (White)	
	15			SP 626	15	Each	Raised Pavement Marker - Stimsonite Model 101LP One-Way (Yellow)	
	560		405	SP 626	965	Each	Replacement Prismatic Retro-Reflector	
			10	SP 626	10	Each	Replacement Pavement Marker Casting - Stimsonite Model 101LP	
	60			630	60	Cu. Yd.	Concrete for Anchor Base Foundations	
	143			630	143	Lin. Ft.	Ground Mounted Support, No. 2 Post	
			130	630	130	Lin. Ft.	Ground Mounted Support, No. 3 Post	
	4			630	4	Each	Ground Mounted Support, No. 3 Post, As Per Plan	A129
	3			630	3	Each	Overhead Sign Support, Type TC-12.30, Design 12, 27.75 Foot Span	
	1			630	1	Each	Overhead Sign Support, Type TC-7.65, Design 6, 69 Foot Span	
	1			630	1	Each	Overhead Sign Support, Type TC-7.65, Design 8, 87 Foot Span	
	1			630	1	Each	Sign Support Assembly, Pole Mounted	
	6		4	630	10	Each	Sign Support Assembly, Bridge Mounted, As Per Plan	A129/B11
	104		96	630	200	Sq. Ft.	Sign Erected, Flat Sheet, As Per Plan	A129/B11
	909			630	909	Sq. Ft.	Sign Erected, Extrusheet, As Per Plan	A129

NO.	REVISION	BY	DATE
1	ADDENDUM 1, QUANTITY REVISIONS	JAN	1/24/97

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

DATE: JAN. 7, 1997 SCALE: N.T.S.

77-97-04 SHEET 5 OF 39

GENSUM1.DWG DCA DRAWN BY: nel 1/7/97, REV. BY: jan 1/23/97

GENERAL SUMMARY

			PART A							PART B									
SHEET NUMBER																			
			A19							B19					ITEM	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
																		TRAFFIC CONTROL (CONTINUED)	
			16							14					630	30	Each	Removal of Ground Mounted Sign and Storage, As Per Plan	A129/B110
			13												630	13	Each	Removal of Ground Mounted Sign and Reerection	
										1					630	1	Each	Removal of Temporary Overlay Sign and Storage, As Per Plan	B110
			1												630	1	Each	Removal of Overhead Mounted Sign and Reerection	
			26							15					630	41	Each	Removal of Ground Mounted Post Support and Storage, As Per Plan	A129/B110
			1							1					630	2	Each	Removal of Overhead Mounted Sign and Storage, As Per Plan	A129/B110
			1												630	1	Each	Removal of Overhead Sign Support and Storage, Type TC-7.65, As Per Plan	A129
			2												630	2	Each	Removal of Ground Mounted Beam Support and Storage, As Per Plan	A129
										1					630	1	Each	Removal of Overhead Sign Support and Storage, Type TC-12.30, As Per Plan	B110
			1												631	1	Each	Sign Service	
			2												631	2	Each	Sign Wired	
			1												631	1	Each	Disconnect Switch with Enclosure, Type X	
			3												631	3	Each	Ballast, Remote, Type CMRI-250-480	
			1												631	1	Each	Ballast, Wiring Enclosure, Type A	
			3												631	3	Each	Mercury Vapor Luminaire, Type TC-31.21 with 250 Watt Lamp	
			3												631	3	Each	Removal of Luminaire and Storage, As Per Plan	A129
			2												631	2	Each	Removal of Luminaire and Reerection	
			3												631	3	Each	Removal of Ballast and Storage, As Per Plan	A129
			2												631	2	Each	Removal of Ballast and Reerection	
			1												631	1	Each	Removal of Disconnect Switch and Storage, As Per Plan	A129
			16.00							10.47					642	26.47	Mile	Edge Line, Type 1, As Per Plan	A129/B110
			15.00							9.95					642	24.95	Mile	Lane Line, Type 1, As Per Plan	A129/B110
			1385							2500					642	3885	Lin. Ft.	Channelizing Line, Type 1	
			1911							236					642	2147	Lin. Ft.	Transverse Line, Type 1	
										0.47					642	0.47	Mile	Removal of Pavement Marking	
										133					802	133	Each	Barrier Reflector, Type A	
			491							236					802	727	Each	Barrier Reflector, Type B	
			5												SPECIAL	5	Each	Air Speed Zone Marking	A180
			14.00							9.63					SPECIAL	23.63	Mile	Sonic Nap Alert Pattern (SNAP)	A182

NO.	REVISION	BY	DATE
1	ADDENDUM 1, QUANTITY REVISIONS	JAN	1/24/97

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

DATE: JAN. 7, 1997 SCALE: N.T.S.

77-97-04 SHEET 5A OF 39

GENSUMB.DWG DCA DRAWN BY: nel 1/7/97; REV. BY jon 1/23/97

GENERAL SUMMARY

PART A | PART B

SHEET NUMBER

9			A18	A20						B19					ITEM	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
																		LIGHTING	
			1												625	1	Each	Ground Rod	
										93					625	93	Lin. Ft.	Conduit, 1 1/2", 713.07	
			1							1					625	2	Each	Pull Box, 713.08, 24"	
			1												625	1	Each	Pull Box, 713.08, 18"	
			2												625	2	Each	Cable Splicing Kit	
			443							21					625	464	Lin. Ft.	Trench, 24" Deep	
			458												SP 625	458	Lin. Ft.	Conduit, 4" with 3 Cell Innerduct, 713.04 or 713.07, Schedule 80	
			458							21					SP 625	479	Lin. Ft.	Conduit, 4" with 4 Cell Innerduct, 713.04 or 713.07, Schedule 80	
			19582							11420					SP 625	31002	Lin. Ft.	Conduit, 4" with 3 Cell Innerduct, 713.07	
			19582							11420					SP 625	31002	Lin. Ft.	Conduit, 4" with 4 Cell Innerduct, 713.07	
			94												SP 625	94	Lin. Ft.	Conduit, Jacked or Drilled Under Pavement, 4" with 3 Cell Innerduct, 713.04 or 713.07, Schedule 80	
			94							44					SP 625	138	Lin. Ft.	Conduit, Jacked or Drilled Under Pavement, 4" with 4 Cell Innerduct, 713.04 or 713.07, Schedule 80	
			44							21					SP 625A	65	Each	Junction Box, Polymer Concrete, 18" x 8" x 8"	
																		MAINTENANCE OF TRAFFIC	
				30											410	30	Cu. Yd.	Traffic Compacted Surface, Type B, As Per Plan	A12
				30											410	30	Cu. Yd.	Traffic Compacted Surface, Type C	
351															614	351	Each	Barrier Reflector, Type A	
				7						16					614	23	Each	Barrier Reflector, Type B2	
				6											614	6	Each	Object Marker	
				50											614	50	Hour	Law Enforcement Officer with Patrol Car	
										0.26					614	0.26	Mile	Temporary Edge Line, Class I 740.05, Type C	
				0.30											614	0.30	Mile	Temporary Center Line, Class I	
										0.12					614	0.12	Mile	Temporary Center Line, Class I 740.05, Type C	
				0.53											614	0.53	Mile	Temporary Center Line, Class II	
										40					614	40	Lin. Ft.	Temporary Stop Line, Class I 740.05, Type C	
6															614	6	Each	Temporary Impact Attenuator, As Per Plan	8
										44					615	44	Sq. Yd.	Temporary Pavement, Class A, As Per Plan	B12

NO.	REVISION	BY	DATE
1	QUANTITY MISSING	JJS	1/24/97

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

DATE: JAN. 7, 1997 | SCALE: N.T.S.

77-97-04 | SHEET 6 OF 39

GENSUM1.DWG DCA DRAWN BY: rel 1/7/97

GENERAL SUMMARY

			PART A							PART B									
SHEET NUMBER															ITEM	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
9			A20							B19									
																		MAINTENANCE OF TRAFFIC (CONTINUED)	
			105							100					616	205	M. Gal.	Water	
			11							10					616	21	Ton	Calcium Chloride	
			1354							300					622	1654	Lin. Ft.	Portable Concrete Barrier, 32"	
6849															SP 622A	6,849	Each	Concrete Barrier Delineator	
12.97															SP 622A	12.97	Mile	Temporary Concrete Barrier (Furnished by Commission)	
32										14					SP 622B	46	Each	Delineator	
1312															SP 626A	1312	Each	Construction Zone Marker, One– Way Model, White	
12.68															SP 641	12.68	Mile	4" Temporary White Edge Line	
3.49															SP 641	3.49	Mile	4" Temporary Yellow Edge Line	
12.79															SP 641	12.79	Mile	4" Temporary White Lane Line	
0.25															SP 641	0.25	Mile	4" Temporary Dotted Line	
2.00															SP 641	2.00	Mile	4" Temporary Channelizing Line	
14.14			0.31												SP 641A	14.45	Mile	Temporary Removal of Existing Pavement Marking	
1320															642	1320	Lin. Ft.	Removal of Pavement Marking	
																		STRUCTURES	
																		For Structure Ohio Turnpike Over S.R. 43 (M.P. 188.2) See Sheet A146.	
																		For Structure Ohio Turnpike Over Cuyahoga River (M.P. 191.4) See Sheet B125.	
																		For Structure Ohio Turnpike Over Infirmary Road (M.P. 193.1) See Sheet B141.	
																		GENERAL	
															103.05	Lump Sum		Premium for Contract Performance Bond and Payment Bond	
															SP 128	Lump Sum		Survey of Local Roads	
															SP 614	Lump Sum		Maintaining Traffic	
															SP 619	Lump Sum		Field Office	
															SP 623	Lump Sum		Construction Layout Survey	
															624	Lump Sum		Mobilization	

GENSUM1.DWG DCA DRAWN BY: nel 1/7/97

NO.	REVISION	BY	DATE

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

DATE: JAN. 7, 1997	SCALE: N.T.S.
77-97-04	SHEET 7 OF 39

MAINTENANCE OF TRAFFIC GENERAL NOTES

1. THE CONTRACTOR'S RESPONSIBILITY TO THE SAFETY OF THE MOTORING PUBLIC WHILE PERFORMING THE REQUIREMENTS OF HIS CONSTRUCTION CONTRACT WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH THESE MAINTENANCE OF TRAFFIC PLANS, SPECIFICATIONS AND SPECIAL PROVISIONS, THE CURRENT EDITION, LATEST REVISION OF THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" AND THE APPLICABLE PROVISIONS OF THE "STANDARD PROCEDURE OF MAINTENANCE AND CONTRACTORS OPERATIONS UNDER TRAFFIC ON THE OHIO TURNPIKE", DATED JULY, 1994.

2. ALL MAINTENANCE OF TRAFFIC DEVICES, DRUMS, SIGNS, FLASHING ARROW PANELS, FLAGGERS, ETC. AS SHOWN AND LOCATED ON THE MAINTENANCE OF TRAFFIC DRAWINGS SHALL BE INCORPORATED FOR THE VARIOUS PHASES OF WORK AREAS UNDER NORMAL TRAFFIC CONDITIONS. IF SPECIAL TRAFFIC CONDITIONS EXIST, THESE MAINTENANCE OF TRAFFIC PLANS MAY HAVE TO BE MODIFIED. HOWEVER, NO MODIFICATIONS TO THE LAYOUT OF THE DEVICES SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS TO BE MADE UNLESS APPROVED BY THE CHIEF ENGINEER.

3. SINCE FLAGGERS ARE RESPONSIBLE FOR HUMAN SAFETY AND MAKE THE GREATEST NUMBER OF CONTACTS WITH THE TRAVELING PUBLIC OF ALL CONSTRUCTION PERSONNEL, IT IS IMPORTANT THEY ARE, MENTALLY ALERT, COURTEOUS BUT WITH A FIRM MANNER, PROPERLY ATTIRED WITH A NEAT APPEARANCE, AWARE OF THEIR RESPONSIBILITY FOR THE SAFETY OF THE MOTORISTS AND THE CONSTRUCTION PERSONNEL, AND INFORMED OF THE EXACT TRAFFIC MOVEMENTS THAT THEY ARE TO CONTROL. FLAGGERS SHALL WEAR BRIGHT ORANGE VESTS OR JACKETS WHICH ARE TO BE REFLECTORIZED FOR NIGHTTIME OPERATIONS. FLAGGERS ARE TO USE RED FLAGS. (RED FLAGS SHALL BE A MINIMUM OF 18" X 18" IN SIZE.)

   THE USE OF FLAGGERS SHALL BE AS DIRECTED BY THE ENGINEER. HOWEVER, AS A MINIMUM THE CONTRACTOR SHOULD EXPECT TO PROVIDE A FLAGGER AT LOCATIONS WHERE VEHICLES AND/OR EQUIPMENT MERGES INTO AND OUT OF THE TURNPIKE TRAFFIC FLOW PATTERN.

4. LENGTH AND DURATION OF SINGLE LANE CLOSURE AND RESTRICTION SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

5. OHIO TURNPIKE MAINTENANCE OF TRAFFIC PHASE DATES, LANE REDUCTION TIME LIMITATIONS, AND LIQUIDATED DAMAGE CLAUSES ARE CONTAINED IN THE FOLLOWING SPECIAL PROVISIONS:
   SP 103 – TIME OF COMPLETION
   SP 104 – ACCESS TO TURNPIKE AND RESTRICTIONS
   SP 111 – TIME OF THE ESSENCE – LIQUIDATED DAMAGES

6. THE CONTRACTOR SHALL PROVIDE A 48 HOUR NOTICE TO THE OHIO TURNPIKE COMMISSION CHIEF ENGINEER PRIOR TO CHANGING MAINTENANCE OF TRAFFIC PHASES.

7. TEMPORARY PAVEMENT MARKINGS SHALL BE INSTALLED BY THE CONTRACTOR AS PER SPECIAL PROVISION SP 641. TEMPORARY REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE AS PER SPECIAL PROVISION SP 641A.

8. CONSTRUCTION ZONE MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS AND SHALL CONFORM TO ITEM SP 626A – "CONSTRUCTION ZONE MARKERS" OF THE SPECIAL PROVISIONS.

9. ALL TEMPORARY CONCRETE BARRIER SHOWN ON THE PLANS FOR MAINTENANCE OF TRAFFIC WILL BE AS PER SPECIAL PROVISION SP 622A.

10. ITEM 614 TEMPORARY IMPACT ATTENUATOR, AS PER PLAN

    THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING AND SUBSEQUENTLY REMOVING IMPACT ATTENUATORS, AS REQUIRED IN THE PLANS. THIS ITEM SHALL INCLUDE ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED AS REQUIRED BY THE MANUFACTURER TO CONSTRUCT COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEMS.

    THE IMPACT ATTENUATOR SYSTEM CAN BE ANY OF THE FOLLOWING:

    REACT 350, ROADWAY SAFETY SERVICES, INC.
    80 REMINGTON BLVD.
    RONKONKOMA, NY 11779
    (516) 588-6220

    G*R*E*A*T CZ, ENERGY ABSORPTION SYSTEMS, INC.
    ONE EAST WACKER DRIVE
    CHICAGO, IL 60601
    (312) 467-6750

    QUAD GUARD CZ SYSTEM, ENERGY ABSORPTION SYSTEMS, INC.
    ONE EAST WACKER DRIVE
    CHICAGO, IL 60601
    (312) 467-6750

    THE ATTENUATORS SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN ON THE PLANS.

    THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTION, REPAIRING, AND OTHERWISE RESTORING THE IMPACT ATTENUATOR IN ACCORDANCE WITH THE MANUFACTURER'S MAINTENANCE INSTRUCTIONS WHILE IT IS IN USE ON THE PROJECT. SUCH REPAIRS SHALL BE PERFORMED WITHIN TWENTY-FOUR (24) HOURS OF NOTIFICATION OF THE INCIDENT WHICH CAUSED DAMAGE TO THE ATTENUATOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL NECESSARY MATERIALS AND EQUIPMENT REQUIRED TO PERFORM THE ABOVE DESCRIBED RESTORATION OF THE ATTENUATOR.

    PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR EACH, ITEM 614 – TEMPORARY IMPACT ATTENUATOR, AS PER PLAN, WHICH PRICE SHALL BE CONSIDERED FULL PAYMENT FOR FURNISHING, INSTALLING, AND SUBSEQUENTLY REMOVING AT THE SPECIFIED LOCATIONS.

11. ALL TEMPORARY SIGNS SHALL BE FURNISHED AND INSTALLED BY THE OHIO TURNPIKE COMMISSION BUT MAINTAINED BY THE CONTRACTOR.

12. FINAL SIGN AND OTHER MAINTENANCE OF TRAFFIC DEVICE LOCATIONS MAY HAVE TO BE ADJUSTED TO FIT GEOMETRIC ROADWAY CONDITIONS.

13. ALL DRUMS FURNISHED FOR THIS PROJECT SHALL BE THE PLASTIC SAFETY TYPE AS SHOWN ON OHIO TURNPIKE COMMISSION STANDARD DRAWING TCR-2. USED DRUMS ARE PERMITTED FOR USE PROVIDED THEY ARE IN LIKE-NEW CONDITION AND HAVE THE REQUIRED REFLECTORIZATION OF A NEW DRUM. ANY DRUM DETERMINED TO NOT MEET THE SATISFACTION OF THE ENGINEER SHALL BE REPLACED. PLASTIC SAFETY DRUMS INCLUDING THE SETTING, MAINTENANCE, REPLACEMENT AND SUBSEQUENTLY REMOVAL SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM SP 614 – MAINTAINING TRAFFIC.

    DURING PHASE 1 CONSTRUCTION THE CONTRACTOR SHALL REOPEN THE ROADWAY TO TWO LANES IN EACH DIRECTION BY 12:00 PM (NOON) FRIDAY. THE TWO LANE DIRECTIONAL ROADWAY MUST REMAIN OPEN UNTIL AT LEAST 10:00 PM FRIDAY. THE STAGING OF THE OUTSIDE SHOULDER CONSTRUCTION SHALL BE SCHEDULED SO THAT NO MORE THEN A 3 INCH DROPOFF EXISTS BY THE FRIDAY 12:00 PM (NOON) PERIOD. THE DRUM LINE SHALL BE PLACED IN THE SHOULDER AT THE PAVEMENT EDGE. FOR SATURDAY WORK THE DIRECTIONAL ROADWAYS CAN BE RETURNED TO THE PHASE ONE MAINTENANCE OF TRAFFIC TYPICAL SECTION. THE ROADWAY MUST BE REOPENED TO TWO DIRECTION LANES SUNDAY BY 12:00 PM (NOON) AND REMAIN OPEN UNTIL AT LEAST 10:00 PM. EXCEPTIONS TO THE ABOVE ARE CONTAINED IN SPECIAL PROVISION 104.

    IN ADDITION TO THE DRUM PLACEMENT REQUIREMENT AS SHOWN ON THE PLANS, THE CONTRACTOR SHALL INSTALL AND MAINTAIN DURING PHASE 2 MAINTENANCE OF TRAFFIC TWO DRUMS IN ADVANCE OF EACH GUARDRAIL TERMINAL ASSEMBLY ET-2000. THE FIRST DRUM SHALL BE PLACED DIRECTLY IN FRONT OF THE ET-2000 FACE AND THE SECOND DRUM SPACED 50 FEET IN ADVANCE OF THE FIRST DRUM.

14. THE CONTRACTOR'S REQUEST FOR USE OF A NIGHT WORK ZONE SHALL INCLUDE THE TYPE OF WORK TO BE DONE, THE DURATION OF THE WORK, LOCATION OF THE INTENDED WORK, AND THE CONTRACTOR'S PROPOSED LIGHTING PLAN. TEMPORARY LIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE SUCH THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE HIGHWAY. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS. ALL TEMPORARY LIGHTING REQUIRED FOR NIGHT WORK SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM SP 614 – MAINTAINING TRAFFIC. 1

15. THE OHIO TURNPIKE COMMISSION HAS ASSIGNED AN OVERALL CONSTRUCTION MANAGEMENT FIRM FOR THIS THIRD LANE WIDENING PROJECT. HOWEVER, EACH CONTRACTOR WHICH HAS WORK LIMITS ADJACENT TO ANOTHER CONTRACTOR WORK LIMITS HAS THE RESPONSIBILITY TO COORDINATE AND MUTUALLY COOPERATE WITH EACH OTHERS WORK ACTIVITIES DURING THE ENTIRE CONSTRUCTION PROCESS.

16. IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT IN WRITING ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED IN WRITING BY THE CHIEF ENGINEER.

17. AMBER FLASHING LIGHTS SHALL BE USED ON ALL VEHICLES AND/OR EQUIPMENT FOR INGRESS AND EGRESS OF THE WORK ZONE. WHILE IN THE WORK ZONE LIMITS THE FLASHERS ARE TO BE TURNED OFF.

18. IF THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AS SET FORTH IN THESE PLANS OR WITH PROVISIONS OF THE MANUAL, THE TURNPIKE CHIEF ENGINEER SHALL SUSPEND WORK UNTIL THE CONTRACTOR COMPLIES WITH THE NECESSARY REQUIREMENTS.

19. PAYMENT FOR THE ABOVE, UNLESS SPECIFIED SEPARATELY, SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM SP 614 – MAINTAINING TRAFFIC WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS TO COMPLETE THE ABOVE WORK.

NO.	REVISION	BY	DATE
1	ADDED SP TO 614	EWK	1-24-97

OHIO TURNPIKE COMMISSION

MAINTENANCE OF TRAFFIC GENERAL NOTES

DATE: NOV. 1996	SCALE: N.T.S.
CONTRACT 77-97-04	SHEET 8 OF 39

DRAWN BY: JJS | REVISED BY: EWK
DATE: SEPT 1996 | NOV. 1996
CAD FILE NAME: 702.../GN9704

QUANTITY SUBSUMMARY

SEQUENCE OF CONSTRUCTION

THE ADDITION OF A THIRD DIRECTIONAL LANE AND A BARRIER WALL MEDIAN ALONG THE OHIO TURNPIKE SHALL BE ACCOMPLISHED WHILE TRAFFIC IS BEING MAINTAINED IN ACCORDANCE WITH THE ENCLOSED MAINTENANCE OF TRAFFIC PLANS.

PHASE ONE CONSTRUCTION

THE EXISTING OUTSIDE SHOULDER IS TO BE MILLED AND RESURFACED. SEE THE ROADWAY CONSTRUCTION PLANS FOR SHOULDER BUILD-UP AND WORK LIMITS. THIS CONSTRUCTION EFFORT SHOULD HAVE A SHORT TIME-FRAME AND IS COVERED IN SPECIAL PROVISION SP 104.

PHASE ONE MAINTENANCE OF TRAFFIC

INSTALL EASTBOUND LEAD-IN SIGNING RELATIVE TO REDUCING THE EXISTING TWO DIRECTION LANES TO ONE. INSTALL WESTBOUND LEAD-IN SIGNING RELATIVE TO REDUCING THE EXISTING THREE LANES TO ONE. PLACE THE MAINTENANCE OF TRAFFIC DEVICES THROUGH THE TAPER AREAS AND ALIGN THE MAINLINE IN ACCORDANCE WITH THE PHASE ONE MAINTENANCE OF TRAFFIC TYPICAL SECTION AND PLANS.

PHASE TWO CONSTRUCTION

THE MAJOR ELEMENT OF THIS PHASE IS THE CONSTRUCTION OF THE TURNPIKE MEDIAN WHICH INCLUDES AN ADDITIONAL DIRECTIONAL LANE, A WIDENED SHOULDER AND A MEDIAN BARRIER SAFETY WALL. ALL EXISTING MAINLINE BRIDGES ARE TO BE WIDENED.

PHASE TWO MAINTENANCE OF TRAFFIC

UPON COMPLETION OF THE OUTSIDE SHOULDER, TWO LANES OF TRAFFIC ARE TO BE USED ALONG THE TURNPIKE. SEE PHASE TWO MAINTENANCE OF TRAFFIC TYPICAL SECTION. PRIOR TO THE WORK ZONE TRAFFIC WILL BE SHIFTED TO THE RIGHT USING DEVICES AS SHOWN IN THE PLANS. TRUCKS WILL BE DIRECTED TO USE THE LEFT MOST LANE. SETTING THE TEMPORARY CONCRETE BARRIER SHALL BE AS PER CBR-1, AND THE DETAIL SHEET PROVIDED SHOWING THE STAGING OPERATIONS FROM PHASE 1 TO PHASE 2.

FOR INSTALLATION OF THE BRIDGE EXPANSION JOINT STRIP SEAL THE CONTRACTOR HAS THREE LANES OF PAVEMENT AND BOTH SHOULDERS TO PROVIDE SHORT TERM LANE SHIFTS. USE OHIO TURNPIKE COMMISSION STANDARD DRAWING TCR-12 FOR SIGN AND DRUM PLACEMENT.

LOCATION			ITEM NUMBERS													
			SP 641						SP 641A	614	SP 622A	SP 626A	614	SP 622A	SP 622B	642
PHASE	STATION TO STATION	DIRECTION	4" TEMPORARY WHITE EDGE LINE	4" TEMPORARY YELLOW EDGE LINE	4" TEMPORARY WHITE LANE LINE	4" TEMPORARY DOTTED LINE	4" TEMPORARY CHANNELIZING LINE	8" TEMPORARY YELLOW EDGE LINE ⚠	TEMPORARY REMOVAL OF EXISTING PAVEMENT MARKINGS	BARRIER REFLECTOR, TYPE A	CONCRETE BARRIER DELINEATOR	CONSTRUCTION ZONE MARKER-ONE WAY WHITE	TEMPORARY IMPACT ATTENUATOR, AS PER PLAN	TEMPORARY CONCRETE BARRIER (FURNISHED BY COMMISSION)	DELINEATOR	REMOVAL OF PAVEMENT MARKING
			MILE	MILE	MILE	MILE	MILE	MILE	MILE	EACH	EACH	EACH	EACH	MILE	EACH	LIN.FT.
1	MP 186.35 TO MP 186.70	EB	0.35						0.35							
1	MP 186.70 TO MP 193.38 ⚠	EB													8	
1	MP 186.70 TO MP 193.44	WB													8	
1	MP 193.44 TO MP 193.55	WB	0.11													
1	MP 193.65 TO MP 193.90 ⚠	WB	0.25	0.25					0.25							
1	MP 194.30 TO MP 194.55	WB		0.25					0.25							
1	MP 194.95 TO MP 195.20	WB		0.25					0.25							
2	MP 186.45 TO MP 186.70	EB	0.25	0.25	0.25				0.50		26	21	1	0.05		
2	MP 186.70 TO MP 193.38	EB	6.48		6.68	0.20			6.83	164	3485	705		6.60	8	
2	MP 187.10 TO MP 187.30	WB	0.18		0.20				0.20		106	19		0.20		
2	MP 187.30 TO MP 193.44 ⚠	WB	6.04		6.14	0.10			6.29	187	3200	648		6.06	8	1320
2	MP 193.44 TO MP 194.30	WB	0.66		0.66	0.20			0.86		32	70	1	0.06		1500
2	MP 194.30 TO MP 194.55	WB	0.25	0.25	0.25				0.50			21				
2	MP 194.55 TO MP 194.95	WB	0.40		0.40				0.80			42				
2	MP 194.95 TO MP 195.20	WB	0.25	0.25	0.25				0.50			21				
2	CONSTRUCTION ACCESS AREA MP 189.75	EB					0.50	0.37					1			
2	CONSTRUCTION ACCESS AREA MP 191.80	EB					0.50	0.37					1			
2	CONSTRUCTION ACCESS AREA MP 189.75	WB					0.50	0.37					1			
2	CONSTRUCTION ACCESS AREA MP 191.80	WB					0.50	0.37					1			
					⚠				⚠			⚠				⚠
TOTAL			15.22	1.50	14.83	0.50	2.00	1.48	17.58	351	6849	1547	6	12.97	32	2820

NO.	REVISION	BY	DATE
1	ADD REVISED QUANTITIES	EWK	1-24-97

OHIO TURNPIKE COMMISSION

MAINTENANCE OF TRAFFIC QUANTITY SUBSUMMARY

DATE: NOV. 1996 SCALE: N.T.S.

CONTRACT 77-97-04 SHEET 9 OF 39

DATE: SEPT 1996 | DRAWN BY: JJS | DATE: SEPT 1996 | CAD FILE NAME: 7026100/QUANREV

R...D BY: EWK | DATE: NOV. 1996

INDEX OF SHEETS

OHIO TURNPIKE COMMISSION

THE JAMES W. SHOCKNESSY OHIO TURNPIKE

CONTRACT 77-97-04 PART B
THIRD LANE CONSTRUCTION
M.P. 191.22 TO M.P. 193.38

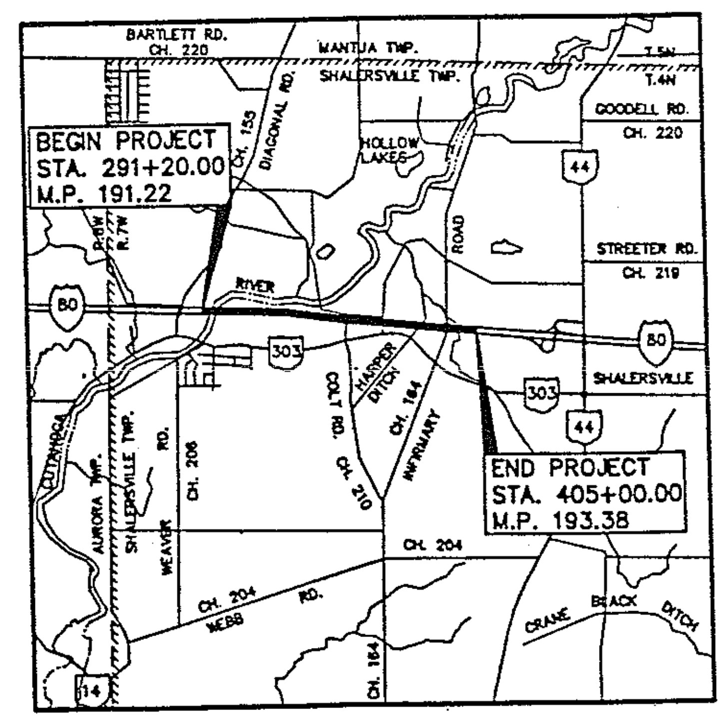
STATION 291+20.00 TO STATION 405+00.00
PORTAGE COUNTY

OHIO TURNPIKE COMMISSION STANDARD DRAWINGS

AS-1	~~3-13-96~~	DKJ-1	~~3-4-97~~	MCC-1	~~8-14-96~~	I-3C50	~~10-15-96~~
AS-2	~~11-2-96~~	DKJ-2	~~4-4-96~~	RPM-1R	~~7-19-96~~		
CB-1R	~~4-1-96~~	DR-1	~~10-1-95~~	TC-2	~~4-1-96~~		
CBR-1	~~3-1-96~~	EPA-1	~~9-5-96~~	TCR-11	~~7-21-96~~		
CBR-2	~~8-21-95~~	GR-1R	~~8-13-96~~	TCR-13R	~~3-5-96~~		
CBR-3R	~~8-13-96~~	JB-1	~~6-13-96~~	UD-1	~~6-21-96~~		
CBR-30H	~~3-13-96~~	MBC-1	~~9-11-96~~	I-3850	~~10-15-96~~		

OHIO DEPARTMENT OF TRANSPORTATION STANDARD DRAWINGS

BP-2.1	10-28-94	GR-3.1	5-6-91	MC-10	5-1-76	MT-96.25	9-9-88
BP-3.1	2-1-92	GR-3.2	5-6-91	MC-11	8-1-76	ICD-1-82	8-1-84
BP-5.1	10-28-94	GR-4.2	5-6-91	MC-4	7-28-76	BS-1-93	12-19-94
GR-1.1	5-6-91	GR-8.1	1-31-94	MH-1	12-18-84	FB-1-82	5-10-82
GR-1.2	10-30-92	MC-1	6-13-69	I-3A & B	4-1-80	PCB-91	4-24-92
GR-1.3	2-21-92	MC-9.3	10-30-92	MT-96.11	9-9-88	RB-1-55	2-2-59
GR-2.1	5-6-91	MC-9.4	10-30-92	MT-96.20	9-9-88	SD-1-69	6-12-69



APPROVED FOR
THE OHIO TURNPIKE COMMISSION
BY

CHIEF ENGINEER

DATE

RECOMMENDED FOR APPROVAL
BY
URS GRIENER CONSULTANTS, INC.

REVIEW CONSULTANT

DATE

SCALES

PLAN 0 50

PROFILE HORIZONTAL 0 50 VERTICAL 0 5

STATE OF OHIO
WILLIAM D. ANKNEY
31487
REGISTERED PROFESSIONAL ENGINEER

William D. Ankney

PLANS PREPARED BY
W.E. QUICKSALL & ASSOCIATES
CONSULTING ENGINEERS
NEW PHILADELPHIA, OHIO

2 WORKING DAYS
BEFORE YOU DIG
Call...800-362-2764 (Toll Free)
OHIO UTILITIES PROTECTION SERVICE
CALL JAYTEL – (419) 884-0400
(LCI FIBER OPTIC CABLE)
OHIO TURNPIKE DIVISION SUPERINTENDENT
(419) 882-2922
(ROADWAY LIGHTING CABLE)

FIBER OPTIC CABLE AS-BUILT DRAWINGS
LCI COMMUNICATIONS CORP. ———— SHEET 1,2,29 THRU 34, 199-207

NO	REVISIONS	BY	DATE
1	ADD. ADDED SHTS/ DATES	REK	1-24-97

DESIGN CONTRACT NO. 71-95-36

ITEM	FROM SHEET NO. B2	B7	B9	B11	B20	B21	B22	B23	B25	B109	ITEM	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
														ROADWAY	
201		LUMP SUM									201	LUMP SUM		CLEARING AND GRUBBING	B7
202										LUMP SUM	202	LUMP SUM		STRUCTURE REMOVED	
202							28				202	28	LIN. FT.	CONCRETE BARRIER REMOVED	
202							144				202	144	LIN. FT.	CONCRETE BARRIER REMOVED, AS PER PLAN	B8
202								62			202	62	LIN. FT.	CURB REMOVED	
202									1087		202	1087	LIN. FT.	PIPE REMOVED, 24" AND UNDER	
202							2481.25				202	2481.25	LIN. FT.	GUARDRAIL REMOVED	
202				200.00							202	200	LIN. FT.	GUARDRAIL REMOVED FOR REUSE	
202							16				202	16	EACH	GUARD POST REMOVED	
202							5				202	5	EACH	ANCHOR ASSEMBLY REMOVED, TYPE T	
202									7		202	7	EACH	CATCH BASIN REMOVED	
202								164			202	164	LIN. FT.	FENCE REMOVED	
202							13				202	13	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED	
SPECIAL			516								SPECIAL	516	LIN. FT.	PIPE CLEANOUT, 15" TO 36"	B9
SP 202J									367		SP 202J	367	LIN. FT.	PLUG AND FILL EXISTING CONDUIT	
SP 202K							7				SP 202K	7	EACH	ANCHOR ASSEMBLY, SYRO STEEL ET-2000, REMOVED FOR STORAGE	
SP 202L							6				SP 202L	6	EACH	ANCHOR ASSEMBLY, SYRO STEEL ET-2000, REMOVED AND RESET	
202										1048	202	1048	LIN. FT.	EXISTING CONDUIT CLEANED, AS PER PLAN	B10
202										3	202	3	EACH	FLOOD GATE REMOVED	B9
				10,800							SPECIAL	10,800	SQ.FT.	GEOGRID	
SPECIAL							1				SPECIAL	1	EACH	INERTIA BARRIER REMOVED	B8
205				9,500							SP205	9,500	SQ.YD.	LIME MODIFIED SUBGRADE	
205				9,500							SP205	9,500	SQ.YD.	CEMENT MODIFIED SUBGRADE	
203				1207				23,376			203	24,583	CU. YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
203								8639			203	8639	CU. YD.	EMBANKMENT	
203					23						203	23	HOUR	PROOF ROLLING	
203				2556	68,263	1750					203	72,569	SQ. YD.	SUBGRADE COMPACTION	
203									1112	609	203	1721	LIN. FT.	DITCH CLEANOUT	B7
205				475							SP205	475	TON	LIME	
205				594							SP205	594	TON	CEMENT	
604	12										604	12	EACH	MONUMENT ASSEMBLY	B2 & B7
205											SP205	5	M.GAL.	WATER	
606							343.75				606	343.75	LIN. FT.	GUARDRAIL, TYPE 5, USING STEEL POSTS	
606							4				606	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1, USING STEEL POST	
606							2				606	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1, USING STEEL POST, AS PER PLAN	B8
606							1				606	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2,	
SP 606				200.00							SP 606	200	LIN. FT.	GUARDRAIL REBUILT, TYPE 5	
SP 606											SP 606	100	EACH	GUARDRAIL POST, 9 FT.	
622							108				622	108	LIN. FT.	CONCRETE BARRIER, TYPE D, AS PER PLAN	B8
622							7006				622	7006	LIN. FT.	CONCRETE BARRIER, TYPE B-50, AS PER PLAN	
622							3502				622	3502	LIN. FT.	CONCRETE BARRIER, TYPE C-50, AS PER PLAN	B8

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

DESIGNED: WCR | CHECKED: RLL | DATE: 12-4-96
DRAWN: SAH | IN CHARGE: WDA | SCALE: NONE

CONTRACT 77-97-04 SHEET B15 OF B178

ITEM	FROM SHEET NO. B8	B23	B25	B28	B109	ITEM	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
									EROSION CONTROL	
207	1500					207	1500	SQ. YD.	TEMPORARY SEEDING AND MULCHING	
207	1800			385		207	2185	LIN. FT.	FILTER FABRIC FENCE	B8
207	500			736		207	1236	CU. YD.	TEMPORARY BENCHES, DAMS AND SEDIMENT BASINS	
207	312					207	312	SQ. YD.	TEMPORARY DITCH PROTECTION	
207	250			289		207	539	EACH	STRAW OR HAY BALES	
601			9		121	601	130	CU. YD.	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
601	25		68		6	601	93	CU. YD.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
601	100			147		601	247	CU. YD.	ROCK CHANNEL PROTECTION, TYPE C WITHOUT FILTER	
SPECIAL			312			SPECIAL	312	LIN. FT.	PAVED GUTTER, BROKEN IN-PLACE	B10
601			20		28	601	48	LIN. FT.	PAVED GUTTER, AS PER PLAN	B10
659	1000	6520				659	7520	SQ. YD.	SEEDING AND MULCHING	
659	375					659	375	SQ. YD.	REPAIR SEEDING AND MULCHING	
659	0.07	0.68				659	0.75	TON	COMMERCIAL FERTILIZER	
659		3.38				659	3.38	TON	AGRICULTURAL LIMING	
659	19					659	19	M. GAL.	WATER	
670			1245			670	1245	SQ. YD.	DITCH EROSION PROTECTION	

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

DESIGNED: WCR | CHECKED: RLL | DATE: 12-4-96
DRAWN: SAH | IN CHARGE: WDA | SCALE: NONE

CONTRACT 77-97-04 SHEET B16 OF B178

ITEM	FROM SHEET NO.																	ITEM	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
												B11	B20	B21	B22	B23	B40	B109				
																					DRAINAGE	
SPECIAL																		60	SPECIAL	60	LIN. FT.	SEALING REINFORCED CONCRETE PIPE JOINTS	B11
SPECIAL																		99	SPECIAL	99	LIN. FT.	HANDRAIL	B10
516																		540	516	540	LIN. FT.	PVC WATERSTOP	
516																		841	516	841	SQ. FT.	1/4" PREFORMED EXPANSION JOINT FILLER	
SP 519A																		2434	SP 519A	2434	SQ. FT.	PATCHING OVERHEAD CONCRETE STRUCTURES	
SP 519B																		7360	SP 519B	7360	LBS.	GROUT SUBSEALING OF CULVERT WALLS AND CEILINGS	
SP 536																		36	SP 536	36	SQ. YD.	CONCRETE WEATHERPROOFING, SUBSTRUCTURE	
																					PAVEMENT	
254													2438	22,506			1219		254	26,163	SQ. YD.	PAVEMENT PLANING, BITUMINOUS	
SP 302												426	17,832	292					SP 302	18,550	CU. YD.	BITUMINOUS AGGREGATE BASE	
SP 304														292					SP 304	292	CU. YD.	AGGREGATE BASE	
SP 304												710	19,593						SP 304	20,303	CU. YD.	AGGREGATE BASE, VARIABLE DEPTH	B7
SP 402												266	6941	1179					SP 402	8386	CU. YD.	ASPHALT CONCRETE BASE COURSE OR RECYCLED ASPHALT CONCRETE BASE COURSE	
SP 404												89	2314	842			42		SP 404	3,287	CU. YD.	ASPHALT CONCRETE SURFACE COURSE, USING CRUSHED SLAG	
SP 407													244	2261			122		SP 407	2,627	GALLON	TACK COAT	
SP 408												1022	25,678	700					SP 408	27,400	GALLON	PRIME COAT	
SP 609												100				2423			SP 609	2523	LIN. FT.	ASPHALT CONCRETE CURB, AC-20, STANDARD TYPE 1	
SP 611																282			SP 611	282	SQ. YD.	CLASS S CONCRETE, APPROACH SLAB, USING SHRINKAGE COMPENSATING CEMENT (T=10")	
SP 617														3385					SP 617	3385	SQ. YD.	SHOULDER PREPARATION	
SP 617														376					SP 617	376	CU. YD.	COMPACTED AGGREGATE	
SP 617														10					~~SP 617~~	~~10~~	~~M. GAL.~~	~~WATER~~	
SP 627															1189				SP 627	1189	TON	STONE SHOULDER PROTECTION	
SPECIAL																							

NO.	REVISIONS	BY	DATE
1	CHANGE IN QUANTITY	RER	8/24/97

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

DESIGNED: DES | CHECKED: CKD | DATE: DAT
DRAWN: DWN | IN CHARGE: CHG | SCALE: NONE

CONTRACT 77-97-04 SHEET B18 OF B178

ITEM	FROM SHEET NO.								ITEM	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	B-40	B8	B12	B23	B110	B111	B112	B-40A					
												TRAFFIC CONTROL	
SP 622B					10				SP 626	10	EACH	REPLACEMENT PAVEMENT MARKER CASTING – STIMSONITE MODEL 101 LP	
SP 626							274		SP 626	274	EACH	RAISED PAVEMENT MARKER – STIMSONITE MODEL 101 LP ONE-WAY WHITE	
SP 626							288	119	SP 626	405	EACH	REPLACEMENT PRISMATIC RETRO-REFLECTOR	
SP 626						1			630	1	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN & STORAGE, AS PER PLAN	B110
						130			630	130	LIN. FT.	GROUND MOUNTED SUPPORT, NO. 3 POST	
630						4			630	4	EACH	SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED, AS PER PLAN	B110
630						96			630	96	SQ. FT.	SIGN ERECTED, FLAT SHEET, AS PER PLAN	B110
630						14			630	14	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE, AS PER PLAN	B110
630						1			630	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT & STORAGE TYPE TC-16.30	B-110
						1			630	1	EACH	REMOVAL OF TEMPORARY OVERLAY SIGN AND STORAGE, AS PER PLAN	B110
630						15			630	15	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND STORAGE, AS PER PLAN	B110
630								2,500	642	2,500	LIN.FT.	CHANNELIZING LINE, TYPE 1	
							9.53	0.94	642	10.47	MILE	EDGE LINE, TYPE 1, AS PER PLAN	B110
642							8.78	1.17	642	9.95	MILE	LANE LINE, TYPE 1, AS PER PLAN	B110
642							0.47		642	0.47	MILE	REMOVAL OF PAVEMENT MARKING	
642								236	642	236	LIN.FT.	TRANSVERSE LINE, TYPE 1	
							133		802	133	EACH	BARRIER REFLECTOR, TYPE A	
802							236		802	236	EACH	BARRIER REFLECTOR, TYPE B	
802													
SPECIAL							8.80	0.83	SPECIAL	9.63	MILE	SONIC NAP ALERT PATTERN (SNAP)	
												LIGHTING	
	21			~~21~~					SP625	21	LIN.FT.	CONDUIT, 4" CELL W/ 4 CELL INNERDUCT 713.04 OR 713.07 SCHEDULE 80	
	21			~~21~~					625	21	LIN.FT.	TRENCH, 24" DEEP	
				93					625	93	LIN. FT.	CONDUIT, 1 1/2", 713.07	
SP 625				11,420					SP 625	11,420	LIN. FT.	CONDUIT, 4" WITH 3 CELL INNERDUCT, 713.07	
SP 625				11,420					SP 625	11,420	LIN. FT.	CONDUIT, 4" WITH 4 CELL INNERDUCT, 713.07	
SP 625	1			20					SP 625A	21	EACH	JUNCTION BOX, POLYMER CONCRETE, 18"x8"x8"	
SP 625A	44								SP 625	44	LIN. FT.	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT 4" *	
	1								625	1	EACH	PULL BOX, 713.08, 24'	
												MAINTENANCE OF TRAFFIC	
614			0.12						614	0.12	MILE	TEMPORARY CENTERLINE, CLASS 1 740.05, TYPE C	
614			40						614	40	LIN. FT.	TEMPORARY STOP LINE, CLASS 1 740.05, TYPE C	
614			0.26						614	0.26	MILE	TEMPORARY EDGE LINE, CLASS 1 740.05, TYPE C	
614			16						614	16	EACH	BARRIER REFLECTOR, TYPE B2	
615			44						615	44	SQ. YD.	TEMPORARY PAVEMENT, CLASS A, AS PER PLAN	B12
616		100							616	100	M. GAL.	WATER	
616		10							616	10	TON	CALCIUM CHLORIDE	
622			300						622	300	LIN. FT.	PORTABLE CONCRETE BARRIER, 32"	
					14				SP622B	14	EACH	DELINEATOR	
												FOR STRUCTURE OVER CUYAHOGA RIVER, SEE SHEET NO. 125	
												FOR STRUCTURE OVER INFIRMARY ROAD, SEE SHEET NO. 141	
SP 614													
SP 619													
SP 623													
624													

* WITH 4 CELL INNERDUCT 713.04 OR 713.07 SCHEDULE 80

NO.	REVISIONS	BY	DATE
1	ADD. REV. & ADDED QUANT.	[illegible]	1-2-98

OHIO TURNPIKE COMMISSION

GENERAL SUMMARY

W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

DESIGNED: WCR | CHECKED: FDH | DATE: 12-4-96
DRAWN: SAH | IN CHARGE: WDA | SCALE: NONE

CONTRACT 77-97-04 SHEET B19 OF B178

STRUCTURE – GENERAL NOTES

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992 INCLUDING THE 1993, 1994 AND 1995 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING

HS20-44 CASE I, THE ALTERNATE MILITARY LOADING, AND A 30 P.S.F. FUTURE WEARING SURFACE.

DESIGN STRESSES

CONCRETE CLASS S –	COMPRESSIVE STRENGTH 4500 P.S.I. (SUPERSTRUCTURE)
CONCRETE CLASS C –	COMPRESSIVE STRENGTH 4000 P.S.I. (SUBSTRUCTURE)
REINFORCING STEEL –	ASTM A615, A616, A617 GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I. SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615
EXISTING STRUCTURAL STEEL	ASTM A7 (ASSUMED) – YIELD STRENGTH 33,000 P.S.I. ASTM A36 – YIELD STRENGTH 36,000 P.S.I.
NEW STRUCTURAL STEEL	ASTM A36 – YIELD STRENGTH 36,000 P.S.I. ASTM A572 – YIELD STRENGTH 50,000 P.S.I. (STEEL LOAD PLATE FOR ELASTOMERIC BEARINGS ONLY)

ODOT STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFERENCE SHALL BE MADE TO THE FOLLOWING OHIO DEPARTMENT OF TRANSPORTATION STANDARD DRAWINGS:

BS-1-93	DATE: 12-19-94
FB-1-82	DATE: 5-10-82
PCB-91	DATE: 4-24-92
RB-1-55	REVISED: 2-2-59
SD-1-69	DATE: 6-12-69

REFERENCE SHALL BE MADE TO THE FOLLOWING OHIO DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATIONS:

944 DATE: 12-07-95 1

UTILITIES LINES

THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO PROTECT THE EXISTING UTILITY LINES IN THE VICINITY OF THE STRUCTURE WHILE PERFORMING ANY WORK. THE CONTRACTOR AND UTILITY COMPANY(IES) ARE REQUESTED TO COOPERATE BY ARRANGING WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER BE HELD TO A MINIMUM. ALL EXPENSE INVOLVED IN RELOCATION (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY COMPANY.

REFER TO SHEET B7 FOR FURTHER INFORMATION.

EXISTING STRUCTURE PLANS

THE ORIGINAL CONSTRUCTION PLANS OR THE DECK REPLACEMENT DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE OFFICES OF URS CONSULTANTS, 564-A WHITE POND DRIVE, AKRON, OHIO 44320. TELEPHONE: (330) 836-9111.

EXISTING STRUCTURE VERIFICATION

DETAILS, DIMENSIONS, AND ELEVATIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO SECTION 513.02 OF THE SPECIFICATIONS AND O.T.C. GENERAL CONDITIONS G-2.04 AND G-5.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS, DIMENSIONS, ELEVATIONS, AND SKEW ANGLES WHICH HAVE BEEN FIELD VERIFIED BY THE CONTRACTOR. THE STRUCTURAL STEEL AND STRUCTURAL STEEL DECK JOINTS SHALL NOT BE FABRICATED UNTIL THE ACTUAL DETAILS, DIMENSIONS, ELEVATIONS, AND SKEW ANGLES HAVE BEEN FIELD VERIFIED BY THE CONTRACTOR.

ANY ADDITIONAL COST RESULTING FROM VARIATIONS FROM PLAN DIMENSIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO ADDITIONAL PAYMENT OVER THE UNIT PRICE BID WILL BE AWARDED BY THE COMMISSION.

DIMENSIONS

DIMENSIONS GIVEN ARE MEASURED HORIZONTALLY AND AT SIXTY (60) DEGREES FAHRENHEIT, UNLESS OTHERWISE NOTED.

DECK PROTECTIVE METHOD

THE DECK PROTECTIVE METHODS FOR THE SUPERSTRUCTURE DECK AND ABUTMENT SLAB ARE EPOXY COATED REINFORCING STEEL IN THE TOP AND BOTTOM MATS, THREE (3) INCH CONCRETE COVER AND CONCRETE WEATHERPROOFING SEALER ON THE TOP SURFACE.

MONOLITHIC WEARING SURFACE

THE THICKNESS OF THE MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE ONE (1) INCH.

CONCRETE WEATHERPROOFING

ITEM SP 536-CONCRETE WEATHERPROOFING SHALL BE APPLIED TO THE FOLLOWING NEW EXPOSED CONCRETE SURFACES OF THE BRIDGE:

- THE TOPS OF NEW ABUTMENT SLABS AND NEW SUPERSTRUCTURE SLABS.
- ALL NEW PARAPET SURFACES AND SLAB SIDE EDGES.
- THE BOTTOM SURFACE OF THE NEW SUPERSTRUCTURE SLAB FROM THE SLAB SIDE EDGE TO THE EXTERIOR STRINGER FLANGE.
- NEW APPROACH SLABS AND MEDIAN BARRIERS ON THE APPROACH SLABS.
- NEW EXPOSED CONCRETE SURFACES OF ALL ABUTMENTS AND PIERS. SEALING SHALL NOT BE DONE UNTIL ANY CONCRETE PATCHING REPAIRS HAVE BEEN COMPLETED AND CURED.

CARE SHALL BE TAKEN NOT TO APPLY WEATHERPROOFING ON CONSTRUCTION JOINT SURFACES, SURFACES TO RECEIVE JOINT SEALER OR FASCIA BEAM PAINT.

ABUTMENT BACKFILL

BACKFILL BETWEEN THE EXISTING MEDIAN WINGWALLS AND EXTENDING FROM THE EXISTING GROUND LINE TO THE BOTTOM OF THE DECK SLAB SHALL BE PLACED IN ACCORDANCE WITH SECTION 503 OF THE SPECIFICATION AND SHALL BE INCLUDED WITH ITEM 503, ABUTMENT BACKFILL, AS PER 503.10, FOR PAYMENT.

EPOXY COATED REINFORCING STEEL SUPPORT

IN ACCORDANCE WITH THE REQUIREMENTS OF SP 509 AND SECTION 509.09 OF THE SPECIFICATIONS THE TOP AND BOTTOM MATS OF ALL LONGITUDINAL AND TRANSVERSE EPOXY COATED REINFORCING STEEL SHALL BE SUPPORTED BY APPROVED EPOXY COATED DEVICES WITH SPACING NOT EXCEEDING THREE (3) FOOT CENTERS IN EACH DIRECTION. BROKEN CONCRETE, BRICKS, ETC. SHALL NOT BE USED FOR SUPPORT OF REINFORCING STEEL.

COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

IN ADDITION TO THE REQUIREMENTS OF 503.03, THE CONTRACTOR SHALL DESIGN AND CONSTRUCT COFFERDAMS, CRIBS AND SHEETING TO ACCOMMODATE A WATER ELEVATION 5 FEET ABOVE THE NORMAL WATER ELEVATION AS SPECIFIED IN THE PLANS. THE CONTRACTOR, AT HIS OPTION, MAY ELECT TO DESIGN AND CONSTRUCT THE COFFERDAM TO ACCOMMODATE A LOWER WATER ELEVATION, HOWEVER, CONSTRUCTION TO THE LOWER WATER ELEVATION WOULD NEGATE THE PROSPECT OF CLAIMING A CHANGED CONDITION DUE TO HIGH WATER OR FLOODING OF THE COFFERDAM. ANY REQUEST CITING A CHANGED CONDITION MUST BE SUBMITTED, IN WRITING, TO THE ENGINEER WITH SUPPORTING CALCULATIONS AND DRAWINGS SUBSTANTIATING THAT THE ITEM AS CONSTRUCTED WOULD HAVE ACCOMMODATED A WATER ELEVATION 5 FEET ABOVE THE NORMAL WATER ELEVATION AS SPECIFIED IN THE PLANS.

NO.	REVISIONS	BY	DATE
1	ADD. CHANGED DATE	RER	1-24-97

OHIO TURNPIKE COMMISSION

STRUCTURE GENERAL NOTES
OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)
OHIO TURNPIKE OVER INFIRMARY ROAD (MP 193.1)

W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

DESIGNED: ZRD	CHECKED: wda	DATE: 12-4-96
DRAWN: FDH	IN CHARGE: WDA	SCALE: N.T.S.

61/65 CONTRACT 77-97-04 SHEET B119 OF B178

STRUCTURE – GENERAL NOTES

BRIDGE DECK ELEVATIONS, SLAB THICKNESS, AND APPROACH PROFILES

IN ORDER TO MEET ROADWAY GRADES, TO ASSURE THE CONSTRUCTION OF THE REQUIRED THICKNESS OF DECK SLABS, AND TO ASSURE THE PROPER LOCATION OF THE REINFORCING STEEL IN THE DECK SLABS, THE CONTRACTOR SHALL OBTAIN THE ELEVATIONS OF THE TOP OF THE NEW AND EXISTING STEEL BEAMS AFTER THE REMOVAL OF THE PORTIONS OF EXISTING DECK SLAB, DELINEATED IN THE PLANS AT THE LOCATIONS SHOWN IN THE TABLE ON SHEETS 14/16 AND 17/19 FOR THE FINAL PAVEMENT ELEVATIONS. THE CONTRACTOR SHALL COMPUTE THE DECK SCREED ELEVATIONS UTILIZING THE DEAD LOAD DEFLECTIONS. THE CONTRACTOR SHALL THEN CALCULATE THE DECK THICKNESS OVER THE BEAMS USING THE DECK SCREED ELEVATIONS AND THE TOP OF BEAM ELEVATIONS. THE CONTRACTOR SHALL FURNISH THE ELEVATIONS TO THE ENGINEER FOR FINAL CHECKING. IF THE COMPUTED DECK THICKNESS IS FOUND TO BE LESS THAN THE MINIMUM THICKNESS REQUIRED, THE FINAL PAVEMENT ELEVATIONS SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. FORM WORK SHALL NOT PROCEED UNTIL A CHECK OF THE FINAL ELEVATIONS HAS BEEN PERFORMED BY THE ENGINEER.

THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED UPON 8 1/2" THICK CONCRETE OUTSIDE THE HAUNCH AREAS, AND THE AVERAGE THICKNESS OF CONCRETE PLACED OVER THE EXISTING OR PROPOSED BEAMS AT THE HAUNCHES. A TYPICAL HAUNCH WIDTH OF NINE (9) INCHES SHALL BE USED FOR COMPUTING THE QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN SIX (6) AND TWELVE (12) INCHES, PROVIDED THAT THE SLOPE SHALL NOT BE MORE THAN 1:4 FOR A HAUNCH LESS THAN NINE (9) INCHES IN WIDTH.

PLACEMENT OF THE ABUTMENT SLAB PRIOR TO THE DECK SLAB SHALL NOT BE PERMITTED. HOWEVER, THE ABUTMENT SLAB AND THE DECK SLAB MAY BE POURED AT THE SAME TIME. UPON THE COMPLETION OF THESE POURS AND PRIOR TO POURING THE CONCRETE APPROACH SLABS, THE ENGINEER SHALL PROVIDE THE CONTRACTOR WITH FINISH GRADES AND ELEVATIONS REQUIRED TO PROVIDE A SMOOTH TRANSITION FROM THE ROADWAY PAVEMENT AND APPROACH SLABS TO THE CONCRETE ABUTMENT AND DECK SLABS.

PRIOR TO PLACING THE APPROACH SLABS, THE CONTRACTOR SHALL PROVIDE THE ENGINEER THE EDGE OF NEW AND EXISTING PAVEMENT ELEVATIONS AND EDGE OF SHOULDER ELEVATIONS AT 25 FOOT INTERVALS FOR A DISTANCE OF 200 FEET BEYOND THE END OF THE APPROACH SLAB, AND AS BUILT ELEVATIONS OF THE ABUTMENT AND DECK SLABS. AFTER RECEIPT OF THESE ELEVATIONS, THE ENGINEER SHALL CALCULATE AND PROVIDE TO THE CONTRACTOR FINAL ELEVATIONS FOR THE APPROACH SLABS AND APPROACH PAVEMENT. NO APPROACH SLABS SHALL BE POURED NOR SHALL PAVING COMMENCE UNTIL RECEIPT OF THESE FINAL ELEVATIONS.

PAYMENT FOR THE ABOVE MENTIONED WORK SHALL BE INCLUDED WITH THE LUMP SUM PRICE BID FOR ITEM SP 623-CONSTRUCTION LAYOUT SURVEY.

REPLACEMENT OF EXISTING REINFORCING STEEL

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONCRETE REMOVAL OPERATIONS OF THE CONTRACTOR SHALL BE REPLACED WITH NEW STEEL AT THE EXPENSE OF THE CONTRACTOR. DRILLING DOWEL HOLES, FURNISHING AND PLACING SP 956 NONSHRINKING EPOXY MORTAR, AND REINFORCING BAR DOWELS, WHERE NEEDED TO REPLACE EXISTING REINFORCEMENT DAMAGED BY THE CONTRACTOR, SHALL BE DONE AT THE CONTRACTOR'S EXPENSE OF THE CONTRACTOR.

EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION, SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 300 LBS FOR THE TURNPIKE OVER CUYAHOGA RIVER (MP 191.4) AND 150 LBS FOR THE TURNPIKE OVER INFIRMARY ROAD (MP 193.1) HAS BEEN INCLUDED IN THE QUANTITIES FOR ITEM SP 509 FOR THIS PURPOSE.

CUTTING OR BENDING OF REINFORCING BARS

ANY CUTTING OR BENDING OF BARS NECESSARY TO ACCOMMODATE ANY ESSENTIAL ELEMENT OF WORK RELATED TO THE PROJECT, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 509 REINFORCING STEEL, GRADE 60 AND/OR ITEM SP 509 EPOXY COATED REINFORCING STEEL, GRADE 60 AND/OR ITEM SP 825 GALVANIZED REINFORCING STEEL, GRADE 60 UNLESS OTHERWISE NOTED.

PATCHING CONCRETE STRUCTURES

A CONTINGENCY QUANTITY OF 20 SQ. FT. OF SP 519 PATCHING CONCRETE STRUCTURES HAS BEEN INCLUDED ON THE SUMMARY OF QUANTITIES FOR EACH STRUCTURE FOR USE AS DIRECTED BY THE ENGINEER.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE ESTIMATED QUANTITIES FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

CONSTRUCTION JOINTS

CONSTRUCTION JOINT SURFACES SHALL BE FREE FROM OIL, LAITANCE, FORM RELEASE AGENT, OR ANY OTHER MATERIAL THAT WOULD PREVENT BONDING TO THE CONCRETE SURFACE. ALL LAITANCE AND OTHER CONTAMINANTS SHALL BE REMOVED BY HIGH PRESSURE WATER BLASTING WITH A MINIMUM PRESSURE OF 5,000 P.S.I. HOWEVER, WATER BLASTING SHALL NOT BE REQUIRED WHERE EXISTING CONCRETE HAS BEEN ROUGHENED BY JACKHAMMERS DURING CONCRETE REMOVAL OPERATIONS. SURFACES SHALL BE THOROUGHLY DRENCHED WITH CLEAN WATER AND ALLOWED TO DRY TO A DAMP CONDITION FREE OF STANDING WATER BEFORE PLACING CONCRETE. PREPARATION OF CONSTRUCTION JOINT SURFACES SHALL NOT BE MEASURED FOR PAYMENT. THE COST THEREOF SHALL BE INCLUDED IN THE CONTRACT PRICE ON THE PERTINENT CONCRETE ITEMS.

ABBREVIATIONS

E.F.	-	EACH FACE	O/O	-	OUT TO OUT
F.F.	-	FAR FACE	C/C	-	CENTER TO CENTER
N.F.	-	NEAR FACE	MIN.	-	MINIMUM
TYP.	-	TYPICAL	EXIST.	-	EXISTING
BRG.	-	BEARING	P.G.	-	PROFILE GRADE
SPA.	-	SPACES	DIA.	-	DIAMETER
E.B.	-	EASTBOUND			
W.B.	-	WESTBOUND			
R.A.	-	REAR ABUTMENT			
F.A.	-	FORWARD ABUTMENT			
R.P.	-	REAR PIER			
F.P.	-	FORWARD PIER			

ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE SIX (6) INCH DIAMETER, PLASTIC CORRUGATED PIPE AS PER ODOT SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE SP.

ITEM 518 - 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE SIX (6) INCH DIAMETER, PLASTIC CORRUGATED PIPE AS PER ODOT SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE S. THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES AND END CAPS REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

CONCRETE PARAPETS

DEFLECTION JOINTS SHALL BE CONSTRUCTED BY SAWING THE CONCRETE AFTER IT HAS TAKEN ITS INITIAL SET AND BEFORE ANY CRACKS DEVELOP. THE USE OF AN EDGE GUIDE, FENCE OR JIG SHALL BE USED TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE AND ALIGNED ON BOTH FACES OF THE PARAPET. THE JOINT SHALL BE THE WIDTH OF THE SAW BLADE, NOT TO EXCEED ONE QUARTER (0.25) INCH, AND SHALL BE ONE AND ONE-HALF (1.5) INCHES DEEP. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK, EXCEPT AS NOTED ON THE PLANS AND SHALL BE CAULKED WITH A ONE (1) INCH THICKNESS OF MATERIAL CONFORMING TO FEDERAL SPECIFICATION TT-S-00227E. THE BOTTOM ONE HALF (0.5) INCH OF THE SAWED JOINT AT THE OUTSIDE FACE OF THE PARAPET SHALL BE LEFT UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

PILE DRIVING

IF EQUIPMENT FOR PILE DRIVING OPERATIONS OCCUPIES ANY PORTION OF THE EXISTING STRUCTURE, STRESS CALCULATIONS BY A REGISTERED STRUCTURAL ENGINEER SHALL BE SUBMITTED TO THE ENGINEER IN ACCORDANCE WITH SECTION 501.09 OF THE SPECIFICATIONS.

PILE DESIGN LOADS (SAFE BEARING CAPACITY)

TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)
THE DESIGN LOAD FOR THE ABUTMENT PILES IS 45 TONS PER PILE AND THE DESIGN LOAD FOR THE PIER PILES IS 67 TONS PER PILE.

TURNPIKE OVER INFIRMARY ROAD (MP 193.1)
THE DESIGN LOAD FOR THE ABUTMENT PILES IS 45 TONS PER PILE AND THE DESIGN LOAD FOR THE PIER PILES IS 40 TONS PER PILE.

ITEM 507 - 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, AS PER PLAN

PILE WALL THICKNESS:
THE RESPONSIBILITY OF CHOOSING AND PROVIDING A SATISFACTORY PILE WALL THICKNESS FOR THIS PROJECT SHALL BE BORNE BY THE CONTRACTOR EXCEPT THAT THE PILE WALL THICKNESS SHALL NOT BE LESS THAN 0.235 INCHES. IF A PILE WALL THICKNESS GREATER THAN 0.235 INCHES IS NECESSARY TO RESIST THE PILE INSTALLATION DRIVING STRESS, THE CONTRACTOR SHALL MAKE THIS DETERMINATION AND SHALL FURNISH A PILE WITH AN ACCEPTABLE WALL THICKNESS. IF MONOTUBE PILES ARE USED, THE MINIMUM WALL THICKNESS SHALL BE 0.17 INCHES.

PILE HAMMER:
THE PILE HAMMER USED TO INSTALL THESE CONCRETE PILES SHALL HAVE A STATE'S ENERGY RATING OF NOT LESS THAN 18,500 FOOT-POUNDS. THIS REQUIREMENT DOES NOT RELIEVE THE CONTRACTOR FROM 108.05 WHICH STATES THAT THE CONTRACTOR IS TO PROVIDE SUFFICIENT EQUIPMENT FOR PROSECUTING THE REQUIRED WORK. REFER TO "ODOT'S MANUAL OF PROCEDURES FOR STRUCTURES" TO OBTAIN THE STATE'S ENERGY RATING.

ITEM 518 - SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN

SCUPPERS SHALL BE IN ACCORDANCE WITH STANDARD DRAWING SD-1-69 EXCEPT THAT SCUPPER PIPES SHALL EXTEND 8 INCHES BELOW THE BOTTOM OF THE BEAMS INSTEAD OF 2 INCHES.

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

STRUCTURE GENERAL NOTES
OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)
OHIO TURNPIKE OVER INFIRMARY ROAD (MP 193.1)

W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

DESIGNED: ZRD | CHECKED: wda | DATE: 12-4-96
DRAWN: FDH | IN CHARGE: WDA | SCALE: N.T.S.

STRUCTURE – GENERAL NOTES

PARAPET FORMS

FORMS FOR THE BRIDGE PARAPETS AND SLAB SIDE EDGES SHALL BE IN ACCORDANCE WITH SECTION 508.027 OF THE SPECIFICATIONS AND THE FOLLOWING:

WHEN WOOD FORMS ARE USED THEY SHALL PRODUCE A SMOOTH SURFACE OF UNIFORM TEXTURE AND COLOR SUBSTANTIALLY EQUAL TO THAT WHICH WOULD BE OBTAINED WITH THE USE OF NEW PLYWOOD CONFORMING TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY PRODUCT STANDARD PSI FOR EXTERIOR B-B CLASS I PLYWOOD.

FORMS SHALL BE OF A CONSTRUCTION WHICH WOULD ALLOW FOR THEIR REMOVAL WITHIN 24 HOURS OF THE CONCRETE PLACEMENT WITHOUT CAUSING DAMAGE TO THE CONCRETE.

GROUT CLEANING

ALL BARRIER SURFACES AND DECK EDGES SHALL BE GROUT CLEANED IN ACCORDANCE WITH SECTION 511.15 OF THE SPECIFICATIONS USING WHITE PORTLAND CEMENT.

ITEM SP 202 – PORTIONS OF STRUCTURE REMOVED

ALL DEMOLITION OPERATIONS PERFORMED UNDER ITEM SP 202 SHALL COMPLY IN ALL RESPECTS WITH THE REQUIREMENTS OF THE OTC SPECIAL PROVISION SP 525A LEAD PAINT REMOVAL, WORKER/ENVIRONMENTAL PROTECTION AND WASTE HANDLING.

MAINTENANCE OF TRAFFIC ON INFIRMARY ROAD

MAINTENANCE OF TRAFFIC ON INFIRMARY ROAD SHALL BE AS PER SHEETS B12 THRU B14 .

COATING ASSESSMENT REPORT

THE BIDDER'S ATTENTION IS CALLED TO THE EXISTENCE OF A ''COATING ASSESSMENT REPORT'' FOR THE MAINLINE BRIDGE STRUCTURES INCLUDED IN THIS CONSTRUCTION CONTRACT:

THE BRIDGES ARE AS FOLLOWS:
OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)
OHIO TURNPIKE OVER INFIRMARY ROAD (MP 193.1)

THE PURPOSE OF THE INVESTIGATION WAS TO ASSESS THE CONDITION OF THE PROTECTIVE COATINGS (PAINT) FOUND ON THE EXISTING BRIDGES AND TO MAKE REPAIR OR REPLACEMENT RECOMMENDATIONS.

THIS INVESTIGATION WAS CONDUCTED BY KTA/SET ENVIRONMENTAL (KTA/SET) OF PITTSBURGH PENNSYLVANIA, PROVIDING COMPREHENSIVE ENGINEERING AND CONSULTING SERVICES FOR HAZARDOUS (LEAD) PAINT MANAGEMENT. THE REPORT INCLUDES FIELD OBSERVATIONS, FIELD TEST RESULTS, LABORATORY ANALYSIS AND A DISCUSSION OF THE FINDINGS AND RECOMMENDATIONS OF KTA/SET.

THESE RECOMMENDATIONS WERE USED AS A GUIDE TO DETERMINE WHICH OF THE EXISTING STRUCTURES WERE TO HAVE THE EXISTING STEEL PAINTED.

THE REPORT IS AVAILABLE FOR REVIEW BY EACH PROSPECTIVE BIDDER AT THE OFFICE OF THE COMMISSION OR AT THE OFFICE OF URS GREINER, INC., 564 WHITE POND DRIVE, AKRON, OHIO 44320: (330) 836-9111.

OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

PAINTING OF ITEM 513, STRUCTURAL STEEL AISC CATEGORY I, AS PER PLAN

THE NEW STRUCTURAL STEEL SHALL BE TOTALLY SHOP PAINTED WITH ALL COATS IN ACCORDANCE WITH SPECIAL PROVISION ''SP 514A, TOTAL SHOP PAINTING – SYSTEM IZEU''. THE THREE COAT SHOP APPLICATION OF THE PAINT IS INCLUDED FOR PAYMENT UNDER 'ITEM 513, STRUCTURAL STEEL, AISC CATEGORY I, AS PER PLAN'.

ANY FIELD TOUCH UP OF DAMAGED AREAS SHALL BE INCLUDED WITH ITEM SP 514A – FIELD CLEANING AND REPAIR OF DAMAGED COATING, SYSTEM IZEU.

SURFACE PREPARATION OF STEEL PRIOR TO PAINTING

THE CONTRACTOR'S ATTENTION IS CALLED TO SPECIAL PROVISION SP 514A PART 3 – EXECUTION, SECTION II SURFACE PREPARATION, SPECIFICALLY PARAGRAPH A, WHICH ADDRESSES SURFACE PREPARATION.

ALL SHARP EDGES SUCH AS THOSE CREATED BY FLAME CUTTING AND SHEARING OF STEEL SHALL BE ADDRESSED ACCORDING TO THIS SPECIFICATION IN ORDER TO ENSURE A PROPER PAINT SYSTEM. BREAKING THE EDGE CAN BE ACCOMPLISHED BY A SINGLE PASS OF A GRINDER IN ORDER TO FLATTEN THE EDGE. HOWEVER, CARE SHALL BE TAKEN TO ENSURE THAT DURING THE REMOVAL OPERATION NEW SHARP EDGES ARE NOT CREATED. THIS REQUIREMENT IS APPLICABLE TO ALL STRUCTURES WHETHER OR NOT IT IS SPECIFICALLY ADDRESSED IN THE CONTRACT DRAWINGS.

NO SEPARATE PAYMENT FOR ANY GRINDING REQUIRED TO CONFORM TO THE SPECIFICATIONS WILL BE MADE UNDER SP 514A. PAYMENT FOR THE SHOP APPLIED COATING SYSTEM IS INCLUDED IN THE COMPLETED WORK OF ITEM 513 – STRUCTURAL STEEL (OF THE TYPE SPECIFIED) PER PART 4 – MEASUREMENT AND PAYMENT OF SPECIAL PROVISION SP 514A.

PROTECTION OF PAINTED STEEL DURING ERECTION

THE NEW STRUCTURAL STEEL THAT IS TOTALLY PAINTED IN THE SHOP SHALL CONFORM IN ALL RESPECTS TO THE REQUIREMENTS OF SP 514A TOTAL SHOP PAINTING – SYSTEM IZEU AND SPECIFICALLY TO PART 3 – EXECUTION, SECTION V ''SHIPPING, STORAGE AND HANDLING OF SHOP PAINTED STEEL.''

IN ADDITION TO THESE REQUIREMENTS THE CONTRACTOR SHALL TAKE WHATEVER MEANS NECESSARY TO PROTECT THE FINISHED PAINTED SURFACE FROM DAMAGE DURING THE ERECTION OF THE STEEL, THE INSTALLATION OF THE FALSEWORK AND FORMWORK AND THE POURING OF THE CONCRETE DECK AND PARAPETS. THIS PROTECTION SHALL INCLUDE THE USE OF PADDING ON BRACKETS AND FORMWORK SUPPORTS, CONSTRUCTION OF TIGHT FITTING FORMS AND OTHER PROTECTIVE METHODS THE CONTRACTOR MAY DEEM NECESSARY FOR PROTECTING THE NEWLY PAINTED SURFACE.

THE CHIEF ENGINEER SHALL HAVE THE AUTHORITY TO INSTRUCT THE CONTRACTOR TO DELAY THE START OF HIS OPERATIONS OR SUSPEND HIS OPERATIONS IN WHOLE OR IN PART IF HE DOES NOT UTILIZE PROPER CARE OR MEANS TO PROTECT THE NEWLY PAINTED STEEL DURING ERECTION OR HIS FORMING OPERATIONS.

OHIO TURNPIKE OVER INFIRMARY ROAD (MP 193.1)

SURFACE PREPARATION OF STEEL PRIOR TO PAINTING

THE CONTRACTOR'S ATTENTION IS CALLED TO SPECIAL PROVISION SP 514B PART 3 – EXECUTION, SECTION II SURFACE PREPARATION, SPECIFICALLY PARAGRAPH A, WHICH ADDRESSES SURFACE PREPARATION.

ALL SHARP EDGES SUCH AS THOSE CREATED BY FLAME CUTTING AND SHEARING OF STEEL SHALL BE ADDRESSED ACCORDING TO THIS SPECIFICATION IN ORDER TO ENSURE A PROPER PAINT SYSTEM. BREAKING THE EDGE CAN BE ACCOMPLISHED BY A SINGLE PASS OF A GRINDER IN ORDER TO FLATTEN THE EDGE. HOWEVER, CARE SHALL BE TAKEN TO ENSURE THAT DURING THE REMOVAL OPERATION NEW SHARP EDGES ARE NOT CREATED. THIS REQUIREMENT IS APPLICABLE TO ALL STRUCTURES WHETHER OR NOT IT IS SPECIFICALLY ADDRESSED IN THE CONTRACT DRAWINGS.

NO SEPARATE PAYMENT FOR THE PREPARATION OF THE STRUCTURAL STEEL TO CONFORM TO THE ABOVE REQUIREMENTS WILL BE MADE UNDER SP 514B. PAYMENT FOR THE APPLICATION OF THE SHOP PRIMER IS INCLUDED WITH THE WORK OF ITEM 513 – STRUCTURAL STEEL (OF THE TYPE SPECIFIED). THEREFORE, ALL WORK ASSOCIATED WITH PREPARATION OF THE STEEL PRIOR TO PAINTING IS ALSO INCLUDED IN ITEM 513.

PAINTING OF STRUCTURAL STEEL

THE NEW STRUCTURAL STEEL SHALL BE SHOP PRIMED AND FIELD CLEANED IN ACCORDANCE WITH THE SPECIAL PROVISION SP 514B – SHOP PRIMING/FIELD PAINTING – SYSTEM IZEU.

THE NEW STRUCTURAL STEEL SHALL BE FIELD PAINTED WITH THE INTERMEDIATE AND FINISH COATS IN ACCORDANCE WITH SPECIAL PROVISION SP 514 LOCALIZED OR TOTAL REMOVAL OF EXISTING COATINGS -SYSTEMS OZEU AND UUU.

THE EXISTING STEEL SHALL BE TOTALLY CLEANED AND PRIMED PER SP 514. THE INTERMEDIATE AND FINISH COATS SHALL COMPLY WITH SP 514 AND BE APPLIED TO BOTH THE EXISTING AND NEW STEEL AT THE SAME TIME. DISPOSAL OF THE WASTE MATERIAL/HAZARDOUS WASTE RESULTING FROM THE CLEANING OPERATION SHALL BE PAID FOR UNDER SP 525A.

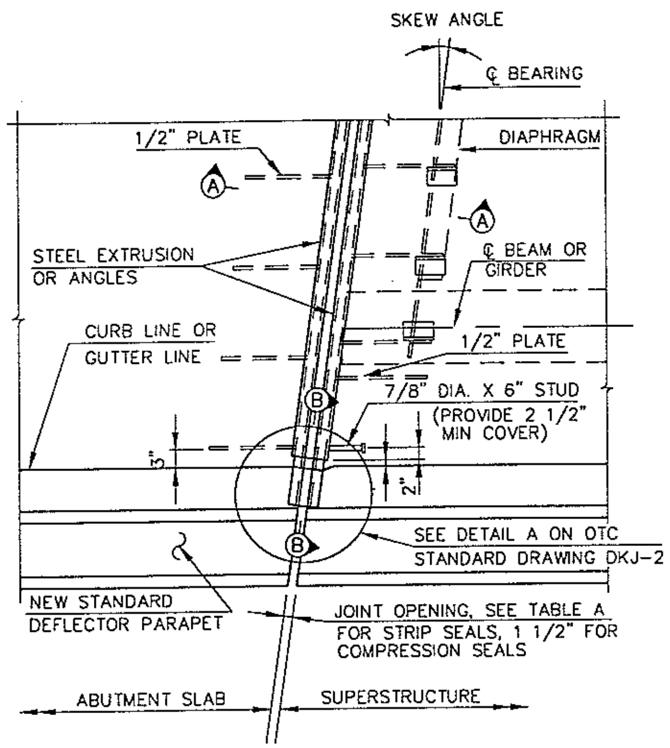
NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

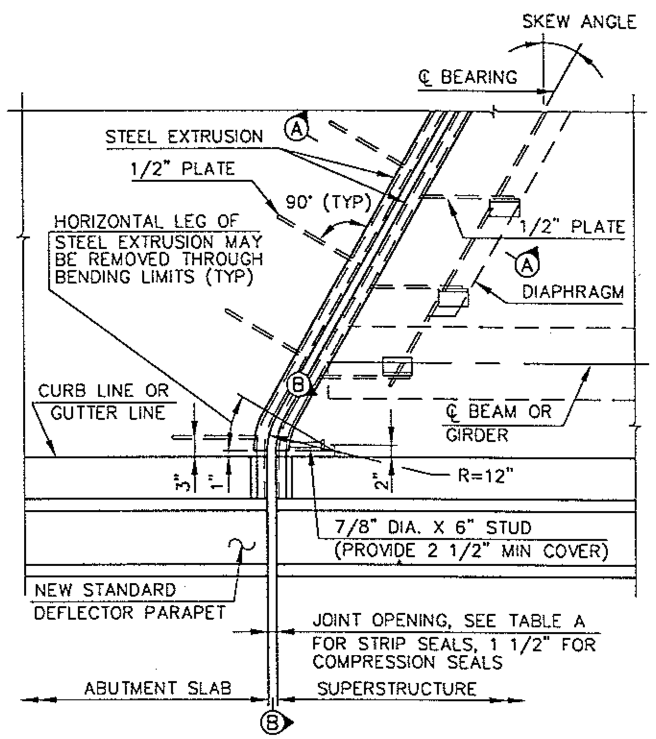
STRUCTURE GENERAL NOTES
OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)
OHIO TURNPIKE OVER INFIRMARY ROAD (MP 193.1)

W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

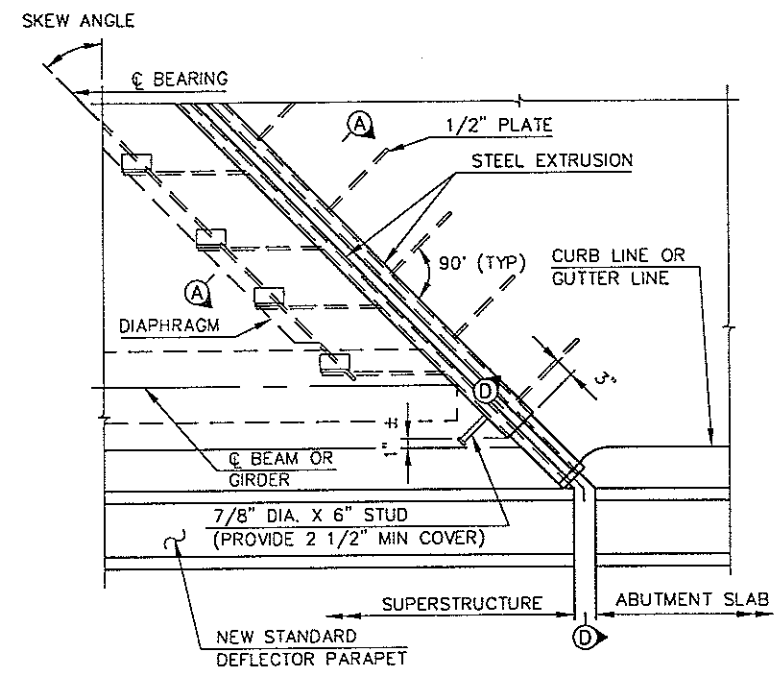
DESIGNED: ZRD	CHECKED: wda	DATE: 12-4-96
DRAWN: FDH	IN CHARGE: WDA	SCALE: N.T.S.



PLAN – SKEW ANGLE < 10°
(STRIP SEAL SHOWN, COMPRESSION SEAL SIMILAR)



PLAN – SKEW ANGLE 10° TO 45°
(STRIP SEAL SHOWN, COMPRESSION SEAL SIMILAR)



PLAN – SKEW ANGLE > 45° (STRIP SEAL ONLY)

NOTE: WHEN SKEW ANGLE IS GREATER THAN 45°, FURNISH JOINT ASSEMBLIES IN TWO SECTIONS AND PROVIDE A FIELD SPLICE AT THE CENTERLINE OF ROADWAY.

GENERAL NOTES

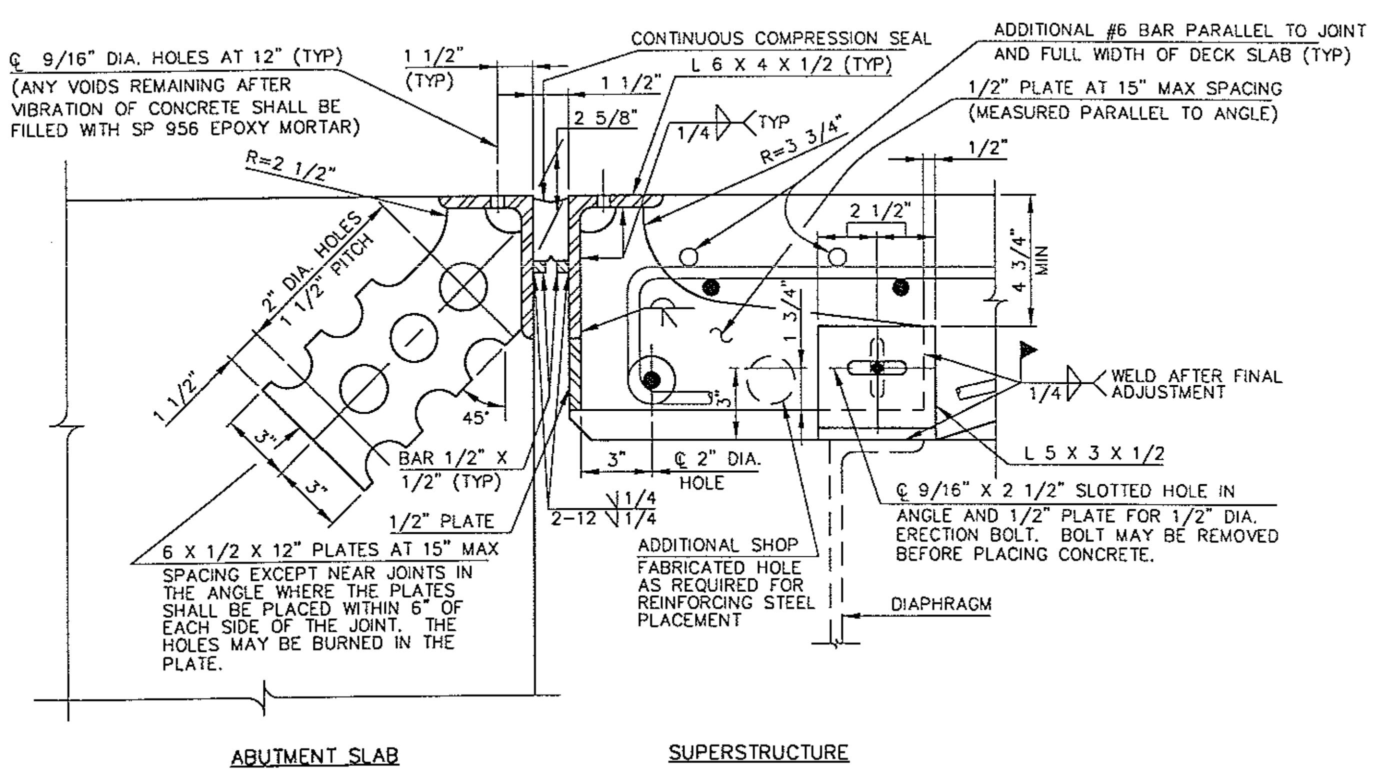
1. INSTALLATION OF SEAL: DURING INSTALLATION OF SUPPORT/ARMOR FOR THE SUPERSTRUCTURE SIDE OF THE JOINT SEAL, THE SEATING OF BEAMS ON BEARINGS SHALL BE CAREFULLY OBSERVED TO ASSURE THAT POSITIVE BEARING IS MAINTAINED. PROPER VERICAL FIT OF THE SUPPORT/ARMOR ON THE BEAMS SHALL BE ACHEIVED BY POSITIONING OF THE SUPPORT ANGLES RATHER THAN BY CLAMPING FORCE.
2. ELASTOMERIC COMPRESSION SEALS SHALL BE USED AT FIXED JOINTS ONLY, AND AT SKEWS LESS THAN 45°.
3. STUD ANCHORS SHALL BE LOW CARBON STEEL ASTM A-108.
4. THE MINIMUM LENGTH OF RETAINER SHALL BE 6'-0" BETWEEN JOINTS UNLESS OTHERWISE SHOWN.
5. JOINTS IN EXTRUSIONS SHALL HAVE WATERTIGHT, PARTIAL PENETRATION BUTT WELDS COMPLETELY AROUND THE OUTER PERIPHERY OF THE ABUTMENT SURFACES. WELDS WHICH WILL BE IN CONTACT WITH THE SEAL AND/OR ANCHOR PLATES SHALL BE GROUND SMOOTH.
6. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
7. ELASTOMERIC COMPRESSION SEALS SHALL BE WATSON-BOWMAN ACME WJ-200, D.S. BROWN C-V 2000, ERIE METAL SPECIALTIES BR200 OR APPROVED EQUAL.
8. CONTINUOUS STRIP SEALS SHALL BE AS MANUFACTURED BY WATSON-BOWMAN ACME, D.S. BROWN OR APPROVED EQUAL, AND SHALL BE THE SIZE AS SPECIFIED. SEE STRIP SEAL SELECTION TABLE.
9. DETAILS AT DIAPHRAGMS SHOWN, DETAILS AT BEAMS OR GIRDERS SIMILAR.
10. TRANSVERSE JOINTS IN COMPRESSION SEAL ARMOR AND VERTICAL LEGS OF EXTRUSIONS SHALL HAVE COMPLETE PENETRATION BUTT WELDS. WELDS WHICH WILL BE IN CONTACT WITH SEALS SHALL BE GROUND FLUSH.
11. ARMOR STEEL COATING: FINISHED STEEL ASSEMBLY SHALL BE METALIZED, SEE SPECIAL PROVISIONS.

NOTE

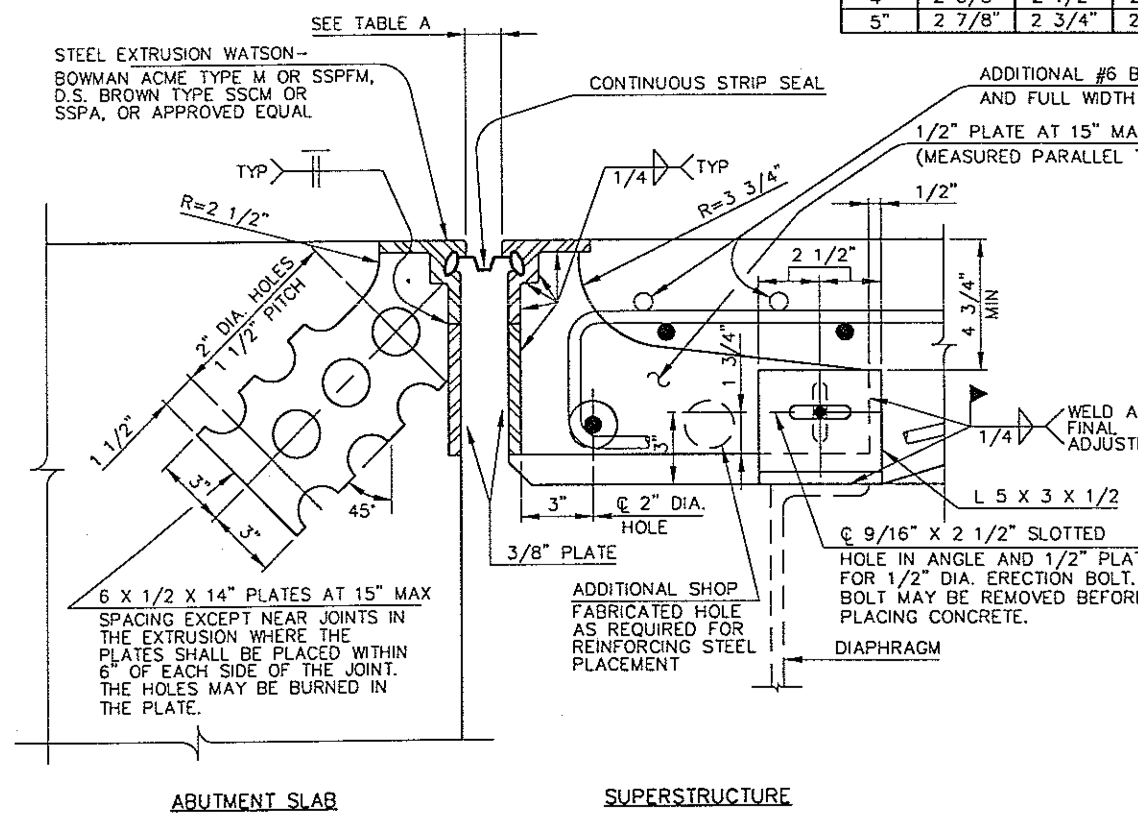
FOR SECTIONS B-B & D-D AND DETAIL A, SEE OTC STANDARD DRAWING DKJ-2.

TABLE A

STRIP SEAL SIZE	STRIP SEAL JOINT OPENING						
	TEMPERATURE °F						
	30	40	50	60	70	80	90
3"	2 1/4"	2 1/8"	2"	1 7/8"	1 3/4"	1 5/8"	1 1/2"
4"	2 5/8"	2 1/2"	2 1/2"	2 3/8"	2 1/4"	2 1/8"	2"
5"	2 7/8"	2 3/4"	2 3/4"	2 5/8"	2 5/8"	2 1/2"	2 3/8"



SECTION A–A (COMPRESSION SEAL)



SECTION A–A (STRIP SEAL)
WATSON-BOWMAN ACME TYPE M, OR D.S. BROWN TYPE SSCM EXTRUSIONS SHOWN.

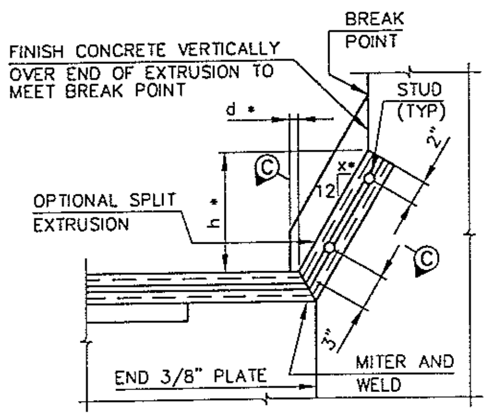
NO.	REVISION	BY	DATE
1	ADDENDUM 1, NEW SHEET ISSUED	JAN	1/24/97

OHIO TURNPIKE COMMISSION

DECK JOINT DETAILS CELLULAR ABUTMENTS

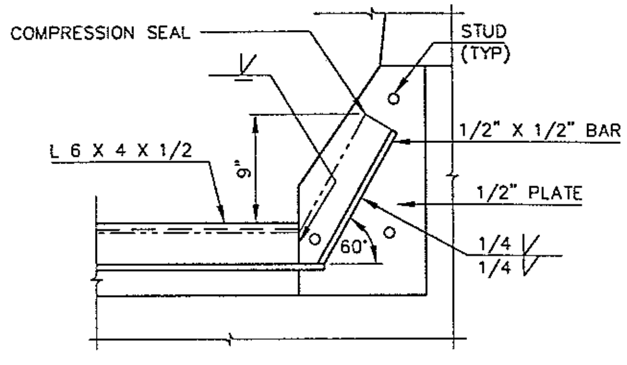
DATE: JANUARY 1, 1997 | SCALE: N.T.S.
C4/C5 | O.T.C. STANDARD DWG. DKJ-1 | SHEET: B122 OF B178

DESIGNED BY: | CHECKED BY:
DATE: | DATE:
DRAWN BY: KMH | REVISED BY: T.K.I.
DATE: 9/95 | DATE: 4/04/96
CAD FILE NAME: 7026100/DKJ-1

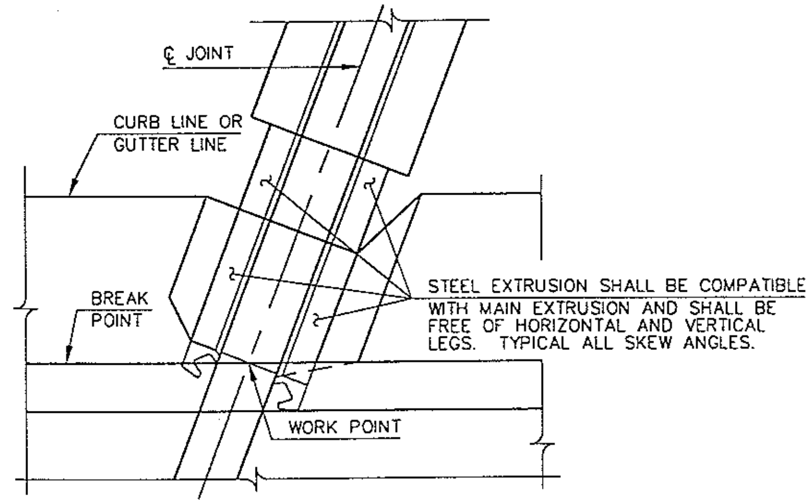


SECTION B-B (STRIP SEAL)

• SEE TABLE B FOR VALUE



SECTION B-B (COMPRESSION SEAL)



DETAIL A

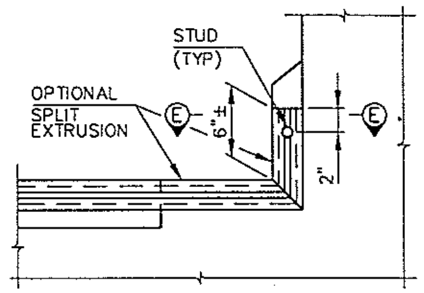
NOTE: FOR JOINT DETAILS IN SIDEWALK SEE OTC STANDARD DRAWING DKJ-3

NOTES

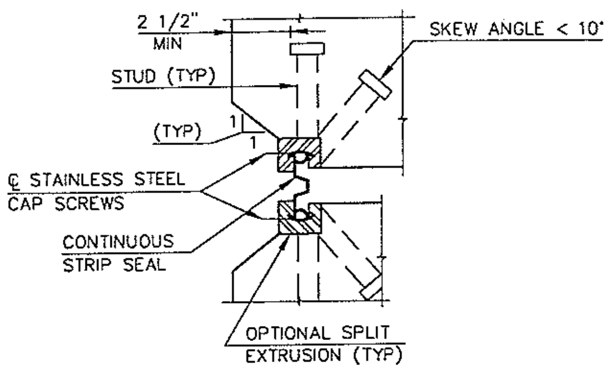
1. THE SPLIT EXTRUSION SHOWN IS A NORMAL EXTRUSION WHICH HAS BEEN MODIFIED. AT JOINT UPTURNS, ESPECIALLY ON SKEWED BRIDGE DECKS, THE USE OF SPLIT EXTRUSIONS MAY BE NECESSARY TO ENSURE GOOD SEAL INSTALLATION. ON SHOP DRAWINGS, WHERE THE SPLIT EXTRUSION IS NOT USED, THE SEAL MANUFACTURER OR HIS AGENT WARRANTS TO THE CHIEF ENGINEER THAT THE FURNISHED CONFIGURATION WILL PROVIDE FOR READY INSTALLATION AND REPLACEMENT OF THE SEAL.
2. SECTION F-F & G-G – THE BENT STEEL PLATES SHALL BE A-36 STEEL, GALVANIZED IN ACCORDANCE WITH ITEM 711.02.

   SHOP DRAWINGS SHALL BE SUBMITTED PER CMS 501.05.

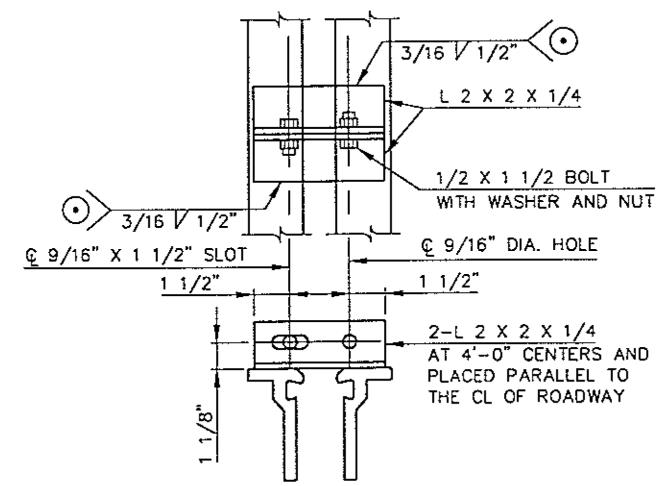
   BASIS OF PAYMENT: THE UNIT PRICE SHALL INCLUDE ALL MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS TO FURNISH AND INSTALL THE BENT PLATES. PAYMENT WILL BE MADE AT THE UNIT PRICE BID PER POUND FOR ITEM 513, PARAPET PLATES, AS PER PLAN.
3. FOR GENERAL NOTES, SEE OTC STANDARD DRAWING DKJ-1.



SECTION D-D



SECTION C-C



DETAIL – ALIGNMENT BRACKET

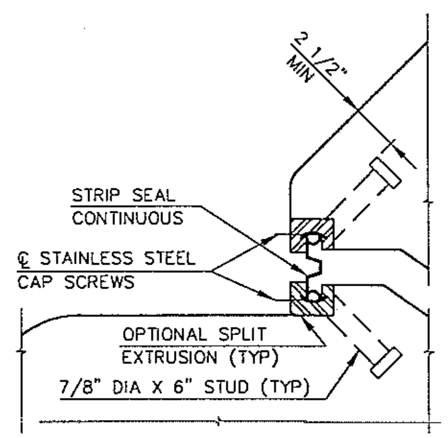
⊙ TEMPORARY WELD TO BE REMOVED AND GROUND SMOOTH IN FIELD. LOOSEN TEMPORARY JOINT ARMOR AFTER INITIAL SET OF CONCRETE, PREFERABLY NOT LATER THAN TWO HOURS AFTER CONCLUSION OF CONCRETE PLACEMENT.

STRIP SEAL SELECTION TABLE		
SEAL MOVEMENT RATING (SIZE)	MANUFACTURER & DESIGNATION •	
	THE D.S. BROWN COMPANY	WATSON–BOWMAN & ACME CORP.
3"	300L	SE-300
4"	400L	SE-400
5"	500L	SE-500

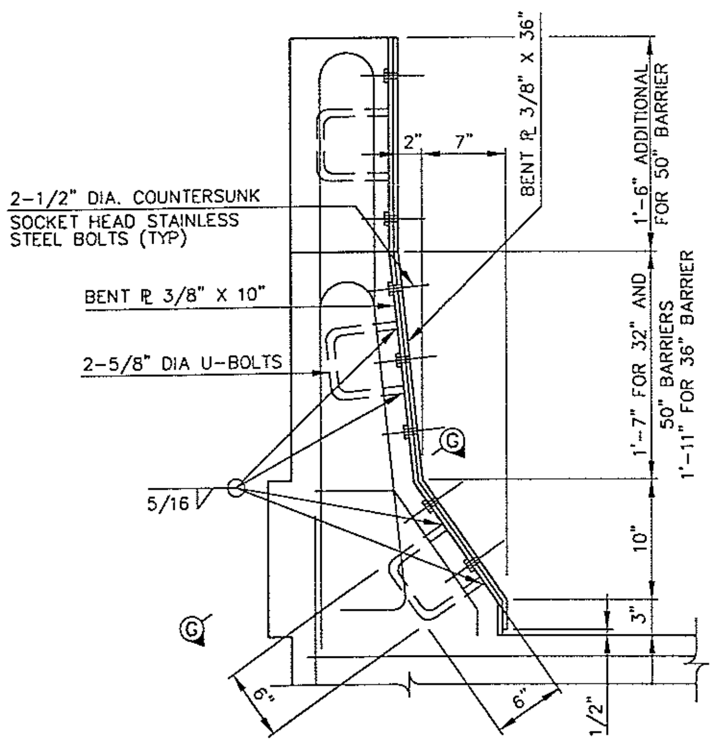
• OR APPROVED EQUAL

TABLE B

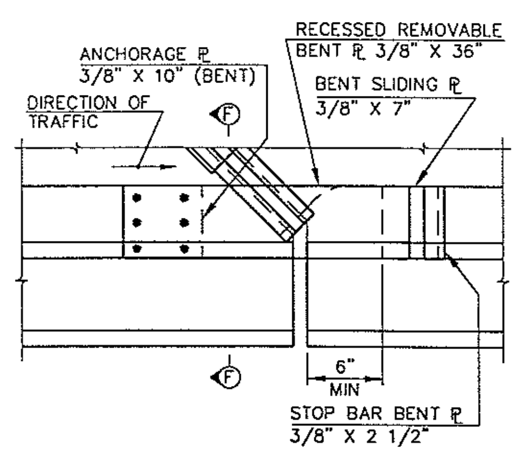
	SKEW ANGLE	
	<10°	10° – 45°
d	3/4" MIN	3/4"
x	6 15/16"	7 1/2"
h	10"	10"



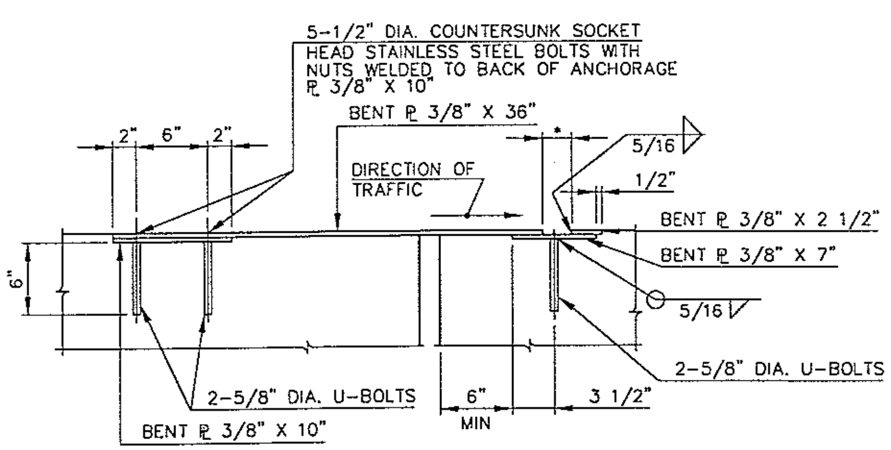
SECTION E-E



SECTION F-F



PLAN – SKEWS > 45°



SECTION G-G

• DIMENSION SET EQUAL TO STRIP SEAL JOINT OPENING AT TIME OF INSTALLATION

NO.	REVISION	BY	DATE
1	ADDENDUM 1, NEW SHEET ISSUED	JAN	1/24/97

OHIO TURNPIKE COMMISSION

DECK JOINT DETAILS

DATE: JANUARY 1, 1997 | SCALE: N.T.S.

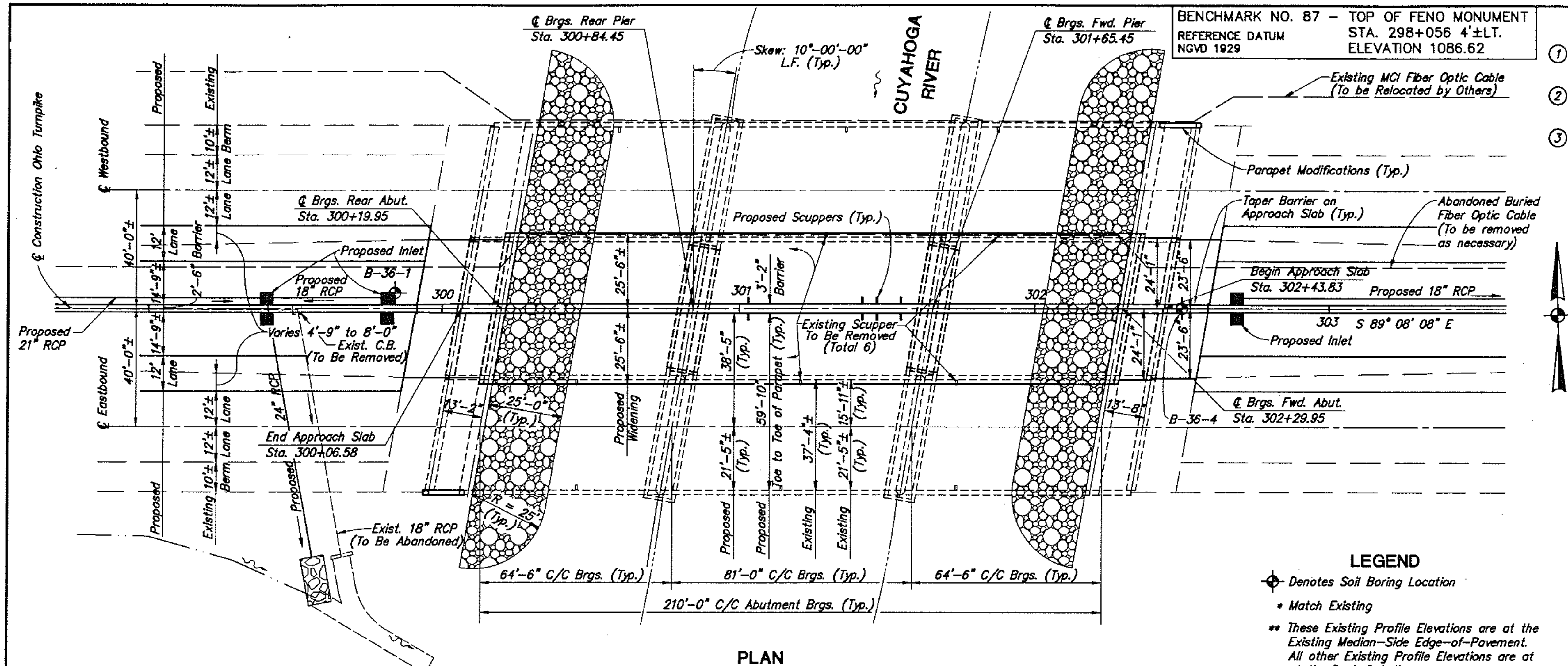
G5/G5 | O.T.C. STANDARD DWG. DKJ-2 | SHEET: B123 OF B178

DESIGNED BY: | CHECKED BY: | DATE:

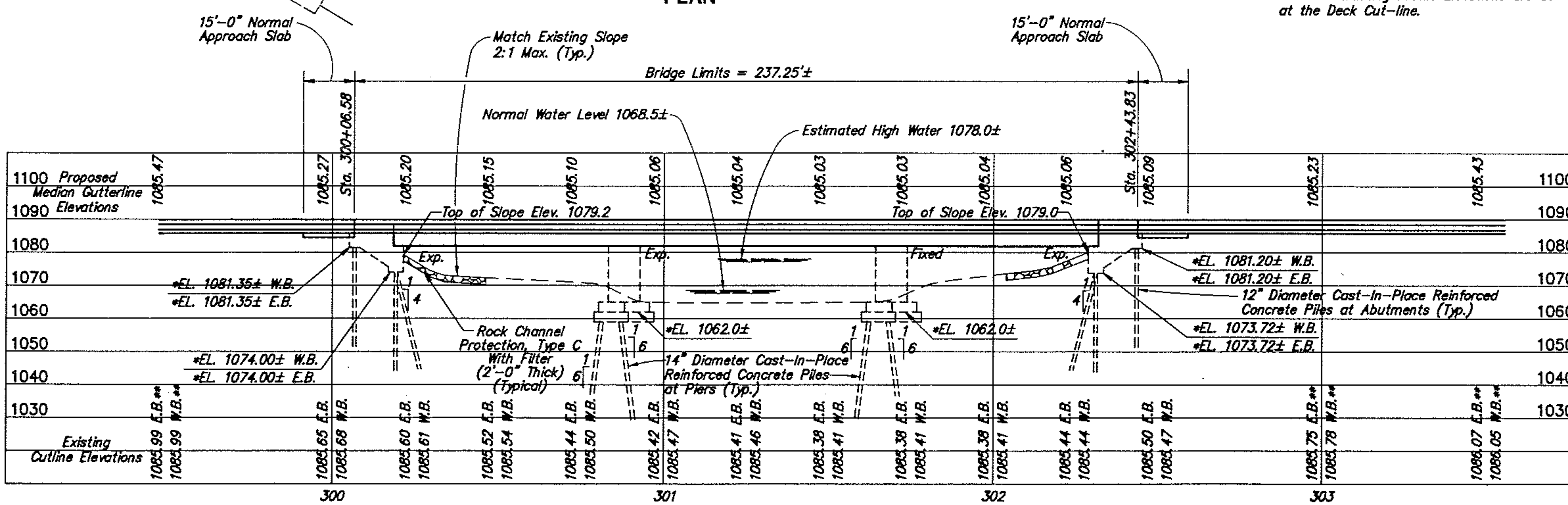
DRAWN BY: KMH | REVISED BY: T.K.I.

DATE: 9/95 | DATE: 4/04/96

CAD FILE NAME: 7026100/DKJ-2



PLAN



ELEVATION

NOTES

1. Survey is based on the Re-established Centerline. See Survey Control Plan, Sheet B2.
2. For Proposed Scupper Locations, See Framing Plan, Sheet 11/16
3. Earthwork Limits shown are approximate. Actual slopes shall conform to Plan Cross Sections.

EXISTING STRUCTURE DATA

TYPE: TWIN 3-SPAN, (CENTER SPAN ONLY COMPOSITE) REINFORCED CONCRETE DECKS ON (A7) STEEL BEAMS EXCEPT A36 FOR FIRST INTERIOR BEAM ADJACENT TO RELOCATED EXTERIOR A7 BEAM.
SPANS: 64.5'±-81'±-64.5'± C/C BRGS.
ROADWAY: 37'-4" TOE/TOE PARAPETS (E.B. & W.B.)
SKEW: 10°-00'-00" L.F.
WEARING SURFACE: MONOLITHIC CONCRETE
LOADING: HS 20-44 CASE I AND THE ALTERNATE MILITARY LOADING
APPROACH SLABS: 15'-0
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
CROWN: 3/16"/FT.

PROPOSED STRUCTURE

Latitude: N 41°-14'-50" Longitude: W 81°-17'-05"

PROPOSED WORK: CONSTRUCT A MEDIAN WIDENING OF THE EXISTING REINFORCED CONCRETE ABUTMENTS AND PIERS ON PILES. ERECT NEW A36 STEEL BEAMS. WIDEN THE EXISTING CONCRETE DECK AND CONSTRUCT CONCRETE MEDIAN BARRIERS.
TYPE: TWIN 3-SPAN, MEDIAN WIDENED, REINFORCED CONCRETE DECKS, COMPOSITE IN THE CENTER SPAN ONLY WITH A36 OR A7 STEEL BEAMS, SUPPORTED ON WIDENED REINFORCED CONCRETE SUBSTRUCTURES.
SPANS: 64.5'-81'-64.5' C/C BRGS.
ROADWAY: 59'-10" TOE/TOE PARAPETS (E.B. & W.B.)
SKEW: 10°-00'-00" L.F.
WEARING SURFACE: MONOLITHIC CONCRETE
LOADING: HS20-44 CASE I AND THE ALTERNATE MILITARY LOADING
APPROACH SLABS: 15'-0" NORMAL TO ABUTMENT
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
CROWN: 3/16"/FT.

ESTIMATED PILE LENGTHS

12" DIAMETER CAST-IN-PLACE REINFORCED CONCRETE PILES

Rear Abutment Upper Level — 25 Feet
Rear Abutment Lower Level — 20 Feet
Forward Abutment Lower Level — 25 Feet
Forward Abutment Upper Level — 30 Feet

14" DIAMETER CAST-IN-PLACE REINFORCED CONCRETE PILES

Rear Pier — 20 Feet
Forward Pier — 20 Feet

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

GENERAL PLAN

OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

DESIGNED: ZRD | CHECKED: wdo | DATE: 12-4-96
DRAWN: FDH | IN CHARGE: WDA | SCALE: N.T.S.

1/16 CONTRACT 77-97-04 SHEET B124 OF B178

ESTIMATED QUANTITIES

CALC. BY: FDH DATE: 12-3-96
CHKD. BY: ZRD DATE: 12-3-96

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GEN'L.	SEE SHEET NO.
SP 202	LUMP SUM		PORTIONS OF STRUCTURE REMOVED				LUMP	
503	669	CU.YD.	UNCLASSIFIED EXCAVATION	252	417			
503	33	CU.YD.	ABUTMENT BACKFILL, AS PER 503.10	33				
503	LUMP SUM		COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN				LUMP	G1/G5
505	LUMP SUM		PILE DRIVING EQUIPMENT MOBILIZATION				LUMP	
507	780	LIN.FT.	12" CAST-IN-PLACE REINFORCED CONCRETE PILES	780				
507	560	LIN.FT.	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, AS PER PLAN		560			G2/G5
509	3,120	POUND	REINFORCING STEEL, GRADE 60		3,120			
SP 509	122,282	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	30,251		91,731	300	G2/G5
510	198	EACH	DOWEL HOLES, USING SP 853 GROUT ANCHORING	106	92			
SP 511	158	CU.YD.	CLASS C CONCRETE, ABUTMENTS	158				
SP 511	176	CU.YD.	CLASS C CONCRETE, PIER FOOTINGS		176			
SP 511	161	CU.YD.	CLASS C CONCRETE, PIER ABOVE FOOTINGS		161			
SP 511A	370	CU.YD.	CLASS S CONCRETE, SUPERSTRUCTURE DECK AND BARRIERS, USING SHRINKAGE COMPENSATING CEMENT			364	6	2/16
SP 511A	60	CU.YD.	CLASS S CONCRETE, ABUTMENT SLABS AND BARRIERS, USING SHRINKAGE COMPENSATING CEMENT	60				
SP 512	24	SQ.YD.	MEMBRANE WATERPROOFING (SHEET TYPE 2)	24				
513	351,300	POUND	STRUCTURAL STEEL, AISC CATEGORY I, AS PER PLAN			351,300		
513	1368	EACH	WELDED STUD SHEAR CONNECTOR			1368		
SP 514	LUMP SUM		SURFACE PREPARATION OF EXISTING STEEL, SYSTEM UUU			LUMP		
SP 514	LUMP SUM		FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM UUU			LUMP		
SP 514	LUMP SUM		FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM UUU			LUMP		
SP 514	LUMP SUM		FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM UUU			LUMP		
~~SP 514A~~	~~LUMP SUM~~		~~FIELD CLEANING AND REPAIR OF DAMAGED COATING, SYSTEM IZEU~~			LUMP		
516	6	EACH	BEARING DEVICES, FIXED		6			
516	18	EACH	BEARING DEVICES, EXPANSION	12	6			
516	6	SQ.FT.	1/2" PREFORMED EXPANSION JOINT FILLER	6				
516	6	LIN.FT.	JOINT SEALER, 705.04	6				
SP 516B	473	LIN.FT.	SEALING OF CONSTRUCTION JOINTS	48		425		

ESTIMATED QUANTITIES

CALC. BY: FDH DATE: 12-3-96
CHKD. BY: ZRD DATE: 12-3-96

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GEN'L.	SEE SHEET NO.
518	104	CU.YD.	POROUS BACKFILL WITH FILTER FABRIC	104				
518	186	LIN.FT.	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	186				G2/G5
518	171	LIN.FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	171				G2/G5
518	8	EACH	SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN			8		G2/G5
SP 519	40	SQ.FT.	PATCHING CONCRETE STRUCTURES				40	G2/G5
SP 525A	LUMP SUM		WORKER PROTECTION				LUMP	
SP 525A	15	EACH	PROTECTIVE CLOTHING/ EQUIPMENT SET				15	
SP 525A	LUMP SUM		ESTABLISH REGULATED AREAS				LUMP	
SP 525A	LUMP SUM		PAINT WASTE/HAZARDOUS WASTE CLASSIFICATION, HANDLING, AND DISPOSAL				LUMP	
SP 525A	LUMP SUM		CONTAINMENT SYSTEM				LUMP	
SP 527	LUMP SUM		FALSEWORK, TEMPORARY BRACING AND PROTECTIVE STRUCTURES				LUMP	
SP 533R	152	LIN.FT.	REPLACEMENT OF 3 INCH CONTINUOUS STRIP SEAL IN STRUCTURAL STEEL JOINT			152		
SP 533W	100	LIN.FT.	3 INCH CONTINUOUS STRIP SEAL IN STRUCTURAL STEEL JOINT (WIDENING)			100		
SP 536	1,349	SQ.YD.	CONCRETE WEATHERPROOFING, DECK AND APPROACH SLABS	265		1,084		
SP 536	673	SQ.YD.	CONCRETE WEATHERPROOFING, PARAPETS	85		588		
SP 536	375	SQ.YD.	CONCRETE WEATHERPROOFING, SUBSTRUCTURE	90	280		5	2/16
601	619	CU.YD.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	619				
SP 825	9,704	POUND	GALVANIZED REINFORCING STEEL, GRADE 60		9,704			

NOTES

1. ITEM SP 202 CONSISTS OF THE FOLLOWING APPROXIMATE REINFORCED CONCRETE REMOVAL QUANTITIES:

ABUTMENT PARAPETS	7.7	CU. YD.
ABUTMENT SLAB	3.3	CU. YD.
ABUTMENTS	1.8	CU. YD.
APPROACH SLABS	0.1	CU. YD.
DECK PARAPETS	45.4	CU. YD.
DECK SLAB	46.0	CU. YD.

THESE QUANTITIES ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL ESTIMATE HIS OWN REMOVAL QUANTITIES IN DETERMINING HIS BID PRICE FOR THE ITEM SP 202.

2. AS A CONTINGENCY, 6 CU. YD. OF CONCRETE HAVE BEEN INCLUDED IN THE ESTIMATED QUANTITY FOR SUPERSTRUCTURE CONCRETE, IN THE GENERAL COLUMN, TO BE USED AS DIRECTED BY THE ENGINEER FOR ADDITIONAL CONCRETE REQUIRED IN THE HAUNCHES DUE TO PROFILE ADJUSTMENT.

3. AS A CONTINGENCY, 5 SQ. YD. OF CONCRETE WEATHERPROOFING, SUBSTRUCTURE HAS BEEN INCLUDED TO SEAL ANY CONCRETE PATCHED AREAS TO BE USED AS DIRECTED BY THE ENGINEER.

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

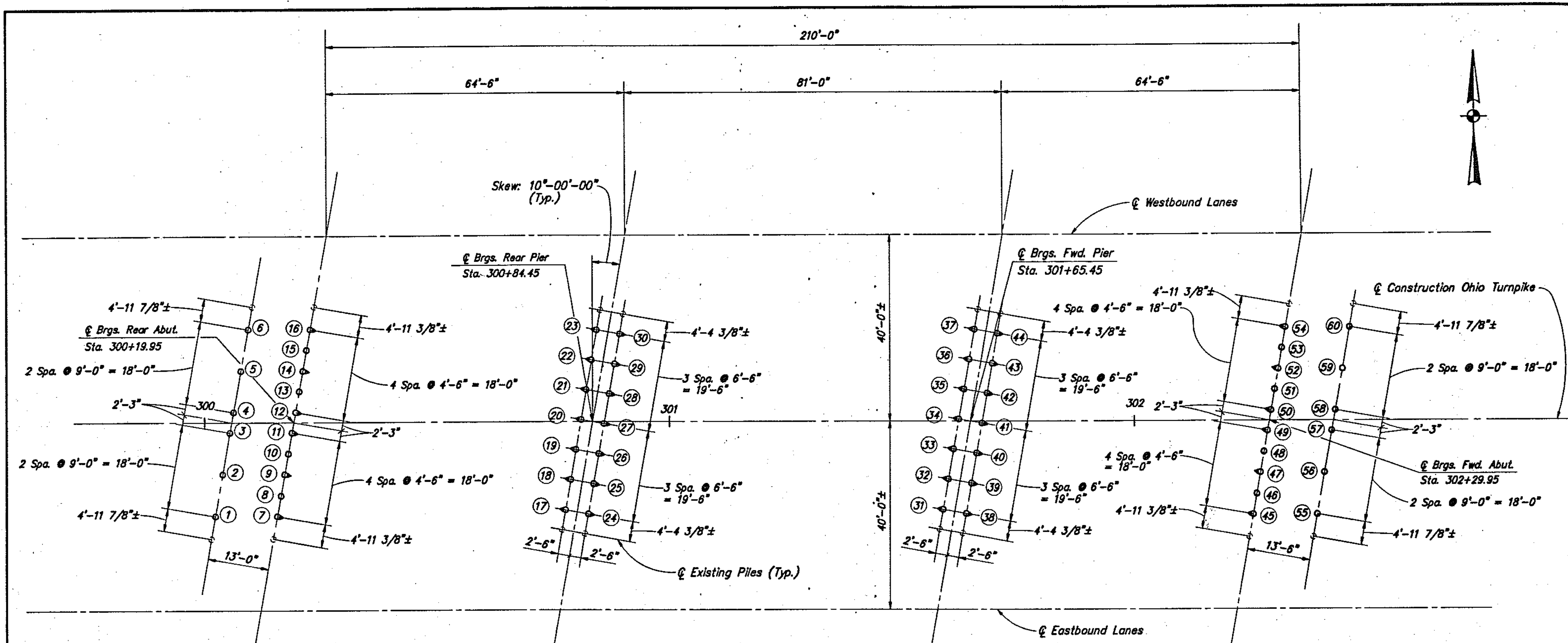
ESTIMATED QUANTITIES

OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

DESIGNED: ZRD | CHECKED: wda | DATE: 12-4-96
DRAWN: FDH | IN CHARGE: WDA | SCALE: N.T.S.

2/16 CONTRACT 77-97-04 SHEET B125 OF B178



STRUCTURAL LAYOUT AND PILING PLAN

PILE CUT-OFF ELEVATION								
PILE NO.	PILE SIZE	ELEVATION	PILE NO.	PILE SIZE	ELEVATION	PILE NO.	PILE SIZE	ELEVATION
1	12"	1082.35	23	14"	1063.00	45	12"	1074.72
2	12"	1082.35	24	14"	1063.00	46	12"	1074.72
3	12"	1082.35	25	14"	1063.00	47	12"	1074.72
4	12"	1082.35	26	14"	1063.00	48	12"	1074.72
5	12"	1082.35	27	14"	1063.00	49	12"	1074.72
6	12"	1082.35	28	14"	1063.00	50	12"	1074.72
7	12"	1075.00	29	14"	1063.00	51	12"	1074.72
8	12"	1075.00	30	14"	1063.00	52	12"	1074.72
9	12"	1075.00	31	14"	1063.00	53	12"	1074.72
10	12"	1075.00	32	14"	1063.00	54	12"	1074.72
11	12"	1075.00	33	14"	1063.00	55	12"	1082.20
12	12"	1075.00	34	14"	1063.00	56	12"	1082.20
13	12"	1075.00	35	14"	1063.00	57	12"	1082.20
14	12"	1075.00	36	14"	1063.00	58	12"	1082.20
15	12"	1075.00	37	14"	1063.00	59	12"	1082.20
16	12"	1075.00	38	14"	1063.00	60	12"	1082.20
17	14"	1063.00	39	14"	1063.00			
18	14"	1063.00	40	14"	1063.00			
19	14"	1063.00	41	14"	1063.00			
20	14"	1063.00	42	14"	1063.00			
21	14"	1063.00	43	14"	1063.00			
22	14"	1063.00	44	14"	1063.00			

NOTES

All Abutment Piles are 12" Cast-In-Place Reinforced Concrete Piles.

All Pier Piles are 14" Cast-In-Place Reinforced Concrete Piles.

LEGEND

- *Indicates Pile Battered: Abutment Piles @ 4:1, Pier Piles @ 6:1*
- *Indicates Vertical Pile*
- *Indicates Existing Pile*

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

STRUCTURAL LAYOUT AND PILING PLAN

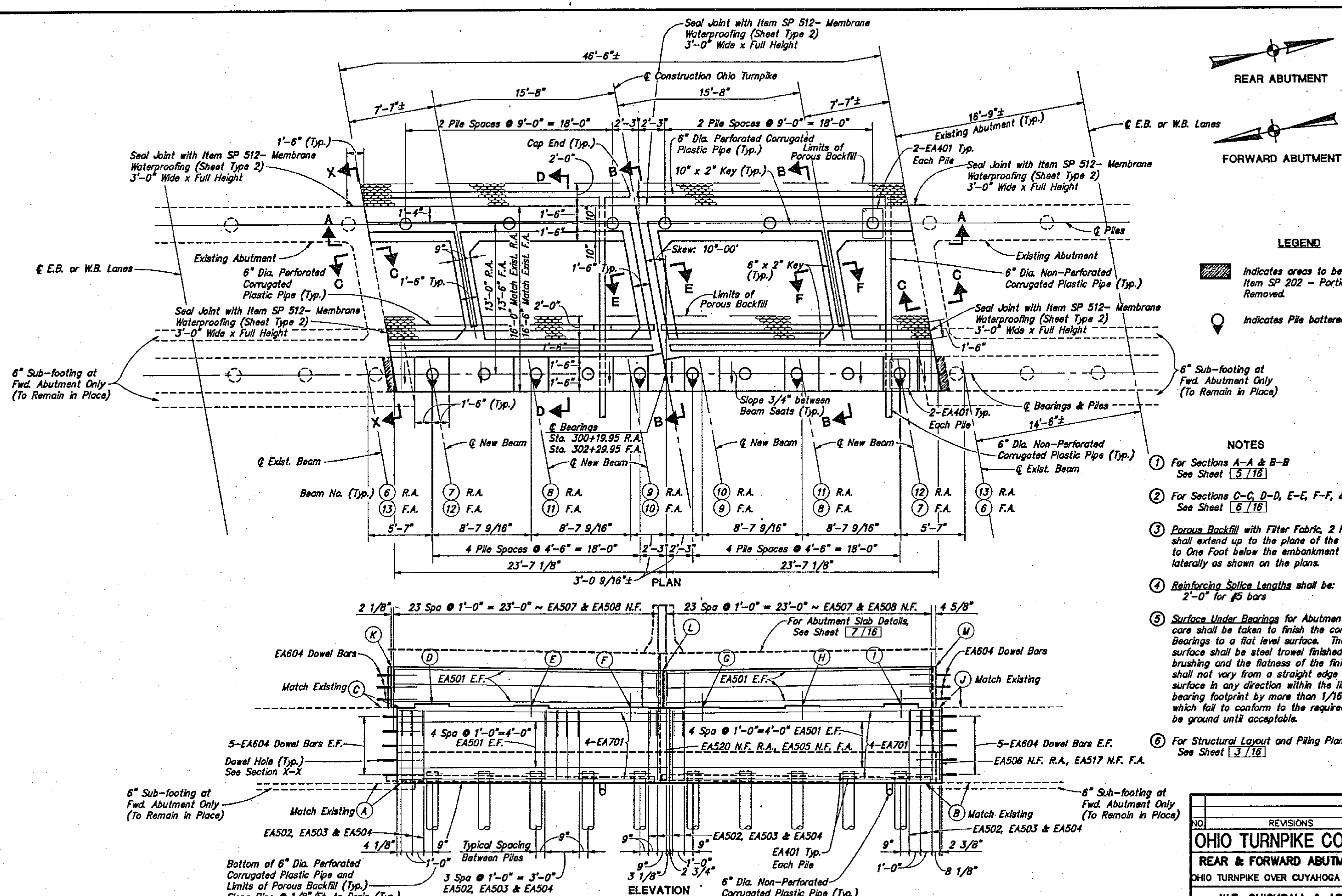
OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.3)

W.E. QUICKSALL & ASSOCIATES

NEW PHILADELPHIA, OHIO

DESIGNED: ZRD	CHECKED: wda	DATE: 12-4-96
DRAWN: FDH	IN CHARGE: WDA	SCALE: N.T.S.

3/16 CONTRACT 77-97-04 SHEET B126 OF B178



LEGEND

Indicates areas to be removed per Item SP 202 – Portions Of Structure Removed.

Indicates Pile battered at 4:1

NOTES

1. For Sections A-A & B-B See Sheet 5/16
2. For Sections C-C, D-D, E-E, F-F, & X-X, See Sheet 6/16
3. Porous Backfill with Filter Fabric, 2 Feet Thick shall extend up to the plane of the subgrade, to One Foot below the embankment surface, and laterally as shown on the plans.
4. Reinforcing Splice Lengths shall be: 2'-0" for #5 bars
5. Surface Under Bearings for Abutment Seat: Special care shall be taken to finish the concrete under the Bearings to a flat level surface. The concrete surface shall be steel trowel finished without brushing and the flatness of the finished surface shall not vary from a straight edge laid on the surface in any direction within the limits of the bearing footprint by more than 1/16 Inch. Surfaces which fail to conform to the required flatness shall be ground until acceptable.
6. For Structural Layout and Piling Plan, See Sheet 3/16

ELEVATIONS													
LOCATION	A	B	C	D	E	F	G	H	I	J	K	L	M
REAR ABUTMENT	1074.00±	1074.00±	1080.55±	1080.88	1080.72	1080.57	1080.56	1080.71	1080.85	1080.55±	1084.12	1083.72	1084.10
FORWARD ABUTMENT	1073.72±	1073.72±	1080.42±	1080.69	1080.55	1080.41	1080.41	1080.54	1080.68	1080.42±	1083.92	1083.57	1083.91

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

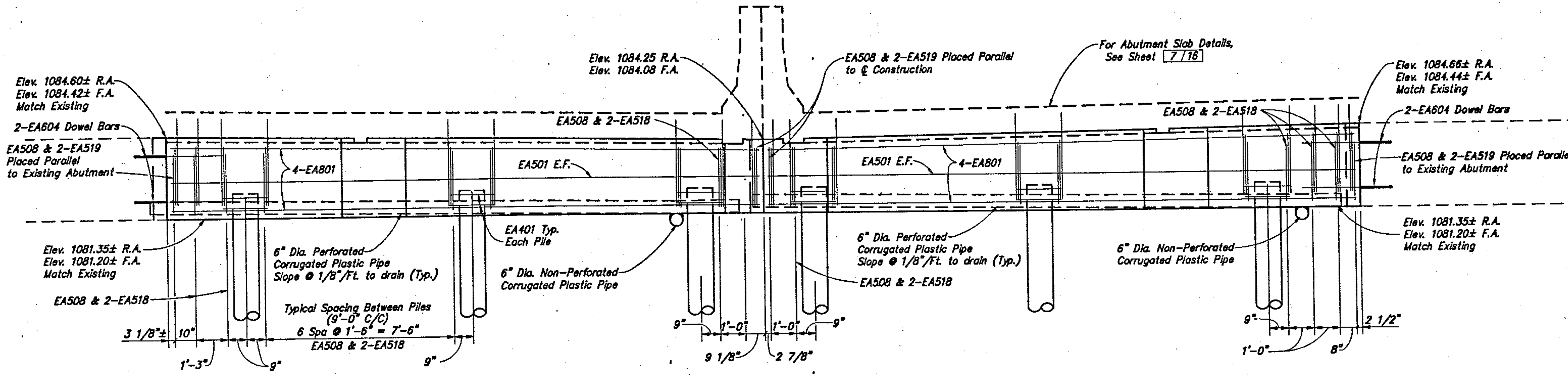
REAR & FORWARD ABUTMENT DETAILS

OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

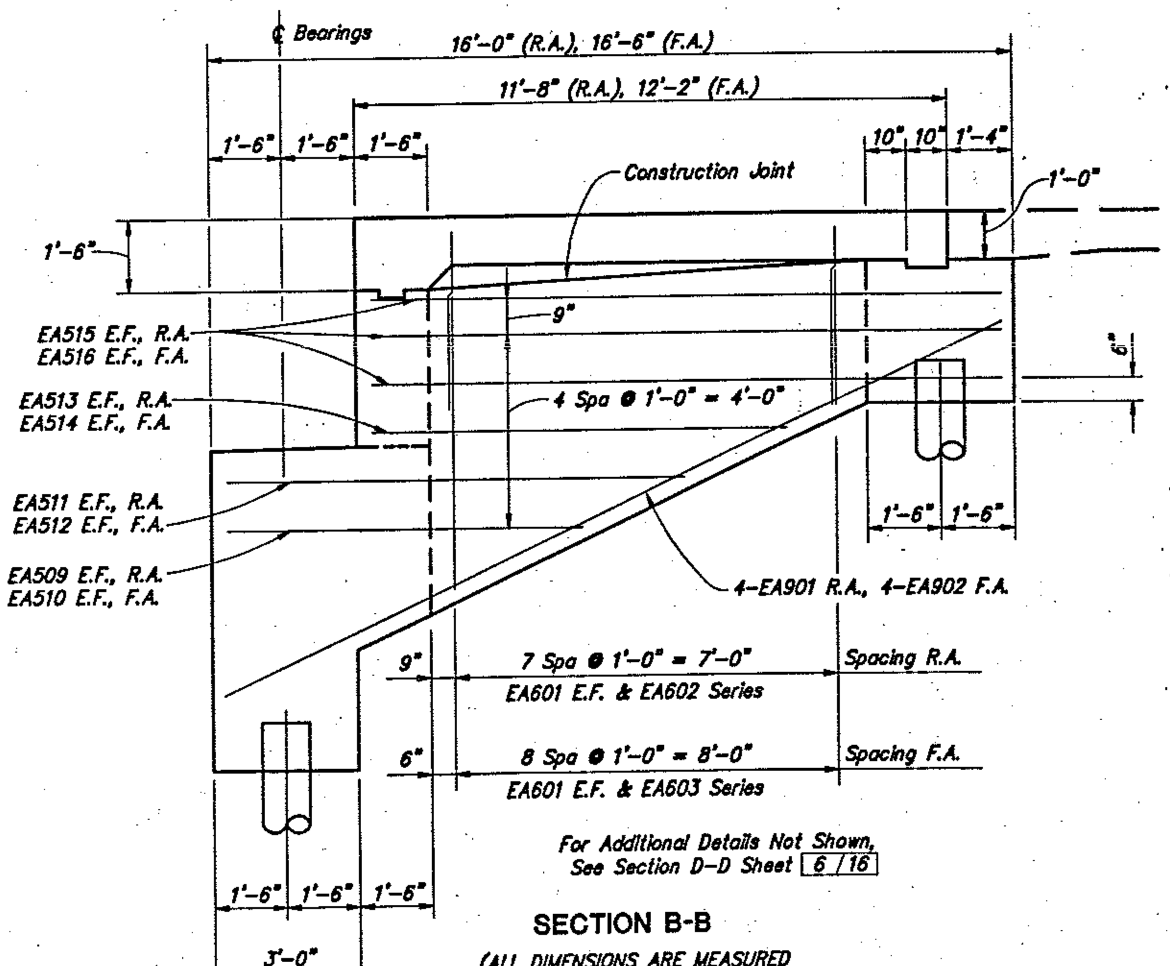
DESIGNED: wda | CHECKED: ZRP | DATE: 12-4-96
DRAWN: FDH | IN CHARGE: WDA | SCALE: N.T.S.

CONTRACT 77-97-04 SHEET B127 OF B178



SECTION A-A

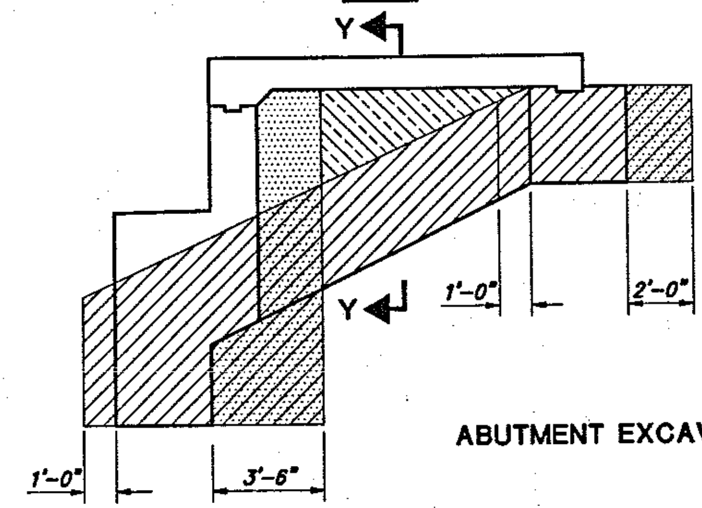
Indicates Area Included with Item 503 Abutment Backfill, As Per 503.10
Indicates Area Included with Item 503 Unclassified Excavation
Indicates Area Included with Item 518 Porous Backfill With Filter Fabric



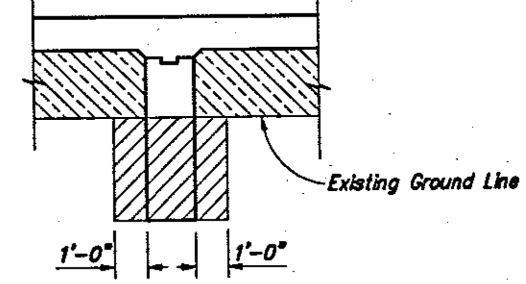
For Additional Details Not Shown, See Section D-D Sheet 6/16

SECTION B-B

(ALL DIMENSIONS ARE MEASURED PERPENDICULAR TO ABUTMENT)



ABUTMENT EXCAVATION DIAGRAM



SECTION Y-Y

NOTES

1. Reinforcing Splice Lengths shall be:
   2'-0" for #5 bars (Minimum)
   2'-4" for #6 bars (Minimum)
2. For Plan & Section Locations, See Sheet 4/16

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

ABUTMENT DETAILS

OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

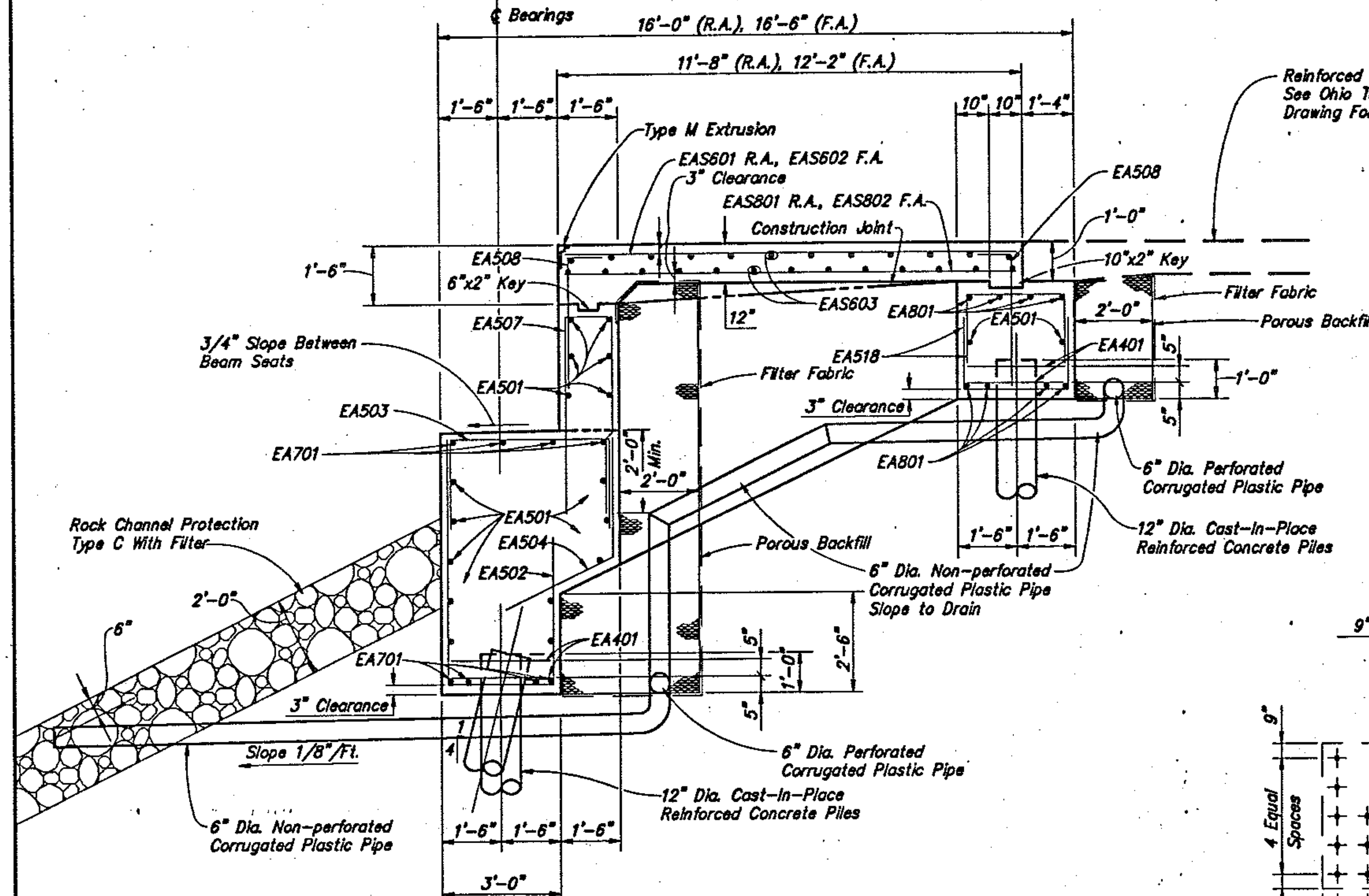
W.E. QUICKSALL & ASSOCIATES

NEW PHILADELPHIA, OHIO

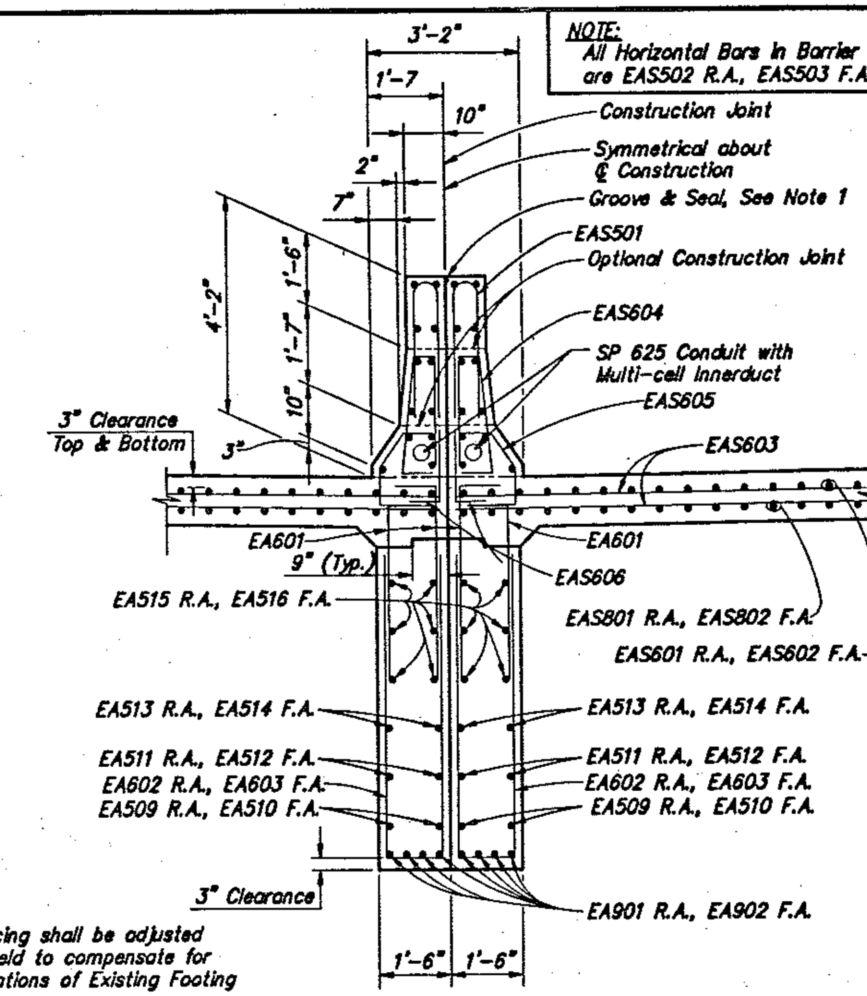
DESIGNED: wda	CHECKED: ZRD	DATE: 12-4-96
DRAWN: FDH	IN CHARGE: WDA	SCALE: N.T.S.

5/16 CONTRACT 77-97-04 SHEET B128 OF B178

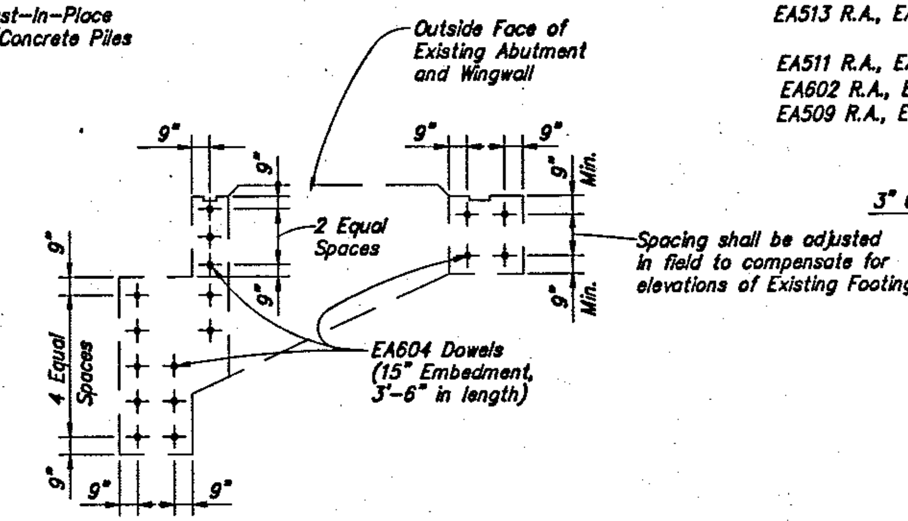
NOTE:
All Horizontal Bars in Barrier are EAS502 R.A., EAS503 F.A.



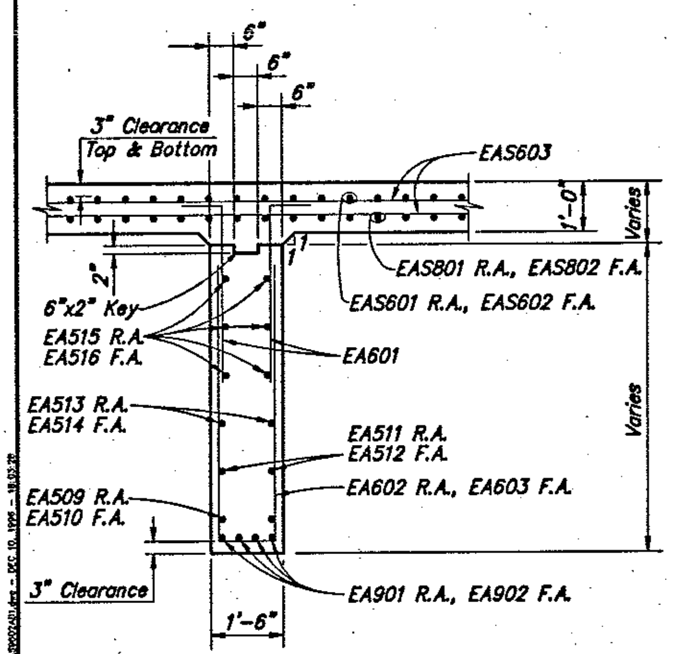
SECTION D-D



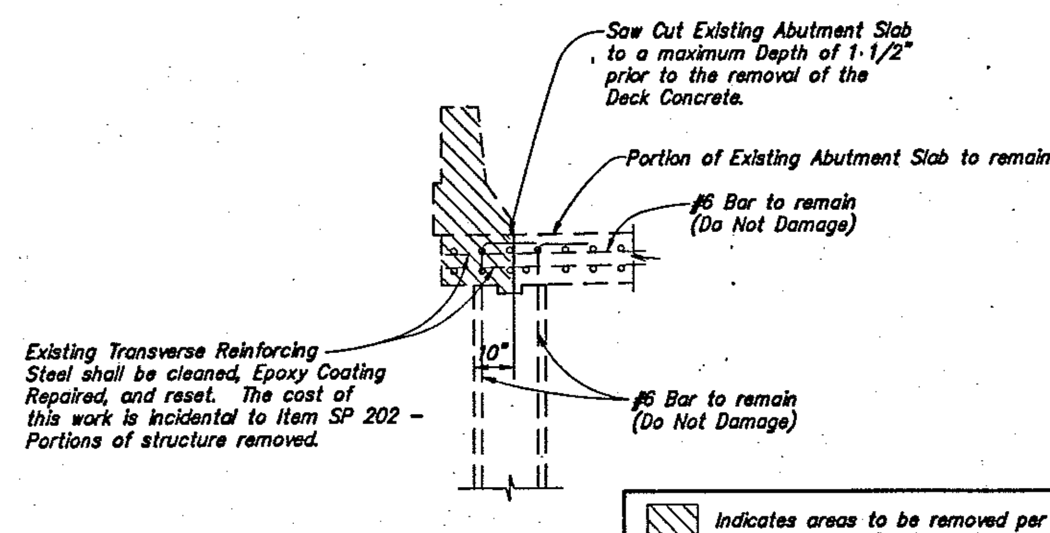
SECTION E-E



SECTION X-X
NOT TO SCALE

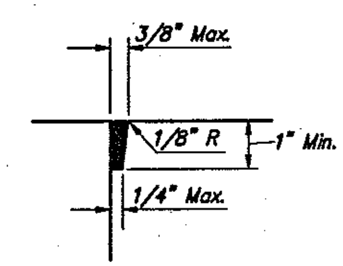


SECTION F-F



SECTION C-C

Indicates areas to be removed per Item SP 202 - Portions of Structure Removed.



GROOVE & SEAL DETAIL

NOTES

(1) Groove & Seal with 705.04, as shown on ODOT Standard Drawing BP-2.1, at the top of the Barriers. Cost to be included with the cost of the appropriate Abutment Concrete Pay Items. See Detail this sheet.

(2) Reinforcing Splice Lengths shall be:
2'-0" for #5 bars (Minimum)
2'-4" for #6 bars (Minimum)

(3) For Plan & Section Locations, See Sheet 4/16

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

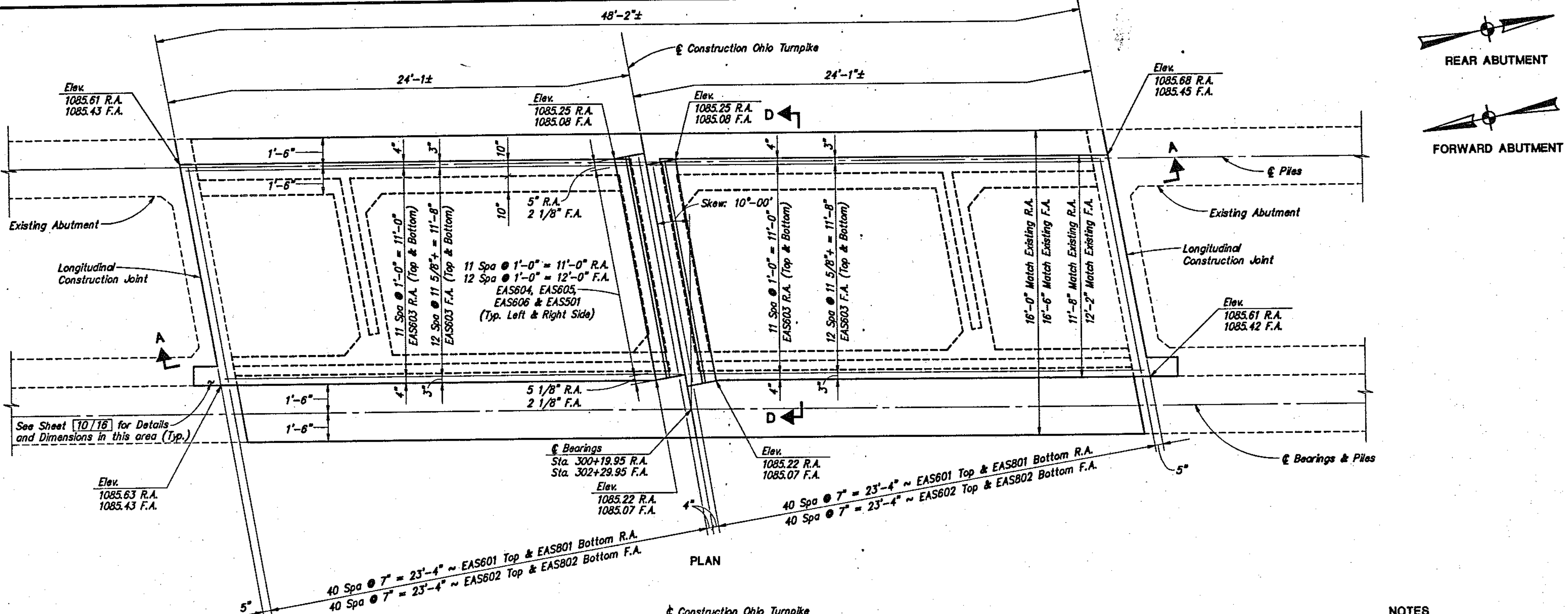
ABUTMENT DETAILS

OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

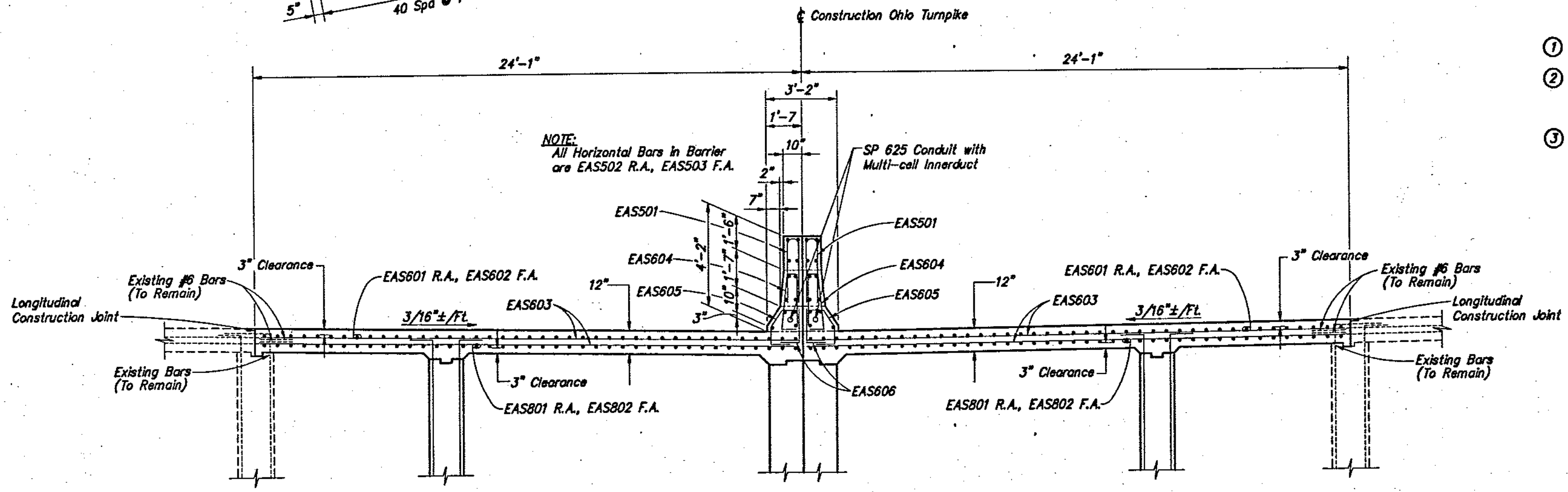
W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

DESIGNED: wdq | CHECKED: ZRD | DATE: 12-4-96
DRAWN: FDH | IN CHARGE: WDA | SCALE: N.T.S.

6/16 CONTRACT 77-97-04 SHEET B129 OF B178



PLAN



SECTION A-A

NOTES

1. For Section D-D, See Sheet 6/16
2. Longitudinal Construction Joint shall be treated in accordance with Item SP 516B – Sealing of Construction Joint.
3. Longitudinal or Transverse Construction Joints shall not be permitted in the Abutment Slab, except as shown in the plans.

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

ABUTMENT SLAB DETAILS

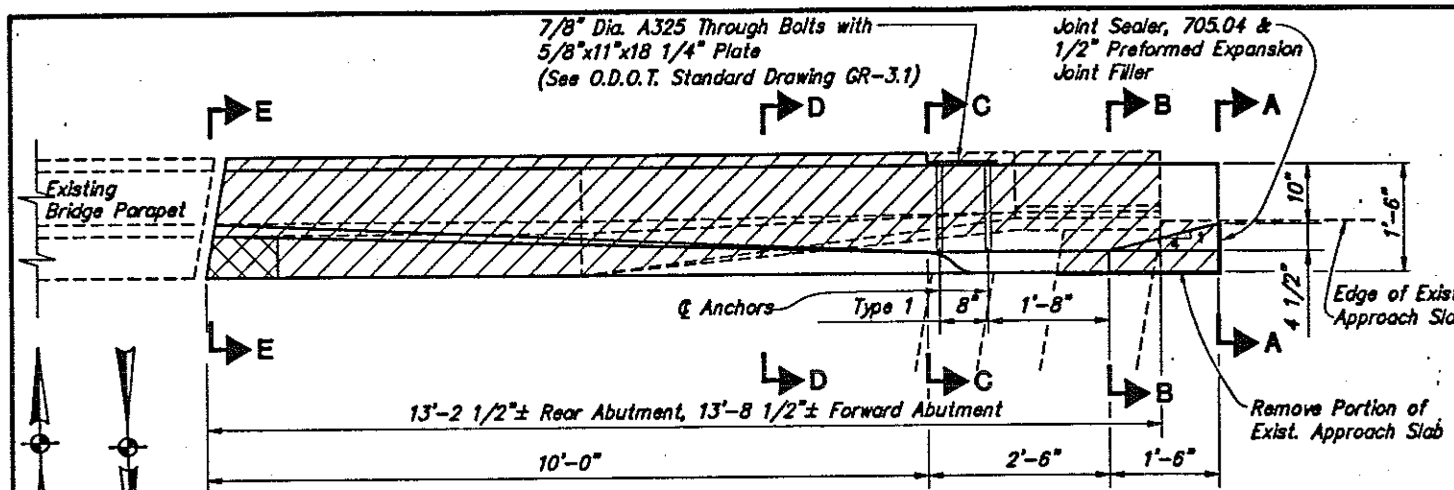
OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

W.E. QUICKSALL & ASSOCIATES

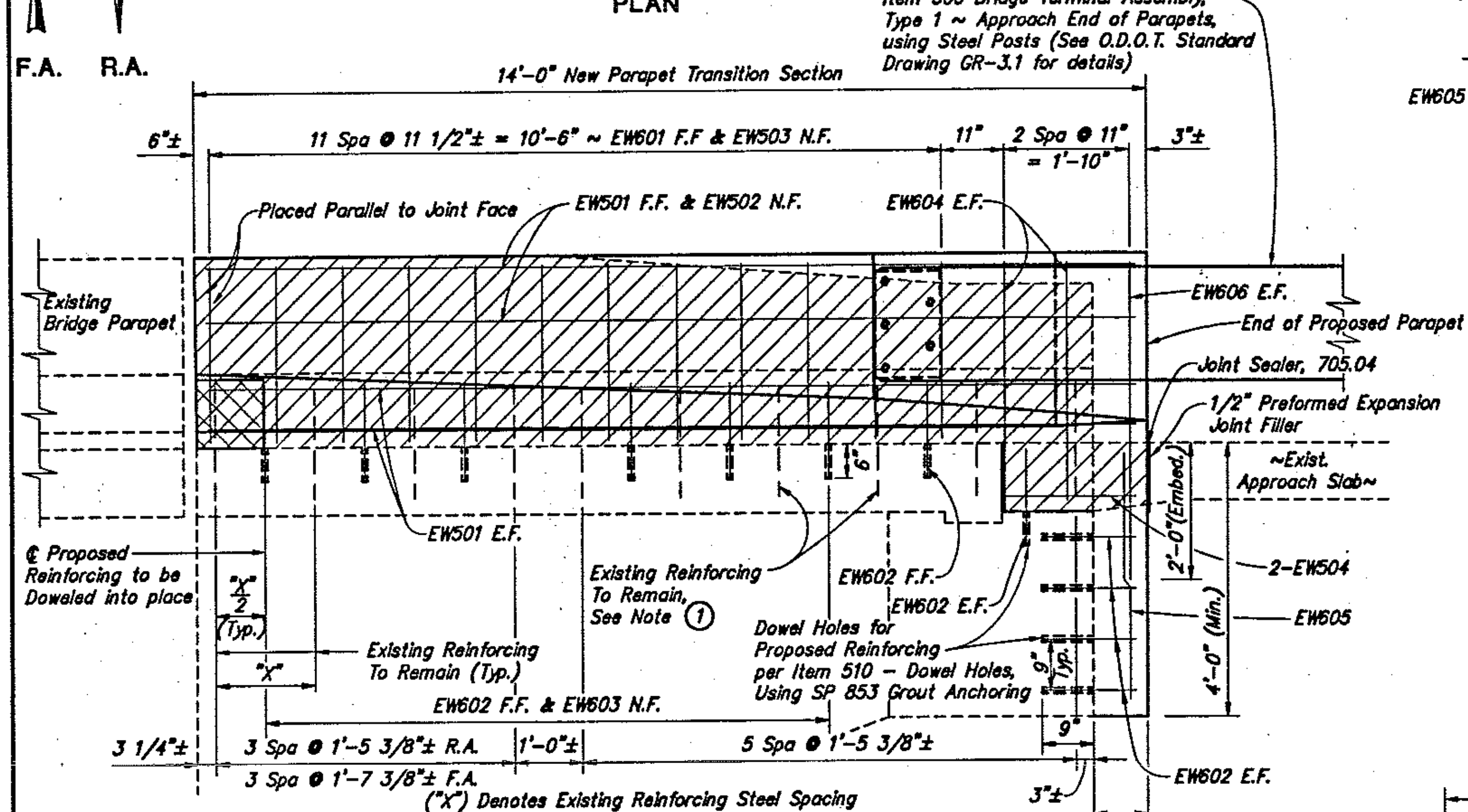
NEW PHILADELPHIA, OHIO

DESIGNED: wda	CHECKED: ZRD	DATE: 12-4-96
DRAWN: FDH	IN CHARGE: WDA	SCALE: N.T.S.

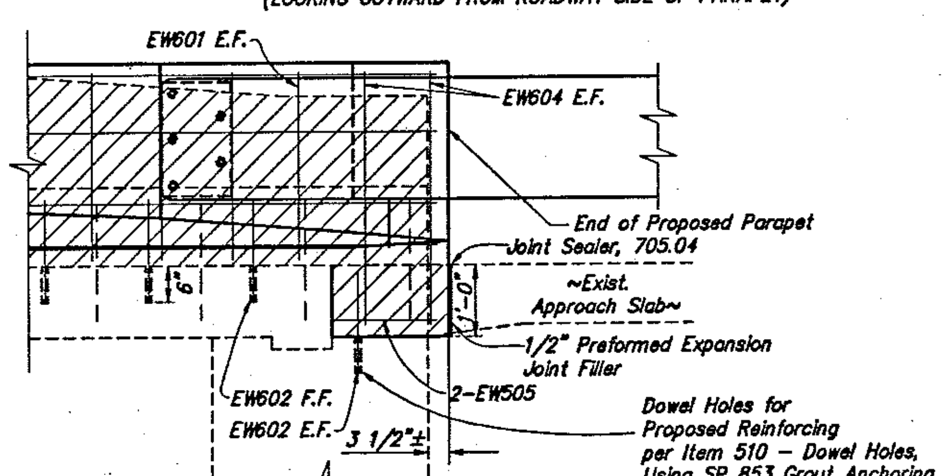
7/16 CONTRACT 77-97-04 SHEET B130 OF B178



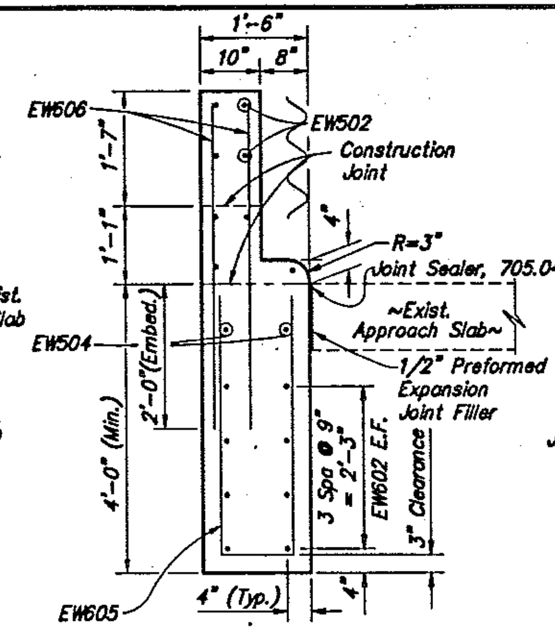
PLAN



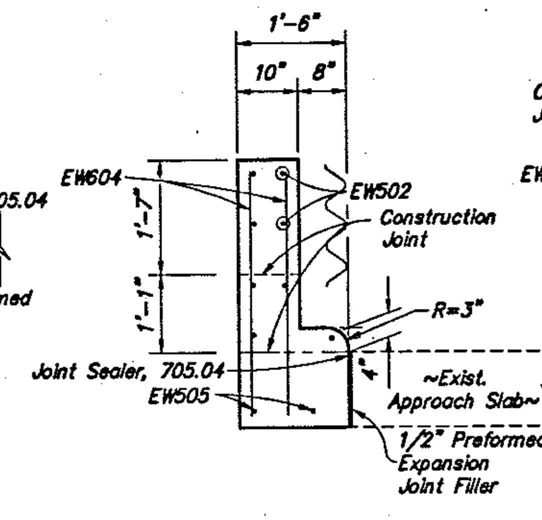
ELEVATION (REAR ABUTMENT)
(BRIDGE TERMINAL ASSEMBLY, TYPE 1)
(LOOKING OUTWARD FROM ROADWAY SIDE OF PARAPET)



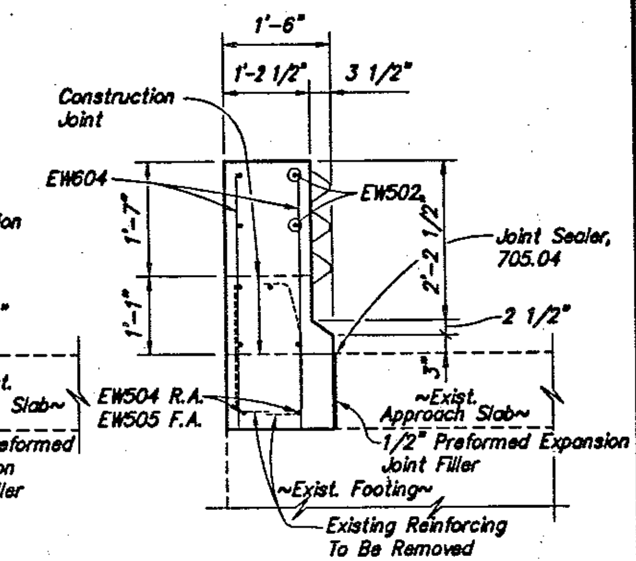
PARTIAL ELEVATION (FORWARD ABUTMENT)
(FOR ADDITIONAL DETAILS, SEE ELEVATION (REAR ABUTMENT))



SECTION A-A
(REAR ABUTMENT)

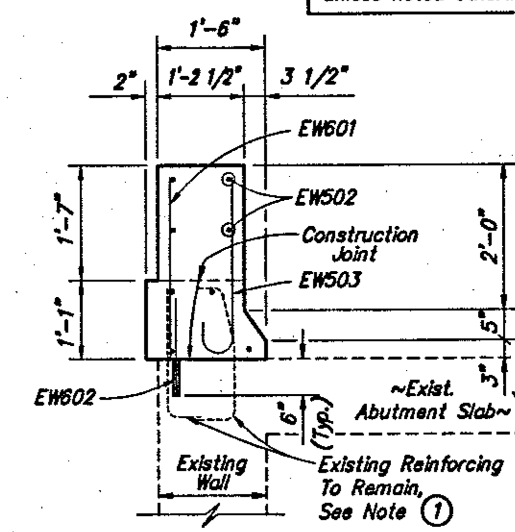


SECTION A-A
(FWD. ABUTMENT)

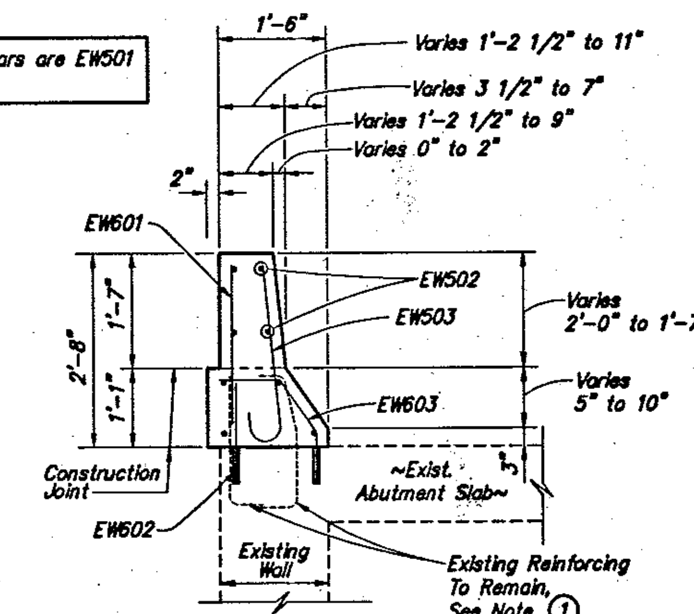


SECTION B-B

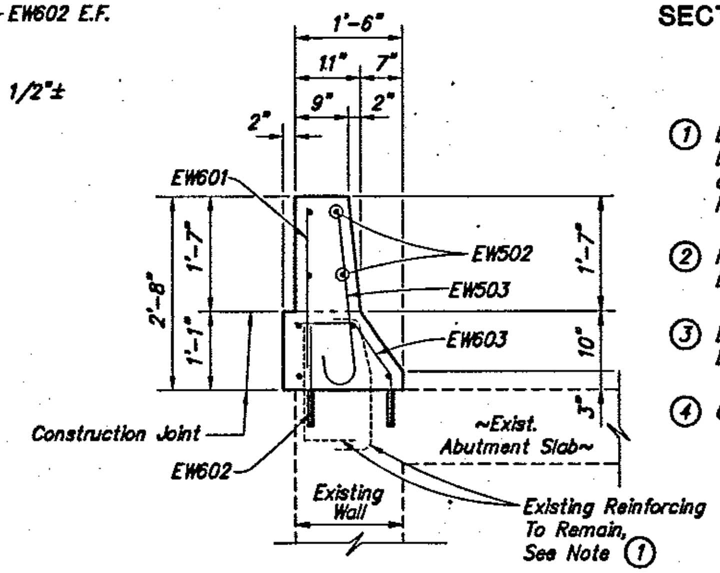
All parapet horizontal bars are EW501 unless noted otherwise.



SECTION C-C



SECTION D-D
(THRU TRANSITION AREA)



SECTION E-E
BEGIN/END OF PARAPET TRANSITION

NOTES

1. Existing Reinforcing Steel to be cleaned. Epoxy Coating Repaired, and Reused. Cost of this is incidental to Item SP 202 – Portions of Structure Removed.
2. Reinforcing Steel shall be as per Item SP 509– Epoxy Coated Reinforcing Steel, Grade 60.
3. Dowel Holes shall be as per Item 510 – Dowel Holes, using SP 853 Grout Anchoring.
4. Concrete shall be as per Item SP 511A.

LEGEND

- (hatched) Areas to be removed per Item SP 202 – Portions of Structure Removed
- (cross-hatched) Areas to be removed per Item SP 202 – Portions of Structure Removed using special care so as to avoid damage to Existing Expansion Joint Armor and Anchors.

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

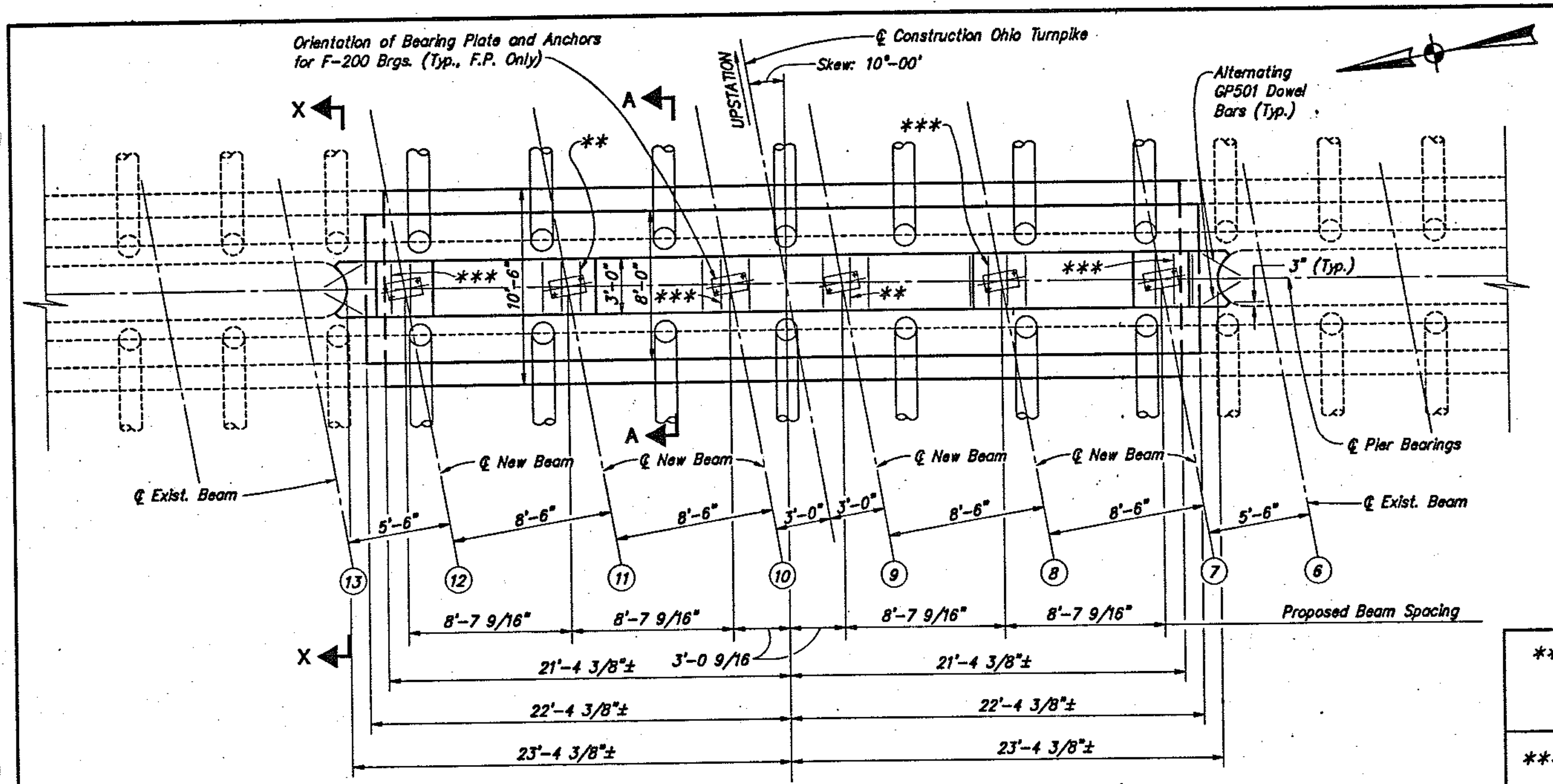
PARAPET MODIFICATION DETAILS

OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

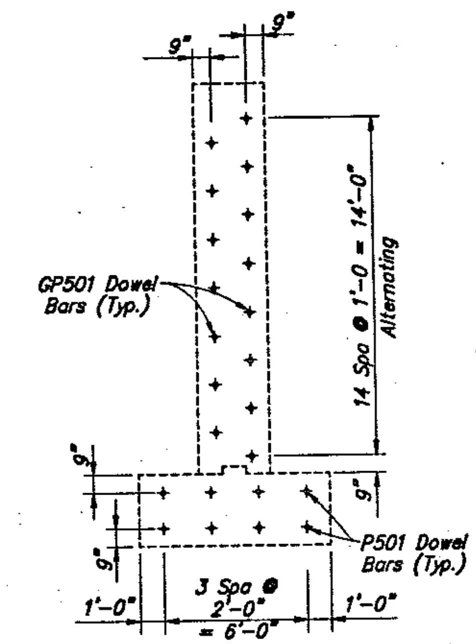
W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

DESIGNED: wda	CHECKED: ZRD	DATE: 12-4-96
DRAWN: FDH	IN CHARGE: WDA	SCALE: N.T.S.

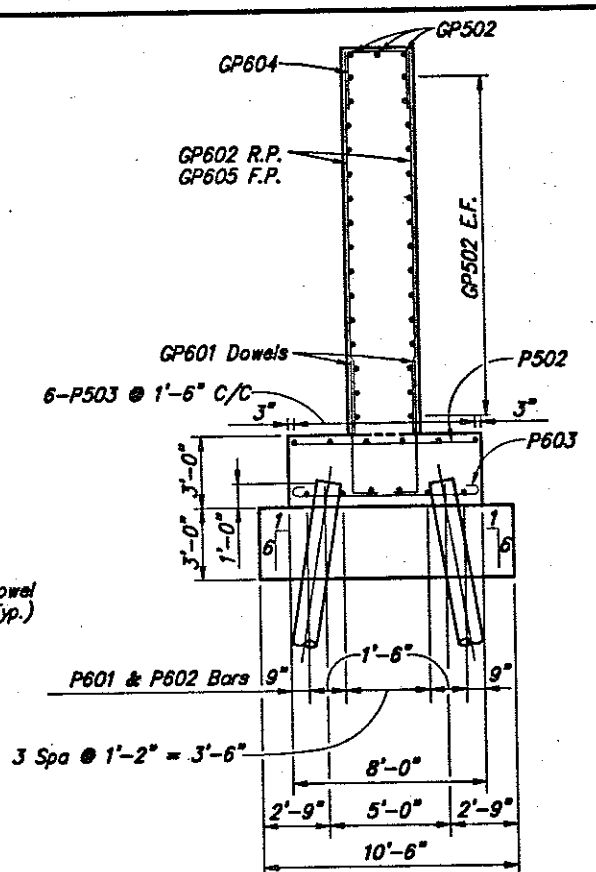
8/16 CONTRACT 77-97-04 SHEET B131 OF B178



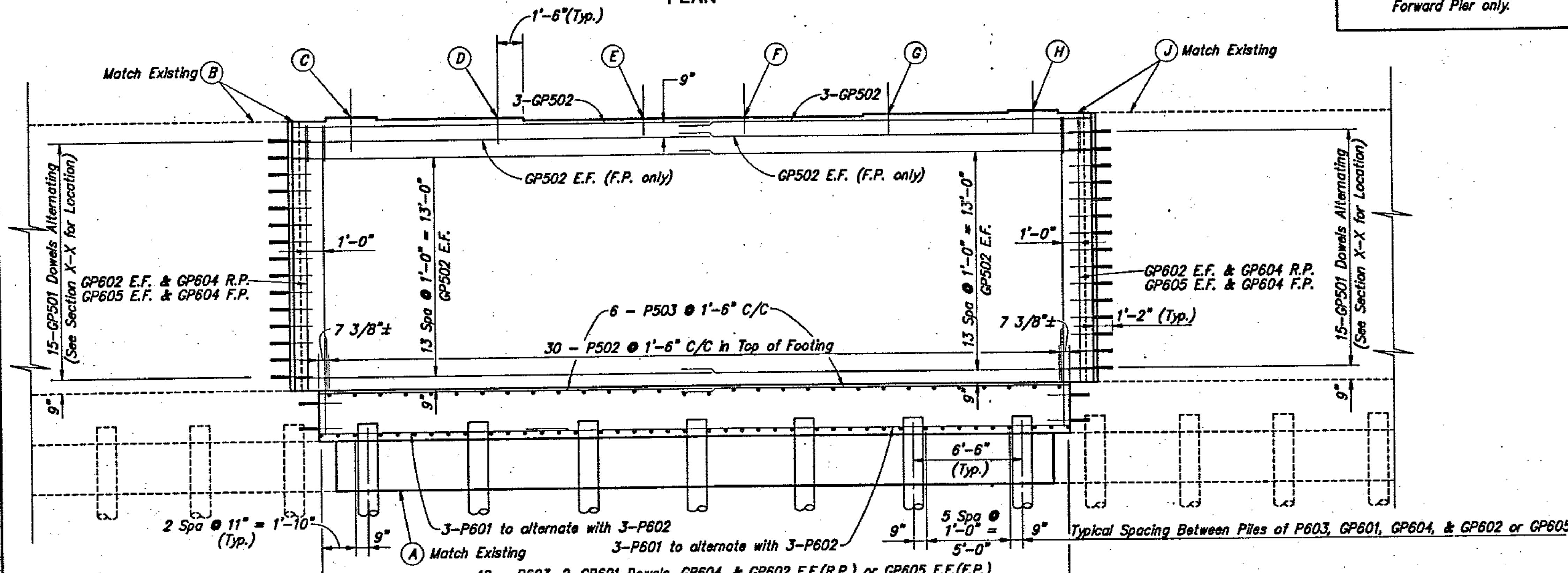
PLAN



SECTION X-X



SECTION A-A



ELEVATION

** Move GP604 Bars 2" North to avoid Dowel Holes for F-200 Bearings at Forward Pier only.

*** Move GP604 Bars 2" South to avoid Dowel Holes for F-200 Bearings at Forward Pier only.

NOTES

1. Reinforcing Splice Lengths shall be:
   - 1'-4" for #5 Galvanized Bars
   - 2'-1" for #6 Galvanized Bars
   - 1'-4" for #5 Uncoated Bars
   - 2'-1" for #6 Uncoated Bars
2. Surface Under Bearings for Pier Seat: Special care shall be taken to finish the concrete under the Bearings to a flat level surface. The concrete surface shall be steel trowel finished without brushing and the flatness of the finished surface shall not vary from a straight edge laid on the surface in any direction within the limits of the bearing footprint by more than 1/16 inch. Surfaces which fail to conform to the required flatness shall be ground until acceptable.
3. Bridge Seat Reinforcing: Reinforcing Steel in the vicinity of the Bridge Seat shall be accurately placed to avoid interference with the drilling of Bearing Anchor Holes or the pre-setting of Bearing Anchors.
4. Bearing Anchors: At the option of the contractor, Bearing Anchors (or formed holes), located and supported by templates, may be cast in place.
5. For Structural Layout and Piling Plan, See Sheet 3/16
6. Bearing Anchor Bolts (or Rods): shall be galvanized according to 711.02 and Grouted using SP 853 Grout Anchoring.

ELEVATIONS

LOCATION	A	B	C	D	E	F	G	H	J
REAR PIER	1059.00±	1080.13±	1080.25	1080.10	1079.95	1079.95	1080.08	1080.20	1080.13±
FORWARD PIER	1059.00±	1080.03±	1080.87	1080.74	1080.60	1080.60	1080.71	1080.83	1080.07±

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

PIER DETAILS

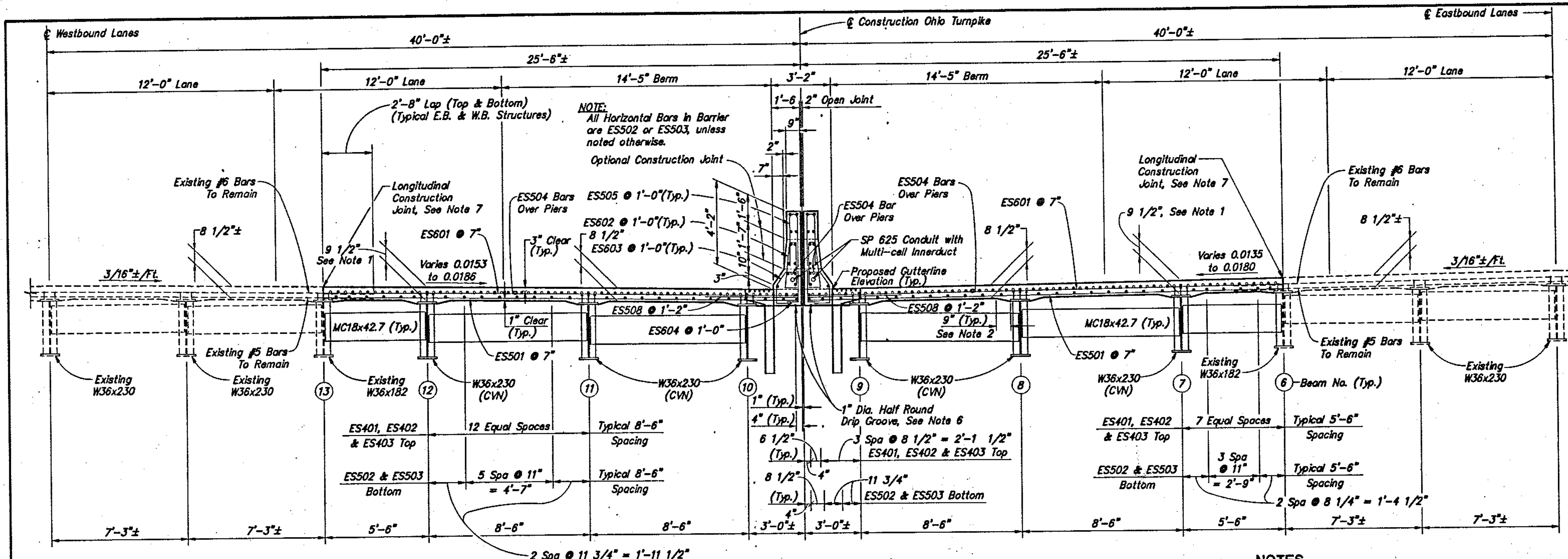
OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

W.E. QUICKSALL & ASSOCIATES

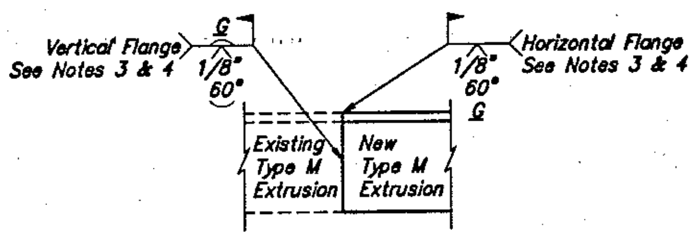
NEW PHILADELPHIA, OHIO

DESIGNED: ZRD	CHECKED: wda	DATE: 12-4-96
DRAWN: FDH	IN CHARGE: WDA	SCALE: N.T.S.

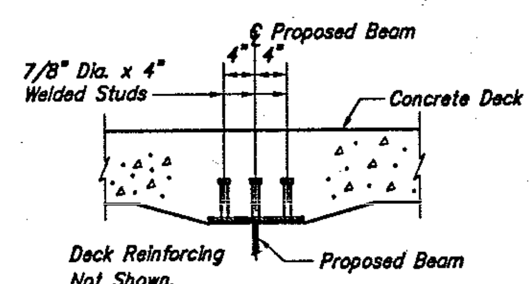
9/16 CONTRACT 77-97-04 SHEET B132 OF B178



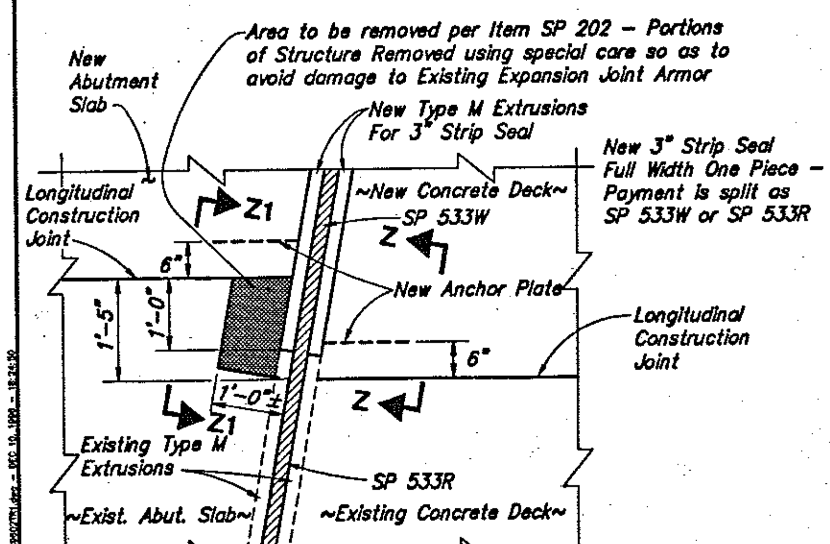
PROPOSED TRANSVERSE SECTION



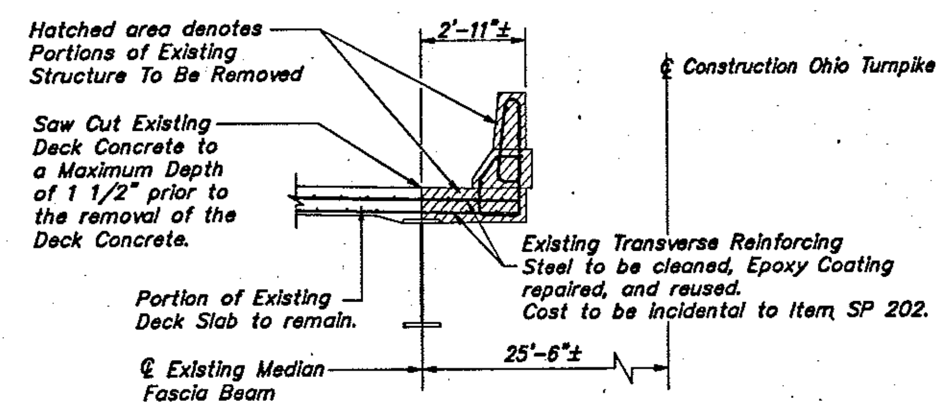
VIEW Z-Z
VIEW Z1-Z1 (OPPOSITE HAND)



TYPICAL
SHEAR CONNECTOR DETAIL



DETAIL C



DECK REMOVAL SECTION

NOTES

1. DECK SLAB DEPTH: The distance shown from top of deck slab to top of steel beam is the theoretical design dimension including the design haunch thickness of 1 inch. The quantity of deck concrete to be paid for shall be based on this dimension, minus the design haunch thickness, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.
2. A Haunch Width of 9 Inches shall be used for computing quantity of concrete. However, the haunch width may vary between 6 and 12 inches.
3. New Extrusion or Angle shall be carefully aligned with the existing extrusion prior to the welding. The alignment shall be maintained during the welding. The Extrusions Throat shall be cleaned after welding to insure proper seating of the Elastomeric Seal.
4. WELDED CONNECTIONS: All field splices shall have a complete penetration butt weld. Welds in contact with seal shall be ground flush. Welds shall conform to standard AWS and AASHTO specifications for highway bridges.
5. Materials shown are new unless noted otherwise.
6. Drip Groove: shall terminate 2'-0" from the face of the abutments.
7. Longitudinal Construction Joint shall be treated in accordance with Item SP 516B – Sealing of Construction Joint.
8. Longitudinal or Transverse Construction Joints shall not be permitted in the Deck Slab, except as shown in the plans.
9. For Slab Plan, See Sheet 14/16.
10. For Steel Notes, See Sheet 11/16.

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

TRANSVERSE SECTION

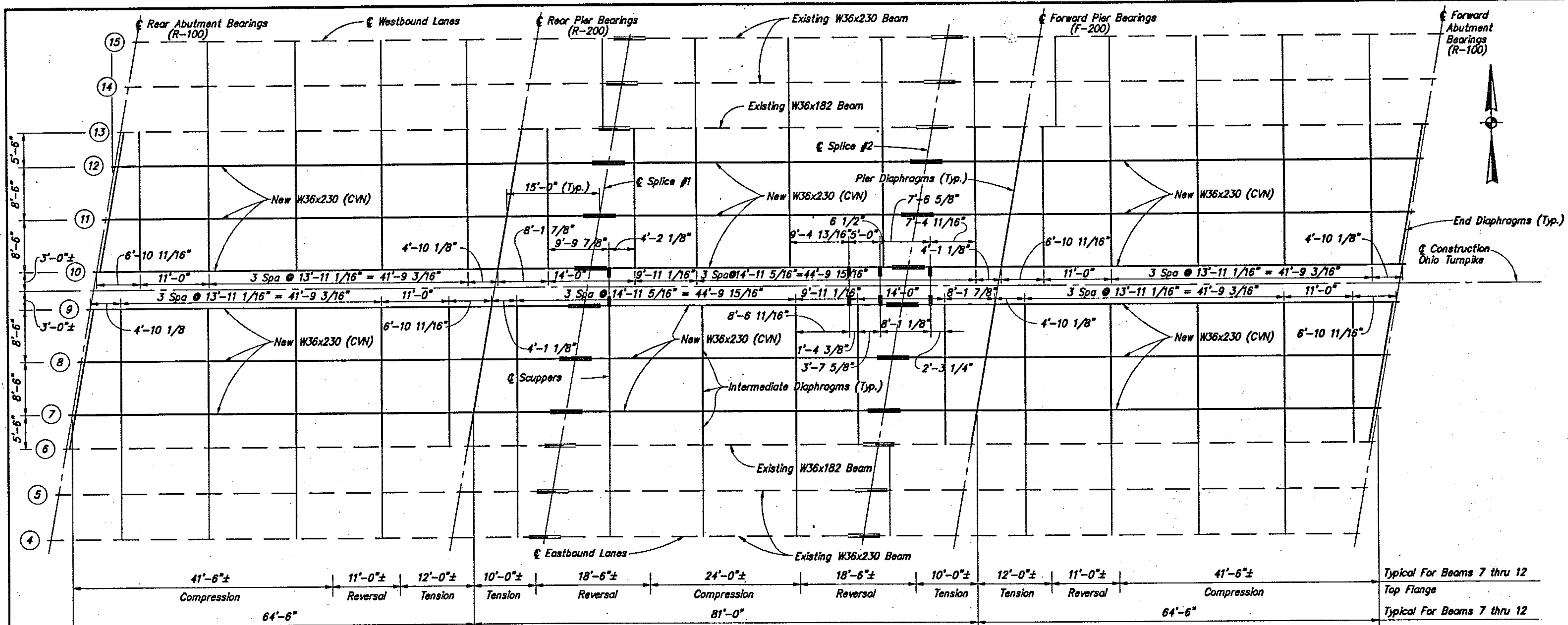
OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

W.E. QUICKSALL & ASSOCIATES

NEW PHILADELPHIA, OHIO

DESIGNED: ZRP	CHECKED:	DATE: 12-4-96
DRAWN: FDH	IN CHARGE: WDA	SCALE: N.T.S.

CONTRACT 77-97-04 SHEET B133 OF B178



STRUCTURAL STEEL FRAMING PLAN

NOTES

1. Where a Shape or Plate is Designated (CVN) the material shall meet specified minimum Notch Toughness Requirements as specified in 711.01 of CMS.
2. Welded Attachments for supports of Concrete Deck Finishing Machine or any other purpose is prohibited. Only those welds shown on the plans for attachment of Bearings and Stiffeners shall be permitted.
3. Diaphragms located between Beams 6 & 7 and between Beams 12 & 13: The Connection Bolts shall be hand tightened for the pouring of the Deck. Complete tightening after the Deck has cured.
4. Welded Stud Shear Connectors shall conform to AASHTO M-169 and Item 513.
5. Structural Expansion Joints shall be a continuous 3" Strip Seal. All Structural Steel Associated with the Structural Expansion Joints shall be included with Item SP 533W, 3" Continuous Strip Seal in Structural Steel Joint (Widening). For Additional Details See Sheet 10/16. See Sheets G4/G5 & G5/G5.
6. High Strength Bolts shall be 1" Diameter, Galvanized and shall conform to ASTM A325, SP 513, SP 514B & SP 711, unless noted otherwise.
7. Splice Plate: All Splice Plates used in the Beam Splices shall be Designated CVN.
8. All New Structural Steel shall be ASTM A36, Yield Strength 36,000 p.s.i., and shall be totally shop painted with all coats. See Structure General Notes for additional information.

NOTES

9. For F-200 Bearing Details, See St'd. Dwg. FB-1-82.
10. For R-100 & R-200 Bearing Details, See St'd. Dwg. RB-1-55.
11. For Splice Details, See St'd. Dwg. BS-1-93.
12. For Typical Intermediate, Pier & End Diaphragm Details, See Sheet 12/16
13. For Shear Connector Detail, See Sheet 10/16
14. For Transverse Section, See Sheet 10/16
15. For Scupper Details, See Standard Scupper per O.D.O.T. Standard Drawing SD-1-69.
16. For Camber Diagrams, See Sheet 13/16
17. For Shear Connector Spacing, See Sheet 13/16

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

FRAMING PLAN

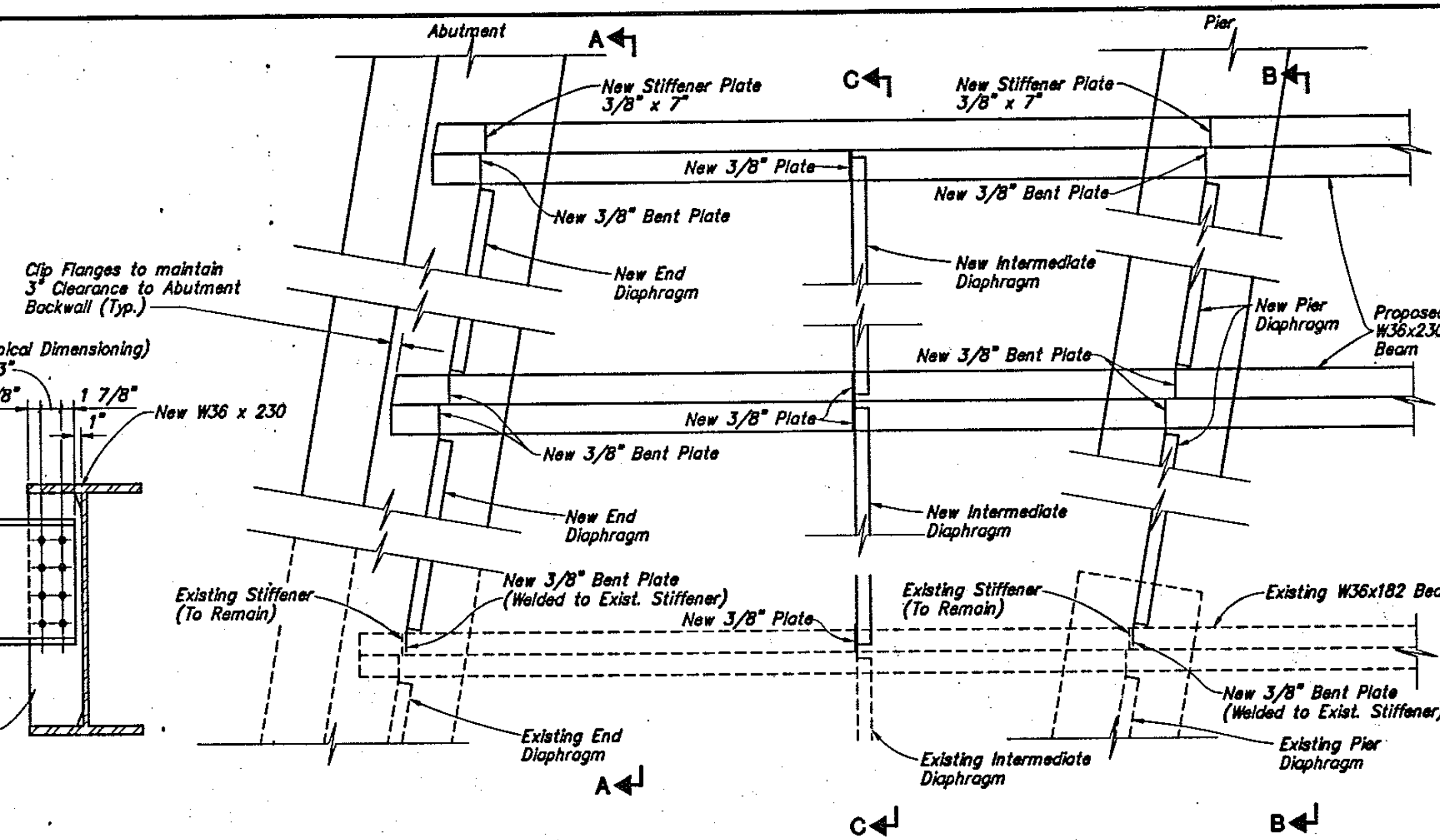
OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.3)

W.E. QUICKSALL & ASSOCIATES

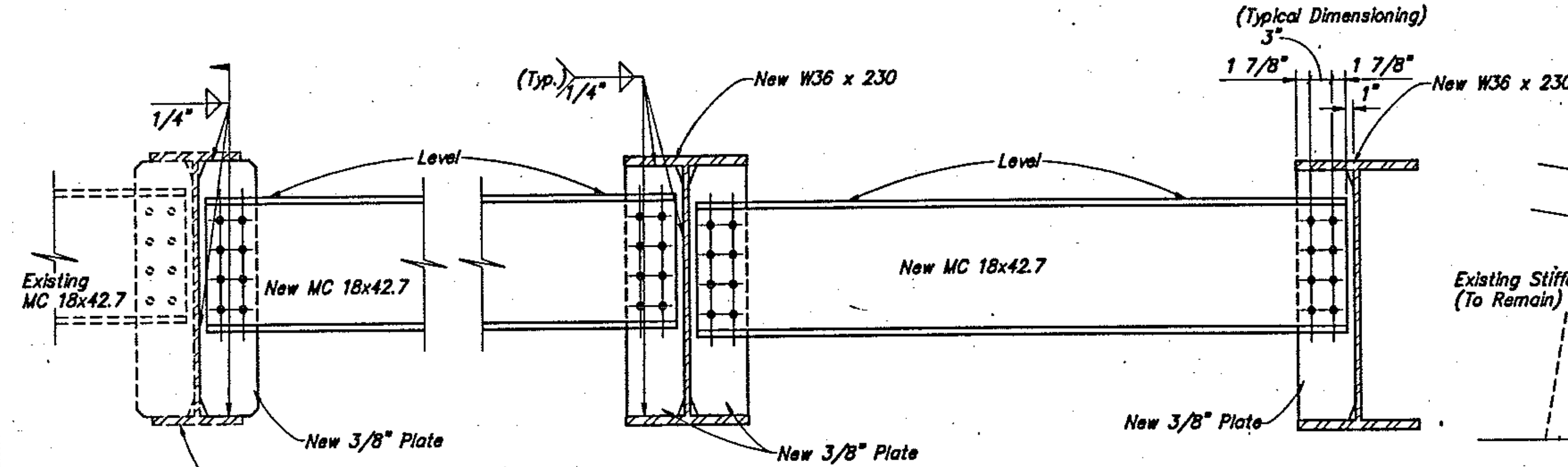
NEW PHILADELPHIA, OHIO

DESIGNED: ZRD	CHECKED: wda	DATE: 12-4-96
DRAWN: FDH	IN CHARGE: WDA	SCALE: N.T.S.

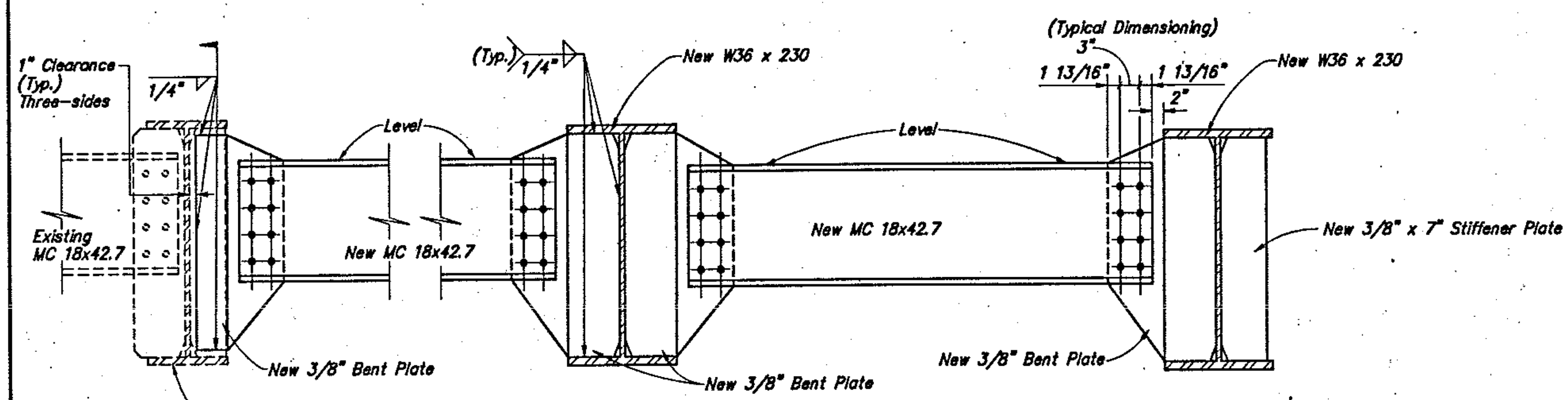
11/16 CONTRACT 77-97-04 SHEET B134 OF B178



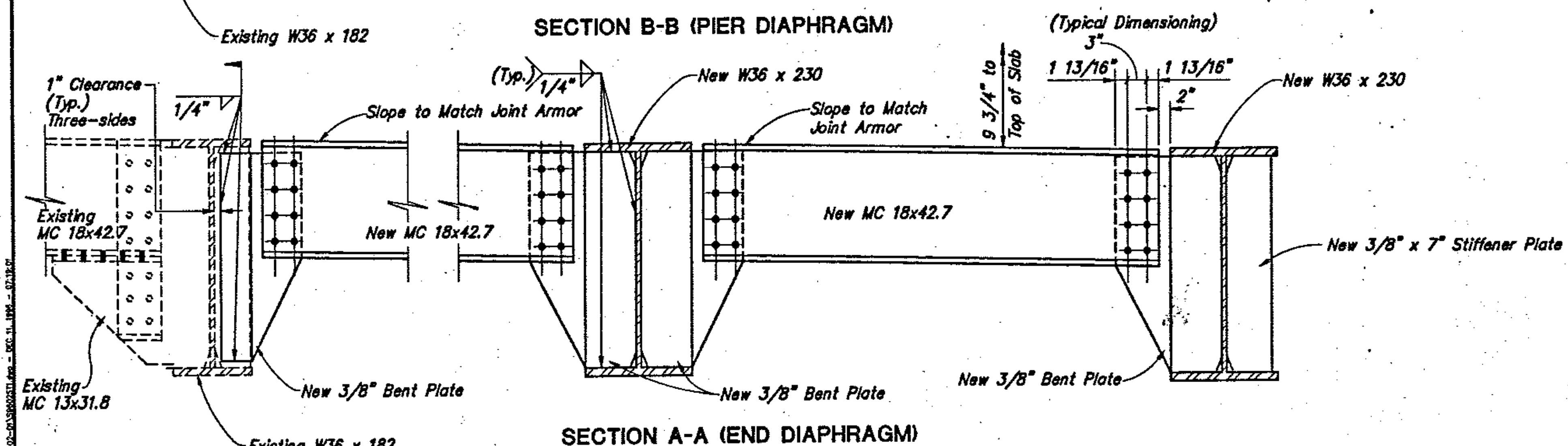
PLAN



SECTION C-C (INTERMEDIATE DIAPHRAGM)



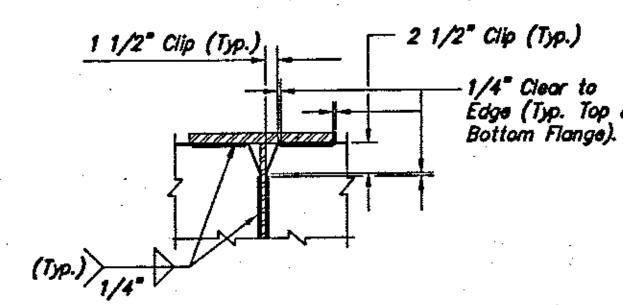
SECTION B-B (PIER DIAPHRAGM)



SECTION A-A (END DIAPHRAGM)

NOTES

1. High Strength Bolts shall be 7/8" Dia. A325.
2. All bolt spacings shall be 3" C/C Horizontal and 3 1/2" C/C Vertical.



TYPICAL STIFFENER DETAIL

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

STEEL CONNECTION DETAILS

OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

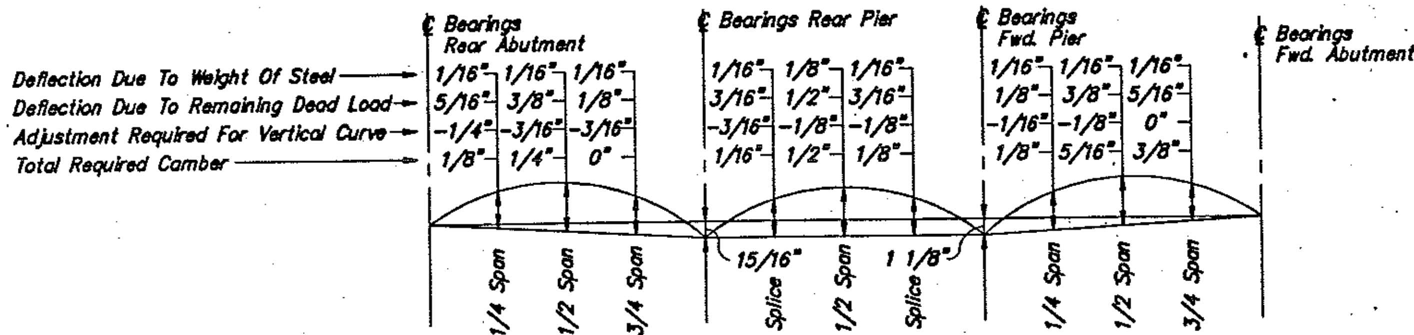
W.E. QUICKSALL & ASSOCIATES

NEW PHILADELPHIA, OHIO

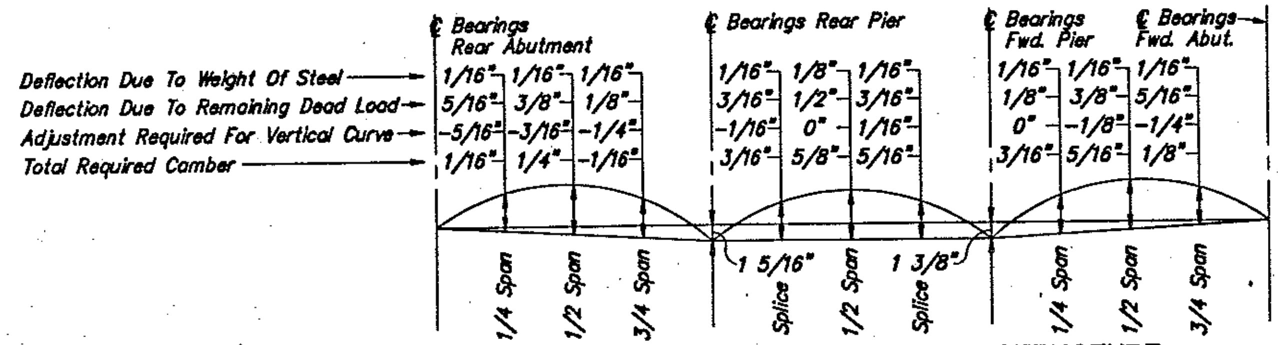
DESIGNED: ZRD	CHECKED: wda	DATE: 12-4-96
DRAWN: FDH	IN CHARGE: WDA	SCALE: N.T.S.

12/16

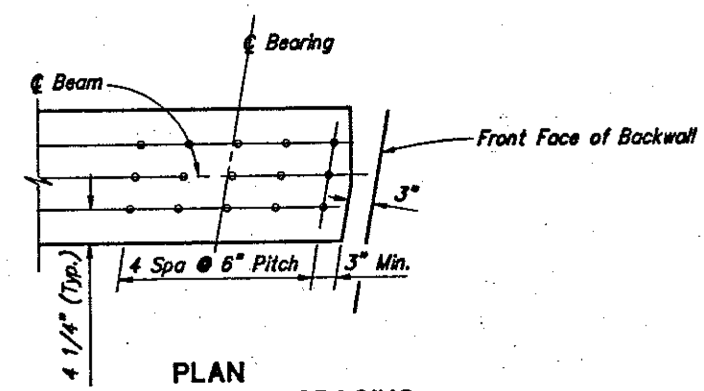
CONTRACT 77-97-04 SHEET B135 OF B178



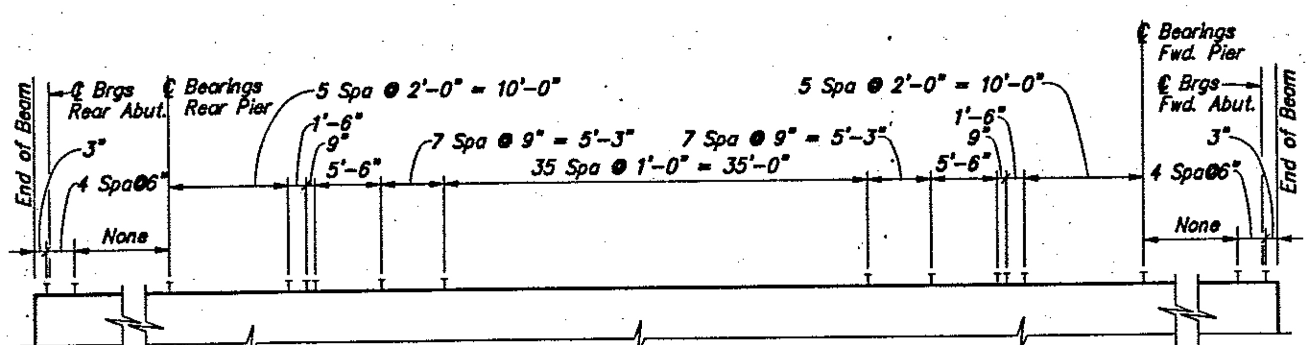
CAMBER DIAGRAM WESTBOUND STRUCTURE



CAMBER DIAGRAM EASTBOUND STRUCTURE



PLAN
SHEAR CONNECTOR SPACING
AT ABUTMENTS



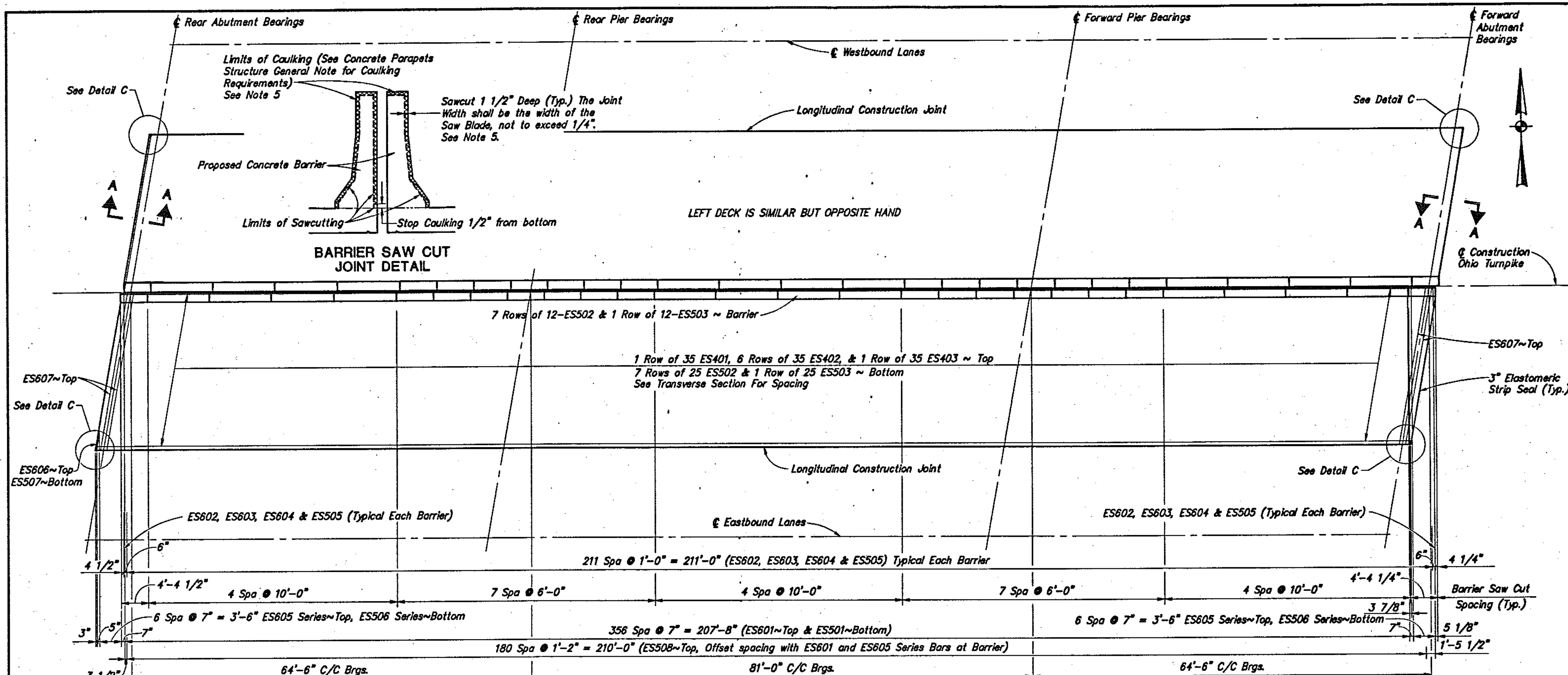
SHEAR CONNECTOR SPACING

NO.	REVISIONS	BY	DATE

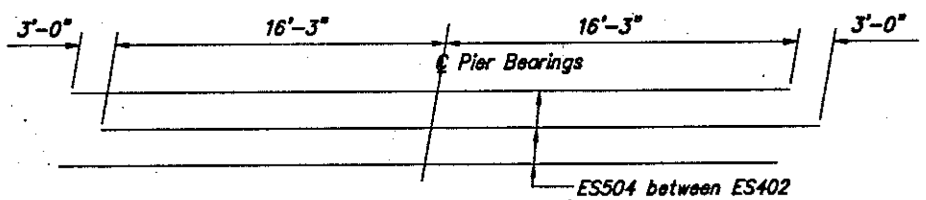
OHIO TURNPIKE COMMISSION
STEEL DETAILS
OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.3)
W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

DESIGNED: ZRD	CHECKED: wda	DATE: 12-4-96
DRAWN: FDH	IN CHARGE: WDA	SCALE: N.T.S.

13/16 CONTRACT 77-97-04 SHEET B136 OF B178



SLAB PLAN



STAGGER SYSTEM OF ES504 BARS OVER PIERS

FINISH PAVEMENT ELEVATIONS

SIDE	LOCATION	SPAN #1 ABUTMENT BEARING	SPAN #1 1/4	SPAN #1 1/2	SPAN #1 3/4	PIER BEARING	SPAN #2 Splice	SPAN #2 1/2	SPAN #2 Splice	PIER BEARING	SPAN #3 1/4	SPAN #3 1/2	SPAN #3 3/4	SPAN #3 ABUTMENT BEARING
WESTBOUND	BEAMLINE #13	1085.62	1085.56	1085.54	1085.51	1085.50	1085.46	1085.45	1085.41	1085.41	1085.41	1085.42	1085.45	1085.46
WESTBOUND	BEAMLINE #12	1085.53	1085.47	1085.45	1085.42	1085.41	1085.37	1085.36	1085.32	1085.32	1085.32	1085.33	1085.36	1085.37
WESTBOUND	BEAMLINE #11	1085.39	1085.33	1085.30	1085.28	1085.26	1085.23	1085.21	1085.19	1085.18	1085.19	1085.19	1085.22	1085.23
WESTBOUND	BEAMLINE #10	1085.24	1085.20	1085.16	1085.13	1085.11	1085.09	1085.07	1085.05	1085.05	1085.05	1085.06	1085.07	1085.09
WESTBOUND	TOE OF BARRIER	1085.22	1085.18	1085.14	1085.11	1085.08	1085.06	1085.04	1085.03	1085.03	1085.03	1085.04	1085.05	1085.07
EASTBOUND	TOE OF BARRIER	1085.22	1085.18	1085.14	1085.11	1085.09	1085.07	1085.04	1085.03	1085.03	1085.03	1085.04	1085.05	1085.07
EASTBOUND	BEAMLINE #9	1085.24	1085.20	1085.16	1085.13	1085.11	1085.09	1085.06	1085.05	1085.05	1085.05	1085.06	1085.07	1085.09
EASTBOUND	BEAMLINE #8	1085.40	1085.33	1085.30	1085.25	1085.23	1085.21	1085.20	1085.18	1085.16	1085.18	1085.18	1085.19	1085.22
EASTBOUND	BEAMLINE #7	1085.56	1085.47	1085.44	1085.38	1085.36	1085.34	1085.33	1085.31	1085.28	1085.31	1085.31	1085.30	1085.35
EASTBOUND	BEAMLINE #6	1085.66	1085.56	1085.53	1085.46	1085.44	1085.42	1085.42	1085.39	1085.35	1085.39	1085.39	1085.37	1085.44

NOTES

1. Longitudinal or Transverse Construction Joints shall not be permitted in the Deck Slab, except as shown in the plans.
2. Transverse Reinforcing Steel shall be field bent as required. Any damage to the Epoxy Coating shall be repaired per SP 509.10. Payment shall be included with Item SP 509-Epoxy Coated Reinforcing Steel, Grade 60.
3. Finish Pavement Elevations: The elevations shown are the Finished Pavement Elevations. Proper allowance shall be made for the Dead Load Deflections caused by the weight of the concrete.
4. The cost of the Sawcutting and Caulking shall be included with the appropriate concrete pay item.
5. Reinforcing Splice Lengths shall be:
   1'-7" for #4 bars
   2'-7" for #5 bars
6. For Transverse Section, See Sheet 10/16
7. For Detail C, See Sheet 10/16
8. For Section A-A, See Sheet G4/G5

NO.	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION

SLAB PLAN

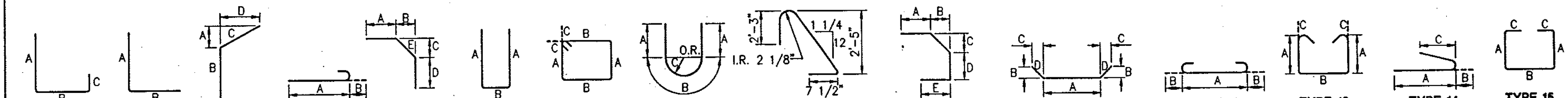
OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

W.E. QUICKSALL & ASSOCIATES

NEW PHILADELPHIA, OHIO

DESIGNED: ZRD | CHECKED: wda | DATE: 12-4-96
DRAWN: FDH | IN CHARGE: WDA | SCALE: N.T.S.

CONTRACT 77-97-04 SHEET B137 OF B178



TYPE 1 TYPE 2 TYPE 3 TYPE 4 TYPE 5 TYPE 6 TYPE 7 TYPE 8 TYPE 9 TYPE 10 TYPE 11 TYPE 12 TYPE 13 TYPE 14 TYPE 15

ABUTMENTS

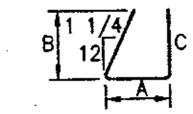
MARK	TYPE	A	B	C	D	E	NUMBER REAR	NUMBER FORWARD	TOTAL	LENGTH	WEIGHT
EA901	ST						16		16	17'-4"	943
EA902	ST							16	16	17'-10"	970
EA801	ST						16	16	32	23'-3"	1,986
EA701	ST						16	16	32	23'-3"	1,521
EA601	2	3'-8	1'-0"				64	72	136	4'-6"	919
EA602	6	2'-11" to 5'-10"	1'-2"		Length Varies By 10"		4 Series of 8		4 Series of 8	6'-8" to 12'-6"	461
EA603	6	2'-9" to 6'-1"	1'-2"		Length Varies By 10"			4 Series of 9	4 Series of 9	6'-4" to 13'-0"	523
EA604	ST						34	34	68	3'-6"	357
EA501	ST						36	36	72	23'-3"	1,746
EA502	1	6'-0"	2'-8"	3'-8"			42	42	84	12'-1"	1,059
EA503	6	2'-3"	4'-2"				42	42	84	8'-5"	737
EA504	3	1'-2 1/2"	3'-0"	3'-0"	2'-9"		42	42	84	5'-11"	518
EA505	ST.							1	1	6'-3"	7
EA506	ST.						1		1	6'-0"	6
EA507	6	5'-5"	1'-2"				48	48	96	11'-9"	1,177
EA508	2	3'-5"	10 1/2"				87	87	174	4'-2"	756
EA509	4	7'-0"	7"				8		8	7'-7"	63
EA510	4	7'-5"	7"					8	8	8'-0"	67
EA511	4	9'-2"	7"				8		8	9'-9"	81
EA512	4	9'-7"	7"					8	8	10'-2"	85
EA513	4	8'-2"	7"				8		8	8'-9"	73
EA514	4	8'-8"	7"					8	8	9'-3"	77
EA515	12	12'-7"	7"				24		24	13'-9"	344
EA516	12	13'-1"	7"					24	24	14'-3"	357
EA517	ST							1	1	6'-3"	7
EA518	6	2'-4"	2'-8"				70	70	140	7'-1"	1,034
EA519	6	2'-4"	2'-9"				8	8	16	7'-2"	120
EA520	ST						1		1	6'-0"	6
EA401	7	1'-9"	2'-6"	4 1/2"			32	32	64	9'-0"	385

ABUTMENT SLABS

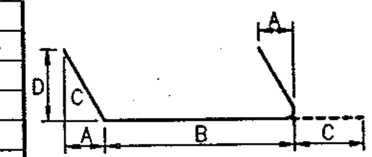
MARK	TYPE	A	B	C	D	E	NUMBER REAR	NUMBER FORWARD	TOTAL	LENGTH	WEIGHT
EAS801	ST						82		82	11'-6"	2,518
EAS802	ST							82	82	12'-0"	2,627
EAS601	ST						82		82	11'-6"	1,416
EAS602	ST							82	82	12'-0"	1,478
EAS603	ST						48	52	100	24'-0"	3,605
EAS604	9	SEE DETAIL					24	26	50	5'-5"	407
EAS605	10	7"	6"	8 1/2"	11"	10"	24	26	50	2'-9"	207
EAS606	2	1'-6"	10"				24	26	50	2'-2"	163
EAS501	6	2'-9"	5"				24	26	50	5'-8"	296
EAS502	ST						24		24	11'-6"	288
EAS503	ST							24	24	12'-0"	300

ABUTMENT WINGWALLS (PARAPETS)

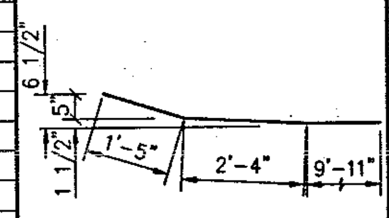
MARK	TYPE	A	B	C	D	E	NUMBER REAR	NUMBER FORWARD	TOTAL	LENGTH	WEIGHT
EW601	ST						12	14	26	2'-5"	94
EW602	ST						17	9	26	1'-4"	52
EW603	5	8"	6"	8 1/2"	8 1/2"	10 3/8"	6	6	12	2'-2"	39
EW604	ST						4	4	8	3'-4"	40
EW605	6	3'-7"	1'-2"				1		1	8'-0"	12
EW606	ST						2		2	4'-6"	14
EW501	ST						6	6	12	13'-8"	171
EW502	18	SEE DETAIL					2	2	4	13'-8"	57
EW503	4	2'-5"	7"				12	12	24	3'-0"	75
EW504	ST						2		2	2'-0"	4
EW505	ST							2	2	1'-6"	3
							(ABUTMENTS – EPOXY COATED BARS) TOTAL				30,251



TYPE 16



TYPE 17



TYPE 18

NOTES

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A700 IS A NO. 7 AND A1014 IS A NO. 10 SIZE. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

REINFORCING STEEL MARKS BEGINNING WITH 'E' SHALL BE EPOXY COATED BARS.

ST ~ DENOTES STRAIGHT BARS

EPOXY COATED REINFORCING STEEL SUPPORT
IN ACCORDANCE WITH THE REQUIREMENTS OF SP 509 AND SECTION 509.09 OF THE SPECIFICATIONS THE TOP AND BOTTOM MATS OF ALL LONGITUDINAL AND TRANSVERSE EPOXY COATED REINFORCING STEEL SHALL BE SUPPORTED BY APPROVED EPOXY COATED DEVICES WITH SPACING NOT EXCEEDING THREE (3) FOOT CENTERS IN EACH DIRECTION. BROKEN CONCRETE, BRICKS, ETC. SHALL NOT BE USED FOR SUPPORT OF REINFORCING STEEL.

REINFORCING STEEL SAMPLES
REFER TO OTC GENERAL CONDITIONS G-6.02 AND CMS SECTION 700, 709.01 THROUGH 709.05 AND 709.08. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING FOR EACH BRIDGE. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL SPLICED IN ACCORDANCE WITH 509.08.

NO.	REVISIONS	BY	DATE

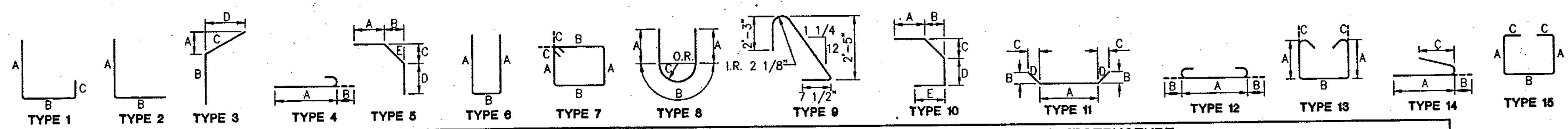
OHIO TURNPIKE COMMISSION

REINFORCING BAR SCHEDULE

OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

DESIGNED: wdg CHECKED: ZRD DATE: 12-4-96
DRAWN: FDH IN CHARGE: WDA SCALE: N.T.S.

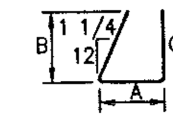


PIERS

MARK	TYPE	A	B	C	D	E	NUMBER REAR	NUMBER FORWARD	TOTAL	LENGTH	WEIGHT
P601	ST						6	6	12	30'-0	541
P602	ST						6	6	12	16'-9"	302
P603	12	7'-8"	8"				42	42	84	9'-0"	1,136
P501	ST						16	16	32	2'-6"	83
P502	ST						30	30	60	7'-8"	480
P503	ST						12	12	24	23'-1"	578
							(PIERS – UNCOATED BARS) TOTAL				3,120
GP601	2	4'-11"	1'-0"				84	84	168	5'-9"	1,451
GP602	ST						88		88	14'-9"	1,950
GP603	NOT USED										
GP604	6	2'-1"	2'-8"				44	44	88	6'-6"	859
GP605	ST							88	88	15'-5"	2,038
GP501	ST						30	30	60	2'-4"	146
GP502	ST						62	66	128	24'-5"	3,260
							(PIERS – GALVANIZED BARS) TOTAL				9,704

SUPERSTRUCTURE

MARK	TYPE	A	B	C	D	E	NUMBER WESTBOUND	NUMBER EASTBOUND	TOTAL	LENGTH	WEIGHT
ES601	ST						357	357	714	25'-3"	27,079
ES602	9	SEE DETAIL					214	214	428	5'-5"	3,482
ES603	10	7"	6"	8 1/2"	9 1/4"	10"	214	214	428	2'-10"	1,821
ES604	2	1'-6"	7 1/2"				214	214	428	2'-0"	1,286
ES605	ST				Length Varies By 3'-3 5/8"(+)		2 Series of 7	2 Series of 7	4 Series of 7	2'-10" to 22'-8"	536
ES606	ST						1	1	2	2'-10"	9
ES607	ST						4	4	8	25'-8"	308
ES501	ST						357	357	714	25'-3"	18,804
ES502	ST						259	259	518	30'-0"	16,208
ES503	ST						37	37	74	20'-5"	1,576
ES504	ST						72	72	144	35'-6"	5,332
ES505	6	2'-9"	5"				214	214	428	5'-8"	2,530
ES506	ST				Length Varies By 3'-3 5/8"(+)		2 Series of 7	2 Series of 7	4 Series of 7	2'-10" to 22'-8"	372
ES507	ST						1	1	2	2'-10"	6
ES508	ST						181	181	362	5'-0"	1,888
ES401	4	29'-6"	6"				35	35	70	30'-0"	1,403
ES402	ST						210	210	420	30'-0"	8,417
ES403	4	13'-11"	6"				35	35	70	14'-5"	674
							(SUPERSTRUCTURE – EPOXY COATED BARS) TOTAL				91,731



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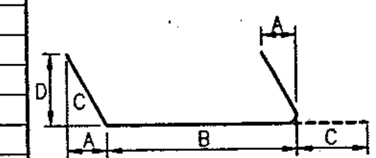
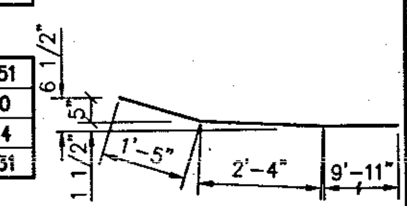


TYPE 17

(ABUTMENTS – EPOXY COATED BARS) TOTAL	30,251
(PIERS – UNCOATED BARS) TOTAL	3,120
(PIERS – GALVANIZED BARS) TOTAL	9,704
(SUPERSTRUCTURE – EPOXY COATED BARS) TOTAL	91,731



TYPE 18

NOTES

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A700 IS A NO. 7 AND A1014 IS A NO. 10 SIZE. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

REINFORCING STEEL MARKS BEGINNING WITH 'E' SHALL BE EPOXY COATED BARS.

REINFORCING STEEL MARKS BEGINNING WITH 'G' SHALL BE GALVANIZED BARS.

ST ~ DENOTES STRAIGHT BARS

EPOXY COATED REINFORCING STEEL SUPPORT
IN ACCORDANCE WITH THE REQUIREMENTS OF SP 509 AND SECTION 509.09 OF THE SPECIFICATIONS THE TOP AND BOTTOM MATS OF ALL LONGITUDINAL AND TRANSVERSE EPOXY COATED REINFORCING STEEL SHALL BE SUPPORTED BY APPROVED EPOXY COATED DEVICES WITH SPACING NOT EXCEEDING THREE (3) FOOT CENTERS IN EACH DIRECTION. BROKEN CONCRETE, BRICKS, ETC. SHALL NOT BE USED FOR SUPPORT OF REINFORCING STEEL.

REINFORCING STEEL SAMPLES
REFER TO OTC GENERAL CONDITIONS G-6.02 AND CMS SECTION 700, 709.01 THROUGH 709.05 AND 709.08. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING FOR EACH BRIDGE. 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

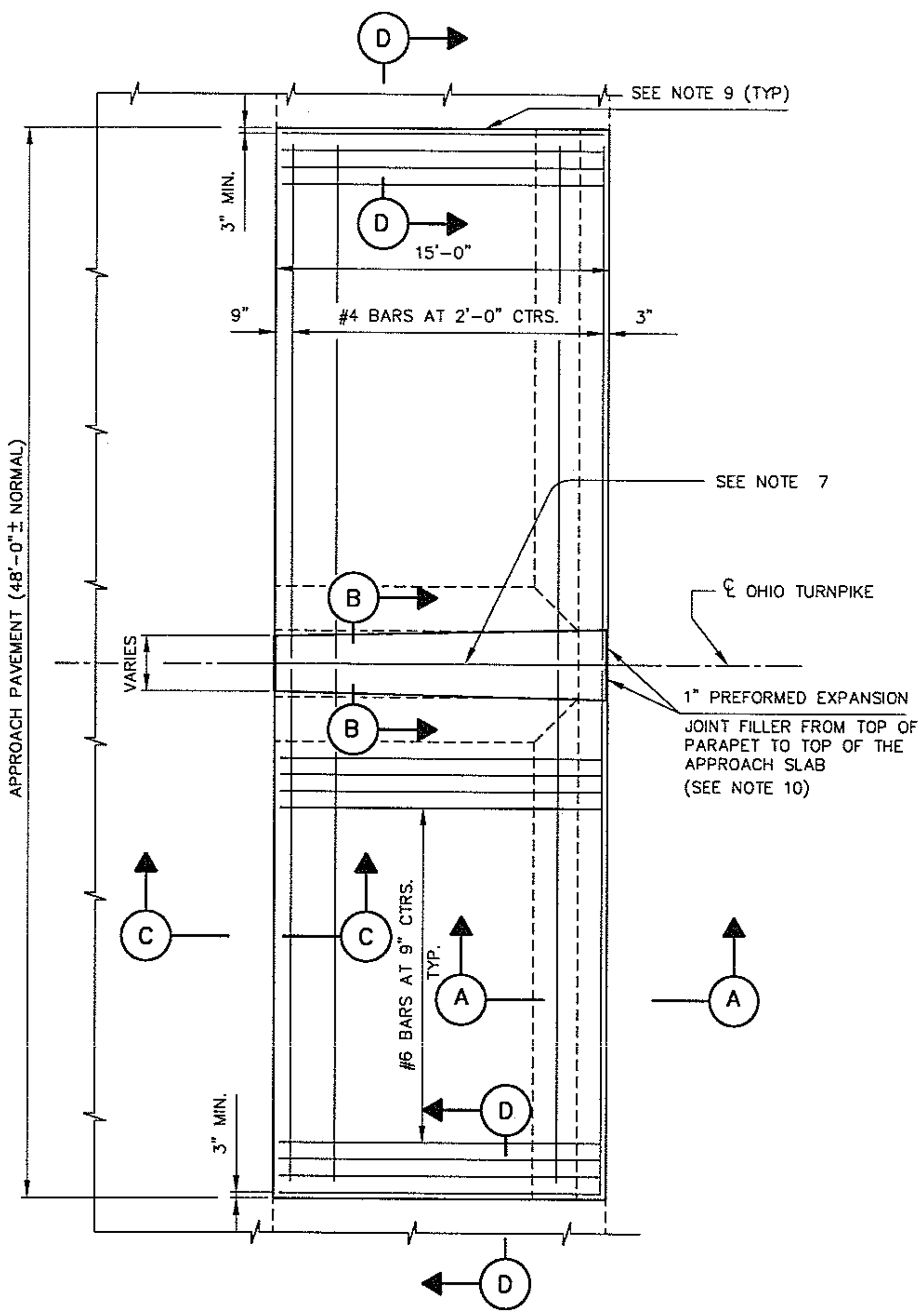
REINFORCING BAR SCHEDULE

OHIO TURNPIKE OVER CUYAHOGA RIVER (MP 191.4)

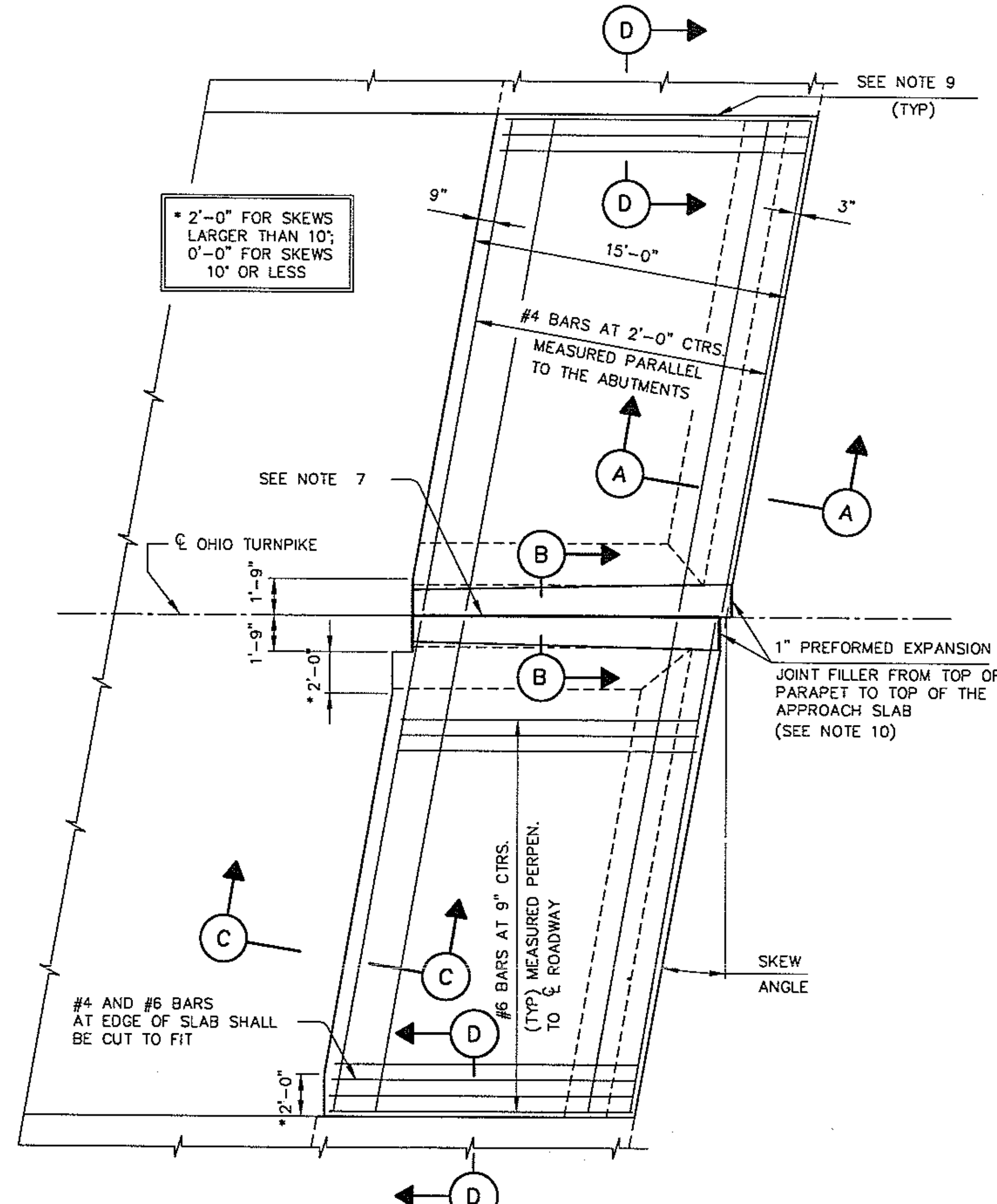
W.E. QUICKSALL & ASSOCIATES
NEW PHILADELPHIA, OHIO

DESIGNED: ZRD | CHECKED: wda | DATE: 12-4-96
DRAWN: FDH | IN CHARGE: WDA | SCALE: N.T.S.

16/16 CONTRACT 77-97-04 SHEET B139 OF B178



PLAN



APPROACH SLAB FOR SKEWED BRIDGE

NOTES

1. THIS DRAWING PROVIDES DESIGN AND GENERAL CONSTRUCTION DETAILS. THE PROJECT PLANS WILL SHOW SKEW, ESTIMATED QUANTITY (SQ. YDS), AND SPECIAL NOTES AND DETAILS, WHERE NECESSARY FOR CONDITIONS OTHER THAN THOSE INDICATED HEREON. THE APPROACH SLAB SHALL BE ADAPTED TO FIT THE ENDS OF THE BRIDGE AND THE APPROACH PAVEMENT.
2. CONCRETE: CLASS S USING SHRINKAGE COMPENSATING CEMENT. REINFORCING STEEL: ASTM A615, A616 OR A617 - GRADE 60 MIN YIELD STRENGTH 60,000 P.S.I. AND SHALL BE EPOXY COATED.
3. LONGITUDINAL CONSTRUCTION JOINTS REQUIRED FOR STAGE CONSTRUCTION SHALL BE AS PER 511.09 .
4. CROWN SHALL CONFORM TO THAT OF THE BRIDGE DECK. IF THE RATE OF CROWN OF THE BRIDGE DECK DIFFERS FROM THAT OF THE APPROACH ASPHALT PAVEMENT, A SMOOTH TRANSITION SHALL BE PROVIDED ON THE APPROACH ASPHALT PAVEMENT AT A TRANSITION RATE OF 1 TO 200.
5. TRANSVERSE JOINT DETAILS AT THE APPROACH PAVEMENT END OF THE APPROACH SLAB SHALL BE AS DETAILED ON OTC STANDARD DRAWING AS-2.
6. BASE MATERIAL SHALL BE ITEM SP 310-SUBBASE, TYPE I, GRADING A OR ITEM SP 304-AGGREGATE BASE DEPENDING ON MATERIAL SPECIFIED FOR THE MAINLINE PAVEMENT.
7. GROOVE AND SEAL WITH 705.04 AS PER ODOT STD. DWG. BP-2.1
8. TYPE A WATERPROOFING SHALL NOT EXTEND ABOVE THE BOTTOM OF THE GROOVE INTO WHICH THE JOINT SEALER IS TO BE PLACED. IT SHALL BE APPLIED TO THE ENTIRE AREA OF THE ABUTMENT OR SUPERSTRUCTURE WHICH COMES INTO CONTACT WITH THE APPROACH SLAB.
9. THE JOINT BETWEEN THE EXISTING AND THE NEW APPROACH SLABS SHALL BE AS SHOWN IN SECTION 'D-D'.
10. 1" PREFORMED EXPANSION JOINT FILLER SHALL BE PER 705.03
11. THE TWO 4" DIAMETER PVC CONDUITS WITH MULTI-CELL INNERDUCT SHALL COMPLY WITH SP 625.
12. FOR SECTIONS 'A-A', 'B-B', 'C-C' AND 'D-D' ADDITIONAL INFORMATION SEE OTC STANDARD DRAWING AS-2.
13. THE FOLLOWING ITEMS SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE YARD FOR ITEM SP 611, CLASS 'S' CONCRETE, APPROACH SLAB, USING SHRINKAGE COMPENSATING CEMENT (T=10"):

: ALL JOINTS
: GROOVE AND JOINT SEAL
: TYPE 'A' WATERPROOFING
: 1" PREFORMED EXPANSION JOINT FILLER
: MEDIAN BARRIERS

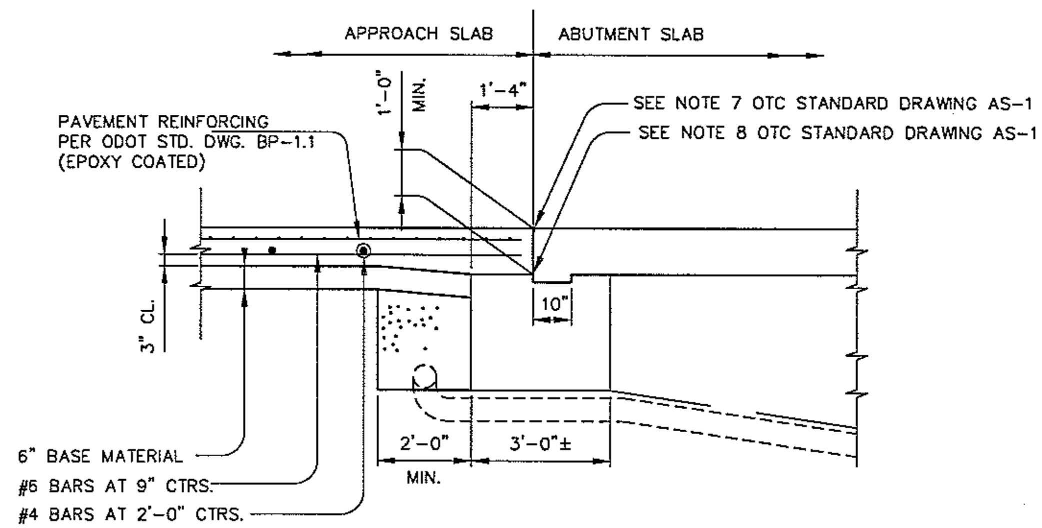
DESIGNED BY:	CHECKED BY:
DRAWN BY: FFF	DATE:
DATE: 12/27/95	REVISED BY: T.K.I.
CAD FILE NAME: 7026100/AS-1	DATE: 12/20/96

OHIO TURNPIKE COMMISSION

REINFORCED CONCRETE APPROACH SLAB

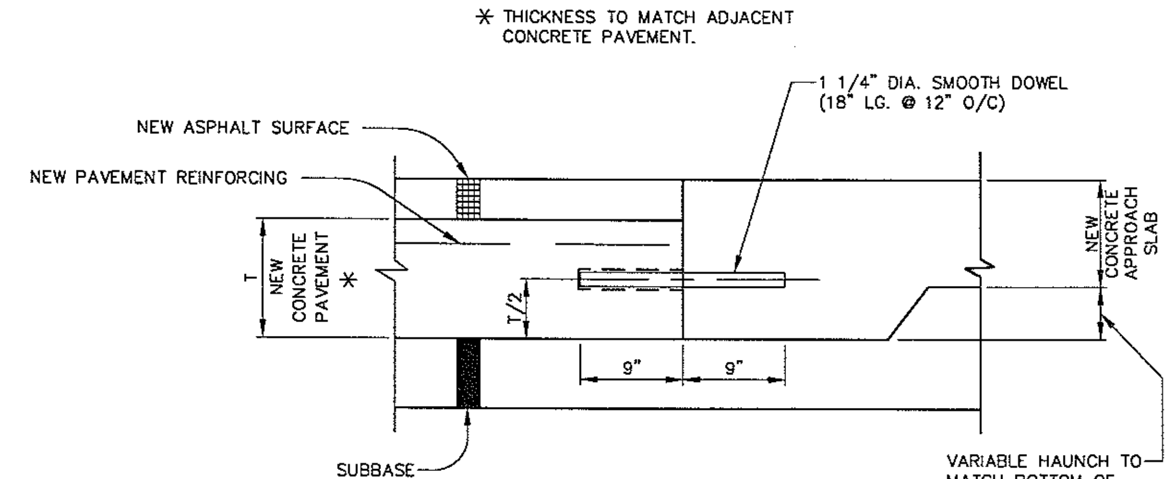
DATE: JANUARY 1, 1997 | SCALE: N.T.S.

O.T.C. STANDARD DRAWING AS-1

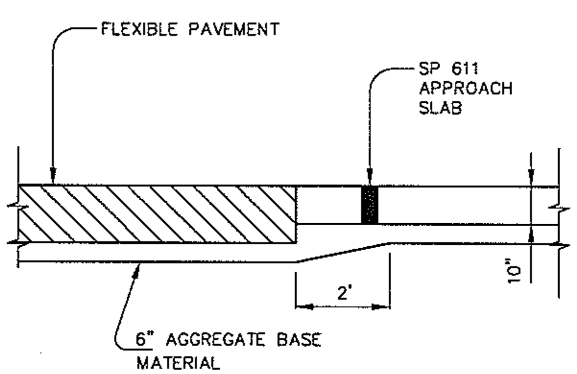


NOTE: ALL REINFORCING BARS SHALL BE EPOXY COATED.

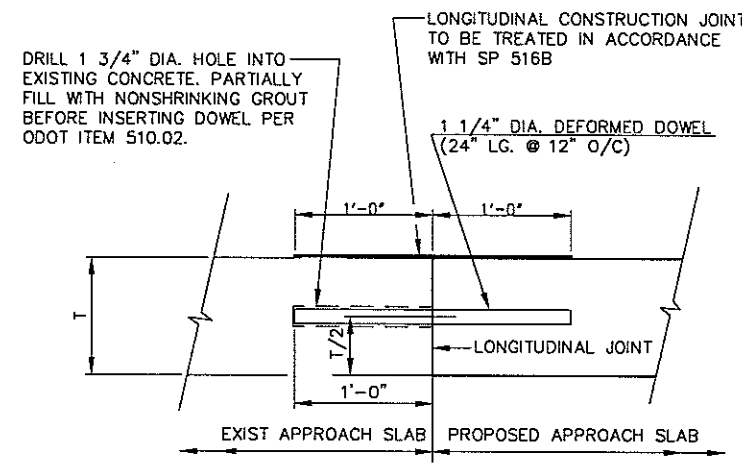
SECTION A-A



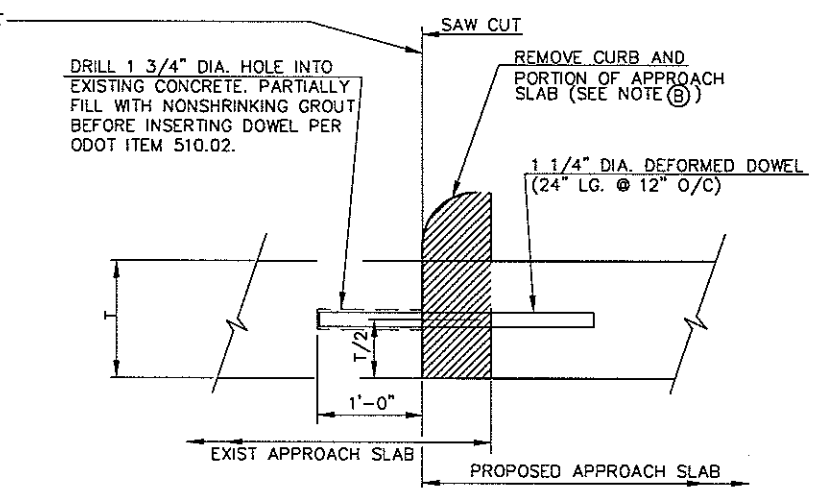
SECTION C-C
COMPOSITE PAVEMENT



SECTION C-C
FLEXIBLE PAVEMENT



SECTION D-D
(FOR APPROACH SLAB WITHOUT INTEGRAL CONCRETE CURB)

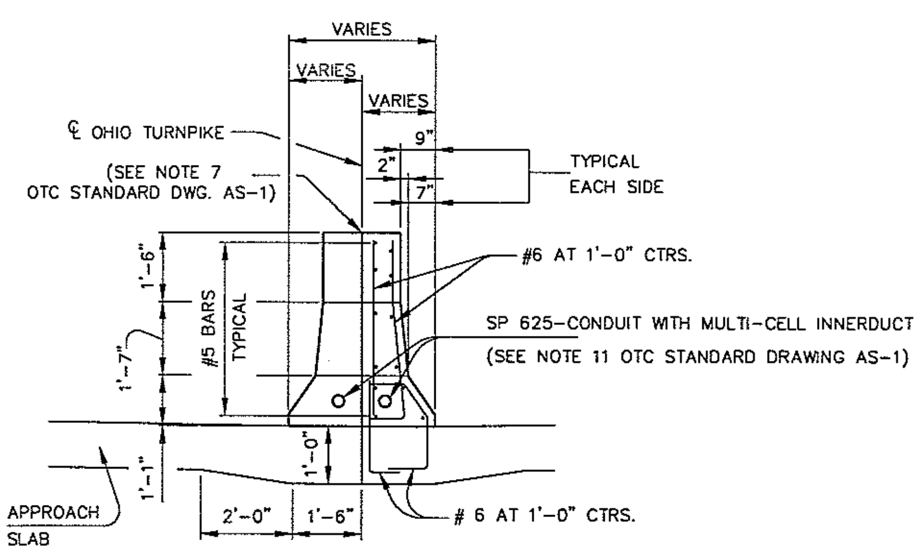


SECTION D-D
(FOR APPROACH SLAB WITH INTEGRAL CONCRETE CURB)

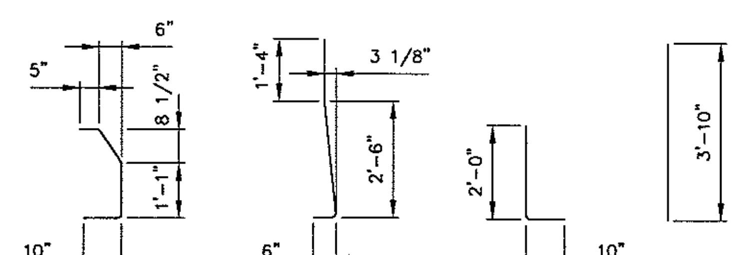
NOTES:

A FOR LOCATIONS OF SECTIONS 'A-A', 'B-B', 'C-C', AND 'D-D' AND ADDITIONAL NOTES, SEE OTC STANDARD DRAWING AS-1

B THE REMOVAL SHALL BE PER 202.05 OF THE ODOT CMS BUT THE COST OF THE REMOVAL SHALL BE INCIDENTAL TO THE COST OF ITEM SP 611



SECTION B-B
REINFORCING AND DIMENSIONS SYMMETRICAL ABOUT CENTERLINE



BAR BENDING DIAGRAMS

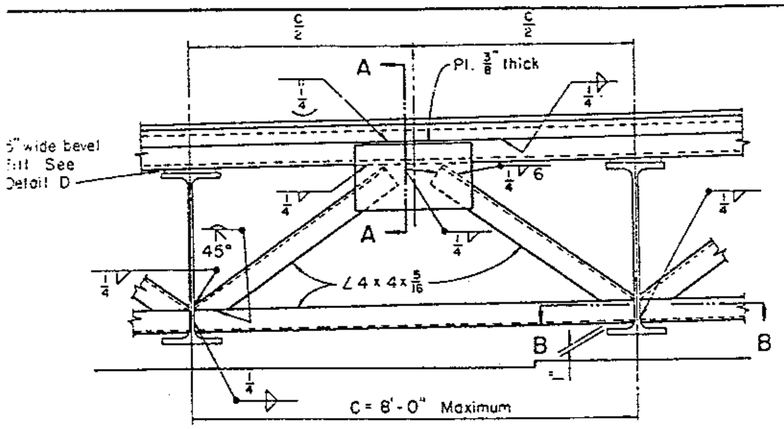
DESIGNED BY:	CHECKED BY: D.S.B.
DATE:	DATE: 11/01/96
DRAWN BY: A.L.H.	REVISED BY: T.K.I.
DATE: 12/27/95	DATE: 12/20/96
CAD FILE NAME: 7026100/AS-2	

OHIO TURNPIKE COMMISSION

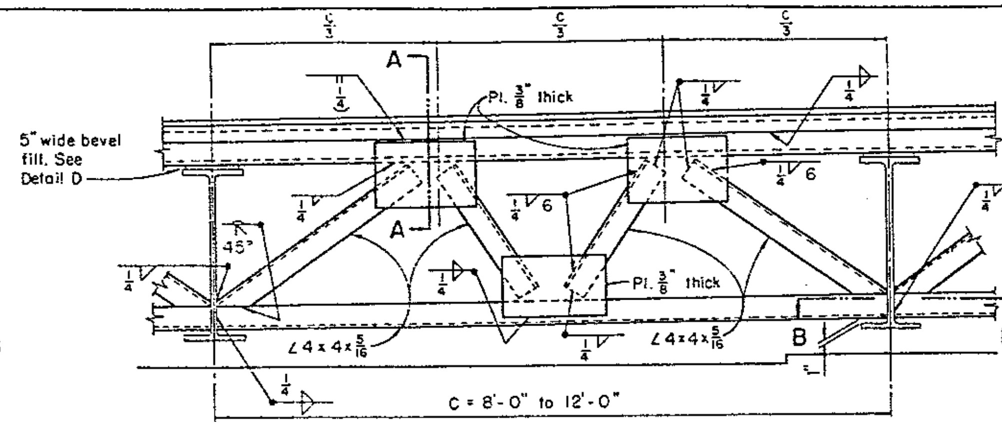
REINFORCED CONCRETE APPROACH SLAB SECTIONS AND DETAILS

DATE: JANUARY 1, 1997 SCALE: N.T.S.

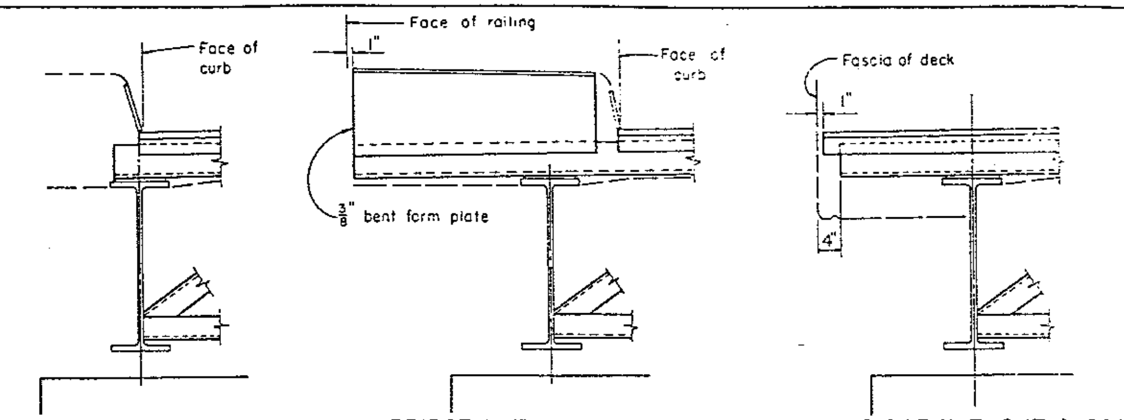
O.T.C. STANDARD DRAWING AS-2



END CROSSFRAME
For beam spacing of 8'-0" or less measured parallel to end dam.



END CROSSFRAME
For beam spacing of 8'-0" to 12'-0" measured parallel to end dam.

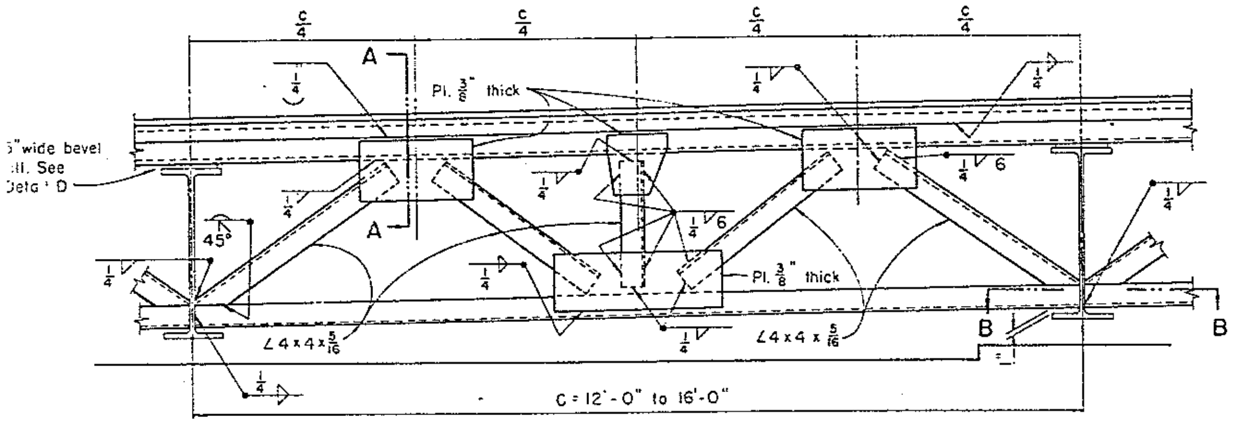


BRIDGE WITH CURBS

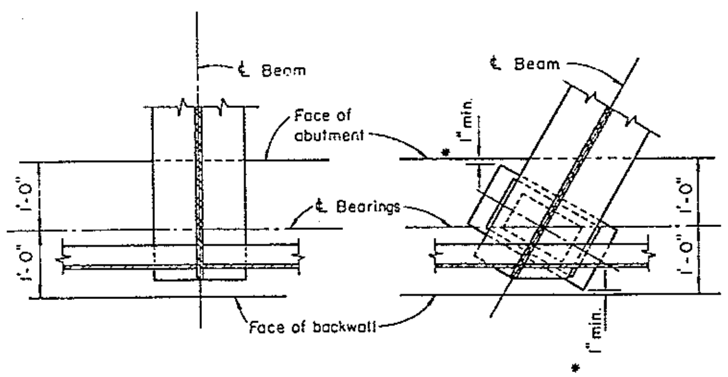
BRIDGE WITH SIDEWALK

BRIDGE WITHOUT CURBS

END DAM DETAILS AT FASCIA BEAM
(For additional details see Sheet No. 2)



END CROSSFRAME
For beam spacing of 12'-0" to 16'-0" measured parallel to end dam.

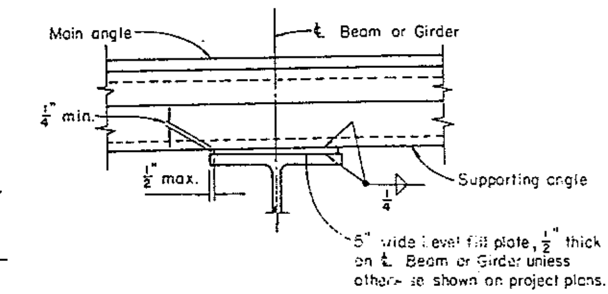


FOR SQUARE BRIDGES

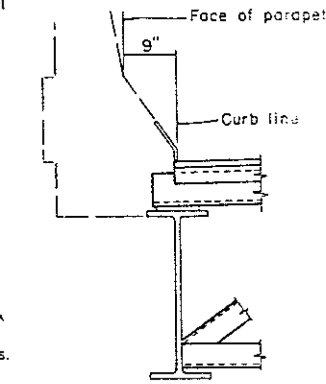
FOR SKEWED BRIDGES

SECTION B - B

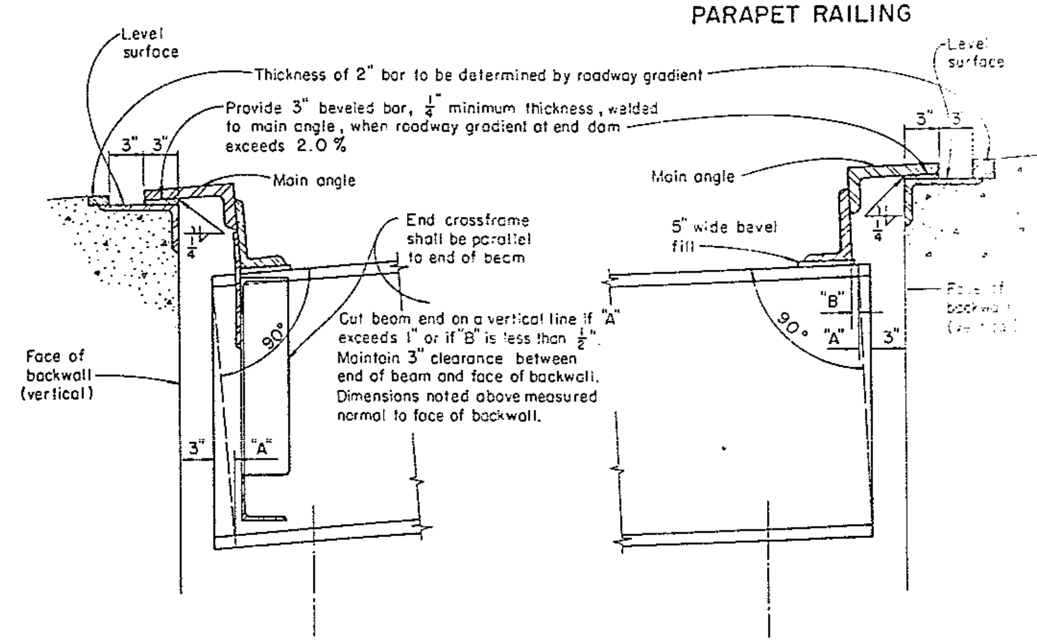
* Where necessary, cope corner of masonry plate in order to maintain 1" clearance.



DETAIL D

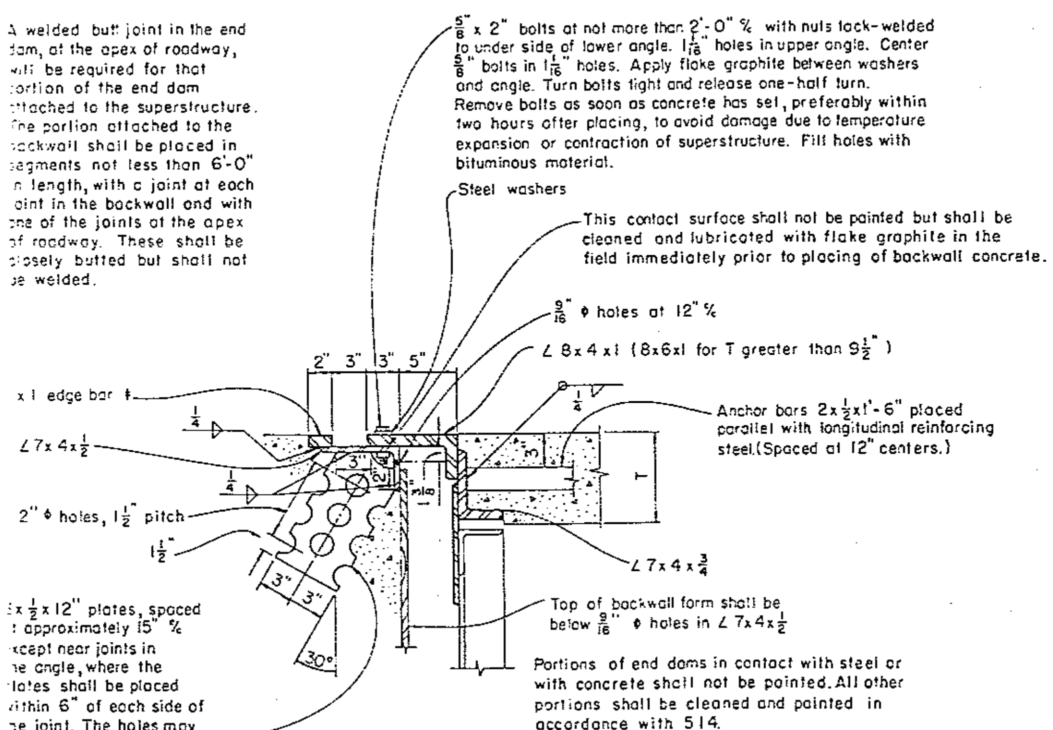


BRIDGE WITH ROADWAY PARAPET RAILING



LONGITUDINAL SECTION
BRIDGE ON GRADE

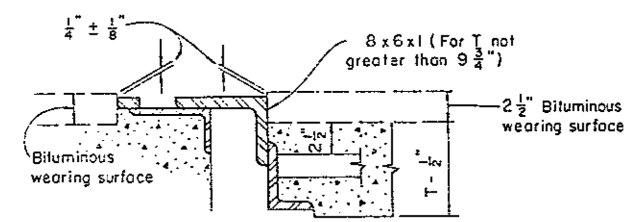
A welded butt joint in the end dam, at the apex of roadway, will be required for that portion of the end dam attached to the superstructure. The portion attached to the backwall shall be placed in segments not less than 6'-0" in length, with a joint at each joint in the backwall and with one of the joints at the apex of roadway. These shall be closely butted but shall not be welded.



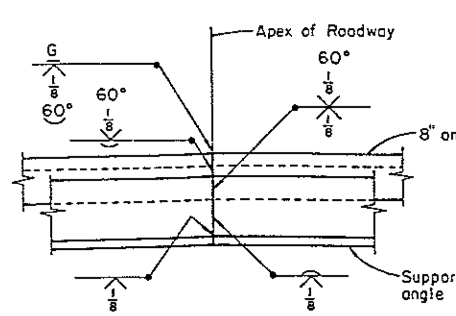
Portions of end dams in contact with steel or with concrete shall not be painted. All other portions shall be cleaned and painted in accordance with 514.

SECTION A-A
SHOWING ROADWAY END DAM FOR MONOLITHIC WEARING SURFACE

† Furnish different thickness if required to compensate for grades in excess of 2%.



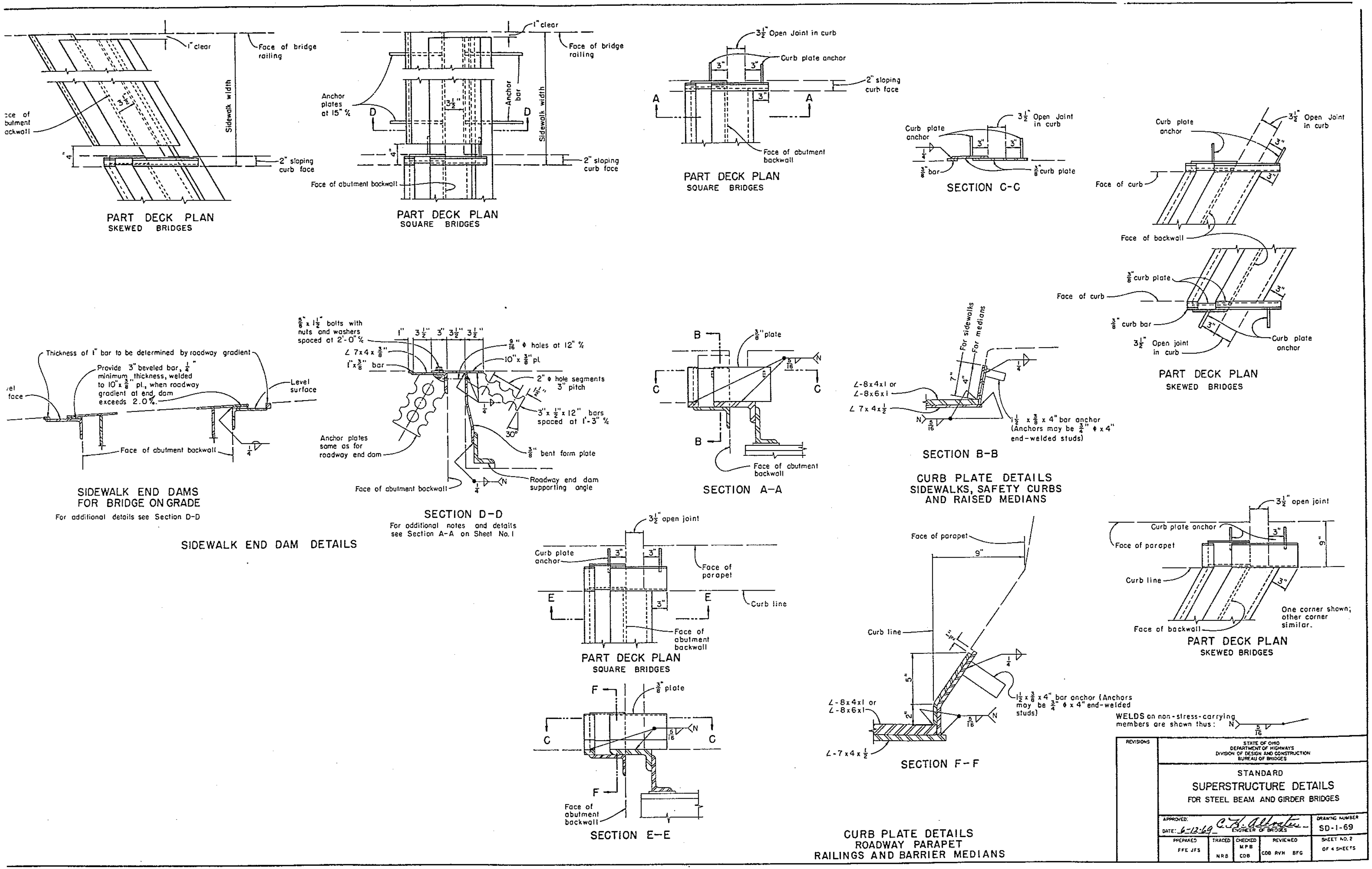
SECTION A-A
SHOWING ROADWAY END DAM FOR BITUMINOUS WEARING SURFACE
Same as SECTION A-A for monolithic wearing surface except as shown.



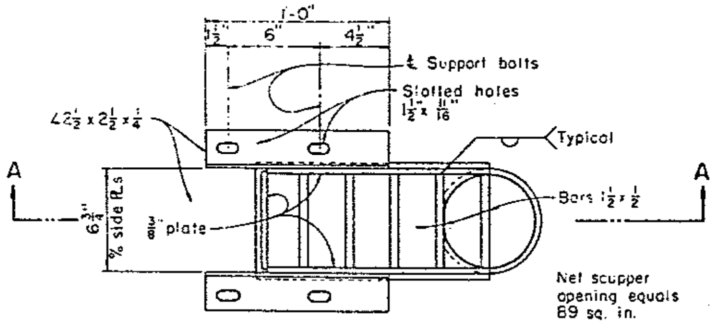
WELDED BUTT JOINT IN SUPERSTRUCTURE END DAM

When end dam contains no apex, a butt joint may be furnished near the centerline of the deck, if necessary to facilitate handling and shipping.

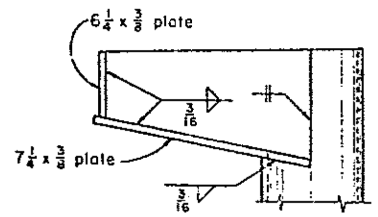
REVISIONS	STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES STANDARD SUPERSTRUCTURE DETAILS FOR STEEL BEAM AND GIRDER BRIDGES
	APPROVED: [signature] ENGINEER OF BRIDGES DATE: 6-12-69 PREPARED FFE · TRACED HRB · CHECKED WJJ FFE · REVIEWED COB RVH BFS DRAWING NUMBER SD-1-69 SHEET NO. 3 OF 4 SHEETS



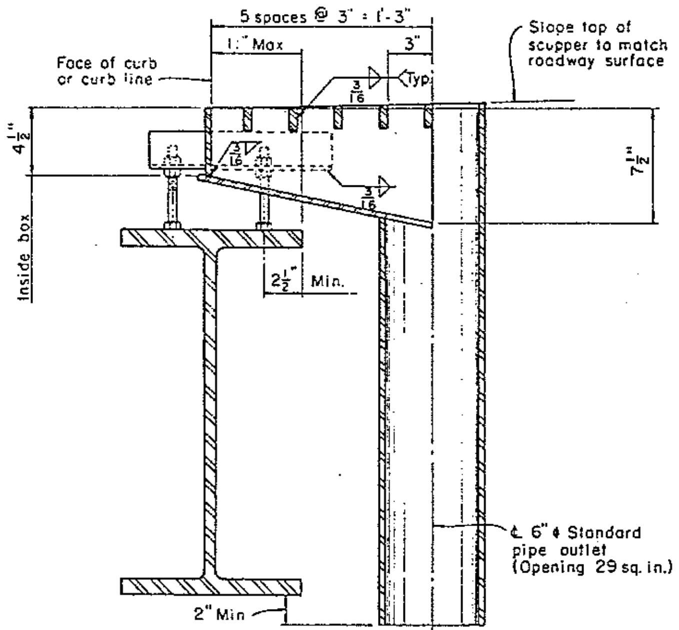
1" clear
Face of bridge railing
Sidewalk width
2" sloping curb face
PART DECK PLAN
SKEWED BRIDGES
Anchor plates at 15" %
Anchor bar
Face of abutment backwall
PART DECK PLAN
SQUARE BRIDGES
3½" Open Joint in curb
Curb plate anchor
Face of abutment backwall
PART DECK PLAN
SQUARE BRIDGES
SECTION C-C
⅜" curb plate
PART DECK PLAN
SKEWED BRIDGES
Face of curb
Face of backwall
Thickness of 1" bar to be determined by roadway gradient
Provide 3" beveled bar, ¼" minimum thickness, welded to 10" x ⅜" pl., when roadway gradient at end dam exceeds 2.0%.
Level surface
Face of abutment backwall
SIDEWALK END DAMS
FOR BRIDGE ON GRADE
For additional details see Section D-D
⅝" x 1½" bolts with nuts and washers spaced at 2'-0" %
∠ 7x4x⅜"
1" x ⅜" bar
9/16" ϕ holes at 12" %
10" x ⅜" pl.
2" ϕ hole segments 3" pitch
3" x ½" x 12" bars spaced at 1'-3" %
Anchor plates same as for roadway end dam
⅜" bent form plate
Roadway end dam supporting angle
SECTION D-D
For additional notes and details see Section A-A on Sheet No. 1
SIDEWALK END DAM DETAILS
⅜" plate
SECTION A-A
For sidewalks
For medians
∠-8x4x1 or ∠-8x6x1
∠ 7x4x½
1½ x ⅜ x 4" bar anchor (Anchors may be ¾" ϕ x 4" end-welded studs)
SECTION B-B
CURB PLATE DETAILS
SIDEWALKS, SAFETY CURBS AND RAISED MEDIANS
3½" open joint
Face of parapet
Curb line
PART DECK PLAN
SQUARE BRIDGES
SECTION E-E
SECTION F-F
One corner shown; other corner similar.
PART DECK PLAN
SKEWED BRIDGES
WELDS on non-stress-carrying members are shown thus:
CURB PLATE DETAILS
ROADWAY PARAPET
RAILINGS AND BARRIER MEDIANS
REVISIONS
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES
STANDARD
SUPERSTRUCTURE DETAILS
FOR STEEL BEAM AND GIRDER BRIDGES
APPROVED:
DATE: 6-12-69
ENGINEER OF BRIDGES
DRAWING NUMBER
SD-1-69
PREPARED FFE JFS
TRACED NRB
CHECKED MPB CDB
REVIEWED CDB RVH BFG
SHEET NO. 2 OF 4 SHEETS



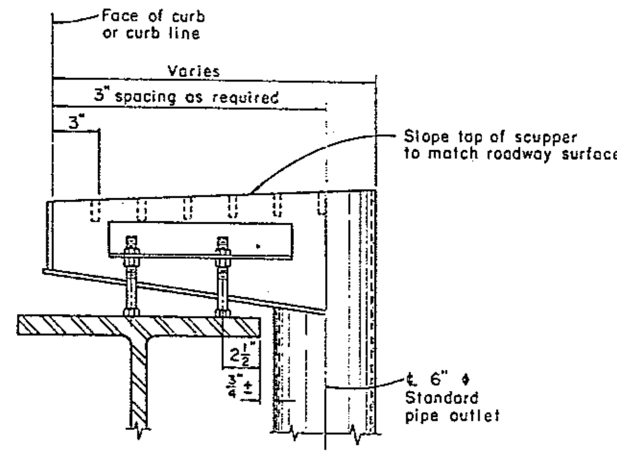
PLAN
STANDARD SCUPPER



SCUPPER ELEVATION

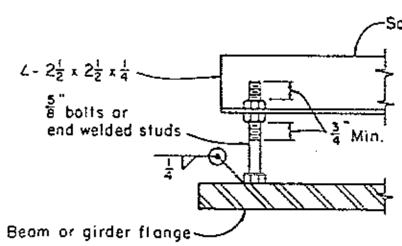


SECTION A-A

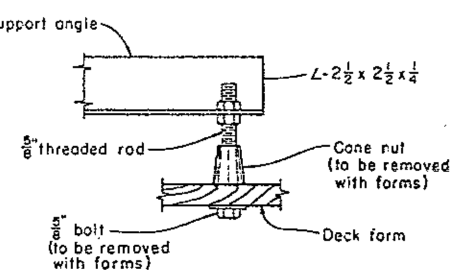


DETAIL A

Scupper elevation showing method for lengthening scupper where necessary to clear the flanges.



DETAIL B



DETAIL C

For scuppers that are not located adjacent to a beam or girder flange.

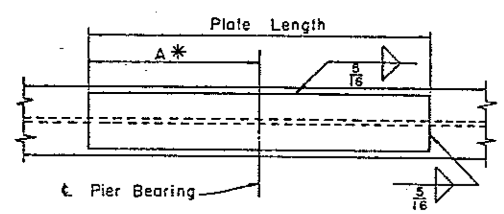
SCUPPER SUPPORT BOLTS

Scuppers shall be furnished in sufficient number to provide one square inch of net scupper opening for each 12 to 15 square feet of deck area to be drained. The downspout shall have at least one square inch of opening for each five square inch of net scupper opening, with a minimum nominal diameter of 6 inches.

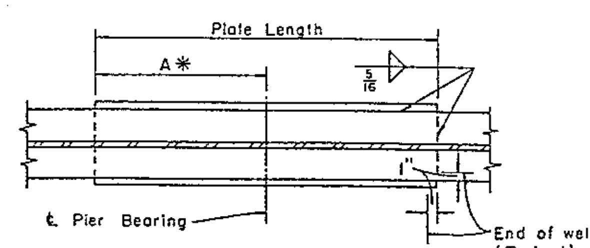
Scupper should clear crossframes by at least 6" and abutments by 2'-6". They shall be no nearer to ℄ of pier bearings than 0.10 of span length.

The support angles and support bolts are included with scupper for payment.

Scuppers, including support angles, shall be galvanized in accordance with 711.



TOP FLANGE



BOTTOM FLANGE

MOMENT PLATES

✱ See Standard Drawings or project plans for dimension "A". Dimension "A" equals $\frac{1}{2}$ plate length unless otherwise shown, in which case the plans shall indicate the span to which dimension "A" applies.

REVISIONS	STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES
	STANDARD SUPERSTRUCTURE DETAILS FOR STEEL BEAM AND GIRDER BRIDGES
	APPROVED: DATE: 6-12-69 — C. H. Altfeater, ENGINEER OF BRIDGES — DRAWING NUMBER SD-1-69
	PREPARED MPB · TRACED NRB · CHECKED VJJ · REVIEWED COB RVH BFG · SHEET NO 3 OF 4 SHEETS

GENERAL: This drawing provides design and construction details. The Project plans shall show the location of splices plus a reference to this drawing for pertinent details and notes. For splicing beams of different sizes or where splices are located at beam bend points, the project plans shall include sufficient details supplementing this drawing to completely describe the splice.

DESIGN SPECIFICATIONS: This drawing conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway Officials, 1965, including the Ohio "Supplement" to these specifications.

BASIC UNIT STRESSES:

Structural Steel	ASTM A-36	20,000 psi	bending
		12,000 psi	shear
High Strength Bolts	ASTM A-325	13,500 psi	shear

FATIGUE UNIT STRESSES: Where the ratio of the minimum to the maximum moment R is <O the splice design shall be based on the allowable fatigue unit stresses as required by Section 1.7.3 instead of on the basic unit stresses noted above. The effect of this change in the allowable unit stresses may be conveniently implemented in the design by increasing the calculated maximum stresses (moment and shear) by the ratio of the basic unit stress to the fatigue unit stress. These modified maximum stresses may then be used as specified in the DESIGN note to verify the adequacy of the splice design shown hereon, or to establish modified strength requirements for special designs using basic unit stresses.

DESIGN: For each structure the designer shall choose a splice location and determine the maximum total stresses (moment and shear) at that point. The splice shall be designed for not less than (1) the average of the calculated maximum stress and the static strength of the beam, (2) the modified maximum stress specified in the FATIGUE UNIT STRESSES note, or (3) 75 % of the static strength of the beam. The splice designs shown hereon are designed for (3). If stresses (1) or (2) are more critical, this design shall not be used and such splices should be designed to meet the established requirements. The static beam strength at the splice is based on the net section for bending and the gross section for shear using the basic unit stresses. When splicing beams of different sizes, the splice design shall be based on the lighter weight beam.

FASTENERS: 1" diameter High Strength Bolts.

SPLICE MATERIAL WEIGHT plus the weight of fills, where required, shall be included with the structural steel quantity for payment.

FABRICATION AND ASSEMBLY: Beam ends at splices shall be cut and fit as per plan. The opening between beam ends after assembly shall not exceed 1/4".

FILLS shown on the project plans and shop drawings shall be dimensioned to the nearest 1/16 inch in thickness, but not less than 1/8 inch thick, based on the dimensions for detailing and intended relative position of the abutting flanges and webs, to be spliced. However, in the final shop assembly, fills shall be furnished with thicknesses sufficient to compensate for any misalignment of abutting flanges and webs due to standard rolling mill tolerances. The actual fills used in the splice shall be such as to compensate for differences in total thickness or relative positions of 1/16 inch or more.

VERTICAL CLEARANCE: For grade separation structures an allowance of 3/4 inches plus the thickness of the outside flange splice plate shall be used in computing the actual vertical clearance under a beam splice.

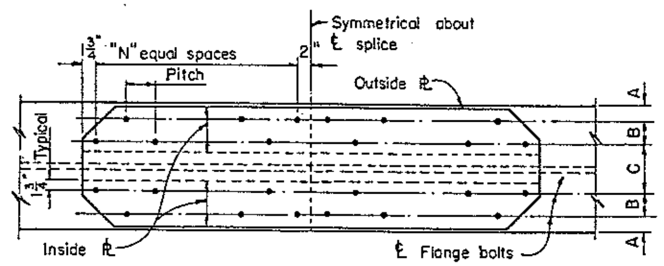
BEAM SPLICE DATA

DETAILS / DESIGN

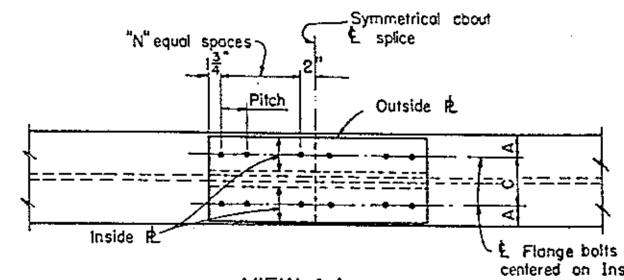
Beam		Flange Splice TYPE	Flange Plates: Outside, 2 required	Flange Plates: Inside, 4 required	Flange Bolts: Number	N Spa.	Dimensions (inches): Pitch	A	B	C	Web Splice TYPE	Web Plates, 2 required	Web Bolts No.	Weight of splice material # lbs.	Beam Strength: Moment ft.-kips	Shear kips
36 WF	280	B	16 x 11/16 x 6'-3"	6 1/2 x 13/16 x 6'-3"	80	9	3 3/4	2 1/16	3	6 1/2	B	19 1/2 x 7/16 x 2'-7"	60	1210	1455	354
	260	B	16 x 5/8 x 5'-0"	6 1/2 x 3/4 x 5'-0"	64	7	3 3/4	2	3	6 1/2	B	19 1/2 x 7/16 x 2'-7"	60	950	1338	338
	245	B	16 x 9/16 x 5'-0"	6 1/2 x 11/16 x 5'-0"	64	7	3 3/4	2	3	6 1/2	B	19 1/2 x 7/16 x 2'-7"	54	880	1261	321
	230	B	16 x 9/16 x 5'-0"	6 1/2 x 5/8 x 5'-0"	64	7	3 3/4	2	3	6 1/2	B	19 1/2 x 3/8 x 2'-7"	54	840	1180	306
	194	A	11 x 5/8 x 2'-11 1/2"	4 1/2 x 3/4 x 2'-11 1/2"	40	4	3 1/2	2 9/16	—	7	B	19 1/2 x 7/16 x 2'-7"	54	540	891	314
	182	A	11 x 9/16 x 2'-11 1/2"	4 1/2 x 11/16 x 2'-11 1/2"	40	4	3 1/2	2 9/16	—	7	B	19 1/2 x 3/8 x 2'-7"	48	490	838	295
	170	A	11 x 1/2 x 2'-11 1/2"	4 1/2 x 5/8 x 2'-11 1/2"	40	4	3 1/2	2 1/2	—	7	B	19 1/2 x 3/8 x 2'-7"	48	460	782	277
	160	A	11 x 1/2 x 2'-4 1/2"	4 1/2 x 9/16 x 2'-4 1/2"	32	3	3 1/2	2 1/2	—	7	B	19 1/2 x 3/8 x 2'-7"	48	400	729	266
	150	A	11 x 7/16 x 2'-4 1/2"	4 1/2 x 9/16 x 2'-4 1/2"	32	3	3 1/2	2 1/2	—	7	A	13 1/2 x 3/8 x 2'-7"	40	340	670	255
	135	A	11 x 3/8 x 2'-4 1/2"	4 1/2 x 1/2 x 2'-4 1/2"	32	3	3 1/2	2 1/2	—	7	A	13 1/2 x 3/8 x 2'-7"	40	320	583	244
33 WF	240	B	15 x 5/8 x 4'-8 1/2"	6 x 13/16 x 4'-8 1/2"	64	7	3 1/2	2 5/16	2 1/2	6 1/4	B	19 1/2 x 7/16 x 2'-4"	54	870	1140	306
	220	B	15 x 9/16 x 4'-8 1/2"	6 x 11/16 x 4'-8 1/2"	64	7	3 1/2	2 1/4	2 1/2	6 1/4	B	19 1/2 x 7/16 x 2'-4"	54	790	1040	286
	200	B	15 x 1/2 x 3'-6 1/2"	6 x 5/8 x 3'-6 1/2"	48	5	3 1/2	2 1/4	2 1/2	6 1/4	B	19 1/2 x 3/8 x 2'-4"	48	580	943	264
	152	A	10 x 1/2 x 2'-4 1/2"	4 x 11/16 x 2'-4 1/2"	32	3	3 1/2	2 11/16	—	6 1/4	B	19 1/2 x 3/8 x 2'-4"	42	380	655	239
	141	A	10 x 7/16 x 2'-4 1/2"	4 x 5/8 x 2'-4 1/2"	32	3	3 1/2	2 5/8	—	6 1/4	A	13 1/2 x 3/8 x 2'-4"	36	320	595	228
	130	A	10 x 7/16 x 2'-4 1/2"	4 x 9/16 x 2'-4 1/2"	32	3	3 1/2	2 5/8	—	6 1/4	A	13 1/2 x 3/8 x 2'-4"	36	310	539	218
	118	A	10 x 3/8 x 1'-9 1/2"	4 x 1/2 x 1'-9 1/2"	24	2	3 1/2	2 5/8	—	6 1/4	A	13 1/2 x 3/8 x 2'-4"	36	250	476	208
30 WF	132	A	10 x 7/16 x 2'-4 1/2"	4 x 5/8 x 2'-4 1/2"	32	3	3 1/2	2 1/4	—	6	B	19 1/2 x 3/8 x 2'-1"	42	350	501	209
	124	A	10 x 7/16 x 2'-4 1/2"	4 x 9/16 x 2'-4 1/2"	32	3	3 1/2	2 1/4	—	6	A	13 1/2 x 3/8 x 2'-1"	32	300	464	199
	116	A	10 x 3/8 x 1'-9 1/2"	4 x 1/2 x 1'-9 1/2"	24	2	3 1/2	2 1/4	—	6	A	13 1/2 x 3/8 x 2'-1"	32	240	430	192
	108	A	10 x 3/8 x 1'-9 1/2"	4 x 7/16 x 1'-9 1/2"	24	2	3 1/2	2 1/4	—	6	A	13 1/2 x 3/8 x 2'-1"	32	230	392	186
	99	A	10 x 3/8 x 1'-9 1/2"	4 x 3/8 x 1'-9 1/2"	24	2	3 1/2	2 1/4	—	6	A	13 1/2 x 3/8 x 2'-1"	32	220	353	177
27 WF	114	A	9 1/2 x 7/16 x 1'-9 1/2"	4 x 1/2 x 1'-9 1/2"	24	2	3 1/2	2 1/16	—	6	B	19 1/2 x 3/8 x 1'-11"	36	270	390	174
	102	A	9 1/2 x 3/8 x 1'-9 1/2"	4 x 7/16 x 1'-9 1/2"	24	2	3 1/2	2	—	6	A	13 1/2 x 3/8 x 1'-11"	28	220	345	158
	94	A	9 1/2 x 3/8 x 1'-9 1/2"	4 x 7/16 x 1'-9 1/2"	24	2	3 1/2	2	—	6	A	13 1/2 x 3/8 x 1'-11"	28	220	315	150
	84	A	9 1/2 x 3/8 x 1'-9 1/2"	4 x 3/8 x 1'-9 1/2"	24	2	3 1/2	2	—	6	A	13 1/2 x 3/8 x 1'-11"	28	210	273	141
24 WF	110	A	10 x 7/16 x 2'-4 1/2"	4 1/2 x 1/2 x 2'-4 1/2"	32	3	3 1/2	2 3/4	—	6 1/2	B	19 1/2 x 3/8 x 1'-8"	30	300	373	138
	100	A	10 x 7/16 x 2'-4 1/2"	4 1/2 x 1/2 x 2'-4 1/2"	32	3	3 1/2	2 3/4	—	6 1/2	B	19 1/2 x 3/8 x 1'-8"	30	300	338	126
	94	A	8 1/2 x 3/8 x 1'-9 1/2"	3 1/2 x 1/2 x 1'-9 1/2"	24	2	3 1/2	2	—	5	B	19 1/2 x 3/8 x 1'-8"	30	230	282	140
	84	A	8 1/2 x 3/8 x 1'-9 1/2"	3 1/2 x 1/2 x 1'-9 1/2"	24	2	3 1/2	2	—	5	B	19 1/2 x 3/8 x 1'-8"	30	230	250	127
	76	A	8 1/2 x 3/8 x 1'-9 1/2"	3 1/2 x 1/2 x 1'-9 1/2"	24	2	3 1/2	2	—	5	B	19 1/2 x 3/8 x 1'-8"	30	230	223	119
	68	A	8 1/2 x 3/8 x 1'-9 1/2"	3 1/2 x 7/16 x 1'-9 1/2"	24	2	3 1/2	2	—	5	A	13 1/2 x 3/8 x 1'-8"	24	200	195	112
21 WF	68	A	8 1/2 x 3/8 x 1'-9 1/2"	*3 1/2 x 3/8 x 1'-9 1/2"	24	2	3 1/2	1 3/4	—	4 3/4	B	19 1/2 x 3/8 x 1'-5"	24	190	175	102

* Trim plates as required to fit beam fillets.

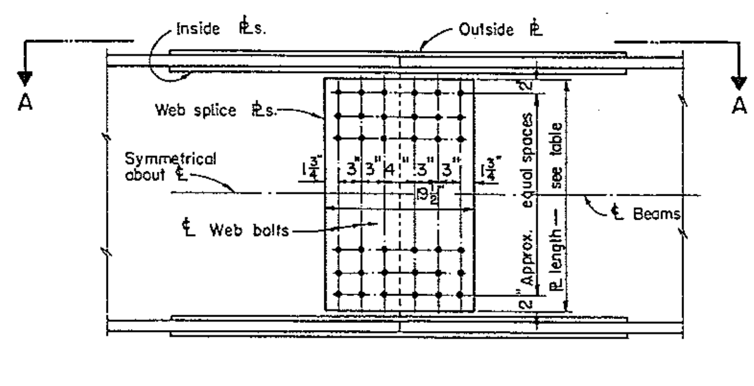
\# Tabulated weights are approximate and are for estimating purposes only. They include an allowance for weight of bolts and washers.



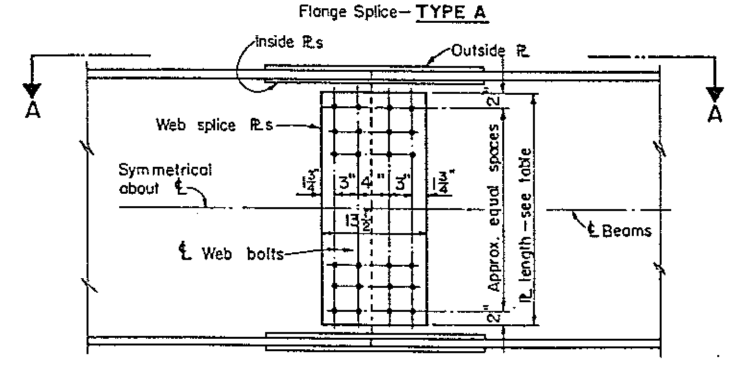
VIEW A-A
Flange Splice-TYPE B



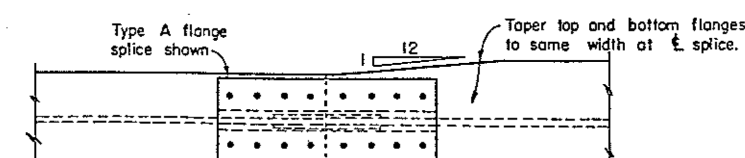
VIEW A-A
Flange Splice— TYPE A



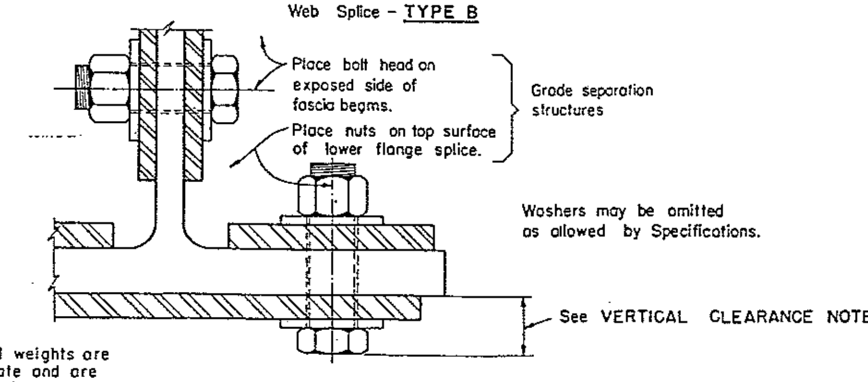
BEAM SPLICE DETAIL
Web Splice - TYPE B



BEAM SPLICE DETAIL
Web Splice - TYPE A

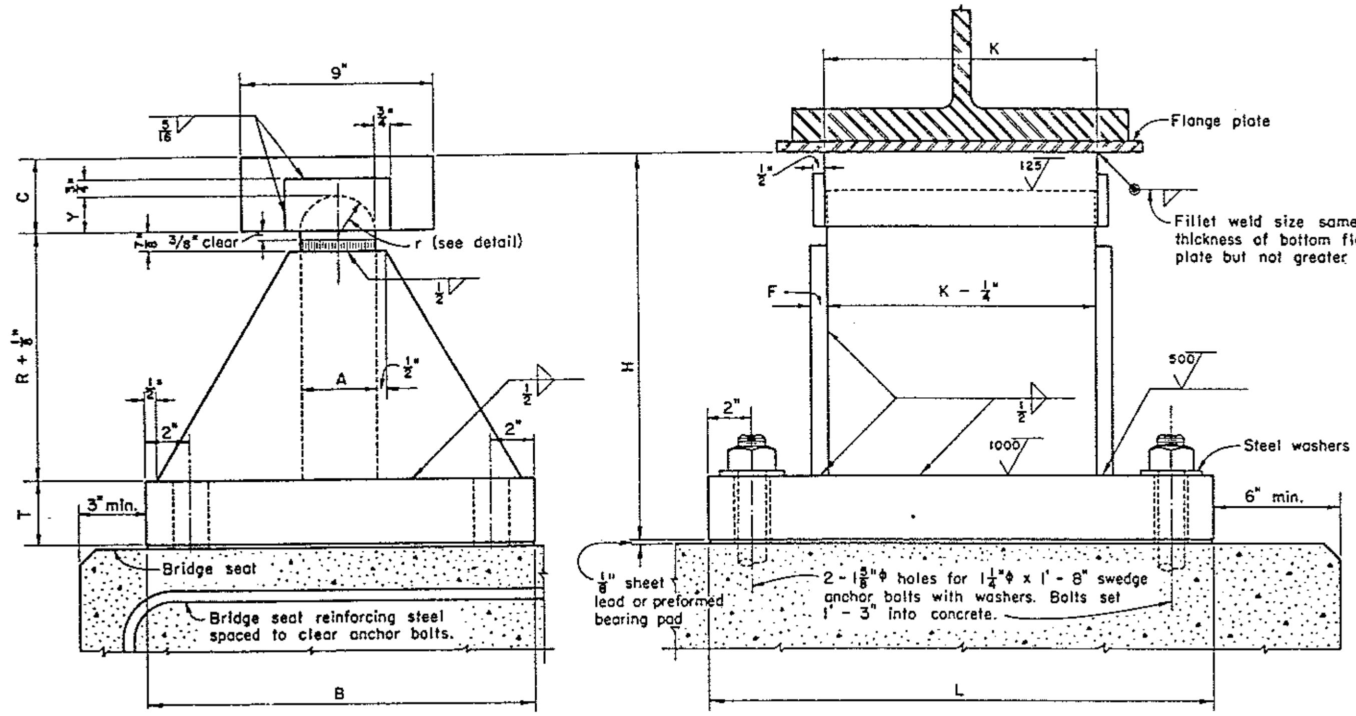


VIEW A-A
Splice detail for beams having different flange widths



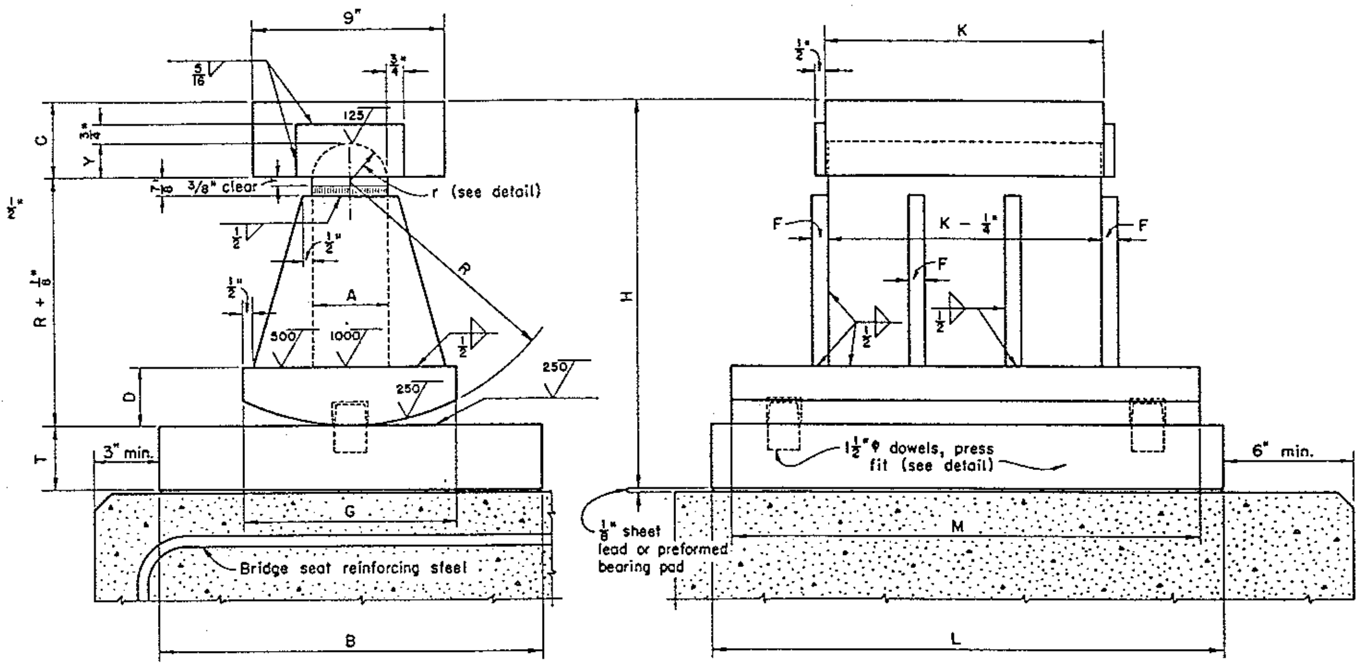
PARTIAL SECTION
(at ℄ of beam splice)

REVISIONS	STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES	
	STANDARD **BOLTED BEAM SPLICE DETAILS** FOR STEEL BEAM BRIDGES	
	APPROVED: DATE: 6-12-69 C. H. Altwater ENGINEER OF BRIDGES	DRAWING NUMBER SD-1-69
	PREPARED MPB · TRACED CAM · CHECKED CPD · REVIEWED HHH BFG RVH CDB	SHEET NO 4 OF 4 SHEETS



STRUCTURAL STEEL BOLSTER

See table below for additional dimensions.

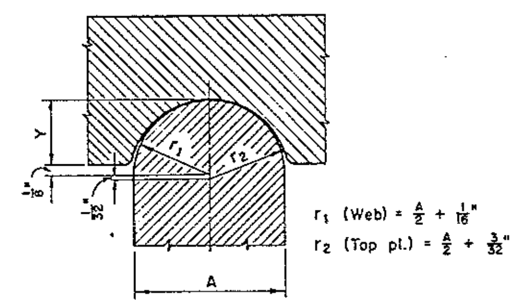


STRUCTURAL STEEL ROCKER

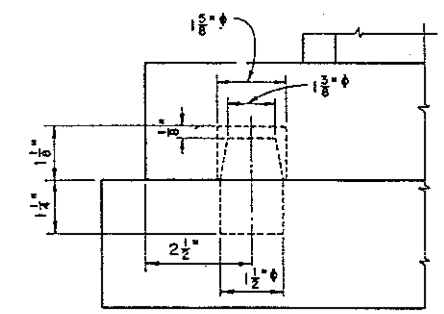
See table below for additional dimensions.

Bolster No.	Rocker No.	Dimensions (inches)													Weight each (lb.)		Maximum Load (lb.)
		A	B	C	D	F	G	H	K	L	M	R	T	Y	Bolster	Rocker	
	R - 75	2$\frac{1}{2}$	8	2$\frac{1}{2}$	1$\frac{3}{4}$	$\frac{1}{2}$	7	9$\frac{5}{8}$	9	18	16	5$\frac{1}{2}$	1$\frac{1}{2}$	1$\frac{3}{16}$		205	75,000
B - 100	R - 100	2$\frac{1}{2}$	10	2$\frac{1}{2}$	2	$\frac{1}{2}$	7$\frac{1}{2}$	10$\frac{5}{8}$	9	19	17	6$\frac{1}{2}$	1$\frac{1}{2}$	1$\frac{3}{16}$	225	250	100,000
B - 125	R - 125	3	11	3	2	$\frac{1}{2}$	8	12$\frac{1}{8}$	10$\frac{1}{2}$	20	18	7$\frac{1}{2}$	1$\frac{1}{2}$	1$\frac{7}{16}$	295	315	125,000
B - 150	R - 150	3	12	3	2$\frac{1}{4}$	$\frac{1}{2}$	8$\frac{1}{2}$	13$\frac{3}{8}$	11$\frac{1}{2}$	22	19	8$\frac{1}{2}$	1$\frac{3}{4}$	1$\frac{7}{16}$	360	400	150,000
B - 175	R - 175	3	14	3$\frac{1}{2}$	2$\frac{1}{2}$	$\frac{1}{2}$	9	15$\frac{1}{8}$	12	23	20	9$\frac{1}{2}$	2	1$\frac{7}{16}$	455	505	175,000
B - 200	R - 200	3	16	3$\frac{1}{2}$	2$\frac{3}{4}$	$\frac{5}{8}$	9	16$\frac{3}{8}$	12	24	21	10$\frac{1}{2}$	2$\frac{1}{4}$	1$\frac{7}{16}$	540	605	200,000
B - 225	R - 225	3	17	3$\frac{1}{2}$	2$\frac{3}{4}$	$\frac{5}{8}$	9	16$\frac{7}{8}$	13	25	22	11	2$\frac{1}{4}$	1$\frac{7}{16}$	590	665	225,000
B - 250	R - 250	3$\frac{1}{2}$	18	3$\frac{1}{2}$	2$\frac{3}{4}$	$\frac{3}{4}$	10	17$\frac{5}{8}$	13	26	23	11$\frac{1}{2}$	2$\frac{1}{2}$	1$\frac{11}{16}$	695	775	250,000
B - 275	R - 275	3$\frac{1}{2}$	19	3$\frac{1}{2}$	3$\frac{1}{4}$	$\frac{3}{4}$	12	18$\frac{3}{8}$	14	27	24	12	2$\frac{3}{4}$	1$\frac{11}{16}$	800	945	275,000
B - 300	R - 300	3$\frac{1}{2}$	20	3$\frac{1}{2}$	3$\frac{1}{4}$	$\frac{3}{4}$	12	19$\frac{1}{8}$	14	28	25	12$\frac{1}{2}$	3	1$\frac{11}{16}$	895	1050	300,000

Weights given are for one rocker or bolster complete (including sheet lead, anchor bolts and washers).



TOP BEARING DETAIL



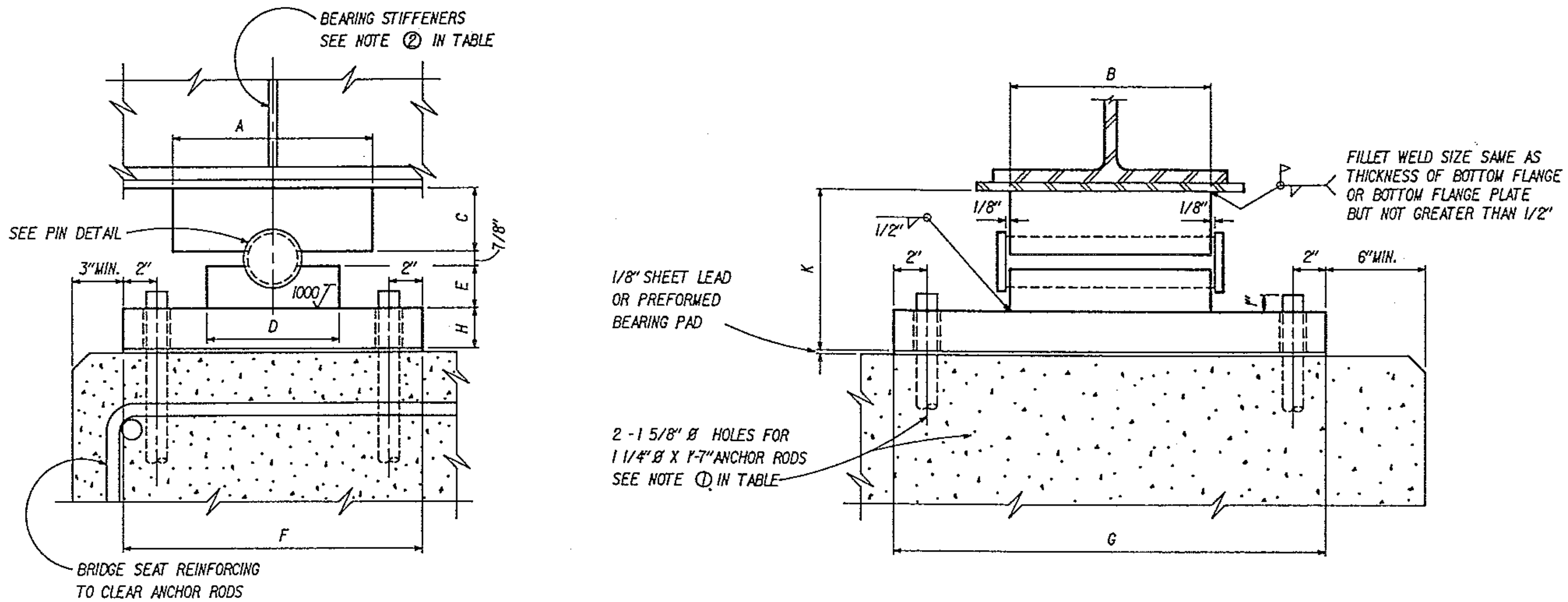
DOWEL DETAIL

DESIGN SPECIFICATIONS: This standard drawing conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated October 1, 1951, together with revisions thereof dated July 15, 1952, April 1, 1954 and February 1, 1955.

LIMITATION: This rocker and bolster design shall not be used where the anticipated movement is in excess of 2 inches.

REVISIONS	STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES
2-2-59	STANDARD ROCKERS AND BOLSTERS FOR STEEL BEAM AND GIRDER BRIDGES REACTIONS 75,000 lb. TO 300,000 lb.
	APPROVED: DATE: 3-1-55 ENGINEER OF BRIDGES

PREPARED	TRACED	CHECKED	REVIEWED	DRAWING NUMBER
MPS CFB JCM WHR	JVP	CEM GPH	CSD BFS CHA AJF OHO	RB-1-55



ELEVATIONS OF FIXED BEARING

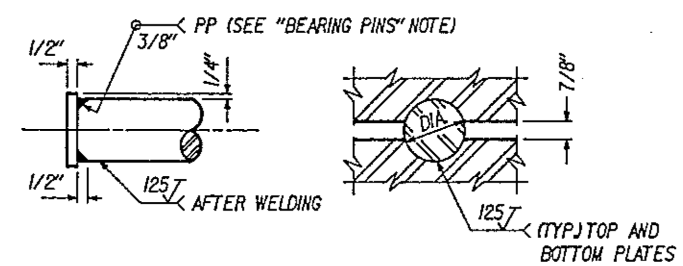
SEE TABLE FOR ADDITIONAL DIMENSIONS

FIXED BEARING NO.	FIXED BEARINGS											
	DIMENSIONS (INCHES)										WEIGHT EA. (LBS)	MAXIMUM LOAD (LBS)
	A	B	C	D	E	F	G	H	K	DIA.		
① F - 50	6	6	1 1/2	3	1 1/4	8	16	1 1/2	5 1/8	2	100	50,000
① F - 100	7	9	1 3/4	4	1 1/2	9	18	1 1/2	5 5/8	2	143	100,000
F - 150	9	9	2 1/2	5	1 1/2	11	20	2	6 7/8	2 1/2	244	150,000
F - 200	10	10	3	6	2	11	22	2	7 7/8	2 1/2	300	200,000
F - 250	11	10	3 1/2	7	2	12	24	2 1/2	8 7/8	3	400	250,000
F - 300	12	11	3 3/4	8	2 1/2	14	25	2 1/2	9 5/8	3	502	300,000
② F - 350	12	11	3 3/4	8	2 1/2	16	25	2 1/2	9 5/8	3	540	350,000
② F - 400	12	12	3 3/4	8	2 1/2	18	26	2 1/2	9 5/8	3	610	400,000

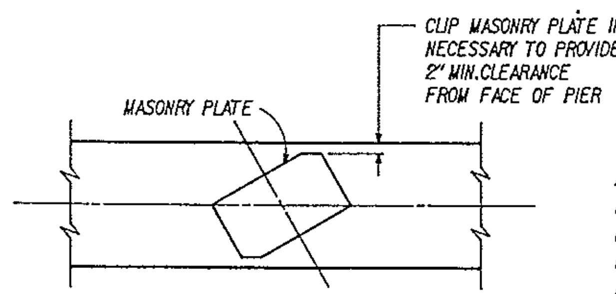
① ONLY 2 ANCHOR RODS REQUIRED, PLACED IN DIAGONALLY OPPOSITE CORNERS OF THE MASONRY PLATE.

② BEARING STIFFENERS ARE REQUIRED ON BOTH SIDES OF THE BEAM OR GIRDER WEB ABOVE.

WEIGHTS GIVEN ARE FOR ONE COMPLETE BEARING, INCLUDING SHEET LEAD AND ANCHOR RODS.



BEARING PIN DETAIL



MASONRY PLATE DIMENSIONS SHOWN IN TABLE MAY BE USED PROVIDED CLIPPED CORNERS DO NOT REDUCE THE BEARING AREA OF THE PLATE BY MORE THAN 5%. BEARINGS WITH CLIPPED MASONRY PLATES SHALL BE IDENTIFIED ON THE PLANS WITH THE WORD "MODIFIED". THUS : "F - 300 MODIFIED"

PLAN VIEW OF TOP OF PIER

SHOWING MASONRY PLATE FOR BRIDGE ON SKEW

NOTES

DESIGN SPECIFICATIONS : THIS STANDARD DRAWING CONFORMS TO THE REQUIREMENTS OF "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1977, INCLUDING THE 1978, 1979, 1980 AND 1981 INTERIMS TO THE ABOVE AND THE OHIO SUPPLEMENT TO THESE SPECIFICATIONS, EXCEPT THAT THE MASONRY PLATES FOR THE BEARINGS ARE DESIGNED ON THE BASIS OF AN ALLOWABLE BENDING STRESS OF 30,000 P.S.I. ASSUMING UNIFORM DISTRIBUTION OF BEARING ON THE CONCRETE.

STEEL PLATES : IF THE SUPERSTRUCTURE MEMBERS ARE A36 STEEL THE PLATES SHALL BE THE SAME MATERIAL AND SHALL BE PAINTED IN ACCORDANCE WITH THE SAME SPECIFICATIONS. IF THE SUPERSTRUCTURE MEMBERS ARE A588 STEEL, UNPAINTED, THE PLATE ELEMENT ABOVE THE BEARING PIN SHALL ALSO BE A588 STEEL. THE PLATE ELEMENTS BELOW THE BEARING PIN MAY BE EITHER A36, GALVANIZED BEFORE WELDING, OR A588 UNPAINTED, BUT BOTH PLATES SHALL BE OF THE SAME MATERIAL.

BEARING PINS : IF THE SUPERSTRUCTURE MEMBERS ARE A36 STEEL THE PINS SHALL BE MADE FROM STOCK MEETING THE REQUIREMENTS OF 711.04 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, AND SHALL BE PAINTED IN ACCORDANCE WITH THE SAME SPECIFICATIONS AS THOSE FOR PAINTING THE SUPERSTRUCTURE MEMBERS. IF THE SUPERSTRUCTURE MEMBERS ARE A588 STEEL AND THE BOTTOM PLATES ARE A36, GALVANIZED, THE PINS SHALL BE AS ABOVE, GALVANIZED INSTEAD OF PAINTED. IF THE BOTTOM PLATES ARE A588 THE PINS SHALL ALSO BE A588. BEARING PINS MAY BE FABRICATED FROM ONE PIECE OF STOCK OR FROM ROD STOCK AND PLATES, WELDED AS SHOWN ON THESE DETAILS.

SURFACE FINISH : SURFACE FINISHES SHOWN ON THESE DETAILS SHALL BE MINIMUM BEFORE GALVANIZING. A 500 FINISH OR SMOOTHER SHALL BE USED WHERE NOT OTHERWISE NOTED.

ROADWAY GRADE : IF THE ROADWAY GRADE EXCEEDS 2% THE UPPER LOAD PLATE OF THE BEARING SHALL BE BEVELED TO MATCH THE GRADE. DIMENSION C SHALL BE MAINTAINED AT THE CENTER OF THE PLATE.

LATERAL EXPANSION : ALL BEARINGS MUST BE ACCURATELY PLACED SO THAT PROPER CLEARANCE WILL BE PROVIDED AT ALL BEARINGS FOR LATERAL EXPANSION OF THE SUPERSTRUCTURE. IF THE SUPERSTRUCTURE EXCEEDS 60' IN WIDTH THE 1/8" CLEARANCE SHOWN AT EACH END OF THE BEARING PIN SHALL BE INCREASED. A CLEARANCE OF 1/4" AT EACH END WILL BE ADEQUATE FOR A SUPERSTRUCTURE WIDTH UP TO 120'.

BEARING ANCHOR RODS : AT THE OPTION OF THE CONTRACTOR, THE BEARING ANCHOR RODS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST IN PLACE.

BRIDGE SEAT REINFORCING : PROJECT PLAN SHALL INCLUDE A PLAN VIEW OF THE SEAT AREA FOR THE FIXED BEARING SHOWING THE OUTLINE OF THE MASONRY PLATE, THE ANCHOR RODS AND THE MAIN REINFORCING BARS IN THE TOP OF THE BRIDGE SEAT. ADEQUATE DIMENSIONS SHALL BE PROVIDED TO ENSURE THAT THERE WILL BE NO INTERFERENCE BETWEEN THE ANCHOR RODS AND THE RE-BARS, AND THAT THE SEAT AREA WILL ACCOMODATE THE BEARING.

REVISIONS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

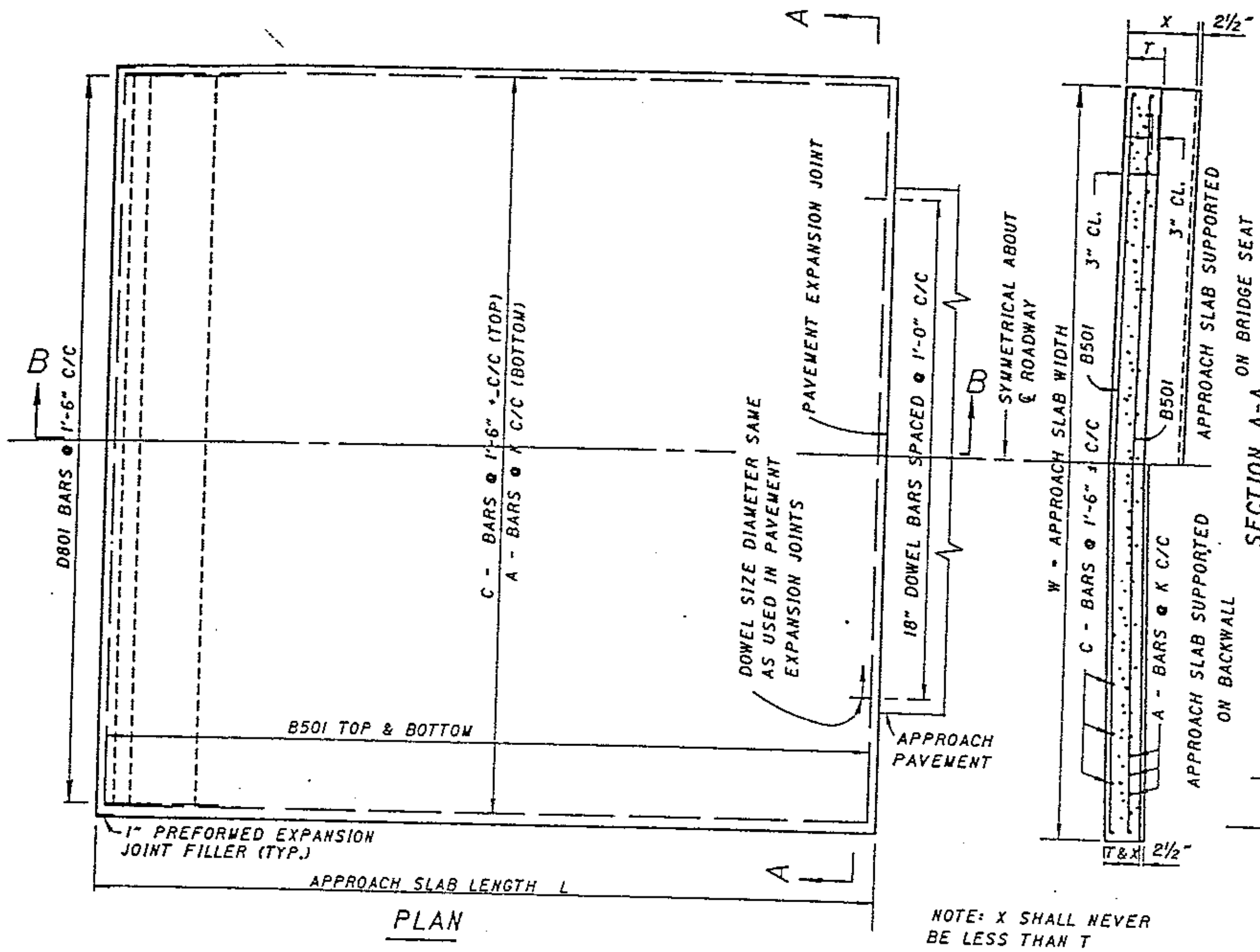
STANDARD

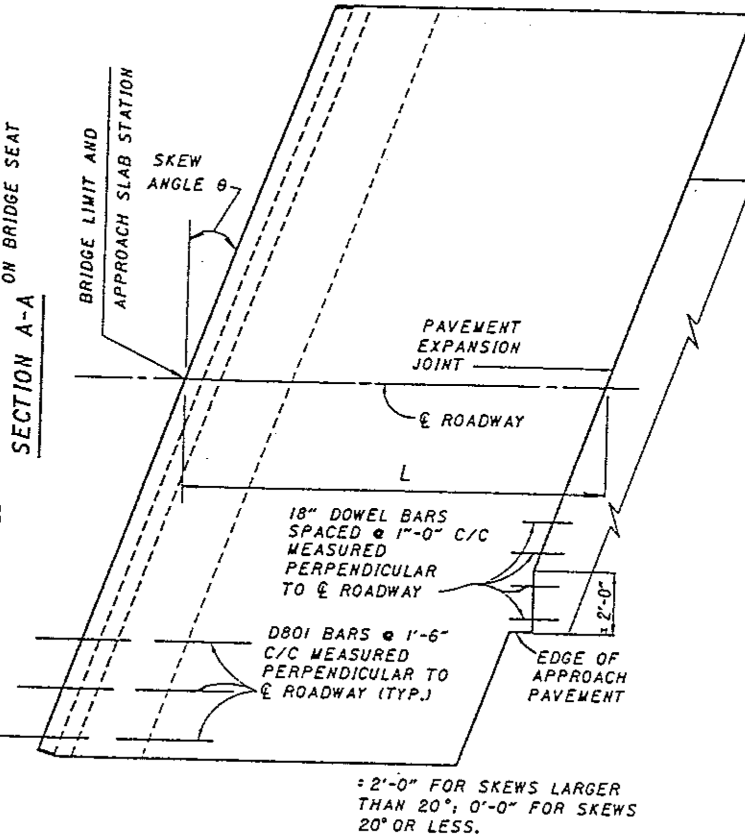
FIXED BEARINGS
FOR STEEL BEAM AND GIRDER BRIDGES

APPROVED : Robert B. Pfeifer
DATE : 5-10-82
ENGINEER OF BRIDGES

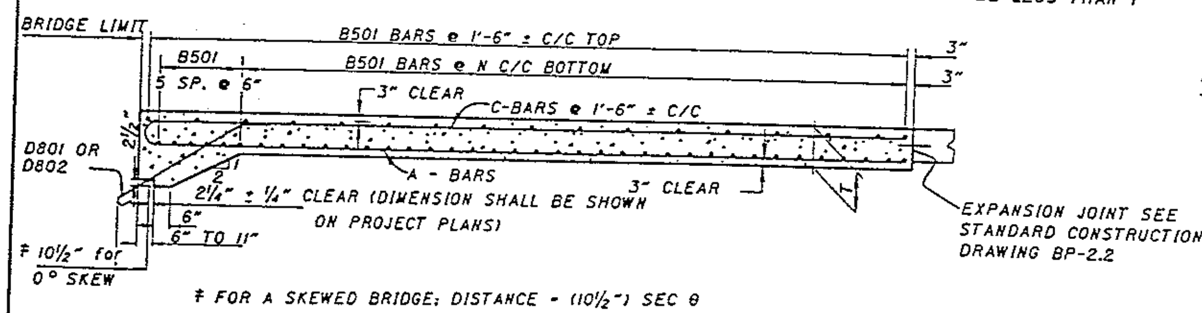
DRAWING NO. FB-1-82

PREPARED	TRACED	CHECKED	REVIEWED
DWI BFG	REF	FFE	WJJ





APPROACH SLAB FOR SKEWED STRUCTURE



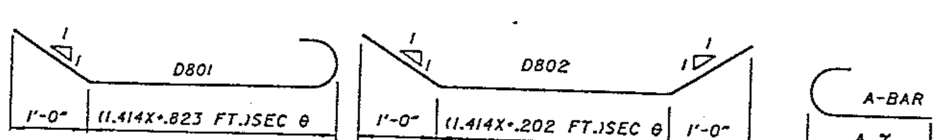
‡ FOR A SKEWED BRIDGE: DISTANCE = (10½") SEC θ

SECTION B-B

REINFORCING STEEL (FOR ONE APPROACH SLAB)

LENGTH L	THICKNESS T	A-BARS SP'C'G K	A-BARS MARK	A-BARS LENGTH	A-BARS DIMENSION A	A-BARS NO. REQ'D.	B501 (BOTTOM) * LENGTH	B501 (BOTTOM) SP'C'G N	B501 (BOTTOM) NO. REQ'D.	B501 (TOP) * LENGTH	B501 (TOP) NO. REQ'D.	C-BARS MARK	C-BARS LENGTH	C-BARS NO. REQ'D.	D801 OR D802 NO. REQ'D.
15'-0"	12"	10"	A1001	15'-11"	14'-6"	$12\left[\frac{W-0.5}{K}\right]+1$	(W-0.5)sec θ	9"	22	(W-0.5)sec θ	11	C501	14'-6"	$12\left[\frac{W-0.5}{18}\right]+1$	$12\left[\frac{W-0.5}{18}\right]+1$
20'-0"	13"	7½"	A1002	20'-11"	19'-6"			8"	31		14	C502	19'-6"		
25'-0"	15"	7"	A1003	25'-11"	24'-6"			8"	39		18	C503	24'-6"		
30'-0"	17"	6½"	A1004	30'-11"	29'-6"			8½"	44		21	C504	29'-6"		

W - APPROACH SLAB WIDTH, OUT TO OUT, IN FEET
θ - ANGLE OF SKEW
K - A-BAR SPACING IN INCHES
N - B-BAR SPACING IN INCHES
X - APPROACH SLAB THICKNESS AT ABUTMENT END IN FEET
X - OUT TO OUT



GENERAL: THIS DRAWING PROVIDES DESIGN AND GENERAL CONSTRUCTION DETAILS. THE PROJECT PLANS WILL SHOW LENGTH, SKEW, CURBS (IF ANY), ESTIMATED QUANTITY (SQUARE YARDS), AND SPECIAL NOTES AND DETAILS WHERE NECESSARY. FOR CONDITIONS OTHER THAN THOSE INDICATED HEREON, THE APPROACH SLAB SHALL BE ADAPTED TO FIT THE ENDS OF THE BRIDGE AND THE APPROACH PAVEMENT.

ANCHOR BARS D801 OR D802 SHALL BE DETAILED FOR A SPECIFIC BRIDGE AND SHALL BE INCLUDED WITH ITEM 509 UNDER ABUTMENTS OR SUPERSTRUCTURE FOR PAYMENT. D801 BARS CANNOT BE USED AS SHOWN WHERE APPROACH SLABS ARE SUPPORTED ON BACKWALLS LESS THAN 14 INCHES THICK. D802 BARS SHALL BE USED ON PRESTRESSED CONCRETE BOX BEAM BRIDGES WHERE THE APPROACH SLAB IS SUPPORTED ON AN 11 INCHES THICK BACKWALL.

* AT THE OPTION OF THE CONTRACTOR, B501 BARS MAY BE LAPPED 20 INCHES MINIMUM AT THE CENTERLINE OF ROADWAY, OR WHERE REQUIRED FOR LONGITUDINAL CONSTRUCTION JOINTS.

DESIGN SPECIFICATIONS: THIS STANDARD DRAWING CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1977, INCLUDING THE 1978, 1979, 1980 AND 1981 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA

DESIGN LOADING: HS-20-44 AND THE ALTERNATE MILITARY LOADING.

CONCRETE CLASS C : COMPRESSIVE STRENGTH 4000 P.S.I

REINFORCING STEEL: ASTM A615, A616 OR A617-GRADE 60; MINIMUM YIELD STRENGTH OF 6000 P.S.I. AND SHALL BE EPOXY COATED.

REINFORCING STEEL: FOR SKEWED BRIDGES THE A AND C BARS SHALL BE PLACED PARALLEL TO THE CENTER LINE OF ROADWAY AND THE B BARS SHALL BE PLACED PARALLEL TO THE ABUTMENTS.

PREFORMED EXPANSION JOINT FILLER, TYPE "A" WATER PROOFING, AND SEALER AT THE CORNERS AND SIDES OF THE APPROACH SLAB SHALL BE INCLUDED IN THE PRICE BID PER SQUARE YARDS FOR THE APPROACH SLAB.

PREFORMED ELASTOMERIC JOINT SEALER SHOWN AT THE BRIDGE LIMIT END OF THE APPROACH SLAB SHALL BE INCLUDED IN THE PRICE BID PER SQUARE YARDS FOR THE APPROACH SLAB.

LONGITUDINAL CONSTRUCTION JOINTS REQUIRED FOR STAGE CONSTRUCTION SHALL BE AS PER 511.09.

CURBS, BRIDGES WITH SIDEWALKS : FOR BRIDGES CONSTRUCTED WITH RAISED SIDEWALKS, DEFLECTOR PARAPETS OR OTHER TYPES OF CONSTRUCTION WHICH RETAIN ROADWAY SURFACE DRAINAGE, THE APPROACH SLABS SHALL EITHER INCLUDE INTEGRAL CURBS OR BE CONSTRUCTED IN CONJUNCTION WITH BRIDGE CURBS. CURB HEIGHT SHALL BE TRANSITIONED UNIFORMILY BETWEEN BRIDGE CURB HEIGHT AND APPROACH CURB HEIGHT IN A LENGTH AS FOLLOWS: WHERE WINGWALL EXTENDS BEYOND END OF APPROACH SLAB, USE A MINIMUM LENGTH OF 10 FEET BEYOND END OF WINGWALL. WHERE THE APPROACH SLAB EXTENDS BEYOND THE END OF WINGWALL,TRANSITION IN THIS LENGTH. HOWEVER, THE TRANSITION LENGTH SHALL NOT BE LESS THAN 10 FEET AND THE TRANSITION SHALL EXTEND BEYOND THE END OF APPROACH SLAB IF NECESSARY.

APPROACH SLAB WIDTH (W): APPROACH SLABS SHALL BE THE SAME WIDTH AS THE BRIDGE ROADWAY.

THE LENGTH OF APPROACH SLABS SHOULD BE BASED ON FACTORS SUCH AS THE SIZE AND AMOUNT OF EXCAVATION BEHIND THE ABUTMENTS, NEW OR EXISTING EMBANKMENTS AND SKEW OF THE BRIDGE.

CROWN SHALL CONFORM TO THAT OF THE APPROACH PAVEMENT AND BRIDGE DECK. IF THE RATE OF CROWN OF THE BRIDGE DECK DIFFERS FROM THAT OF THE APPROACH PAVEMENT, A SMOOTH TRANSITION SHALL BE PROVIDED WITHIN THE LIMITS OF THE APPROACH SLAB.

WEARING SURFACE: GENERALLY APPROACH SLABS SHALL HAVE AN ASPHALT CONCRETE WEARING SURFACE ONLY WHEN BOTH THE APPROACH PAVEMENT SURFACE AND THE BRIDGE WEARING SURFACE ARE ASPHALT CONCRETE.

EXPANSION JOINT DETAILS AT THE APPROACH PAVEMENT END OF THE APPROACH SLAB ARE USED ONLY IN CONJUNCTION WITH CONCRETE PAVEMENT OR CONCRETE BASE COURSE. PAYMENT FOR THE EXPANSION JOINT, INCLUDING DOWEL BARS, PREFORMED EXPANSION JOINT FILLER AND JOINT SEALER, IS INCLUDED IN THE PRICE BID PER SQ. YD. FOR THE APPROACH SLAB.

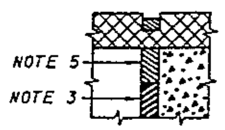
DESIGN AGENCY: BUREAU OF BRIDGES AND STRUCTURAL DESIGN

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

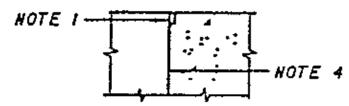
ENGINEER OF BRIDGES — DATE 11-27-81

DESIGNED JFF | DRAWN JFF | CHECKED JAH | REVIEWED LWW | REVISIONS 9-15-94 | AS-1-81

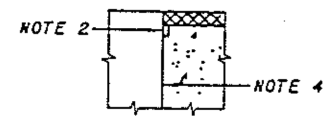
STANDARD: REINFORCED CONCRETE APPROACH SLAB



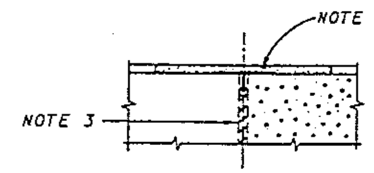
DETAIL A



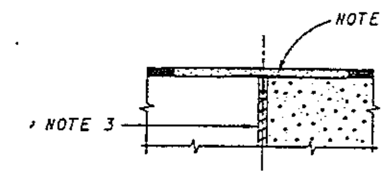
DETAIL B



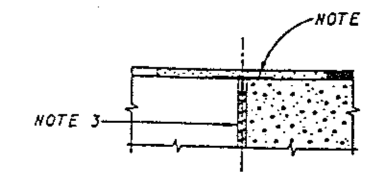
DETAIL C



DETAIL D

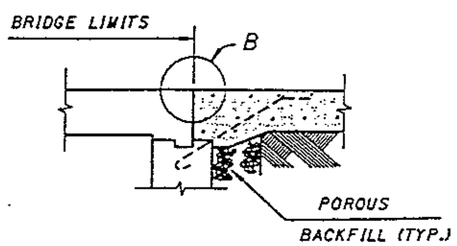


DETAIL E



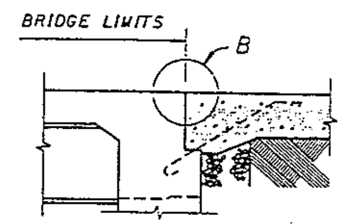
DETAIL F

CONCRETE WEARING SURFACE ON BRIDGE DECK AND APPROACH SLAB



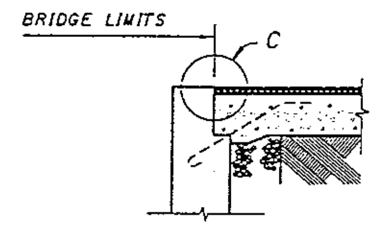
ON SLAB BRIDGES

CONCRETE WEARING SURFACE ON BRIDGE DECK AND APPROACH SLAB



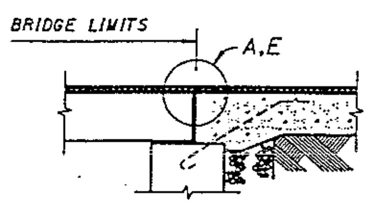
ON BRIDGES WITH INTEGRAL CONSTRUCTION

CONCRETE WEARING SURFACE ON BRIDGE DECK ONLY

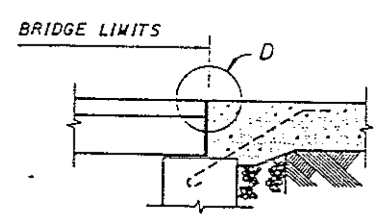


APPROACH SLAB SUPPORTED ON ABUTMENT BACKWALL

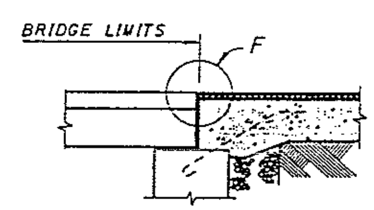
ASPHALT CONCRETE WEARING SURFACE ON BRIDGE DECK AND APPROACH SLAB



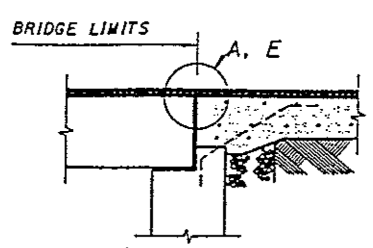
ON PRESTRESSED CONCRETE BOX BEAM BRIDGES



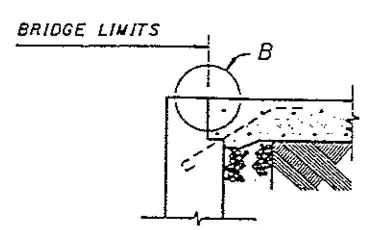
ON PRESTRESSED CONCRETE BOX BEAM BRIDGES



ON PRESTRESSED CONCRETE BOX BEAM BRIDGES



APPROACH SLAB SUPPORTED ON ABUTMENT BACKWALL



APPROACH SLAB SUPPORTED ON ABUTMENT BACKWALL

NOTE : APPROACH SLAB SEAT ON PRESTRESSED CONCRETE BOX BEAM BRIDGES IS SHOWN AT SAME ELEVATION AS BEAM SEAT. HOWEVER, IT MAY ACTUALLY BE HIGHER OR LOWER THAN THE BEAM SEAT DEPENDING ON BOX BEAM DEPTH.

NOTE 1 : PREFORMED ELASTOMERIC JOINT SEALER 705.11 (1¼" FOR ½" JOINT) DEPRESSED ⅛" BELOW ROADWAY, PLACED IN ½" x 2¼" GROOVE.

NOTE 2 : PREFORMED ELASTOMERIC JOINT SEALER 705.11 (1¼" FOR ½" JOINT) PLACED IN ½" x 2⅛" GROOVE.

NOTE 3 : 1" PREFORMED EXPANSION JOINT FILLER 705.03

NOTE 4 : TYPE "A" WATERPROOFING.

NOTE 5 : SEE PLAN INSERT SHEET. ABUTMENT JOINTS IN BITUMINOUS CONCRETE BOX BEAM BRIDGES.

NOTE 6 : SEE PLAN INSERT SHEET. POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM.

TYPE "A" WATERPROOFING SHALL NOT EXTEND ABOVE THE BOTTOM OF THE GROOVE INTO WHICH THE PREFORMED ELASTOMERIC JOINT SEALER IS TO BE PLACED. IT SHALL BE APPLIED TO THE ENTIRE AREA OF THE ABUTMENT OR SUPERSTRUCTURE WHICH COMES INTO CONTACT WITH THE APPROACH SLAB.

FOR PRESTRESSED CONCRETE BOX BEAM BRIDGES WITH ASPHALT CONCRETE ON BOTH BRIDGE DECK AND APPROACH SLAB, THE TOP OF APPROACH SLAB AT THE BRIDGE END SHALL BE CONSTRUCTED TO THE LEVEL OF THE TOP OF THE BEAMS TO FACILITATE WATERPROOFING OF THE JOINT. THE THICKNESS OF ASPHALT CONCRETE AT THE APPROACH END SHALL BE THE THICKNESS OF ASPHALT CONCRETE USED ON THE ROADWAY PAVEMENT. THE THICKNESS OF ASPHALT CONCRETE SHALL VARY UNIFORMLY, IF NECESSARY, IN THE LENGTH OF THE APPROACH SLAB. THE BASE SHALL BE GRADED TO PERMIT THE BOTTOM OF THE APPROACH SLAB TO BE PARALLEL TO THE TOP.

FOR STRUCTURES HAVING ASPHALT CONCRETE WEARING SURFACE ON BOTH BRIDGE DECK AND APPROACH SLABS AND WHERE NO DECK EXPANSION DEVICES ARE PROVIDED, THE DECK MEMBRANE WATERPROOFING SHALL EXTEND BEYOND THE BRIDGE LIMITS A DISTANCE OF 2'-0".

DESIGN AGENCY
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

ENGINEER OF BRIDGES

11-27-81
DATE

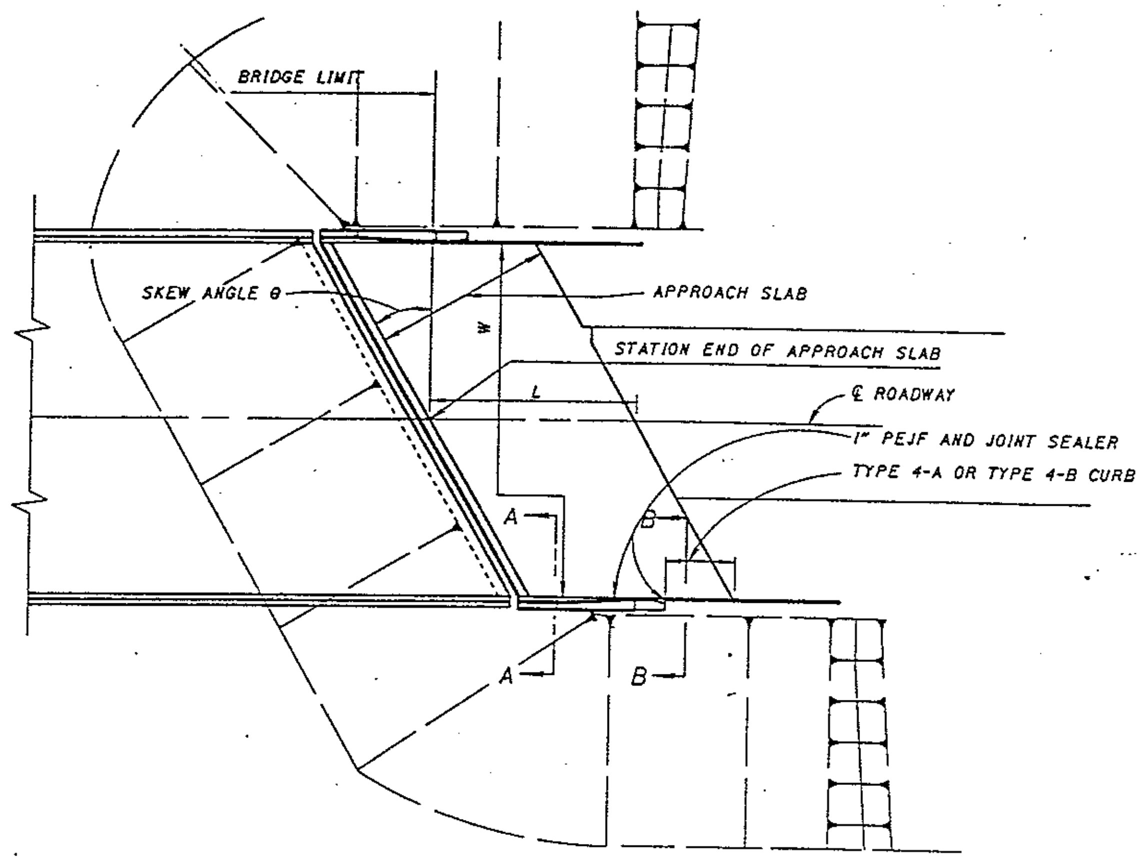
REVIEWED LMW
CHECKED JAW
DESIGNED JFF
DRAWN JFF

AS-1-81

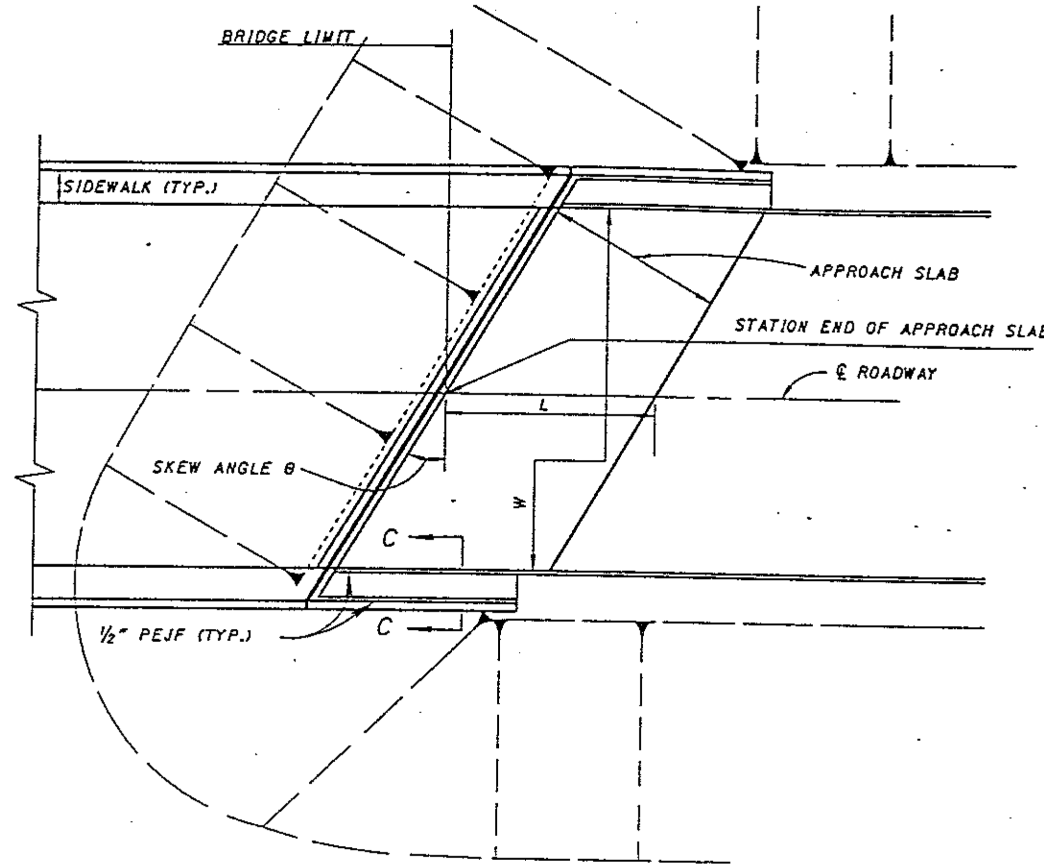
REVISIONS
9-15-94

STANDARD
REINFORCED CONCRETE APPROACH SLAB

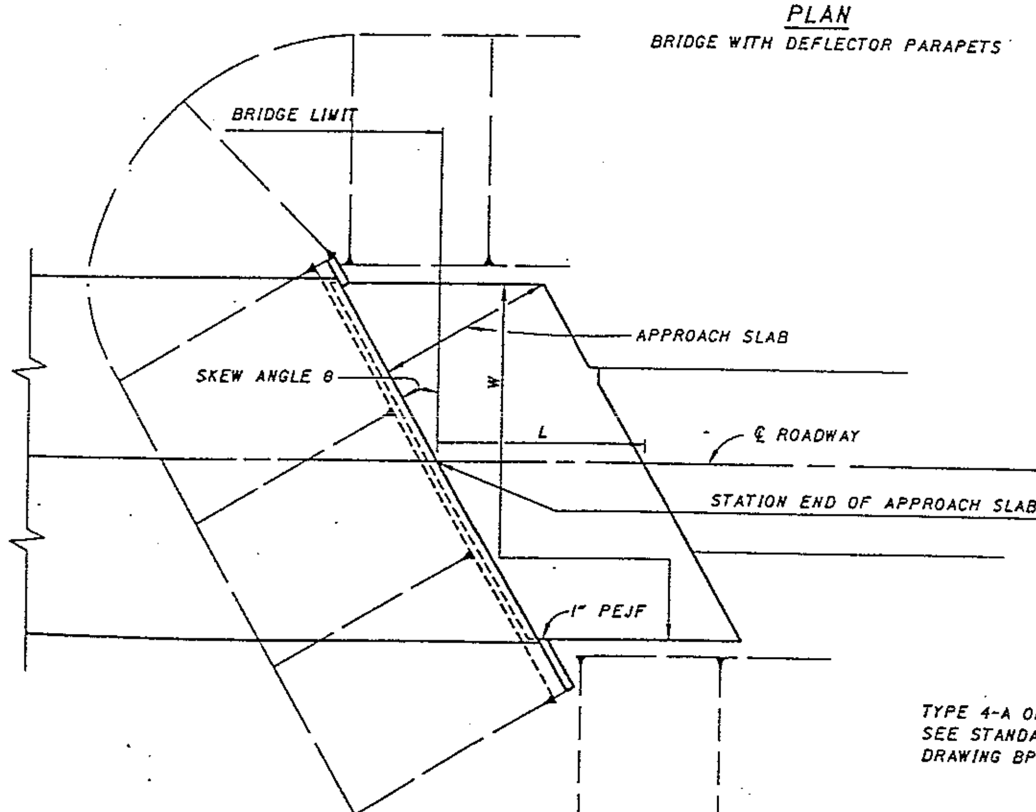
2/3



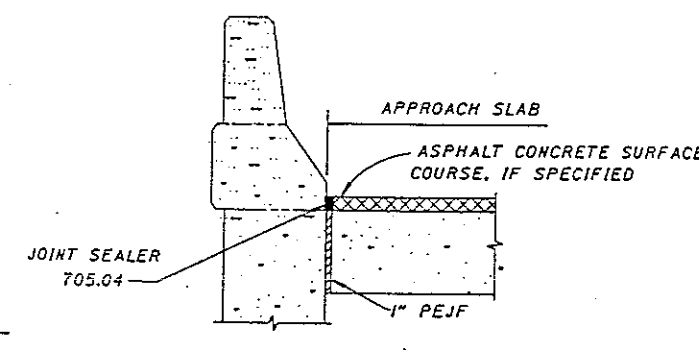
PLAN
BRIDGE WITH DEFLECTOR PARAPETS



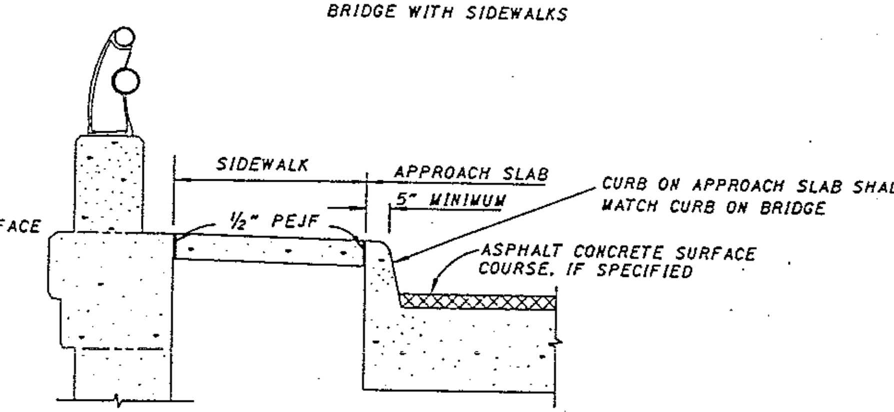
PLAN
BRIDGE WITH SIDEWALKS



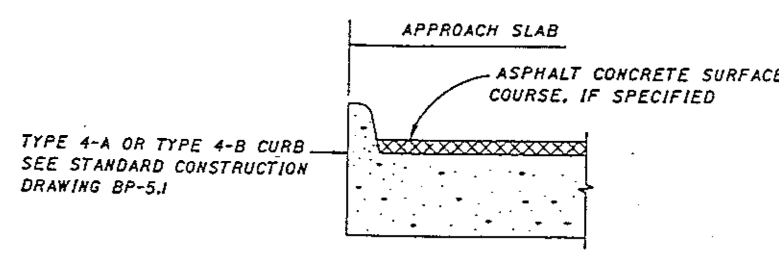
PLAN
BRIDGE WITHOUT CURBS



SECTION A-A



SECTION C-C



SECTION B-B

DESIGN AGENCY
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
ENGINEER OF BRIDGES
11-27-81
DATE

REVIEWED LMW
CHECKED JAH
DESIGNED JFF
DRAWN JFF
REVISIONS 9-15-94
AS-1-81

STANDARD
REINFORCED CONCRETE APPROACH SLAB

3/3

GENERAL: THIS DRAWING PROVIDES DESIGN AND CONSTRUCTION DETAILS. THE PROJECT PLANS SHALL SHOW THE LOCATION OF SPLICES PLUS A REFERENCE TO THIS DRAWING FOR PERTINENT DETAILS AND NOTES. FOR SPLICING BEAMS OF DIFFERENT SIZES OR WHERE SPLICES ARE LOCATED AT BEAM BEND POINTS, THE PROJECT PLANS SHALL INCLUDE SUFFICIENT DETAILS SUPPLEMENTING THIS DRAWING TO COMPLETELY DESCRIBE THE SPLICE.

DESIGN SPECIFICATIONS: THIS DRAWING CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992, INCLUDING THE 1993 INTERIM SPECIFICATIONS, AND THE OHIO DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL, 1993.

DESIGN METHOD: LOAD FACTOR DESIGN

ALLOWABLE STRESSES:

STRUCTURAL STEEL	ASTM	A-36	YIELD STRESS = 36 KSI
	ASTM	A-572, A-588	YIELD STRESS = 50 KSI
HIGH STRENGTH BOLTS	ASTM	A-325	DESIGN SLIP RESISTANCE = 21 KSI

(DESIGN SLIP RESISTANCE IS BASED ON THE AASHTO CLASS A MINIMUM SLIP COEFFICIENT OF 0.33)

DESIGN: FOR EACH STRUCTURE THE DESIGNER SHALL CHOOSE A SPLICE LOCATION AND DETERMINE THE MAXIMUM TOTAL STRESSES (MOMENT AND SHEAR) AT THAT POINT. IN CONTINUOUS SPANS, SPLICES PREFERABLY SHALL BE MADE NEAR POINTS OF CONTRAFLEXURE. THE SPLICE SHALL BE DESIGNED FOR NOT LESS THAN (1) THE AVERAGE OF THE REQUIRED STRENGTH AT THE POINT OF SPLICE AND THE STRENGTH OF THE MEMBER AT THE SAME POINT, (2) THE MODIFIED MAXIMUM STRESS SPECIFIED IN THE FATIGUE UNIT STRESSES NOTE, OR (3) 75% OF THE STATIC STRENGTH OF THE BEAM. THE SPLICE DESIGNS SHOWN HEREON ARE DESIGNED FOR (3). SEE NOTE FOR DESIGN LOADS. IF STRESSES (1) OR (2) ARE MORE CRITICAL, THIS DESIGN SHALL NOT BE USED AND SUCH SPLICES SHOULD BE DESIGNED TO MEET THE ESTABLISHED REQUIREMENTS. THE STATIC BEAM STRENGTH AT THE SPLICE IS BASED ON THE NET SECTION FOR BENDING AND THE GROSS SECTION FOR SHEAR USING THE BASIC UNIT STRESSES. WHEN SPLICING BEAMS OF DIFFERENT SIZES, THE SPLICE DESIGN SHALL BE BASED ON THE LIGHTER WEIGHT BEAM.

DESIGN LOADS: DESIGN MOMENT [KIP-IN] $= 0.75 \left(\frac{Fy\ I}{d}\right)$

DESIGN SHEAR [KIP] $= 0.75\ (0.58\ Fy\ Tw\ (d - 2\ Tf))$

WHERE:
- I = MOMENT OF INERTIA BASED ON THE BEAM'S GROSS-SECTION OR ON THE NET-SECTION IF THE FLANGE AREA REMOVED EXCEEDING 15% OF THE GROSS-SECTION IS DEDUCTED [IN^4] (SEE AASHTO 10.18.1.1)
- Fy = YIELD STRESS [KSI]
- d = MEMBER DEPTH [IN]
- Tw = WEB THICKNESS [IN]
- Tf = FLANGE THICKNESS [IN]

FATIGUE STRESSES: THIS SPLICE STANDARD HAS NOT BEEN EVALUATED FOR FATIGUE STRESSES. THE DESIGNER IS REQUIRED TO CALCULATE THE MAXIMUM MOMENT RANGE AND EVALUATE THE ACTUAL STRESSES AGAINST ALLOWABLES GIVEN IN AASHTO TABLE 10.3.1A.

FASTENERS:

ASTM	A-36	1" DIAMETER HIGH STRENGTH BOLTS	ASTM	A-325
ASTM	A-572, A-588	1⅛" DIAMETER HIGH STRENGTH BOLTS	ASTM	A-325

SPLICE MATERIAL WEIGHT PLUS THE WEIGHT OF FILLS, WHERE REQUIRED, SHALL BE INCLUDED WITH THE STRUCTURAL STEEL QUANTITY FOR PAYMENT.

FABRICATION AND ASSEMBLY: BEAM ENDS AT SPLICES SHALL BE CUT AND FIT AS PER PLAN. THE OPENING BETWEEN BEAM ENDS AFTER ASSEMBLY SHALL NOT EXCEED ¼".

FILLS SHOWN ON THE PROJECT PLANS AND SHOP DRAWINGS SHALL BE DIMENSIONED TO THE NEAREST 1/16 INCH IN THICKNESS, BUT NOT LESS THAN ⅛ INCH THICK, BASED ON THE DIMENSIONS FOR DETAILING AND INTENDED RELATIVE POSITION OF THE ABUTTING FLANGES AND WEBS TO BE SPLICED. HOWEVER, IN THE FINAL SHOP ASSEMBLY, FILLS SHALL BE FURNISHED WITH THICKNESSES SUFFICIENT TO COMPENSATE FOR ANY MISALIGNMENT OF ABUTTING FLANGES AND WEBS DUE TO STANDARD ROLLING MILL TOLERANCES. THE ACTUAL FILLS USED IN THE SPLICE SHALL BE SUCH AS TO COMPENSATE FOR DIFFERENCES IN TOTAL THICKNESS OR RELATIVE POSITIONS OF MORE THAN 1/16 INCH.

VERTICAL CLEARANCE: FOR GRADE SEPARATION STRUCTURES AN ALLOWANCE OF ¾ INCHES PLUS THE THICKNESS OF THE OUTSIDE FLANGE SPLICE PLATE SHALL BE USED IN COMPUTING THE ACTUAL VERTICAL CLEARANCE UNDER A BEAM SPLICE.

DESIGN AGENCY
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

ENGINEER OF BRIDGES

12-19-94
DATE

REVISIONS	DESIGNED	CHECKED	REVIEWED
	GEA	SAM	
	DRAWN SAM	BS-1-93	

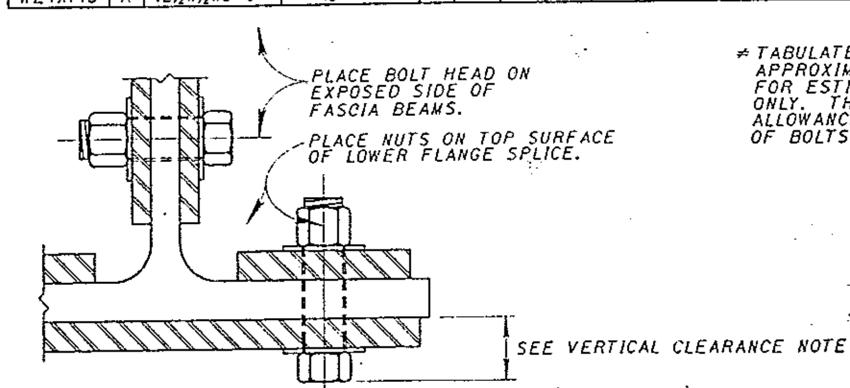
STANDARD
BOLTED BEAM SPLICE
FOR STEEL BEAM BRIDGES

1 / 3

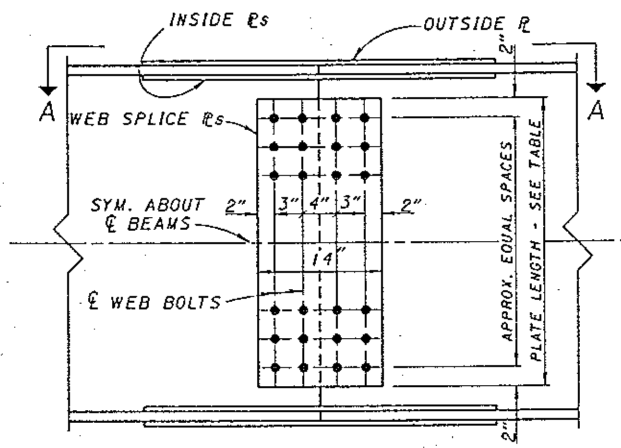
BEAM SPLICE DETAILS

BEAM	FLANGE PLATES TYPE	FLANGE PLATES OUTSIDE 2 REQ'D	FLANGE PLATES INSIDE 4 REQ'D	FLANGE BOLTS NUM.	FLANGE BOLTS N SPA.	FLANGE BOLTS PITCH	FLANGE BOLTS A	FLANGE BOLTS B	FLANGE BOLTS C	WEB SPLICE TYPE	WEB SPLICE WEB PLATES 2 REQ'D	WEB SPLICE WEB BOLTS No.	WEIGHT OF SPLICE MAT'RL lbs. ≠
W40X268	B	17 1/2 X 5/8 X 4'-2"	7 X 5/8 X 4'-2"	64	7	3 1/2	2 5/16	3	7 1/8	B	33 1/4 X 9/16 X 20	60	960
W40X249	B	15 1/2 X 5/8 X 4'-2"	6 X 5/8 X 4'-2"	64	7	3 1/2	2 5/16	2	7 1/8	B	33 1/4 X 9/16 X 20	60	890
W40X244	B	17 1/2 X 9/16 X 4'-2"	7 X 9/16 X 4'-2"	64	7	3 1/2	2 5/16	3	7 1/8	B	33 1/4 X 9/16 X 20	60	910
W40X221	B	17 1/2 X 1/2 X 3'-2"	7 X 1/2 X 3'-2"	48	5	3 1/2	2 5/16	3	7 1/8	B	33 1/4 X 9/16 X 20	60	720
W40X215	B	15 1/2 X 9/16 X 4'-2"	6 X 9/16 X 4'-2"	64	7	3 1/2	2 5/16	2	7 1/8	B	33 1/4 X 1/2 X 20	60	820
W40X199	B	15 1/2 X 1/2 X 3'-2"	6 X 1/2 X 3'-2"	48	5	3 1/2	2 5/16	2	7 1/8	B	33 1/4 X 1/2 X 20	60	650
W40X192	B	17 1/2 X 3/8 X 3'-2"	7 X 3/8 X 3'-2"	48	5	3 1/2	2 5/16	3	7 1/8	B	33 1/4 X 9/16 X 20	60	630
W40X183	A	11 1/2 X 5/8 X 2'-8"	4 X 5/8 X 2'-8"	40	4	3 1/2	2 5/16	-	7 1/8	B	33 1/4 X 1/2 X 20	60	560
W40X167	A	11 1/2 X 1/2 X 2'-2"	4 X 1/2 X 2'-2"	32	3	3 1/2	2 5/16	-	7 1/8	B	33 1/4 X 1/2 X 20	60	470
W40X149	A	11 1/2 X 7/16 X 2'-2"	4 X 7/16 X 2'-2"	32	3	3 1/2	2 3/8	-	7	B	33 1/4 X 1/2 X 20	60	460
W36X300	B	16 X 3/4 X 6'-3 1/2"	6 1/2 X 3/4 X 6'-3 1/2"	80	9	3 3/4	2 5/16	2 1/2	7	C	31 X 13/16 X 26	80	1510
W36X280	B	16 X 11/16 X 5'-1/2"	6 1/2 X 11/16 X 5'-1/2"	64	7	3 3/4	2 5/16	2 1/2	7	B	31 X 11/16 X 20	60	1120
W36X260	B	16 X 5/8 X 5'-1/2"	6 1/2 X 5/8 X 5'-1/2"	64	7	3 3/4	2 1/4	2 1/2	7	B	31 X 11/16 X 20	60	1060
W36X245	B	16 X 9/16 X 5'-1/2"	6 1/2 X 9/16 X 5'-1/2"	64	7	3 3/4	2 5/16	2 1/2	6 7/8	B	31 X 5/8 X 20	60	970
W36X230	B	16 X 9/16 X 5'-1/2"	6 1/2 X 9/16 X 5'-1/2"	64	7	3 3/4	2 5/16	2 1/2	6 7/8	B	31 X 5/8 X 20	60	940
W36X210	A	12 X 5/8 X 3'-0"	4 1/2 X 5/8 X 3'-0"	40	4	3 1/2	2 9/16	-	7	B	31 X 11/16 X 20	60	670
W36X194	A	12 X 9/16 X 3'-0"	4 1/2 X 9/16 X 3'-0"	40	4	3 1/2	2 5/8	-	6 7/8	B	31 X 5/8 X 20	60	620
W36X182	A	12 X 9/16 X 3'-0"	4 1/2 X 9/16 X 3'-0"	40	4	3 1/2	2 5/8	-	6 7/8	B	31 X 5/8 X 20	60	600
W36X170	A	12 X 1/2 X 2'-5"	4 1/2 X 1/2 X 2'-5"	32	3	3 1/2	2 9/16	-	6 7/8	B	31 X 9/16 X 20	60	510
W36X160	A	12 X 1/2 X 2'-5"	4 1/2 X 1/2 X 2'-5"	32	3	3 1/2	2 5/8	-	6 3/4	B	31 X 9/16 X 20	60	500
W36X150	A	11 3/4 X 7/16 X 2'-5"	4 1/2 X 7/16 X 2'-5"	32	3	3 1/2	2 5/8	-	6 3/4	A	31 X 1/2 X 14	40	380
W36X135	A	11 3/4 X 7/16 X 1'-10"	4 1/2 X 7/16 X 1'-10"	24	2	3 1/2	2 5/8	-	6 3/4	A	31 X 7/16 X 14	40	310
W33X263	B	15 1/2 X 11/16 X 4'-9"	6 1/2 X 11/16 X 4'-9"	64	7	3 1/2	2 3/16	2 1/2	6 3/8	C	28 X 13/16 X 26	72	1150
W33X241	B	15 1/2 X 5/8 X 4'-9"	6 1/2 X 5/8 X 4'-9"	64	7	3 1/2	2 1/4	2 1/2	6 3/8	C	28 X 13/16 X 26	72	1090
W33X221	B	15 1/2 X 9/16 X 4'-9"	6 1/2 X 9/16 X 4'-9"	64	7	3 1/2	2 3/16	2 1/2	6 3/8	B	28 X 11/16 X 20	54	890
W33X201	B	15 1/2 X 1/2 X 3'-7"	6 1/2 X 1/2 X 3'-7"	48	5	3 1/2	2 1/4	2 1/2	6 1/4	B	28 X 5/8 X 20	54	680
W33X169	A	11 X 9/16 X 3'-0"	4 1/2 X 9/16 X 3'-0"	40	4	3 1/2	2 3/8	-	6 3/4	B	28 X 5/8 X 20	54	570
W33X152	A	11 X 1/2 X 2'-5"	4 1/2 X 1/2 X 2'-5"	32	3	3 1/2	2 7/16	-	6 3/4	B	28 X 9/16 X 20	54	460
W33X141	A	11 X 7/16 X 2'-5"	4 1/2 X 7/16 X 2'-5"	32	3	3 1/2	2 7/16	-	6 5/8	B	28 X 9/16 X 20	54	460
W33X130	A	11 X 7/16 X 1'-10"	4 1/2 X 7/16 X 1'-10"	24	2	3 1/2	2 7/16	-	6 5/8	A	28 X 1/2 X 14	36	300
W33X118	A	11 X 3/8 X 1'-10"	4 1/2 X 3/8 X 1'-10"	24	2	3 1/2	2 7/16	-	6 5/8	A	28 X 7/16 X 14	36	280
W30X211	B	15 X 9/16 X 5'-1/2"	6 X 9/16 X 5'-1/2"	64	7	3 1/2	2 7/16	2	6 1/4	B	25 X 3/4 X 20	48	910
W30X191	A	15 X 1/2 X 3'-7"	6 X 1/2 X 3'-7"	48	5	3 1/2	3 7/16	-	8 1/8	B	25 X 11/16 X 20	48	670
W30X173	A	14 3/4 X 1/2 X 3'-0"	6 X 1/2 X 3'-0"	40	4	3 1/2	3 7/16	-	8 1/8	B	25 X 5/8 X 20	48	570
W30X148	A	10 X 9/16 X 2'-5"	4 X 9/16 X 2'-5"	32	3	3 1/2	2 1/4	-	6	B	25 X 5/8 X 20	48	460
W30X132	A	10 X 1/2 X 2'-5"	4 X 1/2 X 2'-5"	32	3	3 1/2	2 3/16	-	6 1/8	B	25 X 9/16 X 20	48	420
W30X124	A	10 X 7/16 X 1'-10"	4 X 7/16 X 1'-10"	24	2	3 1/2	2 1/4	-	6	B	25 X 9/16 X 20	48	370
W30X116	A	10 X 7/16 X 1'-10"	4 X 7/16 X 1'-10"	24	2	3 1/2	2 1/4	-	6	A	25 X 1/2 X 14	32	280
W30X108	A	10 X 3/8 X 1'-10"	4 X 3/8 X 1'-10"	24	2	3 1/2	2 1/4	-	6	A	25 X 7/16 X 14	32	260
W30X99	A	10 X 3/8 X 1'-10"	4 X 3/8 X 1'-10"	24	2	3 1/2	2 1/4	-	6	A	25 X 7/16 X 14	32	260
W30X90	A	10 X 3/8 X 1'-10"	4 X 3/8 X 1'-10"	24	2	3 1/2	2 3/16	-	6	A	25 X 7/16 X 14	32	260
W27X194	A	14 X 9/16 X 3'-7"	5 1/2 X 9/16 X 3'-7"	48	5	3 1/2	3 1/4	-	7 1/2	C	22 X 13/16 X 26	56	770
W27X178	A	14 X 1/2 X 3'-7"	5 1/2 X 1/2 X 3'-7"	48	5	3 1/2	3 1/4	-	7 3/8	B	22 X 3/4 X 20	42	630
W27X161	A	14 X 1/2 X 3'-0"	5 1/2 X 1/2 X 3'-0"	40	4	3 1/2	3 1/4	-	7 1/2	B	22 X 11/16 X 20	42	540
W27X146	A	13 3/4 X 7/16 X 3'-0"	5 1/2 X 7/16 X 3'-0"	40	4	3 1/2	3 1/4	-	7 1/2	B	22 X 5/8 X 20	42	500
W27X129	A	10 X 1/2 X 2'-5"	4 X 1/2 X 2'-5"	32	3	3 1/2	2 1/16	-	5 7/8	B	22 X 5/8 X 20	42	410
W27X114	A	10 X 7/16 X 1'-10"	4 X 7/16 X 1'-10"	24	2	3 1/2	2 1/8	-	5 7/8	B	22 X 9/16 X 20	42	330
W27X102	A	10 X 3/8 X 1'-10"	4 X 3/8 X 1'-10"	24	2	3 1/2	2 1/16	-	5 7/8	A	22 X 1/2 X 14	28	250
W27X94	A	9 3/4 X 3/8 X 1'-10"	4 X 3/8 X 1'-10"	24	2	3 1/2	2 1/16	-	5 7/8	A	22 X 7/16 X 14	28	240
W27X84	A	9 3/4 X 3/8 X 1'-10"	4 X 3/8 X 1'-10"	24	2	3 1/2	2 1/16	-	5 7/8	A	22 X 7/16 X 14	28	240
W24X162	A	12 1/2 X 9/16 X 3'-0"	5 X 9/16 X 3'-0"	40	4	3 1/2	2 15/16	-	7 1/8	C	19 X 7/8 X 26	48	620
W24X146	A	12 1/2 X 1/2 X 3'-0"	5 X 1/2 X 3'-0"	40	4	3 1/2	2 7/8	-	7 1/8	B	19 X 3/4 X 20	36	490

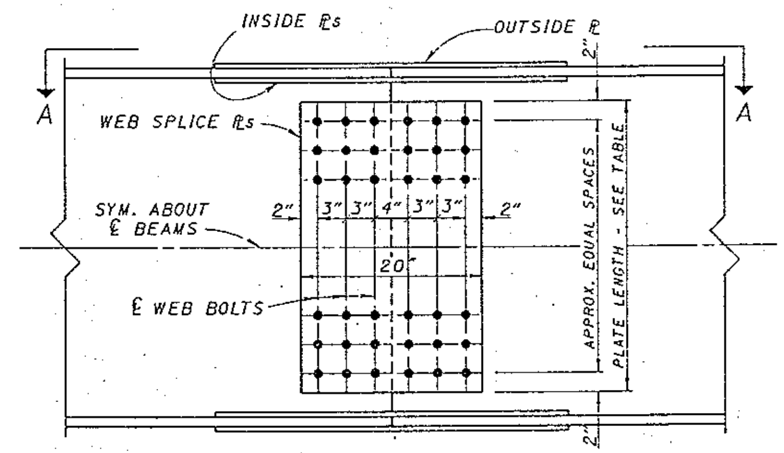
≠ TABULATED WEIGHTS ARE APPROXIMATE AND ARE FOR ESTIMATING PURPOSES ONLY. THEY INCLUDE AN ALLOWANCE FOR WEIGHT OF BOLTS AND WASHERS.



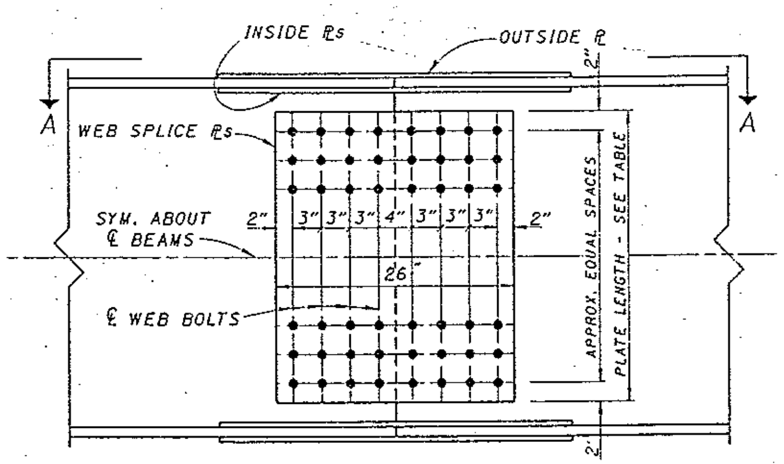
PARTIAL SECTION
(AT ℄ OF BEAM SPLICE)



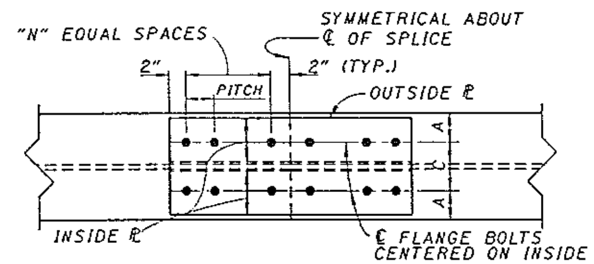
BEAM SPLICE DETAIL
WEB SPLICE - TYPE A



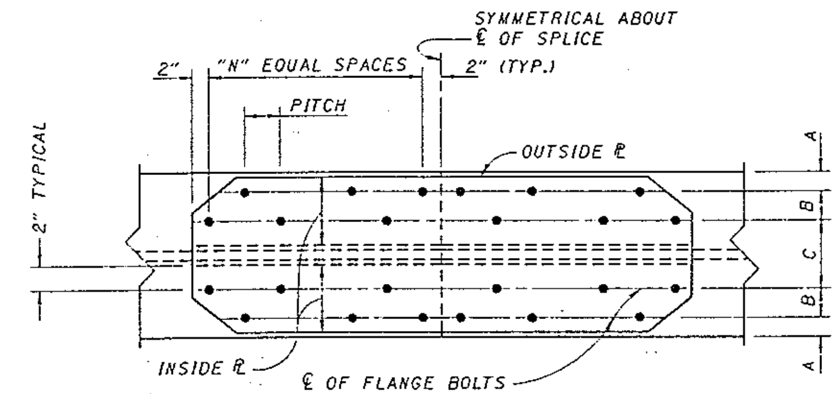
BEAM SPLICE DETAIL
WEB SPLICE - TYPE B



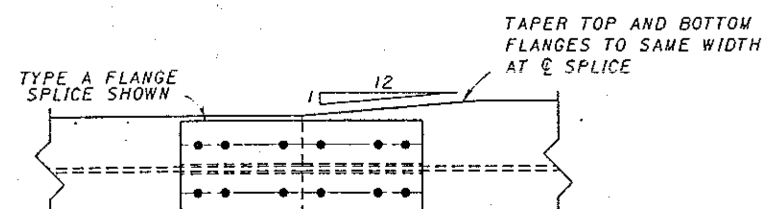
BEAM SPLICE DETAIL
WEB SPLICE - TYPE C



VIEW A-A
FLANGE SPLICE - TYPE A



VIEW A-A
FLANGE SPLICE - TYPE B



VIEW A-A
SPLICE DETAIL FOR BEAMS HAVING DIFFERENT FLANGE WIDTHS

NOTE: ALL SHAPES AND PLATES SHALL BE DESIGNATED (CVN), AND SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01 OF CMS.

NOTE: ALL FASTENERS ARE 1" DIAMETER HIGH STRENGTH BOLTS, ASTM A-325

DESIGN AGENCY
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
ENGINEER OF BRIDGES
12-19-94
DATE

REVIEWED
CHECKED SAM
DESIGNED GEA
DRAWN SAM
REVISIONS

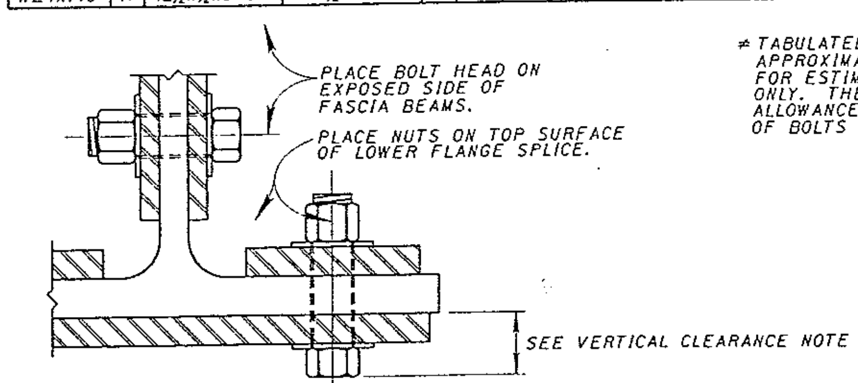
BS-1-93

STANDARD
BOLTED BEAM SPLICE
FOR STEEL BEAM BRIDGES
(FOR 36 KSI STEEL)

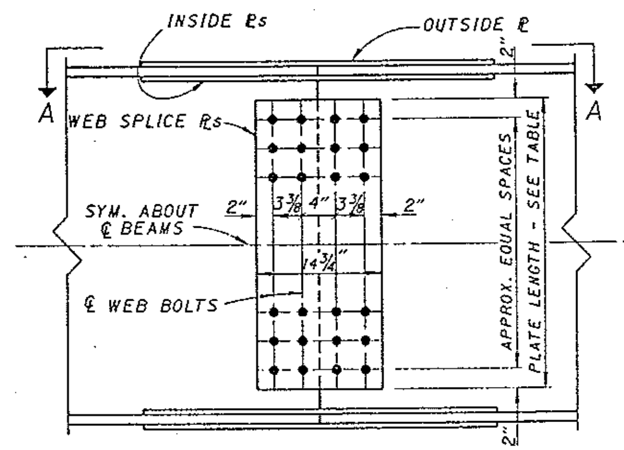
BEAM SPLICE DETAILS

BEAM	FLANGE PLATES TYPE	FLANGE PLATES OUTSIDE 2 REQ'D	FLANGE PLATES INSIDE 4 REQ'D	FLANGE BOLTS NUM.	FLANGE BOLTS N SPA.	FLANGE BOLTS PITCH	FLANGE BOLTS A	FLANGE BOLTS B	FLANGE BOLTS C	WEB SPLICE TYPE	WEB SPLICE WEB PLATES 2 REQ'D	WEB SPLICE WEB BOLTS No.	WEIGHT OF SPLICE MAT'RL lbs. ≠
W40X268	B	17 1/2x5/8x5'-11"	7x5/8x5'-11"	80	9	3 1/2	2 5/16	3	7 1/8	C	33x11/16x28 1/4	72	1390
W40X249	B	15 1/2x5/8x4'-9"	6x5/8x4'-9"	64	7	3 1/2	2 5/16	2	7 1/8	C	33x11/16x28 1/4	72	1130
W40X244	B	17 1/2x9/16x4'-9"	7x9/16x4'-9"	64	7	3 1/2	2 5/16	3	7 1/8	C	33x11/16x28 1/4	72	1150
W40X221	B	17 1/2x1/2x4'-9"	7x1/2x4'-9"	64	7	3 1/2	2 5/16	3	7 1/8	C	33x11/16x28 1/4	72	1080
W40X215	B	15 1/2x9/16x4'-9"	6x9/16x4'-9"	64	7	3 1/2	2 5/16	2	7 1/8	C	33x5/8x28 1/4	72	1040
W40X199	B	15 1/2x1/2x3'-7"	6x1/2x3'-7"	48	5	3 1/2	2 5/16	2	7 1/8	C	33x5/8x28 1/4	72	850
W40X192	B	17 1/2x3/8x3'-7"	7x3/8x3'-7"	48	5	3 1/2	2 5/16	3	7 1/8	C	33x11/16x28 1/4	72	840
W40X183	A	11 1/2x5/8x3'-0"	4x5/8x3'-0"	40	4	3 1/2	2 5/16	-	7 1/8	B	33x9/16x21 1/2	54	620
W40X167	A	11 1/2x1/2x3'-0"	4x1/2x3'-0"	40	4	3 1/2	2 5/16	-	7 1/8	B	33x9/16x21 1/2	54	570
W40X149	A	11 1/2x7/16x2'-5"	4x7/16x2'-5"	32	3	3 1/2	2 3/8	-	7	B	33x9/16x21 1/2	54	500
W36X300	B	16x3/4x6'-3 1/2"	6 1/2x3/4x6'-3 1/2"	80	9	3 3/4	2 5/16	2 1/2	7	C	31x7/8x28 1/4	72	1600
W36X280	B	16x3/4x6'-3 1/2"	6 1/2x3/4x6'-3 1/2"	80	9	3 3/4	2 5/16	2 1/2	7	C	31x13/16x28 1/4	72	1480
W36X260	B	16x5/8x6'-3 1/2"	6 1/2x5/8x6'-3 1/2"	80	9	3 3/4	2 1/4	2 1/2	7	C	31x3/4x28 1/4	72	1380
W36X256	A	12x13/16x4'-2"	4 1/2x13/16x4'-2"	56	6	3 1/2	2 9/16	-	7 1/8	C	31x7/8x28 1/4	72	1090
W36X245	B	16x5/8x5'-1/2"	6 1/2x5/8x5'-1/2"	64	7	3 3/4	2 5/16	2 1/2	6 7/8	C	31x3/4x28 1/4	72	1170
W36X232	A	12x11/16x4'-2"	4 1/2x11/16x4'-2"	56	6	3 1/2	2 9/16	-	7	C	31x13/16x28 1/4	72	1010
W36X230	B	16x5/8x5'-1/2"	6 1/2x5/8x5'-1/2"	64	7	3 3/4	2 5/16	2 1/2	6 7/8	C	31x11/16x28 1/4	72	1100
W36X210	A	12x5/8x3'-7"	4 1/2x5/8x3'-7"	48	5	3 1/2	2 9/16	-	7	C	31x13/16x28 1/4	72	910
W36X194	A	12x5/8x3'-0"	4 1/2x5/8x3'-0"	40	4	3 1/2	2 5/8	-	6 7/8	C	31x3/4x28 1/4	72	780
W36X182	A	12x9/16x3'-0"	4 1/2x9/16x3'-0"	40	4	3 1/2	2 5/8	-	6 7/8	C	31x11/16x28 1/4	72	740
W36X170	A	12x1/2x3'-0"	4 1/2x1/2x3'-0"	40	4	3 1/2	2 9/16	-	6 7/8	B	31x9/16x21 1/2	54	570
W36X160	A	12x1/2x2'-5"	4 1/2x1/2x2'-5"	32	3	3 1/2	2 5/8	-	6 3/4	B	31x9/16x21 1/2	54	510
W36X150	A	11 7/8x1/2x2'-5"	4 1/2x1/2x2'-5"	32	3	3 1/2	2 5/8	-	6 3/4	B	31x9/16x21 1/2	54	510
W36X135	A	11 7/8x7/16x2'-5"	4 1/2x7/16x2'-5"	32	3	3 1/2	2 5/8	-	6 3/4	B	31x1/2x21 1/2	54	460
W33X263	B	15 1/2x11/16x5'-11"	6 1/2x11/16x5'-11"	80	9	3 1/2	2 3/16	2 1/2	6 3/8	C	29 3/8x13/16x28 1/4	64	1350
W33X241	B	15 1/2x5/8x4'-9"	6 1/2x5/8x4'-9"	64	7	3 1/2	2 1/4	2 1/2	6 3/8	C	29 3/8x3/4x28 1/4	64	1100
W33X221	B	15 1/2x9/16x4'-9"	6 1/2x9/16x4'-9"	64	7	3 1/2	2 3/16	2 1/2	6 3/8	C	29 3/8x11/16x28 1/4	64	1010
W33X201	B	15 1/2x1/2x4'-9"	6 1/2x1/2x4'-9"	64	7	3 1/2	2 1/4	2 1/2	6 1/4	C	29 3/8x11/16x28 1/4	64	980
W33X169	A	11x9/16x3'-0"	4 1/2x9/16x3'-0"	40	4	3 1/2	2 3/8	-	6 3/4	B	29 3/8x9/16x21 1/2	48	570
W33X152	A	11x1/2x2'-5"	4 1/2x1/2x2'-5"	32	3	3 1/2	2 7/16	-	6 3/4	B	29 3/8x1/2x21 1/2	48	470
W33X141	A	11x1/2x2'-5"	4 1/2x1/2x2'-5"	32	3	3 1/2	2 7/16	-	6 5/8	B	29 3/8x1/2x21 1/2	48	460
W33X130	A	11x7/16x2'-5"	4 1/2x7/16x2'-5"	32	3	3 1/2	2 7/16	-	6 5/8	B	29 3/8x1/2x21 1/2	48	440
W33X118	A	11x3/8x1'-10"	4 1/2x3/8x1'-10"	24	2	3 1/2	2 7/16	-	6 5/8	B	29 3/8x1/2x21 1/2	48	380
W30X211	B	15x9/16x4'-9"	6x9/16x4'-9"	64	7	3 1/2	2 7/16	2	6 1/4	C	26 1/2x3/4x28 1/4	56	990
W30X191	B	15x1/2x3'-7"	6x1/2x3'-7"	48	5	3 1/2	2 7/16	2	6 1/8	C	26 1/2x11/16x28 1/4	56	780
W30X173	B	14 7/8x1/2x3'-7"	6x1/2x3'-7"	48	5	3 1/2	2 7/16	2	6 1/8	C	26 1/2x5/8x28 1/4	56	730
W30X148	A	10x9/16x2'-5"	4x9/16x2'-5"	32	3	3 1/2	2 1/4	-	6	B	26 1/2x9/16x21 1/2	42	460
W30X132	A	10x1/2x2'-5"	4x1/2x2'-5"	32	3	3 1/2	2 3/16	-	6 1/8	B	26 1/2x1/2x21 1/2	42	420
W30X124	A	10x7/16x2'-5"	4x7/16x2'-5"	32	3	3 1/2	2 1/4	-	6	B	26 1/2x1/2x21 1/2	42	410
W30X116	A	10x7/16x1'-10"	4x7/16x1'-10"	24	2	3 1/2	2 1/4	-	6	B	26 1/2x1/2x21 1/2	42	360
W30X108	A	10x3/8x1'-10"	4x3/8x1'-10"	24	2	3 1/2	2 1/4	-	6	B	26 1/2x1/2x21 1/2	42	350
W30X99	A	10x3/8x1'-10"	4x3/8x1'-10"	24	2	3 1/2	2 1/4	-	6	B	26 1/2x7/16x21 1/2	42	330
W30X90	A	10x3/8x1'-10"	4x3/8x1'-10"	24	2	3 1/2	2 3/16	-	6	A	26 1/2x3/8x14 3/4	28	250
W27X194	A	14x9/16x4'-2"	5 1/2x9/16x4'-2"	56	6	3 1/2	3 1/4	-	7 1/2	C	24x3/4x28 1/4	48	850
W27X178	A	14x9/16x3'-7"	5 1/2x9/16x3'-7"	48	5	3 1/2	3 1/4	-	7 5/8	C	24x11/16x28 1/4	48	730
W27X161	A	14x1/2x3'-0"	5 1/2x1/2x3'-0"	40	4	3 1/2	3 1/4	-	7 1/2	C	24x5/8x28 1/4	48	630
W27X146	A	13 7/8x7/16x3'-0"	5 1/2x7/16x3'-0"	40	4	3 1/2	3 1/4	-	7 1/2	B	24x1/2x21 1/2	36	490
W27X129	A	10x1/2x2'-5"	4x1/2x2'-5"	32	3	3 1/2	2 1/16	-	5 7/8	B	24x1/2x21 1/2	36	400
W27X114	A	10x1/2x1'-10"	4x1/2x1'-10"	24	2	3 1/2	2 1/8	-	5 7/8	B	24x1/2x21 1/2	36	340
W27X102	A	10x3/8x1'-10"	4x3/8x1'-10"	24	2	3 1/2	2 1/16	-	5 7/8	B	24x7/16x21 1/2	36	310
W27X94	A	9 7/8x3/8x1'-10"	4x3/8x1'-10"	24	2	3 1/2	2 1/16	-	5 7/8	B	24x7/16x21 1/2	36	300
W27X84	A	9 7/8x3/8x1'-10"	4x3/8x1'-10"	24	2	3 1/2	2 1/16	-	5 7/8	A	24x3/8x14 3/4	24	230
W24X162	A	12 1/2x9/16x3'-7"	5x9/16x3'-7"	48	5	3 1/2	2 15/16	-	7 1/8	C	20 7/8x3/4x28 1/4	48	690
W24X146	A	12 1/2x1/2x3'-0"	5x1/2x3'-0"	40	4	3 1/2	2 7/8	-	7 1/8	B	20 7/8x5/8x21 1/2	36	510

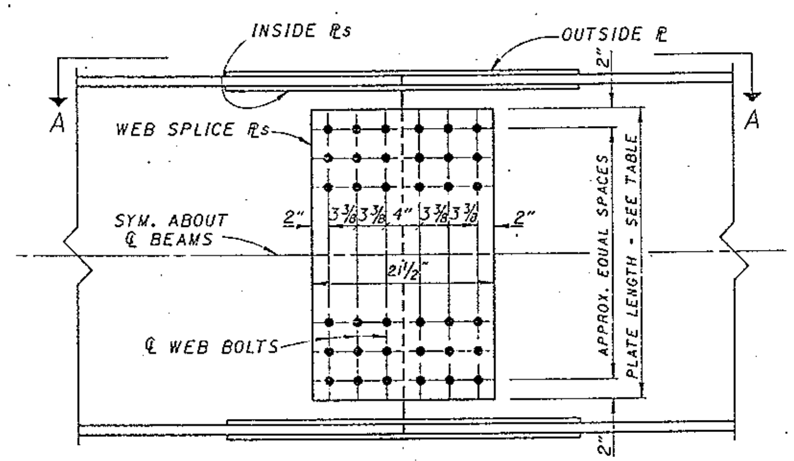
≠ TABULATED WEIGHTS ARE APPROXIMATE AND ARE FOR ESTIMATING PURPOSES ONLY. THEY INCLUDE AN ALLOWANCE FOR WEIGHT OF BOLTS AND WASHERS.



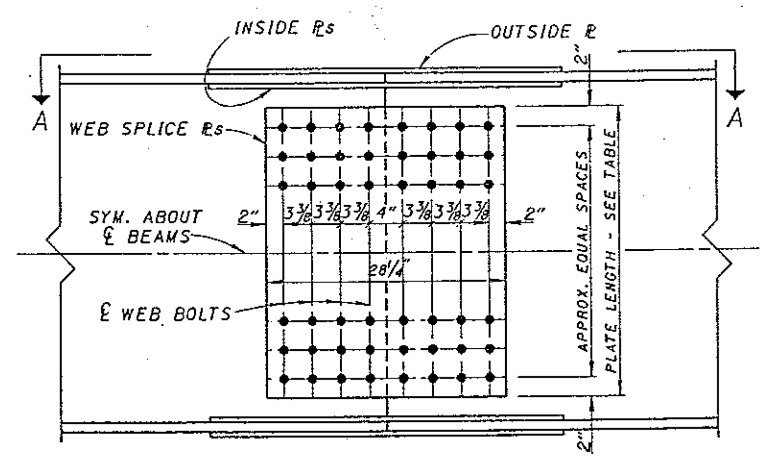
PARTIAL SECTION
(AT ℄ OF BEAM SPLICE)



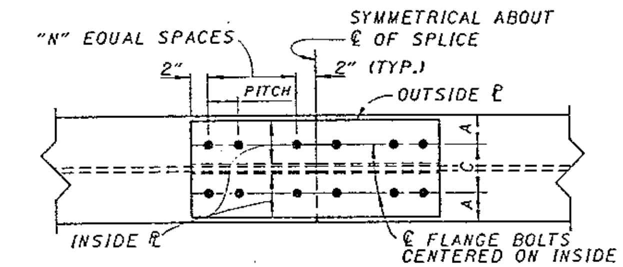
BEAM SPLICE DETAIL
WEB SPLICE - TYPE A



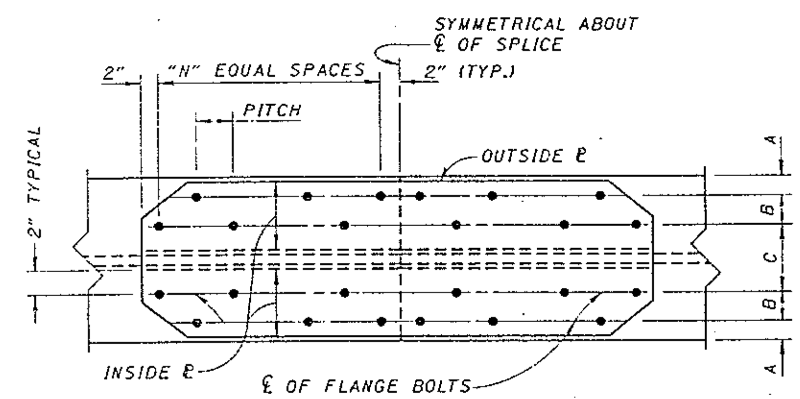
BEAM SPLICE DETAIL
WEB SPLICE - TYPE B



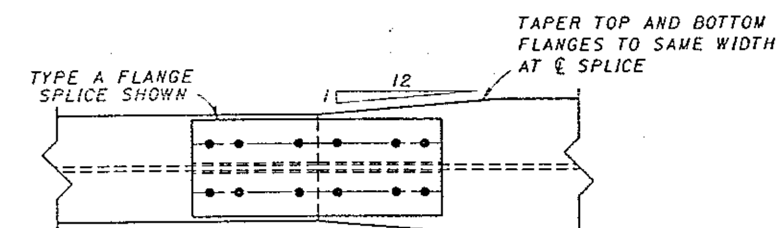
BEAM SPLICE DETAIL
WEB SPLICE - TYPE C



VIEW A-A
FLANGE SPLICE - TYPE A



VIEW A-A
FLANGE SPLICE - TYPE B



VIEW A-A
SPLICE DETAIL FOR BEAMS HAVING DIFFERENT FLANGE WIDTHS

NOTE: ALL SHAPES AND PLATES SHALL BE DESIGNATED (CVN), AND SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01 OF CMS.

NOTE: ALL FASTENERS ARE 1 1/8" DIAMETER HIGH STRENGTH BOLTS. ASTM A-325

DESIGN AGENCY
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

ENGINEER OF BRIDGES

12-19-94
DATE

REVIEWED

CHECKED SAM

DESIGNED GEA

DRAWN SAM

REVISIONS

BS-1-93

STANDARD
BOLTED BEAM SPLICE
FOR STEEL BEAM BRIDGES
(FOR 50 KSI STEEL)

3/3

OHIO
TURNPIKE

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

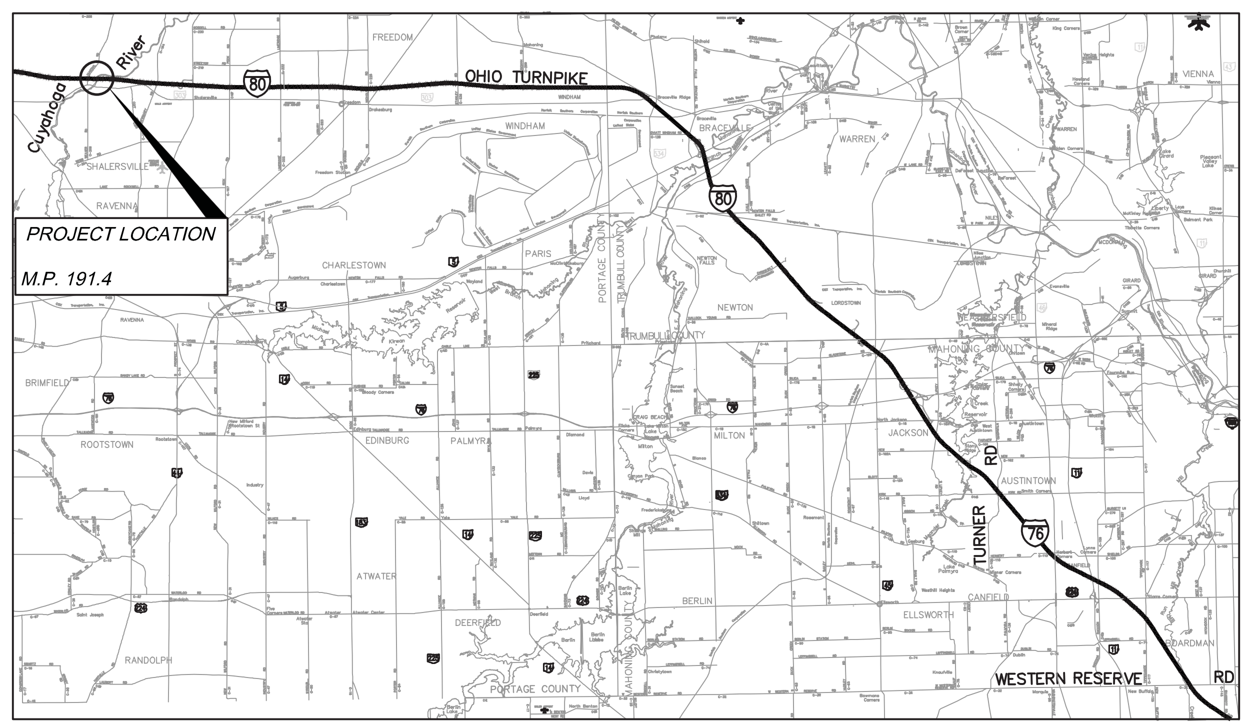
THE JAMES W. SHOCKNESSY OHIO TURNPIKE

PROJECT NO. 39-16-02 PART B
BRIDGE REPAIR AND REHABILITATION

OHIO TURNPIKE OVER CUYAHOGA RIVER M.P. 191.4
PORTAGE COUNTY, OHIO

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION STANDARD DRAWINGS

DJ-7	DECK JOINT DETAILS
TCB-1	TRAFFIC CONTROL BRIDGE AND BARRIER SIGN SUPPORT DETAILS
TCR-1	TEMPORARY TRAFFIC CONTROL GENERAL NOTES
TCR-2	TEMPORARY TRAFFIC CONTROL DETAILS, LEGEND, NOTES, AND STANDARD SINGLE LANE CLOSURE
TCR-2.1	TEMPORARY TRAFFIC CONTROL SINGLE LANE CLOSURE WITH PORTABLE CONCRETE BARRIER
TCR-9	TEMPORARY TRAFFIC CONTROL SHORT DURATION/SHORT TERM SHOULDER CLOSURE
TCR-15	TEMPORARY TRAFFIC CONTROL SIGNS FOR MAINTENANCE AND CONSTRUCTION



APPROVED FOR
THE OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION
BY

CHIEF ENGINEER

DATE

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS PROTECTIVE
SERVICE CALL: 1-800-925-0988

OHIO TURNPIKE DIVISION SUPERINTENDENT:
(440) 234-2081 X 5700

ENGINEER'S SEAL

STATE OF OHIO
CHARLES
A.
CVITKOVICH
E-50897
REGISTERED
PROFESSIONAL ENGINEER

DATE: 9/22/15

OHIO DEPARTMENT OF TRANSPORTATION STANDARD DRAWINGS

RB-1-55	ROCKERS AND BOLSTERS FOR STEEL BEAM AND GIRDER BRIDGES	07/19/13
MT-105.10	TEMPORARY SIGN SUPPORT	07/19/13
TC-52.10	SIGN BLANK DETAILS 1	10/18/13
TC-52.20	SIGN BLANK DETAILS 2	07/18/14

OHIO DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATIONS

SS 800	REVISIONS TO THE 2010 CONSTRUCTION & MATERIAL SPECIFICATIONS	07/19/13
SS 821	ARROW BOARD	04/20/12
SS 848	BRIDGE DECK REPAIR AND OVERLAY WITH CONCRETE USING HYDRODEMOLITION	10/21/11
SS 921	ARROW BOARD	04/20/12

39-16-02 - Title Sheet.dwg; 9/30/15 - 2:25pm

GENERAL SUMMARY

ITEM	TOTAL	UNIT	DESCRIPTION
			STRUCTURES
SP 202	LUMP	LUMP SUM	PORTIONS OF STRUCTURE REMOVED
SP 509	100	POUNDS	EPOXY COATED REINFORCING STEEL, GRADE 60 (**)
SP 516B	366	FOOT	SEALING OF CONSTRUCTION JOINTS
SP 516G	36	EACH	REPLACE EXPANSION BEARING DEVICE
SP 527	LUMP	LUMP SUM	FALSEWORK, TEMPORARY BRACING, AND PROTECTIVE STRUCTURES
SP 533D	183	FOOT	CONTINUOUS ELASTOMER SEAL IN A PORTLAND CEMENT CONCRETE JOINT

NOTES:

1. FOR GENERAL NOTES, SEE SHEET 3 OF 7.
2. SPECIFIC STRUCTURE REHABILITATION SCOPE OF WORK IS SHOWN ON THE GENERAL PLAN AND PROFILE SHEET.
3. (**) DESIGNATES A CONTINGENCY QUANTITY, TO BE USED AT THE DIRECTION OF THE ENGINEER.

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

DESIGN AGENCY

NO.	REVISIONS	BY	DATE
-	-	-	-
-	-	-	-
-	-	-	-

DESIGNED CAC | CHECKED CMM | DRAWN CAC | IN CHARGE DCA

GENERAL SUMMARY
OHIO TURNPIKE OVER CUYAHOGA RIVER
M.P. 191.4 PORTAGE COUNTY

PROJECT 39-16-02B
DATE: 9/30/15

1. DESIGN SPECIFICATIONS:
THIS PROJECT CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION FOR STATE HIGHWAY AND TRANSPORTATION OFFICIALS, AND THE ODOT BRIDGE DESIGN MANUAL, 2004 EDITION.

2. DESIGN DATA:

DESIGN LOADING	-	SUPERSTRUCTURE: HS20-44, AND THE ALTERNATE MILITARY LOADING
CONCRETE CLASS S	-	COMPRESSIVE STRENGTH 4,500 PSI (SUPERSTRUCTURE)
REINFORCING STEEL	-	ASTM A615 OR A996 - GRADE 60, MINIMUM YIELD STRENGTH 60,000 PSI

3. CONSTRUCTION SPECIFICATIONS:
THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS DATED JANUARY, 2010, AND THE SPECIAL PROVISIONS CONTAINED IN THE CONTRACT DOCUMENTS SHALL GOVERN THIS PROJECT.

4. SCOPE OF WORK:
SEE GENERAL PLAN AND PROFILE SHEET 4 OF 7.

5. PROTECTION OF TRAFFIC:
THE CONTRACTOR SHALL SUBMIT A PLAN TO PROTECT THE TRAVELING PUBLIC FROM ALL REMOVAL DEBRIS AND/OR CONSTRUCTION MATERIAL THAT MAY COME IN CONTACT OR POSE A DANGER TO THE TRAVELING PUBLIC. THE CONTRACTOR MAY PERFORM THE WORK DURING A WEEKEND, IN ACCORDANCE WITH SP 104. THE PLAN MUST BE SUBMITTED TO THE COMMISSION AND GOVERNING LOCAL AGENCIES PRIOR TO THE COMMENCEMENT OF ANY WORK.

6. UTILITY LINES:
THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO PROTECT THE EXISTING UTILITY LINES IN THE VICINITY OF THE STRUCTURES WHILE PERFORMING ANY WORK. THE CONTRACTOR AND UTILITY COMPANY(IES) ARE REQUESTED TO COOPERATE BY ARRANGING WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER BE HELD TO A MINIMUM. ALL EXPENSE INVOLVED IN RELOCATION (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY COMPANY(IES).

7. RIGHT OF WAY FENCE:
ANY RIGHT OF WAY FENCE REMOVED OR DISTURBED BY THE CONTRACTOR SHALL BE REINSTALLED TO ITS ORIGINAL LOCATION AND CONDITION AT NO ADDITIONAL COST. REINSTALLATION SHALL MEET OTIC STANDARD DRAWING F-1 RIGHT OF WAY FENCE.

8. EXISTING STRUCTURE VERIFICATION:
DETAILS, DIMENSIONS, AND ELEVATIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PRE-BID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS, DIMENSIONS, ELEVATIONS, AND SKEW ANGLES WHICH HAVE BEEN FIELD VERIFIED BY THE CONTRACTOR.

THE ORIGINAL CONSTRUCTION PLANS OF THE EXISTING STRUCTURE ARE AVAILABLE FOR REVIEW UPON REQUEST AT THE OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION OFFICE:
682 PROSPECT STREET
BEREA, OHIO 44017

ANY ADDITIONAL COST RESULTING FROM VARIATIONS FROM PLAN DIMENSIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO ADDITIONAL PAYMENT OVER THE UNIT PRICE BID WILL BE AWARDED BY THE OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION.

9. CONSTRUCTION JOINTS:
CONSTRUCTION JOINT SURFACES SHALL BE FREE FROM OIL, LAITANCE, FORM RELEASE AGENT, OR ANY OTHER MATERIAL THAT WOULD PREVENT BONDING TO THE CONCRETE SURFACE. ALL LAITANCE AND OTHER CONTAMINANTS SHALL BE REMOVED BY HIGH PRESSURE WATER BLASTING WITH A MINIMUM PRESSURE OF 5,000 P.S.I. HOWEVER, WATER BLASTING SHALL NOT BE REQUIRED WHERE EXISTING CONCRETE HAS BEEN ROUGHENED BY JACKHAMMERS DURING CONCRETE REMOVAL OPERATIONS. SURFACES SHALL BE THOROUGHLY DRENCHED WITH CLEAN WATER AND ALLOWED TO DRY TO A DAMP CONDITION FREE OF STANDING WATER BEFORE PLACING CONCRETE. PREPARATION OF CONSTRUCTION JOINT SURFACES SHALL NOT BE MEASURED FOR PAYMENT. THE COST THEREOF SHALL BE INCLUDED IN THE CONTRACT PRICE OF THE PERTINENT CONCRETE ITEMS.

10. CUTTING OR BENDING OF REINFORCING BARS:
ANY CUTTING OR BENDING OF BARS NECESSARY TO ACCOMMODATE ANY ESSENTIAL ELEMENT OF WORK RELATED TO THE PROJECT SHALL BE CONSIDERED INCIDENTAL AND NO ADDITIONAL COMPENSATION WILL BE GRANTED.

11. ITEM SP 509 - EPOXY COATED REINFORCING STEEL, GRADE 60:
THE CONTRACTOR SHALL REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE COMMISSION WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE. A CONTINGENCY QUANTITY OF 100 POUNDS HAS BEEN INCLUDED IN THE PLANS FOR THIS WORK.

THE CONTRACTOR SHALL REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE CHIEF ENGINEER TO BE MADE UNUSABLE DUE TO CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE COMMISSION.

DESIGN AGENCY

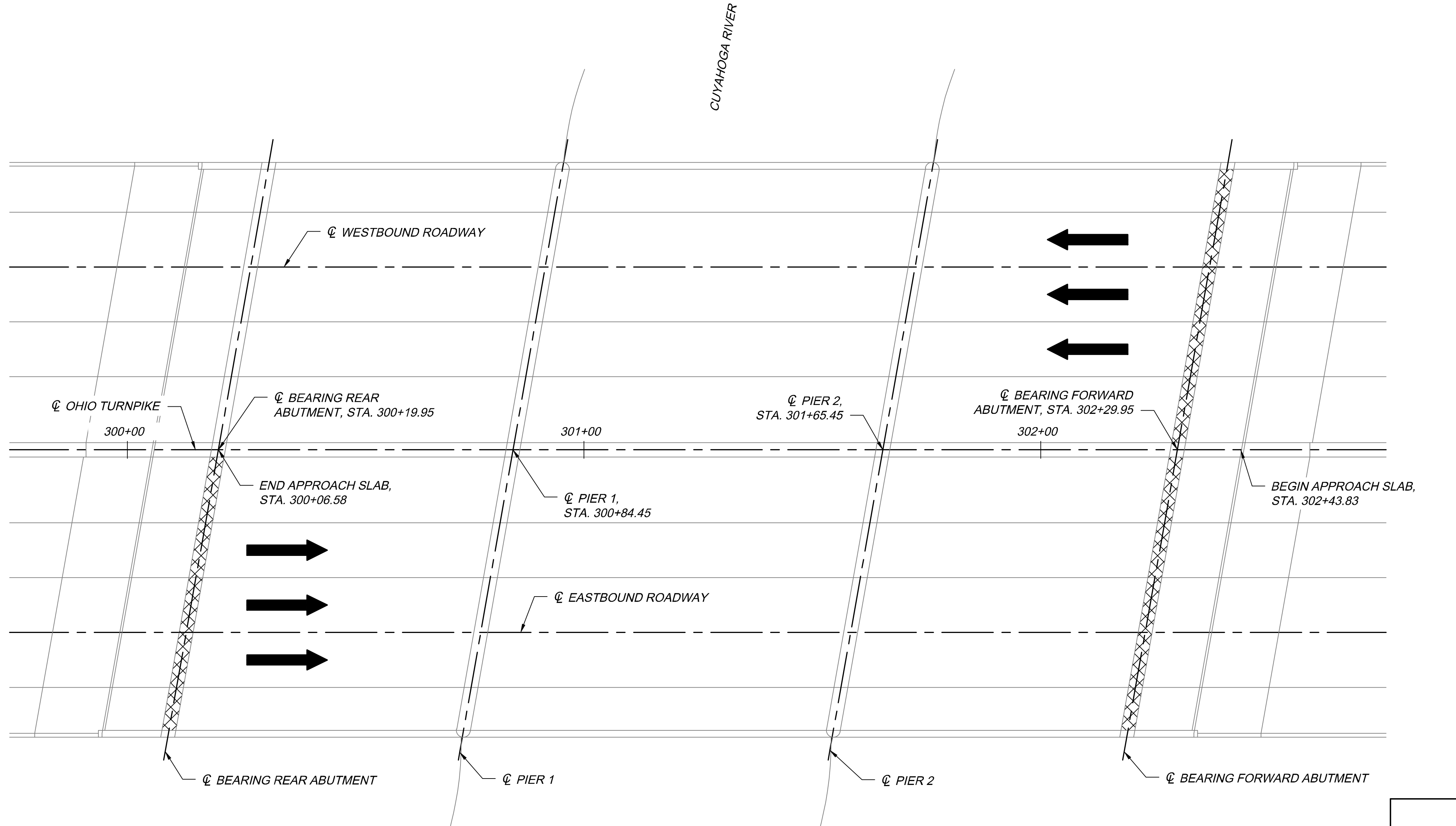
NO.	REVISIONS	BY	DATE
-	-	-	-
-	-	-	-
-	-	-	-

DESIGNED CAC CHECKED CMM
DRAWN CAC IN CHARGE DCA

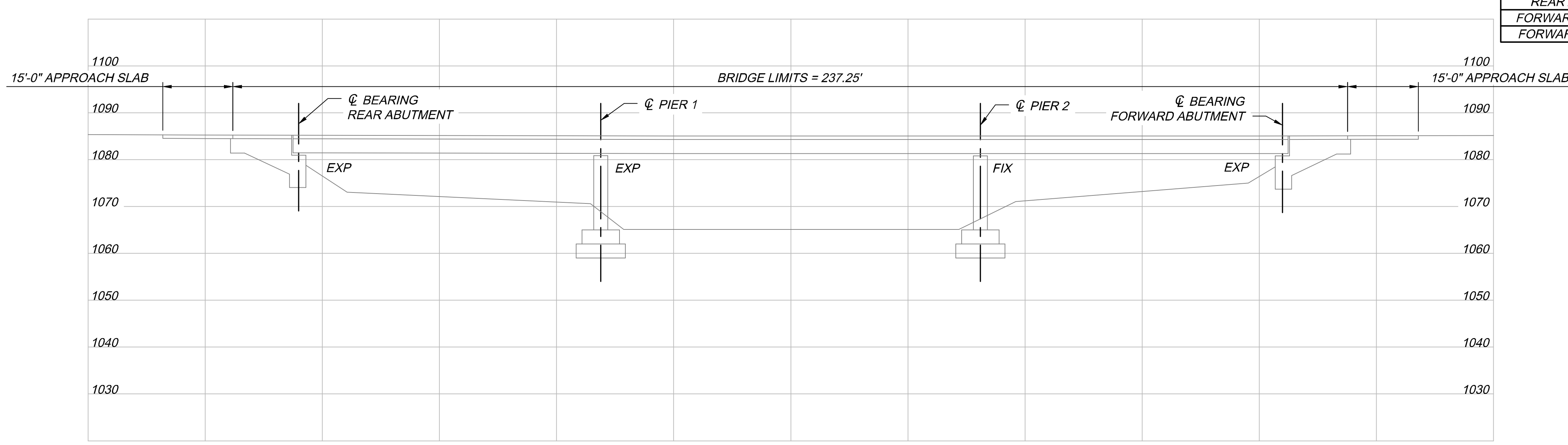
GENERAL NOTES
OHIO TURNPIKE OVER CUYAHOGA RIVER
M.P. 191.4 PORTAGE COUNTY

PROJECT 39-16-02B
DATE: 9/30/15

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION



GENERAL PLAN



PROFILE

EXISTING AND PROPOSED STRUCTURE

TYPE: CONTINUOUS SPAN STEEL BEAMS WITH REINFORCED CONCRETE DECK, SUBSTRUCTURE, CELLULAR ABUTMENTS, WALL TYPE PIERS

SPANS: 64'-6", 81'-0", 64'-6"

ROADWAY: 59'-10" TOE TO TOE OF PARAPET

ALIGNMENT: TANGENT

SKEW: 10° 00' 00" LEFT FORWARD

WEARING SURFACE: MONOLITHIC CONCRETE

LOADING: HS20-44 CASE I AND ALTERNATE MILITARY LOADING

BUILT: 1954

STRUCTURE FILE NUMBER: 6729495

DECK JOINT DIMENSIONS

LOCATION	EXISTING OPENING @ 50°F	CALCULATED THERMAL MOVEMENT
REAR ABUTMENT - EASTBOUND	1 3/8"	1.702"
FORWARD ABUTMENT - EASTBOUND	1 1/4"	0.755"
FORWARD ABUMENT - WESTBOUND	1 1/8"	0.755"

PROPOSED REHABILITATION SCOPE OF WORK:

1. INSTALL TEMPORARY BRACING AS REQUIRED PER SP 527 IN ORDER TO RAISE BEAMS AS REQUIRED TO REMOVE AND REPLACE ALL BEARINGS AT THE ABUTMENTS IN ACCORDANCE WITH SP 516G.
2. REMOVE AND REPLACE THE DECK JOINTS AS INDICATED IN ACCORDANCE WITH SP 533D.

LEGEND

REPLACE DECK JOINTS IN ACCORDANCE WITH SP 533D.

NOTES:

THE PLAN DETAILS SHOWN ARE FROM THE ORIGINAL CONSTRUCTION AND REHABILITATION PLANS, WHICH MAY NOT BE DRAWN TO SCALE AND ARE FOR INFORMATION ONLY.

DESIGN AGENCY

NO.	REVISIONS	BY	DATE
-	-	-	-
-	-	-	-
-	-	-	-

DESIGNED CAC | CHECKED CMM | DRAWN CAC | IN CHARGE DCA

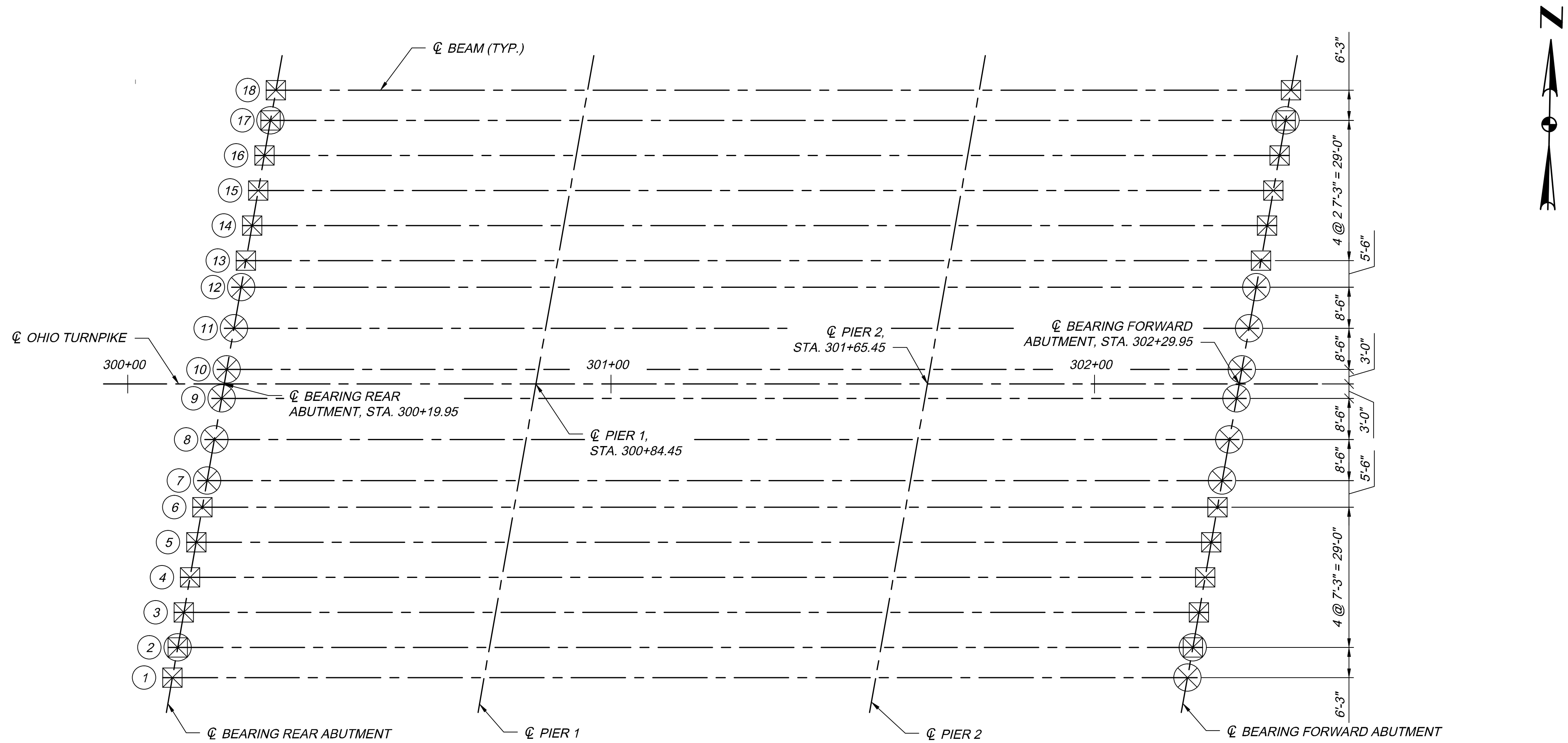
GENERAL PLAN AND PROFILE
OHIO TURNPIKE OVER CUYAHOGA RIVER
PORTAGE COUNTY
M.P. 191.4

PROJECT 39-16-02B
DATE: 9/30/15

4
7

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

39-16-02 - Superstructure Details.dwg; 9/30/15 - 2:25pm



FRAMING PLAN

LEGEND:

BEAM NUMBER

REPLACE BEARING DEVICE PER SP 516G. EXISTING TYPE IS ES-2 PER ORIGINAL CONSTRUCTION STANDARD DRAWING S-11, SEE PLAN SHEET 6 OF 7.

REPLACE BEARING DEVICE PER SP 516G. EXISTING TYPE IS R-100 PER ODOT STANDARD DRAWING RB-1-55.

REPLACE BEARING DEVICE PER SP 516G. EXISTING TYPE IS R-200 PER ODOT STANDARD DRAWING RB-1-55.

NOTES:

1. THE PLAN DETAILS SHOWN ARE FROM THE ORIGINAL CONSTRUCTION AND REHABILITATION PLANS, WHICH MAY NOT BE DRAWN TO SCALE AND ARE FOR INFORMATION ONLY.

39-16-02 - Superstructure Details.dwg; 9/30/15 - 2:25pm

DESIGN AGENCY

NO.	REVISIONS	BY	DATE
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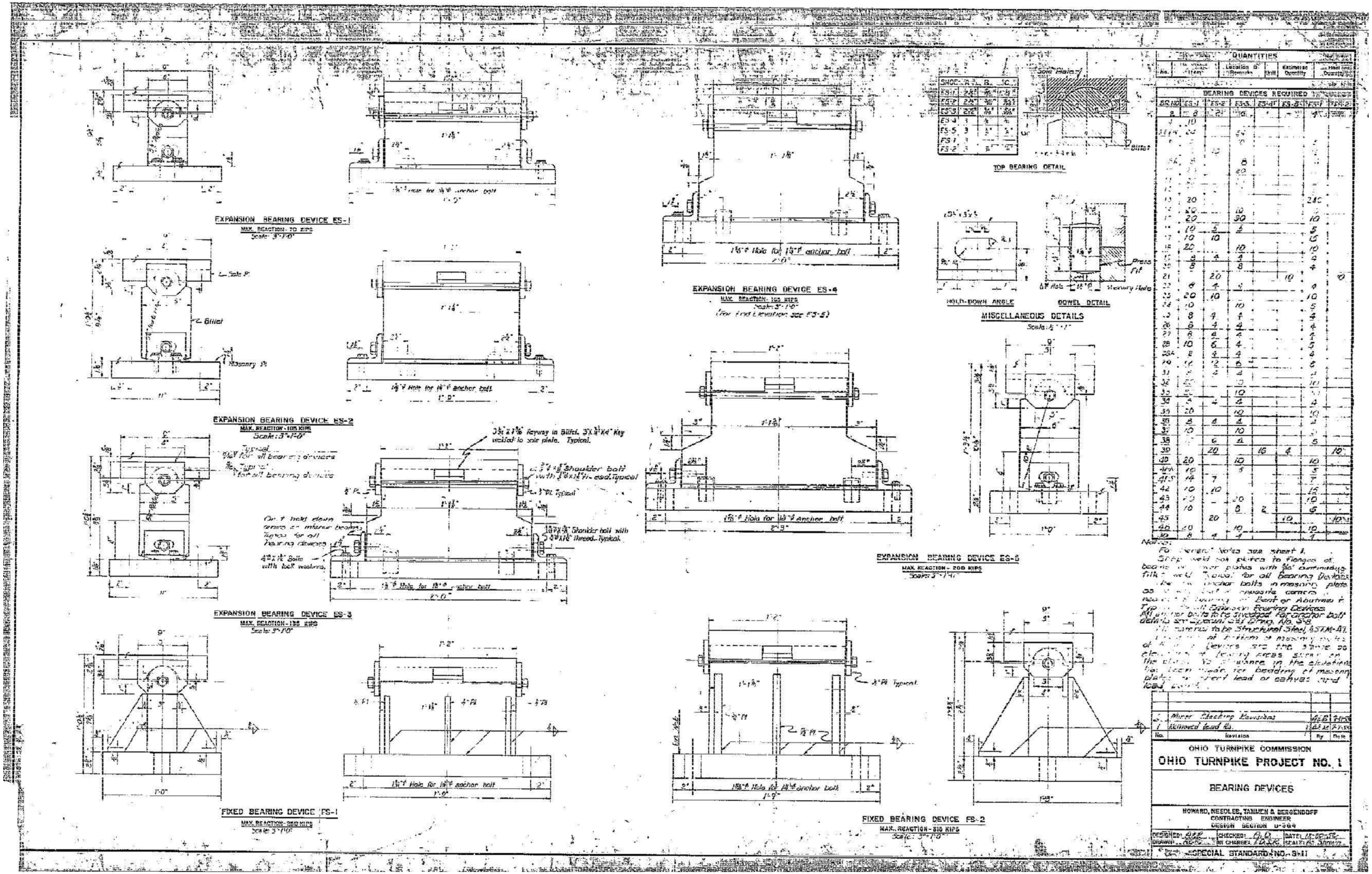
DESIGNED CAC | CHECKED CMM | DRAWN CAC | IN CHARGE DCA

FRAMING PLAN
OHIO TURNPIKE OVER CUYAHOGA RIVER
M.P. 191.4 PORTAGE COUNTY

PROJECT 39-16-02B
DATE: 9/30/15

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION



EXISTING BEARING DETAILS
OHIO TURNPIKE OVER CUYAHOGA RIVER

M.P. 191.4

PORTAGE COUNTY

DESIGNED	CHECKED	NO.	REVISIONS	BY	DATE
CAC	CMM	-	-	-	-
DRAWN	IN CHARGE				
CAC	DCA	-	-	-	-

DESIGN AGENCY

PROJECT 39-16-02B

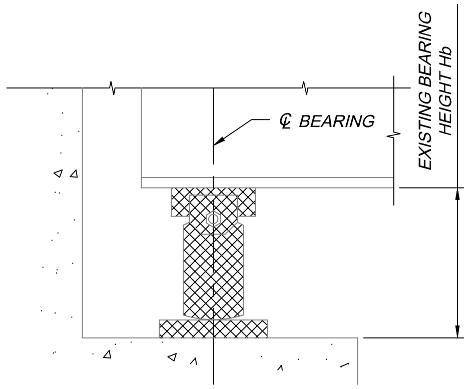
DATE: 9/30/15

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

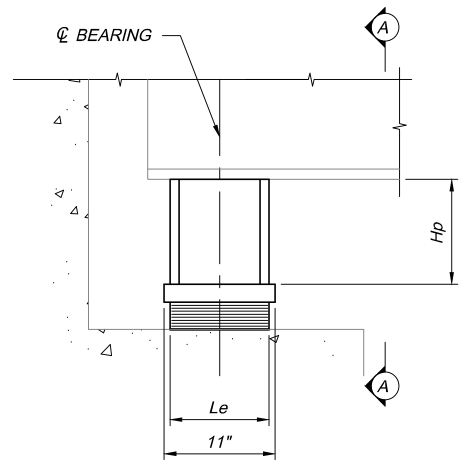
FOR REFERENCE ONLY

6
7

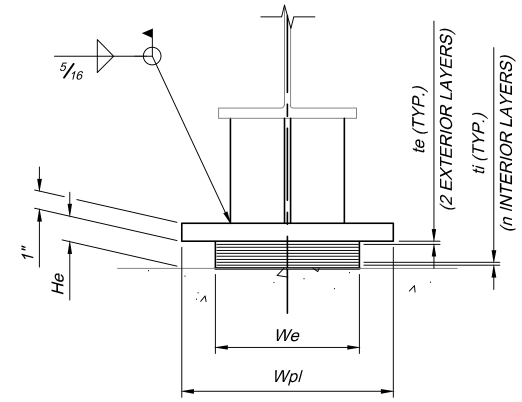
39-16-02 - Superstructure Details.dwg; 9/30/15 - 2:25pm



REMOVAL DETAIL



ELEVATION



SECTION A-A

BEARING DETAIL - ABUTMENT (EXPANSION)

(BEAMS WITH EXISTING TYPE ES-2 BEARINGS SHOWN, R-100 AND R-200 BEARINGS SIMILAR)

BEARING INFORMATION

LOCATION	BEAM NO.	BEARING						LOAD PLATE	HP 10x42		DESIGN LOADS (KIPS)				NO. REQUIRED
		Le	We	te	ti	n	He	Wpl	Hb	Hp	DL	LL max(w/o IMPACT)	LL min(w/o impact)	TOTAL LOAD (DL + LL)	
REAR ABUTMENT	1, 18	8 1/2"	10"	0.140"	0.200"	8	3.102"	1'-1 1/4"	1'-0 1/2"	8.40"	23.00	31.34	-3.60	54.34	2
REAR ABUTMENT	2, 17	8 1/2"	11"	0.138"	0.198"	8	3.078"	1'-5 1/2"	1'-4 1/2"	12.42"	30.00	50.67	-4.60	80.67	2
REAR ABUTMENT	3, 4, 5, 14, 15, 16	8 1/2"	11"	0.138"	0.198"	8	3.078"	1'-5 1/2"	1'-0 1/2"	8.42"	30.00	50.67	-4.60	80.67	6
REAR ABUTMENT	6, 13	8 1/2"	10"	0.140"	0.200"	8	3.102"	1'-1 1/4"	1'-0 1/2"	8.40"	25.80	46.72	-4.10	72.52	2
REAR ABUTMENT	7, 8, 11, 12	8 1/2"	11"	0.140"	0.200"	8	3.102"	1'-5 1/2"	10 3/4"	6.65"	33.90	56.72	-5.10	90.62	4
REAR ABUTMENT	9, 10	8 1/2"	10"	0.140"	0.200"	8	3.102"	1'-5 1/2"	10 3/4"	6.65"	30.40	41.01	-4.40	71.41	2
FORWARD ABUTMENT	1	6"	10	0.109"	0.156"	5	1.908"	1'-1 1/4"	10 3/4"	7.84"	23.00	31.34	-3.60	54.34	1
FORWARD ABUTMENT	2, 17	7"	1'-0"	0.133"	0.190"	4	1.929"	1'-5 1/2"	1'-4 1/2"	13.57"	30.00	50.67	-4.60	80.67	2
FORWARD ABUTMENT	3, 4, 5, 14, 15, 16	7"	1'-0"	0.133"	0.190"	4	1.929"	1'-5 1/2"	1'-0 1/2"	9.57"	30.00	50.67	-4.60	80.67	6
FORWARD ABUTMENT	6, 13	8"	10"	0.133"	0.191"	7	2.732"	1'-1 1/4"	1'-0 1/2"	8.77"	25.70	46.72	-5.10	72.42	2
FORWARD ABUTMENT	7, 8, 11, 12	7"	1'-1"	0.140"	0.201"	4	2.009"	1'-5 1/2"	10 3/4"	7.74"	33.90	56.72	-5.10	90.62	4
FORWARD ABUTMENT	9, 10	6"	1'-0"	0.125"	0.179"	4	1.847"	1'-5 1/2"	10 3/4"	7.90"	30.40	41.01	-4.40	71.41	2
FORWARD ABUTMENT	18	6"	10"	0.109"	0.156"	5	1.908"	1'-1 1/4"	1'-0 1/2"	9.59"	23.00	31.34	-3.60	54.34	1

NOTES

1. ELASTOMERIC BEARINGS: THE BEARINGS HAVE BEEN DESIGNED UNDER DIVISION I, SECTION 14.6.6, METHOD A, OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. ELASTOMERIC BEARINGS SHALL COMPLY WITH ODOT CMS ITEM 516 AND SECTION 18, BEARINGS, DIVISION II, CONSTRUCTION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER WITH A MINIMUM SHEAR MODULUS OF 100 PSI AT 73° F AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS CORRESPONDING TO DESIGN METHOD A. THE TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS. THE MANUFACTURER SHALL FURNISH CERTIFIED TEST DATA. THE MANUFACTURER SHALL SUPPLY A SAMPLE BEARING OF EACH DESIGN, AS SHOWN IN THE PLANS, FOR DESTRUCTIVE TESTING AND APPROVAL PURPOSES. SAMPLE BEARINGS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED INCIDENTAL TO THE ITEM.

2. WELDING SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

3. BEARING REPOSITIONING: IF THE BEARINGS ARE SET AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60°F ± 10°F, THE GIRDERS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F ± 10°F.

4. THE STEEL LOAD PLATE SHALL BE ASTM A709 GRADE 36 STEEL AND SHALL BE PAINTED IN ACCORDANCE WITH SP 514A. SEE SP 514A FOR PAYMENT INFORMATION.

5. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.

6. SUPERSTRUCTURE SUPPORT, AND/OR JACKING AND RESETTING OF BEARINGS AS DIRECTED BY THE ENGINEER SHALL BE PERFORMED IN ACCORDANCE WITH ITEM 516 AND SP 516G. SEE STRUCTURE NOTES AND SPECIAL PROVISIONS.

7. BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. SAMPLE BEARINGS SHALL NOT BE MEASURED FOR PAYMENT.

8. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INDICATE THE BEARING LOCATION ON THE BRIDGE AND A DIRECTION ARROW THAT POINTS UP STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.

9. CONTRACTOR IS TO VERIFY EXISTING BEARING HEIGHTS PRIOR TO FABRICATION OF NEW BEARINGS AND LOAD PLATES. SEE GENERAL NOTES ON SHEET 3 OF 7 FOR EXISTING STRUCTURE VERIFICATION NOTE. FURNISH STEEL SHIM PLATES, FULL WIDTH OF BEAM FLANGE AND FULL LENGTH OF LOAD PLATE, AS REQUIRED BETWEEN THE BEAM FLANGE AND THE LOAD PLATE, TO PROVIDE THE REQUIRED STRUCTURE DEPTH AND PROPERLY ALIGN THE DECK JOINTS. CONTRACTOR IS RESPONSIBLE FOR PROPER EXPANSION JOINT FIT-UP. THE CONTRACTOR SHALL FURNISH SHIM PLATES WITH EACH BEARING DEVICE EVEN THOUGH THE CONTRACTOR MEASURED THE EXISTING BEARING HEIGHTS AND THE ENGINEER CONCURRED WITH THE MEASUREMENTS. INCLUDE STEEL SHIMS WITH ITEM SP 516 FOR PAYMENT. INCLUDE SHIM PACK WITH BEARINGS DELIVERED TO THE SITE FOR FINAL FIELD ADJUSTMENTS.

LEGEND

- DENOTES PORTIONS OF BEARINGS TO BE REMOVED

39-16-02 - Bearings.dwg; 9/30/15 - 2:25pm

DESIGN AGENCY	
NO.	REVISIONS
-	-
DESIGNED CAC	CHECKED CMM
DRAWN CAC	IN CHARGE DCA

PROPOSED BEARING DETAILS

OHIO TURNPIKE OVER CUYAHOGA RIVER

PORTAGE COUNTY

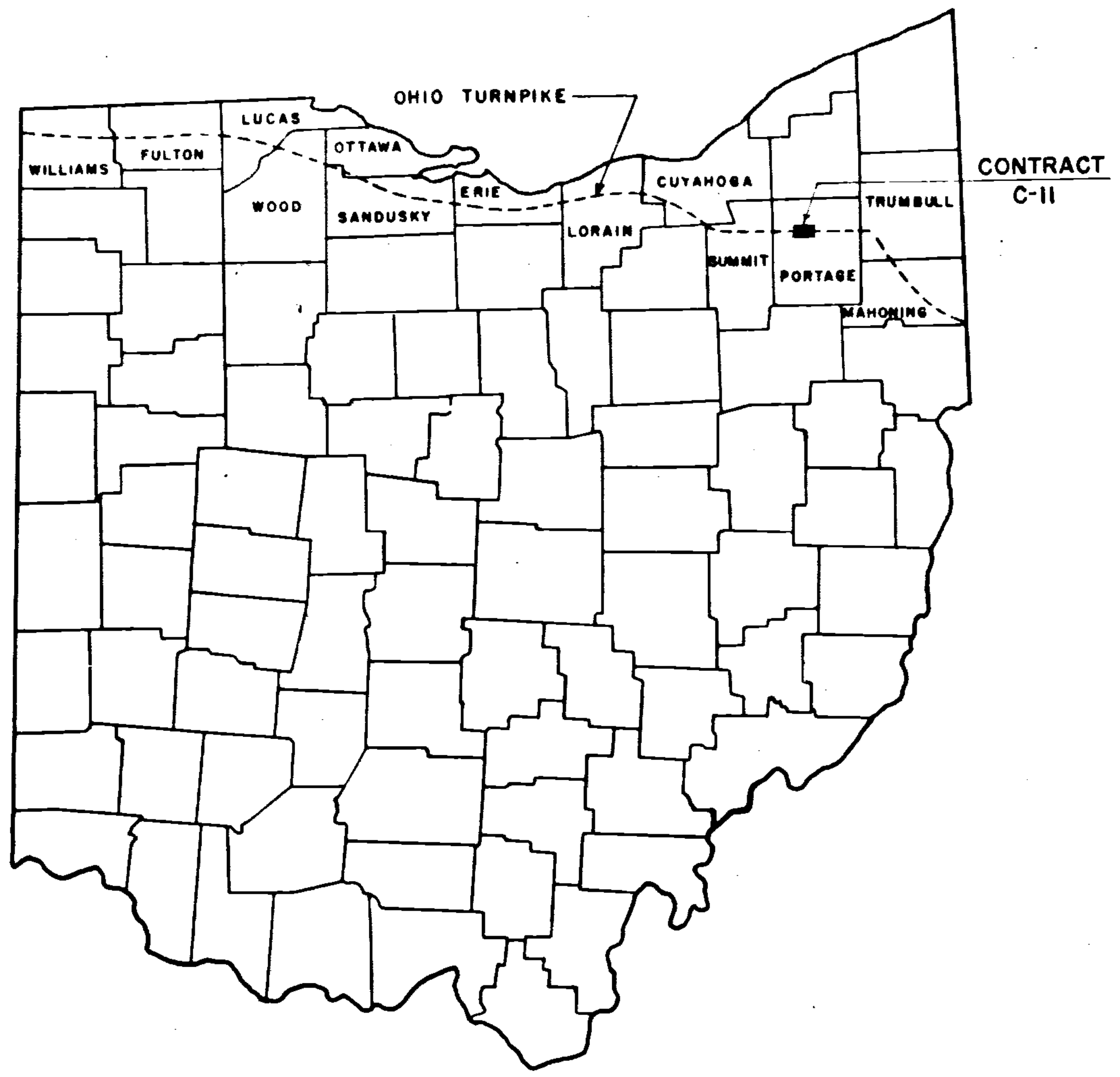
MP 191.4

PROJECT 39-16-02B

DATE: 9/30/15

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

CONTRACT NO. C-11	
COUNTY - PORTAGE	
DATE: MARCH	1953



OHIO TURNPIKE COMMISSION

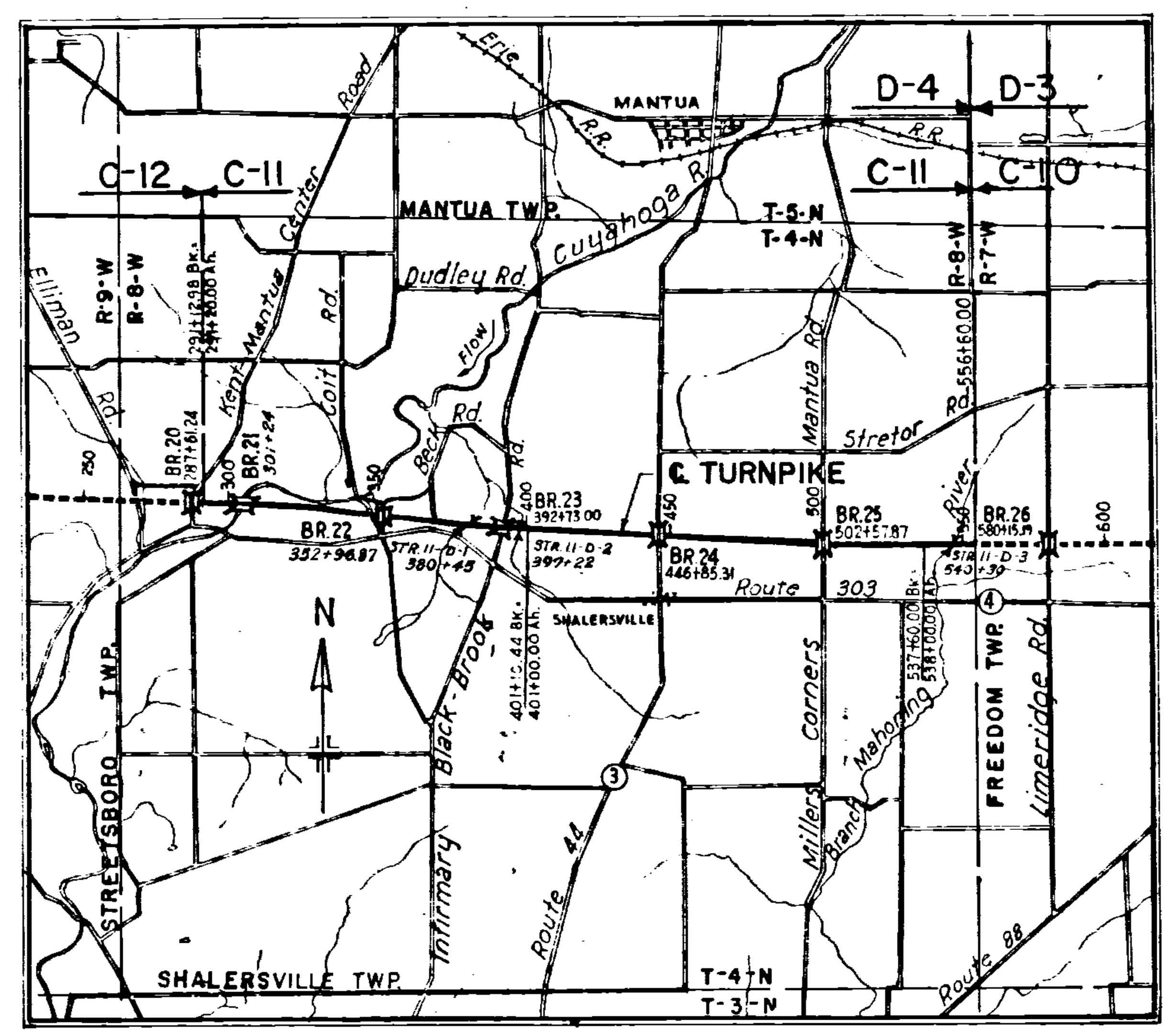
OHIO TURNPIKE PROJECT NO. 1

DESIGN SECTION D-4

CONTRACT NO. C-11

TURNPIKE CONSTRUCTION CONTRACT

STATION 291 + 20 TO STATION 556 + 60



LOCATION PLAN

SCALE IN MILES

APPROVAL RECOMMENDED
HOWARD, NEEDLES, TAMMEN, & BERGENDOFF
CONTRACTING ENGINEER
R. N. Bergendoff
March 4, 1953

STATE OF OHIO
R. N. BERGENDOFF
14967
REGISTERED PROFESSIONAL ENGINEER

APPROVED
J. E. GREINER CO.
CONSULTING ENGINEER
J. E. Jenkins Jr.
6-8-53

APPROVED
OHIO TURNPIKE COMMISSION
CHIEF ENGINEER
6-9-53

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SHEET NO.	SHEET TITLE
	COVER SHEET
1.	INDEX AND GENERAL NOTES
2.	SUMMARY SHEET - ROADWAY, DRAINAGE AND PAVING ITEMS
3.	SUMMARY SHEET - STRUCTURES
4.	TYPICAL CROSSROAD CROSS SECTIONS AND MISC. DETAILS
5.	PLAN AND PROFILE STA. 291 + 20 TO STA. 316 + 00
6.	PLAN AND PROFILE STA. 316 + 00 TO STA. 341 + 00
7.	PLAN AND PROFILE STA. 341 + 00 TO STA. 366 + 00
8.	PLAN AND PROFILE STA. 366 + 00 TO STA. 391 + 00
9.	PLAN AND PROFILE STA. 391 + 00 TO STA. 416 + 00
10.	PLAN AND PROFILE STA. 416 + 00 TO STA. 441 + 00
11.	PLAN AND PROFILE STA. 441 + 00 TO STA. 466 + 00
12.	PLAN AND PROFILE STA. 466 + 00 TO STA. 491 + 00
13.	PLAN AND PROFILE STA. 491 + 00 TO STA. 516 + 00
14.	PLAN AND PROFILE STA. 516 + 00 TO STA. 541 + 00
15.	PLAN AND PROFILE STA. 541 + 00 TO STA. 556 + 60
16.	PLAN AND PROFILE - COIT ROAD RELOCATION
17.	PLAN AND PROFILE - MILLERS CORNER - MANTUA ROAD
18.	STRUCTURE NO. 11-D-1 BOX CULVERT AT STA. 380 + 45
19.	STRUCTURE NO. 11-D-2 BOX CULVERT AT STA. 397 + 22
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22.	STRUCTURE NO. 21 - SUPERSTRUCTURE
23.	STRUCTURE NO. 21 - ABUTMENTS AND PIERS
24.	STRUCTURE NO. 22 - GENERAL PLAN AND ELEVATION
25.	STRUCTURE NO. 22 - SUPERSTRUCTURE
26.	STRUCTURE NO. 22 - ABUTMENTS AND BENTS
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33.	STRUCTURE NO. 25 - GENERAL PLAN AND ELEVATION
34.	STRUCTURE NO. 25 - SUPERSTRUCTURE
35.	STRUCTURE NO. 25 - ABUTMENTS
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GENERAL NOTES

GENERAL

SPECIFICATIONS:

THIS PROJECT SHALL BE CONSTRUCTED UNDER THE FOLLOWING SPECIFICATIONS

CONSTRUCTION AND MATERIALS - GENERAL SPECIFICATIONS, OHIO TURNPIKE PROJECT NO. 1 DATED DEC. 9, 1952.

DESIGN - STATE OF OHIO, DEPARTMENT OF HIGHWAYS, DESIGN SPECIFICATIONS FOR HIGHWAY STRUCTURES, DATED OCT. 1, 1951 AND REVISED JULY 15, 1952.

SPECIAL PROVISIONS FOR CONTRACT C-11

SUPPLEMENTAL SPECIFICATIONS - THOSE SUPPLEMENTAL SPECIFICATIONS (SS) LISTED BELOW SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS.

- SS T-31 DATED DEC. 9, 1952 BITUMINOUS SURFACE TREATMENT
- SS B-11 DATED DEC. 9, 1952 STABILIZED BASE COURSE WITH CALCIUM CHLORIDE
- SS B-20 DATED DEC. 9, 1952 WATERBOUND MACADAM BASE COURSE
- SS I-30 DATED JAN. 6, 1953 FARM TILE DRAINS
- SS I-9 DATED DEC. 9, 1952 STONE UNDERDRAIN
- SS T-10 DATED DEC. 9, 1952 TRAFFIC COMPACTED SURFACE COURSE
- SS T-35 DATED DEC. 9, 1952 ASPHALTIC CONCRETE SURFACE COURSE
- SS T-30 DATED DEC. 9, 1952 BITUMINOUS PRIME COAT AND TACK COAT
- SS A-2 DATED MAY 28, 1953 AMENDMENTS OF GENERAL SPECIFICATIONS
- SS B-35 DATED DECEMBER 9, 1952 ASPHALTIC CONCRETE BASE AND LEVELING COURSES
- SS I-18 DATED MAY 28, 1953 STABILIZED SHOULDERS AND TEMPORARY RUNAROUNDS
- SS I-29 DATED MAY 28, 1953 CONSTRUCTION CONTRACT INFORMATION SIGNS.

BORINGS:

BORINGS AT STRUCTURE SITES AND ALONG THE CENTERLINE OF TURNPIKE HAVE BEEN MADE UNDER A PREVIOUS CONTRACT. LOGS OF THE BORINGS TAKEN AT THE BRIDGE SITES ARE SHOWN ON THE STRUCTURE PLANS. A SOILS PROFILE HAS BEEN PREPARED FROM BORINGS MADE ON THE ℄ OF THE TURNPIKE. ALL BORING DATA IS GIVEN FOR INFORMATIONAL PURPOSES ONLY; ITS ACCURACY AND COMPLETENESS IS NOT GUARANTEED BY THE COMMISSION.

UTILITIES:

EXCEPT AS OTHERWISE SHOWN ON THE PLANS, ALL UTILITIES ENCOUNTERED IN THE CONSTRUCTION WHICH INTERFERE WITH PORTIONS OF THE FINISHED PROJECT WILL BE REMOVED OR RELOCATED BY OTHERS. THE CONTRACTOR SHALL COORDINATE HIS OPERATIONS WITH THE WORK OF THE UTILITY OWNERS OR OTHERS WHO MAY BE MAKING THE RELOCATIONS OR REMOVALS, AND SHALL NOTIFY THE OWNERS OF THE UTILITIES OF HIS PROPOSED SCHEDULE SUFFICIENTLY IN ADVANCE TO PERMIT THEM TO MAKE ANY NECESSARY ARRANGEMENTS.

STATUS OF PLANS:

THE CONTRACT DRAWINGS ATTACHED HERETO ARE SUBSTANTIALLY COMPLETE AS SHOWN. HOWEVER, SOME FINAL FIELD AND DETAIL WORK IS STILL UNDER WAY AND IT IS EXPECTED THAT MINOR ADDITIONS [redacted] WILL BE NECESSARY AS THIS WORK PROGRESSES. [redacted]

ROADWAY, DRAINAGE AND PAVEMENT

CROSS SECTIONS:

THE TEMPLATE SHOWN ON ROADWAY QUANTITY CROSS SECTIONS IS DRAWN TO TOP OF SUBGRADE. SURFACING QUANTITIES ARE COMPUTED SEPARATELY.

DRAINAGE:

LOCATION, GRADE AND CROSS-SECTIONS FOR CROSS CULVERTS, MEDIAN INLETS, UNDER DRAINS, SEWERS, INTERCEPTING, SIDE OR TOE DITCHES OR AGRICULTURAL DRAINS MAY BE MODIFIED AT THE DIRECTION OF THE ENGINEER TO BETTER FIT CONDITIONS ENCOUNTERED DURING THE CONSTRUCTION.

DRIVEWAYS:

THE NUMBER, LOCATION, ALIGNMENT, SURFACING AND GRADE OF DRIVEWAYS ABUTTING RELOCATED OR IMPROVED STATE, COUNTY, OR TOWNSHIP ROADS MAY BE MODIFIED BY THE ENGINEER DURING CONSTRUCTION AS CIRCUMSTANCES THEN ENCOUNTERED MAY REQUIRE.

RIGHT OF WAY FENCE:

RIGHT OF WAY FENCE SHALL BE CONSTRUCTED SIX (6") INCHES INSIDE THE BOUNDARIES OF THE TURNPIKE RIGHT OF WAY EXCEPT AS INDICATED ON STANDARD DRAWING NO. 13 AND AS SHOWN ON THE PLANS. TYPE 2 RIGHT OF WAY FENCE SHALL BE CONSTRUCTED UNLESS OTHERWISE NOTED ON THE PLANS.

MISCELLANEOUS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL MEDIAN INLETS ARE ON THE CENTERLINE OF TURNPIKE. WHERE SPECIAL SIDE, TOP OR TOE OF SLOPE DITCHES ARE SHOWN ON THE PLAN-PROFILE SHEETS, BUT ARE NOT COMPLETELY DESCRIBED THEREON, ADDITIONAL DITCH DETAILS NECESSARY ARE SHOWN ON THE DRAINAGE CROSS SECTIONS. ALL AREAS ADJACENT TO THE TURNPIKE WHICH ARE DISTURBED DUE TO THE PROPOSED CONSTRUCTION SHALL RECEIVE "SPECIAL SEEDING" IN ACCORDANCE WITH ITEM L-19 OF THE "GENERAL SPECIFICATIONS".

ELEVATIONS ARE REFERRED TO M.S.L., U.S.C. AND G.S. DATUM. NORTH INDICATED IS GRID NORTH OF NORTH ZONE OF OHIO STATE LAMBERT PROJECTION COORDINATE SYSTEM.

SIDE SLOPES FOR SPECIAL SIDE DITCHES SHALL BE 1 ON 2 UNLESS OTHERWISE NOTED ON THE PLANS.

STRUCTURES

STRUCTURAL STEEL:

STRUCTURAL STEEL NOT OTHERWISE SPECIFIED SHALL CONFORM TO THE REQUIREMENTS OF THE "STANDARD SPECIFICATIONS FOR STEEL FOR BRIDGES AND BUILDINGS", A.S.T.M. DESIGNATION A7.

RIVETING:

ALL RIVETS SHALL BE 7/8 Ø. EXCEPT AS OTHERWISE NOTED ON THE PLANS, ALL FIELD CONNECTIONS SHALL BE RIVETED.

WELDING:

EXCEPT AS OTHERWISE NOTED ON THE PLANS, WELDING SHALL BE LIMITED TO SHOP FABRICATION. ALL WELDING SHALL BE CLASS "A" CONFORMING TO REQUIREMENTS OF SECTION S.7.22 "GENERAL SPECIFICATIONS".

CAMBER:

BEAMS SHALL BE CAMBERED SO AS TO CONFORM TO THE PROFILE GRADE OF THE ROADWAY AFTER DEFLECTION UNDER TOTAL DEAD LOAD.

SETTING SHOES AND ANCHOR BOLTS:

ALL ANCHOR BOLTS EXCEPT WHERE THE ERECTED SUPERSTRUCTURE WILL PREVENT, SHALL BE DRILLED IN AND SET IN GROUT AFTER THE SUPERSTRUCTURE IS ERECTED. IN THE EVENT THAT THE ERECTED SUPERSTRUCTURE WILL PREVENT DRILLING IN CERTAIN ANCHOR BOLTS, THESE ANCHOR BOLTS SHALL BE DRILLED IN AND PLACED BEFORE, BUT GROUTED AFTER, ERECTION OF SUPERSTRUCTURE. SPECIAL CARE SHALL BE TAKEN IN PLACING REINFORCING STEEL IN THE BRIDGE SEATS SO THAT IT WILL NOT INTERFERE WITH THE DRILLING OF ANCHOR BOLT HOLES. FOR ALL DEGREES OF SKEW, ANCHOR BOLTS, MASONRY PLATES AND SHOES SHALL BE SET SQUARE WITH ℄ OF BEAM UNLESS OTHERWISE SHOWN ON THE PLANS.

DIMENSIONS:

SPAN LENGTHS GIVEN ON THE PLANS ARE TO BE MEASURED HORIZONTALLY AND ADJUSTED TO A TEMPERATURE OF 60°F. UNLESS OTHERWISE NOTED.

CONCRETE:

ALL CONCRETE SHALL BE PORTLAND CEMENT CONCRETE CLASS "C" UNLESS OTHERWISE SHOWN ON THE PLANS. ALL EXPOSED CORNERS AND EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1", UNLESS OTHERWISE SHOWN. BEARING PADS FOR BEAMS AT ABUTMENTS AND BENTS SHALL BE MONOLITHIC WITH BRIDGE SEATS

REINFORCING STEEL:

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF SECTION S-4 OF "GENERAL SPECIFICATIONS". DIMENSIONS SHOWN ON THE PLANS FOR DISTANCE FROM SURFACE OF CONCRETE TO REINFORCING BARS ARE CLEAR DIMENSIONS. BAR SPLICES SHALL BE 30 DIAMETERS UNLESS OTHERWISE SHOWN ON THE PLANS. REINFORCING BAR EMBEDMENTS SHALL BE 20 DIAMETERS MINIMUM. METAL BAR SUPPORTS AND SPACERS SHALL BE GALVANIZED.

FORMS:

FORMS FOR PARAPETS (INCLUDING CURVED SURFACES), SIDEWALKS AND SAFETY CURBS SHALL BE LINED FOR SMOOTH FINISH. STEEL FORMS MAY BE USED FOR CURVED SURFACES. FORMS FOR ALL OTHER EXPOSED SURFACES OF BENTS AND ABUTMENTS SHALL BE TONGUE AND GROOVED WITH STAGGERED END BUTT JOINTS, AND WITH THE GRAIN VERTICAL FOR ALL VERTICAL SURFACES.

CONSTRUCTION JOINTS:

CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS WILL NOT BE PERMITTED, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

POURING SEQUENCE:

THE FLOORS OF CONTINUOUS SPANS SHALL BE POURED IN SECTIONS AND IN THE SEQUENCE AND DIRECTION INDICATED BY CIRCLED NUMBERS AND ARROWS SHOWN ON THE PLANS.

PARAPETS:

PARAPETS SHALL NOT BE POURED UNTIL ALL ABUTMENT AND BRIDGE SLABS HAVE BEEN POURED.

ROADWAY FINISH:

ABUTMENT AND BRIDGE FLOORS FOR BRIDGES CARRYING TURNPIKE ROADWAYS ARE TO BE MACHINE FINISHED IN ACCORDANCE WITH SECTION T-71.21 OF "GENERAL SPECIFICATIONS".

WATERPROOFING:

ALL SURFACES IN CONTACT WITH ASPHALTIC CONCRETE ROADWAY SURFACING SHALL BE WATERPROOFED WITH TYPE "C" WATERPROOFING IN ACCORDANCE WITH SECTION S-3.07 OF "GENERAL SPECIFICATIONS".

PILING:

ALL CONCRETE PILING SHALL BE DRIVEN TO THE BEARING SPECIFIED BELOW, AS DETERMINED BY THE FORMULA IN SECTION S-18.05 OF "GENERAL SPECIFICATIONS". 12" PILING - 60 TONS AND 14" PILING - 75 TONS.

VIBRATION:

ALL CONCRETE SHALL BE MECHANICALLY VIBRATED IN CONFORMANCE WITH REQUIREMENTS OF SECTION S-1.15 OF "GENERAL SPECIFICATIONS".

No.	Revision	By	Date
2	As-Built Plans	BC	4-2-5?
1	Minor checking revisions	L.N	7-6-53

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE PROJECT NO. 1

INDEX AND GENERAL NOTES

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONTRACTING ENGINEER
DESIGN SECTION D-4

DESIGNED: D.J.W.	CHECKED: R.E.S.	DATE: 2-18-53
DRAWN: L.M.	IN CHARGE: D.J.W.	SCALE: No Scale

CONTRACT No. C-11 SHEET 1 OF 36

REFERENCE NUMBER	SPECIFICATION ITEM NUMBER	DESCRIPTION	UNIT	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	TOTALS	PROPOSAL QUANTITIES
		ROADWAY																				
1	E-1	Roadway Excavation	Cu.Yd.	217,896	75,270	433,481	6,511	11,128	87,852	194,493		255,060	163	558	38,811	103,970					1,425,193	1,370,000
2	E-1	Excavation of Unsuitable Material	Cu.Yd.			1,686	140,033	14,009					3,091								158,819	160,000
3	E-4	Borrow	Cu.Yd.	-200110	32328	-233704	622648	278896	-51783	-169279	202650	-200765	228559	127047	-36401	-103941					496,145	500,000
4	E-8	Removal & Disposal of Existing Pavement	Sq.Yd.							1,380											1,380	1,380
5	E-11	Water	M-Gal.	23	147	189	862	98	48	33	277	73	313	174	3						2,540	2,550
6	E-12	Pipe Removed (Under 16")	Lin.Ft.							50											50	50
7																						
8	I-15	Guard Rail, Type "A"	Lin.Ft.	1350		248	432	918		248		248									3,444	3450
9	I-15	Guard Rail, Type "B"	Lin.Ft.		1,792	1,152	4,788	2,332		608	3296	896	3425	1,936							20,225	20,250
10	I-15	Guard Rail, Type "C-1" or "C-2"	Lin.Ft.							400											400	400
11	I-15	Guard Rail, Type "D-1" or "D-2"	Lin.Ft.												736	192					928	950
12																						
13	I-23	Right of Way Fence, Type "2"	Lin.Ft.	4,877	5,140	6,100	5,140	5,780	5,160	5,000	5,020	5,100	5,100	3,120							55,537	56,000
14	I-25	Permanent Barricades	Lin.Ft.				60								30						60	60
15	I-26	Permanent Monuments & Station Markers	Ea.	1	3	2	2	1	1	3	1	4	1	1							20	20
16	I-28	Temporary Cattle Fence	Lin.Ft.																			2000
17																						
18	L-3	Placing Stockpiled Topsoil	Sq.Yd.	12,252	13,960	14,449	13,436	12,710	13,563	14,082	13,222	14,746	7,722	7,933							138,075	140,000
19	L-6	Roadside Cleanup	Lump																			Lump
20	L-9	Agricultural Hydrated Lime	Ton	5.51	6.28	6.50	6.05	5.72	6.10	6.34	5.95	6.64	3.47	3.57							62.13	65
21	L-9	Bonemeal or Raw Bone	Ton	1.10	1.26	1.30	1.21	1.14	1.22	1.27	1.19	1.33	0.69	0.71							12.42	15
22	L-9	Commercial Fertilizer (10-6-4)	Ton	1.10	1.26	1.30	1.21	1.14	1.22	1.27	1.19	1.33	0.69	0.71							12.42	15
23	L-9	Seeding and Protecting, Type "A"	Sq.Yd.	12,252	13,960	14,449	13,436	12,710	13,563	14,082	13,222	14,746	7,722	7,933							138,075	140,000
24	L-10	Sodding	Sq.Yd.	240	1056	734	4095	1520	3,416	924					390						12,375	13,000
25	L-19	Seeding & Mulching (Special Seeding)	Sq.Yd.	22,128	1,379	20,086	30,581	21,890	16,211	16,452	18,120	16,352	18,082	13,179	11,622	16,388					223,570	230,000
26																						
		DRAINAGE (Including Small Structure)																				
27																						
28	E-2	Excavation For Structures (Wet)	Cu.Yd.														1660	3200			4860	4900
29	E-2	Excavation For Structures (Dry)	Cu.Yd.	13	552	1083	6	812	615	140	9	7	477	732					900		5346	5300
30	E-3	Channel Excavation	Cu.Yd.		83	121		50	203								175	1,060	110		1802	1800
31																						
32	I-2	15" R.C.C.P. Under Pavement	Lin.Ft.	168	112	176	226	200		104	264	174	196	180							1,800	1,804
33	I-2	18" R.C.C.P. Under Pavement	Lin.Ft.	84				88	92												264	264
34																						
35	I-2	15" P.C.C.P. or V.C.P.	Lin.Ft.	830				350	1,000	300											2,480	2,480
36	I-2	18" P.C.C.P. or V.C.P.	Lin.Ft.							152											152	152
37																						
38	I-4	6" Underdrain (Box Culverts)	Lin.Ft.														630	540	370		1540	1540
39	I-4	6" Underdrain, Type "A" (H=1'-3")	Lin.Ft.						1,600												1,600	1,600
40	I-4	6" Underdrain, Type "B" (H=1'-3")	Lin.Ft.			2,700															2,700	2,700
41	I-4	6" Pipe Outlets for Underdrains	Lin.Ft.			72			130												202	200
42	I-5	Pipe Specials (15" R.C.C.P., 30° Bend)	Each				1														1	1
43	I-5	Pipe Specials (15" R.C.C.P., 36°30' Bend)	Each				1														1	1
44	I-8	Inlets, Type "A"	Each				1				1		1								3	3
45	I-8	Inlets, Type "A-1"	Each	2	1	2	1	3	2	2	2	2	2	2							21	21
46	I-8	Inlets, Type "A-1" Modified	Each	1	2				1												4	4
47	I-9	Stone Underdrain, No. 1	Lin.Ft.												80						80	80
48	I-14	Paved Ditches (4" Plain Concrete)	Sq.Yd.	266	339	1,111	1,596	4		9	2	1064	400								4,791	5,200
49	I-30	8" Farm Tile Drains E.Q.D.T.	Lin.Ft.				800														800	800
50	I-30	8" Pipe Outlet For Tile Drains	Lin.Ft.				20			10											30	20
51	S-1	Concrete for Structures Class C	Cu.Yd.	2.91	21.49	29.12	1.60	25.67	32.51	15.38	2.40	1.70	17.0	49.60			1635	1970	1,150		4973.74	4980
52	S-4	Reinforcing Steel	Lb.	158	894	1836	94	1,734	2,220	655	141	98	98	1344			192300	266500	116,500		585885	586000
53	S-27	15" R.C.C.P.	Lin.Ft.			50															50	
54	S-27	36" R.C.C.P.	Lin.Ft.		168																168	168
55	S-27	36" R.C.C.P. or 14 Ga. C.M.P.	Lin.Ft.							64											64	64
56	S-27	42" R.C.C.P. or 12 Ga. C.M.P.	Lin.Ft.		204																204	204
57	S-27	15" 12 Gauge C.M.P.	Lin.Ft.			46															46	
58	S-27	72" 8 Gauge C.M.P.	Lin.Ft.						164												164	164
59	S-27	84" 7 Gauge Sectional Plate Pipe	Lin.Ft.			306															306	306
60	S-27	84" 10 Gauge Sectional Plate Pipe	Lin.Ft.											208							208	208
61	S-27	84" R.C.C.P.	Lin.Ft.					188													188	188
62																						

REFERENCE NUMBER	SPECIFICATION ITEM NUMBER	DESCRIPTION	UNIT	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	TOTALS	PROPOSAL QUANTITIES
		PAVEMENT																				
63	B-11	Calcium Chloride	Ton													2.5					2.5	2.5
64	B-11	6" Stabilized Base Course	Sq.Yd.													3,273					3,273	3300
65	B-20	5" Waterbound Macadam Base Course	Sq.Yd.			3,206									4,456						7,662	4500
66	B-35	Asphaltic Concrete Base and/or Leveling Course	Cu.Yd.							106											106	115
67																						
68	I-22	Selected Sub-base	Cu.Yd.	5,900	7441	9,183	8940	6,224	6,585	7,998	6,528	9,519	6518	4,076							76,906	77,000
69																						
70	T-30	Bituminous Prime Coat	Gal.			1,603									447	1637					3687	4,100
72	T-31	Bituminous Surface Treatment - Aggregate	Cu.Yd.			32										27					59	30
73	T-31	Bituminous Surface Treatment - Bit. Material *	Gal.			1,122										980					2,102	1,000
74	T-33	3" Bituminous Macadam Surface Course	Sq.Yd.	8,982	10,000	10,000	10,000	9,529	10,000	10,000	10,000	10,000	10,000	6,240							104,781	105,000
75	T-35	Asphaltic Concrete Surface Course, Type "A"	Cu.Yd.							31					186						217	225
76																						
77	T-71	10" Reinforced Portland Cement Concrete Pavement	Sq.Yd.	11,946	13,333	13,333	13,333	12,705	13,333	13,333	13,333	13,333	13,333	8,320	66						139,701	140,000

* Bituminous Material shall be MC-4, MC-5, RT-9 or RT-10.

GRADING ANALYSIS

SHEET NO.	STATION TO STATION	NET EFFECTIVE EXCAVATION	ROADWAY EMBANKMENT x 1.09‡	BORROW	EXCAVATION OF UNSUITABLE MAT'L
5	291+20 to 316+00	217,215	17,105	-200,110	
6	316+00 to 341+00	74,578	106,906	32,328	
7	341+00 to 366+00	371,718	138,014	-233,704	1,686
8	366+00 to 391+00	5939	628,587	622,648	140,033
9	391+00 to 416+00	11,532	290,428	278,896	14,009
10	416+00 to 441+00	87,302	35,519	-51,783	
11	441+00 to 466+00	193,711	24,432	-169,279	
12	466+00 to 491+00	-734	201,916	202,650	
13	491+00 to 516+00	254,241	53,476	-200,765	
14	516+00 to 541+00	-155	228404	228,559	3,091
15	541+00 to 556+60	118	127,165	127,047	
16	Coit Road	38,811	2,410	-36,401	
17	Millers Corner - Mantua Rd	103,970	29	-103,941	
18	Box Culvert - 380+45	175 ⓞ	0		
19	Box Culvert 397+22	1,060 •	0		
20	Box Culvert 540+30	110 ++	0		
7	Beck Road Relocation	61,192			
	Totals	1,419,438	1,854,391	496,145	158,819

* Net effective excavation is determined as follows:

Roadway Excavation (E-1) + Channel Excavation (E-3) − $\frac{\text{Sq. Yds Stockpiled Topsoil}}{18}$ = Net effective excavation

‡ Embankment quantities include backfill for unsuitable excavation. Tests indicate that the proper balance factor = 1.09

† Borrow is determined as follows:
(Roadway Embankment x 1.09) − Net effective excavation = Borrow

• Included in Sheet 9 Net effective Excavation & Borrow Quantities

++ Included in Sheet 14 Net effective Excavation & Borrow Quantities.

ⓞ Included in Sheet 8 Net effective Excavation & Borrow Quantities.

The symbols shown below are used throughout the plans to designate various types of pipe culverts or sewers.

P.C.C.P.	Standard Strength Plain Cement Concrete Pipe	Sec. M-6.5 (a)
P.C.C.P. (E.S.)	Extra Strength Plain Cement Concrete Pipe	Sec. M-6.5 (b)
R.C.S.P.	Standard Reinforced Concrete Sewer Pipe	Sec. M-6.6 (a)
R.C.C.P.	Standard Strength Reinforced Culvert Pipe	Sec. M-6.6 (b)
R.C.C.P. (E.S.)	Extra Strength Reinforced Concrete Culvert Pipe	Sec. M-6.6 (c)
C.M.P.	Corrugated Metal Pipe	Sec. M-6.4
V.C.P.	Standard Strength Vitrified Clay Pipe	Sec. M-6.8 (a)
P.V.C.P. (E.S.)	Extra Strength Perforated Vitrified Clay Pipe	Sec. M-6.8 (d)
E.Q.D.T.	Extra Quality Drain Tile	Sec. M-6.7 (b)

No.	Revision	By	Date
7	As-Built Plans	BC	4-2-56
6	Added Ref. Numbers 53 and 57, Revised Ref. Nos. 25, 29, 51 and 52.	AFS	5-5-54
5	Revised Ref. Numbers 66 and 67	AFS	4-2-54
4	Revised Ref. Numbers 1, 13, 24, 48, 65, 70, 72, and 73. Added Beck Rd. Rel. to Grading Analysis	AGA	4-2-54
3	Revised Ref. Numbers 25, 48, and 50	R.E.W.	12-17-53
2	Revised Ref. Numbers; 1, 3, 24, 28, 29, 30, 38, 51 and 52. Deleted Reference No. 57 . Reference No. 59 changed from 72" to 84". Added No. 61.	V.F.D. R.E.S.	8-11-53
1.	Minor checking revisions throughout.	R.E.S. E.D.H.	7-53

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE PROJECT NO. 1

SUMMARY SHEET

ROADWAY, DRAINAGE AND PAVING ITEMS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONTRACTING ENGINEER
DESIGN SECTION D-4

DESIGNED: D.J.W. CHECKED: E.C.E. & R.E.S. DATE: 3-9-53
DRAWN: E.D.H. IN CHARGE: D.J.W. SCALE: No Scale

CONTRACT No. C-11 SHEET 2 OF 36

QUANTITIES					
No.	Item	Location & Remarks	Unit	Estimated Quantity	Final Quantity

REFERENCE NUMBER	SPECIFICATION ITEM NUMBER	DESCRIPTION	UNIT	STRUCTURE AND SHEET NUMBERS: STR. NO.21 SH.NO.21	STR.NO.22 SH.NO.24	STR.NO.23 SH.NO.27	STR.NO.24 SH.NO.30	STR.NO.25 SH.NO.33	TOTALS	PROPOSAL QUANTITIES
100	E-2	Excavation For Structures (Dry)	Cu.Yds.	332	250	476	338	363	1759	1800
101	E-2	Excavation For Structures (Wet)	Cu.Yds.	460					460	360
102	I-10	Riprap, Type A Grouted.	Sq.Yds.			6			6	10
103	I-15	Guard Rail, Type A	Lin. Ft.	960		466			1426	1430
104	*S-1	Concrete For Structures, Class C	Cu.Yds.	1358	394	728	534	541	3,555	3,560
105	S-3	Waterproofing, Type C	Sq.Yds.				703		703	610
106	•S-4	Reinforcing Steel	Lbs.	204,060	66,625	129,250	92,145	80,440	572,520	571,500
107	†S-7	Structural Steel	Lbs.	564,235	143,500	131,780	177,500	143,500	1,160,515	1,160,000
108	**S-9	Structural Expansion &/or Contraction Joints	Lbs.	15,950	5,644	15,480	6,576	5,644	49,294	49,300
109	S-14	Metal Handrail, Type A	Lin. Ft.	960		466			1426	1430
110	S-14	Metal Handrail, Type B	Lin. Ft.		442		453	475	1370	1360
111	S-16	First Test Pile	Each	1		1	1		3	3
112	S-17	Pile Test Load	Each	1		1	1		3	3
113	S-18	Furnishing Bearing Piles, Cast-in-Place Reinforced Concrete 12" Dia.	Lin. Ft.			3,372	2,612		5,984	5,925
114	••S-18	Driving Bearing Piles, Cast-in-Place Reinforced Concrete 12" Dia.	Lin. Ft.			3,372	2,612		5,984	5,925
115	S-18	Splices for Bearing Piles, Cast-in-Place Reinforced Concrete 12" Dia.	Each			48	30		78	80
116	S-18	Furnishing Bearing Piles, Cast-in-Place Reinforced Concrete 14" Dia.	Lin. Ft.	3,832					3,832	3,850
117	••S-18	Driving Bearing Piles, Cast-in-Place Reinforced Concrete 14" Dia.	Lin. Ft.	3,832					3,832	3,850
118	S-18	Splice for Bearing Piles, Cast-in-Place Reinforced Concrete 14" Dia.	Each	48					48	50
119	S-19	Soil Load Bearing Test	Each			1	1		2	2
120	T-35	Asphaltic Concrete Surface Course, Type C	Cu.Yds.				25		25	25
121	I-10	Dumped Rock Fill	Cu.Yds.	515					515	515
122	I-14	Paved Ditch (4" Grouted Stone)	Sq.Yds.		38			63	101	100
124	S-29	Drainage of Structures, Scuppers Type A	Each	4		4			8	8
126	S-29	Drainage of Structures, Scuppers Type B	Each		4		2	2	8	8
127	S-29	Drainage of Structures, 6" W.I. Pipe	Lin. Ft.	64	96	152	124	80	516	520
128	S-29	Drainage of Structures, 6" Pipe	Lin. Ft.			345	140		485	500
129	S-29	Drainage of Structures, 8" Pipe	Lin. Ft.			75			75	75
		MISCELLANOUS								
135	I-29	Construction Contract Information Sign	Each	—	—	—	—	—	6	8

† Includes Bearing Devices and Anchor Bolts
* Includes Premolded expansion joint filler, poured elastic joint filler, copper flashing, copper tubes and screens and Class "C" concrete for shoulder inlets.
** Includes plates, anchor bars, angles, bolts and stirrups.
• Includes reinforcing steel for shoulder inlets.
•• Includes concrete and reinforcing steel.

No.	Revision	By	Date
2	As-Built Plans	BC	4-2-56
1	Minor Checking Revisions	F.S.	3-31-53

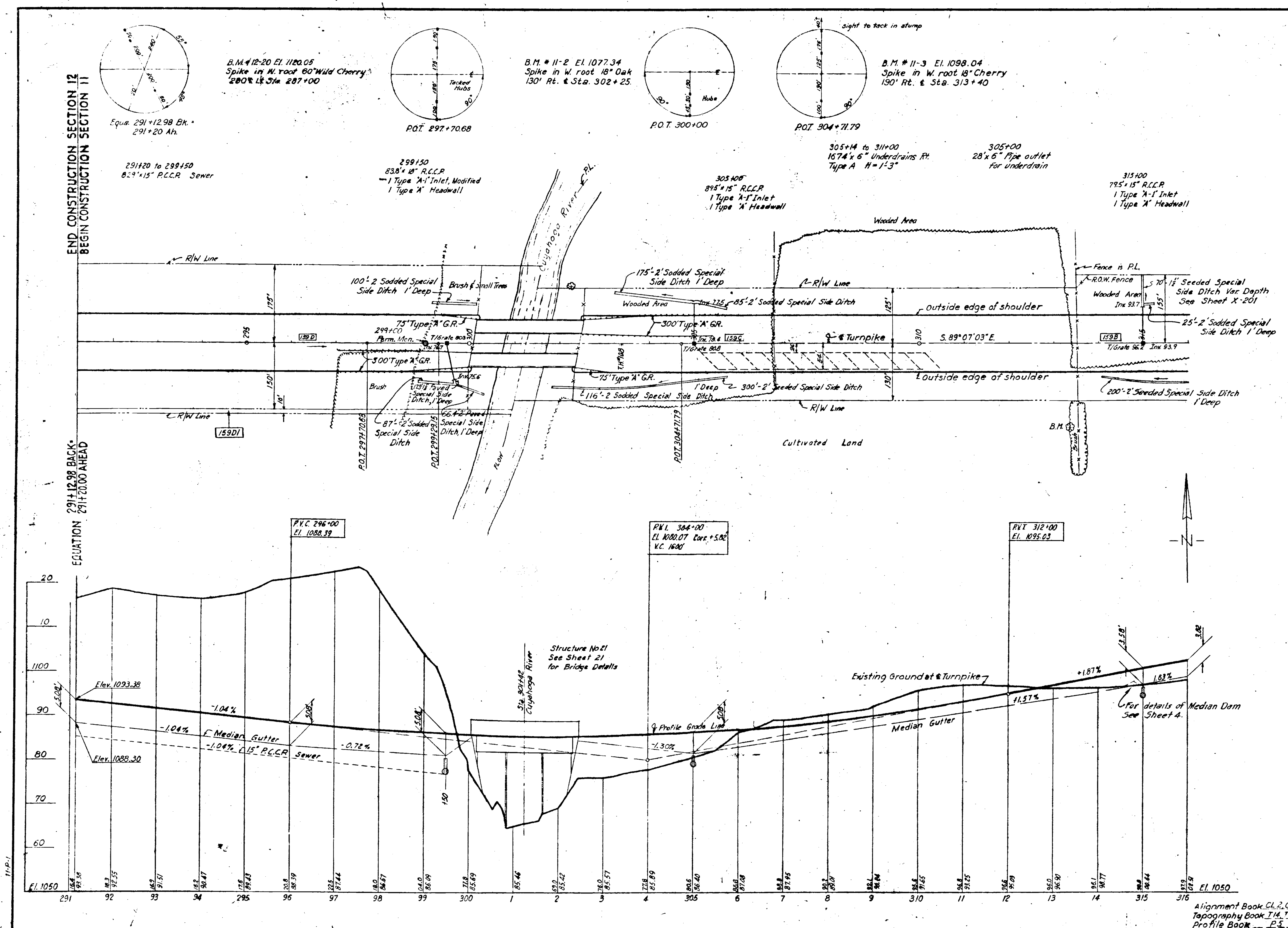
OHIO TURNPIKE COMMISSION

OHIO TURNPIKE PROJECT NO. 1

SUMMARY SHEET
STRUCTURES

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONTRACTING ENGINEER
DESIGN SECTION D-4

DESIGNED: | CHECKED: | DATE: 2-20-53
DRAWN: JCT | IN CHARGE: T.C.J.K. | SCALE:



QUANTITIES					
No.	Item	Location & Remarks	Unit	Estimated Quantity	Final Quantity
		ROADWAY			
E-1	Roadway Exc.		Cu.Yd.	217,896	225,259
E-1	Exc. of Unsuit. Mat.		Cu.Yd.		324
I-15	G.R. Type "A"		Lin.Ft.	1,350	1,350
I-23	R.O.W. Fence Type "2"		Lin.Ft.	4877	4,864
I-26	Perm. Mons.	299+00	Ea.	1	1
L-3	Placing Stockpiled Topsoil		Sq.Yd.	12,252	12,544
L-9	Seed. & Protect. Type "A"		Sq.Yd.	12,252	12,544
L-10	Sodding		Sq.Yd.	240	551
L-19	Seed. & Mulch.		Sq.Yd.	22,128	31,991
		DRAINAGE			
I-4	6" Pipe Outlet for Underdrains		Lin.Ft.		28
E-2	Excavation for Structures (Dry)		Cu.Yd.	13	10.6
I-2	15" R.C.C.P. Under Pav't.	305+00 315+00	Lin.Ft.	168	169
I-2	15" RCCP or VCP	291+20 to 299+50	Lin.Ft.	830	829
I-2	18" R.C.C.P. Under Pav't.	299+50	Lin.Ft.	84	83.8
I-8	Inlets, Type "A-1"	305+00, 315+00	Ea.	2	2
I-8	Inlets, Type "A-1" Modified	299+50	Ea.	1	1
I-14	Paved Ditches (4" Plain Concrete)		Sq.Yd.	266	56.7
S-1	Concrete for Structures		Cu.Yd.	2.91	2.91
S-4	Rein. Steel		Lb.	158	158
I-4	6" Underdrains Type A (H=1'-3")	305+14 to 311+00 E.B.	Lin.Ft.		1674
		PAVEMENT			
I-22	Selected Sub-base		Cu.Yd.	5900	5390
T-33	3" Bit. Macadam Surface Course		Sq.Yd.	8,952	8744
T-71	10" Reinforced P.C.C. Pav't.		Sq.Yd.	11,946	11,946
	The following quantities are total for Construction Sections C-11 & C-12				
E-4	Borrow		Cu.Yd.		754,592
E-11	Water		M.Gal.		9,380
L-9	Agricultural Hyd. Lime		Ton		15
L-9	Commercial Fertilizer	10-20-10	Ton		24.37
L-19	Agricultural Hyd. Lime		Ton	(E.W.O.)	56.15

No.	Revision	By	Date
2	As-Built Plans	BC	4-256
1	Minor checking revisions	R.E.S.	7-53

OHIO TURNPIKE COMMISSION

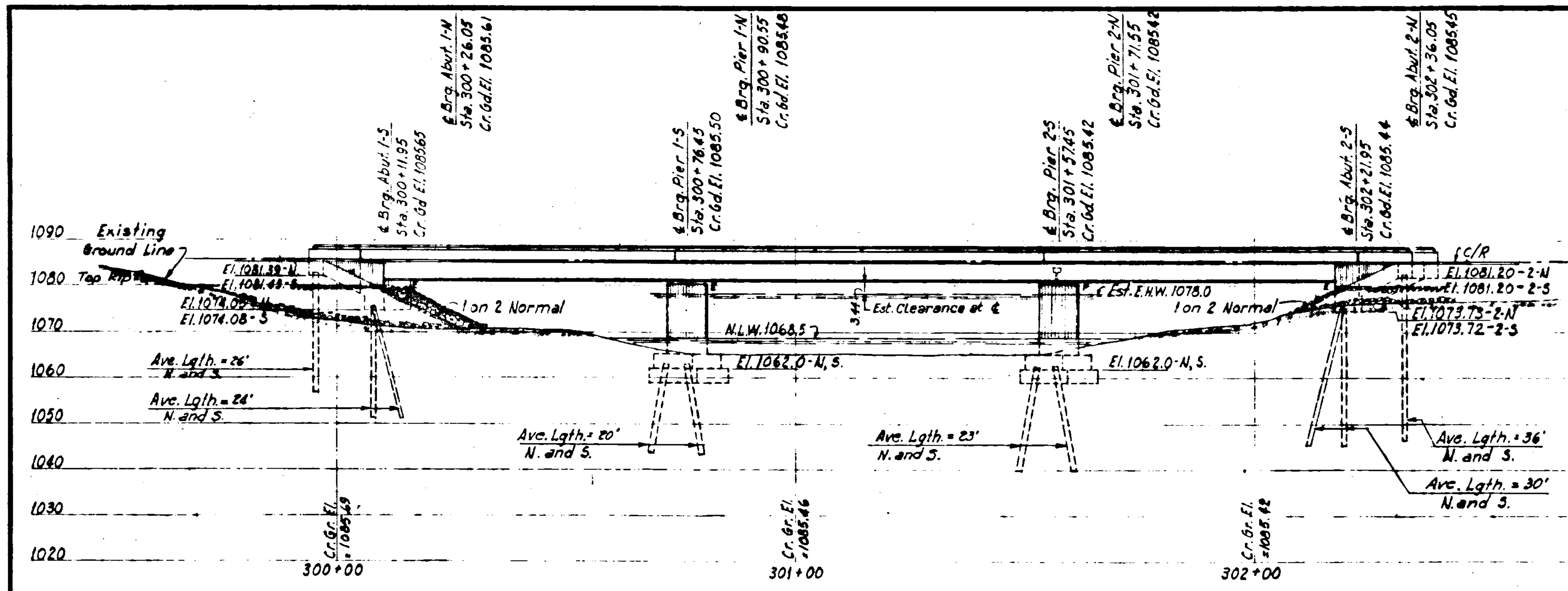
OHIO TURNPIKE PROJECT NO. 1

PLAN AND PROFILE
PORTAGE COUNTY
STA. 291+20 TO STA. 316+00

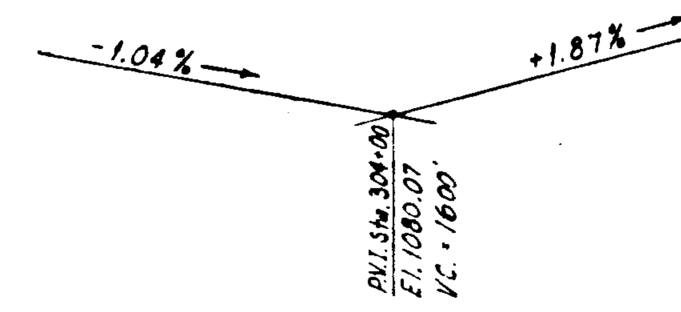
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONTRACTING ENGINEER
DESIGN SECTION D-4

DESIGNED: A.F.S. | CHECKED: H.C.M. | DATE: 10-21-52
DRAWN: V.E.D. G.M.N. Jr. | IN CHARGE: D.J.W. | SCALE: 1" = 100' Hor. 1" = 10' Vert.

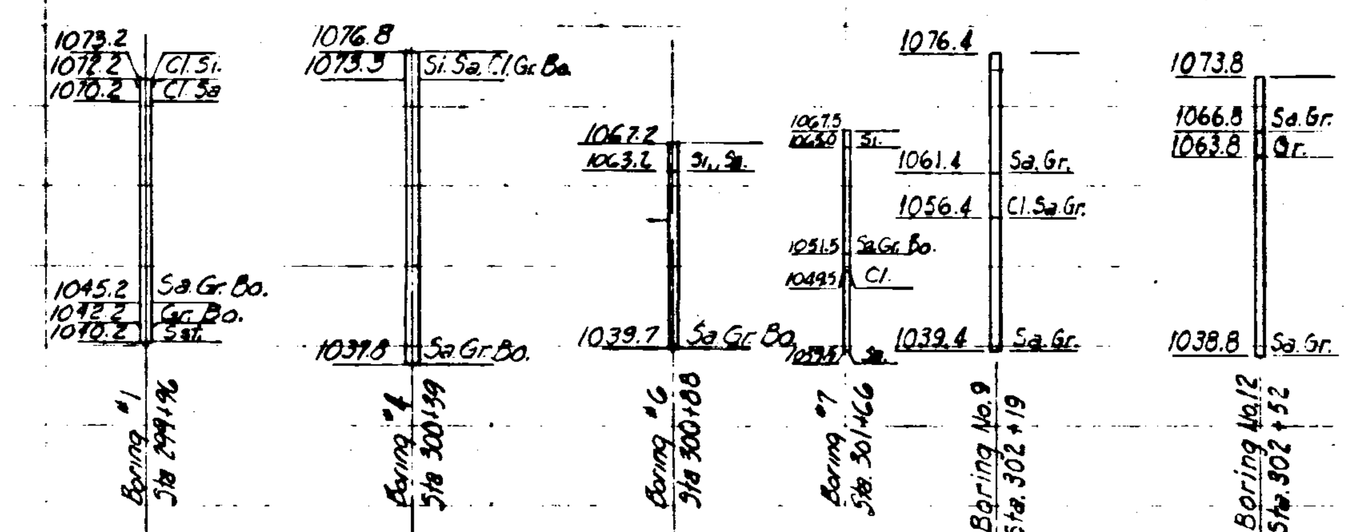
CONTRACT NO. C-11 SHEET 5 OF 36



ELEVATION



GRADE SKETCH



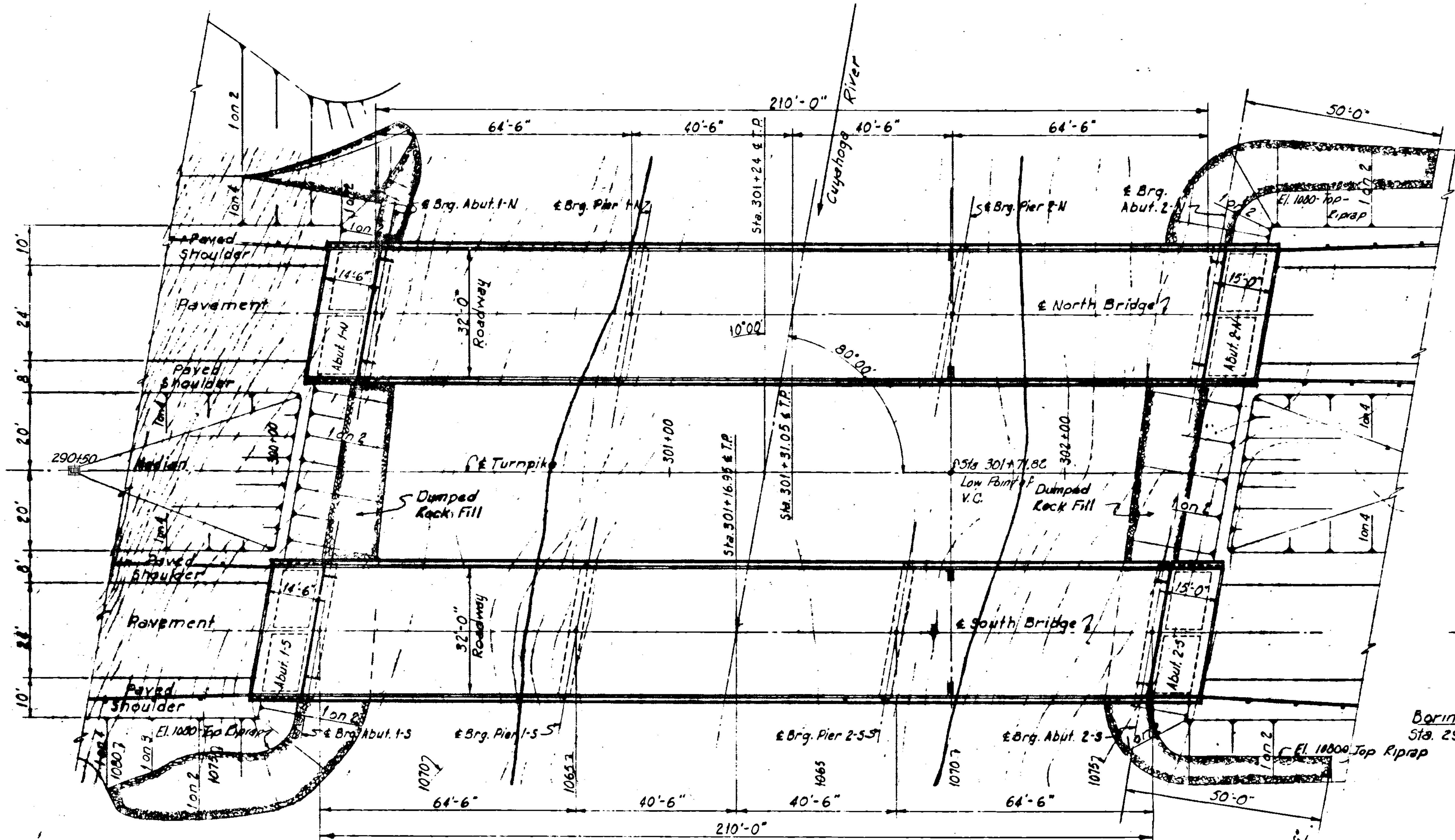
Abbreviations

Sa. = Sand · Si. = Silt
Cl. = Clay · Bo. = Boulders
Gr. = Gravel · Sst. = Sandstone

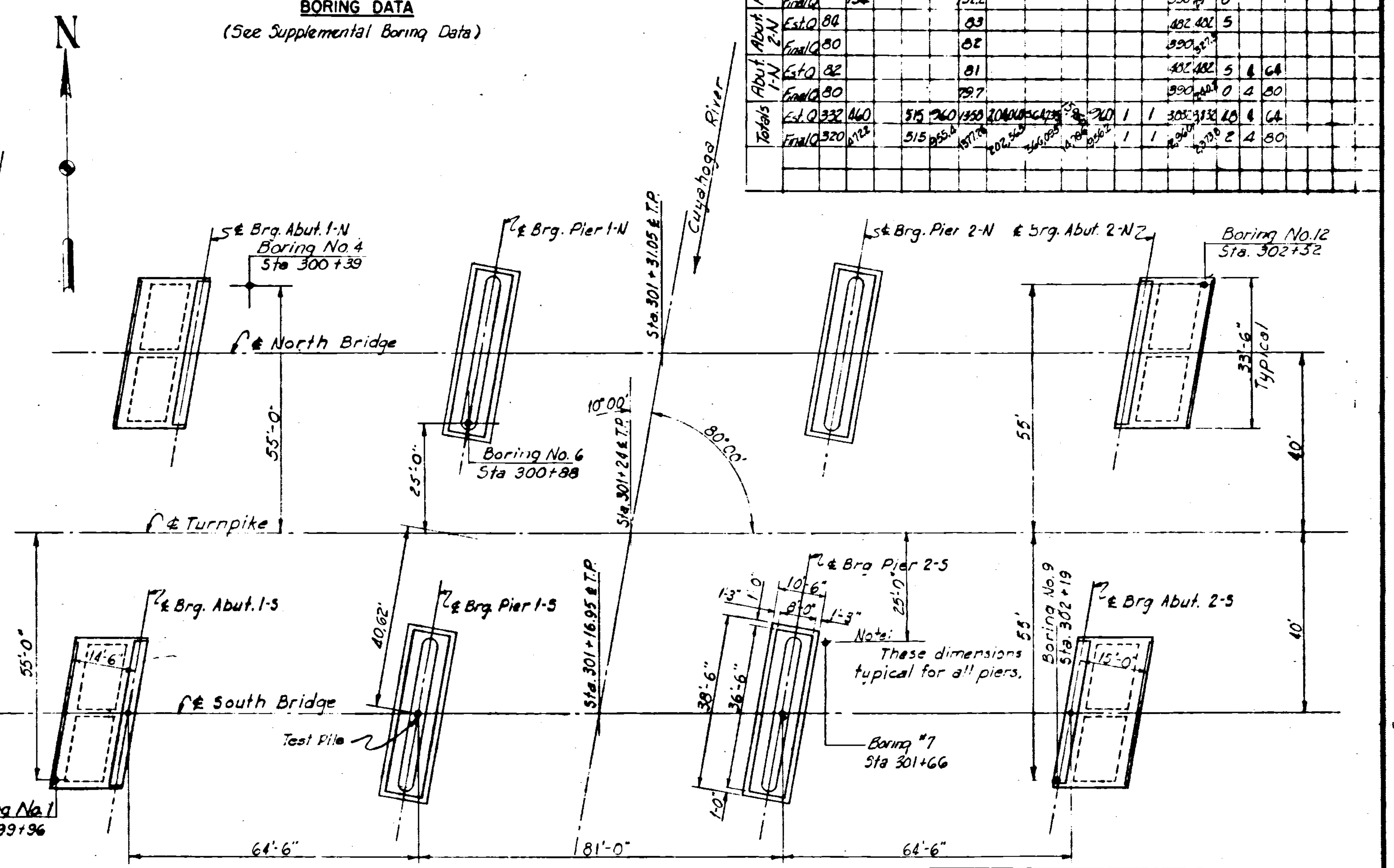
BORING DATA

(See Supplemental Boring Data)

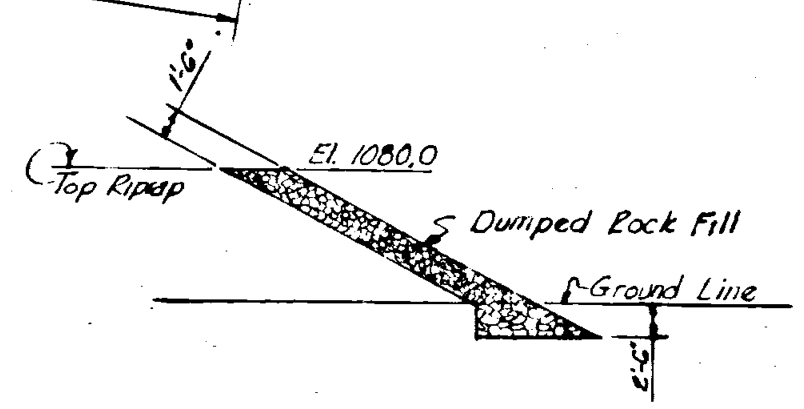
Item No.	Item	Unit		E-2	E-2		I-10	I-15	S-1	S-4	S-7	S-9	S-14	S-16	S-17	S-18	S-18	S-18	S-19	S-29
	Item			Exc. for Structures (Dry)	Exc. for Structures (Wet)		Dumped Rock Fill	Guard Rail, Type A	Conc. for Structures, Cl. C	Reinforcing Steel	Structural Steel	Struct. Exp. ℄ for Contr. Joints	Metal Handrail Type A	First Test Pile	Pile Test Load	Fur. Brg. Piles Cast-in-Pl. Rein. Conc. 14" Dia.	Driv. Brg. Piles Cast-in-Place Rein. Conc. 14" Dia.	Spl. for Brg. Piles Cast-in-Place Rein. Conc. 14" Dia.	Drain. of Struct. Scuppers Type A Mod.	Drainage of Struct. C.I. Pipe
	Unit			Cu.Yds.	Cu.Yds.		Cu.Yds.	Lin.Ft.	Cu.Yds.	Lbs.	Lbs.	Lbs.	Lin.Ft.	Each	Each	Lin.Ft.	Lin.Ft.	Each	Each	Lin.Ft.
Superstr.		Est.Q						960	482		56425	[illegible]	960							
		Final Q							525.3											
Pier 2-S		Est.Q			115				134							476	476	7		
		Final Q			107.9				132							330	408.2	0		
Pier 1-S		Est.Q			115				134					1	1	476	476	7		
		Final Q			101.9				132.3					1	1	350	369.0	0		
Abut. 2-S		Est.Q		84					83							482	482	5		
		Final Q		80					81.9							390	379.5	0		
Abut. 1-S		Est.Q		82					81							482	482	5		
		Final Q		80					79.7							390	357.5	0		
Pier 2-N		Est.Q			115				134							476	476	7		
		Final Q			128.4				132							350	330.5	2		
Pier 1-N		Est.Q			115				134							476	476	7		
		Final Q			134				132.2							350	397.6	0		
Abut. 2-N		Est.Q		84					83							482	482	5		
		Final Q		80					82							390	327.5			
Abut. 1-N		Est.Q		82					81							482	482	5	4	64
		Final Q		80					79.7							390	340.1	0	4	80
Totals		Est.Q		332	460		515	960	1350	204000	56425	[illegible]	960	1	1	3832	3832	48	4	64
		Final Q		320	272.2		515	955.4	1377.26	202,565	366,095	14.78	956.2	1	1	2,960	2973.0	2	4	80



PLAN



FOOTING PLAN



SECTION THROUGH RIPRAP

REFERENCES

For General Notes see Sheet 1.
For additional details refer to the following Std. and special Std. drawings:

Std. Drwg. No.	Title
5	Handrail Details
15	Drainage Details
17	Guard Rail Details
S-1	Abutments - Roadway = 32'-0"
S-5	Bridge Floor - Roadway = 32'-0" and 2-14'-0" plus 2'-0" Median.
S-8	Bents

C.F. = 2000

No.	Revision	By	Date
2	As-Built Plans	H.R.L.	4-2-56
1	Minor Checking Revisions	F.S.	3-31-53

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE PROJECT NO. 1

STRUCTURE NO. 21
CUYAHOGA RIVER
GENERAL PLAN AND ELEVATION

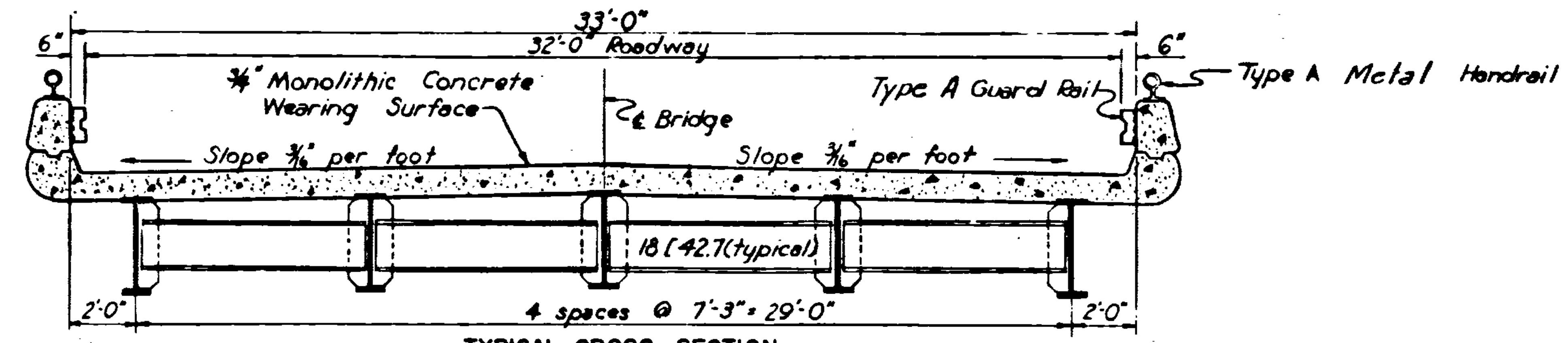
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONTRACTING ENGINEER
DESIGN SECTION D-4

DESIGNED: J.P.S.-E.I. · CHECKED: H.D.M. · DATE: 2-6-53
DRAWN: G.D. · IN CHARGE: J.O.S.K. · SCALE: 1" = 20'

CONTRACT NO. C-11 · SHEET 21 OF 36

4N4A

No.	Item	Location & Remarks	Unit	Estimated Quantity	Final Quantity
QUANTITIES					

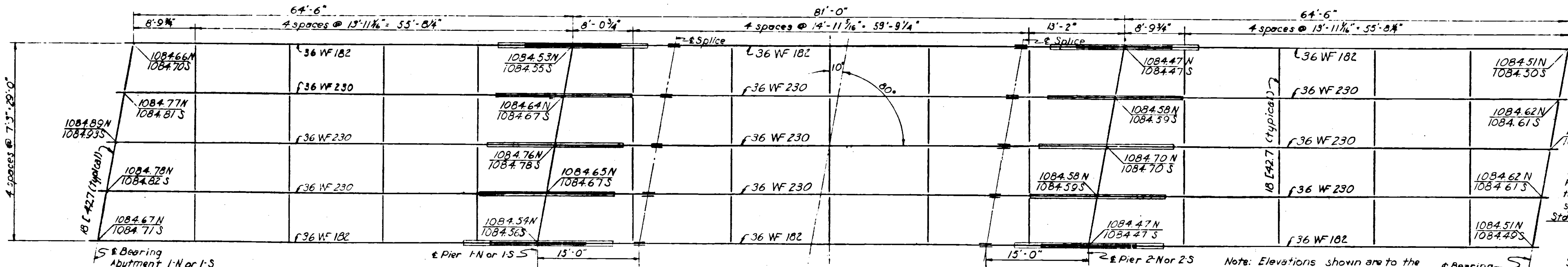


TYPICAL CROSS SECTION
Scale: ¼" = 1'-0"

PLAN
Scale: ⅛" = 1'-0"

Note: Elevations shown are to the top of finished concrete.

Note: Scuppers are same as Type A shown on std. Drawing No. 15 except that downspout is increased in length from 1'-0" to 3'-6".



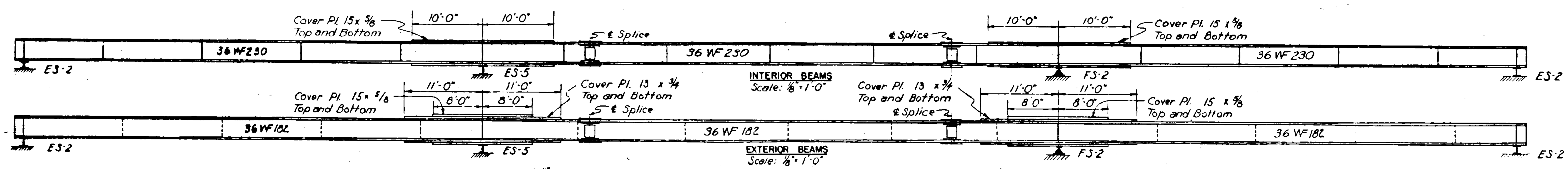
FRAMING PLAN
Scale ⅛" = 1'-0"

Note: Elevations shown are to the top of beam flanges.

REFERENCES

For General Notes see Sheet 1.
For additional details refer to the following standard and special standard drawings:

Std. Drwg. No.	Title
5	Handrail Details
15	Drainage Details
17	Guard Rail Details
S-5	Bridge Floor-Roadway 32'-0" and 2-14'-0" plus 1'11" Median
S-6	Bridge Floor-Roadway 28'-0" and 24'-0"
S-9, S-10	Beam Splices
S-11	Bearing Devices
S-12	Floor Expansion Devices and Median

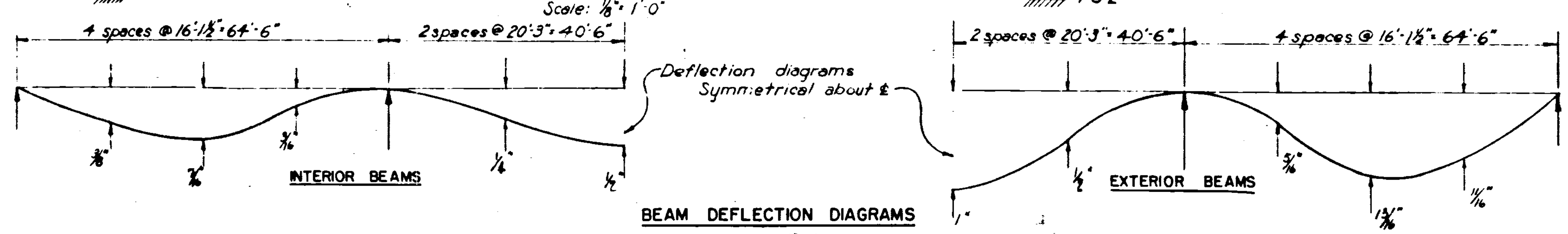


INTERIOR BEAMS
Scale: ⅛" = 1'-0"

EXTERIOR BEAMS
Scale: ⅛" = 1'-0"

The deflections shown consist of:

	Int. Beams	Ext. Beams
(a) D.L. of structural steel	17%	10%
(b) D.L. of reinforced concrete	83%	90%



BEAM DEFLECTION DIAGRAMS
Scale: Horiz. 1/16" = 1'-0" Vert. 1" = 1"

No.	Revision	By	Date
2	As-Built Plans	H.R.L.	4-2-54
1	Minor Checking Revisions	F.S.	7-31-53

OHIO TURNPIKE COMMISSION
OHIO TURNPIKE PROJECT NO. 1

STRUCTURE NO. 21
CUYAHOGA RIVER
SUPERSTRUCTURE

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONTRACTING ENGINEER
DESIGN SECTION D-4

DESIGNED: J.P.S. CHECKED: H.A.M. DATE: 2-5-53
DRAWN: K.L.G. IN CHARGE: T.C.S.T. SCALE: As Shown

CONTRACT No. C-11 SHEET 22 OF 36

M4A

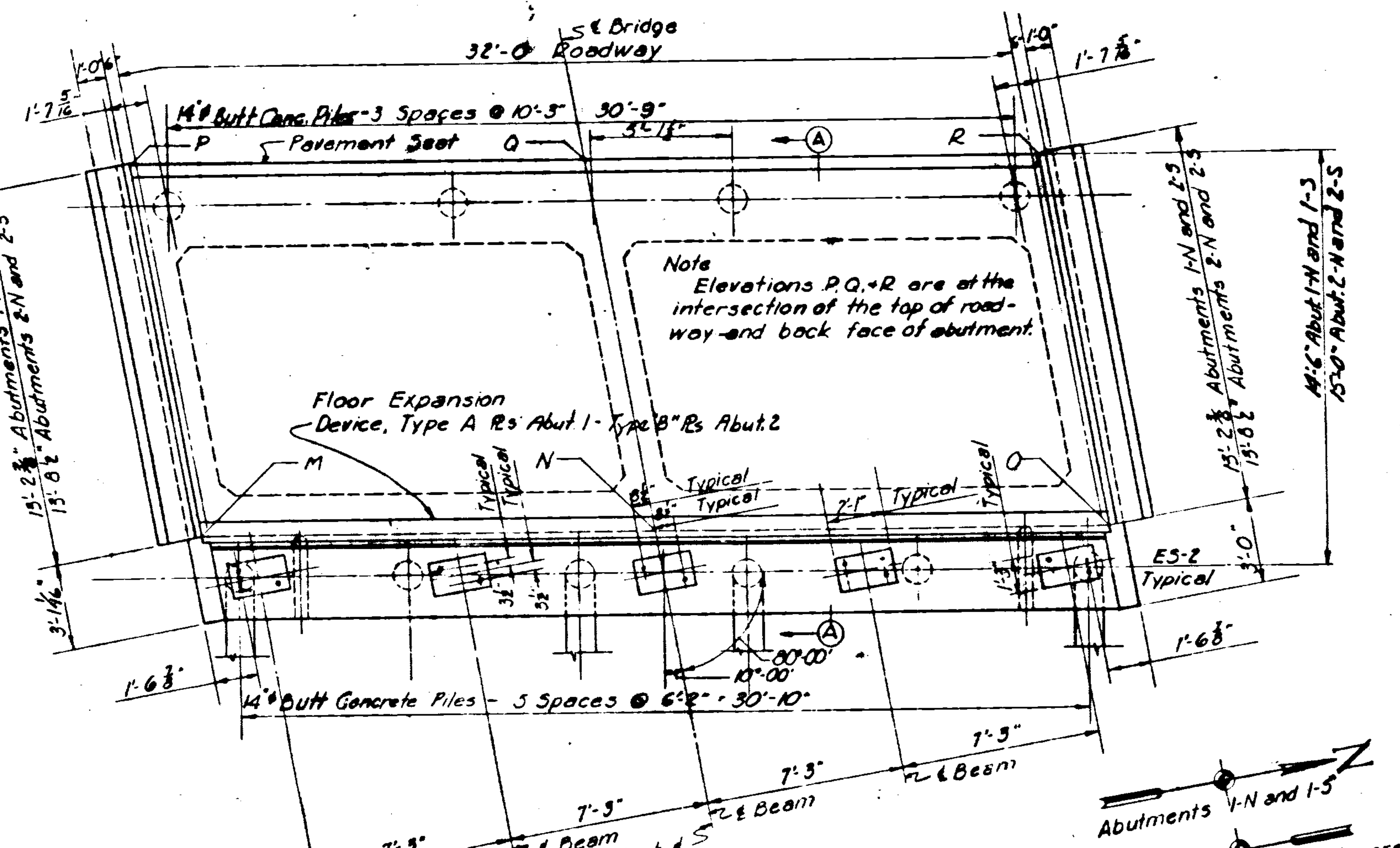
QUANTITIES

No.	Item	Location & Remarks	Unit	Estimated Quantity	Final Quantity

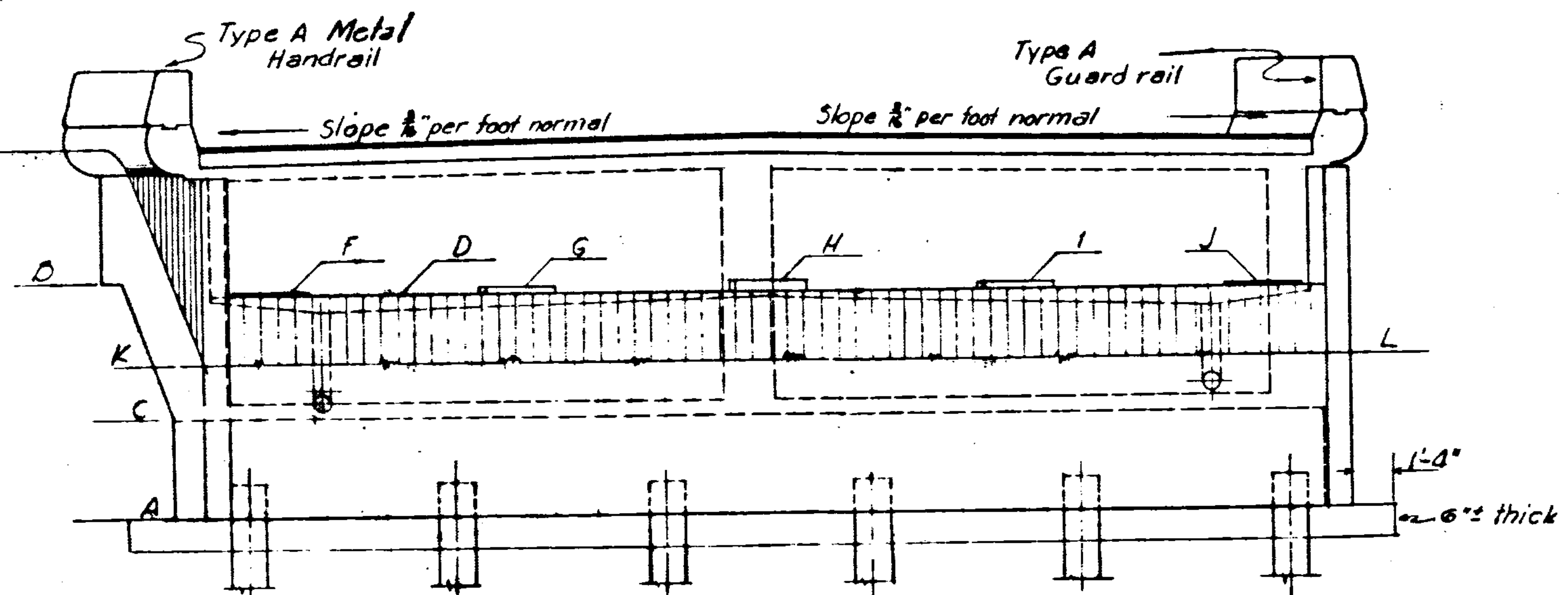
ELEVATIONS

	Bents 1-N	Bents 1-S	Bents 2-N	Bents 2-S
A	1062.0	1062.0	1062.0	1062.0
B	1080.05	1080.07	1080.00	1080.00
D	1080.09	1080.11	1080.04	1080.04
E	1080.31	1080.33	1080.25	1080.25
F	1080.42	1080.45	1080.36	1080.37
G	1080.31	1080.34	1080.25	1080.25
H	1080.10	1080.12	1080.04	1080.04

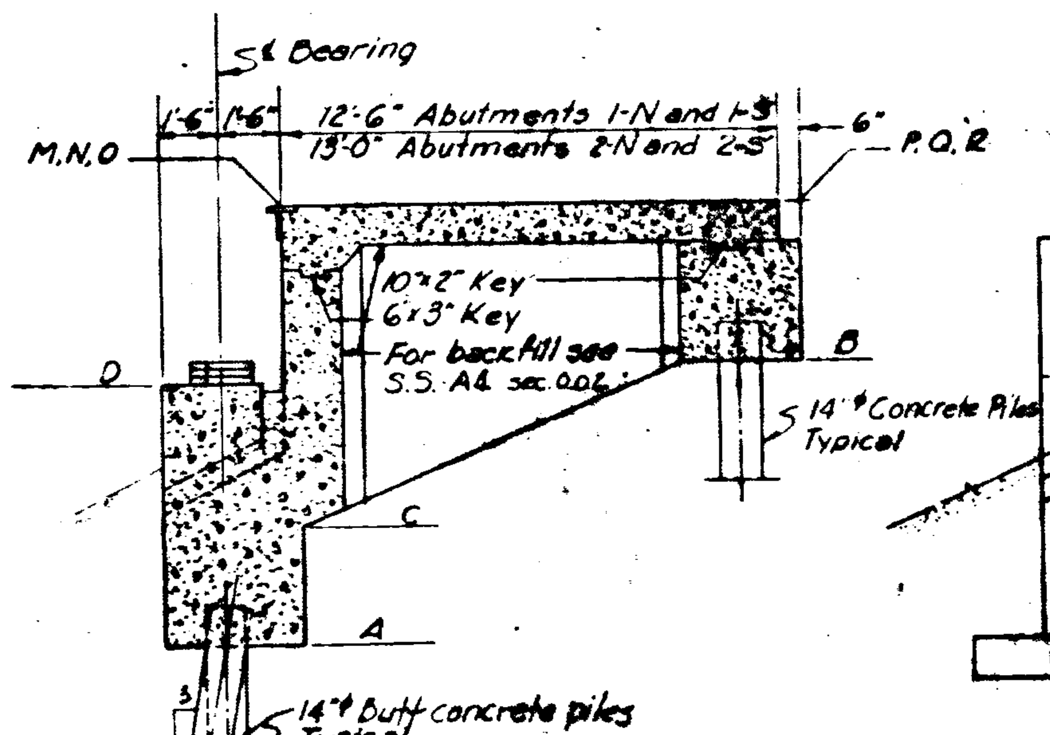
	Abutments 1-N	Abutments 1-S	Abutments 2-N	Abutments 2-S
A	1074.05	1074.08	1073.73	1073.72
B	1081.39	1081.43	1081.20	1081.20
C	1076.92	1076.95	1076.60	1076.59
D	1080.55	1080.58	1080.39	1080.38
F	1080.60	1080.64	1080.14	1080.42
G	1080.75	1080.79	1080.59	1080.58
H	1080.86	1080.90	1080.70	1080.69
I	1080.74	1080.78	1080.59	1080.57
J	1080.59	1080.63	1080.19	1080.42
K	1078.59	1078.57	1078.19	1078.22
L	1078.52	1078.55	1078.19	1078.21
M	1085.37	1085.41	1085.21	1085.19
N	1085.61	1085.65	1085.46	1085.44
O	1085.35	1085.39	1085.20	1085.18
P	1085.41	1085.45	1085.22	1085.20
Q	1085.65	1085.69	1085.47	1085.46
R	1085.39	1085.43	1085.22	1085.20



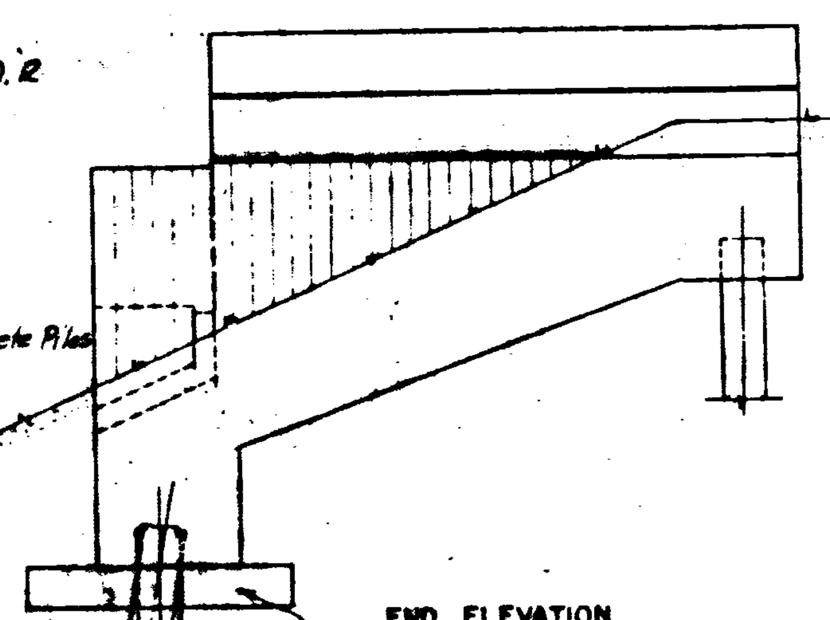
PLAN



FRONT ELEVATION



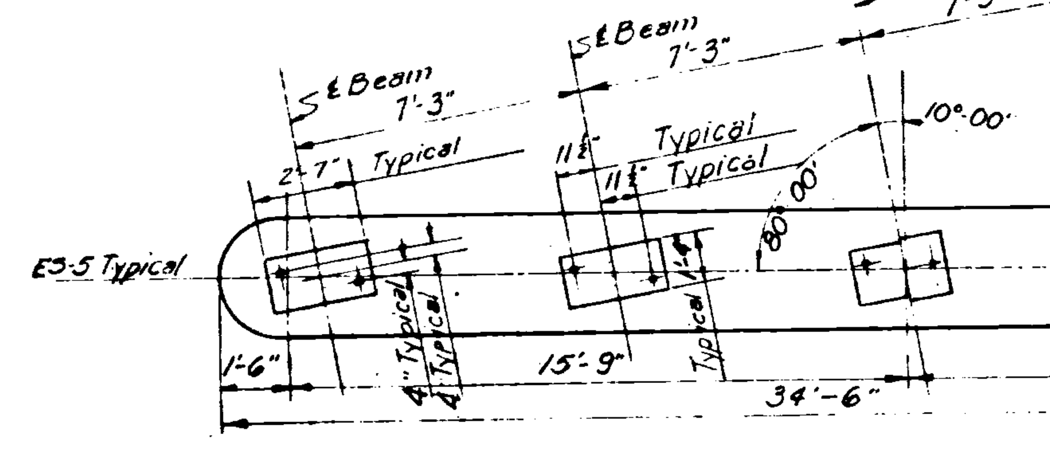
SECTION A-A



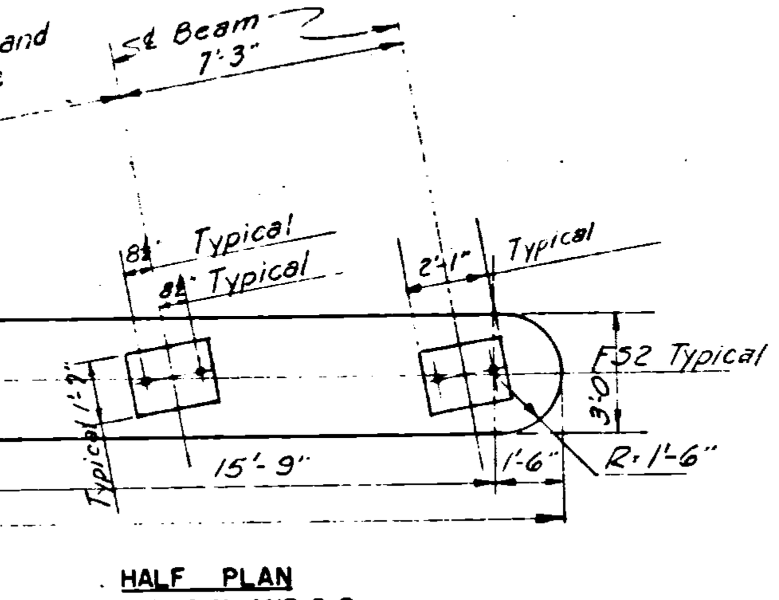
END ELEVATION

Abutments 2-N & 2-S
Sub-footer 36'-8¼" long x 6'8" wide x 0'-6"± thick
NOT A PAY ITEM, DONE @ CONTRACTOR'S REQUEST

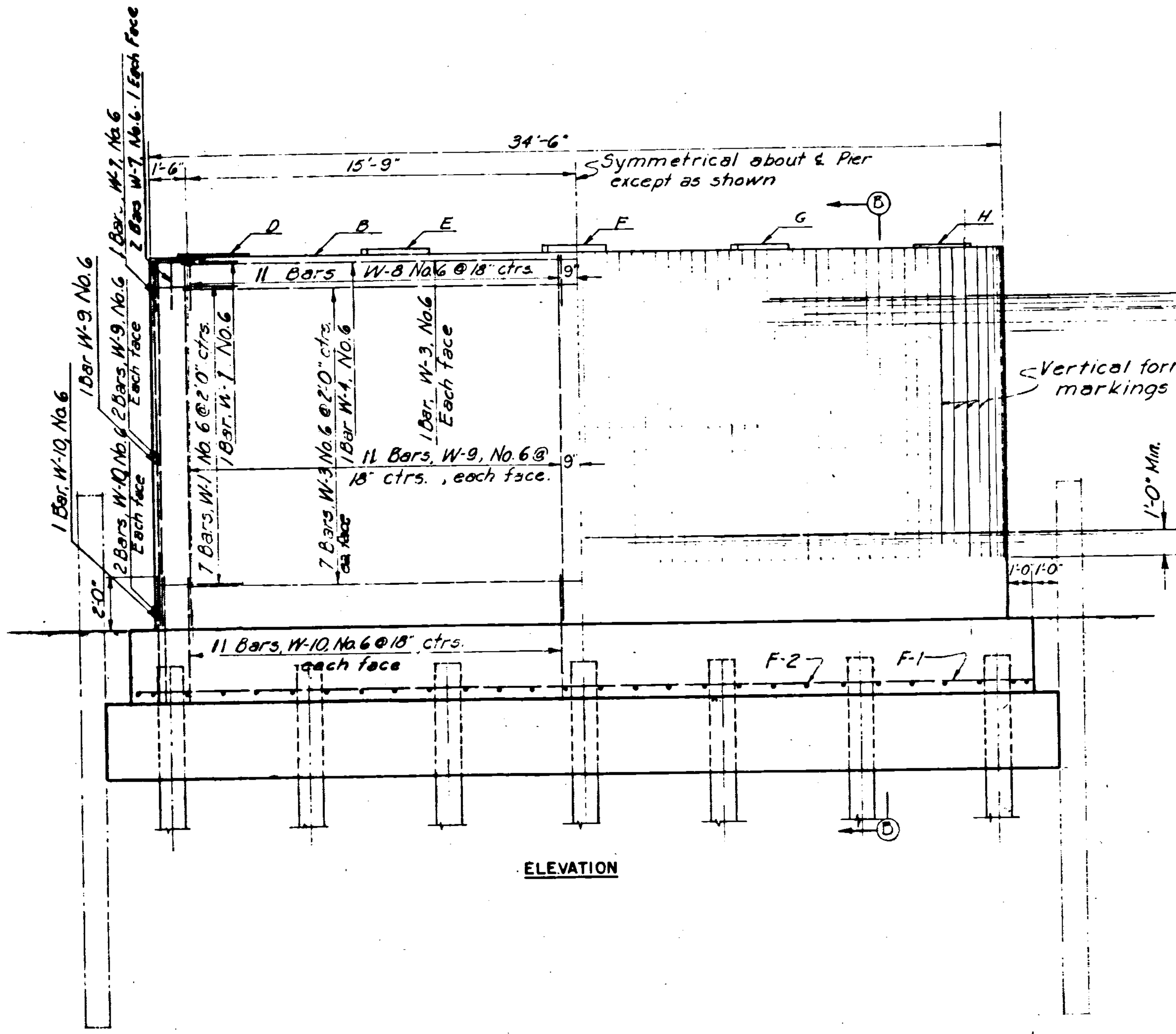
ABUTMENTS



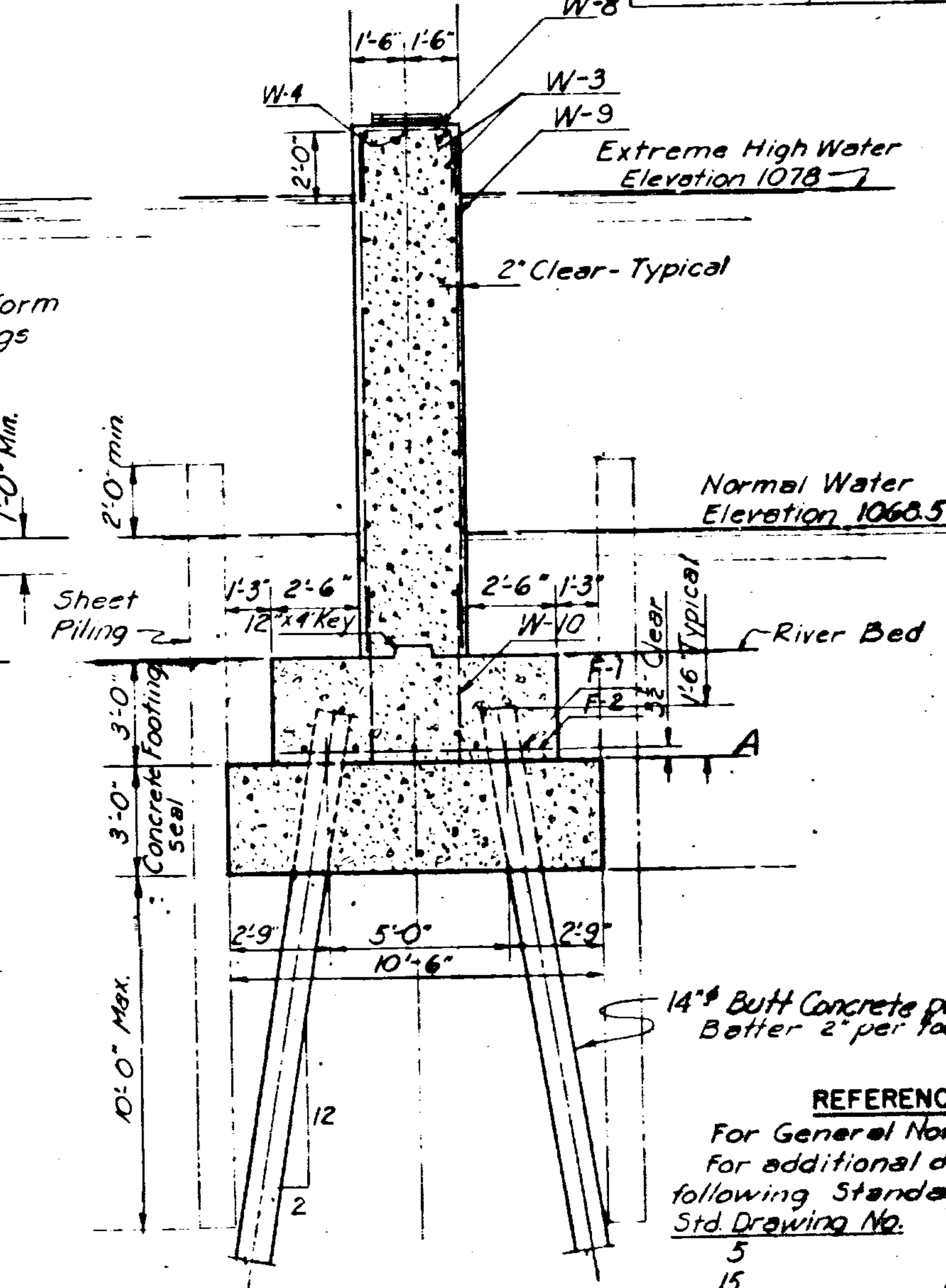
HALF PLAN
PIERS 1-N AND 1-S



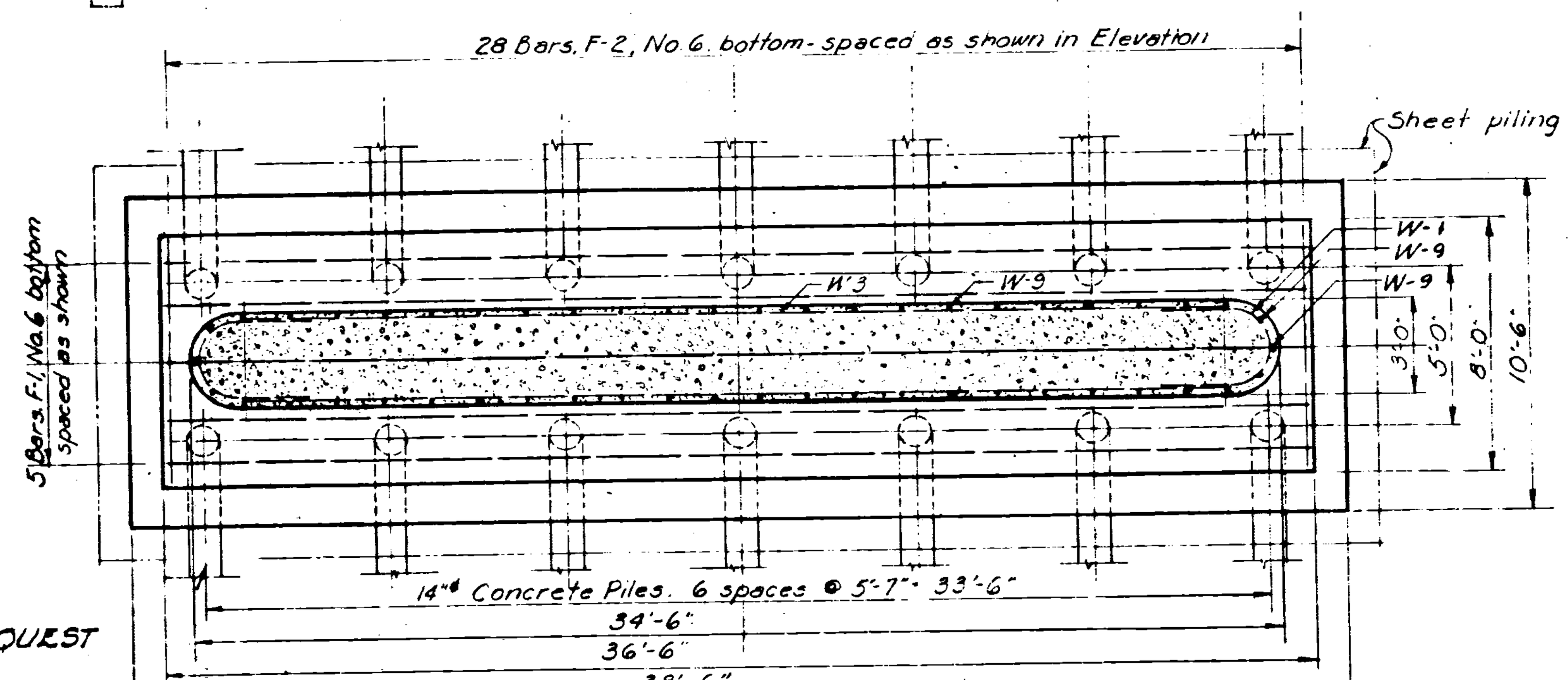
HALF PLAN
PIERS 2-N AND 2-S



ELEVATION



SECTION B-B



FOOTING PLAN

PIERS

REFERENCES

For General Notes see Sheet 1
For additional details refer to the following Standard Drawings.

Std. Drawing No.	Title
5	Handrail Details
15	Drainage Details
17	Guard Rail Details
S-1	Abutments, Roadway = 32'-0"
S-8	Bents
S-11	Bearing Devices
S-12	Floor Expansion Devices and Median

No.	Revision	By	Date
3	As-Built Plans	H.P.L.	4-8-54
2	No. of W9 & W7 Bars	F.S.	9/15/53
1	Minor Checking Revisions	F.S.	7-31-53

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE PROJECT NO. 1

STRUCTURE NO. 21
CUYAHOGA RIVER
ABUTMENTS AND PIERS

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONTRACTING ENGINEER
DESIGN SECTION D-4

DESIGNED: [illegible] CHECKED: H.A.M. DATE: 2-6-53
DRAWN: [illegible] IN CHARGE: IDSK SCALE: ¼" = 1'-0"

CONTRACT No. C-11 SHEET 23 OF 36

374

OHIO TURNPIKE COMMISSION

THE JAMES W. SHOCKNESSY OHIO TURNPIKE

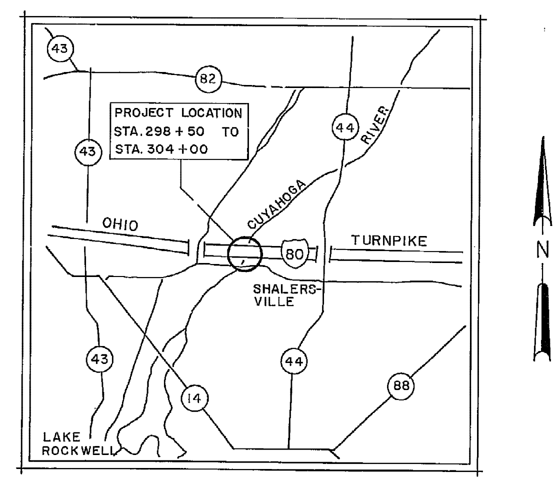
CONTRACT CIP-43-85-12

DECK REPLACEMENT & WIDENING
TURNPIKE STRUCTURES

OVER CUYAHOGA RIVER - M.P. 191.4
SHALERSVILLE TWP., PORTAGE COUNTY

ORIGINAL CONTRACT SECTION C-11

INDEX OF SHEETS



LOCATION MAP

0 9000 18000 27000
SCALE IN FEET

SCALES

0 40'
PLAN

0 8'
TYPICAL SECTION

SUPPLEMENTAL STANDARD CONSTRUCTION DRAWINGS

BP-2	12-06-76	GR-1	2-05-82	MC-3	6-1-73
BP-3	12-06-76	GR-2B	2-05-82	TC-35.10	8-29-84
F-2	5-01-76	GR-3	2-05-82		
F-3	5-01-76	GR-4A	2-05-82		

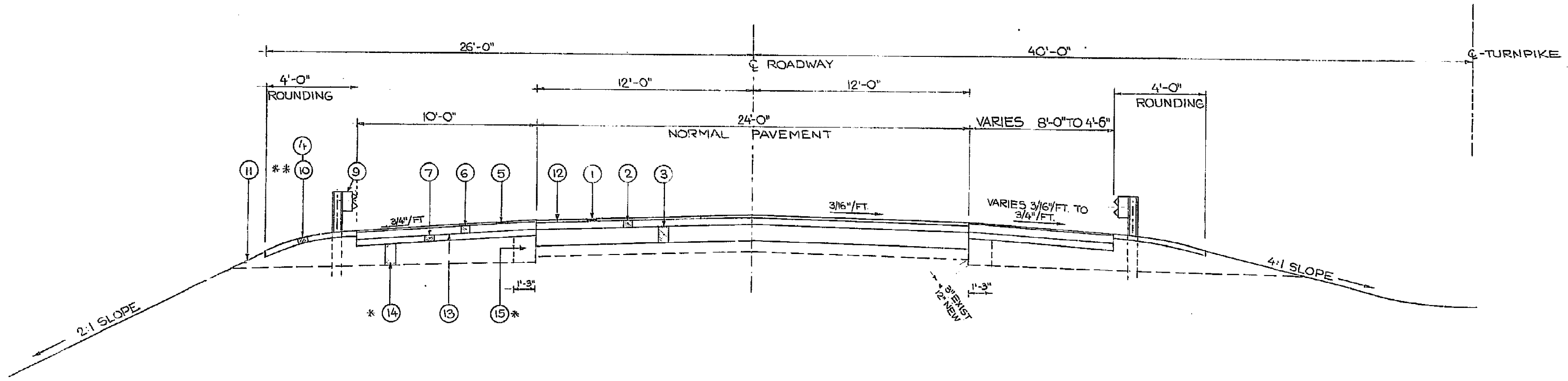
SUPPLEMENTAL STANDARD BRIDGE DRAWINGS

BR-1	5-29-79	SD-1-69-PG.3,4	6-12-69	FB-1-82	5-10-82
RB-1-55	2-02-59				

APPROVED FOR
THE OHIO TURNPIKE COMMISSION
BY

G. Alan Plain
(CHIEF ENGINEER.)

1-24-85
DATE



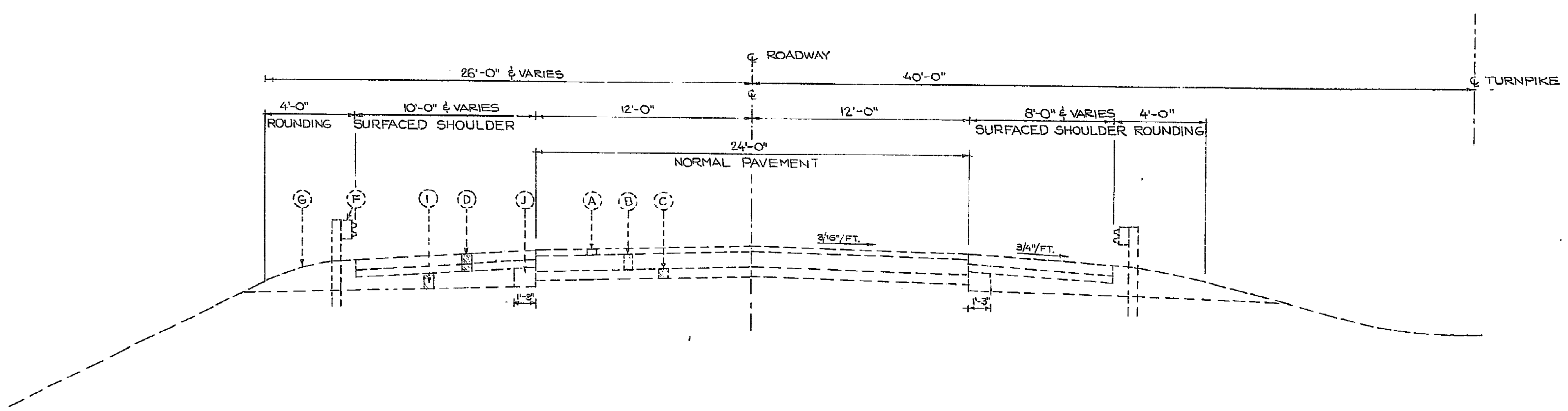
proposed TYPICAL SECTION

SCALE: 1"=4'

PROPOSED TYPICAL SECTION

1. ITEM SP 404 – 1" ASPHALT CONCRETE SURFACE COURSE (OVERLAY)
2. ITEM 402 – VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE
3. ITEM SP 451 – FULL DEPTH PAVEMENT REPAIRS OR EXIST. 10" CONC. PAVEMENT
4. ITEM SP 617 – 4" RECONDITIONED SHOULDER (WITHOUT GUARDRAIL)
5. ITEM SP 414 – SHOULDER SURFACE TREATMENT
6. ITEM 402 – 6" ASPHALT CONCRETE FOR SHOULDERS
7. ITEM 304 – 4" AGGREGATE BASE

9. ITEM SP 606 – GUARDRAIL REBUILT (TYPE 5)
10. ITEM SP 627 – 4" STONE SHOULDER PROTECTION (ONLY WITH GUARDRAIL)
11. ITEM 659 – SEEDING AND MULCHING
12. ITEM SP 407 – TACK COAT
13. ITEM SP 408 – PRIME COAT
14. – AGGREGATE DRAIN – TYPE II (EXISTING)
15. – AGGREGATE DRAIN – TYPE I (EXISTING)



existing TYPICAL SECTION

SCALE: 1"=4'

EXISTING TYPICAL SECTION

- (A) – 4"± ASPHALT SURFACE
- (B) – EXISTING 10" CONCRETE PAVEMENT
- (C) – 6"± SUB-BASE MATERIAL
- (D) – 6½"± ASPH. CONCRETE SHOULDERS

- (F) – GUARDRAIL
- (G) – STONE SHOULDER PROTECTION

- (I) – AGGREGATE DRAIN (TYPE II)
- (J) – AGGREGATE DRAIN (TYPE I)

* EXISTING AGGREGATE DRAIN MATERIAL REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED, RESHAPED OR RESTORED IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM SP 605, AGGREGATE DRAINS. EXISTING AGGREGATE DRAIN OUTLETS SHALL BE MAINTAINED. NO ADDITIONAL PAYMENT SHALL BE MADE FOR THIS WORK. PAYMENT SHALL BE INCLUDED WITH ITEM 304 AGGREGATE BASE.

** WHERE GUARDRAILS ARE NOT SHOWN ON THE PLANS USE SP617 RECONDITIONED SHOULDER IN PLACE OF SP627 STONE SHOULDER PROTECTION.

DRAWN by: I.P. DATE: 2-12-84
CHECKED by: K.R. DATE: 12-14-84

TYPICAL SECTION

GENERAL NOTES

DESIGN SPECIFICATIONS

THESE STRUCTURES CONFORM TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1977, INCLUDING THE 1978, 1979, 1980, 1981, AND 1982 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN LOADING

DESIGN LOADING - HS20-44 CASE I AND THE ALTERNATE-MILITARY LOADING.

DESIGN STRESSES

CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 - P.S.I.

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 - P.S.I.

REINFORCING STEEL - ASTM A615 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI.

STRUCTURAL STEEL - ASTM A36 - YIELD STRENGTH 36,000 P.S.I.

DECK PROTECTION METHOD

ABUTMENT SLAB AND SUPERSTRUCTURE SLAB DECK PROTECTION METHOD: EPOXY COATED REINFORCING STEEL, BOTH MATS. SILANE CONCRETE WEATHER-PROOFING.

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

PLANS OF EXISTING BRIDGE

CONSTRUCTION PLANS FOR THE EXISTING BRIDGE 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.

MATERIALS:

1) EPOXY COATED REINFORCING STEEL: SHALL BE GRADE 60 CONFORMING TO AASHTO M31 AND ASTM A775-81 (FUSION BONDED EPOXY COATING).

2) WELDED STUD SHEAR CONNECTORS: SHALL CONFORM TO AASHTO M 169 AND SP 513.

DIMENSIONS

DIMENSIONS GIVEN ARE MEASURED HORIZONTALLY AND AT 60°F, UNLESS OTHERWISE NOTED. DIMENSIONS GIVEN FOR THE EXISTING STRUCTURE ARE FROM THE ORIGINAL CONSTRUCTION PLANS. SOME VARIATIONS 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 THE FABRICATION OR INSTALLATION OF ANY PART TO INSURE THAT ALL PARTS CAN BE PROPERLY ASSEMBLED AS SPECIFIED IN THE PLANS. 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.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EIXSTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. SPECIAL ATTENTION SHOULD BE GIVEN TO THE ABUTMENT BACKWALL AND EXPANSION JOINTS. REMOVAL OF THE BRIDGE DECK AND ABUTMENT SLAB MAY BE DESIRABLE TO DETERMINE EXISTING CONDITIONS PRIOR TO ORDERING MATERIALS. THE CONTRACTOR IS REFERRED TO CMS SECTION 513.02 and O.T.C. GENERAL CONDITIONS G-2.04 AND G-5.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PRE-BID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

REPLACEMENT OF EXISTING REINFORCING STEEL

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT HIS COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL.

REPLACEMENT REINFORCING STEEL SHALL BE PAID FOR AT THE BASE BID UNIT PRICE FOR ITEM 509.

WHERE EXISTING REINFORCING IS DETERIORATED PROHIBITING RE-USE, PROVISIONS HAVE BEEN INCLUDED UNDER ITEM 510 - DOWEL HOLES FOR DRILLING AND GROUTING NEW REINFORCING STEEL.

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.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

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

WEATHERPROOFING

ITEM SP536, SILANE CONCRETE WEATHERPROOFING, SHALL BE APPLIED TO THE FOLLOWING CONCRETE SURFACES:

A) THE TOPS OF ABUTMENT AND SUPERSTRUCTURE SLABS.
B) ALL PARAPET SURFACES AND SLAB SIDE EDGES.
C) THE BOTTOM SURFACE OF THE SUPERSTRUCTURE SLAB FROM THE SLAB SIDE EDGE TO THE EXTERIOR STRINGER FLANGE.
D) ALL THE NEW EXTERIOR ABUTMENT WINGWALLS AND CURTAIN WALLS ABOVE FINISHED GROUND.

CAST-IN-PLACE REINFORCED CONCRETE PILES

THE PROVISIONS AS SET FORTH IN ITEM 507 OF THE SPECIFICATIONS SHALL APPLY EXCEPT THAT:

CAST-IN-PLACE REINFORCED CONCRETE PILES MAY BE ONE OF THE FOLLOWING TYPES, OR OTHER APPROVED EQUAL:

1. RAYMOND STANDARD OR STEP-TAPERED STEEL SHELL PILES HAVING A MINIMUM SHELL THICKNESS, WHEN DRIVEN WITH A MANDREL, OF NO. 16 BIRMINGHAM GAUGE.

2. UNION METAL MONOTUBE TAPERED STEEL SHELL PILES HAVING A MINIMUM SHELL THICKNESS OF NO. 7 U.S. MANUFACTURERS STANDARD GAUGE. THE SHELL SHALL HAVE A TIP DIAMETER NOT LESS THAN EIGHT INCHES AND SHALL INCREASE IN DIAMETER AT A RATE OF NOT LESS THAN 1 INCH IN EACH 8 FEET OF LENGTH, EXCEPT THAT THE MAXIMUM DIAMETER NEED NOT EXCEED 13 1/2 INCHES, AND THE BUTT DIAMETER SHALL BE NOT LESS THAN 13 1/2 INCHES.

3. SHELL PILES, NOT TAPERED, HAVING A MINIMUM SHELL THICKNESS, WHEN DRIVEN WITH A MANDREL, OF NO. 16 U.S. MANUFACTURERS STANDARD GAUGE AND A MINIMUM DIAMETER OF 14 INCHES.

4. CLOSED END STEEL TUBES SHALL BE 10-3/4 INCHES DIAMETER HAVING A MINIMUM WALL THICKNESS OF 5/16 INCHES CONFORMING TO THE CURRENT A.S.T.M. SPECIFICATION SERIAL DESIGNATION A252.

ALL SHELLS AND TUBES SHALL BE OF OPEN HEARTH STEEL AND SHALL BE FURNISHED WITH APPROVED WATERTIGHT POINTS. WHERE SPLICES CANNOT BE AVOIDED IN THE SHELLS OR TUBES OF THE CAST-IN-PLACE REINFORCED CONCRETE PILES, THE DETAILS AND CONSTRUCTION OF THE SPLICES SHALL BE WATERTIGHT AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

THE DESIGN LOAD FOR THE ABUTMENT PILES IS 45-TONS PER PILE.

ITEM 201 - CLEARING AND GRUBBING

THE CONTRACTOR SHALL REMOVE ALL VEGETATION AND TOPSOIL WHERE EXCAVATION OR EMBANKMENT IS TO BE MADE, IN ACCORDANCE WITH ITEM 201 OF THE SPECIFICATIONS. PAYMENT FOR THIS WORK SHALL BE MADE UNDER THE LUMP SUM BID FOR ITEM 201 - CLEARING AND GRUBBING.

ITEM 607 - FENCE REPLACEMENT

ALL ALLOWANCE FOR RIGHT-OF-WAY FENCE REPLACEMENT HAS BEEN MADE FOR FENCE REMOVED DURING CONSTRUCTION. THE FENCE BETWEEN THE WINGWALLS OF THE ADJACENT EASTBOUND AND WESTBOUND ABUTMENTS AND THE FENCE BEYOND THE OUTSIDE WINGWALLS SHALL BE REPLACED TO THE CORNER POST AND CONNECTED TO THE EXISTING RIGHT-OF-WAY FENCE ALONG THE PRESENT LINE.

ITEM 659 - SEEDING AND MULCHING

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS SHOWN ON THE CROSS SECTIONS PLUS 2 FEET FOR ROUNDING AND AN ADDITIONAL 5 FEET FOR WORKING AREA, WHERE NEEDED.

ITEM SP 451 - FULL DEPTH PAVEMENT REPAIR CONTINGENCY QUANTITIES

SP 451	FULL DEPTH PAVEMENT REPAIRS	350 S.Y.
SP 451	JOINT REPAIRS, TYPE D	30 L.F.
SP 451	JOINT REPAIRS, TYPE H	200 L.F.
SP 451	JOINT REPAIRS TYPE K	100 L.F.
SP 451	JOINT REPAIRS TYPE L	100 L.F.
SP 605	AGGREGATE DRAINS TYPE II	100 L.F.
SP 451	COMPACTED SUBGRADE	30 C.Y.
310	SUBBASE GRADING A, TYPE I	30 C.Y.

CRACK AND JOINT REPAIR

THE CONTRACTOR IS TO REMOVE ALL EXISTING BITUMINOUS MATERIAL THAT IS FOUND IN CRACKS OR JOINTS AND REPLACE IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEET NO. 9/24 . NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK. PAYMENT SHALL BE INCLUDED WITH ITEM 402 ASPHALT CONCRETE.

ABBREVIATIONS

W.B.B.	WEST BOUND BRIDGE
E.B.B.	EAST BOUND BRIDGE
W.B.	WEST BOUND
E.B.	EAST BOUND
N.S.	NEAR SIDE
F.S.	FAR SIDE
R.A.	REAR ABUTMENT
F.A.	FORWARD ABUTMENT
FWD.	FORWARD
ABUT.	ABUTMENT
TYP.	TYPICAL
STA.	STATION
DWG.	DRAWING
APPR.	APPROACH
EXP.	EXPANSION
O.D.O.T.	OHIO DEPARTMENT OF TRANSPORTATION
STD.	STANDARD
BRG.	BEARING
EL. & ELEV.	ELEVATION
SHLD.	SHOULDER
PVT.	PAVEMENT
RT.	RIGHT
LT.	LEFT
ES	EACH SIDE
EXIST.	EXISTING

NO	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION
OHIO TURNPIKE

GENERAL NOTES
OHIO TURNPIKE OVER CUYAHOGA RIVER

MADISON · MADISON · INTERNATIONAL
ARCHITECTS · ENGINEERS · PLANNERS
2930 EUCLID AVE. CLEVELAND, OHIO 44115

DESIGNED JR	CHECKED: KP	DATE: 12-21-84
DRAWN: J.M.P	IN CHARGE: KP	SCALE:

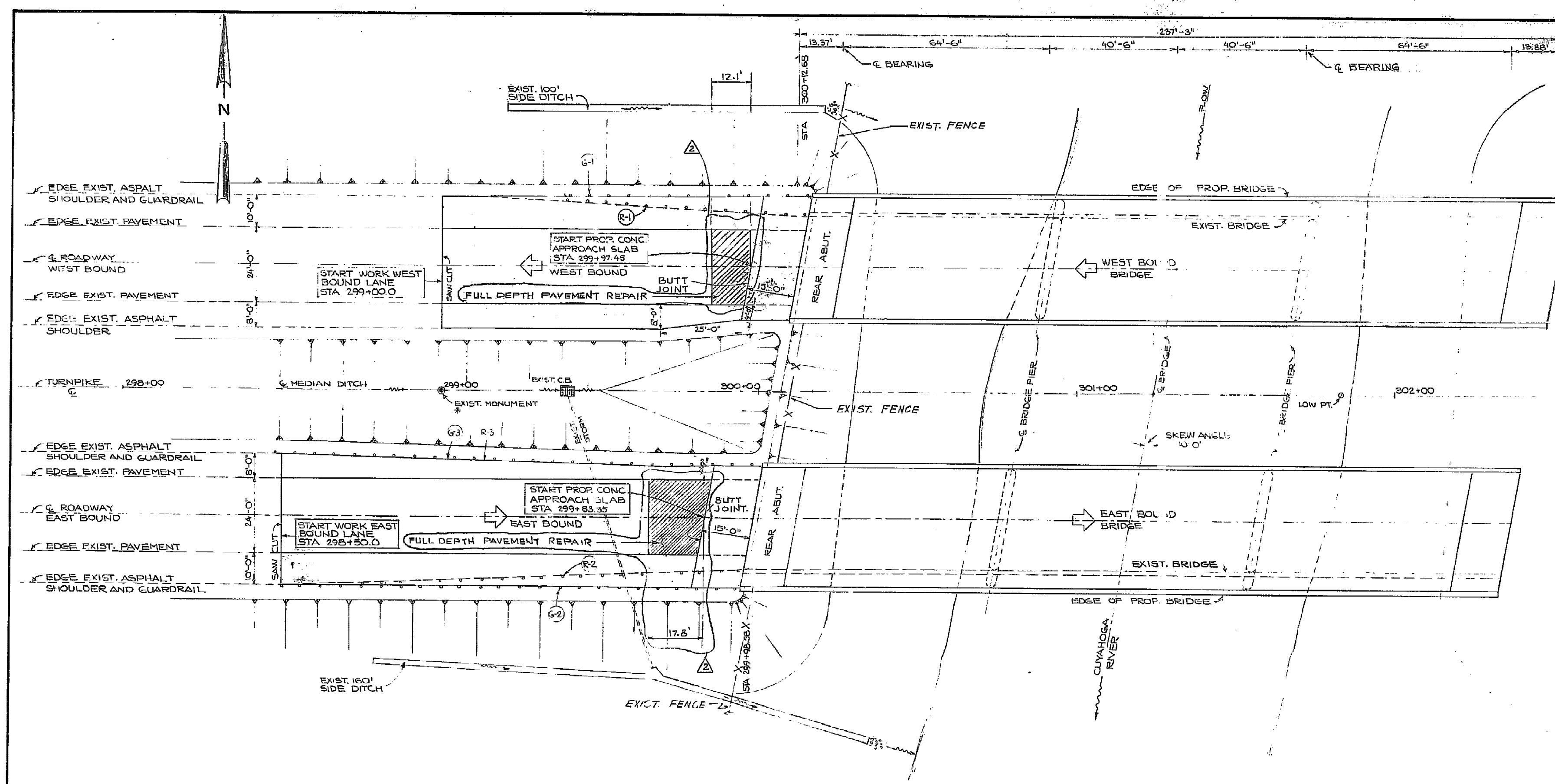
CONTRACT NO. 43-85-12 SHEET 3 OF 24

GENERAL SUMMARY

Cal. By RCW Date 12-12-84
Check.By IP Date 12-14-84

SHEET NUMBER 3	5	6	7	8		20		3	ITEM	QUANTITY	UNIT	DESCRIPTION
												ROAD WAY
	115	118							202	233	CU. YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
	81	81							202	162	SQ YD	PAVEMENT REMOVED (RIGID)
	375	375							202	750	LIN. FT	GUARD-RAIL REMOVED FOR RE-USE
	616	624							202	1,240	SQ.YD	WEARING COURSE REMOVED
			52	28					203	80	CU.YD	EMBANKMENT
	3	3							606	6	EACH	BRIDGE TERMINAL ASSEMBLY – TYPE "A"
	363	363							SP606	726	LIN. FT	GUARD-RAIL REBUILT - TYPE "5"
	258	176							607	434	LIN. FT.	FENCE TYPE "47"
	258	176							202	434	LIN. FT.	FENCE REMOVED
	416	420							203	836	SQ YD.	SUBGRADE COMPACTION
	1	1							606	2	EACH	ANCHOR ASSEMBLY-TYPE "T"
LUMP									201	LUMP	LUMP	CLEARING AND GRUBBING
												PAVEMENT
	46	47							304	93	CU.YD.	AGGREGATE BASE
	121	122							402	243	CU.YD.	ASPHALT CONCRETE AC-20
	17	17							SP404	34	CU.YD.	ASPHALT CONCRETE AC-20
	43	43							SP407	86	GAL.	TACK COAT
	208	168							SP408	376	GAL.	PRIME COAT
	167	211							SP414	378	GAL.	BIT-MATERIAL FOR SHOULDER SURFACE TREATMENT
	416	422							SP414	838	SQ.YD	AGGREGATE FOR SHOULDER SURFACE TREATMENT
	53	54							SP617	107	SQ YD.	SHOULDER PREPARATION
	17	18							SP617	35	CU.YD.	COMPACTED AGGREGATE
	130	130							SP611	260	SQ.YD.	CLASS "C" CONCRETE, APPROACH SLAB; USING SHRINKAGE COMPENSATING CEMENT (T=10")
	48	51							SP621	99	TONS.	STONE SHOULDER PROTECTION
	1	1							SP617	2	M GAL	WATER
30								30	310	30	CU.YD	SUB-BASE TYPE "I" (GRADING A)
350								350	SP451	350	SQ. YD.	FULL DEPTH PAVEMENT REPAIRS
30								30	SP451	30	LIN. FT.	JOINT REPAIRS, TYPE 'D'
200								200	SP451	200	LIN FT.	JOINT REPAIRS, TYPE 'H'
100								100	SP451	100	LIN. FT.	JOINT REPAIRS, TYPE 'K'
100								100	SP451	100	LIN. FT.	JOINT REPAIRS, TYPE 'L'
30								30	SP451	30	CU YD.	COMPACTED SUBGRADE
												DRAINAGE
100								100	SP605	100	LIN FT.	AGGREGATE DRAINS - TYPE II
												EROSION CONTROL
			214	158					659	372	SQ YD	SEEDING AND MULCHING
	0.06	0.08							659	0.14	TONS	COMMERCIAL FERTILIZER
	19	26							207	45	EACH	STRAW OR HAY BALES
												TRAFFIC CONTROL
						25			402	25	CU.YD.	3" ASPHALT CONC. BASE COURSE, AS PER PLAN
						40			404	40	CU.YD.	ASPHALT LEVELING COURSE FOR MAINTAINING TRAFFIC ON CROSSOVERS
						1,000			605	1,000	LIN. FT	6" UNCLASSIFIED PIPE UNDERDRAINS 707.01
						450			603	450	LIN FT	12" TYPE "F" CONDUIT 707.01
						LUMP			614	LUMP	LUMP	CONSTRUCT NEW CROSSOVER
						6,850			SP622A	6,850	LIN. FT.	TEMPORARY CONCRETE BARRIER (FURNISHED BY COMMISSION)
						LUMP			SP614	LUMP	LUMP	MAINTAINING TRAFFIC
												GENERAL
									103.05	LUMP	LUMP	PREMIUM FOR CONTRACT PERFORMANCE BOND AND PAYMENT BOND
									SP619	LUMP	LUMP	FIELD OFFICE
									SP623	LUMP	LUMP	CONSTRUCTION LAYOUT SURVEY
									624	LUMP	LUMP	MOBILIZATION

FOR STRUCTURE OVER 20'-0 SPAN SEE DWG. NO.



DESIGNED: I.P. DATE: 12-17-84
DRAWN: R.W. DATE: 12-18-84
CHECKED: K.P. DATE: 12-19-84

⚠2 AS BUILT

GUARDRAIL											
					202	SP606	606	606	202	607	
REF NO.	CENTERLINE STATION		SIDE	ROADWAY	GUARDRAIL REMOVED FOR REUSE	GUARDRAIL REBUILT TYPE 5	BRIDGE TERMINAL ASSEMBLY TYPE A	ANCHOR ASSEMBLY TYPE T	FENCE REMOVED	FENCE TYPE-47	
	FROM	TO	LT. RT.	WB. E.B.	LIN. FT.	LIN.FT.	EACH	EACH	LIN.FT	LIN.FT	
R-1	299+39	300+16	LT	W.B.	75						
R-2	298+50	299+93	RT	E.B.	150						
R-3	298+50	300+00	LT	E.B.	150						
G-1	299+39	300+16	LT	W.B.		62.5	1	1			
G-2	298+50	299+93	RT	E.B.		150	1				
G-3	298+50	300+00	LT	E.B.		150	1				
	300+05	300+15							258	258	
	TOTAL				375	362.5	3	1			

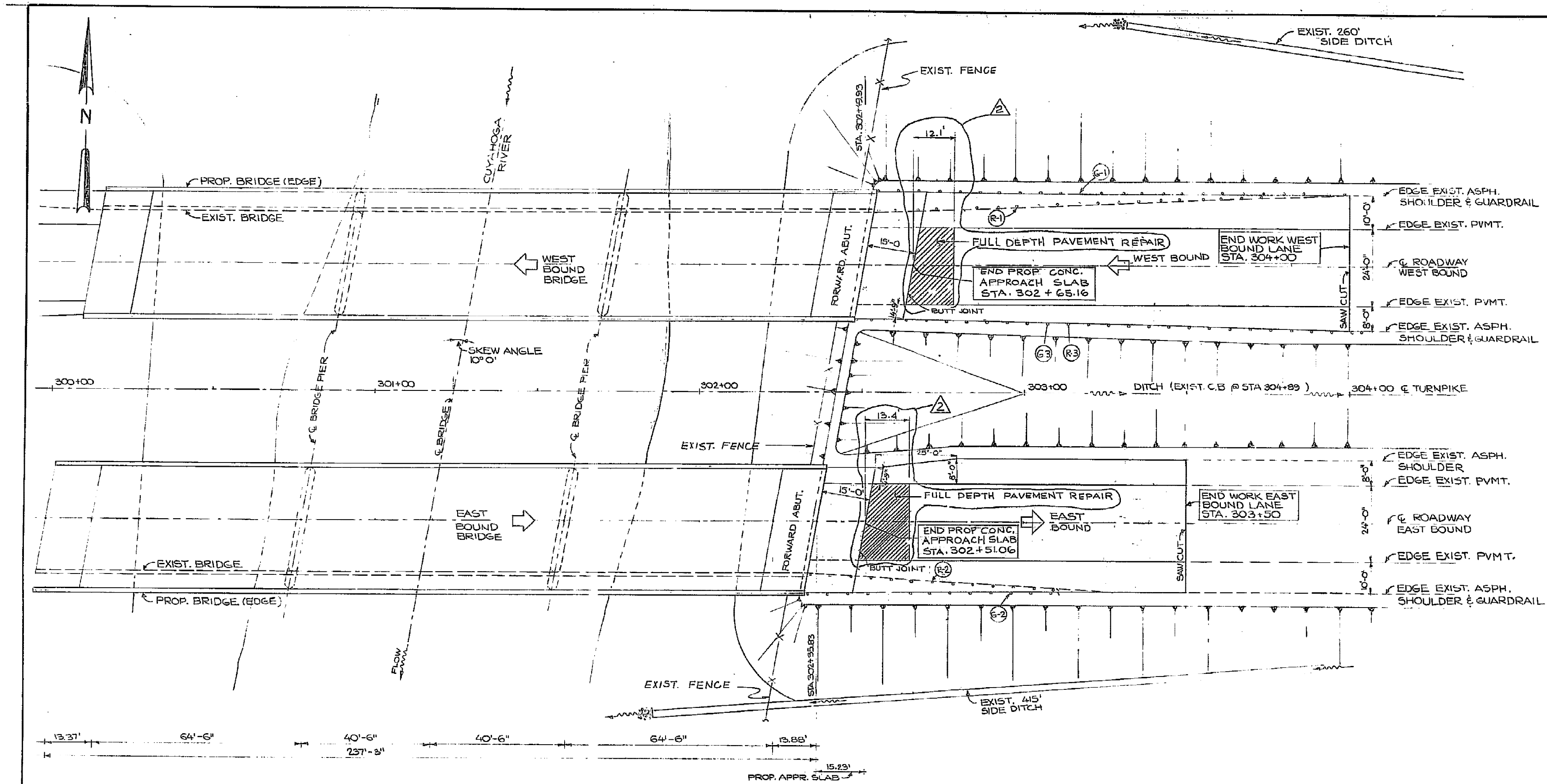
ITEM SP611 REINF. CONC. APPROACH SLAB T=10"						
STATION FROM	STATION TO	ROAD-WAY	LENGTH	WIDTH	AREA	
		W.B. E.B.	FT.	FT.	SQ.YD.	
299+97.45	300+12.68	W.B.	15.23	39	66	
299+83.35	299+98.58	E B	15.23	39	66	
TOTAL					132	

* EXISTING MONUMENT STA 299+00.0
EL. 1080.37

DURING SURVEY THE MONUMENT ELEVATION IS TAKEN AS 1080.37 AND IT WAS FOUND THAT THE EXISTING ELEVATIONS OF THE ROADWAY IS ABOUT 0.90' BELOW THE AS-CONSTRUCTED EXISTING DRAWINGS.

ITEM 202 PAVEMENT REMOVED						
STATION FROM	STATION TO	ROAD-WAY	LENGTH	WIDTH	AREA	
		W.B.E.B.	FT	FT	SQ.YD.	
299+97.45	300+12.68	W.B.	15.23	24	40.6	
299+83.35	299+98.58	E.B.	15.23	24	40.6	
TOTAL					81.2	

PAVEMENT QUANTITIES																						
							202	202	203	304	SP617	402	SP404	SP407	SP408	SP414	SP414	SP617	SP627	SP617	659	
CENTERLINE STATION		ROADWAY	LENGTH	WIDTH	DEPTH	SIDE	EXC. NOT INC. EMB. CONST.	WEARING COURSE 4½" REMOVED	SUB GRADE COMPACTION	4" AGGRE. BASE	WATER	ASPHALT CONC. AC-20	1" ASPHALT CONC.	TACK COAT	PRIME COAT	BIT. MATER. FOR SHOULDER SURF. TREAT.	AGGRE. FOR SHOULDER SURF. TREAT.	SHOULDER PREPARATION	STONE SHOULDER PROTECTION	COMPACTED AGGREGATE	COMM. FERTILIZER	REMARKS
FROM	TO	W.B. E.B.	FT.	FT.	IN.	RT. LT.	CU. YD.	SQ. YD.	CU. YD.	CU. YD.	M.GAL.	CU. YD.	CU. YD.	GAL.	GAL.	GAL.	SQ. YD.	SQ. YD.	TONS	CU. YD.	TONS	
299+00.00	299+97.45	W.B.	97.45	24	3			260				21.7	7.2	18								PAVT
299+00.00	300+16.00	W.B.	116	5.08	4	LT.													14.04			SHLD.
299+00.00	300+16.00	W.B.	116	25		LT.															0.03	SHLD.
299+00.00	300+01.00	W.B.	101	10		LT.	31.04		112.2	12.5		18.7			44.9	56.1	112.2					SHLD.
299+00.00	299+93.00	W.B.	93	6.38		RT.	18.23		65.9	7.3		11.0			26.4	33.0	65.9					SHLD.
299+00.00	299+93.00	W.B.	93	5.08	4	RT					1							52.5		5.83		SHLD.
298+50.00	299+83.35	E.B.	133.35	24	3			355.6				29.6	9.9	25								PAVT.
298+50.00	299+93.00	E.B.	143	5.08	4	RT.													17.3			SHLD.
298+50.00	299+93.00	E.B.	143	20		RT.															0.03	SHLD.
298+50.00	299+84.00	E.B.	134	6.38		LT.	26.3		95.0	10.5		15.8			38.0	47.5	95.0					SHLD.
298+50.00	299+79.00	E.B.	129	10		RT.	39.7		143.3	15.9		23.9			57.3	71.7	143.3					SHLD.
298+50.00	299+84.00	EB	134	5.08	4	LT													16.2			
TOTAL							115.27	615.6	416.4	46.2	1	120.7	17.1	43	166.6	208.3	416.4	52.5	47.54	5.83	0.06	



△2 AS BUILT

DESIGNED: I.P.	DATE: 12-18-84
DRAWN: R.W.	DATE: 12-19-84
CHECKED: K.P.	DATE: 12-20-84

GUARDRAIL

REF. NO.	CENTERLINE STATION		SIDE	ROADWAY	202 GUARDRAIL REMOVED FOR REUSE	SP606 GUARDRAIL REBUILT TYPE 5	606 BRIDGE TERMINAL ASSEMBLY TYPE A	606 ANCHOR ASSEMBLY TYPE T	202 FENCE REMOVED	607 FENCE TYPE- 47
	FROM	TO	LT/RT	WB/E.B.	LIN. FT.	LIN.FT.	EACH	EACH	LIN.FT	LIN.FT
R-1	302+55.	304+00.	LT	W.B.	150					
R-2	302+32.	303+09.	RT	E.B.	75					
R-3	302+48	304+00	RT	W.B.	150					
G-1	302+55	304+00	LT	W.B.		150	1			
G-2	302+32	303+09	RT	E.B.		62.5	1	1		
G-3	302+48	304+00	RT	WB		150	1			
	302+33	302+43							176	176
	TOTAL				375	362.5	3	1	176	176

ITEM SP611 REINF. CONC. APPROACH SLAB T=10"

STATION FROM	STATION TO	ROAD-WAY	LENGTH	WIDTH	AREA	
		W.B. E.B.	FT	FT	SQ.YD.	
302+49.93	302+65.16	W.B.	15.23	39	66	
302+35.83	302+51.06	E.B.	15.23	39	66	
	TOTAL				132	

ITEM 202 PAVEMENT REMOVED

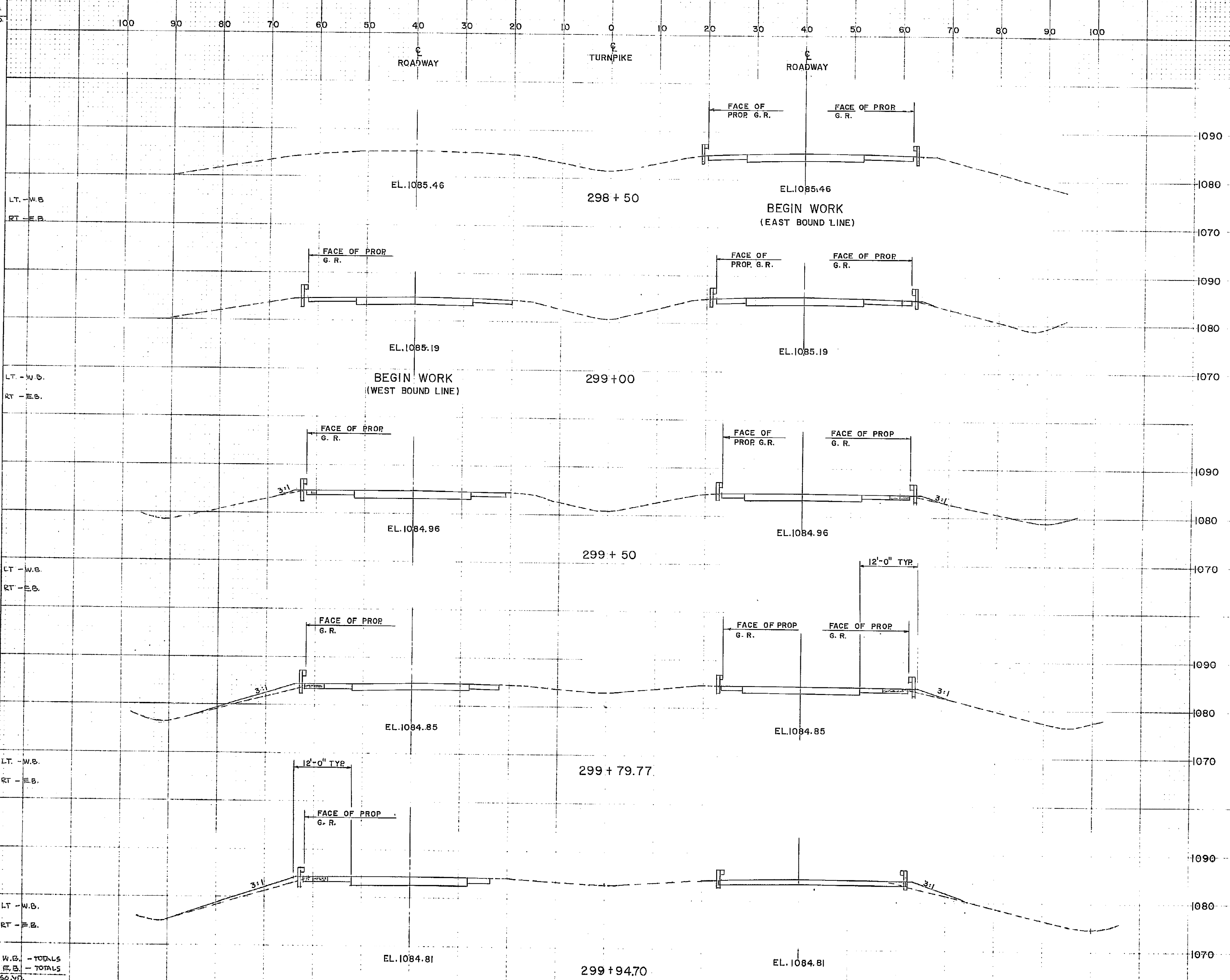
STATION FROM	STATION TO	ROAD-WAY	LENGTH	WIDTH	AREA	
		W.B. E.B.	FT.	FT.	SQ.YD.	
302+49.93	302+65.16	W.B.	15.23	24	40.6	
302+35.83	302+51.06	E.B.	15.23	24	40.6	
	TOTAL				81.2	

PAVEMENT QUANTITIES

CENTERLINE STATION FROM	CENTERLINE STATION TO	ROADWAY	LENGTH	WIDTH	DEPTH	SIDE	202 EXC. NOT INC. EMB. CONST.	202 WEARING 4½" COURSE REMOVED	203 SUB GRADE COMPACTION	304 4" AGGRE. BASE	SP617 WATER	402 ASPHALT CONC. AC-20	SP404 1"ASPHALT CONC.	SP407 TACK COAT	SP408 PRIME COAT	SP414 BIT. MATER FOR SHOULD. SURF. TREAT.	SP414 AGGRE. FOR SHOULDER SURF. TREAT	SP617 SHOULDER PREPARATION	SP627 STONE SHOULDER PROTECTION	SP617 COMPACTED AGGREGATE	659 COMM. FERTILIZER	REMARKS
		W.B. E.B.	FT	FT	IN.	RT/LT	CU.YD.	SQ. YD.	CU.YD.	CU.YD.	M.GAL.	CU.YD.	CU.YD.	GAL.	GAL.	GAL.	SQ.YD.	SQ.YD.	TONS	CU.YD.	TONS	
302+65.16	304+00.00	W.B.	134.84	24	3			360				30	10	25								PAVT.
302+53.00	304+00.00	W.B.	147	5.08	4	LT.													17.8			SHLD.
302+53.00	304+00.00	W.B.	147	35		LT.															0.05	SHLD.
302+68.00	304+00.00	W.B.	132	6.38		RT.	25.9		93.6	10.4		15.6			37.5	46.8	93.6					SHLD.
302+68.00	304+00.00	W.B.	132	10		LT.	40.6		146.7	16.3		24.4			58.7	73.3	146.7					SHLD.
302+47.00	304+00.00	W.B.	153	5.08	4	RT													18.5			SHLD.
302+51.06	303+50.00	E.B.	99	24	3			264				22.0	7.3	18								PAVT.
302+54.00	303+50.00	E.B.	96	3.38		LT	18.9		66.7	7.4		11.1			26.7	33.3	66.7					SHLD.
302+48.00	303+50.00	E.B.	102	10		RT	31.3		113.3	12.6		18.9			45.3	56.7	113.3					SHLD.
302+32.00	303+50.00	E.B.	118	25		RT.															0.03	SHLD.
302+32.00	303+50.00	E.B.	118	5.08	4	RT													14.3			SHLD.
302+54.00	303+50.00	E.B.	96	5.08	4	LT					1							54.2		6.00		SHLD.
TOTAL							116.7	624	420.3	46.7	1	122.0	17.3	43	168.2	210.1	420.3	54.2	50.6	6.0	0.08	

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

7 / 24



SEEDING END WIDTH (FT.)	SEEDING SQ. YDS. (SQ.YD.)	
—	—	LT. – W.B.
2.0	11.1	RT – E.B.
2.0	11.1	LT. – W.B.
5.0	27.8	RT – E.B.
12.0	39.7	LT – W.B.
7.0	23.2	RT – E.B.
22.0	36.5	LT. – W.B.
10.0	16.6	RT – E.B.
24.0	48.0	LT – W.B.
—	—	RT – E.B.
	135.3	W.B. – TOTALS
	78.7	E.B. – TOTALS
	214.0	SQ.YD.

	END AREA CUT	END AREA FILL (SQ.FT.)	VOLUME CUT	VOLUME FILL (CU.YD.)
LT – W.B.	—	—	—	—
RT – E.B.	—	1.0	—	1.5
LT – W.B.	—	2.0	—	3.7
RT – E.B.	—	3.0	—	5.6
LT – W.B.	—	10.0	—	11.0
RT – E.B.	—	5.0	—	5.5
LT. – W.B.	—	16.0	—	8.9
RT – E.B.	—	9.0	—	5.0
LT – W.B.	—	16.0	—	10.7
RT – E.B.	—	—	—	—
TOTALS W.B.				34.3
E.B.				18.0
				52.3 C.Y.

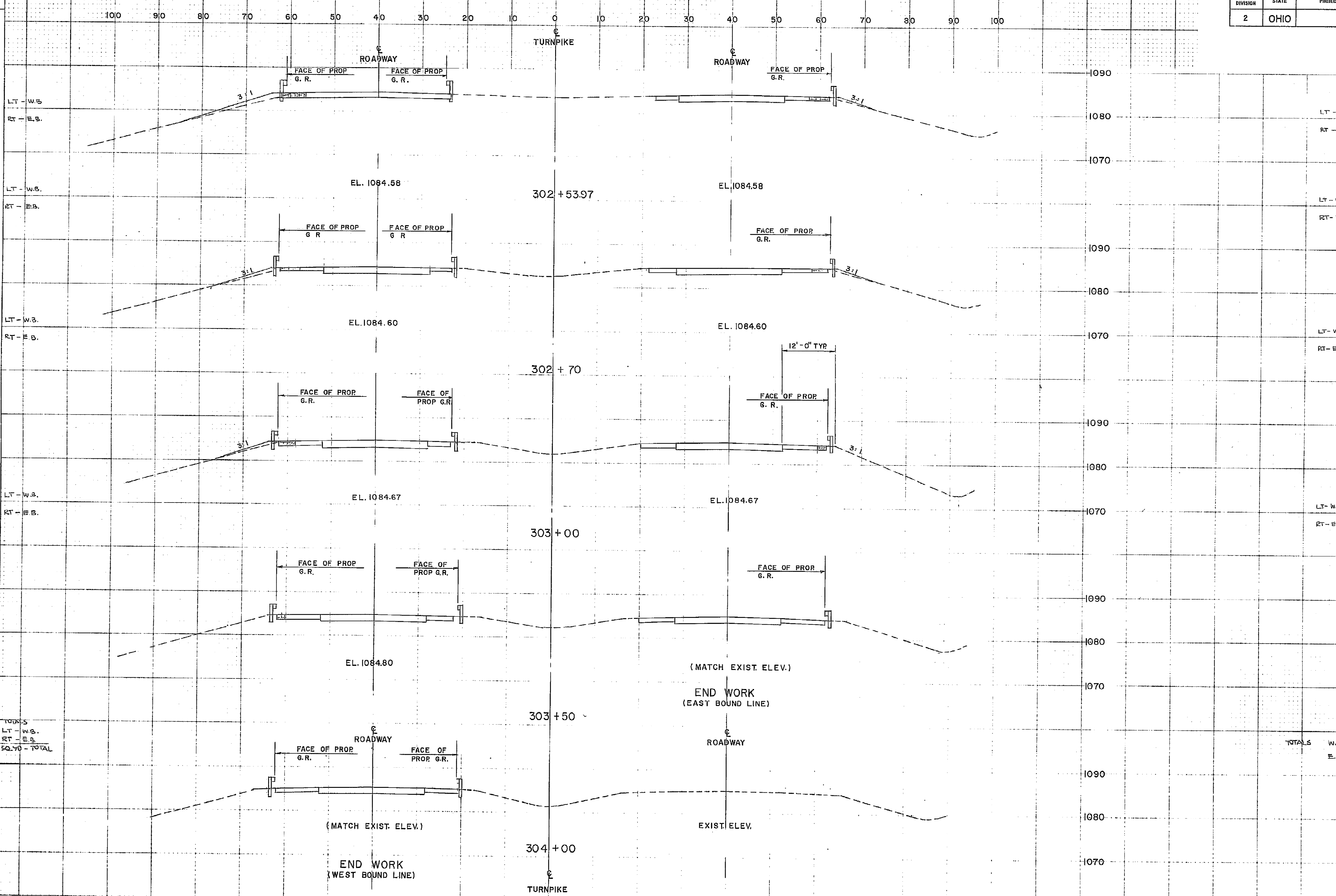
DESIGNED: I.R.	DATE: 12-19-84	
DRAWN: R.W.	DATE: 12-20-84	
CHECKED: K.P.	DATE: 12-21-84	

H-12-M

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

SEEDING

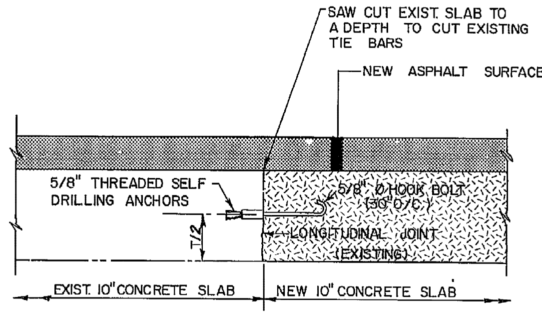
Station	END WIDTH	SQ. YDS.	Side
302+53.97	—	—	LT - W.B.
	10.0	20.0	RT - E.B.
302+70	6.0	12.0	LT - W.B.
	9.0	16.0	RT - E.B.
303+00	13.0	43.3	LT - W.B.
	4.0	13.3	RT - E.B.
303+50	6.0	33.3	LT - W.B.
	—	—	RT - E.B.
TOTALS		108.6	LT - W.B.
		49.3	RT - E.B.
		157.9	SQ.YD. - TOTAL



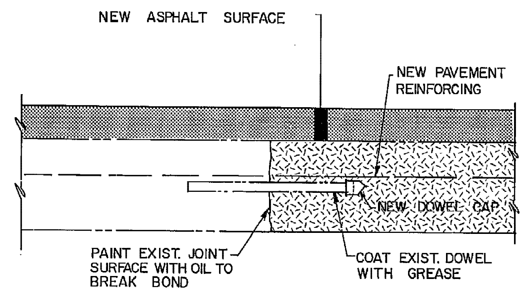
Station	Side	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
302+53.97	LT - W.B.	—	—	—	—
	RT - E.B.	—	8.0 SQ FT	—	5.3 CU.YD
302+70	LT - W.B.	—	12.0	—	7.1
	RT - E.B.	—	5.0	—	3.0
303+00	LT - W.B.	—	6.0	—	6.7
	RT - E.B.	—	2.0	—	2.2
303+50	LT - W.B.	—	2.0	—	3.7
	RT - E.B.	—	—	—	—
TOTALS	W.B.				17.5
	E.B.				10.5
					28.0 C.Y.

DESIGNED: I.P. DATE: 12-9-84
DRAWN: R.W. DATE: 12-20-84
CHECKED: K.P. DATE: 12-21-84

H-12-M



TYPE 'D' JOINT



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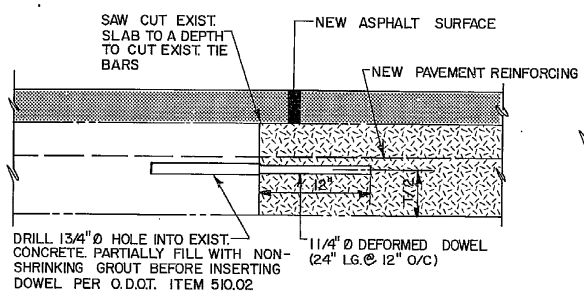

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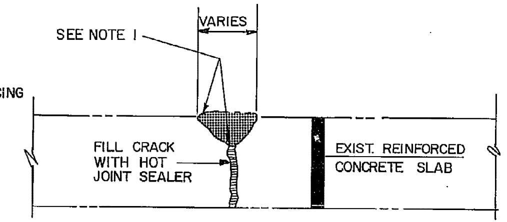
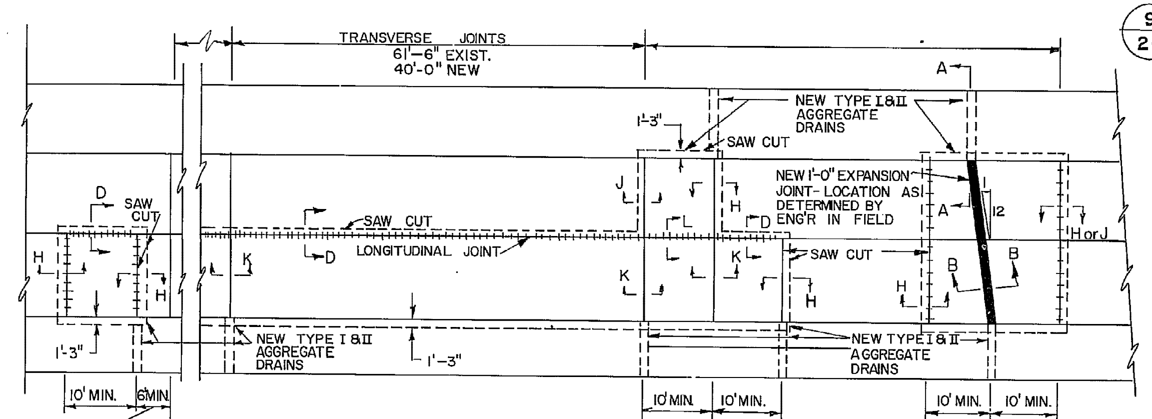


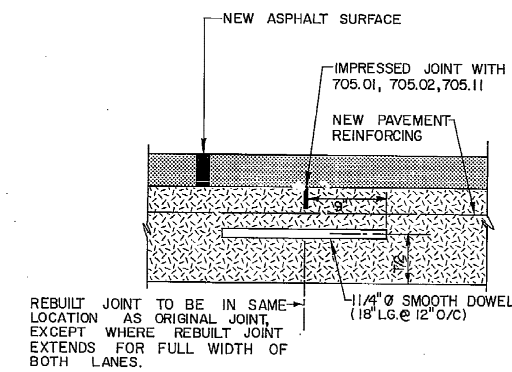
TRANSVERSE & LONGITUDINAL CRACK & JOINT REPAIRS



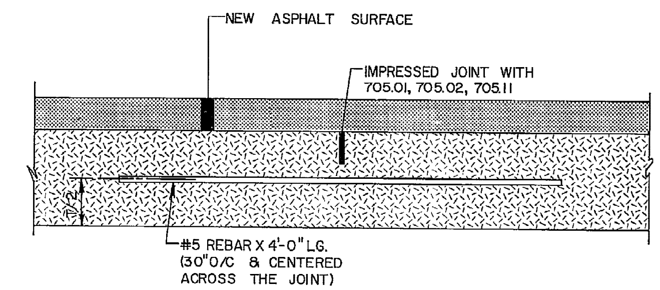
NOTE: IF A PORTION OF THE SLAB TO BE REPLACED IS CLOSER THAN 6' TO A TRANSVERSE JOINT THEN THE ENTIRE SLAB UP TO THE JOINT IS TO BE REPLACED.

CONCRETE JOINT ARRANGEMENT PLAN

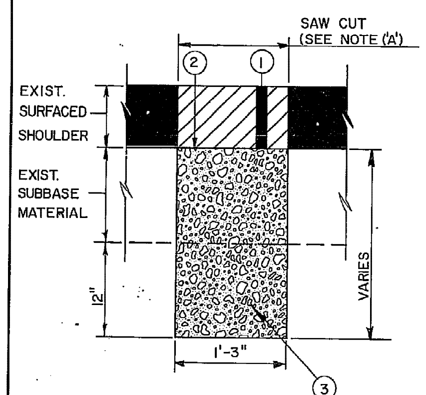
NOTE: A NEW TYPE II DRAIN MAY ONLY BE REQUIRED AT ONE END OF THE EXPANSION JOINT OR SLAB REPLACEMENT AS DIRECTED BY DRAINAGE CONDITIONS IN THE FIELD.



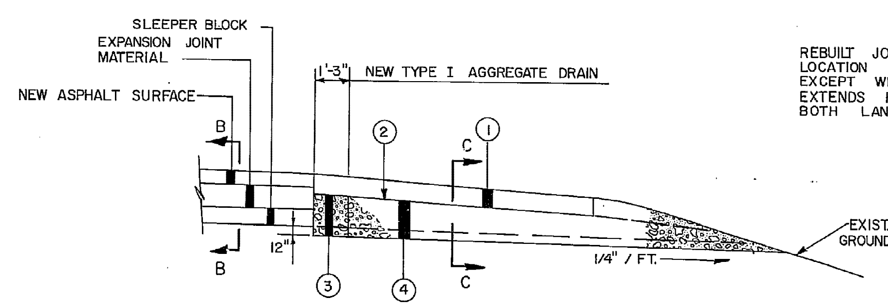
TYPE 'K' JOINT



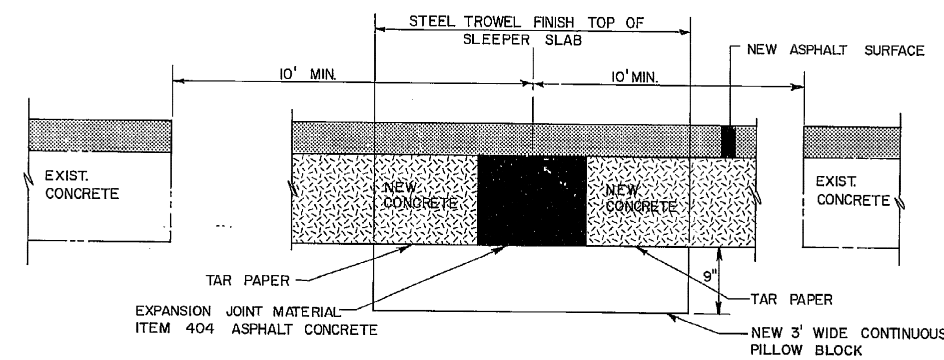
TYPE 'L' JOINT



SECTION C-C



SECTION A-A



SECTION B-B

LEGEND:

1. NEW PAVED SHOULDER
2. SP 408 PRIME COAT (0.2 TO 0.5 GAL./SQ YD)
3. SP 605 AGGREGATE DRAINS, TYPE I (SEE NOTE "B")
4. SP 605 AGGREGATE DRAINS, TYPE II (SEE NOTE "B")

CRACK & JOINT REPAIRS DETAILS

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.

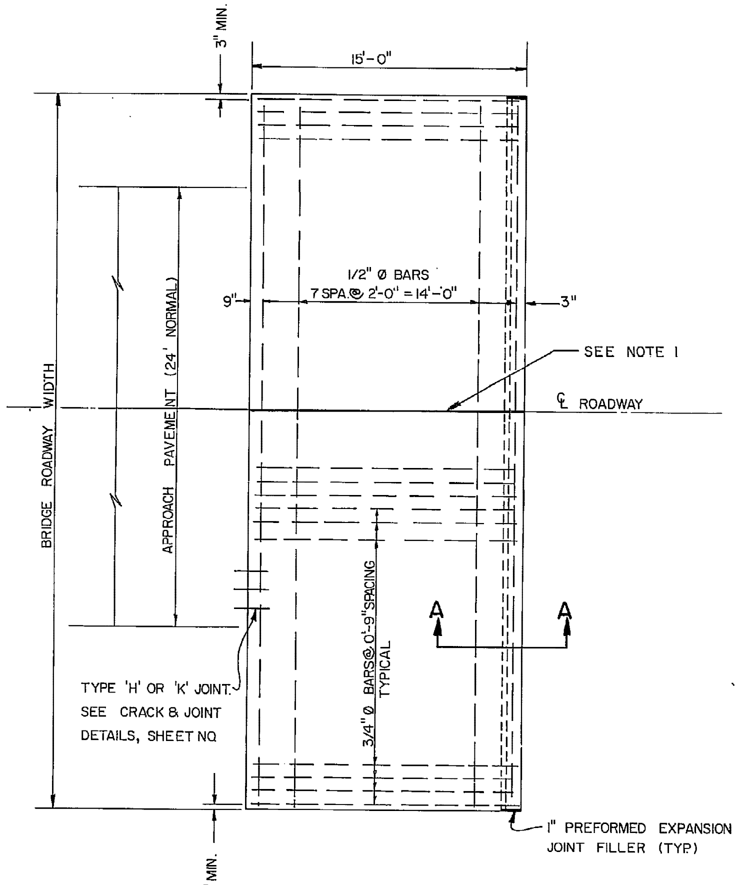
2. DETAIL OF LONGITUDINAL PAVEMENT SHOULDER JOINT SIMILAR.

NOTE 'A': FULL DEPTH SAW CUT OF EXISTING ASPHALT PAVEMENT IS REQUIRED WHERE EXISTING PAVEMENT IS TO BE REMOVED FOR INSTALLATION OF EITHER TYPE I OR TYPE II DRAINS.

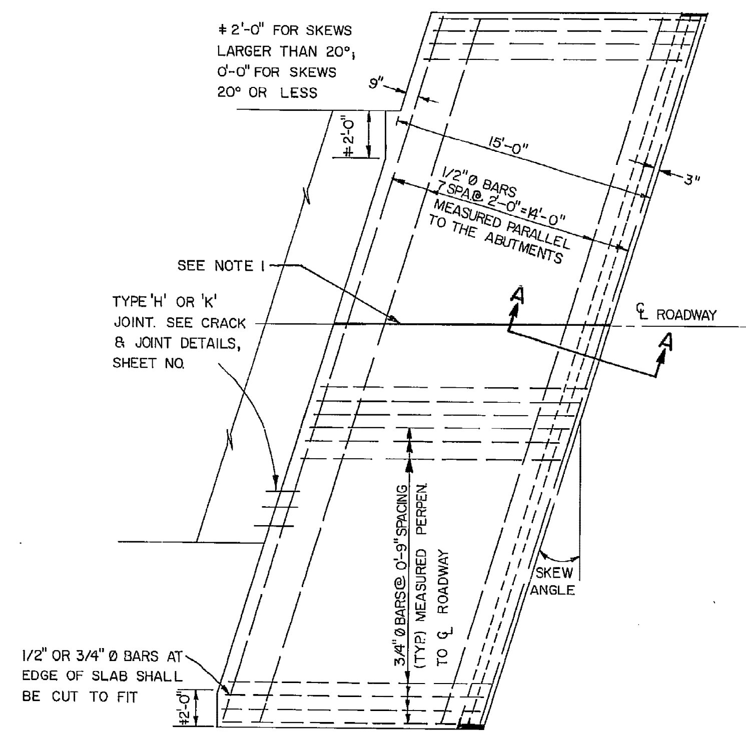
NOTE 'B': TYPE I AGGREGATE DRAINS WILL BE INSTALLED ADJACENT TO ALL NEW FULL DEPTH CONCRETE REPLACEMENT; THE EXISTING DRAIN REMOVED & REPLACED TO THE DEPTH INDICATED HEREON.
TYPE II AGGREGATE DRAINS WILL BE INSTALLED AT EACH EXPANSION JOINT & FULL DEPTH REPAIR OR AS DIRECTED BY THE ENGINEER.

FOR DETAILS NOT SHOWN SEE O.D.O.T. STD. CONST. DWG. BP-3.

OHIO TURNPIKE COMMISSION	
CRACK & JOINT DETAILS	
DATE: AUGUST 1984	SCALE: N.T.S.
CIP 43-85-12	SHEET 9 OF 24



PLAN



APPROACH SLAB FOR SKEWED BRIDGE

GENERAL THIS DRAWING PROVIDES DESIGN AND GENERAL CONSTRUCTION DETAILS. THE PROJECT PLANS WILL SHOW SKEW, CURBS (IF ANY), ESTIMATED QUANTITY (SQ.YDS.), AND SPECIAL NOTES AND DETAILS, WHERE NECESSARY FOR CONDITIONS OTHER THAN THOSE INDICATED HEREON, THE APPROACH SLAB SHALL BE ADAPTED TO FIT THE ENDS OF THE BRIDGE AND THE APPROACH PAVEMENT.

DESIGN DATA

CONCRETE: CLASS C USING SHRINKAGE COMPENSATING CEMENT
REINFORCING STEEL: A.S.T.M. A615, A616 OR A617 - GRADE 60 MIN YIELD STRENGTH 60,000 P.S.I.

PREFORMED EXPANSION JOINT FILLER AND SEALER AT THE CORNERS AND SIDES OF THE APPROACH SLAB SHALL BE INCLUDED IN THE PRICE BID PER SQ YARD FOR THE APPROACH SLAB.

GROOVE AND JOINT SEAL SHOWN AT THE BRIDGE LIMIT END OF THE APPROACH SLAB SHALL BE INCLUDED IN THE PRICE BID PER SQ YARD FOR THE APPROACH SLAB.

TYPE A WATERPROOFING SHOWN AT THE ABUTMENT SLAB SHALL BE INCLUDED IN THE PRICE BID PER SQ. YARD FOR THE APPROACH SLAB.

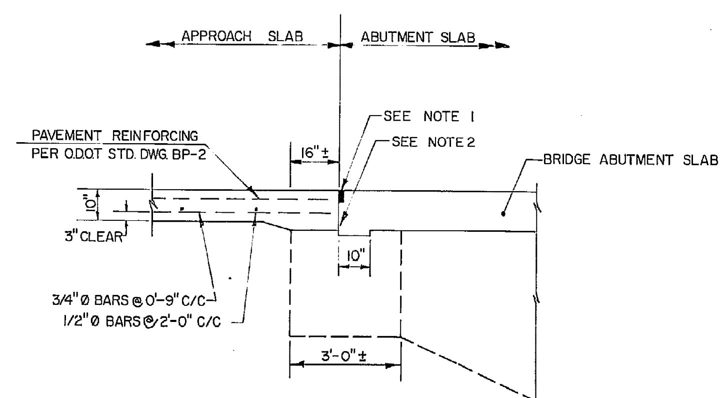
LONGITUDINAL CONSTRUCTION JOINTS REQUIRED FOR STAGE CONSTRUCTION SHALL BE AS PER 511.09

CURBS, BRIDGES WITH SIDEWALKS FOR BRIDGES CONSTRUCTED WITH RAISED SIDEWALKS, DEFLECTOR PARAPETS OR OTHER TYPES OF CONSTRUCTION WHICH RETAIN ROADWAY SURFACE DRAINAGE, THE APPROACH SLABS SHALL EITHER INCLUDE INTEGRAL CURBS OR BE CONSTRUCTED IN CONJUNCTION WITH BRIDGE CURBS. CURB HEIGHT SHALL BE TRANSITIONED UNIFORMLY BETWEEN BRIDGE CURB HEIGHT AND APPROACH CURB HEIGHT IN LENGTH AS FOLLOWS: WHERE WINGWALL EXTENDS BEYOND END OF APPROACH SLAB, USE A MINIMUM LENGTH OF 10 FT BEYOND END OF WINGWALL. WHERE THE APPROACH SLAB EXTENDS BEYOND THE END OF WINGWALL, TRANSITION IN THIS LENGTH. HOWEVER, THE TRANSITION LENGTH SHALL NOT BE LESS THAN 10 FT AND THE TRANSITION SHALL EXTEND BEYOND THE END OF THE APPROACH SLAB IF NECESSARY.

APPROACH SLAB WIDTH APPROACH SLABS SHALL BE THE SAME WIDTH AS THE BRIDGE ROADWAY, UNLESS SHOWN OTHERWISE ON THE PLANS.

CROWN SHALL CONFORM TO THAT OF THE APPROACH PAVEMENT AND BRIDGE DECK. IF THE RATE OF CROWN OF THE BRIDGE DECK DIFFERS FROM THAT OF THE APPROACH PAVEMENT, A SMOOTH TRANSITION SHALL BE PROVIDED WITHIN THE LIMITS OF THE APPROACH SLAB.

TRANSVERSE JOINT DETAILS AT THE APPROACH PAVEMENT END OF THE APPROACH SLAB SHALL BE EITHER TYPE 'K' OR 'H' AS DETAILED ON THE PLANS. PAYMENT FOR THE TRANSVERSE JOINT SHALL BE AT THE UNIT PRICE BID PER LIN FT FOR THE TYPE OF JOINT FURNISHED.

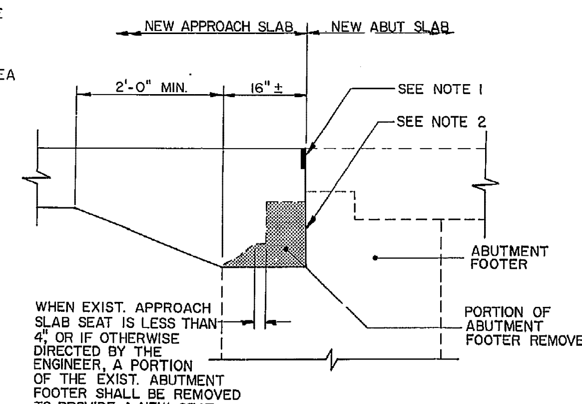


SECTION A-A

NOTE 1: GROOVE AND SEAL AS PER O.D.O.T. STD. CONST. DWG. BP-3.

NOTE 2: TYPE A WATERPROOFING SHALL NOT EXTEND ABOVE THE BOTTOM OF THE GROOVE INTO WHICH THE JOINT SEALER IS TO BE PLACED. IT SHALL BE APPLIED TO THE ENTIRE AREA OF THE ABUTMENT OR SUPERSTRUCTURE WHICH COMES INTO CONTACT WITH THE APPROACH SLAB.

NOTE 3: REPAIR OF BROKEN APPROACH SLAB SEAT SHALL BE CONSTRUCTED BY THE CONTRACTOR AS PER DETAIL 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 G-9.02(5) OF THE GENERAL CONDITIONS.



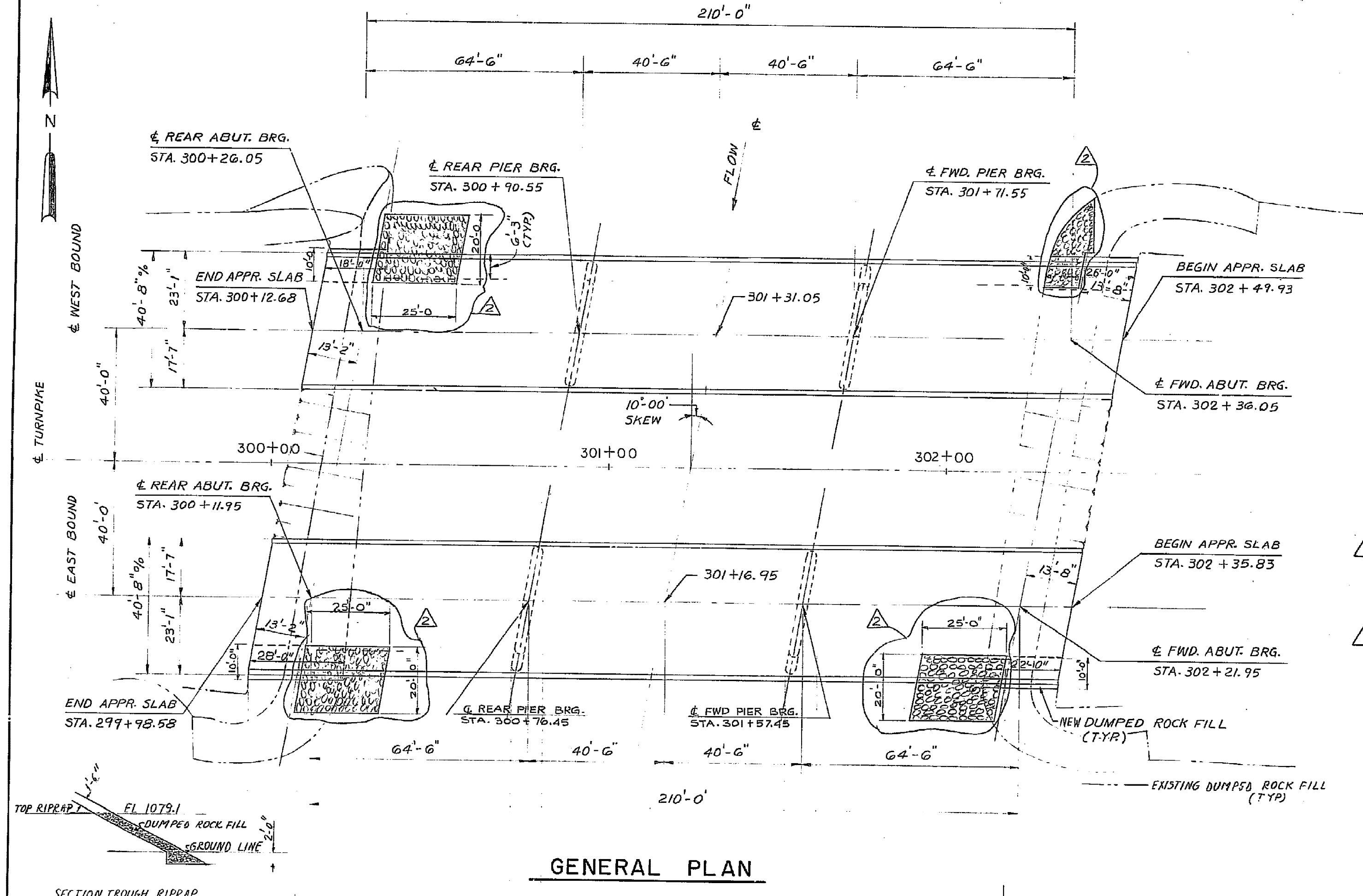
APPROACH SLAB SEAT REPAIR DETAIL

Nº	REVISION	BY	DATE
2	ADDED IMPRESSED JOINT & CHANGED TYPE OF CEMENT	DFC	11-28-84
1	ADDED SEAT REPAIR DETAIL	DFC	10-2-84

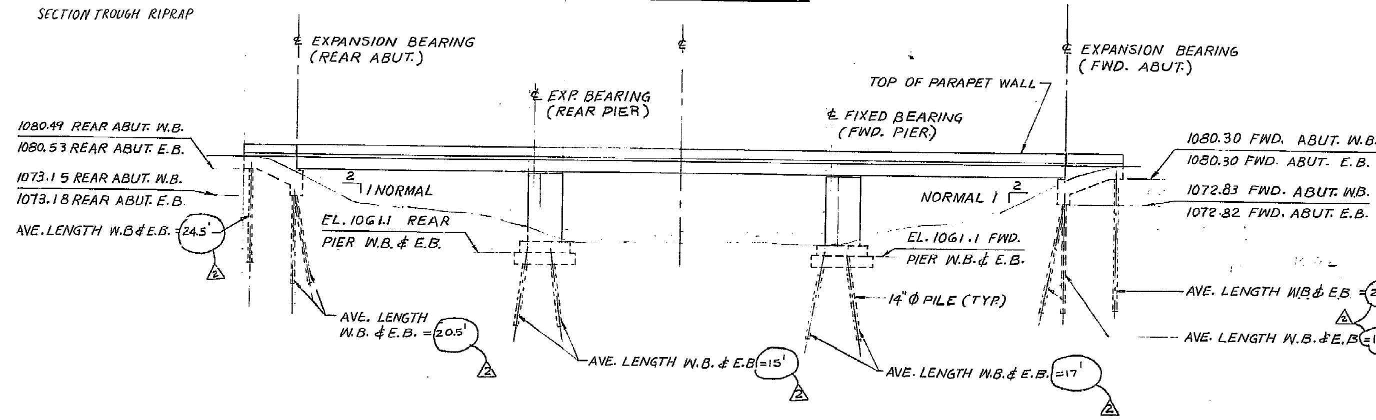
OHIO TURNPIKE COMMISSION

REINFORCED CONCRETE APPROACH SLABS

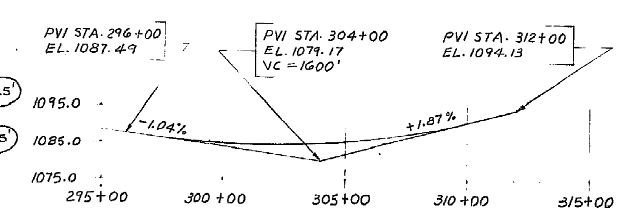
DATE: OCTOBER 1983	SCALE: N.T.S.
CIP 43-85-12	SHEET 10 OF 24



GENERAL PLAN



TYPICAL ELEVATION



PROFILE
NTS

NOTES

1. THE ELEVATIONS GIVEN ARE WITH RESPECT TO THE TOP OF PERMANENT MONUMENT EL. 1080.37 AT STA. 299+00

ESTIMATED STRUCTURE QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	EAST-BOUND	WEST-BOUND	GENERAL
SP 202	LUMP SUM		PORTIONS OF STRUCTURES REMOVED	LUMP SUM	LUMP SUM	
503	LUMP SUM		COFFERDAMS, CRIBS AND SHEETING.	LUMP SUM	LUMP SUM	
503	240	CU YD	UNCLASSIFIED EXCAVATION.	120	120	
503	78	CU YD	BACKFILL IN ACCORDANCE WITH 503.10	39	39	
505	LUMP SUM		PILE DRIVING EQUIPMENT MOBILIZATION.	LUMP SUM	LUMP SUM	
507	684	LIN. FT.	14" ø CAST IN PLACE REINFORCED CONCRETE PILES.	342	342	
509	11474	LB.	REINFORCING STEEL, GRADE - 60	5737	5737	
510	236	EA.	DOWEL HOLES, USING SP 853 GROUT ANCHORING	118	118	
SP511	72	CU YD	CLASS-C CONCRETE, PIER FOOTING.	36	36	
SP511	42	CU YD	CLASS-C CONCRETE, PIER	21	21	
SP511	58	CU YD	CLASS-C CONCRETE, ABUTMENTS	29	29	
* SP511A	101	CU YD	CLASS-S CONCRETE, ABUTMENT SLAB.& BARRIERS	51	50	
SP511A	571	CU YD	CLASS-S CONCRETE, SUPERSTRUCTURE DECK AND BARRIERS USING SHRINKAGE COMPENSATING CEMENT.	286	285	
513	118,816	LB.	STRUCTURAL STEEL (AISC CERT NOT REQUIRED)	59,533	59,283	
SP513	3360	EA.	WELDED STUD SHEAR CONNECTORS.	1680	1680	
SP513A	LUMP SUM		DISMANTLE, STORE, MOVE, ALTER AND/OR RECONDITION AND ERECT REUSED STRUCTURAL STEEL	LUMP SUM	LUMP SUM	
SP514	LUMP SUM		FIELD PAINTING OF EXISTING STRUCTURAL STEEL.	LUMP SUM	LUMP SUM	
SP514	118,816	L.B.	FIELD PAINTING OF NEW STRUCTURAL STEEL	59,533	59,283	
518	12	EA.	SCUPPERS	6	6	
SP 519	386	SQ FT.	PATCHING OF CONCRETE STRUCTURES.	193	193	
SP 527	LUMP SUM.		FALSEWORK, TEMPORARY BRACING & PROTECTIVE STRUCTURES	LUMP SUM	LUMP SUM	
SP533	166	LIN. FT.	3" CONTINUOUS STRIP SEAL IN STRUCTURAL STEEL JOINTS	83	83	
SP 536	3562	SQ YD	SILANE CONCRETE WEATHERPROOFING.	1781	1781	
601	152	SQ YD	DUMPED ROCK FILL, TYPE B	76	76	
SP 824	154145	LB.	EPOXY-COATED REINFORCING STEEL, GRADE-60.	77073	77072	
SPECIAL	8	EA.	RESET EXISTING ROCKER BEARINGS	4	4	

* USING SHRINKAGE COMPENSATING CEMENT

NO.	REVISIONS	BY	DATE
2	AS BUILT		
1	REVISED QUANTITY	S.B.	2-85

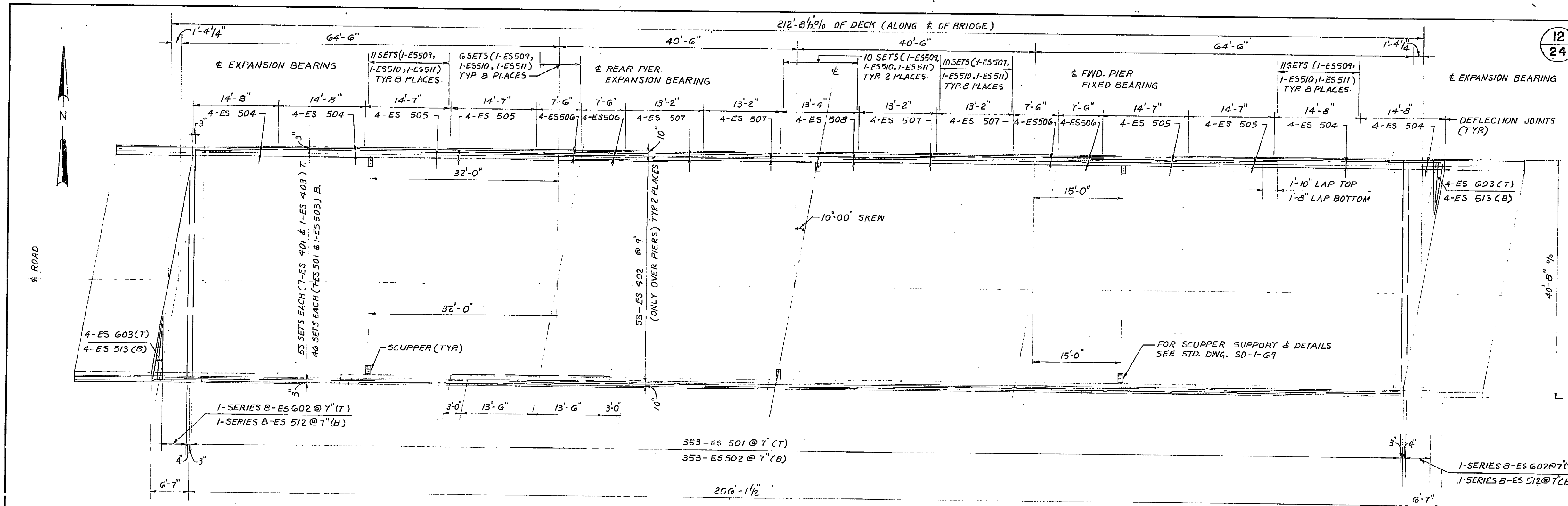
OHIO TURNPIKE COMMISSION
OHIO TURNPIKE

GENERAL PLAN & ESTIMATED QUANTITIES
OHIO TURNPIKE OVER CUYAHOGA RIVER

MADISON · MADISON · INTERNATIONAL
ARCHITECTS ENGINEERS · PLANNERS
2930 EUCLID AVE. CLEVELAND, OHIO 44115

DESIGNED: JR | CHECKED: KF | DATE: 12-21-84
DRAWN: D.C.P. | IN CHARGE: KF | SCALE: 1" = 20'-0"

CONTRACT NO. CIP-43-85-12 SHEET 1 OF 7

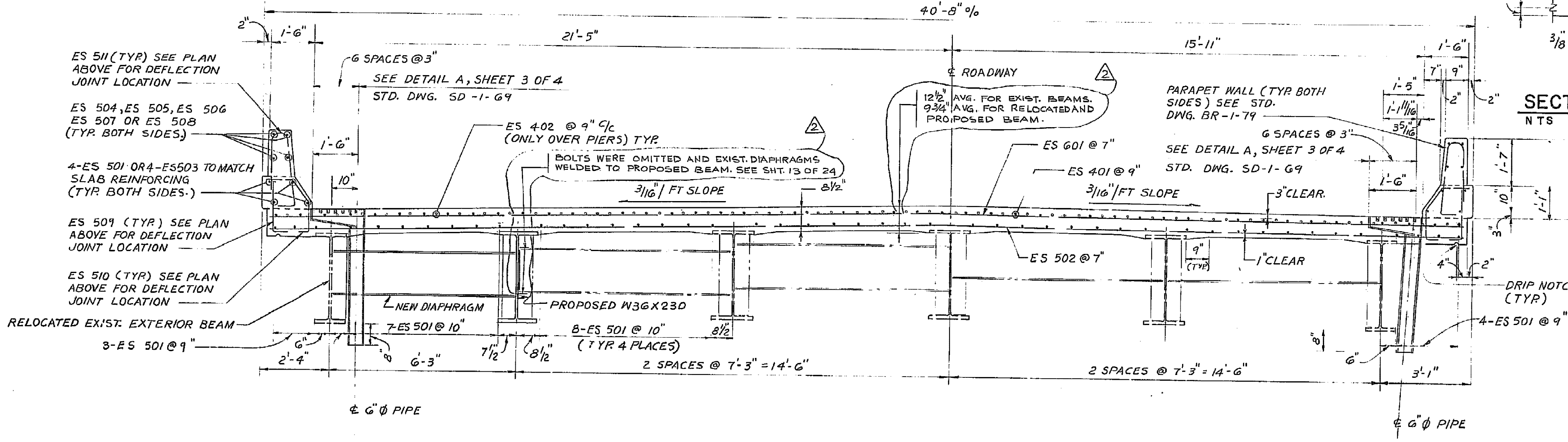


PLAN

1/8" = 1'-0"

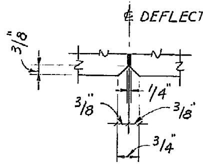
NO PROVISION IS GIVEN IN THE DESIGN FOR FUTURE WEARING COURSE FOR THIS BRIDGE.

WESTBOUND BRIDGE SHOWN - EASTBOUND BRIDGE IS THE SAME EXCEPT WIDENING IS ON SOUTH SIDE



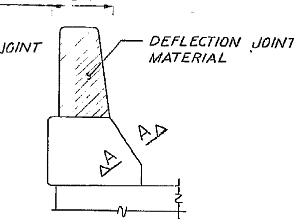
TRANSVERSE SECTION

1/2" = 1'-0"



SECTION A-A

NTS



DEFLECTION JOINT

NTS

NOTES :

1. THE DEFLECTION JOINTS IN THE BARRIER CURB MAY BE EITHER 1/4" GRAY SPONGE OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. EITHER MATERIAL SHALL MEET THE REQUIREMENTS OF AASHTO M-153, TYPE I, EXCEPT THE DENSITY OF THE PVC SPONGE SHALL NOT BE LESS THAN 20 LBS. PER CU. FT. INCLUDE WITH ITEM SP511, CLASS S CONCRETE, SUPERSTRUCTURE, FOR PAYMENT.

NO.	REVISIONS	BY	DATE
2	AS BUILT		

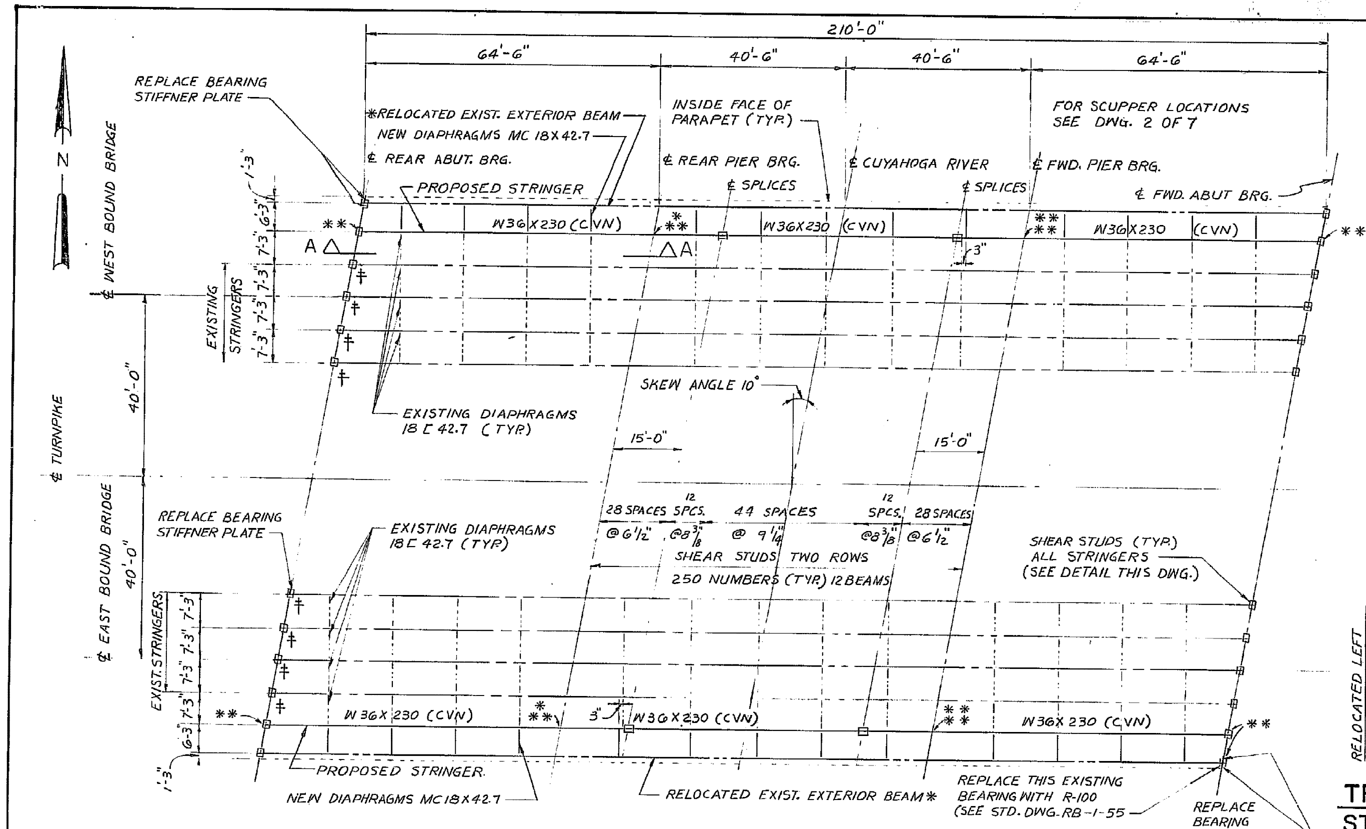
OHIO TURNPIKE COMMISSION
OHIO TURNPIKE

SUPERSTRUCTURE PLAN & SECTION
OHIO TURNPIKE OVER CUYAHOGA RIVER

MADISON · MADISON · INTERNATIONAL
ARCHITECTS · ENGINEERS · PLANNERS
2930 EUCLID AVE. CLEVELAND, OHIO 44115

DESIGNED: J.R.	CHECKED: K.R.	DATE: 12-20-84
DRAWN: D.C.P.	IN CHARGE: K.R.	SCALE: AS NOTED

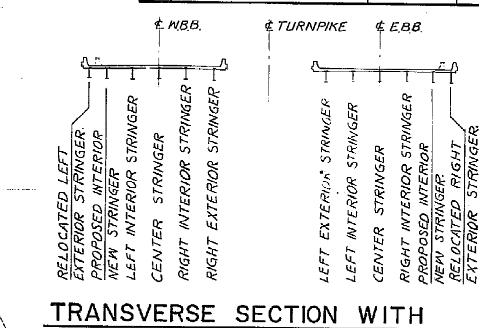
CONTRACT NO. CIP-43-85-12 SHEET 2 OF 7



FRAMING PLAN

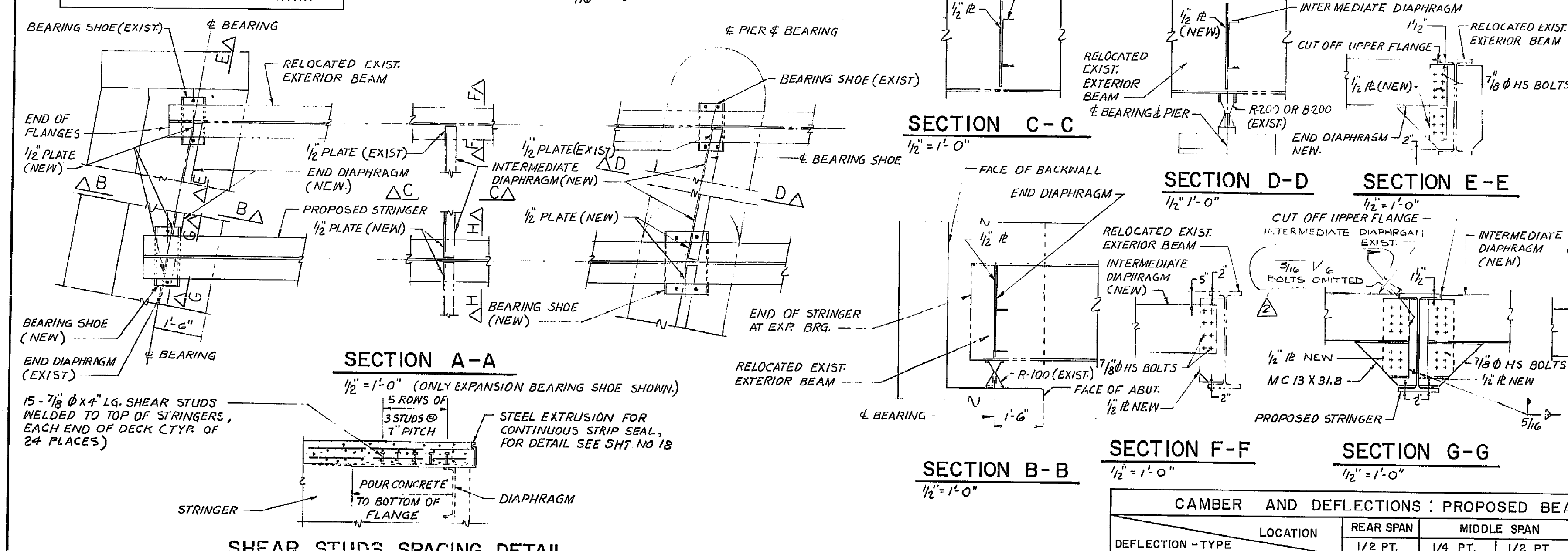
1/16" = 1'-0"

CONTRACTOR TO VERIFY ALL EXISTING DIMENSIONS PRIOR TO FABRICATION.



TRANSVERSE SECTION WITH STRINGER IDENTIFICATION

(LOOKING UP STATION) NTS



SECTION A-A

1/2" = 1'-0" (ONLY EXPANSION BEARING SHOE SHOWN)

SHEAR STUDS SPACING DETAIL NTS

SECTION B-B 1/2" = 1'-0"

SECTION C-C 1/2" = 1'-0"

SECTION D-D 1/2" = 1'-0"

SECTION E-E 1/2" = 1'-0"

SECTION F-F 1/2" = 1'-0"

SECTION G-G 1/2" = 1'-0"

SECTION H-H 1/2" = 1'-0"

13/24

FINISHED PAVEMENT ELEVATIONS										
	LOCATION	REAR SPAN		MIDDLE SPAN					FORWARD SPAN	
	MEMBER	℄ BRG. (REAR ABUT.)	1/2 PT.	℄ BRG. (REAR PIER)	1/4 PT.	1/2 PT.	3/4 PT.	℄ BRG. (FWD. PIER)	1/2 PT.	℄ BRG. (FWD. ABUT.)
W.B.B.	CENTER STRINGER	1084.71	1084.64	1084.58	1084.57	1084.54	1084.53	1084.52	1084.54	1084.56
W.B.B.	LEFT INTERIOR STRINGER	1084.59	1084.52	1084.46	1084.45	1084.42	1084.41	1084.40	1084.42	1084.44
W.B.B.	RIGHT INTERIOR STRINGER	1084.60	1084.53	1084.47	1084.46	1084.43	1084.41	1084.40	1084.42	1084.44
W.B.B.	PROPOSED NEW STRINGER	1084.48	1084.41	1084.35	1084.34	1084.31	1084.30	1084.29	1084.31	1084.33
W.B.B.	RIGHT EXTERIOR STRINGER	1084.49	1084.42	1084.36	1084.35	1084.32	1084.30	1084.29	1084.31	1084.33
W.B.B.	RELOCATED STRINGER.	1084.39	1084.32	1084.26	1084.25	1084.22	1084.21.	1084.20	1084.22	1084.24
E.B.B.	CENTER STRINGER	1084.75	1084.67	1084.60	1084.58	1084.56	1084.54	1084.52	1084.53	1084.54
E.B.B.	LEFT INTERIOR STRINGER	1084.63	1084.55	1084.49	1084.47	1084.45	1084.43	1084.41	1084.42	1084.43
E.B.B.	RIGHT INTERIOR STRINGER	1084.64	1084.56	1084.49	1084.47	1084.45	1084.43	1084.41	1084.42	1084.43
E.B.B.	LEFT EXTERIOR STRINGER	1084.52	1084.44	1084.37	1084.35	1084.33	1084.31	1084.29	1084.31	1084.32
E.B.B.	PROPOSED NEW STRINGER	1084.53	1084.45	1084.38	1084.36	1084.34	1084.32	1084.30	1084.30	1084.31
E.B.B.	RELOCATED STRINGER.	1084.44	1084.36	1084.29	1084.27	1084.25	1084.23	1084.20	1084.20	1084.21

1. FOR ELEVATIONS NOTES SEE SHEET 6 OF 7
2. REFER TO ODOT STD. DWG. SD-1-69 FOR SPLICE DETAILS. ALL SPLICE PLATES MUST MEET (CVN) REQUIREMENTS.
3. SHAPES OR PLATES DESIGNATED (CVN) SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01 OF LATEST EDITION OF ODOT CONSTRUTION AND MATERIALS SPECIFICATIONS.
4. NEW STRUCTURAL BEARINGS TO BE TYPE AS NOTED ON PLANS. (REF. ODOT STD. DWG RB-1-55). * ALL EXISTING BEARINGS OF THIS BEAM SHALL ALSO BE REMOVED WITH THE BEAMS UNLESS OTHERWISE SPECIFIED., ** ROCKER R-100., *** ROCKER R-200., **** BOLSTER B-200
5. † SPECIAL- RESET EXISTING ROCKER BEARINGS

BRIDGE DECK ELEVATIONS, SLAB THICKNESS AND APPROACH PROFILES :

IN ORDER TO MEET ROADWAY GRADES, TO ASSURE THE CONSTRUCTION OF THE REQUIRED THICKNESS OF DECK SLABS AND TO ASSURE THE PROPER LOCATION OF THE REINFORCING STEEL IN THE DECK SLABS; THE CONTRACTOR SHALL OBTAIN THE ELEVATIONS OF THE TOP OF EXISTING STEEL BEAMS AFTER THE COMPLETE REMOVAL OF EXISTING DECK SLAB AT THE LOCATIONS SHOWN IN THE TABLE ON SHEET 3 OF 7 FOR THE FINAL PAVEMENT ELEVATIONS, AND COMPUTE THE DECK THICKNESS OVER EXISTING BEAMS IF THE COMPUTED DECK THICKNESS IS FOUND TO BE LESS THAN MINIMUM THICKNESS REQUIRED, THE TOP OF FINAL PAVEMENT ELEVATIONS SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER THE CONTRACTOR SHALL ALSO COMPUTE THE DECK SCREED ELEVATION UTILIZING THE DEAD LOAD DEFLECTIONS. THE QUANTITY OF DECK CONCRETE TO BE PAID SHALL BE BASED UPON 8 1/2" THICK CONCRETE OUTSIDE THE HAUNCH AREA AND 9 3/4" THICK CONCRETE OVER EXISTING AND NEW BEAMS AT THE HAUNCHES. A TYPICAL HAUNCH WIDTH OF 9" SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE, HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6" AND 12", PROVIDED THAT THE SLOPE SHALL NOT BE MORE THAN 1:4 FOR A HAUNCH LESS THAN 9" IN WIDTH.

PRIOR TO THE CONTRACTOR POURING THE CONCRETE ABUTMENT AND APPROACH SLABS, THE ENGINEER WILL PROVIDE THE CONTRACTOR WITH FINISH GRADES REQUIRED TO PROVIDE A SMOOTH TRANSITION FROM THE ASPHALT ROADWAY TO THE CONCRETE BRIDGE DECK.

UPON REMOVAL OF THE EXISTING ASPHALT SURFACE AND THE COMPLETION OF THE FULL DEPTH PAVEMENT REPAIRS, THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER ELEVATIONS OF THE EXISTING CONCRETE SURFACE ALONG THE CENTERLINE AND BOTH EDGES OF PAVEMENT AT INTERVALS OF 25 FEET. ELEVATIONS OF THE EXISTING ASPHALT FOR A DISTANCE OF 100 FEET BEYOND PAVING LIMITS SHALL ALSO BE PROVIDED. AFTER RECEIPT OF THESE ELEVATIONS THE ENGINEER WILL CALCULATE AND PROVIDE TO THE CONTRACTOR FINAL ELEVATIONS FOR THE CONCRETE ABUTMENT AND APPROACH SLABS FOR BOTH THE ITEM 402 ASPHALT CONCRETE BASE COURSE AND THE ITEM SP.404 ASPHALT CONCRETE SURFACE COURSE. NO ASPHALT APPROACH PAVING SHALL COMMENCE UNTILL RECEIPT OF THESE FINAL ELEVATIONS.

PAYMENT FOR THE ABOVE MENTIONED WORK SHALL BE INCLUDED WITH THE LUMP SUM PRICE FOR ITEM SP. 623.

CAMBER AND DEFLECTIONS : PROPOSED BEAM *				
LOCATION	REAR SPAN	MIDDLE SPAN		FWD. SPAN.
DEFLECTION - TYPE	1/2 PT.	1/4 PT.	1/2 PT.	1/2 PT.
DL.-DEFLECTION : SUPERIMPOSED	8/16	13/16	1 3/16	8/16

* DEFLECTION DUE TO STEEL ONLY IS '0' AT ALL LOCATIONS

NO.	REVISIONS	BY	DATE
2	AS BUILT.		

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE

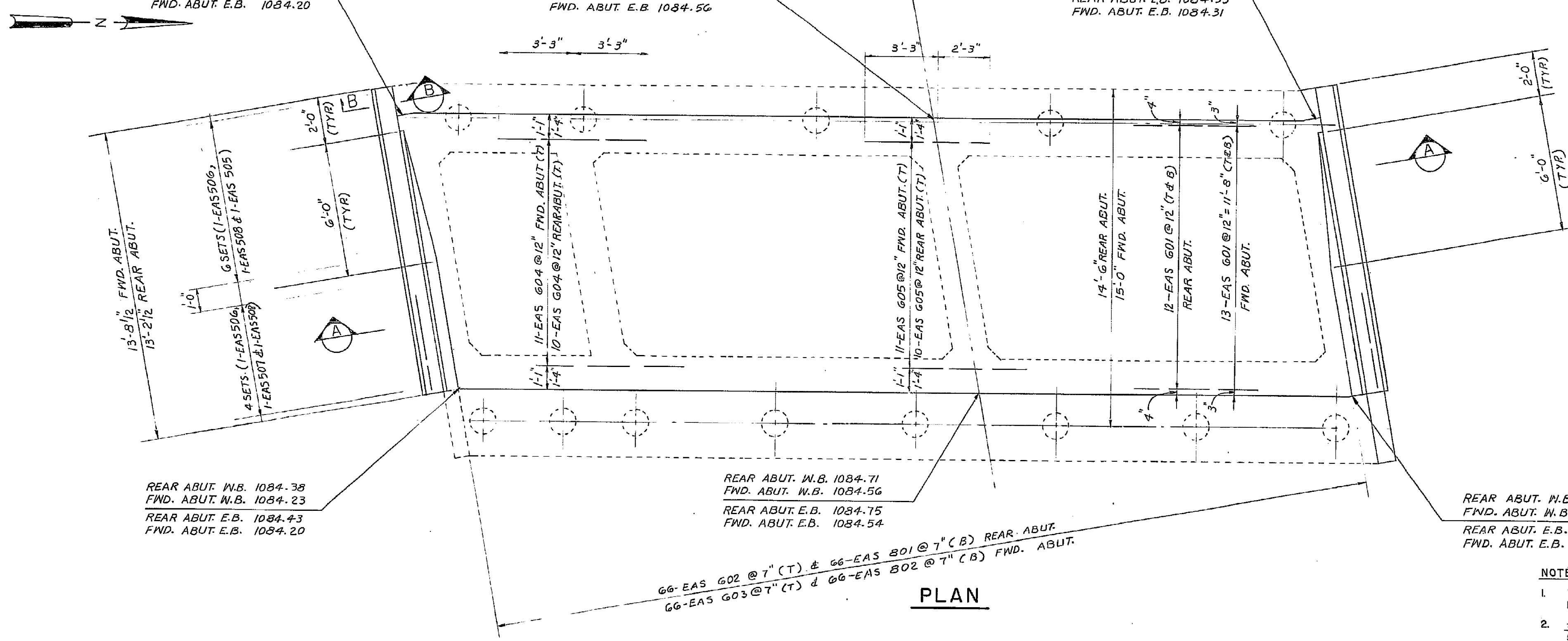
FRAMING PLAN & DETAILS

OHIO TURNPIKE OVER CUYAHOGA RIVER

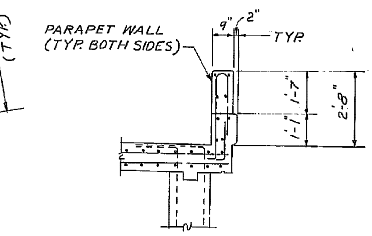
MADISON · MADISON · INTERNATIONAL
ARCHITECTS · ENGINEERS · PLANNERS
2930 EUCLID AVE. CLEVELAND, OHIO 44115

DESIGNED: JR | CHECKED: K.I. | DATE: 12-19-84
DRAWN: D.C.P. | IN CHARGE: K.I. | SCALE: AS NOTED

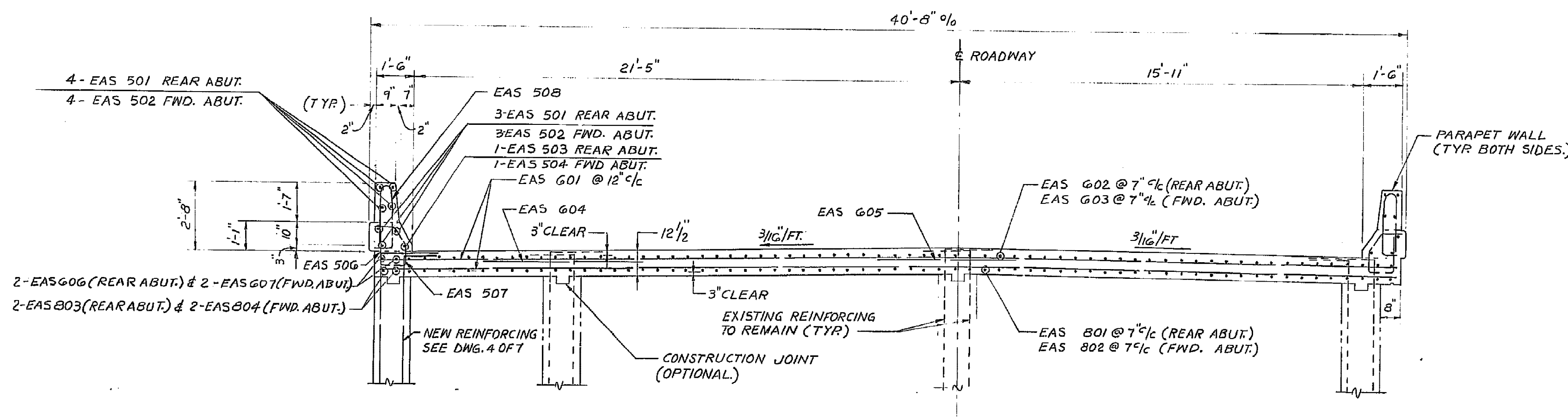
CONTRACT NO. CIP-43-85-12 SHEET 3 OF 7



PLAN



SECTION B



SECTION A

NOTES:

1. THE ELEVATIONS GIVEN ARE WITH RESPECT TO THE TOP OF PERMANENT MONUMENT EL. 1080.37 AT STA. 299+00.
2. ABUTMENT BACKFILL: BACKFILL SHALL BE PLACED IN ACCORDANCE WITH 503 BETWEEN THE EXISTING WINGWALLS AND THE NEW WINGWALLS EXTENDING FROM THE EXISTING GROUND LINE TO THE BOTTOM OF THE DECK SLAB. THE CONTRACTOR SHALL ALSO PROVIDE AND PLACE BACKFILL BETWEEN EXISTING WINGWALLS AS REQUIRED TO BRING THE FILL TO THE LEVEL OF THE PROPOSED SLAB, INCLUDE WITH ITEM 503 ABUTMENT BACKFILL, AS PER 503.10 FOR PAYMENT.
3. CONCRETE INSERT ASSEMBLIES: CONCRETE INSERT ASSEMBLIES, AS SHOWN ON STANDARD CONSTRUCTION DRAWINGS GR-1 & GR-3, SHALL BE PROVIDED AT ALL WINGWALL TERMINALS FOR ATTACHMENT OF GUARDRAIL TERMINAL CONNECTORS, EVEN THOUGH GUARDRAIL MAY NOT BE SPECIFIED ON THE ROADWAY PLANS. WHERE THE APPROACH SLAB IS UNCURBED, CONCRETE ANCHOR ASSEMBLIES SHALL BE PROVIDED FOR WHEEL GUARD ATTACHMENT. INCLUDE WITH ITEM SP. 511A FOR PAYMENT.

NO	REVISIONS	BY	DATE

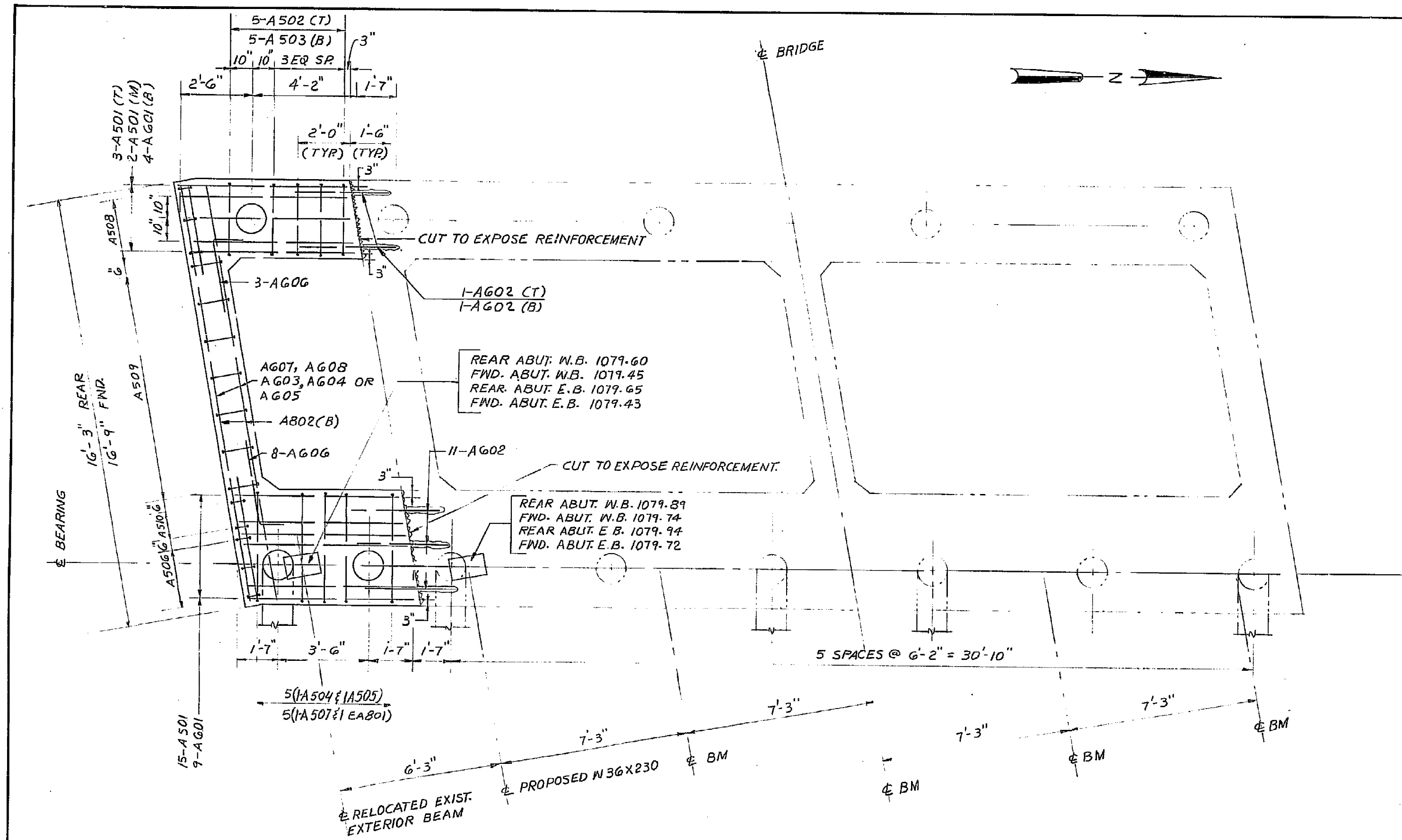
OHIO TURNPIKE COMMISSION
OHIO TURNPIKE

ABUTMENT SLAB PLAN & SECTION
OHIO TURNPIKE OVER CUYAHOGA RIVER

MADISON · MADISON · INTERNATIONAL
ARCHITECTS · ENGINEERS · PLANNERS
2930 EUCLID AVE. CLEVELAND, OHIO 44115

DESIGNED: J.R. | CHECKED: K.P. | DATE: 12-21-84
DRAWN: D.C.P. | IN CHARGE: K.P. | SCALE: 3/8"=1'-0"

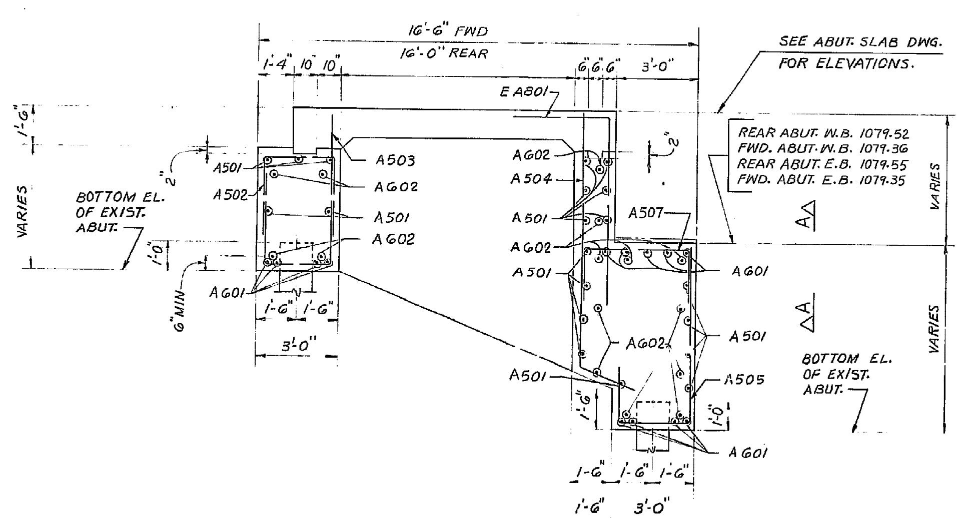
CONTRACT NO. CIP-43-85-12 SHEET 4 OF 7



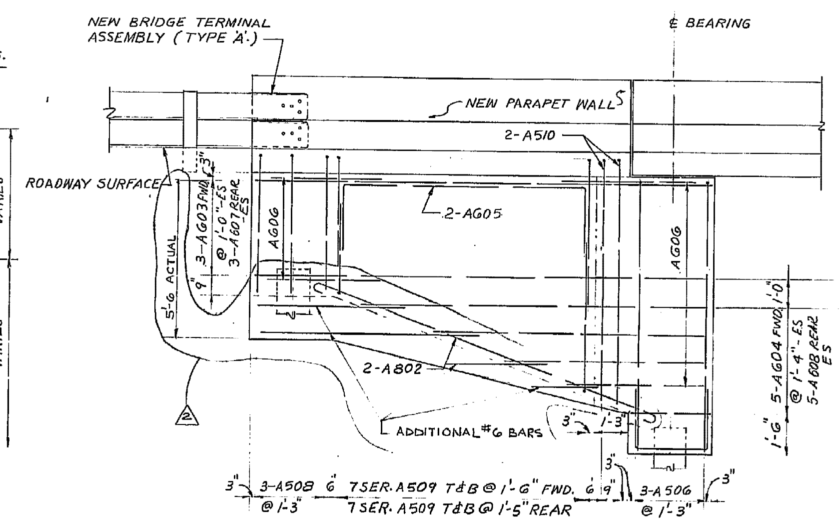
PLAN

NOTES

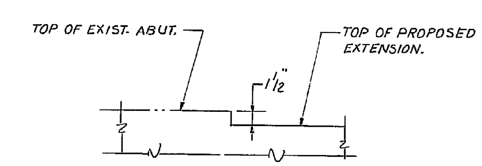
1. THE ELEVATIONS GIVEN ARE WITH RESPECT TO THE TOP OF PERMANENT MONUMENT EL. 1080.37 AT STA. 299+00



TYPICAL SECTION



TYPICAL ELEVATION



PARTIAL SECTION A-A

N.T.S.

NO	REVISIONS	BY	DATE
1	AS BUILT		

OHIO TURNPIKE COMMISSION

OHIO TURNPIKE

ABUTMENT WIDENING AND SECTION

OHIO TURNPIKE OVER CUYAHOGA RIVER

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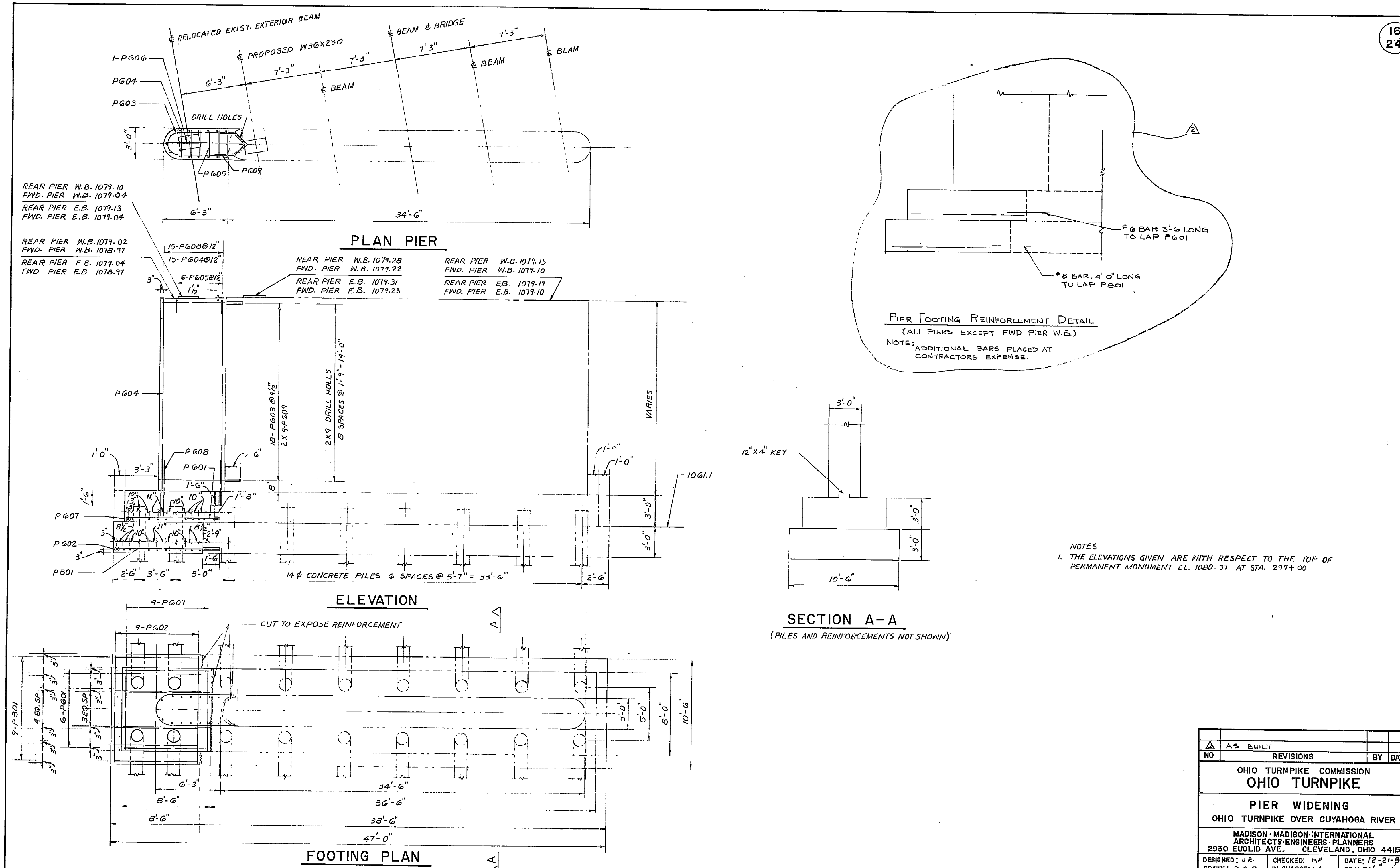
2930 EUCLID AVE. CLEVELAND, OHIO 44115

DESIGNED: JR	CHECKED: KP	DATE: 12-21-84
DRAWN: D.C.P.	IN CHARGE: KP	SCALE: 3/8"=1'-0"

CONTRACT NO. CIP-43-85-12 SHEET 5 OF 7



NOTES
1. THE ELEVATIONS GIVEN ARE WITH RESPECT TO THE TOP OF PERMANENT MONUMENT EL. 1080.37 AT STA. 299+00

NO	REVISIONS	BY	DATE
△	AS BUILT		

OHIO TURNPIKE COMMISSION
OHIO TURNPIKE

PIER WIDENING
OHIO TURNPIKE OVER CUYAHOGA RIVER

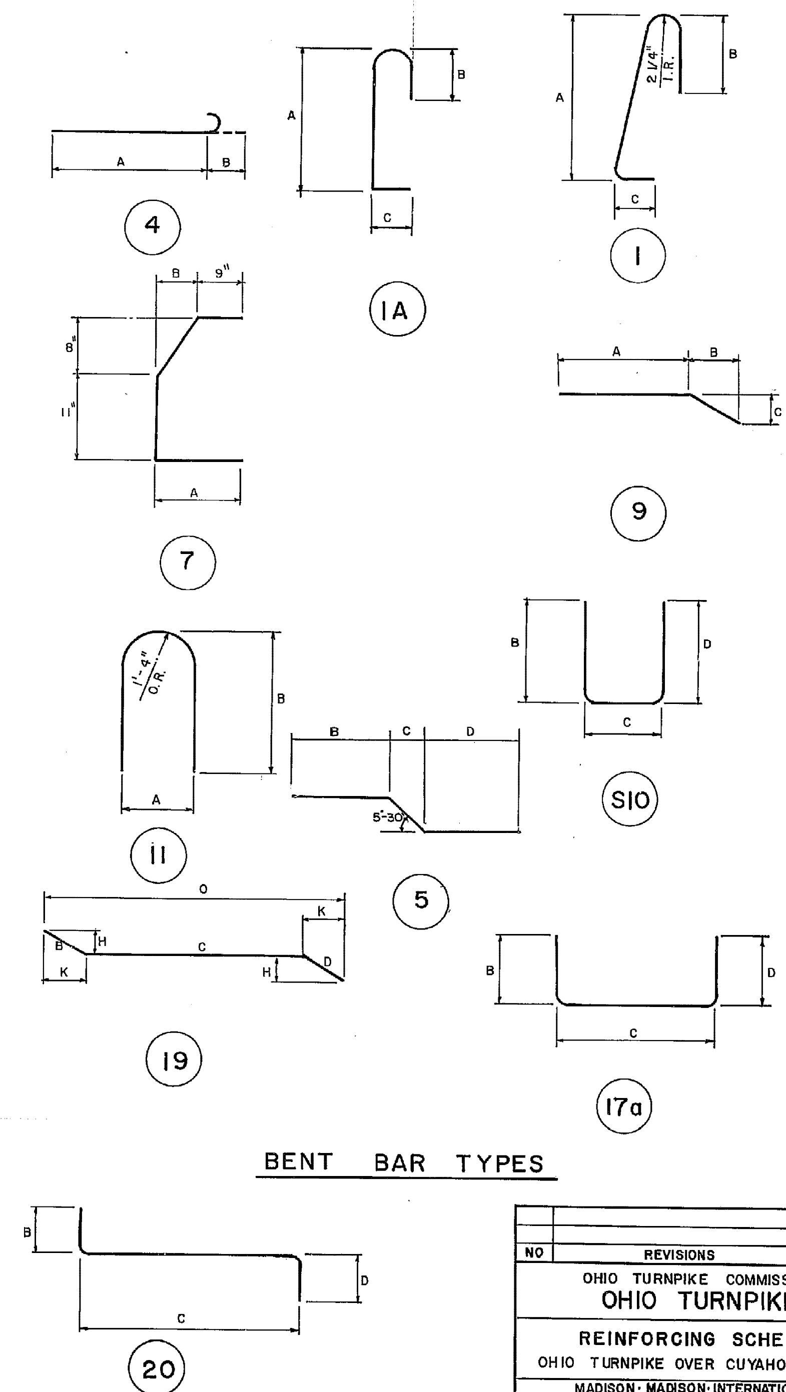
MADISON-MADISON-INTERNATIONAL
ARCHITECTS-ENGINEERS-PLANNERS
2930 EUCLID AVE. CLEVELAND, OHIO 44115

DESIGNED: J.R.	CHECKED: HP	DATE: 12-21-84
DRAWN: D.C.P.	IN CHARGE: H.E.	SCALE: 1/4"=1'-0

CONTRACT NO. CIP-43-85-12 SHEET 6 OF 7

MARK	NO. REQUIRED	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS D	SERIES INCR.	WEIGHT LBS.	W.B.B. FWD.	E.B.B. REAR
				ABUTMENT							
A 501	80	6'-0"	STR.						501	20 / 20	20 / 20
A 502	20	6'-11"	17a		2'-4"	2'-6"	2'-4"		144	5 / 5	5 / 5
A 503	20	8'-6"	17a		2'-6"	2'-6"	3'-9"		177	5 / 5	5 / 5
A 504	20	11'-0"	9	8'-8"	1'-0"	2'-0"			238	5 / 5	5 / 5
A 505	20	12'-2"	17a		3'-11"	2'-6"	6'-0"		254	5 / 5	5 / 5
A 506	12	19'-5"	17a		9'-8"	0'-4"	9'-8"		408	3 / 3	3 / 3
A 507	20	7'-9"	17a		2'-0"	4'-0"	2'-0"		162	5 / 5	5 / 5
A 508	12	8'-1"	17a		4'-0"	0-4"	4'-0"		101	3 / 3	3 / 3
A 509	4 SER. 7 = 28	8'-5" / 12'-4"	17a		3'-10" / 5'-9"	1'-0"	3'-10" / 5'-9"	3 1/4"	302	7 / 7	7 / 7
A 510	8	17'-7"	17a		8'-9"	0'-4"	8'-9		147	2 / 2	2 / 2
A 601	52	6'-0"	STR.						469	13 / 13	13 / 13
A 602	60	3'-6"	STR.						315	15 / 15	15 / 15
A 603	12	16'-3"	STR.						293	6 / 6	
A 604	4 SER. 5 = 20	2'-6" / 7'-9"	STR.						154	10 / 10	
A 605	8	12'-5"	17a		2'-0"	8'-9"	2'-0"		150	2 / 2	2 / 2
A 606	44	6'-11"	9	3'-3"	2'-0"	2'-0"			457	11 / 11	11 / 11
A 607	12	15'-6"	STR.						279		6 / 6
A 608	4 SER. 5 = 20	2'-6" / 7'-3"	STR.						146		10 / 10
A 802	8	15'-9"	4	14'-10"	0'-11"				336	2 / 2	2 / 2
								TOTAL=	5033		
				PIER							
P601	24	9'-10"	STR.						354	6 / 6	6 / 6
P602	36	10'-2"	STR.						550	9 / 9	9 / 9
P603	72	14'-4"	11	2'-8"	6'-7"				1550	18 / 18	18 / 18
P604	60	14'-6"	STR.						1307	15 / 15	15 / 15
P605	24	7'-10"	S10		2'-10"	2'-6"	2'-10"		282	6 / 6	6 / 6
P606	4	8'-11"	20		3'-1"	6'-0"			54	1 / 1	1 / 1
P607	36	7'-8"	STR.						415	9 / 9	9 / 9
P608	60	6'-10"	20		1'-0"	6'-0"			615	15 / 15	15 / 15
P609	72	3'-5"	19		2'-0"	1'-6"			369	18 / 18	18 / 18
P801	36	9'-10"	STR.						945	9 / 9	9 / 9
								TOTAL =	6441		
							GRAND	TOTAL =	11,474		
				ABUTMENT SLAB EPOXY COATED							
EAS501	28	12'-10"	STR.						375		14 / 14
EAS502	28	13'-4"	STR.						389	14 / 14	
EAS503	4	12'-7"	5		1'-10"	6'-0"	5'-0"		52		2 / 2
EAS504	4	13'-1"	5		1'-10"	6'-0"	5'-6"		55	2 / 2	
EAS505	48	2'-10"	17a		9"	1'-7"	9"		142	12 / 12	12 / 12
EAS506	80	3'-0"	20			2'-1"	11"		250	20 / 20	20 / 20
EAS507	32	2'-10"	7	7"	6"				94	8 / 8	8 / 8
EAS508	80	4'-10"	1A	2'-4"	2'-2"	7"			403	20 / 20	20 / 20
EAS601	100	40'-2"	STR.						6034	26 / 26	24 / 24
EAS602	132	11'-6"	STR.						2280		66 / 66
EAS603	132	12'-0"	STR.						2379	66 / 66	
EAS604	42	6'-6"	STR.						410	11 / 11	10 / 10
EAS605	42	5'-6"	STR.						347	11 / 11	10 / 10
EAS606	8	12'-10"	STR.						154		4 / 4
EAS607	8	13'-4"	STR.						160	4 / 4	
EAS801	132	11'-6"	STR.						4053		66 / 66
EAS802	132	12'-0"	STR.						4229	66 / 66	
EAS803	8	12'-10"	STR.						274		4 / 4
EAS804	8	13'-4"	STR.						285	4 / 4	
								TOTAL=	22365		

MARK	NO. REQUIRED	LENGTH	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS D	SERIES INCR.	WEIGHT LBS.	W.B.B	E.B.B.
				SUPERSTRUCTURE EPOXY COATED							
ES401	770	30'-0"	STR.						15431	385	385
ES402	212	30'-0"	STR.						4248	106	106
ES403	110	15'-4"	STR.						1126	55	55
ES501	756	30'-0"	STR.						23655	378	378
ES502	706	40'-0"	STR.						29454	353	353
ES503	108	14'-2"	STR.						1596	54	54
ES504	64	14'-4"	STR.						957	32	32
ES505	64	14'-3"	STR.						951	32	32
ES506	64	7'-2"	STR.						479	32	32
ES507	64	12'-10"	STR.						856	32	32
ES508	13	13'-0"	STR.						217	8	8
ES509	648	1'-11"	20		0'-9"	1'-4"			1298	324	324
ES510	648	3'-2"	7	0'-9"	0'-6"				2142	324	324
ES511	648	5'-3"	1	2'-4"	2'-2"	0'-7"			3548	324	324
ES512	4 SER. 8 = 32	14'-2" / 40'-2"	STR.					3'-3"	907	16	16
ES513	16	14'-0"	STR.						234	8	8
ES601	706	40'-0"	STR.						42416	353	353
ES602	4 SER. 8 = 32	14'-2" / 40'-2"						3'-3"	1306	16	16
ES603	16	14'-0"	STR.						336	8	8
								TOTAL=	131157		
				ABUTMENT EPOXY COATED							
EA801	20	11'-6"	17a			3'-8"	8'-3"		623	5 / 5	5 / 5
								TOTAL=	623		
							GRAND	TOTAL=	154145		



BENT BAR TYPES

NO	REVISIONS	BY	DATE

OHIO TURNPIKE COMMISSION
OHIO TURNPIKE

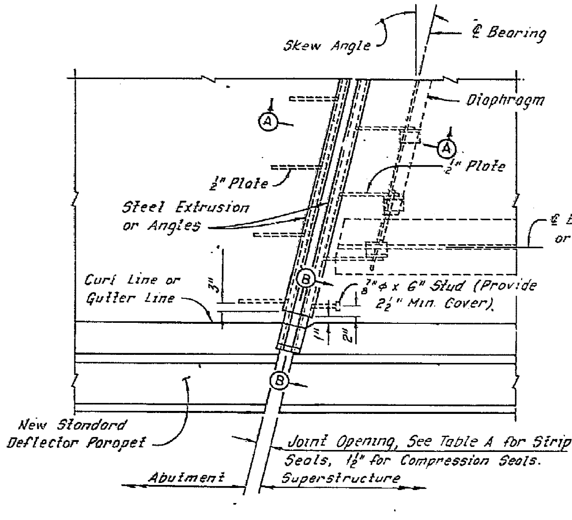
REINFORCING SCHEDULE
OHIO TURNPIKE OVER CUYAHOGA RIVER

MADISON · MADISON · INTERNATIONAL
ARCHITECTS · ENGINEERS · PLANNERS
2930 EUCLID AVE. CLEVELAND, OHIO 44115

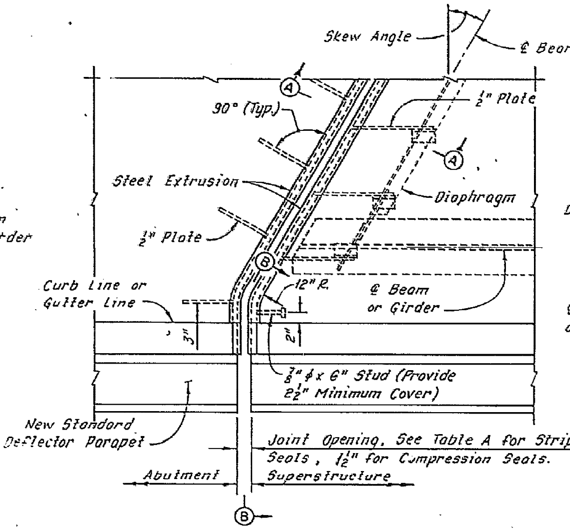
DESIGNED: JR DRAWN: D.C.P.	CHECKED: KP IN CHARGE: KP	DATE: 12-21-84 SCALE:

CONTRACT NO. CIP-43-85-12 SHEET 7 OF 7

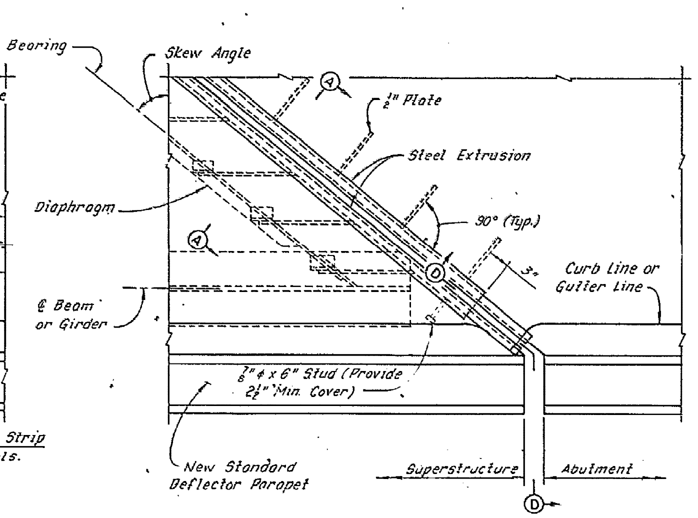
D C B A A B C D



PLAN - SKEW ANGLE < 20°
(Strip Seal Shown, Compression Seal Similar)
Scale: 1/4" = 1'-0"



PLAN - SKEW ANGLE 20° TO 45°
(Strip Seal Shown, Compression Seal Similar)
Scale: 1/4" = 1'-0"



PLAN - SKEW ANGLE > 45° (STRIP SEAL ONLY)
Scale: 1/4" = 1'-0"

GENERAL NOTES

ELASTOMERIC COMPRESSION SEALS SHALL BE USED AT FIXED JOINTS ONLY, AND AT SKEWS LESS THAN 45°.

STUD ANCHORS SHALL BE LOW CARBON STEEL ASTM A-108.

ALL WELDING SHALL CONFORM WITH A.W.S. AND AASHTO SPECIFICATIONS FOR WELDED HIGHWAY AND RAILWAY BRIDGES.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.

ELASTOMERIC COMPRESSION SEAL SHALL BE WABO-ACME J-200, D.S. BROWN D.S. 200 OR APPROVED EQUAL.

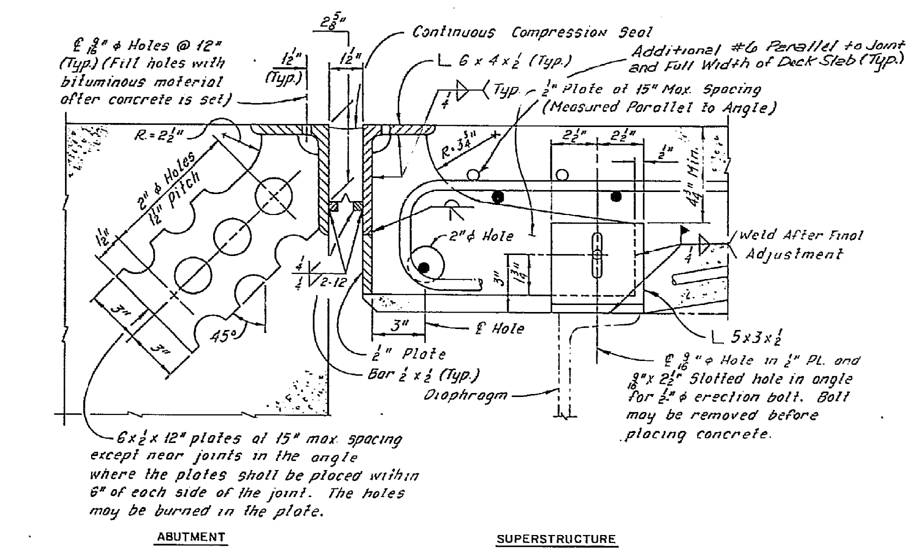
CONTINUOUS STRIP SEAL SHALL BE AS MANUFACTURED BY WABO-ACME, D.S. BROWN, GENERAL TIRE OR APPROVED EQUAL, AND SHALL BE THE SIZE AS SPECIFIED

DETAILS AT DIAPHRAGMS SHOWN, DETAILS AT BEAMS OR GIRDERS SIMILAR.

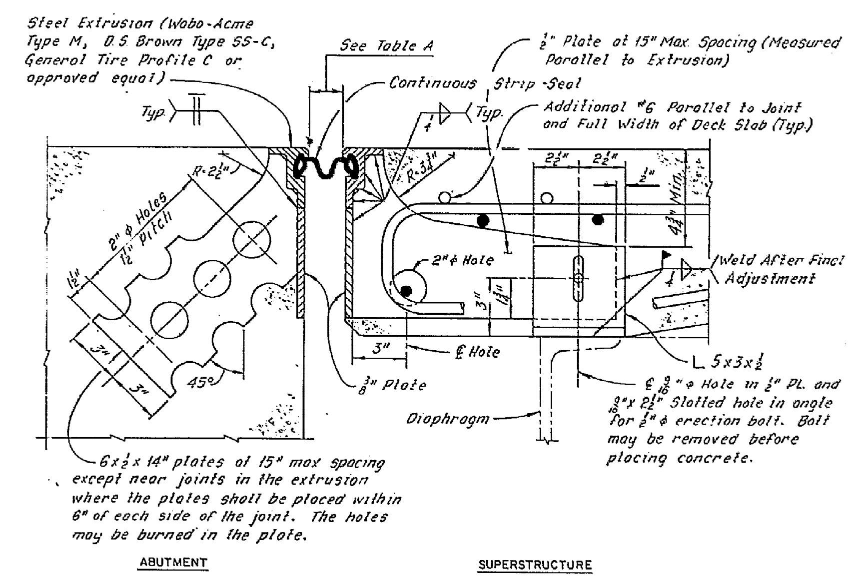
TABLE A

STRIP SEAL SIZE	STRIP SEAL JOINT OPENING INSTALLATION CHART						
	TEMPERATURE °F						
	30	40	50	60	70	80	90
3"	2-1/4"	2-1/8"	2"	1-7/8"	1-3/4"	1-5/8"	1-1/2"
4"	2-7/8"	2-5/8"	2-3/8"	2-1/4"	2"	1-3/4"	1-1/2"
5"	3-3/8"	3-1/8"	2-3/4"	2-1/2"	2-1/8"	1-7/8"	1-1/2"

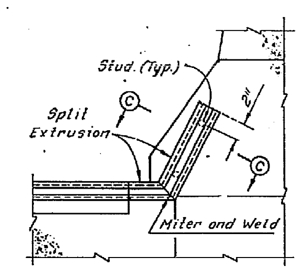
MINIMUM JOINT WIDTH AT TIME OF INSTALLATION SHALL BE 1-1/2" AT TEMPERATURES OF 90°F. AND ABOVE.



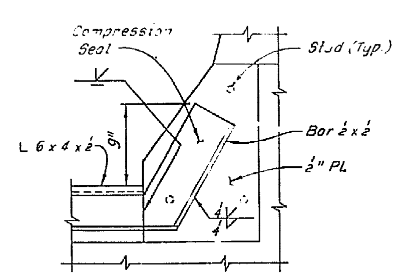
SECTION A-A (COMPRESSION SEAL)
Scale: 3" = 1'-0"



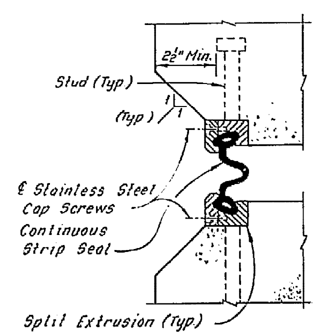
SECTION A-A (STRIP SEAL)
Scale: 3" = 1'-0"



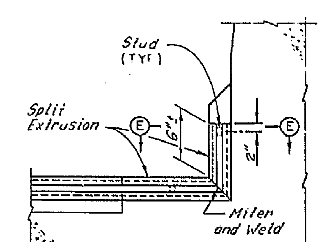
SECTION B-B (STRIP SEAL)
Scale: 1 1/2" = 1'-0"



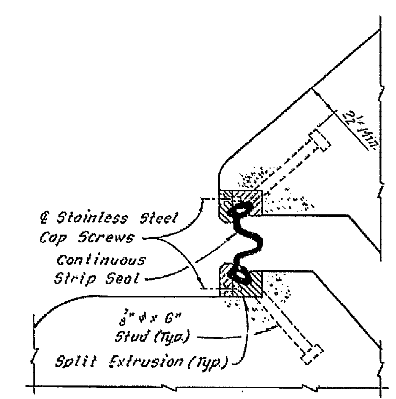
SECTION B-B (COMPRESSION SEAL)
Scale: 1 1/2" = 1'-0"



SECTION C-C
No Scale



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

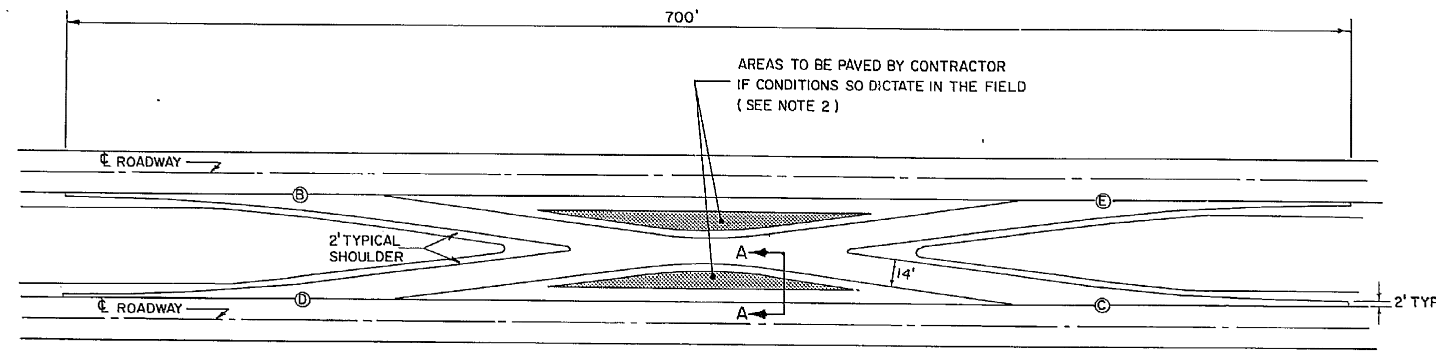


SECTION E-E
No Scale

OHIO TURNPIKE COMMISSION

DECK JOINT DETAILS

DATE: JANUARY 1985	SCALE: AS NOTED
FIP: 43-85-12	SHEET 18 OF 24



PLAN
SCALE: 1"=40'

NOTE: PROFILE OF CROSSOVER BETWEEN POINTS B-C AND D-E TO BE STRAIGHT LINES

REFURBISHING EXISTING CROSSOVER

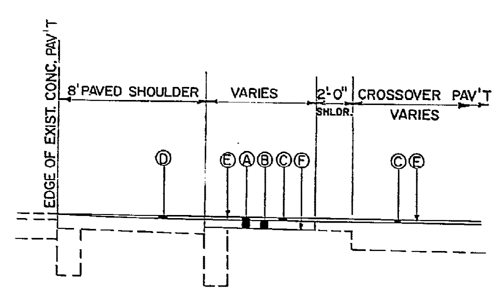
NOTES: 1. EXISTING CROSSOVERS, WHERE INDICATED ON THE ROADWAY PLANS, ARE TO BE REFURBISHED AND SURFACED, IF DIRECTED, WITH AN ASPHALT OVERLAY (MIN. 1" THICKNESS) BY THE CONTRACTOR TO CONFORM TO THE DIMENSIONS AND DETAILS SHOWN ON THIS SHEET OR AS OTHERWISE DIRECTED BY THE ENGINEER.

PAYMENT FOR ALL LABOR AND MATERIALS NECESSARY FOR THE REFURBISHING AND MAINTENANCE (DURING CONTRACT WORK) OF EXISTING CROSSOVERS, EXCEPT FOR ASPHALT OVERLAYS AND PAVING SHADED AREAS SHALL BE INCLUDED UNDER ITEM 614 "MAINTENANCE TRAFFIC". PAYMENT FOR ASPHALT OVERLAYS, OF THE EXISTING CROSSOVERS SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 404-"ASPHALT LEVELING COURSE FOR MAINTAINING TRAFFIC ON CROSSOVERS".

2. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED IN THE PROPOSAL TO BE USED AS DIRECTED BY THE ENGINEER FOR THE PURPOSE OF PAVING THE SHADED AREAS AS SHOWN ON THE PLAN.

ITEM 402- 3"ASPHALT CONCRETE BASE COURSE, AS PER PLAN 25 CU.YDS.

PAYMENT FOR ITEM 203-EXCAVATION AND ITEM 408 PRIME COAT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 402- 3"ASPHALT CONCRETE BASE COURSE.



SECTION A-A
SCALE 1/4"=1'-0"

LEGEND

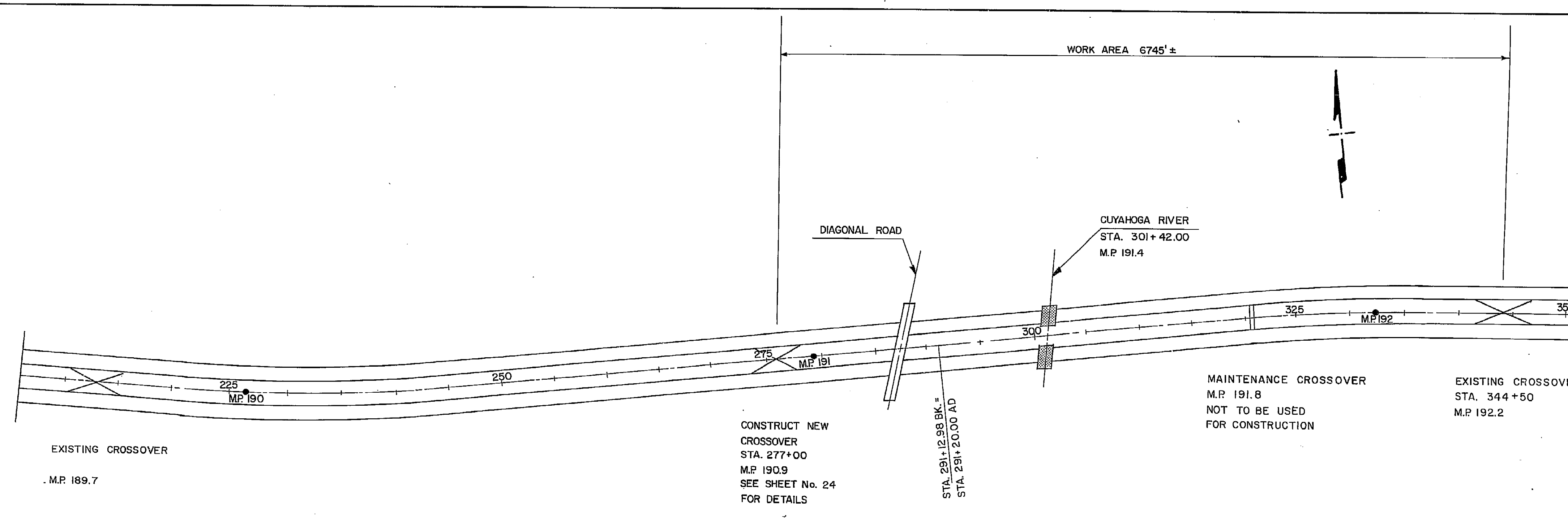
- * Ⓐ-203-EXCAVATION
- * Ⓑ-402-3"ASPHALT CONCRETE BASE COURSE, AS PER PLAN
- Ⓒ-404-1"ASPHALT CONCRETE SURFACE COURSE
- Ⓓ-VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE
- Ⓔ-407 TACK COAT
- * Ⓕ-408 PRIME COAT

*SEE NOTE 2

OHIO TURNPIKE COMMISSION

EXISTING CROSSOVER DETAILS

DATE: OCTOBER 1984	SCALE: AS NOTED
CIP: 43-85-12	SHEET 19 OF 24



*EXISTING CROSSOVERS ARE TO BE RESURFACED, IF DIRECTED BY THE ENGINEER, WITH AN ASPHALT OVERLAY (MINIMUM 1" THICKNESS). THE EXISTING CROSSOVER SHALL BE SWEPT CLEAN OF ALL LOOSE MATERIAL AND TACK COATED PRIOR TO THE PLACEMENT OF THE OVERLAY. PAYMENT FOR ASPHALT OVERLAYS OF THE EXISTING CROSSOVERS SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 404 - "ASPHALT LEVELING COURSE FOR MAINTAINING TRAFFIC ON CROSSOVERS", WHICH PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK.

TRAFFIC CONTROL ESTIMATED QUANTITIES

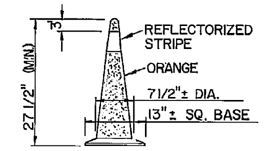
ITEM	TOTAL	UNIT	DESCRIPTION
* 404	40	CU. YD.	ASPHALT LEVELING COURSE FOR MAINTAINING TRAFFIC ON CROSSOVERS
SP 614	LUMP	LUMP	MAINTAINING TRAFFIC
SP 622A	6850	LIN. FT.	TEMPORARY CONCRETE BARRIER PROVIDED BY THE COMMISSON.
605	1000	LIN. FT.	6" UNCLASSIFIED PIPE UNDERDRAINS 707.01
605	450	LIN. FT.	12" TYPE "F" CONDUIT 707.01
614	LUMP	LUMP	CONSTRUCT NEW CROSSOVER
402	25	CU.YD.	3" ASPHALT CONCRETE BASE COURSE, AS PER PLAN.

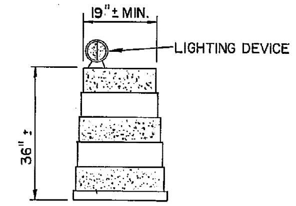
OHIO TURNPIKE COMMISSION

TRAFFIC CONTROL
LOCATION PLAN
ESTIMATED QUANTITIES

DATE: SEPTEMBER 1984	SCALE: N.T.S.
RMP: 43-85-12	SHEET 20 OF 24

TRAFFIC CONTROL DRAWINGS — GENERAL NOTES AND DETAILS





CONE SHAPED TRAFFIC GUIDE:
THE CONE SHAPED TRAFFIC GUIDE SHALL BE THE SLIMLINE OR TRIMLINE STYLE WITH THE BODY OF THE TRAFFIC GUIDE CONSTRUCTED OF POLYVINYL CHLORIDE MATERIAL. THE BASE OF THE TRAFFIC GUIDE SHALL BE CONSTRUCTED OF POLYVINYL CHLORIDE OR MOLDED RUBBER MATERIAL. THE CONE SHALL BE HOLLOW. THE NET WEIGHT OF THE CONE SHALL NOT BE LESS THAN 5½ POUNDS.

THE EXTERIOR OF THE GUIDE CONE SHALL BE HIGH VISIBILITY, FADE RESISTANT, IMPREGNATED FLUORESCENT ORANGE. THE GUIDE SHALL HAVE ONE HIGHLY REFLECTIVE WHITE OR SILVER STRIPE ENCIRCLING THE CONE AND BE NOT LESS THAN 4" IN WIDTH. THE STRIPE SHALL BE PERMANENTLY APPLIED SO THAT THE TOP EDGE IS APPROXIMATELY 3" FROM THE CONE APEX.

EACH CONE IS TO HAVE A SLIP-OVER COLLAR BASE. THE SLIP-OVER COLLAR BASE SHALL BE BLACK IN COLOR AND SHALL BE CONSTRUCTED OF A RUBBER MATERIAL AND SHALL WEIGH NOT LESS THAN 5 POUNDS. THE SLIP-OVER COLLAR BASE SHALL BE FULLY COMPATIBLE WITH THE PHYSICAL PROPERTIES OF THE CONE.

A ONE-PIECE CONE SHAPED TRAFFIC GUIDE MEETING THE ABOVE MATERIAL REQUIREMENTS AND HAVING A NET WEIGHT OF APPROXIMATELY 10½ POUNDS, WITH THE WEIGHT DISTRIBUTED IN ACCORDANCE WITH GOOD ENGINEERING DESIGN STANDARDS TO ENSURE MAXIMUM STABILITY SO THAT, IN NORMAL USE IN CONTROL OF HIGH SPEED TRAFFIC, THE GUIDE WILL STAND ERECT WITHOUT USE OF ADDITIONAL WEIGHT OR BALLAST, MAY BE PROVIDED IN LIEU OF THE TWO-PIECE GUIDE CONE.

TRAFFIC DRUM:
THE TRAFFIC DRUM SHALL BE AS MANUFACTURED BY THE KELCH CORPORATION, LEAR/SIEGLER INC., OR EQUAL, AS APPROVED BY THE CHIEF ENGINEER AND SHALL BE A TWO PIECE, BREAKAWAY STYLE, DESIGNED THAT DAMAGE AFTER IMPACT WILL BE MINIMAL THROUGH A TEMPERATURE RANGE OF -15 F, TO +125 F. THE DRUM SHALL BE CONSTRUCTED OF NOT LESS THAN 1/8-INCH THICK, IMPACT RESISTANT, POLYETHYLENE, FORMULATED TO ALLOW THE DRUM TO RETURN TO THE ORIGINAL DESIGN AFTER IMPACT.

THE DRUM SHALL HAVE A TOP O.D. OF APPROXIMATELY 19" DESIGNED TO ACCOMMODATE 2 EACH LIGHTING DEVICES AND A BASE O.D. OF APPROXIMATELY 24". OVERALL HEIGHT OF THE DRUM, INCLUDING BASE, SHALL BE APPROXIMATELY 36". THE DRUM SHALL CONTAIN 5 RECESSED BANDS WHICH SHALL ACCEPT REFLECTIVE SHEETING BANDS OF APPROXIMATELY 6" WIDTH. THE DRUM SHALL BE DESIGNED WITH ONE OR MORE FLAT SIDES WHICH HAVE A MINIMUM WIDTH AT THE BASE OF 12", EXTENDING TOP TO BOTTOM, TO MINIMIZE ROLLING, SHOULD THE UNIT BE KNOCKED OVER. TOTAL WEIGHT OF THE DRUM SHALL BE NOT LESS THAN 12 LBS.. COLOR OF THE DRUM SHALL BE COLOR STABILIZED, SAFETY ORANGE. THE DETACHABLE BASE PORTION SHALL BE TRAY TYPE, DESIGNED TO PROVIDE BALLAST STORAGE FOR STABILITY OF THE DRUM.

THE TRAFFIC DRUM SHALL HAVE 4 EACH, NOMINAL 6" WIDE, REFLECTIVE STRIPES APPLIED TO THE DRUM RECESSED BANDS, STARTING FROM THE TOP, IN ORANGE, WHITE, ORANGE, WHITE SEQUENCE. THE STRIPES SHALL BE FABRICATED OF ENCAPSULATED LENS, HIGH INTENSITY REFLECTIVE SHEETING. THE REFLECTIVE SHEETING SHALL BE NO. 3870 WHITE (SILVER) AND NO. 5884 ORANGE AS MANUFACTURED BY THE 3M COMPANY OR EQUAL, AS APPROVED BY THE CHIEF ENGINEER, CONSIDERING REFLECTIVITY, DURABILITY, PLIABILITY AND ADHESION QUALITIES.

DRUMS WITH LIGHTING DEVICES, WHICH ARE OPERATED FROM DUSK TO DAWN, ARE REQUIRED IN ANY TYPE ZONE THAT IS TO BE FUNCTIONAL DURING ANY NON-DAYLIGHT HOURS. TYPE "C", STEADY BURN LIGHTS, SHALL BE USED ON ALL DRUMS REQUIRED TO DELINEATE THE TRAVELED WAY THROUGH AND/OR AROUND OBSTRUCTIONS IN THE CONSTRUCTION ZONE. TYPE "A" LOW INTENSITY-FLASHING LIGHTS, SHALL BE USED ON DRUMS AT ALL OTHER LOCATIONS.

LEGEND:

- TYPE III PORTABLE BARRICADE WITH SIGN * AND LIGHTS AS PER PLATE. C-5 (PAGE 7-42B) IN THE O.M.U.T.C.D. SIGN TO BE SIMILAR TO R-75.
- RUMBLE STRIPS.**
- TRAFFIC SIGN ON BREAK-AWAY POSTS.**
- TRAFFIC SIGN ON WOOD BLOCKS.**
- REFLECTORIZED TRAFFIC DRUMS.*
- REFLECTORIZED TRAFFIC CONES.*
- LOCALIZED WORK AREA.
- ROADWAY CLOSED TO TRAFFIC.
- FLAGGER LOCATION (ALL WORKING HOURS)*
- FLAGGER LOCATION (REQ'D AS CONS'T. OPERATIONS DICTATE) *
- FLASHING ARROW PANEL TYPE C, PER STANDARD CONSTRUCTION DRAWING TC-35.10 *

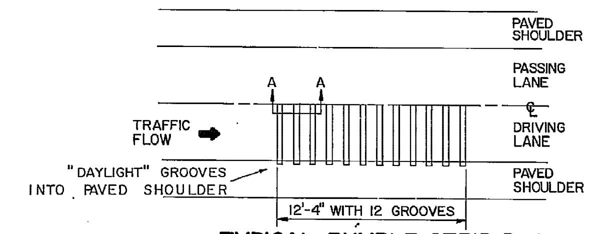
NOTES: *TRAFFIC DEVICES THAT THE CONTRACTOR IS TO FURNISH, INSTALL, MAINTAIN, AND REMOVE AS SHOWN ON THE TRAFFIC CONTROL DRAWINGS.

** SEE SPECIFICATIONS FOR RESPONSIBILITY

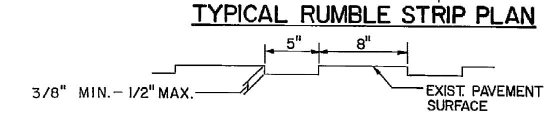
GENERAL NOTES:

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.

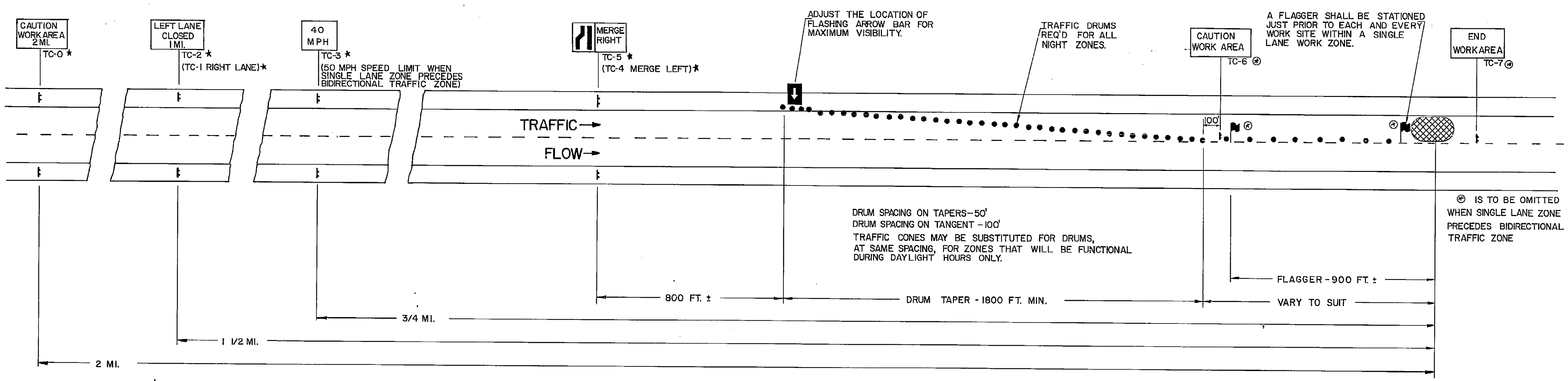
RUMBLE STRIP DETAILS



TYPICAL RUMBLE STRIP PLAN



TYPICAL GROOVE DETAIL
(SECTION A-A)



* WHEN SINGLE LANE ZONE PRECEDES A BIDIRECTIONAL ZONE THESE SIGNS WILL BE MOUNTED ON BREAK-AWAY POSTS

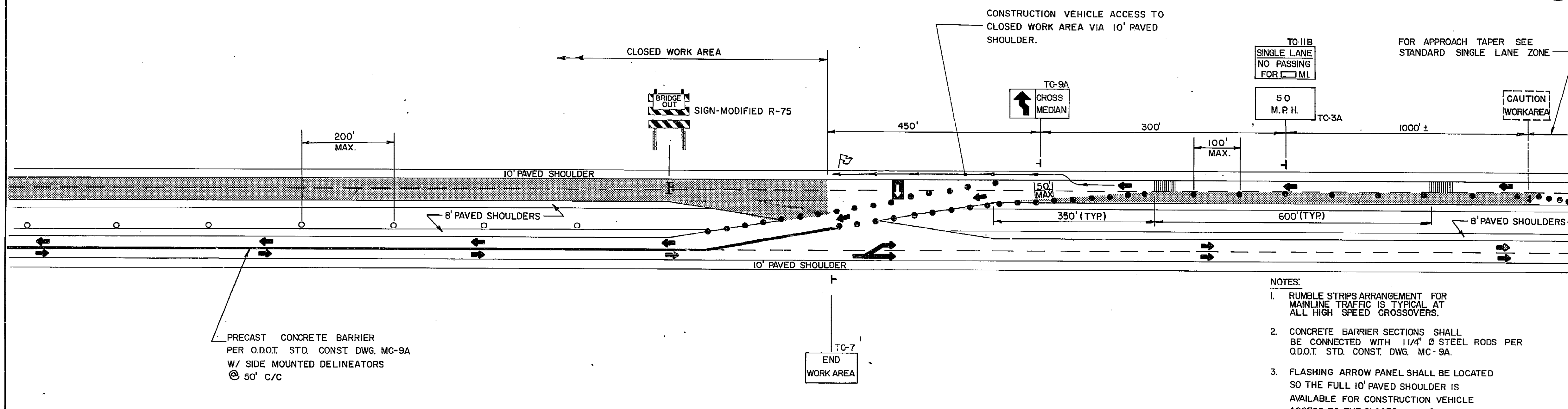
STANDARD SINGLE LANE ZONE

OHIO TURNPIKE COMMISSION

TRAFFIC CONTROL
GENERAL NOTES, DETAILS & STANDARD SINGLE LANE ZONE

9-17-84	⚠	ADDED TYPE III BARRIER	DFC	DATE: APRIL 1983	SCALE: N.T.S.
DATE	REV.	DESCRIPTION	BY:	CIP 43-85-12	SHEET 21 OF 24

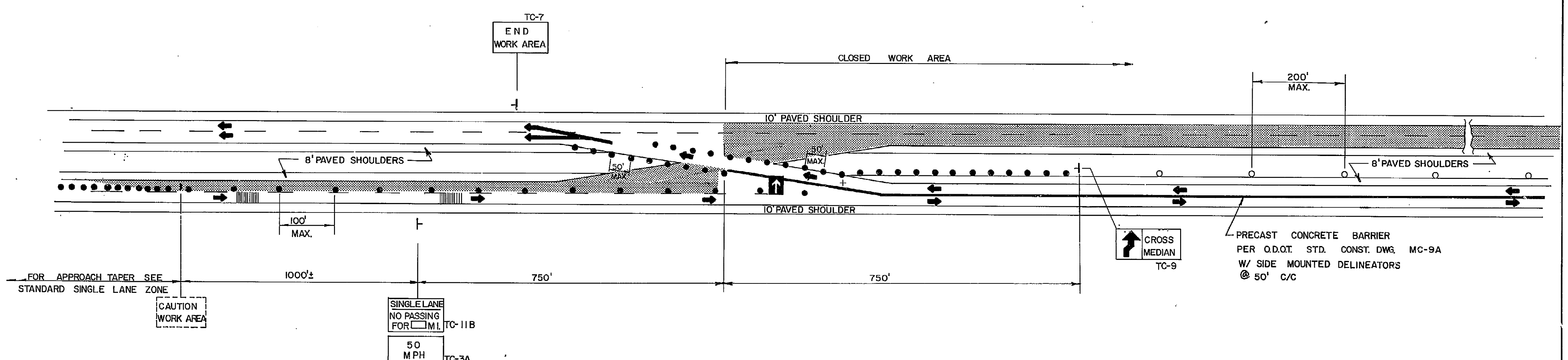
STANDARD BIDIRECTIONAL WORK ZONE



NOTES:

1. RUMBLE STRIPS ARRANGEMENT FOR MAINLINE TRAFFIC IS TYPICAL AT ALL HIGH SPEED CROSSOVERS.
2. CONCRETE BARRIER SECTIONS SHALL BE CONNECTED WITH 1 1/4" Ø STEEL RODS PER O.D.O.T. STD. CONST. DWG. MC-9A.
3. FLASHING ARROW PANEL SHALL BE LOCATED SO THE FULL 10' PAVED SHOULDER IS AVAILABLE FOR CONSTRUCTION VEHICLE ACCESS TO THE CLOSED WORKED AREA.

CROSS MEDIAN APPROACH



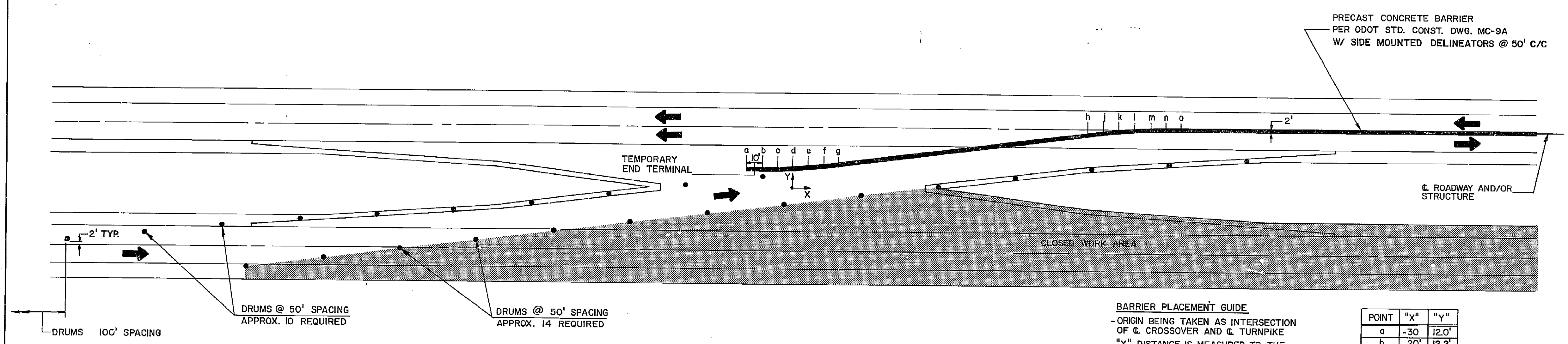
STRAIGHT THRU APPROACH

OHIO TURNPIKE COMMISSION

STANDARD BIDIRECTIONAL TRAFFIC CONTROL

DATE	REV.	DESCRIPTION	BY:
9-16-84	1	ADDED TYPE III BARRICADE, MOVED ARROW BAR, ADDED CONES ALONG SHOULDER	DFC

DATE: MARCH 1983 | SCALE: N.T.S.
CIP 43-85-12 | SHEET 22 OF 24

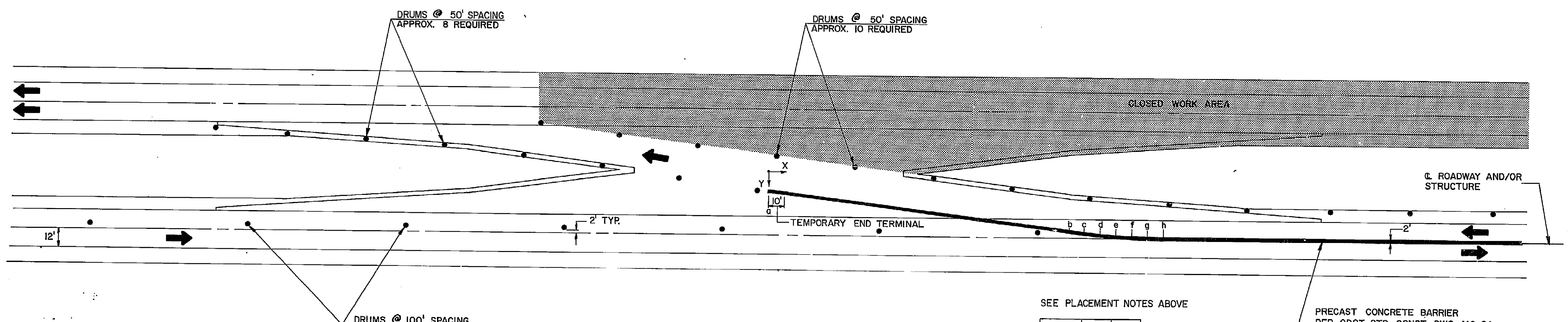


CROSS MEDIAN APPROACH

BARRIER PLACEMENT GUIDE

- ORIGIN BEING TAKEN AS INTERSECTION OF ℄ CROSSOVER AND ℄ TURNPIKE
- "Y" DISTANCE IS MEASURED TO THE ℄ OF THE BARRIER
- THIS GUIDE IS TO BE USED FOR CROSSOVERS LOCATED IN TANGENT SECTIONS ONLY. FOR CROSSOVERS LOCATED IN HORIZONTAL CURVES THE BARRIER WILL BE LAID-OUT BY THE ENGINEER IN THE FIELD.

POINT	"X"	"Y"
a	-30	12.0'
b	-20'	12.2'
c	-10'	12.5'
d	0	13.1'
e	10'	13.7'
f	20'	14.7'
g	30'	15.9'
h	190'	36.1'
j	200'	37.3'
k	210'	38.3'
l	220'	38.9'
m	230'	39.5'
n	240'	39.8'
o	250'	40.0'



STRAIGHT THRU APPROACH

FOR DETAILS NOT SHOWN SEE "BIDIRECTIONAL TRAFFIC CONTROL"

SEE PLACEMENT NOTES ABOVE

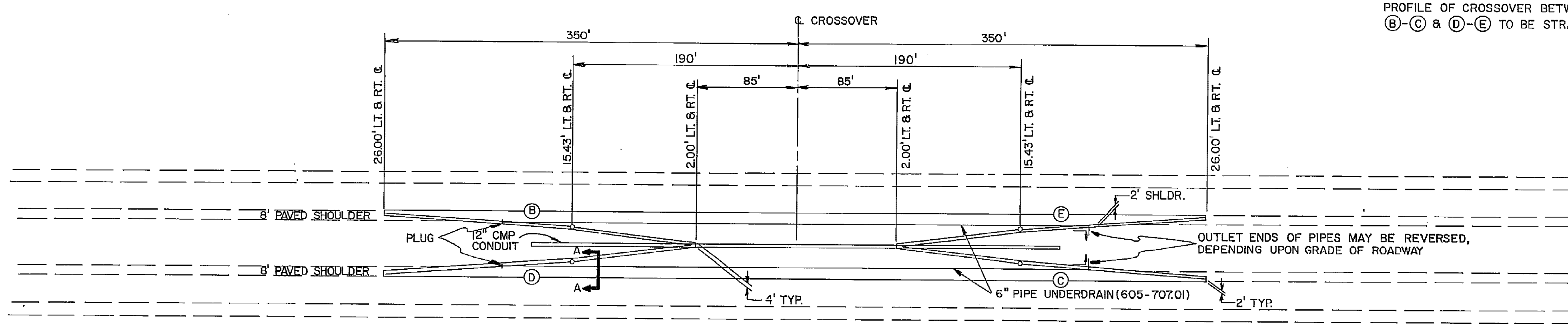
POINT	"X"	"Y"
a	0	12.0'
b	190'	36.1'
c	200'	37.3'
d	210'	38.3'
e	220'	38.9'
f	230'	39.5'
g	240'	39.8'
h	250'	40.0'

OHIO TURNPIKE COMMISSION

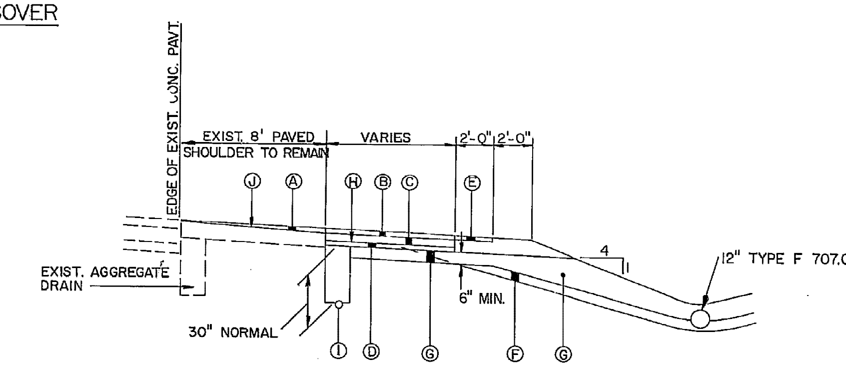
TRAFFIC CONTROL
CROSSOVER DETAILS

DATE: SEPTEMBER 1984 | SCALE: 1" = 30'
CIP 43-85-12 | SHEET 23 OF 24

PROFILE OF CROSSOVER BETWEEN POINTS Ⓑ-Ⓒ & Ⓓ-Ⓔ TO BE STRAIGHT LINES



PLAN OF NEW CROSSOVER
SCALE: 1"=50'



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

THE NEW CROSSOVER IS TO BE CONSTRUCTED BY THE CONTRACTOR TO THE DIMENSIONS AND DETAILS SHOWN ON THIS SHEET. ALL LABOR AND MATERIALS NECESSARY FOR THE CONSTRUCTION OF THE NEW CROSSOVER IS TO BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 - "CONSTRUCT NEW CROSSOVER FOR MAINTAINING TRAFFIC", EXCEPT FOR 6" PIPE UNDERDRAINS, AND 12" TYPE "F" CONDUIT.

THESE ITEMS WILL BE PAID FOR AS FOLLOWS:
ITEM 603-12" TYPE "F" CONDUIT 707.01 ____________ L.F.
ITEM 605-6" UNCLASSIFIED PIPE UNDERDRAINS 707.01 __ L.F.

MAINTENANCE OF CROSSOVER (DURING CONTRACT WORK) SHALL BE INCLUDED FOR PAYMENT UNDER ITEM SP614 "MAINTAINING TRAFFIC."

LEGEND

- Ⓐ 404-VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE
- Ⓑ 404-2" ASPHALT CONCRETE SURFACE COURSE
- Ⓒ 402-5 1/2" ASPHALT CONCRETE BASE COURSE (2 LAYERS)
- Ⓓ 304-4" AGGREGATE BASE
- Ⓔ 402-3" ASPHALT BASE COURSE
- Ⓕ 6" SAND BLANKET USING 703.02
- Ⓖ Nº 2 AGGREGATE USING 703.01
- Ⓗ 408-PRIME COAT
- Ⓘ 605-6" PIPE UNDERDRAIN 707.01 (PERFORATIONS DOWN)
- Ⓙ 407-TACK COAT

OHIO TURNPIKE COMMISSION	
CROSSOVER CONSTRUCTION PLAN	
DATE: SEPTEMBER 1984	SCALE: AS NOTED
CIP 43-85-12	SHEET 24 OF 24