

DETOUR MAP

SCALE 0 1 2 3 4 5 6

= Detour

MICROFILMED
OCT 19 1992

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

ALL-309-(3.02)(3.37)(6.95)

AMERICAN AND MARION TOWNSHIPS
ALLEN COUNTY

ALLEN COUNTY	OHIO	1 / 57
ALL-309-(3.02)(3.37)(6.95)	FHWA REGION 5	
F-BRF-43(30)	FEDERAL PROJECT	

F-BRF-43(30)

MICROFILMED
OCT 8 1992

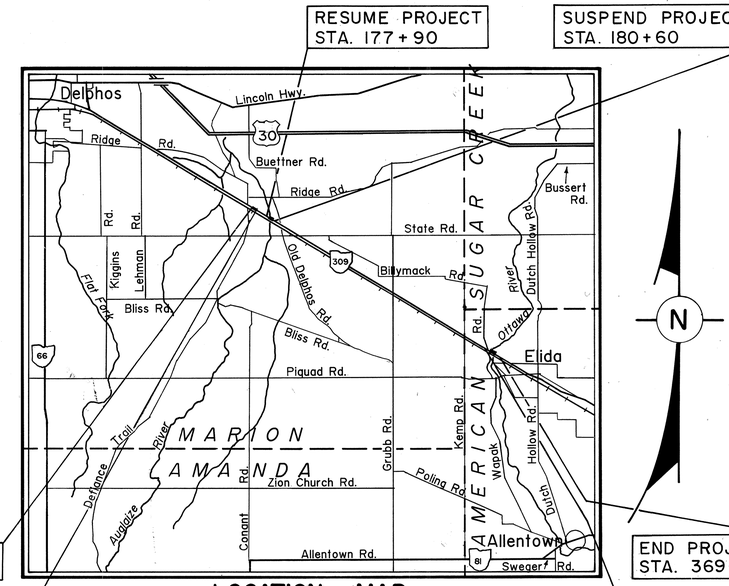
CONVENTIONAL SIGNS

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

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

INDEX OF SHEETS

Title Sheet	1
Schematic Plan & Design Designation	2
Typical Section	3
General Notes	4
General Summary	5
Pavement Calculations	6-10
Plan and Profile	11-16
Cross Sections	17-26
Channel Cross Sections	27-30, 29A
Structure over 20' Span	31-50
Right-of-Way Plans	51-57



LOCATION MAP

SCALE IN MILES 0 1 2 3 4

1989 SPECIFICATIONS

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

I hereby approve these plans and declare that the making of this improvement will require the closing to traffic of the highway and that detours will be provided as indicated on the plans.

Approved James L. Schmenk
Date 10-14-88 District Deputy Director of Transportation

Approved B. D. Hawblonni 14TH
Date 12/2/88 Engineer, Bureau of Bridges and Structural Design

Approved Theodore J. Smith
Date 5/4/89 Chief Engineer, Planning & Design

Approved Bernard B Hurst
Date 5/4/89 Director, Department of Transportation

REVISED 7-18-89

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

LINE DATA

Begin Project	159+60	Begin Work	158+00
Suspend Project	160+05	Suspend Work	161+50
Sub-Total	45.00 (F)	Sub-Total	350.00 (F)
Resume Project	177+90	Resume Work	176+50
Suspend Project	180+60	Suspend Work	182+00
Sub-Total	270.00 (BRF)	Sub-Total	550.00 (BRF)
Resume Project	367+25	Resume Work	366+41.50
End Project	369+25	End Work	370+50
Sub-Total	200.00 (BRF)	Sub-Total	408.50 (BRF)
TOTAL NET LENGTH OF PROJECT	515.00 L.F. =0.098 Mile	TOTAL NET LENGTH OF WORK	1308.50 =0.248 Mile

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

Portion to be improved
State & Federal Routes
Other Roads
Detour

SCALES

Plan 0 20 40
Profile: Horizontal 0 20 40, Vertical 0 5 10
Cross Section: Horizontal 0 5 10, Vertical 0 5 10

SUPPLEMENTAL SPECIFICATIONS		
836	11-12-85	
847	10-17-83	
947	10-17-83	
802	5-4-88	
944	6-24-89	

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

BP-5	10-1-87	PSBD-1-81	9-18-81	CB-2-2 A&B	5-1-79				
GR-1	1-11-85	MC-4	7-26-76	MH-3	12-18-84				
GR-2B	2-5-82	MC-11	8-1-78	MH-1	12-18-84				
GR-3	1-21-85	MT-99.10	11-14-86	MC-1	6-13-69				
GR-4	2-5-82	AS-1-81	11-27-81	MH-5	6-12-75				
		GR-4A	1-30-84	EXJ-3-82	8-1-84				
DBR-2-73	4-10-73								

STRUCTURE PLANS REVIEWED BY:
Burgess & Niple, Limited
Columbus, Ohio

Plan Prepared By:
Kohli And Kaliher Assoc., Ltd.
311 East Market Street
Lima, Ohio

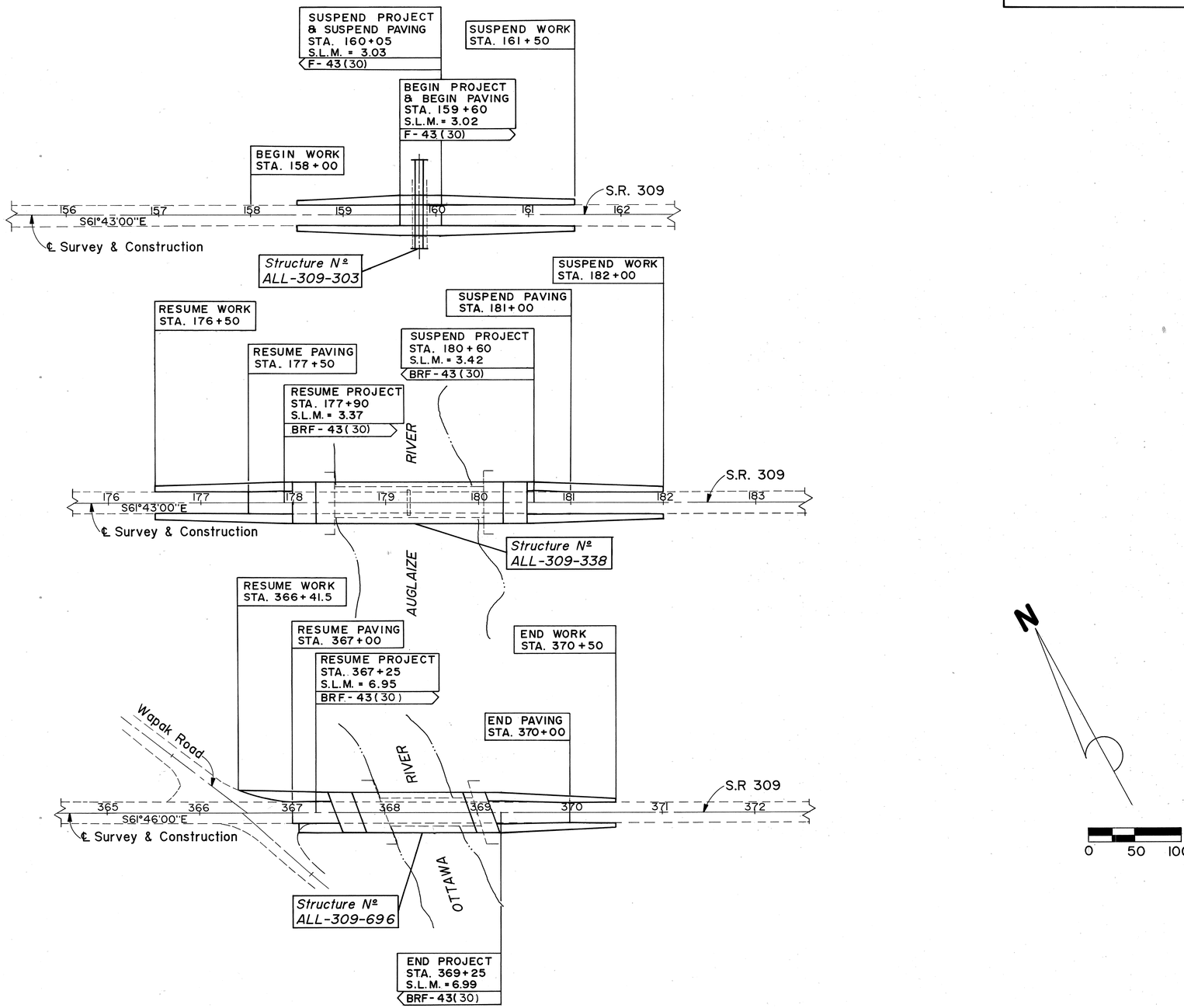
SEAL

Project: ALL-309-(3.02)(3.37)(6.95)
Date of Letting 19, Contract No.

LD0300 Rev. 1-1-81

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SCHEMATIC PLAN



DESIGN DESIGNATION

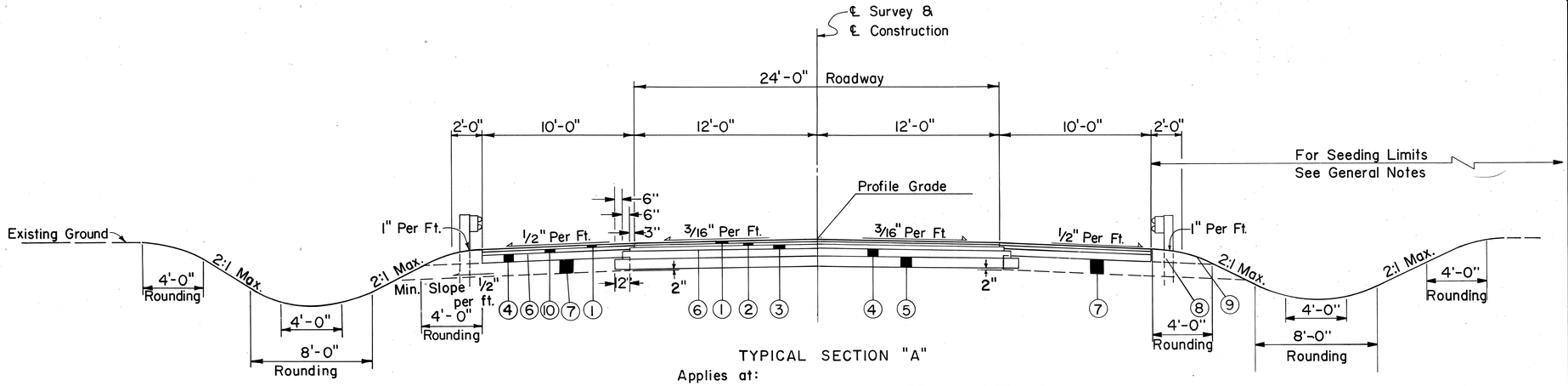
Current ADT (1988)	=	6,696
Design ADT (2008)	=	10,206
DHV	=	1,021
D	=	60%
T	=	5%
V (Design Speed)	=	55 mph
V (Legal Speed)	=	55 mph
Functional Classification	=	Minor Arterial

67357
BRUNING

TYPICAL SECTION
TYPE 404 ON 301

Computations By Initials R.L.M. Date 2/5/88
Computations Checked By Initials B.C.P. Date 6-16-88

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)
OHIO
FHWA REGION 5
FEDERAL PROJECT
3/57



TYPICAL SECTION "A"

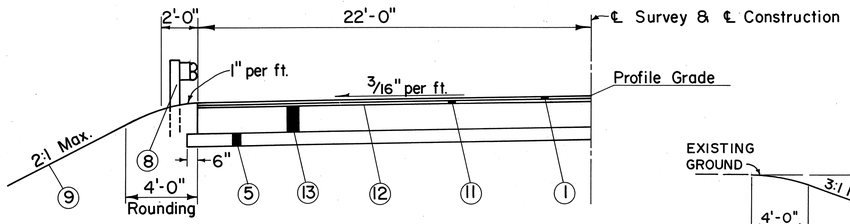
Applies at:

Sta. 177+90	to Sta. 177+96.75	=	6.75 L.F.
Sta. 180+53.25	to Sta. 180+60	=	6.75 L.F.
Sta. 367+25	to Sta. 367+44.84	=	19.84 L.F.
Sta. 369+17.16	to Sta. 369+25	=	7.84 L.F.
	TOTAL	=	41.18 L.F.

Note: Low Fill, Pipe Underdrains and Aggregate Drain Details apply either side.

ITEM 605 AGGREGATE DRAINS		
STA.	LEFT	RIGHT
370+25	11	
370+00		14
369+75	14	
369+50		15
369+25	16	
367+25	17	
181+75		12
181+50	13	
181+25		14
181+00	15	
180+75		16
177+75		12
177+50	16	
177+25		15
177+00	15	
176+75		13
161+25		14
161+00	25	
160+75		18
160+50	30	
160+25		18
160+00	22	
159+50	32	
159+25		21
159+00	25	
158+75		23
SUB TOTAL	228=F 228=BRF	TOTAL 456 L.F.

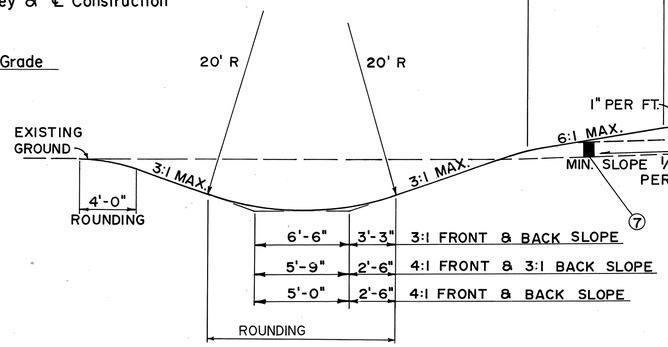
F FUNDS ⊥ BRF FUNDS

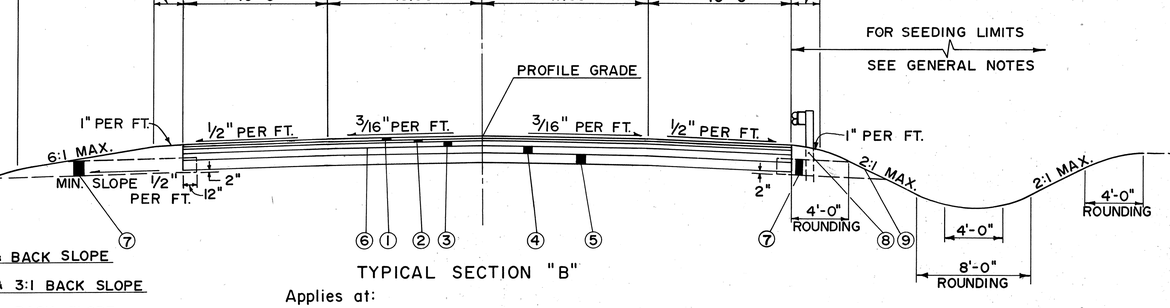


APPROACH SLAB SECTION

Section Applies at:

Sta. 177+96.75 to Sta. 180+53.25	=	256.50 Lin. Ft.
Deduct for Str. ALL-309-0338		
Sta. 178+21.75 to Sta. 180+28.25	=	-206.50 Lin. Ft.
Length	=	50.00 Lin. Ft.
Sta. 367+44.84 to Sta. 369+17.16	=	172.32 Lin. Ft.
Deduct for Str. ALL-309-0696		
Sta. 367+69.84 to Sta. 368+92.16	=	-122.32 Lin. Ft.
Length	=	50.00 Lin. Ft.





TYPICAL SECTION "B"

Applies at:
Sta. 159+60 to Sta. 160+05 = 45.00 L.F.

① Item 404 1¼" Asphalt Concrete AC-20
② Item 402 1¾" Asphalt Concrete AC-20
③ Item 301 3" Bituminous Aggregate Base AC-20
④ Item 304 6" Aggregate Base , as per plan
⑤ Item 310 8" Subbase, Type I , Grading A
⑥ Item 408 Bituminous Prime Coat, applied at the rate of 0.40 Gallon per Square Yard
⑦ Item 605 Aggregate Drains
⑧ Item 606 Guardrail, Type 5
⑨ Item 659 Seeding and Mulching
⑩ Item 402 2¾" Asphalt Concrete AC-20
⑪ Item 403 1¼" Asphalt Concrete AC-20
⑫ Item 407 Tack Coat,
⑬ Item 611 Reinforced Concrete Approach Slab (T=15")

BRUNING 44-132 67357

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GENERAL NOTES

SUPPLEMENTAL SPEC 824
ALL REFERENCE TO S.S. 824 APPEARING ON STANDARD DRAWINGS OR ON THE PLANS SHALL BE CONSIDERED TO READ C.M.S. 509.

DETOUR LIMITATION: TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 120 CONSECUTIVE CALENDER DAYS. THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET 1. THE DETOUR SHALL BE ESTABLISHED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY OTHERS. ACCESS TO ADJACENT PROPERTIES AFFECTED BY ANY OF THE CONSTRUCTION OPERATIONS SHALL BE MAINTAINED AT ALL TIMES UNLESS PERMISSION TO CLOSE THE FACILITY IS OBTAINED FROM OWNERS AND THE ENGINEER. ROAD CLOSED SIGNS SHALL BE ERECTED AT DEFIANCE TRAIL AND PIQUAD ROAD ON STATE ROUTE 309. FAILURE TO COMPLY WITH DETOUR LIMITATIONS RESULT IN LIQUIDATED DAMAGES AS PER SECTION 108.07 OF THE C.M.S..

FIELD OFFICE: THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 300 SQUARE FEET OF FLOOR SPACE. PAYMENT SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 619, FIELD OFFICE.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS: THE ROUNDED CORNERS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS SECTIONS EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

AGGREGATE DRAINS: AGGREGATE DRAINS SHALL BE PLACED AT FIFTY (50) FOOT INTERVALS ON EACH SIDE OF NORMAL CROWNED SECTIONS OR AS DIRECTED BY THE ENGINEER.

ITEM - 304 AGGREGATE BASE, AS PER PLAN: MATERIALS FURNISHED FOR THIS ITEM SHALL EXCLUDE ALL SLAG EXCEPT GRANULATED SLAG OR CRUSHED AIR-COOLED BLAST FURNACE SLAG.

ELEVATION DATUM: ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

CONTINGENCY QUANTITIES: THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNED 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 THE COMPLETION OF THIS PROJECT.

UNDERGROUND UTILITIES: THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 O.R.C.

ITEM 407 TACK COAT, THE RATE OF APPLICATION OF 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT, AS DIRECTED BY THE ENGINEER.

PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.075 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL: THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED " AS DIRECTED BY THE ENGINEER " FOR EROSION AND SILTATION CONTROL MEASURES.

		F	BRF	TOTAL
207	TEMPORARY SEEDING & MULCHING	538	763	1301 Sy.
207	STRAW OR HAY BALES	254	295	549 Each
659	COMMERCIAL FERTILIZER	0.02	0.03	0.05 Ton
659	WATER	2	2	4 M. Gal.

SEEDING: QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREA BETWEEN TEN FEET OUTSIDE THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS, OR TO THE RIGHT-OF-WAY LINES, IF SUCH LINES ARE LESS THAN TEN FEET FROM THE WORK LIMITS.

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

CONNECTION TO EXISTING PIPE: WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING SEWER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT. PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 603 CONDUIT ITEMS.

FARM DRAINS: ALL FARM DRAINS, WHICH ARE ENCOUNTERED DURING CONSTRUCTION, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS UNDER THE DIRECTION OF THE ENGINEER. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATIONS, AND WHICH CROSS THE ROADWAY, SHALL BE REPLACED WITHIN THE CONSTRUCTION LIMITS BY ITEM 603 CONDUIT, TYPE B, ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

EXISTING COLLECTORS AND ISOLATED FARM DRAINS, WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF THE ROADWAY DITCHES, SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY 603 TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE, IF POSSIBLE, ONE FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH. LATERAL TILE FIELDS WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY 603, TYPE E CONDUIT AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE AND GRADE OF REQUIRED REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION, AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

		F	BRF	TOTAL
ITEM 603	12" CONDUIT, TYPE B	20	80	100 L.F.
ITEM 603	6" CONDUIT, TYPE E	20	80	100 L.F.
ITEM 603	8" CONDUIT, TYPE E	20	80	100 L.F.
ITEM 603	12" CONDUIT, TYPE E	10	40	50 L.F.
ITEM 603	6" CONDUIT, TYPE F	10	40	50 L.F.
ITEM 603	8" CONDUIT, TYPE F	10	40	50 L.F.

NECESSARY BENDS AND BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEM, NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL AUTHORIZED BY THE ENGINEER.

WATERING PERMANENT SEEDED AREAS: THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR THE PERMANENT SEEDED AREAS, AS PER 659.09.

		F	BRF	TOTAL
659	WATER	6	9	15 M. Gal.

MONUMENTS: MONUMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS SHOWN ON STANDARD CONSTRUCTION DRAWING MC-1. FOR LOCATIONS, SEE SHEET NO. 6, 8, AND 10.

EROSION CONTROL: ITEM 601 IS PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE THIS ITEM. THE ENGINEER SHALL CHECK AND NONPERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION.

CONDUIT END TREATMENT: IMMEDIATELY AFTER PLACEMENT OF ANY CONDUITS, THE CONTRACTOR SHALL CONSTRUCT THE END TREATMENTS REQUIRED BY THE PLANS AT BOTH THE OUTLET AND INLET ENDS. THIS SHALL INCLUDE HEADWALLS, CONCRETE RIPRAP, ROCK CHANNEL PROTECTION, SODDING, ETC.

UTILITY OWNERSHIP: THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:

OHIO POWER COMPANY
216 N. ELIZABETH ST.
LIMA, OHIO 45802
(419) 222-9010
ATT'N: JEFF MYERS

UNITED TELEPHONE COMPANY OF OHIO
122 S. ELIZABETH ST.
LIMA , OHIO 45801
(419) 228-1200
ATT'N: TOM WINEGARDNER

CENTEL CABLE TELEVISION COMPANY OF OHIO
3100 ELIDA RD.
LIMA , OHIO 45805
(419) 331-3333
ATT'N: RON LAMB

WEST OHIO GAS CO.
319 W. MARKET ST.
LIMA , OHIO 45801
(419) 227-5416
ATT'N: VERN SCHULTE

CONRAIL
J.T. SULLIVAN
CHIEF ENGINEER , DESIGN & CONSTRUCTION
ROOM 1200
15 N. 32nd STREET
PHILADELPHIA , PENNSYLVANIA
ATT'N : PAUL KAUFMANN

EROSION CONTROL PADS AND ANIMAL GUARDS: EROSION CONTROL PADS AND ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLET END OF ALL PIPE UNDERDRAINS AND FARM DRAINS , AS PER STANDARD CONSTRUCTION DRAWING MC-4 , EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE.

PAYMENT FOR THE EROSION CONTROL PADS AND THE ANIMAL GUARDS SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 603 , 12" & 15" CONDUIT, TYPE F. (STRUCTURE ALL-309-0338) ITEM 603 , 12" & 18" CONDUIT , TYPE F (STRUCTURE ALL-309-0696)

REMOVAL OF TREES AND STUMPS: ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED UNDER THE LUMP SUM PRICE BID FOR "ITEM 201 - CLEARING AND GRUBBING" . EXCEPT THAT THOSE TREES FOR WHICH PROTECTION AND PRESERVATION WORK IS INDICATED ELSEWHERE IN THESE PLANS SHALL NOT BE REMOVED. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED:

SIZES	Nº TREES F	Nº TREES BRF	Nº STUMPS F	Nº STUMPS BRF	TOTAL
30"	0	1	0	0	1
48"	0	1	0	0	1

THE ABOVE ESTIMATE IS APPROXIMATE AND THE STATE OF OHIO RESERVES THE RIGHT TO ORDER REMOVAL OF ADDITIONAL TREES OR STUMPS OUTSIDE OF THE LIMITS OF CONSTRUCTION BUT WITHIN THE RIGHT-OF-WAY AND/OR EASEMENT LINES. PAYMENT FOR THE REMOVAL OF THESE ADDITIONAL TREES OR STUMPS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201 , CLEARING AND GRUBBING.

JOINT SEALERS
ALL REFERENCE TO 705.01 OR 705.02 APPEARING ON STANDARD DRAWINGS OR ON THE PLANS SHALL BE CONSIDERED TO READ 705.04

Computations By Initials R.L.M. Date 6/3/88
Computations Checked By Initials B.C.P. Date 6/16/88

67357
BRUNING

MICROFILMED
OCT 19 1992

GENERAL SUMMARY

Computations By Initials R.L.M. Date 6/10/88
Computations Checked By Initials ~~B.C.P~~ Date ~~6-17-88~~

ALLEN COUNTY
ALL-309-(3.00)(3.35)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

5
57

ITEM N°	F FUNDS 3	BRF FUNDS 3	F FUNDS 4	BRF FUNDS 4	F FUNDS 6	BRF FUNDS 7	BRF FUNDS 8	BRF FUNDS 9	BRF FUNDS 10	F FUNDS 11	BRF FUNDS 12	BRF FUNDS 13	BRF FUNDS 14	BRF FUNDS 15	BRF FUNDS 16	BRF FUNDS 25	F FUNDS	BRF FUNDS	ITEM N°	ITEM EXTENSION	QUANTITY	UNIT	DESCRIPTION
																							ROADWAY
201																	LUMP	LUMP	201		LUMP		Clearing and Grubbing
202										539	86.3	463	187.8	229	277		539	1243.1	202		1782.1	L.F.	Guardrail Removed
203					371		1273		1329								371	2602	203		2973	C.Y.	Excavation , not including Embankment Construction
203					1267		439		313								1267	752	203		2019	C.Y.	Embankment
203					640	490	494	579	331								640	894	203		2534	S.Y.	Subgrade Compaction
202					70	474		503									70	977	202		1047	S.Y.	Pavement Removed
604					2		2		2								2	4	604		6	EACH	Monument Assembly
606										225	86.3	375	187.8	170.76	285.74		225	1105.6	606		1330.6	L.F.	Guardrail , Type 5
606										2				1			2	1	606		3	EACH	Anchor Assembly , Type A
606												4		3	1			8	606		8	EACH	Bridge Terminal Assembly , Type B
606														1				1	606		1	EACH	Anchor Assembly , Type T
202										LUMP							LUMP		202		LUMP		Structures Removed
																							EROSION CONTROL
207			538	763													538	763	207		1301	S.Y.	Temporary Seeding and Mulching
207			254	295													254	295	207		549	EACH	Straw or Hay Bales
601														442				442	601		442	C.Y.	Rock Channel Protection , Type C with filter
601												207						207	601		207	C.Y.	Rock Channel Protection , Type D with filter
659			0.02	0.03	0.24		0.21		0.13								0.26	0.37	659		0.63	TON	Commercial Fertilizer
659					2691		2359		1458							33	2691	3850	659		6541	S.Y.	Seeding and Mulching
659			8	11													8	11	659		19	MGAL	Water
																							DRAINAGE
602										15							15		602		15	C.Y.	Concrete Masonry
603			20	80						105							125	80	603		205	L.F.	12" Conduit, Type B
603			20	80													20	80	603		100	L.F.	6" Conduit , Type E
603			20	80						61							81	80	603		161	L.F.	8" Conduit , Type E
603			10	40						18		138					28	178	603		206	L.F.	12" Conduit , Type E
603			10	40													10	40	603		50	L.F.	6" Conduit , Type F
603			10	40													10	40	603		50	L.F.	8" Conduit , Type F
603										42	7						42	7	603		49	L.F.	10" Conduit , Type F
603												10		65				75	603		75	L.F.	12" Conduit , Type F
603												70						70	603		70	L.F.	15" Conduit , Type F
603														10				10	603		10	L.F.	18" Conduit , Type F
604														1				1	604		1	EACH	Catch Basin , Adjust to Grade
604										2		1					2	1	604		3	EACH	Catch Basin , N° 2-2-B
604										2							2		604		2	EACH	Manhole , N° 3
605			228	228													228	228	605		456	L.F.	Aggregate Drains
603										96							96		603		96	L.F.	96" Conduit, Type A, 706.02,
																							PAVEMENT
301					53	21		28									53	49	301		102	C.Y.	Bituminous Aggregate Base , AC-20
304					107	43	78	59	53								107	233	304		340	C.Y.	Aggregate Base , as per Plan
310					142	116		138									142	254	310		396	C.Y.	Subbase , Type I Grading A
402					31	12	38	16	25								31	91	402		122	C.Y.	Asphalt Concrete , AC-20
403						8		8										16	403		16	C.Y.	Asphalt Concrete , AC-20
404					22	17	17	20	12								22	66	404		88	C.Y.	Asphalt Concrete , AC-20
407						18		18										36	407		36	GAL	Tack Coat ,
408					256	104	189	142	130								256	565	408		821	GAL	Bituminous Prime Coat
611						244		244										488	611		488	S.Y.	Reinforced Concrete Approach Slab (T=15")
																							TRAFFIC CONTROL
802										4	2	8	4	5	4		4	23	802		27	EACH	Barrier Reflectors, Type A
614					0.01		0.07		0.06								0.01	0.13	614		0.14	MILE	Temporary Center Lines , Class II
621					0.01		0.07		0.06								0.01	0.13	621		0.14	MILE	Center Lines
621					0.02		0.13		0.11								0.02	0.24	621		0.26	MILE	Edge Lines
																							STRUCTURES OVER 20' SPAN
																							For Quantities of Bridge ALL -309-0338 , See Sheet 35
																							For Quantities of Bridge ALL-309-0696 , See Sheet 45
614																	LUMP	LUMP	614		LUMP		Maintaining Traffic
619																	LUMP	LUMP	619		LUMP		Field Office
623																	LUMP	LUMP	623		LUMP		Construction Layout Stakes
624																	LUMP	LUMP	624		LUMP		Mobilization

PAVEMENT CALCULATIONS

ALL-309-3.02
Sta. 158+50 to Sta. 161+50

℄ CONST. STA.	ITEM 404 - 1 1/4" ASPHALT CONC.	ITEM 402 - 1 3/4" ASPHALT CONC.	ITEM 301 - 3" BIT. AGGREGATE BASE	ITEM 304 - 6" AGGREGATE BASE	ITEM 310 - 8" SUBBASE	ITEM 203 - SUBGRADE COMPACTION	ITEM 408 - BIT. PRIME COAT
STA. 159 + 60 TO STA. 160 + 05	$22.45' * \frac{1\ 1/4"}{12} * 45' \div 27 = 3.90$ C.Y.	$22.45' * \frac{1\ 3/4"}{12} * 45' \div 27 = 5.46$ C.Y.	$22.45' * 3"/12 * 45' \div 27 = 9.35$ C.Y.	$22.45' * 6"/12 * 45' \div 27 = 18.71$ C.Y.	$22.45' * 8"/12 * 45' \div 27 = 24.94$ C.Y.	$22.45' * 45' \div 9 = 112.25$ S.Y.	$22.45' * 45' * 0.4$ GAL/SY $\div 9 = 44.90$ GAL.
STA. 158 + 50 TO STA. 159 + 60	$\frac{10.5' + 20'}{2} * \frac{1\ 1/4"}{12} * 110' \div 27 = 6.47$ C.Y.	$\frac{10.5' + 20'}{2} * \frac{1\ 3/4"}{12} * 110' \div 27 = 9.06$ C.Y.	$\frac{10.5' + 20'}{2} * 3"/12 * 110' \div 27 = 15.53$ C.Y.	$\frac{10.5' + 20'}{2} * 6"/12 * 110' \div 27 = 31.06$ C.Y.	$\frac{10.5' + 20'}{2} * 8"/12 * 110' \div 27 = 41.42$ C.Y.	$\frac{10.5' + 20'}{2} * 110' \div 9 = 186.39$ S.Y.	$\frac{10.5' + 20'}{2} * 110' * 0.4$ GAL/SY $\div 9 = 74.56$ GAL.
STA. 159 + 60 TO STA. 160 + 05	$10' * \frac{1\ 1/4"}{12} * 45' \div 27 * 2$ SIDES $= 3.47$ C.Y.	$10' * \frac{1\ 3/4"}{12} * 45' \div 27 * 2$ SIDES $= 4.86$ C.Y.	$10' * 3"/12 * 45' \div 27 * 2$ SIDES $= 8.33$ C.Y.	$10' * 6"/12 * 45' \div 27 * 2$ SIDES $= 16.67$ C.Y.	$10' * 8"/12 * 45' \div 27 * 2$ SIDES $= 22.22$ C.Y.	$10' * 45' \div 9 * 2$ SIDES $= 100.00$ S.Y.	$10' * 45' * 0.4$ GAL/SY $\div 9 * 2$ SIDES $= 40.00$ GAL.
STA. 160 + 05 TO STA. 161 + 50	$\frac{20' + 9.9'}{2} * \frac{1\ 1/4"}{12} * 145' \div 27 = 8.36$ C.Y.	$\frac{20' + 9.9'}{2} * \frac{1\ 3/4"}{12} * 145' \div 27 = 11.71$ C.Y.	$\frac{20' + 9.9'}{2} * 3"/12 * 145' \div 27 = 20.07$ C.Y.	$\frac{20' + 9.9'}{2} * 6"/12 * 145' \div 27 = 40.14$ C.Y.	$\frac{20' + 9.9'}{2} * 8"/12 * 145' \div 27 = 53.52$ C.Y.	$\frac{20' + 9.9'}{2} * 145' \div 9 = 240.86$ S.Y.	$\frac{20' + 9.9'}{2} * 145' * 0.4$ GAL/SY $\div 9 = 96.34$ GAL.
TOTALS	22.20 C.Y.**	31.09 C.Y.**	53.28 C.Y.**	106.58 C.Y.**	142.10 C.Y.**	639.50 S.Y.**	255.80 GAL.**

℄ CONST: STA.	ITEM 202 - PAVEMENT REMOVED
STA. 159+60 TO STA. 159+74	$22.45' * 14' \div 9 = 34.92$ S.Y.
STA. 159+91 TO STA. 160+05	$22.45' * 14' \div 9 = 34.92$ S.Y.
TOTAL	69.84 S.Y.

ITEM 604 - MONUMENT ASSEMBLY		
Point Referenced	Station	Type, Location
P.O.T.	159+60	Monument box on ℄
P.O.T.	160+05	Monument box on ℄
TOTAL	2 EACH **	

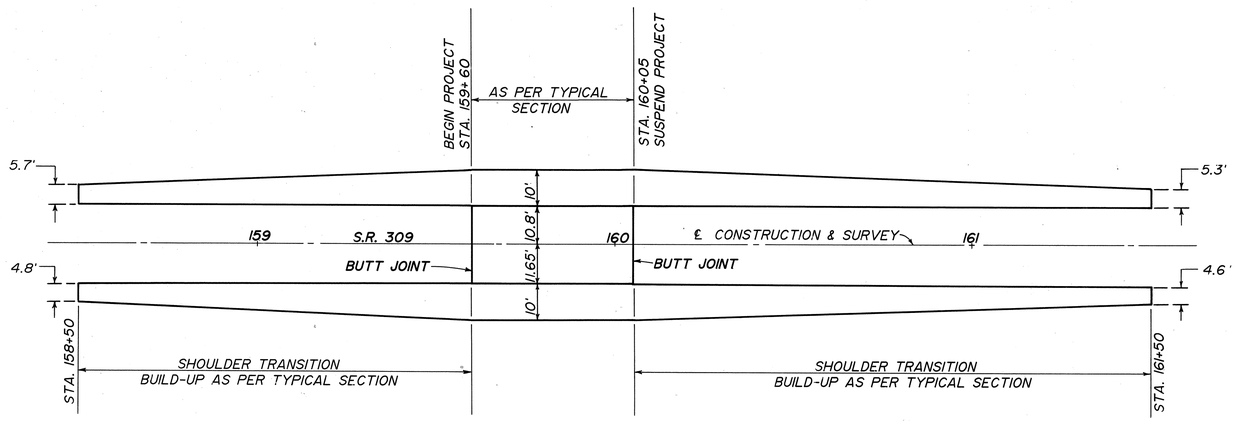
ITEM 621 - CENTERLINE - DASHED	
STA.	L.F.
159+60 to 160+05	45 L.F. (0.009 Mi.) **

ITEM 614 - TEMPORARY CENTERLINE, CLASS II	
STA.	L.F.
159+60 to 160+05	45 L.F. (0.009 Mi.)**

ITEM 621 - 4" EDGE LINES - WHITE	
STA.	L.F.
159+60 to 160+05	90 L.F. (0.017 Mi.)**

ITEM 659 - SEEDING & MULCHING	
SHEET Nº	Sq. Yd.
17	238
18	1631
19	822
TOTAL	2691 **

ITEM 203 - EXCAVATION & EMBANKMENT		
SHEET Nº	EXCAVATION - CU. YD.	EMBANKMENT - CU. YD.
17	2	18
18	275	862
19	94	387
TOTALS	371 **	1267 **



ITEM 659 - COMMERCIAL FERTILIZER

2691 S.Y. $* \frac{9\ S.F.}{S.Y.} * \frac{20}{1000\ S.F.} * \frac{1\ Ton}{2000} = 0.24$ Ton **

Computations By Initials R.L.M. Date 6/10/88
Computations Checked By Initials B.C.P Date 6-16-88

**= Totals carried to Sheet 5

BRUNING 67357

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

7/57

PAVEMENT CALCULATIONS

ALL-309-3.37
Sta. 176+50 to 182+00

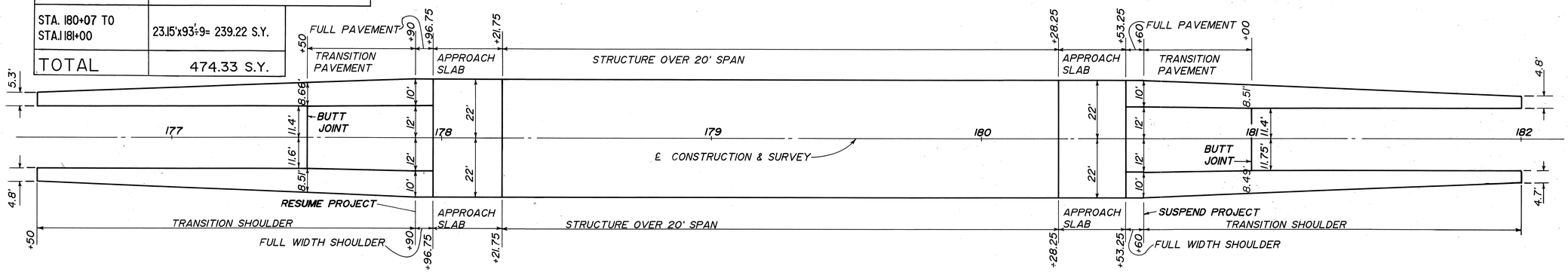
ROADWAY

℄ CONST. STA.	ITEM 404 - 1 1/4" ASPHALT CONC.	ITEM 402 - 1 3/4" ASPHALT CONC.	ITEM 301 - 3" BIT. AGGREGATE BASE	ITEM 304 - 6" AGGREGATE BASE	ITEM 310 - 8" SUBBASE	ITEM 203 - SUBGRADE COMPACTION	ITEM 408 - BIT. PRIME COAT
STA. 177 + 50 TO STA. 177 + 90	$\frac{23' + 24'}{2} * \frac{1\ 1/4"}{12} * 40' \div 27 = 3.63$ C.Y.	$\frac{23' + 24'}{2} * \frac{1\ 3/4"}{12} * 40' \div 27 = 5.08$ C.Y.	$\frac{23.5' + 24.5'}{2} * 3"/12 * 40' \div 27 = 8.89$ C.Y.	$\frac{24.5' + 25.5'}{2} * 6"/12 * 40' \div 27 = 18.52$ C.Y.	$\frac{25.5' + 26.5'}{2} * 8"/12 * 40' \div 27 = 25.68$ C.Y.	$\frac{23' + 24'}{2} * 40' \div 9 = 104.44$ S.Y.	$\frac{24.5' + 25.5'}{2} * 40' * 0.4$ GAL/SY $\div 9 = 44.44$ GAL.
STA. 177 + 90 TO STA. 177 + 96.75	$24' * \frac{1\ 1/4"}{12} * 6.75' \div 27 = 0.63$ C.Y.	$24' * \frac{1\ 3/4"}{12} * 6.75' \div 27 = 0.88$ C.Y.	$24.5' * 3"/12 * 6.75' \div 27 = 1.53$ C.Y.	$25.5' * 6"/12 * 6.75' \div 27 = 3.19$ C.Y.	$26.5' * 8"/12 * 6.75' \div 27 = 4.42$ C.Y.	$24' * 6.75' \div 9 = 18.00$ S.Y.	$25.5' * 6.75' * 0.4$ GAL/SY $\div 9 = 7.65$ GAL.
STA. 178 + 21.75 TO STA. 180 + 28.25	STRUCTURE OVER 20' SPAN						
STA. 180 + 53.25 TO STA. 180 + 60	$24' * \frac{1\ 1/4"}{12} * 6.75' \div 27 = 0.63$ C.Y.	$24' * \frac{1\ 3/4"}{12} * 6.75' \div 27 = 0.88$ C.Y.	$24.5' * 3"/12 * 6.75' \div 27 = 1.53$ C.Y.	$25.5' * 6"/12 * 6.75' \div 27 = 3.19$ C.Y.	$26.5' * 8"/12 * 6.75' \div 27 = 4.42$ C.Y.	$24' * 6.75' \div 9 = 18.00$ S.Y.	$25.5' * 6.75' * 0.4$ GAL/SY $\div 9 = 7.65$ GAL.
STA. 180 + 60 TO STA. 181 + 00	$\frac{24' + 23.15'}{2} * \frac{1\ 1/4"}{12} * 40' \div 27 = 3.64$ C.Y.	$\frac{24' + 23.15'}{2} * \frac{1\ 3/4"}{12} * 40' \div 27 = 5.09$ C.Y.	$\frac{24.5' + 23.65'}{2} * 3"/12 * 40' \div 27 = 8.92$ C.Y.	$\frac{25.5' + 24.65'}{2} * 6"/12 * 40' \div 27 = 18.57$ C.Y.	$\frac{26.5' + 25.65'}{2} * 8"/12 * 40' \div 27 = 25.75$ C.Y.	$\frac{24' + 23.15'}{2} * 40' \div 9 = 104.78$ S.Y.	$\frac{25.5' + 24.65'}{2} * 40' * 0.4$ GAL/SY $\div 9 =$ 44.58 GAL.
SUB TOTALS	8.53 C.Y.	11.93 C.Y. **	20.87 C.Y.**	43.47 C.Y.**	60.27 C.Y.	245.22 S.Y.	104.32 GAL. **

APPROACH SLAB

℄ CONST. STA.	ITEM 404 - 1 1/4" ASPHALT CONC.	ITEM 403 - 1 1/4" ASPHALT CONC.	ITEM 407 - TACK COAT	ITEM 611 - REINF. CONC. APPR. SLAB	ITEM 310 - 8" SUBBASE	ITEM 203 - SUBGRADE COMPACTION
STA. 177 + 96.75 TO STA. 178 + 21.75	$44' * \frac{1\ 1/4"}{12} * 25' \div 27 = 4.24$ C.Y.	$44' * \frac{1\ 1/4"}{12} * 25' \div 27 = 4.24$ C.Y.	$44' * 25' * 0.075$ GAL/SY $\div 9 = 9.17$ GAL.	$44' * 25' \div 9 = 122.22$ S.Y.	$45' * 8"/12 * 25' \div 27 = 27.78$ C.Y.	$44' * 25' \div 9 = 122.22$ S.Y.
STA. 180 + 28.25 TO STA. 180 + 53.25	$44' * \frac{1\ 1/4"}{12} * 25' \div 27 = 4.24$ C.Y.	$44' * \frac{1\ 1/4"}{12} * 25' \div 27 = 4.24$ C.Y.	$44' * 25' * 0.075$ GAL/SY $\div 9 = 9.17$ GAL.	$44' * 25' \div 9 = 122.22$ S.Y.	$45' * 8"/12 * 25' \div 27 = 27.78$ C.Y.	$44' * 25' \div 9 = 122.22$ S.Y.
SUB TOTAL	8.48 C.Y.	8.48 C.Y. **	18.34 GAL. **	244.44 S.Y. **	55.56 C.Y.	244.44 S.Y.
SHEET TOTAL	17.01 C.Y. **				115.83 C.Y. **	489.66 S.Y. **

℄ CONST. STA.	ITEM 202 - PAVEMENT REMOVED
STA. 177+50 TO STA. 178+42	23'x92'÷9= 235.11 S.Y.
STA. 180+07 TO STA.I 181+00	23.15'x93'÷9= 239.22 S.Y.
TOTAL	474.33 S.Y.



Computations By Initials R.L.M. Date 6/10/88
Computations Checked By Initials B.C.P Date 6/16/88

**= Totals carried to Sheet 5

BRUNING 67357

PAVEMENT CALCULATIONS ALL-309-3.37 Sta. 176+50 to 182+00

HOLDERS

℄ CONST. STA.	ITEM 404 - 1 1/4" ASPHALT CONC.	ITEM 402 - 2 3/4" ASPHALT CONC.	ITEM 304 - 6" AGGREGATE BASE	ITEM 408 - BIT. PRIME COAT	ITEM 203 - SUBGRADE COMPACTION
STA. 176 + 50 TO STA. 177 + 50	$\frac{10.1' + 17.17'}{2} * \frac{1\ 1/4"}{12} * 100 \div 27 = 5.26$ C.Y.	$\frac{10.1' + 17.17'}{2} * \frac{2\ 3/4"}{12} * 100 \div 27 = 11.57$ C.Y.	$\frac{10.1' + 17.17'}{2} * 6"/12 * 100' \div 27 = 25.25$ C.Y.	$\frac{10.1' + 17.17'}{2} * 100' * 0.4$ GAL/SY $\div 9 = 60.60$ GAL.	$\frac{10.1' + 17.17'}{2} * 100' \div 9 = 151.50$ S.Y.
STA. 177 + 50 TO STA. 177 + 90	$\frac{17.17' + 20'}{2} * \frac{1\ 1/4"}{12} * 40' \div 27 = 2.87$ C.Y.	$\frac{17.17' + 20'}{2} * \frac{2\ 3/4"}{12} * 40' \div 27 = 6.31$ C.Y. - 1"/12 * 3"/12 * 40' ÷ 27 * 2 SIDES = -0.06 C.Y.	$\frac{9.6' + 19.5'}{2} * 6"/12 * 40' \div 27 = 10.78$ C.Y. - 4"/12 * 6"/12 * 40' ÷ 27 * 2 SIDES = -0.49 C.Y.	$\frac{9.6' + 19.5'}{2} * 40' * 0.4$ GAL/SY $\div 9 = 25.87$ GAL.	$\frac{17.17' + 20'}{2} * 40' \div 9 = 82.60$ S.Y.
STA. 177 + 90 TO STA. 177 + 96.75	$10' * \frac{1\ 1/4"}{12} * 6.75' \div 27 * 2$ SIDES = 0.52 C.Y.	$10' * \frac{2\ 3/4"}{12} * 6.75' \div 27 * 2$ SIDES = 1.15 C.Y. - 1"/12 * 3"/12 * 6.75' ÷ 27 * 2 SIDES = -0.01 C.Y.	9.75' * 6"/12 * 6.75' ÷ 27 * 2 SIDES = 2.44 C.Y. - 4"/12 * 6"/12 * 6.75' ÷ 27 * 2 SIDES = - 0.08 C.Y.	9.75' * 6.75' * 0.4 GAL/SY ÷ 9 * 2 SIDES = 5.85 GAL.	10' * 6.75' ÷ 9 * 2 SIDES = 15.00 S.Y.
STA. 180 + 53.25 TO STA. 180 + 60	$10' * \frac{1\ 1/4"}{12} * 6.75' \div 27 * 2$ SIDES = 0.52 C.Y.	$10' * \frac{2\ 3/4"}{12} * 6.75' \div 27 * 2$ SIDES = 1.15 C.Y. - 1"/12 * 3"/12 * 6.75' ÷ 27 * 2 SIDES = -0.01 C.Y.	9.75' *6"/12 * 6.75' ÷ 27 * 2 SIDES = 2.44 C.Y. - 4"/12 * 6"/12 * 6.75' ÷ 27 * 2 SIDES = -0.08 C.Y.	9.75' * 6.75' * 0.4 GAL/SY ÷ 9 * 2 SIDES = 5.85 GAL.	10' * 6.75' ÷ 9 * 2 SIDES = 15.00 S.Y.
STA. 180 + 60 TO STA. 181 + 00	$\frac{20' + 17'}{2} * \frac{1\ 1/4"}{12} * 40' \div 27 = 2.85$ C.Y.	$\frac{20' + 17'}{2} * \frac{2\ 3/4"}{12} * 40' \div 27 = 6.28$ C.Y. - 1"/12 * 3"/12 * 40' ÷ 27 * 2 SIDES = -0.06 C.Y.	$\frac{19.5' + 16.5'}{2} * 6"/12 * 40' \div 27 = 13.33$ C.Y. - 4"/12 * 6"/12 * 40' ÷ 27 * 2 SIDES = -0.49 C.Y.	$\frac{19.5' + 16.5'}{2} * 40' * 0.4$ GAL/SY ÷ 9 = 32.00 GAL.	$\frac{20' + 17'}{2} * 40' \div 9 = 82.22$ S.Y.
STA. 181 + 00 TO STA. 182 + 00	$\frac{17' + 9.5'}{2} * \frac{1\ 1/4"}{12} * 100' \div 27 = 5.11$ C.Y.	$\frac{17' + 9.5'}{2} * \frac{2\ 3/4"}{12} * 100' \div 27 = 11.25$ C.Y.	$\frac{17' + 9.5'}{2} * 6"/12 * 100' \div 27 = 24.54$ C.Y.	$\frac{17' + 9.5'}{2} * 100' * 0.4$ GAL/SY ÷ 9 = 58.88 GAL.	$\frac{17' + 9.5'}{2} * 100' \div 9 = 147.22$ S.Y.
TOTALS	17.13 C.Y. **	37.57 C.Y. **	77.64 C.Y. **	189.05 GAL. **	493.54 S.Y. **

PAVEMENT TOTALS (For Information Only)

Description	Quantity	
301-Bituminous Aggregate Base	20.87	C.Y.
304-Aggregate Base	121.11	C.Y.
310-Subbase , Type 1 , Grading A	115.83	C.Y.
402-Asphalt Concrete , AC 20	49.50	C.Y.
403-Asphalt Concrete , AC 20	8.48	C.Y.
404-Asphalt Concrete , AC 20	34.14	C.Y.
407-Tack Coat ,	18.34	Gal.
408-Bituminous Prime Coat	293.37	Gal.
611-Reinforced Concrete Approach Slab	244.44	S.Y.
203-Subgrade Compaction	983.20	S.Y.
202-Pavement Removed	474.33	S.Y.

Computations By Initials R.L.M. Date 6/13/88
Computations Checked By Initials B.C.P. Date 6-16-88

ITEM 604 - MONUMENT ASSEMBLY

Point Referenced	Station	Type, location
P.O.T.	177+50	Monument box on ℄
P.O.T.	181+00	Monument box on ℄
TOTAL	2 EACH **	

ITEM 621 - CENTERLINE - DASHED

STA.	L.F.
177+50 to 181+00	350 L.F. (0.066 Mi.)**

ITEM 614-TEMPORARY CENTERLINE, CLASS II

STA.	L.F.
177+50 to 181+00	350 L.F. (0.066 Mi.)**

ITEM 621-4" EDGE LINES - WHITE

STA.	L.F.
177+50 to 181+00	700 L.F. (0.133 Mi.)**

ITEM 659 - SEEDING & MULCHING

SHEET Nº	Sq. Yd.
20	594
21	528
22	1006
23	231
TOTAL	2359 **

ITEM 203 - EXCAVATION & EMBANKMENT

SHEET Nº	EXCAVATION-CU. YD.	EMBANKMENT-CU. YD.
20	32	100
21	631	227
22	592	102
23	18	10
TOTAL	1273 **	439 **

ITEM 659 - COMMERCIAL FERTILIZER

$2359\ S.Y. * \frac{9\ S.F.}{S.Y.} * \frac{20\ \#}{1000\ S.F.} * \frac{1\ Ton}{2000\ \#} = 0.21\ Ton$ **

**= Totals carried to Sheet 5

BRUNING 67357

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

9/57

PAVEMENT CALCULATIONS

ALL-309-6.95
Sta. 366+41.5 to 370+50

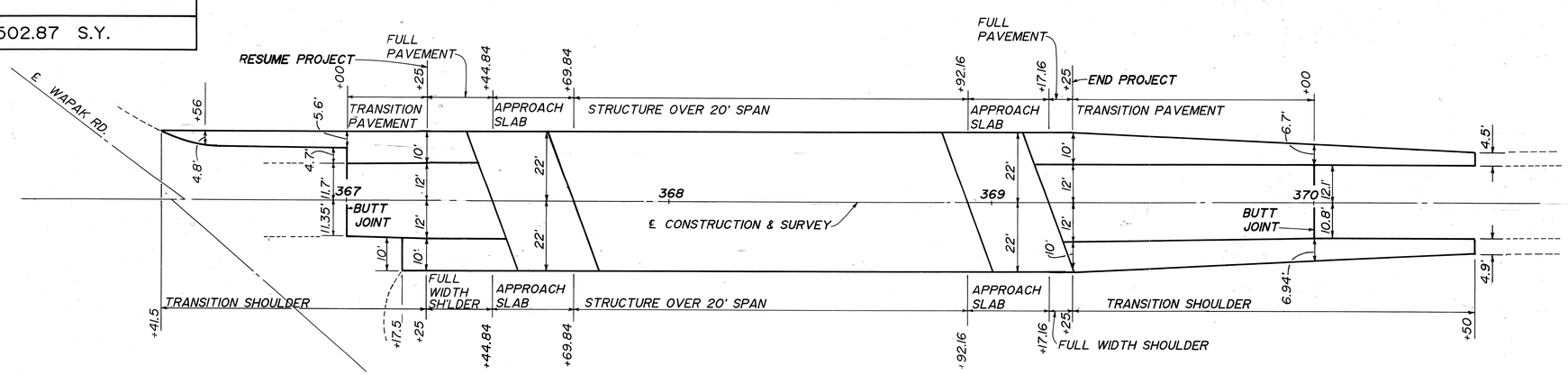
ROADWAY

℄ CONST. STA.	ITEM 404 - 1 1/4" ASPHALT CONC.	ITEM 402 - 1 3/4" ASPHALT CONC.	ITEM 301 - 3" BIT. AGGREGATE BASE	ITEM 304 - 6" AGGREGATE BASE	ITEM 310 - 8" SUBBASE	ITEM 203 - SUBGRADE COMPACTION	ITEM 408 - BIT.. PRIME COAT
STA. 367 + 00 TO STA. 367 + 25	$\frac{23.05' + 24'}{2} * \frac{1\ 1/4"}{12} * 25' \div 27 = 2.27$ C.Y.	$\frac{23.05' + 24'}{2} * \frac{1\ 3/4"}{12} * 25' \div 27 = 3.18$ C.Y.	$\frac{23.55' + 24.5'}{2} * 3"/12 * 25' \div 27 = 5.56$ C.Y.	$\frac{24.55' + 25.5'}{2} * 6"/12 * 25' \div 27 = 11.59$ C.Y.	$\frac{25.55' + 26.5'}{2} * 8"/12 * 25' \div 27 = 16.06$ C.Y.	$\frac{23.05' + 24'}{2} * 25' \div 9 = 65.35$ S.Y.	$\frac{24.55' + 25.5'}{2} * 25' * 0.4$ GAL/SY $\div 9 = 27.81$ GAL.
STA. 367 + 25 TO STA. 367 + 44.84	$24' * \frac{1\ 1/4"}{12} * 19.84' \div 27 = 1.84$ C.Y.	$24' * \frac{1\ 3/4"}{12} * 19.84' \div 27 = 2.57$ C.Y.	$24.5' * 3"/12 * 19.84' \div 27 = 4.50$ C.Y.	$25.5' * 6"/12 * 19.84' \div 27 = 9.37$ C.Y.	$26.5' * 8"/12 * 19.84' \div 27 = 12.98$ C.Y.	$24' * 19.84' \div 9 = 52.91$ S.Y.	$25.5' * 19.84' * 0.4$ GAL/SY $\div 9 = 22.49$ GAL.
STA. 369 + 69.84 TO STA. 368 + 92.16	S T R U C T U R E O V E R 2 0 ' S P A N						
STA. 369 + 17.16 TO STA. 369 + 25	$24' * \frac{1\ 1/4"}{12} * 7.84' \div 27 = 0.73$ C.Y.	$24' * \frac{1\ 3/4"}{12} * 7.84' \div 27 = 1.02$ C.Y.	$24.5' * 3"/12 * 7.84' \div 27 = 1.78$ C.Y.	$25.5' * 6"/12 * 7.84' \div 27 = 3.70$ C.Y.	$26.5' * 8"/12 * 7.84' \div 27 = 5.13$ C.Y.	$24' * 7.84' \div 9 = 20.91$ S.Y.	$25.5' * 7.84' * 0.4$ GAL/SY $\div 9 = 8.89$ GAL.
STA. 369 + 25 TO STA. 370 + 00	$\frac{24' + 22.9'}{2} * \frac{1\ 1/4"}{12} * 75' \div 27 = 6.79$ C.Y.	$\frac{24' + 22.9'}{2} * \frac{1\ 3/4"}{12} * 75' \div 27 = 9.50$ C.Y.	$\frac{24.5' + 23.4'}{2} * 3"/12 * 75' \div 27 = 16.63$ C.Y.	$\frac{25.5' + 24.4'}{2} * 6"/12 * 75' \div 27 = 34.65$ C.Y.	$\frac{26.5' + 25.4'}{2} * 8"/12 * 75' \div 27 = 48.06$ C.Y.	$\frac{24' + 22.9'}{2} * 75' \div 9 = 195.42$ S.Y.	$\frac{25.5' + 24.4'}{2} * 75' * 0.4$ GAL/SY $\div 9 = 83.17$ GAL.
SUB TOTALS	11.63 C.Y.	16.27 C.Y. **	28.47 C.Y. **	59.31 C.Y. **	82.23 C.Y.	334.59 S.Y.	142.36 GAL. **

APPR. SLABS

℄ CONST. STA.	ITEM 404 - 1 1/4" ASPHALT CONC.	ITEM 403 - 1 1/4" ASPHALT CONC.	ITEM 407 - TACK COAT	ITEM 611 - REINF. CONC. APPR. SLAB	ITEM 310 - 8" SUBBASE	ITEM 203 - SUBGRADE COMPACTION
STA. 367 + 44.84 TO STA. 367 + 69.84	$44' * \frac{1\ 1/4"}{12} * 25' \div 27 = 4.24$ C.Y.	$44' * \frac{1\ 1/4"}{12} * 25' \div 27 = 4.24$ C.Y.	$44' * 25' * 0.075$ GAL/SY $\div 9 = 9.17$ GAL.	$44' * 25' \div 9 = 122.22$ S.Y.	$45' * 8"/12 * 25' \div 27 = 27.78$ C.Y.	$44' * 25' \div 9 = 122.22$ S.Y.
STA. 368 + 92.16 TO STA. 369 + 17.16	$44' * \frac{1\ 1/4"}{12} * 25' \div 27 = 4.24$ C.Y.	$44' * \frac{1\ 1/4"}{12} * 25' \div 27 = 4.24$ C.Y.	$44' * 25' * 0.075$ GAL/SY $\div 9 = 9.17$ GAL.	$44' * 25' \div 9 = 122.22$ S.Y.	$45' * 8"/12 * 25' \div 27 = 27.78$ C.Y.	$44' * 25' \div 9 = 122.22$ S.Y.
SUB TOTAL	8.48 C.Y.	8.48 C.Y. **	18.34 GAL. **	244.44 S.Y. **	55.56 C.Y.	244.44 S.Y.
SHEET TOTAL	20.11 C.Y.**				137.79 C.Y.**	579.03 S.Y. **

℄ CONST. STA.	ITEM 202 - PAVEMENT REMOVED
STA. 367+00 TO STA. 367 + 97	23.05' * 97' ÷ 9 = 248.43 S.Y.
STA. 369+00 TO STA. 370+00	22.9 * 100' ÷ 9 = 254.44 S.Y.
TOTAL	502.87 S.Y.



Computations By Initials R.L.M. Date 4/13/88
Computations Checked By Initials B.C.A Date 6.16.88

**= Totals carried to Sheet 5

BRUNING 67257

ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO FHWA REGION 5 FEDERAL PROJECT	10 57

PAVEMENT CALCULATIONS

ALL-309-6.95
Sta. 366+41.5 to 370+50

SHOULDERS

℄ CONST. STA.	ITEM 404 - 1 1/4" ASPHALT CONC.	ITEM 402 - 2 3/4" ASPHALT CONC.	ITEM 304 - 6" AGGREGATE BASE	ITEM 408 - BIT. PRIME COAT	ITEM 203 - SUBGRADE COMPACTION
STA. 366 + 41.5 TO STA. 367 + 00	$\frac{4.8' + 0'}{2} * \frac{1\ 1/4"}{12} * 14.5' \div 27 = 0.13$ C.Y. $\frac{4.8' + 5.6'}{2} * \frac{1\ 1/4"}{12} * 44' \div 27 = 0.88$ C.Y.	$\frac{4.8' + 0'}{2} * \frac{2\ 3/4"}{12} * 14.5' \div 27 = 0.30$ C.Y. $\frac{4.8' + 5.6'}{2} * \frac{2\ 3/4"}{12} * 44' \div 27 = 1.94$ C.Y.	$\frac{4.8' + 0'}{2} * 6"/12 * 14.5' \div 27 = 0.64$ C.Y. $\frac{4.8' + 5.6'}{2} * 6"/12 * 44' \div 27 = 4.24$ C.Y.	$\frac{4.8' + 0'}{2} * 14.5' * 0.4$ GAL/SY $\div 9 = 1.55$ GAL. $\frac{4.8' + 5.6'}{2} * 44' * 0.4$ GAL/SY $\div 9 = 10.17$ GAL.	$\frac{4.8' + 0'}{2} * 14.5' \div 9 = 3.87$ S.Y. $\frac{4.8' + 5.6'}{2} * 44' \div 9 = 25.42$ S.Y.
STA. 367 + 00 TO STA. 367 + 25	$\frac{10.3' + 10'}{2} * \frac{1\ 1/4"}{12} * 25' \div 27 = 0.98$ C.Y. $\frac{10' + 10'}{2} * \frac{1\ 1/4"}{12} * 7.5' \div 27 = 0.29$ C.Y.	$\frac{10.3' + 10'}{2} * \frac{2\ 3/4"}{12} * 25' \div 27 = 2.15$ C.Y. $-1"/12 * 3"/12 * 25' \div 27 = -0.02$ C.Y. $\frac{10' + 10'}{2} * \frac{2\ 3/4"}{12} * 7.5' \div 27 = 0.64$ C.Y. $-1"/12 * 3"/12 * 7.5' \div 27 = -0.01$ C.Y.	$\frac{10.05' + 9.75'}{2} * 6"/12 * 25' \div 27 = 4.58$ C.Y. $-4"/12 * 6"/12 * 25' \div 27 = -0.15$ C.Y. $\frac{9.75' + 9.75'}{2} * 6"/12 * 7.5' \div 27 = 1.35$ C.Y. $-4"/12 * 6"/12 * 7.5' \div 27 = -0.05$ C.Y.	$\frac{10.05' + 9.75'}{2} * 25' * 0.4$ GAL/SY $\div 9 = 11.00$ GAL. $\frac{9.75' + 9.75'}{2} * 7.5' * 0.4$ GAL/SY $\div 9 = 3.25$ GAL.	$\frac{10.3' + 10'}{2} * 25' \div 9 = 28.19$ S.Y. $\frac{10' + 10'}{2} * 7.5' \div 9 = 8.33$ S.Y.
STA. 367 + 25 TO STA. 367 + 44.84	$10' * \frac{1\ 1/4"}{12} * 19.84' \div 27 * 2$ SIDES $= 1.53$ C.Y.	$10' * \frac{2\ 3/4"}{12} * 19.84' \div 27 * 2$ SIDES $= 3.37$ C.Y. $-1"/12 * 3"/12 * 19.84' \div 27 * 2$ SIDES $= -0.03$ C.Y.	$9.75' * 6"/12 * 19.84' \div 27 * 2$ SIDES $= 7.16$ C.Y. $-4"/12 * 6"/12 * 19.84' \div 27 + 2$ SIDES $= -0.24$ C.Y.	$9.75' * 19.84' * 0.4$ GAL/SY $\div 9 * 2$ SIDES $= 17.19$ GAL.	$10' * 19.84' \div 9 * 2$ SIDES $= 44.09$ S.Y.
STA. 369 + 17.16 TO STA. 369 + 25	$10' * \frac{1\ 1/4"}{12} * 7.84' \div 27 * 2.$ SIDES $= 0.60$ C.Y.	$10' * \frac{2\ 3/4"}{12} * 7.84' \div 27 * 2$ SIDES $= 1.33$ C.Y. $-1"/12 * 3"/12 * 7.84' \div 27 * 2$ SIDES $= -0.01$ C.Y.	$9.75' * 6"/12 * 7.84' \div 27 * 2$ SIDES $= 2.83$ C.Y. $-4"/12 * 6"/12 * 7.84' \div 27 * 2$ SIDES $= -0.10$ C.Y.	$9.75' * 7.84' * 0.4$ GAL/SY $\div 9 * 2$ SIDES $= 6.79$ GAL.	$10' * 7.84' \div 9 * 2$ SIDES $= 17.42$ S.Y.
STA. 369 + 25 TO STA. 370 + 00	$\frac{20' + 13.64'}{2} * 1\ 1/4" * 75' \div 27 = 4.87$ C.Y.	$\frac{20' + 13.64'}{2} * \frac{2\ 3/4"}{12} * 75' \div 27 = 10.71$ C.Y. $-1"/12 * 3"/12 * 75' \div 27 * 2$ SIDES $= -0.12$ C.Y.	$\frac{19.5' + 13.14'}{2} * 6"/12 * 75' \div 27 = 22.67$ C.Y. $-4"/12 * 6"/12 * 75' \div 27 * 2$ SIDES $= -0.93$ C.Y.	$\frac{19.5' + 13.14'}{2} * 75' * 0.4$ GAL/SY $\div 9 = 54.40$ GAL.	$\frac{20' + 13.64'}{2} * 75' \div 9 = 140.17$ S.Y.
STA. 370 + 00 TO STA. 370 + 50	$\frac{13.64' + 9.4'}{2} * \frac{1\ 1/4"}{12} * 50' \div 27 = 2.22$ C.Y.	$\frac{13.64' + 9.4'}{2} * \frac{2\ 3/4"}{12} * 50' \div 27 = 4.89$ C.Y.	$\frac{13.64' + 9.4'}{2} * 6"/12 * 50' \div 27 = 10.67$ C.Y.	$\frac{13.64' + 9.4'}{2} * 50' * 0.4$ GAL/SY $\div 9 = 25.60$ GAL.	$\frac{13.64' + 9.4'}{2} * 50' \div 9 = 64.00$ S.Y.
TOTALS	11.50 C.Y. **	25.14 C.Y. **	52.67 C.Y. **	129.95 GAL. **	331.49 S.Y. **

PAVEMENT TOTALS (For Information Only)

Description	Quantity	
301-Bituminous Aggregate Base	28.47	C.Y.
304-Aggregate Base	111.98	C.Y.
310-Subbase , Type 1 , Grading A	137.79	C.Y.
402-Asphalt Concrete , AC-20	41.41	C.Y.
403-Asphalt Concrete , AC-20	8.48	C.Y.
404-Asphalt Concrete , AC-20	31.61	C.Y.
407-Tack Coat ,	18.34	Gal.
408-Bituminous Prime Coat	272.31	Gal.
611-Reinforced Concrete Approach Slab	244.44	S.Y.
203-Subgrade Compaction	910.52	S.Y.
202-Pavement Removed	502.87	S.Y.

Computations By Initials R.L.M. Date 6/13/88
Computations Checked By Initials B.C.P. Date 6-17-88

ITEM 604 - MONUMENT ASSEMBLY

Point Referenced	Station	Type, Location
P.O.T.	367+00	Monument box on ℄
P.O.T.	370+00	Monument box on ℄
TOTAL	2 EACH **	

ITEM 621 - CENTERLINE - NO PASSING EASTBOUND

STA.	L.F.
367+00 to 370+00	300 L.F. (0.057 Mi.)**

ITEM 614 - TEMPORARY CENTERLINE, CLASS II

STA.	L.F.
367+00 to 370+00	300 L.F. (0.057 Mi.)**

ITEM 621 - 4" EDGE LINES - WHITE

STA.	L.F.
367+00 to 370+00	600 L.F. (0.114 Mi.) **

ITEM 659 - SEEDING & MULCHING

SHEET Nº	Sq. Yd.
24	26
25	395
26	1037
TOTAL	1458 **

ITEM 203 - EXCAVATION & EMBANKMENT

SHEET Nº	EXCAVATION - CU. YD.	EMBANKMENT - CU. YD
24	1	0
25	1170	7
26	158	306
TOTALS	1329 **	313 **

ITEM 659 - COMMERCIAL FERTILIZER

$1458\ S.Y * \frac{9\ S.F.}{S.Y.} * \frac{20\ \#}{1000\ S.F.} * \frac{1\ Ton}{2000\ \#} = 0.13$ Ton **

**= Totals carried to Sheet 5

BRUNING 67357

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

11
57

NOTE: EXISTING CATCH BASIN SHOWN IN PLAN COULD NOT BE FOUND IN THE FIELD. REMOVAL, IF NECESSARY, SHALL BE CONDUCTED UNDER 603 CONDUIT, 96" A, AND 604,2-2-B CATCH BASIN

TYPICAL SECTION OF ADJOINING PAVEMENT AT STA. 160+05 FOR ① THRU ⑤ SEE SECTION AT STA. 159+60

BEGIN WORK STA. 158+00

P.K. NAIL O.P.C. #77481-16
℄ CONST. & SURVEY
P.K. NAIL S.R. 309
39.17'
48.69' (PLUMBED)
59.60'
P.K. NAIL
P.K. NAIL

℄ REFERENCE - STA. 156+00

BEGIN PROJECT & BEGIN PAVING STA. 159+60 S.L.M. = 3.02 F-43 (30)

SUSPEND WORK STA. 161+50

STA. 158+00 — STA. 162+00

BEGIN SHEET — END SHEET

Prop. R/W — Work Limits — R/W

№ 3 M.H. 9'x12"E — 2-2-B C.B. — 8" TILE

2-D — 3-D — 61'x 8" E — 101

15'x 10"E — 8" TILE — ABANDONED

Exist. C.B. (SEE NOTE)

S61°43'00"E — 159 — 161 — S.R. 309

1-R — Butt Joint — 90°00' — 4-D — 160 — 2-R — Butt Joint

℄ Construction & Survey

℄ Structure Sta. 159+82

6" GAS — +69.5 — 105' x 12" B+ — 6" GAS — G — 1-G — +94.5 — 6" GAS

RETIRED 4" GAS — 8" TILE — Work Limits — 15'x 10"E — 8" TILE — 2=4' x 10" F — 8" TILE — RETIRED 4" GAS

R/W — UGT — R/W — UGT — R/W

№ 3 M.H. — 1-D — 2-2-B C.B. — Temp. R/W — 102-T

9' x 12" E — 8" TILE — Exist. C.B. (SEE NOTE)

4' x10" F

2.3'± — 3.5'± — 5.6'± — 10.8'± — 11.65'± — 4.9'± — 1.9'± — 3.6'±

5:1 — 9:1 — 4:1 — 2.4:1

⑤ ④ ③ ① ② ③ ④ ⑤

TYPICAL SECTION OF ADJOINING PAVEMENT AT STA. 159+60

① 6"± 404 ASPHALT
② 12"± CONC.
③ 4"± ASPHALT
④ 6"± STONE
⑤ 10"± STONE

SUSPEND PROJECT & SUSPEND PAVING STA. 160+05 S.L.M. = 3.03 F-43 (30)

Conrail Track

= PAVEMENT REMOVED

P.K. NAIL O.P.C. # 774 388
℄ CONST. & SURVEY
S.R. 309
39.20'
64.98'
68.88'
P.K. NAIL
P.K. NAIL

℄ REFERENCE - STA. 162+00

B.M. NO. 1 - ELEV. 778.65
SPIKE IN POWER POLE AT STA. 154+60, 38' RIGHT

B.M. NO. 2 - ELEV. 779.09
CHISELED "X" WEST END, NORTH ABUT. R.R. BRIDGE STA. 159+69, 61.5' RIGHT

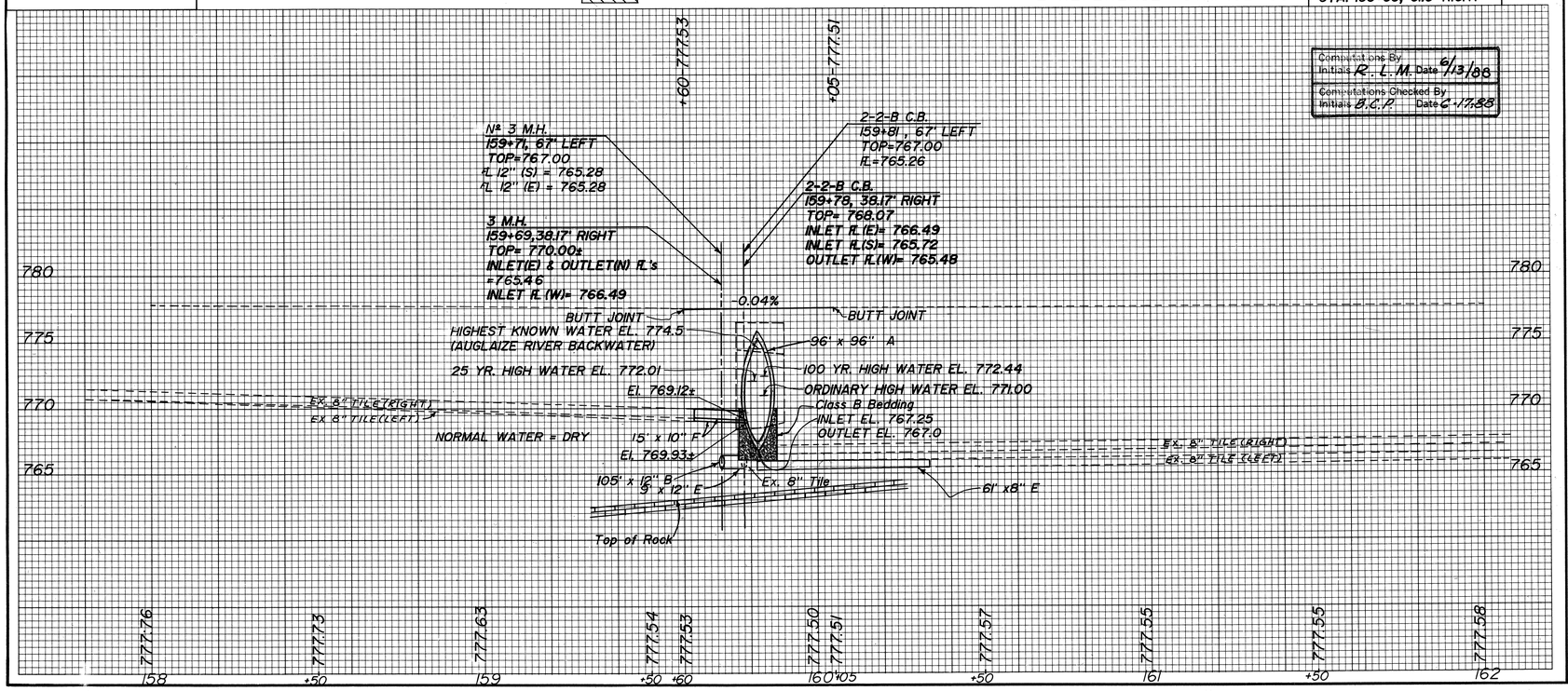
EXISTING STRUCTURE

TYPE: Conc. Slab Bridge on Conc. Wall Abutments
SPAN: 16' Clear
SKEW: None
WEARING SURFACE: Bituminous
ALIGNMENT: Tangent
CONDITION: Poor
DISPOSITION: To Be Removed
DATE BUILT: 1937

PROPOSED STRUCTURE

TYPE: Concrete Pipe, Type A Conduit
SIZE: 96" ϕ X 96' Long
LOADING: HS 20-44 and the Alternate Military Loading
ROADWAY: 24'-0"
SKEW: None
ALIGNMENT: Tangent

Computations By Initials R. L. M. Date 6/3/88
Computations Checked By Initials B.C.P. Date 6-17-88



ESTIMATED QUANTITIES

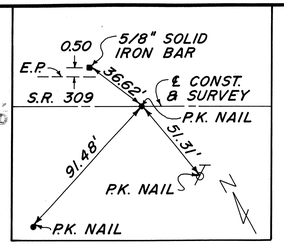
REF. NO.	STATION TO STATION	SIDE	202 Guard Rail Removed L.F.	602 Concrete Structures Masonry Removed C.Y.	602 BARRIER REFLECTORS TYPE A EACH	603 Conduit 8"E	603 Conduit 10"F	603 Conduit 12"B	603 Conduit 12"E	603 Conduit 96"A	604 Nº 3 Manhole Each	604 2-2-B Catch Basin Each	606 Anchor Assembly Type A Each	606 Guard Rail Type 5 L.F.	TOTALS
				Lump	4										4
				Lump											LUMP
				9											15
				6						96					96
1-R	158+47 to 161+19	L.&Rt.	539												539
2-R	159+74 to 159+91	L.&Rt.													
1-D	159+67 to 159+79	Rt.				9	27				1	1			18
2-D	159+67 to 159+81	L.&Rt.				9	15	105			1	1			105
3-D	159+81 to 160+33	Lt.					61				1	1			42
4-D	159+82	L.&Rt.													2
1-G	158+44 to 161+20	Rt.		225	2								2		61
															2
															2
															225
TOTALS			539												

PLAN AND PROFILE, STA. 158+00 TO 162+00

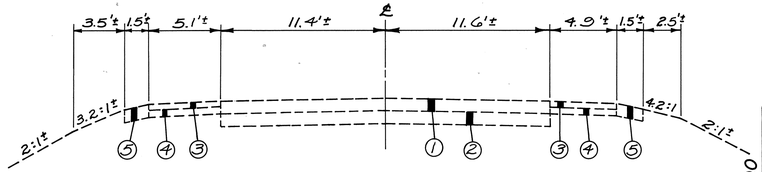
ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

12
57

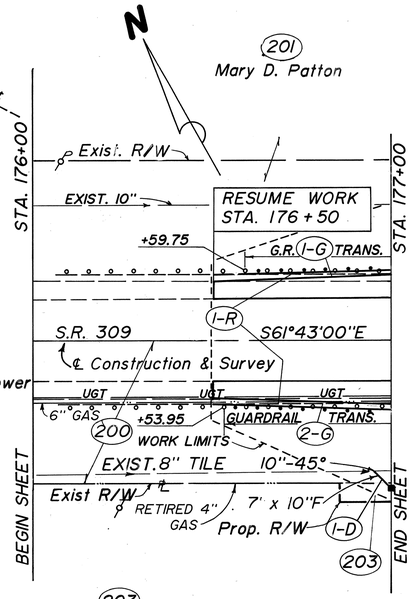


℄ REFERENCE - STA. 176+00



TYPICAL SECTION OF ADJOINING PAVEMENT STA. 177+50

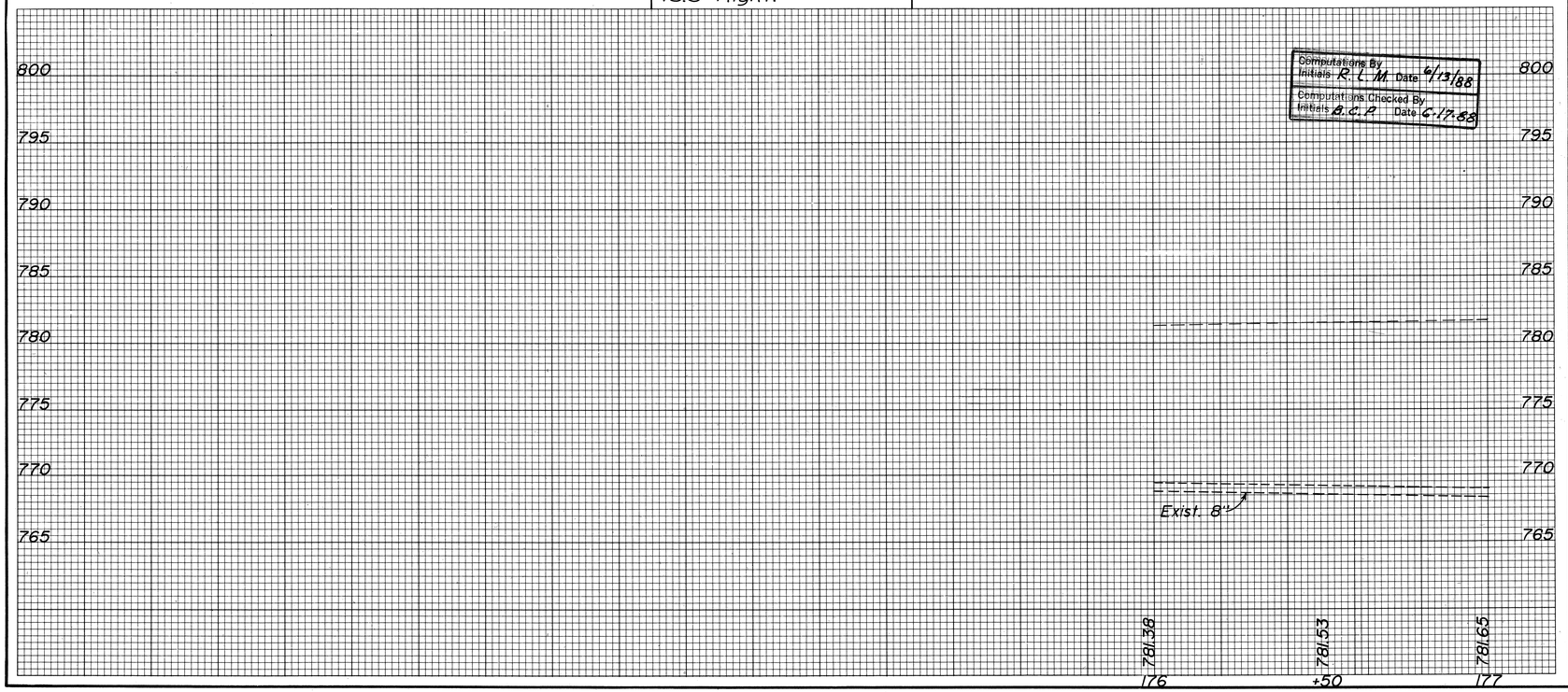
1. 9½"± 404 ASPHALT
2. 11"± CONC.
3. 4"± ASPHALT
4. 6"± STONE
5. 10"± STONE



200 = Central Ohio Power & Light Company (NOW OHIO POWER CO.)

203 Consolidated Rail Corporation

B.M. #4 - Elev. 779.30
Spike in R.R. telephone pole at Sta. 175+20, 45.5' Right.



Computations By Initials R. L. M. Date 6/13/88
Computations Checked By Initials B. C. P. Date 6.17.88

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 Guard Rail Removed L.F.	606 Guard Rail Type 5 L.F.	802 BARRIER REFLECTRS TYPE A EACH	603 Conduit 10"F	603 Conduit Bends and Branches 10"-45°
1-D	176+95 to 177+00	Rt.				7	1
1-G	176+59.75 to 177+00	Lt.		40.25	1		
2-G	176+53.95 to 177+00	Rt.		46.05	1		
1-R	176+53.95 to 177+00	Lt. & Rt.	86.3				
TOTALS			86.3	86.3	2	7	1

PLAN AND PROFILE, STA. 176+00 TO 177+00

= PAVEMENT REMOVED

MICROFILMED
OCT 19 1992

N

RESUME PROJECT
STA. 177+90
S.L.M. = 3.37
BRF - 43 (30)

SUSPEND PROJECT
STA. 180+60
S.L.M. = 3.42
BRF - 43 (30)

AUGLAIZE RIVER

STA. 177+00

STA. 181+00

BEGIN SHEET

END SHEET

Exist. R/W

Work Limits

RESUME PAVING
STA. 177+50

SUSPEND PAVING
STA. 181+00

EXIST. 10" GUARDRAIL TRANSITION

EXIST. 12"

GUARDRAIL TRANSITION

+22.5
47.5' LT.

+27.5
42'

+87.5, 22' LT.

+62.5, 22' LT.

+31.25

10'x 12" F

40'x 15" F

+18.75

BUTT JOINT
S.R. 309

S61°43'00"E

178

179

180 ℄ Construction & Survey

BUTT JOINT

1-R

1-G

2-G

2-R

UGT

UGT

6" GAS

6" GAS

GUARDRAIL TRANSITION

GUARDRAIL TRANSITION

EXIST. 8" (ABANDON)
2-2-B C.B.

138' x 12" E

RETIRED 4" GAS

+18.75
+87.5, 22' RT.

+31.25

EXIST. 12"

+62.5, 22' RT.

RETIRED 4" GAS

1-D

203

Prop. R/W

Structure No. ALL-309-0338
Exist. R/W

Work Limits

Temp. R/W

10'x 15" F

+22.5
43' RT.

27.5
40' RT.

Trees Removed
1-48" Size

Consolidated Rail Company

CONRAIL

B.M. #5 - Elev. 781.10
Chiseled "X" in N.W. Abut. of Bridge (ALL-309-0338)
Sta. 178+45, 18.5' Right

B.M. #6 - Elev. 783.04
Chiseled "X" in East end, middle girder, R.R. Bridge
Sta. 180+10, 80' Right

781.65 781.75 781.92 782.08 782.25 782.41 782.58 782.74 782.90

+50 +50 +50 +50 +50 +50

177 178 179 180 181

800 795 790 785 780 775 770 765

Bridge Limits = 206.50'

Sta. 178+21.75

Sta. 180+28.25

+0.20%

+0.33 %

BUTT JOINT

BUTT JOINT

2-2-B C.B.
STA. 177+00, 41' RT.
TOP= 771.81
℄ = 12" 768.08
℄ = 10" 768.34

7" x 10" F

138' x 12" E

Exist. 8" (Abandon)

10' x 15" F
OUTLET 178+48, 41' RT.
ELEV. 767.16

℄ = 763.5

10' x 12" F
OUTLET 178+46, 37.5' LT.
ELEV. 766.25

100 YR. HIGH WATER
ELEV. 774.30

25 YR. HIGH WATER
ELEV. 773.71

NORMAL WATER
ELEV. 766.00
OUTLET 179+93, 35.5' RT.
ELEV. 768.32

20' x 15" F

40' x 15" F

OUTLET 179+73, 38' LT.
ELEV. 766.81

Exist 12"

Computations By
Initials R.L.M. Date 6/13/88

Computations Checked By
Initials B.C.P. Date 6-17-88

EXISTING STRUCTURE

TYPE: Conc. Br. with Cont. Steel Beams
SPAN: 2 at 80' c/c Bearings
ROADWAY: 24'
SKEW: None
LOADING: H-15-33
WEARING SURFACE: Asphalt Concrete
ALIGNMENT: Tangent
CONDITION: Poor
DISPOSITION: To Be Removed

PROPOSED STRUCTURE

TYPE: Non-composite Prestressed Conc. Box Beams w/ Reinforced Conc. Substructure
SPAN: 66.66'-66.66'-66.66' c/c Brg.
ROADWAY: 44'+ f/f Guardrail
CROWN: 3/16" per ft.
LOADING: HS 20-44 and Alt. Military Loading
ALIGNMENT: Tangent SKEW: None
APPROACH SLABS: AS-1-81 (25' Long)
WEARING SURFACE: 2 1/2" Min. Asp. Conc.

ESTIMATED QUANTITIES

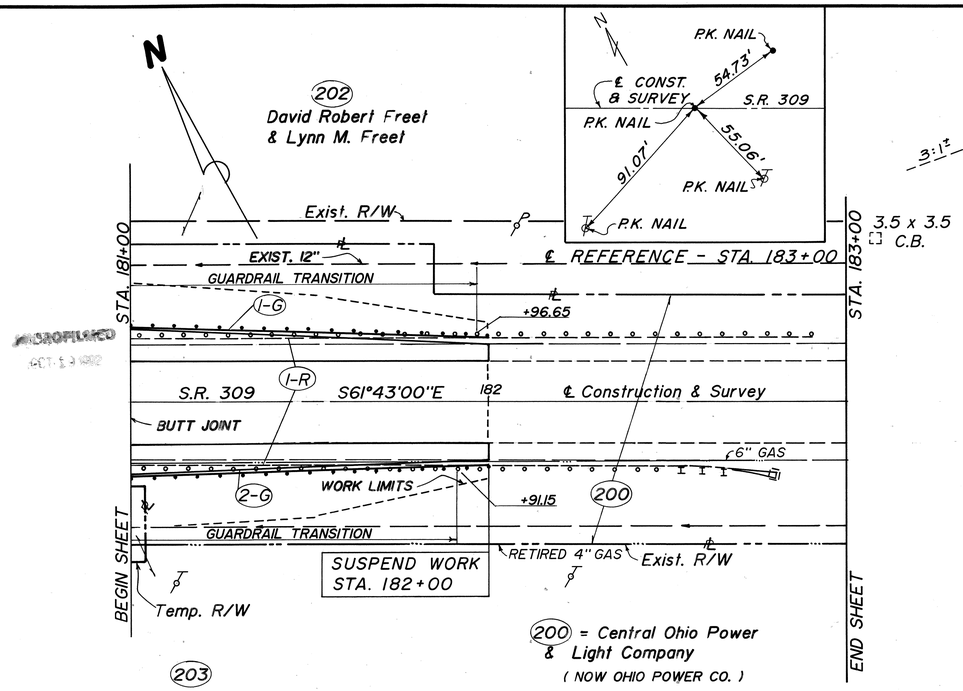
REF. NO.	STATION TO STATION	SIDE	202 Guard Rail Removed L.F.	606 Guard Rail Type 5 L.F.	606 Beam Assembly Type B Each	802 BARRIER REFLECTORS TYPE A EACH	601 Type D R.C.P. 18"W.f. C.Y.	603 Conduit 12"E 12"F L.F.	603 Conduit 15"F L.F.	604 Catch Basin 2-2-B Each
1-D	177+00 to 178+48	Rt.							10	1
2-D	178+36 to 178+46	Lt.								
3-D	179+93 to 180+13	Rt.								
4-D	179+73 to 180+13	Lt.								
5-D	178+22.75 to 178+47	Lt.&Rt.					124	138	20	
6-D	180+10 to 180+27.25	Lt.&Rt.					83		40	
1-R	177+00 to 178+41	Lt.&Rt.	282							
2-R	180+09.6 to 181+00	Lt.&Rt.	181							
1-G	177+00 to 181+00	Lt.		187.5	2	4				
2-G	177+00 to 181+00	Rt.		187.5	2	4				
TOTALS			463	375	4	8	207	138	70	1

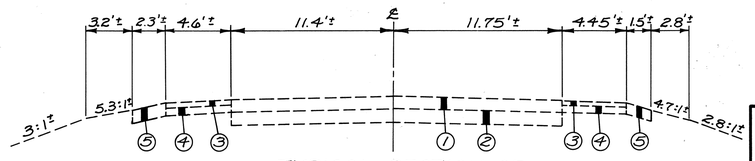
PLAN AND PROFILE, STA. 177+00 TO STA. 181+00

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO | FHWA REGION 5 | FEDERAL PROJECT

14
57



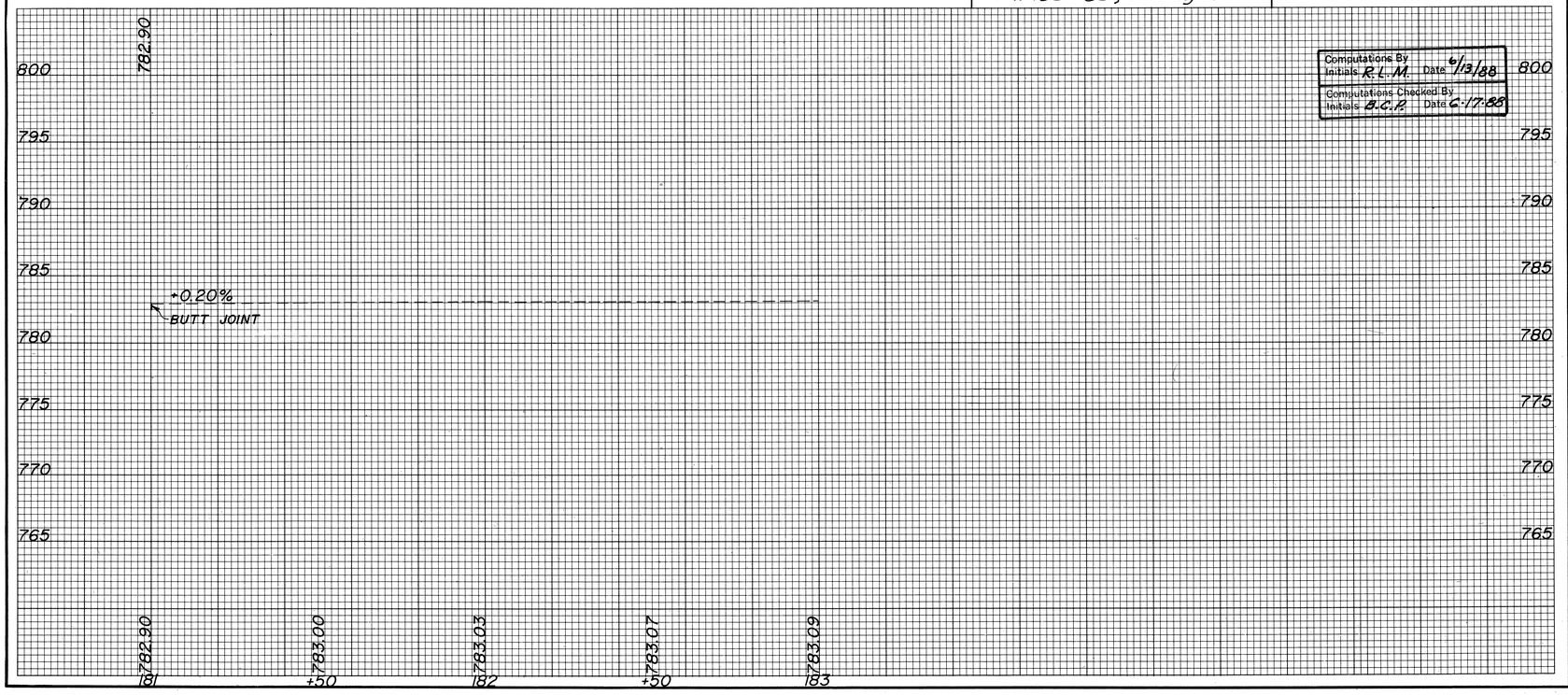


TYPICAL SECTION OF ADJOINING PAVEMENT STA. 181+00

① 9½"± 404 ASPHALT
② 11"± CONC.
③ 4"± ASPHALT
④ 6"± STONE
⑤ 10"± STONE

B.M. #7 - Elev. 783.64
Chiseled "X" in S.W. bolt on R.R. Crossing Signal at Sta. 185+09, 61' Right

Computations By Initials R.L.M. Date 6/13/88
Computations Checked By Initials B.C.P. Date 6-17-88



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 Guard Rail Removed L.F.	606 Guard Rail Type 5 L.F.	802 BARRIER REFLECTOR TYPE A EACH
1-R	181+00 to 181+96.65	Lt.&Rt.	187.8		
1-G	181+00 to 181+96.65	Lt.		96.65	2
2-G	181+00 to 181+91.15	Rt.		91.15	2
TOTALS			187.8	187.8	4

PLAN AND PROFILE, STA. 181+00 TO STA. 183+00

B.M. #2 - Elev. 796.65
Spike in R.R. telephone pole at Sta. 366+77.5, 45.5' Right.

Wapak Road

RESUME WORK STA. 366+41.5

301 Mary Lou Morgan

302 Paul Jacobs

300 = Central Ohio Light & Power Company (NOW OHIO POWER CO.)

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

15
57

RESUME PAVING STA. 367+00

Prop. R/W

Ex. R/W

℄ = MEAN LOW WATER

WORK LIMITS

Exist. R/W

EXIST. 6"

EXIST. 12"

EXIST. 12" CMP

367+53 50' LT.

368+80 47' LT. EXIST. 10"

45° x 12" F.

368+63.5 27' LT.

368+52.5 23' LT.

10" x 12" F

10" R.

+72.99

+60.49

+85.49

+76.51

+39.01

STA. 365+00

STA. 369+00

BEGIN SHEET

END SHEET

S61°46'00"E

366 S.R. 309 367 368

Structure No. ALL-309-0696

℄ CONSTRUCTION & SURVEY

TYPE "T" ANCHOR ASSEMBLY

WORK LIMITS

20° SKEW

6" GAS

RETIRED 4" GAS

EXIST. 10"

10" x 18" F.

367+86 40' RT.

368+75 46.5' RT.

TempR/W

Prop. R/W

RESUME PROJECT
STA. 367+25
S.L.M. = 6.95
BRF - 43 (30)

Consolidated Rail Corporation

CONRAIL

WAPAK RD.

1-D 5-D 1-G 1-R 2-G 2-D 3-D 4-D 6-D 303-T 303

MICROFILMED OCT 19 1992

SIGN
P.K. NAIL 48.75' (PLUMBED)
P.K. NAIL
64.30' (PLUMBED)
O.P.C. # 799 172 15T
℄ CONST. & SURVEY
P.K. NAIL
S.R. 309
63.05'
50.92' (PLUMBED)
P.K. NAIL
P.K. NAIL

= PAVEMENT REMOVED

℄ REFERENCE - STA. 365+00

2.6'± 4.7'± 11.7'± 11.35'± 20:1 40:1

TYPICAL SECTION OF ADJOINING PAVEMENT STA. 367+00

① 6"± 404 ASPHALT
② 12"± CONC.
③ 4"± ASPHALT
④ 6"± STONE
⑤ 10"± STONE

B.M. #3 - Elev. 795.55
Chiseled "X" in S.E. Abut. of Bridge (ALL-309-06.97)

795.44 795.35 795.26 795.16 795.07

+50 +50

Sta. 367+69.84 Sta. 369+92.16

R.L.M. 6/13/88
B.C.P. 6.17.88

Bridge Limits
122.32'
-0.16%
-0.19%

BUTT JOINT

100 YR. HIGH WATER ELEV. 789.84' 25 YR. HIGH WATER ELEV. 788.93'

+77, 40' LT. 782.0
10' x 12" F

+10.5, 35' RT. 780.92

NORMAL WATER 779.0

+52, 35' LT. 778.5±

45° x 12" F

10' x 18" F

+78, 35' RT. 778.31

45° x 12" F

℄ EL= 771.3

795.74 795.66 795.57 795.52 795.44 795.30 795.27 795.11 795.12

805 800 795 790 785 780 775

365 +50 366 +50 367 +50 368 +50 369

EXISTING STRUCTURE

TYPE: Steel Girder with Conc. Deck
SPAN: 100' c/c Pins
ROADWAY: 28'
SKEW: 20° R.F.
APPROACH SLABS: 25'
WEARING SURFACE: Asphalt Conc.
ALIGNMENT: Tangent
CONDITION: Fair
DISPOSITION: To Be Removed

PROPOSED STRUCTURE

TYPE: Non-composite Prestressed Conc. Box Beams w/ Reinforced Conc. Substructure
SPAN: 58.5'-58.5' c/c Brg.
ROADWAY: 44'+ f/f Guardrail
CROWN: 3/16" per ft.
LOADING: HS 20-44 and Alt. Military Loading
ALIGNMENT: Tangent SKEW: 20°RF
APPROACH SLABS: AS-1-81 (25' Long)
WEARING SURFACE: 2 1/2" Min. Asp. Conc.

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	802 BARRIER REFLECTR TYPE A EACH	202 Guard Rail Removed L.F.	606 Anchor Assembly Type A Each	606 Br. Term Assembly Type B Each	606 Anchor Assembly Type T Each	601 RCP Type C w/ Fillet C.Y. 12"F	603 Conduit 18"F	604 3x3 C.B. Adjust to Grade Each	606 Guard Rail Type 5 str LF	606 Guard Rail Type 5 LF	609 CONC. CURB TYPE 2 LF
1-R	366+49.5 to 367+98.6	Lt. & Rt.		229								102.0 50	18.75 152.0 18.75
1-D	367+16 to 367+77	Lt.						10					
2-D	368+01 to 368+11	Rt.						10					
3-D	368+52 to 368+97	Lt.						45					
4-D	368+78 to 368+88	Rt.							10				
5-D	367+53 to 368+14	Lt. & Rt.						227					
6-D	368+52.5 to 369+00	Lt. & Rt.						215					
1-G	366+48 to 369+00	Lt.	3		1		2						
2-G	367+17 to 367+76.51	Rt.	2			1	1						
TOTALS			5	229	1	3	1	442	65	1	1	1	10

PLAN AND PROFILE, STA. 365+00 TO 369+00

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO | FHWA REGION 5 | FEDERAL PROJECT

16/57

END PROJECT
STA. 369+25
S.L.M. = 6.99
BRF-43(30)

302 Paul Jacobs

END WORK
STA. 370+50

P.K. NAIL
O.P.C. #799
168
82.78'
℄ CONST. & SURVEY
P.K. NAIL
S.R. 309
39.64
58.91'
P.K. NAIL

℄ REFERENCE - STA. 372+00

Ex. R/W

300 Central Ohio Light and Power Company

EXIST. 10" (NOW OHIO POWER CO.)

STA. 369+00

STA. 372+00

END PAVING
STA. 370+00

WORK LIMITS

GUARDRAIL TRANSITION

1-G

+39.15

BUTT JOINT

S61°46'00"E S.R. 309

370

371 ℄ CONSTRUCTION & SURVEY

1-R

+01.51

6" GAS

36"

2-G

+48.10

WORK LIMITS

GUARDRAIL TRANSITION

6" GAS

RETIRED 4" GAS

Ex. R/W

BEGIN SHEET

END SHEET

303

Prop. R/W

CONRAIL

B.M. #4 - Elev. 795.45
Top N.W. bolt in base of R.R. signal at Sta. 372+05, 62' Right.

▨ = PAVEMENT REMOVED

B.M. #5 - Elev. 792.17
Spike in R.R. telephone pole at Sta. 379+38, 48.5' Right.

2.2'± 4.2'± 12.1'± 10.8'± 4.7'± 2.0'±

2.6:1 2.8:1

⑤ ④ ③ ① ② ③ ④ ⑤

TYPICAL SECTION OF ADJOINING PAVEMENT STA. 370+00

① 6"± 404 ASPHALT
② 12"± CONC.
③ 4"± ASPHALT
④ 6"± STONE
⑤ 10"± STONE

795.07 +50 794.97 794.88 794.91 794.86 794.82 794.78 794.67 794.57 795.12

805 800 795 790 785 780 775

-0.19% -0.12%

BUTT JOINT

369 +50 370 +50 371 +50 372

R.L.M. 6/13/88
B.C.P. 6-17-88

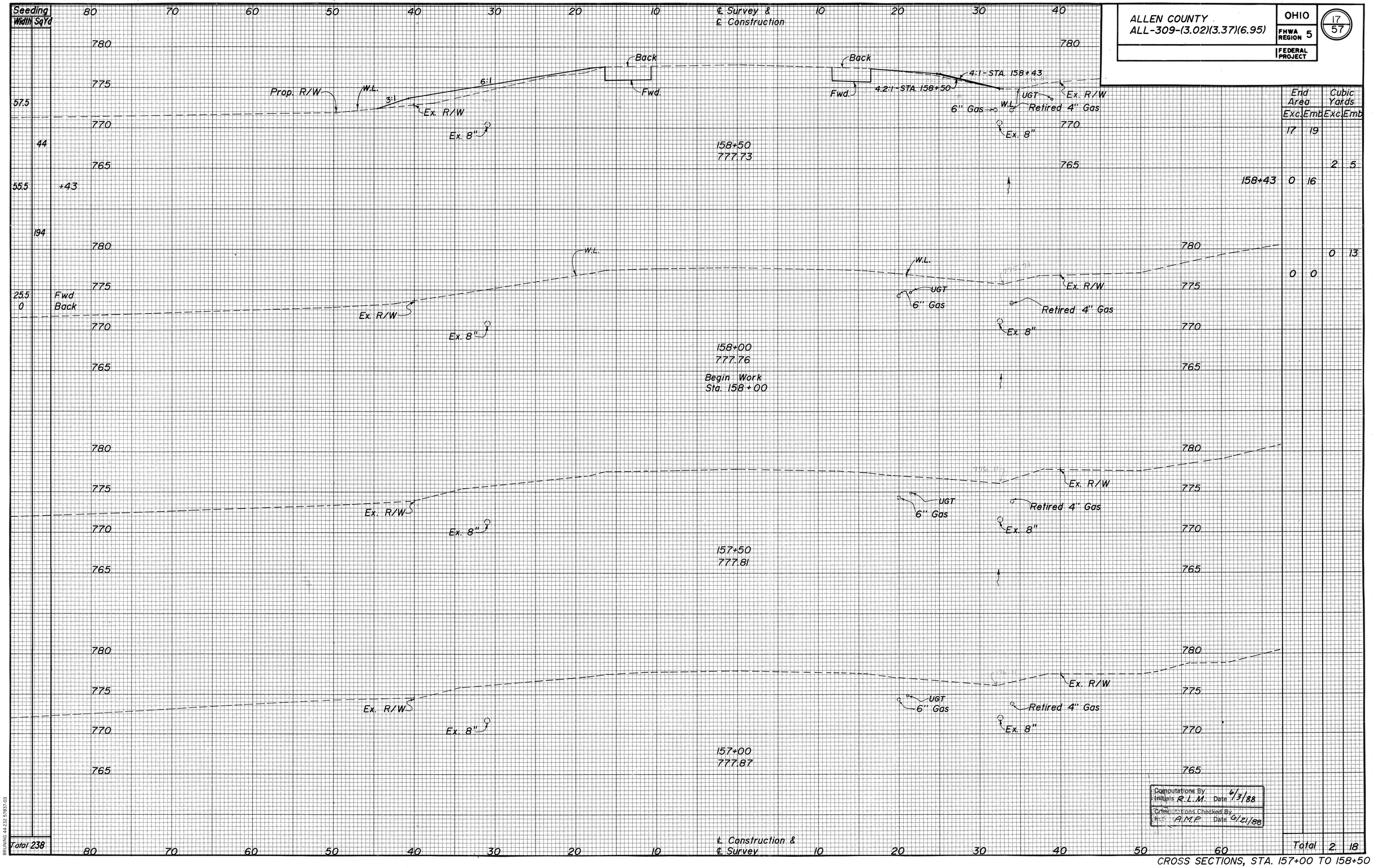
TREES REMOVED 1-30" SIZE

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 Guard Rail Removed L.F.	606 Guard Rail Type 5 L.F.	Bridge Terminal Assembly Type B Each	802 BARRIER REFLECTRS TYPE A EACH
1-R	369+00 to 370+48.10	Lt.&Rt.	277			
1-G	369+00 to 370+39.15	Lt.		139.15	1	2
2-G	369+00 to 370+48.10	Rt.		146.59		2
TOTALS			277	285.74	1	4

PLAN AND PROFILE, STA. 369+00 TO 372+00

ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO FHWA REGION 5 FEDERAL PROJECT	17 57



	End Area		Cubic Yards	
	Exc.	Emb	Exc.	Emb
158+43	17	19		
	0	16	2	5
	0	0	0	13
Total	2	18		

Computations By
Initials R.L.M. Date 6/3/88
Computations Checked By
Initials A.M.P Date 6/21/88

CROSS SECTIONS, STA. 157+00 TO 158+50

BRUNING 44-232 37837-03

ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO	18 57
	FHWA REGION 5	
	FEDERAL PROJECT	

Seeding Width SqYd

℄ Survey & ℄ Construction

Prop. R/W — W.L. — 3:1 — 767.8 — Ex. R/W — Ex. 8" — 7:1 — 160+50, 777.57 — Suspend Project & Suspend Paving Sta. 160+05 — 2.5:1 — W.L. — Temp. R/W — Ex. R/W — 6" Gas — Retired 4" Gas — Ex. 8"

Pavement Removed Sta. 159+60 to Sta. 160+05

LEVEL STA. 159+82 — 2.7:1 - STA. 159+82 — 3:1 - STA. 160+00 — 8:1 - STA. 160+00 — Butt Joint - Sta. 159+60 and Sta. 160+05 — 2:1 - STA. 159+82 — 2:1 - STA. 160+00 — 12" — W.L. — Temp. R/W

Prop. R/W — W.L. — 3:1 — EL. 767.0 — 767.2 - STA. 160+00 — 767.00 STA. 159+82 — HW4 - B — Ex. R/W — Ex. C.B. Sta. 159+77.8, 39' Lt — 105 L.F. 12"B at 0.18% — 777.51, 160+00, 777.50 — 96 L.F of 96"ø Pipe — 7'-6" — 4'-9" — 771.2 - STA. 160+00 EL 76725 — Ex. R/W — Retired 4" Gas — 6" Gas — 28" — Ex. C.B. Sta. 159+79, 37' Rt. — HW4 - B, Modified

Nº 2-2-B C.B.
Sta. 159+81, 67' Left
Top=767.00
IE=765.26

Nº 3 M.H.
Sta. 159+71, 67' Left
Top=767.00
IE=765.28

Begin Project & Begin Paving Sta. 159+60

Nº 2-2-B C.B. Sta. 159+78, 38.17' Right
Top=768.07
Inlet IE.(E)=766.49
Inlet IE.(S)=765.72
Outlet IE.(W)=765.48

Nº 3 M.H.
Sta. 159+69, 38.17' Right
Top=770.00±
Inlet(E) & Outlet(N) IE's =765.46
Inlet IE.(W)=766.49

Prop. R/W — W.L. — 3:1 — Fwd. — Back — 767.5 — 8:1 — 3:1 — Ex. R/W — Ex. 8" — 159+50, 777.54 — 3.1:1 — W.L. — 6" Gas — Retired 4" Gas — Ex. 8" — Temp. R/W — Ex. R/W

Prop. R/W — W.L. — 3:1 — 6:1 — Ex. R/W — Ex. 8" — 159+00, 777.63 — 4.7:1 — W.L. — 6" Gas — UGT — Ex. R/W — Retired 4" Gas — Ex. 8"

	End Area Exc. Emb	End Area Exc. Emb	Cubic Yards Exc.	Cubic Yards Emb.
	33	129		
			56	236
160+05 Fwd	34	154		
160+05 Back	68	154		
			13	29
	68	154		
Correction for Culvert			0	-26
			23	60
159+91	68	204		
159+73	68	204	45	136
			33	79
159+60 Fwd	68	126		
159+60 Back	34	126		
			13	47
	34	126		
			54	200
			24	90
			38	101
158+50	17	19		
Total	275	862		

Computations By Initials R. L. M. Date 4/13/88
Computations Checked By Initials A.M.P. Date 6/21/88

℄ Construction & ℄ Survey

CROSS SECTIONS STA. 159+00 TO 160+50

BRUNING 44-232-57837-03

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

19
57

Seeding Width	Seeding SqYd
0	
48.5	Fwd
	Back
188	
72.5	+22
185	
79	
449	
82.5	+50
Total	822

℄ Survey &
℄ Construction

70 60 50 40 30 20 10 | 10 20 30 40 50 60 70

780 / 775 / 770 / 765

Ex. R/W
Ex. 8"
6" Gas
Ex. R/W
UGT
Ex. 8"
Retired 4" Gas

162+50
777.61

780 / 775 / 770 / 765

6" Gas
Ex. R/W
UGT
Ex. 8"
Retired 4" Gas

162+00
777.58

780 / 775 / 770 / 765

Fwd.
Back
Prop. R/W
W.L.
Ex. R/W
Ex. 8"
Fwd.
Back
6" Gas
Ex. R/W
UGT
Retired 4" Gas
Ex. 8"

161+50
777.55

Suspend Work
Sta. 161+50

780 / 775 / 770 / 765

6:1
3:1
Prop. R/W
W.L.
3:1
768.4 - STA. 161+00
Ex. R/W
Ex. 8"
STA. 161+00
STA. 161+22
3:1 - STA. 161+22
3:1 - STA. 161+00
Temp. R/W
W.L.
UGT
Ex. R/W
6" Gas
Retired 4" Gas
Ex. 8"

161+00
777.55

℄ Construction &
℄ Survey

	End Area Exc.	End Area Emb	Cubic Yards Exc.	Cubic Yards Emb
Fwd	0	0		
Back	16	0		
			20	63
			20	97
			25	116
			54	227
160+50	33	129		
Total			94	387

Computations By Initials R.L.M. Date 6/13/88
Computations Checked By Initials A.M.P. Date 6/21/88

BRUNING 44-232 57837-03

CROSS SECTIONS, STA. 161+00 TO 162+50

ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO FHWA REGION 5 FEDERAL PROJECT	20 57

Seeding Width Sqrd

℄ Survey & ℄ Construction

Pavement Removed - Fwd.

Back

Butt Joint

Fwd.

6" Gas

781.75
177+50
781.75

Resume Paving
Sta. 177+50

Prop. R/W

W.L.

Ex. R/W

Retired 4" Gas

Ex. 8"

12" E

Ex. 10"

59

336

62

258

31
0

Fwd
Back

177+00
781.65

2-2-B C.B.
Sta. 177+00, 41.5' Rt.
Top=771.81
8" Inlet(W)=768.34
12" Outlet(E)=768.08

176+50
781.53

Resume Work
Sta. 176+50

176+00
781.38

	End Area		Cubic Yards	
	Exc.	Emb	Exc.	Emb
Fwd	46	66		
Back	8	66		
			16	81
			9	21
			16	19
Fwd	8	0		
Back	0	0		
Total	32	100		

Computations By Initials R.L.M. Date 6/13/88
Computations Checked By Initials A.M.P. Date 6/21/88

Total 594

BRUNING 44-232 57837-03

ROAD CROSS SECTIONS, STA. 176+00 TO 177+50

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO | FHWA REGION 5 | FEDERAL PROJECT

21/57

Computations By Initials R.L.M. Date 6/13/88
Computations Checked By Initials A.M.P. Date 6/21/88

Seeding Width Sqyd

80 70 60 50 40 30 20 10 ℄ Survey & ℄ Construction 10 20 30

End Area Exc. Emb | Cubic Yards Exc. Emb

785 785
780 780
775 782.41 179+50 782.35 775
770 770

785 785
780 780
775 782.24 179+00 782.16 775
770 770

70 Correction for Seeding Rear Abutment

STRUCTURE NO. ALL-309-0338

785 785
780 780
775 782.08 178+50 782.07 775 Correction for Earthwork at Rear Abutment +450 +7
0 Fwd +21.75
56.5 Back 770 770

12" E
Ex. 8" Outlet = 767.8
Sta. 178+46, 35' Rt.

Ex. 10" Outlet = 766.2
Sta. 178+46, 38' Lt.

End Approach Slab
Sta. 178+21.75

+20.25 82 95

785 785
62 71
137
780 780 82 95
3.28
6" Gas
2:1
Prop. R/W
775 781.91 178+00 781.92 775
W.L.
1.84
119 149
Ex. R/W
W.L.
56.5 770 770
Ex. R/W
Retired 4" Gas
Resume Project Sta. 177+90
321
Ex. 10"
Ex. 8"
12" E
59 +50
177+50 46 66

Total 528 Total 631 227

℄ Construction & ℄ Survey

80 70 60 50 40 30 20 10 10 20 30 40 50 60

ROAD CROSS SECTIONS, STA. 178+00 TO 179+50

BRUNING 44-232 57837-03

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

22
57

℄ Survey &
℄ Construction

Seeding Width / Sq Yd

Station	Seeding Width	Seeding Sq Yd
181+50	49	281
181+00	52	314
180+50	61	48
180+43	63	98
Fwd +29	63	265
Back	0	
Total		1006

181+50
783.00

Ex. R/W
Ex. 12"
W.L.
2:1
.17
.32
6" Gas
.28
Ex. R/W
Retired 4" Gas
Ex. 12"

Pavement Removed - Back
Fwd.
Buff Joint
Back
2.04
W.L.
2:1
.31
6" Gas
.34
Temp. R/W
Ex. R/W
Retired 4" Gas
Ex. 12"

782.90
181+00
782.90

Suspend Paving
Sta. 181+00

Suspend Project
Sta. 180+60

Ex. R/W
Ex. 12"
W.L.
2:1
.42
3.51
6" Gas
.81
W.L.
Temp. R/W
Ex. R/W
Retired 4" Gas
Ex. 12"

782.74
180+50
782.63

Begin Approach Slab
Sta. 180+28.25

782.57
180+00
782.46

Ex. 12" Outlet = 767.1
Sta. 180+03, 38' Lt.

Ex. 12" Outlet = 768.5
Sta. 180+03, 35' Rt.

Correction for Seeding
Fwd Abutment

Correction for
Earthwork at
Fwd. Abutment

End Area / Cubic Yards

Station	End Area Exc.	End Area Emb	Cubic Yards Exc.	Cubic Yards Emb
	10	11		
				19 27
Fwd	10	18		
Back	0	18		
				129 47
			88	33
			66	25
+29.75 Fwd	88	33		
Back	0	0		
			+378	+3
Total			592	102

Computations By
Initials R. L. M. Date 4/13/88

Computations Checked By
Initials A.M.P. Date 6/21/88

℄ Construction &
℄ Survey

ROAD CROSS SECTIONS, STA. 180+00 TO 181+50

BRUNING 44-232 57837-03

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO | FHWA REGION 5 | FEDERAL PROJECT

23
57

Seeding Width	Seeding Sqyd	End Area Exc.	End Area Emb	Cubic Yards Exc.	Cubic Yards Emb
0	Fwd				
34	Back				
231					
49	+50				
Total	231				

80 70 60 50 40 30 20 10 ℄ Survey & ℄ Construction 10 20 30 40

785 780 775 770

Ex. R/W
Ex. 12"
183+00
783.09
6" Gas
Ex. R/W
Ex. 12"
Retired 4" Gas

785 780 775 770

Ex. R/W
Ex. 12"
182+50
783.07
6" Gas
Ex. R/W
Ex. 12"
Retired 4" Gas

785 780 775 770

W.L.
Fwd.
Back
Ex. R/W
Ex. 12"
182+00
783.03
Fwd.
Back
W.L.
6" Gas
Ex. R/W
Retired 4" Gas
Ex. 12"

Suspend Work
Sta. 182+00

	Fwd	Back
	0	0
	9	0
	18	10
181+50	10	11
Total	18	10

Computations By Initials R.L.M. Date 6/13/88
Computations Checked By Initials A.M.P. Date 6/21/88

℄ Construction & ℄ Survey

80 70 60 50 40 30 20 10 10 20 30 40 50 60

ROAD CROSS SECTIONS, STA. 182+00 TO 183+00

BRUNING 44-232-57837-03

ALLEN COUNTY	OHIO
ALL-309-(3.02)(3.37)(6.95)	FHWA REGION 5
	FEDERAL PROJECT

24
57

℄ Survey &
℄ Construction

Seeding Width	Sq.Yd.	Sta.	Offset	Elevation	Notes
18.5	6	366+47	20' Rt.	795	Ex. R/W; Ex. 2.9'; 1"/FT.; W.L.; UGT; Ex. 10"
		366+50		795.52	℄ Survey & ℄ Construction
		366+50	20' Rt.	795	Ex. R/W; Retired 4" Gas; 6" Gas; Ex. 10"
		Resume Work Sta. 366+41.5			
		366+41.5	0	+27.5	
		366+00		795.57	WAPAK RD.; Ex. 10"
		366+00	20' Rt.	795	Ex. R/W; Retired 4" Gas; 6" Gas; Ex. C.B. Sta. 366+07, 31.0' Rt. Top = 793.4 10" Inv. = 789.3
		365+50		795.66	WAPAK RD.
		365+50	20' Rt.	795	Ex. R/W; Retired 4" Gas; 6" Gas
		365+50	0		Ex. C.B. Sta. 365+60.5, 29.9' Lt. Top = 793.4 6" Inlet = 789.9 10" Outlet = 789.9
		365+00		795.74	
		365+00	20' Rt.	795	Ex. R/W; Retired 4" Gas; 6" Gas
		365+00	0		Ex. R/W

	End Area Exc.	End Area Emb	Cubic Yards Exc.	Cubic Yards Emb
	4	0		
			1	0
366+41.5 Fwd	3	0		
Back	0	0		
Total	1	0		

Total	26

Computations By Initials R.L.M. Date 4/13/88
Computations Checked By Initials A.M.P. Date 4/21/88

℄ Construction &
℄ Survey

BRUNING 44-232 57837-03

ROAD CROSS SECTIONS, STA. 365+00 TO 366+50

ALLEN COUNTY	OHIO	25
ALL-309-(3.02)(3.37)(6.95)	FHWA REGION 5	57
	FEDERAL PROJECT	

STRUCTURE NO. ALL-309-0696

Seeding Width	Seeding Sq. Yd			End Area Exc.	End Area Emb.	Cubic Yards Exc.	Cubic Yards Emb.
		795					
			33 Correction for Seeding Rear Abutment				
		795					
0			Fwd Rt				
2			Back Rt +82				
	5						
20.5			Fwd Rt				
20.5			Back Rt +78				
	60						
0			Fwd Lt				
33			Back Lt +56.5				
	11						
18			Fwd Rt +50				
33			Fwd Lt				
51			Back 795				
	170						
41.5			+17				
	21						
22			+11				
	25						
18.5		795					
	103						
18.5			+50				
Total	395						

795.16
368+50
795.11

Ex. 10" Outlet = 779.1
Sta. 368+87, 35' Lt.

Ex. 18" Outlet = 778.3
Sta. 368+84.5, 35' Rt.

795.26
368+00
795.27

End Approach Slab
Sta. 367+69.84

Ex. 12" Outlet = 782.0
Sta. 367+77.1, 39.9' Lt.

Ex. 12" Outlet = 780.9
Sta. 368+10.5, 35' Rt.

795.35
367+50
795.30

Ex. 12"

Resume Project
Sta. 367+25

Ex. 10"

795.44
367+00
795.44

Ex. C.B. (Adjust to Grade)
Sta. 367+17.5, 30.5' Lt.
Top = 793.0
Bottom = 784.9
12" Inlet = 789.3
12" Outlet = 785.8

Resume Paving
Sta. 367+00

Ex. 10"

	End Area Exc.	End Area Emb.	Cubic Yards Exc.	Cubic Yards Emb.
795				
Correction for Earthwork at Rear Abutment				+918 +1
795				
+68.31 Fwd	0	0		
Back	126	1		
795				
Fwd	47	2		
Back	4	2		
366+50	4	0		
Total	1170	7		

Prop. R/W, W.L., Ex. R/W, 2:1, 12:1, 2.18, 2.96, 2.03, 2.02

W.L., Ex. R/W, 795, 6" Gas, Retired 4" Gas

Ex. R/W, W.L., 4:1, Fwd., Back, UGT, Back, Fwd., Butt Joint, UGT CROSSES @ +31±

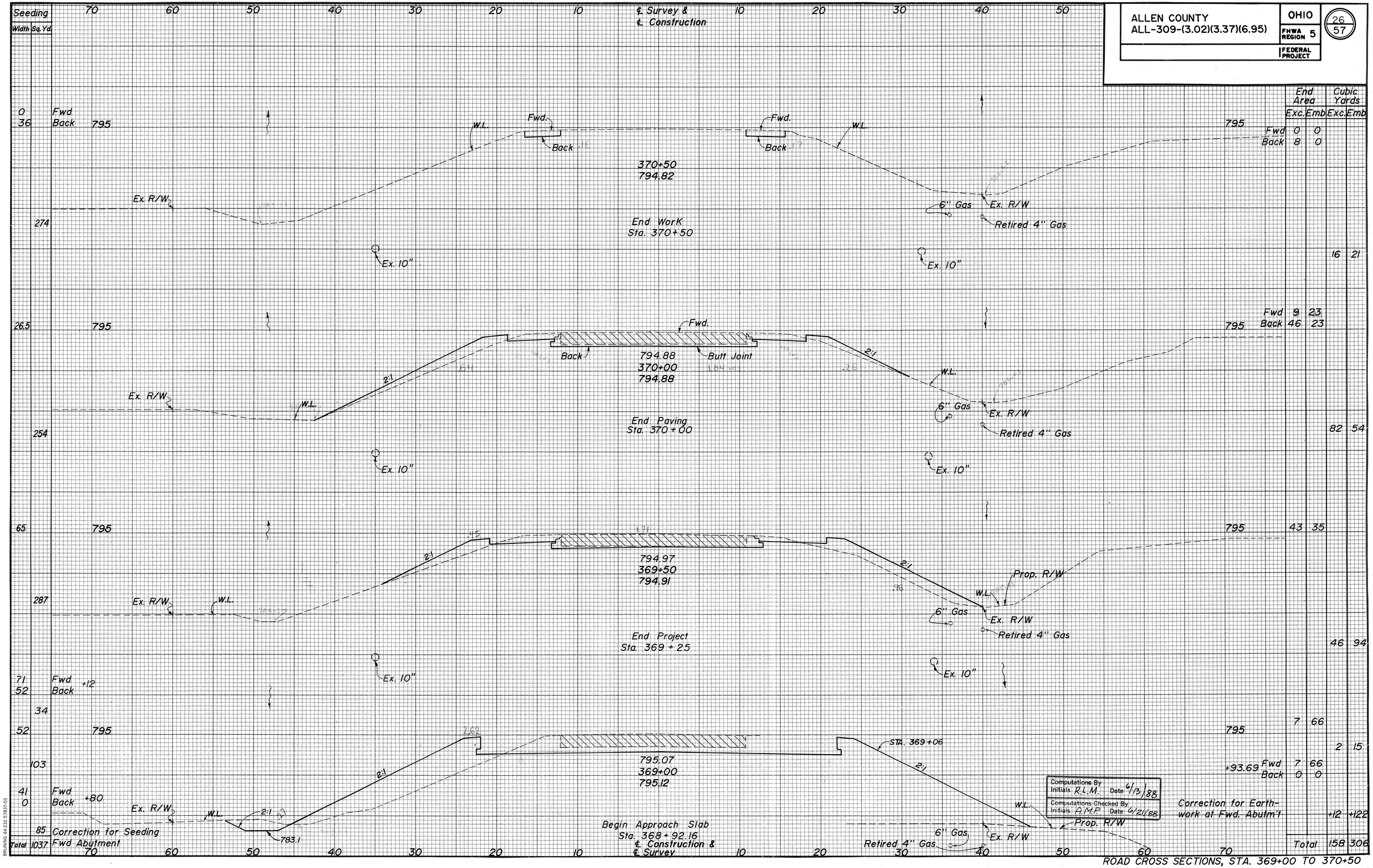
WAPAK RD. W.L., Ex. R/W, 795, 6" Gas, Retired 4" Gas

Computations By Initials R.L.M. Date 4/13/88
Computations Checked By Initials A.M.P. Date 6/21/88

ROAD CROSS SECTIONS, STA. 367+00 TO 368+50

BRUNING 44-232 57837-03

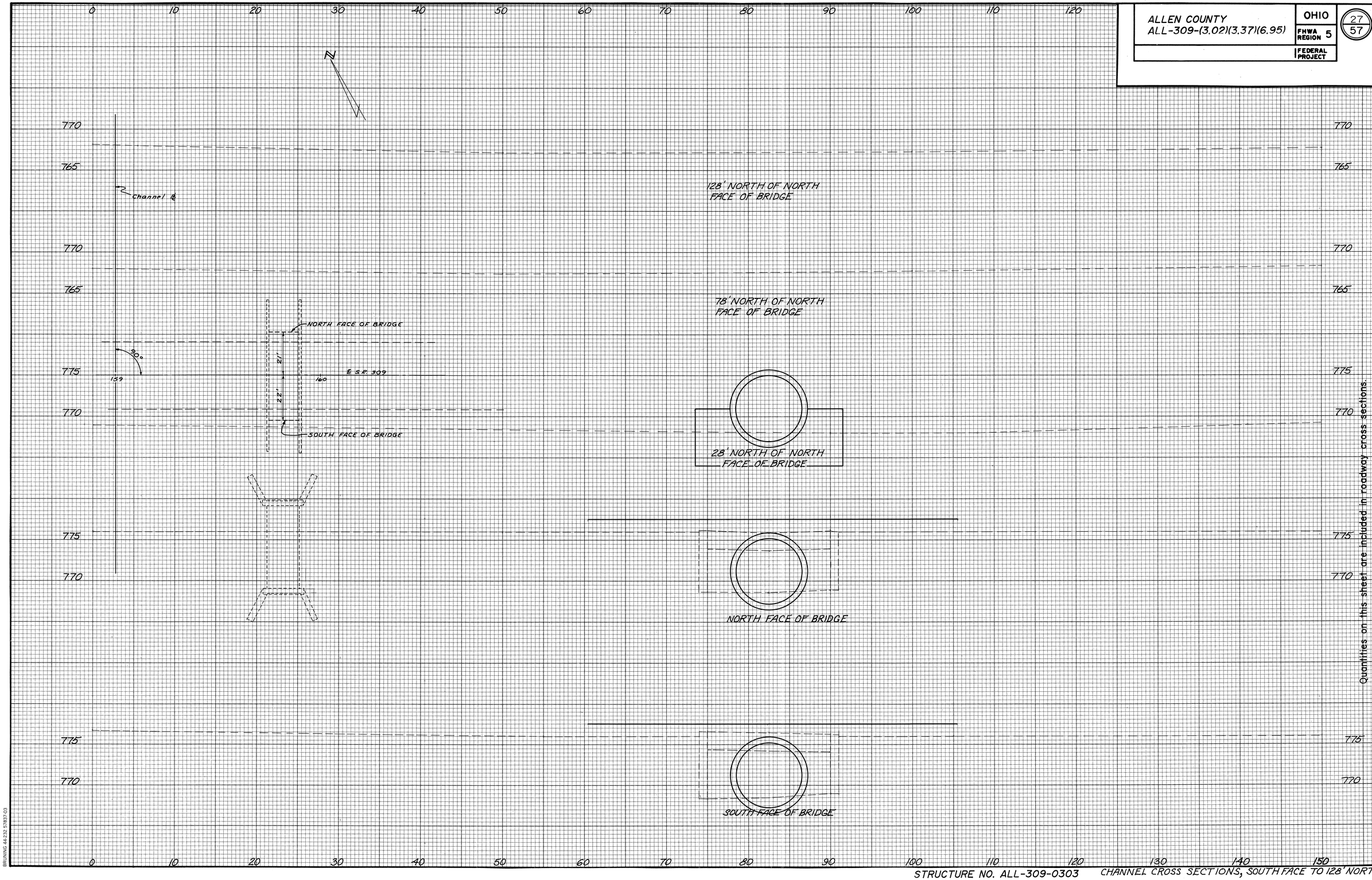
ALLEN COUNTY	OHIO	26
ALL-309-(3.02)(3.37)(6.95)	FHWA REGION 5	57
	FEDERAL PROJECT	



ROAD CROSS SECTIONS, STA. 369+00 TO 370+50

BRUNING 44-232 57837-03

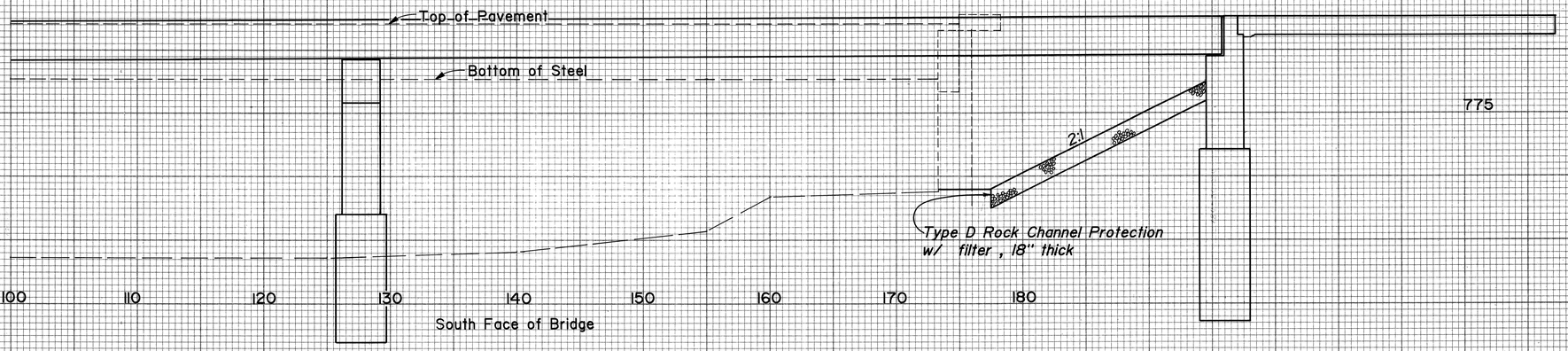
ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO FHWA REGION 5 FEDERAL PROJECT	27 57

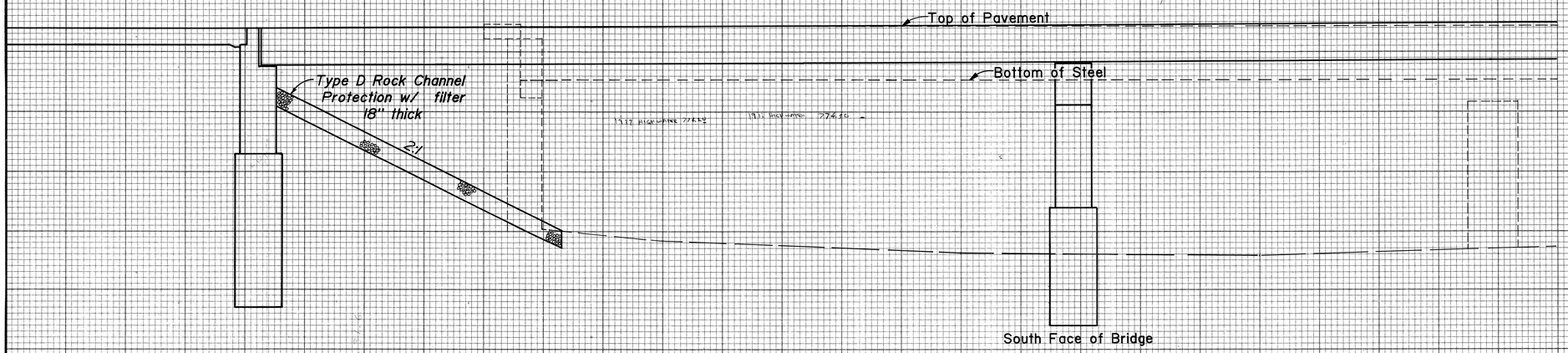


STRUCTURE NO. ALL-309-0303 CHANNEL CROSS SECTIONS, SOUTH FACE TO 128' NORTH

BRUNING 44-232-57837-03

ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO FHWA REGION 5 FEDERAL PROJECT	28 57





0=Sta. 178+31.6
16.56' Rt. of ℄ S.R. 309

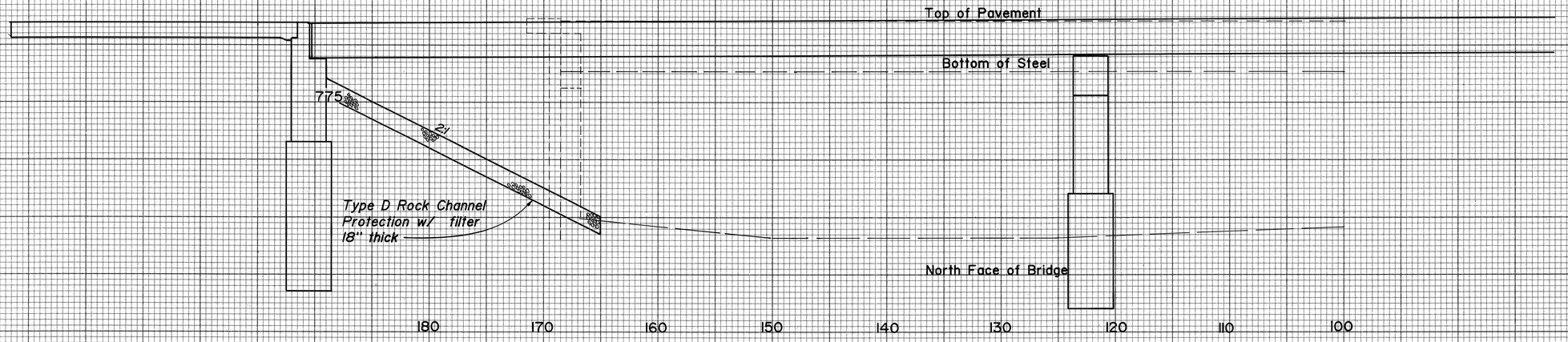
End Area Exc.	End Area Emb	Cubic Yards Exc.	Cubic Yards Emb

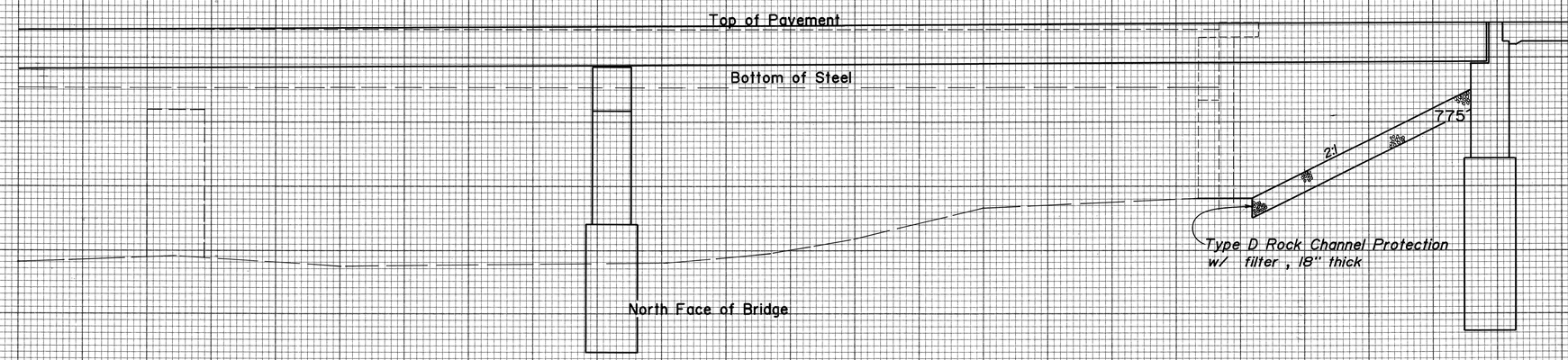
ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

29
57

	End Area	Cubic Yards
	Exc. Emb	Exc. Emb





Quantities on this sheet are included in roadway cross sections.

0= Sta. 180+13
16.9' Lt. of ℄ S.R. 309

Total

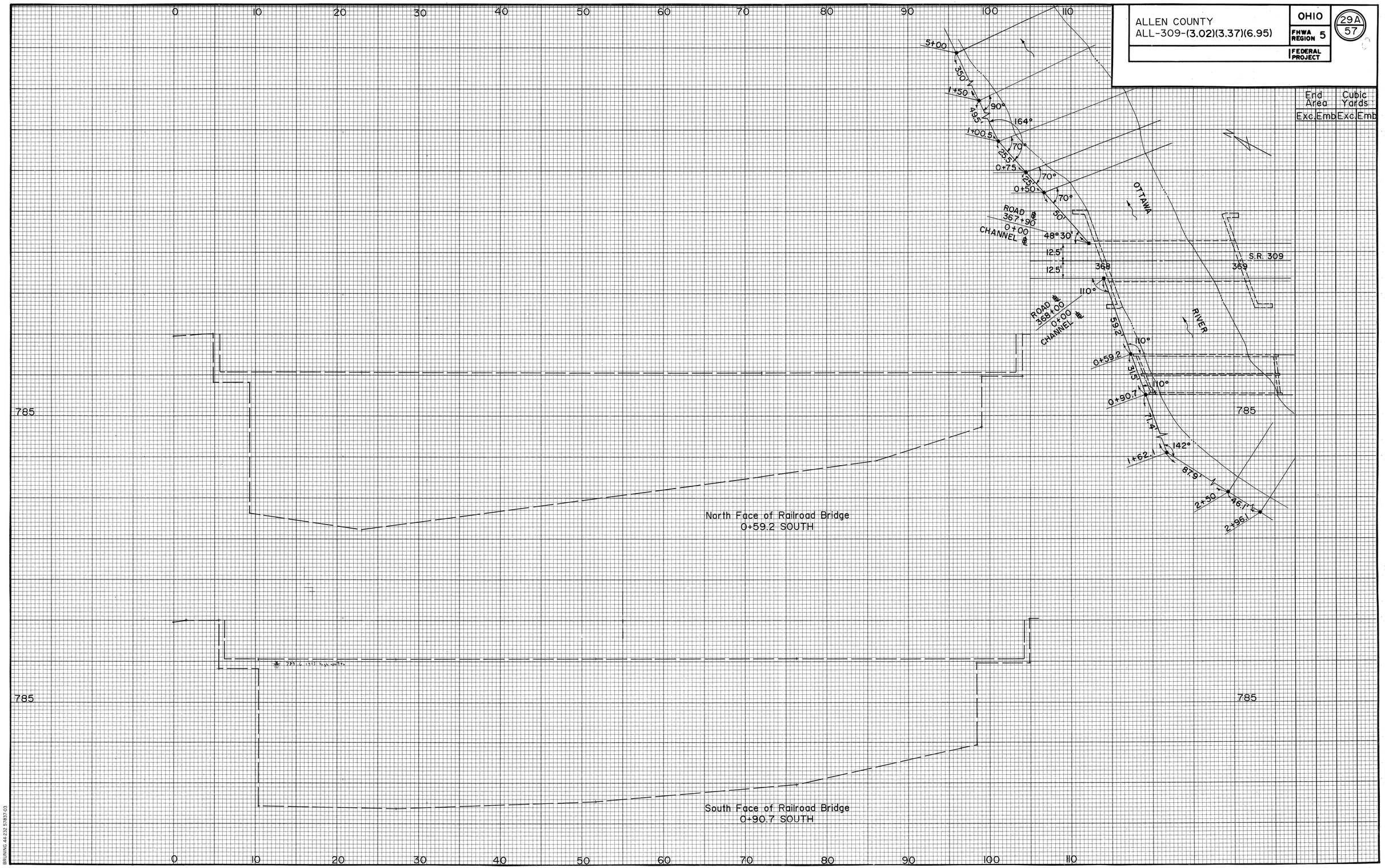
BRUNING 44-232-57837-03

STRUCTURE NO. ALL-309-0338

CHANNEL CROSS SECTIONS, NORTH FACE OF BRIDGE

ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO FHWA REGION 5 FEDERAL PROJECT	29A 57

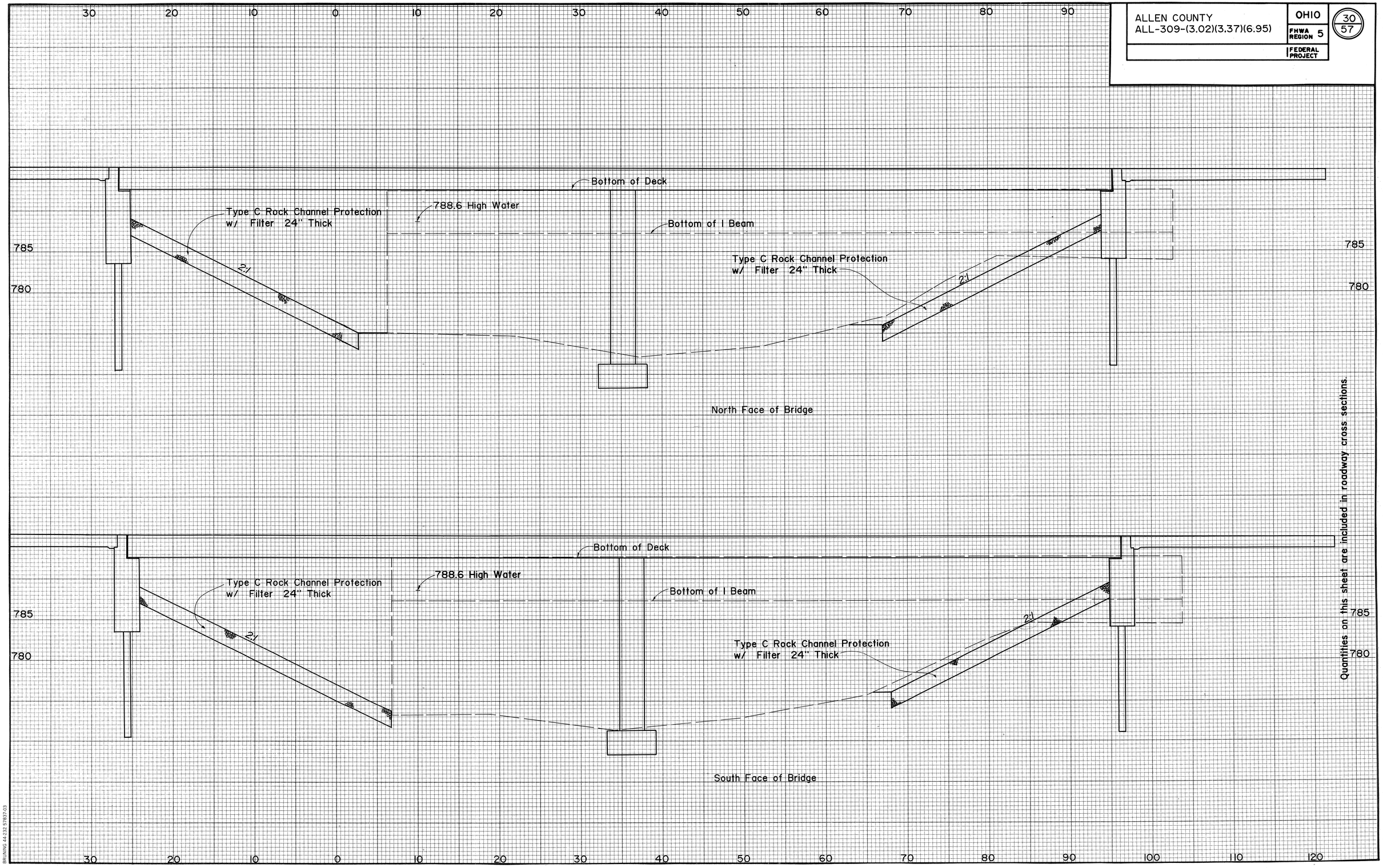
End Area		Cubic Yards	
Exc.	Emb	Exc.	Emb



BRUNING 44-232 57837-03

STRUCTURE NO. ALL-309-0696 CHANNEL CROSS SECTIONS 0+59.2 SOUTH TO 0+90.7 SOUTH

ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO FHWA REGION 5 FEDERAL PROJECT	30 57



BRUNING 44-232-57837-03

STRUCTURE NO. ALL-309-0696 CHANNEL CROSS SECTION SOUTH FACE AND NORTH FACE

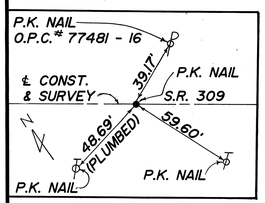
ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

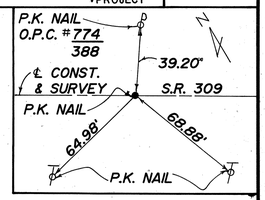
31/57

HYDRAULIC DATA

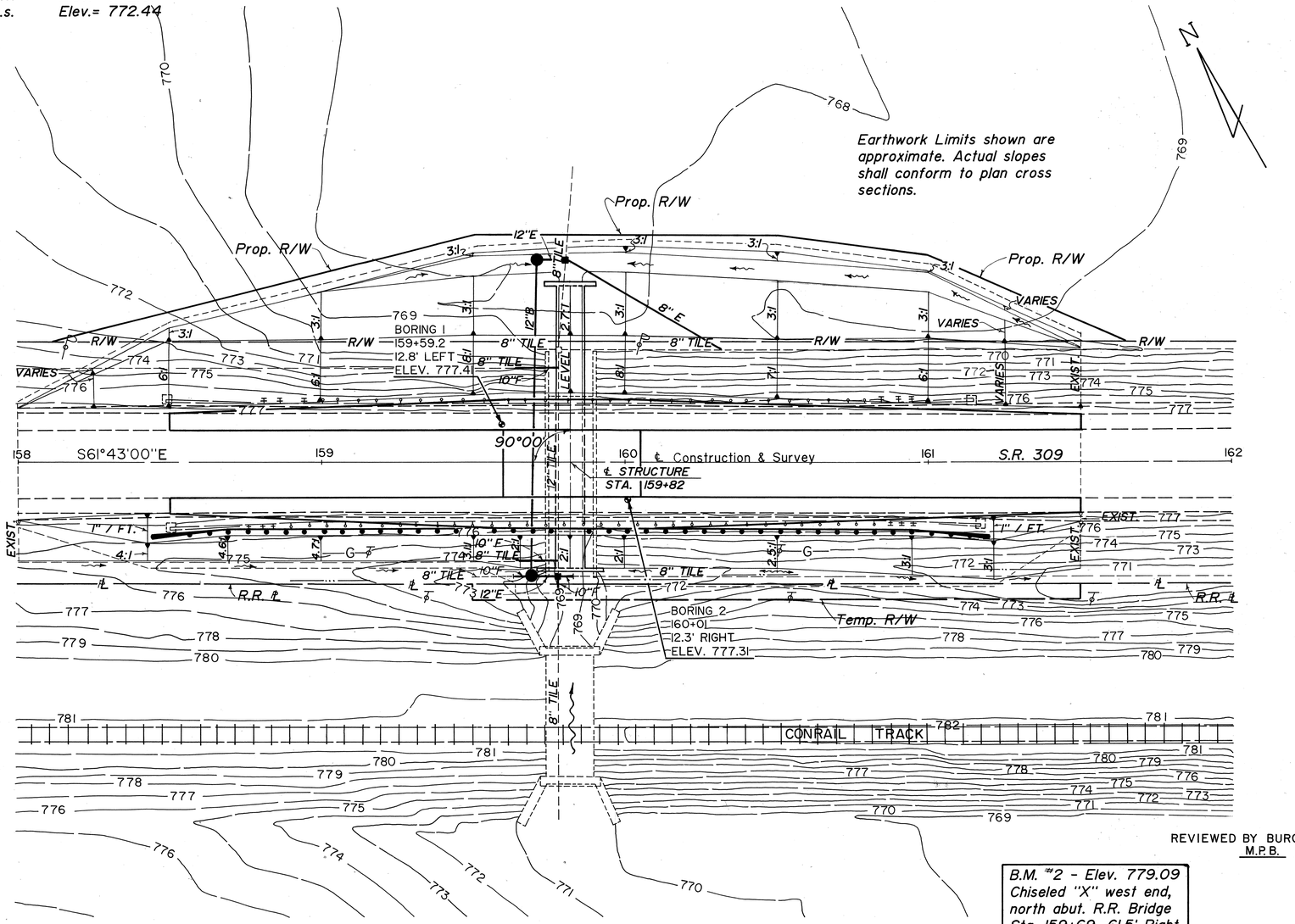
Q25= 75 c.f.s. V= 3.03 f.p.s. Elev.= 772.01
Q100= 90 c.f.s. V= 3.27 f.p.s. Elev.= 772.44
Drainage Area= 0.082 Sq. Mi.



℄ REFERENCE - STA. 156+00



℄ REFERENCE - STA. 162+00



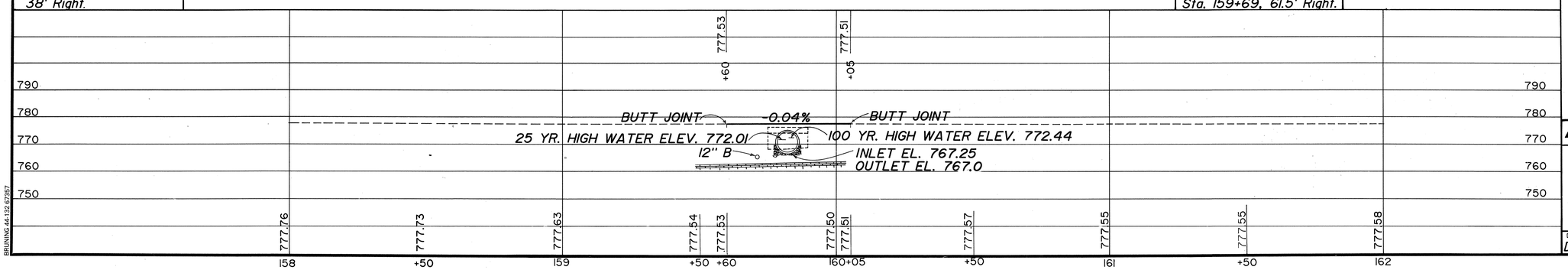
DESIGN TRAFFIC

1986	6,696 A.D.T.
2006	10,206 A.D.T.

B.M. #1 - Elev. 778.65
Spike in power pole
at Sta. 154+60,
38' Right.

REVIEWED BY BURGESS & NIPLE, LTD.
M.P.B. 7/6/88

B.M. #2 - Elev. 779.09
Chiseled "X" west end,
north abut. R.R. Bridge
Sta. 159+69, 61.5' Right.



EXISTING STRUCTURE

TYPE: Conc. Slab Bridge on Conc. Wall
SPAN: 16' Clear Abutments
SKEW: None
WEARING SURFACE: Bituminous
ALIGNMENT: Tangent
CONDITION: Poor
DISPOSITION: To be removed
DATE BUILT: 1937

PROPOSED STRUCTURE

TYPE: Concrete Pipe, Type A Conduit
SIZE: 96" ø X 96' Long
LOADING: HS 20-44 and the Alternate Military Loading
ROADWAY: 24'-0"
SKEW: None
ALIGNMENT: Tangent

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO

1/2

SITE PLAN

STRUCTURE ALL-309-0303
OVER DITCH
ALLEN COUNTY STA. 159+82

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P.	S.M.M.	R.L.M.	J.R.M.	2-9-88	R.L.M.

BRUNING 44 132 67357

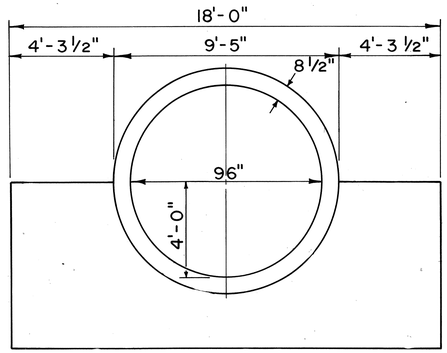
STRUCTURE - ALL - 309 - 0303

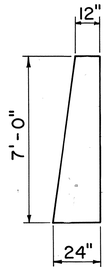
Sta. 159 + 82

ALLEN COUNTY
ALL - 309 - (3.02)(3.37)(6.95)

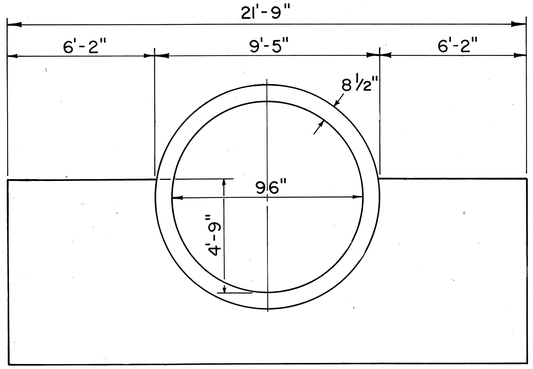
OHIO
FHWA REGION 5
FEDERAL PROJECT

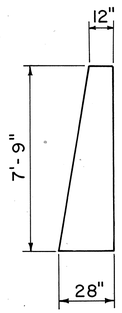
32
57



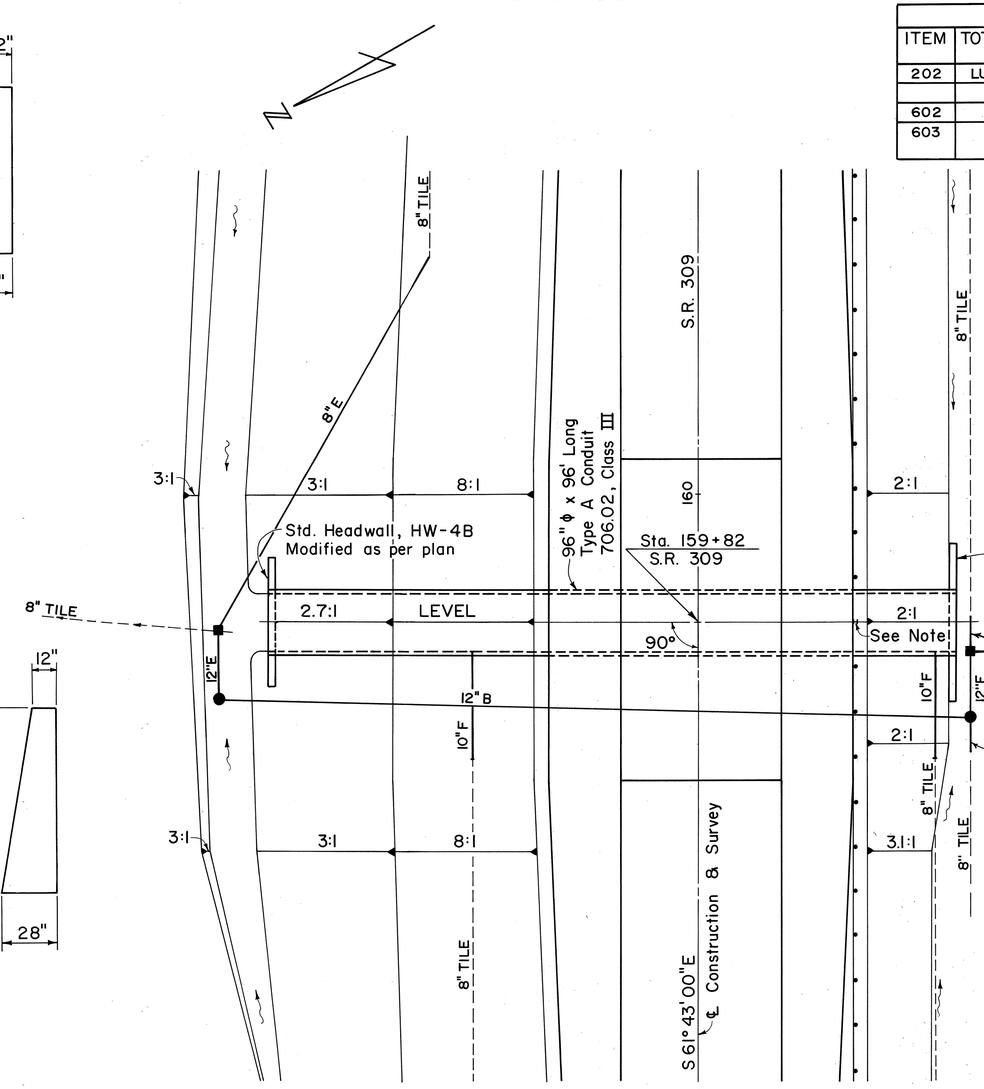


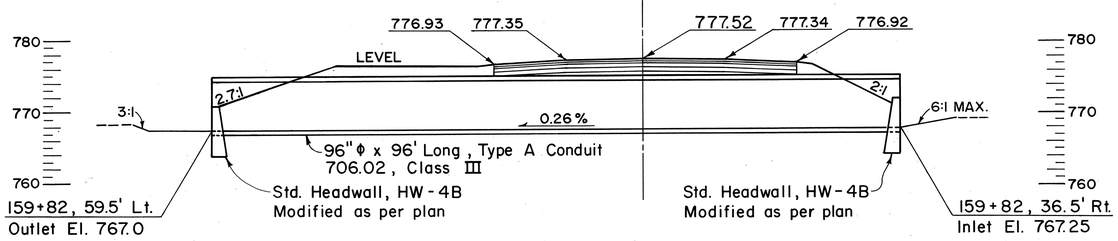
STANDARD HEADWALL, HW-4B
MODIFIED AS PER PLAN
(NORTH HEADWALL)





STANDARD HEADWALL, HW-4B
MODIFIED AS PER PLAN
(SOUTH HEADWALL)





Scale in feet
0 10 20

ESTIMATED QUANTITIES**

ITEM	TOTAL	UNIT	DESCRIPTION	GENERAL	NORTH HEADWALL	SOUTH HEADWALL
202	LUMP	SUM	STRUCTURES REMOVED	LUMP		
602	15	CU. YD.	CONCRETE MASONRY		6	9
603	96	LIN. FT.	96"ϕ X 96' CONDUIT, TYPE A 706.02 *	96		

*- No alternate pipe due to clearance limitations.

**- Quantities carried to Sheet No. 11 of 57

NOTE: GUARDRAIL POST LOCATED OVER THE CULVERT SHALL BE INLET MOUNTED AS PER STANDARD DRAWING GR-1 EXCEPT AS NOTED ON THIS SHEET.
DRILLING METHODS THAT CAUSE SPALLING OF THE CONCRETE WHEN THE BIT PASSES OUT THROUGH THE UNDERSIDE OF THE CULVERT SHALL NOT BE PERMITTED. AS AN ALTERNATE TO THE THROUGH BOLTING PER GR-1, PARTIAL DEPTH RESIN BONDED ANCHORING SYSTEMS MAY BE USED. THE ANCHOR SHALL BE GALVANIZED AND BE THE SAME DIAMETER AND STRENGTH AS THE BOLTS SPECIFIED. 7/8" DIAMETER ANCHOR SYSTEMS SHOULD RESIST AN AVERAGE ULTIMATE TENSIL LOAD OF 24,000 POUNDS AND THE 1¼" DIAMETER 43,700 POUNDS. KELTON GOLD, INC. OR HILTI SYSTEMS INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS ARE ACCEPTABLE.
TEST LOAD DATA SHALL BE SUBMITTED TO VERIFY MANUFACTURER'S RECOMMENDED ANCHOR, HOLE SIZE, EMBEDMENT DEPTH, BONDING MEDIUM, ETC. IN SATISFYING THE LOAD REQUIREMENTS.
THE CONTRACTOR WILL BE RESPONSIBLE FOR PROPERLY FITTING THE INLET MOUNTED POST PLATE TO THE CULVERT. THE COSTS OF THIS INLET MOUNTED POST, ANCHORING, ETC. AS MENTIONED ABOVE ARE CONSIDERED INCIDENTAL TO ITEM 606 GUARDRAIL, TYPE 5.

REVISED 8-2-89

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS
LIMA, OHIO

2 / 2

ESTIMATED QUANTITIES
STRUCTURE DETAILS
STRUCTURE ALL-309-0303
OVER DITCH
ALLEN COUNTY STA. 159+82

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P.		T.H.H.	J.R.M.	5-27-88	A.M.P.

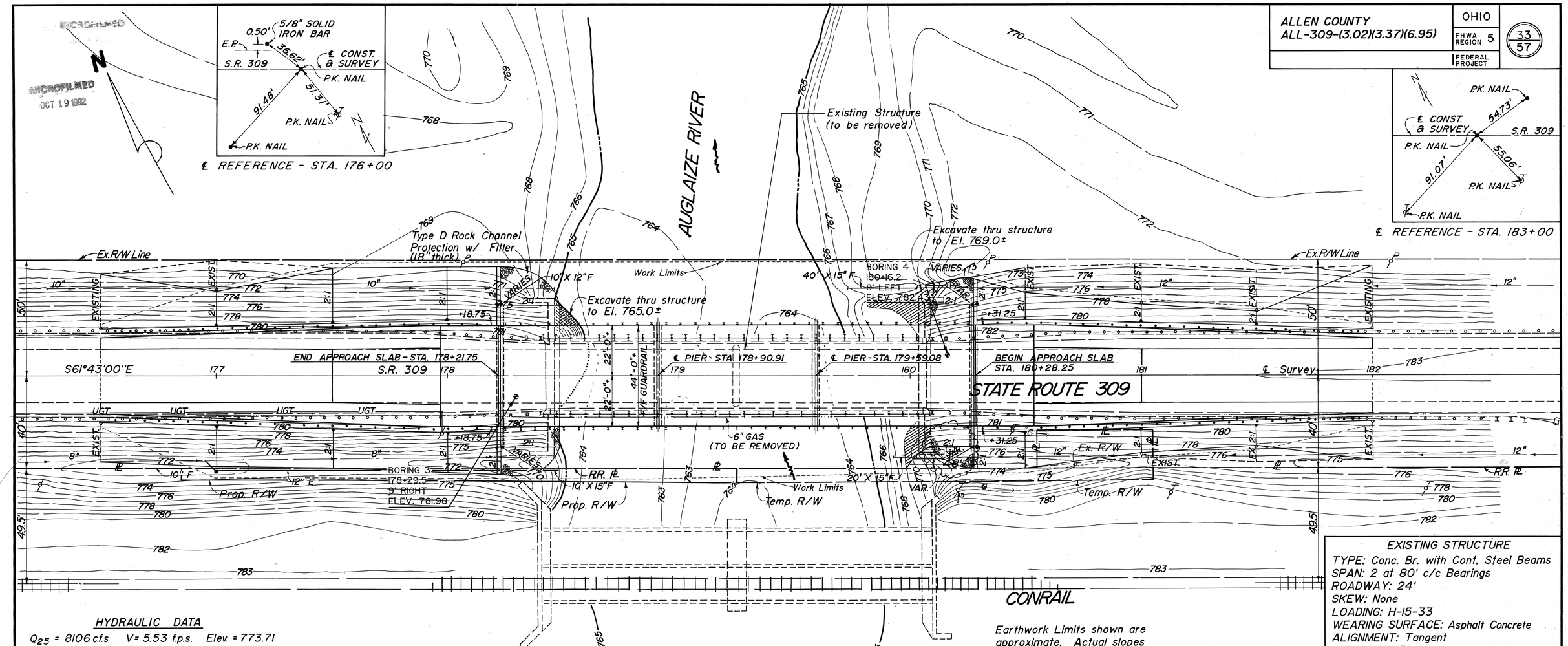
BRUNING 57257

MICROFILMED
OCT 19 1992

ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO	33 / 57
	FHWA REGION 5	
	FEDERAL PROJECT	

℄ REFERENCE - STA. 176+00

℄ REFERENCE - STA. 183+00



PLAN

HYDRAULIC DATA

Q_{25} = 8106 c.f.s V= 5.53 f.p.s. Elev. = 773.71
Q_{100} = 9608 c.f.s. V= 6.00 f.p.s. Elev. = 774.50
Drainage Area = 237 Sq. Mi.

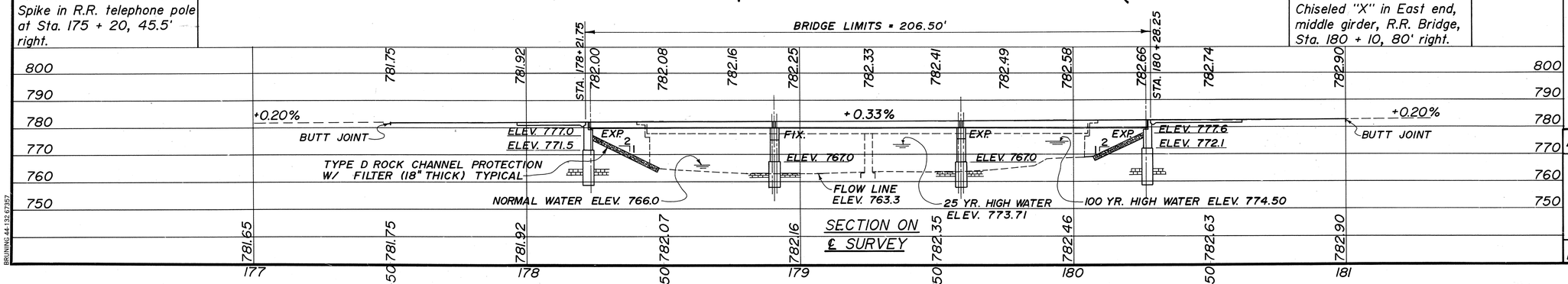
DESIGN TRAFFIC

1986 6,696 A.D.T.
2006 10,206 A.D.T.

REVIEWED BY BURGESS & NIPLE, LTD.
M.P.B. 7/6/88

B.M. No. 4 - Elev. 779.30
Spike in R.R. telephone pole at Sta. 175 + 20, 45.5' right.

B.M. No. 6 - Elev. 783.04
Chiseled "X" in East end, middle girder, R.R. Bridge, Sta. 180 + 10, 80' right.



SECTION ON ℄ SURVEY

EXISTING STRUCTURE

TYPE: Conc. Br. with Cont. Steel Beams
SPAN: 2 at 80' c/c Bearings
ROADWAY: 24'
SKEW: None
LOADING: H-15-33
WEARING SURFACE: Asphalt Concrete
ALIGNMENT: Tangent
CONDITION: Poor
DISPOSITION: To Be Removed

PROPOSED STRUCTURE

TYPE: Non-composite Prestressed Conc. Box Beams w/Reinforced Conc. Substructure
SPAN: 66.66'-66.66'-66.66' c/c Brg.
ROADWAY: 44'+ f/f Guardrail
CROWN: 3/16" per ft.
LOADING: HS 20-44 and Alt. Military Loading
ALIGNMENT: Tangent SKEW: None
APPROACH SLABS: AS-1-81 (25' Long)
WEARING SURFACE: 2 1/2" Min. Asp. Con.

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO

1 / 10

SITE PLAN
BRIDGE NO. ALL-309-0338
OVER AUGLAIZE RIVER
ALLEN COUNTY STA. 178+21.75
STA. 180+28.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B	A.M.P		T.H.H.	J.R.M.	2-5-88	

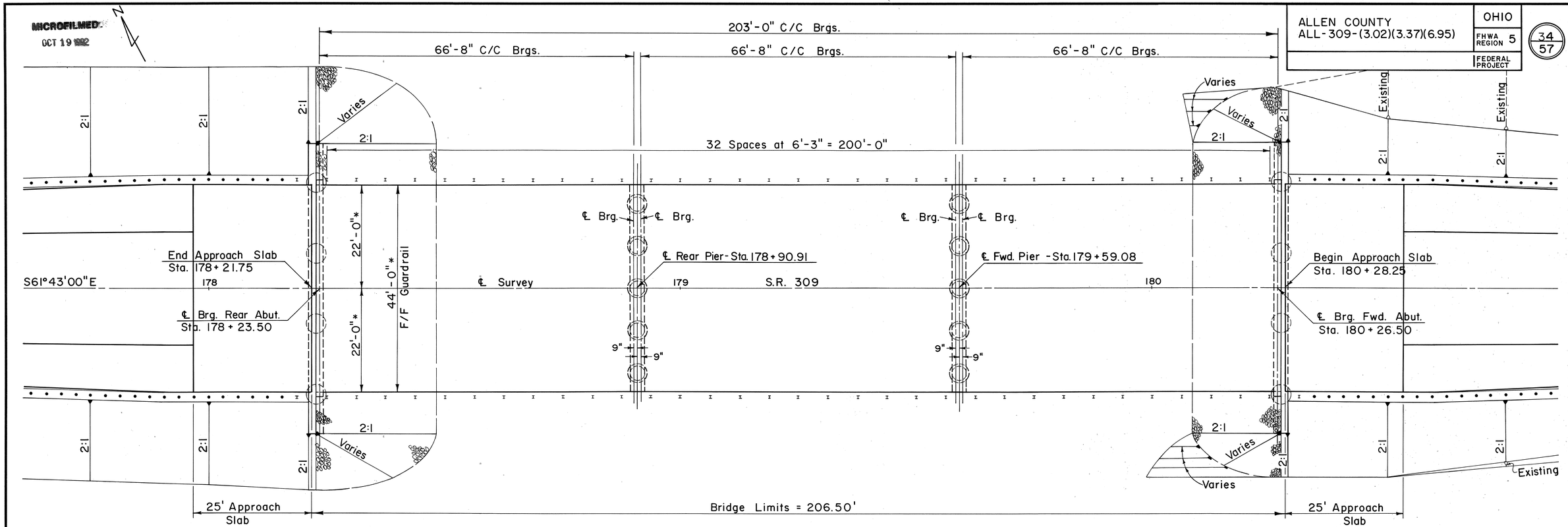
BRUNING 44-132-67357

MICROFILMED
OCT 19 1982

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

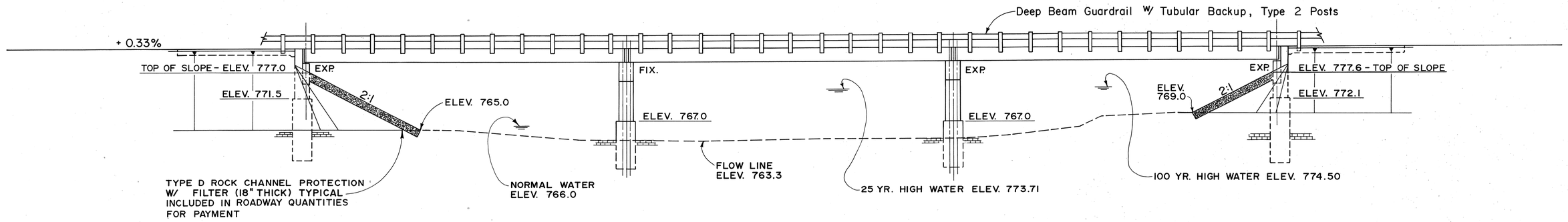
OHIO
FHWA REGION 5
FEDERAL PROJECT

34
57



PLAN

*- Plus Fit-up



ELEVATION

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS
LIMA, OHIO

2/10

GENERAL PLAN & ELEVATION

BRIDGE NO. ALL-309-0338
OVER AUGLAIZE RIVER
ALLEN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P		T.H.H	J.R.M.	5-27-88	A.M.P

BRUNING 67357

MICROFILMED

MICROFILMED
OCT 19 1992

GENERAL NOTES

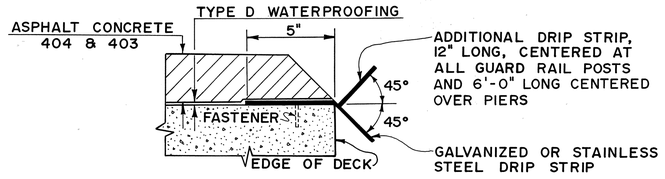
REFERENCE SHALL BE MADE TO STANDARD DRAWINGS: PSBD-1-81 DATED 9-18-81, SHEETS 1, 2, 3 AND 4 OF 4, DBR-2-73 DATED 4-10-73, AS-1-81 DATED 11-27-81, SHEETS 1, 2, AND 3 OF 3, EXJ-3-82 DATED 8-1-84, AND TO SUPPLEMENTAL SPECIFICATIONS, 836 DATED 11-12-85

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS 1983, INCLUDING 1984, 1985, 1986, AND 1987 INTERIM SPECIFICATIONS, AND TO THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA:

DESIGN LOADING: HS 20-44, AND ALTERNATE MILITARY LOADING
CONCRETE CLASS C: COMPRESSIVE STRENGTH 4000 P.S.I.
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
CONCRETE FOR PRESTRESSED CONCRETE BEAMS: UNIT STRESS - 2200 P.S.I. COMPRESSION, 444 P.S.I. TENSION
PRESTRESSING STRAND ASTM A416 - F'S = 270,000 P.S.I. INITIAL STRESS = 0.70 F'S
REINFORCING STEEL FOR PRESTRESSED BEAMS SHALL BE ASTM A615, A616, OR A617 - GRADE 40 OR 60

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURE SHALL BE REMOVED. SUITABLE WASTE MASONRY MAY BE PLACED AS BANK PROTECTION AS DIRECTED BY THE ENGINEER.



DRIP STRIP: PRIOR TO APPLYING TYPE D WATERPROOFING, A BENT DRIP STRIP SHALL BE INSTALLED ALONG THE EDGES OF THE DECK AS SHOWN. THE STRIPS SHALL BE FASTENED AT 1'-6" C/C MAXIMUM WITH 1 1/4" X 5/32" X 1/4" FLAT HEAD DRIVE PIN AND WASHER. (LENGTH X SHANK DIA. X HEAD DIA.) OR #10 GALVANIZED SCREWS AND EXPANSION ANCHORS, SUBJECT TO THE APPROVAL OF THE ENGINEER. THE STRIPS SHALL BE PLACED THE FULL LENGTH OF THE DECK, ENDING AT THE FACE OF THE ABUTMENT WINGWALLS. WHERE SPLICES ARE REQUIRED A 3" (MIN.) LAP SHALL BE USED WITH A FASTENER THROUGH THE LAP. STEEL FOR GALVANIZED STRIPS SHALL BE 8" X 0.105" AND SHALL MEET THE REQUIREMENTS OF ASTM A568. GALVANIZING SHALL BE IN ACCORDANCE WITH 711.02. STAINLESS STEEL SHALL BE 20 GAUGE ASTM A167. TYPE 304 MILL FINISH. PAYMENT SHALL BE AT THE CONTRACT PRICE BID FOR THE ITEM SPECIAL SQ. FT. STEEL DRIP STRIP, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

DECK PROTECTION METHOD: TYPE D WATERPROOFING AND ASPHALT CONCRETE OVERLAY, STEEL DRIP STRIP, AND SEALING OF CONCRETE SURFACES.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES: A CONCRETE SEALER SHALL BE APPLIED TO THE FOLLOWING SURFACES, SEE SHEETS 6 AND 8 OF 10. SEE THE PROPOSAL NOTE FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION PROCEDURES & RATES AND MATERIAL REQUIREMENTS.

ESTIMATED QUANTITIES

QUANTITIES CALCULATED BY A.M.P. DATE 4-18-88
QUANTITIES CHECKED BY T.H.H. DATE 5-4-88

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT'S.	PIERS	GEN'L.
202	Lump		Structures Removed				Lump
403	45	Cu. Yd.	Asphalt Concrete (AC-20)	45			
404	35	Cu. Yd.	Asphalt Concrete (AC-20)	35			
503	Lump		Cofferdams, Cribs and Sheeting				Lump
503	138	Cu. Yd.	Unclassified Excavation		138		
509	8853	Lbs.	Reinforcing Steel, Grade 60		4546	4307	
511	110	Cu. Yd.	Class C Concrete, Abutments (See Proposal Note)		110		
511	58	Cu. Yd.	Class C Concrete, Piers (See Proposal Note)			58	
511	13	Cu. Yd.	Class S Concrete, Superstructure (See Proposal Note)	13			
512	986	Sq. Yd.	Type D Waterproofing	986			
515	33	Each	Prestressed Concrete Bridge Members (See Proposal Note)	33			
516	92	Lin. Ft.	Structural Expansion Joints including Elastomeric Compression		92		
			Seals				
516	132	Each	1 1/4" x 6" x 12" Laminated Elastomeric Bearing Pads		44	88	
SPECIAL	25	Sq. Yd.	Sealing of Concrete Surfaces, Epoxy (See Proposal Note)		25		
516	88	Sq. Ft.	1 1/4" Preformed Expansion Joint Filler			88	
517	425	Lin. Ft.	Railing (Deep Beam with Steel Tubular Back-up & Steel Posts	425			
			and Bolts) (See Proposal Note)				
518	47	Cu. Yd.	Porous Backfill, as per plan		47		
518	124	Lin. Ft.	6" Perforated, Helical Corrugated Steel Pipe, 707.01		124		
518	21	Lin. Ft.	6" Non-perforated Helical Corrugated Steel Pipe, including Specials, 707.01		21		
509	7548	Lbs.	Epoxy Coated Reinforcing Steel, Grade 60	1456	6092		
SPECIAL	98	Lin. Ft.	48" Diameter Drilled Shafts, above the bedrock socket		58	40	
SPECIAL	108	Lin. Ft.	48" Diameter Drilled Shafts, in bedrock		48	60	
SPECIAL	329	Sq. Ft.	Steel Drip Strip	329			
SPECIAL	146	Sq. Yd.	Sealing of Concrete Surfaces (See Proposal Note)	146			

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO
3/10

GENERAL NOTES
ESTIMATED QUANTITIES
BRIDGE NO. ALL-309-0338
OVER AUGLAIZE RIVER
ALLEN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P.		T.H.H.	J.R.M.	5-27-88	A.M.P.

BRUNING 57357

MICROFILMED
OCT 19 '82

ITEM SPECIAL - DRILLED SHAFTS

DESCRIPTION
THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING DRILLED SHAFTS OF THE TYPE AND SIZE SPECIFIED ON THE PLANS. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND APPURTENANCES REQUIRED TO COMPLETE THE WORK AS SPECIFIED. THE LENGTH(S) OF THE DRILLED SHAFTS SHOWN IN THESE PLANS HAS BEEN ESTIMATED FROM AVAILABLE SUBSURFACE INFORMATION. THE CONTRACTOR IS EXPECTED TO FURNISH THE PROPOSED DRILLED SHAFTS AS PER THESE PLAN REQUIREMENTS, WITH THE UNDERSTANDING THAT ACTUAL LENGTH REQUIRED, BASED ON CONDITIONS ENCOUNTERED DURING CONSTRUCTION, MAY DIFFER FROM THE ESTIMATED LENGTH SHOWN ON THE PLANS.

THE LIMITS OF EACH DRILLED SHAFT SHALL BE DEFINED AT THE TOP BY THE PLAN ELEVATION AND AT THE BOTTOM BY THE ELEVATION OF THE BOTTOM OF THE BEDROCK SOCKET.

A CASING WILL BE NECESSARY FOR THE CONSTRUCTION OF EACH PIER DRILLED SHAFT AND THE CASINGS SHALL BE LEFT IN PLACE. A CASING MAY BE NECESSARY FOR THE CONSTRUCTION OF EACH ABUTMENT DRILLED SHAFT. ABUTMENT DRILLED SHAFT CASINGS MAY BE REMOVED PROVIDED ALL PLAN REQUIREMENTS ARE SATISFIED.

CONTRACTOR QUALIFICATION
THE CONTRACTOR SHALL SUBMIT INFORMATION TO THE ENGINEER TO DOCUMENT THAT HIS PERSONNEL ARE EXPERIENCED IN THE CONSTRUCTION OF DRILLED SHAFTS OF THE TYPE AND SIZE SPECIFIED ON THE PLANS. THIS INFORMATION SHALL BE SUBMITTED AT THE PRECONSTRUCTION CONFERENCE.

CASING
THE CASINGS SHALL BE MADE OF STEEL. SHALL BE WATER TIGHT AND SHALL BE OF AMPLE STRENGTH TO WITHSTAND HANDLING STRESSES AND EXTERNAL SUBSURFACE PRESSURES. THE CASINGS SHALL BE SEATED INTO THE BEDROCK, THUS ATTEMPTING TO SEAL OFF INCOMING WATER. THE CASING LENGTH SHALL BE AS NECESSARY TO CONSTRUCT EACH DRILLED SHAFT.

THE DIAMETER OF THE FURNISHED CASING(S) SHALL BE LARGE ENOUGH TO ALLOW THE CONSTRUCTION OF A BEDROCK SOCKET WITH A DIAMETER EQUAL TO OR GREATER THAN THE PLAN DIAMETER.

EXCAVATION
WHEN OBJECTS SUCH AS LARGE BOULDERS ARE ENCOUNTERED, THEY SHALL BE REMOVED. BLASTING METHODS MAY BE USED. AND WHEN USED, SHALL BE CONDUCTED SO AS TO AVOID DISTURBANCE TO THE BEDROCK FORMATION BELOW AND OUTSIDE THE LIMITS OF THE PROPOSED DRILLED SHAFT EXCAVATIONS. THE DRILLED SHAFTS SHALL PENETRATE INTO BEDROCK TO A DEPTH THAT PROVIDES A BEDROCK SOCKET LENGTH THAT IS NOT LESS THAN THE BEDROCK SOCKET LENGTH SHOWN IN THE PLANS. WHEN A CASING WHICH EXTENDS DOWN TO BEDROCK IS USED THE BEDROCK SOCKET SHALL BE MEASURED FROM THE BOTTEM OF THE CASING TO THE BOTTOM OF THE DRILLED BEDROCK EXCAVATION. WHEN THE ENGINEER IS ASSURED THAT A PORTION OF THE METAL CASING IS EMBEDDED IN BEDROCK. THE EMBEDDED DISTANCE MAY BE INCLUDED AS PART OF THE BEDROCK SOCKET UPON THE ENGINEER'S CONCURRENCE.

DEWATERING
THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING ANY INCOMING WATER TO THE EXTENT THAT THE SHAFT EXCAVATION IS MAINTAINED DRY ENOUGH FOR PERFORMANCE OF THE REQUIRED INSPECTION OPERATION. THE PREFERRED METHOD OF CONSTRUCTION IS TO PLACE THE CONCRETE IN A CLEAN, DRY EXCAVATION. THE CONTRACTOR IS EXPECTED TO MAKE A REASONABLE ATTEMPT TO SEAL WATER OUT OF THE DRILLED SHAFT EXCAVATION.

BOTTOM CLEANOUT
THE BOTTOM OF THE DRILLED SHAFT EXCAVATION SHALL BE AS CLEAN AS PRACTICABLE (NO MORE THAN ONE INCH OF LOOSE MATERIAL ON THE BOTTOM) PRIOR TO CONCRETE PLACEMENT. DRILLING SPOILS THAT ADHERE TO THE VERTICAL SIDES OF THE BEDROCK SOCKET ARE TO BE REMOVED.

APPROVAL BEFORE CONCRETE PLACEMENT
CONCRETE SHALL NOT BE PLACED IN ANY DRILLED SHAFT EXCAVATION WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE DRILLED SHAFT EXCAVATION SHALL BE INSPECTED IMMEDIATELY BEFORE THE CONCRETE IS PLACED. A LIGHT POWERFUL ENOUGH TO THOROUGHLY INSPECT THE SIDES, BOTTOM AND REINFORCING STEEL CAGE OF THE DRILLED SHAFT IS REQUIRED. NO CONCRETE SHALL BE PLACED DURING INCLEMENT WEATHER CONDITIONS WHICH PREVENT A THOROUGH INSPECTION.

CONCRETE PLACEMENT
THE CONCRETE FOR THE DRILLED SHAFTS SHALL BE PLACED AS PER 511 EXCEPT AS MODIFIED BY THE PLANS. THE CONCRETE PLACEMENT OPERATION SHOULD BE CONTINUOUS FROM START TO FINISH. THE CONCRETE FOR THE BEDROCK SOCKET SHALL BE PLACED AGAINST THE INSITU BEDROCK AND SHALL BE PLACED PROMPTLY AFTER THE FINAL INSPECTION OF THE SHAFT. IF PRACTICABLE, THE CONCRETE SHALL BE PLACED IN A CLEAN DRY EXCAVATION. CARE SHALL BE TAKEN TO ENSURE THAT CONCRETE IS NOT BEING PLACED IN MOVING WATER. THE CONCRETE CAN BE PLACED IN A DRY DRILLED SHAFT EXCAVATION BY THE FREE FALL METHOD PROVIDED THE CONCRETE FALLS TO IT'S FINAL POSITION THROUGH AIR WITHOUT STRIKING THE SIDES OF THE HOLE, THE REINFORCING STEEL CAGE, OR ANY OTHER OBSTRUCTION. THE FREE FALL METHOD ALLOWS THE CONCRETE TO BE DROPPED FROM THE TOP THROUGH A CENTERING CHUTE TO THE CONCRETE'S FINAL POSITION.

IF THE ENGINEER DETERMINES THAT DEWATERING IS NOT PRACTICABLE, THE CONTRACTOR WILL BE GIVEN PERMISSION TO PLACE THE CONCRETE UNDER WATER. TO PLACE CONCRETE UNDER WATER, THE DRILLED SHAFT EXCAVATION SHALL BE FILLED WITH WATER TO SUCH A DEPTH THAT ALL WATER MOTION HAS CEASED. THE CONCRETE SHALL THEN BE PLACED BY MEANS OF A CONCRETE PUMP. THE CONCRETE PUMP PIPE SHALL HAVE A DIAMETER THAT IS NOT LESS THAN 4 INCHES. THE CONCRETE PUMP EQUIPMENT SHALL BE SO ARRANGED THAT NO VIBRATIONS RESULT WHICH MIGHT DAMAGE FRESH CONCRETE. PIPES CARRYING CONCRETE FROM THE PUMP TO THE SHAFT SHOULD BE ARRANGED WITH A MINIMUN NUMBER OF BENDS. THE PIPE USED TO CONVEY THE CONCRETE TO THE BOTTOM OF THE DRILLED SHAFT EXCAVATION SHALL BE ANCHORED TO THE STEEL CASING TO PREVENT THE PIPE FROM UNDULATING DURING THE INITIAL PLACEMENT OF THE CONCRETE.

THE PUMPING EQUIPMENT SHALL BE SUITABLE IN KIND AND ADEQUATE IN CAPACITY FOR THE WORK REQUIRED. THE USE OF ALUMINUM PIPE AS A CONVEYANCE FOR THE CONCRETE WILL NOT BE PERMITTED. AN ADEQUATE QUANTITY OF GROUT MORTAR OR CONCRETE WITH COARSE AGGREGATE OMITTED SHALL BE PUMPED THROUGH THE EQUIPMENT AHEAD OF THE SPECIFICATION CONCRETE TO PROVIDE LUBRICATION TO THE PUMPING SYSTEM. THE CONCRETE USED FOR LUBRICATION SHALL NOT BE PLACED IN THE SHAFT. THE LUBRICATION PROCESS WILL NOT BE REPEATED AS LONG AS THE PUMPING OPERATIONS ARE CONTINUOUS. THE OPERATION OF THE PUMP SHALL BE SUCH THAT A CONTINUOUS STREAM OF CONCRETE WITHOUT AIR POCKETS IS PRODUCED, IN ORDER TO PREVENT THE CONTAMINATION OF THE CONCRETE PLACED INITIALLY AT THE BOTTOM OF THE SHAFT. THE OUTLET END OF THE PUMPING PIPE SHALL BE SEALED WITH A DIAPHRAGM OR PLUG THAT IS FLUSHED OUT WHEN THE HYDROSTATIC PRESSURE FROM THE COLUMN OF CONCRETE EXCEEDS THAT OF WATER IN THE SHAFT. THE INITIAL RATE OF CONCRETE PLACEMENT MUST BE CAREFULLY CONTROLLED SO AS NOT TO LIFT OR DISPLACE THE CAGE OF REINFORCING STEEL. THE CONVEYING SYSTEM SHALL BE WATER TIGHT AND THE OUTLET END SHALL ALWAYS REMAIN WELL BELOW THE TOP OF THE FRESHLY PLACED CONCRETE. THE PREFFERED CONCRETE PLACEMENT PROCEDURE IS TO MAINTAIN THE OUTLET END OF THE PUMPING SYSTEM AT APPROXIMATELY 9 FEET BELOW THE TOP OF THE FRESH CONCRETE. WHEN THE CONCRETE REACHES THE TOP OF THE DRILLED SHAFT COLUMN ALL LAITANCE SHALL BE REMOVED.

TOLERANCES
THE CONTRACTOR SHALL LOCATE AND CONSTRUCT THE TOP CENTER OF THE PIER DRILLED SHAFTS WITHIN A ONE-INCH RADIUS OF THE POSITION INDICATED BY THE PLANS. THE PIER SHAFTS ARE TO BE INSTALLED VERTICALLY AND MUST BE WITHIN 1.0 PERCENT OF PLUMB FOR THE TOTAL LENGTH OF THE DRILLED SHAFT.

THE TOP CENTER OF THE ABUTMENT DRILLED SHAFTS SHALL BE LOCATED WITHIN A 3 INCH RADIUS OF THE POSITION INDICATED BY THE PLANS. THE ABUTMENT VERTICAL DRILLED SHAFTS ARE TO BE INSTALLED WITHIN 2.0 PERCENT OF PLUMB FOR THE TOTAL LENGTH OF THE DRILLED SHAFTS. THE ABUTMENT BATTER DRILLED SHAFTS ARE TO BE INSTALLED WITHIN 5.0 PERCENT OF PLAN FOR THE TOTAL LENGTH OF THE DRILLED SHAFTS.

CONCRETE
CONCRETE FOR ALL DRILLED SHAFTS SHALL BE CLASS S CONCRETE AND SHALL BE IN ACCORDANCE WITH 511, EXCEPT AS MODIFIED AND SUPPLEMENTED HEREIN. THE REQUIRED SLUMP IS SIX (6) INCHES, PLUS OR MINUS ONE-HALF INCH. THE MAXIMUM WATER TO CEMENT RATIO SHALL BE 0. 50. IF CONCRETE IS PLACED UNDER WATER, THE REQUIREMENT OF ADDING 10 PERCENT MORE CEMENT TO THE CONCRETE MIX SHALL BE WAIVED. THE TOP 5 TO 10 FEET OF CONCRETE IN THE DRILLED SHAFTS ARE REQUIRED TO BE VIBRATED. ONLY A MINIMAL VIBRATORY EFFORT IS NECESSARY. SPECIAL CARE SHALL BE TAKEN NOT TO OVER- VIBRATE THE DRILLED SHAFT CONCRETE.

IF THE CASINGS FOR THE DRILLED SHAFTS ARE TO BE WITHDRAWN, THE CONCRETE SHALL NOT BE VIBRATED UNTIL THE CASING IS COMPLETELY REMOVED AND THE SHAFT TOP IS FORMED TO THE PLAN CROSS-SECTION. CARE SHALL BE TAKEN WHEN REMOVING THE CASING SO THAT THE REINFORCING STEEL CAGE IS NOT DEFORMED BY THE FORCE OF THE DOWNWARD FLOWING CONCRETE. THE CONTRACTOR SHALL FURNISH A PRECONSTRUCTED TOP FORM FOR USE IN ACCURATELY CONFINING THE CONCRETE AT THE TOP OF THE DRILLED SHAFT WHEN THE CASING IS REMOVED. THE TOP FORM SHALL BE NOT LESS THAN THREE FOOT LONG.

REINFORCING STEEL
REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF 509. THE REINFORCING STEEL SHALL BE GRADE 60. THE SPIRAL REINFORCING MAY BE PLAIN BARS ASTM A82 OR A615. THE REINFORCING STEEL CAGE SHALL BE COMPLETELY ASSEMBLED PRIOR TO PLACEMENT AND THE LENGTH SHALL BE AS NECESSARY TO CONSTRUCT EACH DRILLED SHAFT. SEE PLAN SHEETS FOR DETAILS OF REINFORCING STEEL. NOTE THAT THE LENGTHS PROVIDED IN THE REINFORCING STEEL LIST ARE ESTIMATED LENGTHS. THE REINFORCING STEEL SHOULD BE PLACED AT PLAN LOCATION.

INSPECTION
THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUITABLE MEANS FOR ACCESS AND SAFE DESCENT INTO ALL DRILLED SHAFT EXCAVATIONS THAT ARE PROTECTED BY A CASING AND HAVE A DIAMETER THAT IS LARGE ENOUGH TO ALLOW A PERSON TO SAFELY ENTER AND PERFORM THE REQUIRED INSPECTION. ACCESS MAY BE PROVIDED BY A POSITIVE FOWARD AND REVERSE HYDRAULIC WINCH OR A POWER-UP AND POWER-DOWN HOIST ON A CRANE. THE METHOD CHOSEN FOR ENTERING AND LEAVING THE SHAFT SHALL BE CONVENIENT, SAFE AND NOT UNCOMFORTABLE FOR THE USER. THE CONTRACTOR SHALL ALSO PROVIDE PROTECTIVE CLOTHING FOR USE BY THOSE MAKING AN INSPECTION OF THE SHAFT.

SMALL DIAMETER AND/OR UNCASED DRILLED SHAFT EXCAVATIONS SHALL BE INSPECTED AS THOROUGHLY AS PRACTICABLE.

AN INSPECTION RECORD CHART HAS BEEN INCLUDED WITH THE PLANS ON SHEET 5 OF 10 AND SHOULD BE COMPLETED BY THE ENGINEER. MEASUREMENTS SHOULD BE OBTAINED PRIOR TO PLACING THE CONCRETE. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT NEEDED TO OBTAIN THE MEASUREMENTS FOR COMPLETING THE CHART. THE CONTRACTOR SHALL ASSIST THE ENGINEER IN OBTAINING THESE MEASUREMENTS. WHEN THE INSPECTION RECORD CHART IS COMPLETED, THE PROJECT ENGINEER SHOULD SUBMIT A COPY TO THE BUREAU OF BRIDGES:
ATTENTION: FOUNDATION ENGINEER

SAFETY PROVISIONS
THE CONTRACTOR SHALL HAVE AT THE JOB SITE ALL EQUIPMENT AND MATERIALS NEEDED TO PROVIDE SAFE CONSTRUCTION AND INSPECTION OF THE DRILLED SHAFTS AS REQUIRED BY CITY, STATE AND FEDERAL SAFETY REQUIREMENTS.

METHOD OF MEASUREMENT
THE TOTAL PAY LENGTH OF EACH DRILLED SHAFT SHALL BE THE COMPLETED AND ACCEPTED LENGTH, MEASURED ALONG THE AXIS OF THE DRILLED SHAFT FROM THE BOTTOM OF THE BEDROCK SOCKET TO THE PROPOSED TOP ELEVATION, AS PER PLAN. THE REINFORCING STEEL THAT PROJECTS FROM THE DRILLED SHAFT INTO THE PIER COLUMN OR THE ABUTMENT FOOTING AS SPECIFIED BY THE PLAN IS INCLUDED WITH THE DRILLED SHAFT FOR PAYMENT BUT SHALL NOT BE INCLUDED IN THE MEASURED LENGTH OF THE DRILLED SHAFT.

BASIS OF PAYMENT
PAYMENT FOR FURNISHING AND INSTALLING DRILLED SHAFTS WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT OF ACCEPTED SHAFTS AS PER ITEM SPECIAL "48 INCH DIAMETER DRILLED SHAFTS", WHICH SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE ITEM AS SPECIFIED.

DESIGN PARAMETERS
THE CALCULATED DESIGN LOADING FOR A PIER DRILLED SHAFT IS 140 TONS AND FOR AN ABUTMENT DRILLED SHAFT IS 140 TONS. THE ALLOWABLE DESIGN END BEARING PRESSURE IS 11.5 TONS PER SQUARE FOOT.

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO
4/10

DRILLED SHAFTS NOTES
BRIDGE NO. ALL-309-0338
OVER AUGLAIZE RIVER
ALLEN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.		S.M.M.	T.H.H.	J.R.M.	5/27/88	

BRINKING 07357

MICROFILMED
OCT 19 1982

INSPECTION RECORD FOR DRILLED SHAFTS

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

37/57

PROJECT NO._____

GENERAL CONTRACTOR_____

DRILLING CONTRACTOR_____

PROJECT ENGINEER_____

TYPE & MODEL OF DRILLING MACHINERY_____

MAX.CONTINUOUS TORQUE _____FT.-LB.

CROWD (MAX. CONTINUOUS DOWNWARD FORCE)_____LBS.

TYPE OF CONCRETE PUMP_____

HOSE DIAMETER_____INCHES

CAPACITY_____CU.FT./MIN.

COST PER LINEAL FOOT_____

ABOVE THE BEDROCK SOCKET_____

IN BEDROCK SOCKET_____

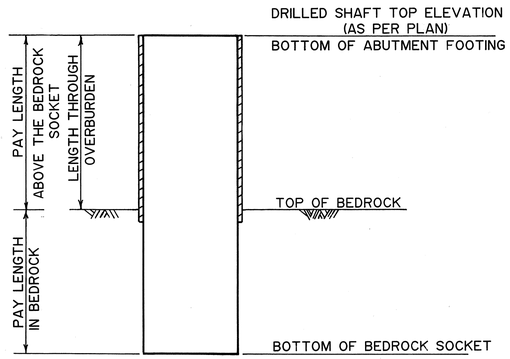
TYPE OF ROCK_____

SUBSTRUCTURE UNIT		DATE AND TIME OF DRILLING		APPROX. ELEVATION OF TOP OF OVER BURDEN	LENGTH OF DRILLED SHAFTS ABOVE THE BEDROCK SOCKET				OBSTRUCTIONS ENCOUNTERED			LENGTH OF DRILLED SHAFTS IN BEDROCK SOCKET			STEEL CASING			REINFORCING STEEL				CONCRETE					TOLERANCES			PLAN SHAFT DIAMETER (INCH)	CONSTRUCTED SHAFT DIAMETER (INCH)
																		VERTICAL		SPIRAL							DEVIATION FROM PLUMB				
PIER OR ABUT	SHAFT NO.	STARTED DATE / TIME	FINISHED DATE / TIME		THROUGH AIR (FEET)	THROUGH WATER (FEET)	THROUGH OVER BURDEN (FEET)	PAY LENGTH (FEET)	NUMBER	SIZE (INCH)	ELAPSED TIME FOR REMOVAL (HR.)	APPROX. ELEVATION OF TOP OF BEDROCK	ELEV. OF BOTT. OF BEDROCK SOCKET	LENGTH OF BEDROCK SOCKET (FEET)	LENGTH (FEET)	CASING GAUGE	WAS CASING LEFT IN PLACE ?	BAR SIZE NO.	NO. OF REBARS	BAR SIZE NO.	PITCH (INCH)	SLUMP TEST RESULT (INCH)	CYLINDER STRENGTH f'c (P.S.I.)	AIR TEMP. (F)	TIME NEEDED TO PLACE CONCRETE (HR)	QUANTITY (CU.YD.)	N-S (INCH)	E-W (INCH)	DEVIATION OF COLUMN TOP CENTER FROM PLAN LOCATION HORIZONTALLY (INCH)		

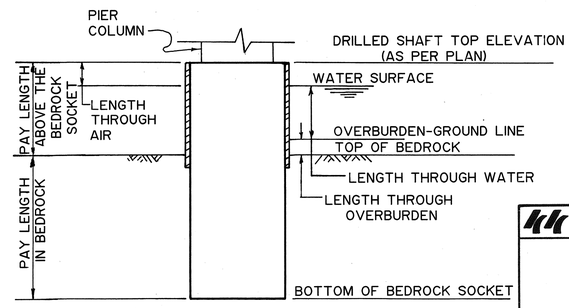
PROJECT ENGINEER COMMENTS

CONSIDER COMMENTING ON:

1. LOCATION AND EXTENT OF CAVITIES
2. PROCEDURES FOR CONTROLING WATER
3. WERE UNEXPECTED SURFACE CONDITIONS ENCOUNTERED
4. ANY SUGGESTIONS FOR IMPROVING THE PLANS



ABUTMENT



PIER

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO

5/10

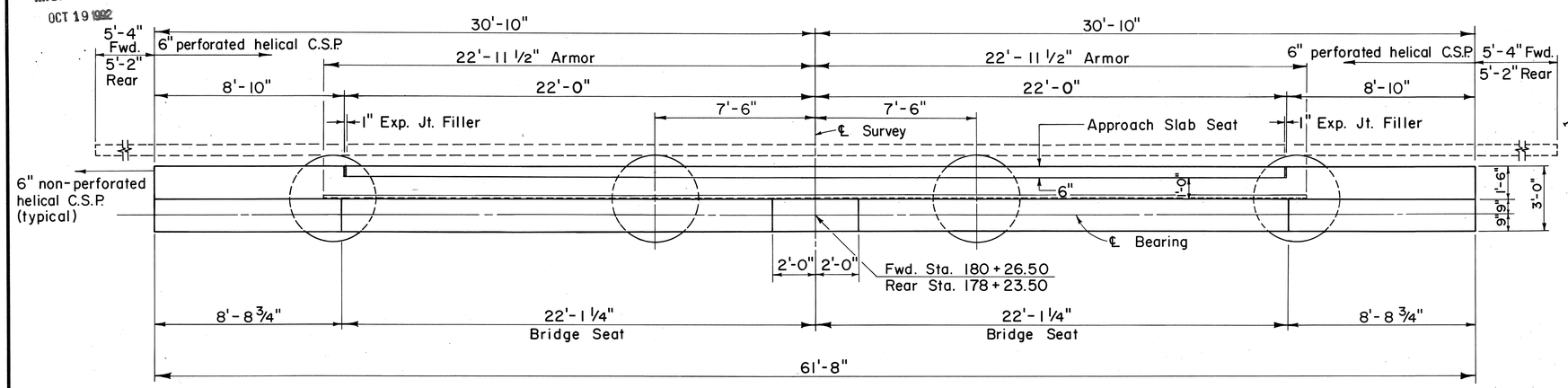
DRILLED SHAFTS
INSPECTION RECORD
BRIDGE NO. ALL-309-0338
OVER AUGLAIZE RIVER
ALLEN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	S.M.M		T.H.H.	J.R.M.	5/27/88	

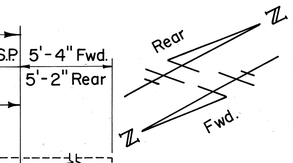
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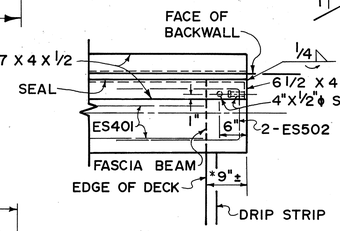
MICROFILMED
OCT 19 1992

ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO FHWA REGION 5 FEDERAL PROJECT	38/57



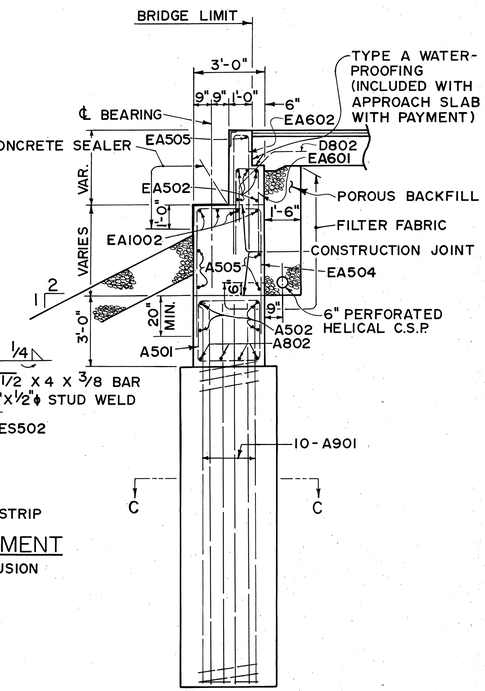
PLAN



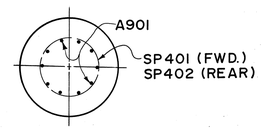


PART PLAN AT ABUTMENT

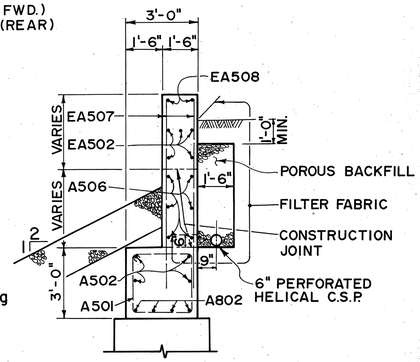
* DECK JOINT PROTRUSION



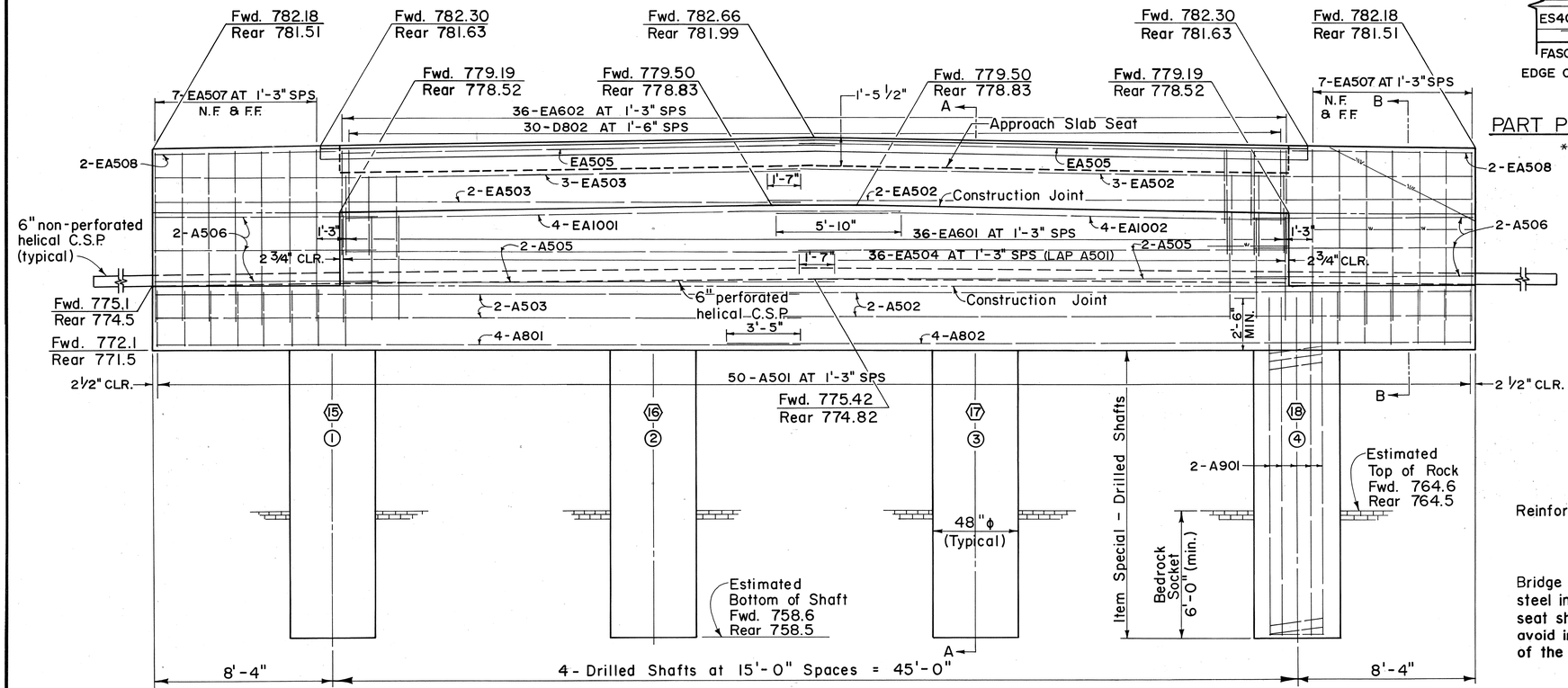
SECTION A-A



SECTION C-C



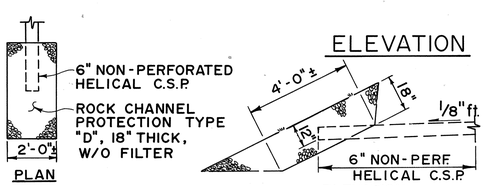
SECTION B-B



ELEVATION

⬡ = Drilled Shaft No. Forward Abutment

◯ = Drilled Shaft No. Rear Abutment



TERMINATION OF C.S.P AT SIDE SLOPE

Reinforcing Steel Abbreviations:
N.F. - Near Face
F.F. - Far Face
SPS - Spaces

Bridge Seat Reinforcing: Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of the anchor bar holes.

NOTES:
All reinforcing steel laps shall be 30 Dia. unless otherwise shown.

Backwall Concrete above the bridge seat construction joint shall not be placed until after the beams are set, deck concrete placed and expansion joint adjusted as specified.

Porous Backfill, 1.5 ft. thick, shall extend up to the plane of the subgrade and laterally to the ends of the wingwalls. Filter Fabric shall conform with 712.09, Type A and shall be included with porous backfill for payment.

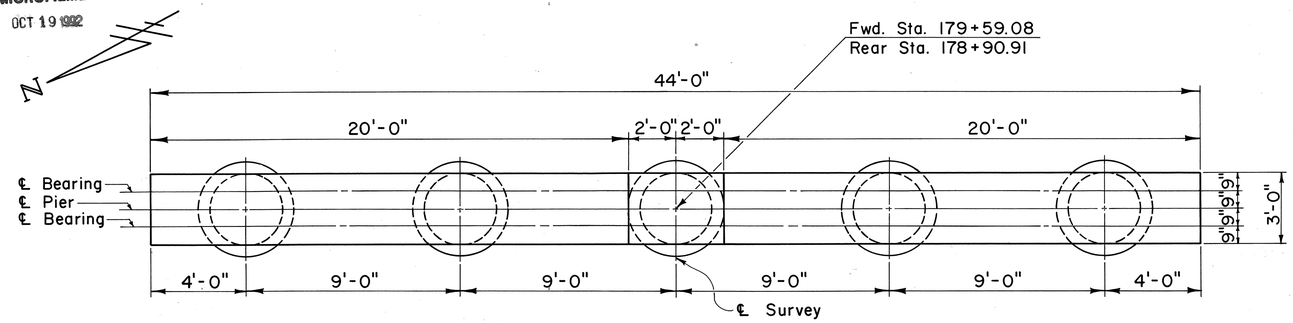
KOHLI AND KALIHER ASSOCIATES, LIMITED CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO	6/10

REAR AND FORWARD ABUTMENT DETAILS
BRIDGE NO. ALL-309-0338
OVER AUGLAIZE RIVER
ALLEN COUNTY

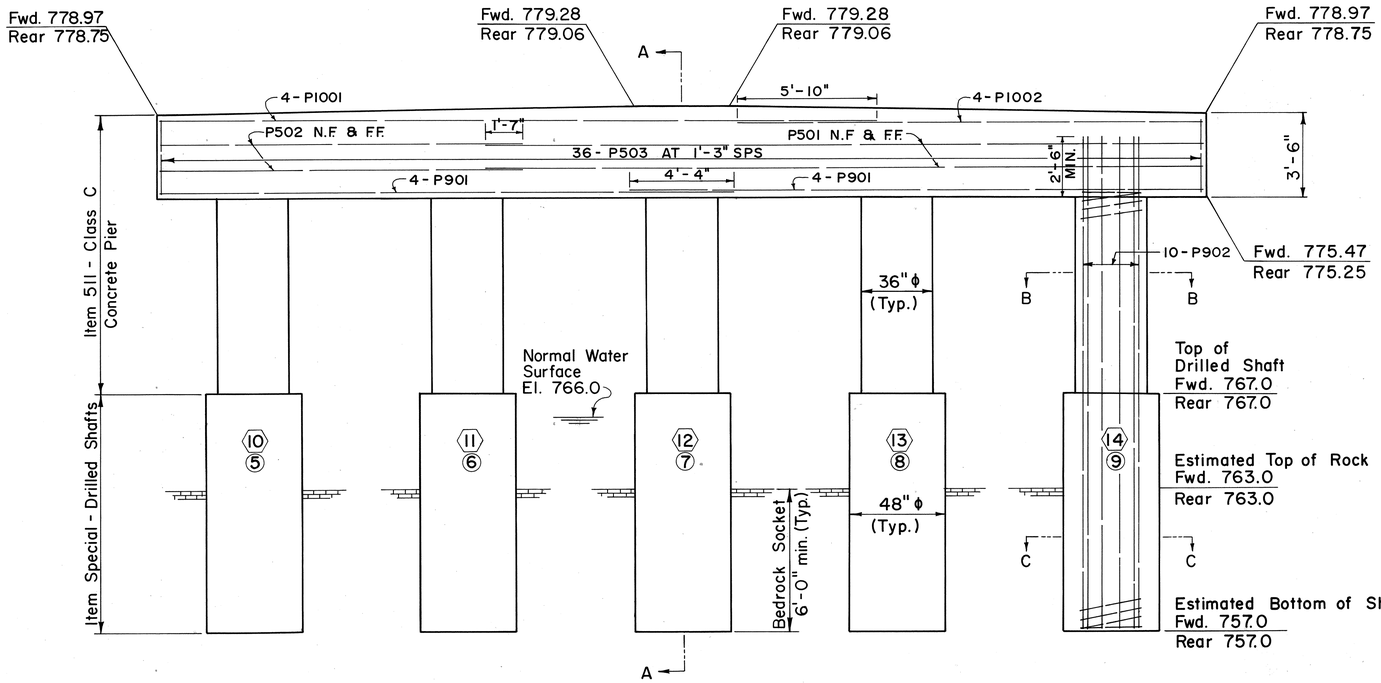
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P		T.H.H	J.R.M.	5-27-88	A.M.P

BRUNING 67357

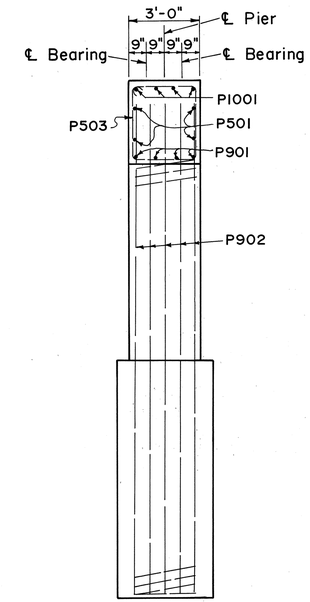
MICROFILMED
OCT 19 1992



PLAN



ELEVATION



SECTION A-A

NOTES:

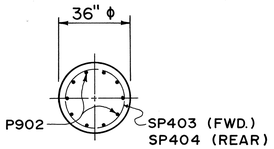
Bridge Seat Reinforcing: Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of the anchor bar holes.

Reinforcing Steel Abbreviations:
N.F. - Near Face
F.F. - Far Face
SPS - Spaces

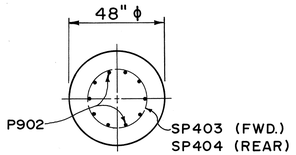
All reinforcing steel laps shall be 30 Dia. unless otherwise shown.

Class S Concrete may be used for the Pier Columns above Elev. 767.0.

⬡ = Drilled Shaft No. Forward Pier
○ = Drilled Shaft No. Rear Pier



SECTION B-B



SECTION C-C

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO
7/10

PIER DETAILS

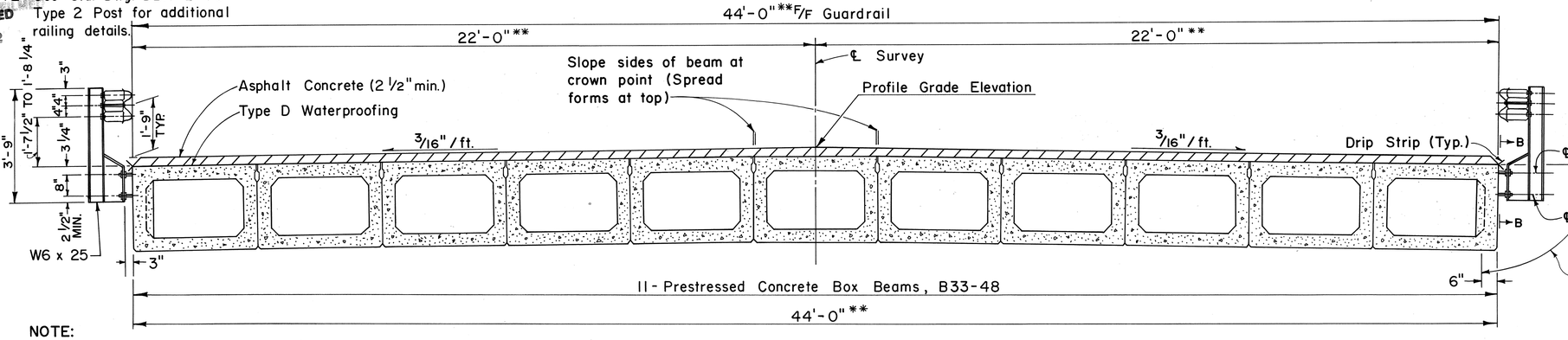
BRIDGE NO. ALL-309-0338
OVER AUGLAIZE RIVER
ALLEN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
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BRUNING 67957

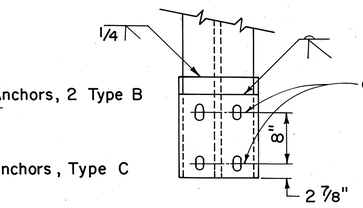
MICROFILMED
OCT 19 1992

NOTE: See Std. Dwg. DBR-2-73 Type 2 Post for additional railing details.



TRANSVERSE CROSS SECTION

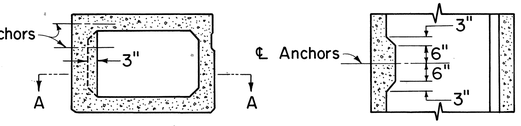
** - plus beam fit-up



SECTION B-B

NOTE:
Slots shall be provided in all guardrail posts, so that vertical adjustments may be made after placements to provide a straight-smooth guardrail line across the structure.

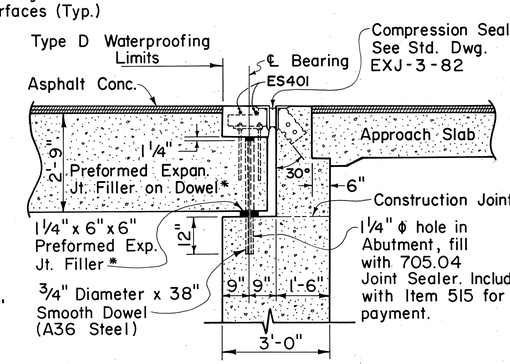
The keyway on the fascia of the exterior beams shall be omitted.



SECTION SHOWING WALL THICKENING AT GUARDRAIL ANCHORS

SECTION A-A

Shear keys shall be mortared on a slope between the top edges of the adjacent beams where the vertical offset (within tolerance) occurs.



BEARING AT ABUTMENT

SEE SHEET 6 OF 10 FOR PART PLAN AT ABUTMENT-DECK JOINT PROTRUSION

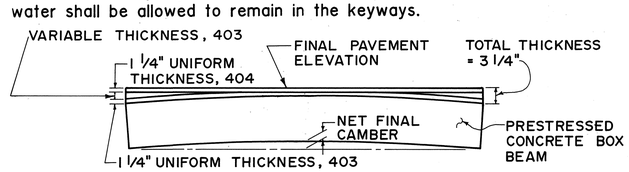
SPAN 1, SPAN 2, AND SPAN 3

NOTE:
Calculated camber at time of paving, including allowance for camber growth due to creep, is 7/8". Calculated deflection due to weight of surface course and railing is 1/8". Net final camber of beams is 3/4". This is 3/4" in excess of the amount required to place the top of the beam parallel to profile grade. This excess amount shall be compensated for by thickening the 403 leveling course from 1 1/4" at center of spans to 2" at ends of spans.

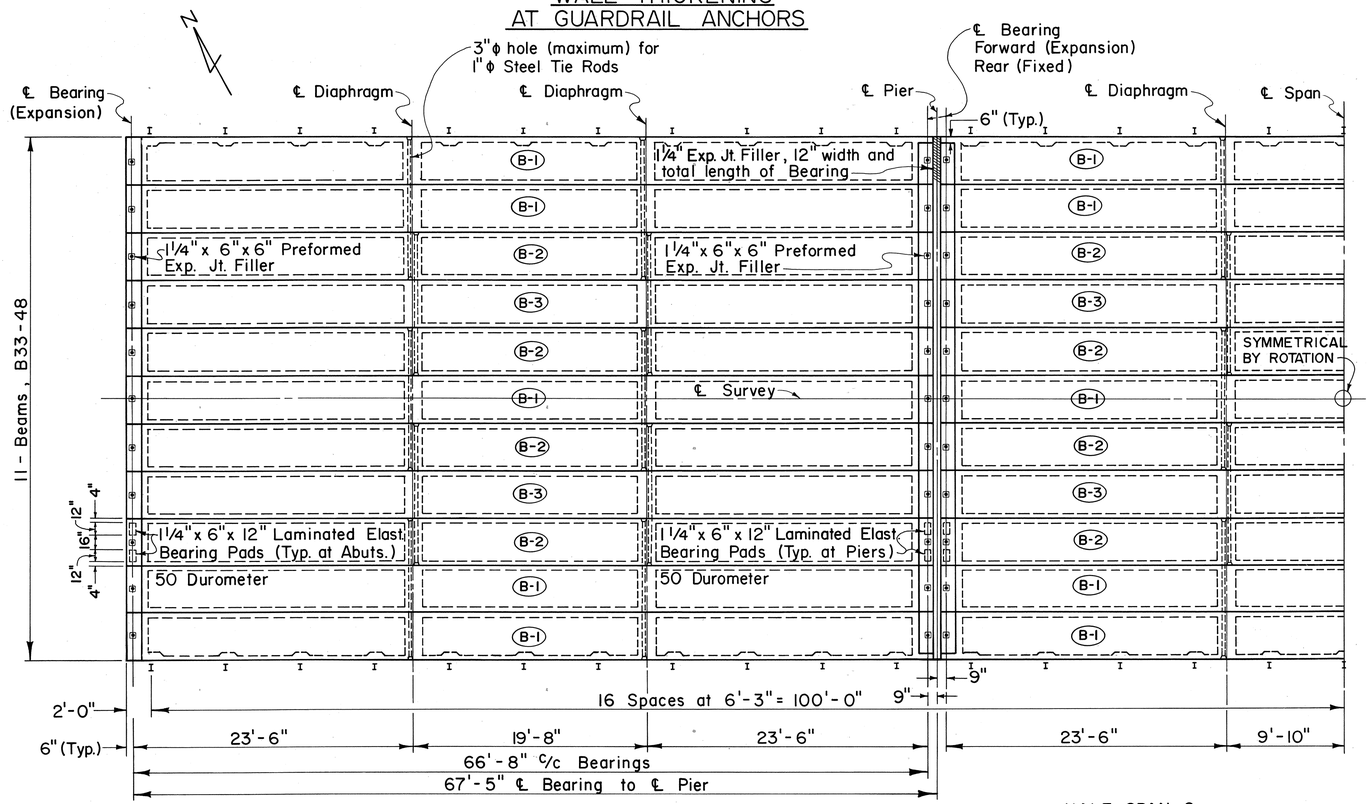
Asphalt concrete surface course shall consist of a variable thickness of 403 and 1 1/4" thickness of 404. The 403 shall be placed in two operations. The first course shall be of 1 1/4" uniform thickness. The second course shall be feathered to place the surface parallel to and 1 1/4" below final pavement surface elevation.

NON-SHRINKING MORTAR: Mortar or grout for keyways between prestressed concrete box beams, for tie rod recesses and for anchor dowel holes shall be a non-shrinking non-metallic mortar having a minimum compressive strength at 28 days of 5000 p.s.i. according to the Corps of Engineers Specification CRD-C621-83 when prepared to a moderate fluidity (124-145% flow table flow). The mortar or grout shall also meet all other requirements of Specification CRD-C621-83. The mortar shall be prepared, placed and cured in accordance with the manufacturer's recommendations, against surfaces as specified below.

PREPARATION OF CONCRETE SURFACES IN CONTACT WITH NON-SHRINKING MORTAR: The keyway surfaces shall be given a medium sandblast at the plant within four days before the beams leave the plant. Before mortaring, the keyways shall be thoroughly clean of all dirt, dust and other foreign matter. The keyway surfaces shall be wetted, but no free water shall be allowed to remain in the keyways.



ASPHALT THICKNESS DIAGRAM

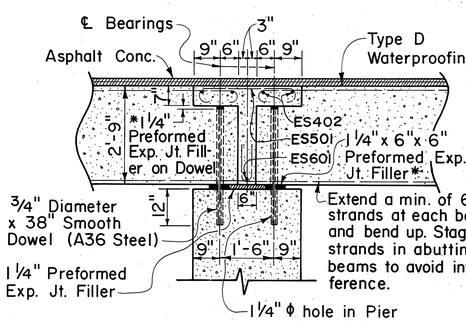


SPAN 1 AND SPAN 3

HALF PLAN

HALF SPAN 2

BEARING AT PIER



*- Included with Item 515 for payment.

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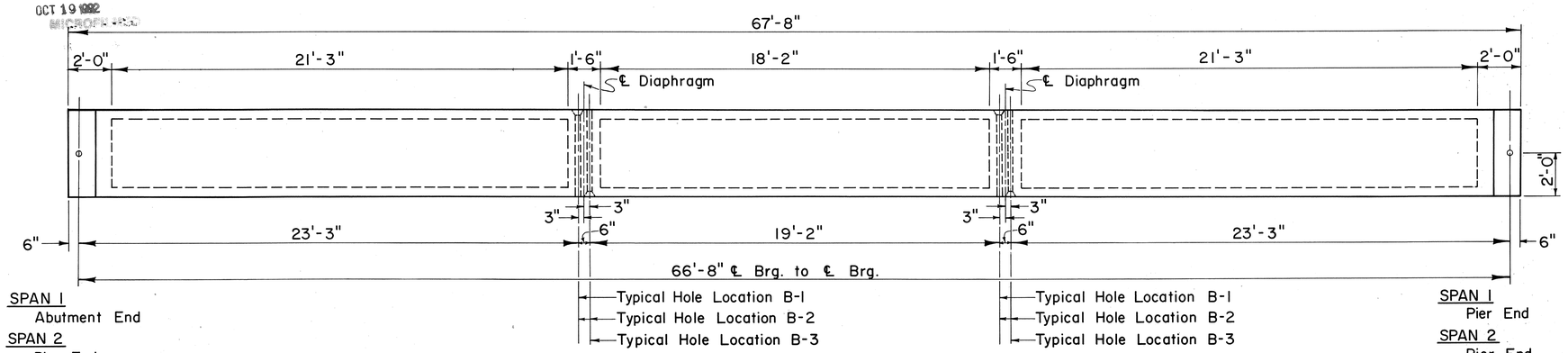
SUPERSTRUCTURE DETAILS

BRIDGE NO. ALL-309-0338
OVER AUGLAIZE RIVER
ALLEN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P.		T.H.H.	J.R.M.	5-27-88	A.M.P.

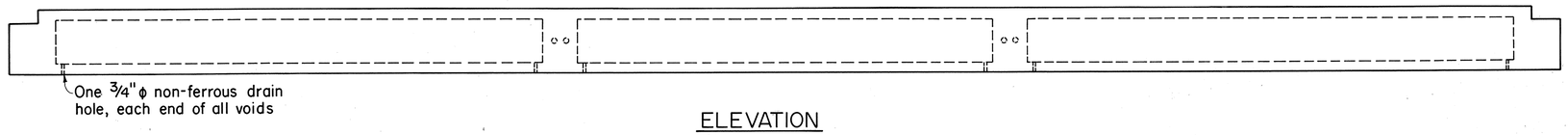
BRUNING 67357

MICROFILMED
OCT 19 1992

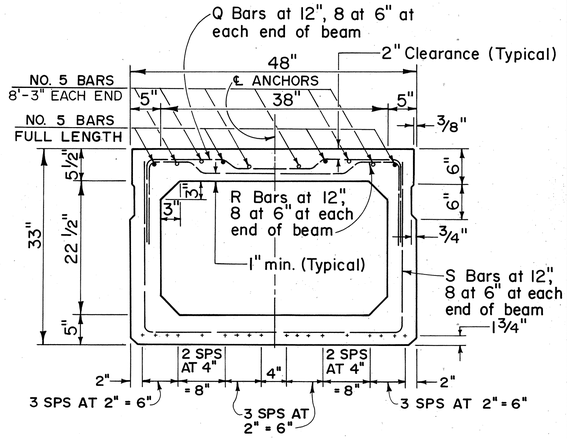


PLAN

Interior beams shown. Fascia beams similiar.
(See Sheet 8 of 10)

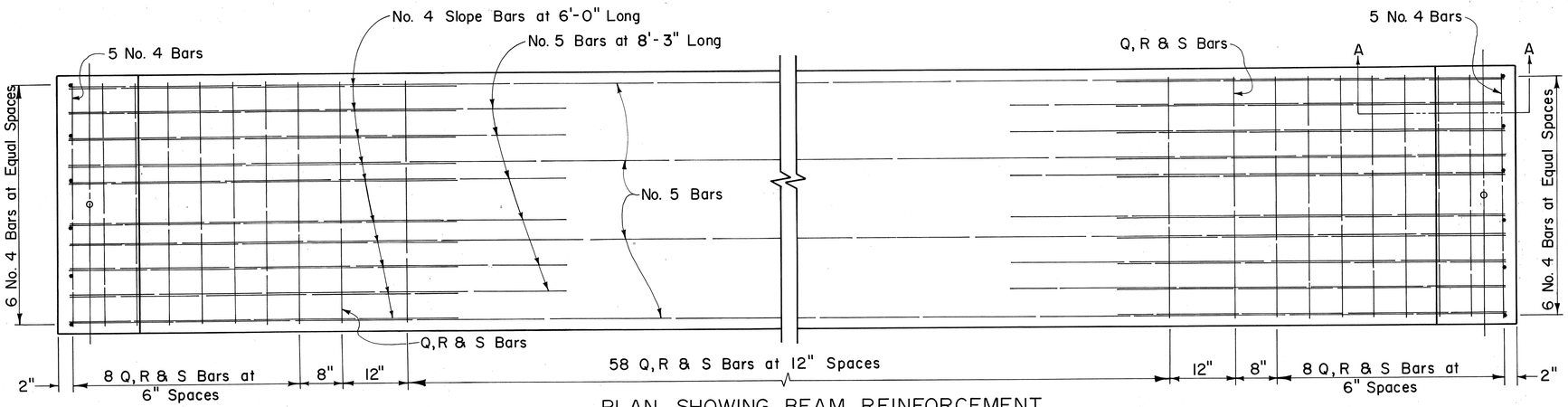


ELEVATION

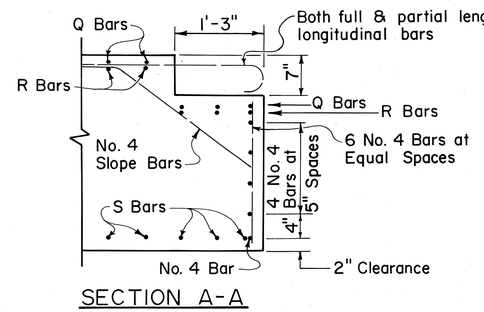


18 Strands
+ Indicates Strand Locations

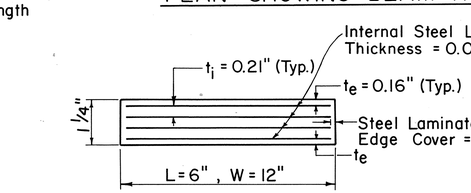
STRAND PATTERN DETAILS - B33-48



PLAN SHOWING BEAM REINFORCEMENT



SECTION A-A



LAMINATED ELASTOMERIC EXPANSION BEARING
50 DUROMETER

DEAD LOAD REACTION = 19.4K
LIVE LOAD REACTION = 31K
MAXIMUM DESIGN LOAD = 50.4K

NOTES:

FASCIA BEAMS: To avoid interference with the anchors for the Bridge Railing Posts, the longitudinal reinforcing bars near the fascia shall be shifted as necessary. Fabricator's shop drawings shall show complete details of beam reinforcement.

For additional details see sheet 8 of 10 and standard drawing PSBD-1-81, sheets 1, 2, 3, and 4 of 4.

List of details to be used from standard drawing PSBD-1-81:

1. Beam lifting inserts
2. Anchor dowels
3. Details and reinforcement of beam ends
4. End details of transverse tie rod anchorage
5. Beam dimensional tolerance
6. Fascia beam with notch

Fabricator may change the width of the beams on the bridge if there is some advantage in doing so. However, the bridge width must remain the same, bearings must be redesigned by a professional engineer and there will be no additional cost to the state. The revised plans must be submitted for approval by the Director.

TOLERANCES:
INDIVIDUAL ELASTOMERIC LAYER THICKNESS: ±20% OF DESIGN VALUE (NOT TO EXCEED ±1/8")

PLAN DIMENSION -0, +1/4"
DESIGN THICKNESS -0, +1/8"
EDGE COVER OF EMBEDDED LAMINATES -0, +1/8"

BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS EITHER FIXED OR EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516, EACH, LAMINATED ELASTOMERIC BEARINGS (6" X 12" X 1 1/4").

LAMINATED ELASTOMERIC BEARINGS
THE LAMINATED ELASTOMERIC BEARING MANUFACTURER SHALL PROOF LOAD EACH LAMINATED ELASTOMERIC BEARING WITH A COMPRESSIVE LOAD EQUAL TO 1.5 TIMES THE MAXIMUM DESIGN LOAD AS PER ARTICLE 25.7, BEARING TESTS AND ACCEPTANCE CRITERIA, DIVISION II, CONSTRUCTION OF THE 1985 INTERIM SPECIFICATIONS FOR THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, THIRTEENTH EDITION, 1983. THE TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS. ACCEPTANCE OF THE BEARING SHALL BE ACCORDING TO LEVEL I ACCEPTANCE CRITERIA OF ARTICLE 25.7 AND 711.23 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE MANUFACTURER SHALL FURNISH CERTIFIED TEST DATA.

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO
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PRESTRESSED BEAM DETAILS
B33-48
BRIDGE NO. ALL-309-0338
OVER AUGLAIZE RIVER
ALLEN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P		T.H.H	J.R.M.	5-27-88	A.M.P

BRUNING 67257

MICROFILMED
OCT 19 1992

REINFORCING STEEL LIST

ABUTMENTS

MARK	NO.	LENGTH	WEIGHT	SHP.	A	B	C
A501	100	11'-3"	1173	B1	2'-8"	2'-8"	
A502	8	32'-11"	275	S			
A503	8	30'-0"	250	S			
A505	16	22'-9"	380	S			
A506	24	10'-3"	257	S			
A801	8	30'-0"	641	S			
A802	8	34'-9"	742	S			
D802	60	5'-2"	828	B3	2'-4"	1'-0"	
A901	80	15'-9"	**	S			
		TOTAL	4546				
EPOXY COATED REINFORCING STEEL							
EA502	10	32'-11"	343	S			
EA503	10	30'-0"	313	S			
EA504	72	14'-3"	1070	B2	2'-8"	5'-11"	
EA505	4	22'-9"	95	S			
EA507	56	8'-8"	506	S			
EA508	8	8'-4"	70	S			
EA601	72	8'-0"	865	B2	1'-2"	3'-7"	
EA602	72	10'-4"	1117	B2	0'-8"	5'-0"	
EA1001	8	26'-0"	895	S			
EA1002	8	23'-9"	818	S			
		TOTAL	6092				

PIERS

P501	8	30'-0"	250	S			
P502	8	15'-3"	127	S			
P503	72	12'-3"	920	B1	2'-8"	3'-2"	
P901	16	24'-0"	1306	S			
P902	100	20'-9"	**	S			
P1001	8	30'-0"	1033	S			
P1002	8	19'-6"	671	S			
		TOTAL	4307				

SUPERSTRUCTURE

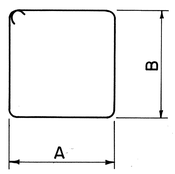
EPOXY COATED REINFORCING STEEL							
ES401	8	22'-6"	120	S			
ES402	16	22'-0"	235	S			
ES501	242	3'-8"	925	B4	2'-6"		
ES502	8	5'-0"	42	B2	0'-9"	2'-3"	
ES601	4	22'-4"	134	S			
		TOTAL	1456				

SPIRAL REINFORCEMENT

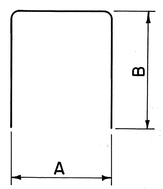
MARK	NO.	LENGTH	CORE	PITCH	TURNS	SPACERS
SP401	4	13'-6"	30"	4 1/2"	39	3
SP402	4	13'-0"	30"	4 1/2"	38	3
SP403	5	18'-6"	30"	4 1/2"	53	3
SP404	5	18'-3"	30"	4 1/2"	52	3

NOTE: Spiral Reinforcement shall be included in unit price for Item Special - Drilled Shafts. Drilled Shaft lengths are estimated.

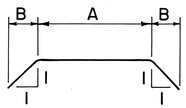
BENDING DIAGRAM



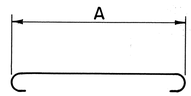
B1



B2



B3



B4

** Included in unit price for Item Special - Drilled Shafts. Drilled Shaft lengths are estimated.

REINFORCING STEEL SAMPLES:
Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.
Bar Marks with the prefix "E" shall be Epoxy Coated.

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS
LIMA, OHIO
10/10

REINFORCING STEEL LIST
AND BENDING DIAGRAM
BRIDGE NO. ALL-309-0338
OVER AUGLAIZE RIVER
ALLEN COUNTY

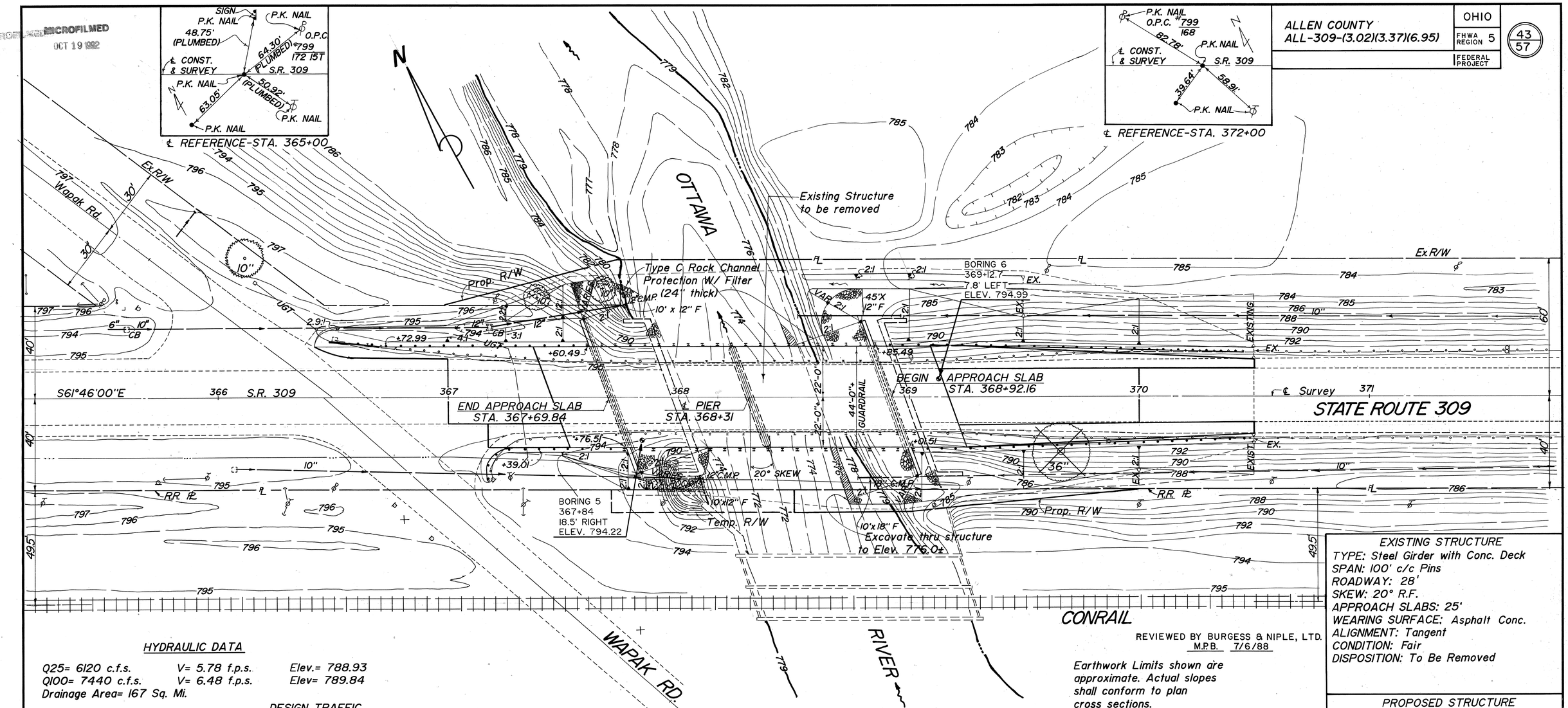
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P.		T.H.H.	J.R.M.	5-27-88	A.M.P.

BRUNING 67357

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OCT 19 1992

℄ REFERENCE-STA. 365+00

℄ REFERENCE-STA. 372+00



PLAN

REVIEWED BY BURGESS & NIPLE, LTD.
M.P.B. 7/6/88

Earthwork Limits shown are approximate. Actual slopes shall conform to plan cross sections.

HYDRAULIC DATA

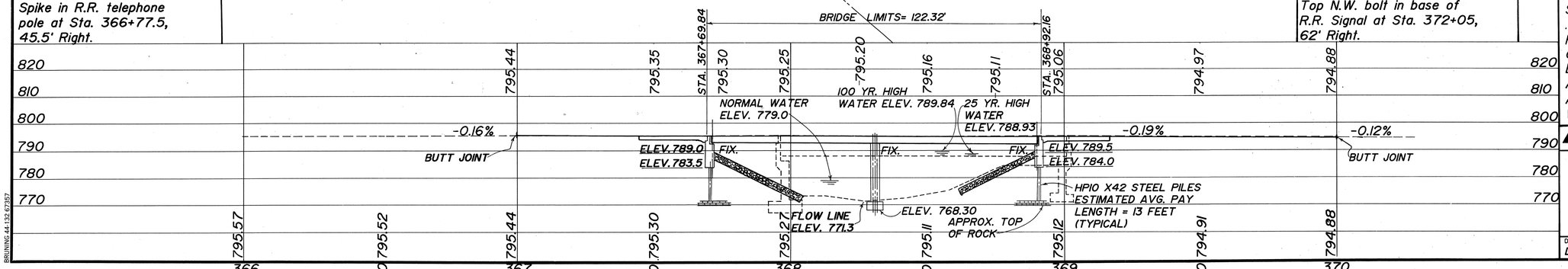
Q25= 6120 c.f.s. V= 5.78 f.p.s. Elev.= 788.93
Q100= 7440 c.f.s. V= 6.48 f.p.s. Elev= 789.84
Drainage Area= 167 Sq. Mi.

DESIGN TRAFFIC

1986 6,696 A.D.T.
2006 10,206 A.D.T.

B.M. #2 - Elev. 796.65
Spike in R.R. telephone pole at Sta. 366+77.5, 45.5' Right.

B.M. #4 - Elev. 795.45
Top N.W. bolt in base of R.R. Signal at Sta. 372+05, 62' Right.



SECTION ON ℄ SURVEY

EXISTING STRUCTURE

TYPE: Steel Girder with Conc. Deck
SPAN: 100' c/c Pins
ROADWAY: 28'
SKEW: 20° R.F.
APPROACH SLABS: 25'
WEARING SURFACE: Asphalt Conc.
ALIGNMENT: Tangent
CONDITION: Fair
DISPOSITION: To Be Removed

PROPOSED STRUCTURE

TYPE: Non-composite Prestressed Conc. Box Beams w/Reinforced Conc. Substructure
SPAN: 58.5'-58.5' c/c Brg.

ROADWAY: 44'+f/f Gaurdrail
CROWN: 3/16" per ft.
LOADING: HS 20-44 and Alt. Mil. Loading
ALIGNMENT: Tangent SKEW: 20° RF
APPROACH SLABS: AS-1-81 (25' Long)
WEARING SURFACE: 2 1/2" Min. Asp. Con.

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS
LIMA, OHIO

1 / 8

SITE PLAN

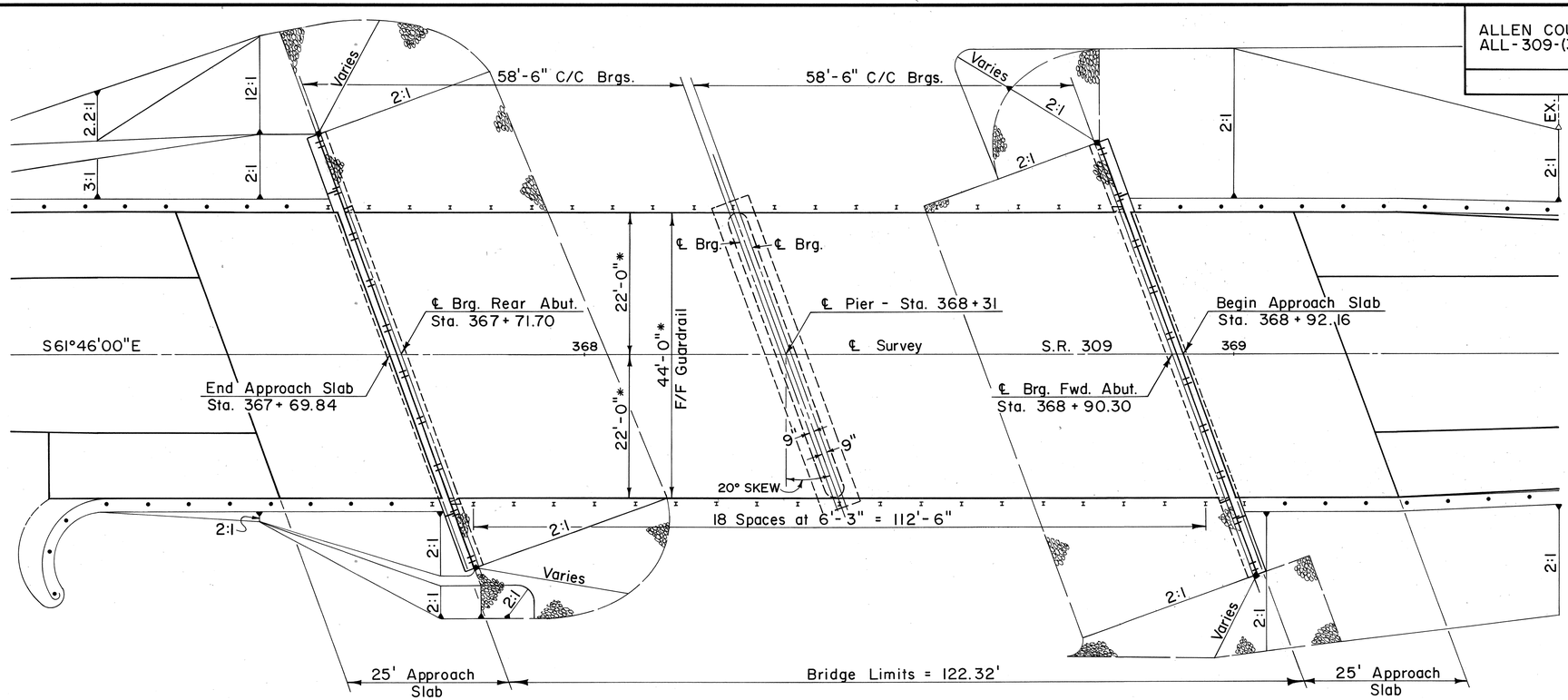
BRIDGE NO. ALL-309-0696
OVER OTTAWA RIVER
ALLEN COUNTY STA. 367+69.84
STA. 368+92.16

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P.	S.M.M.	T.H.H.	J.R.M.	2-5-88	R.L.M.

SITE PLAN

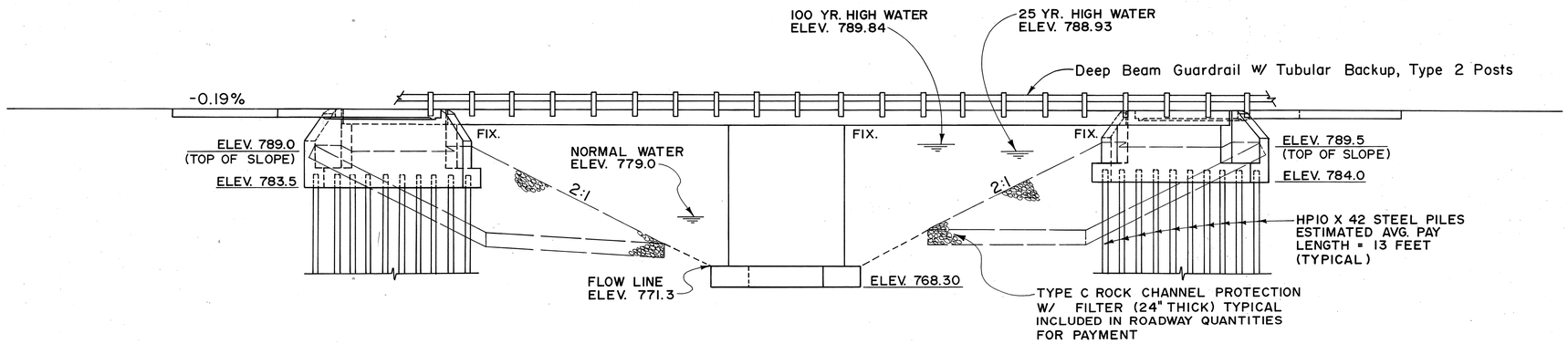
BRUNING 44-132-67357

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OCT 19 1992



PLAN

*- Plus fit-up



ELEVATION

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO
2/8

GENERAL PLAN & ELEVATION

BRIDGE NO. ALL-309-0696
OVER OTTAWA RIVER
ALLEN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P.		T.H.H.	J.R.M.	5-27-88	A.M.P.

BRUNING 57257

MICROFILMED
OCT 19 1992

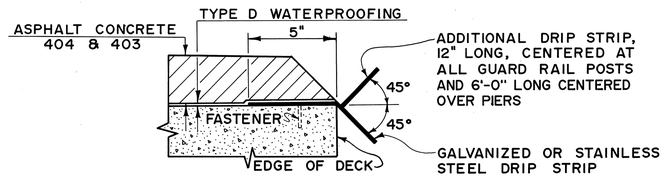
GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS: PSBD-1-81 DATED 9-18-81, SHEETS 1, 2, 3 AND 4 OF 4, DBR-2-73 DATED 4-10-73, AS-1-81 DATED 11-27-81, SHEETS 1, 2, AND 3 OF 3, EXJ-3-82 DATED 8-1-84 , AND TO SUPPLEMENTAL SPECIFICATIONS, 836 DATED 11-12-85

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS 1983, INCLUDING 1984, 1985, 1986 AND 1987 INTERIM SPECIFICATIONS, AND TO THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA:
DESIGN LOADING: HS 20-44, AND ALTERNATE MILITARY LOADING
CONCRETE CLASS C: COMPRESSIVE STRENGTH 4000 P.S.I.
REINFORCING STEEL: ASTM A615, A616, A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.
CONCRETE FOR PRESTRESSED CONCRETE BEAMS: UNIT STRESS - 2200 P.S.I. COMPRESSION, 444 P.S.I. TENSION
PRESTRESSING STRAND ASTM A416 - F'S = 270,000 P.S.I. INITIAL STRESS = 0.70 F'S
REINFORCING STEEL FOR PRESTRESSED BEAMS SHALL BE ASTM A615, A616, OR A617 - GRADE 40 OR 60

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURE SHALL BE REMOVED. SUITABLE WASTE MASONRY MAY BE PLACED AS BANK PROTECTION AS DIRECTED BY THE ENGINEER.



DRIP STRIP: PRIOR TO APPLYING TYPE D WATERPROOFING, A BENT DRIP STRIP SHALL BE INSTALLED ALONG THE EDGES OF THE DECK AS SHOWN THE STRIPS SHALL BE FASTENED AT 1'-6" C/C MAXIMUM WITH 1 1/4" X 5/32" X 1/4" FLAT HEAD DRIVE PIN AND WASHER. (LENGTH X SHANK DIA. X HEAD DIA.) OR #10 GALVANIZED SCREWS AND EXPANSION ANCHORS, SUBJECT TO THE APPROVAL OF THE ENGINEER. THE STRIPS SHALL BE PLACED THE FULL LENGTH OF THE DECK, ENDING AT THE FACE OF THE ABUTMENT WINGWALLS. WHERE SPLICES ARE REQUIRED A 3" (MIN.) LAP SHALL BE USED WITH A FASTENER THROUGH THE LAP. STEEL FOR GALVANIZED STRIPS SHALL BE 8" X 0.105" AND SHALL MEET THE REQUIREMENTS OF ASTM A568. GALVANIZING SHALL BE IN ACCORDANCE WITH 711.02. STAINLESS STEEL SHALL BE 20 GAUGE ASTM A167. TYPE 304 MILL FINISH. PAYMENT SHALL BE AT THE CONTRACT PRICE BID FOR THE ITEM SPECIAL SQ. FT. STEEL DRIP STRIP, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

DECK PROTECTION METHOD: TYPE D WATERPROOFING AND ASPHALT CONCRETE OVERLAY, STEEL DRIP STRIP, AND SEALING OF CONCRETE SURFACES.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES: A CONCRETE SEALER SHALL BE APPLIED TO THE FOLLOWING SURFACES, SEE SHEETS 4 AND 6 OF 8. SEE THE PROPOSAL NOTE FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION PROCEDURES & RATES AND MATERIAL REQUIREMENTS.

PILES: SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS ATTAINED BY PENETRATING SOFT BEDROCK WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH, OR REFUSAL SHALL BE CONSIDERED AS ATTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS. THE DESIGN LOAD IS 52 TONS PER PILE. SEE PILE POINTS NOTE.

ABUTMENT PILING: ABUTMENT PILING BENDING STRESS MAY APPROACH, REACH OR EXCEED YIELD STRESS.

"PILE POINTS: STEEL PILE POINTS SHALL BE USED TO PROTECT THE TIPS OF THE PROPOSED PILING. THE STEEL POINTS SHALL BE FURNISHED BY ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BOULEVARD, CLIFTON, NEW JERSEY 07014, INTERNATIONAL CONSTRUCTION EQUIPMENT, INC., 301 WAREHOUSE DRIVE, MATTHEWS, NORTH CAROLINA 28015, DOUGHERTY FOUNDATION PRODUCTS, INC., P.O. BOX 688, FRANKLIN LAKES, NEW JERSEY 07417, VERSA STEEL INC., 3601 N.W. YEON AVENUE, P.O. BOX 10559, PORTLAND, OREGON 97210 OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO THE DIRECTOR." PAYMENT FOR PILE POINTS SHALL BE INCLUDED WITH ITEM 507, STEEL PILES, HP 10 x 42, AS PER PLAN.

ESTIMATED QUANTITIES

QUANTITIES CALCULATED BY A.M.P. DATE 4-26-88
QUANTITIES CHECKED BY T.H.H. DATE 5-17-88

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	PIER	GEN'L.
202	Lump		Structures Removed				Lump
403	30	Cu. Yd.	Asphalt Concrete (AC-20)	30			
404	20	Cu. Yd.	Asphalt Concrete (AC-20)	20			
503	Lump		Cofferdams, Cribs and Sheeting				Lump
503	165	Cu. Yd.	Unclassified Excavation		165		
505	Lump		Pile Driving Equipment Mobilization				Lump
507	260	Lin. Ft.	Steel Piles, HP10 x 42, As per plan		260		
509	11699	Lbs.	Reinforcing Steel, Grade 60		5606	6093	
511	131	Cu Yd.	Class C Concrete, Abutments (See Proposal Note)		131		
511	109	Cu. Yd.	Class C Concrete, Pier Walls (See Proposal Note)		109		
511	33	Cu. Yd.	Class C Concrete, Pier Footings (See Proposal Note)			33	
511	9	Cu. Yd.	Class S Concrete, Superstructure (See Proposal Note)	9			
512	573	Sq. Yd.	Type D Waterproofing	573			
515	22	Each	Prestressed Concrete Bridge Members (See Proposal Note)	22			
516	99	Lin. Ft.	Structural Expansion Joints including Elastomeric Compression		99		
			Seals (See Proposal Note)				
516	88	Each	1 1/4" x 5" x 12" Laminated Elastomeric Bearing Pads		44	44	
516	20	Sq. Ft.	1/8" Preformed Bearing Pads, 711.21		10	10	
SPECIAL	26	Sq. Yd.	Sealing of Concrete Surfaces, Epoxy (See Proposal Note)		26		
503	39	Cu. Yd.	Rock Excavation			39	
517	250	Lin. Ft.	Railing (Deep Beam with Steel Tubular Back-up & Steel Posts	250			
			and Bolts) (See Proposal Note)				
518	59	Cu. Yd.	Porous Backfill, as per plan		59		
518	142	Lin. Ft.	6" Perforated, Helical Corrugated Steel Pipe, 707.01		142		
518	20	Lin. Ft.	6" Non-perforated Helical Corrugated Steel Pipe, including Specials, 707.01		20		
509	5771	Lbs.	Epoxy Coated Reinforcing Steel, Grade 60	761	5010		
SPECIAL	190	Sq. Ft.	Steel Drip Strip	190			
SPECIAL	72	Sq. Yd.	Sealing of Concrete Surfaces (See Proposal Note)	72			

EMBANKMENT CONSTRUCTION: THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE AFTER WHICH EXCAVATION MAY BE MADE FOR THE ABUTMENT CAPS AND PILES DRIVEN.

FOUNDATION BEARING PRESSURE: PIER FOOTING, AS DESIGNED, PRODUCES A MAXIMUM BEARING PRESSURE OF 2.4 TONS PER SQ. FT.

FOOTING SHALL EXTEND A MINIMUM OF 3" INTO BEDROCK OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER.

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO
3/8

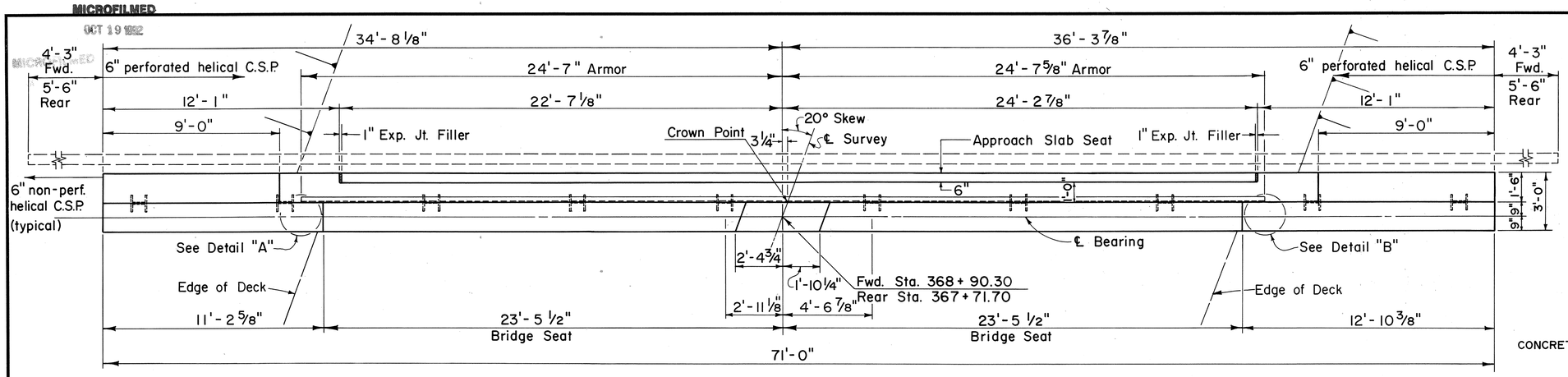
GENERAL NOTES
ESTIMATED QUANTITIES
BRIDGE NO. ALL-309-0696
OVER OTTAWA RIVER
ALLEN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P.		T.H.H.	J.R.M.	5-27-88	A.M.P.

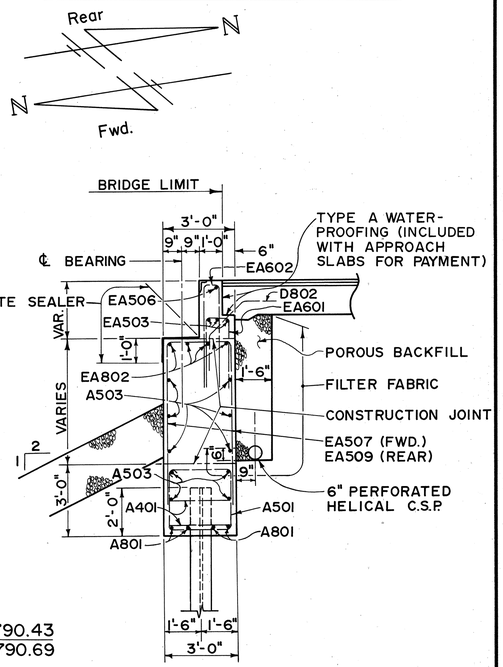
BRUNING 67357

MICROFILMED
OCT 19 1982

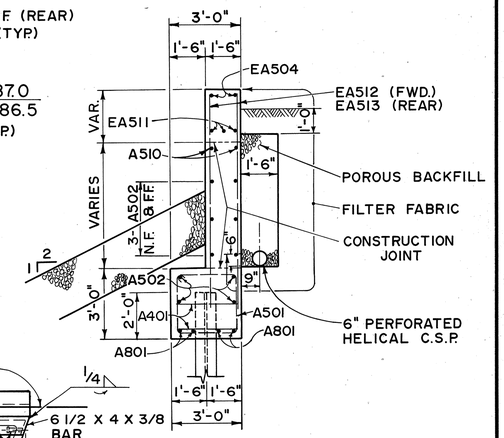
ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO FHWA REGION 5 FEDERAL PROJECT	46 57



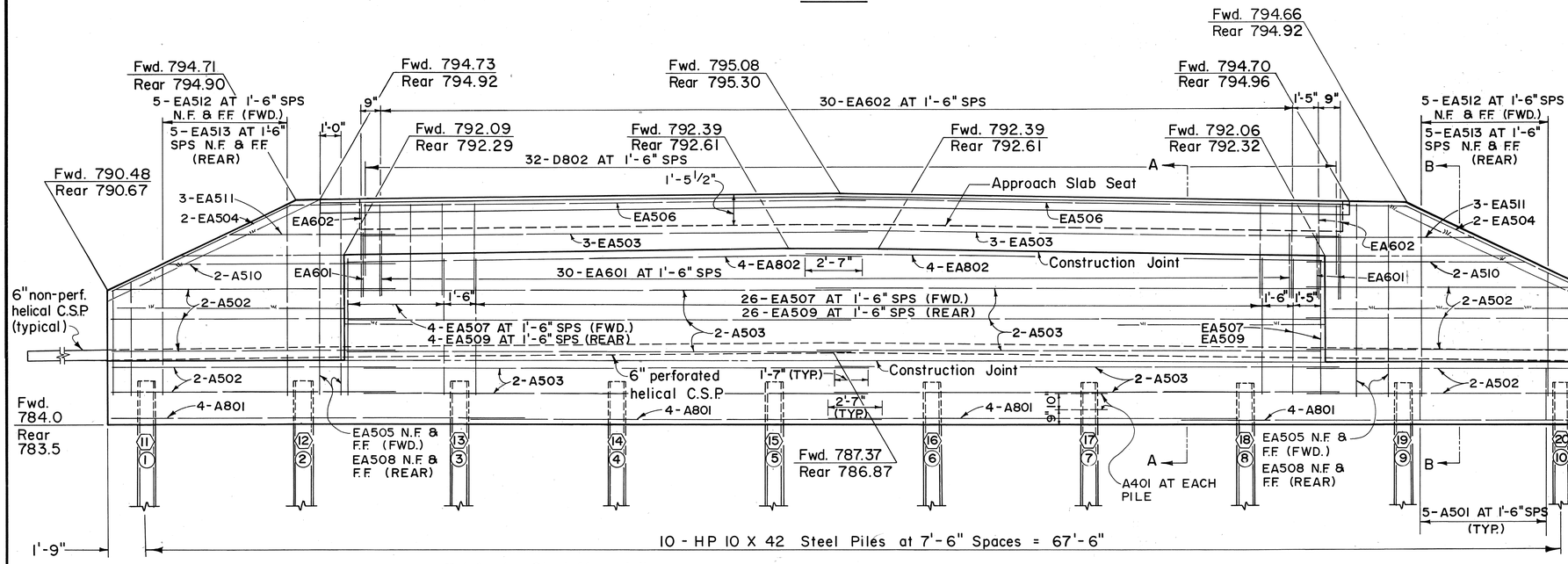
PLAN



SECTION A-A



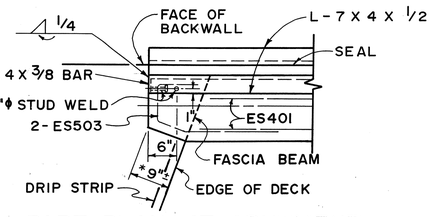
SECTION B-B



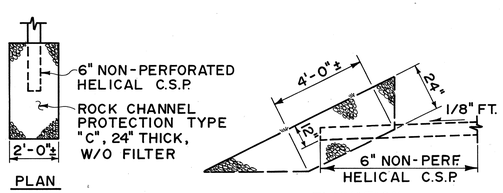
ELEVATION

⬡ = Pile No. Forward Abutment
○ = Pile No. Rear Abutment

Reinforcing Steel Abbreviations:
N.F. - Near Face
F.F. - Far Face
SPS - Spaces



PART PLAN AT ABUTMENT
DETAIL "A"
* DECK JOINT PROTRUSION



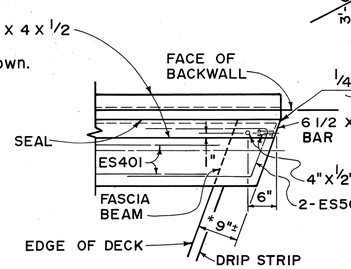
TERMINATION OF C.S.P AT SIDE SLOPE

NOTES:
All reinforcing steel laps shall be 30 Dia. unless otherwise shown.

Backwall Concrete above the bridge seat construction joint shall not be placed until after the beams are set, deck concrete placed and expansion joint width set as specified.

Porous Backfill, 1.5 ft. thick, shall extend up to the plane of the subgrade and laterally to the ends of the wingwalls. Filter Fabric shall conform with 712.09, Type A and shall be included with porous backfill for payment.

Bridge Seat Reinforcing: Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of the anchor bar holes.



PART PLAN AT ABUTMENT
DETAIL "B"
* DECK JOINT PROTRUSION

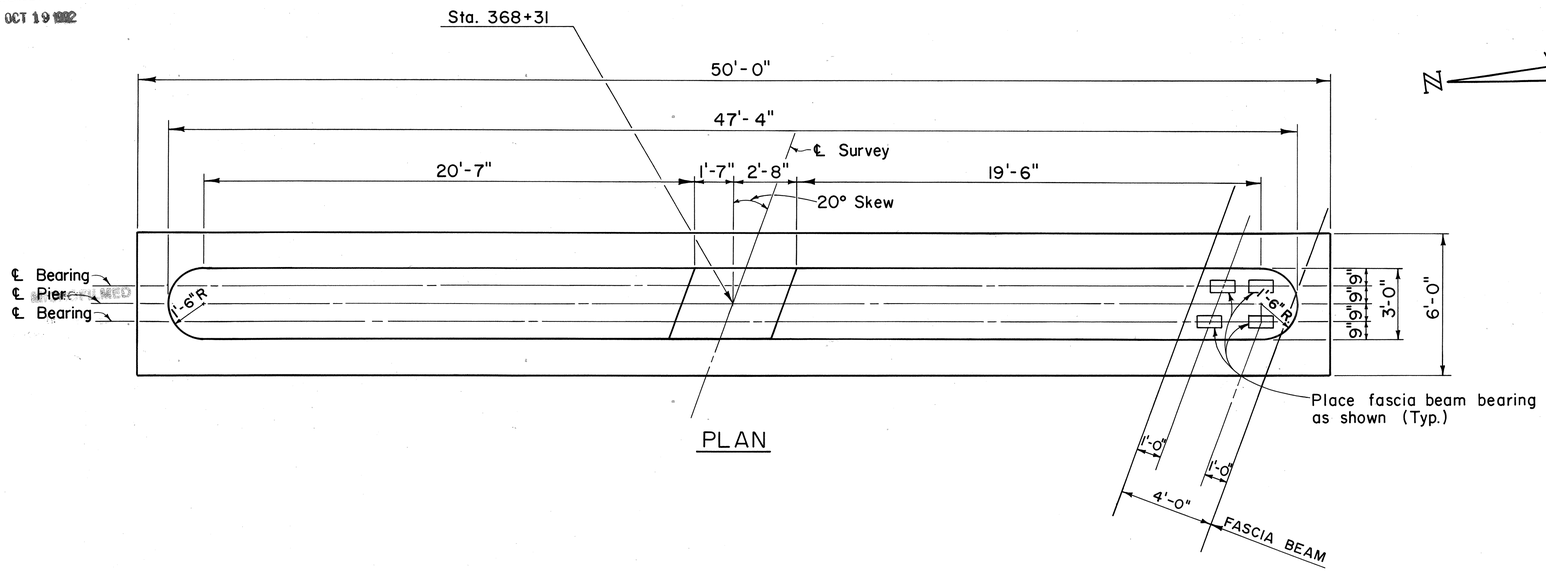
KOHLI AND KALIHER ASSOCIATES, LIMITED CONSULTING ENGINEERS AND SURVEYORS — LIMA, OHIO	4/8

REAR AND FORWARD
ABUTMENT DETAILS
BRIDGE NO. ALL-309-0696
OVER OTTAWA RIVER
ALLEN COUNTY

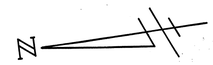
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P.		T.H.H	J.R.M.	5-27-88	A.M.P.

BRUNING 67357

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PLAN

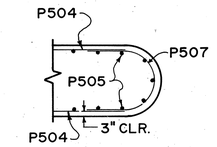


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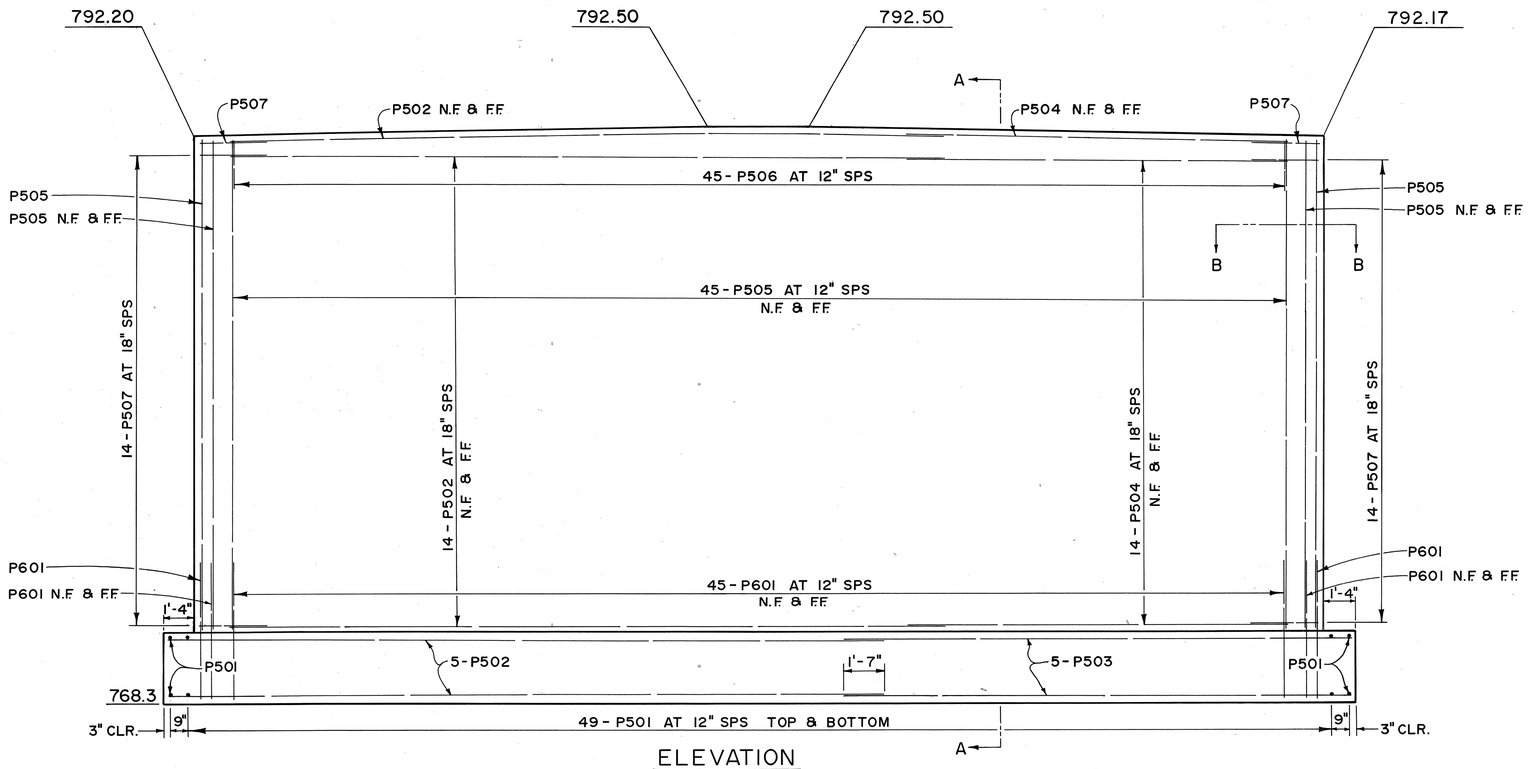
Bridge Seat Reinforcing: Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of the anchor bar holes.

Reinforcing Steel Abbreviations:
N.F. - Near Face
F.F. - Far Face
SPS - Spaces

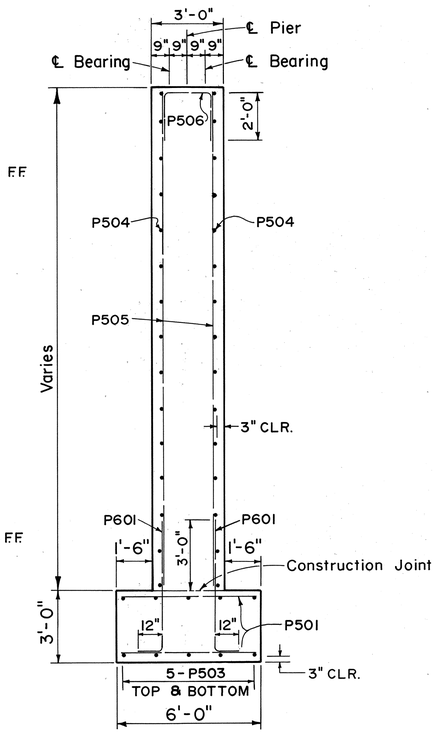
All reinforcing steel laps shall be 30 Dia. unless otherwise shown.



SECTION B-B



ELEVATION



SECTION A-A

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS
LIMA, OHIO
5/8

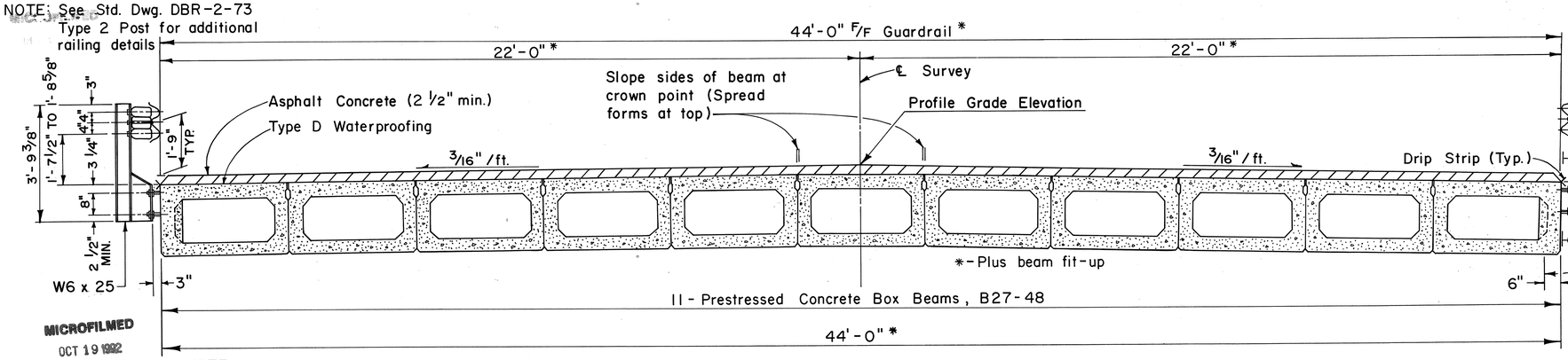
PIER DETAILS

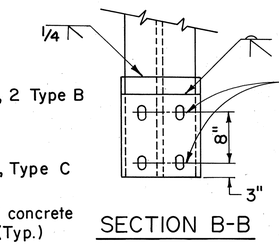
BRIDGE NO. ALL-309-0696
OVER OTTAWA RIVER
ALLEN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P.		T.H.H	J.R.M.	5-27-88	A.M.P

BRUNING 67357

NOTE: See Std. Dwg. DBR-2-73 Type 2 Post for additional railing details





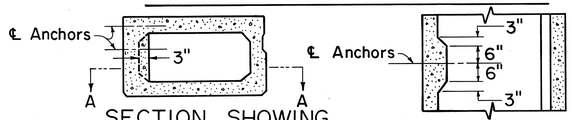
SECTION B-B

MICROFILMED
OCT 19 1992

NOTE:
Slots shall be provided in all guardrail posts, so that vertical adjustments may be made after placements to provide a straight-smooth guardrail line across the structure.

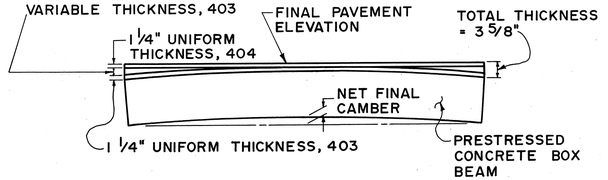
The keyway on the fascia of the exterior beams shall be omitted.

TRANSVERSE CROSS SECTION



SECTION SHOWING WALL THICKENING AT GUARDRAIL ANCHORS

SECTION A-A



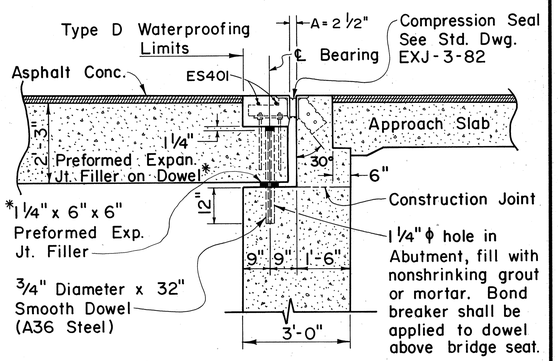
ASPHALT THICKNESS DIAGRAM

NOTE:
Calculated camber at time of paving, including allowance for camber growth due to creep, is 1 1/4". Calculated deflection due to weight of surface course and railing is 1/8". This is 1 1/8" in excess of the amount required to place the top of the beam parallel to profile grade. This excess amount shall be compensated for by thickening the 403 leveling course from 1 1/4" at center of spans to 2 3/8" at ends of spans.

Asphalt concrete surface course shall consist of a variable thickness of 403 and 1 1/4" thickness of 404. The 403 shall be placed in two operations. The first course shall be of 1 1/4" uniform thickness. The second course shall be feathered to place the surface parallel to and 1 1/4" below final pavement surface elevation.

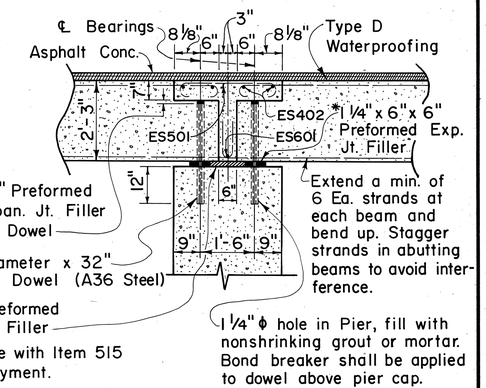
NON-SHRINKING MORTAR: Mortar or grout for keyways between prestressed concrete box beams, for tie rod recesses and for anchor dowel holes shall be a non-shrinking non-metallic mortar having a minimum compressive strength at 28 days of 5000 p.s.i. according to the Corps of Engineers Specification CRD-C621-83 when prepared to a moderate fluidity (124-145% flow table flow). The mortar or grout shall also meet all other requirements of Specification CRD-C621-83. The mortar shall be prepared, placed and cured in accordance with the manufacturer's recommendations, against surfaces as specified below.

PREPARATION OF CONCRETE SURFACES IN CONTACT WITH NON-SHRINKING MORTAR: The keyway surfaces shall be given a medium sandblast at the plant within four days before the beams leave the plant. Before mortaring, the keyways shall be thoroughly clean of all dirt, dust and other foreign matter. The keyway surfaces shall be wetted, but no free water shall be allowed to remain in the keyways.



BEARING AT ABUTMENT

SEE SHEET 4 OF 8 FOR PART PLAN AT ABUTMENT - DECK JOINT PROTRUSION

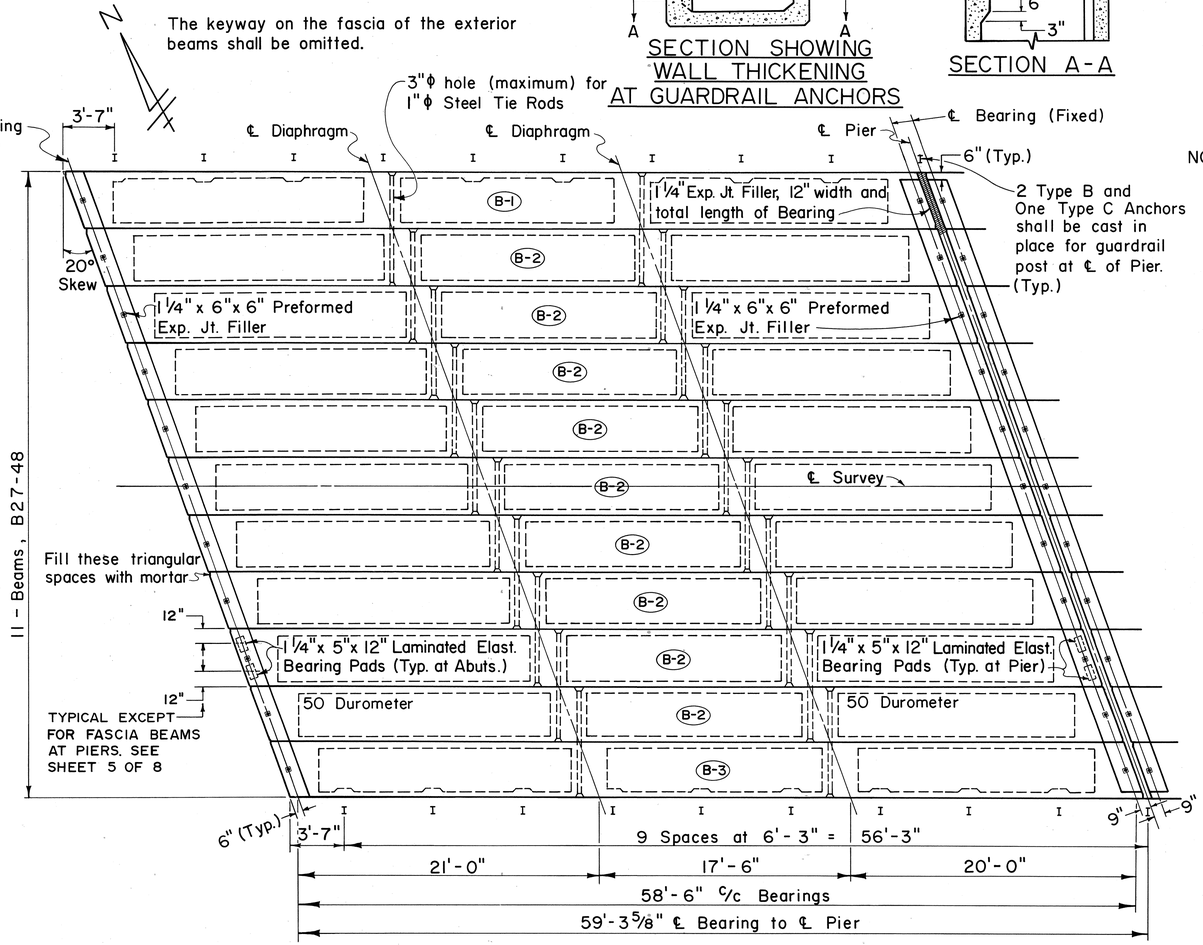


*-Include with Item 515 for payment.

BEARING AT PIER



Shear keys shall be mortared on a slope between the top edges of the adjacent beams where the vertical offset (within tolerance) occurs.



HALF PLAN

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS
LIMA, OHIO

6/8

SUPERSTRUCTURE DETAILS

BRIDGE NO. ALL-309-0696
OVER OTTAWA RIVER
ALLEN COUNTY

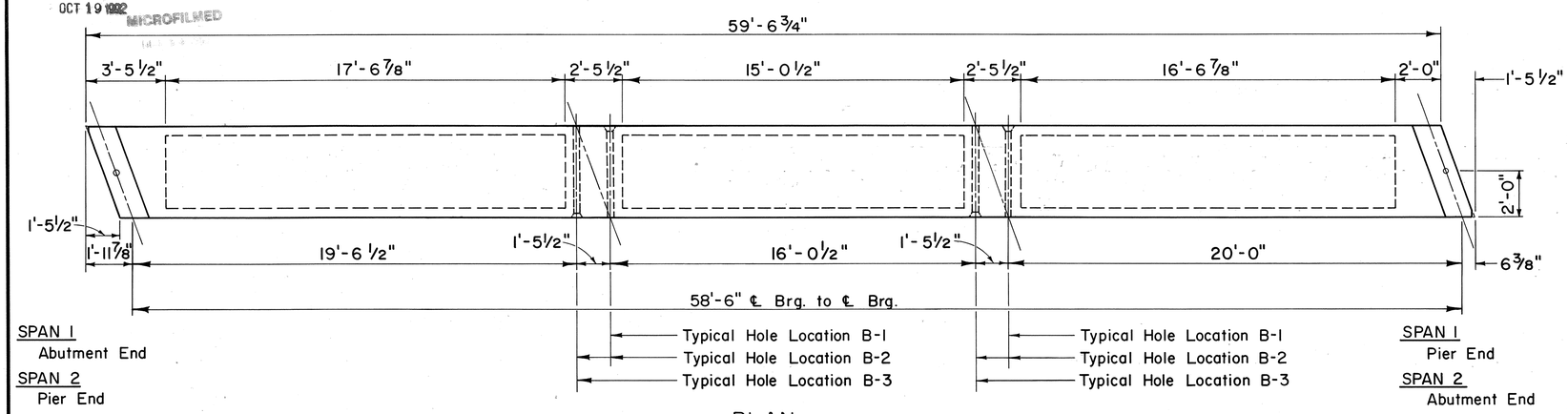
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P		T.H.H	J.R.M.	5-27-88	A.M.P

BRUNING 67357

MICROFILMED
OCT 19 1992
MICROFILMED

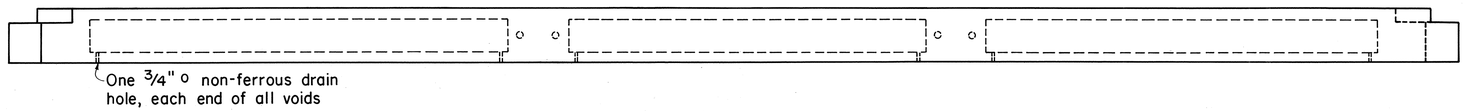
ALLEN COUNTY	OHIO
ALL-309-(3.02)(3.37)(6.95)	FHWA REGION 5
	FEDERAL PROJECT

49/57

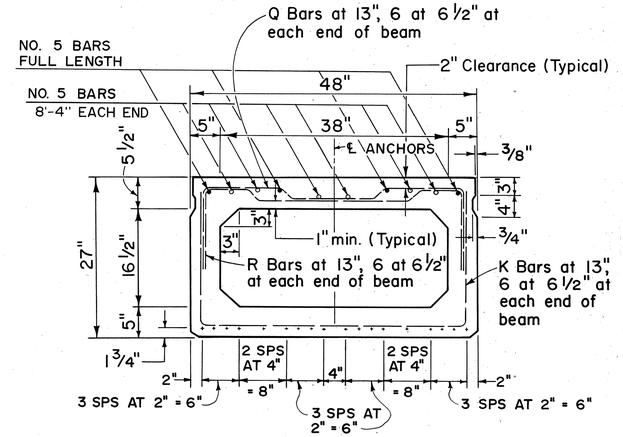


PLAN

Beams B-2 shown
Beams B-1 and B-3 are similiar (See sheet 6 of 8)



ELEVATION



18 Strands
+ Indicates Strand Locations

STRAND PATTERN DETAILS - B27-48

NOTES:

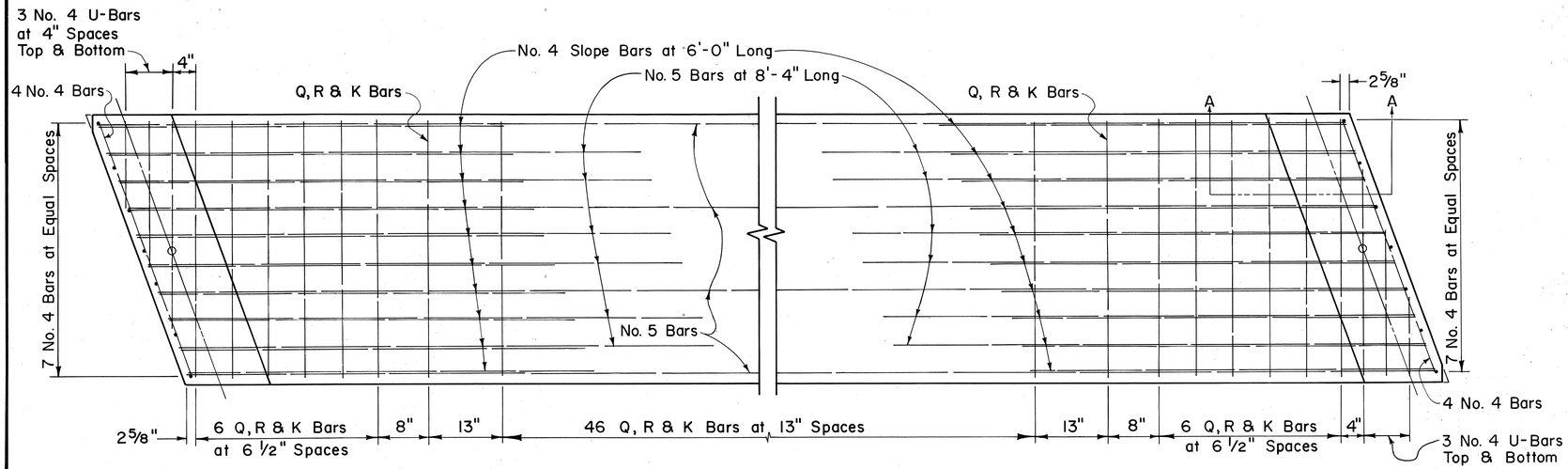
FASCIA BEAMS: To avoid interference with the anchors for the Bridge Railing Posts, the longitudinal reinforcing bars near the fascia shall be shifted as necessary. Fabricator's shop drawings shall show complete details of beam reinforcement.

For additional details see sheet 6 of 8 and standard drawing PSBD-1-81, sheets 1, 2, 3, and 4 of 4.

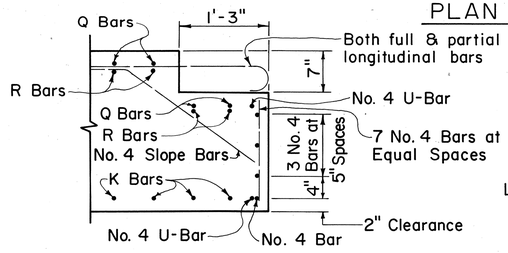
List of details to be used from standard drawing PSBD-1-81:

1. Beam lifting inserts
2. Anchor dowels
3. Details and reinforcement of beam ends
4. End details of transverse tie rod anchorage
5. Beam dimensional tolerance
6. Fascia beam with notch

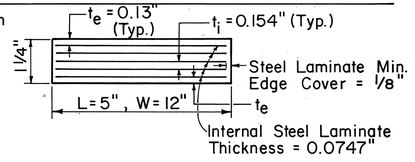
Fabricator may change the width of the beams on the bridge if there is some advantage in doing so. However, the bridge width must remain the same, bearings must be redesigned by a professional engineer and there will be no additional cost to the state. The revised plans must be submitted for approval by the Director.



PLAN SHOWING BEAM REINFORCEMENT



SECTION A-A



LAMINATED ELASTOMERIC EXPANSION BEARING
50 DUROMETER

Dead Load Reaction = 16.3 K
Live Load Reaction = 30.25 K
Maximum Design Load = 46.5 K

LAMINATED ELASTOMERIC BEARINGS

THE LAMINATED ELASTOMERIC BEARING MANUFACTURER SHALL PROOF LOAD EACH LAMINATED ELASTOMERIC BEARING WITH A COMPRESSIVE LOAD EQUAL TO 1.5 TIMES THE MAXIMUM DESIGN LOAD AS PER ARTICLE 25.7, BEARING TESTS AND ACCEPTANCE CRITERIA,. DIVISION II, CONSTRUCTION OF THE 1985 INTERIM SPECIFICATIONS FOR THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, THIRTEENTH EDITION, 1983. THE TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS. ACCEPTANCE OF THE BEARING SHALL BE ACCORDING TO LEVEL I ACCEPTANCE CRITERIA OF ARTICLE 25.7 AND 711.23 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE MANUFACTURER SHALL FURNISH CERTIFIED TEST DATA.

TOLERANCES:
INDIVIDUAL ELASTOMERIC LAYER THICKNESS: ±20% OF DESIGN VALUE (NOT TO EXCEED ±1/8")

PLAN DIMENSION -0, +1/4"
DESIGN THICKNESS -0, +1/8"
EDGE COVER OF EMBEDDED LAMINATES -0, +1/8"

BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS EITHER FIXED OR EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516, EACH, LAMINATED ELASTOMERIC BEARINGS (5" X 12" X 1 1/4").

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO

7/8

PRESTRESSED BEAM DETAILS
B27-48
BRIDGE NO. ALL-309-0696
OVER OTTAWA RIVER
ALLEN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P.		T.H.H	J.R.M.	5-27-88	A.M.P.

BRUNING 67357

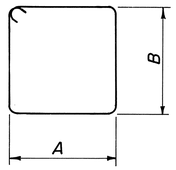
MICROFILMED
OCT 19 1992

REINFORCING STEEL LIST

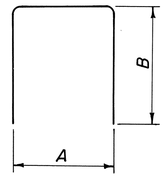
MARK	Nº	LENGTH	WEIGHT	SHAPE	A	B	C
FORWARD ABUTMENT							
A401	20	9'-0"	120	B1	2'-6 3/4"	1'-9"	
A501	49	11'-3"	575	B1	2'-8"	2'-8"	
A502	20	13'-7"	283	S			
A503	20	24'-1"	502	S			
A510	4	10'-9"	45	S			
A801	16	19'-7"	837	S			
D801	32	5'-2"	441	B3	2'-4"	1'-0"	
		TOTAL	2803				
EPOXY COATED BARS							
EA503	6	24'-1"	151	S			
EA504	4	12'-8"	53	B9	2'-10"	9'-10"	
EA505	8	9'-3"	77	S			
EA506	2	24'-0"	50	S			
EA507	32	16'-3"	542	B2	2'-8"	6'-11"	
EA511	6	8'-0"	50	S			
EA512	20	VARIES FROM 6'-1" TO 8'-11"	156	S			
EA514	8	5'-5"	45	S			
EA601	33	7'-0"	347	B2	1'-2"	3'-1"	
EA602	33	9'-6"	471	B2	0'-8"	4'-7"	
EA802	8	24'-7"	525	S			
		TOTAL	2467				
PIER							
P501	102	5'-6"	585	S			
P502	40	30'-0"	1252	S			
P503	10	21'-3"	222	S			
P504	30	16'-0"	501	S			
P505	96	20'-8"	2069	S			
P506	45	6'-3"	293	B2	2'-6"	2'-0"	
P507	30	7'-1"	222	B7	2'-6"	1'-7"	
P601	96	6'-7"	949	B8	1'-0"	5'-9"	
		TOTAL	6093				

MARK	Nº	LENGTH	WEIGHT	SHAPE	A	B	C
REAR ABUTMENT							
A401	20	9'-0"	120	B1	2'-6 3/4"	1'-9"	
A501	49	11'-3"	575	B1	2'-8"	2'-8"	
A502	20	13'-7"	283	S			
A503	20	24'-1"	502	S			
A510	4	10'-9"	45	S			
A801	16	19'-7"	837	S			
D802	32	5'-2"	441	B3	2'-4"	1'-0"	
		TOTAL	2803				
EPOXY COATED BARS							
EA503	6	24'-1"	151	S			
EA504	4	12'-8"	53	B9	2'-10"	9'-10"	
EA506	2	24'-0"	50	S			
EA508	8	10'-0"	83	S			
EA509	32	17'-9"	592	B2	2'-8"	7'-8"	
EA511	6	8'-0"	50	S			
EA513	20	VARIES FROM 6'-9" TO 9'-7"	170	S			
EA515	8	6'-1"	51	S			
EA601	33	7'-0"	347	B2	1'-2"	3'-1"	
EA602	33	9'-6"	471	B2	0'-8"	4'-7"	
EA802	8	24'-7"	525	S			
		TOTAL	2543				
SUPERSTRUCTURE EPOXY COATED BARS							
ES401	8	23'-11"	128	S			
ES402	8	23'-5"	125	S			
ES501	110	3'-6"	402	B4	2'-4"		
ES502	4	5'-1"	21	B5	0'-8"	2'-4"	2'-4"
ES503	4	3'-5"	14	B6	0'-8"	0'-6"	1'-9"
ES601	2	23'-9"	71	S			
		TOTAL	761				

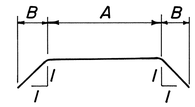
BENDING DIAGRAM



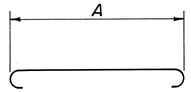
B1



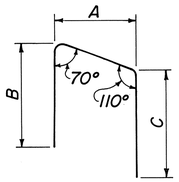
B2



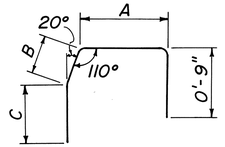
B3



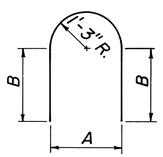
B4



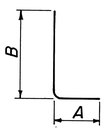
B5



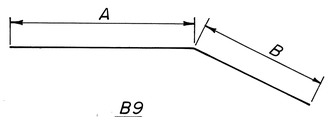
B6



B7



B8



B9

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

BAR MARKS with a prefix "E" shall be epoxy coated.

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS
LIMA, OHIO

8/8

REINFORCING STEEL LIST AND BENDING DIAGRAMS
Bridge ALL-309-0696
over Ottawa River
Allen County

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.B.	A.M.P.		T.H.H.	J.R.M.	5-27-88	A.M.P.

BRUNING 44132-57039

CENTERLINE SURVEY PLAT

ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO FHWA REGION 5
R/W ONLY	FEDERAL PROJECT

51/57

1/7

0 100 500 1000
SCALE IN FEET

N

N.W.Cor., S.W.1/4, Sec.34
RIDGE RD
S02°25'00"E, 582.20'
DEFIANCE TRAIL
120°42'00"
155
154+63.18

BEGIN PROJECT
Sta. 159+60
S.L.M.=3.02
F-43(30)

MARION TOWNSHIP
Sec. 34, T-2-S, R-5-E

Bridge No. ALL-309-0303
160
S61°43'00"E
165
℄ Survey
S.R.309 (ELIDA RD.)
175

RESUME PROJECT
Sta. 177+90
S.L.M.=3.37
BRF-43(30)

AUGLAIZE RIVER
Bridge No. ALL-309-0338
180
185

SUSPEND PROJECT
Sta. 160+05
S.L.M.=3.03
F-43(30)

SUSPEND PROJECT
Sta. 180+60
S.L.M.=3.42
BRF-43(30)

N.E.Cor., N.E.1/4, Sec.12
206.03'
N.W.Cor., N.W.1/4, Sec.7
2274.47'
S03°07'30"E
2068.44'
Sec.12, T-3-S, R-5-E
MARION TWP.
AMERICAN TWP.
Sec.7, T-3-S, R-6-E

AMERICAN TOWNSHIP
Sec.7, T-3-S, R-6-E

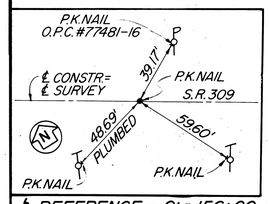
340+67.57
340
KEMP RD.
371.16'
S8°38'30"
S.E.Cor., N.E.1/4, Sec.12

RESUME PROJECT
Sta. 367+25
S.L.M.=6.95
BRF-43(30)

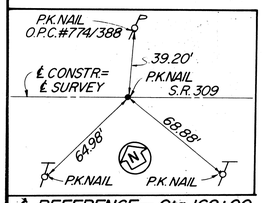
366+49.60
WAPAK RD.
37°02'30"
365
OTTAWA RIVER
Bridge No. ALL-309-0696
138°42'40"
370
S61°46'00"E
375
℄ Survey
S.R.309 (ELIDA RD.)
366+45.78
WAPAK RD.

END PROJECT
Sta. 369+25
S.L.M.=6.99
BRF-43(30)

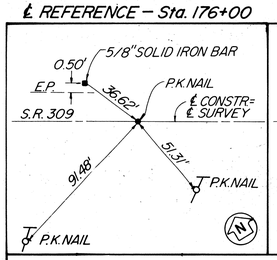
℄ REFERENCE — Sta. 156+00



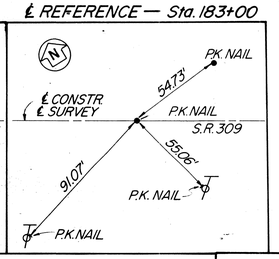
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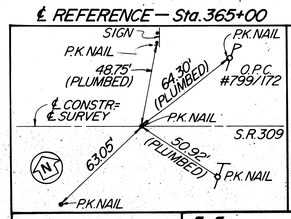
℄ REFERENCE — Sta. 176+00



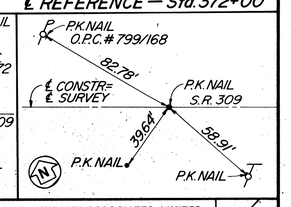
℄ REFERENCE — Sta. 183+00



℄ REFERENCE — Sta. 365+00



℄ REFERENCE — Sta. 372+00



I hereby certify that this plat is a true delineation of a survey for the Ohio Department of Transportation, District 1, Lima, Ohio by Kohli and Kaliher Associates, Limited, Lima, Ohio.

By _____
Surveyor No. 5017
Date 9/28/88

Received _____, 19____
Recorded _____, 19____
Book _____, Page _____

_____
County Recorder

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO

Rev.	Date	Description
		Date Completed _____

Seal

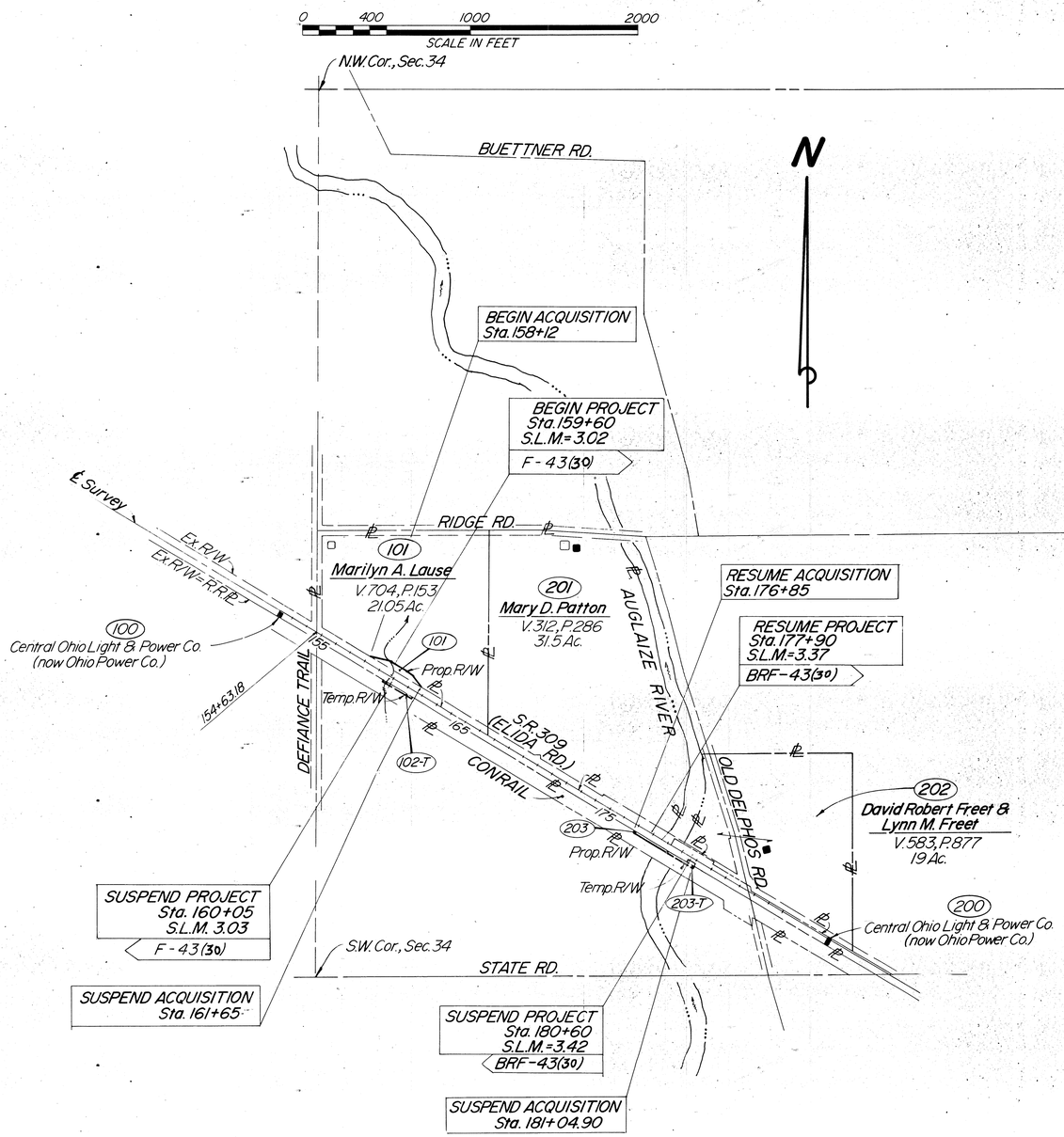
BRUNING S7357

CENTERLINE SURVEY PLAT

PROPERTY MAP

ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO FHWA REGION 5	52 57
	FEDERAL PROJECT	2 7

R/W ONLY



ALLEN COUNTY
American Township
Sec. 34, T3S-R6E

NOTE—The locations of the underground utilities shown in the plans are as obtained from the owners of the utility as required by Section 153.64 of the Ohio Revised Code.

POWER—OHIO POWER COMPANY
216 N. ELIZABETH ST.
LIMA, OHIO 45802
(419)-222-9010
ATT'N: JEFF MYERS

TELEPHONE—UNITED TELEPHONE COMPANY OF OHIO
122 S. ELIZABETH ST.
LIMA, OHIO 45801
(419)-228-1200
ATT'N: TOM WINEGARDNER

GAS—WEST OHIO GAS COMPANY
319 W. MARKET ST.
LIMA, OHIO 45801
(419)-227-5416
ATT'N- VERN SCHULTE

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO

Rev.	Date	Description
		Date Completed

PROPERTY MAP, ALL-309-3.02
ALL-309-3.37

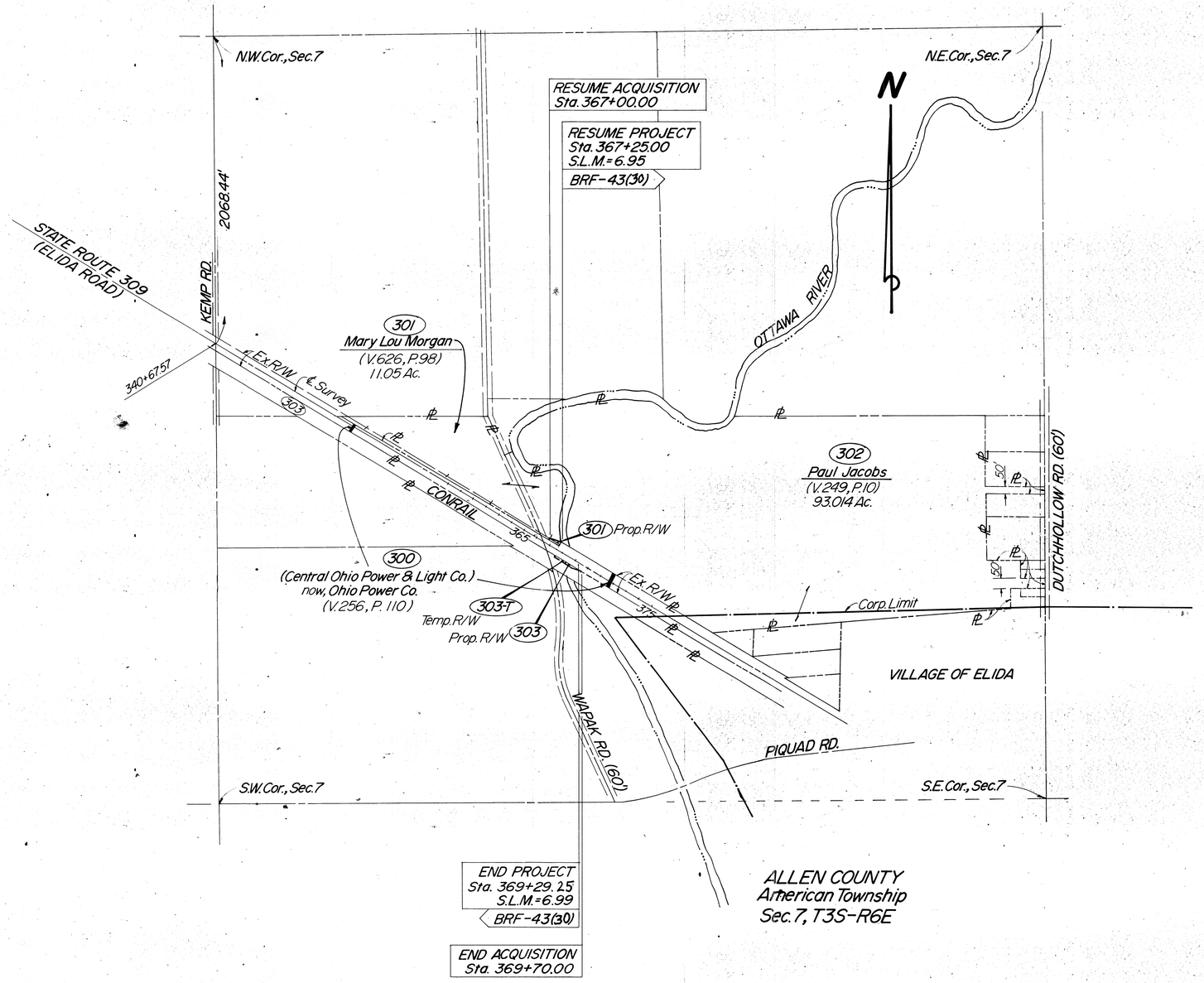
BRUNING 37357

PROPERTY MAP

0 400 1000 2000
SCALE IN FEET

ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO FHWA REGION 5 FEDERAL PROJECT
R/W ONLY	53/57 3/7

See Utility Notes, Sheet 2 of 7



KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO

Rev.	Date	Description
		Date Completed

BRUNING 57039

TOTAL NUMBER OF ___
3 OWNERSHIPS
0 TOTAL TAKES
0 OWNERSHIPS WITH STRUCTURES INVOLVED
0 OWNERSHIPS WITH "P" ITEMS

SUMMARY OF ADDITIONAL RIGHT OF WAY

DRAWN BY MGB DATE 6-2-88	ALLEN COUNTY ALL-309-(3.02)(3.37)(6.95)	OHIO	54
CHKD BY RLM DATE 6-15-88		FHWA REGION 5	57
FEDERAL PROJECT		STATE PROJECT 014830	4 / 7

PARCEL	OWNER	SHEET NO.	OWNERS RECORD BOOK	OWNERS RECORD PAGE	RECORD AREA (Acres)	TOTAL P.R.O. (Acres)	GROSS TAKE (Acres)	P.R.O. IN TAKE (Acres)	NET TAKE (Acres)	STRUCTURE (Acres)	NET RESIDUE LEFT (Acres)	NET RESIDUE RIGHT (Acres)	TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED BOOK	AS ACQUIRED PAGE
	ALL-309-3.02:															
100	CENTRAL OHIO LIGHT & POWER CO. (now Ohio Power Company)	2,5	256	110				NOT REQUIRED						Covered by (Easement for Highway Purposes to State of Ohio by Vol.230, Page 493)		
101	[1] MARILYN A. LAUSE	2,5	704	153	21.05	2.140	0.517	0.324	0.193	0	18.717	—	State			
102-T	[2] CONSOLIDATED RAIL CORPORATION [2]	2,5	608	297			0	0	(0.023)	0				Temporary Easement for Construction Purposes (Drainage and Grading)		
	ALL-309-3.37:															
200	CENTRAL OHIO LIGHT & POWER CO. (now Ohio Power Company)	2;6	256	110				NOT REQUIRED						(See Vol.230, P. 493)		
201	MARY D. PATTON	2,6	312	286	31.5			NOT REQUIRED						NOT REQUIRED		
202	DAVID ROBERT FREET & LYNN M. FREET	2,6	583	877	19			NOT REQUIRED						NOT REQUIRED		
203	CONSOLIDATED RAIL CORPORATION	2,6	608	297			0.028	0	0.028	0						
203-T	"	2,6	608	297			0	0	(0.021)	0				Temporary Easement for Construction Purposes (Grading)		
	ALL-309-6.95:															
300	CENTRAL OHIO LIGHT & POWER CO. (now Ohio Power Company)	3,7	256	110				NOT REQUIRED						(See Vol. 230, P. 493)		
301	[3] MARY LOU MORGAN	3;7	626	98	11.05	1.571	0.036	0.018	0.018	0	9.461	—				
302	PAUL JACOBS	3,7	249	10	93.014			NOT REQUIRED						NOT REQUIRED		
303	CONSOLIDATED RAIL CORPORATION	3,7	608	297			0.019	0	0.019	0						
303-T	"	3,7	608	297			0	0	(0.018)	0				Temporary Easement for Construction Purposes (Grading)		

REV.	DATE	DESCRIPTION

R/W SUMMARY SHEET

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

55/57

5/7

R/W ONLY

P.K. NAIL
O.P.C.#774/388

℄ CONSTR= ℄ SURVEY

S 39.20'

S.R. 309

P.K. NAIL

64.98'

68.88'

P.K. NAIL

P.K. NAIL

℄ REFERENCE — Sta. 162+00

P.K. NAIL
O.P.C.#774811-16

℄ CONSTR= ℄ SURVEY

39.11'

P.K. NAIL

S.R. 309

48.69' PLUMBED

59.60'

P.K. NAIL

P.K. NAIL

℄ REFERENCE — Sta. 156+00

BEGIN ACQUISITION
Sta. 158+12.00

BEGIN PROJECT
Sta. 159+60
S.L.M. 3.02
F-43(30)

SUSPEND PROJECT
Sta. 160+05
S.L.M.=3.03
F-43(30)

SUSPEND ACQUISITION
Sta. 161+65.00

Part of S.W. 1/4, Sec. 34, T-2-S, R-5-E, Marion Township

(101)
MARILYN A. LAUSE

Record Area	21.05 Ac.
Gross Take	0.517 Ac.
P.R.O. in Take	0.324 Ac.
Net Take	0.193 Ac.

159+50 75 Lt.

160+50 75 Lt.

161+00 68 Lt.

8"

12" E

S 61°43'00"E, 100.00'

S 53°44'49"E 50.49'

S 75°56'53"E, 142.37'

Prop. R/W

Work Limits

S 38°24'42"E, 70.77'

Prop. R/W

158+12.00 40 Lt.

161+65.00 40 Lt.

Ex. R/W

West Line, S.W. 1/4, Sec. 34

154+63.18

N 28°17'00"E, 40.00'

WL

8"

10" F

353.00'

8"

S 28°17'00"W, 40.00'

8"

Ex. R/W

40'

158+12

℄ Constr= ℄ R/W= ℄ Survey

159+50

12" S

161+65

348.82'

486.82'

158

159

160

161

162

S 61°43'00"E, 353.00'

STATE ROUTE 309

(101)

(100)

DEFIANCE TRAIL

S 28°17'00"W, 40.00'

+69.5

+82

+94.5

UGT

WL

6" GAS

8"

10" F

6" GAS

6" GAS

WL

RETIRED 4" GAS

Ex. R/W

RETIRED 4" GAS

UGT

S 61°43'00"E, 200.00'

8"

UGT

Ex. R/W

8" E

10" F

Work Limits

S 28°17'00"W, 5.00'

N 28°17'00"E, 5.00'

N 61°43'00"W, 200.00'

Temp. R/W

102-T

159+50 40 Rt.

159+50 45 Rt.

161+50 40 Rt.

161+50 45 Rt.

49.5'

(102)

8"

RR Sta. 14343+53'
Face East Abutment Bridge No. 271.09 (182)
1 Span Thru Floor

CONRAIL

(102)

CONSOLIDATED RAIL CORPORATION

Gross Take	0 Acres
P.R.O. in Take	0 Acres
Net Take	0 Acres
Temp. Take	0.023 Acres

N

(101)
LAUSE

(100)
CENTRAL OHIO LIGHT & POWER CO.
(now Ohio Power Co.)

CONRAIL

(102)

RR Sta. 14339+83'
M.P. 271

Station to Station Reference — 178+46.40 (1988) = 177+39.50 (1938)

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO

Rev.	Date	Description
		Date Completed

BRUNING 37357

STA. 158+00 TO STA. 162+00, RIGHT-OF-WAY PLANS, ALL-309-3.02

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

56
57

6
7

R/W ONLY

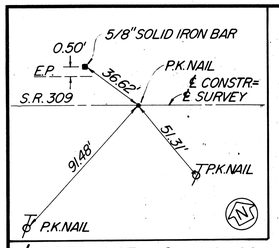
Part of S.W. 1/4, Sec. 34, T-2-S, R-5-E, Marion Township

N

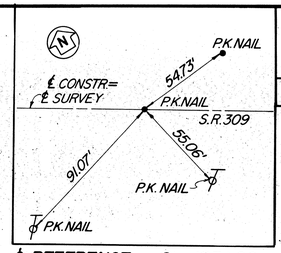
AUGLAIZE RIVER

RESUME PROJECT
Sta. 177+90
S.L.M.=3.37
BRF-43(30)

SUSPEND PROJECT
Sta. 180+60
S.L.M.=3.42
BRF-43(30)



℄ REFERENCE — Sta. 176+00



℄ REFERENCE — Sta. 183+00

(201) MARY D. PATTON

(202) DAVID ROBERT FREET & LYNN M. FREET

(200) CENTRAL OHIO POWER & LIGHT COMPANY (now Ohio Power Co.)

(203) CONSOLIDATED RAIL CORPORATION

Ex.R/W
W.L.
Work Limits
Temp. R/W
Prop. R/W
℄ Constr= ℄ R/W= ℄ Survey
STATE ROUTE 309
CONRAIL
CB
Retired 4" Gas
6" Gas UGT
10"F
12"F
15"F
8"
12"E
12"
10"
50'
40'
49.5'
33'

S61°43'00"E
S28°17'00"W, 40.00'
S61°43'00"E, 240.40'
N61°43'00"W, 240.40'
N28°17'00"E, 5.00'
S28°17'00"W, 40.00'
S61°43'00"E, 129.50'
N61°43'00"W, 179.50'
S28°17'00"W, 5.00'
S61°43'00"E, 50.00
S28°17'00"W, 5.00'

176+85 40'Rt. 176+85 45'Rt.
179+25.40 40'Rt. 179+25.40 45'Rt.
180+54.90 40'Rt.
181+04.90 40'Rt. 181+04.90 45'Rt.
182+92.30 43.5'Lt.
182+92.30 30'Lt.
+18.75
+31.25
+25.40
+54.90 23.5'Rt.
+04.90 23.5'Rt.

RESUME ACQUISITION
Sta. 176+85

SUSPEND ACQUISITION
Sta. 181+04.90

RRSta 14324+20'
SR 309 Sta 179+25.40

RRSta 14323+39'
Face East Abutment Bridge No. 270.72 (181)
2 Span Half Thru Girder

	Gross Take	P.R.O. in Take	Net Take	Temp. Take
	0.028 Ac.	0 Ac.	0.028 Ac.	0.021 Ac.

Station to Station Reference — 178+46.40 (1988) = 177+39.50 (1938)

KOHLI AND KALIHER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS — LIMA, OHIO

Rev.	Date	Description
		Date Completed

BRUNING 37357

STA. 176+00 TO STA. 182+00, RIGHT-OF-WAY PLANS, ALL-309-337

ALLEN COUNTY
ALL-309-(3.02)(3.37)(6.95)

OHIO
FHWA REGION 5
FEDERAL PROJECT

57/57

7/7

R/W ONLY

RESUME PROJECT
Sta. 367+25.00
S.L.M.=6.95
BRF-43(30)

RESUME ACQUISITION
Sta. 367+00.00

END PROJECT
Sta. 369+29.00
S.L.M.=6.99
BRF-43(30)

END ACQUISITION
Sta. 369+70.00

Part of S.W. 1/4, Sec. 7, T-3-S, R-6-E,
American Township

N

SIGN
P.K.NAIL
P.K.NAIL
48.75' (PLUMBED)
64.30' (PLUMBED)
O.P.C. #799/172
℄ CONST.= ℄ SURVEY
P.K.NAIL
S.R.309
63.05'
50.92' (PLUMBED)
P.K.NAIL
P.K.NAIL

℄ REFERENCE — Sta. 365+00.00

P.K.NAIL
O.P.C. #799/168
82.78'
℄ CONST.= ℄ SURVEY
P.K.NAIL
S.R. 309
39.64'
59.91'
P.K.NAIL

℄ REFERENCE — Sta. 372+00

301
MARY LOU MORGAN

Record Area	11.05 Ac.
Gross Take	0.036 Ac.
P.R.O. in Take	0.018 Ac.
Net Take	0.018 Ac.

302
PAUL JACOBS

WAPAK RD.

OTTAWA RIVER

Mean Low Water

Ex.R/W

Work Limits

℄ Constr.= ℄ Survey

R/W =

S62°06'00"E

S61°46'00"E

STATE ROUTE 309

S76°09'30"E, 80.47'

Prop.R/W

N61°46'00"W 77.94'

N62°06'00"W 77.94'

S28°14'00"W, 20.00'

N28°14'00"E, 10.45'

S28°14'00"W, 40.00'

N28°14'00"E, 10.00'

S61°46'00"E, 120.00'

N61°46'00"W, 80.00'

N61°46'00"W, 46.50'

N69°30'52"W, 74.18'

Prop.R/W

Temp.R/W

WL

367+77.94 60Lt.

367+00 40Lt.

367+77.94 40Lt.

367+77.94 30Lt.

366+49.60

366+45.78

366+72.99

367+60.49

367+39.01

367+76.51

368+01.51

368+85.49

368+50

367+70 40Rt.

367+70 50Rt.

368+50 50Rt.

368+96.50 50Rt.

369+70 40Rt.

142°57'30"

41°17'20"

10"

12"

18"

36"

6" GAS

RETIRED 4" GAS

CENTRAL OHIO LIGHT & POWER CO.
(now OhioPower Co.)

300

301

302

303

303-T

CONRAIL

CONSOLIDATED RAIL CORPORATION

Gross Take	0.019 Ac.
P.R.O. in Take	0 Ac.
Net Take	0.019 Ac.
Temp. Take	0.018 Ac.

To M.P. 267
R.R. Sta. 141+27+42.9

RR Sta. 141+33+96
Face East Abutment Bridge No. 11761267.13
Half thru Girder

30'
40'
60'
495'

Station to Station Reference — 367+77.94 (1988) = 205+60 (1936)
or 368+01.60 (1988) = 205+83.66 (1936)

KOHLI AND KALINER ASSOCIATES, LIMITED
CONSULTING ENGINEERS AND SURVEYORS LIMA, OHIO

Rev.	Date	Description
		Date Completed

BRUNING 37357

STA. 366+00 TO STA. 371+00, RIGHT-OF-WAY PLANS, ALL-309-6.95

ALL-309-(3.0Z)(3.37)(6.95)

1/9

ALLEN COUNTY	OHIO FHWA REGION
ALL-309-3.00	FEDERAL PROJECT

1/3

GENERAL INFORMATION

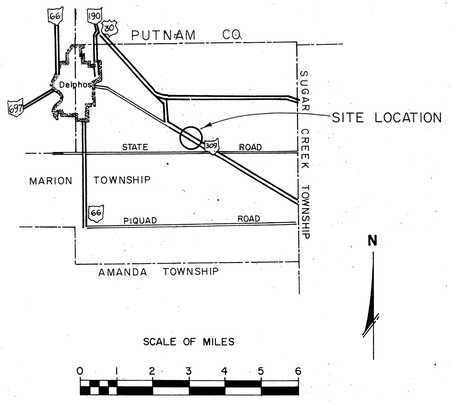
BORINGS ARE MADE BY MEANS OF A ROTARY TYPE DRILL RIG, EMPLOYING A 2-INCH O.D., 1-3/8 INCH I.D. SAMPLER, AT 2-1/2 AND/OR 5-FOOT DEPTH INTERVALS, DRIVEN BY MEANS OF A 140 POUND DROP HAMMER WITH A FREE FALL OF 30 INCHES. THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLER THE LAST 12 INCHES IS CONSIDERED THE STANDARD PENETRATION TEST.

THE BORING LOG SHEET SHOWS GRAPHIC PLOT OF THE INFORMATION OBTAINED, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, NUMBER OF BLOWS FOR THE STANDARD PENETRATION TESTS IN THREE 6-INCH INCREMENTS, FIELD SAMPLE NUMBER, AND SAMPLE DESCRIPTION BASED ON LABORATORY TESTS AND THE OHIO DEPARTMENT OF TRANSPORTATION CLASSIFICATION SYSTEM. RESULTS OF STRENGTH AND CONSOLIDATION TESTING, IF PERFORMED, APPEAR ON SEPARATE ENCLOSURES.

AT DEPTH WHERE MATERIALS ARE BOULDERY OR GRAVELLY TO THE EXTENT THAT THE SAMPLE CANNOT BE DRIVEN, A WASH SAMPLE IS PROCURED FOR VISUAL CLASSIFICATION TO DETERMINE THE GENERAL CHARACTER OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRANT LABORATORY TESTING.

NOTE--ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THE DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

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LEGEND

ROTARY BORING — PLAN

ROTARY BORING — PROFILE— PLOTTED TO VERTICAL SCALE ONLY
— INDICATES MOISTURE CONTENT IN PERCENT
X — INDICATES NUMBER OF BLOWS FOR THE FIRST SIX INCHES
Y — INDICATES NUMBER OF BLOWS FOR THE SECOND SIX INCHES
Z — INDICATES NUMBER OF BLOWS FOR THE THIRD SIX INCHES

w — INDICATES FREE WATER

MOISTURE CONTENT ≥ LL-3

MOISTURE CONTENT OF A NON-PLASTIC SOIL > 25

SOIL TYPES

	OHIO CLASS
GRAVEL AND/OR STONE FRAGMENTS	A-1-a
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b
FS — FINE SAND	A-3
COARSE AND FINE SAND	A-3a
GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, CLAY	A-2-6
GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4
SANDY SILT	A-4a
SILT	A-4b
ELASTIC SILT AND CLAY	A-5
SOD AND/OR TOPSOIL	VISUAL
BERM MATERIAL	VISUAL
CINDERS	VISUAL

	OHIO CLASS
SILT AND CLAY	A-6a
SILTY CLAY	A-6b
ELASTIC CLAY	A-7-5
CLAY	A-7-6
RANDOM FILL	VISUAL
WEATHERED SHALE	VISUAL
SHALE	VISUAL
SANDSTONE	VISUAL
LIMESTONE	VISUAL
DOLOMITE	VISUAL
SILTSTONE	VISUAL

PARTICLE SIZE DEFINITION

BOULDERS	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY
8"	3"	2mm NO.10	.42 mm NO.40	.074 mm NO.200	.005 mm	

RESOURCE INTERNATIONAL
281 ENTERPRISE DR.
COLUMBUS, OHIO 43081
(614) 885-1959

INTRODUCTION

THE PROJECT CONSISTS OF REPLACING AN EXISTING SINGLE SPAN BRIDGE ON STATE ROUTE 309 IN ALLEN COUNTY SOUTHEAST OF DELPHOS, OHIO. THE PROPOSED STRUCTURE AT MILEPOST 3.00 IS EXPECTED TO BE A SINGLE SPAN WITH REINFORCED CONCRETE ABUTMENTS.

GEOLOGY

SURFACE SOILS AT THE BRIDGE SITE CAN BE DESCRIBED AS GROUND MORAINES OF GLACIAL ORIGIN (PLEISTOCENE AGE) AND DEPOSITED BY THE ADVANCE OF THE ILLINOIAN AND WISCONSIN GLACIERS. BEDROCK, CHARACTERIZED AS A MONROE LIMESTONE OF SILURIAN AGE AND LOCALLY DOLOMITIZED THROUGHOUT ALLEN COUNTY, CONTAINS MINOR CALCITE AND A NEGLIGIBLE AMOUNT OF IMPURITIES.

EXPLORATION

TWO ENGINEERING TEST BORINGS, DESIGNATED AS TB-1 AND TB-2 WERE DRILLED AT THE STATIONS AND OFFSETS SHOWN ON THE BORING LOGS. THE TEST BORINGS WERE DRILLED WITH A TRUCK MOUNTED ROTARY DRILLING MACHINE UTILIZING CONTINUOUS FLIGHT AUGERS AND TRICONE ROLLER BIT TO ADVANCE THE HOLE. STANDARD PENETRATION TESTS WERE PERFORMED AT 2.5 AND 5-FOOT INTERVALS TO OBTAIN REPRESENTATIVE SOIL SAMPLES FOR VISUAL EXAMINATION AND LABORATORY TESTING. ALL SAMPLES SELECTED AS BEING REPRESENTATIVE OF THE SITE SOILS WERE TESTED FOR GRADATION AND ATTERBERG LIMITS. ROCK CORES WERE OBTAINED AND VISUALLY CLASSIFIED BY A GEOLOGIST.

INVESTIGATIONAL FINDINGS

THE TEST DATA INDICATES THAT THE ORIGINAL SOILS GENERALLY EXHIBITED VARIED SEQUENCE OF COHESIVE, GRANULAR SOILS WERE FOUND OVER THE BEDROCK IN BORING TB-2. THE COHESIVE SOIL IS OF THE A-4A TO A-4B, A-6A TO A-6B AND A-7-5 CATEGORY. THE GRANULAR SOIL BELONGS TO A-1-B AND A-2-6 CATEGORY. DOLOMITE BEDROCK WAS ENCOUNTERED AT DEPTHS OF APPROXIMATELY 15.0 AND 13.5 FEET. CLASSIFICATION IS ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION SYSTEM.

ALLEN COUNTY
ALL-309-3.00
STRUCTURE FOUNDATION INVESTIGATION

DATE: JUNE 87	DRAWN BY: J.K.H.	CHECKED BY:	REVISED:

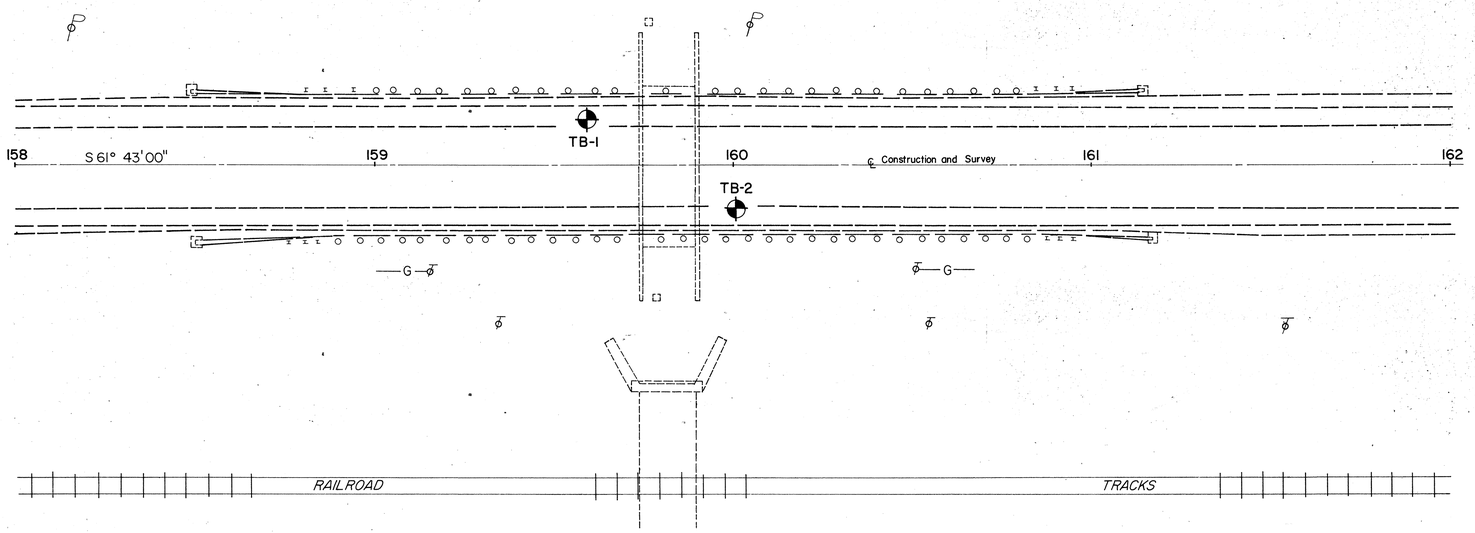
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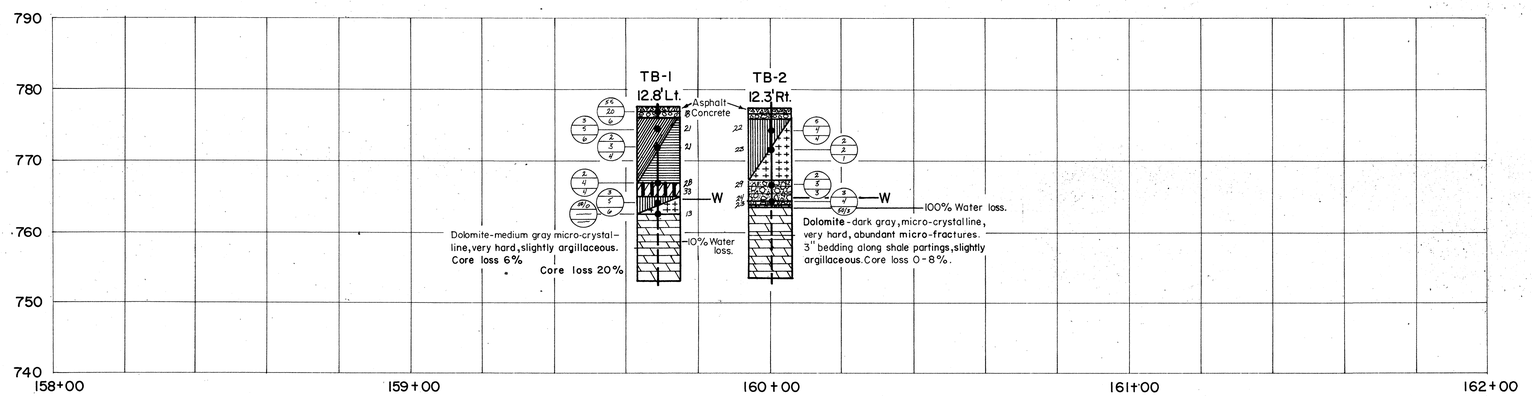
ALL-309-(3.02)(3.37)(6.95)

2/9

ALLEN COUNTY	OHIO FHWA REGION
ALL-309-3.00	FEDERAL PROJECT

2/3





N

SCALES:

HORIZ. 0 20 40 60 ft.

VERT. 0 10 20 30 ft.

RESOURCE INTERNATIONAL
281 ENTERPRISE DR.
COLUMBUS, OHIO 43081
(614) 885-1959

ALLEN COUNTY
ALL-309-3.00
STRUCTURE FOUNDATION INVESTIGATION

DATE: JUNE 87	DRAWN BY: J.K.H.	CHECKED BY:	REVISED:

ALL-309-(3.02)(3.37)(6.95)

3/9

3/3

ALLEN COUNTY	OHIO
ALL-309-3.00	F.H.W.A. REGION FEDERAL PROJECT

BORING LOG: TB-1
STATION AND OFFSET: 159 + 69 13Ft. Lt.
SURFACE ELEVATION: 777.4 Feet
WATER ENCOUNTERED: 13.0 Feet
DATE STARTED: 4-1-87
DATE FINISHED: 4-1-87
SAMPLER TYPE: 2S & RC

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS LL	ATT LIMITS PI	PHYSICAL CHARACTERISTIC % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
776.6					Asphalt concrete 0.8									
775.9					Gravel base 1.5									
	S-1	55 20 6												A-6a to A-6b
	S-2	3 5 6				21	37	17	-	-	-	-	-	
	S-3	2 3 4		5	Silty clay turning to clayey silt, some to little fine to coarse sand, trace fine gravel	21	-	-	9	14	15	40	23	A-6a to A-6b
					10.7									
766.7	S-4	2 4 4		10	Elastic clay, trace fine to coarse sand, fine gravel and organics 12.5	33	46	15	-	-	-	-	-	A-7-5
764.9	S-5	3 5 6			Mottled clayey silt, some to little fine to coarse sand, trace fine to coarse gravel	13	22	5	-	-	-	-	-	A-4a to A-4b
762.4	NR	50/0			Top of rock 15.0									
	CR-1		94	15	Dolomite, microcrystalline, very hard, bedding planes at 2" intervals along shale partings									
	CR-2		80	20										
752.7					24.7									
				25	Bottom of boring at 24.7 feet 10% water loss at 19.0 feet									
				30										
				35										
				40										
				45										
				50										
				55										
				60										
				65										
				70										
				75										
				80										
				85										

BORING LOG TB-2
STATION AND OFFSET: 160 + 01 12 Ft.Rt.
SURFACE ELEVATION: 777.3
WATER ENCOUNTERED: 12.8 Feet
DATE STARTED: 4-2-87
DATE FINISHED: 4-2-87
SAMPLER TYPE: 2S & RC

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS LL	ATT LIMITS PI	PHYSICAL CHARACTERISTIC % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
776.4					Asphalt concrete 0.9									
775.8					Gravel base 1.5									
	S-1	5 4 4												A-4a to A-4b
	S-2	2 2 1		5	Clayey silt, some fine to coarse sand, light to trace fine gravel	22	34	9	-	-	-	-	-	
767.3					10.0									
	S-3	2 3 3		10	Coarse to fine sand, some fine gravel, little clayey silt	29	38	11	28	43	14	-5-		A-2-6
764.3					13.0									
763.8	S-4	3 4 50/3			Fine to coarse sand and fine to coarse gravel 13.5 Top of rock									
	CR-1		92	15	Dolomite, micro to finely crystalline, very hard, 2" to 3" bedding along shale partings, abundant micro fractures									
	CR-2		100	20										
753.3					24.0									
				25	Bottom of boring at 24.0 feet 100% water loss at 14 feet									
				30										
				35										
				40										
				45										
				50										
				55										
				60										
				65										
				70										
				75										
				80										
				85										

BORING LOG:
STATION AND OFFSET:
SURFACE ELEVATION:
WATER ENCOUNTERED:
DATE STARTED:
DATE FINISHED:
SAMPLER TYPE:

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS LL	ATT LIMITS PI	PHYSICAL CHARACTERISTIC % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
				5										
				10										
				15										
				20										
				25										
				30										
				35										
				40										
				45										
				50										
				55										
				60										
				65										
				70										
				75										
				80										
				85										

RESOURCE INTERNATIONAL
281 ENTERPRISE DR.
COLUMBUS, OHIO 43081
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ALLEN COUNTY
ALL - 309 - 3.00
STRUCTURE FOUNDATION INVESTIGATION

DATE: JUNE 87	DRAWN BY: J.K.H.	CHECKED BY:	REVISED:

MICROFILMED
OCT 19 1992
MICROFILMED

GENERAL INFORMATION

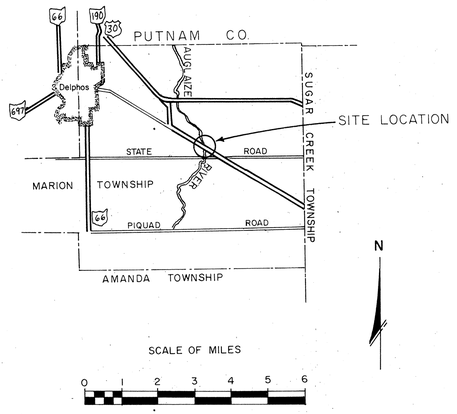
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THE BORING LOG SHEET SHOWS GRAPHIC PLOT OF THE INFORMATION OBTAINED, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, NUMBER OF BLOWS FOR THE STANDARD PENETRATION TESTS IN THREE 6-INCH INCREMENTS, FIELD SAMPLE NUMBER, AND SAMPLE DESCRIPTION BASED ON LABORATORY TESTS AND THE OHIO DEPARTMENT OF TRANSPORTATION CLASSIFICATION SYSTEM. RESULTS OF STRENGTH AND CONSOLIDATION TESTING, IF PERFORMED, APPEAR ON SEPARATE ENCLOSURES.

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LEGEND

ROTARY BORING — PLAN

ROTARY BORING — PROFILE— PLOTTED TO VERTICAL SCALE ONLY
\# — INDICATES MOISTURE CONTENT IN PERCENT
X — INDICATES NUMBER OF BLOWS FOR THE FIRST SIX INCHES
Y — INDICATES NUMBER OF BLOWS FOR THE SECOND SIX INCHES
Z — INDICATES NUMBER OF BLOWS FOR THE THIRD SIX INCHES

INDICATES FREE WATER

MOISTURE CONTENT ≥ LL-3

MOISTURE CONTENT OF A NON-PLASTIC SOIL > 25

SOIL TYPES

	OHIO CLASS
GRAVEL AND/OR STONE FRAGMENTS	A-1-a
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b
FINE SAND	A-3
COARSE AND FINE SAND	A-3a
GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, CLAY	A-2-6
GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4
SANDY SILT	A-4a
SILT	A-4b
ELASTIC SILT AND CLAY	A-5
SOD AND/OR TOPSOIL	VISUAL
BERM MATERIAL	VISUAL
CINDERS	VISUAL

	OHIO CLASS
SILT AND CLAY	A-6a
SILTY CLAY	A-6b
ELASTIC CLAY	A-7-5
CLAY	A-7-6
RANDOM FILL	VISUAL
WEATHERED SHALE	VISUAL
SHALE	VISUAL
SANDSTONE	VISUAL
LIMESTONE	VISUAL
DOLOMITE	VISUAL
SILTSTONE	VISUAL

PARTICLE SIZE DEFINITION

8"	3"	2 mm		.42 mm		.074 mm	.005 mm
BOULDERS	COBBLES	GRAVEL	COARSE	SAND	FINE	SAND	SILT	CLAY
			NO.10		NO.40		NO.200	

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ALL-309-(3.02)(3.37)(6.95)

4/9

ALLEN COUNTY	OHIO FHWA REGION
ALL-309-3.35	FEDERAL PROJECT

1/3

INTRODUCTION

THE PROJECT CONSISTS OF REPLACING AN EXISTING TWO SPAN BRIDGE ON STATE ROUTE 309 IN ALLEN COUNTY SOUTHEAST OF DELPHOS, OHIO. THE PROPOSED STRUCTURE AT MILEPOST 3.35 IS EXPECTED TO BE THREE SPANS WITH REINFORCED CONCRETE ABUTMENTS.

GEOLOGY

SURFACE SOILS AT THE BRIDGE SITE CAN BE DESCRIBED AS GROUND MORAINES OF GLACIAL ORIGIN (PLEISTOCENE AGE) AND DEPOSITED BY THE ADVANCE OF THE ILLINOIAN AND WISCONSIN GLACIERS. BEDROCK, CHARACTERIZED AS A MONROE LIMESTONE OF SILURIAN AGE AND LOCALLY DOLOMITIZED THROUGHOUT ALLEN COUNTY, CONTAINS MINOR CALCITE AND A NEGLIGIBLE AMOUNT OF IMPURITIES.

EXPLORATION

TWO ENGINEERING TEST BORINGS, DESIGNATED AS TB-3 AND TB-4 WERE DRILLED AT THE STATIONS AND OFFSETS SHOWN ON THE BORING LOGS. THE TEST BORINGS WERE DRILLED WITH A TRUCK MOUNTED ROTARY DRILLING MACHINE UTILIZING CONTINUOUS FLIGHT AUGERS AND TRICONE ROLLER BIT TO ADVANCE THE HOLE. STANDARD PENETRATION TESTS WERE PERFORMED AT 2.5 AND 5-FOOT INTERVALS TO OBTAIN REPRESENTATIVE SOIL SAMPLES FOR VISUAL EXAMINATION AND LABORATORY TESTING. ALL SOIL SAMPLES WERE TESTED FOR MOISTURE CONTENT AND SAMPLES SELECTED AS BEING REPRESENTATIVE OF THE SITE SOILS WERE TESTED FOR GRADATION AND/OR ATTERBERG LIMITS. ROCK CORES WERE OBTAINED AND VISUALLY CLASSIFIED BY A GEOLOGIST.

INVESTIGATIONAL FINDINGS

THE TEST DATA INDICATES THAT THE ORIGINAL SOILS EXHIBITED VARIED SEQUENCE OF COHESIVE AND GRANULAR SOILS. THE COHESIVE SOIL IS OF THE A-4a, A-6a AND A-6b CATEGORY. THE GRANULAR SOIL BELONGS TO A-2-4 AND A-2-6 CATEGORY. DOLOMITE BEDROCK WAS ENCOUNTERED AT DEPTHS OF APPROXIMATELY 17.5 AND 17.8 FEET. CLASSIFICATION IS ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION SYSTEM.

ALLEN COUNTY
ALL-309-3.35
STRUCTURE FOUNDATION INVESTIGATION

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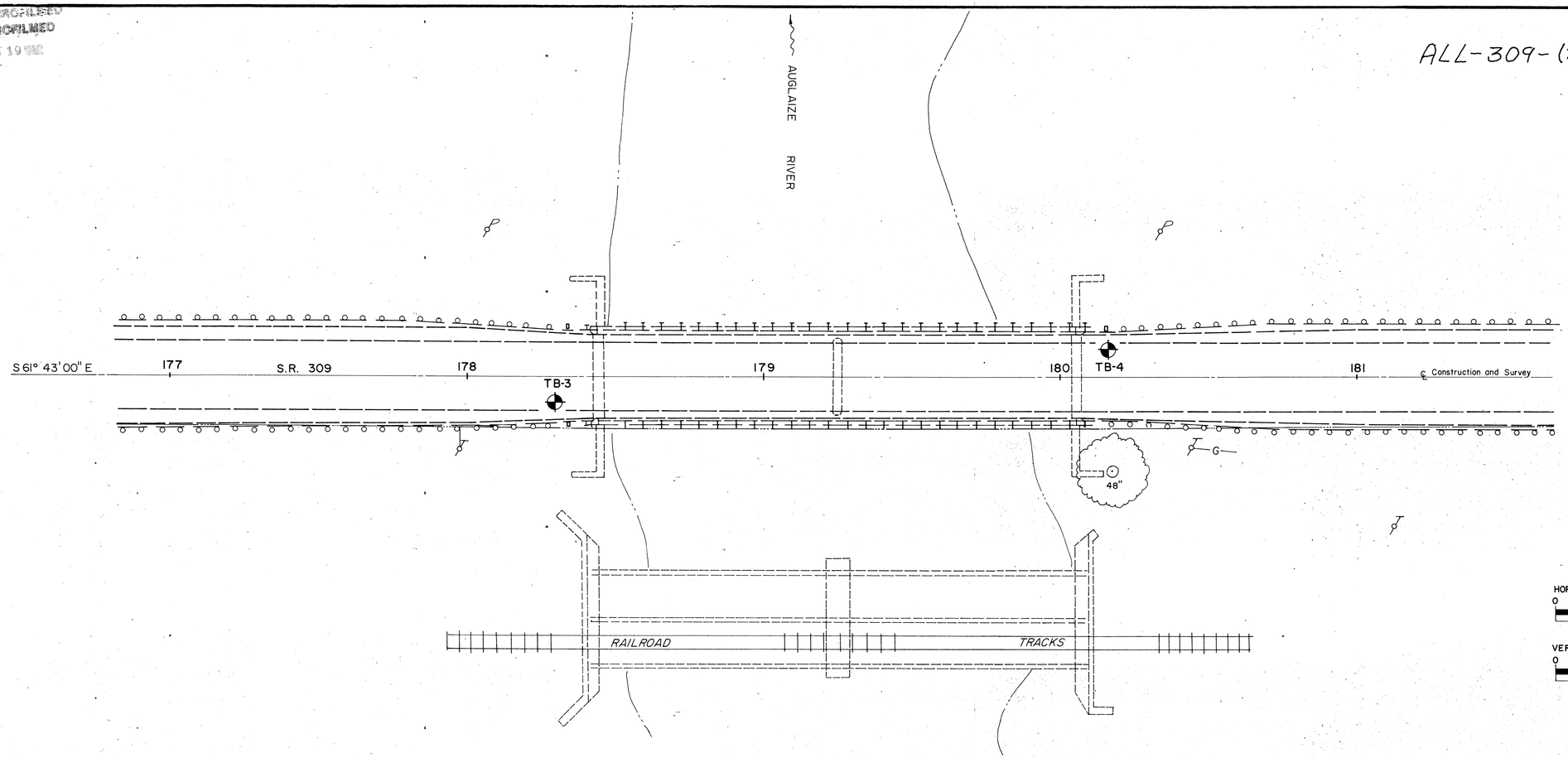
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ALLEN COUNTY	OHIO FHWA REGION
ALL-309-3.35	FEDERAL PROJECT

2/3

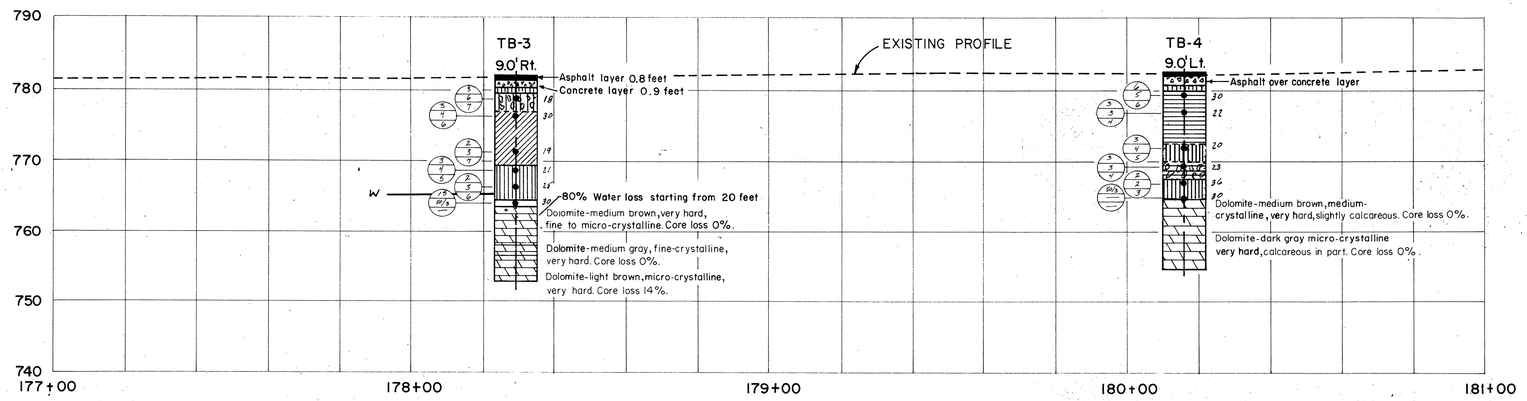


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ALLEN COUNTY
ALL-309-3.35
STRUCTURE FOUNDATION INVESTIGATION

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ALLEN COUNTY	OHIO
	FHWA REGION
ALL-309-3.35	FEDERAL PROJECT

3/3

BORING LOG: TB-3
STATION AND OFFSET: 178+30 9.0 Ft. Rt.
SURFACE ELEVATION: 782.0 Feet
WATER ENCOUNTERED: 16.5 Feet
DATE STARTED: 4-2-87
DATE FINISHED: 4-2-87
SAMPLER TYPE: 2S & RC

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS LL	ATT LIMITS PI	PHYSICAL CHARACTERISTIC % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
781.2					Asphalt 0.8									
780.3					Concrete 1.7									
779.5	S-1	3 6 7			Brown clayey silt, some fine to coarse sand and fine to coarse gravel 2.5	18	28	9	-	-	-	-	-	A-2-4
	S-2	3 4 6		5	Brown clayey silt, some fine to coarse gravel, some fine to coarse sand, rock fragments									
					Mottled brown and gray clayey silt and coarse to fine sand, trace fine gravel									
	S-3	2 3 7		10		19	34	11	4	19	18	33	26	A-6a (5)
769.5					12.5									
	S-4	3 4 5			Gray clayey silt, fine to coarse gravel and some fine to coarse sand, trace organics, rock fragments	21	28	10	-	-	-	-	-	A-2-4 to A-4a
	S-5	2 3 6		15		25	-	-	2	6	23	39	31	A-4a (7)
764.5					Top of Rock 17.5									
763.7	S-6	15 50/3			Weathered shale 18.3									
	CR-1		100%	20	Dolomite, medium brown changing to medium gray and light brown, very hard, 2" to 6" bedding, fine to micro crystalline, shale partings form bedding planes									
	CR-2		100%	25										
	CR-3		86%											
753.0				30	29.0									
					Bottom of boring at 29.0 feet									
					Water loss = 80% at 20 feet									
				35										
				40										
				45										
				50										
				55										
				60										
				65										
				70										
				75										
				80										
				85										

BORING LOG TB-4
STATION AND OFFSET: 180+16 9.0 Ft. Lt.
SURFACE ELEVATION: 782.4 Feet
WATER ENCOUNTERED: No water encountered before rock coring
DATE STARTED: 4-7-87
DATE FINISHED: 4-7-87
SAMPLER TYPE: 2S & RC

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS LL	ATT LIMITS PI	PHYSICAL CHARACTERISTIC % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
					Asphalt over concrete layer									
779.9	S-1	6 5 6			Brown clayey silt, some fine to coarse sand and fine to coarse gravel 2.5									
	S-2	3 3 4		5	Brown clayey silt, some coarse to fine sand, little fine gravel	22	37	17	14	20	14	33	19	A-6b (6)
	S-3	3 4 5		10	Brown clayey silt, some fine to coarse sand, little fine gravel, trace organics	20	32	10	14	11	17	35	22	A-4a (4)
	S-4	3 3 4			Mottled brown and gray clayey silt, fine to coarse gravel and fine to coarse sand, clayey seams 15.0	23	35	12	-	-	-	-	-	A-2-6
767.4	S-5	2 2 3		15	Gray clayey silt and fine to coarse sand, trace fine gravel, trace organics	36	-	-	6	36	11	28	19	A-4a (2)
764.6	S-6	50/3			Top of Rock 17.8									
	CR-1		100%	20	Dolomite - medium brown (18'-19') changing to dark gray (19'-28'), medium to micro crystalline, very hard, bedding planes at 2" intervals along shale partings									
754.4					28.0									
				30	Bottom of boring at 28.0 feet									
					Cave-in depth at 11.5 feet									
				35										
				40										
				45										
				50										
				55										
				60										
				65										
				70										
				75										
				80										
				85										

BORING LOG:
STATION AND OFFSET:
SURFACE ELEVATION:
WATER ENCOUNTERED:
DATE STARTED:
DATE FINISHED:
SAMPLER TYPE:

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS LL	ATT LIMITS PI	PHYSICAL CHARACTERISTIC % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
				5										
				10										
				15										
				20										
				25										
				30										
				35										
				40										
				45										
				50										
				55										
				60										
				65										
				70										
				75										
				80										
				85										

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ALLEN COUNTY
ALL-309-3.35
STRUCTURE FOUNDATION INVESTIGATION

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GENERAL INFORMATION

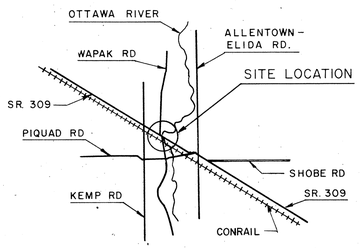
BORINGS ARE MADE BY MEANS OF A ROTARY TYPE DRILL RIG, EMPLOYING A 2-INCH O.D., 1-3/8 INCH I.D. SAMPLER, AT 2-1/2 AND/OR 5-FOOT DEPTH INTERVALS, DRIVEN BY MEANS OF A 140 POUND DROP HAMMER WITH A FREE FALL OF 30 INCHES. THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLER THE LAST 12 INCHES IS CONSIDERED THE STANDARD PENETRATION TEST.

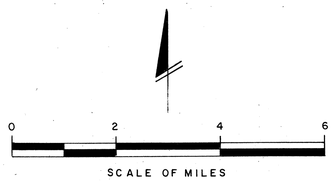
THE BORING LOG SHEET SHOWS GRAPHIC PLOT OF THE INFORMATION OBTAINED, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, NUMBER OF BLOWS FOR THE STANDARD PENETRATION TESTS IN THREE 6-INCH INCREMENTS, FIELD SAMPLE NUMBER, AND SAMPLE DESCRIPTION BASED ON LABORATORY TESTS AND THE OHIO DEPARTMENT OF TRANSPORTATION CLASSIFICATION SYSTEM. RESULTS OF STRENGTH AND CONSOLIDATION TESTING, IF PERFORMED, APPEAR ON SEPARATE ENCLOSURES.

AT DEPTH WHERE MATERIALS ARE BOULDERY OR GRAVELLY TO THE EXTENT THAT THE SAMPLE CANNOT BE DRIVEN, A WASH SAMPLE IS PROCURED FOR VISUAL CLASSIFICATION TO DETERMINE THE GENERAL CHARACTER OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRANT LABORATORY TESTING.

NOTE--ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THE DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE; THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

THE PURPOSE OF THIS SUBSURFACE INVESTIGATION IS TO DEVELOP SOILS INFORMATION FOR FOUNDATION DESIGN WHICH WILL LIMIT UNCERTAINTY AND ESTABLISH RISK POTENTIAL. THIS INVESTIGATION HAS BEEN PERFORMED SPECIFICALLY FOR FOUNDATION DESIGN PURPOSES AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION ESTIMATING OR BIDDING. INFORMATION SHOWN WAS OBTAINED FOR USE IN ESTABLISHING DESIGN CRITERIA FOR THE PROJECT. THE ACCURACY OF THE DATA PRESENTED IS NOT GUARANTEED BY THE STATE OF OHIO OR CONSULTANT AND IS NOT TO BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.





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LEGEND

ROTARY BORING — PLAN

ROTARY BORING — PROFILE — PLOTTED TO VERTICAL SCALE ONLY :
— INDICATES MOISTURE CONTENT IN PERCENT,
X — INDICATES NUMBER OF BLOWS FOR THE FIRST SIX INCHES,
Y — INDICATES NUMBER OF BLOWS FOR THE SECOND SIX INCHES,
Z — INDICATES NUMBER OF BLOWS FOR THE THIRD SIX INCHES

w — INDICATES FREE WATER

MOISTURE CONTENT ≥ LL-3

MOISTURE CONTENT OF A NON-PLASTIC SOIL > 25

SOIL TYPES

	OHIO CLASS
GRAVEL AND/OR STONE FRAGMENTS	A-1-a
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b
FINE SAND	A-3
COARSE AND FINE SAND	A-3a
GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, CLAY	A-2-6
GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4
SANDY SILT	A-4a
SILT	A-4b
ELASTIC SILT AND CLAY	A-5
SOD AND/OR TOPSOIL	VISUAL
BERM MATERIAL	VISUAL
CINDERS	VISUAL

	OHIO CLASS
SILT AND CLAY	A-6a
SILTY CLAY	A-6b
ELASTIC CLAY	A-7-5
CLAY	A-7-6
RANDOM FILL	VISUAL
WEATHERED SHALE	VISUAL
SHALE	VISUAL
SANDSTONE	VISUAL
WEATHERED LIMESTONE	VISUAL
DOLOMITE	VISUAL
SILTSTONE	VISUAL

PARTICLE SIZE DEFINITION

BOULDERS	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY
8"	3"	2 mm NO.10	.42 mm NO.40	.074 mm NO.200	.005 mm	

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7/9

ALLEN COUNTY	OHIO FHWA REGION
ALL. 309-6.93	FEDERAL PROJECT

1/3

INTRODUCTION

THE PROJECT CONSISTS OF REPLACING AN EXISTING SINGLE SPAN BRIDGE ON STATE ROUTE 309 IN ALLEN COUNTY TO THE NORTHWEST OF ELIDA, OHIO. THE PROPOSED STRUCTURE AT MILEPOST 6.93 IS EXPECTED TO BE A SINGLE SPAN WITH REINFORCED CONCRETE ABUTMENTS.

GEOLOGY

SURFACE SOILS AT THE BRIDGE SITE CAN BE DESCRIBED AS GROUND MORAINE OF PLEISTOCENE AGE DEPOSITED BY THE ADVANCE OF THE ILLINOIAN AND WISCONSIN GLACIERS. BEDROCK, CHARACTERIZED AS MONROE LIMESTONE OF SILURIAN AGE AND LOCALLY DOLOMITIZED THROUGHOUT ALLEN COUNTY, CONTAINS MINOR CALCITE AND A NEGLIGIBLE AMOUNT OF IMPURITIES.

EXPLORATION

TWO ENGINEERING TEST BORINGS, DESIGNATED TB-5 AND TB-6 WERE DRILLED AT THE STATIONS AND OFFSETS SHOWN ON THE BORING LOGS. THE TEST BORINGS WERE DRILLED WITH A TRUCK MOUNTED ROTARY DRILLING MACHINE UTILIZING CONTINUOUS FLIGHT AUGERS AND TRICONE ROLLER BIT TO ADVANCE THE HOLE. STANDARD PENETRATION TESTS WERE PERFORMED AT 2.5 AND 5-FOOT INTERVALS TO OBTAIN REPRESENTATIVE SOIL SAMPLES FOR VISUAL EXAMINATION AND LABORATORY TESTING. ALL SOIL SAMPLES OBTAINED WERE TESTED FOR MOISTURE CONTENT; SAMPLES SELECTED AS BEING REPRESENTATIVE OF THE SITE SOILS WERE TESTED FOR GRADATION AND/OR ATTERBERG LIMITS. ROCK CORES WERE OBTAINED AND VISUALLY CLASSIFIED BY A GEOLOGIST.

INVESTIGATIONAL FINDINGS

THE TEST DATA INDICATES THAT THE ORIGINAL SOILS EXHIBITED A VARIED SEQUENCE OF COHESIVE AND GRANULAR SOILS. THE COHESIVE SOIL IS OF THE A-4A, A-4B AND A-6A CATEGORY. THE GRANULAR SOIL BELONGS TO A-1-B AND A-2-4 TO A-2-7 CATEGORIES. DOLOMITE BEDROCK WAS ENCOUNTERED AT DEPTHS OF APPROXIMATELY 22.9 AND 23.4 FEET. CLASSIFICATION IS ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION SYSTEM.

ALLEN COUNTY
ALL. 309-6.93
STRUCTURE FOUNDATION INVESTIGATION

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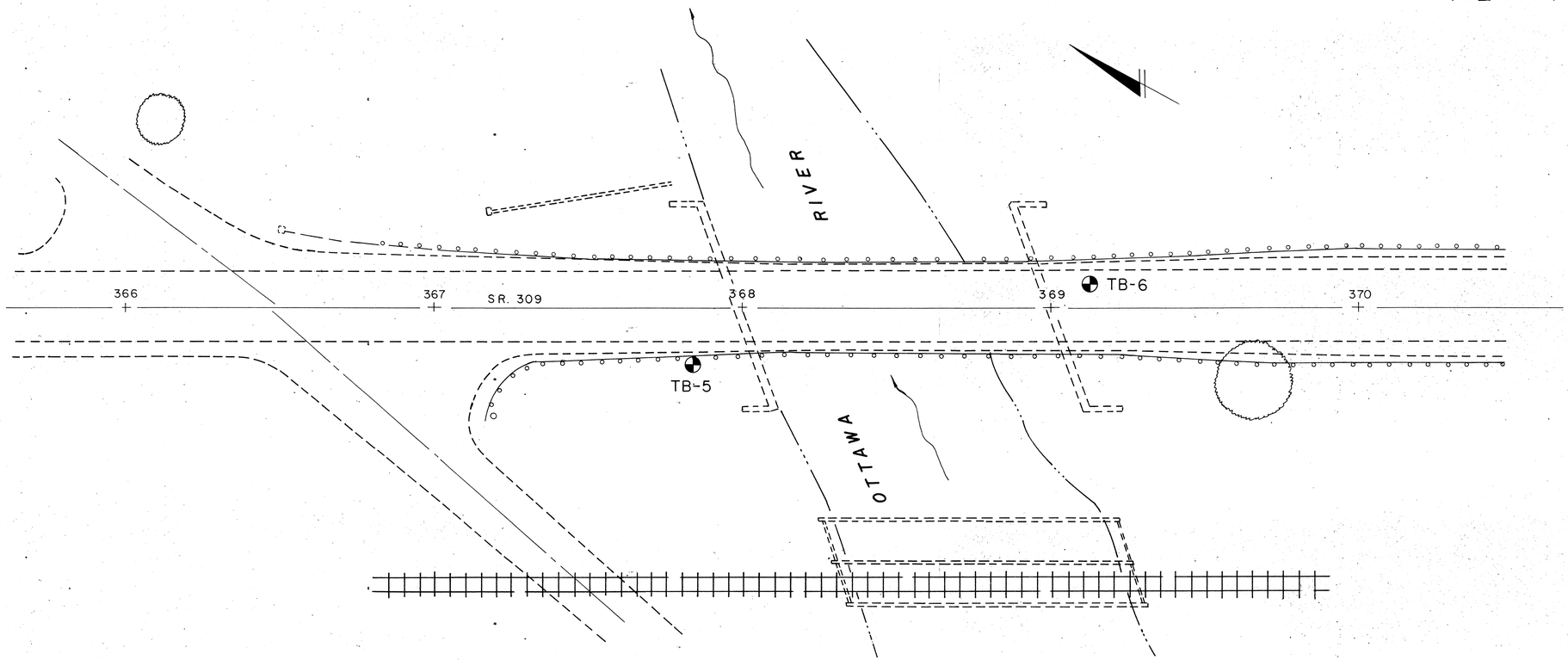
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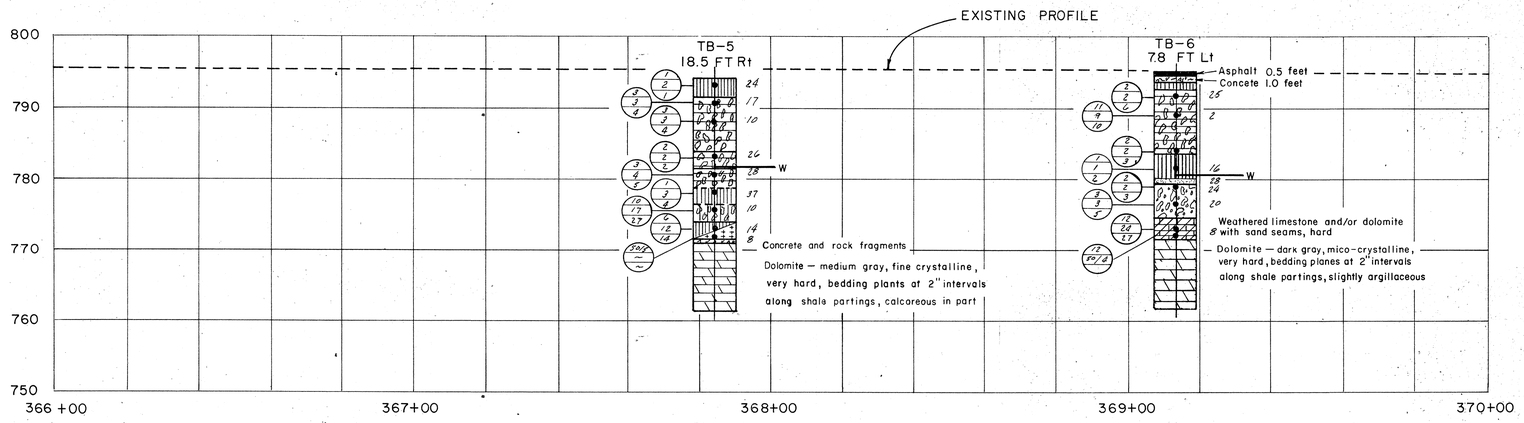
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ALLEN COUNTY	OHIO FHWA REGION
ALL 309-6.93	FEDERAL PROJECT

2/3





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ALLEN COUNTY	OHIO FHWA REGION
ALL. 309 – 6.93	FEDERAL PROJECT

3/3

BORING LOG: TB-5
STATION AND OFFSET: 367+84 18.5 Ft. Rt.
SURFACE ELEVATION: 794.2 Feet
WATER ENCOUNTERED: 12.3 Feet
DATE STARTED: 4-6-87
DATE FINISHED: 4-6-87
SAMPLER TYPE: 2S & RC

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS LL	ATT LIMITS PI	PHYSICAL CHARACTERISTIC % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
	S-1	1 2 1			Brown clayey silt, some fine to coarse sand, little fine to coarse gravel, organics 2.5									
791.7	S-2	3 3 4				17	35	11	–	–	–	–	–	A-2-6
	S-3	3 3 4		5	Brown fine to coarse gravel and rock fragments, some fine to coarse sand and clayey silt 10.0									
784.2	S-4	2 2 2		10	Brown fine to coarse gravel and rock fragments, some fine to coarse sand and clayey silt 12.5	26	34	13	–	–	–	–	–	A-2-6
781.7	S-5	3 4 5			Brown fine to coarse gravel, some fine to coarse sand and clayey silt, trace organics 15.0	28	43	20	–	–	–	–	–	A-2-7
779.2	S-6	1 3 4		15	Mottled brown and gray clayey silt, some fine to coarse sand, trace fine gravel	37	32	7	5	5	25	42	23	A-4a (6)
	S-7	10 17 27			Mottled brown and gray fine to coarse sand, some clayey silt, little fine gravel 20.0	10	NP	NP	18	21	27	23	12	A-2-4
774.2	S-8	6 12 14		20	Mottled brown and gray silt, some coarse to fine sand, little fine gravel, trace clay 22.5	14	–	–	18	22	9	42	10	A-4a (3)
771.7	S-9	50/5			Gravel and rock fragments 22.9									
				25	↖Top of Rock									
	CR-1		100%	30	Dolomite-medium gray, fine crystalline, very hard, bedding planes at 2" intervals along shale partings, calcareous in part 32.9									
761.3				35	Bottom of boring at 32.9 feet									
				40										
				45										
				50										
				55										
				60										
				65										
				70										
				75										
				80										
				85										

BORING LOG TB-6
STATION AND OFFSET: 369+13 7.8 Ft. Lt.
SURFACE ELEVATION: 795.0 Feet
WATER ENCOUNTERED: 14.5 Feet
DATE STARTED: 4-8-87
DATE FINISHED: 4-8-87
SAMPLER TYPE: 2S & RC

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS LL	ATT LIMITS PI	PHYSICAL CHARACTERISTIC % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
794.5					Asphalt 0.5									
793.5					Concrete 1.5									
792.5	S-1	2 2 6			Brown clayey silt, some fine to coarse sand and fine to coarse gravel 2.5									
	S-2	11 9 10		5	Brown fine to coarse gravel and rock fragments, some fine to coarse sand and clayey silt, cobbles 11.5									
783.5	NR	2 2 3		10	Brown clayey silt, some fine to coarse sand, little coarse to fine gravel, fine to coarse sand seams 15.0	16	25	14	18	9	25	25	23	A-6a (4)
	S-3	1 1 2			Fine sand 15.8	28	NP	NP	–	–	–	–	–	A-3
780.0						24	–	–	1	68	23	-8-		A-1-b
779.2	S-4	2 2 3		15	Gray changing to brown coarse to fine sand, little to trace fine clayey silt, trace fine gravel 20.5	20	–	–	3	49	34	-13-		A-1-b
	S-5	3 3 5												
774.5	S-6	12 24 27		20	Weathered limestone and/or dolomite with sand seams									
771.6	S-7	12 50/4			↖Top of Rock 23.4									
				25										
	CR-1		100%	30	Dolomite-dark gray, micro crystalline, very hard, bedding planes at 2" intervals along shale partings, slightly argillaceous 33.5									
761.5				35	Bottom of boring at 33.5 feet 10% water loss starting from 26 feet									
				40										
				45										
				50										
				55										
				60										
				65										
				70										
				75										
				80										
				85										

BORING LOG:
STATION AND OFFSET:
SURFACE ELEVATION:
WATER ENCOUNTERED:
DATE STARTED:
DATE FINISHED:
SAMPLER TYPE:

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS LL	ATT LIMITS PI	PHYSICAL CHARACTERISTIC % AGG	% CS	% FS	% SI	% CL	ODOT CLASS
				5										
				10										
				15										
				20										
				25										
				30										
				35										
				40										
				45										
				50										
				55										
				60										
				65										
				70										
				75										
				80										
				85										

RI 62 ALL-309-6.93

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ALLEN COUNTY
ALL. 309-6.93
STRUCTURE FOUNDATION INVESTIGATION

DATE: 7-87	DRAWN BY: K.R.	CHECKED BY: AVJ	REVISED:

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