STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

ASD-250-(7.42)(7.57) BRF-47(16)

CLEAR CREEK TOWNSHIP
ASHLAND COUNTY

DESIGN DESIGNATION

CURRENT (1989) A.D.T.	=	4410
DESIGN YEAR (2009) A.D.T.	=	6620
D.H.V.	=	662
D DIRECTIONAL DISTRIBUTION	=	55%
T PERCENT B & C TRUCKS	=	10%
V DESIGN SPEED	=	55 m.p.h. *
LEGAL SPEED	=	55 m.p.h.
FUNCTIONAL CLASSIFICATION	=	RURAL ARTERIAL

* FOR DESIGN EXCEPTION, SEE SHEET 2

CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line or
Fence Line (existing) —X—X— (proposed) —X—X—
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)
Waterline — W — W.V. Gasline — G — G.V.
Telephone — T —

INDEX OF SHEETS

LINE DATA

	PROJECT		WORK	
ASD-250-7.42				
BEGIN	STA. 390+98.42		STA. 389+00	
SUSPEND	STA. 391+81.58		STA. 393+50	
LENGTH	83.16	LIN.FT.	450.00	LIN.FT.
	OR 0.016	MILES	OR 0.085	MILES
ASD-250-7.57				
RESUME	STA. 398+59.83		STA. 396+50	
END	STA. 399+39.17		STA. 400+75	
LENGTH	79.34	LIN.FT.	425.00	LIN.FT.
	OR 0.015	MILES	OR 0.080	MILES
TOTAL PROJECT				
TOTAL LENGTH	162.50	LIN.FT.	875.00	LIN.FT.
	OR 0.031	MILES	OR 0.166	MILES

UNDERGROUND UTILITIES
2 WORKING DAYS
BEFORE YOU DIG
CALL..800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

PLAN PREPARED BY:
R.E.WARNER & ASSOCIATES
WESTLAKE, OHIO
ROADWAY AND
STRUCTURE PLANS

STATE OF OHIO — JASBIR SINGH KALOURIA E-43733 — REGISTERED PROFESSIONAL ENGINEER

Project ASD-250-(7.42)(7.57)
Date of Letting ______ 198 Contract No. ______

LOCATION MAP
SCALE IN MILES
0 1 2 3 4

Portion to be improved
State & Federal Routes
Other Roads

SCALES

Plan 0 50 100'
Profile Horizontal 0 50 100' 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

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS						
BP-5	10-1-87	AS-1-81	11-27-81			
GR-1	1-11-85	DBR-2-73	4-10-73			
GR-2B	2-5-82	PSBD-1-81	9-18-81			
GR-3	1-21-85	LA-1	6-1-79			
GR-4A	1-30-84					
		MC-11	8-1-78			
GR-4	2-5-82	MC-4	7-26-76			
		MT-99.10	11-14-86			
		TC-42.20	3-26-79			

1989 SPECIFICATIONS

The Standard Specifications of the State of Ohio Department of Transportation, including changes and supplemental specification 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 ______ [signature]
Date 5-8-89 District Deputy Director of Transportation

Approved B.D. [signature]
Date 7/28/89 Engineer, Bureau of Bridges and Structural Design

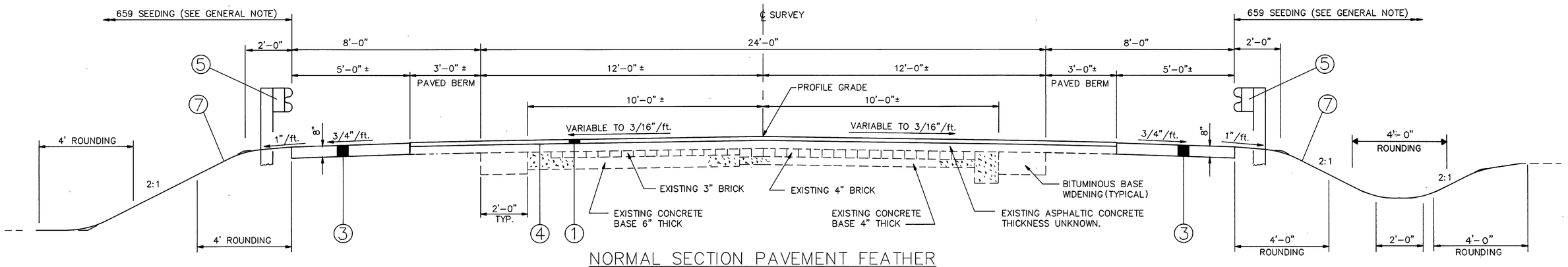
Approved [signature]
Date 8/31/89 Chief Engineer, Planning and Design

Approved [signature]
Date 8/31/89 Director, Department of Transportation

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED

DIVISION ADMINISTRATOR DATE

TYPICAL SECTIONS
TYPE 404

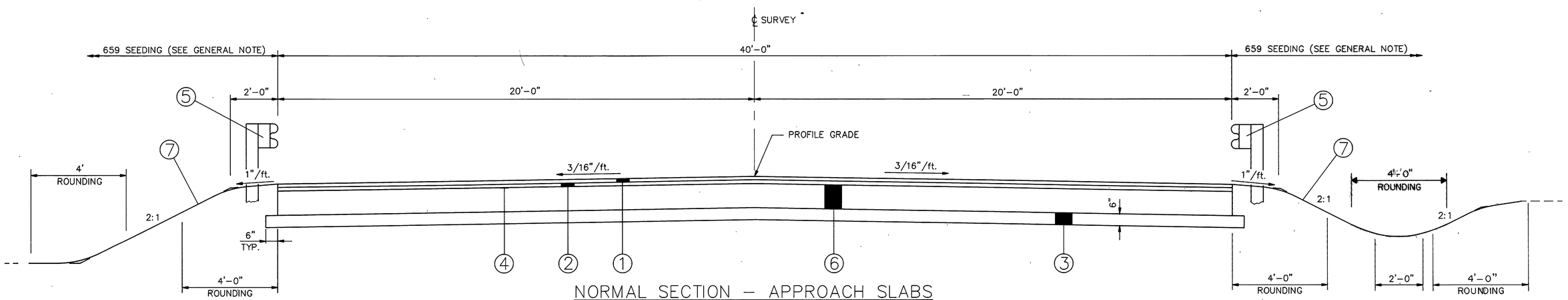


NORMAL SECTION PAVEMENT FEATHER

STATION	390+78.42	TO	390+98.42	=	20.00 LIN. FT.
STATION	391+81.58	TO	392+01.58	=	20.00 LIN. FT.
STATION	398+30.00	TO	398+59.83	=	29.83 LIN. FT.
STATION	399+39.17	TO	399+69.00	=	29.83 LIN. FT.
			TOTAL	=	99.66 LIN. FT.

LEGEND

1. ITEM 404 – 1-1/4" Asphalt Concrete, AC-20
2. ITEM 403 – Variable Thickness Asphalt Conc., AC-20 (1-1/4" Min.)
3. ITEM 304 – Aggregate Base, As Per Plan, Thickness As Shown
4. ITEM 407 – Tack Coat, (See General Note)
5. ITEM 606 – Guardrail, Type 5
6. ITEM 611 – Reinforced Concrete Approach Slab (T=12")
7. ITEM 659 – Seeding and Mulching (See General Note)



NORMAL SECTION – APPROACH SLABS

STATION	390+98.42	TO	391+13.42	=	15.00 LIN. FT.
STATION	391+66.58	TO	391+81.58	=	15.00 LIN. FT.
STATION	398+59.83	TO	398+74.83	=	15.00 LIN. FT.
STATION	399+24.17	TO	399+39.17	=	15.00 LIN. FT.
			TOTAL	=	60.00 LIN. FT.

DESIGN EXCEPTION

BRIDGE WIDTH REQUIRED	44'-0"
BRIDGE WIDTH PROVIDED	40'-0"

BRIDGE LIMITS

STA. 391+13.42 TO 391+66.58 = 53.16 LIN. FT. (ASD-250-0743)
STA. 398+74.83 TO 399+24.17 = 49.34 LIN. FT. (ASD-250-0758)

GENERAL NOTES

FIELD OFFICE:

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 300 SQ.FT. OF FLOOR SPACE. PAYMENT SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 619, FIELD OFFICE. ONLY ONE FIELD OFFICE IS REQUIRED FOR THIS PROJECT

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS:

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

CONTINGENCY QUANTITIES:

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

ELEVATION DATUM:

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

LOCATION OF GUARDRAIL:

THE LOCATION 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.

ITEM 407 – TACK COAT:

THE RATE OF APPLICATION OF 407 TACK COAT SHALL BE SUBJECT TO THE REQUIREMENTS OF 407.05. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.10 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

SUBGRADE COMPACTION:

IN LIEU OF THE REQUIREMENTS OF 203.13 (a) FOR COMPACTION OF THE SUBGRADE UNDER NEW APPROACH SLABS, THE SUBGRADE SHALL BE COMPACTED TO A DEPTH OF 6" AND THE COST OF SAME SHALL BE INCLUDED IN THE UNIT PRICE BID FOR 203 EXCAVATION.

EROSION CONTROL:

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

SEEDING:

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN TEN (10) FEET OUTSIDE THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS, OR TO THE RIGHT-OF-WAY IF SUCH LINE IS LESS THAN TEN (10) FEET FROM THE WORK LIMITS.

ITEM 304 – AGGREGATE BASE, AS PER PLAN:

EXCLUDE ALL SLAG EXCEPT GRANULATED OR CRUSHED AIR COOLED BLAST FURNACE SLAG.

DUST CONTROL:

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED IN THE GENERAL SUMMARY TO BE USED FOR DUST CONTROL AS DIRECTED BY THE ENGINEER:

ITEM 616 ~ WATER = 20 M-GAL.

UNDERGROUND UTILITIES:

THE LOCATION 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.

UTILITY OWNERSHIP:

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

TELEPHONE: GTE TELEPHONE OPERATIONS - NORTH AREA
117 NORTH SANDUSKY ST.
BELLEVUE, OHIO 44811
(419) 483-8158

WATER: BAILEY LAKES WATER
c/o MARK RINGLER
1318 LAKE DRIVE
SAVANNAH, OHIO 44874
(419) 962-4725

GAS: COLUMBIA GAS OF OHIO, INC.
1120 WEST 4TH ST.
MANSFIELD, OHIO 44901
(419) 529-4911

POWER: OHIO POWER COMPANY
301 CLEVELAND AVE SW
P.O. BOX 400
CANTON, OHIO 44701
(216) 438-7040

REMOVAL OF TREES OR 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	No. STUMPS	TOTAL
18"	0	0	0
30"	0	0	0
48"	0	0	0
60"	0	0	0

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.

ITEM 614 – MAINTAINING TRAFFIC

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 135 CONSECUTIVE CALENDER DAYS, THROUGH TRAFFIC WILL BE DETOURED AS SHOWN AT RIGHT. ONLY ONE BRIDGE MAY BE CLOSED TO TRAFFIC AT A TIME IN ORDER TO MAINTAIN LOCAL TRAFFIC BETWEEN THE BRIDGES

THE CONTRACTOR SHALL NOTIFY THE DISTRICT TRAFFIC ENGINEER IN WRITING A MINIMUM OF SEVEN (7) DAYS IN ADVANCE OF THE DATE THE DETOUR IS NEEDED. THE STATE OF OHIO WILL INSTALL, MAINTAIN AND SUBSEQUENTLY REMOVE THE DETOUR SIGNING.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING THE GATES AND BARRICADES AT THE APPROXIMATE WORK LIMITS OF THE PROJECT. SEE SHEET NO. 27

THE 135 CONSECUTIVE CALENDER DAYS SHALL BE CONSIDERED AS AN INTERIM COMPLETION DATE (SECTION 108) AND FOR EACH CALENDER DAY BEYOND THE 135 CONSECUTIVE CALENDER DAYS THAT THE ROADWAY REMAINS CLOSED TO TRAFFIC, THE CONTRACTOR WILL BE ASSESSED LIQUIDATED DAMAGES AS PER 108.07 OF C. & M. SPECIFICATIONS.

THE DETOUR SHALL NOT BE PLACED INTO EFFECT PRIOR TO APRIL 1, 1990 UNLESS OTHERWISE APPROVED BY THE DIRECTOR.

WATERING PERMANENT SEEDED AREAS:

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH OF THE PERMANENT SEEDED AREAS AS PER 659.09
ITEM 659 ~ WATER = 4 M-GAL.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL:

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER, FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
ITEM 207 ~ STRAW OR HAY BALES = 50 EACH

TEMPORARY PAVEMENT MARKINGS:

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

614 – TEMPORARY CENTERLINE, CLASS II = .05 MI.
SEE MT 99.10 FOR REQUIREMENTS

THIS ITEM MAY BE NON-PERFORMED IF THE 621 PAVEMENT MARKINGS ARE IN PLACE PRIOR TO OPENING THE ROAD TO TRAFFIC.

FARM DRAINS

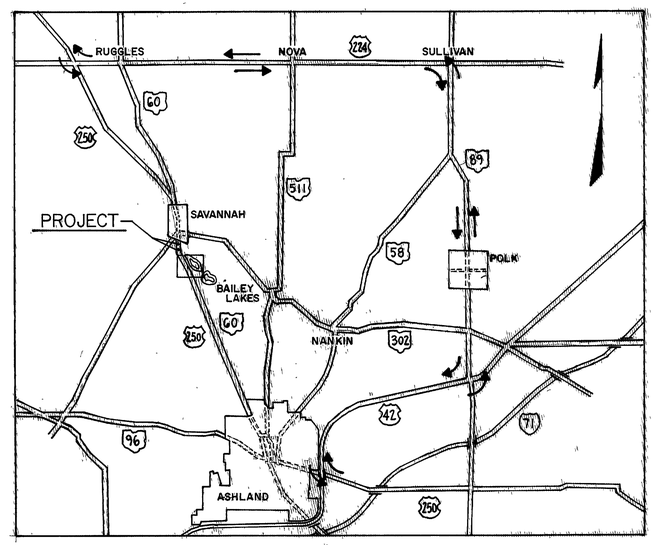
ALL FARM DRAINS, WHICH ARE ENCOUNTERED DURING CONSTRUCTION, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS UNDER THE DIRECTION OF THE ENGINEER.

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 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.

ITEM 603 6"CONDUIT, TYPE F = 100 LIN.FT.



DETOUR - GENERAL NOTES

GENERAL SUMMARY

ASD-250-7.42 SHEET NUMBER					ASD-250-7.57 SHEET NUMBER					ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
3		5		8	3		10		14					
														ROADWAY
LUMP					LUMP					201		LUMP		CLEARING AND GRUBBING
		116					130			202		246	SQ. YD.	PAVEMENT REMOVED
		133					199			202		332	SQ. YD.	WEARING COURSE REMOVED
							36			*202*		*36*	*LIN. FT.*	*PIPE REMOVED, 24" AND UNDER*
		323					**152**			203		*475*	CU. YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
		174					248			203		*422*	CU. YD.	EMBANKMENT
		262.5					300			606		562.5	LIN. FT.	GUARDRAIL, TYPE 5
		3					4			606		7	EACH	ANCHOR ASSEMBLY, TYPE A
		4					4			606		8	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE B
		1								606		1	EACH	ANCHOR ASSEMBLY, TYPE T
10					10					616		20	M-GAL	WATER
														EROSION CONTROL
25					25					207		50	EACH	STRAW OR HAY BALES
				84						601		84	CU. YD.	ROCK CHANNEL PROTECTION, TYPE B WITH **FABRIC FILTER**
									54	601		54	CU. YD.	ROCK CHANNEL PROTECTION, TYPE D WITH **FABRIC FILTER**
		2048				**1957**				659		**4005**	SQ. YD.	SEEDING AND MULCHING
				.18					.18	659		0.36	TON	COMMERCIAL FERTILIZER
2					2					659		4	M-GAL	WATER
														DRAINAGE
50					50					603		100	LIN. FT.	6" CONDUIT, TYPE F
							48			603		*48*	LIN. FT.	12" CONDUIT, TYPE F
														TRAFFIC CONTROL
.02					.03					614		0.05	MILE	TEMPORARY CENTERLINES, CLASS II
				.05					.05	621		0.10	MILE	EDGE LINES
				.02					.03	621		0.05	MILE	CENTER LINES
		7					**8**			**802**		**15**	**EACH**	**BARRIER REFLECTORS, TYPE A**
														PAVEMENT
		33					38			304		71	CU. YD.	AGGREGATE BASE, AS PER PLAN
		7					7			403		14	CU. YD.	ASPHALT CONCRETE, AC-20
		9					12			404		21	CU. YD.	ASPHALT CONCRETE, AC-20
		27					33			407		60	GAL.	TACK COAT
		133					133			611		266	SQ. YD.	REINFORCED CONCRETE APPROACH SLAB (T=12")
														FOR STRUCTURES OVER 20 FEET
														ASD-250- 0743 See Sheet 17
														ASD-250- 0758 See Sheet 23
										624		LUMP		MOBILIZATION
LUMP					LUMP					619		LUMP		FIELD OFFICE
										623		LUMP		CONSTRUCTION LAYOUT STAKES
LUMP					LUMP					614		LUMP		MAINTAINING TRAFFIC

QUANTITY CALCULATIONS

ASD-250-7.42

ITEM 611 REINFORCED CONCRETE APPROACH SLAB

$40' \times 15' \div 9 = 66.7$ S.Y. EACH

ITEM 404 ASPHALT CONCRETE

APPROACH SLABS: $40' \times 15' \times \frac{1.25''}{12} \div 27 = 2.3$ C.Y. EACH

FEATHERING: $30' \times 20' \times \frac{1.25''}{12} \div 27 = 2.3$ C.Y. EACH

ITEM 403 ASPHALT CONCRETE

APPROACH SLABS: $\frac{1.25'' + 2.75''}{2 \times 12} \times 40' \times 15' \div 27 = 3.7$ C.Y. EACH

ITEM 407 TACK COAT

APPROACH SLABS: $40' \times 15' = 600 \div 9 \times .10 = 6.7$ GAL. EACH

FEATHERING: $30' \times 20' = 600 \div 9 \times .10 = 6.7$ GAL. EACH

ITEM 304 AGGREGATE BASE

BERM: $5' \times 20' \times 2 \times \frac{8''}{12} \div 27 = 5$ C.Y. EACH FEATHER

APPROACH SLAB: $15' \times 41' \times \frac{6''}{12} \div 27 = 11.5$ C.Y. EACH

ITEM 202 WEARING COURSE REMOVED

$30' \times 20' \div 9 = 66.7$ S.Y. EACH FEATHER

ITEM 202 PAVEMENT REMOVED

END OF EXISTING APPROACH SLAB STA. 391+24.86

BEGINNING OF NEW APPROACH SLAB STA. 390+98.42

26.44 FT. x 20÷9 = 58.8 S.Y.

END OF NEW APPROACH SLAB STA. 391+81.58

BEGINNING OF EXISTING APPROACH SLAB STA. 391+55.86

25.72 FT. x 20÷9 = 57.2 S.Y.

NOTE:

QUANTITIES CARRIED TO SHEET NO. 5

ASD-250-7.57

ITEM 611 REINFORCED CONCRETE APPROACH SLAB

$40' \times 15' \div 9 = 66.7$ S.Y. EACH

ITEM 404 ASPHALT CONCRETE

APPROACH SLABS: $40' \times 15' \times \frac{1.25''}{12} \div 27 = 2.3$ C.Y. EACH

FEATHERING: $30' \times 29.83' \times \frac{1.25''}{12} \div 27 = 3.5$ C.Y. EACH

ITEM 403 ASPHALT CONCRETE

APPROACH SLABS: $\frac{1.25'' + 2.50''}{2 \times 12} \times 40' \times 15' \div 27 = 3.5$ C.Y. EACH

ITEM 407 TACK COAT

APPROACH SLABS: $40' \times 15' = 600 \div 9 \times .10 = 6.7$ GAL. EACH

FEATHERING: $30' \times 29.83' = 895 \div 9 \times .10 = 9.9$ GAL. EACH

ITEM 304 AGGREGATE BASE

BERM: $5' \times 29.83' \times 2 \times \frac{8''}{12} \div 27 = 7.4$ C.Y. EACH FEATHER

APPROACH SLAB: $15' \times 41' \times \frac{6''}{12} \div 27 = 11.5$ C.Y. EACH

ITEM 202 WEARING COURSE REMOVED

$30' \times 29.83' \div 9 = 99.4$ S.Y. EACH FEATHER

ITEM 202 PAVEMENT REMOVED

END OF EXISTING APPROACH SLAB STA. 398+88.73

BEGINNING OF NEW APPROACH SLAB STA. 398+59.83

28.90 FT. x 20÷9 = 64.2 S.Y.

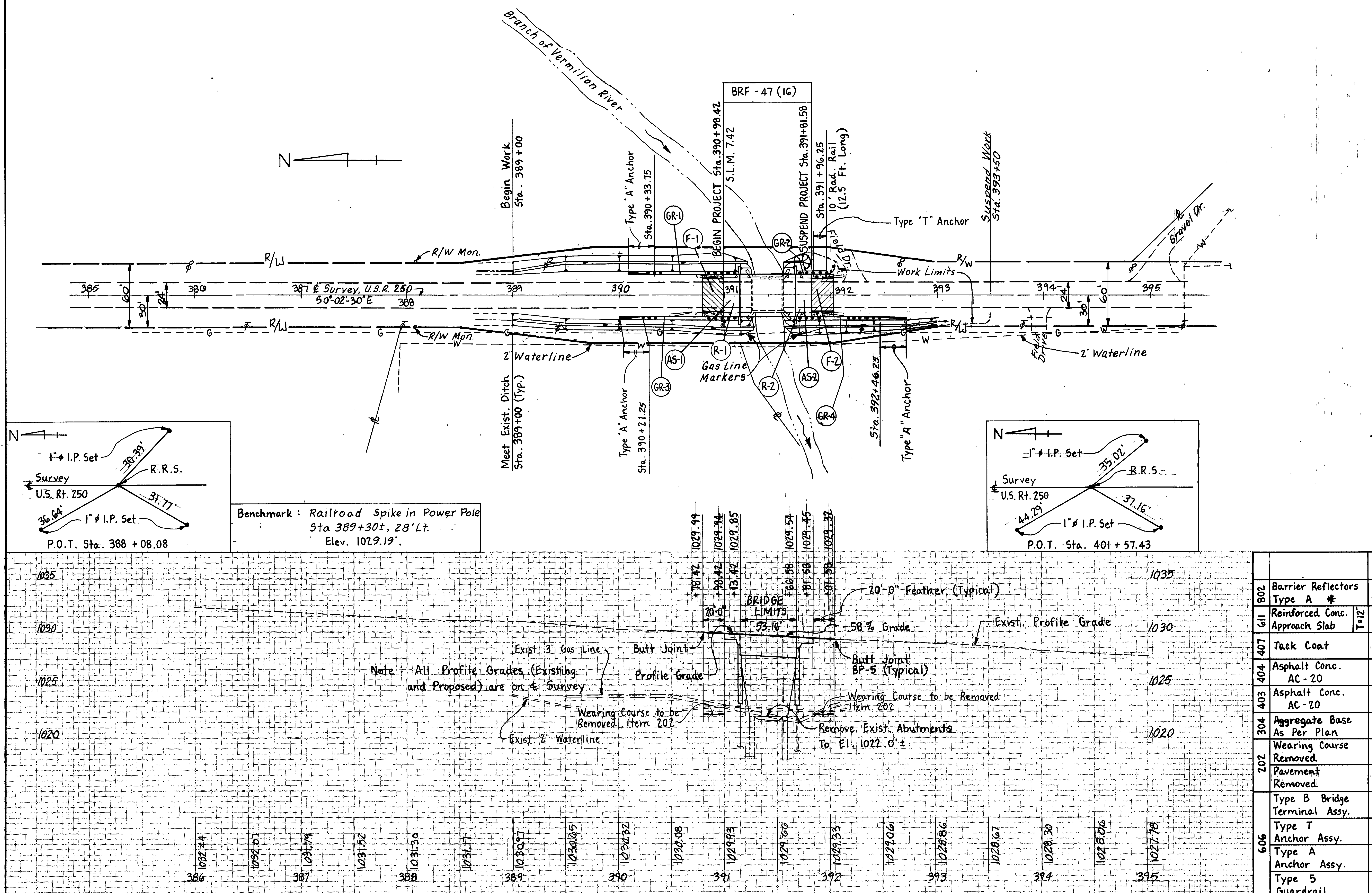
END OF NEW APPROACH SLAB STA. 399+39.17

BEGINNING OF EXISTING APPROACH SLAB STA. 399+09.39

29.78 FT. x 20÷9 = 66.2 S.Y.

NOTE:

QUANTITIES CARRIED TO SHEET NO. 10



ABBREVIATIONS:
- R.R.S. Railroad Spike
- I.P. Iron Pin
- P.G. Profile Grade
- P.O.T. Point of Tangency
- L. Left
- R. Right

Notes:
1. Exist. Guardrail and Signs Within the Work Area to be Removed Incidental to Items 203 & 202 Structure.
2. For Requirements For 614 Work Zone Pavement Markings See MT - 99.10.

Item	Description	Unit	AS-1	AS-2	GR-1	GR-2	GR-3	GR-4	F-1	F-2	R-1	R-2			TOTAL
802	Barrier Reflectors Type A *	EA.			2	1	2	2							7
611	Reinforced Conc. Approach Slab T=12"	S.Y.	66.7	66.7											133
407	Tack Coat	GAL.	6.7	6.7					6.7	6.7					27
404	Asphalt Conc. AC-20	C.Y.	2.3	2.3					2.3	2.3					9
403	Asphalt Conc. AC-20	C.Y.	3.7	3.7											7
304	Aggregate Base As Per Plan	C.Y.	11.5	11.5					5	5					33
202	Wearing Course Removed	S.Y.							66.7	66.7					133
202	Pavement Removed	S.Y.									58.8	57.2			116
606	Type B Bridge Terminal Assy.	EA.			1	1	1	1							4
606	Type T Anchor Assy.	EA.				1									1
606	Type A Anchor Assy.	EA.			1		1	1							3
606	Type 5 Guardrail	L.F.			75	25	87.5	75							262.5
	SIDE				L	L	R	R							
	STATION LIMITS		390 + 98.42 TO 391 + 13.42	391 + 66.58 TO 391 + 81.58	390 + 08.75 TO 391 + 08.75	391 + 71.25 TO 392 + 08.75	389+96.25 TO 391.+08.75	391 + 71.25 TO 392 +71.25	390 + 78.42 TO 390 + 98.42	391 + 81.58 TO 392 + 01.58	390 + 98.42 TO 391 + 24.86	391 + 55.86 TO 391 + 81.58			TOTAL
	Reference Number		AS-1	AS-2	GR-1	GR-2	GR-3	GR-4	F-1	F-2	R-1	R-2			

* Quantity Includes Reflectors on Bridge

EXISTING BRIDGE DATA
Structure File No. 0304719

TYPE: Concrete Beam
SPAN: 28'-0"
ROADWAY: 30.6' ± F/F Guardrail
LOADING: H-15
SUB-STRUCTURE: Concrete Gravity
WEARING SURFACE: 10" ± Asphalt
ALIGNMENT: TANGENT
SKEW: 0°
CONDITION: FAIR TO POOR
DATE BUILT: 1930

EXCAVATION	323	Cu. Yds.
EMBANKMENT	174	Cu. Yds.
SEEDING & MULCHING	2048	Sq. Yds.

Quantities Carried to General Summary Sht. No. 4

PROPOSED STRUCTURE

TYPE: Single Span Precast Box Beam on Capped Pile Abutments.
SPAN: 52'-0" C/C Bearings
ROADWAY: 40'-0" F/F of Guardrail
SKEW: 0°
LOADING: HS 20-44 & Alternate Military Loading
WEARING COURSE: 2½" Min. Asphalt Concrete
APPROACH SLAB: (AS-1-81) 15'-0" Long
ALIGNMENT: Tangent
SUPERELEVATION: None

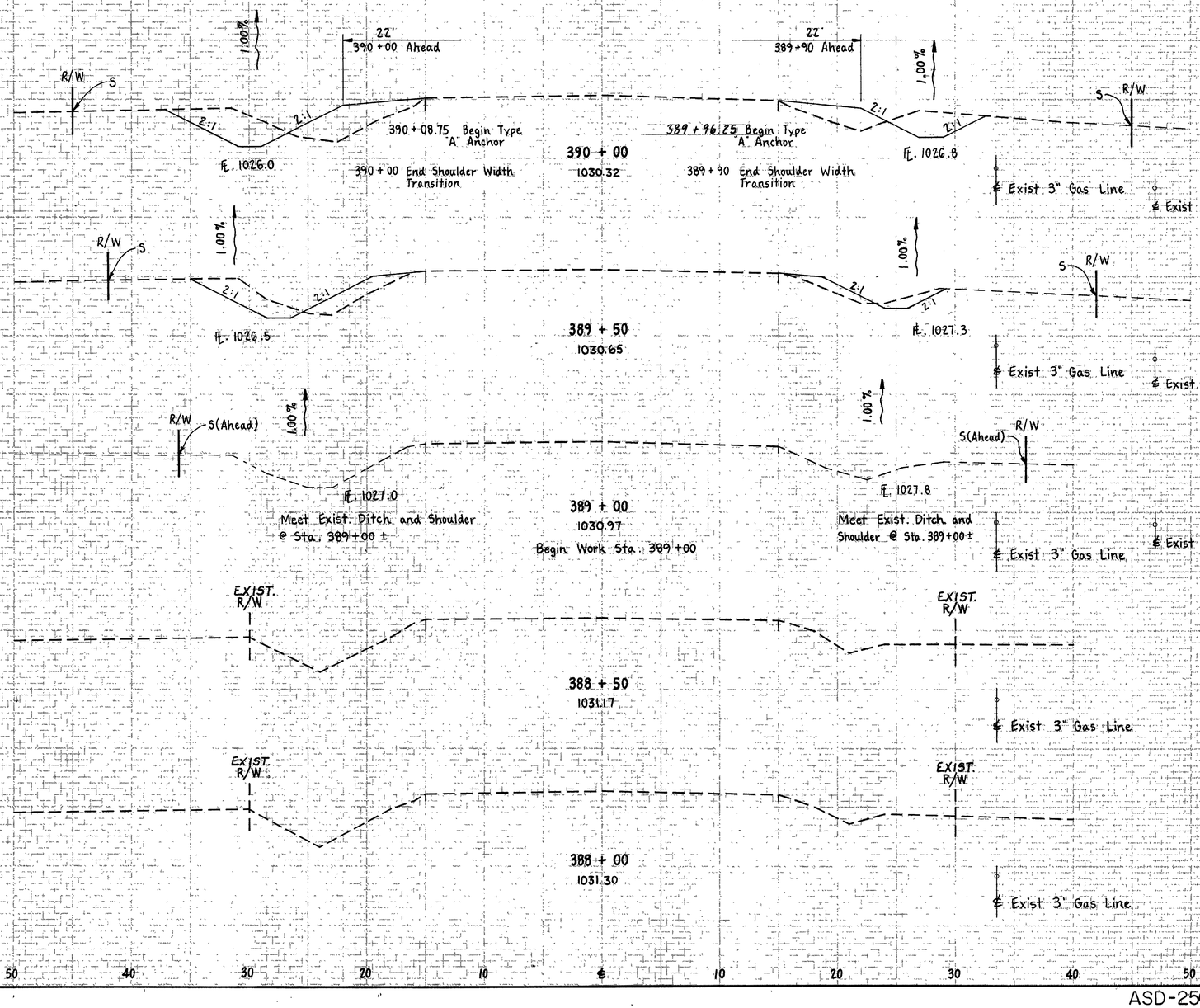
CALC BY SRV DATE 12-1-88
CHKD BY EAP DATE 12-5-88

ASD - 250 - (7.42)(7.57)

OHIO
FHWA REGION 5

6
29

Note: "S" Represents the Seeding Limit.



SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
60	317				
		1030			
		Sta. 390 + 00	1025	28	28
				40	36
54	267	1030			
		Sta. 389 + 50	1025	15	13
				14	12
42	0	1030			
		Sta. 389 + 00	1025	0	0
				0	0
0	0	1030			
		Sta. 388 + 50	1025	0	0
				0	0
0	0	1030			
		Sta. 388 + 00	1025	0	0
		Total to Sheet # 5		315	155
	1836				

Total to Sheet # 5

ASD-250-7.42 X-SECTIONS STA. 388+00 TO 390+00

CALC BY SN DATE 12-98
CHKD BY EAD DATE 12-98

ASD-250-(7.42)(7.57)

OHIO
FHWA REGION 5

7
29

SEEDING END WIDTH	SQ. YDS.
15	
83	
15	
103	
22	
106	
28	
48	
64	
48	
163	
50	
389	
50	
278	
50	
278	
50	

Bk. Sta. 393+50

Note: "S" Represents the Seeding Limit.

393+50 Suspend Work
1028.67

Meet existing ditch and shoulder, +50

393+00
1028.86

℄ 1026.8

392+71.25 End
Type "A" Anchor

22'
392+75 Bk.

392 + 50
1029.06

℄ 1026.5

℄ Exist. 2" Waterline

℄ Exist. 3" Gas Line

392+01.58 Back Wearing Course is to be Removed to Form Butt Joint as Per Standard Construction Dwg. BP-5

Ah. Sta. 392+12
Bk.

8" Item 304
392 + 01.58 Back
Typ. Each Side

1¼" Item 404
392 + 01.58 Back

(+12 Bk) S

391 + 96.25 End
Type "I" Anchor

392 + 00
1029.33

℄ 1026.25

℄ Exist. 3" Gas Line

391 + 81.58 Suspend Project

Start Ditch Sta. 391+80
℄ 1025.0

Item 404 & 403
Asphalt Conc. Overlay
on Approach Slab

Forward Abutment
391 + 66.00 Ahead

6" Item 304
391 + 66.58 Ahead

1029.52
391 + 70
1029.53

Approach Slab
391 + 66.58 Ahead

391 + 66.58 Forward Bridge Limit

391 + 13.42 Rear Bridge Limit

End Ditch Sta. 391+56
℄ 1025.86

℄ 1026.0

℄ 1020 ±

℄ 1026.0

End Ditch Sta. 391+63
℄ 1025.9

℄ Exist. 2" Waterline

℄ Exist. 3" Gas Line

End Ditch Sta. 391+18
℄ 1024.82

Item 404 & 403
Asphalt Conc. Overlay
on Approach Slab

Rear Abutment
391 + 12.50 Ahead

6" Item 304
390 + 98.42 Ahead

1029.93
391 + 00
1029.93

Approach Slab
391 + 13.42 Back

℄ 1025.0

℄ 1025.8

End Ditch Sta. 391+34
℄ 1025.5

℄ Exist. 3" Gas Line

℄ Exist. 2" Waterline

390 + 98.42 Begin Project

8" Item #304
390 + 78.42 Ahead
Typ. Each Side

1¼" Item #404
390 + 78.42 Ahead

1030.08
390 + 50
1030.08

℄ 1026.3

390 + 78.42 Ahead Wearing Course is to be Removed to Form Butt Joint as Per Standard Construction Drawing BP-5.

℄ Exist. 3" Gas Line

℄ Exist. 2" Waterline

Sta. 390 + 00

		END AREA		VOLUME	
		CUT	FILL	CUT	FILL
Sta. 393+50	1025	0	0		
	1030			4	3
Sta 393+50	1025	4	3		
	1030			8	6
Sta. 392 + 50	1025	5	4		
	1030			9	10
Ahead Sta. 392 + 01.58 Back		5	7		
		9	5		
	1030			1	1
Sta. 392 + 00	1025	9	5		
	1030			6	3
Ahead Sta. 391 + 81.58 Back		9	5		
		50	6		
	1030			25	3
Sta. 391 + 70	1025	66	6		
	1030			9	1
Ahead Sta. 391 + 66.58 Back		77	6		
		0	0	78	0
Quantities From Channel Work Sht. # 9					
Ahead Sta. 391 + 13.42 Back	1030	0	0		
		63	23		
				31	11
Sta. 391 + 00	1025	63	23		
				4	1
Ahead Sta. 390 + 98.42 Back		63	23		
		25	22	19	16
Ahead Sta. 390 + 78.42 Back	1030	25	22		
				26	23
Sta. 390 + 50	1025	25	22		
				49	46
Sta. 390 + 00		28	28		

ASD-250-7.42 X-SECTIONS STA. 390+50 TO 392+50

CALC BY SEN DATE 12-1-98
CHKD BY EAD DATE 12-3-98

ASD-250-(7.42)(7.57)

OHIO
FHWA REGION 5

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29

Calculations

G21 Edge Lines, White
Sta. 390 + 78.42 to 392 + 01.58
= 123.16 × 2 ÷ 5280 = .05 miles

G21 Center Lines, Broken Single
Sta. 390 + 78.42 to 392 + 01.58
= 123.16 ÷ 5280 = .02 miles

G59 Commercial Fertilizer
From General Summary G59 Seeding = 2048 Sq. Yds.

Fertilizer = $\frac{2048 \times 9 \times 20}{1000 \times 2000}$ = 0.18 Ton

G01 Rock Channel Protection Type B with filter

60 × 8 = 480

$(8^2 - \frac{\pi r^2}{4}) 2$ = 27

453 sf. × $\frac{2.5}{27}$ = 42 cu.yds.

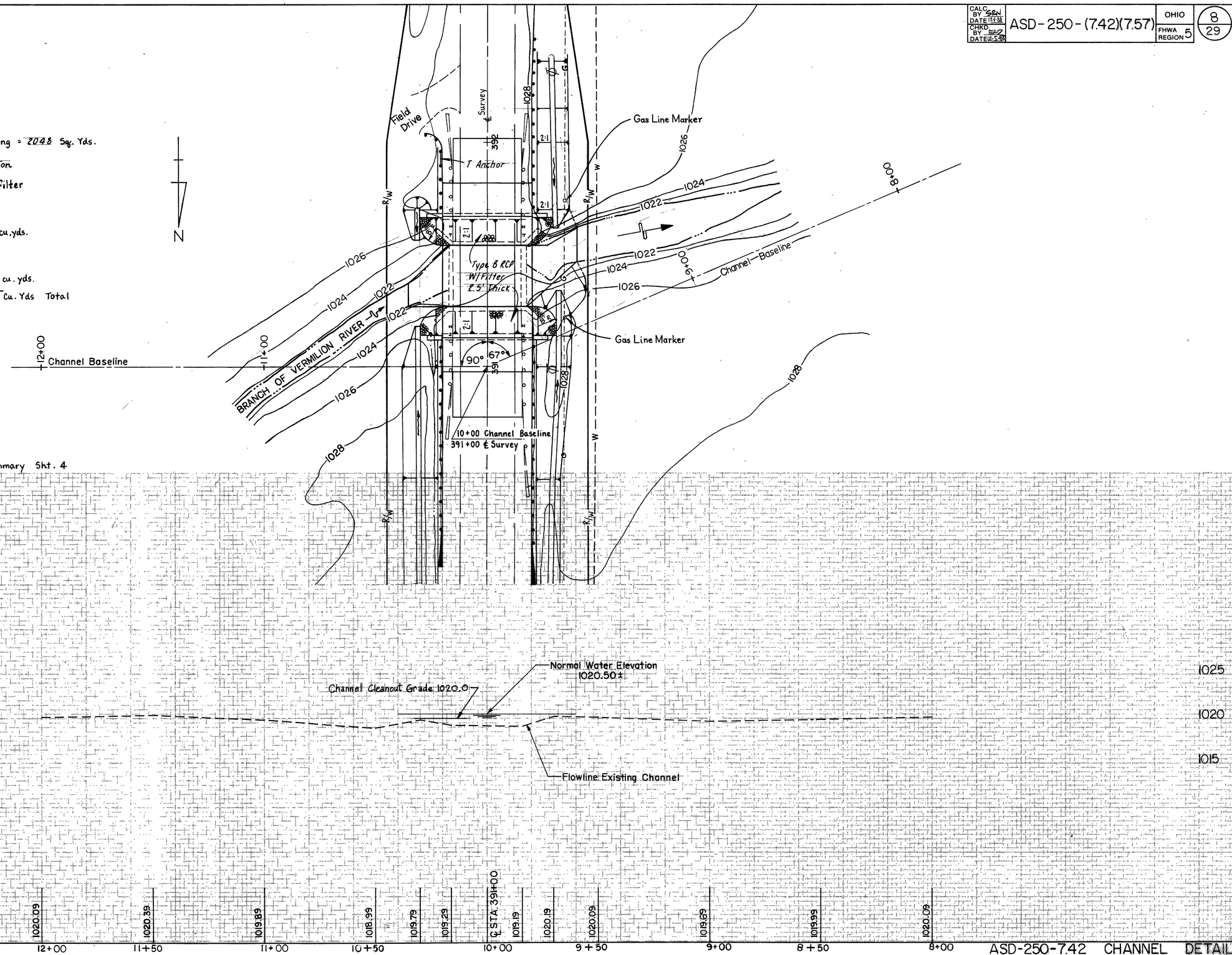
60 × 8 = 480

$(8^2 - \frac{\pi r^2}{4}) 2$ = 27

453 s.f. × $\frac{2.5}{27}$ = 42 cu. yds.

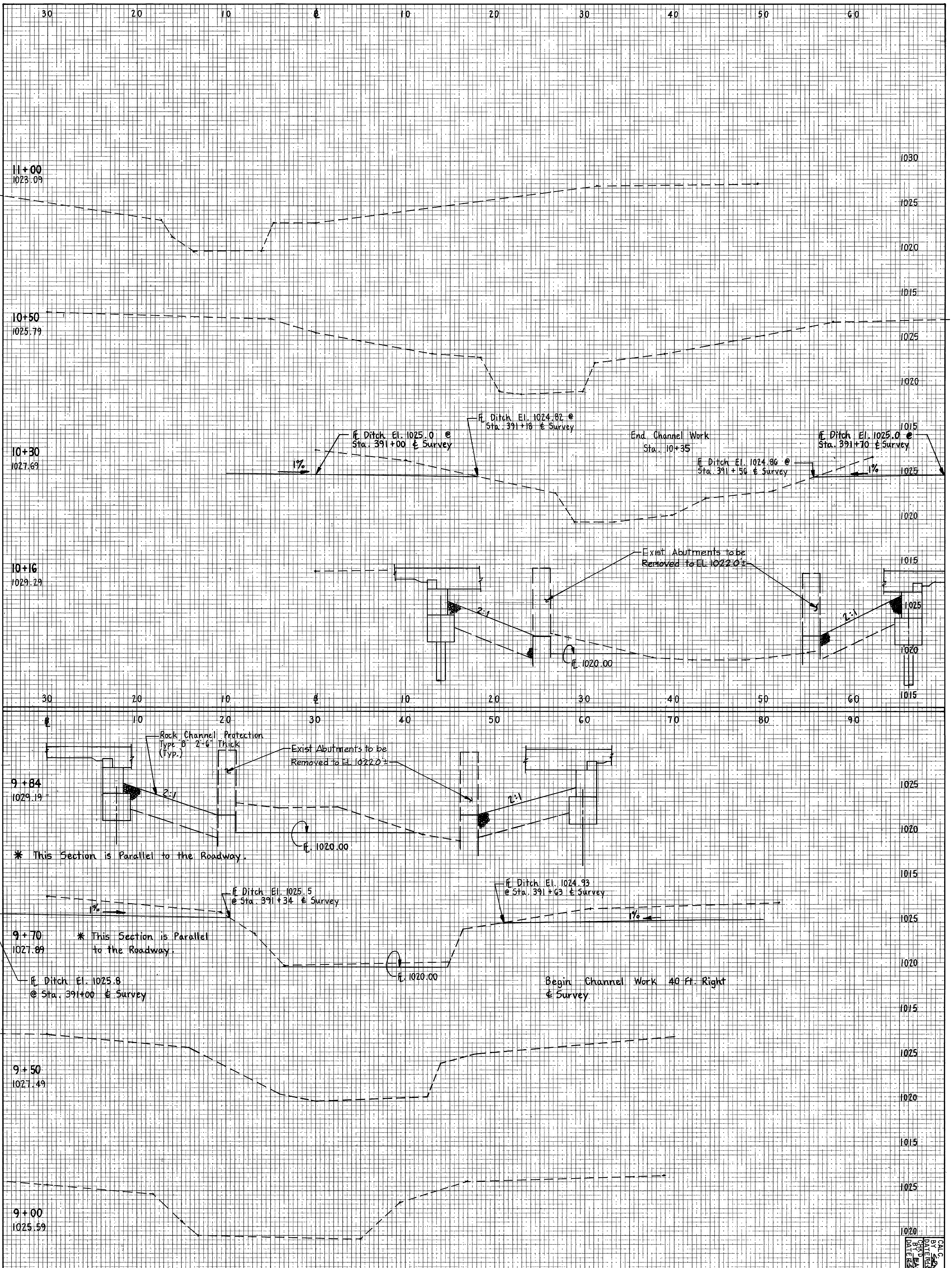
84 Cu. Yds Total

All Quantities are Carried to General Summary Sht. 4



ASD-250-7.42 CHANNEL DETAILS

CALC. BY SRN DATE 11-1-88
CHK'D BY EAP DATE 12-5-88

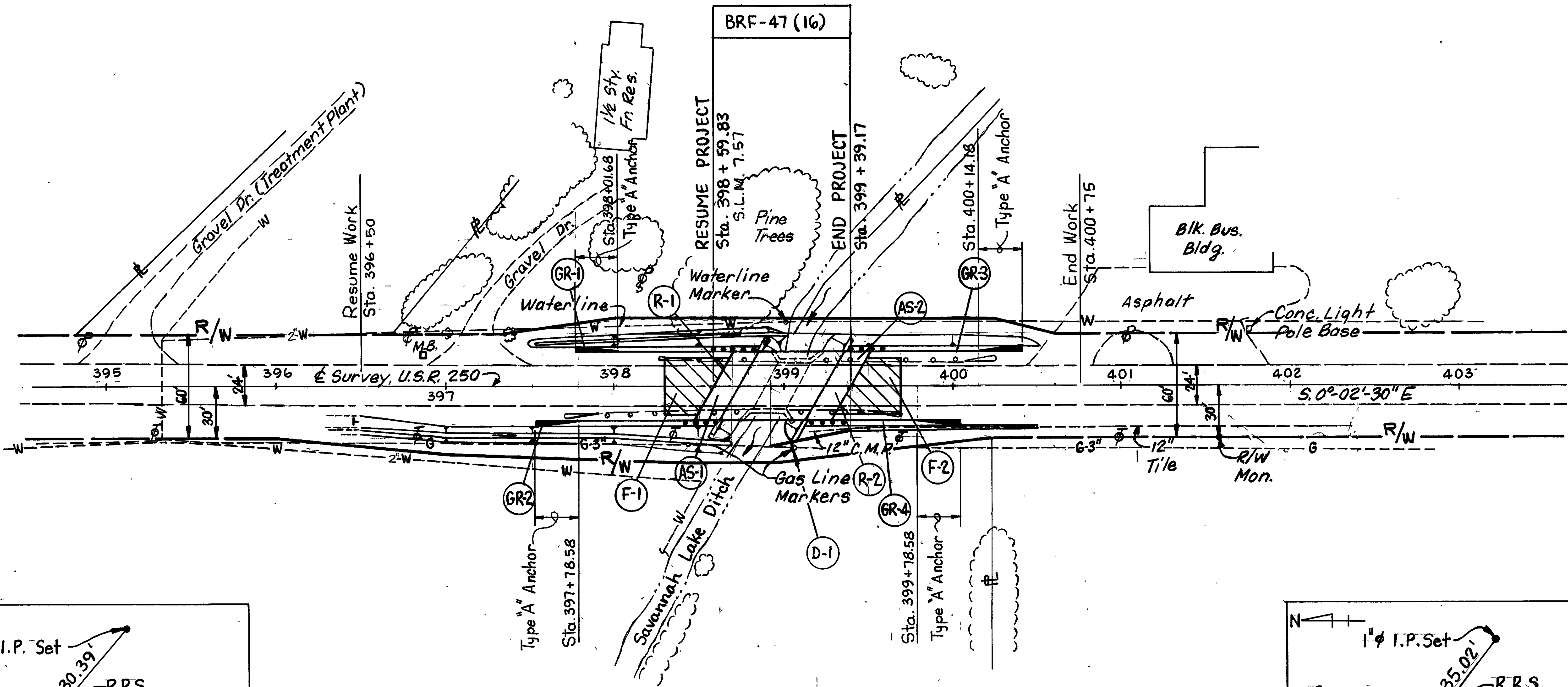


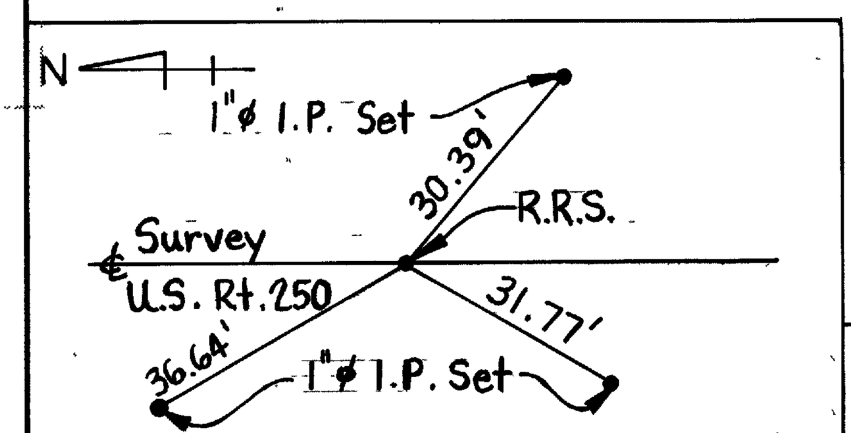
NOTE:

All Cross-Sections are Perpendicular to the Baseline Unless Noted Otherwise.

CHANNEL EARTHWORK

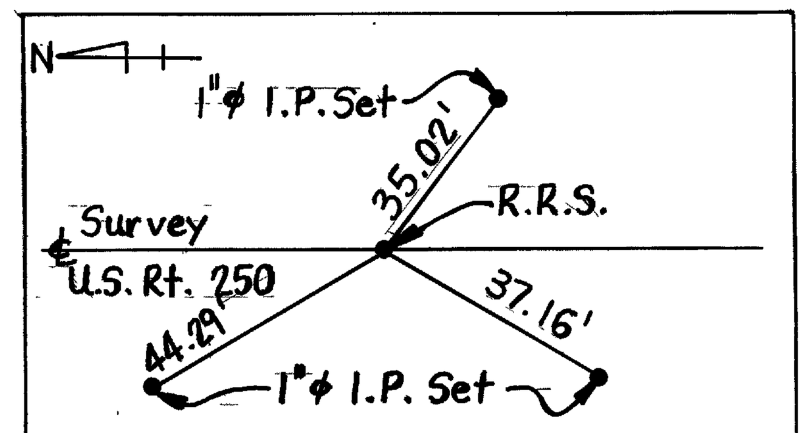
Station	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
9 + 00	0	0		
9 + 50	0	0	0	0
9 + 70	10	0	4	0
9 + 84	68	0	20	0
10 + 16	16	0	50	0
10 + 30	0	0	4	0
10 + 50	0	0	0	0
11 + 00	0	0	0	0
Totals to Sheet 7			78	0



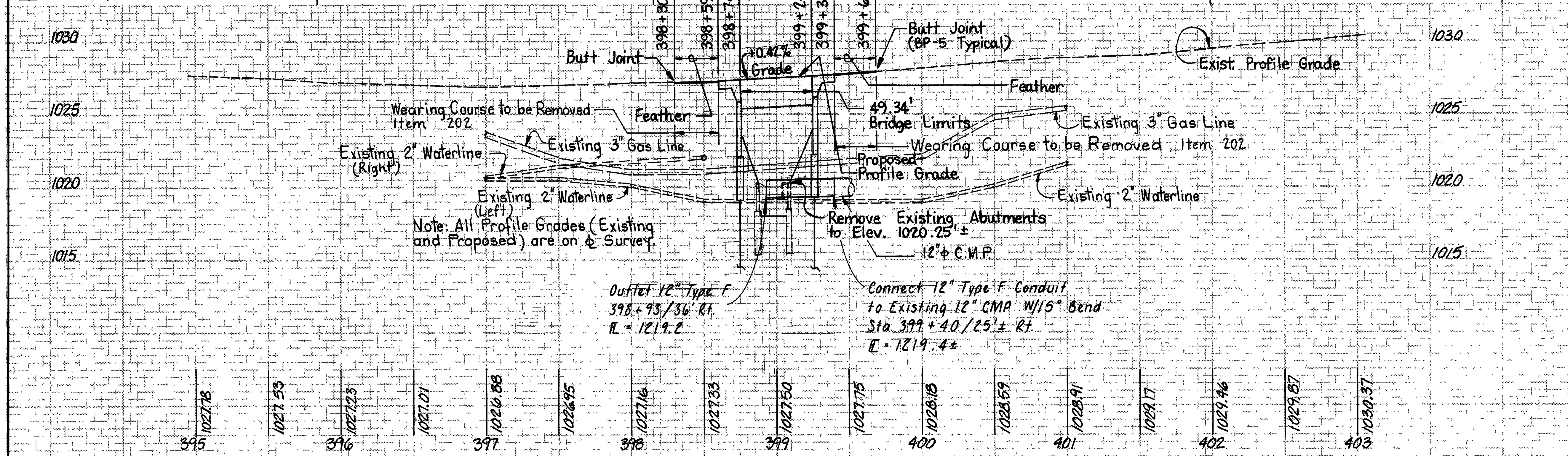


P.O.T. Sta. 388 + 08.08

Benchmark : North Corner of Abandoned Light Pole Fdtn.
Sta. 400 + 65.81 , Lt. 31.78', Elev. 1027.21'



P.O.T. Sta. 401 + 57.43



THE FOLLOWING ARE ELEVATIONS OF THE ABUTMENTS OF THE EXISTING BRIDGE 0758 :

TOP OF SOUTHEAST ABUTMENT = 1027.03
TOP OF NORTHEAST ABUTMENT = 1027.04
TOP OF NORTHWEST ABUTMENT = 1026.98
TOP OF SOUTHWEST ABUTMENT = 1027.09

THIS INFORMATION SUPPLIED FOR THE PURPOSE OF MAINTAINING EXISTING B. M. REFERENCES OF THE EXISTING STRUCTURE AS PER COURT DOCUMENTS FOR ESTABLISHING CHANNEL ELEVATIONS.

ABBREVIATIONS :

R.R.S.	Railroad Spike
I.P.	Iron Pin
P.G.	Profile Grade
P.O.T.	Point of Tangency
L.	Left
R.	Right

Notes :

1. Exist. Guardrail and Signs Within the Work Area to be Removed Incidental to Items 203 & 202 Structure.
2. For Requirements For 614 Work Zone Pavement Markings See MT - 99.10 .

Item	Description	Unit	AS-1	AS-2	GR-1	GR-2	GR-3	GR-4	F-1	F-2	R-1	R-2	D-1		TOTAL
603	12" Conduit Type F												48		48
802	Barrier Reflectors Type A *	EA.			2	2	2	2							8
611	Reinforced Conc. Approach Slab T=12"	S.Y.	66.7	66.7											133
407	Tack Coat	GAL.	6.7	6.7					9.9	9.9					33
404	Asphalt Conc. AC-20	C.Y.	2.3	2.3					3.5	3.5					12
403	Asphalt Conc. AC-20	C.Y.	3.5	3.5											7
304	Aggregate Base As Per Plan	C.Y.	11.5	11.5					7.4	7.4					38
202	Wearing Course Removed	S.Y.							99.4	99.4					199
202	Pavement Removed	S.Y.									64.2	66.2			130
202	Pipe Removed 24" and Under	L.F.											36		36
606	Type B Bridge Terminal Assy.	EA.			1	1	1	1							4
606	Type A Anchor Assy.	EA.			1	1	1	1							4
606	Type 5 Guardrail	L.F.			81.25	81.25	75	62.50							300
	Side				L	R	L	R					R		
	Station Limits		398+59.83 to 398+74.83	399+24.17 to 399+39.17	397+76.68 to 398+82.93	397+53.58 to 398+59.83	399+39.18 to 400+39.18	399+16.08 to 400+03.58	398+30.00 to 398+59.83	399+39.17 to 399+69.00	398+59.83 to 398+88.73	399+09.39 to 399+39.17	398+93.00 to 399+40.00		
	Reference Number		AS-1	AS-2	GR-1	GR-2	GR-3	GR-4	F-1	F-2	R-1	R-2	D-1		TOTAL

* Quantity Includes Reflectors on Bridge

EXISTING BRIDGE DATA
Structure File No. 0304719

TYPE : Concrete Slab
SPAN : 17'-10" Clear
ROADWAY : 30.4' ± f/f Guardrail
LOADING : H-15
SUB-STRUCTURE : Concrete Gravity
WEARING SURFACE : 12" ± Asphalt
ALIGNMENT : Tangent
SKEW : 30° L.F.
CONDITION : Fair to Poor
DATE BUILT : 1930

EXCAVATION	152	Cu. Yds.
EMBANKMENT	248	Cu. Yds.
SEEDING & MULCHING	1957	Sq. Yds.

Quantities Carried to General Summary Sht. No. 4

PROPOSED STRUCTURE

TYPE : Single Span Precast Box Beam on Capped Pile Abutments.
SPAN : 48'-0" c/c Bearings
ROADWAY : 40'-0" f/f of Guardrail
SKEW : 30° L.F.
LOADING : HS 20-44 & Alternate Military Loading
WEARING COURSE : 2½" Min. Asphalt Concrete
APPROACH SLAB : (AS-1-81) 15'-0" Long
ALIGNMENT : Tangent
SUPERELEVATION : None

ASD - 250 - 7.57 PLAN & PROFILE STA. 395+00 TO 403+00

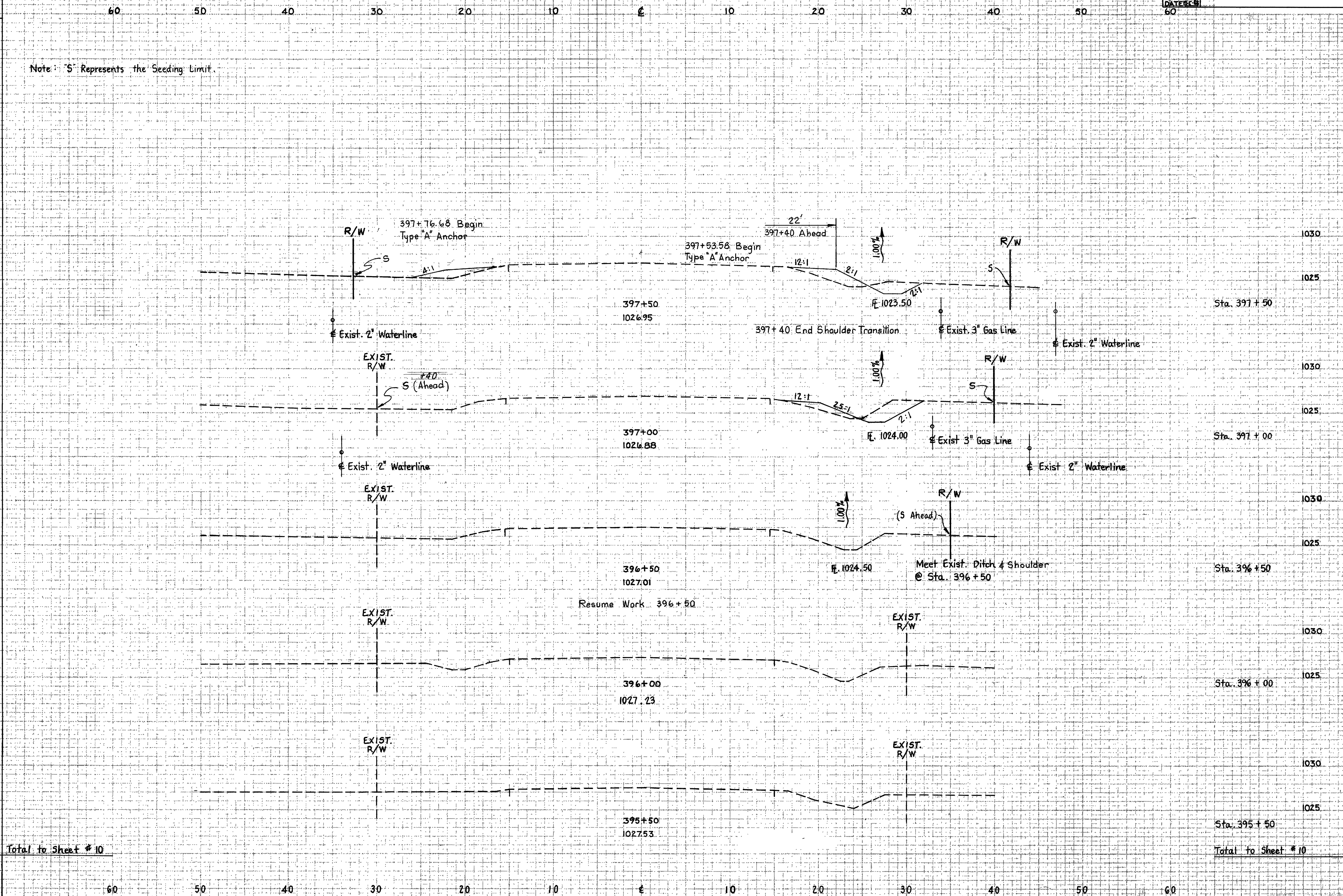
CALC. BY SRV DATE [illegible]
CHKD. BY EAD DATE [illegible]

ASD-250 - (7.42)(7.57)

OHIO
FHWA REGION 5

11 / 29

Note: "S" Represents the Seeding Limit.



SEEDING END WIDTH	SEEDING SQ. YDS.	Station	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
45		Sta. 397 + 50	5	13		
	236				13	17
40		Sta. 397 + 00	9	5		
	169				8	5
21		Sta. 396 + 50	0	0		
	0				0	0
0		Sta. 396 + 00	0	0		
	0				0	0
0		Sta. 395 + 50	0	0		
	2003	Total to Sheet # 10			152	248

ASD-250-7.57 X-SECTIONS STA.395+50 TO STA.397+50

CALC. BY SDH DATE 12-98
CHKD. BY EAD DATE 12-98

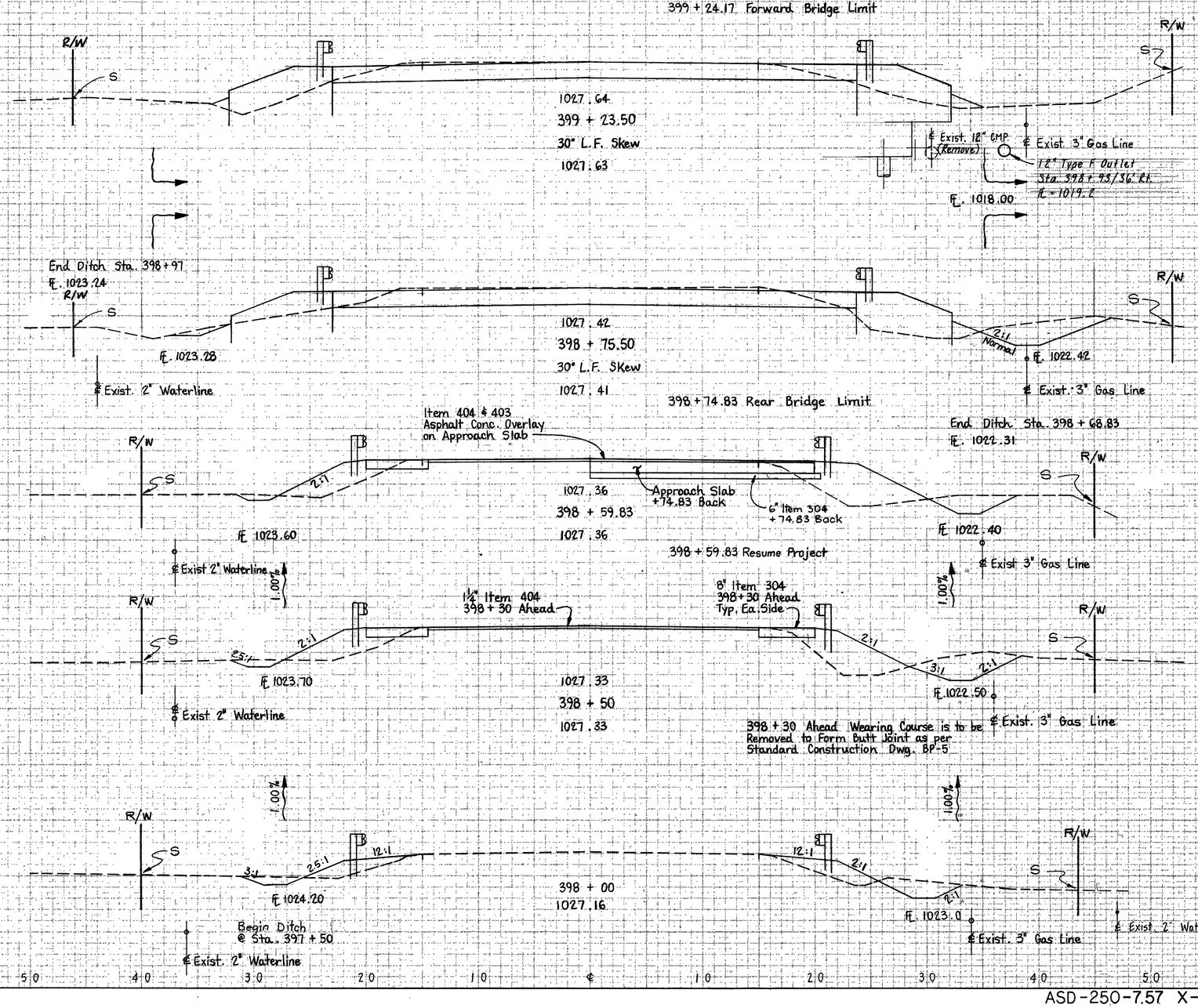
ASD-250-(7.42)(7.57)

OHIO FHWA REGION 5

12 / 29

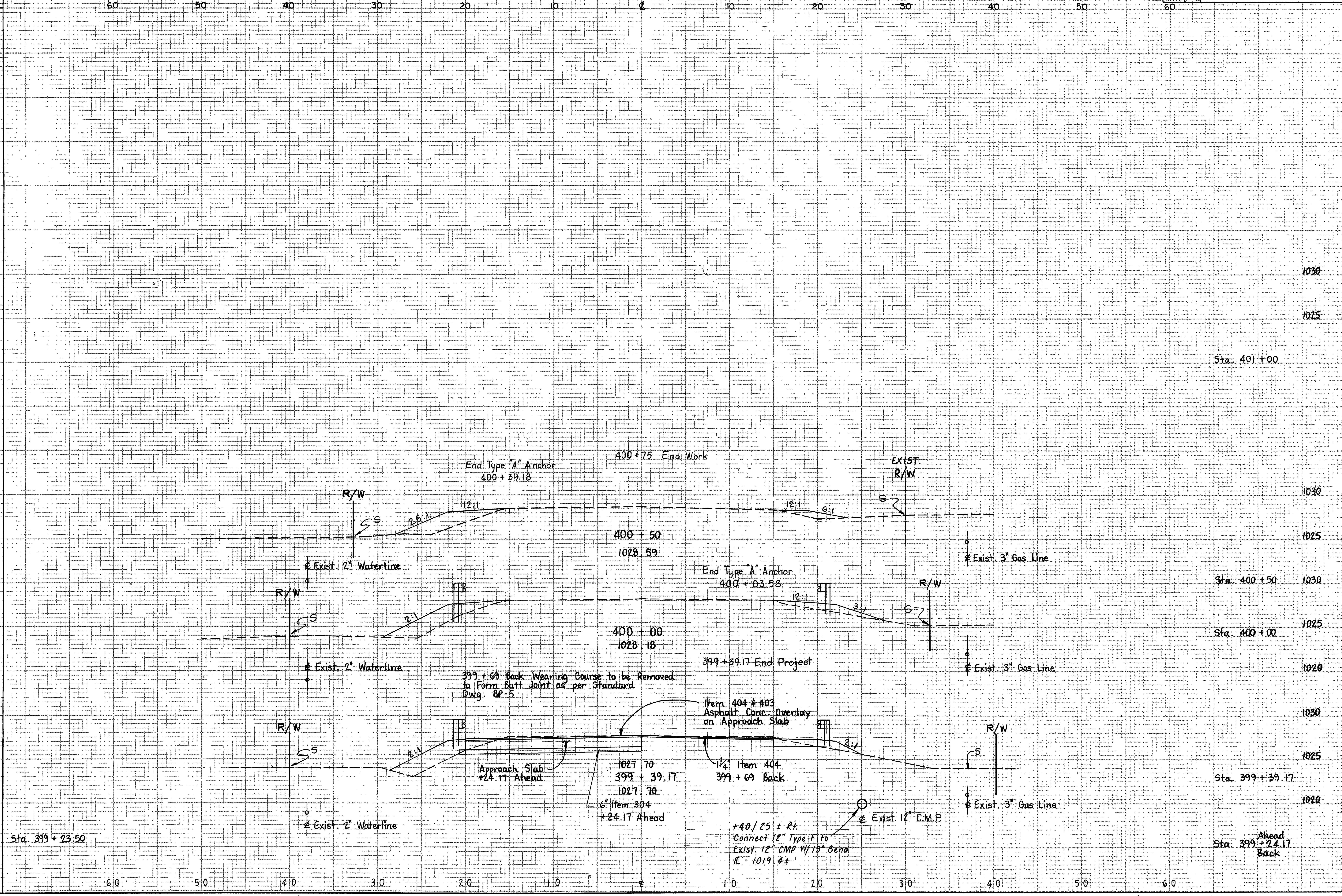
SEEDING END WIDTH	SQ. YDS.
50	267
50	83
45	275
49	
45	
54	275
45	

Note: "S" Represents the Seeding Limit.



		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	1030				
Ahead Sta. 399 + 24.17		15	19		
Back		12	32		
	1025			1	1
End Area × Cos 30°		12	32		
Ahead Sta. 399 + 23.50	1020				
Back		0	0		
Quantities From Channel Work Sht. # 15				43	0
	1030				
	1025				
℄ Exist. 2" Waterline Ahead Sta. 398 + 75.50	1020	0	0		
Back		27	37		
End Area × Cos 30°				1	1
Ahead Sta. 398 + 74.83		27	37		
Back	1025	23	38		
				13	21
Ahead Sta. 398 + 59.83	1020	23	36		
Back		23	36		
				6	13
	1025				
Sta. 398 + 50	1020	20	34		
				15	25
Ahead Sta. 398 + 30		20	34		
Back	1030	10	17		
				11	19
	1025				
Sta. 398 + 00		10	17		
				14	26
Sta. 397 + 50		5	13		

CALC BY SRN DATE 2-1-88 / CHKD BY EAD DATE 12-5-88	ASD-250-(7.42)(7.57)	OHIO / FHWA REGION 5	13 / 29



SEEDING END WIDTH	SEEDING SQ. YDS.
0	
	46
33	
	211
43	
	270
37	
	76
50	

Station	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
Sta. 401 + 00	0	0		
			0	16
Sta. 400 + 50	0	17		
			0	40
Sta. 400 + 00	0	26		
			17	51
Sta. 399 + 39.17	15	19		
			8	11
Sta. 399 + 24.17 Ahead / Back	15	19		

ASD-250-7.57 X-SECTIONS STA. 400+00 TO STA. 401+00

Calculations

621 Edge Lines, White

Sta. 398 + 30 to 399 + 69

= 139′ × 2 ÷ 5280 = .05 miles

621 Center Lines, Broken Solid Double

Sta. 398 + 30 to 399 + 69

= 139 ÷ 5280 = .03 miles

659 Commercial Fertilizer

From General Summary 659 Seeding = 1957 Sq. Yds.

Fertilizer $= \frac{1957 \times 9 \times 20}{1000 \times 2000} = 0.18$ Ton

601 Rock Channel Protection Type D with Filter

$70 \times 7 = 490$

$(7^2 - \frac{\pi r^2}{4})2 = -21$

469 s.f. $\times \frac{1.5}{27} = 26$ cu. yds.

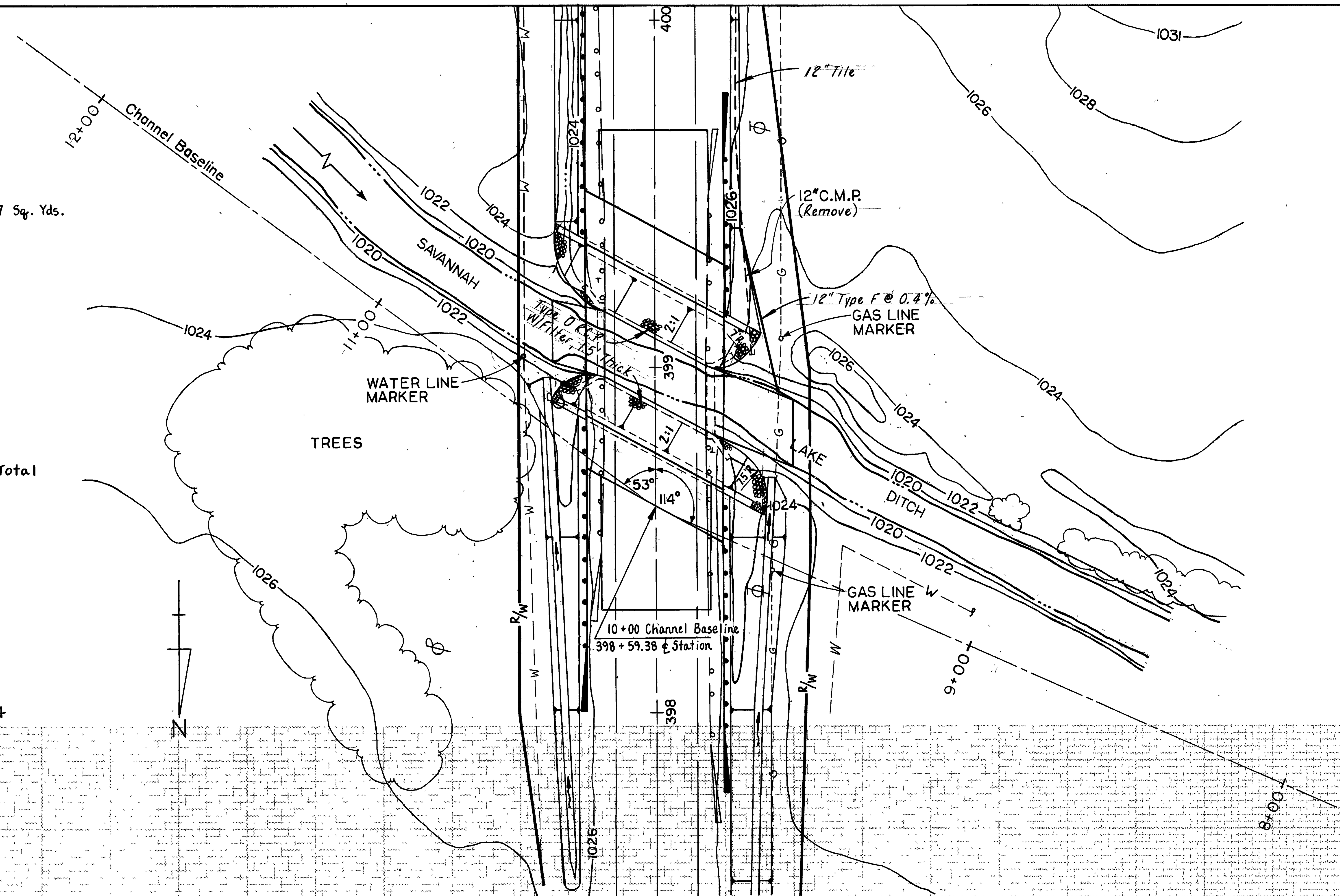
$70 \times 7.5 = 525$

$(7.5^2 - \frac{\pi r^2}{4})2 = -24$

501 s.f. $\times \frac{1.5}{27} = 28$ cu. yds.

54 cu. yds. Total

All Quantities are Carried to General Summary Sht. 4



CALC. BY SRL DATE 12-1-88	ASD-250-(7.42)(7.57)	OHIO FHWA REGION 5	15/29
CHK'D. BY EAS DATE 12-5-88			

CHANNEL EARTHWORK			
STATION	END AREA CU. YDS.		
	CUT	FILL	CUT	FILL
8+50	0	0	0	0
9+00	0	0	0	0
9+50	0	0	0	0
9+67	1	0	0	0
9+82	26	0	8	0
10+21	15	0	31	0
10+32	0	0	3	0
10+50	0	0	0	0
11+00	0	0	0	0
TOTALS To SHT. 12			43	0

End Channel Work
Sta. 10+30

Rock Channel Protection
Type "D", With Filter
1'-6" Thick (Typ.)

Begin Channel Work 40' Right
℄ Survey

℄ Ditch El. 1023.24'
Sta. 390+97 ℄ Survey

11+00
1023.20

10+50
1023.88

10+32
1023.28

* This Section Parallel to the Roadway.

Exist. Abutments to be
Removed to El. 1020.25'±

℄ 1018.00

10+21
1026.38

* This Section Parallel to the Roadway.

Exist. Abutments to be
Removed to El. 1020.25'±

℄ 1018.00'

9+82
1025.93

* This Section Parallel to the Roadway.

℄ Ditch El. 1022.31
Sta. 398+68.83 ℄ Survey

℄ Ditch El. 1022.40'
℄ Sta. 398+59.83
℄ Survey

9+67
1024.53

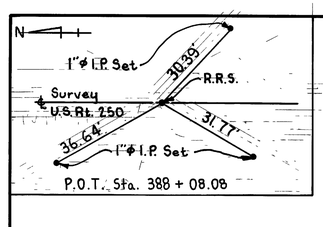
9+50
1024.13

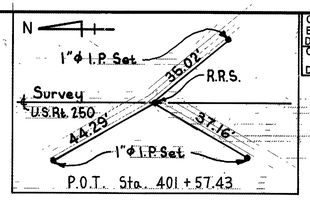
9+00
1023.53

8+50
1024.13

NOTE:
All Cross Sections are Perpendicular to
the Baseline Unless Noted Otherwise.

ASD-250-7.57 CHANNEL X-SECTIONS





CALC. BY		ASD-250-(7.42)(7.57)	OHIO	16
DATE			FHWA REGION 5	29
CHK'D. BY				
DATE				

ASHLAND COUNTY
ASD-250-(7.42)(7.57)

LOCATED 0.2± MILE SOUTH OF SAVANNAH AND S.R. 302

ABBREVIATIONS:
I.P. Iron Pin
R.R.S. Railroad Spike

FOUNDATION INVESTIGATION LEGEND
Indicates Boring Location

EXISTING STRUCTURE DATA
STRUCTURE FILE NO 0304719

TYPE: CONCRETE BEAM
SPAN: 28'-0" CLEAR
ROADWAY: 30.6'± F/F GUARDRAIL
LOADING: H-15
SUB-STRUCTURE: CONCRETE GRAVITY
WEARING SURFACE: 10"± ASPHALT
ALIGNMENT: TANGENT
SKEW: 0°
CONDITION: FAIR TO POOR
DATE BUILT: 1930

PROPOSED STRUCTURE

TYPE: SINGLE SPAN PRECAST BOX BEAM ON CAPPED PILE ABUTMENTS
SPAN: 52' 0" ℄ BEARINGS
ROADWAY: 40'-0" F/F OF GUARDRAIL
SKEW: 0°
LOADING: HS 20-44 & ALTERNATE MILITARY LOADING
WEARING COURSE: 2½" MIN. ASPHALT CONCRETE
APPROACH SLAB: (AS-1-81) 15-0" LONG
ALIGNMENT: TANGENT
SUPERELEVATION: NONE

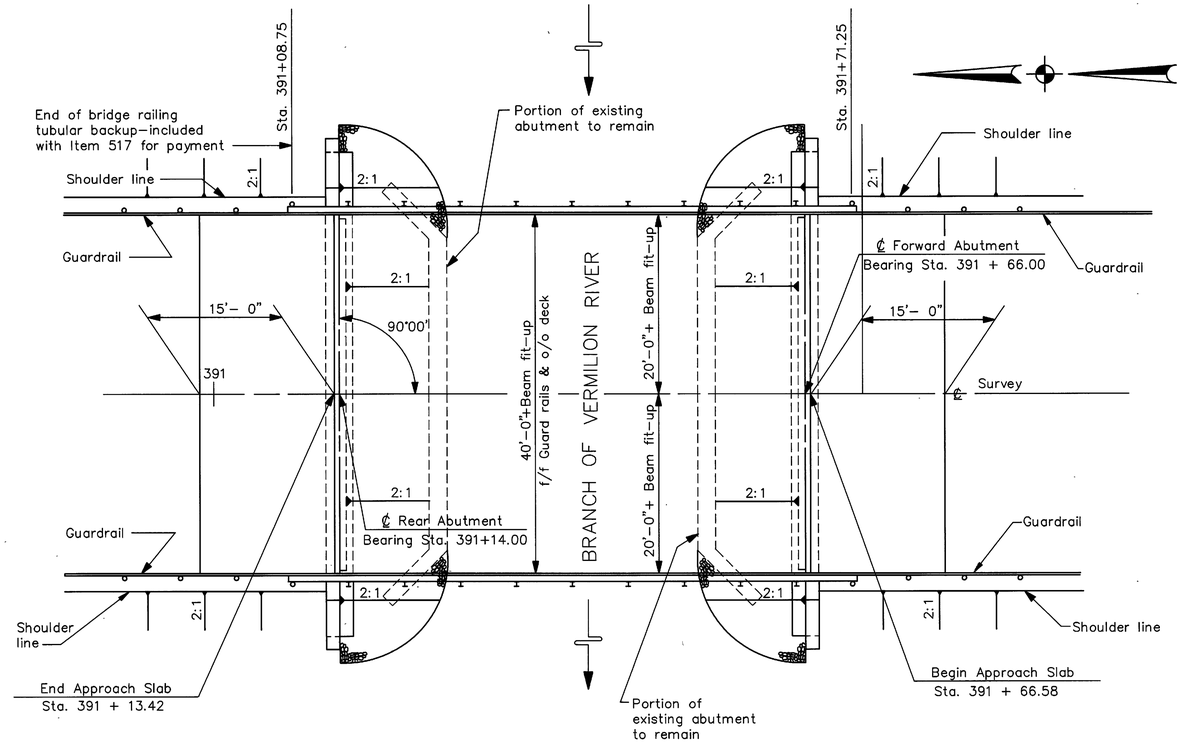
R.E. WARNER & ASSOCIATES CONSULTING ENGINEERS WESTLAKE OHIO — L1 / 6

SITE PLAN

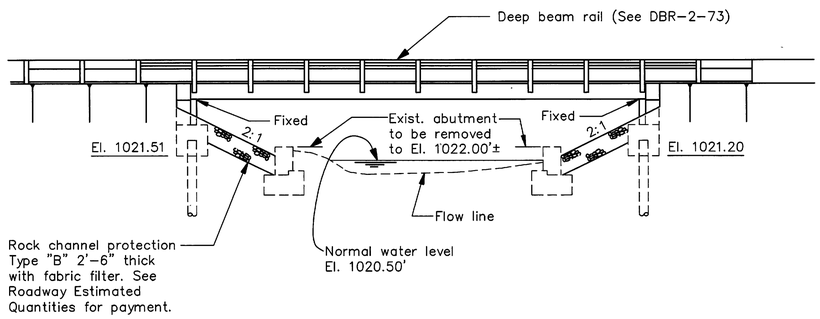
BRIDGE NO. ASD——250——0743
OVER BRANCH OF VERMILION RIVER

STA. 391+13.42 TO 391+66.58

PRESENT TOPOGRAPHY		PROPOSED WORKED			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
DISTRICT 3	AERIAL	CDW	DWB	EAD	JSK



GENERAL PLAN



GENERAL ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawings: DBR-2-73 (dated 4-10-73), PSBD-1-81 sheets 1,2,3, and 4 of 4 (dated 9-18-81), AS-1-81 sheets 1,2 and 3 of 3 (dated 11-27-81) and to Supplemental Specifications: 836 (dated 11-12-85)

DESIGN SPECIFICATION This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1983, including the 1984, 1985, and 1986 Interim Specifications, and the Ohio "Supplement" to these specifications.

DESIGN DATA Design Loading - HS20-44 and the Alternate Military Loading.
Concrete Class C - f'c = 4000 p.s.i. for substructure.
Reinforcing Steel - ASTM A615,A616 or A617 - Fy = 60,000 p.s.i.
Concrete for prestressed concrete beams-unit stresses, 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 in the prestressed box beams may be Grade 40, 40,000 p.s.i. yield or Grade 60, 60,000 p.s.i. yield.
Abutment Piling: Abutment piling bending stress may approach, reach or exceed yield stress.

DECK PROTECTION METHOD Type "D" waterproofing, asphalt concrete overlay, and sealing of concrete surfaces.

TRAFFIC MAINTENANCE Traffic maintenance information can be found on sheet 3.

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.

CLASS C CONCRETE, AS PER PLAN All coarse aggregate for abutment concrete shall be limestone or slag, and not gravel.

EXISTING STRUCTURE VERIFICATION Details and dimensions shown on these plans pertaining to the existing structure have been obtained from plans of the existing structure and/or from field observations and measurements. Consequently, they are indictive of the existing structure and the proposed work but they shall be considered tentative and approximate. The contractor is refered to CMS sections 102.05 and 105.02.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES A concrete sealer, either silane of an epoxy sealer, shall be applied to the following concrete sufaces: The exposed face and the first 6 inches of the bottom surface of the fascia box beams. abutments, see sheet 3/6. See the proposal for surface preparation requirements, application rates, materials requirements and procedures.

REMOVAL OF EXISTING STRUCTURE When no longer needed to maintain traffic, existing structure shall be removed. Rear and Forward Abutments shall be removed to Elev. 1022.00± or closest rustication groove. Suitable waste masonary may be placed as bank protection as directed by the Engineer.

ITEM 507 14 INCH CAST-IN-PLACE REINFORCED CONCRETE PILES AS PER PLAN: The responsibility of choosing and providing a satisfactory pile wall thickness for this project shall be borne by the Contractor except that the pile wall thickness shall not be less than 0.25 inches. If a pile wall thickness greater than 0.25 inches is necessary to resist the pile installation driving stress, the Contractor shall make this determination and shall furnish a pile with an acceptable wall thickness.

PILES Shall be driven to a minimum bearing capacity of 60 tons per pile.

The pile hammer used to install the reinforced concrete piles shall have a State's Energy Rating of not less than 16,500 foot-pounds. This requirement does not relieve the Contractor from 108.05 which states that the Contractor is to provide sufficient equipment for prosecuting the required work. Refer to "ODOT's Manual of Procedures for Structures" to obtain the State's Energy Rating.

CALC. BY. CDW — ESTIMATED QUANTITIES — CHK'D BY EAD

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS	GEN'L		
202	Lump		Portions of structure removed			Lump		
403	13	Cu.Yd.	Asphalt concrete, AC-20	13				
404	8	Cu.Yd.	Asphalt concrete, AC-20	8				
503	Lump		Unclassified excavation		Lump			
505	Lump		Pile Driving Equipment Mobilization			Lump		
507	700	Lin.Ft.	14" Cast-in-place reinforced concrete piles, as per plan		700			
509	3117	Lbs.	Reinforcing steel, Grade 60		3117			
509	3427	Lbs.	Epoxy coated reinforcing steel, Grade 60		3427			
511	61	Cu.Yd.	Class C concrete, as per plan		61			
512	254	Sq.Yd.	Type D waterproofing	254				
515	10	Each	Prestressed concrete bridge members. (See Proposal Note)	10				
516	139	Sq.Ft.	1" Preformed expansion joint filler		139			
516	40	Each	1"x8"x14" Elastometric bearing pads	40				
516	80	Lin.Ft.	2" Deep joint sealer, as per plan		80			
517	125	Lin.Ft.	Railing (deep beam w\stl. tubular backup, type 2 stl. posts & bolts) *	125				
518	24	Cu.Yd.	Porous backfill, as per plan		24			
518	106	Lin.Ft.	6" Perforated, helical corrurated steel pipe, 707.01		106			
518	24	Lin.Ft.	6" Non-perforated, helical corr.stl.pipe, including specials,707.01		24			
523	3	Hour	Dynamic load test		3			
Special	104	Lin.Ft.	Steel drip strip	104				
Special	48	Sq.Yd.	Sealing concrete surfaces, (See Proposal Note)	27	21			
Special	80	Lin.Ft.	Sawing and sealing Bituminous concrete joint	80				

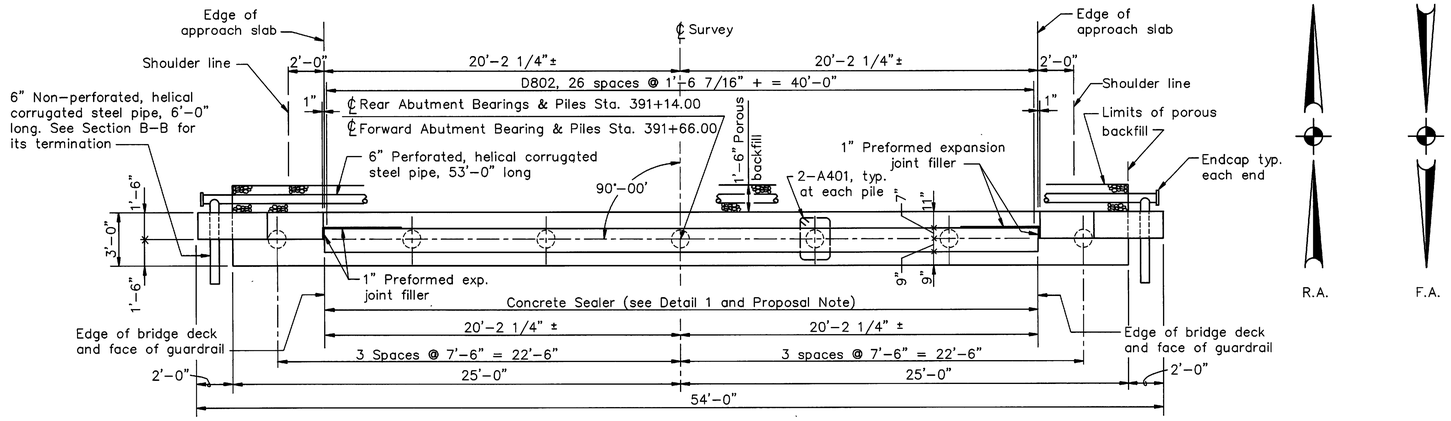
* See proposal note

R.E.WARNER & ASSOCIATES
CONSULTING ENGINEERS
WESTLAKE OHIO

2/6

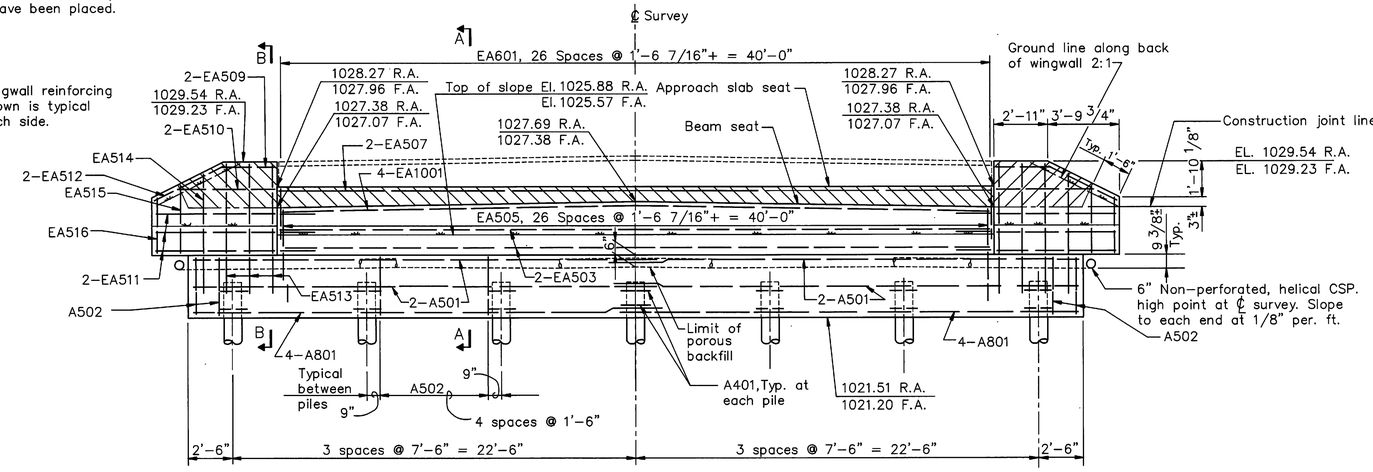
GENERAL PLAN, GENERAL NOTES AND ESTIMATED QUANTITIES
BRIDGE NO. ASD-250-0743
OVER BRANCH
OF VERMILION RIVER

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
CDW	BRW	—	EAD	JSK	4-24-89	

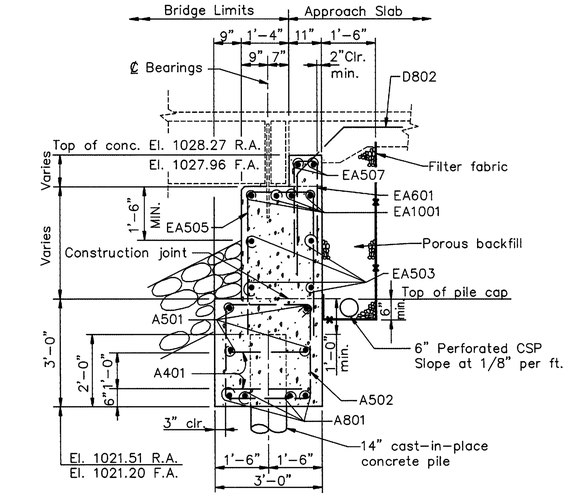


PLAN

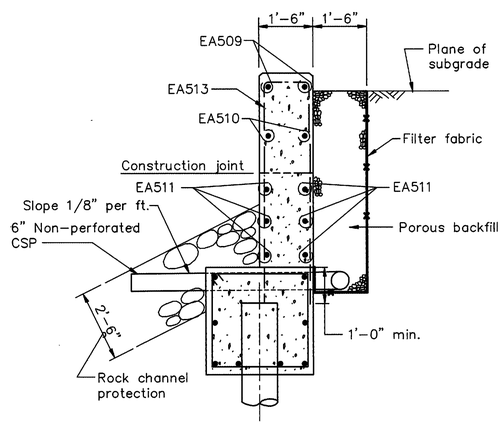
Note: Shaded areas ▨ indicate concrete to be poured after the precast beams have been placed.



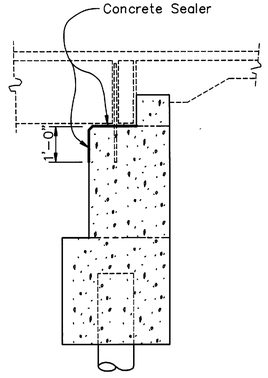
ELEVATION



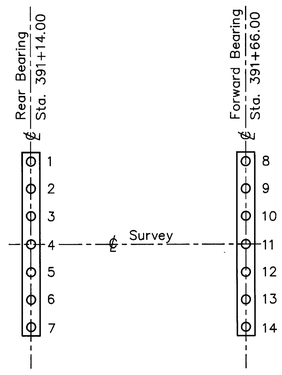
SECTION A-A



SECTION B-B



DETAIL "1"
CONCRETE SEALER AT BRIDGE SEAT



PILE PLAN

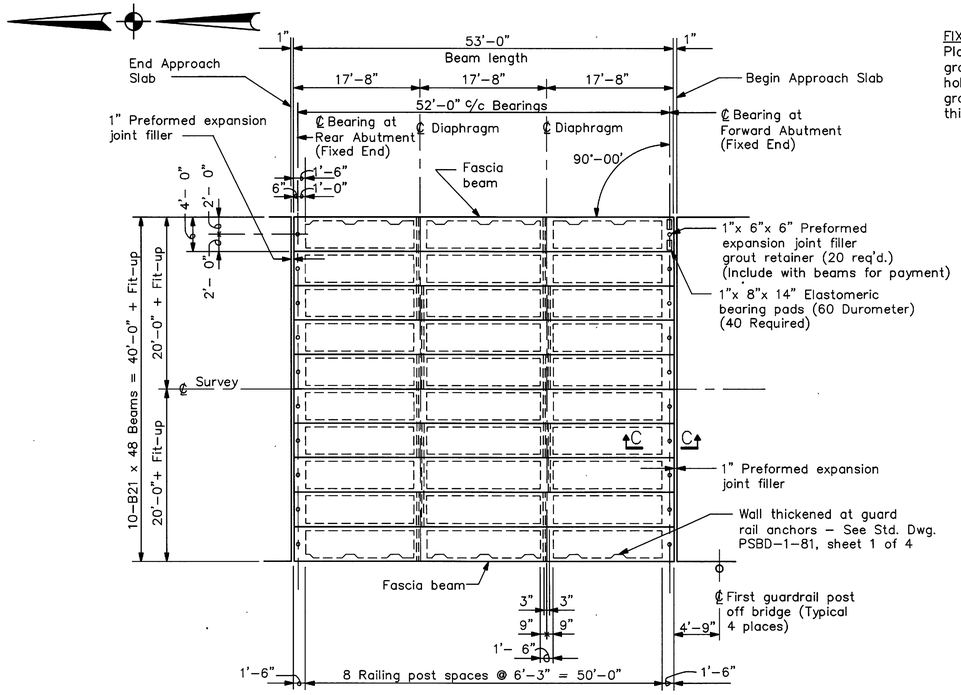
NOTES

1. POROUS BACKFILL shall extend upward to the plane of the subgrade and laterally as shown. Porous backfill shall be gravel and encased with filter fabric. Filter fabric, type A, shall conform to item 712.09 and shall be included with porous backfill for payment.
2. BRIDGE SEAT REINFORCING Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of anchor bar holes.
3. For Reinforcing Bending Schedules see sheet 5 / 6
4. REINFORCING SPLICE LENGTHS shall be 1'-8" for #5 bars, 3'-3" for #8 bars, and 5'-2" for #10 bars.
5. Seal top and front surfaces of bridge seat as shown in Detail 1.
6. NOTATION R.A.-Rear abutment F.A.-Forward abutment

R.E.WARNER & ASSOCIATES CONSULTING ENGINEERS WESTLAKE OHIO | 3 / 6

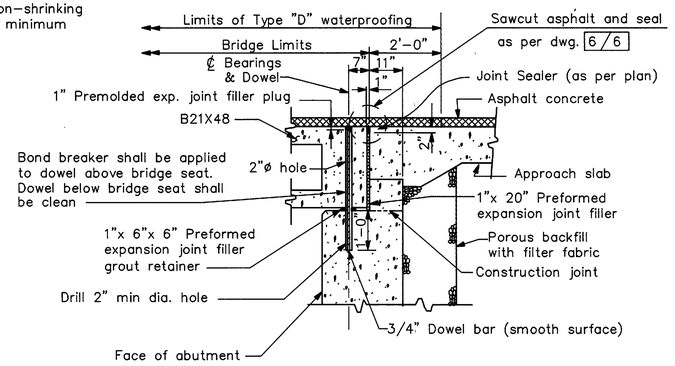
FORWARD AND REAR ABUTMENT DETAILS BRIDGE NO. ASD-250-0743 OVER BRANCH OF VERMILION RIVER

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
CDW	BRW	——	EAD	JSK	4-24-89	

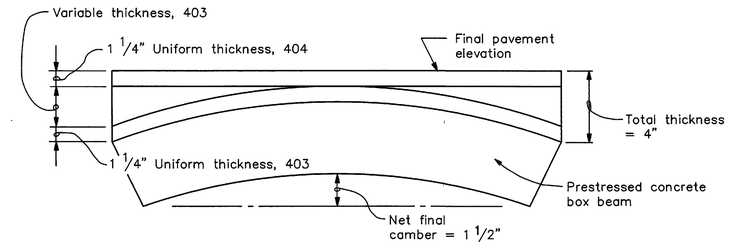


PLAN

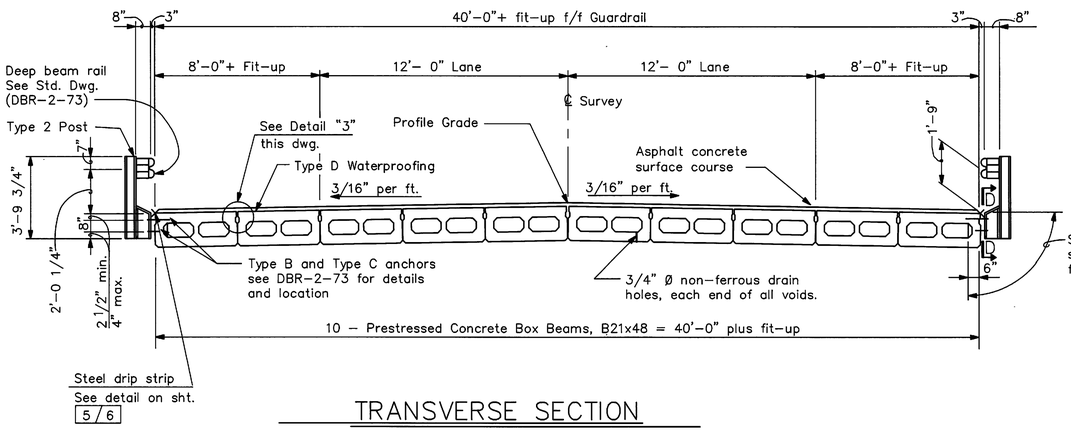
FIXED ANCHOR DOWEL PROCEDURE:
Place preformed expansion joint filler grout retainer. Drill and clean dowel holes. Then place non-shrinking grout, dowel and 1" minimum thickness PEJF plug.



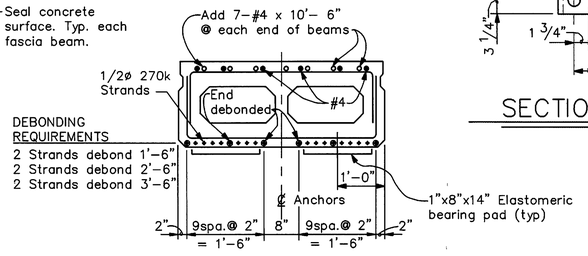
SECTION C-C



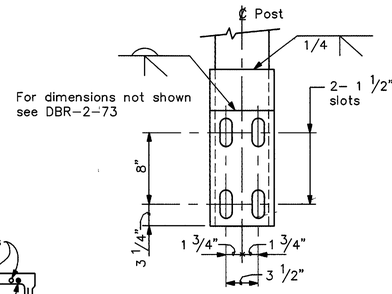
ASPHALT THICKNESS DIAGRAM



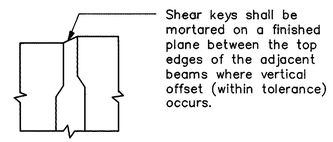
TRANSVERSE SECTION



TYPICAL BOX BEAM B21X48



SECTION D-D



DETAIL "3"

NOTES

ASPHALT CONCRETE SURFACE COURSE shall consist of a variable thickness of 403 and a 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.

CAMBER Calculated camber at time of paving, including allowance for camber growth due to creep, is 1 3/4". Calculated deflection due to weight of surface course and railing is 1/4". The net final camber is 1 1/2". This is 1 1/2" in excess of the amount required to place the top of 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 span to 2 3/4" at ends of span.

RAILING See Standard Drawing DBR-2-73

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

GUARDRAIL POST: Slots shall be provided in all guardrail posts, so that vertical adjustments may be made after placement to provide a straight-smooth guardrail line across the structure. See Section D-D this drawing.

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 manufacturers 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.

STANDARD DETAILS AND NOTES All prestressed concrete box beam construction to be in conformance with standard drawing PSBD-1-81 shts. 1,2,3 and 4 of 4 except as noted on these plans.

PRESTRESSING STRANDS are ASTM A416 1/2 in. 7 wire uncoated, stress relieved strands with an ultimate strength of 270,000 psi and an initial tension of 28,900 lbs. per strand.

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WESTLAKE OHIO
4/6

SUPERSTRUCTURE
BRIDGE NO. ASD-250-0743
OVER BRANCH
OF VERMILION RIVER

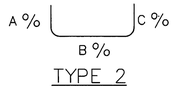
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
CDW	BRW	——	EAD	JSK	4-24-89	

REINFORCING BENDING SCHEDULE

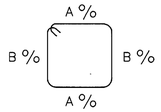
MARK	REAR	FWD	NO.	LENGTH	TYPE	A	B	C	D		WEIGHT
A401	14	14	28	9'-2 1/2"	4	2'-4 3/4"	2'-0"				175
A501	8	8	16	25'-8"	STR						428
A502	34	34	68	10'-6"	4	2'-6"	2'-6"				745
A801	8	8	16	26'-6"	STR						1132
D802	27	27	54	4'-5"	5	1'-0"	1'-9"	1'-9"	2'-4"		637
								TOTAL WEIGHT			3117

EPOXY COATED REINFORCING BENDING SCHEDULE

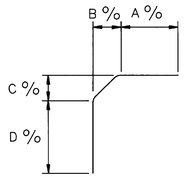
MARK	REAR	FWD	NO.	LENGTH	TYPE	A	B	C	D		WEIGHT
EA503	4	4	8	40'-0"	STR						334
EA505	27	27	54	9'-8"	2	4'-0"	1'-11"	4'-0"			544
EA507	2	2	4	40'-0"	STR						167
EA509	4	4	8	2'-11"	STR						24
EA510	4	4	8	5'-5"	STR						45
EA511	12	12	24	8'-5"	STR						211
EA512	4	4	8	4'-5"	STR						37
EA513	6	6	12	13'-11"	2	6'-6"	1'-2"	6'-6"			174
EA514	2	2	4	13'-3"	2	6'-2"	1'-2"	6'-2"			55
EA515	2	2	4	7'-11"	2	3'-6"	1'-2"	3'-6"			33
EA516	2	2	4	6'-8"	2	2'-10 1/2"	1'-2"	2'-10 1/2"			28
EA601	27	27	54	4'-11"	2	2'-4"	7"	2'-4"			399
EA1001	4	4	8	40'-0"	STR						1376
								TOTAL WEIGHT			3427



TYPE 2

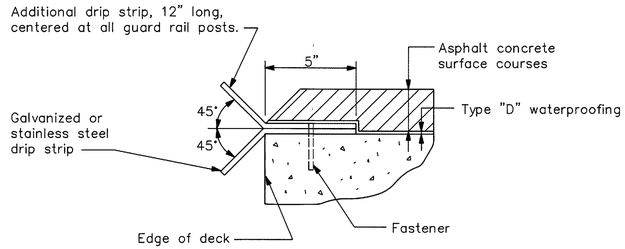


TYPE 4



TYPE 5

DRIP STRIP Prior to applying deck membrane waterproofing, a bent drip strip shall be installed along the edges of the deck as shown. The strips shall be fastened at 1'- 6" c/c maximum with 1-1/4" 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 wingwall. 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 requiements of ASTM A568. Galvanizing shall be in accordance with 711.02. Stainless steel shall be 20 gauge ASTM A167, Type 304, mill finish. The final pay quantity shall be the actual overall length of the Drip Strip. All laps and additional strips at posts shall not be measured for payment. Payment shall be at the contract price bid for Item Special, Lin. Ft., Steel Drip Strip, which shall include all materials, labor, tools and incidentals necessary to complete the item.



DRIP STRIP DETAIL

NOTES:

REINFORCING STEEL SAMPLES: Refer to CMS Sections 106.03, 700, 709.01 through 709.05 & 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.

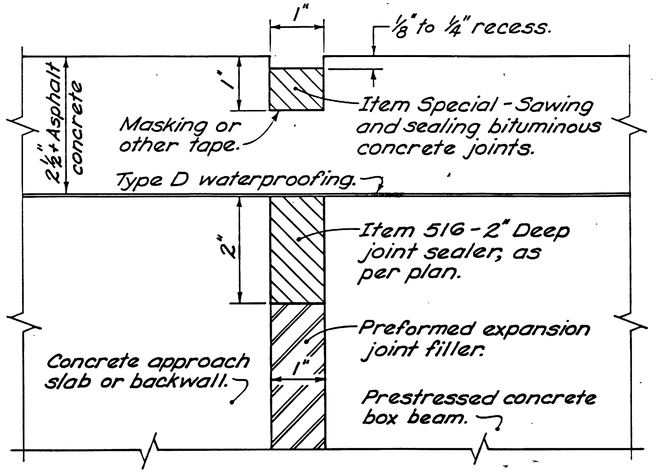
REINFORCING SPLICE LENGTHS shall be 1'-8" for #5 bars, 3'-3" for #8 bars, and 5'-2" for #10 bars.

R.E. WARNER & ASSOCIATES CONSULTING ENGINEERS WESTLAKE OHIO 5/6

REINFORCING STEEL SCHEDULE AND DRIP STRIP DETAIL

BRIDGE NO. ASD-250-0743 OVER BRANCH OF VERMILION RIVER

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
CDW	BRW	——	EAD	JSK	4-24-89	



SEALING OF JOINTS AT ABUTMENTS

ITEM SPECIAL - SAWING AND SEALING BITUMINOUS CONCRETE JOINTS

1) Description:

This work shall consist of cutting and sealing transverse joints on the new bituminous concrete overlay of box beam bridges. Bituminous concrete joints shall be constructed directly over, and in line with, the existing underlying transverse abutment joint of the box beams.

2) Materials:

The joint sealant shall meet the requirements of ASTM Specification D3405, Joint sealants, Hot-poured, for Concrete and Aspalt Pavements. Acceptable alternate materials are:

Roof-Flex 176, polyurethane, as produced by the Carboline Company, 350 Hanley Industrial Court, St. Louis, Missouri 63144 (Roger Zubal, 614-877-3406); a silicone sealant meeting Federal Specifications TT-S-001543A Class A (one-part silicone sealants) and TT-S-00230C Class A (one-component sealants), such as those manufactured by General Electric, Silicone Products Division, 6155 Rockside Rd., Rockside Square I, Independence, Ohio 44131 (John Fromholtz, 216-447-1750) or Dow Corning, 3737 Park East, Beachwood, Ohio 44122 (Robert Ruppel, 216-464-2330); or Sof-Seal, a cold-applied, low-modulus, two-component polymeric compound horizontal sealant as manufactured by W. R. Meadows, Inc., P.O. Box 543, Elgin, Illinois 60121 (Robert Cameron, 312-683-4500). Sealant will be accepted on the basis of the manufacturer's certification that it conforms to the requirements of these specifications.

3) Construction Details:

A) General: The contractor shall conduct his operation so that the cutting, cleaning and sealing of transverse joints is a continuous operation that will be performed as soon as practical after the paving, but no later than four (4) days after placement of the asphalt concrete surface course. Traffic shall not be allowed to knead together or damage the joint cut prior to sealing.

B) Cutting of Transverse Joints: The contractor shall saw or rout transverse joints to the dimensions shown in the details on this sheet. The cut joints shall lie directly above each box beam abutment joint. The joint location shall be marked on the new asphalt surface with a chalk line, or by some other acceptable method, before cutting. Details of the method for locating and accurately marking the proposed cuts shall be subject to the approval of the Engineer prior to starting any surfacing or paving operations.

The blade or blades shall be of such size that the full width and depth of the cut can be made with one pass. Dry or wet cutting will be allowed. Joints shall extend the full width of the bridge.

C) Cleaning Joints: Dry sawed joints shall be thoroughly cleaned with a sufficient amount of compressed air to remove any dirt, dust, or deleterious matter. Wet sawed joints shall be washed clean of all cuttings by flushing with a jet of water and with other tools as necessary. After flushing, the joint shall be blown out with compressed air. When the surfaces are thoroughly clean and dry, and just prior to placing the joint sealer, compressed air having a pressure of at least 90 p.s.i. shall be used to blow out the joint and remove all traces of dust.

In the event freshly cut joints become contaminated before they are sealed, they shall be recleaned of all foreign material by high pressure water jet.

D) Sealing Joints: The joint shall be thoroughly dried before the sealant is placed. After cleaning and drying, a bond-breaker (tape) shall be applied to the bottom of the groove.

Hot-poured joint sealant material shall be heated in a kettle or melter constructed as a double boiler, with the space between the inner and outer shells filled with oil or other heat transfer medium. Positive temperature control and mechanical agitation shall be provided. Heating must be in strict accordance with the manufacturer's recommendation. Joint sealer material shall never be kept heated at the pouring temperature for more than four (4) hours and shall never be reheated. Sealer left in the applicator at the end of a day's work shall be removed and discarded.

Hot-poured sealant shall be applied immediately through a nozzle, which must project into the sawed joint, filling from the bottom up. The seal shall completely fill the joint in such a manner that, after cooling, the level of the sealer will not be higher than 1/8" below the pavement surface. Any depression in the cooled seal greater than 3/16" shall be brought up to the specified limit by further addition of hot-poured sealant. Care shall be taken in the sealing of the joints so that the final appearance will present a neat fine line.

The cold applied sealant materials (polyurethane, silicone, and polymeric compounds) shall be installed as per manufacturers' recommendations, or as directed by the Engineer. The sealant shall be installed when the ambient temperature is 40 degrees F or higher. Traffic shall not be allowed on the joint for one hour after application of the sealant.

4) Method of Measurement:

The quantity to be paid for under this item will be the number of linear feet of joints sawed and sealed as per the above requirements.

5) Basis of Payment:

The unit price per linear foot for Item Special - "Sawing and sealing bituminous concrete joints" shall include the cost of all labor, materials, and equipment necessary to complete the work, including the furnishing and placing of the joint sealer material.

ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN

This item shall meet the material (para. 2) and sealing (para. 3D) specifications of Item Special - Sawing and sealing bituminous concrete joints.

REVISIONS
2-8-84
3-10-87
4-14-87
6-16-87

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

6/6

ABUTMENT JOINTS IN BITUMINOUS CONCRETE, BOX BEAM BRIDGES

BRIDGE NO. ASD-250-0743

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
JEB	MJB		WTF	WJJ	2-2-84

CALC. BY
DATE
CHK'D. BY
DATE

ASD-250-(7.42)(7.57)

OHIO FHWA REGION 5

22 / 29

ASHLAND COUNTY
ASD — 250 — (7.42)(7.57)

LOCATED 0.2 ± MILE NORTH OF BAILEY LAKES

N

1" ϕ I.P. Set
30.39'
℄ Survey U.S.Rt. 250
R.R.S.
31.77'
36.64'
1" ϕ I.P. Set
P.O.T. Sta. 388 + 08.08

N

1" ϕ I.P. Set
35.02'
℄ Survey U.S.Rt. 250
R.R.S.
37.16'
44.29'
1" ϕ I.P. Set
P.O.T. Sta. 401 + 57.43

1 1/2 STY. FR. RES.
DECK
POOL
PINE TREES
BLK. BUSINESS BUILDING
GRAVEL
WATERLINE
Existing Bridge to be Removed
WATER LINE MARKER
Resume Pavement Construction Sta. 398 + 30.00
End Pavement Construction Sta. 399 + 69.00
SAVANNAH LAKE DITCH
40'-0" Out to Out Deck
Face/Face Guardrail
Bridge Sign
2' ϕ Conc. Light Pole Base
ASPHALT
12" C.M.P.
CONC. LIGHT POLE BASE
12" TILE
Curve Left Sign
Exact Waterline Location Unknown. Based on Available Information
GAS LINE MARKER
Match Exist. Pavement Elev.
End Approach Slab Sta. 398 + 74.83
Approach Slab (AS-1-81)
Begin Approach Slab Sta. 399 + 24.17
Approach Slab 400 (AS-1-81)
B-1
B-2
2:1
15'-0"
20'-0"
24'±
S. 0°-02'-30" E.
℄ SURVEY USR 250

EARTHWORK limits shown are approximate actual slopes shall conform to plan cross-sections.

THE FOLLOWING ARE ELEVATIONS OF THE ABUTMENTS OF THE EXISTING BRIDGE 0758:
TOP OF SOUTHEAST ABUTMENT = 1027.03 TOP OF NORTHWEST ABUTMENT = 1026.98
TOP OF NORTHEAST ABUTMENT = 1027.04 TOP OF SOUTHWEST ABUTMENT = 1027.09

THIS INFORMATION SUPPLIED FOR THE PURPOSE OF MAINTAINING EXISTING B.M. REFERENCES OF THE EXISTING STRUCTURE AS PER COURT DOCUMENTS FOR ESTABLISHING CHANNEL ELEVATIONS.

DESIGN TRAFFIC
1988 ADT: 4410
2008 ADT: 6620
% Trucks: 16 %

Traffic will be maintained by Detour.

DRAINAGE DATA
Drainage Area 3.9 Sq. Mi.
Est. Q_{25} = 640 c.f.s. Q_{100} = 863 c.f.s.
V_{25} = 3.85 f.p.s. V_{100} = 4.22 f.p.s.

Benchmark: North Corner of Abandoned Light Pole Fdtn. Sta. 400+65.81, Lt. 31.78', Elev. 1027.21'

ABBREVIATIONS:
I.P. Iron Pin
R.R.S. Railroad Spike

FOUNDATION INVESTIGATION LEGEND:
Indicates boring location

1027.23 1027.01 1026.88 1026.95 1027.16 1027.33 1027.50 1027.75 1028.18 1028.59 1028.91

396 +50 397 +50 398 +50 399 +50 400 +50 401

Feather Item 404
100 Yr. Water El. 1025.48'
Exist. Bridge to be Removed
Top of Slope El. 1023.42'
+0.43% Grade
Top of Slope El. 1023.64'
Existing Profile
Bottom of Pile Cap El. 1019.10'
Slope Protection Type 'D', 1'-6" Thick with Fabric Filter
Bottom of Pile Cap El. 1019.32'
All Piles to be 14" ϕ Cast-in-Place Reinforced Conc. Piles, Estimated Pay Length 50 Ft.
Existing Abutments to be Removed to El. 1020.25' ±
Design Yr. Water El. 1024.52'
Normal Water El. 1019.5' ±
NOTE: All Profile Grades Are On ℄ Survey.

1027.26 +30.00 1027.36 +59.83 1027.42 +74.83 49.34' Bridge Limits 48'-0" ℄ Bearings 1027.64 +24.17 1027.70 +39.17 1027.91 +69.00

1030 1020 1010

EXISTING STRUCTURE DATA

STRUCTURE FILE Nº. 0304743
TYPE: CONCRETE SLAB
SPAN: 17'-10" CLEAR
ROADWAY: 30.4' ± F/F GUARDRAILS
LOADING: H-15
SUB-STRUCTURE: CONCRETE GRAVITY
WEARING SURFACE: 12" ± ASPHALT
ALIGNMENT: TANGENT
SKEW: 30° L.F.
CONDITION: FAIR TO POOR
DATE BUILT: 1930

PROPOSED STRUCTURE

TYPE: SINGLE SPAN PRECAST BOX BEAM ON CAPPED PILE ABUTMENTS
SPAN: 48'-0" ℄ BEARINGS
ROADWAY: 40'-0" F/F OF GUARDRAIL
SKEW: 30° L.F.
LOADING: HS 20-44 & ALTERNATE MILITARY LOADING
WEARING COURSE: 2½ MIN ASPHALT CONCRETE
APPROACH SLAB: (AS-1-81) 15'-0" LONG
ALIGNMENT: TANGENT
SUPERELEVATION: NONE

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WESTLAKE OHIO

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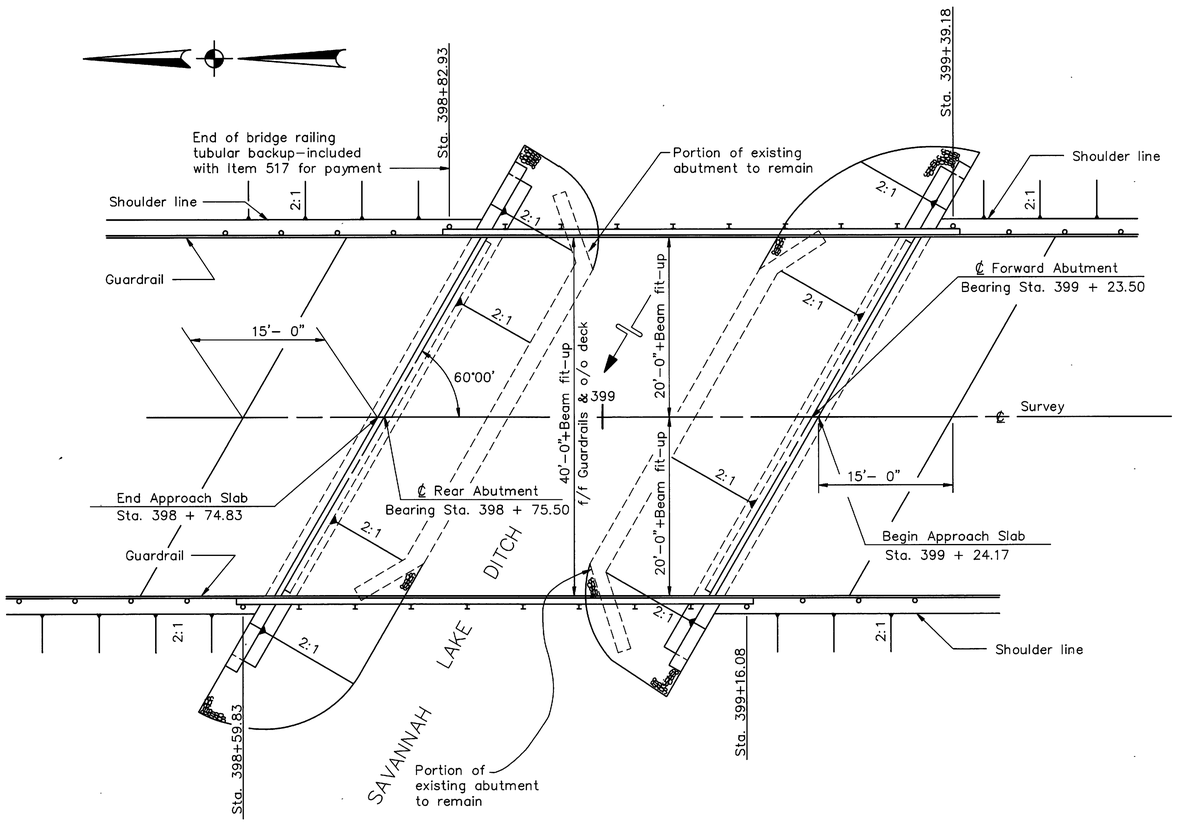
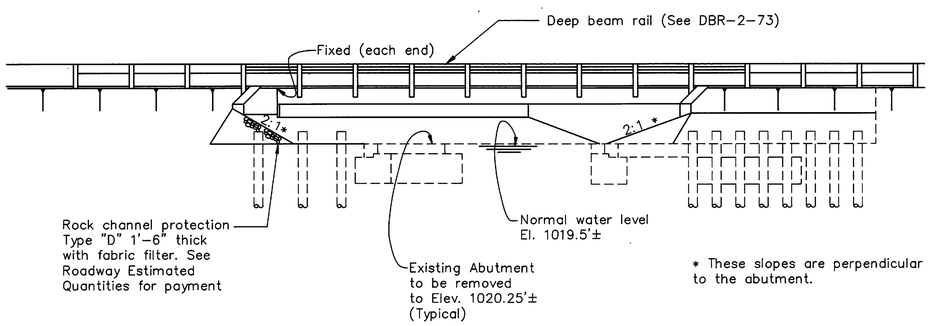
SITE PLAN

BRIDGE NO. ASD — 250 — 0758
OVER
SAVANNAH LAKE DITCH
STA. 398+74.83 TO 399+24.17

PRESENT TOPOGRAPHY		PROPOSED WORKED			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
DISTRICT 3	AERIAL	CDW	SRN	EAD	JSK



GENERAL PLAN



GENERAL ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawings: DBR-2-73 (dated 4-10-73), PSBD-1-81 sheets 1,2,3, and 4 of 4 (dated 9-18-81), AS-1-81 sheets 1,2 and 3 of 3 (dated 11-27-81) and to Supplemental Specifications: 836 (dated 11-12-85)

DESIGN SPECIFICATION This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Tranportation Officials, 1983, including the 1984, 1985, and 1986 Interim Specifications, and the Ohio "Supplement" to these specifications.

DESIGN DATA Design Loading – HS20-44 and the Alternate Military Loading.
Concrete Class C – f'c = 4000 p.s.i. for substructure.
Reinforcing Steel – ASTM A615,A616 or A617 – Fy = 60,000 p.s.i.
Concrete for prestressed concrete beams-unit stresses, 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 in the prestressed box beams may be Grade 40, 40,000 p.s.i. yield or Grade 60, 60,000 p.s.i. yield.
Abutment Piling: Abutment piling bending stress may approach, reach or exceed yield stress.

DECK PROTECTION METHOD Type "D" waterproofing, asphalt concrete overlay, and sealing of concrete surfaces.

TRAFFIC MAINTENANCE Traffic maintenance information can be found on sheet 3.

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.

CLASS C CONCRETE, AS PER PLAN All coarse aggregate for abutment concrete shall be limestone or slag, and not gravel.

EXISTING STRUCTURE VERIFICATION Details and dimensions shown on these plans pertaining to the existing structure have been obtained from plans of the existing structure and/or from field observations and measurements. Consequently, they are indictive of the existing structure and the proposed work but they shall be considered tentative and approximate. The contractor is refered to CMS sections 102.05 and 105.02.

ITEM SPECIAL, SEALING OF CONCRETE SURFACE A concrete sealer, either silane or an epoxy sealer, shall be applied to the following concrete surfaces: The exposed face and the first 6 inches of the bottom surface of the fascia box beam, abutments, see sheet 3/5. See the proposal for surface preparation requirements, application rates, materials requirements and procedures.

REMOVAL OF EXISTING STRUCTURE When no longer needed to maintain traffic, existing structure shall be removed. Rear and Forward Abutments shall be removed to Elev. 1020.25± or closet rustication groove. Suitable waste masonary may be placed as bank protection as directed by the Engineer.

ITEM 507 14 INCH CAST-IN-PLACE REINFORCED CONCRETE PILES AS PER PLAN: The responsibility of choosing and providing a satisfactory pile wall thickness for this project shall be borne by the Contractor except that the pile wall thickness shall not be less than 0.25 inches. If a pile wall thickness greater than 0.25 inches is necessary to resist the pile installation driving stress, the Contractor shall make this determination and shall furnish a pile with an acceptable wall thickness.

PILES Shall be driven to a minimum bearing capacity of 60 tons per pile.

The pile hammer used to install the reinforced concrete piles shall have a State's Energy Rating of not less than 16,500 foot-pounds. This requirement does not relieve the Contractor from 108.05 which states that the Contractor is to provide sufficient equipment for prosecuting the required work. Refer to "ODOT's Manual of Procedures for Structures" to obtain the State's Energy Rating.

CALC. BY. CDW — ESTIMATED QUANTITIES — CHK'D BY EAD

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS	GEN'L		
202	Lump		Portions of structure removed			Lump		
403	11	Cu.Yd.	Asphalt concrete, AC-20	11				
404	8	Cu.Yd.	Asphalt concrete, AC-20	8				
503	Lump		Unclassified excavation		Lump			
505	Lump		Pile Driving Equipment Mobilization			Lump		
507	800	Lin.Ft.	14" Cast-in-place reinforced concrete piles, as per plan		800			
509	3471	Lbs.	Reinforcing steel, Grade 60		3471			
509	4384	Lbs.	Epoxy coated reinforcing steel, Grade 60		4384			
511	70	Cu.Yd.	Class C concrete, abutment, as per plan.		70			
512	237	Sq.Yd.	Type D waterproofing	237				
515	10	Each	Prestressed concrete bridge members, (See Proposal Note)	10				
516	161	Sq.Ft.	1" Preformed expansion joint filler		161			
516	40	Each	1"x8"x14" Elastometric bearing pads	40				
516	92	Lin.Ft.	2" Deep joint sealer, as per plan	92				
516	16	Sq.Ft.	1/8" Preformed bearing pads, 711.21	16				
517	112.5	Lin.Ft.	Railing (deep beam w\stl. tubular backup, type 2 stl. posts & bolts)*	112.5				
518	27	Cu.Yd.	Porous backfill, as per plan		27			
518	121	Lin.Ft.	6" Perforated, helical corrurated steel pipe, 707.01		121			
518	24	Lin.Ft.	6" Non-perforated, helical corr.stl.pipe, including specials,707.01		24			
523	3	Hour	Dynamic load test		3			
Special	96	Lin.Ft.	Steel drip strip	96				
Special	49	Sq.Yd.	Sealing concrete surfaces, (See Proposal Note)	25	24			
Special	92	Lin.Ft.	Sawing and sealing Bituminous concrete joint	92				

* See proposal note

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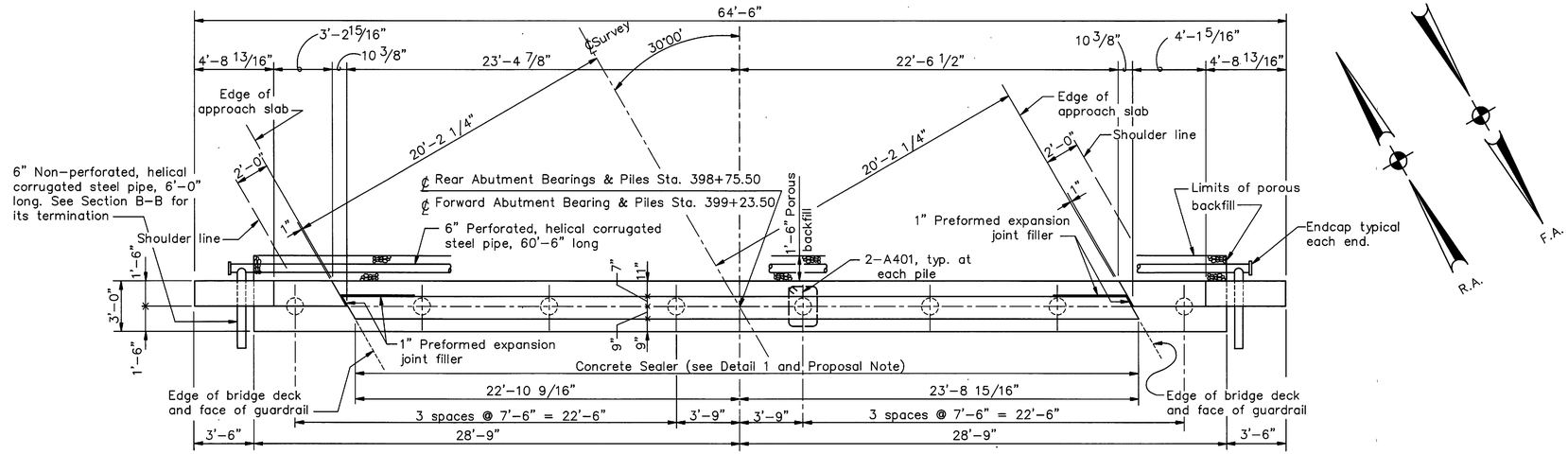
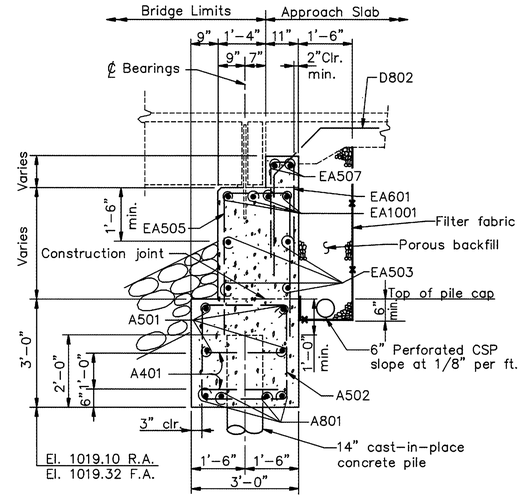
GENERAL PLAN AND GENERAL NOTES
BRIDGE NO. ASD-250-0758
OVER SAVANNAH LAKE DITCH

DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
CDW	BRW	——	EAD	SK	4-24-89	

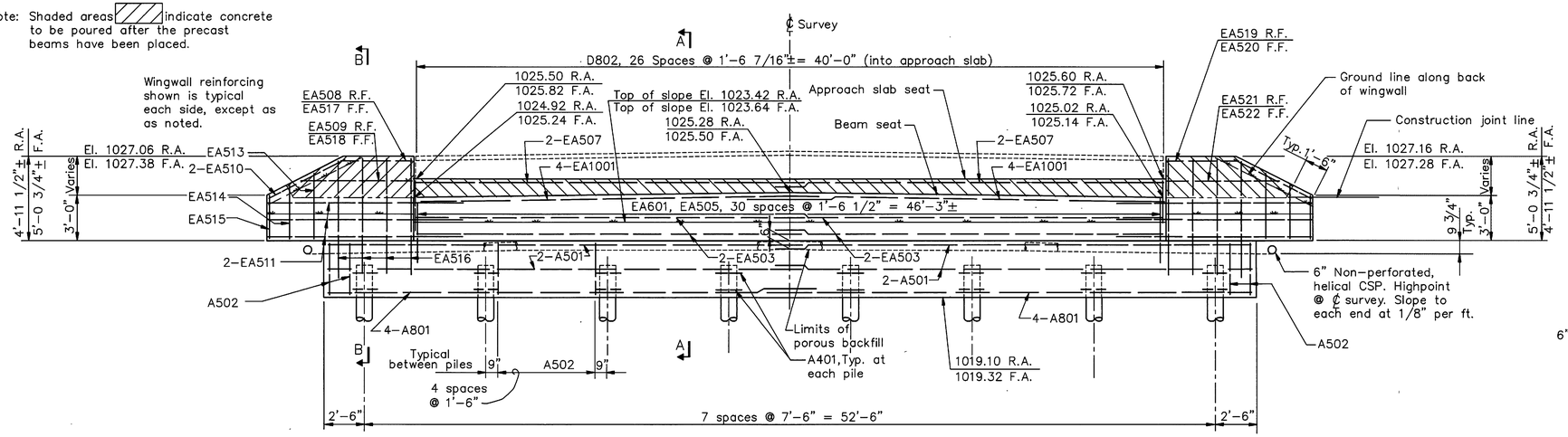


PLAN

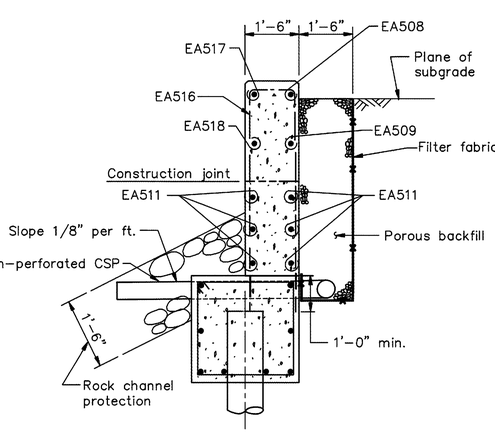


SECTION A-A

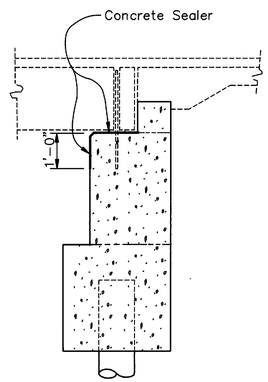
Note: Shaded areas ▨ indicate concrete to be poured after the precast beams have been placed.



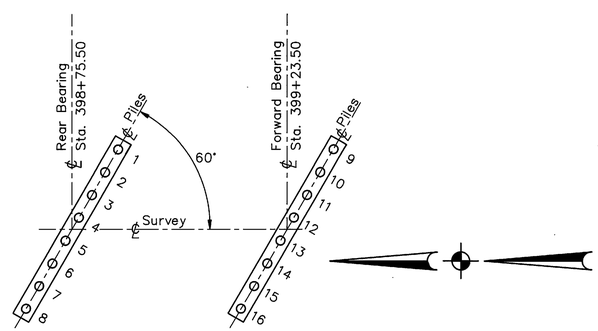
ELEVATION



SECTION B-B



DETAIL "1"
CONCRETE SEALER AT BRIDGE SEAT



PILE PLAN

NOTES

1. POROUS BACKFILL shall extend upward to the plane of the subgrade and laterally as shown. Porous backfill shall be gravel and encased with filter fabric. Filter fabric, type A, shall conform to item 712.09 and shall be included with porous backfill for payment.
2. BRIDGE SEAT REINFORCING Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of anchor bar holes.
3. For Reinforcing Bending Schedules see sheet 5 / 5
4. REINFORCING SPLICE LENGTHS shall be 1'-8" for #5 bars, 3'-3" for #8 bars, and 5'-2" for #10 bars.
5. Seal top and front surfaces of bridge seat as shown in Detail 1.
6. NOTATION R.A.-Rear abutment
   F.A.-Forward abutment
   R.F.-Rear face
   F.F.-Front face

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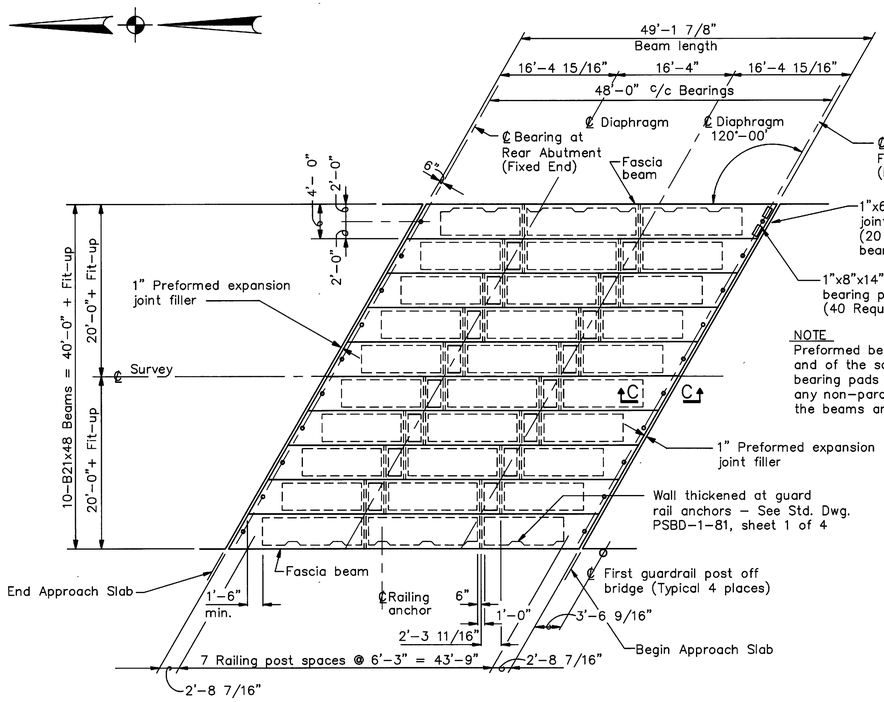
WESTLAKE OHIO

FORWARD AND REAR ABUTMENT DETAILS
BRIDGE NO. ASD-250-0758
OVER SAVANNAH LAKE DITCH

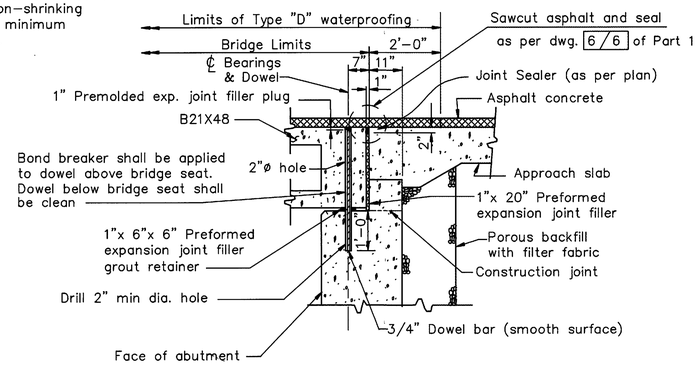
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
CDW	BRW	——	EAD	JSK	4-24-89	



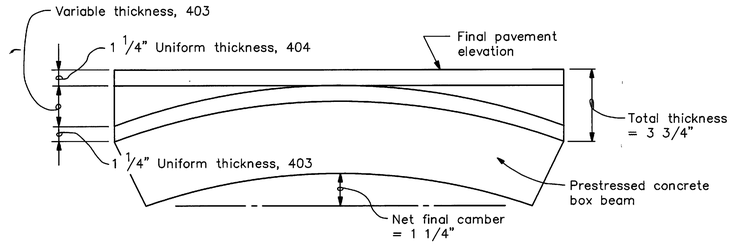
PLAN

FIXED ANCHOR DOWEL PROCEDURE:
Place preformed expansion joint filler grout retainer. Drill and clean dowel holes. Then place non-shrinking grout, dowel and 1" minimum thickness PEJF plug.

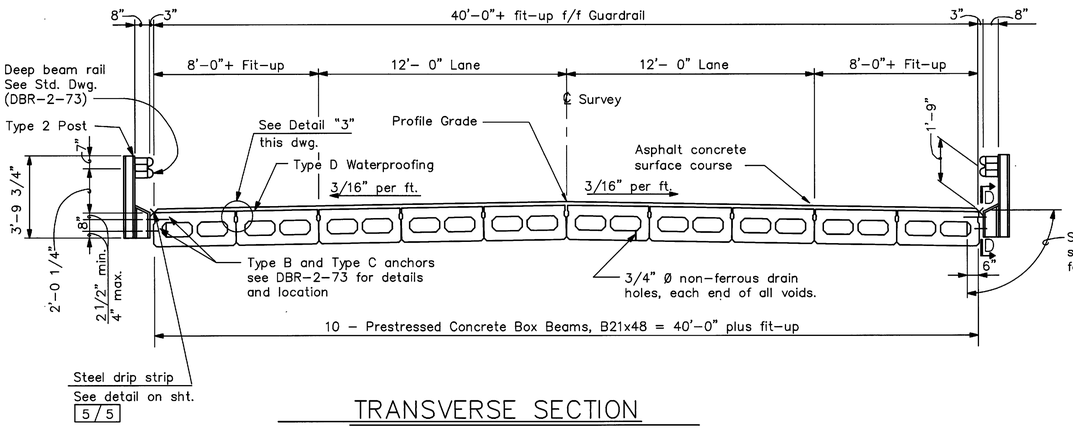
NOTE
Preformed bearing pads per 711.21, 1/8" thick and of the same plan dimensions as the elastomeric bearing pads are provided as shims to accomodate any non-parallelism between the bottom of the beams and the bridge seat.



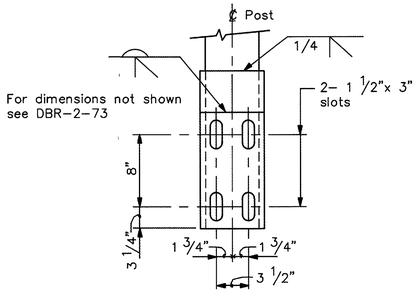
SECTION C-C



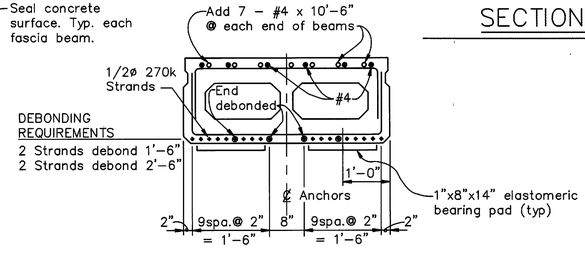
ASPHALT THICKNESS DIAGRAM



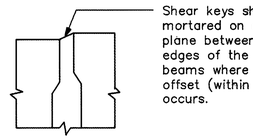
TRANSVERSE SECTION



SECTION D-D



TYPICAL BOX BEAM B21X48



DETAIL "3"

NOTES

ASPHALT CONCRETE SURFACE COURSE shall consist of a variable thickness of 403 and a 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.

CAMBER Calculated camber at time of paving, including allowance for camber growth due to creep, is 1 1/2". Calculated deflection due to weight of surface course and railing is 1/4". The net final camber is 1 1/4". This is 1 1/4" in excess of the amount required to place the top of 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 span to 2 1/2" at ends of span.

RAILING See Standard Drawing DBR-2-73

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

GUARDRAIL POST: Slots shall be provided in all guardrail posts, so that vertical adjustments may be made after placement to provide a straight-smooth guardrail line across the structure. See Section D-D this drawing.

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 manufacturers 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.

STANDARD DETAILS AND NOTES All prestressed concrete box beam construction to be in conformance with standard drawing PSBD-1-81 shts. 1,2,3 and 4 of 4 except as noted on these plans.

PRESTRESSED STRANDS are ASTM A416 1/2 in. 7 wire uncoated, stress relieved strands with an ultimate strength of 270,000 psi and and initial tension of 28,900 lbs per strand.

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SUPERSTRUCTURE
BRIDGE NO. ASD-250-0758
OVER SAVANNAH LAKE DITCH

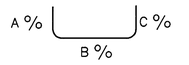
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
CDW	BRW	——	EAD	JSK	4-24-89	

REINFORCING BENDING SCHEDULE

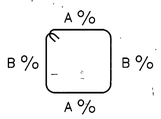
MARK	REAR	FWD	NO.	LENGTH	TYPE	A	B	C	D		WEIGHT
A401	16	16	32	9'-2 1/2"	4	2'-4 3/4"	2'-0"				197
A501	8	8	16	29'-5"	STR						491
A502	39	39	78	10'-6"	4	2'-6"	2'-6"				854
A801	8	8	16	30'-3"	STR						1292
D802	27	27	54	4'-5"	5	1'-0"	1'-9"	1'-9"	2'-4"		637
								TOTAL WEIGHT			3471

EPOXY COATED REINFORCING BENDING SCHEDULE

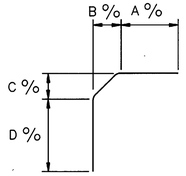
MARK	REAR	FWD	NO.	LENGTH	TYPE	A	B	C	D		WEIGHT
EA503	8	8	16	23'-11 1/2"	STR						400
EA505	31	31	62	9'-10"	2	4'-1"	1'-11"	4'-1"			636
EA507	8	8	16	23'-11 1/2"	STR						400
EA508	1	1	2	3'-0"	STR						6
EA509	1	1	2	5'-4"	STR						11
EA510	4	4	8	5'-0"	STR						42
EA511	12	12	24	11'-3"	STR						282
EA513	2	2	4	8'-11"	2	4'-0"	1'-2"	4'-0"			37
EA514	2	2	4	7'-7"	2	3'-4"	1'-2"	3'-4"			32
EA515	2	2	4	6'-3"	2	2'-8"	1'-2"	2'-8"			26
EA516	8	8	16	13'-3"	2	6'-2"	1'-2"	6'-2"			221
EA517	1	1	2	3'-8"	STR						8
EA518	1	1	2	6'-0"	STR						13
EA519	1	1	2	3'-2 3/4"	STR						7
EA520	1	1	2	3'-10 3/4"	STR						8
EA521	1	1	2	5'-6 3/4"	STR						12
EA522	1	1	2	6'-2 3/4"	STR						13
EA601	31	31	62	4'-11"	2	2'-4"	7"	2'-4"			458
EA1001	8	8	16	25'-9"	STR						1772
								TOTAL WEIGHT			4384



TYPE 2

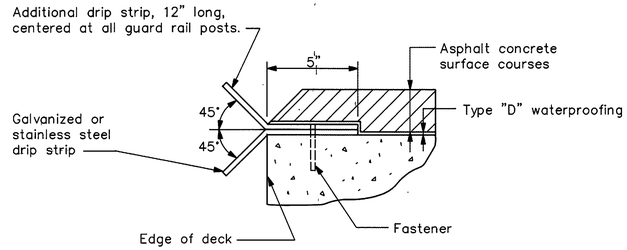


TYPE 4



TYPE 5

DRIP STRIP Prior to applying deck membrane waterproofing, a bent drip strip shall be installed along the edges of the deck as shown. The strips shall be fastened at 1'– 6" c/c maximum with 1–1/4" 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 wingwall. 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 requiements of ASTM A568. Galvanizing shall be in accordance with 711.02. Stainless steel shall be 20 gauge ASTM A167, Type 304, mill finish. The final pay quantity shall be the actual overall length of the Drip Strip. All laps and additional strips at posts shall not be measured for payment. Payment shall be at the contract price bid for Item Special, Lin. Ft., Steel Drip Strip, which shall include all materials, labor, tools and incidentals necessary to complete the item.



DRIP STRIP DETAIL

NOTES:

REINFORCING STEEL SAMPLES: Refer to CMS Sections 106.03, 700, 709.01 through 709.05 & 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.

REINFORCING SPLICE LENGTHS shall be 1'–8" for #5 bars, 3'–3" for #8 bars, and 5'–2" for #10 bars.

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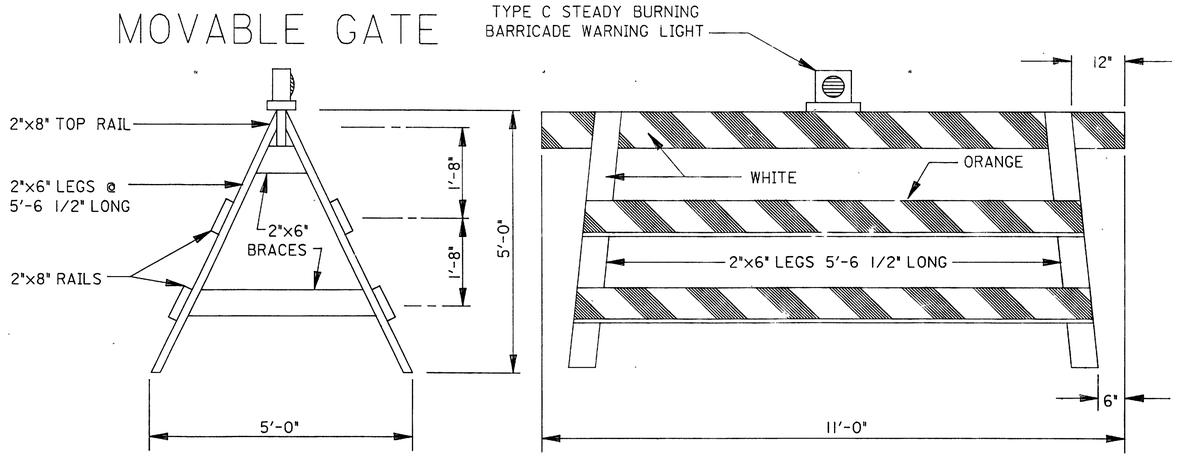
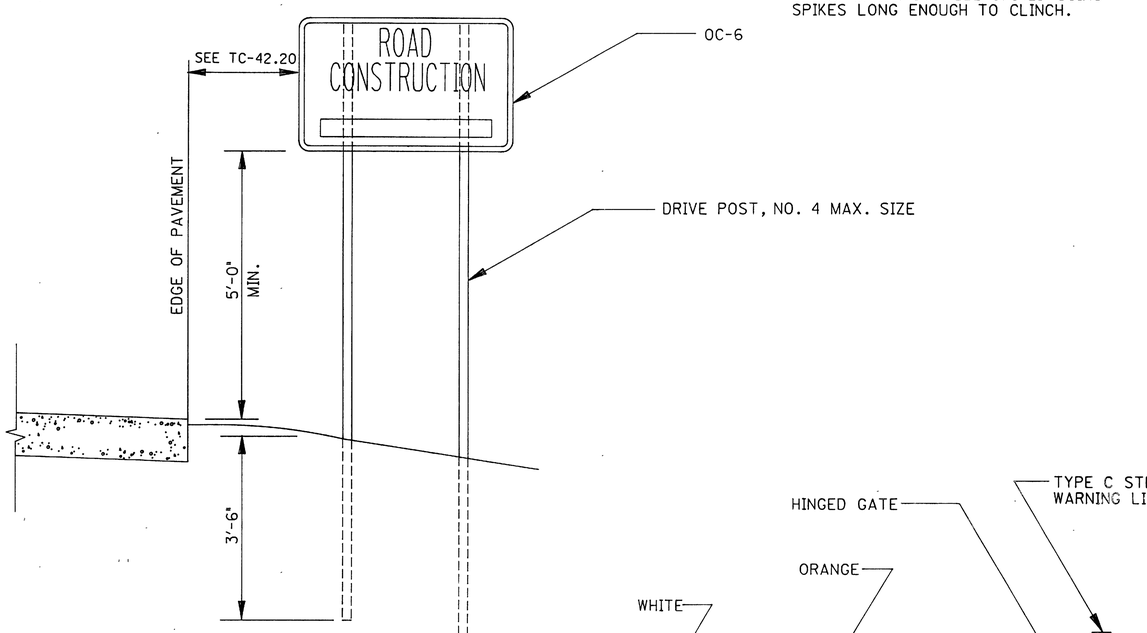
REINFORCING STEEL SCHEDULE AND DRIP STRIP DETAIL
BRIDGE NO. ASD–250–0758
OVER SAVANNAH LAKE DITCH

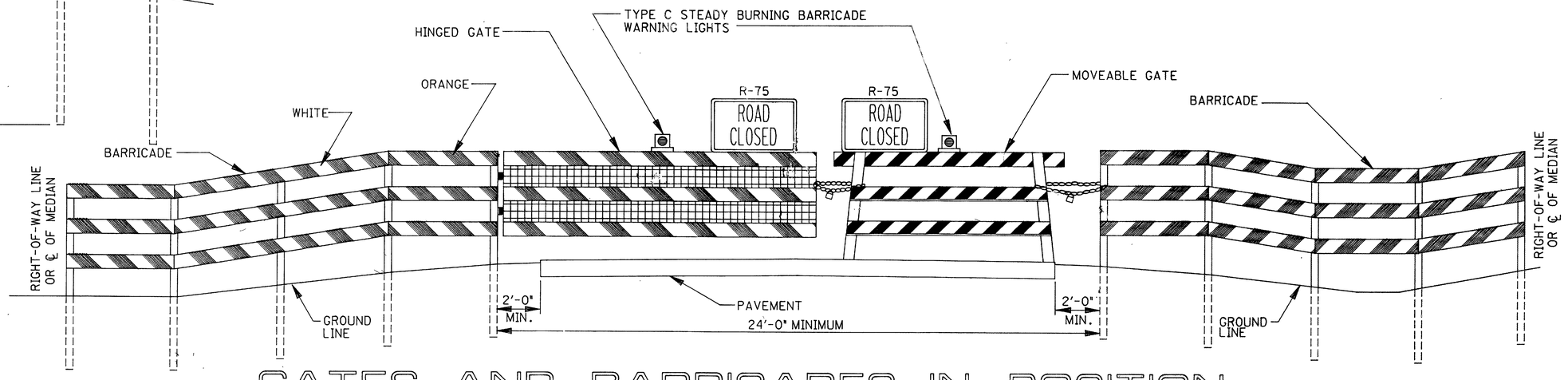
DESIGN	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED
CDW	BRW	——	EAD	JSK	4-24-09	

MOVABLE GATE



GATES SHALL BE WELL SPIKED USING SPIKES LONG ENOUGH TO CLINCH.





GATES AND BARRICADES IN POSITION

-NOTES-

① BARRICADES: BARRICADES SHALL BE CONSTRUCTED ACCORDING TO DETAILS SHOWN. WHEN THE ROAD IS CLOSED TO TRAFFIC, BARRICADES AND GATES SHALL BE USED TO EFFECTIVELY CLOSE THE ENTIRE ROADWAY INCLUDING THE MEDIAN OF DIVIDED HIGHWAYS. IN URBAN AREAS AND AT LOCATIONS WHERE IT IS IMPRACTICAL TO EXTEND THE BARRICADE TO THE RIGHT-OF-WAY LINE BECAUSE OF A SIDEWALK OR OTHER OBSTRUCTION, THE ENDS OF THE BARRICADE SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO EFFECT THE DESIRED CLOSING OF THE HIGHWAY.

② PAINTING AND REFLECTORIZATION: ALL RAILS OF THE BARRCADES AND GATES SHALL BE REFLECTORIZED WITH ORANGE AND WHITE REFLECTORIZED TYPE G SHEETING IN 6" WIDE ALTERNATE STRIPES WHICH SLOPE DOWNWARD TOWARD THE CENTER LINE OF THE ROAD AT AN ANGLE OF 45 . ALL THREE RAILS OFTHE ROAD CLOSED BARRICADE SHALL BE STRIPED ON THE SIDE FACING TRAFFIC. ALL GATE RAILS SHALL BE STRIPED ON BOTH SIDES. ALL POSTS, BRACES, GATE LEGS, AND ANY UNSTRIPED RAILS SHALL BE PAINTED WHITE.

③ GATES: ONE GATE SHALL BE ERECTED FOR EACH TRAFFIC LANE. GATES SHALL BE CHAINED AND PADLOCKED TO ONE ANOTHER AND TO ADJACENT POSTS OF THE BARRICADES. CHAINS SHALL BE 1/4" STOCK OR LARGER WITH WELDED LINKS.

A HINGED GATE MAY BE USED AND SHALL BE AN APPROVED 12'x4' STEEL FRAME FARM TYPE, OR A TYPE APPROVED BY THE ENGINEER THE GATE SHALL BE HUNG ON HINGE SCREW HOOKS, OR AS OTHERWISE APPROVED. STRIPING SIMILAR TO THATUSED ON THE MOVEABLE GATE SHALL BE ACCOMPLISHED WITH 1"x8" LUMBER OR WITH METAL STRIPS FASTENED TO THE GATE. THE GATE SHALL BE SUPPORTED AT THE CENTER IN AN APPROVED MANNER.

④ TYPE C STEADY BURNING BARRICADE WARNING LIGHTS: EACH GATE SHALL BE EQUIPPED WITH A TYPE C STEADY BURNING BARRICADE WARNING LIGHT, CONSPICUOUSLY VISABLE AT ALL DISTANCES UP TO 1000' UNDER NORMAL ATMOSPHERIC CONDITIONS. THE LIGHT SHALL BE IN OPERATION AT ALL TIMES BETWEEN SUNSET AND SUNRISE DURING THE PERIOD THE HIGHWAY IS CLOSED.

⑤ SIGNS: WHERE THE ROAD IS CLOSED TO TRAFFIC BY THE ERECTION OF GATES AND BARRICADES, ROAD CLOSED SIGNS (R-75) SHALL BE MOUNTED ON THE GATES AS SHOWN.

WHERE TRAFFIC IS MAINTAINED, A ROAD CONSTRUCTION AHEAD SIGN (OW-128) SHALL BE USED ON THE RIGHT SHOULDER ON THE APPROACHES APPROXIMATELY 500 FEET IN ADVANCE OF THE PROJECT. A ROAD CONSTRUCTION NEXT__MILES SIGN (OC-6) SHALL BE USED ONTHE RIGHT SHOULDER ON THE APPROACHES TO ANY MAJOR CONSTRUCTION OR MAINTENANCE JOB OF TWO (2) MILES OR MORE IN LENGTH. AN END CONSTRUCTION SIGN (OC-8) SHALL BE ERECTED FACING TRAFFIC LEAVING THE CONSTRUCTION SECTION. THE SIGNS SHALL BE ERECTED AS DETAILED HEREON. DUAL MOUNTED SIGNS ARE REQUIRED FOR A FOUR LANE FACILITY.

⑥ LUMBER: LUMBER USED IN THE CONSTRUCTION OF THE GATES AND BARRICADES SHALL BE NO. 1 COMMON YELLOW PINE OR NO. 1 COMMON DOUGLAS FIR, SURFACED ON FOUR SIDES STANDARD, OR OTHER MATERIALS APPROVED BY THE ENGINEER. ALL SIZES ARE NOMINAL.

⑦ POSTS: POSTS SHALL BE SOUND 4"x4" SAWED OR 4-1/2" ROUND. RAILS OF THE BARRICADE SHALL BE BOLTED TO THE POSTS WITH 5/8" BOLTS.

STANDARD D3-01 06-05-87

DETAILS FOR POSITIONING GATES AND BARRICADES

SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

CALC. BY: PWS 2-89
CHK'D. BY: DES 5-89

STATE JOB NUMBER	FHWA REGION	STATE	PROJECT
03016(0)	5	OHIO	BRF-47 (16)

ASD-250-(7.41)(7.58)
RIGHT OF WAY PLAN

TOTAL NO. PROPERTY OWNERS 5 TOTAL NO. OF COMPLETE TAKES 0 TOTAL NO. OF OWNERS WITH STRUCTURES REMOVED 0

PARCEL NO.	OWNER	DEED RECORD			DEED AREA	TOTAL P.R.O.	TOTAL TAKE	P.R.O. INTAKE	NET TAKE	NET RES. LT.	NET RES. RT.	BLDGS. TO BE ACQ'D.	SHEET NO.	REMARKS	AS ACQUIRED	TYPE FUND	TAX I.D. NO.
		VOL.	PAGE	DATE													
1WD	JOHN R. & HELEN D. DINSMORE	226 206	15-16 465	2-17-48	58.860 AC.	2.0768 AC.	0.4261 AC.	0.3099 AC.	0.1162 AC.	56.667 AC.	—	0	1-2		VOL 561 Pg 370		A01-014-0-0001-00
2WD	CLEAR CREEK TOWNSHIP, ASHLAND CO., OHIO	395	778		12.804 AC.	0.9032 AC.	0.2440 AC.	0.1752 AC.	0.0688 AC.	—	11.832 AC.	0	1-2		VOL 560 Pg 151		A01-014-0-0007-00
3	MARY A. RINGLER				NO	R/W	REQUIRED						1-2				—
4WD	GLENN E. & SARAH R. KLINE	539	617-618		17.624 AC.	0.7768 AC.	0.1821 AC.	0.1347 AC.	0.0474 AC.	—	16.800 AC.	0	1-2		VOL 559 Pg 986		A01-014-0-0006-01
4WD-1	" "						0.3850 AC.	0.2920 AC.	0.0930 AC.	—	—		1-2		" "		A01-014-0-0006-01
5WD	James L. Hammond, Clara B. Hammond	559	673		1.077 A.C.	0.1496 AC.	0.1414 AC.	0.1102 AC.	0.0312 AC.	0.8962 AC.	—	0	1-2		VOL 560 Pg 881		A01-014-0-0003-01
6WD	DALE J. & LOIS M. BROOKS	555	806		8.891 AC.	0.6647 AC.	0.1496 AC.	0.1171 AC.	0.0325 AC.	8.1938 AC.	—	0	1-2		VOL 560 Pg 224		A01-014-0-0004-00
7	CHARLES & GLADYS HUNT				NO	R/W	REQUIRED						1-2				—

UTILITY OWNERS

TELEPHONE: GENERAL TELEPHONE CO.
117 N. SANDUSKY ST.
BELLEVUE, OH. 44811
(419) 483-8158

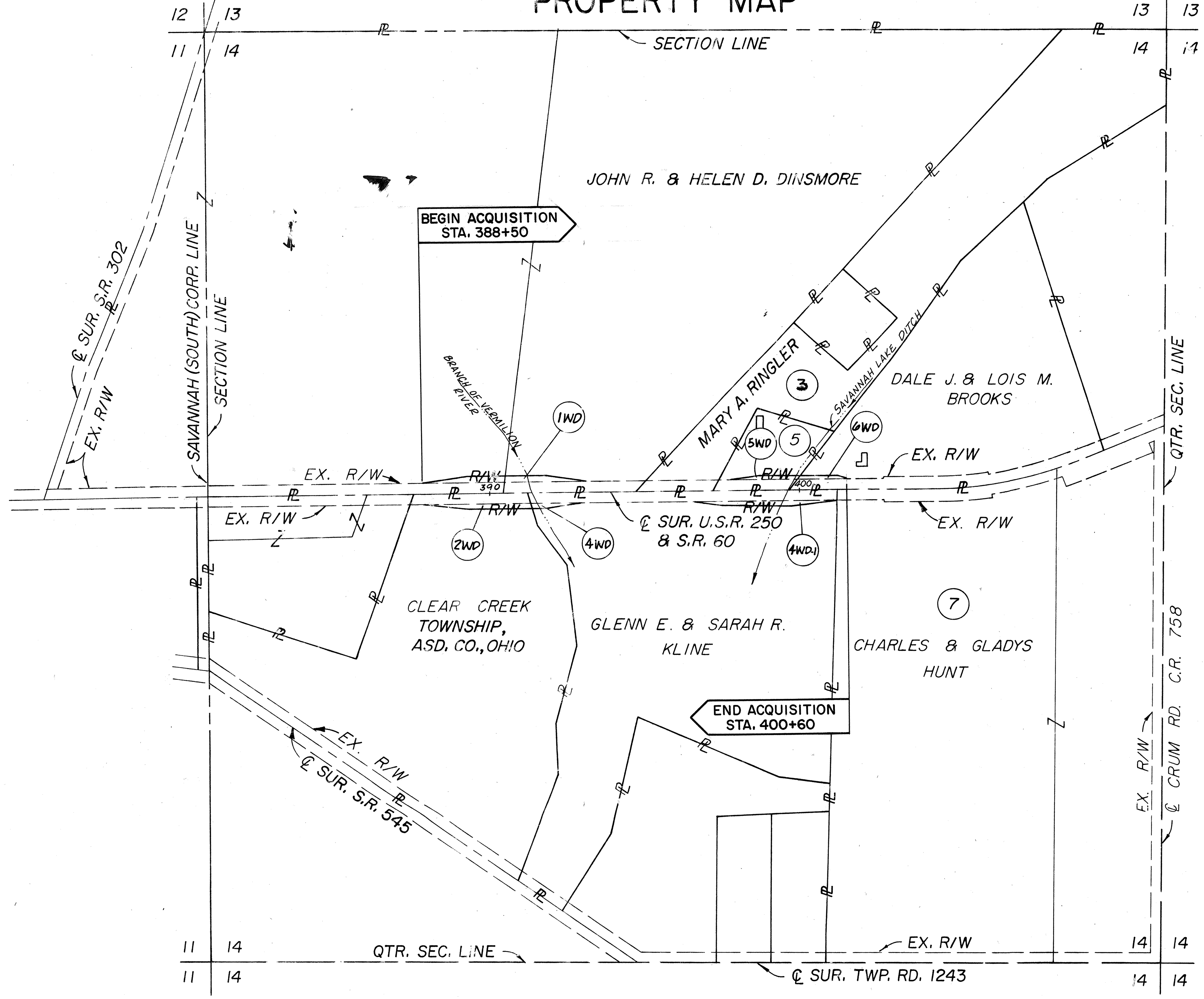
WATER: BAILEY LAKES WATER
C/O MARK RINGLER
1318 LAKE DRIVE
SAVANNAH, OH. 44874
(419)962-4725

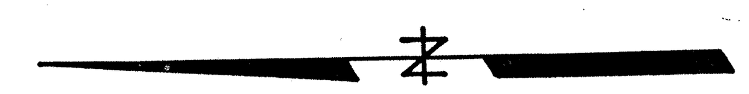
GAS: COLUMBIA GAS OF OHIO, INC.
1120 W. FOURTH ST. P.O. BOX 1328
MANSFIELD, OH. 44901
(419) 529-4911

POWER: OHIO POWER CO.
301 CLEVELAND AVE. S.W. P.O. BOX 400
CANTON, OHIO 44701
(216) 438-7040

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

PROPERTY MAP





ASHLAND COUNTY CLEAR CREEK TWP. SEC. 14 N.E. QTR., TOWN 25N, RANGE 17W

TYPE FUNDS; STATE

PLAN COMPLETED: 5-16-89

REV. DATE	DESCRIPTION
6-27-89	Owner Parcel 5
11-29-89	Owner Parcel 5

STATE JOB NUMBER	FHWA REGION	STATE	PROJECT
03016(0)	5	OHIO	BRF-47(16)

29/29

2/2

Calc. By : PWS 2-89
Chkd. By : DES 5-89

ASD-250-(7.41)(7.58)
RIGHT OF WAY PLAN

The Following are Elevations of the Abutments of the Existing Bridge at 7.58

Top of Southeast Abutment = 1027.03
Top of Northeast Abutment = 1027.04
Top of Northwest Abutment = 1026.98
Top of Southwest Abutment = 1027.09

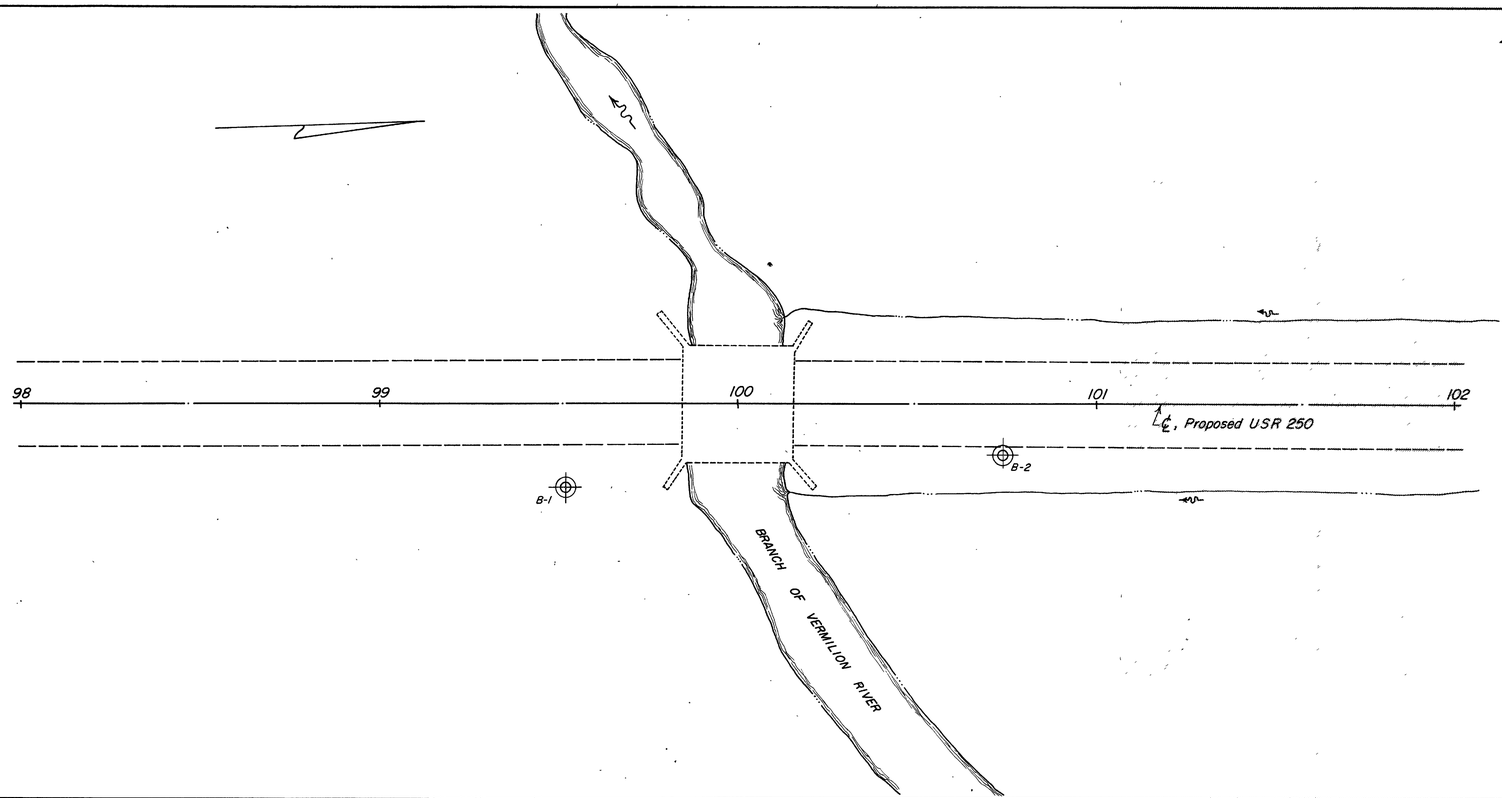
This info. supplied for the purpose of maintaining Existing B.M. References on the existing structure.

Section Line
Nail Found N.E. Cor. of N.E. Qtr. of Section 14
South Corp. Line Savannah N. 88°-58'-27"W.
1305.62' Section Line
SEC. 11
SEC. 14
℄ S.R. 302
℄ S.R. 545
Honey St.
I.P. Fd.
R.R. Spk. Found
Branch of Vermilion River
Scale in Feet
50 0 50 100
John R. & Helen D. Dinsmore
1WD
Cont. = 0.1162 Ac.
P.R.O. = 0.3099 Ac.
Total = 0.4261 Ac.
BEGIN ACQUISITION STA. 388+50 PART 1
SUSPEND ACQUISITION STA. 393+00 PART 1
BEGIN PROJECT STA. 390+98.42 S.L.M. 7.42
SUSPEND PROJECT STA. 391+81.58
Exist. R/W
℄ Survey, U.S.R. 250
S.0°-16'-00"E.
S 0°-02'-30"E
S.0°-02'-30"E.
Waterline
Gas Line Markers
Gravel Dr.
2WD
4WD
Clear Creek Township, Ashland Co., Ohio
Cont. = 0.0688 Ac.
P.R.O. = 0.1752 Ac.
Total = 0.2440 Ac.
S.E. Cor. of N.E. Qtr. of Section 14
James L. Hammond
Clara B. Hammond
5WD
Cont. = 0.0312 Ac.
P.R.O. = 0.1102 Ac.
Total = 0.1414 Ac.
Dale J. & Lois M. Brooks
6WD
Cont. = 0.0325 Ac.
P.R.O. = 0.1171 Ac.
Total = 0.1496 Ac.
RESUME ACQUISITION STA. 396+00 PART 2
END ACQUISITION STA. 400+60 PART 2
Mary A. Ringler
3WD
No R/W Req'd.
1½ Sty. Fr. Res.
RESUME PROJECT STA. 398+59.83 S.L.M. 7.57
END PROJECT STA. 399+34.17
Pine Trees
Savannah Lake Ditch
Gravel Dr. (Treatment Plant)
Blk. Bus. Bldg.
Asphalt
Conc. Light Pole Base
CURVE DATA
P.I. Sta. 405+34.73
Δ = 21°-37' Rt.
Dc = 5°
T = 218.83'
L = 432.47'
E = 20.70'
R = 1146.28'
R/W Mon. (Found) +56.32, 30'
R/W Mon. (Found) +56.64, 30'
1/4 Sec. Line
410+00.63 (RK. Nail Fd.)
℄ Crum Rd. Co. Rd. 753
1/2 Qtr. Sec. Line
R.R. Spk. (Found)
S.W. Cor. of N.E. Qtr. of Section 14 (Rebar Fd.)
12" C.M.P.
12" Tile
Glenn E. & Sarah R. Kline
4WD
Cont. = 0.0474 Ac.
P.R.O. = 0.1347 Ac.
Total = 0.1621 Ac.
4WD-1
Cont. = 0.0930 Ac.
P.R.O. = 0.2920 Ac.
Total = 0.3850 Ac.
Charles & Gladys Hunt
7WD
No R/W Required
ASHLAND COUNTY CLEAR CREEK TWP. SEC. 14 N.E. QTR. TOWN 25N RANGE 17W

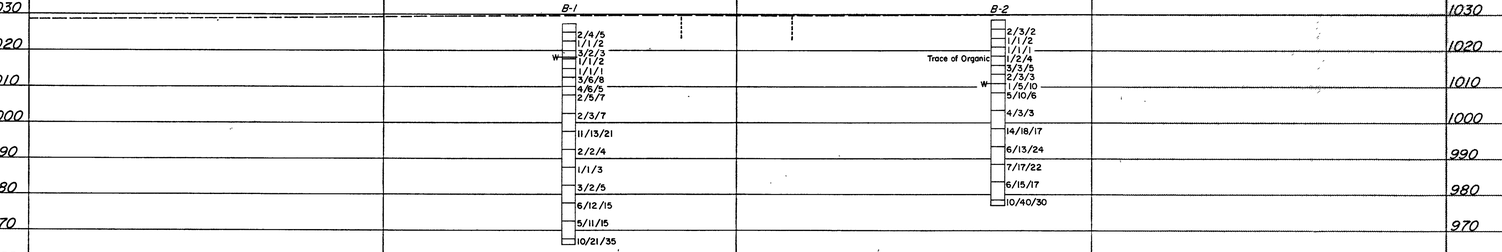
Type Funds : STATE

Plan Completed : 5-16-89

Rev. Date	Description
6-27	Owner Parcel 5
9-20	Add B.M. Note
11-28	Owner Parcel 5



NOTE: Groundline is approximate and the centerline and stationing were fabricated for the purpose of locating borings only.



SCALE: 1" = 20'

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION

BRIDGE NO. ASD-250-0743
OVER BRANCH OF VERMILION RIVER
SEC. ASD-250-7.41

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
L. N. L.	L. N. L.	R. D. R.	8/2/84

E-122
)-12-72

LOG OF BORING

Date Started 6/18/84 | Sampler Type SS | Dia. 1 3/8" | Water Elev. 1018.0'
Date Completed 6/19/84 | Casing: Length | Dia.
Boring No. B-1 | Station & Offset 99+52 23' RT. (REAR ABUTMENT) | Surface Elev. 1027.5'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1027.5	0				SOD										
1027.3															VISUAL
1025.0	2														
	4	2/4/5			BROWN CLAYEY SILT	1	0	0	14	51	35	34	10	31	A-4b
1022.5	6	1/1/2			BROWN SANDY SILT	2	0	1	25	41	33	32	10	28	A-4a
1020.0	8	3/2/3			BROWN AND GRAY CLAYEY SILT	3	0	0	4	54	42	32	10	27	A-4b
1017.5	10	1/1/2			GRAY CLAYEY SILT	4	0	0	17	52	31	27	8	26	A-4b
1015.0	12	1/1/1			BROWN GRAVELLY CLAY	5	29	2	10	35	24	31	11	31	A-6a
1012.5	14	3/6/8			BROWN SILTY SANDY GRAVEL	6	54	12	12	14	8	NP	NP	13	A-1-b
1010.0	16	4/6/5			BROWN SILTY SANDY GRAVEL	7	57	12	14	10	7	NP	NP	13	A-1-b
1007.5	18	2/5/7			GRAY SILTY GRAVELLY SAND	8	25	32	24	10	9	NP	NP	18	A-1-b
	20														
1002.5	22	2/3/7			GRAY SILTY GRAVELLY SAND	9	17	42	27	6	8	NP	NP	17	A-1-b
	24														
997.5	26	11/13/21			GRAY SILTY GRAVELLY SAND	10	25	26	24	14	11	NP	NP	14	A-1-b
	28														
992.5	30	2/2/4			GRAY SANDY SILT	11	0	1	20	46	33	NP	NP	29	A-4a
	32														
987.5	34	1/1/3			GRAY SILTY GRAVELLY SAND	12	27	11	26	21	15	NP	NP	26	A-4a
	36														
982.5	38	3/2/5			GRAY SILT AND CLAY	13	0	0	3	49	48	21	11	24	A-6a
	40														
977.5	42	6/12/15			GRAY SILTY SANDY GRAVEL	14	37	13	11	20	19	NP	NP	34	A-4a
	44														
972.5	46	5/11/15			GRAY SILTY SANDY GRAVEL	15	41	21	11	15	12	20	5	14	A-2-4
	48														
967.5	50														
966.0	52	10/21/35			BROWN GRAVELLY SANDY SILT	16	17	8	14	29	32	NP	NP	14	A-4a

⊥ BOTTOM OF BORING

LOG OF BORING

Date Started 6/18/84 | Sampler Type SS | Dia. 1 3/8" | Water Elev. 1011.0'
Date Completed 6/18/84 | Casing: Length | Dia.
Boring No. B-2 | Station & Offset 100+74 14' RT. (FORWARD ABUTMENT) | Surface Elev. 1028.5'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1028.5	0														
1026.0	2														
	4	2/3/2			BROWN CLAYEY SILT	1	0	1	18	46	35	26	8	26	A-4a
1023.5	6	1/1/2			GRAY SANDY SILT	2	0	1	30	42	27	23	6	26	A-4a
1021.0	8	1/1/1			BROWN CLAYEY SILT	3	0	0	12	55	33	27	8	33	A-4b
1018.5	10	1/2/4			GRAY SILT AND CLAY, TRACE OF ORGANIC	4	0	6	11	41	42	37	14	30	A-6a
1016.0	12	3/3/5			GRAY SILT AND CLAY	5	0	0	4	55	41	32	12	25	A-6a
1013.5	14	2/3/3			GRAY GRAVELLY CLAY	6	18	1	12	35	34	33	14	30	A-6a
1011.0	16	1/5/10			BROWN SILTY SANDY GRAVEL	7	65	15	9	6	5	NP	NP	14	A-1-a
1008.5	18	5/10/6			BROWN SILTY GRAVELLY SAND	8	30	31	23	9	7	NP	NP	17	A-1-b
	20														
1003.5	22	4/3/3			BROWN SILTY GRAVELLY SAND	9	17	38	26	11	8	NP	NP	19	A-1-b
	24														
998.5	26	14/18/17			BROWN SILTY GRAVELLY SAND	10	27	14	20	25	14	NP	NP	11	A-4a
	28														
993.5	30	6/13/24			BROWN SANDY CLAY	11	11	5	11	30	43	28	11	20	A-6a
	32														
988.5	34	7/17/22			BROWN SANDY SILT	12	10	5	10	31	44	26	10	15	A-4a
	36														
983.5	38	6/15/17			BROWN SANDY SILT	13	8	5	10	31	46	26	10	16	A-4a
	40														
978.5	42														
977.0	44	10/40/30			BROWN SANDY SILT	14	13	4	10	30	43	25	9	14	A-4a

⊥ BOTTOM OF BORING

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - TESTING LABORATORY
1600 WEST BROAD STREET COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. ASD-250-0743
OVER BRANCH OF VERMILION RIVER
SEC. ASD-250-7.41

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
S. M. G.	L. N. L.	R. D. R.	8/2/84

TE - 118
600 - 6 - 73

4
5
1
2

ASHLAND COUNTY
ASD-250-7.42
=7.57

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE HIGHLY DISSECTED GLACIATED PORTION OF THE LEXINGTON PENEPLAIN REGION, ON THE BROAD FLOODPLAIN OF THE VERMILION RIVER, IN AN AREA WHERE EXTREMELY DEEP VALLEY AND ALLUVIAL DEPOSITS OVERLIE BEDROCK OF MISSISSIPPIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE BORINGS MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON JUNE 20, 1984.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS

THE BORINGS ENCOUNTERED INTERVALS OF EXTREMELY LOOSE TO EXTREMELY DENSE STRATIFIED BASIC SILTS, CLAYS, PEAT, SAND AND GRAVEL MODIFIED WITH VARYING AMOUNTS OF EACH OTHER THAT GRADUALLY INCREASE (ERRATIC AT TIMES) IN DENSITY WITH INCREASE IN DEPTH. BORING B-1 (IN THE GENERAL VICINITY OF THE REAR ABUTMENT) PENETRATED TO A DEPTH OF 46.5 FEET, ELEVATION 981.0 FEET AND WAS TERMINATED AFTER PENETRATING IN EXCESS OF 21.5 FEET OF MATERIAL REQUIRING IN EXCESS OF 30 BLOWS PER FOOT IN THE STANDARD PENETRATION TEST. BORING B-2 (IN THE GENERAL VICINITY OF THE FORWARD ABUTMENT) PENETRATED TO A DEPTH OF 41.5 FEET, ELEVATION 982.9 FEET AND WAS TERMINATED AFTER PENETRATING IN EXCESS OF 24.0 FEET OF MATERIAL REQUIRING 26 OR MORE BLOWS PER FOOT IN THE STANDARD PENETRATION TEST.

BEDROCK SURFACE WAS NOT ENCOUNTERED IN EITHER OF THE TEST BORINGS PERFORMED.

FREE WATER WAS OBSERVED AND MEASURED IN BORING B-1 AT 12.5-FOOT DEPTH, ELEVATION 1015.0 FEET AND IN BORING B-2 AT 9.0-FOOT DEPTH, ELEVATION 1018.4 FEET.

LEGEND

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- TR — Top of Rock
- H — Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- X/Y/Z — Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test.
  - X = Number of Blows for First 6 inches.
  - Y = Number of Blows for Second 6 inches.
  - Z = Number of Blows for Third 6 inches.
- Drive Rod Penetration Resistance Sounding Log - Profile
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Z — Indicates Final Measurement of Penetration, in Inches.
- W — Indicates Free Water Elevation.
- Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Mudstone or Claystone
- Mudstone or Claystone
- Weathered Shale
- Shale
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone
- Boulders or Cobbles

LOG OF BORING

Date Started 6/20/84 — Sampler Type SS — Dia. 1 3/8" — Water Elev. 1015.0'
Date Completed 6/20/84 — Casing: Length — Dia.
Boring No. B-1 — Station & Offset 99+74 14' LT. (REAR ABUTMENT) — Surface Elev 1027.5'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1027.5	0														
1025.0	2														
	4	1/1/2			BROWN SANDY GRAVELLY SILT	1	26	3	17	32	22	NP	NP	38	A-4a
1022.5	6	1/2/4			BROWN SILT AND CLAY	2	0	1	6	43	50	38	15	35	A-6a
1020.0	8	1/2/3			BLACK COMPACT PEAT	3	0	7	27	45	21	160	34	115	VISUAL
1017.5	10	3/1/1			BROWN SANDY SILT	4	5	6	39	34	16	NP	NP	30	A-4a
1015.0	12	4/6/6			BROWN SILTY GRAVELLY SAND	5	29	23	27	12	9	NP	NP	15	A-1-b
1012.5	14	7/10/10			BROWN SILTY GRAVELLY SAND	6	33	23	23	10	11	NP	NP	16	A-1-b
1010.0	16	6/18/22			BROWN CLAYEY SILT	7	0	3	6	36	55	27	8	18	A-4a
1007.5	18	7/10/14			BROWN SANDY SILT	8	10	14	31	30	15	NP	NP	16	A-4a
	20														
1002.5	22														
	24														
	26	7/12/20			BROWN CLAYEY SILT	9	0	2	8	44	46	24	8	19	A-4a
997.5	28														
	30														
	32	12/20/28			BROWN SANDY SILT	10	10	6	12	33	39	23	8	13	A-4a
992.5	34														
	36	5/13/20			BROWN SANDY SILT	11	9	5	10	32	44	24	9	16	A-4a
987.5	38														
	40														
	42	12/27/35			BROWN SANDY SILT	12	13	5	10	31	41	25	8	15	A-4a
	44														
982.5															
981.0	46	7/12/21			BROWN SANDY SILT	13	12	6	10	30	42	24	7	13	A-4a

BOTTOM OF BORING

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with post performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" 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 18 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a 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, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
12"	3"	2.0mm (No. 10 sieve)	0.42mm (No. 40 sieve)	0.074mm (No. 200 sieve)	0.005mm	

LOG OF BORING

Date Started 6/20/84 — Sampler Type SS — Dia. 1 3/8" — Water Elev. 1018.4'
Date Completed 6/20/84 — Casing: Length — Dia.
Boring No. B-2 — Station & Offset 100+24 14' LT. (FORWARD ABUTMENT) — Surface Elev 1027.4'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1027.4	0														
1024.9	2														
	4	2/2/2			BROWN SANDY SILT	1	8	3	14	43	32	29	7	24	A-4a
1022.4	6	1/1/2			DARK GRAY SILT AND CLAY	2	0	2	13	40	45	40	13	40	A-6a
1019.9	8	5/1/1			BLACK COMPACT PEAT	3	-	-	-	-	-	140	114	169	VISUAL
1017.4	10	1/1/1			GRAY SEDIMENTARY PEAT	4	-	-	-	-	-	40	6	165	VISUAL
1014.9	12	3/4/5			GRAY SILT	5	0	1	6	66	27	NP	NP	24	A-4b
1012.4	14	2/3/4			GRAY GRAVELLY SILT	6	16	4	9	49	22	NP	NP	23	A-4a
1009.9	16	9/12/16			GRAY SILTY SANDY GRAVEL	7	45	22	17	9	7	NP	NP	12	A-1-b
1007.4	18	9/16/21			GRAY SILTY GRAVELLY SAND	8	35	21	23	12	9	NP	NP	12	A-1-b
	20														
1002.4	22														
	24														
	26	19/27/35			GRAY SILTY SAND	9	0	33	38	17	12	NP	NP	16	A-3a
997.4	28														
	30														
	32	13/18/27			GRAY SILTY SANDY GRAVEL	10	44	25	16	9	6	NP	NP	13	A-1-b
992.4	34														
	36	14/19/28			GRAY SILTY GRAVELLY SAND	11	18	30	16	16	20	23	7	17	A-4a
984.4	38														
982.9	40	9/12/14			GRAY SANDY SILT	12	12	5	10	29	44	23	7	16	A-4a

BOTTOM OF BORING

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 THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

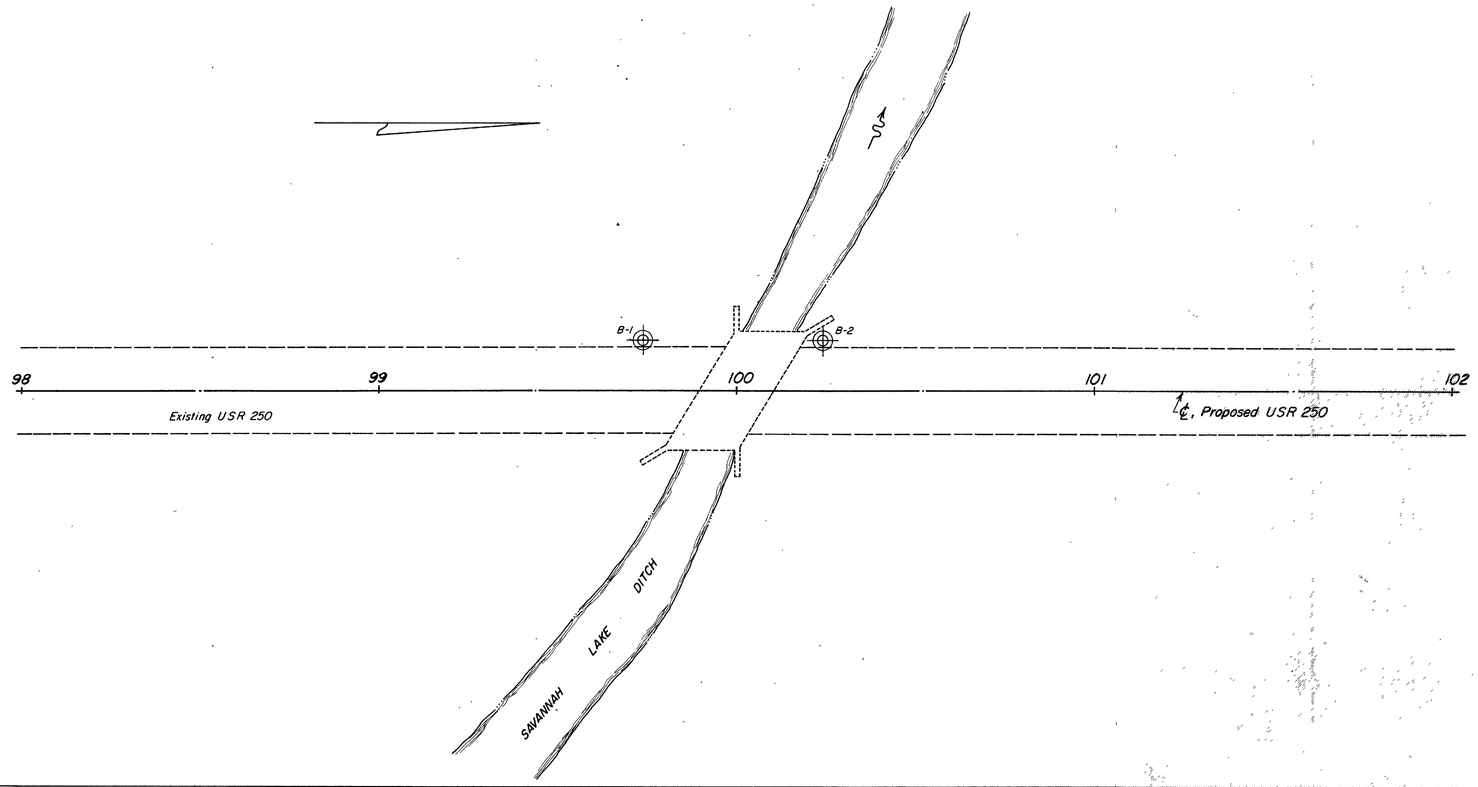
OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS — TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. ASD-250-0758
OVER SAVANNAH LAKE DITCH
SEC. ASD-250-7.58

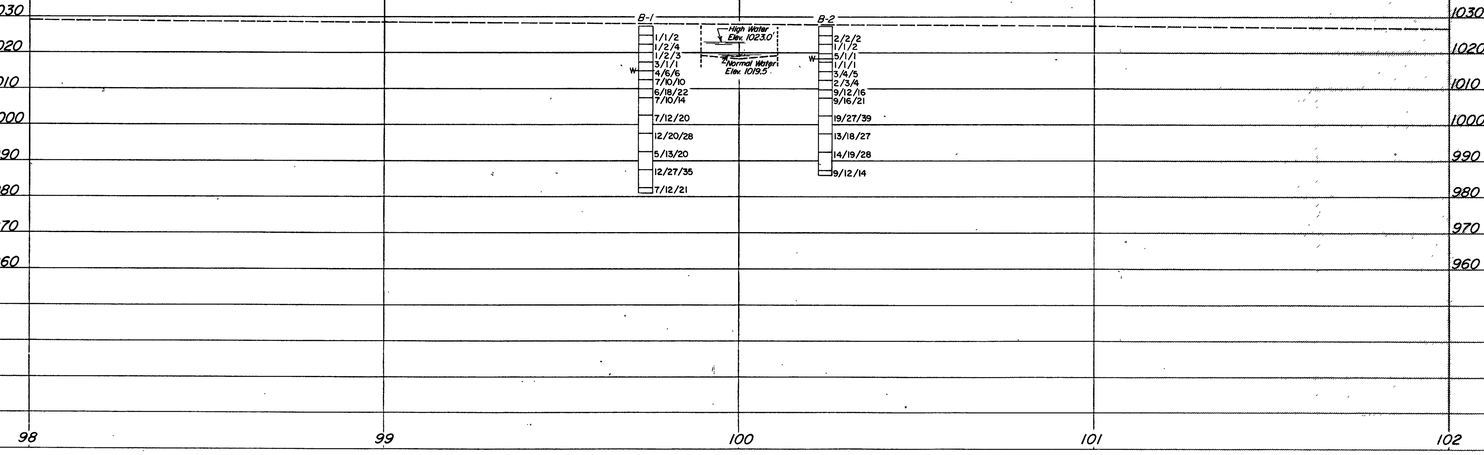
CHECKED BY	REVIEWED BY	DATE
L. N. L.	R. D. R.	8/2/84

5/5

-7.42
ASD-250-7.57 2/2



NOTE: Ground line is approximate and stationing was assigned for the purpose of locating borings only.



SCALE: 1" = 20'

OHIO DEPARTMENT OF TRANSPORTATION
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1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION

BRIDGE NO. ASD-250-0758
OVER SAVANNAH LAKE DITCH
SEC. ASD-250-7.58

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
L. N. L.	L. N. L.	R. D. R.	8/2/84

ASD-250-7.42
ASD-250-7.57