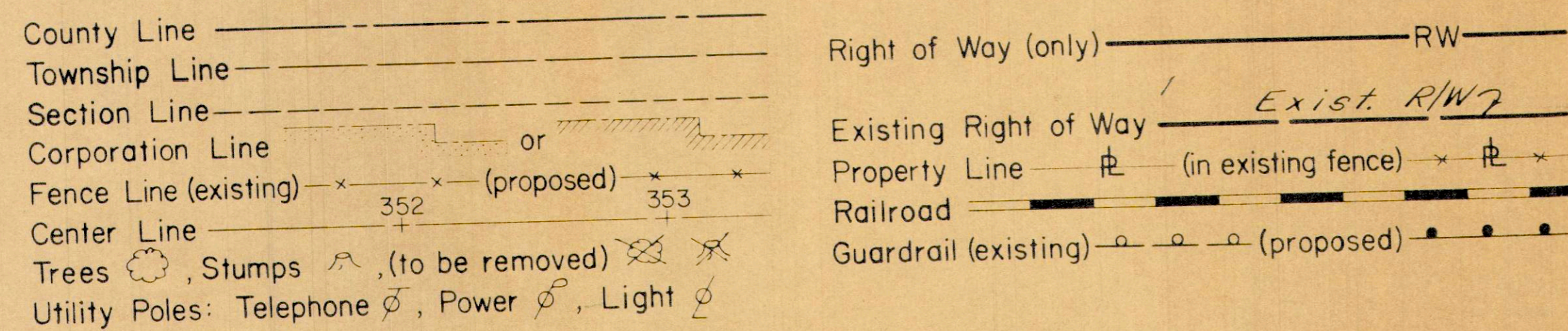


STATE OF OHIO
DEPARTMENT OF HIGHWAYS

ER-60(3)

HOL - 62 - 28.40
HOLMES COUNTY
BERLIN TOWNSHIP

CONVENTIONAL SIGNS



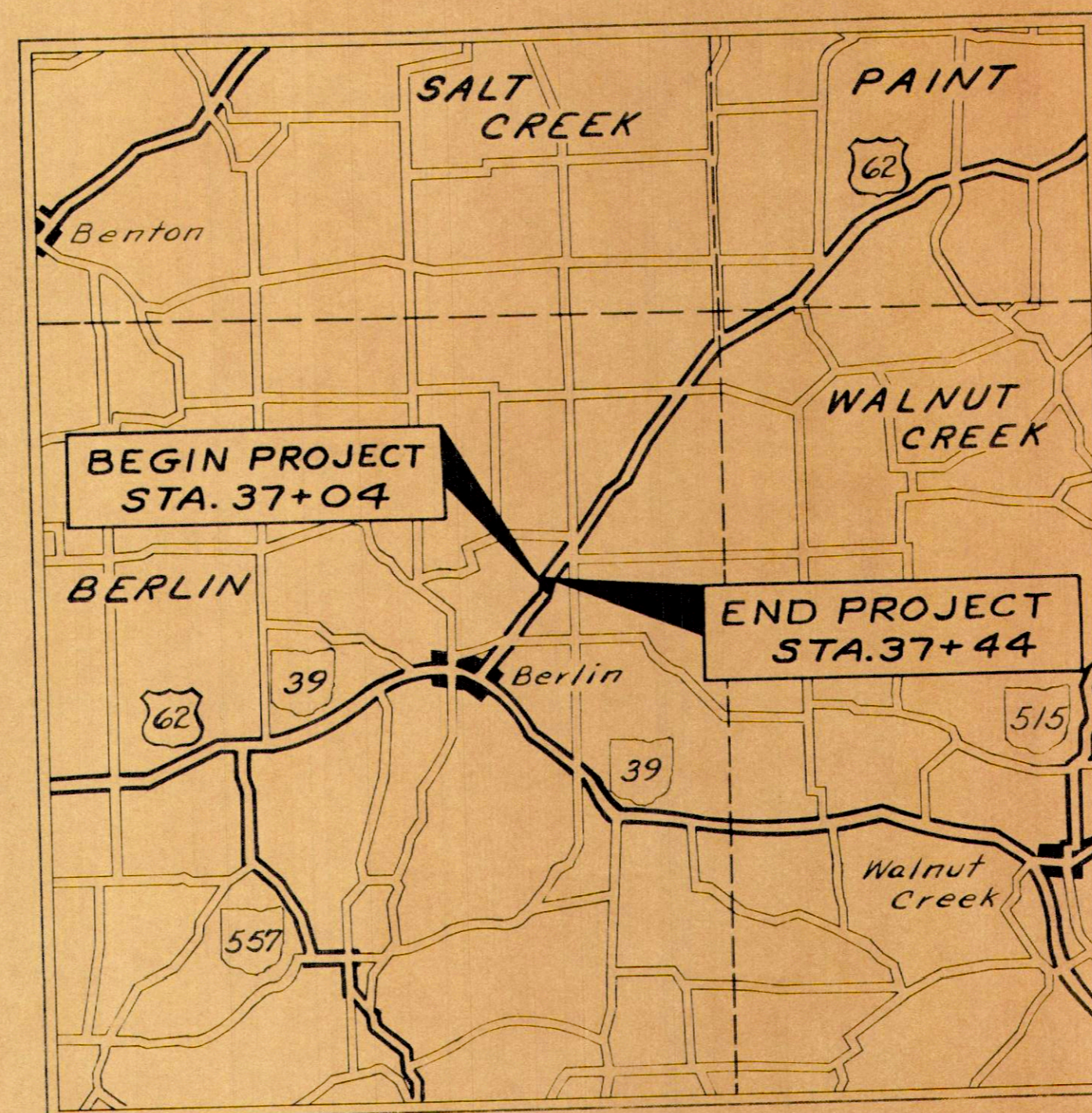
INDEX OF SHEETS

- 1 TITLE PAGE
- 2 TYPICAL SECTION & DESIGN DESIGNATION
- 3 GENERAL NOTES
- 4 SUMMARY OF QUANTITIES AND GENERAL SUMMARY
- 5 PLAN AND PROFILE
- 6-7 CROSS SECTIONS
- 8 DRAINAGE DETAILS
- 9 RIGHT OF WAY

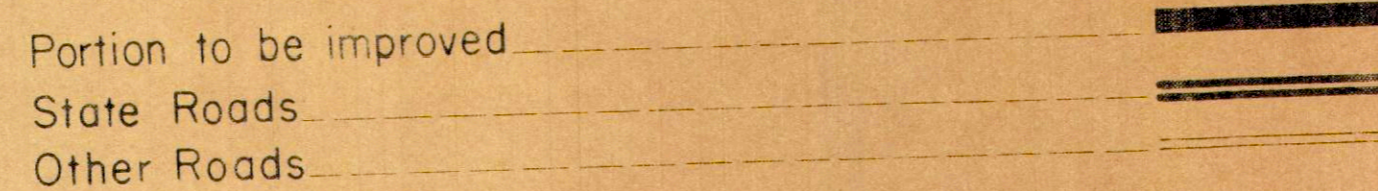
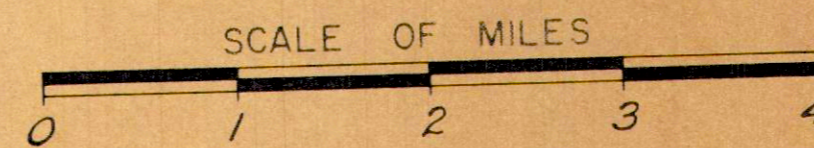
LINE DATA

STA. 37+04 to STA. 37+44 = 40 Lin. Ft.
NET LENGTH OF PROJECT = 40 Lin. Ft. or 0.007 Miles

STA. 34+22 to STA. 39+39 = 517 Lin. Ft.
NET LENGTH OF WORK = 517 Lin. Ft. or 0.097 Miles



LOCATION MAP



SCALES



1971 SPECIFICATIONS

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

The right of way for this improvement will be provided by the State of Ohio.

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

- Approved _____
Date _____ Division Deputy Director
- Approved _____
Date _____ Engineer of Bridges
- Approved _____
Date _____ Engineer of Location & Design
- Approved _____
Date _____ Deputy Director of Design & Construction
- Approved _____
Date _____ Deputy Director of Right of Way
- Approved _____
Date _____ Deputy Director of Planning & Programming
- Approved _____
Date _____ First Assistant Director
- Approved _____
Date _____ Director of Highways

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS			
BP-5	1-1-71	SP-53	6-30-61
BP-6	6-1-65	FACI-1	9-15-67
		FACI-2	6-1-65
GR-2A	1-1-71		
GR-4	1-1-71		
GR-7	1-1-71		
L-1	6-1-65		
MC-3	6-20-69		
MC-4	6-13-69		

SUPPLEMENTAL SPECIFICATIONS	
1001	1-1-69

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____

DIVISION ENGINEER

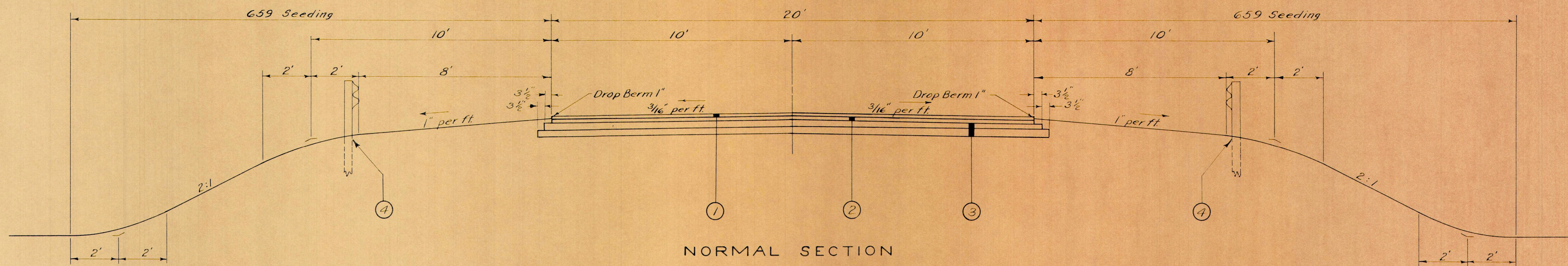
DATE

SEAL

TYPICAL SECTION

TYPE 404 on 301

SCALE 1"=2'



NORMAL SECTION

* STA. 37+04 to STA. 37+44 - 40 Lin. Ft

* NOTE: New Pavement shall be built to same grade as existing pavement.

DESIGN DESIGNATION

Current ADT - 1969	2060
Design Year ADT - 1989	4515
D. H. V.	677
D (direction of distribution)	60-40%
V (design speed)	33 M.P.H.
T (% of B & C Trucks)	9.2%

- ① Item 404 - 1/4" Asphalt Concrete (70-85 or AC-20)
- ② Item 402 - 1/4" Asphalt Concrete (70-85 or AC-20)
- ③ Item 301 - 7" Bituminous Aggregate Base 702.01, (85-100 or AC-10) or 702.09, RT-11 or RT-12 (Two 3 1/2" Courses)
- ④ Item 606 - Guard Rail, Type 7

GENERAL NOTES

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FIELD OFFICE: The Contractor shall provide a suitable field office having a minimum of 150 sq. ft. of floor space and in addition to the requirements of Item 619, he shall provide and maintain sanitary provisions as per 107.06. All the above is included in the lump sum price bid for Item 619, Field Office.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS:
 The rounded corners shown on the typical sections, apply to all cross sections even though otherwise shown on these plans.

EROSION CONTROL: Item 601 is provided in these plans for erosion control. Rock of a stable nature will not be removed in order to place any of this item. The Engineer shall check and non-perform quantities or adjust locations and quantities for this item where indicated by field conditions during construction.

UTILITIES: The Contractor shall notify, at least seven (7) days before breaking ground, all public service corporations having wire, poles, pipes, conduit, manholes or other structures which may be affected by the operation, including all structures which are affected and not shown on these plans. He shall conduct his operations in such a manner as to avoid damage to any and all utilities. Any and all work required for public or private utilities will be done by and at the expense of their respective owners, unless otherwise noted on these plans.

PLACEMENT OF ASPHALT CONCRETE:
 Two-way traffic shall be maintained at all times except that one-way traffic will be permitted for minimum periods of time consistent with the requirements of the specifications for protection of completed asphalt concrete courses.

ELEVATION DATUM:
 All elevations are based on U.S.G.S. Datum.

CONTRACTOR'S MAINTENANCE RESPONSIBILITY:
 On this project, the Contractor's responsibility for maintenance of the existing pavement per Item 614 shall be limited to those portions of the existing pavement lying within the proposed work limits.

CONSTRUCTION LAYOUT STAKES: See note in proposal describing the work included in the lump sum pay item.

SEEDING: Quantities for seeding are calculated for the soil areas between the work limits, as shown on the cross sections.

UNDERGROUND UTILITIES: The locations of the underground utilities shown on the plans have been obtained by diligent field checks and searches of available records. It is believed that they are essentially correct, but the State of Ohio does not guarantee their accuracy or completeness.

MAINTAINING TRAFFIC: The Contractor shall maintain traffic at all times in accordance with the requirements of Item 614. Thru traffic shall be maintained by the use of Temporary Roads as provided in the plans.
 The following estimated quantities have been carried to the General Summary to be used as required for the purpose of maintaining local traffic as per 614.02(a).

- 25 Cu. Yds. 410 Traffic Compacted Surface Type A or B
- 75 Cu. Yds. 410 Traffic Compacted Surface Type C
- 2 Tons 616 Calcium Chloride
- 5 MGal. 616 Water

All the above shall be included for payment in the price bid for 614 Maintaining Traffic except Items 410, 615 and 616.

PUBLIC UTILITIES AFFECTED:
 Ohio Power Co.
 301 Cleveland Ave. S.W. Canton, Ohio
 General Telephone Co.
 1121 Tuscarawas Ave. N.W.
 New Philadelphia, Ohio 44663

CLEARING AND GRUBBING: Although there are no trees and/or stumps specifically marked for removal within the limits of this project, a lump sum quantity has been included in the General Summary for Item 201, Clearing and Grubbing. All provisions as set forth in the specifications under this item shall be followed, and all costs shall be included in the lump sum price bid for Item 201 Clearing and Grubbing.

ESTIMATED QUANTITIES: Specific locations and usage of estimated quantities set up on this plan to be used "as directed by the Engineer" shall be made a matter of record by incorporation into the final change order governing completion of this project. Estimated quantities of materials shall not be ordered for delivery to the project unless authorized by the Engineer.

PAVED BITUMINOUS COATED CORRUGATED METAL STRUCTURE: The metal plates that are incorporated into the bottom and corner plates of this sectional plate structure shall be shop coated in accordance with 707.04 and field paved with bituminous material. The remainder of the plates need not be bituminous coated.

The paving shall consist of a mixture of hot sand and 702.01 Asphalt cement or other bituminous mixture acceptable to the Engineer and shall be spread and compacted to the satisfaction of the Engineer. The completed pavement shall be smooth and durable and shall have a minimum average thickness of approximately one inch over the inside crests of the corrugations. After installation of the structure, damaged or worn spots in the bituminous coating on the inside and outside of the structure shall be re-coated using materials and methods recommended by the manufacturer and as directed by the Engineer.

Payment for all of the above shall be included in the unit price bid for the Item 603 Conduit.

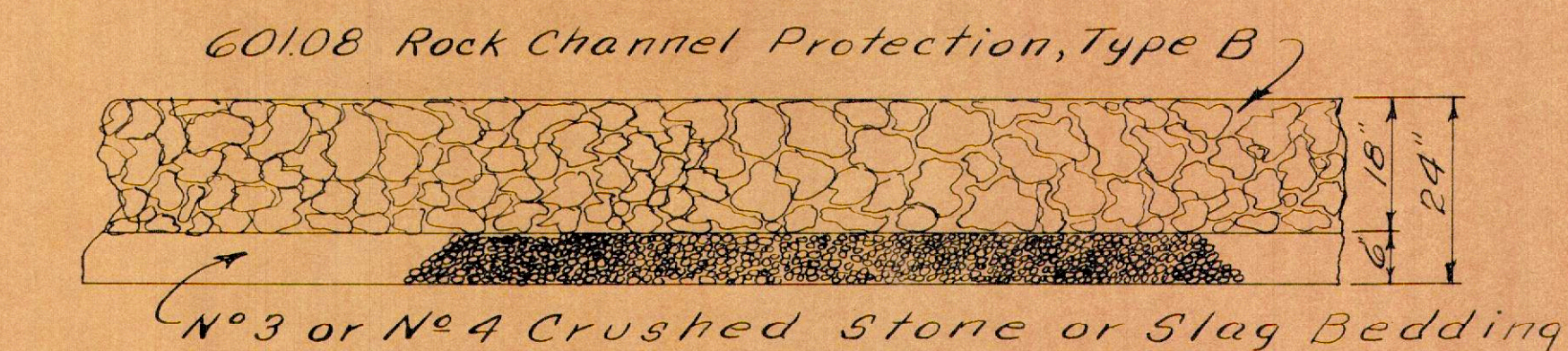
FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS: The contractor shall furnish, erect, maintain and subsequently remove Federal Aid construction identification signs at each of the following approximate locations:

- STA. 33+50 Rt.
- STA. 40+50 Lt.

Sign details shall be as specified on Standard Drawing FACI-1, "Code N-54-(1)-96 (2)" modified by deleting reference to "Your Highway Taxes at Work" and "Federal Highway Trust Fund" and inserting in their respective positions "Your Highway Funds at Work" and "Federal Emergency Relief Fund".

The signs shall be erected in accordance with Standard Drawing FACI-2. Additional requirements shall be in accordance with notes in the proposal.

DETAIL OF ROCK CHANNEL PROTECTION IN DITCH



SUMMARY OF QUANTITIES

PAVEMENT CALCULATIONS

Pavement Area
 STA. 37+04 to STA. 37+44 = 40 Lin. Ft.
 $40' \times 20' \div 9 = 88.9 \text{ Sq. Yds. use } 89 \text{ Sq. Yds.}$

ITEM 404
 Pavement Area = 89 Sq. Yds.
 $89 \times (1\frac{1}{4} \div 36) = 3 \text{ Cu. Yds.}$

ITEM 402
 Pavement Area = 89 Sq. Yds.
 $89 \times (1\frac{1}{4} \div 36) = 3 \text{ Cu. Yds.}$

ITEM 301
 $40' \times [20' + (7'' \div 12'')] \div 9 = 91.5 \text{ Sq. Yds.}$
 $40' \times [20' + (14'' \div 12'')] \div 9 = 94.1 \text{ Sq. Yds.}$
 Total = 185.6 Sq. Yds.
 $185.6 \times (3\frac{1}{2}'' \div 36) = 18 \text{ Cu. Yds.}$

ITEM 203 Subgrade Compaction
 Pavement Area = 89 Sq. Yds. = 89 Sq. Yds.

ITEM 202 Pavement Removal
 Pavement Area = 89.0 Sq. Yds.
 Deduct for Bridge $16.5' \times 20' \div 9 = 36.7 \text{ Sq. Yds.}$
 Net Area = 52.3 Sq. Yds.
 Item 202 Pavement Removal = 52 Sq. Yds.

ITEM 615 Temporary Pavement, Class "B"
 STA. 34+22 to STA. 39+39
 Length = 438.5 Lin. Ft.
 Deduct for Bridge (Same as Existing) = 16.5 Lin. Ft.
 Net Length = 422.0 Lin. Ft.
 $422' \times 20' \div 9 = 938 \text{ Sq. Yds.}$

ITEM 616 Dust Control (Estimated)
 616 Calcium Chloride = 1 Ton
 616 Water = 3 M-Gal.

ITEM 659 - Lime
 Sq. Yds. from Sheet N^o 5 = 897
 $897 \times 9 \div 1000 \times 100 \div 2000 = 0.40 \text{ Tons}$

ITEM 659 - Fertilizer
 Sq. Yds. from Sheet N^o 5 = 897
 $897 \times 9 \div 1000 \times 20 \div 2000 = 0.08 \text{ Tons}$

GENERAL SUMMARY

Calc. _____ Date _____
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FED. RD. DIVISION	STATE	PROJECT
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* Unless otherwise shown

SHEET NUMBER					ITEM	QUANT.	UNIT	DESCRIPTION
	3	4	5	8				
								ROADWAY
								Code Type 6203*
					Lump	201	Lump	Clearing and Grubbing
						52		202 52 Sq. Yds. Pavement Removed
							Lump	202 Lump Lump Structure Removed
						54	32	203 86 Cu. Yds. Excavation not Including Embankment Construction
						247		203 247 Cu. Yds. Embankment
						89		203 89 Sq. Yds. Subgrade Compaction
						25		410 25 Cu. Yds. Traffic Compacted Surface, Type A or B
						75		410 75 Cu. Yds. Traffic Compacted Surface, Type C
							Lump	502 Lump Lump Temporary Bridge
						312.5		606 312.5 Lin. Ft. Guard Rail, Type 7
						4		606 4 Each Anchor Assembly
						938		615 938 Sq. Yds. Temporary Pavement, Class B
							Lump	615 Lump Lump Temporary Roads
						5	3	616 3 M-Gal. Water
						2	1	616 3 Ton Calcium Chloride
								PAVEMENT
						18		301 18 Cu. Yds. Bituminous Aggregate Base: 702.01 (85-100 or AC-10); or 702.09, RT-11 or RT-12
						3		402 3 Cu. Yds. Asphalt Concrete (70-85 or AC-20)
						3		404 3 Cu. Yds. Asphalt Concrete (70-85 or AC-20)
								EROSION CONTROL (Code Type Y-005)
						62		601 62 Sq. Yds. Riprap, Using 6" Reinforced Concrete Slab
						15		601 76 Cu. Yds. Rock Channel Protection, Type A
						897		601 15 Cu. Yds. Rock Channel Protection, Type B
								659 897 Sq. Yds. Seeding and Mulching
						0.08		659 0.08 Ton Commercial Fertilizer (12-12-12)
						0.40		659 0.40 Ton Agricultural Liming
								DRAINAGE
						23.9		602 23.9 Cu. Yds. Concrete Masonry
						82		603 82 Lin. Ft. 14'-3" x 8'-11" Conduit, Type A, 707.03, Gage 7-5, as per plan
							Lump	614 Lump Lump MAINTAINING TRAFFIC
							Lump	Lump LUMP CONSTRUCTION LAYOUT STAKES
							Lump	619 Lump Lump FIELD OFFICE

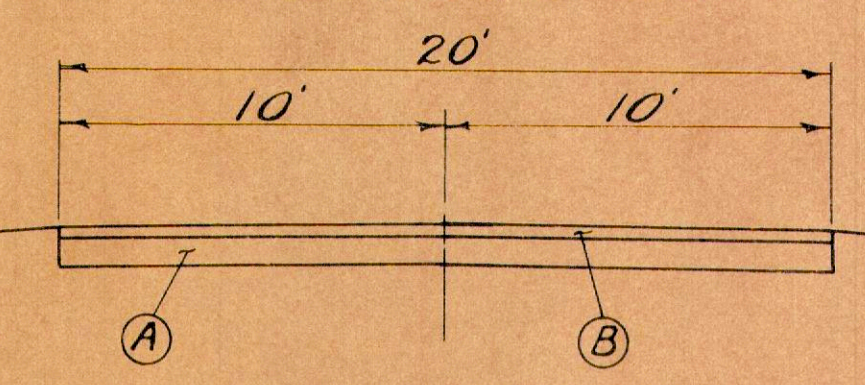
Calc. _____ Date _____
 Chk. _____ Date _____

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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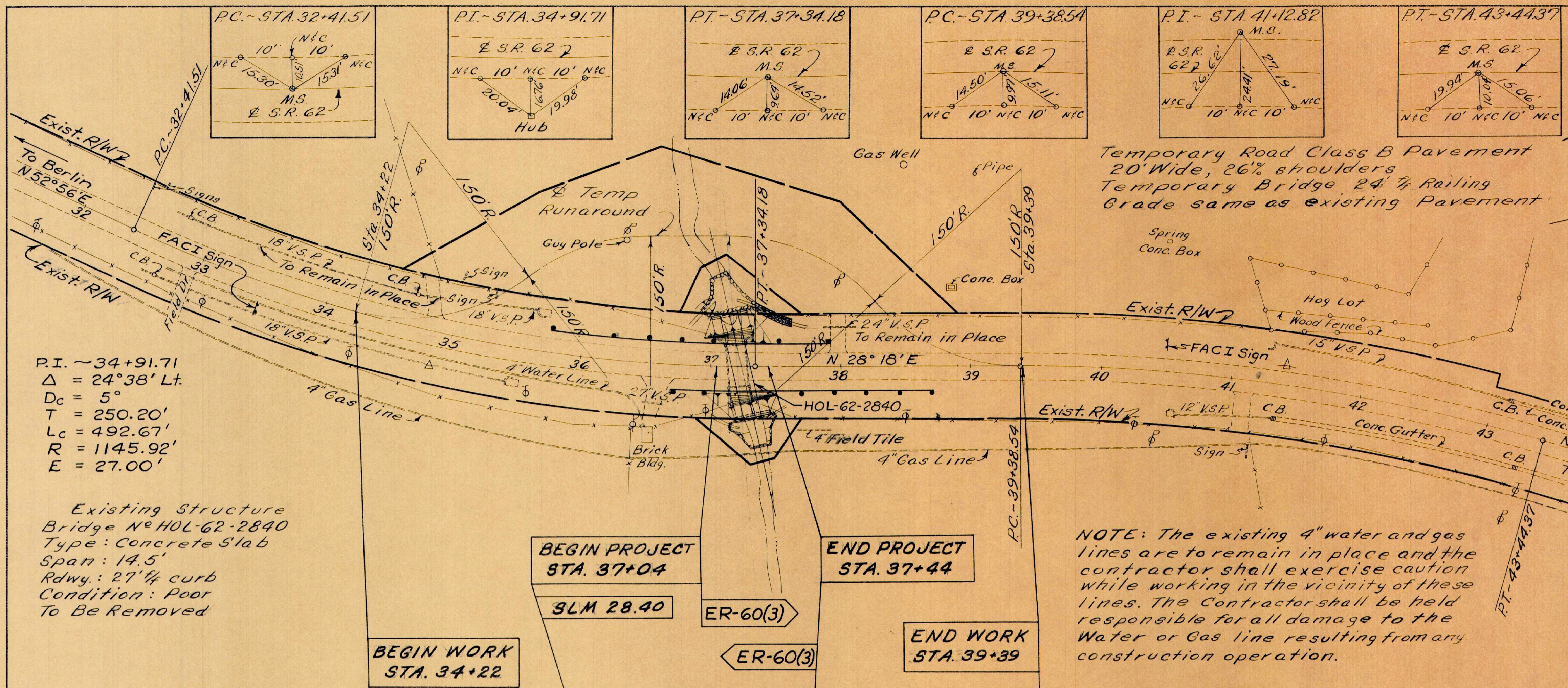
HOL-62-28.40

Rock Channel Protection
 Lt. 34' x 2' x 6' + 27' = 15 Cu. Yds.



Scale 1" = 5'
 (A) Existing 8" Concrete Base
 (B) Existing Asphalt Concrete Surface

TYPICAL SECTION ADJOINING PAVEMENT



P.I. ~ 34+91.71
 $\Delta = 24^\circ 38' Lt.$
 $D_c = 5'$
 $T = 250.20'$
 $L_c = 492.67'$
 $R = 1145.92'$
 $E = 27.00'$

Existing Structure
 Bridge No. HOL-62-2840
 Type: Concrete Slab
 Span: 14.5'
 Rdwy.: 27' 1/2' curb
 Condition: Poor
 To Be Removed

BEGIN WORK
 STA. 34+22

BEGIN PROJECT
 STA. 37+04

END PROJECT
 STA. 37+44

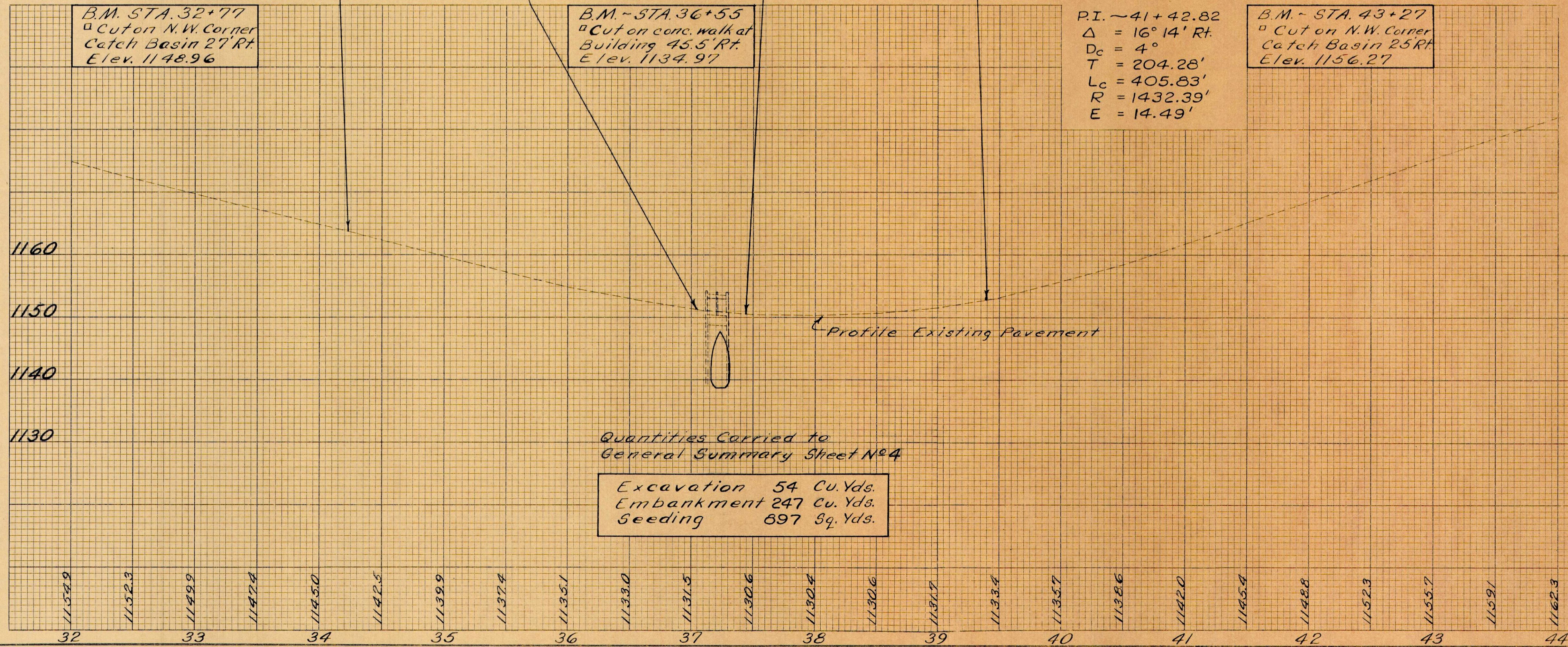
END WORK
 STA. 39+39

NOTE: The existing 4" water and gas lines are to remain in place and the contractor shall exercise caution while working in the vicinity of these lines. The Contractor shall be held responsible for all damage to the Water or Gas line resulting from any construction operation.

DRAINAGE						
Station	See Sheet	Side	New Work	Length	Remarks	
From To			Type Size			
37+24	8	Lt	Pipe 14" x 8" Arch	82'	Existing Structure To Be Removed	
TOTAL						

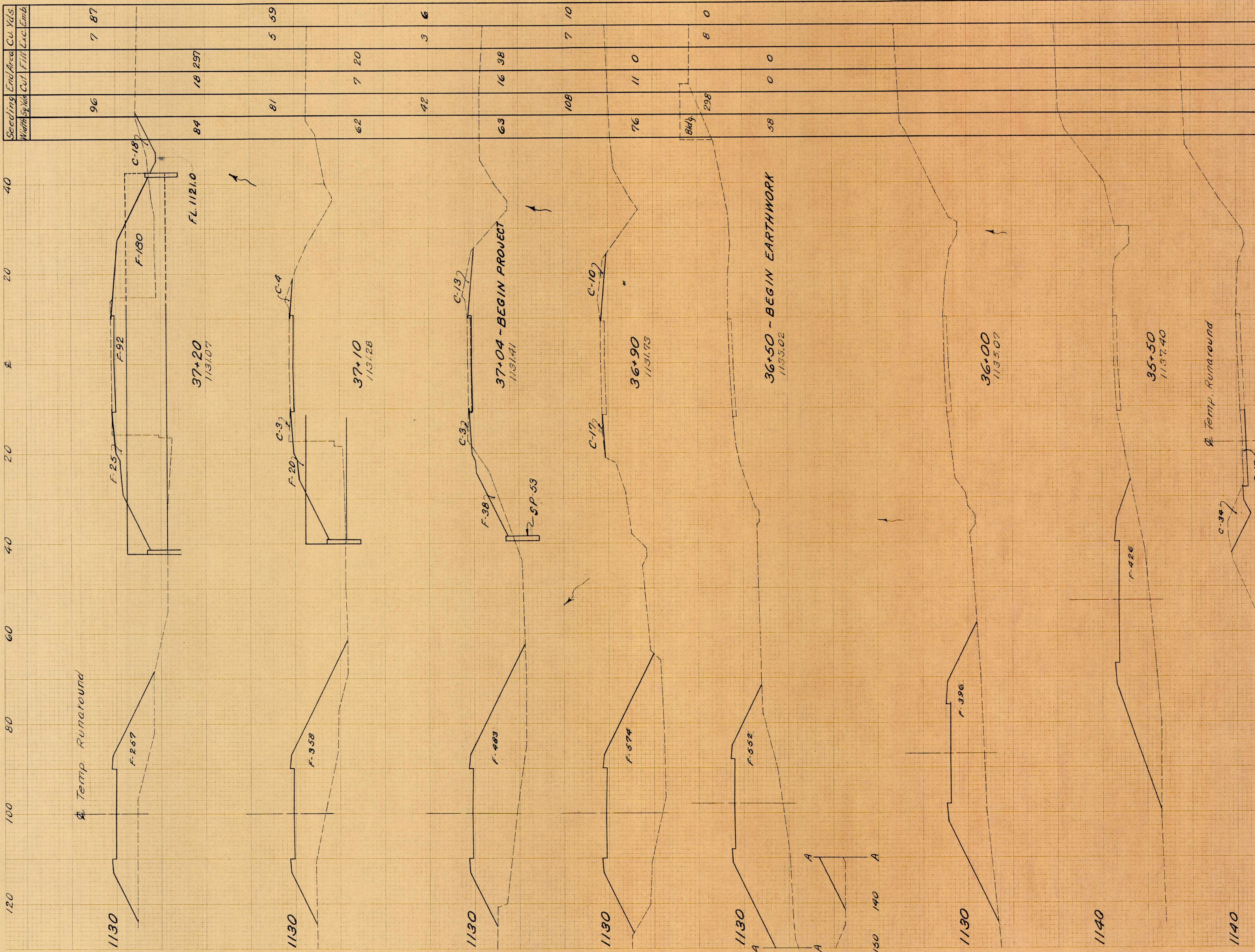
GUARD RAIL				
Station	Side	Type	Anchor Assembly	
From To		Type 7	Each	
35+77.5 36+02.5	Lt.		1	
36+02.5 37+65	Lt.	162.5		
37+65 37+90	Lt.		1	
36+70 36+95	Rt.		1	
36+95 38+45	Rt.	150		
38+45 38+70	Rt.		1	
TOTAL				

EROSION CONTROL			
Station	Side	Rock Channel Protection	
From To		Type B Cu. Yds.	
37+26 37+60	Lt.	15	
TOTAL			



Quantities Carried to
 General Summary Sheet No. 4

Excavation 54 Cu. Yds.
 Embankment 247 Cu. Yds.
 Seeding 697 Sq. Yds.



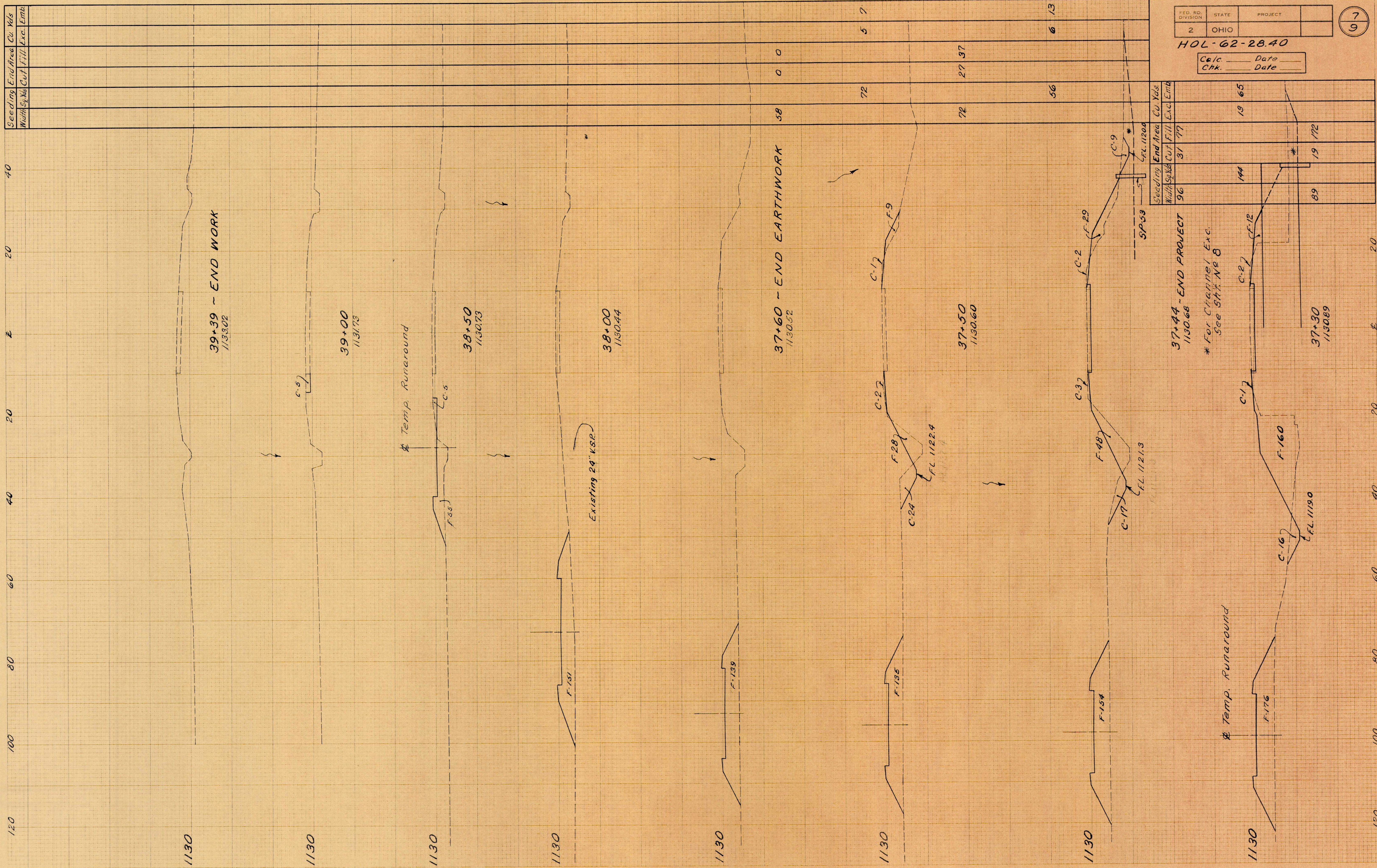
Seeding	End Area	Cu. Yds.
Width Sp. Yds	Cut	Fill Exc. Emb.
96	18	297
84	18	297
81	7	20
62	7	20
42	3	6
63	16	38
108	7	10
76	11	0
514	298	80
58	0	0

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Seeding	End Area	Cu. Yds.
Width Sp. Yds	Cut	Fill Exc. Emb.



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Calc.	Date
CHK.	Date

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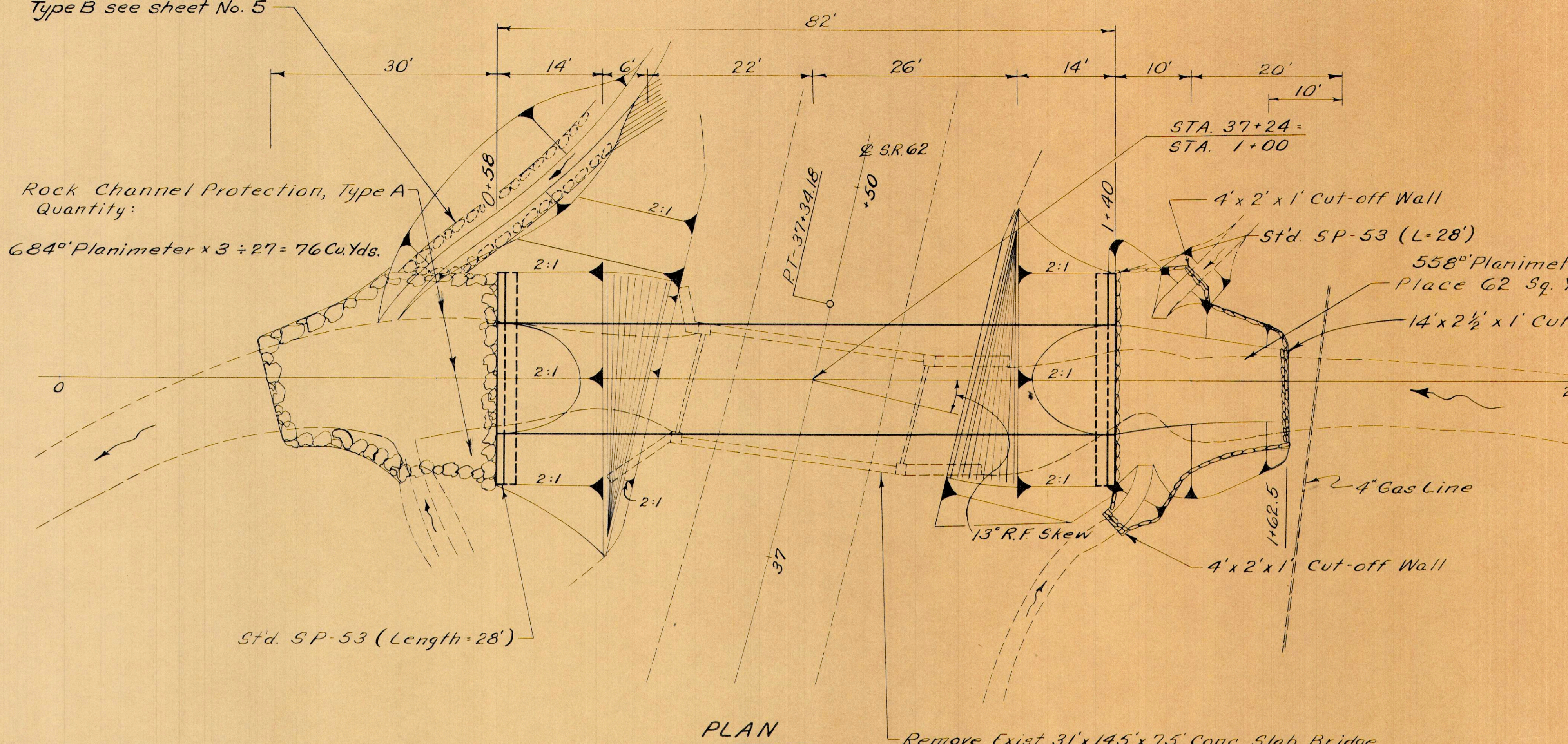
Seeding	End Area	Cu. Yds.
Width	Cut	Fill
Sp. Yds.	Exc.	Emb.
96	31	77
144	19	65
89	19	172

37+44 - END PROJECT
1130.68

* For Channel Exc.
See SHX No. 8

Note: For Rock Channel Protection, Type B see sheet No. 5

Rock Channel Protection, Type A
Quantity:
684° Planimeter x 3 ÷ 27 = 76 Cu.Yds.



PLAN
Scale: 0 10

EARTHWORK CALCULATIONS
Average End Area x Length ÷ 27 = Cu.Yds.
STA. 1+40 to STA. 1+50
 $(\frac{67+48}{2}) \times 10 \div 27 = 21$ Cu.Yds.
STA. 1+50 to STA. 1+62.5
 $(\frac{48+0}{2}) \times 12.5 \div 27 = 11$ Cu.Yds.
TOTAL = 32 Cu.Yds.

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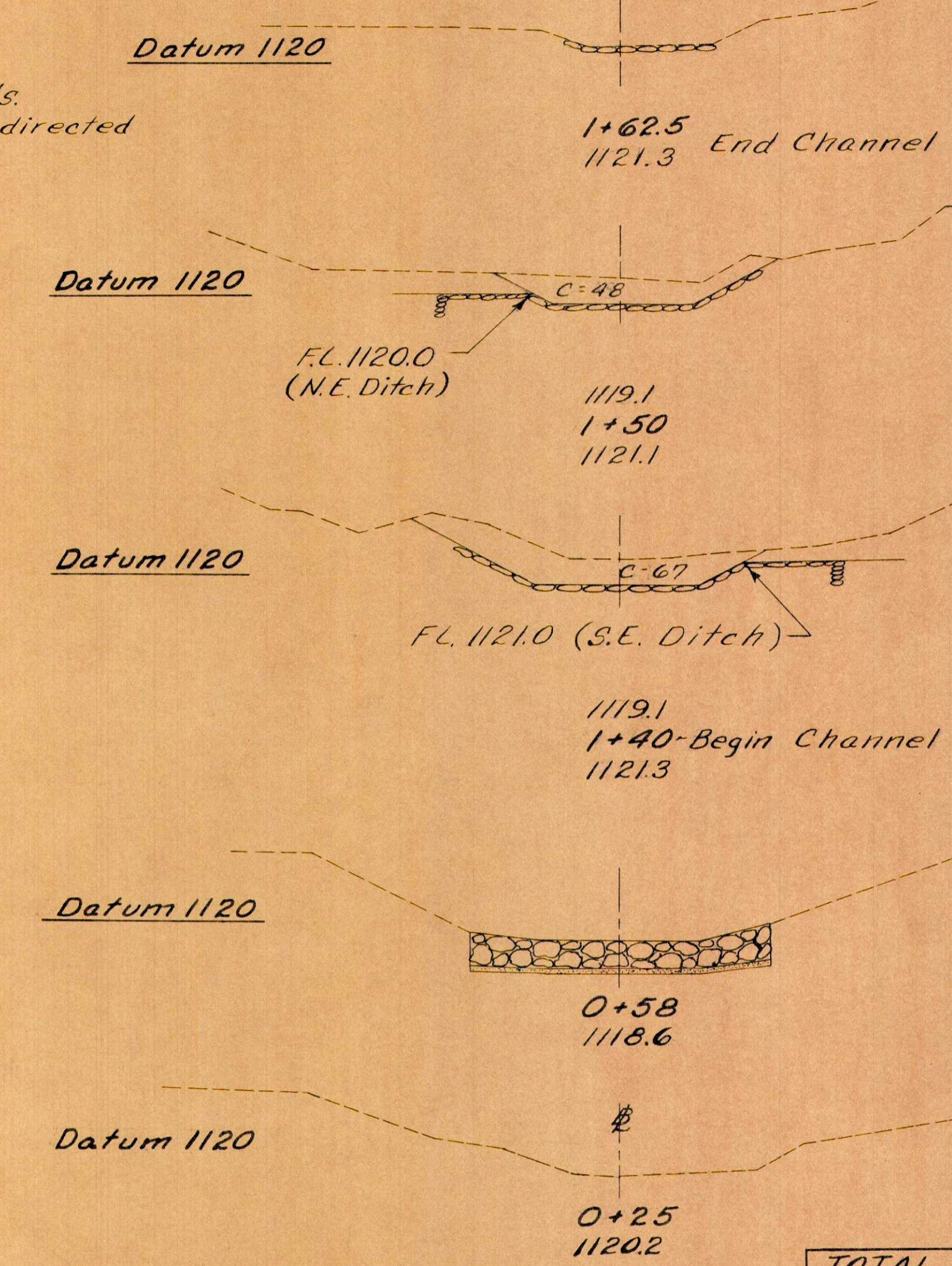
MASONRY CALCULATIONS (SP-53)

Vol. Conc. = W x H x L = Vol. of Pipe

$(\frac{10+2.65}{2}) \times 7.96 \times 28 - [\text{Planimeter } 58' \times 1.462] \div 27 = 11.92$ Cu.Yds.
11.92 x 2 = 23.84 Cu.Yds.
Use 23.9 Cu.Yds.

Temporary Run-Around Bridge: Loading for bridge, HS 20-44, with unit stresses increased 50%. Grade same as existing pavement. Width of structure 24 ft. $\frac{1}{4}$ guardrails.

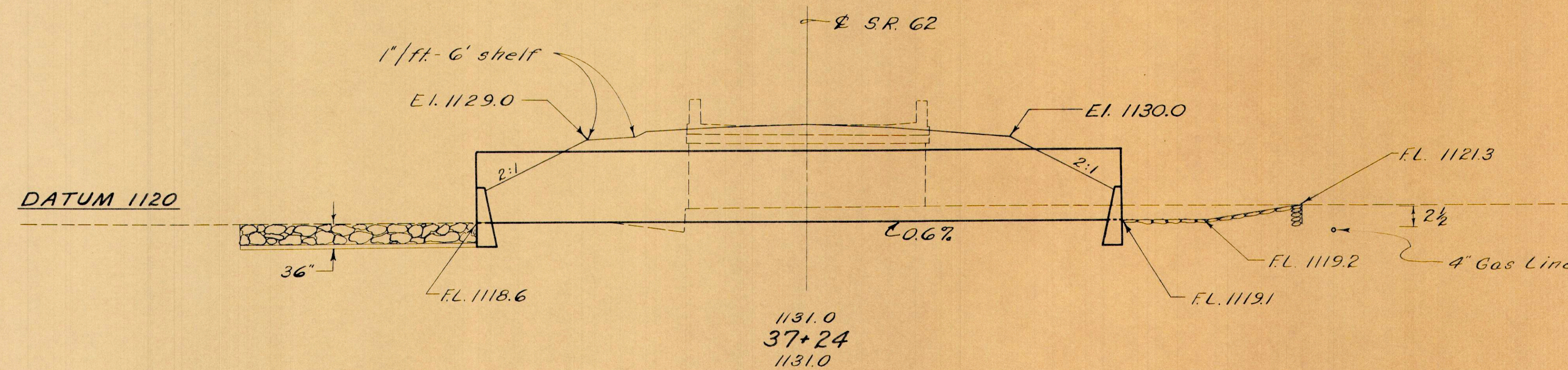
Excavation	
End Area	Cu.Yds.
0	0
11	11
48	48
21	21
67	67
TOTAL	32



QUANTITIES

603	14'-3" x 8'-11" Arch, Type A, 707.03, Gage 7-5	82 Lin.Ft.
601	Rock Channel Protection, Type A	76 Cu.Yds.
601	Riprap, 6" Reinforced Concrete Slab	62 Sq.Yds.
203	Excavation	32 Cu.Yds.
602	Concrete Masonry	23.9 Cu.Yds.
202	Existing Structure Removed	Lump Sum
502	Temporary Bridge	Lump Sum

Drainage Area = 705 Acres
Q25 = 776 cfs



PROFILE
Scale: 0 10

HOL-62-2840 SLM
STA. 37+24
14'-3" x 8'-11" SEC. CORR. METAL PIPE ARCH