

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

HIG-41-0.36

BRUSHCREEK TOWNSHIP

HIGHLAND COUNTY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

1
28

HIGHLAND COUNTY
HIG-41-0.36

DESIGN DESIGNATION

Current A.D.T. (1964)	730
Design Year ADT. (1990)	1390
D.H.V.	167
D. (directional distribution)	60-40
T. (percent B&C Trucks)	12%
V. (design speed)	50MPH

CONVENTIONAL SIGNS

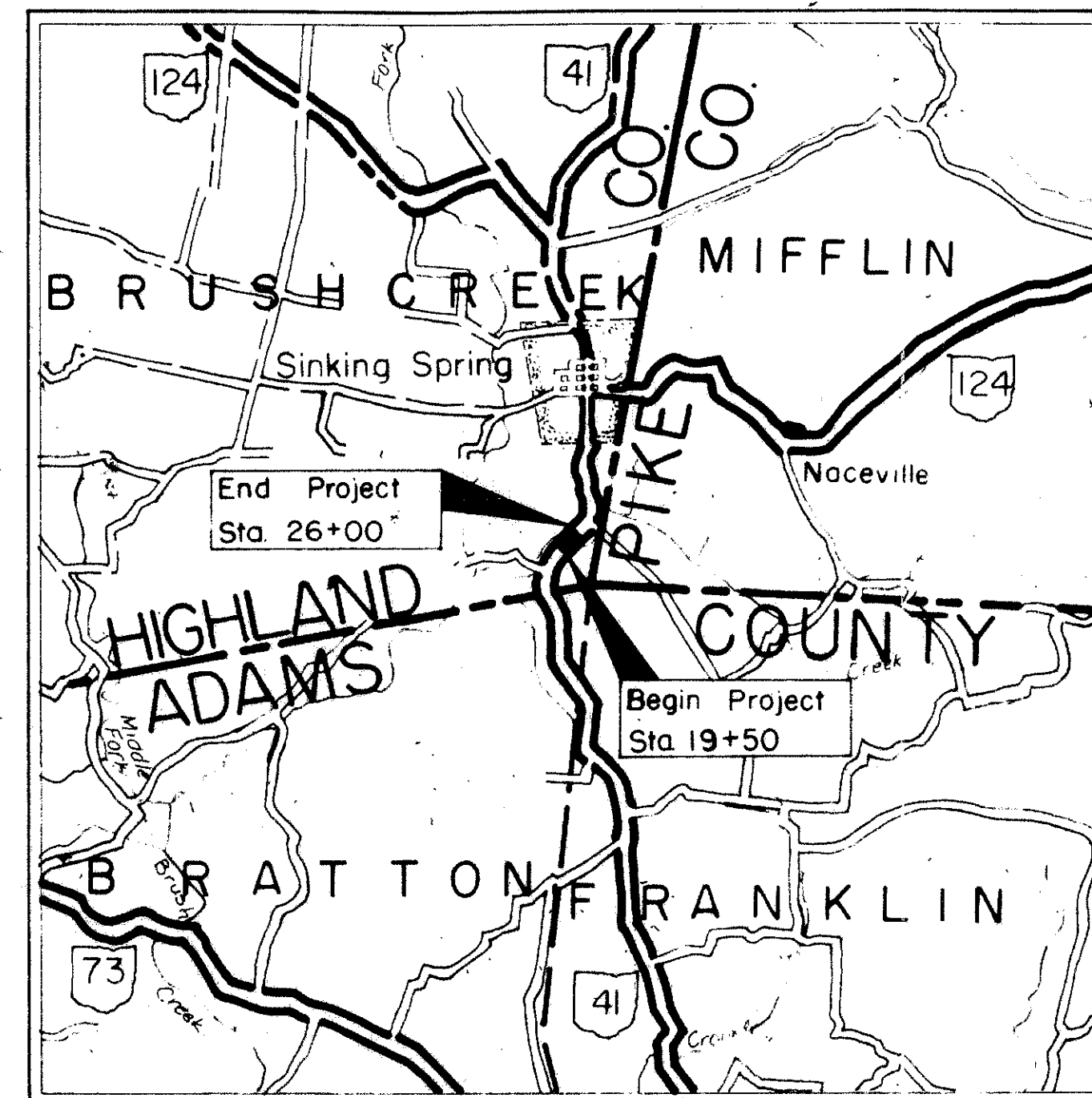
County Line	-----	Limited Access (only)	-----LA-----
Township Line	-----	Right of Way (only)	-----RW-----
Section Line	-----	Limited Access & Right of Way	-----LA&RW-----
Corporation Line	----- or -----	Existing Right of Way	-----
Fence Line (existing)	x---x (proposed) x---x	Property Line	▬ (in existing fence) x---x
Center Line	352 x---x 353	Railroad	====
Trees	☉, Stumps	Guardrail (existing)	—•—•—•—•— (proposed)
Utility Poles:	Telephone ⌀, Power ⌀, Light ⌀		

INDEX OF SHEETS

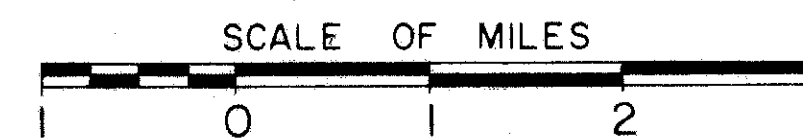
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LINE DATA

Begin Project	Sta. 19+50
End Project	Sta. 26+00
Net Length of Project	650 Lin. Ft. or 0.123 Mile
Begin Work	Sta. 17+89
End Work	Sta. 27+64
Net Length of Work	975 Lin. Ft. or 0.184 Mile



LOCATION MAP



Portion to be improved	=====
State Roads	=====
Other Roads	-----

SCALES

Plan	-----
Profile: Horizontal	-----
Profile: Vertical	-----

1969 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 the plans and estimates.

Approved: *U. J. R. Rusk*
Date: 5-7-69 Division Deputy Director

Approved: *C. H. Actwater*
Date: 5-4-70 Engineer of Bridges

Approved: *R. E. Gattlin*
Date: 5-8-70 Engineer of Location & Design

Approved: *George J. Shroyer*
Date: 5-8-70 Deputy Director of Design & Construction

Approved: *T. H. Board*
Date: 5-20-70 Deputy Director of Right of Way

Approved: *Thomas M. Major*
Date: 5-21-70 Deputy Director of Planning & Programming

Approved: *S. W. Wilson*
Date: 5-21-70 First Assistant Director

Approved: *P. E. Mashiter*
Date: 5-21-70 Director of Highways

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

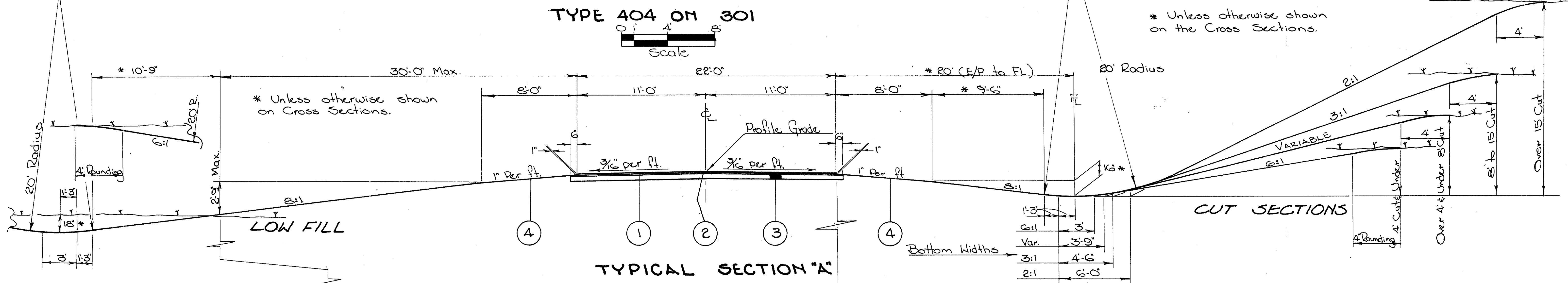
BP-3	12-1-68		
BP-6	6-1-65		
GR-2B	2-15-68		
GR-6	7-15-68		
L-1	6-1-65		
MC-1	6-13-69		
MC-3	6-20-69		
AS-1-67	6-12-69		
CS-1-65 Sh 1 & 2	6-1-65		
MC-4	6-12-69		

SUPPLEMENTAL SPECIFICATIONS

1001	1-1-69
808	11-14-69
939	8-12-69
836	6-17-69

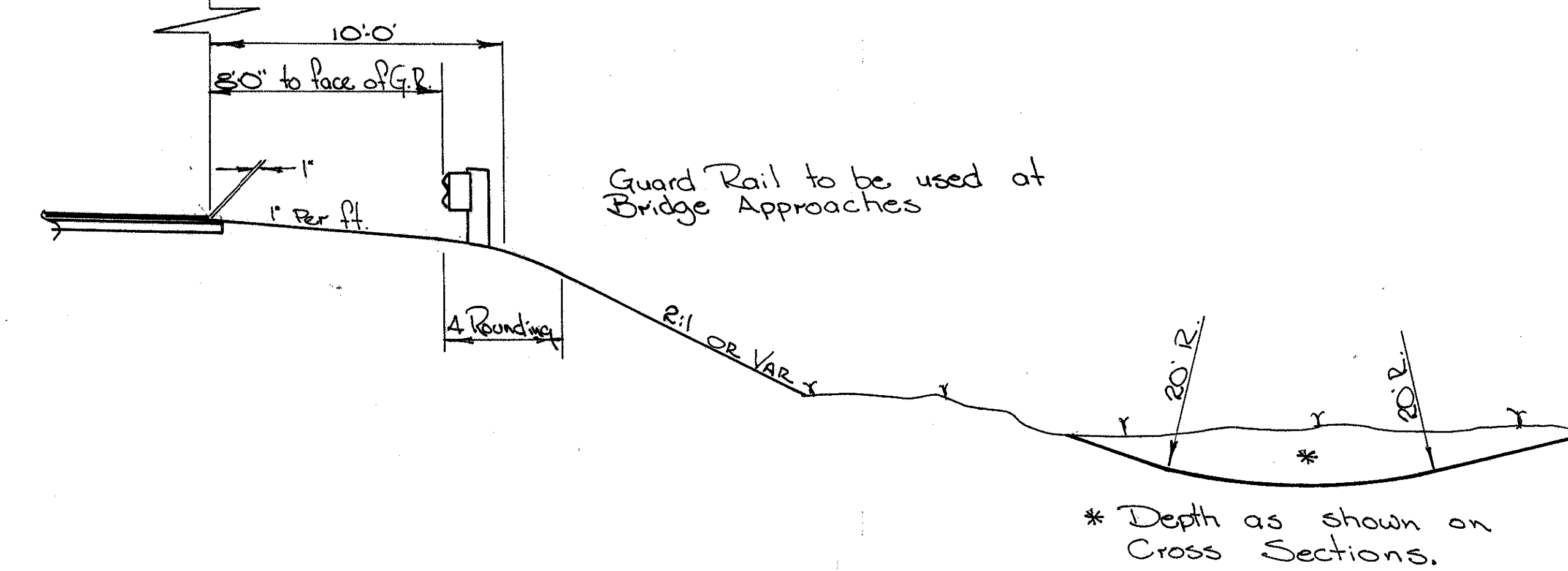
TYPICAL SECTIONS

HIG-41-0.36

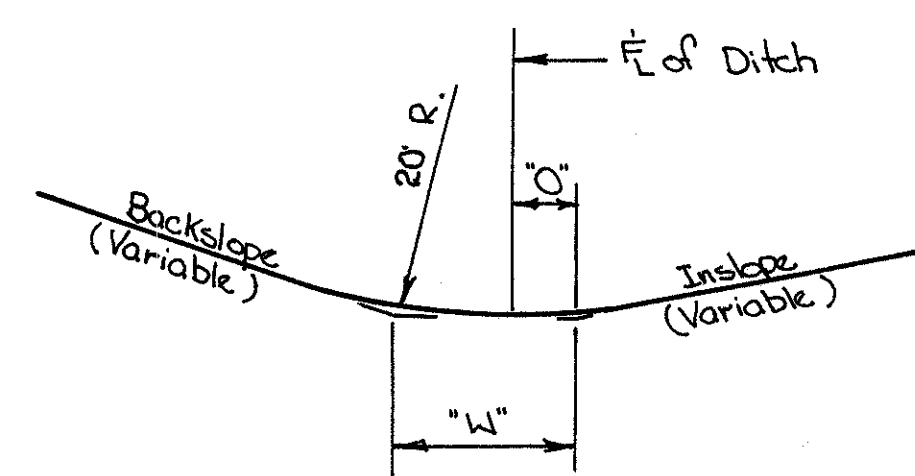


The Above Typical Section Applies Between the Following Stations:
 Sta. 19+50 To Sta. 21+28.38 = 178.38 Lin. Ft.
 Sta. 22+51.62 To Sta. 26+00 = 348.38 Lin. Ft.
 526.76 Lin. Ft.

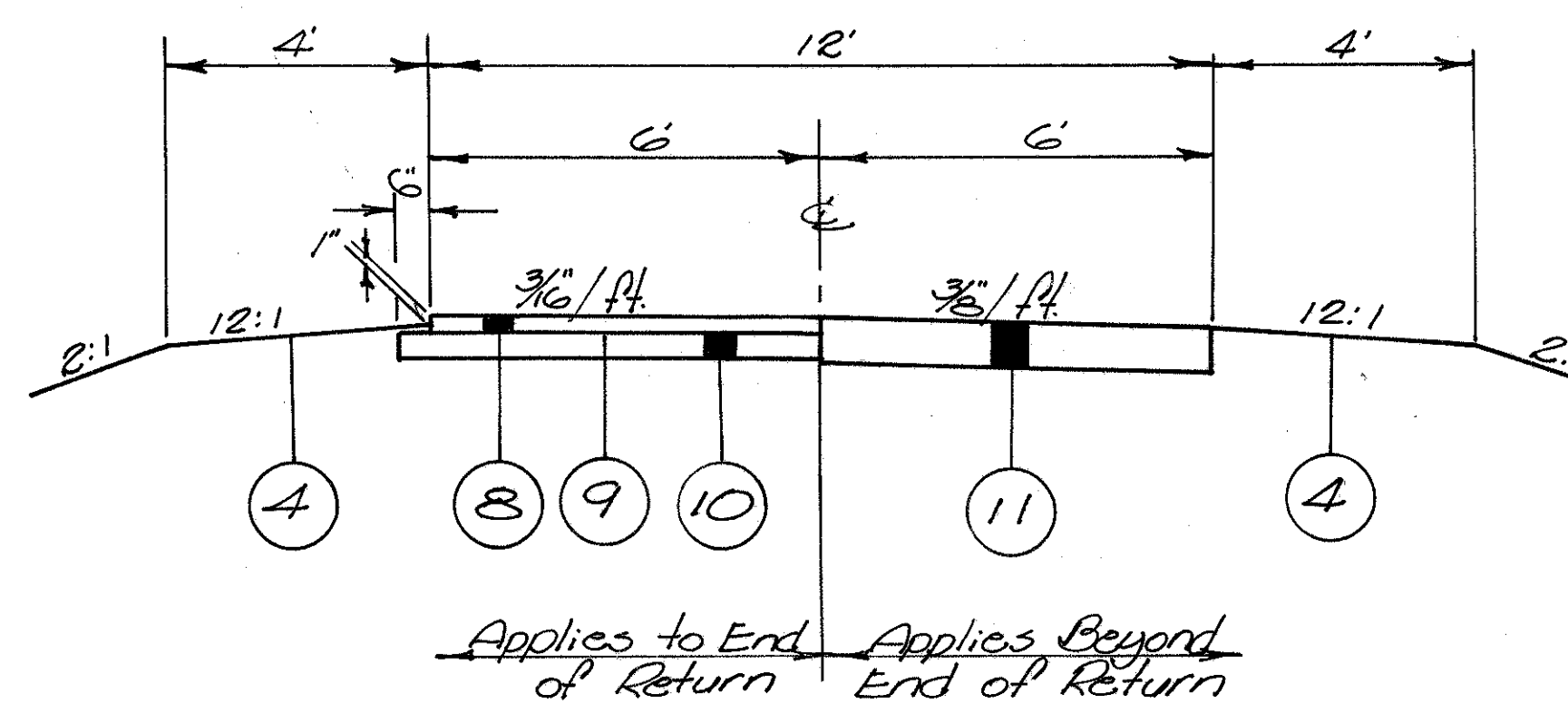
BRIDGE NO. HIG-41-0041
 Approach Slabs & Bridge Limits
 STA. 21+28.38 TO STA. 22+51.62



BACK SLOPE	INSLOPE											
	8:1		7:1		6:1		5:1		4:1		3:1	
	W	O	W	O	W	O	W	O	W	O	W	O
6:1	3'-0"	1'-3"	3'-3"	1'-6"	3'-6"	1'-9"	3'-9"	2'-0"	4'-3"	2'-6"	5'-0"	3'-3"
5:1	3'-3"	3'-6"	3'-9"	4'-0"	4'-3"	4'-6"	4'-9"	5'-0"	5'-3"	5'-6"	5'-9"	6'-0"
4:1	3'-9"	4'-0"	4'-3"	4'-6"	4'-9"	5'-0"	5'-3"	5'-6"	5'-9"	6'-0"	6'-3"	6'-6"
3:1	4'-6"	4'-9"	5'-0"	5'-3"	5'-6"	5'-9"	6'-0"	6'-3"	6'-6"	6'-9"	7'-0"	7'-3"
2:1	6'-0"	6'-3"	6'-6"	6'-9"	7'-0"	7'-3"	7'-6"	7'-9"	8'-0"	8'-3"	8'-6"	8'-9"
1.5:1	7'-4"	7'-6"	7'-9"	8'-0"	8'-3"	8'-6"	8'-9"	9'-0"	9'-3"	9'-6"	9'-9"	10'-0"
1:1	9'-6"	9'-9"	10'-0"	10'-3"	10'-6"	10'-9"	11'-0"	11'-3"	11'-6"	11'-9"	12'-0"	12'-3"



DIMENSIONS OF 20 FT. RADIUS DITCHES ~



TYPICAL SECTION OF RESIDENCE DRIVE

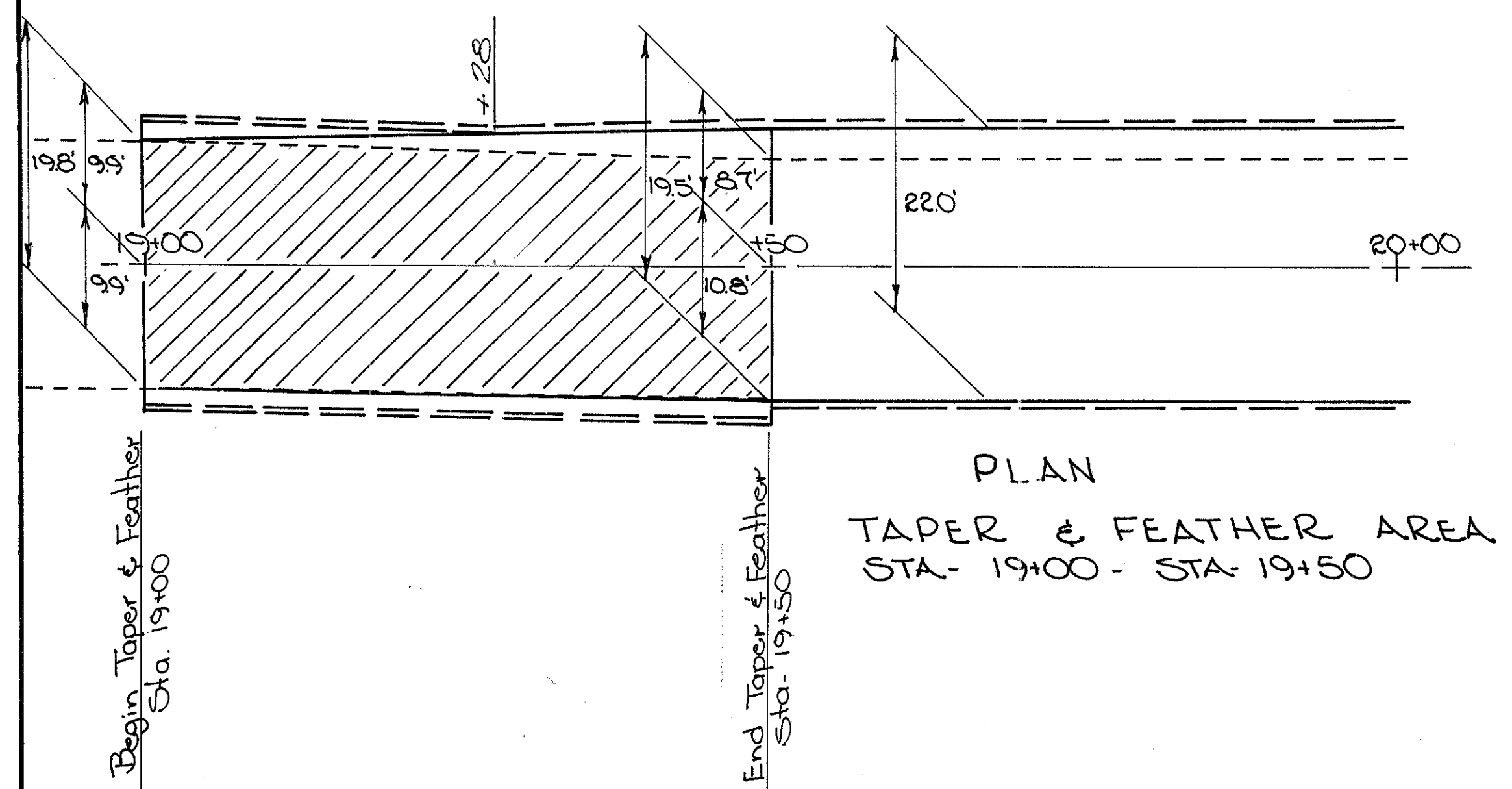
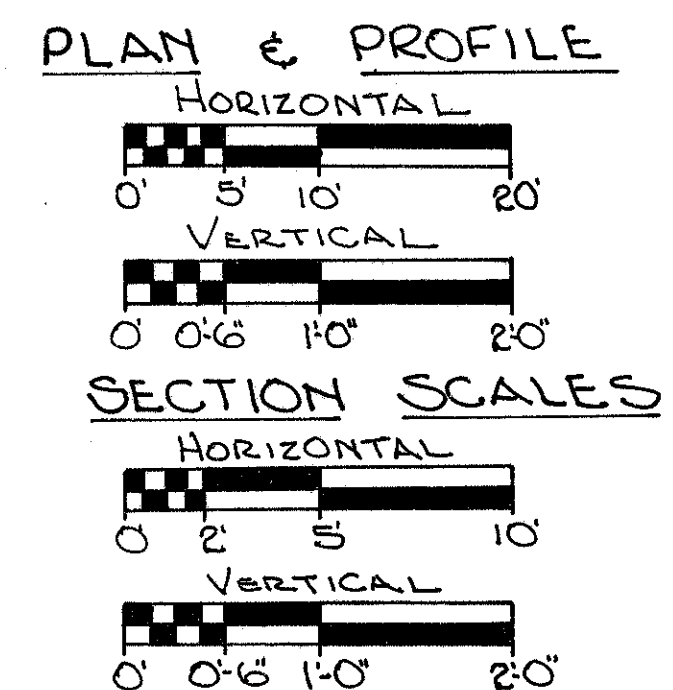
- ~ LEGEND ~
- ① 404 1" Asphalt Concrete (70-85)
 - ② 402 1" Asphalt Concrete (70-85)
 - ③ 301 5" Bituminous Aggregate Base 702.01 (85-100) or 702.09 RT-11 or RT-12
 - ④ 659 Seeding & Mulching
- Note: For Remainder of Legend, See Sheet # 3

TAPER & FEATHER DETAILS

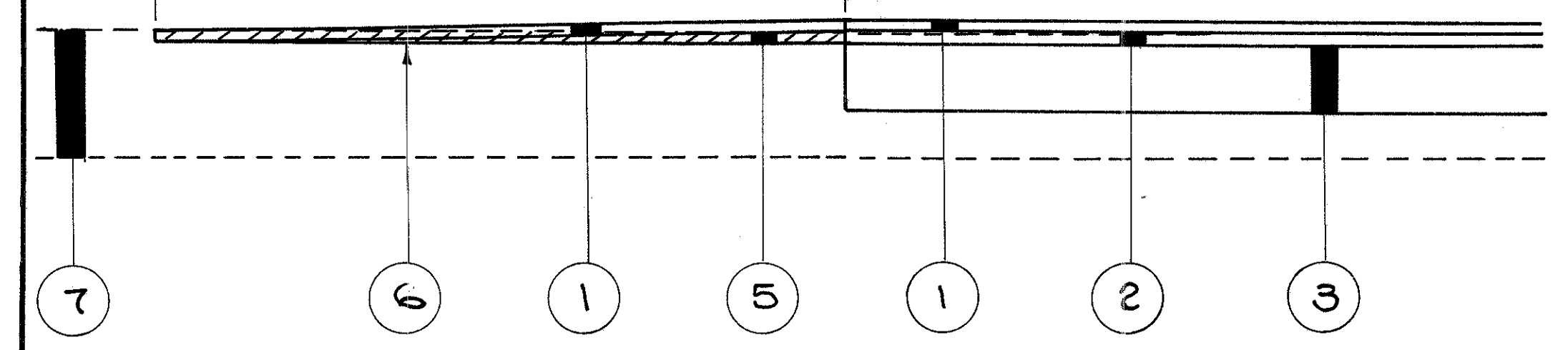
FED. RD. DIVISION	STATE	PROJECT
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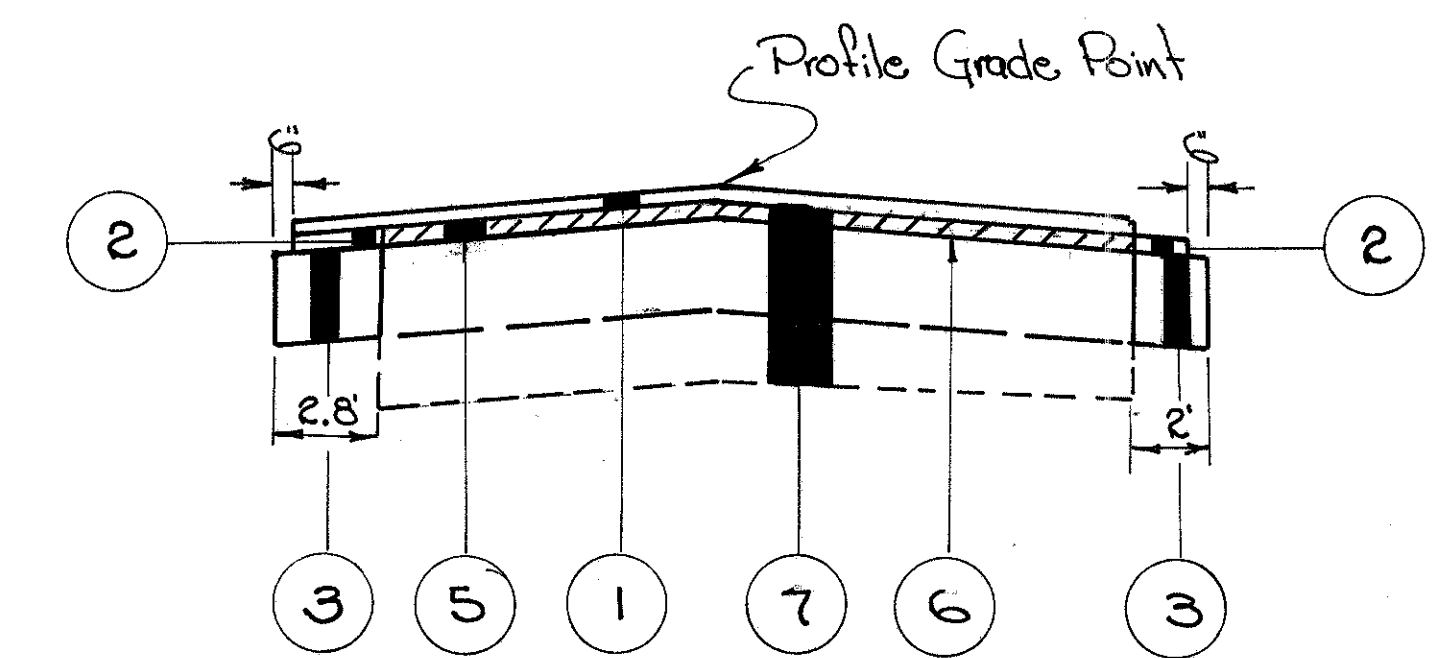
HIG-41-0.36



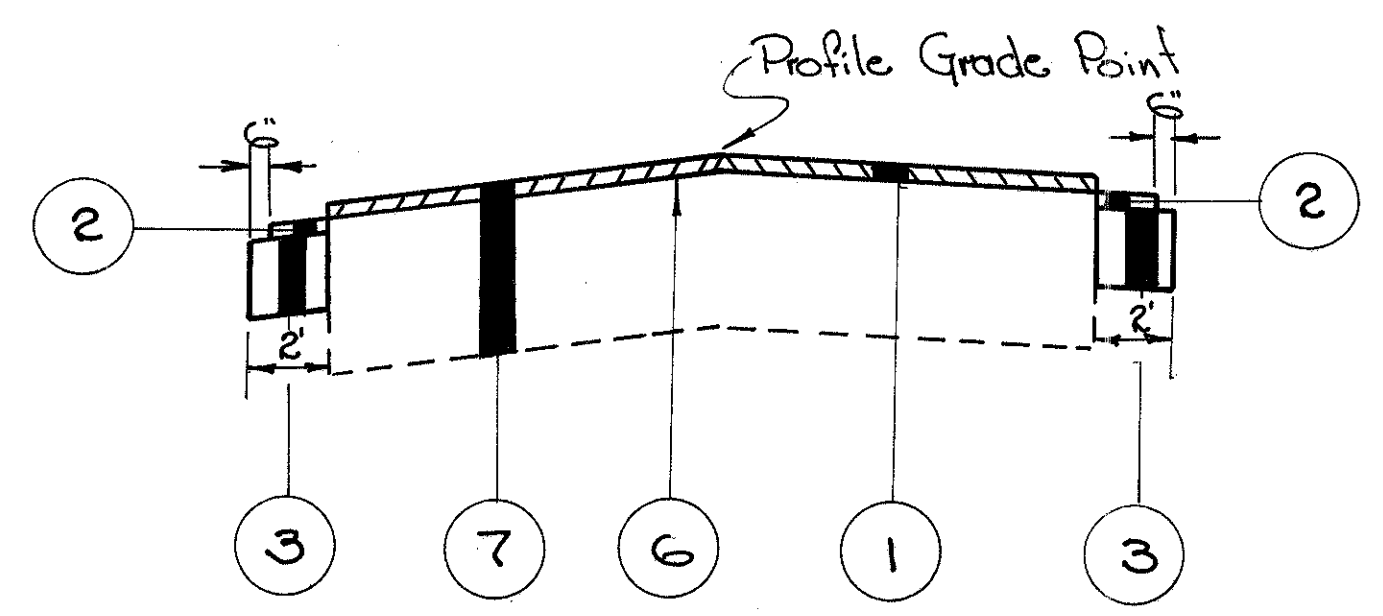
PLAN
TAPER & FEATHER AREA
STA- 19+00 - STA- 19+50



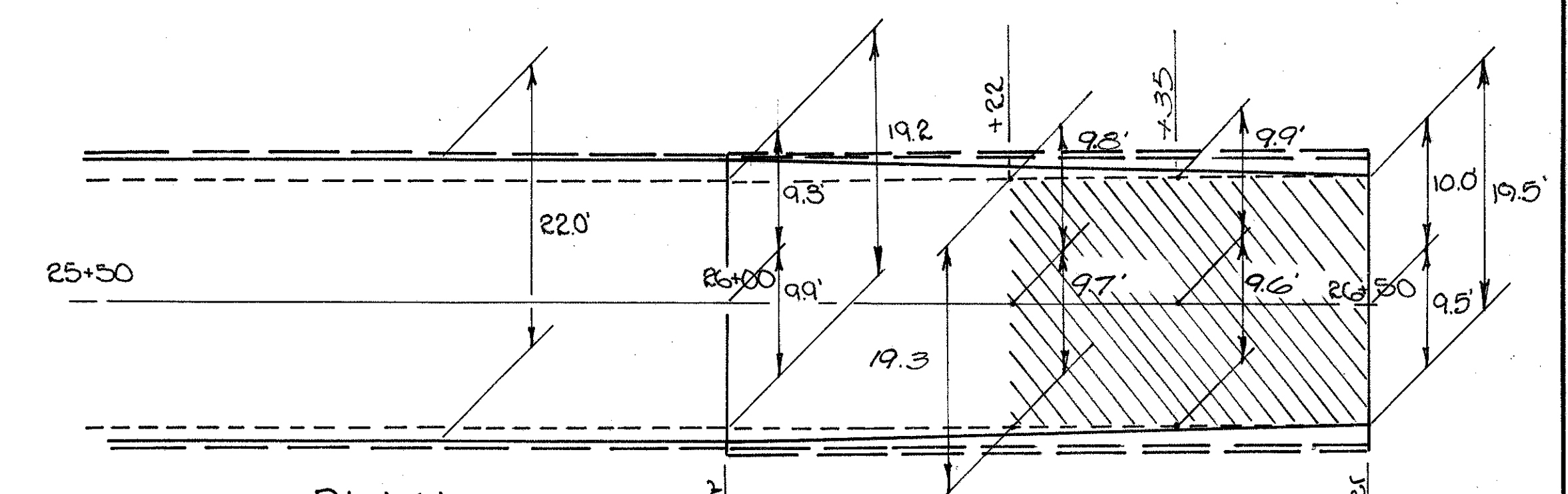
PROFILE



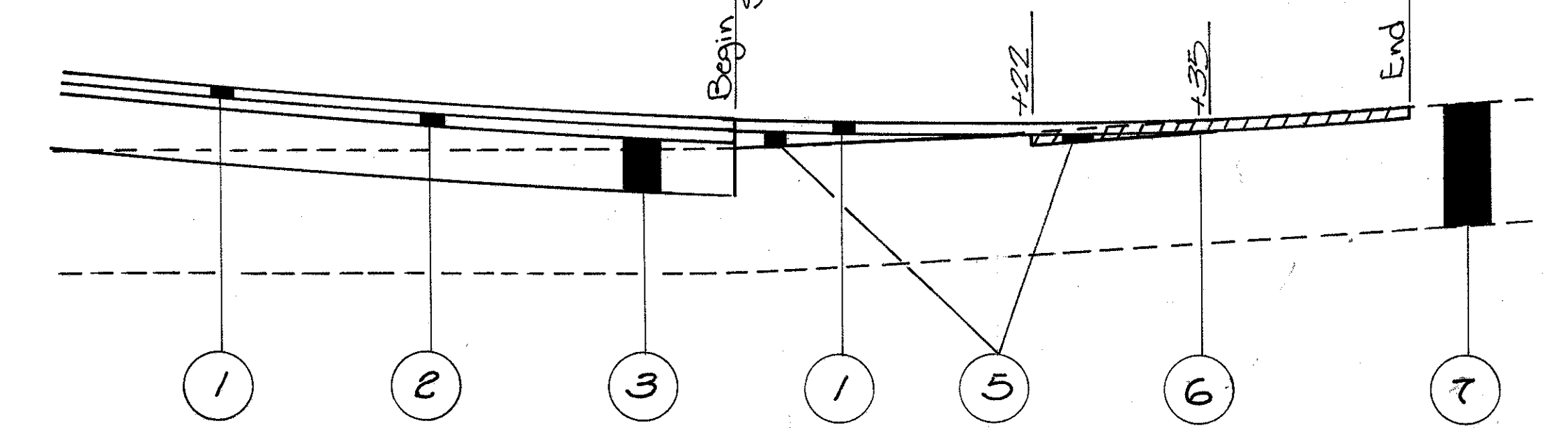
SECTION 19+50 BACK



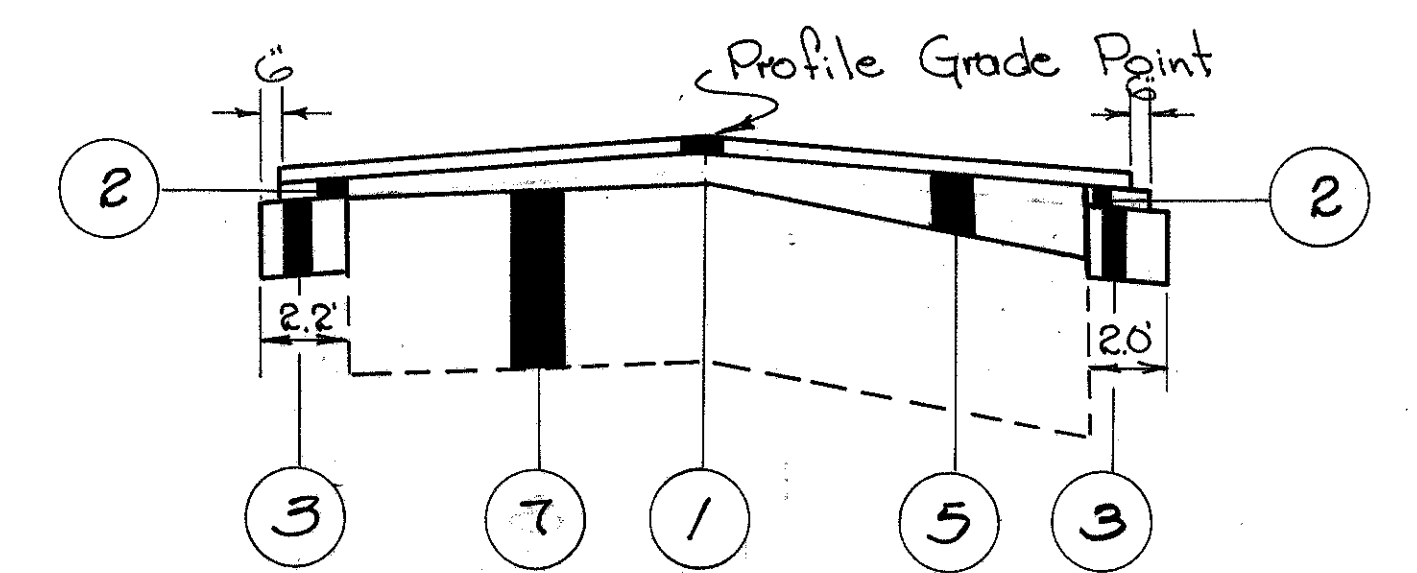
SECTION 19+00 AHEAD



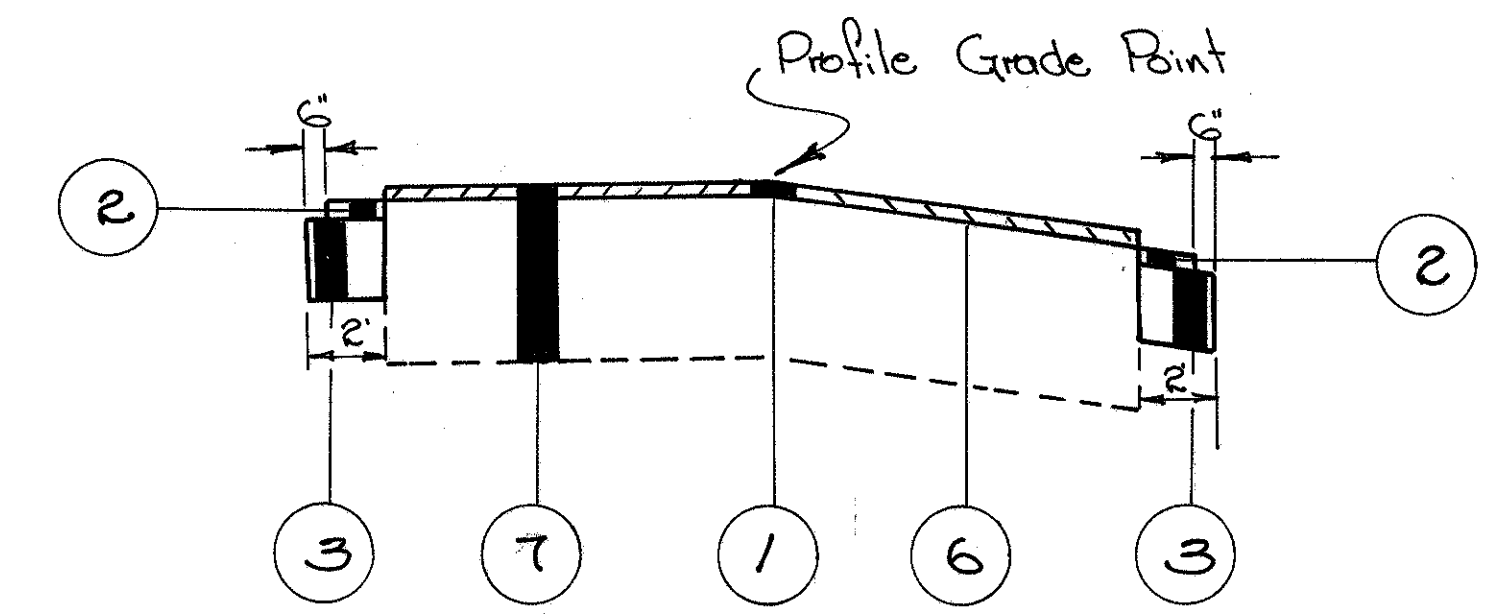
PLAN
TAPER & FEATHER AREA
STA- 26+00 - STA- 26+50



PROFILE



SECTION 26+00 AHEAD



SECTION 26+50 BACK

~ LEGEND ~

- ① 404 1" Asphalt Concrete (70-85).
- ② 402 1" Asphalt Concrete (70-85).
- ③ 301 5" Bituminous Aggregate Base 702.01 (85-100) or 702.09 RT-11 or RT-12
- ⑤ 402 Asphalt Concrete (70-85) 0" Min.
- ⑥ 407 Tack Coat 702.04, MS-2 or RS-1, or 702.02, RC-70 or RC-250, Applied @ 0.1 gal. per sq. yd.
- ⑦ Existing Pavement.
- ▨ 202 1" Existing Wearing Course Removed & Disposed Of
- ⑧ 404 2" Asphalt Concrete (70-85), Placed in Two 1" Courses
- ⑨ 408 Bituminous Prime Coat, 702.09 RT-2 or RT-3 @ 0.4 gal. per sq. ft.
- ⑩ 304 5" Aggregate Base
- ⑪ 304 8" Aggregate Base

STA-19+00 TO STA- 19+50
STA- 26+00 TO STA- 26+50

NOTES

FIELD OFFICE

The contractor shall provide a minimum of 150 sq. ft. of floor space for the field office and in addition to the requirements of Item 619, 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.

REMOVAL OF EXISTING PIPE

The removal of all existing pipe drains which would normally be removed in various excavation items shall be included for payment in the unit prices bid for the respective excavation items, unless otherwise itemized in the plans.

CONSTRUCTION LAYOUT STAKES

See note in proposal describing the work included in this lump sum pay item.

REMOVAL OF TREES AND STUMPS

All trees and stumps specifically marked for removal within the construction limits of this project shall be removed under the lump sum price bid for Item 201 Clearing and Grubbing, except that those trees for which protection and preservation work is indicated elsewhere in these plans shall not be removed.

The following is an approximate estimate of the number of trees and stumps to be removed.

SIZES	NO. TREES	NO. STUMPS
18"	3	0
30"	1	0
48"	3	0
60"	0	0

The above estimate is approximate and the State of Ohio reserves the right to order the 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 201 Clearing and Grubbing.

GUARD RAIL ADJUSTMENT

The locations of guardrail runs as shown in these plans are subject to adjustment to assure that the planned installations will afford maximum protection for traffic.

SEEDING

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

PROFILE GRADE - EXISTING

Since the profile of the existing pavement on this project has been taken the existing pavement has been resurfaced (Approximately \pm). Embankment has been reduced by 9 C.Y. which has been carried to x-section sheet No.

Existing elevations have not been adjusted.

Calculations:

$$\text{Length (embk)} 373.38' - \text{Length (exc)} 303.78' \times \text{width } 19.36' \times \frac{1}{2} \times \frac{1}{2} = 9 \text{ C.Y.}$$

TRAFFIC NOTE

Two-way traffic shall be maintained at all times by use of the existing pavement, the proposed pavement and temporary roads surfaced with 410 aggregate and stabilized with 616 calcium chloride 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. It is not intended that temporary roads be used exclusively for maintaining traffic on this project but that maximum usage be made of existing and proposed pavements. The limits and duration of use of temporary roads shall be held to an absolute minimum, and in all cases shall be subject to the approval of the Engineer.

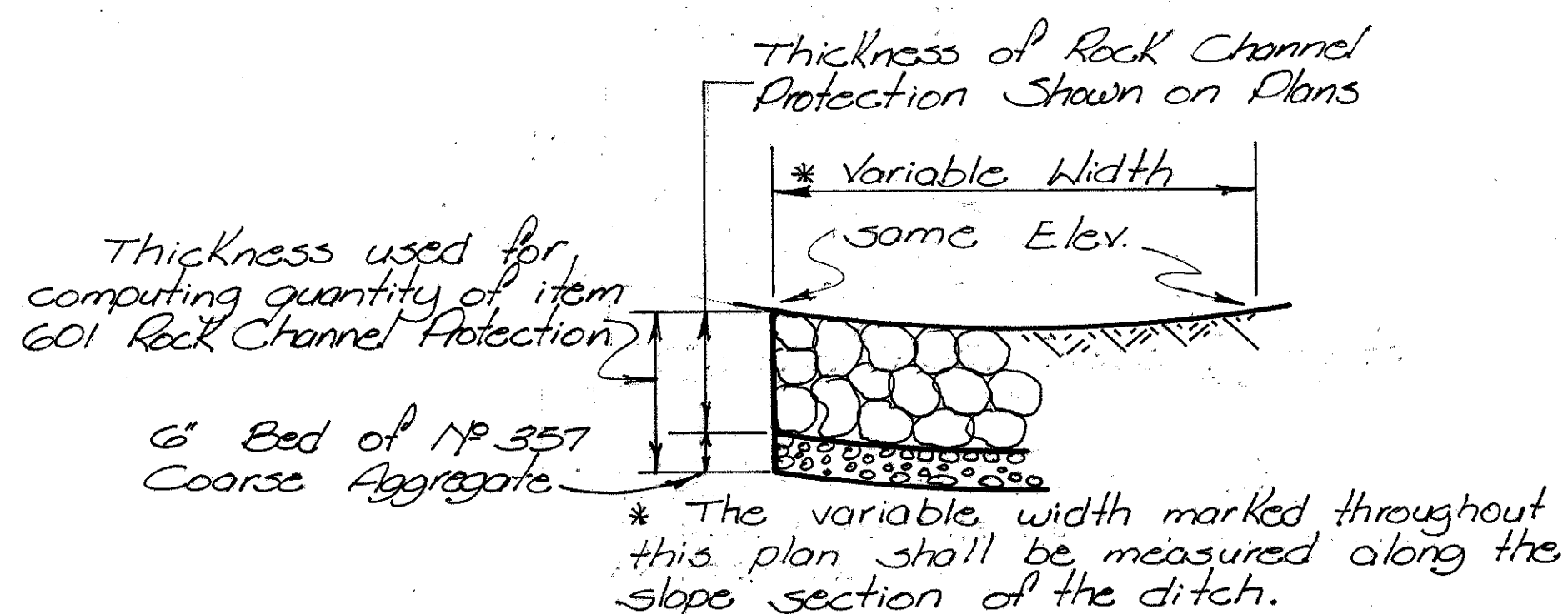
The following is a suggested sequence of construction operations to facilitate the maintenance of two-way traffic:

- 1- Maintain traffic on the existing pavement while a temporary road is constructed on the left as shown on the cross sections from Sta. 17+89 to Sta. 27+64.
- 2- Maintain traffic on the temporary road while the proposed pavement and bridge is constructed.
- 3- Maintain traffic on the proposed pavement when completed while the balance of the project is completed.

Payment for all the above operations except 410, 502, 615 and 616 shall be paid in accordance with 614, Maintaining Traffic.

Materials have been provided for the temporary pavement as follows:

- 1- 410 Traffic Compacted Surface Type A or B 450 C.Y.
- 2- 616 Calcium Chloride 9 Tons



EROSION PROTECTION

PAVEMENT CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT
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See Sheet No.	Location & Description	Side	404			402			301		304			407	202	203	611
			Asphalt Concrete (70-85)			Asphalt Concrete (70-85)			Bituminous Aggregate Base		Aggregate Base			Tack Coat Applied @ 0.1 Gal. per Sq. Yd.	Existing Wearing Course Removed & Disposed of	Subgrade Compaction	Reinforced Concrete Approach Slabs
			1"	2"	Var	1"	Var.	5"	5"	6"	8"	Sq. Yd.	Sq. Yd.	Sq. Yd.	Sq. Yd.	Sq. Yd.	Sq. Yd.
2	Typical Section A																
	526.76 x 22' x 1/2	℄	1287.64		1287.64			1346.17								1287.64	
	526.76 x 23' x 1/2	℄															
3	Feather Areas																
	19+00 ~ 19+50	℄	116.11		17.64	1.52	23.20						109.17	109.17			
	26+00 ~ 26+50	℄	115.28		17.22	3.15	22.78						60.36	60.36			
	Drives			106.8													
	Approach Slabs 25' x 22' x 2' x 1/2															122.22	122.22
	Sub-Totals		1519.03	106.8	1322.50	4.67	1392.15	115.6		115.6	33.64	169.53	169.53	1409.86		122.22	
	Conv. to C.Y., Gal., etc.		42.20	59.3	36.74	4.67	193.35	46.24		16.06	7.48	16.95	169.53	1409.86		122.22	
	Total		48.13				193.35	46.24		23.54		16.95	169.53	1409.86		122.22	
	Use Total		USE 49		USE 42		USE 194	USE 47		USE 24		USE 17	USE 170	1410		123	

SHT. NO.	REF. NO.	ITEM	THICK-NESS	CALCULATIONS	SHT. NO.	REF. NO.	ITEM	THICK-NESS	CALCULATIONS	SHT. NO.	REF. NO.	ITEM	THICK-NESS	CALCULATIONS
3	III	202		Feather Area Sta. 19+00 ~ Sta. 19+50 202 Ex. Wear. Course Removed & Disposed Of. $\frac{1}{2}(19.8+19.5) \times 50' \times \frac{1}{2} = 109.17$ Sq. Yd.	3	III	202		Feather Area Sta. 26+00 ~ Sta. 26+50 Ex. Wear. Course Removed & Disposed Of. $\frac{1}{2}(19.3+19.5) \times 28' \times \frac{1}{2} = 60.36$ Sq. Yd.			659		Commercial Fertilizer (12-12-12) $(8382 + 404) \times 9 \times \frac{20}{1000} \times \frac{1}{2000} = 0.79$ Tons
3	①	404	1"	Asphalt Concrete (70-85) $\frac{1}{2}(22+19.8) \times 50' \times \frac{1}{2} = 116.11$ Sq. Yd.	3	①	404	1"	Asphalt Concrete (70-85) $\frac{1}{2}(22+19.5) \times 50' \times \frac{1}{2} = 115.28$ Sq. Yd.			659		Agricultural Liming $(8382 + 404) \times 9 \times \frac{100}{1000} \times \frac{1}{2000} = 3.95$ Tons
3	②	402	1"	Asphalt Concrete (70-85) Rt. Side $1.5' \times 50' \times \frac{1}{2} = 8.33$ Sq. Yd. Lt. Side (19+00 to 19+28) $28' \times 1.5' \times \frac{1}{2} = 4.67$ S.Y. (19+28 to 19+50) $22' \times \frac{1}{2}(1.5+2.3) \times \frac{1}{2} = 4.64$ S.Y. } 17.64 Sq. Yd.	3	②	402	1"	Asphalt Concrete (70-85) Lt. Side $\frac{1}{2}(1.7+1.5) \times 50' \times \frac{1}{2} = 8.89$ Sq. Yd. Rt. Side $1.5' \times 50' \times \frac{1}{2} = 8.33$ Sq. Yd. } 17.22 Sq. Yd.	8	D-1	601	18"	$46.5' \times 6' \times \frac{1}{2} \times \frac{1}{36} = 20.67$ Cu. Yd.
3	③	301	5"	Bituminous Aggregate Base Rt. Side $2' \times 50' \times \frac{1}{2} = 11.11$ Sq. Yd. Lt. Side (19+00 to 19+28) $28' \times 2' \times \frac{1}{2} = 6.22$ S.Y. (19+28 to 19+50) $22' \times \frac{1}{2}(2+2.8) \times \frac{1}{2} = 5.87$ S.Y. } 23.20 Sq. Yd.	3	③	301	5"	Bituminous Aggregate Base Rt. Side $2' \times 50' \times \frac{1}{2} = 11.11$ Sq. Yd. Lt. Side $\frac{1}{2}(2.2+2.0) \times 50' \times \frac{1}{2} = 11.67$ Sq. Yd. } 22.78 Sq. Yd.	8	D-2	601	18"	$49.5' \times 6' \times \frac{1}{2} \times \frac{1}{36} = 22.00$ Cu. Yd.
3	⑤	402	Var	Asphalt Concrete (70-85) $\frac{1}{2}(19.8+19.5) \times 50' \times \frac{1}{2} = 109.17$ Sq. Yd. $\times \frac{1}{36} = 2 = 1.52$ C.Y.	3	⑤	402	Var	Asphalt Concrete (70-85) Rt. Side $\frac{1}{2}(9.9+9.7) \times 22' \times \frac{1}{4} \times \frac{1}{36} = 1.33$ C.Y. $\frac{1}{2}(9.7+9.6) \times 13' \times \frac{1}{4} \times \frac{1}{36} = 0.39$ C.Y. AVE. = 1.72 C.Y. Lt. Side $\frac{1}{2}(9.3+9.8) \times 22' \times \frac{1}{4} \times \frac{1}{36} = 1.13$ C.Y. $\frac{1}{2}(9.8+9.9) \times 13' \times \frac{1}{4} \times \frac{1}{36} = 0.30$ C.Y. AVE. = 1.43 C.Y. } 3.15 C.Y.	8	D-3	601	18"	$79' \times 6' \times \frac{1}{2} \times \frac{1}{36} = 35.11$ Cu. Yd.
3	⑥	407		Tack Coat $\frac{1}{2}(19.8+19.5) \times 50' \times \frac{1}{2} = 109.17$ Sq. Yd.	3	⑥	407		Tack Coat $\frac{1}{2}(19.3+19.5) \times 28' \times \frac{1}{2} = 60.36$ S.Y.	8	D-4	601	18"	$13.5' \times 6' \times \frac{1}{2} \times \frac{1}{36} = 6.0$ Cu. Yd.
										8	D-5	600		$350' \times 6' \times \frac{1}{2} = 233.33$ Sq. Yd.
										8	D-6	600		$256' \times 6' \times \frac{1}{2} = 170.67$ Sq. Yd.

Calc. By R.L.G. 4/1/69
Chd. By T.H.L. 5/7/69

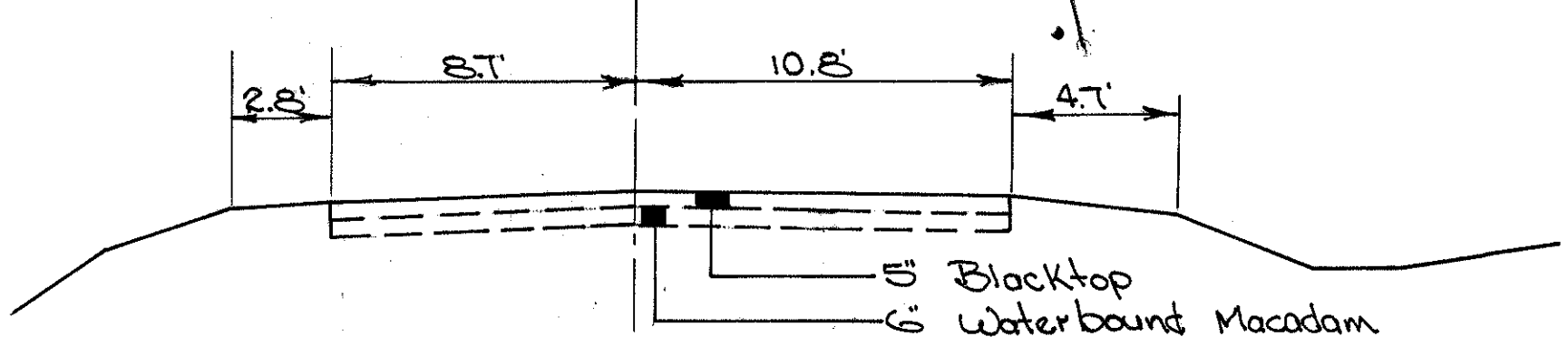
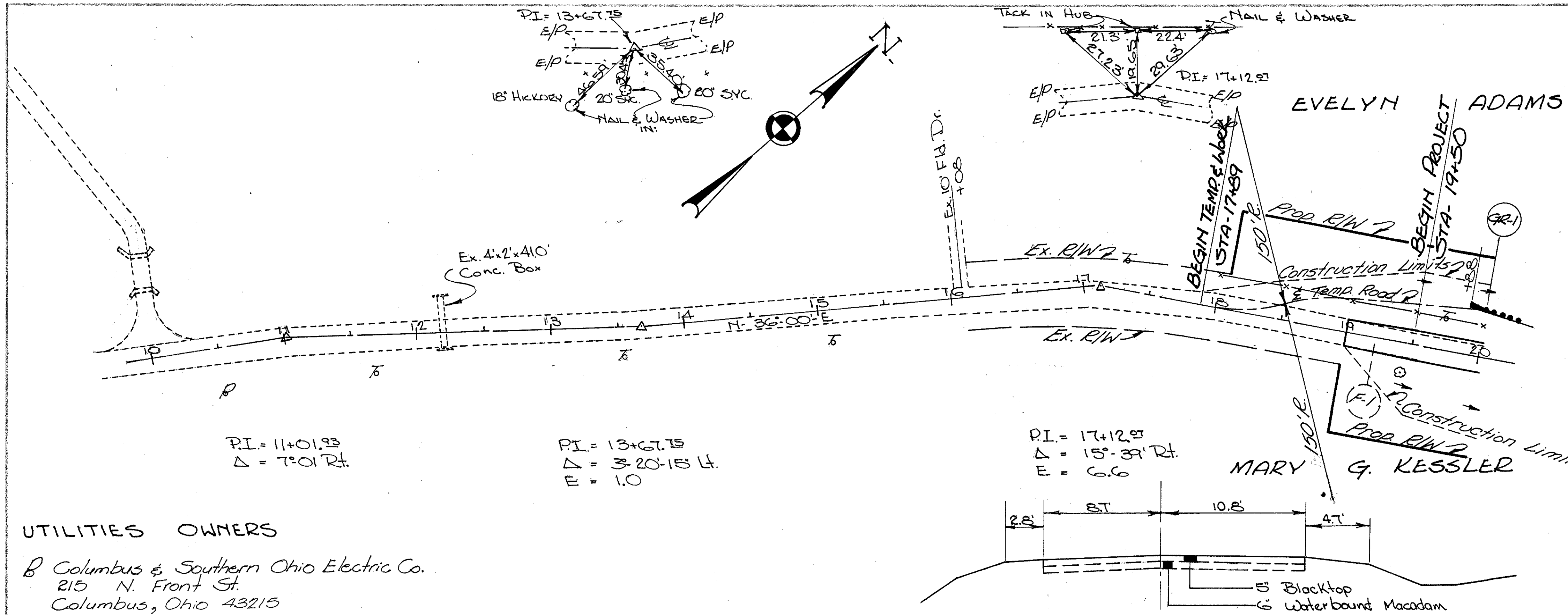
GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
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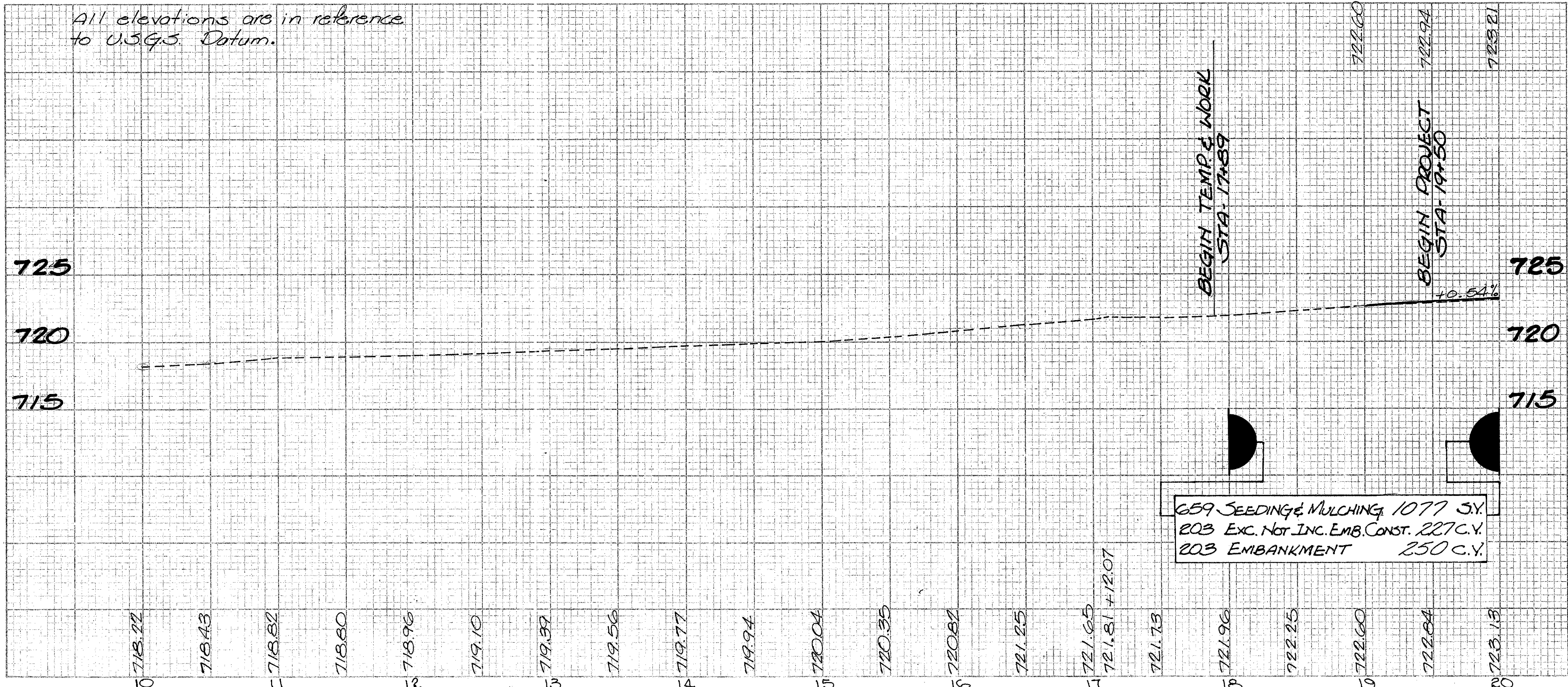
ITEM	SHEET				NUMBER				R/W	ITEM	QUANT	UNIT	DESCRIPTION	
	4	5	7	8										
ROADWAY														
201	Lump										201	Lump	Lump	Clearing & Grubbing.
202					25						202	25	Lin.Ft.	Pipe Removed, 24" & under.
202		170									202	170	Sq.Yd.	Existing Wearing Course Removed & Disposed Of.
203				227	1635						203	1862	Cu.Yd.	Excavation Not Including Embankment Construction.
203				250	3,137						203	3387	Cu.Yd.	Embankment.
203		1410									203	1410	Sq.Yd.	Subgrade Compaction
410		450									410	450	Cu.Yd.	Traffic Compacted Surface Type A or B.
604									6		604	6	Ea.	Centerline Reference Monuments.
606				12	604.02						606	616.02	Lin.Ft.	Guard Rail, Type 5
606				1	3						606	4	Ea.	Approach End Assembly.
615	Lump										615	Lump	Lump	Temporary Roads.
616		9									616	9	Ton	Calcium Chloride.
EROSION CONTROL														
601					84						601	84	Cu.Yd.	Rock Channel Protection, Type B.
659				1077	7305						659	8382	Sq.Yd.	Seeding & Mulching.
659		0.79									659	0.79	Ton	Commercial Fertilizer (12-12-12)
659		3.95									659	3.95	Ton	Agricultural Liming.
660					404						660	404	Sq.Yd.	Sodding
DRAINAGE														
603					34						603	34	Lin.Ft.	24" Conduit, Type D, 706.02 or 706.08
PAVEMENT														
301		194									301	194	Cu.Yd.	Bituminous Aggregate Base, 702.01 (85-100) or 702.09 Rf-11 or RT-12
304		24									304	24	Cu.Yd.	Aggregate Base.
402		42									402	42	Cu.Yd.	Asphalt Concrete (70-85)
404		49									404	49	Cu.Yd.	Asphalt Concrete (70-85)
407		17									407	17	Gal.	Tack Coat, 702.04, MS-2 or RS-1, or 702.02, RC-70 or RC-250.
408		47									408	47	Gal.	Bituminous Prime Coat, 702.09 Rf-2 or Rf-3.
611		123									611	123	Sq.Yds	Reinforced Concrete Approach Slabs (7x13').
STRUCTURES OVER 20' SPAN														
FOR ESTIMATED QUANTITIES SEE SHEET N ^o 24														
For														
619	Lump										619	Lump	Lump	Field Office.
614	Lump										614	Lump	Lump	Construction Layout Stakes
614	Lump										614	Lump	Lump	Maintaining Traffic.



UTILITIES OWNERS

Ⓟ Columbus & Southern Ohio Electric Co.
215 N. Front St.
Columbus, Ohio 43215

Ⓣ General Telephone Co. of Ohio
21 S. South St.
Wilmington, Ohio 45177



ESTIMATED QUANTITIES

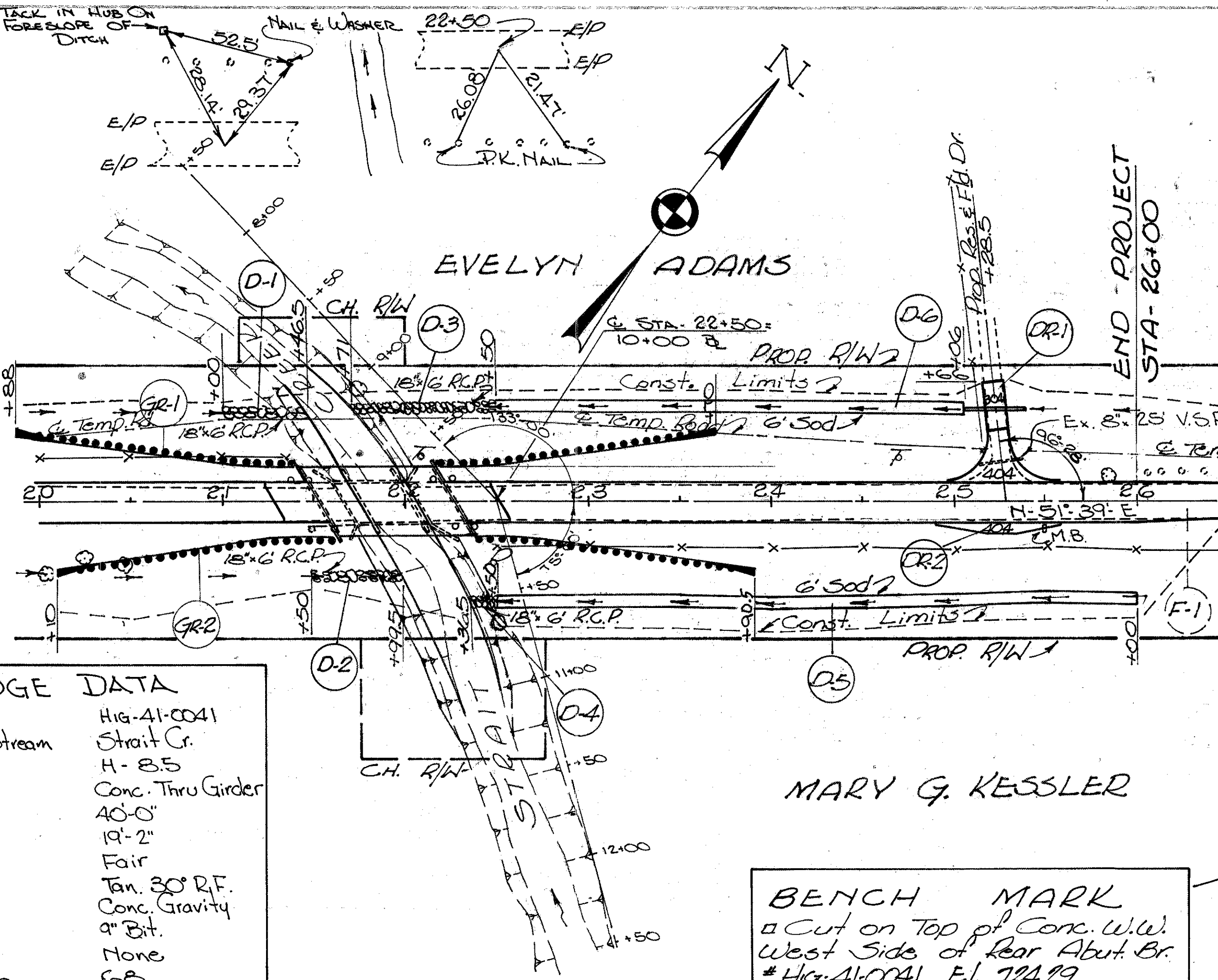
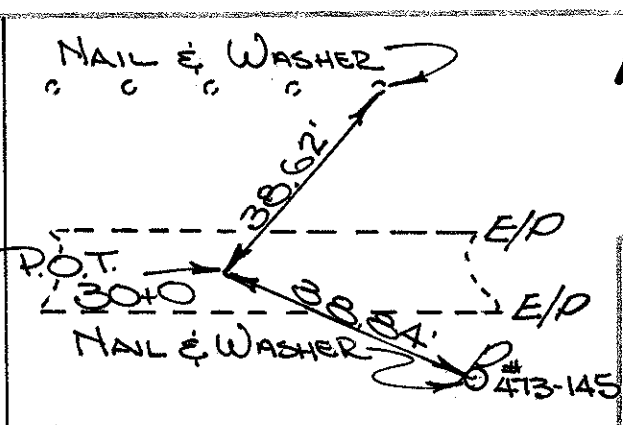
REF. NO.	STATION TO STATION	SIDE	Sq. Feet	Lin. Ft.	Eq.
GR-1	19+88 to 20+00	Lt.		12	1
FI	19+00 to 19+50		34.5		

STA- 10+00 TO STA- 20+00

Quantities Carried to General Summary Sheet No. 6

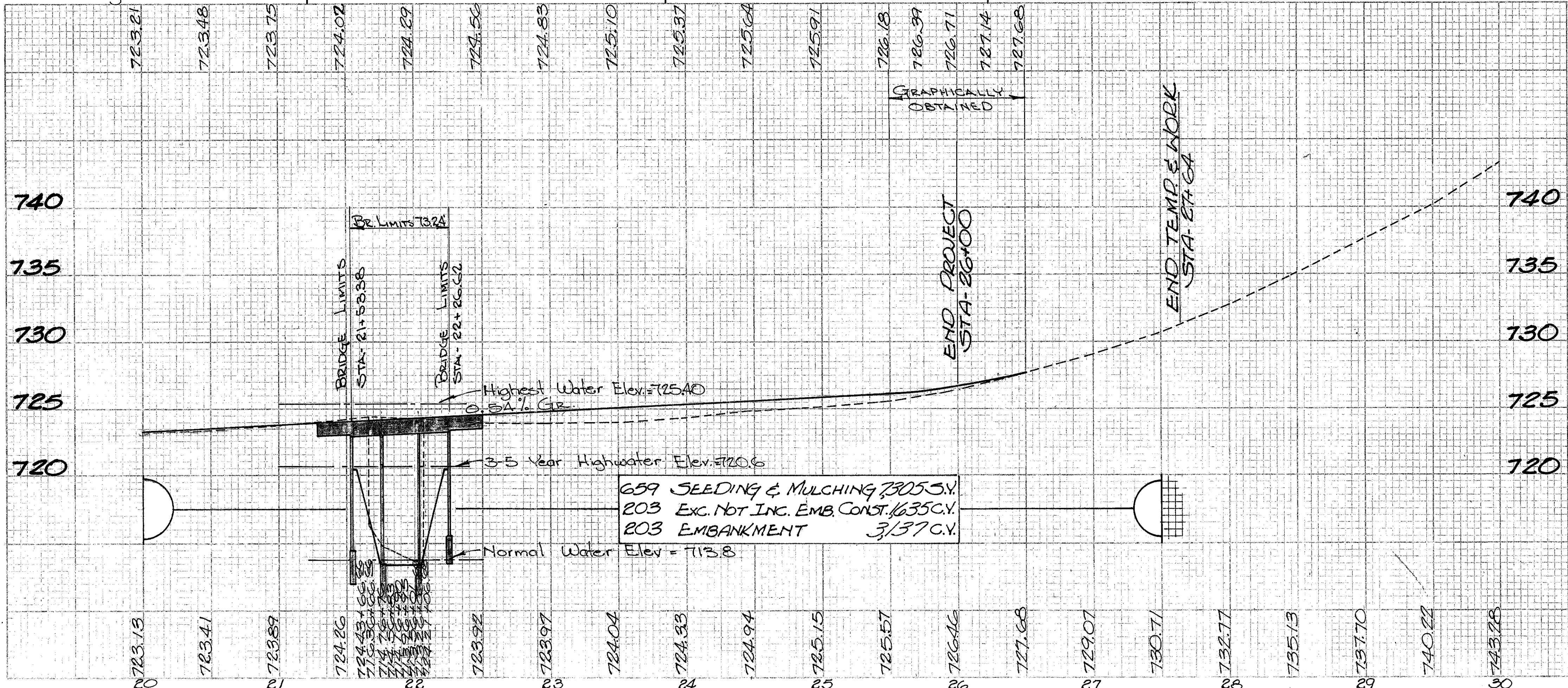
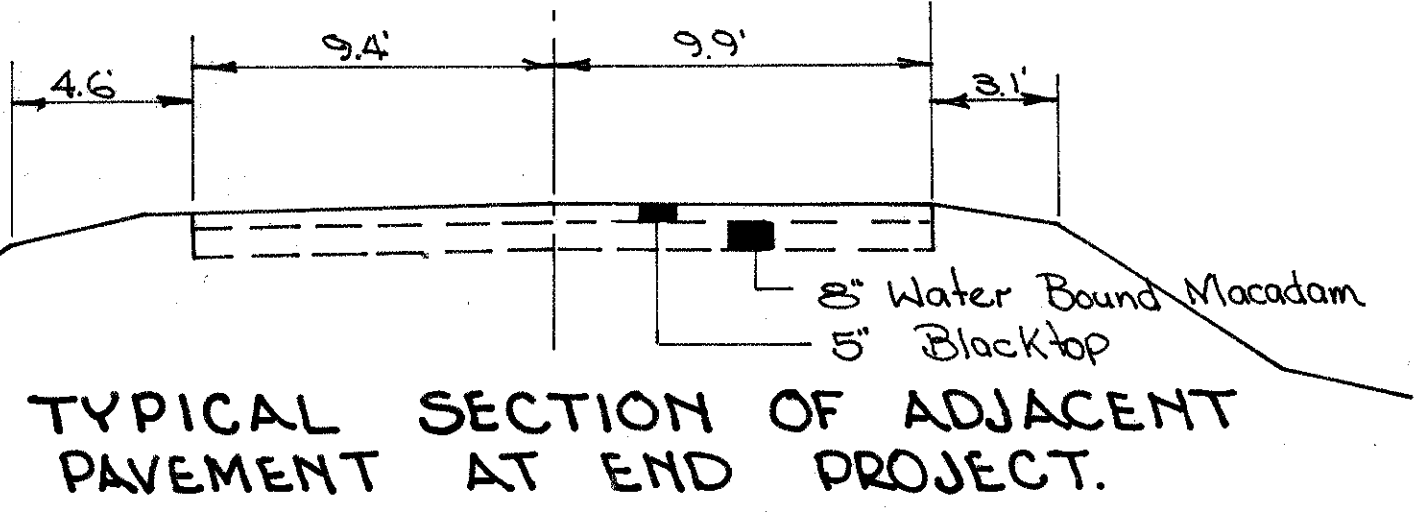
HIG-41-0.36

PROP. BRIDGE DATA
 TYPE: Cont. reinforced concrete slab with reinforced conc. substructure.
 SPANS: 22'-27.5'-22' 1/2 bays.
 ROADWAY: 38'-0" w/ guardrails
 LOADING: HS 20-44
 SKEW: 30° R.F.
 WEARING SURFACE: 1" Mono Conc.
 APPROACH SLABS: AS-1-GT (25' long)
 ALIGNMENT: Tangent.



EX. BRIDGE DATA
 Br. No. Hig-41-0041
 Name of Stream Strait Cr.
 Loading H-85
 Type - Conc. Thru Girder
 Span - 40'-0"
 Rwy - 12'-2"
 Cond - Fair
 Skew Tan 30° R.F.
 Abut. Conc. Gravity
 Surt. 9' 0"
 Reg. None
 Surt. Rating 68

BENCH MARK
 a Cut on Top of Conc. W.W.
 West Side of Rear Abut. Br.
 # Hig-41-0041 E.I. 724.29



ESTIMATED QUANTITIES

SEE SHEET NO.	ITEM	QUANTITY	UNIT	PRICE	TOTAL
601	6006	1	EA	\$70.00	\$70.00
	6006	1	EA	\$30.50	\$30.50
Materials Deduct For Bridge					
					20.67
					35.11
					6
					233.33
					170.67
601	6006	1	EA	\$70.00	\$70.00
601	6006	1	EA	\$30.50	\$30.50
Materials Deduct For Bridge					
					20.67
					35.11
					6
					233.33
					170.67

SEE SHEET NO. 601

ITEM: 603

QUANTITY: 603

UNIT: Conduit

PRICE: \$180.634

TOTAL: \$108,798.82

ITEM: 604

QUANTITY: 5

UNIT: Sp. Yds.

PRICE: \$16.0

TOTAL: \$80.0

ITEM: 605

QUANTITY: 25

UNIT: Sp. Yds.

PRICE: \$8.0

TOTAL: \$200.0

ITEM: 606

QUANTITY: 34

UNIT: Sp. Yds.

PRICE: \$4.7

TOTAL: \$160.18

ITEM: 607

QUANTITY: 34

UNIT: Sp. Yds.

PRICE: \$5.0

TOTAL: \$170.0

ITEM: 608

QUANTITY: 34

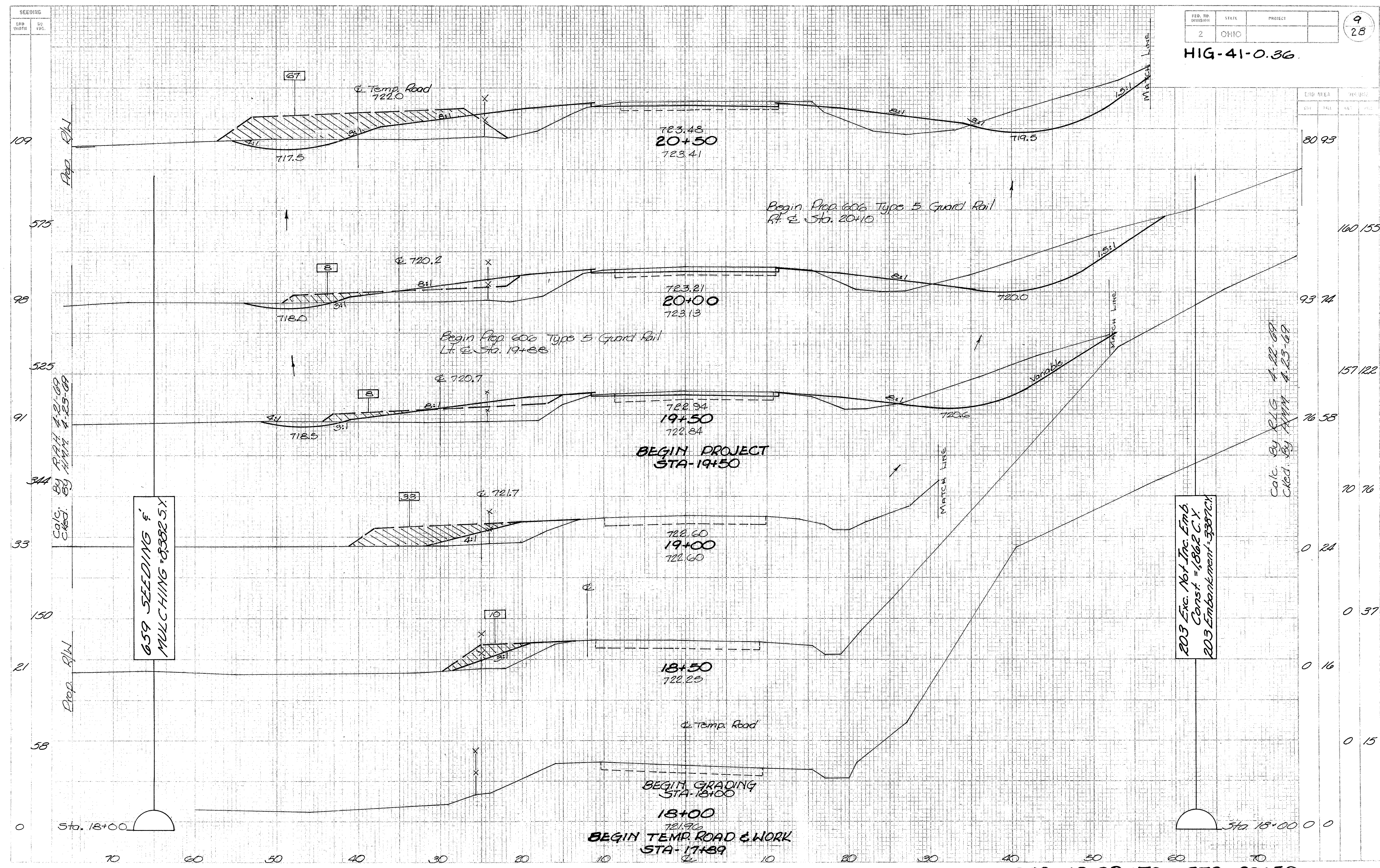
UNIT: Sp. Yds.

PRICE: \$5.0

TOTAL: \$170.0

* Quantities Carried Pavement Calculation Sheet No. 5
 o Quantities Carried General Summary Sheet No. 6

HIG-41-0.36



659 SEEDING & MULCHING = 8382 S.Y.

203 Exc. Not Inc. Emb. Const. = 18662 C.Y. 203 Embankment = 3387CY

Calc. By R.A.H. 4-21-69
Cked. By H.M.M. 4-23-69

Calc. By P.L.G. 4-22-69
Cked. By H.M.M. 4-23-69

STA-18+00 TO STA-20+50

END AREA	TOTAL	CUBIC	FEET
80 93			
160 155			
93 74			
157 122			
76 58			
70 76			
0 24			
0 37			
0 16			
0 15			
Sta. 18+00 0 0			

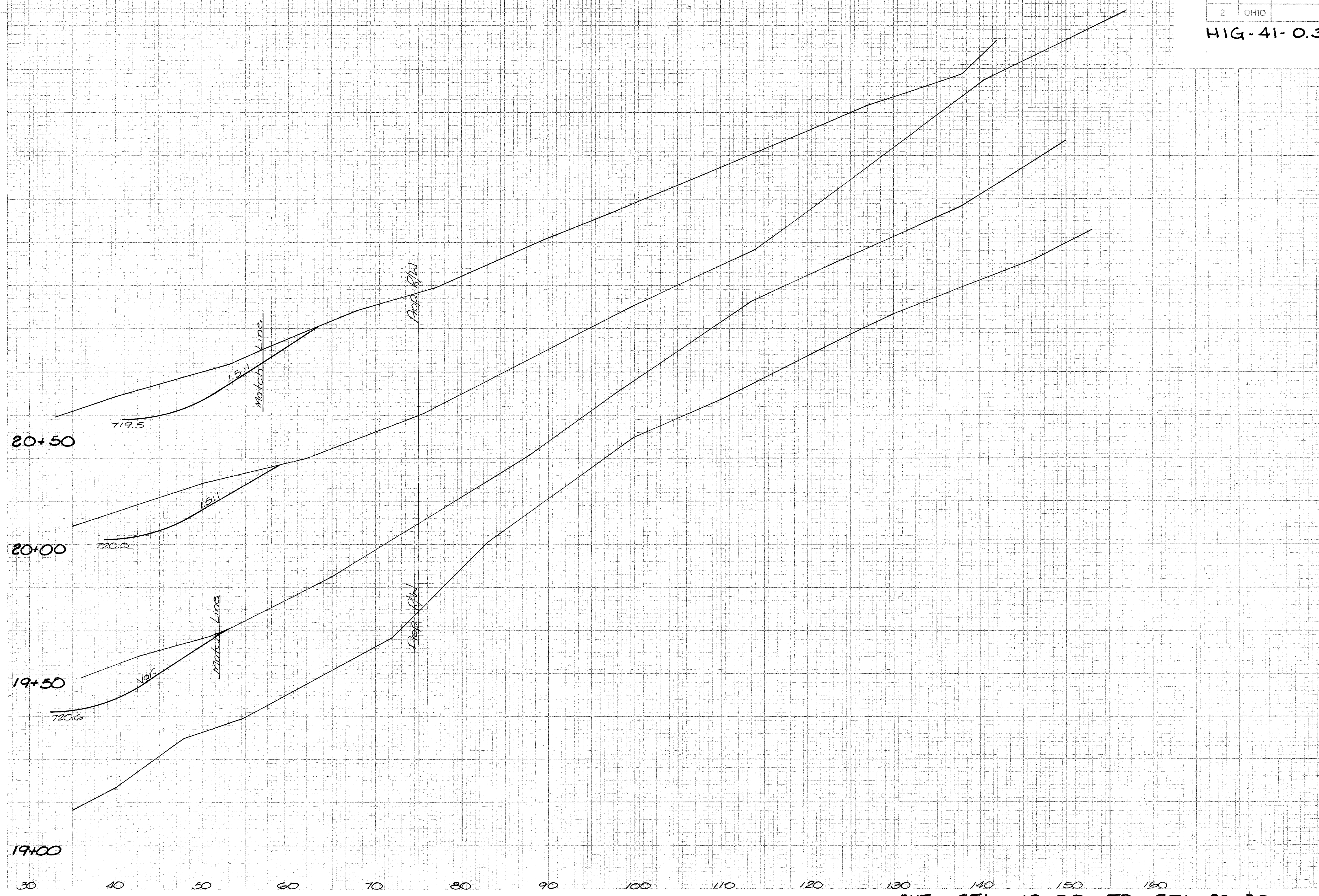
SEEDING
7
END WIDTH
50
YDS

REG. NO. DIVISION	STATE	PROJECT	
2	OHIO		

10
28

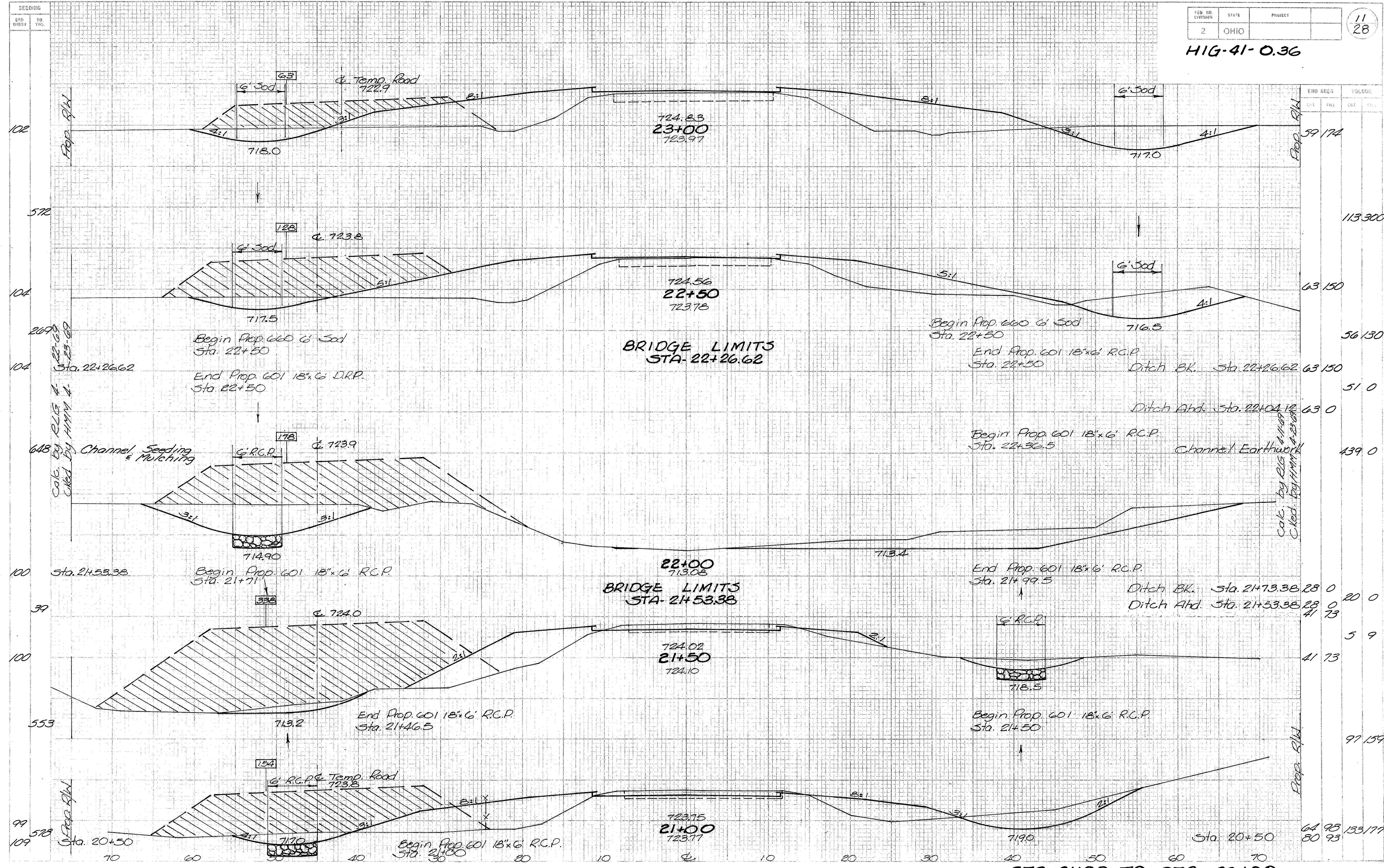
HIG-41-0.36

ERD AREA		VOLUME	
CUT	FILL	CUT	FILL



EXT. STA- 19+00 TO STA- 20+50

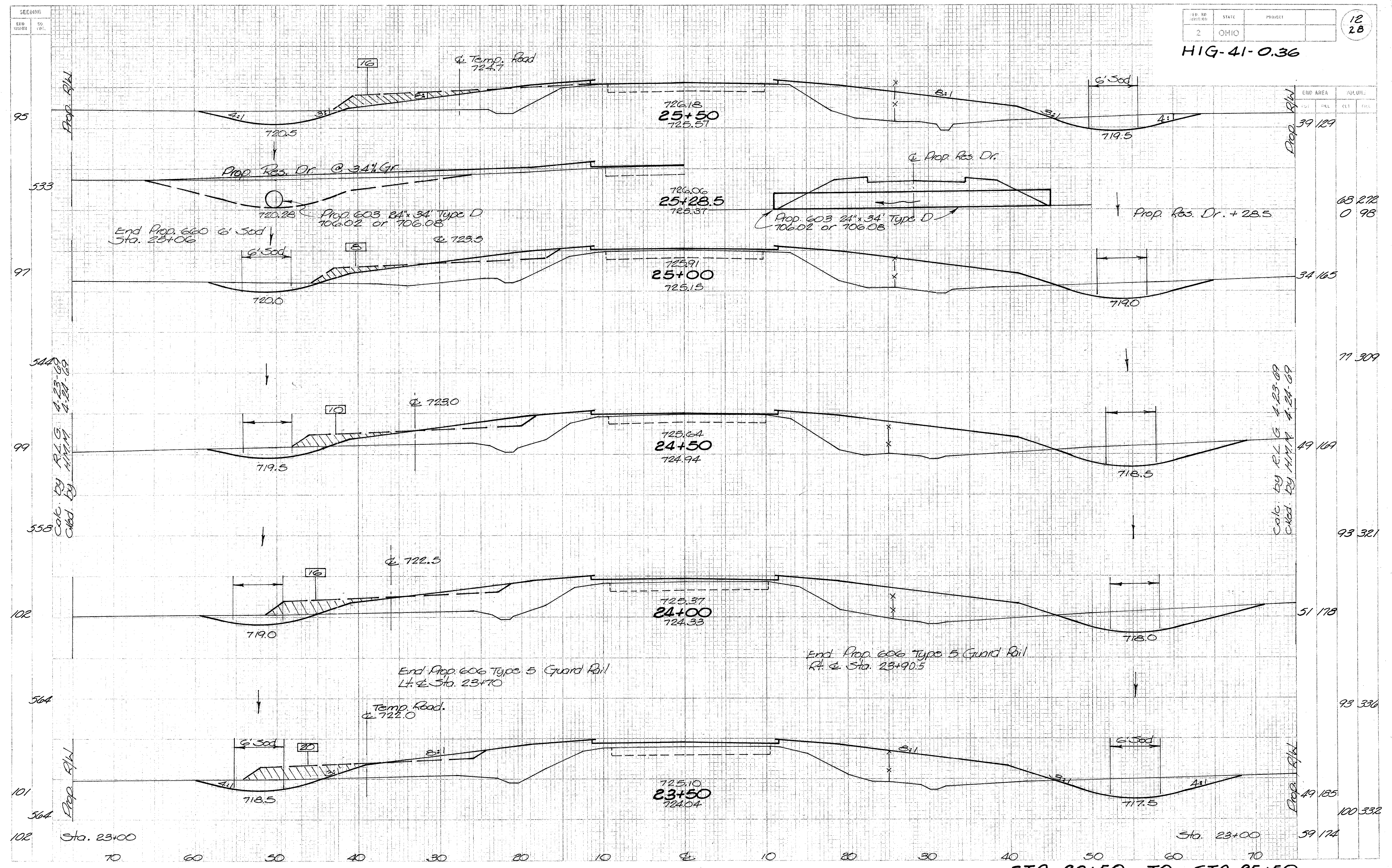
HIG-41-0.36



END AREA	VOLUME	
	CUT	FILL
59 174		
113 300		
63 150		
56 130		
63 150		
51 0		
63 0		
439 0		
28 0		
20 0		
41 73		
5 9		
41 73		
97 159		
64 25	133	177
80 93		

STA-21+00 TO STA-23+00

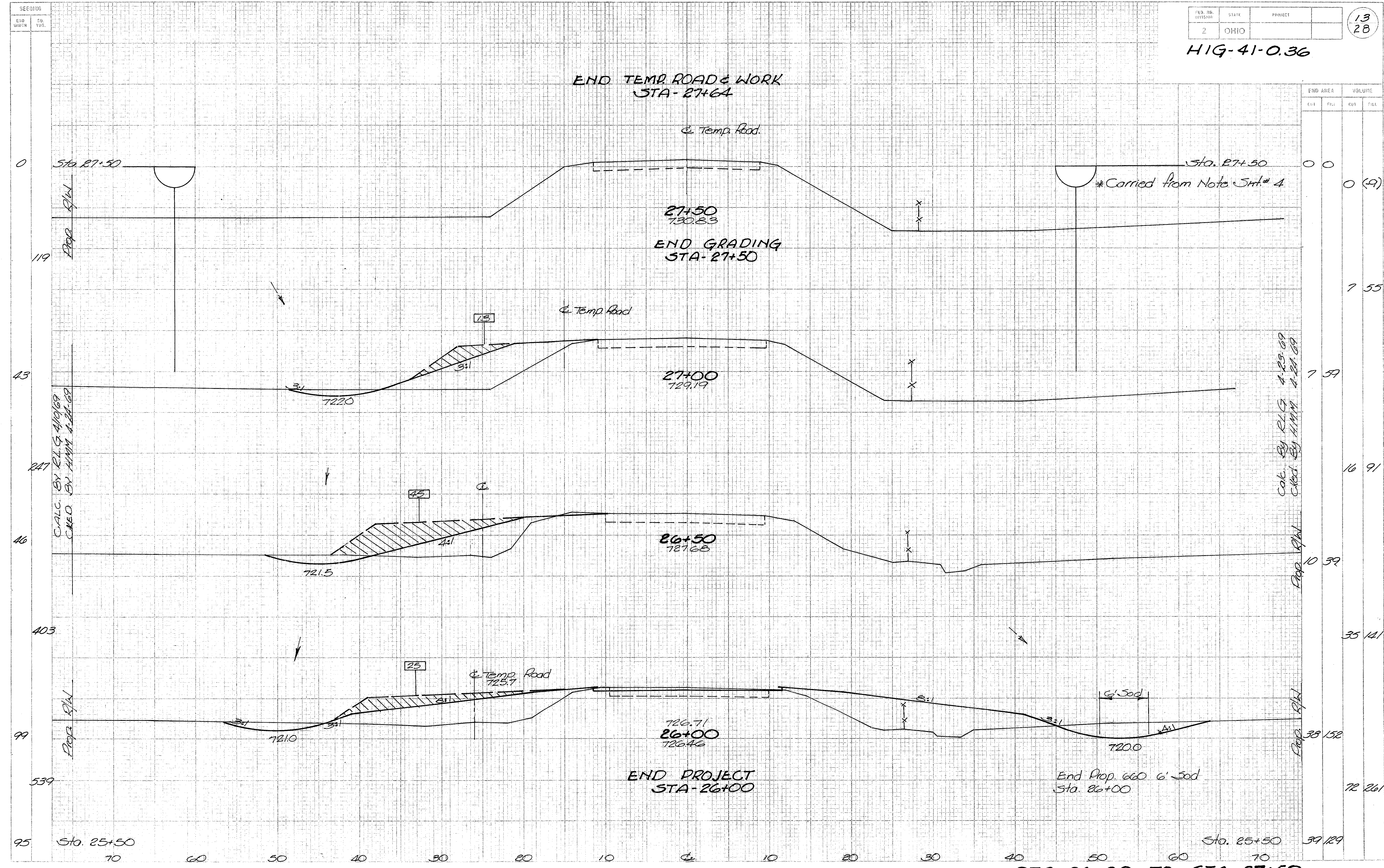
HIG-41-0.36



END AREA	TOTAL	
	FT.	CU.
39.129		
63.272		
0.98		
34.165		
71.309		
49.169		
93.321		
51.178		
93.336		
49.185		
100.332		
59.174		

H19-41-0.36

END TEMP ROAD & WORK
STA-27+64



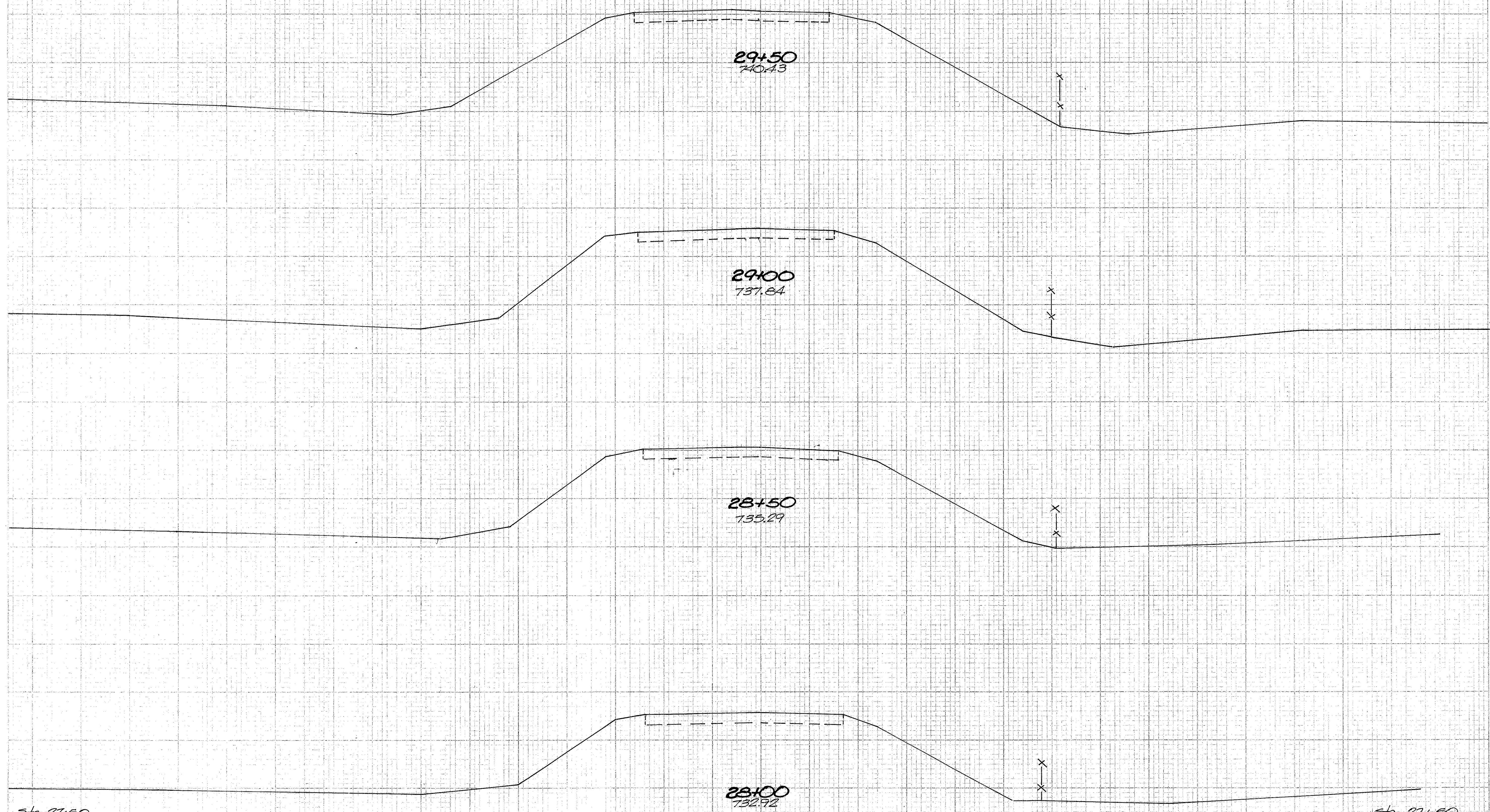
SECTION
 ELEVATION
 DISTANCE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

14
 28

HIG-41-0.36

END AREA		VOLUME	
CUT	FILL	CUT	FILL



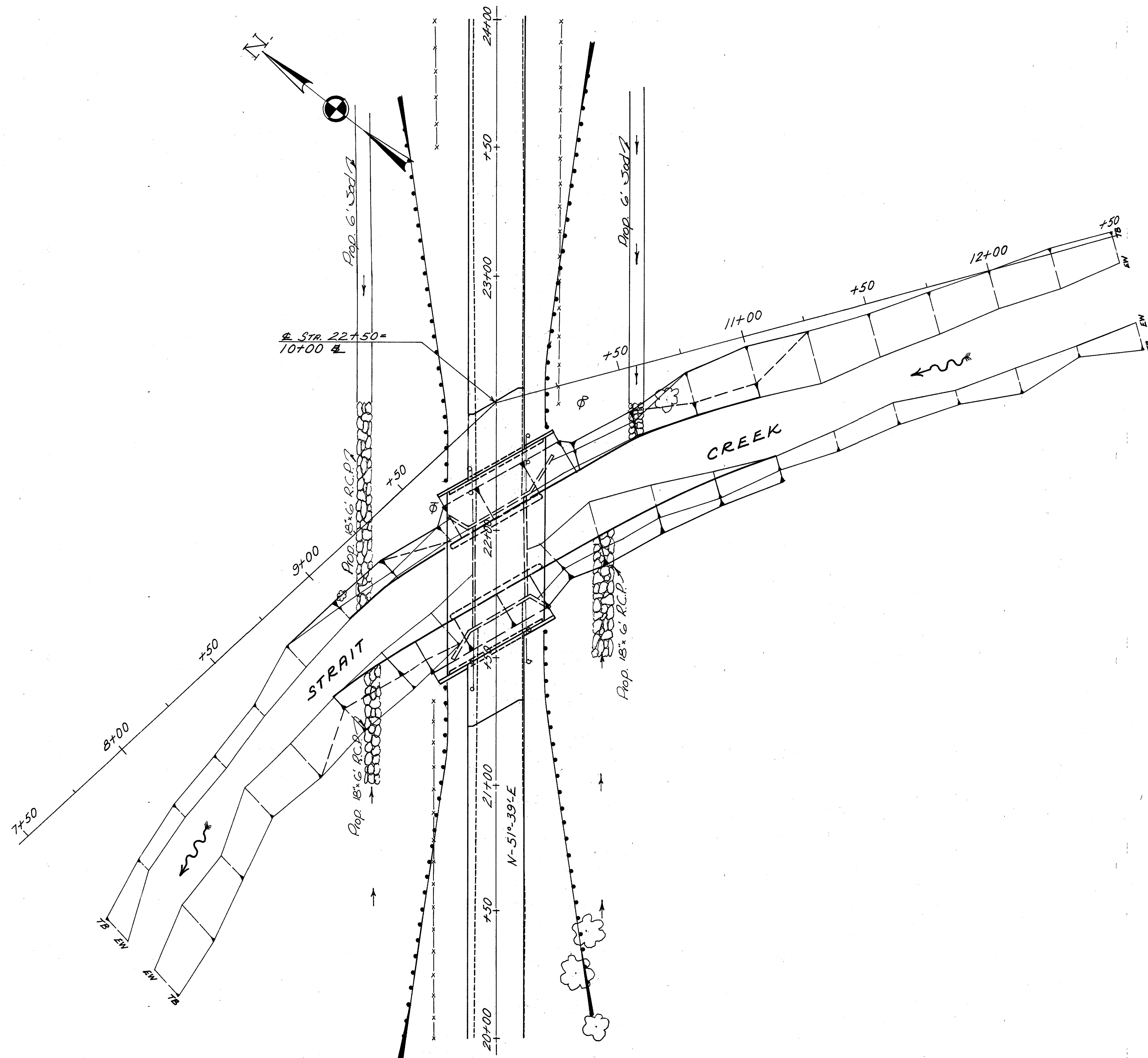
Sta. 27+50 10 20 30 40 50 60 70 Sta. 27+50

STA-28+00 TO STA-29+50

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

15
28

HIG-41-0.36



CHANNEL PLAN

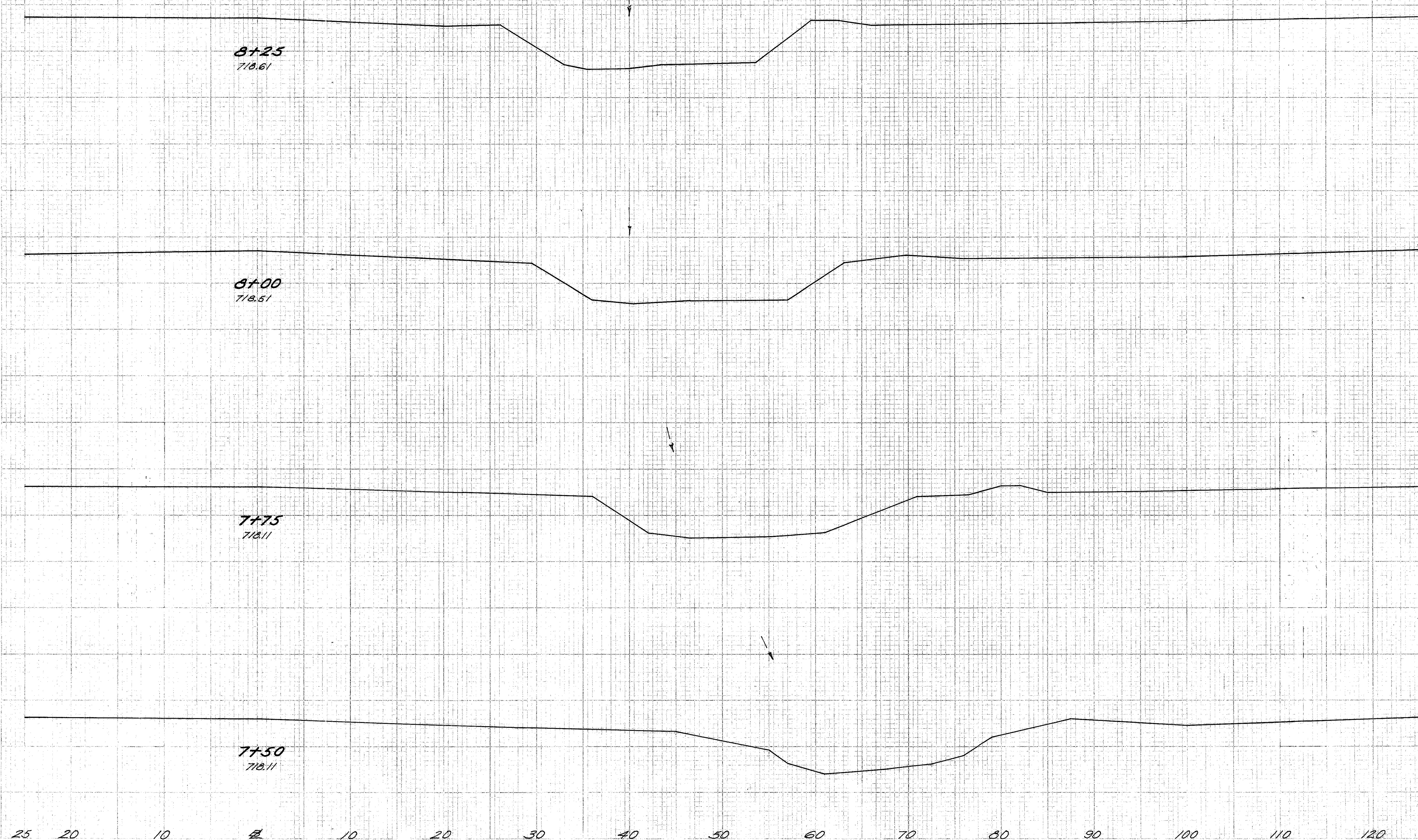
SECTIONS
END
WIDTH
SQ.
YRS.

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

16
28

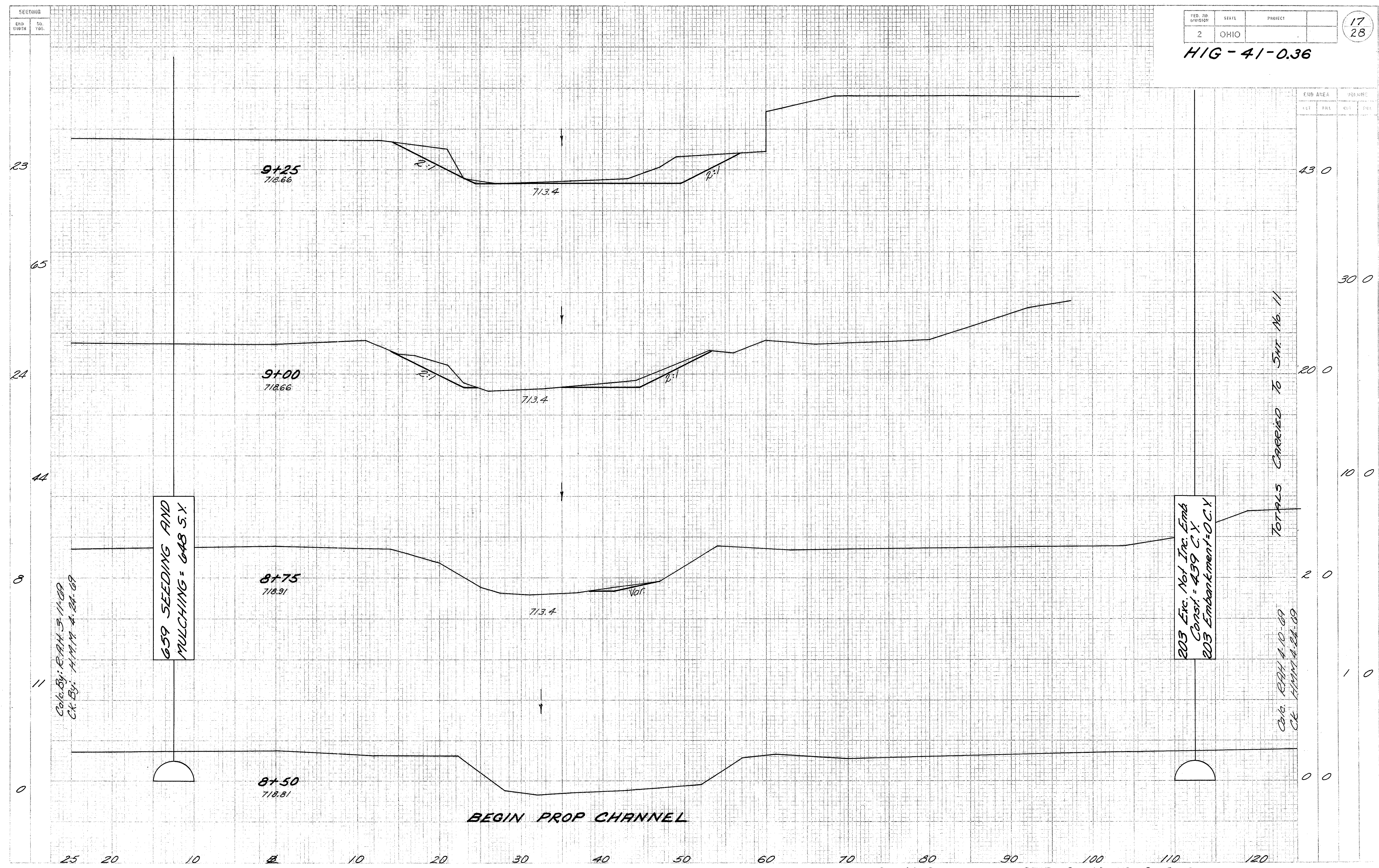
HIG-41-0.36

END AREA
VOL. PER
CUB. YD.



CH. X-SECTIONS STA. 7+50 TO STA. 8+25

HIG-41-0.36



Calc. By: R.A.H. 3-11-69
Chk. By: H.M.M. 4-24-69

659 SEEDING AND
MULCHING = 648 S.Y.

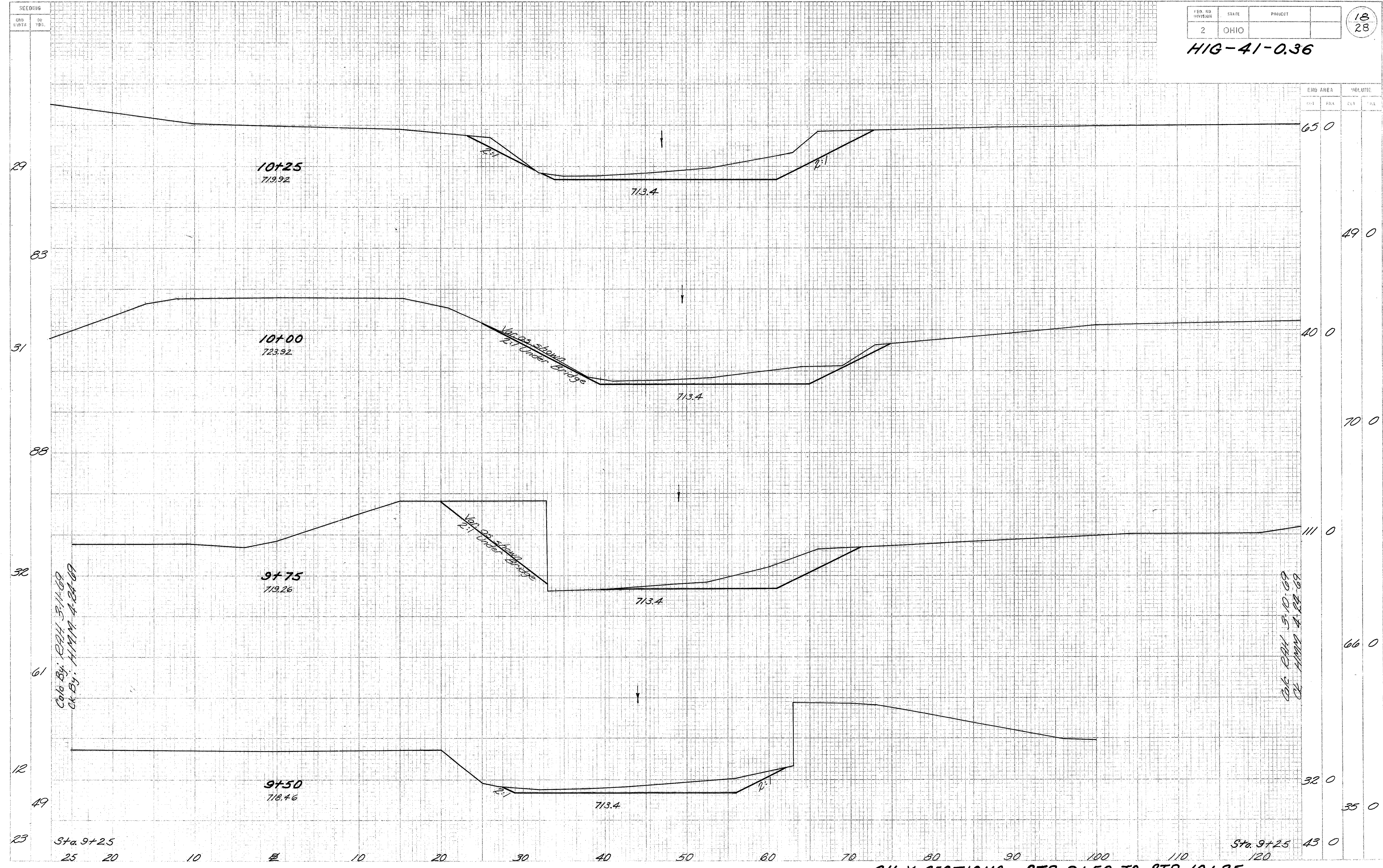
203 Exc. Not Inc. Emb
Const. = 439 C.Y.
203 Embankment = 0 C.Y.

Calc. R.A.H. 4-10-69
Chk. H.M.M. 4-24-69

TOTALS CARRIED TO SHT. No. 11

BEGIN PROP CHANNEL

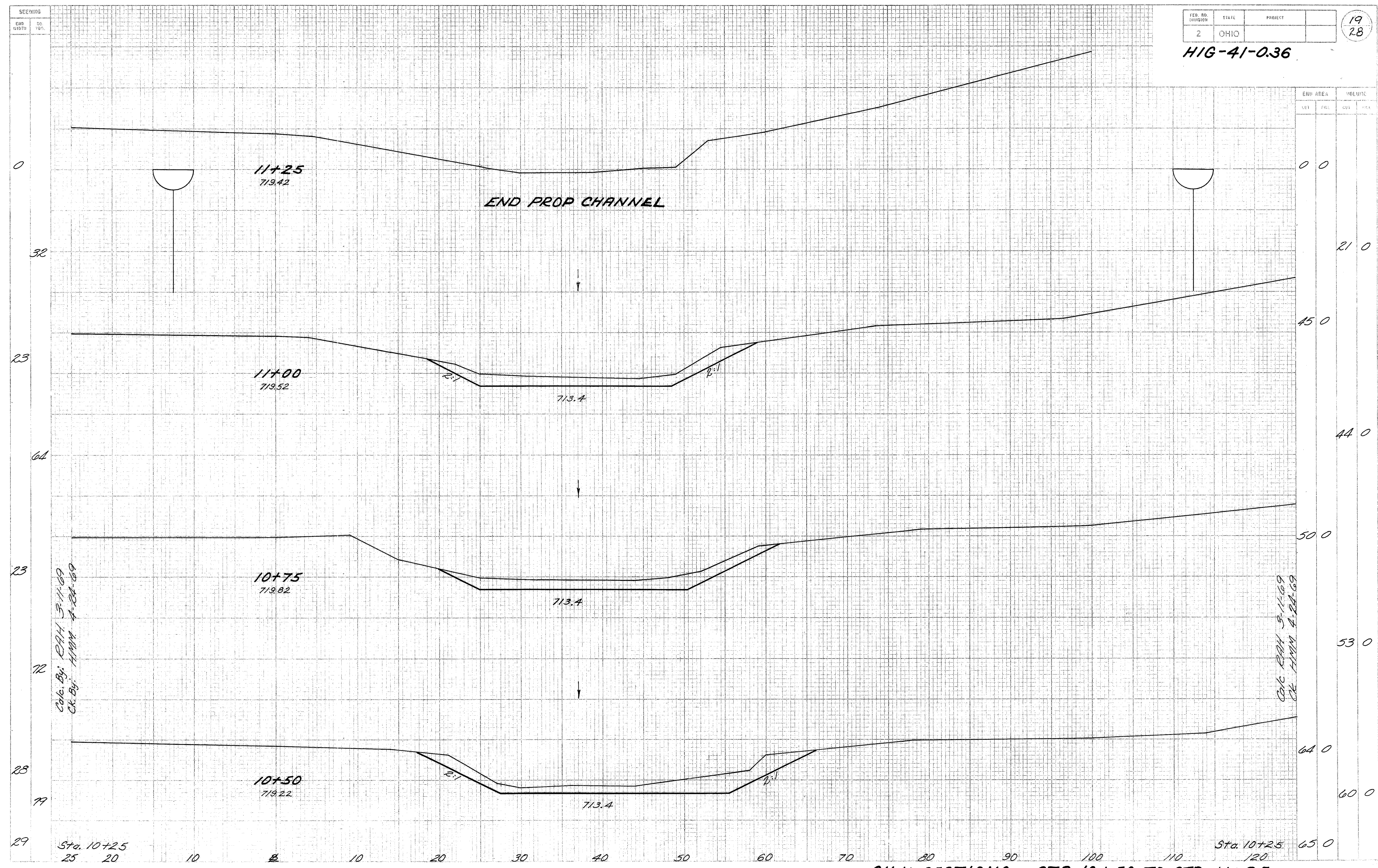
CH. X-SECTIONS STA. 8+50 TO STA. 9+25



END AREA		VOLUME	
FOOT	FEET	CUBIC	FEET
65	0		
49	0		
40	0		
70	0		
111	0		
66	0		
32	0		
35	0		
43	0		

CH. X-SECTIONS STR. 9+50 TO STR. 10+25

HIG-41-0.36



CUM. AREA		CUM. VOL.	
CU. YDS.	SQ. FT.	CU. YDS.	SQ. FT.
0	0	0	0
21	0	0	0
45	0	0	0
44	0	0	0
50	0	0	0
53	0	0	0
64	0	0	0
60	0	0	0

CH. X-SECTIONS STA. 10+50 TO STA. 11+25

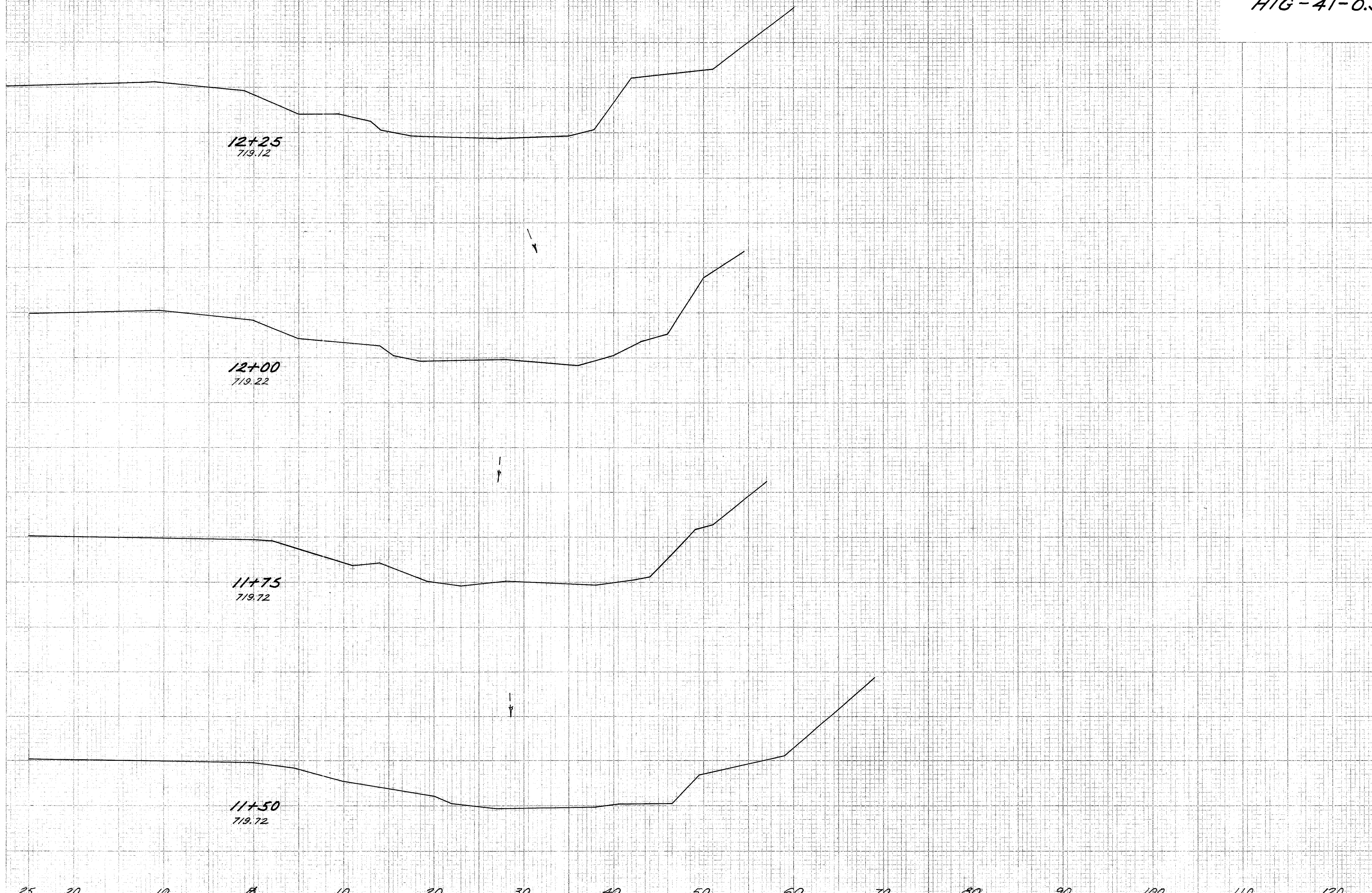
SEEDING
END WIDTH SO. YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

20
28

HIG-41-0.36

END AREA		VOLUME	
EST.	ACT.	EST.	ACT.



CH. X-SECTIONS STR. 11+50 TO STR. 12+25

SEEDING

END WIDTH

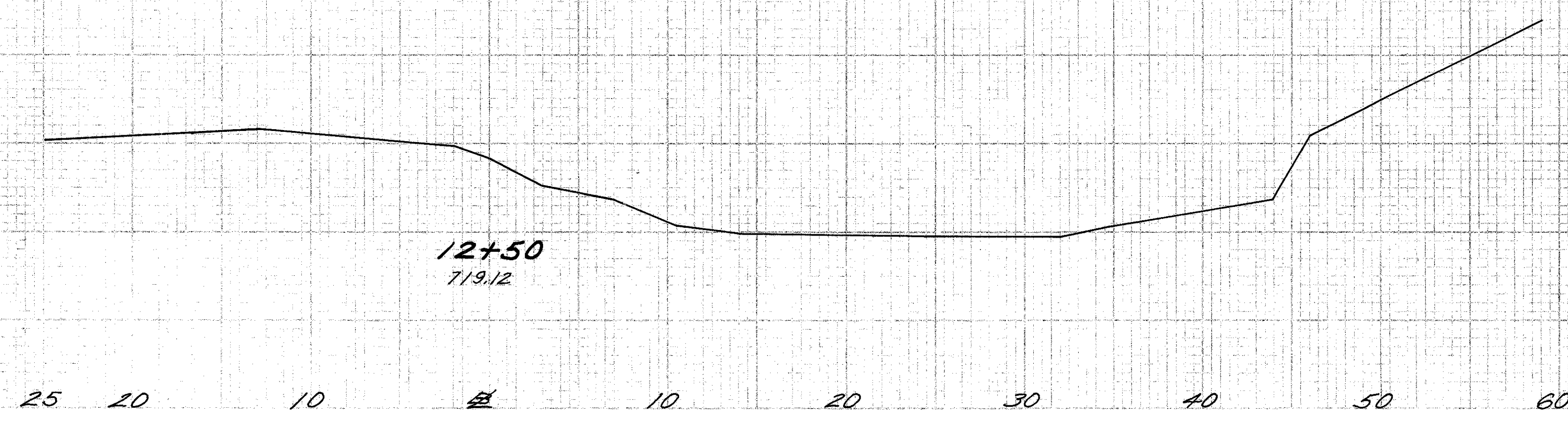
SG. YDS.

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

21
28

HIG-41-0.36

END AREA		VOLUME	
CUT	FILL	CUT	FILL

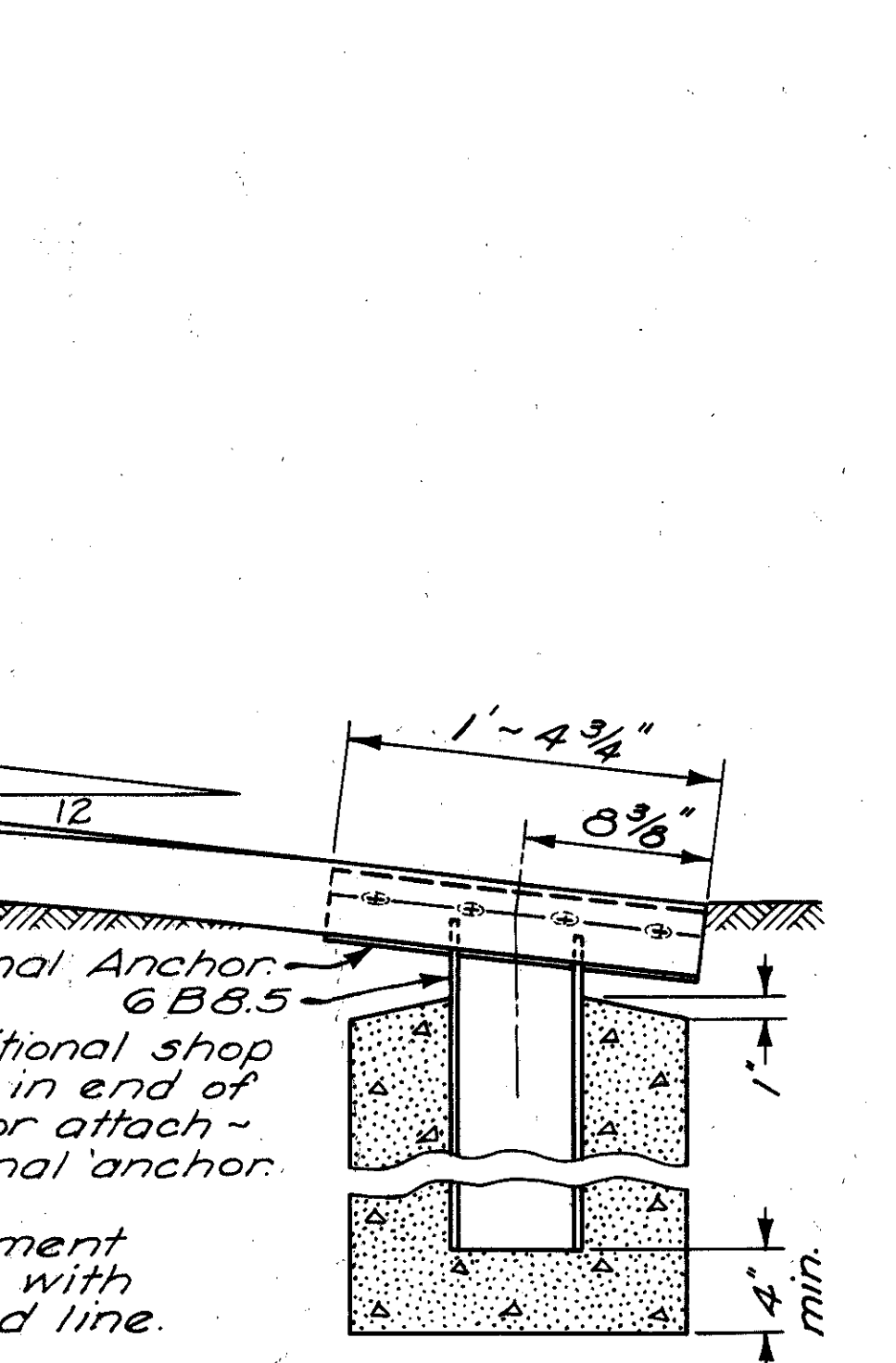
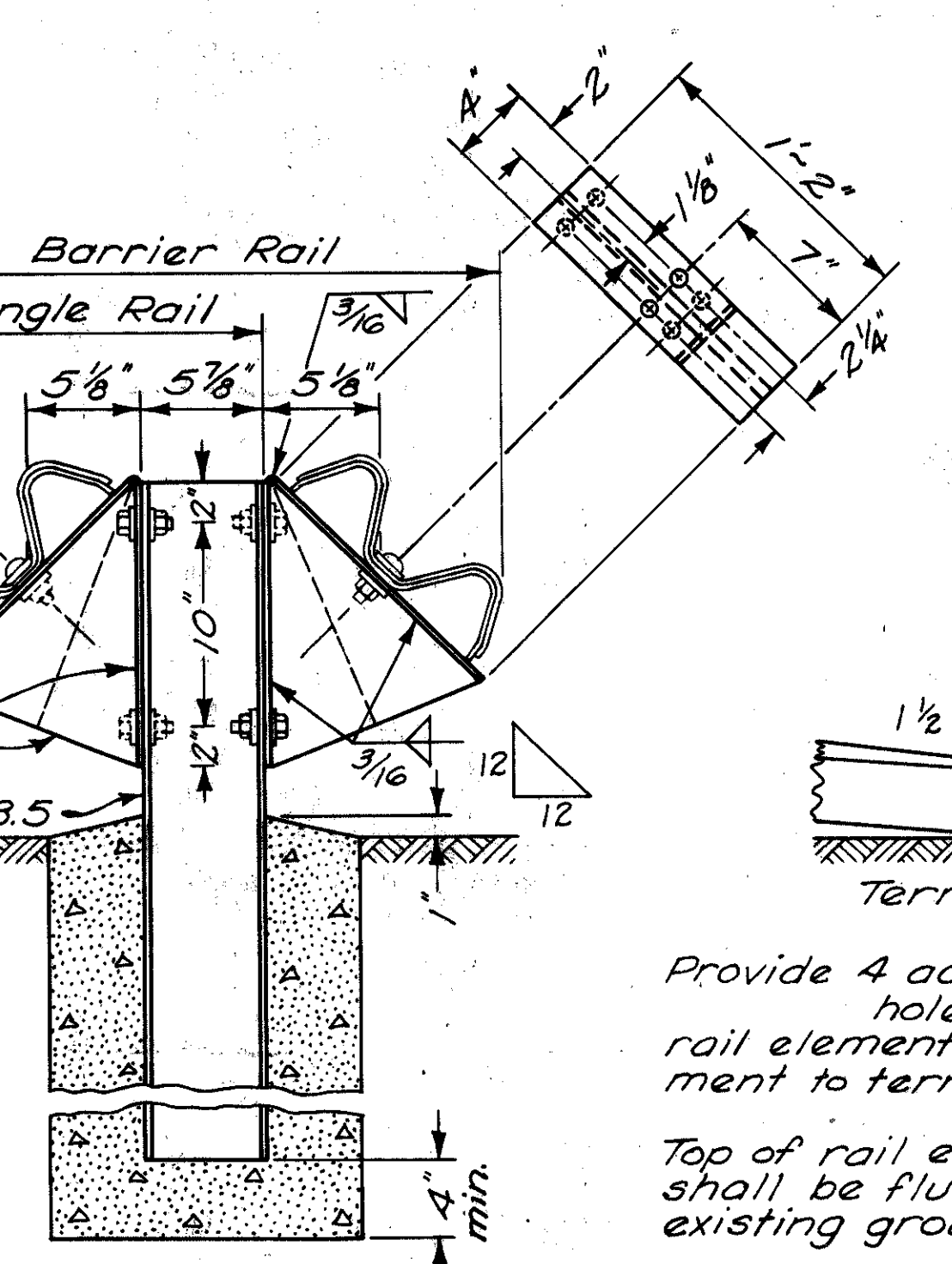
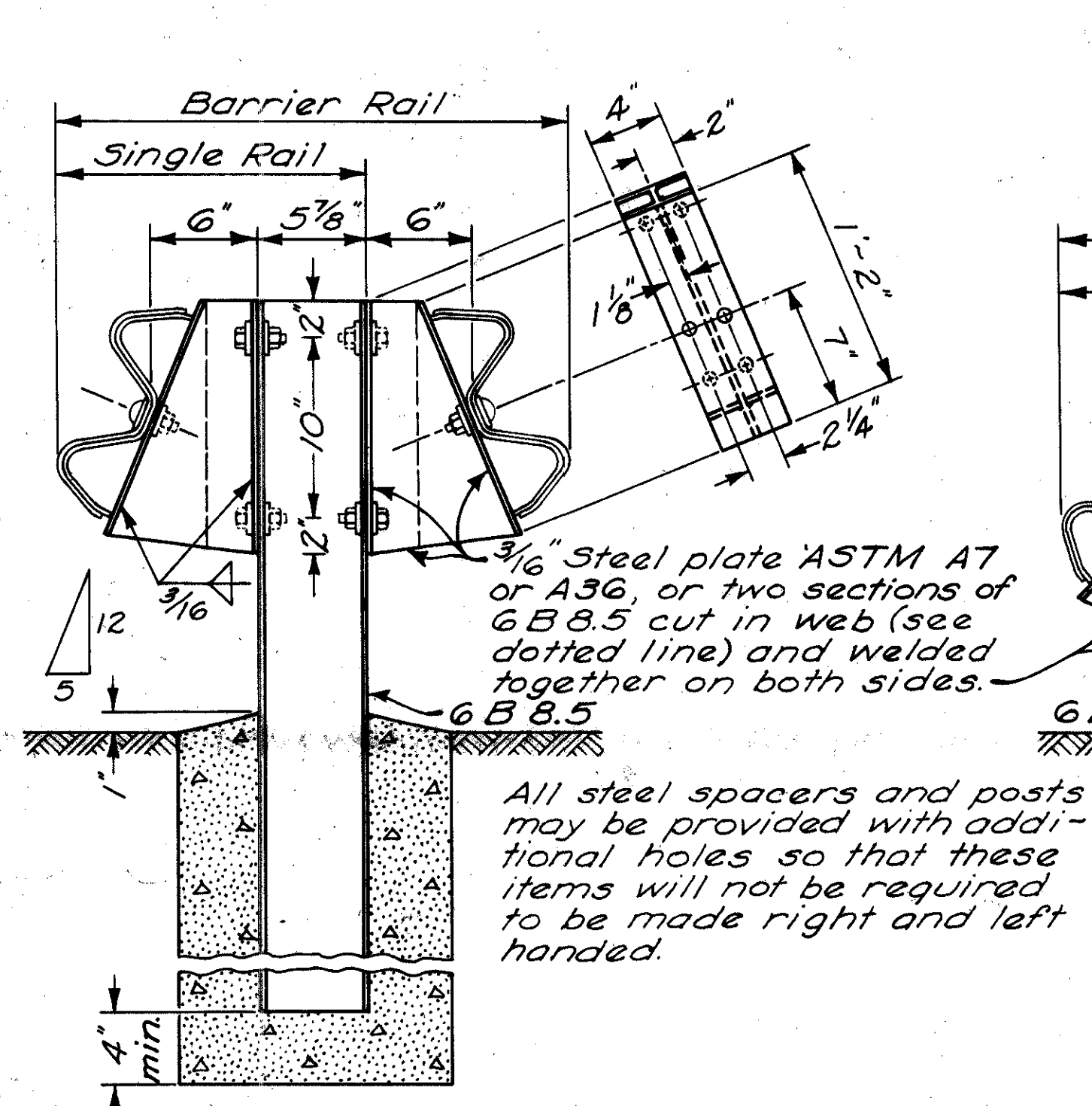
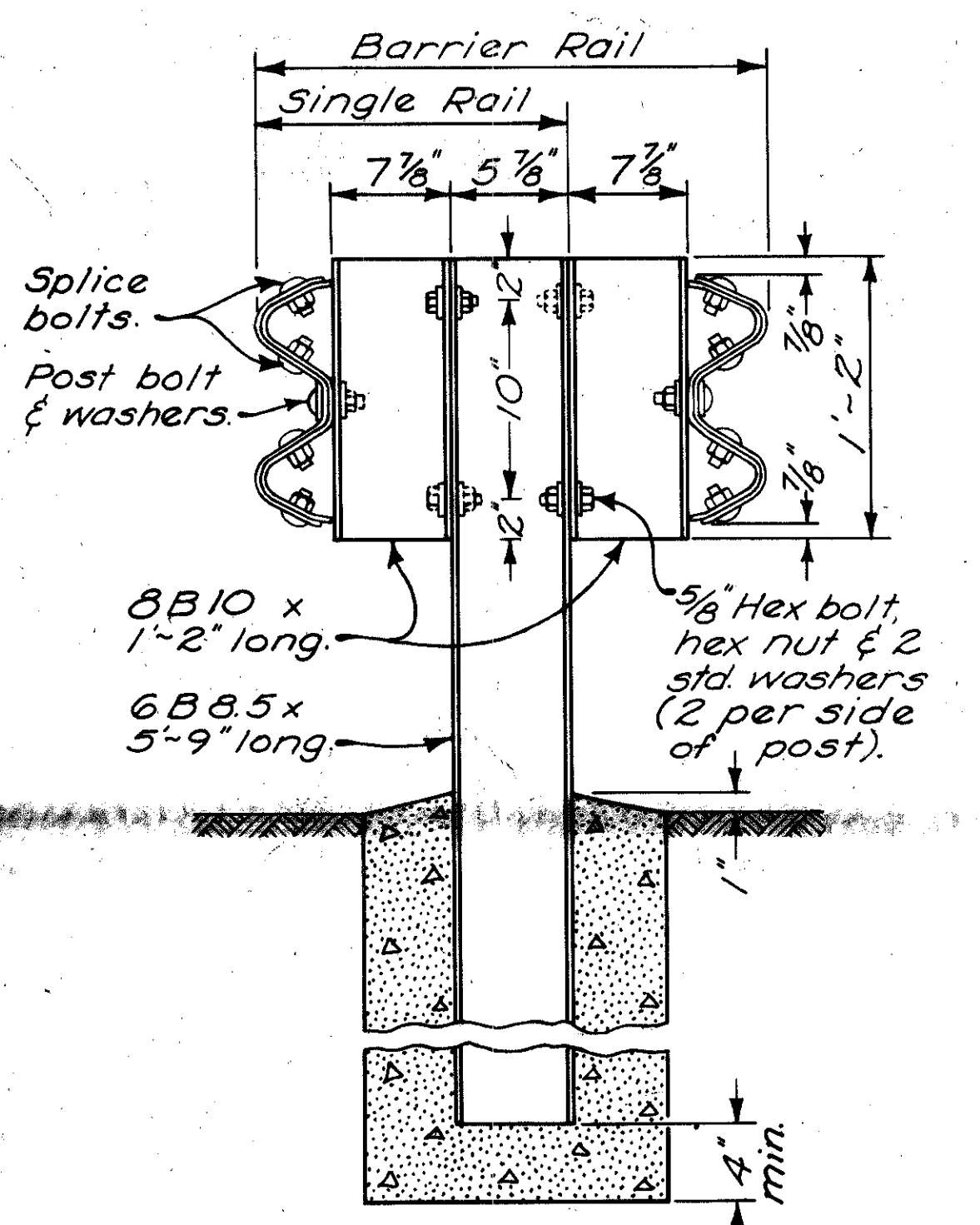
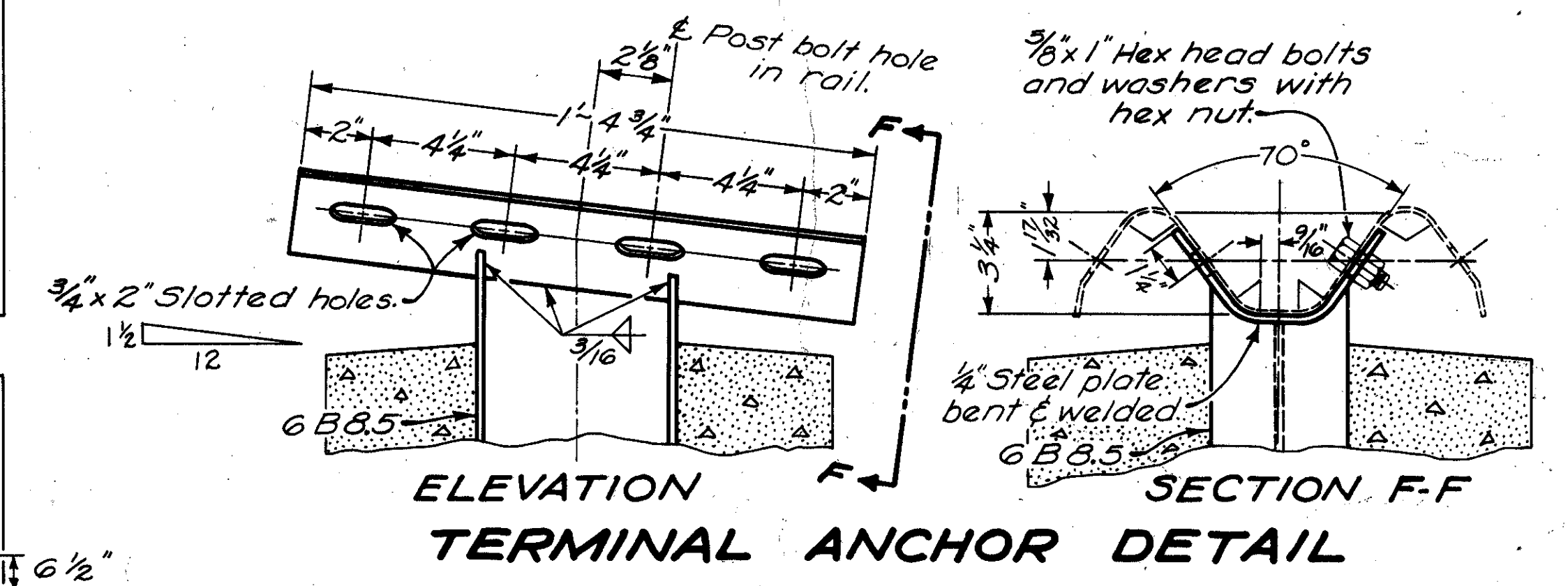
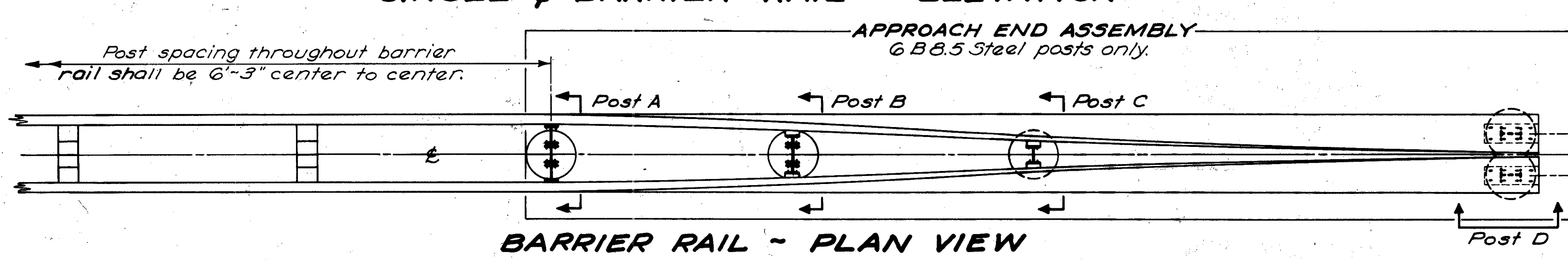
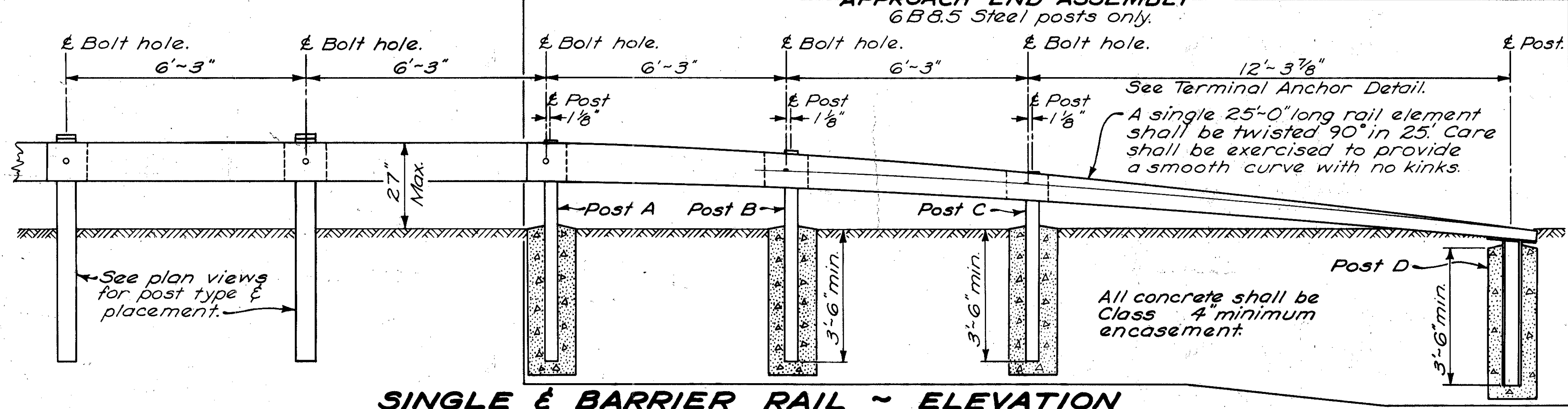
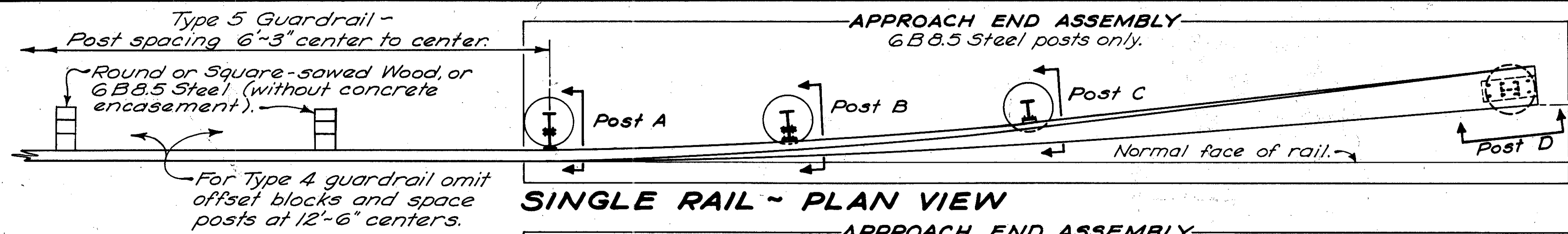


12+50
719.12

25 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120

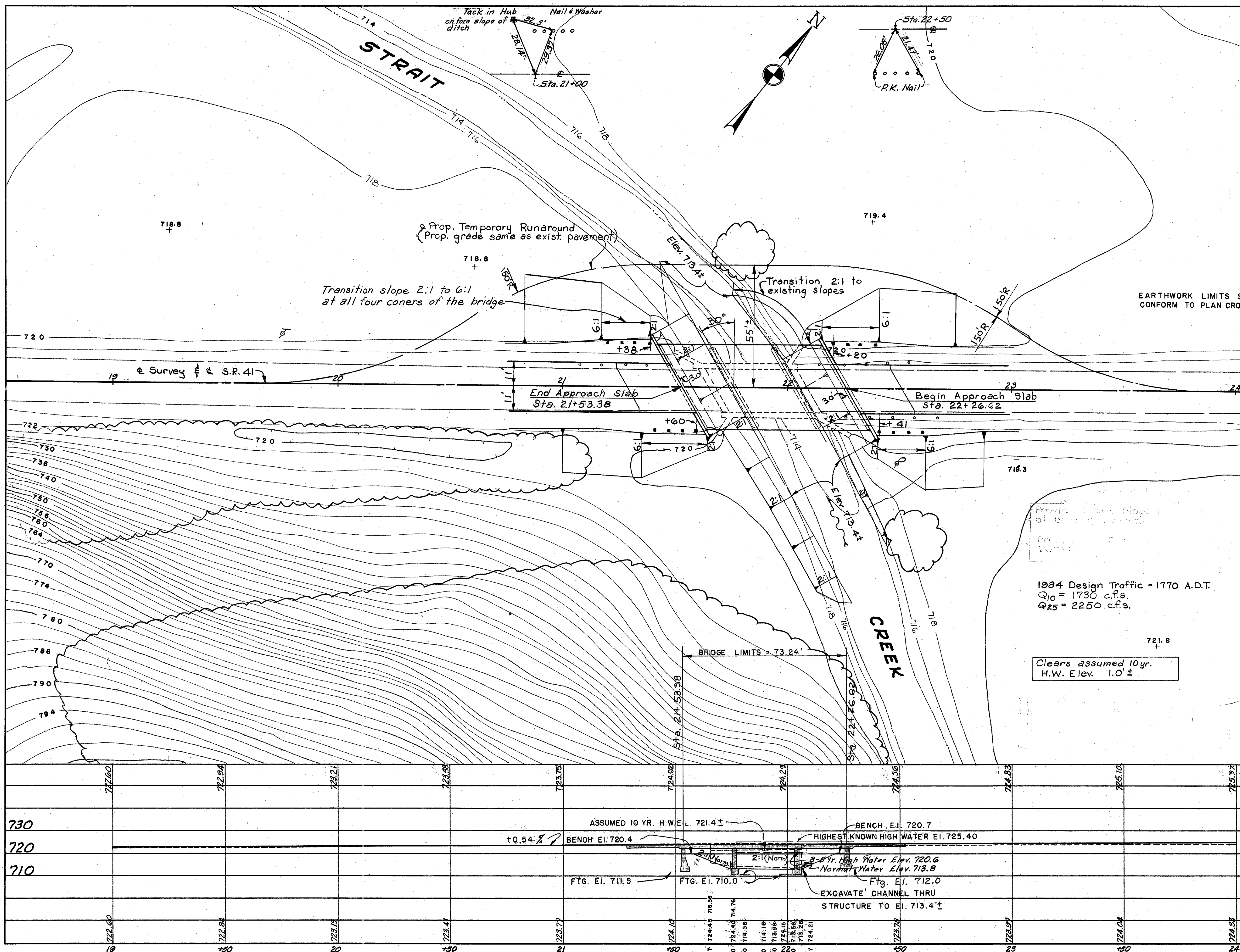
CH. X-SECTIONS STA. 12+50

NOTES
 For details not shown, see Standard Drawings GR-2A and GR-2B.
 All steel parts shall be galvanized in accordance with ASTM A123, A153 or A525, whichever may apply.
 This drawing shall govern where a conflict arises.



HIGHLAND COUNTY
HIG-41-0.36

0.8 mi. south of sinking spring



EARTHWORK LIMITS SHOWN ARE SCHEMATIC. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTION.

EXISTING BRIDGE DATA	
Bridge No.	HIG-41-0041
Type	Thru Girder (Conc.)
Span	40' (Clear)
Roadway	19'-2"
Condition	Critical
Reduction	None
Skew	30° R.F.
Loading	H 8.5
Abut's.	Conc.
W. Surf.	9" Bit.
Suff. Rating	G8

DRAINAGE AREA = 6.1 Sq. mi.

1984 Design Traffic = 1770 A.D.T.
Q₁₀ = 1730 c.f.s.
Q₂₅ = 2250 c.f.s.

Clears assumed 10 yr.
H.W. Elev. 1.0' ±

PROPOSED STRUCTURE
TYPE: Continuous reinforced concrete slab with reinforced concrete substructure.
SPANS: 22'-27.5'-22' % brgs.
ROADWAY: 38'-0" 1/2 guardrails
LOADING: HS 20-44
SKEW: 30° R.F.
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLABS: AS-1-67 (25' long)
ALIGNMENT: Tangent

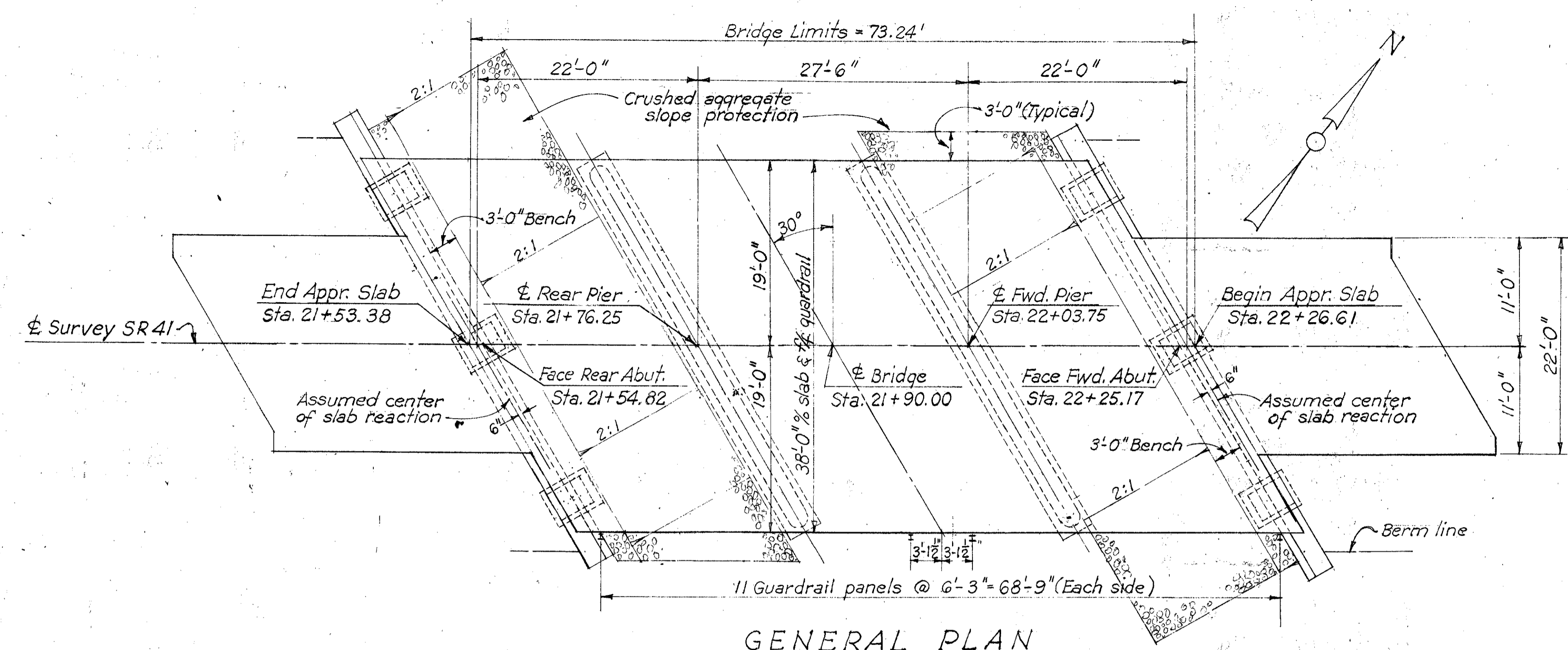
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

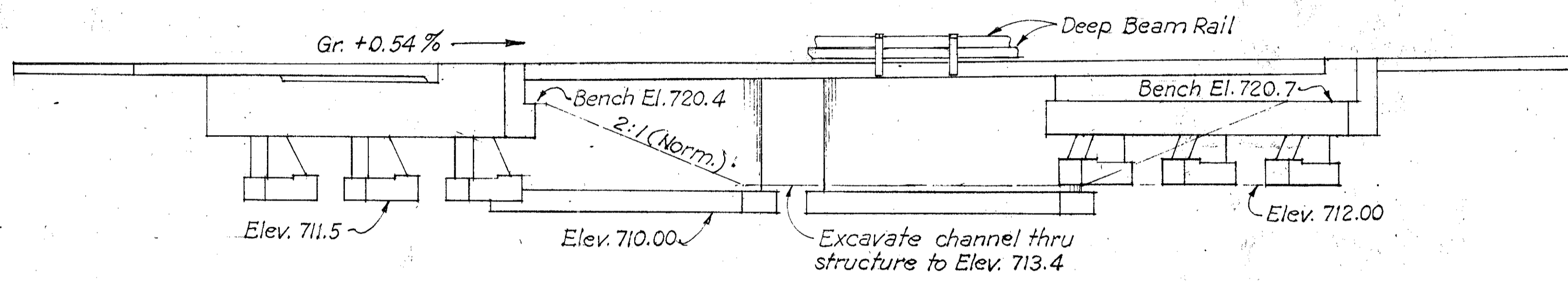
BRIDGE NO. HIG-41-0041
OVER STRAIT CREEK
HIGHLAND CO SR 41
SEC. STA. 21+53.38
SCALE 1" = 20'
22+26.62

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED AERIAL SURVEY	DRAWN AERIAL SURVEY	DESIGNED N.J.B.	DRAWN N.J.B.	CHECKED R.D.M.	REVIEWED P.E. S.

**HIGHLAND COUNTY
HIG-41-0.36**



GENERAL PLAN



ELEVATION

ESTIMATED QUANTITIES								
Item	Total	Unit	Description	Super.	Piers	Abuts	Gen'l.	As-built
202	Lump	Sum	Existing structure removed.				Lump	
502	Lump	Sum	Temporary run-around bridge.				Lump	
503	Lump	Sum	Cofferdams, cribs and sheeting.				Lump	
503	262	Cu.Yd.	Unclassified excavation including rock.		64	198		
509	39,614	Lbs.	Reinforcing steel.	28,943	4,391	6,280		
511	127	Cu.Yd.	Class C Concrete, Superstructure.	127				
511	66	Cu.Yd.	Class C Concrete, Pier walls.		66			
511	59	Cu.Yd.	Class C Concrete, Abutments above footings.			59		
511	33	Cu.Yd.	Class C Concrete, Footings		23	10		
516	8	Sq.Ft.	1/2" Preformed expansion joint filler.				8	
517	146.48	Lin.Ft.	Railing, (Two deep beam rails with steel posts and bolts)	146.48				
518	40	Cu.Yd.	Porous backfill			40		
601	213	Sq.Yd.	Crushed aggregate slope protection				213	
808	127	Units	Chemical Admixture for Concrete, Type A, B or D.	127				

GENERAL NOTES

REFERENCE shall be made to Standard Drawing CS-1-65, sheets 1 & 2 dated 6-1-65, and to Supplemental Specifications 808 dated 11-14-69, and 836 dated 6-17-69.

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway Officials, 1969, including the Ohio "Supplement" to these specifications.

DESIGN DATA:

Design Loading - HS20-44

Concrete Class C - unit stress 1200 psi. for Superstructure
- unit stress 1333 psi. for Substructure

Reinforcing Steel - ASTM A615, A616 or A617 - unit stress 20,000 psi.

TEMPORARY RUN-AROUND BRIDGE

Loading for bridge, HS20-44, with unit stresses increased 50%

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed.

EMBANKMENT CONSTRUCTION: After the pedestals have been built the embankments shall be constructed to the level of the subgrade. Excavation shall then be made for the abutment cross beams and for the benches.

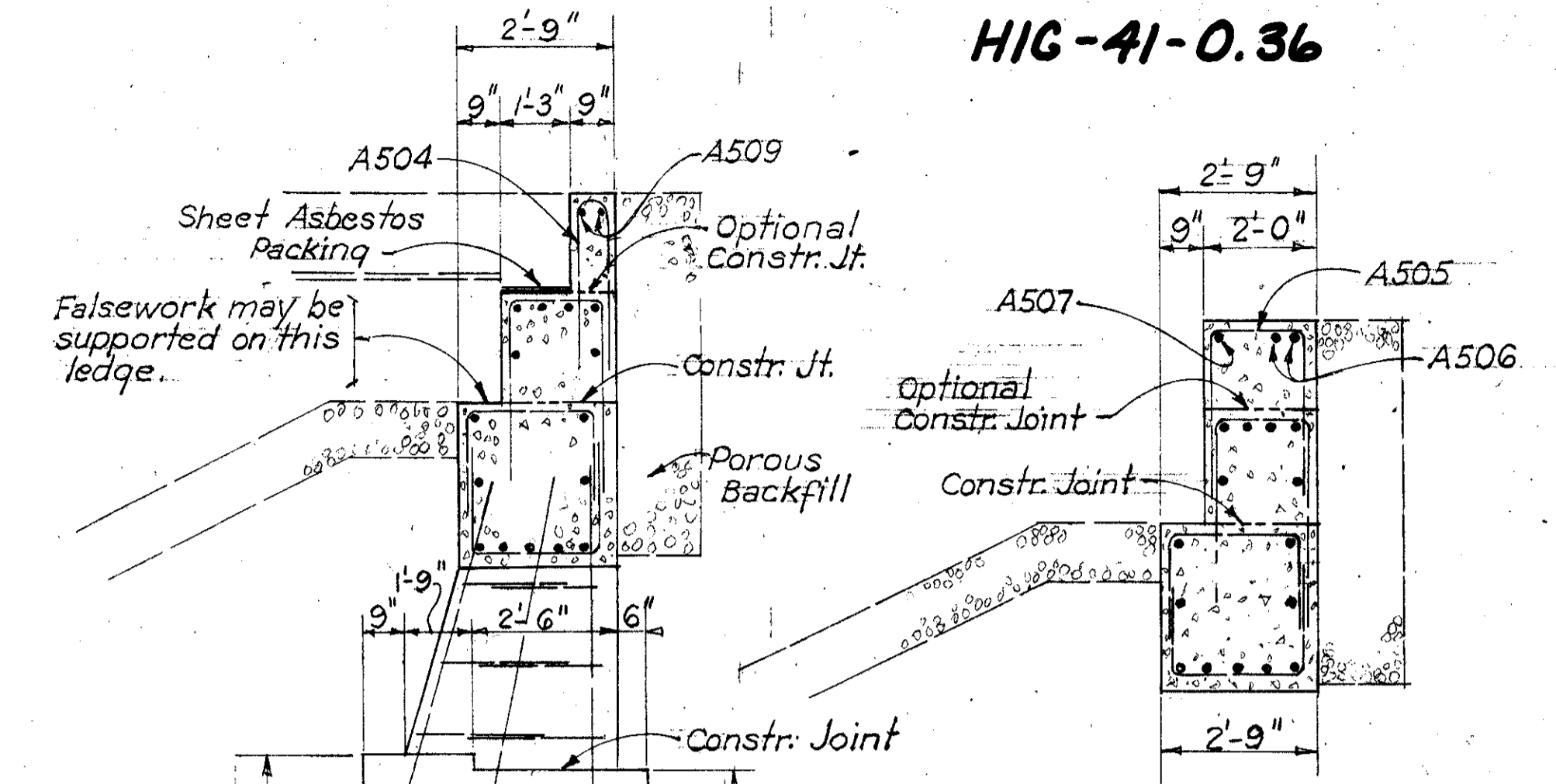
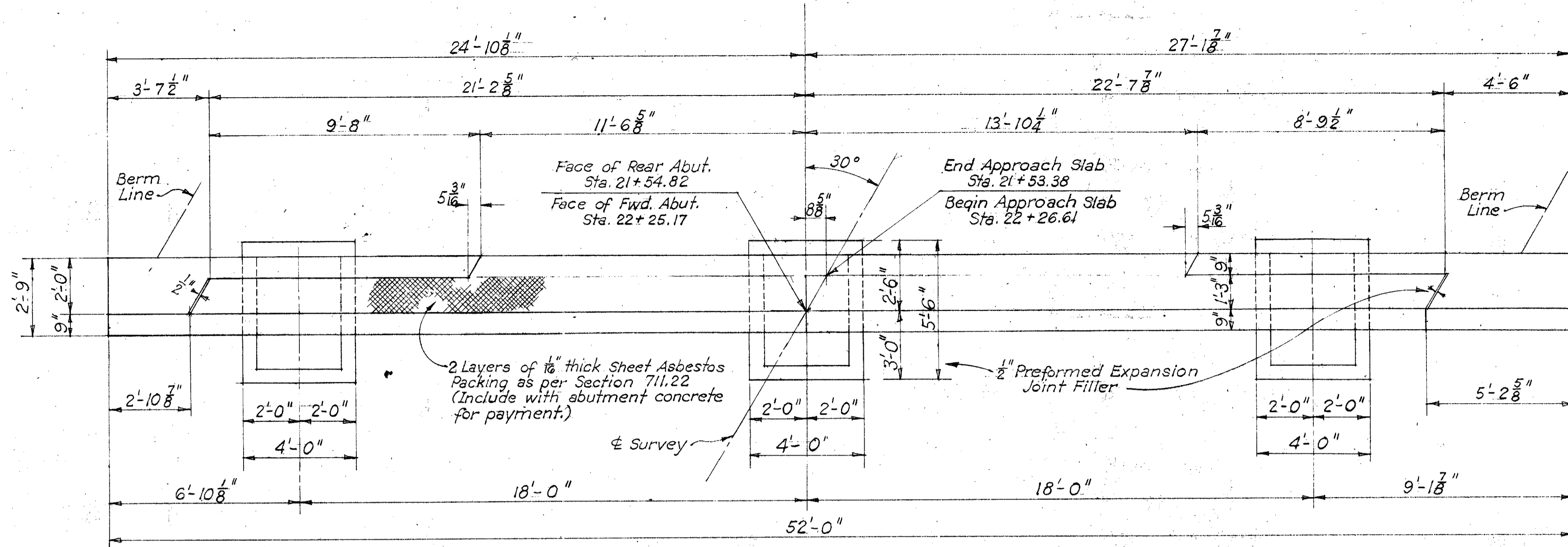
ABUTMENT EXCAVATION QUANTITY, in addition to 503.10, includes the excavation for the cross beams and the removal of the embankment above the bench.

FOUNDATION BEARING PRESSURE: All footings are designed for a maximum bearing pressure of 4 tons per sq. ft.

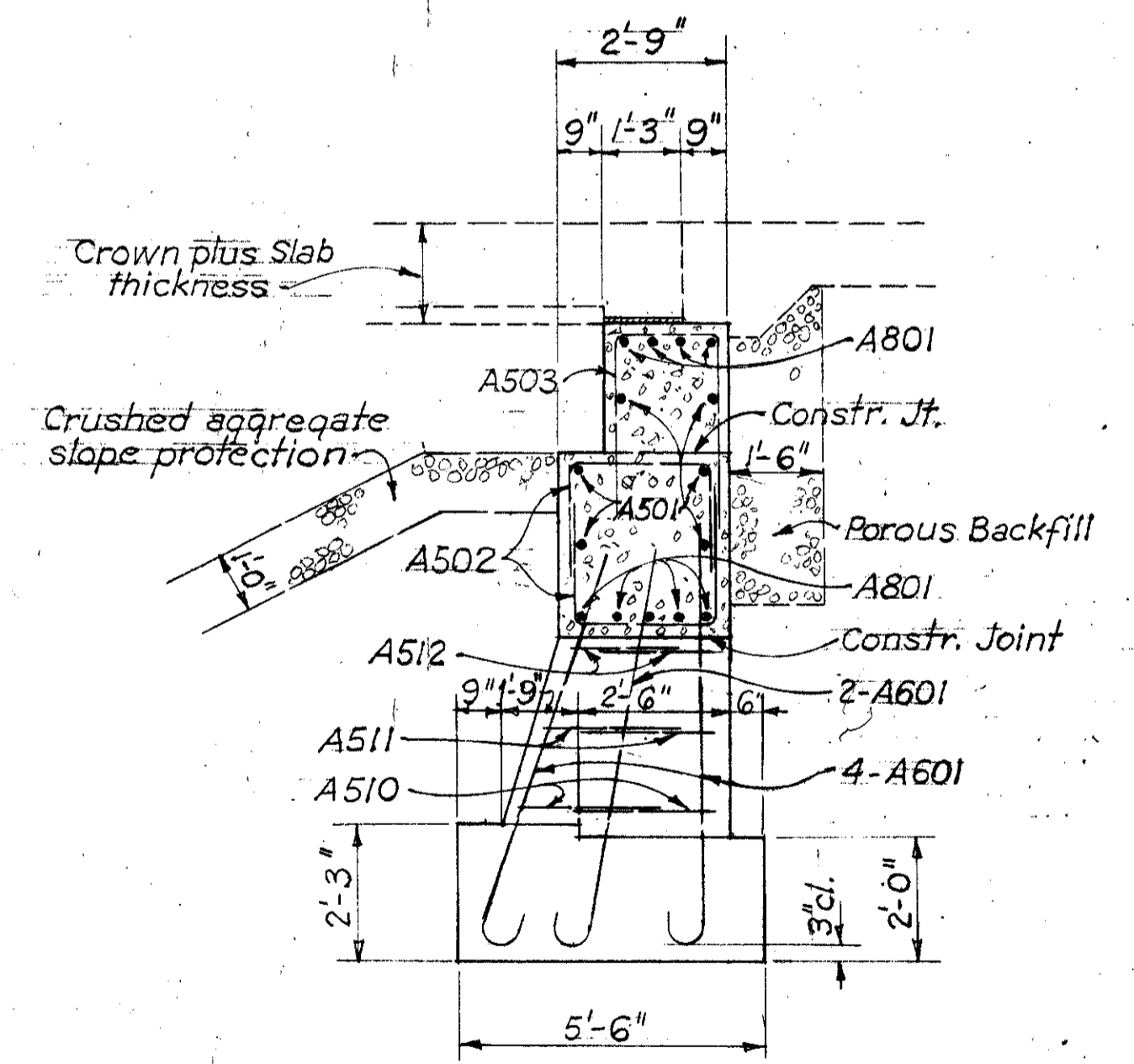
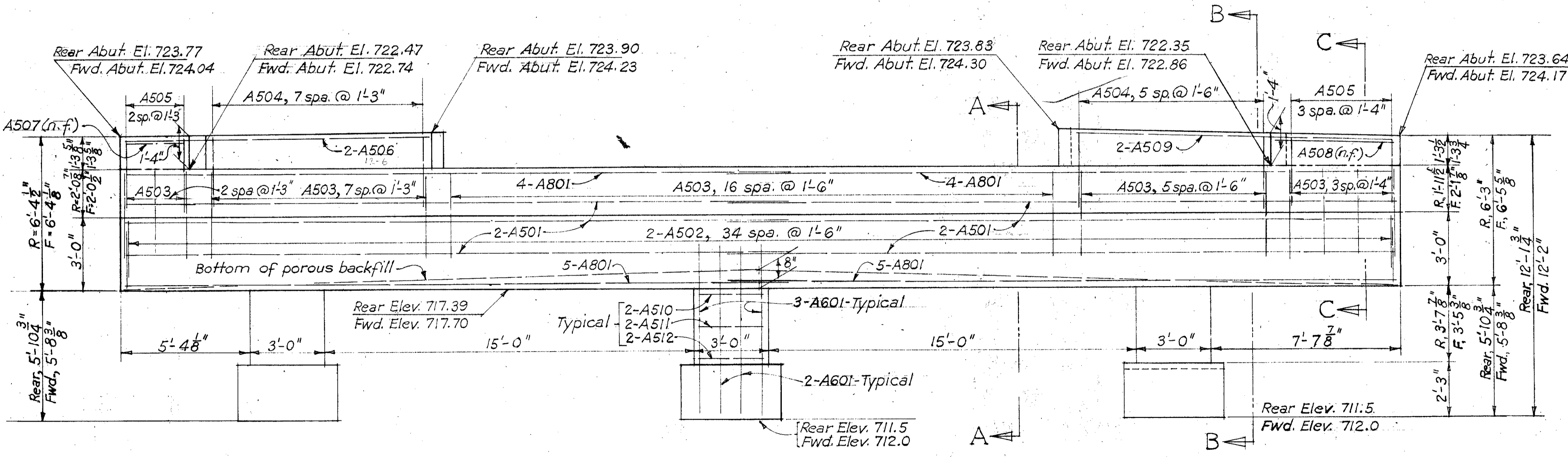
FOOTINGS shall extend a minimum of 3 inches into bedrock, or to the elevation shown, whichever is lower.

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES						2 / 5
GENERAL PLAN & ELEVATION NOTES & EST. QUANTITIES BRIDGE NO. HIG-41-0041 OVER STRAIT CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JVG	JVG		WTL	BFG	2-16-70	

HIGHLAND COUNTY
HIG-41-0.36



Note: Details, dimensions and reinforcing steel not shown on these sections are the same as Section A-A.

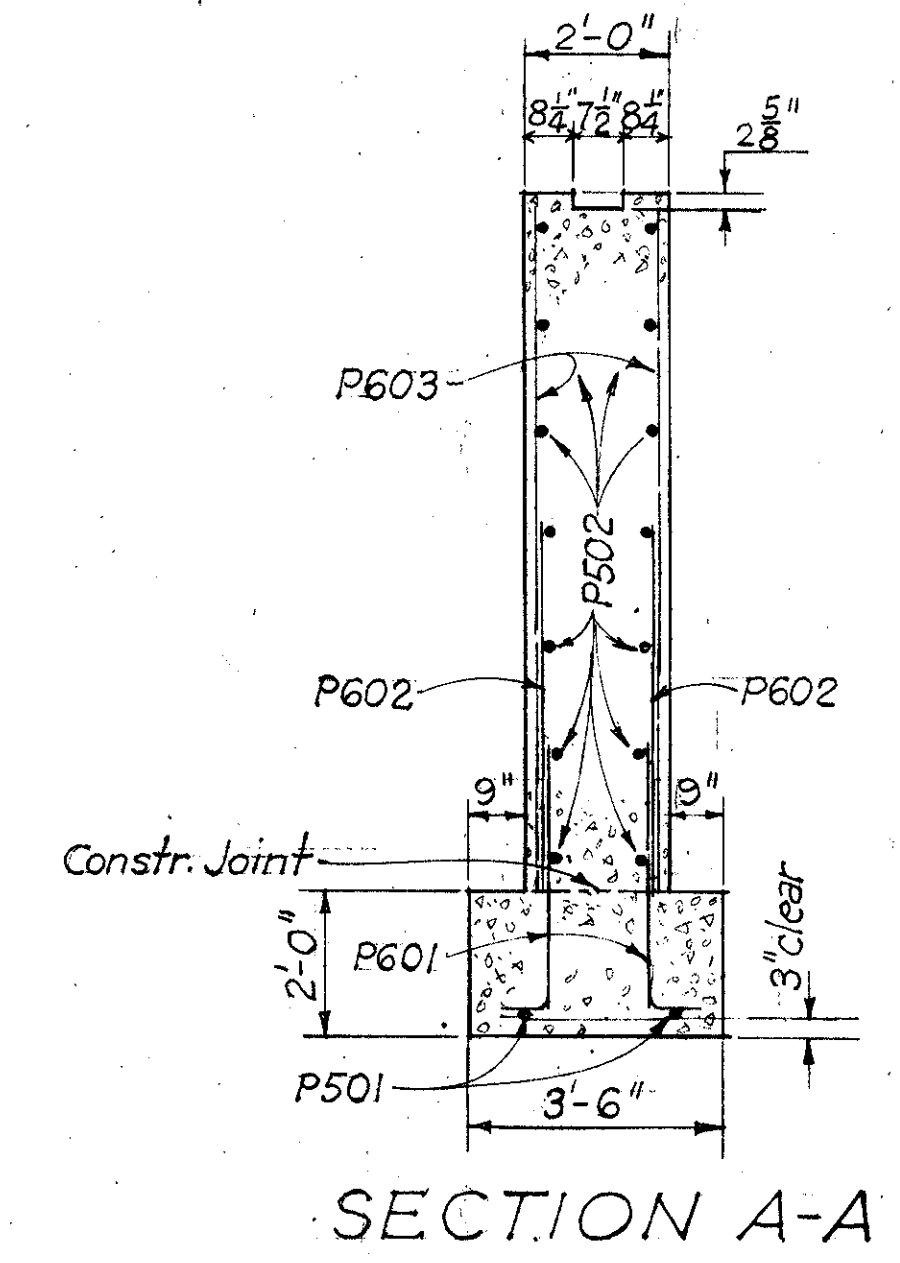
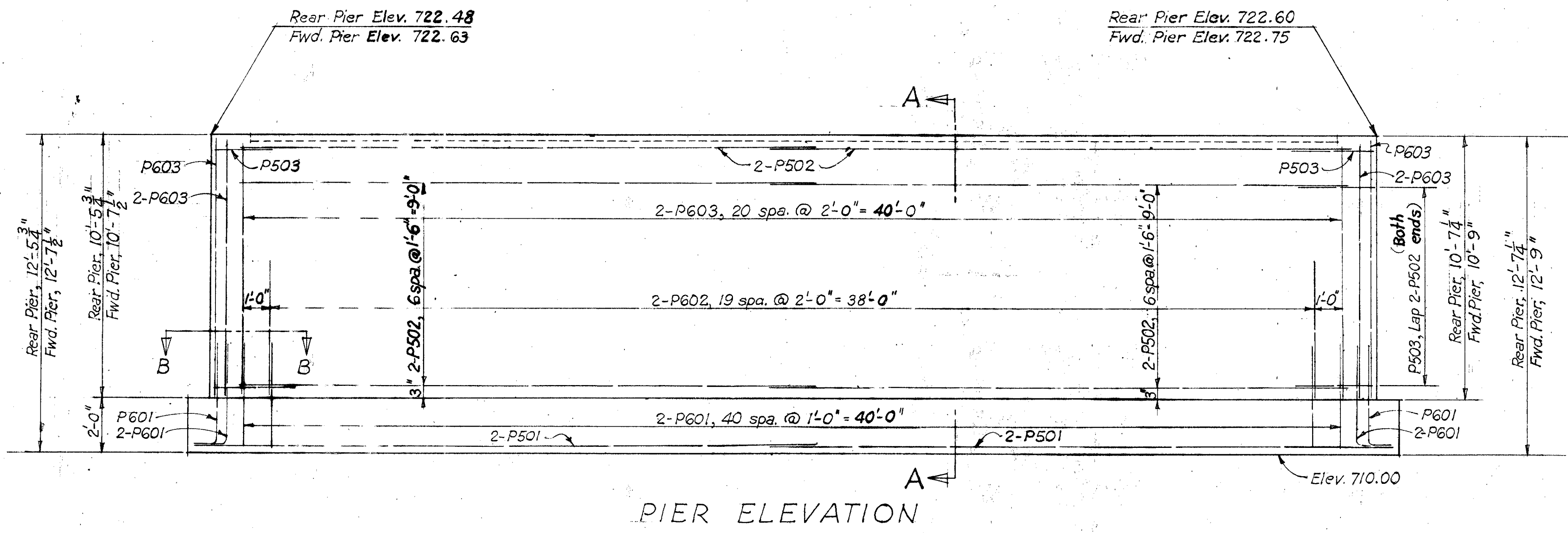
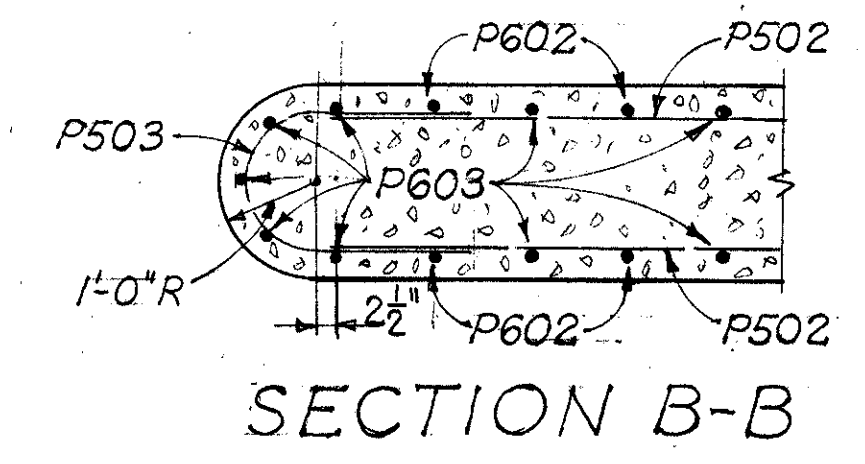
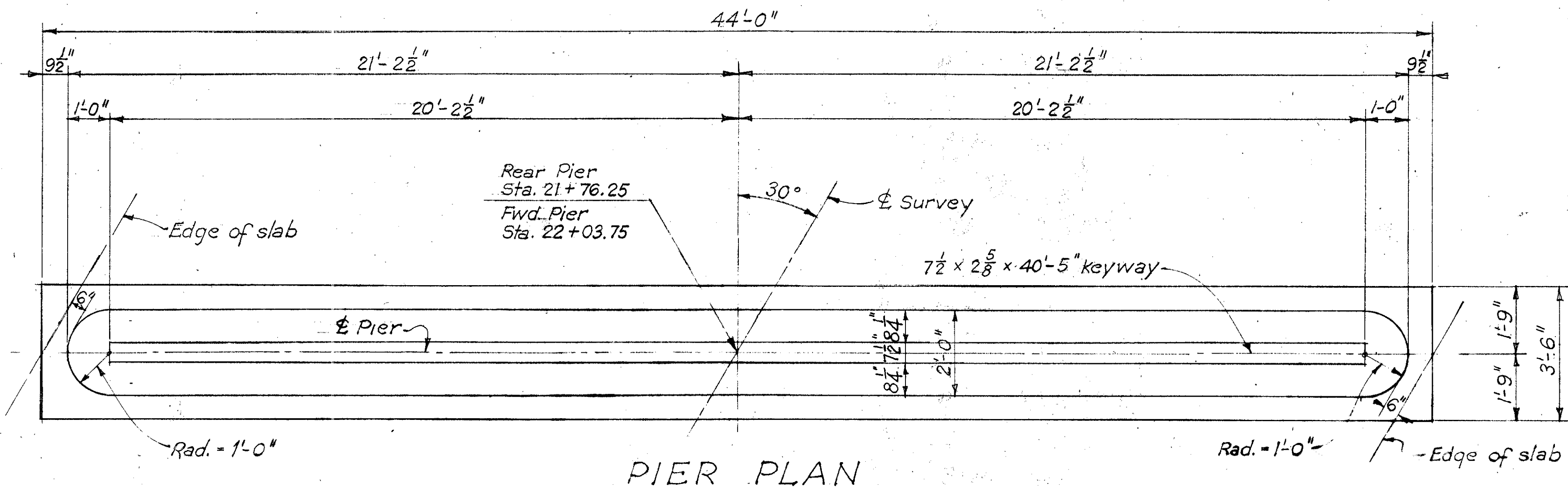


NOTES

POROUS BACKFILL shall extend upward to the subgrade and to the surface of the earth shoulders, and outward to the surface of the embankment slopes.

LEGEND: n.f. denotes near face.
f.f. denotes far face.

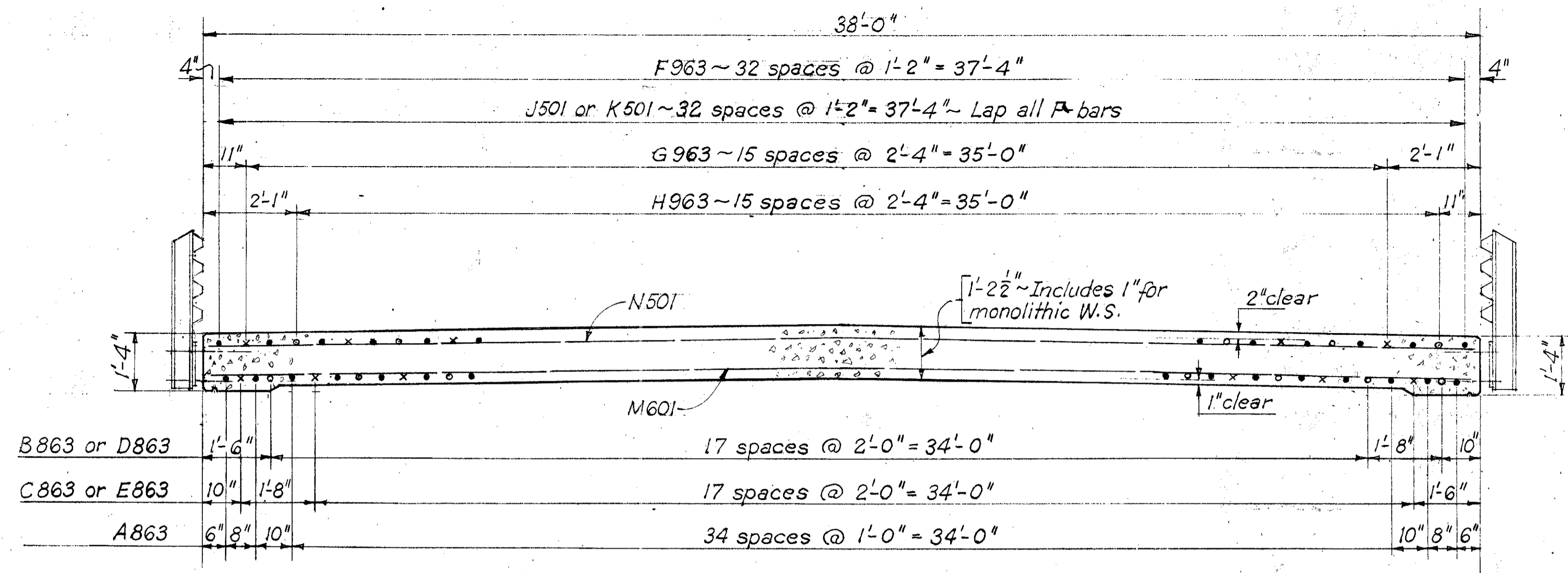
STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES						3/5
ABUTMENT DETAILS						
BRIDGE NO. HIG-41-0041						
OVER STRAIT CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	J.V.G.		WTJ	BFG	2-16-70	



PIER DETAILS
BRIDGE NO. HIG-41-0041
OVER STRAIT CREEK

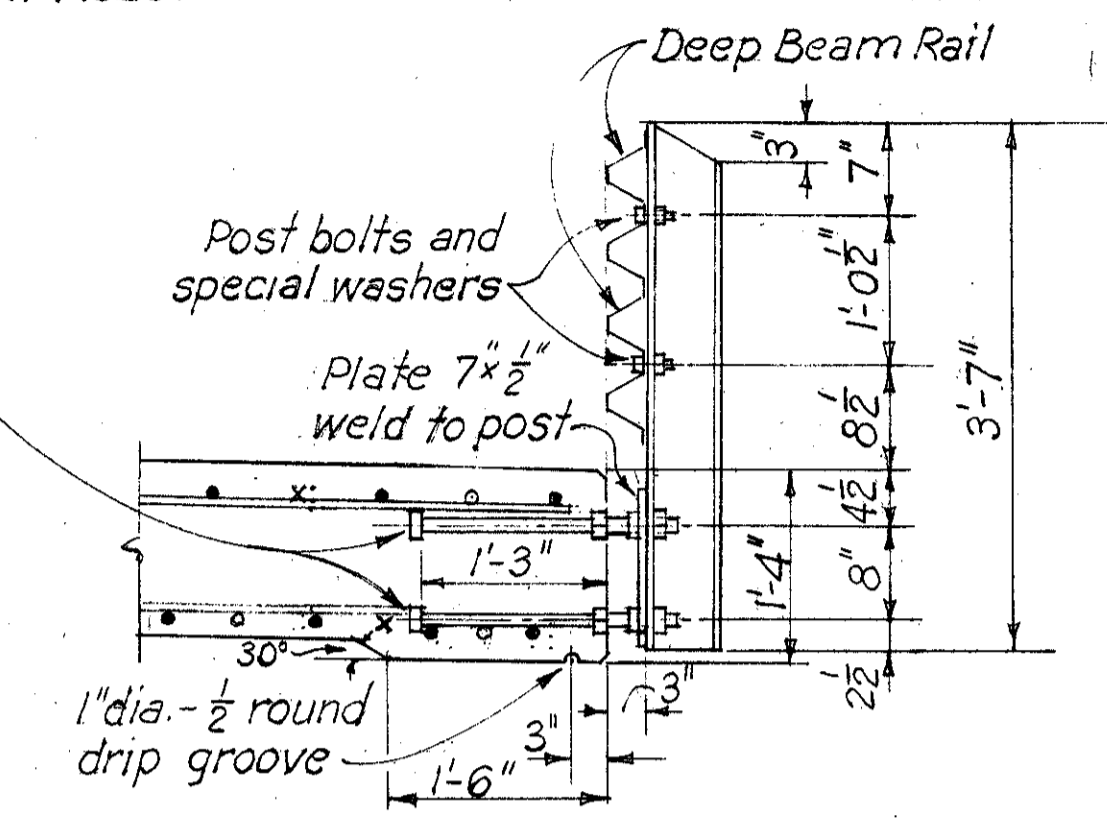
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	J.V.G.		WTZ	BFG	2-16-70	

HIGHLAND COUNTY
HIG-41-0.36

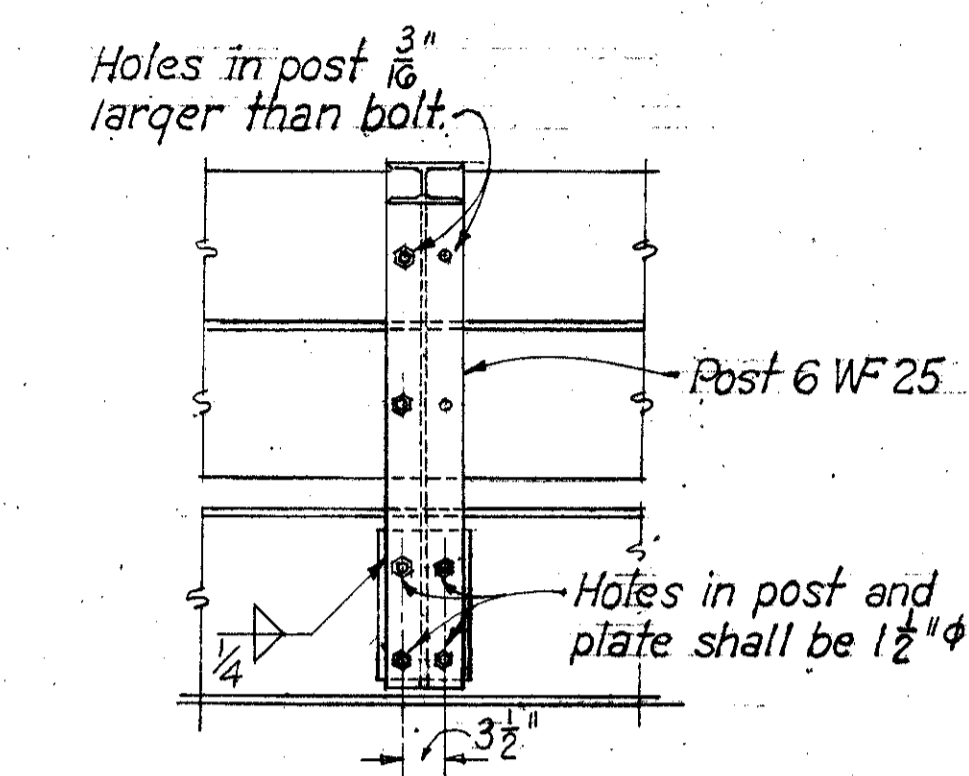


SLAB DETAIL
Transverse Section showing reinforcing steel spacing

$\frac{1}{2}$ " x 20" galvanized machine bolts with square heads. Thread 8" length and provide three galvanized hexagonal nuts per bolt. Fasten bolts rigidly to form before placing concrete. (See Detail A, Std. Drwg. CS-1-65, Sheet 1.) Galvanizing of bolts shall be as provided in Sec. 711.02. Bolt material according to ASTM A325.



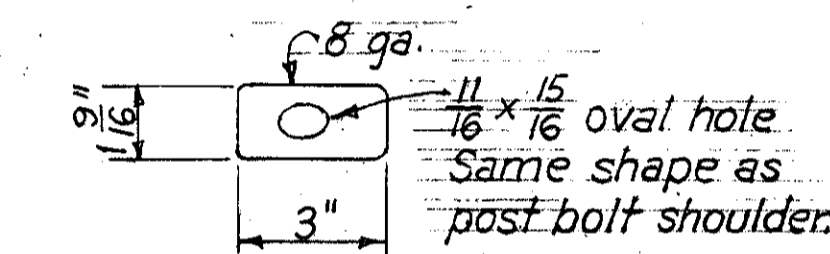
SECTION AT EDGE OF SLAB



ELEVATION OF RAILING POST

NOTE

Refer to Std. Drwg. CS-1-65 Sheet 1 for additional details. Changes in dimensions, spacing and size of bars shall conform to the Slab Detail (this sheet), the Reinforcing Steel List and the data noted below.

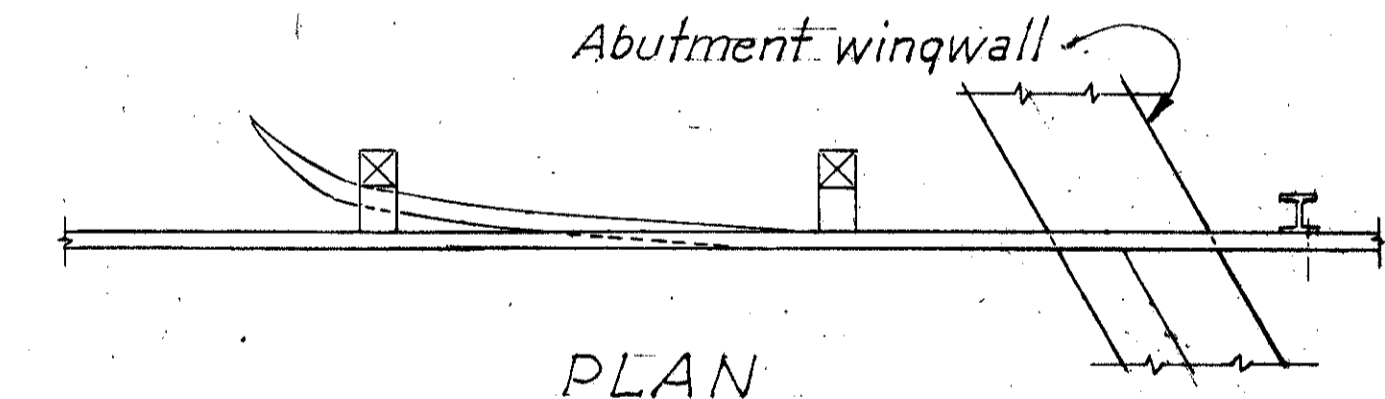


SPECIAL WASHER
(Use under head of all post bolts.)

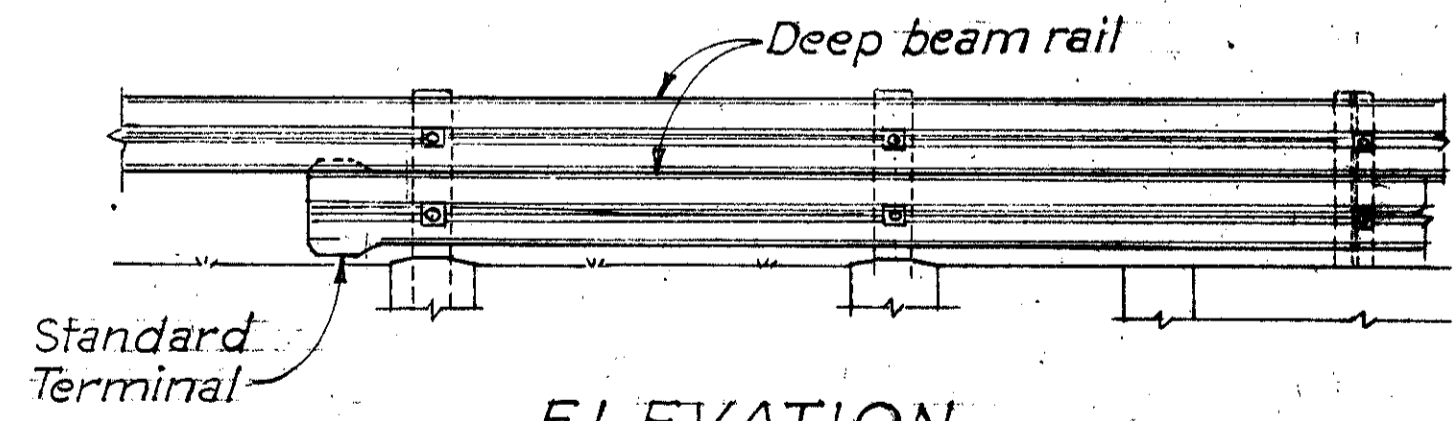
Changes of Slab Data on Std. Drwg. CS-1-65 Sheet 2.						
B863	C863	F963	G963	H963	M bar	
dim b"	dim c"	dim f"	dim g"	dim h"	sp. m"	
17'-11"	16'-8"	9'-1"	4'-8"	3'-4"	1'-5"	

Bars J601 & K601 on Std. Drwg. CS-1-65 Sht. 2 shall be replaced by J501 & K501 respectively and they shall lap with F963 bars.

Bars M701 & N601 shall be replaced by M601 & N501 bars.



PLAN



ELEVATION
TYPICAL TERMINATION OF LOWER RAIL

REINFORCING STEEL LIST					REINFORCING STEEL LIST				
Mark	No.	Length	Weight	Shp	Bending Diagrams				
SUPERSTRUCTURE					ABUTMENTS				
A863	117	25'-11"	8,096	S	A801	36	27'-0"	2,595	S
B863	38	19'-6"	1,978	B	A601	60	8'-2"	736	B
C863	38	17'-6"	1,776	B	A501	24	26'-8"	668	S
D863	19	17'-2"	871	S	A502	140	6'-4"	925	B
E863	19	14'-10"	752	S	A503	76	8'-3"	654	B
F963	66	21'-4"	4,787	S	A504	28	7'-3"	212	B
G963	32	13'-1"	1,423	S	A505	14	6'-11"	101	B
H963	32	10'-6"	1,142	S	A506	4	12'-8"	53	S
J501	66	15'-2"	1,044	S	A507	2	2'-7"	5	S
K501	33	10'-4"	356	S	A508	2	4'-10"	10	S
M601	116	22'-8"	3,949	S	A509	4	13'-0"	54	S
N501	118	22'-6"	2,769	S	A510	12	7'-10"	98	B
PIERS					REPLACEMENT BARS				
P601	188	4'-4"	1,224	B	RE901	1	7'-10"	-	S
P602	80	5'-0"	601	S	RE801	1	7'-6"	-	S
P603	96	10'-4"	1,490	S	RE601	1	6'-11"	-	S
P501	8	22'-8"	189	S	RE501	1	6'-7"	-	S
P502	32	21'-0"	701	S					
P503	32	3'-7"	186	B					

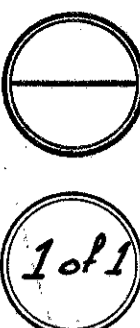
BAR SIZE is indicated in the bar mark. The first digit where three digits are used, indicate the bar size number. For example, A801 is a No. 8 size bar.

UTILITIES
 COLUMBUS SOUTHERN & OHIO ELECTRIC Co.
 OHIO POWER Co.
 GENERAL TELEPHONE Co.

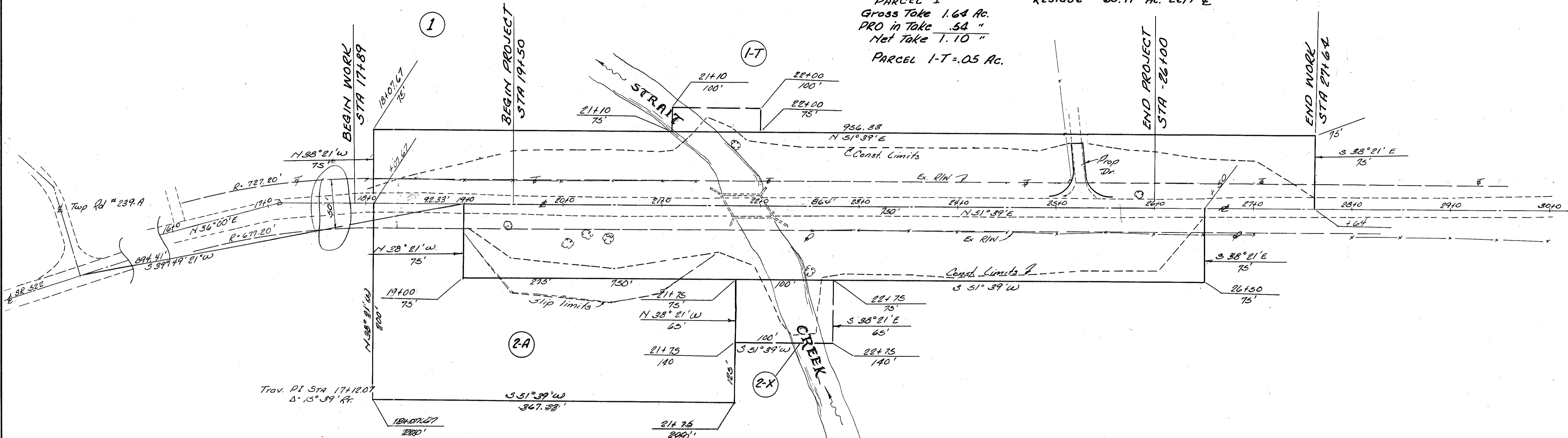
VMS 156B
 BRUSH CREEK TWP.
 HIGHLAND CO.

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

RIW PLAN
 HIG-41-0.36



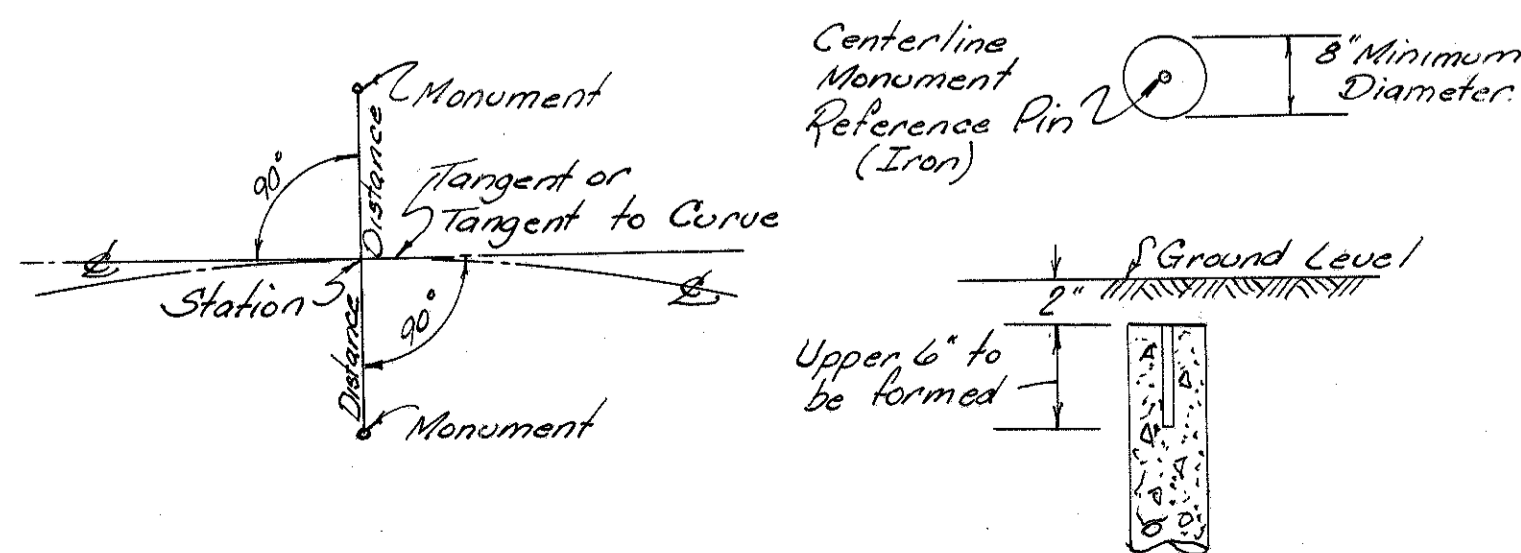
1
 EVELYN ADAMS
 Vol 164 at page 231 Deed Area 61.75 Ac.
 - Gross Take 1.64 "
 Residue 60.11 Ac. Left @
 PARCEL 1
 Gross Take 1.64 Ac.
 PRO in Take .54 "
 Net Take 1.10 "
 PARCEL 1-T = .05 Ac.



2
 MARY G. KESSLER
 Vol 201 at page 790 Deed Area 61.75 Ac.
 - Gross Take 1.29 "
 Residue 60.46 Ac. R.H. @
 Parcel 2
 Gross Take 1.29 Ac. PARCEL 2-A 1.21 Ac.
 PRO in Take .43 " Residue 59.25 Ac.
 Net Take .86 " PARCEL 2-A
 Gross Take 1.21 Ac.
 PRO in Take .05 Ac.
 Parcel 2-X .15 Ac. Net take 1.116 Ac.

I HEREBY CERTIFY THAT THIS PLAT IS A TRUE DELINEATION OF A SURVEY MADE BY THE OHIO DEPARTMENT OF HIGHWAYS Thomas W. Mumphy 3-2220
 DATE May 12, 1969

REFERENCE POINTS TO BE SET AFTER CONSTRUCTION



STATION	DIST. FROM @	
	Lt.	Rt.
19+50	17'	17'
23+00	17'	17'
26+00	17'	17'

Completion Date		By
Revised	Revision Description	
5/15/69	Changed PRO. Parcels 1 & 2	CVB
4/22/71	Added Parcel 2-A	CMB

GENERAL INFORMATION

INTRODUCTION

THE PROJECT CONSISTS OF THE MINOR GRADE IMPROVEMENT OF 600 FEET OF SR 41, IN THE VICINITY OF THE PROPOSED STRUCTURE OVER STRAIT CREEK, APPROXIMATELY 0.7 MILE SOUTH OF SINKING SPRING.

PROPOSED GRADE INDICATES A MAXIMUM 1-FOOT CUT AND 1-FOOT FILL EMBANKMENT.

GEOLOGY OF THE PROJECT

THE ALIGNMENT TRAVERSES THE FLOODPLAIN OF STRAIT CREEK, IN AN AREA WHERE THIN ALLUVIAL DEPOSITS OVERLIE SHALE BEDROCK OF DEVONIAN AGE.

EXPLORATION









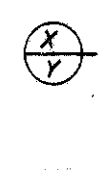
EXPLORATORY BORINGS WERE MADE BY MEANS OF TRUCK-MOUNTED MECHANICAL SOIL AUGER ON OCTOBER 30, 1968. INCLUDED IN THIS REPORT IS A LOG OF A BORING MADE FOR THE STRUCTURE FOUNDATION INVESTIGATION ON THE PROJECT.

INVESTIGATIONAL FINDINGS

MATERIALS ENCOUNTERED ON THE PROJECT WERE PREDOMINANTLY COMPRISED OF SILT CLAYS (A-6a) THAT HAD MOISTURE CONTENTS IN THE LOWER PORTIONS OF THE PLASTIC RANGE.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS— 8 SAMPLES TESTED

DESCRIPTION	H.R.B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
SANDY SILT	A-4(4)	A-4a	22	13	10	27	28	35	9	26	1
SILT AND CLAY	A-6(9)	A-6a	10	4	6	38	42	36	13	21	6
CLAY	A-7-6(11)	A-7-6	5	4	5	40	46	41	17	19	1

 SANDY SILT  SILT AND CLAY  CLAY  SHALE  BERM MATERIAL  AUGER BORING-PLAN VIEW  DRIVE SAMPLE-CORE BORING-PLAN VIEW	VISUAL CLASSIFICATION  AUGER BORING PLOTTED TO VERTICAL SCALE ONLY.  DRIVE SAMPLE-CORE BORING PLOTTED TO VERTICAL SCALE ONLY. NUMBER OF BLOWS FOR "STANDARD PENETRATION" TEST. X-NUMBER OF BLOWS FOR FIRST 6 INCHES. Y-NUMBER OF BLOWS FOR SECOND 6 INCHES.
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NOTE: FIGURES BESIDE BORINGS INDICATE WATER CONTENT IN PERCENT. E.G. .15

SUMMARY OF SOIL TEST DATA

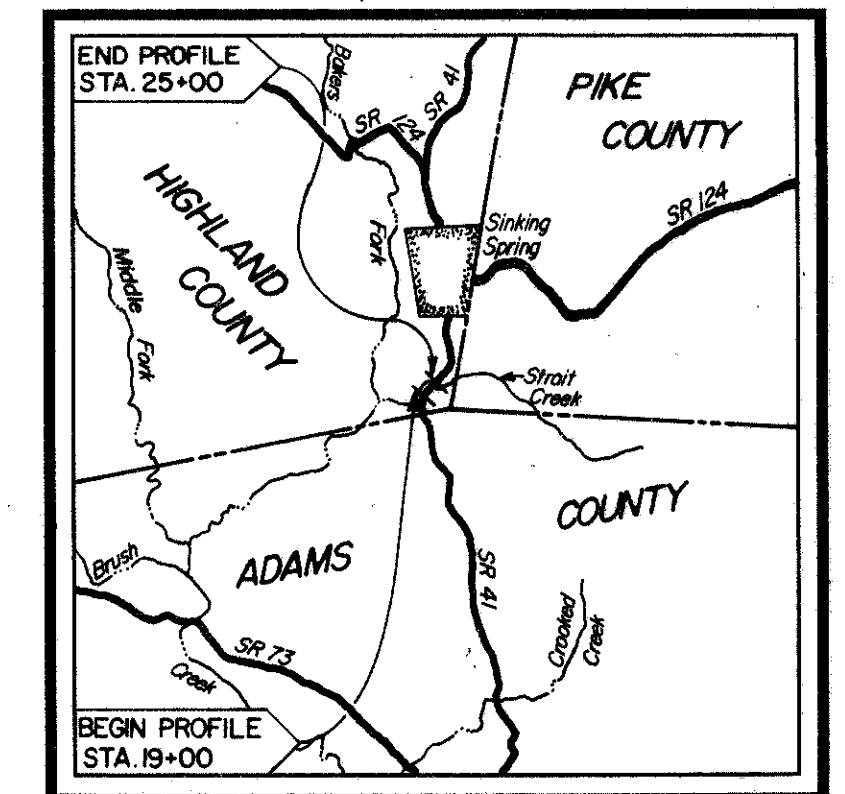
*DENOTES SAMPLE TAKEN AT OR NEAR GRADE.

STATION & OFFSET	DEPTH FROM	TO	% AGG.		% C.S.		% F.S.		% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
			7	3	4	43	43	36	14	20	A-6a*			
20+00 15'RT	0.6-5.0	7	3	4	43	43	36	14	20	A-6a*				
	5.0-9.0	5	4	5	40	46	41	17	19	A-7-6				
	9.0-10.0	13	7	7	30	43	36	13	19	A-6a				
24+00 15'LL	0.6-5.0	6	2	3	43	46	38	15	21	A-6a*				
	5.0-7.0	0	0	3	46	51	36	13	19	A-6a				
	7.0-9.0	15	9	10	28	38	38	14	24	A-6a				
21+03 15'RT	5.0-6.0	18	3	8	38	33	33	11	24	A-6a				
	7.0-8.0	22	13	10	27	28	35	9	26	A-4a				

DRIVE SAMPLE SOIL TEST DATA

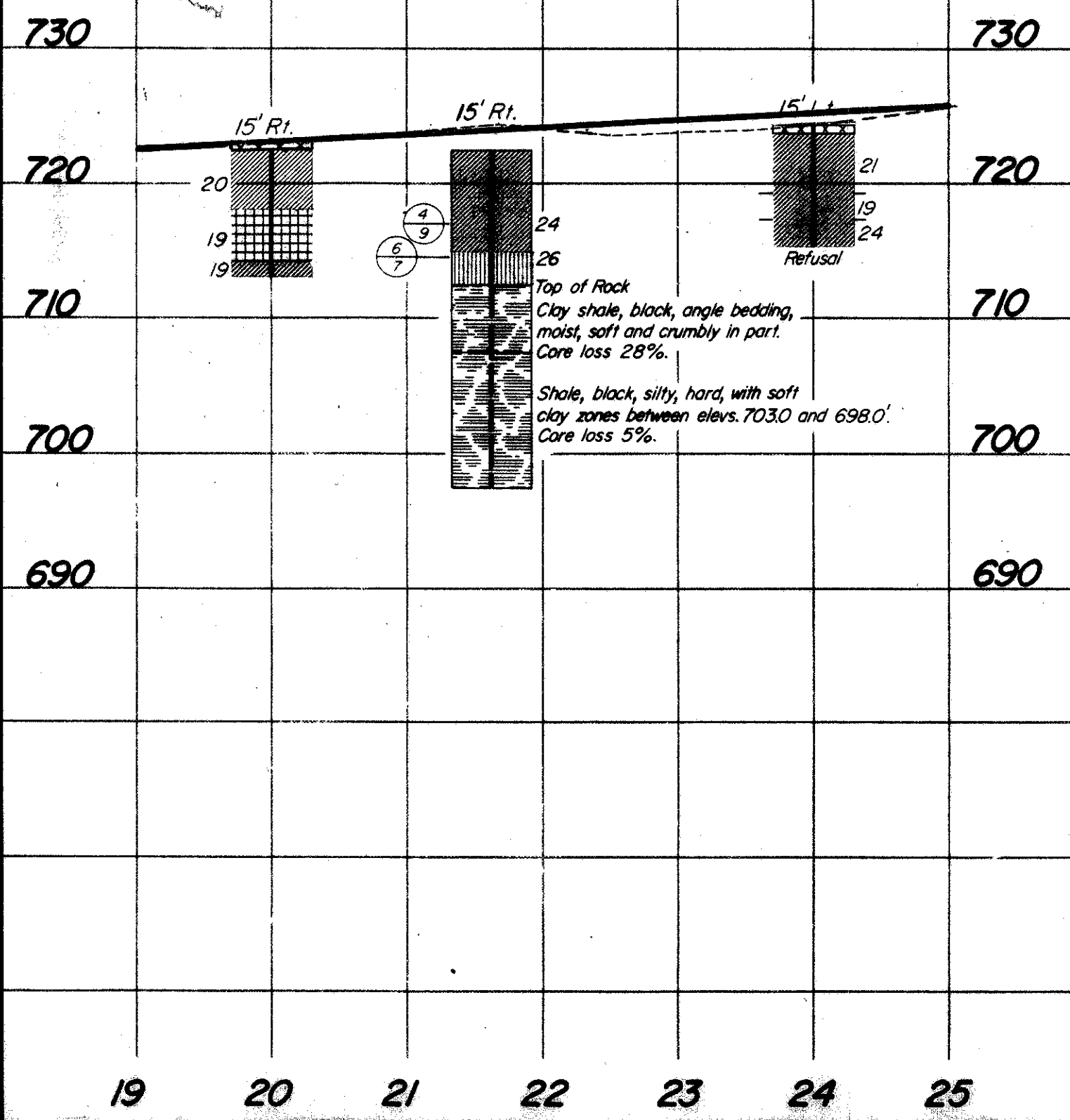
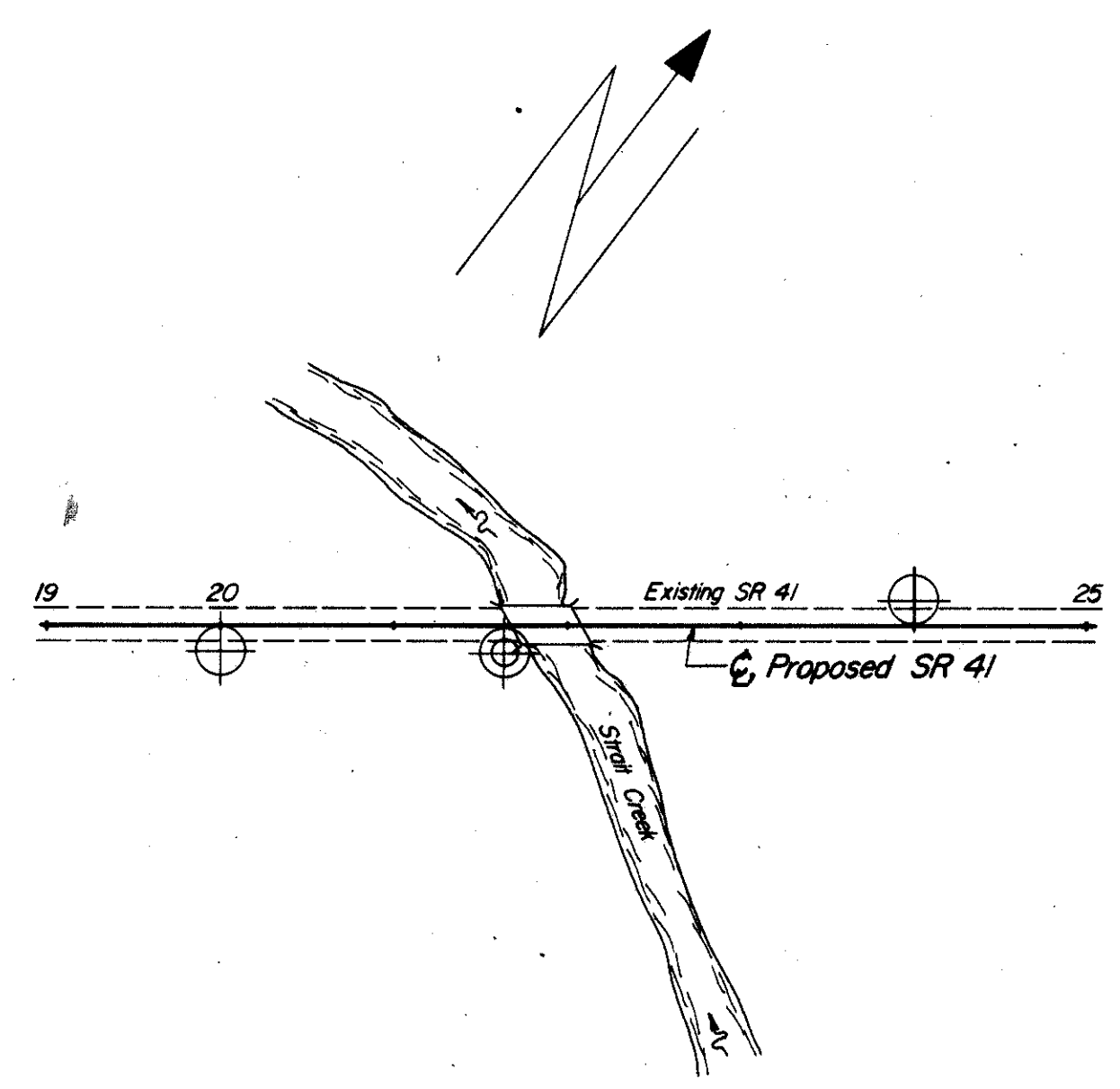
SOIL PROFILE
HIGHLAND COUNTY
HIG-41-0.36
OHIO STATE HIGHWAY TESTING
LABORATORY
1620 W. BROAD ST. COLUMBUS, OHIO 43223

NOTE: INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR 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.



LOCATION MAP

Recon.-G.P.H.-10/7/68
Drilling-Auger-W.S.B.-10/30/68
Drafting-M.S.F.-11/13/68



GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED ON THE FLOODPLAIN IN THE NARROW VALLEY OF BAKERS FORK ON AN UNGLAACIATED UPLAND PLAIN. SHALLOW TO THIN ALLUVIUM OVERLIES SHALE BEDROCK, OF SILURIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE-CORE BORINGS AND FOUR DRIVE ROD SOUNDINGS, MADE BETWEEN SEPTEMBER 18 AND 24, 1968.








INVESTIGATIONAL FINDINGS





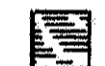
THE BORINGS DISCLOSED THAT BEDROCK SURFACE ENCOUNTERED AT 5 AND 10-FOOT DEPTHS, ELEVATIONS 714 AND 713 FEET, IS OVERLAIN BY STIFF CLAYS AND MERE SILTS. THE BORINGS WERE TERMINATED AT 15 AND 25-FOOT DEPTHS, ELEVATIONS 714 AND 712 FEET, AFTER PENETRATING 10 AND 15 FEET BELOW BEDROCK SURFACE, ELEVATIONS 704 AND 698 FEET.

ROD SOUNDINGS ENCOUNTERED RAPID INCREASE IN PENETRATION RESISTANCE WITH INCREASE IN DEPTH AND WERE TERMINATED UPON RATHER ABRUPT REFUSAL TO PENETRATION AT 9 AND 14-FOOT DEPTHS, ELEVATIONS 711 AND 708 FEET, CONSIDERED TO BE SLIGHTLY BELOW BEDROCK SURFACE, AS REVEALED BY THE BORINGS.

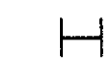
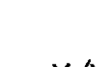




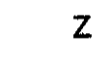


ON THE BASIS OF TESTS, BEDROCK SURFACE IS CONSIDERED TO BE SOMEWHAT FLAT-LYING ACROSS THE SITE BETWEEN ELEVATIONS 714 AND 713 FEET.

NO FREE WATER WAS NOTED IN ANY OF THE HAND PROBES.







-  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

-  Coal
-  Weathered Indurated Clay
-  Indurated Clay
-  Weathered Shale
-  Shale

LEGEND

-  Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
-  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.
-  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

-  Weathered Sandstone
-  Sandstone
-  Leached Dolomite
-  Dolomite
-  Leached Limestone
-  Limestone

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 past 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.

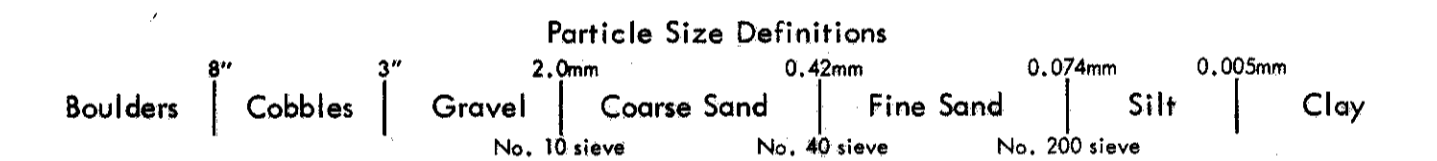
Drive Sample Borings - Drive-Press Sample Borings

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 12 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 two 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.



LOG OF BORING

Date Started 9-18-68 Sampler Type SS Dia. 1 3/8" Water Elev. _____
 Date Completed 9-19-68 Casing Length 10' Dia. 3 1/2"
 Boring No. B-2 Station & Offset 21+63, 15' Rt. (Rear Abutment) Surface Elev. 722.5'

Elev.	Depth	Std. Pen. (N)	Rec. Ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.		
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.		W.C.	
722.5	0															
717.5	6	4/9			Brown Gravelly Clay	1	18	3	8	38	33	11	24	A-6a		
715.0	8	6/7			Brown Gravelly Sandy Silt	2	22	13	10	27	28	35	9	A-4a		
711.5	10	50* (0.7')			TOP OF ROCK											
707.5	12		2.7	1.6	Clay Shale, black, angle bedding, moist, soft and crumbly in part. Core Loss 28%.											
	14															
	18		4.9	0.1												
	20				Shale, black, silty, hard, soft, clayey zones at 19.5 feet and 24.5 feet. Core Loss 5%.											
	22															
697.5	24		4.8	0.2												

*Refusal

LOG OF BORING

Date Started 9-19-68 Sampler Type SS Dia. 1 3/8" Water Elev. _____
 Date Completed 9-20-68 Casing Length 5' Dia. 3 1/2"
 Boring No. B-7 Station & Offset 22+35, 35' Lt. (Forward Abutment) Surface Elev. 718.7'

Elev.	Depth	Std. Pen. (N)	Rec. Ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.		
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.		W.C.	
718.7	0															
713.7	6	50/*														
	8		3.2	1.3	TOP OF ROCK											
	10				Shale, black, hard, angle bedding, soft clayey zone 11.5 feet, top 2 feet blocky. Core Loss 2%.											
	12															
	14		5.0	0.0												

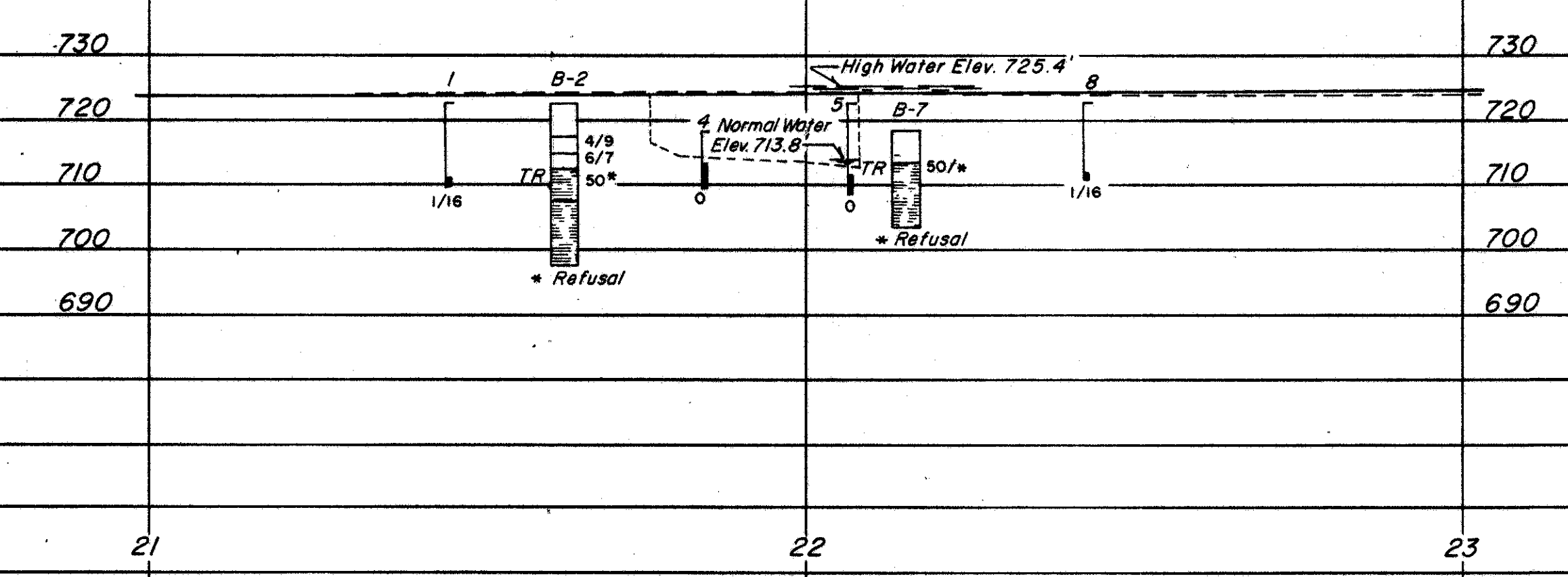
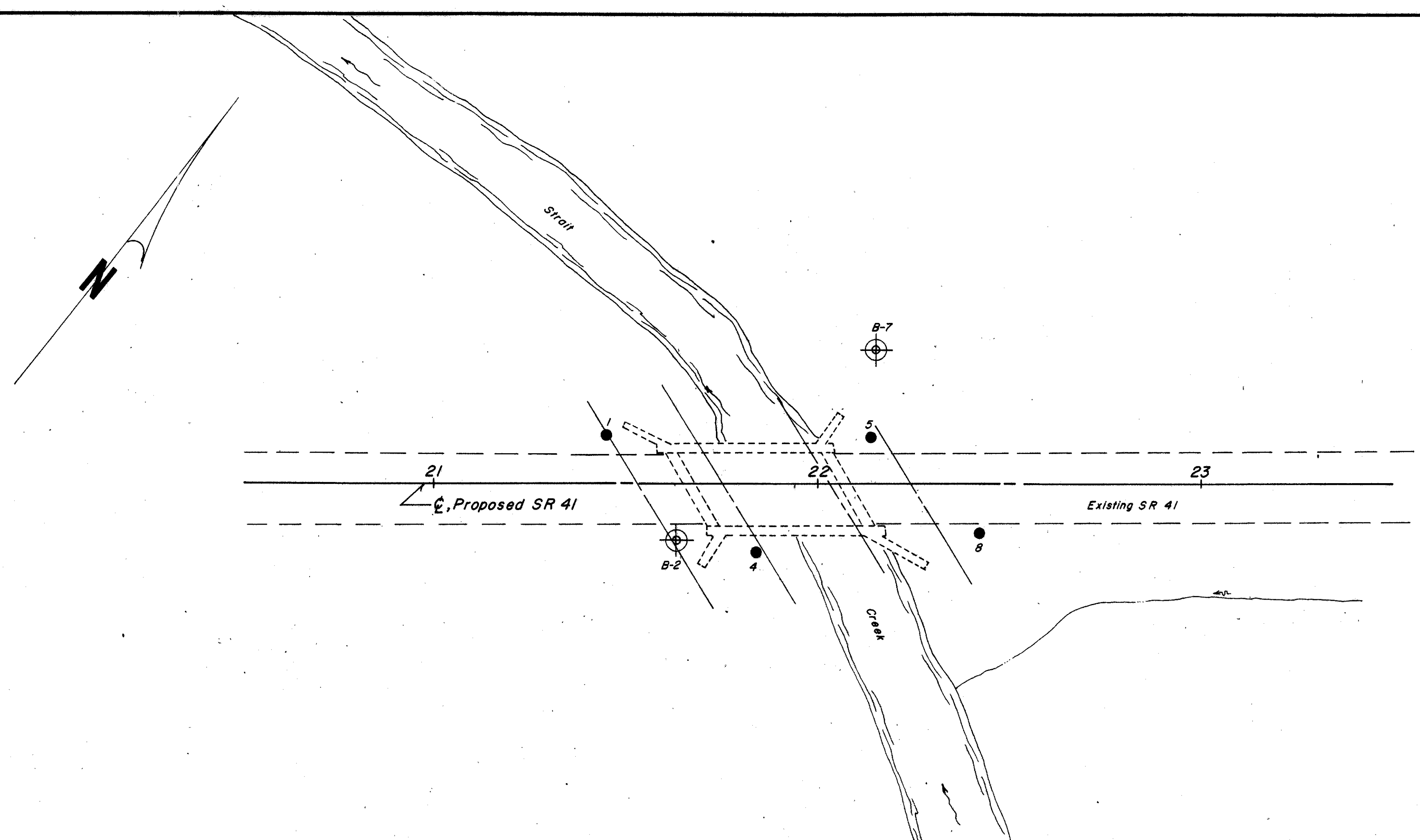
*Refusal

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 HIGHWAYS
TESTING LABORATORY**
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

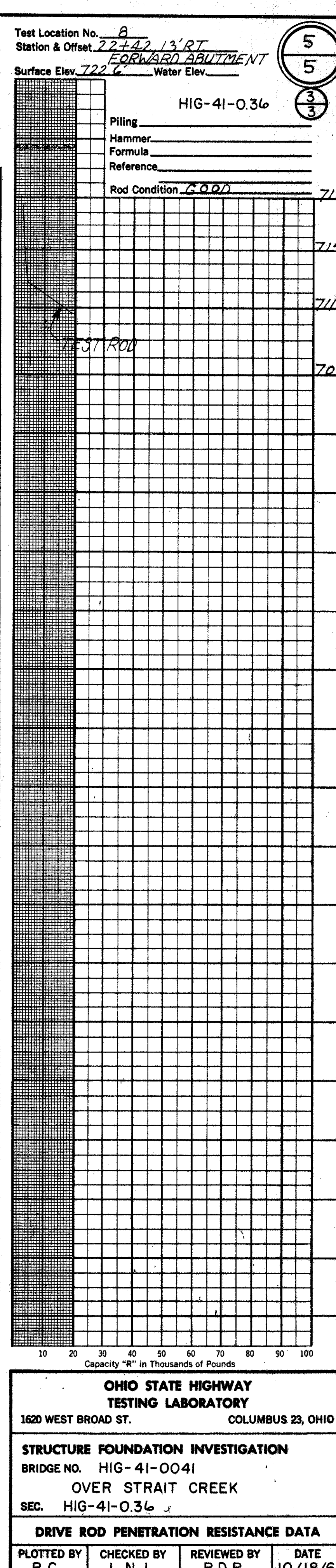
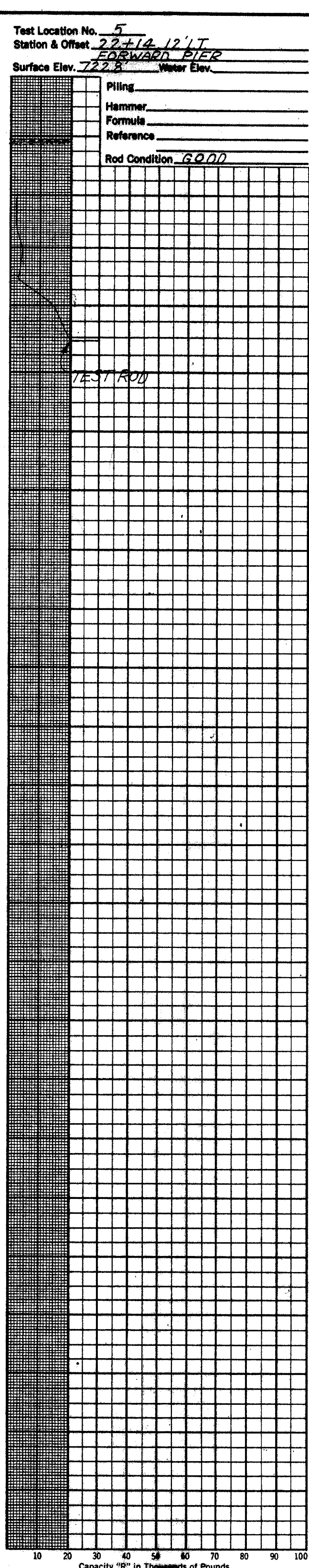
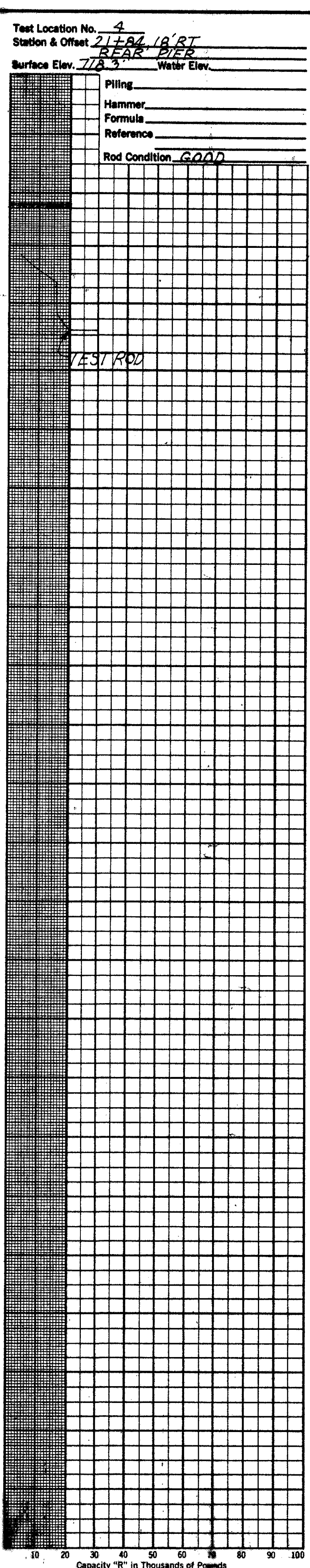
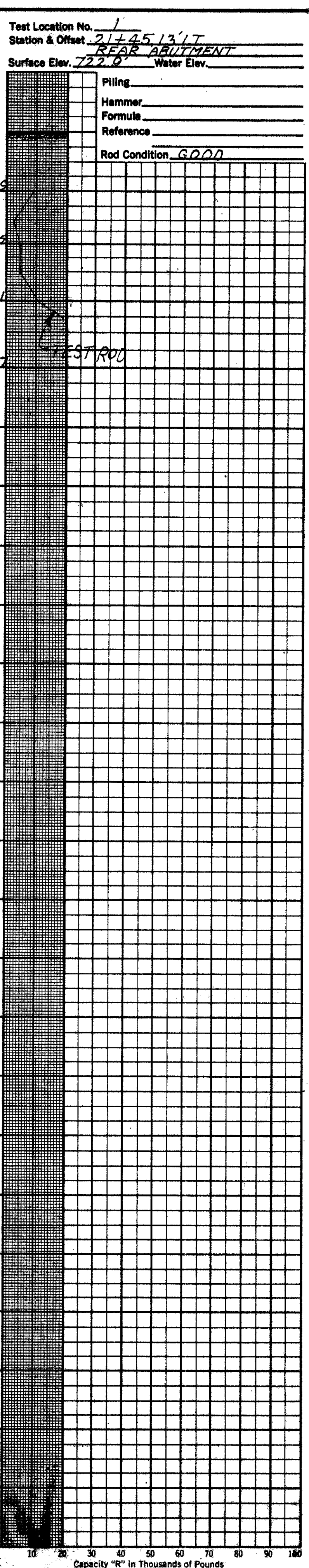
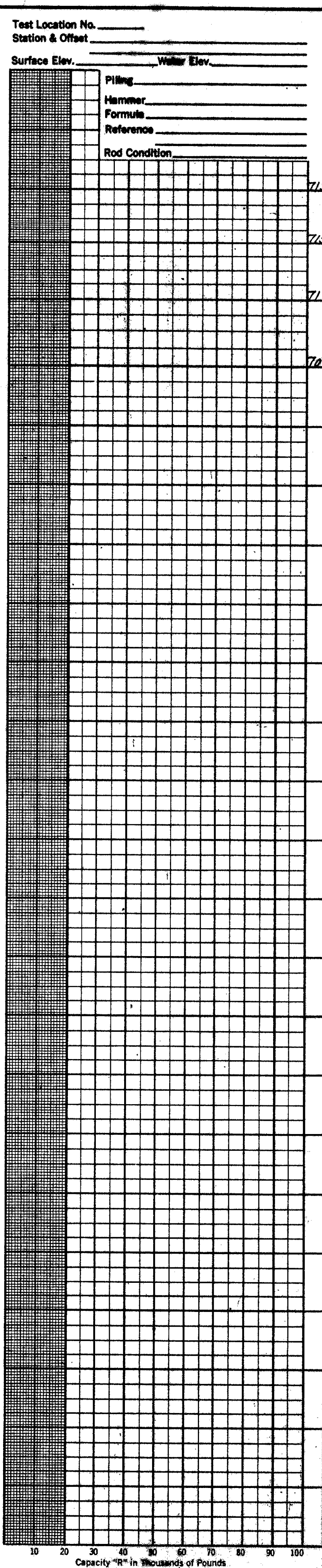
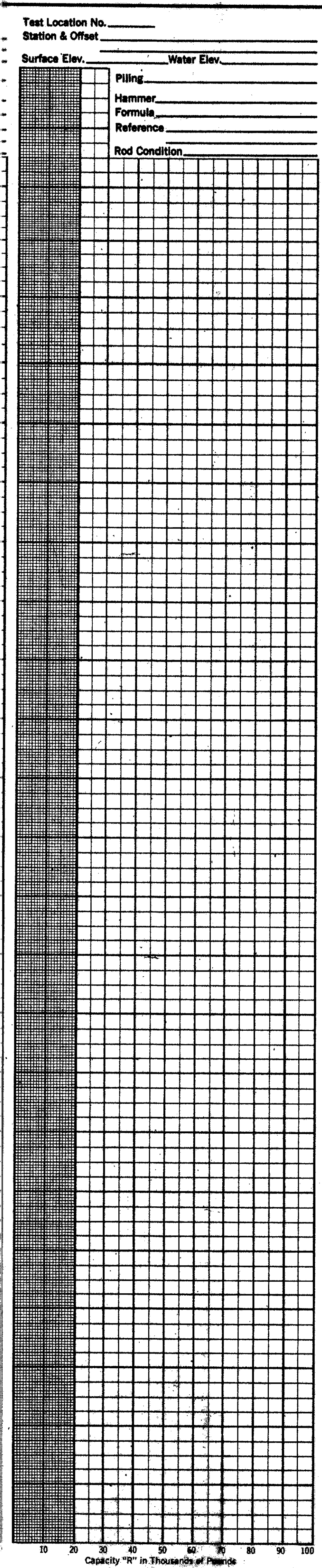
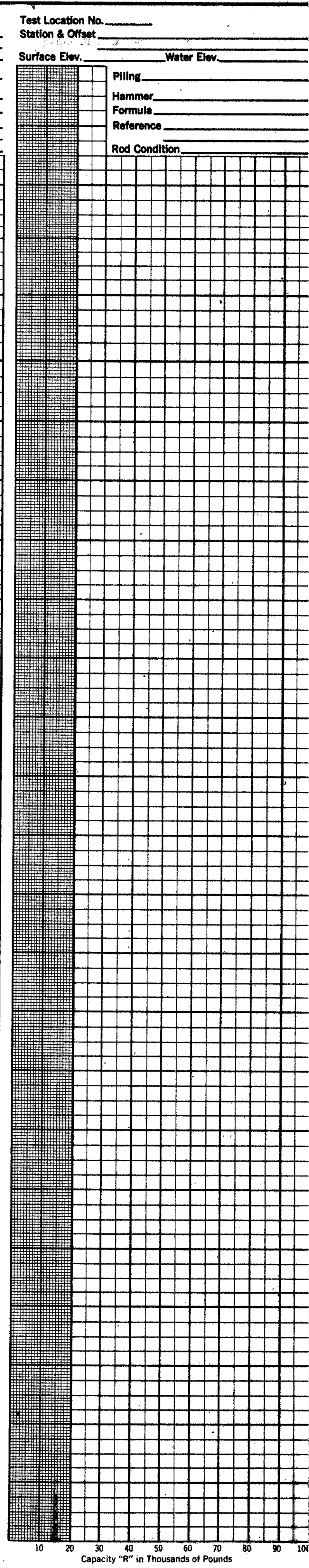
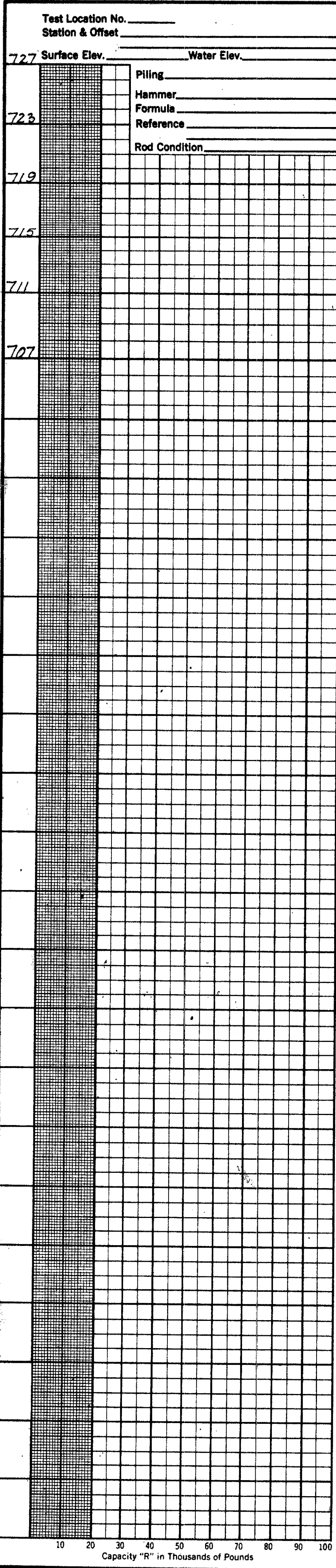
STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. HIG-41-0041
OVER STRAIT CREEK
SEC. HIG-41-0.36

CHECKED BY L.N.L.	REVIEWED BY R.D.R.	DATE 10/18/68
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OHIO DEPARTMENT OF HIGHWAYS TESTING LABORATORY 1620 WEST BROAD STREET, COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO. HIG-41-0041 OVER STRAIT CREEK SEC. HIG-41-0.36			
PLAN AND PROFILE			
DRAWN BY K.J.S.	CHECKED BY L.N.L.	REVIEWED BY R.D.R.	DATE 10/18/68

SCALE: 1" = 20'



5
5
3

HIG-41-0.36

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. HIG-41-0041
OVER STRAIT CREEK
SEC. HIG-41-0.36

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY R.C.	CHECKED BY L.N.L.	REVIEWED BY R.D.R.	DATE 10/18/68
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