

DESIGN DESIGNATIONS

CRA-98-(15.86)(16.20)(20.93)

CURRENT (1969) A.D.T. = 617
 DESIGN YEAR (1989) A.D.T. = 1,100
 D.H.V. = 140
 D (DIRECTIONAL DISTRIBUTION) = 60%
 T (PERCENT B & C TRUCKS) = 25%
 V (DESIGN SPEED) = 60 M.P.H.

CRA-602-(9.34)(12.02)(13.21)

CURRENT (1969) A.D.T. = 1,063
 DESIGN YEAR (1989) A.D.T. = 1,883
 D.H.V. = 225
 D (DIRECTIONAL DISTRIBUTION) = 60%
 T (PERCENT B & C TRUCKS) = 8%
 V (DESIGN SPEED) = 60 M.P.H.

MICROFILMED
 APR 09 1982

MICROFILMED
 APR 09 1982

STATE OF OHIO
 DEPARTMENT OF HIGHWAYS

CRA-98-(15.86)(16.20)(20.93)
 CRA-602-(9.34)(12.02)(13.21)
 CRAWFORD COUNTY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

1
64

CRA-98-(15.86)(16.20)(20.93)
 CRA-602-(9.34)(12.02)(13.21)

SANDUSKY, AUBURN, LIBERTY AND CRANBERRY TOWNSHIPS

CONVENTIONAL SIGNS

County Line _____
 Township Line _____
 Section Line _____
 Corporation Line _____ or _____
 Fence Line (existing) -x-x- (proposed) -x-x-
 Center Line _____
 Trees (to be removed) _____
 Utility Poles: Telephone ϕ , Power ϕ , Light ϕ

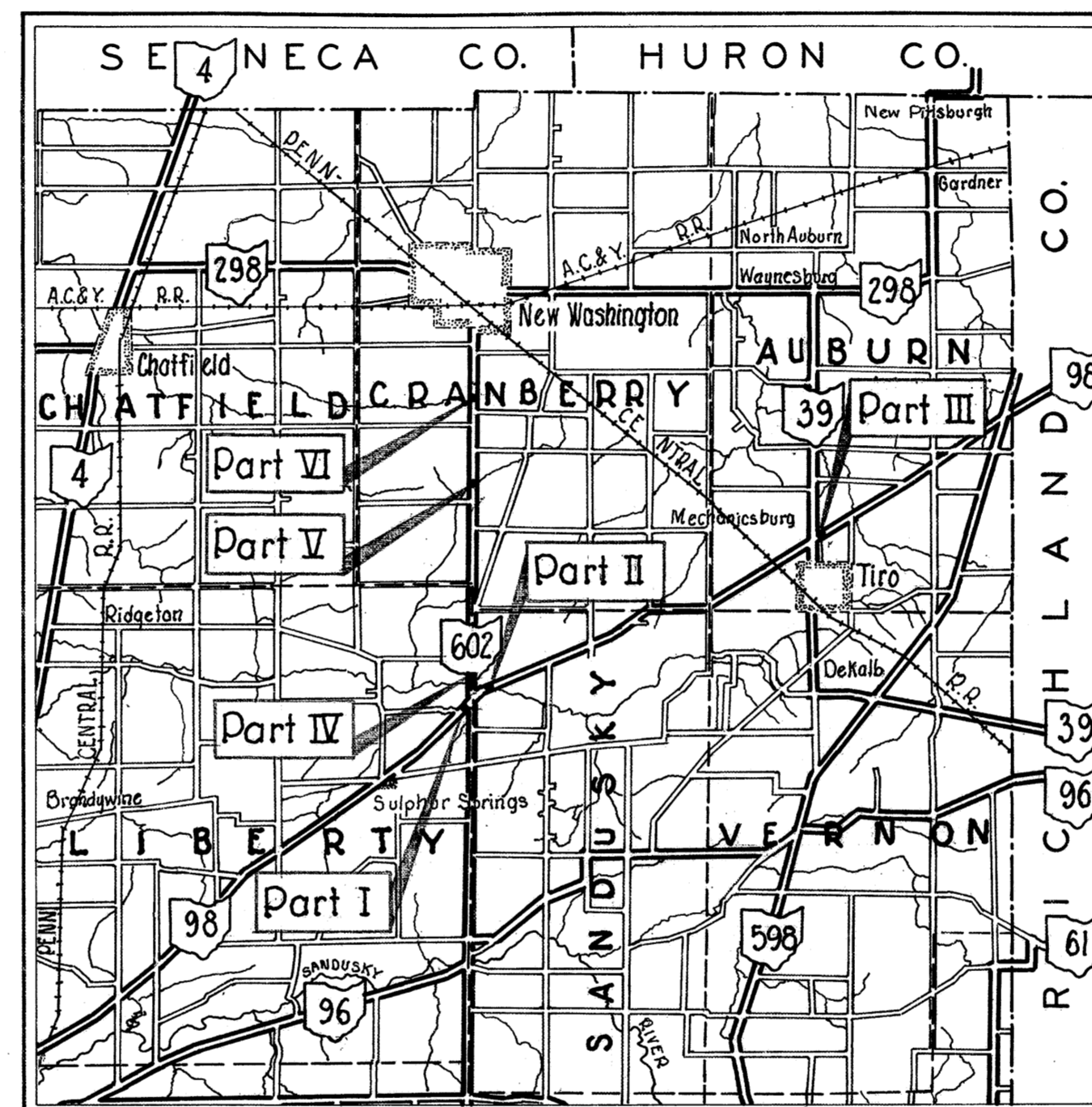
Right of Way (only) _____ RW _____
 Existing Right of Way _____
 Property Line (in existing fence) -x-x-
 Railroad _____
 Guardrail (existing) -o-o-o- (proposed) -o-o-o-

INDEX OF SHEETS

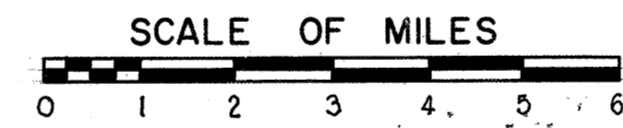
TITLE SHEET	1	PART I	14-19
SCHEMATIC PLAN	2	PART II	20-23
TYPICAL SECTIONS	3 & 4	PART III	24-32
CONSTRUCTION DETAILS	5 & 5A	PART IV	33-35
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GENERAL SUMMARY	8	RIGHT OF WAY	58-64
PART I	9-13		

LINE DATA

PROJECT	WORK		
CRA-98-(15.86)(16.20)(20.93)			
PART I BEGIN STA 836+18	STA 835+00		
SUSPEND STA 837+00	STA 838+00		
NET LENGTH	82.00 LIN. FT.	300.00 LIN. FT.	
PART II RESUME STA 854+50	STA 853+75		
SUSPEND STA 857+00	STA 857+50		
NET LENGTH	250.00 LIN. FT.	375.00 LIN. FT.	
PART III RESUME STA 1100+00	STA 1099+50		
END STA 1100+80	STA 1101+30		
NET LENGTH	80.00 LIN. FT.	180.00 LIN. FT.	
TOTAL PARTS I, II & III	412.00 LIN. FT.	855.00 LIN. FT.	
	OR 0.078 MILE	OR 0.161 MILE	
CRA-602 (9.34)(12.02)(13.21)			
PART IV BEGIN STA 491+00	STA 490+50		
SUSPEND STA 504+75	STA 505+25		
NET LENGTH	1,375.00 LIN. FT.	1,475.00 LIN. FT.	
PART V RESUME STA 635+00	STA 634+00		
SUSPEND STA 636+50	STA 637+25		
NET LENGTH	150.00 LIN. FT.	325.00 LIN. FT.	
PART VI RESUME STA 703+00	STA 702+50		
END STA 705+00	STA 705+50		
NET LENGTH	200.00 LIN. FT.	300.00 LIN. FT.	
TOTAL PARTS IV, V & VI	1,725.00 LIN. FT.	2,100.00 LIN. FT.	
	OR 0.326 MILE	OR 0.397 MILE	
TOTAL ALL PARTS	2,137.00 LIN. FT.	2,955.00 LIN. FT.	
	OR 0.404 MILE	OR 0.559 MILE	



LOCATION MAP



Portion to be improved _____
 State Roads _____
 Other Roads _____
 Detours _____

SCALES

Plan _____
 Profile: Horizontal _____
 Profile: Vertical _____

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS					
BP-3	12-1-68	HW-E	6-1-65	A-1-54	11-8-65
BP-5	6-1-65			P-1-54	11-8-65
BP-6	6-1-65	L-1	6-1-65	CS-1-65 Sh. 142	6-1-65
CB-2-3&2-4	6-1-65			SB-1-64	11-8-65
		MC-3	6-20-69		
		MC-4	6-13-69		
GR-2B	2-15-68				
GR-5	1-15-68	AS-1-67	6-12-69		
		SP-53	6-30-61		

SUPPLEMENTAL SPECIFICATIONS	
1001	1-1-69
938	8-12-69
808	11-14-69
836	6-17-69

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 require the closing to traffic of the highways and that detours will be provided as indicated on sheet No. 6.

Approved: *H. H. Reader*
 Date: 1-24-70 Division Deputy Director

Approved: *C. A. Allwater*
 Date: 2-27-70 Engineer of Bridges

Approved: *R. E. Battie*
 Date: 2-28-70 Engineer of Location & Design

Approved: *George J. Sherman*
 Date: 2-28-70 Deputy Director of Design & Construction

Approved: *T. H. Board*
 Date: 3-12-70 Deputy Director of Right of Way

Approved: *Thomas M. Mapp*
 Date: 3-12-70 Deputy Director of Planning & Programming

Approved: _____
 Date: _____ First Assistant Director

Approved: *P. E. M... ..*
 Date: 3-12-70 Director of Highways

Project: CRA-98-(15.86)(16.20)(20.93) Crawford County
 Date of Letting: 19__ Contract No. _____

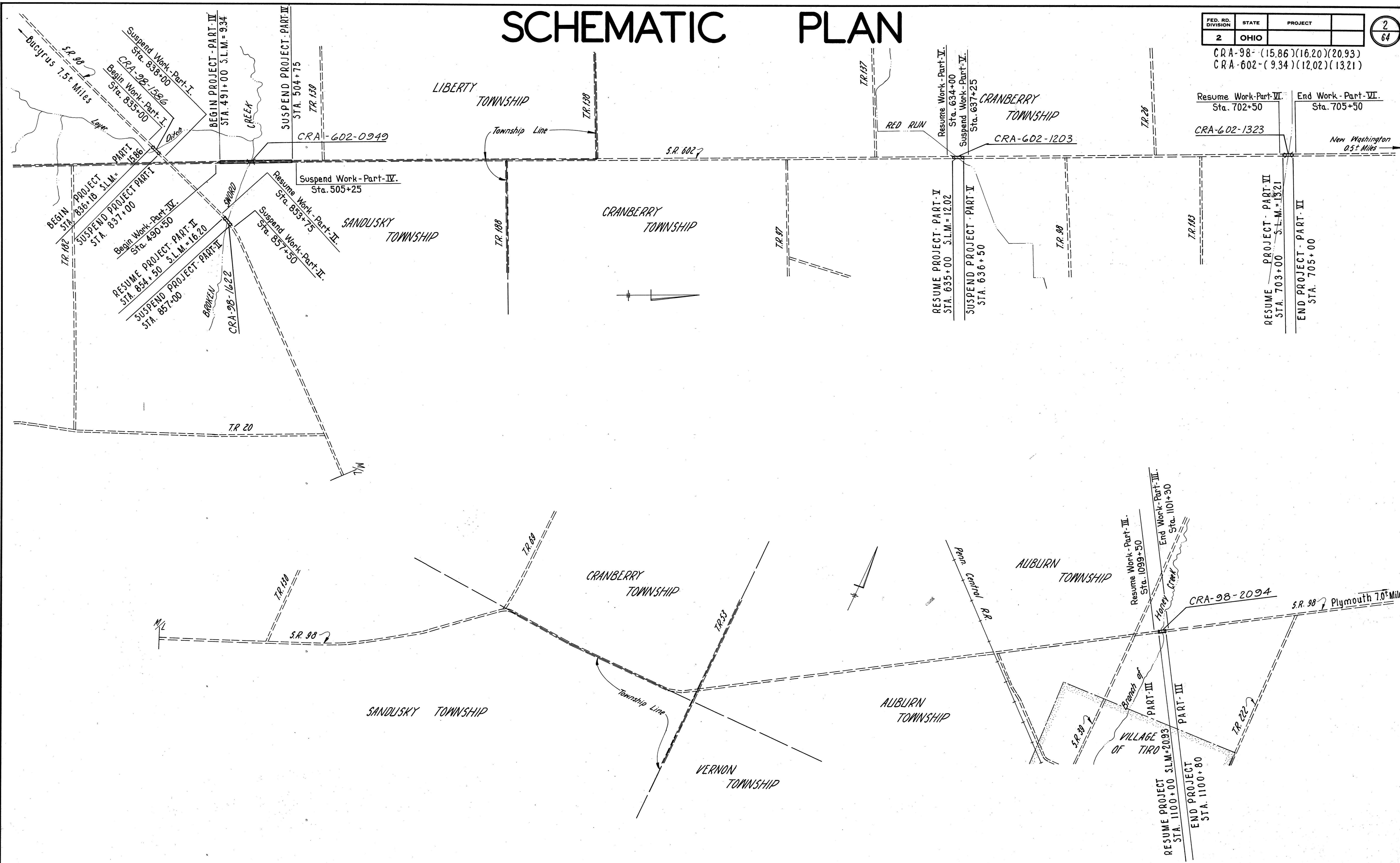
SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT	2 64
2	OHIO		

CRA-98-(15.86)(16.20)(20.93)
CRA-602-(9.34)(12.02)(13.21)

Resume Work-Part-VI Sta. 702+50
End Work-Part-VI Sta. 705+50

CRA-602-1323
New Washington 0.5± Miles



SCALE: 1" = 800'±

NOTE: All Angles at change of Slope shall have a 4' Rounding unless otherwise shown

TYPICAL SECTIONS

TYPE 404 ON 301

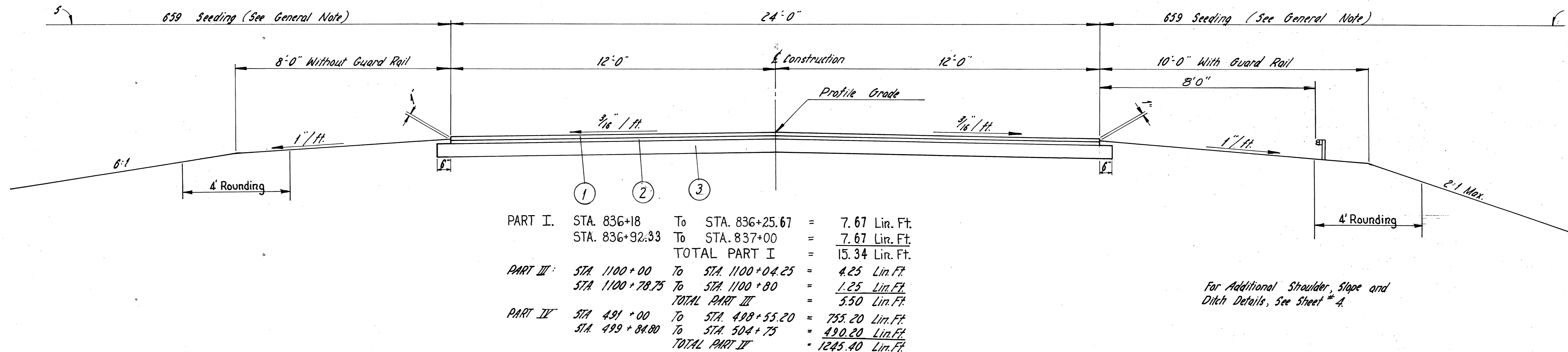
TYPICAL "A" - NORMAL SECTION

Calc. By - M.M. 1-70
Chkd. By - P.G. 1-70

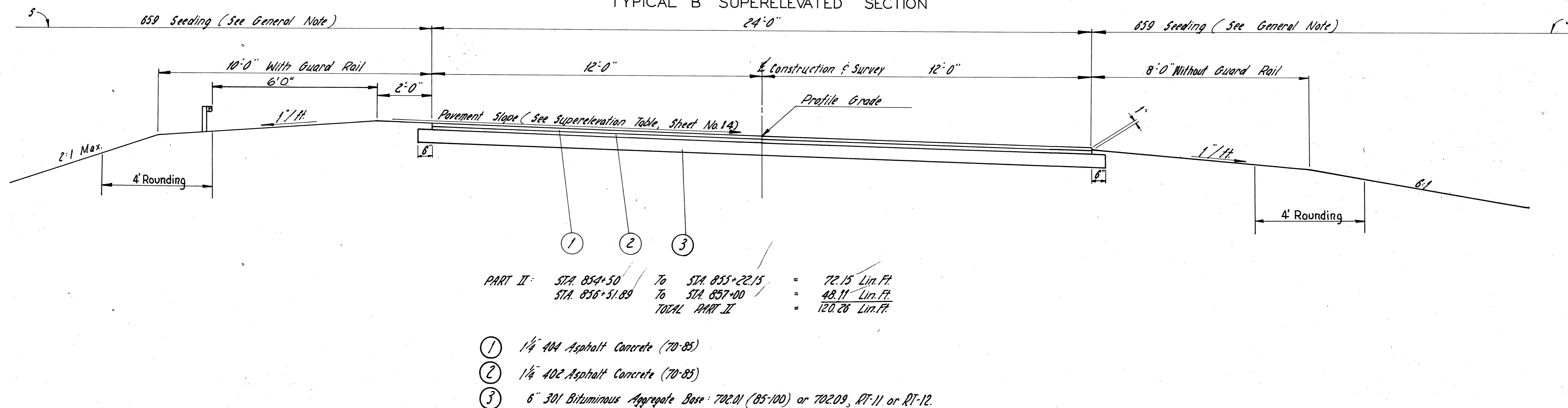
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

3
64

CRA-98-(15.86)(16.20)(20.93)
CRA-602-(9.34)(12.02)(13.21)



TYPICAL "B" SUPERELEVATED SECTION



NOTE: All Angles at change of Slope shall have a 4" Rounding unless otherwise shown.

TYPICAL SECTIONS

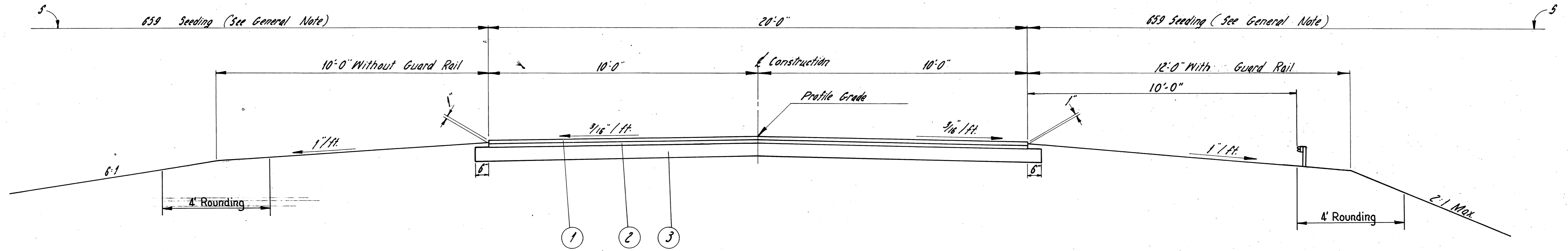
TYPE 404 ON 301

TYPICAL "C" - NORMAL SECTION

Calc. By: PAM 1-70
 Chkd By: PG 1/0

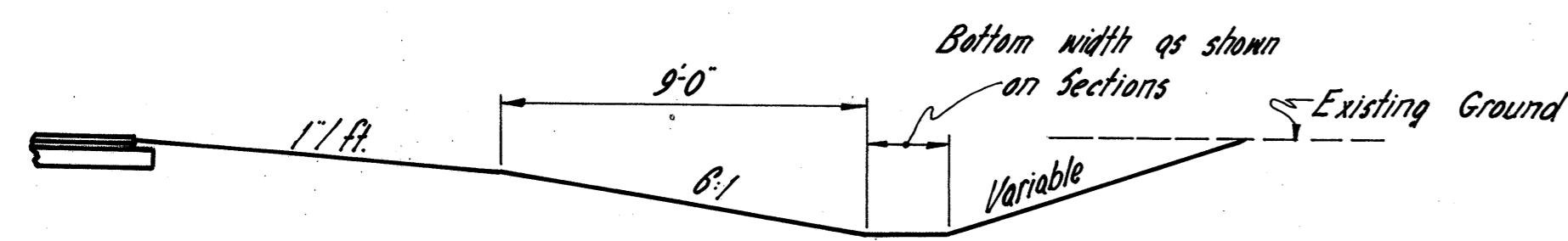
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

CRA-98-(15.86)(16.20)(20.93)
 CRA-802-(9.34)(12.02)(13.21)

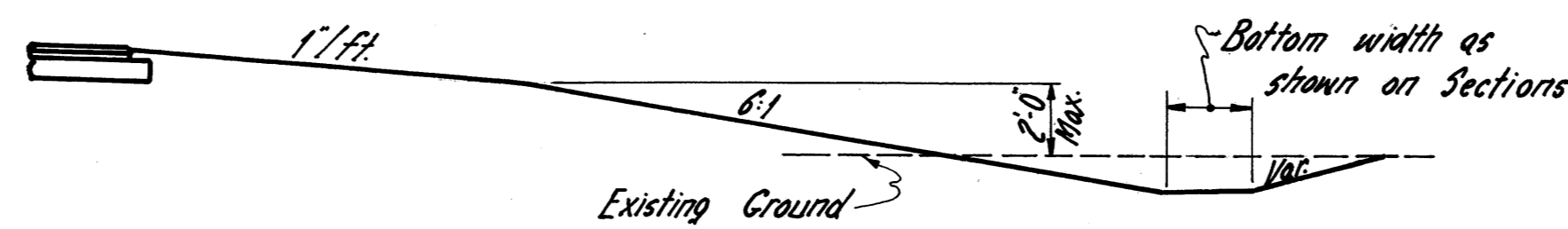


Part I STA. 635+00 To STA. 636+50 = 150.00 Lin. Ft.
 Part II STA. 703+00 To STA. 705+00 = 200.00 Lin. Ft.

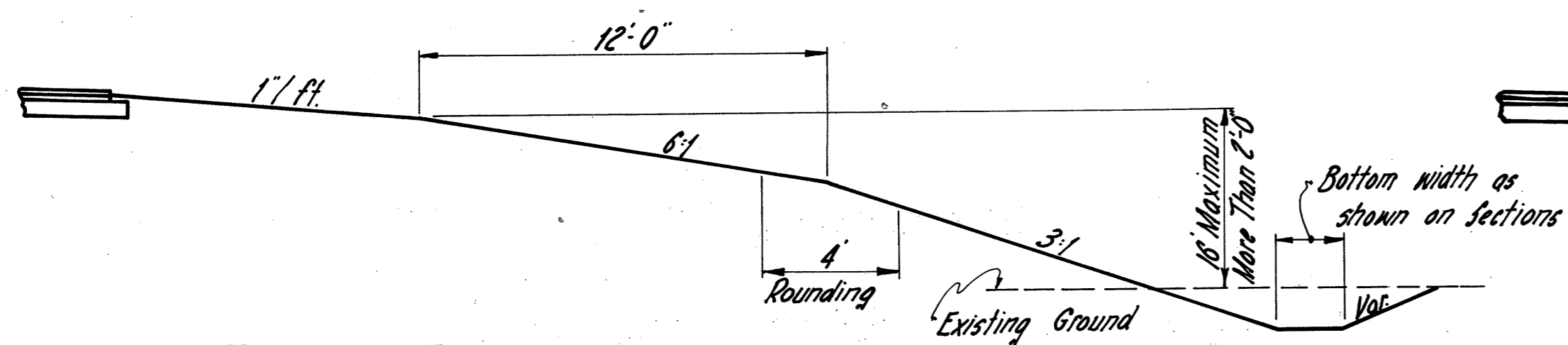
- ① 1 1/2" 404 Asphalt Concrete (70-85)
- ② 1 1/2" 402 Asphalt Concrete (70-85)
- ③ 6" 301 Bituminous Aggregate Base: 702.01 (85-100) or 702.09, RT-11 or RT-12



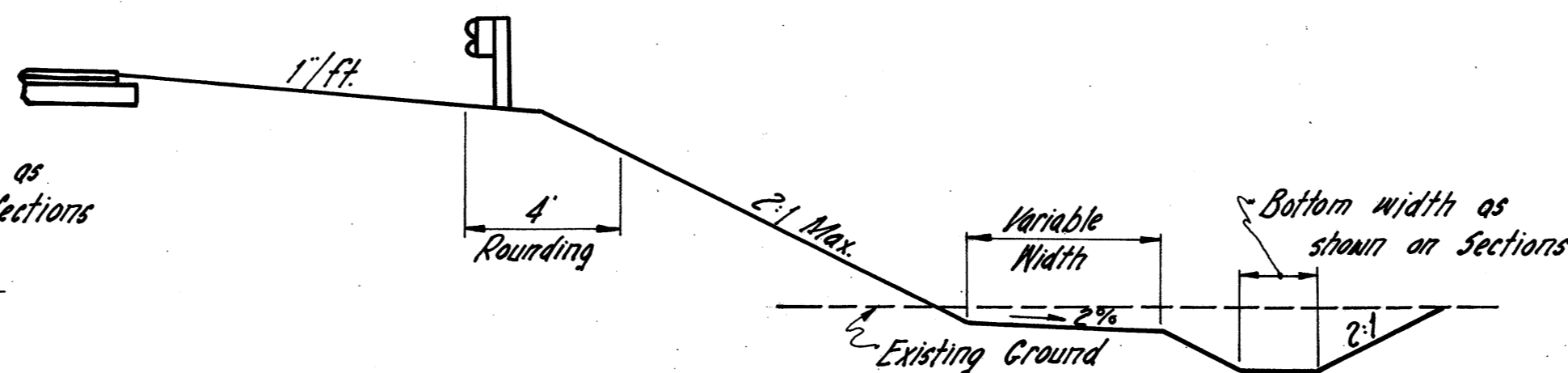
CUT SECTIONS



LOW FILL

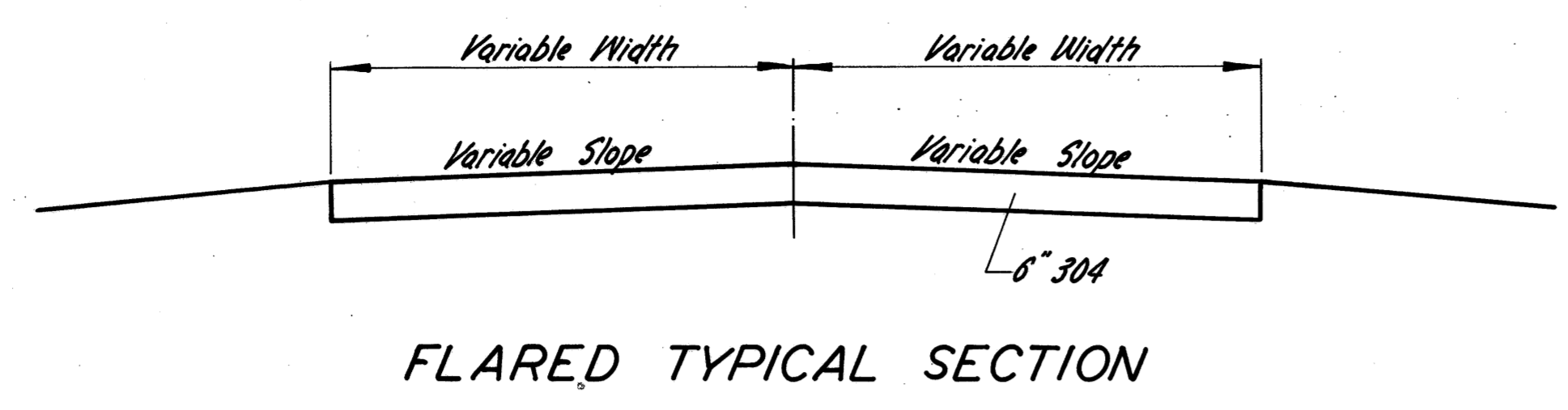


MEDIUM FILL

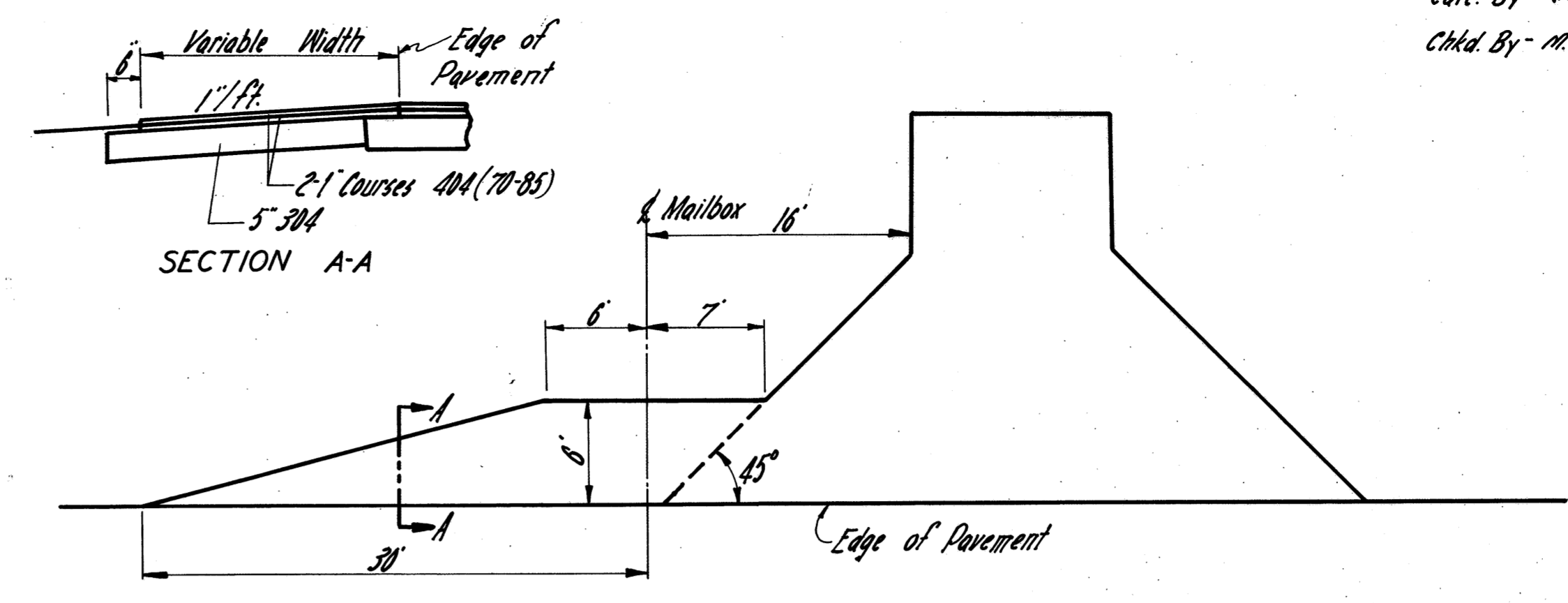


WITH GUARD RAIL

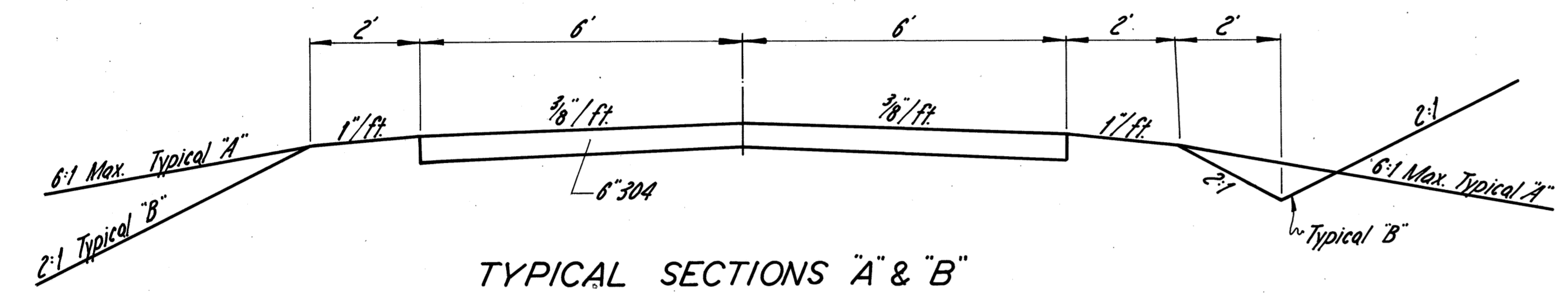
SHOULDER, SLOPE AND DITCH DETAILS



FLARED TYPICAL SECTION

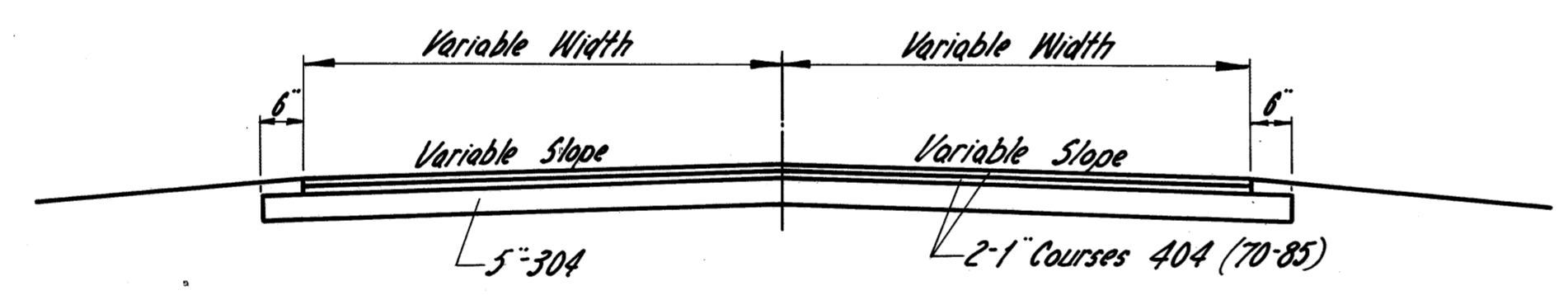


TYPICAL MAILBOX TURNOUT COMBINED WITH DRIVE
 FOR ESTIMATED QUANTITIES, SEE RESPECTIVE PLAN SHEET

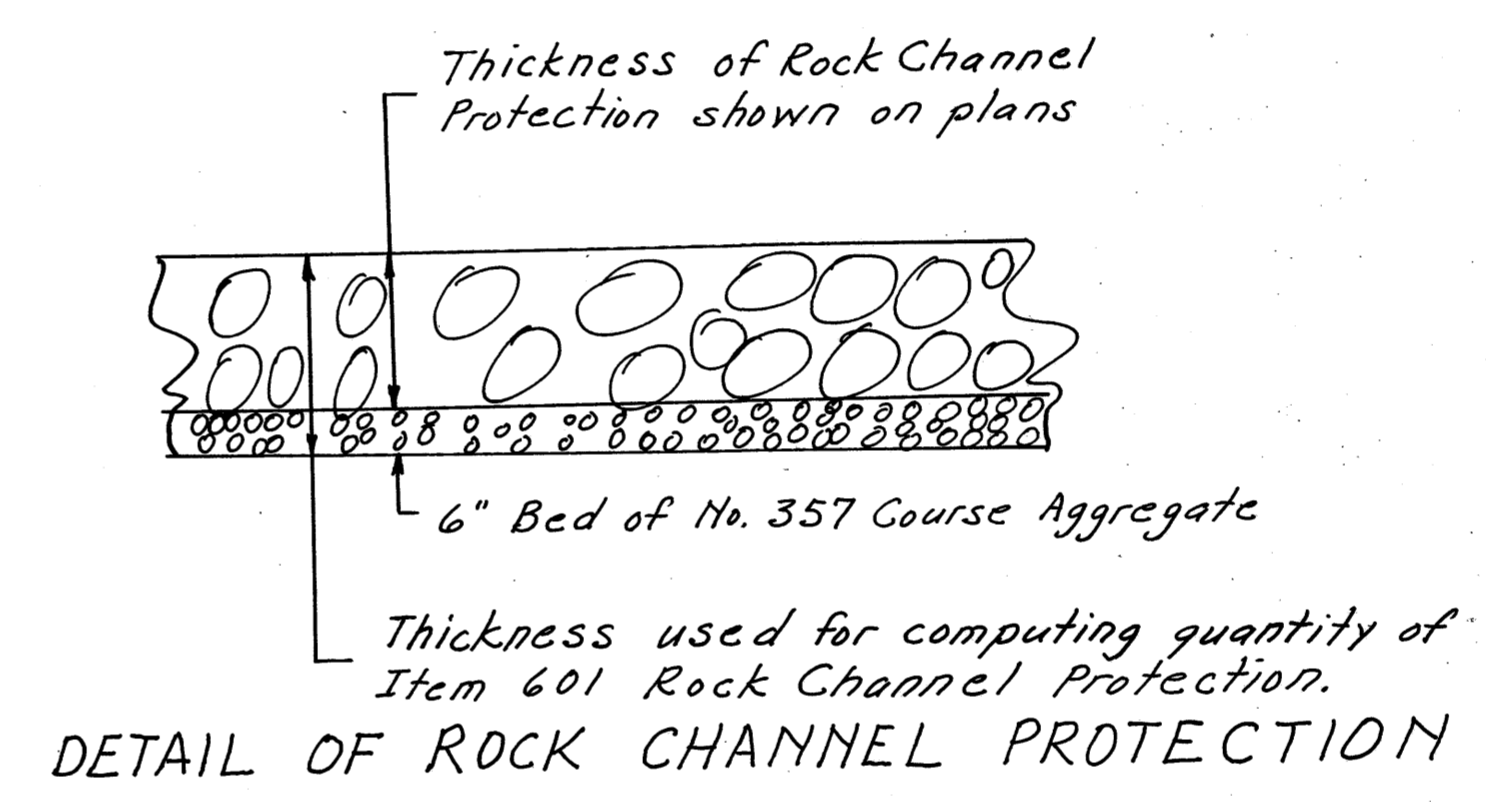


TYPICAL SECTIONS A & B

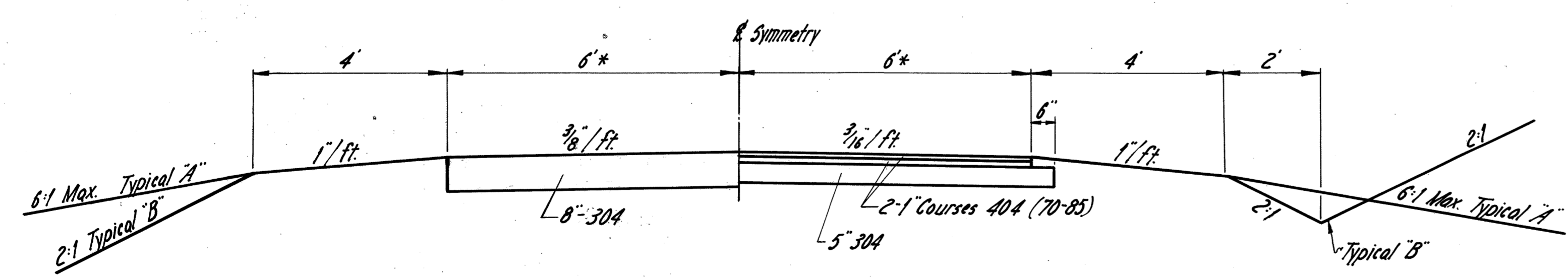
FIELD DRIVE TYPICALS



FLARED TYPICAL SECTIONS

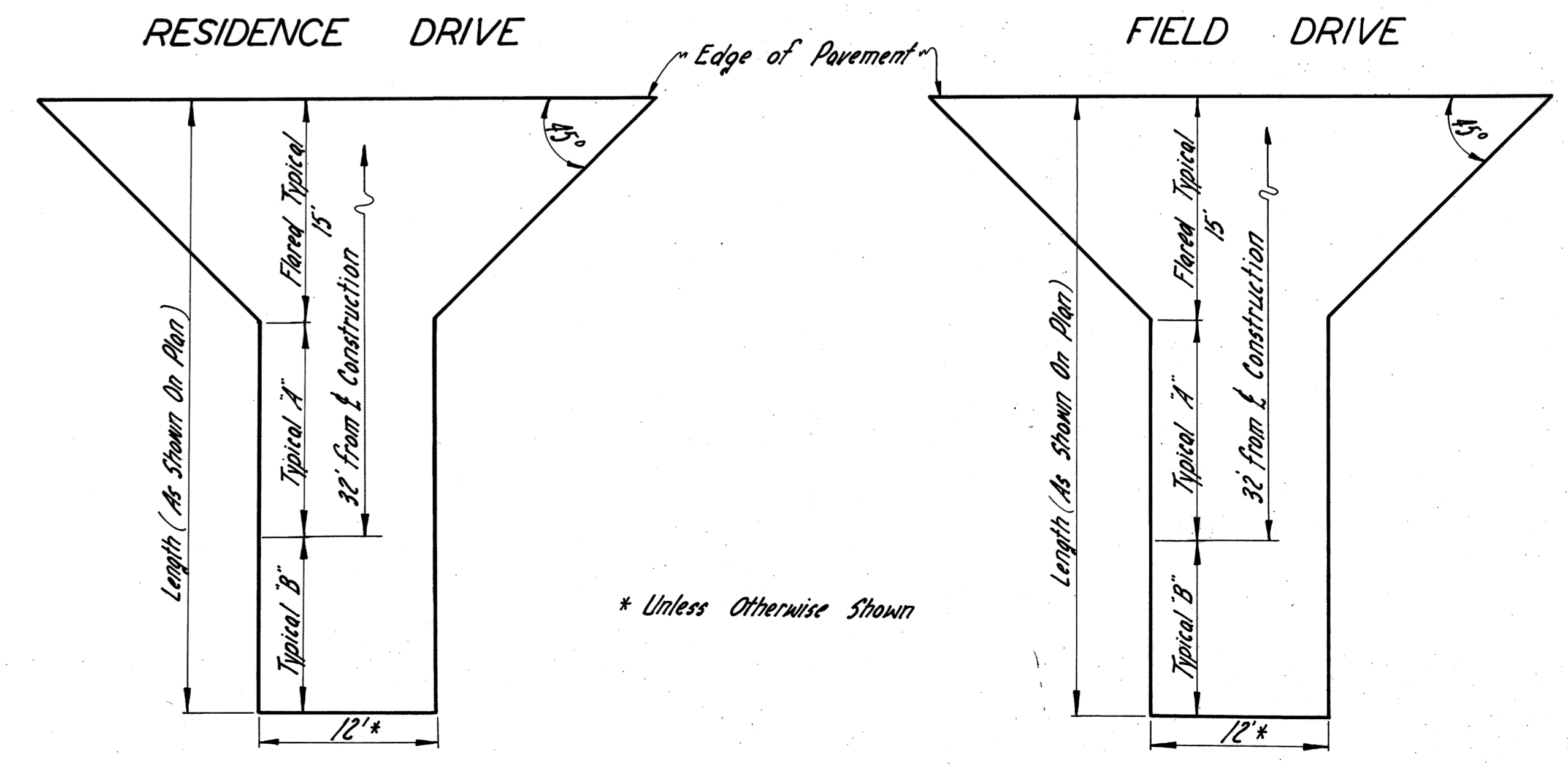


DETAIL OF ROCK CHANNEL PROTECTION



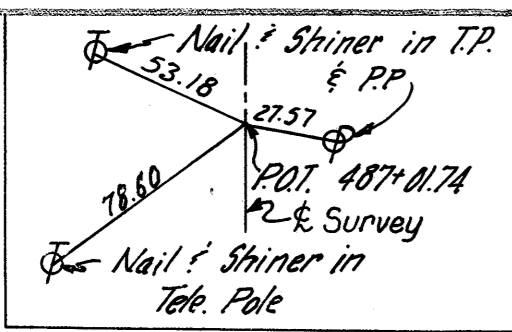
* Unless Otherwise Shown TYPICAL HALF SECTIONS A & B

RESIDENCE TYPICALS

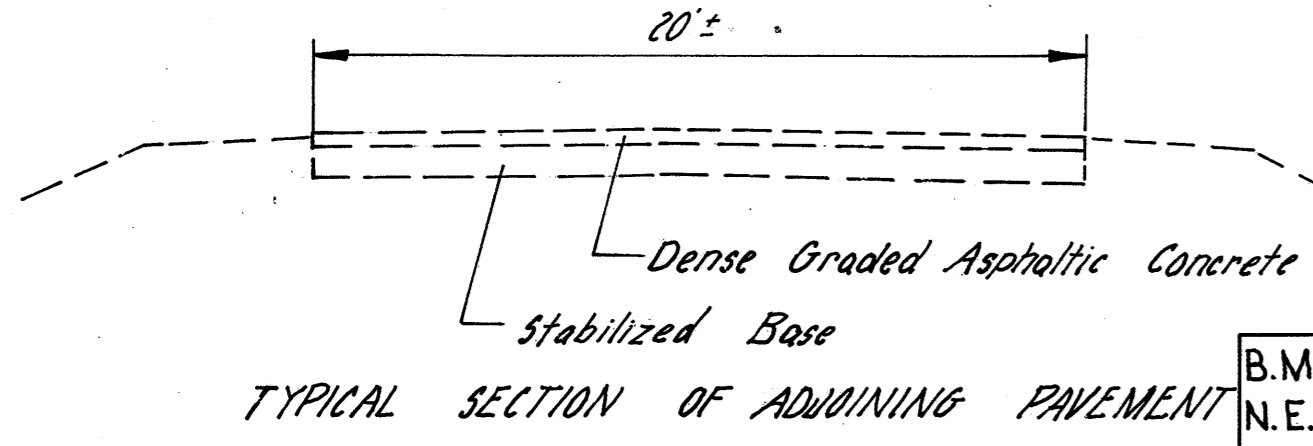
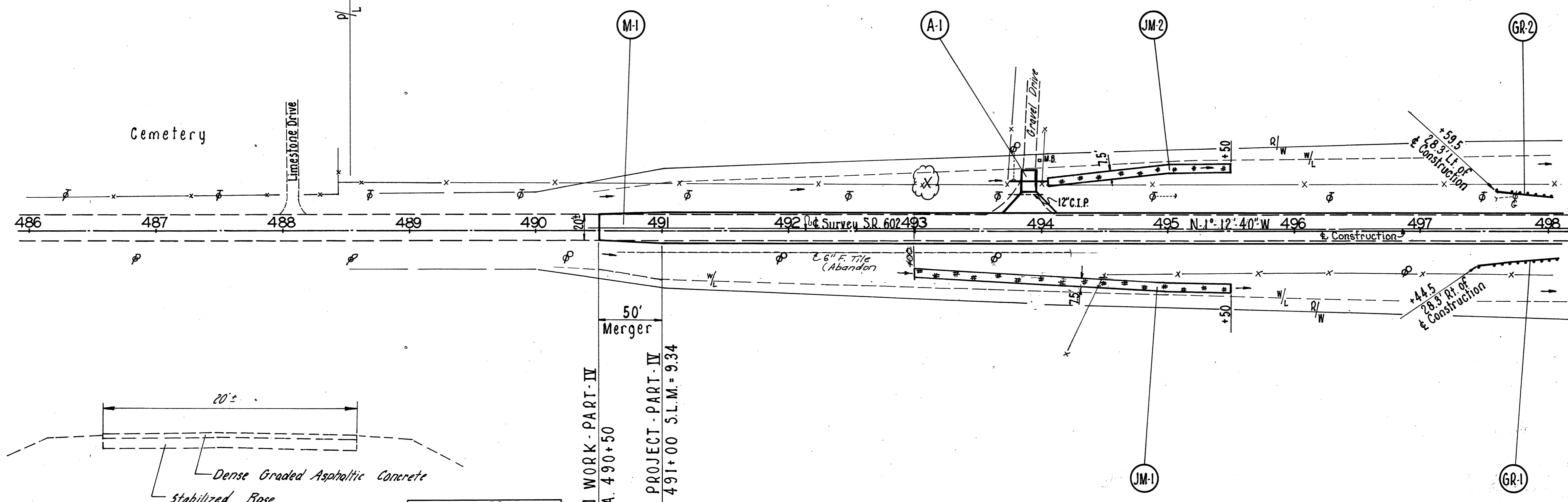


TYPICAL DRIVE DETAILS

* Unless Otherwise Shown



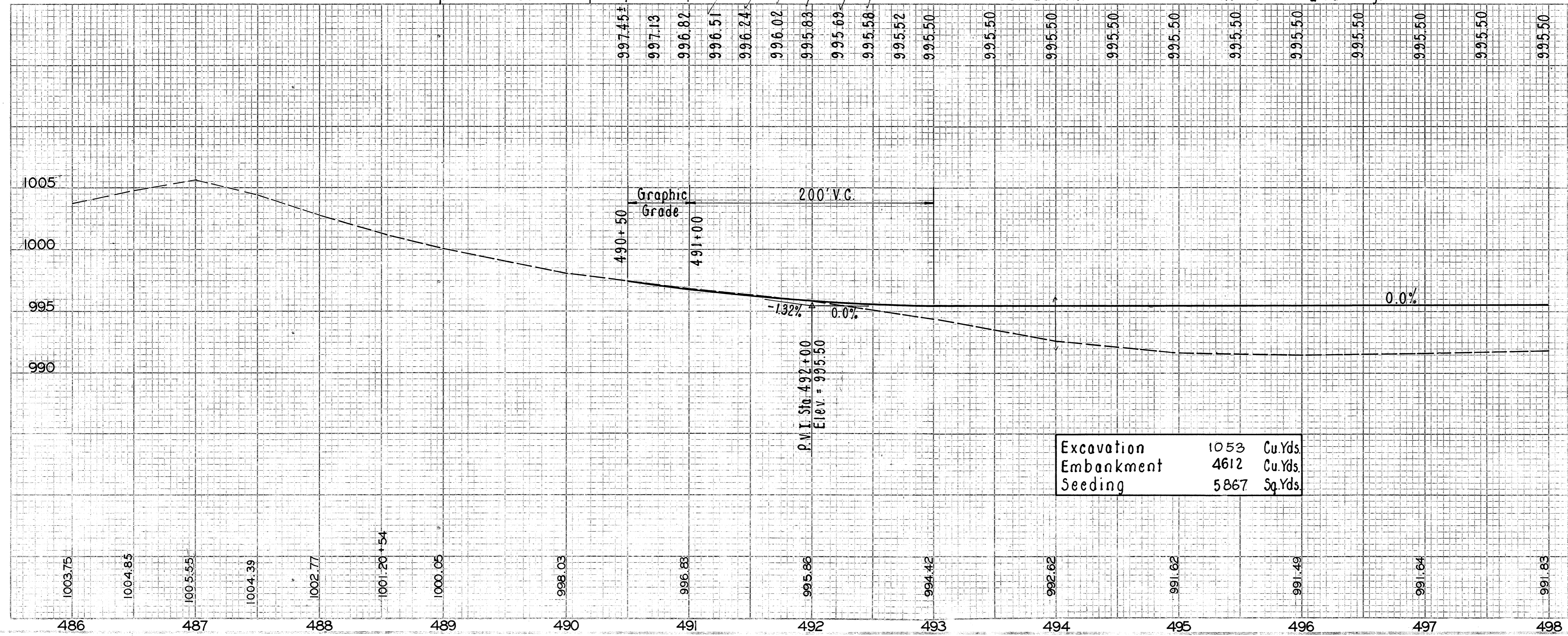
Calc. By: R.M. 1-70
Chk. By: W.T. 1-70



B.M. Chiseled 'X' on N. End N.E. Wingwall of Bridge
CRA-602-0949
Elevation 993.31

NOTE: See General Note for allowable rate of Embankment Construction.

NOTE: Construction & (of Proposed Pavement) is 2.0' Left of & Survey.

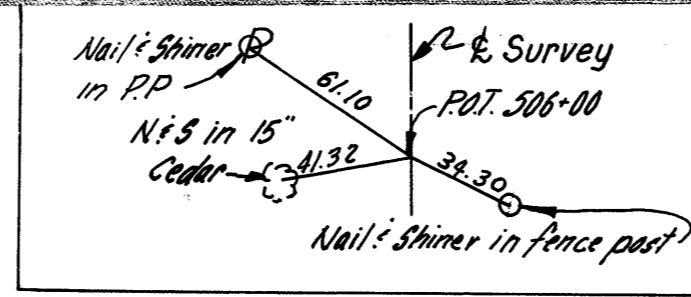


Excavation	1053	Cu.Yds.
Embankment	4612	Cu.Yds.
Seeding	5867	Sq.Yds.

Ref. No.	Station	Item	Unit	Quantity
A-1	493+90 Lt. L=34'	Pipe Removed 24" & Under	Lin. Ft.	28
GR-1	497+44.5 to 498+00 Rt.	Asphalt Concrete (70-85)	Cu.Yds	4.2
GR-2	497+59.5 to 498+00 Lt.	Asphalt Concrete (70-85)	Cu.Yds	4.2
JM-1	493+00 to 495+50 Rt.	Aggregate Base	Cu.Yds	21.3
JM-2	494+05 to 495+50 Lt.	Aggregate Base	Cu.Yds	21.3
M-1	490+50 to 491+00	Aggregate Base	Cu.Yds	21.3
		Bituminous Aggregate Base	Cu.Yds	21.3
		Approach End Assembly	Each	2
		Guard Rail Type-5	Lin. Ft.	96.0
		Seeding And Jute Matting	Sq.Yds.	329
		Subgrade Compaction	Sq.Yds.	122
		Totals		

EXISTING BRIDGE DATA
 CRA-602-0949
 TYPE: Steel Truss (Low)
 SPAN: 58'-0"
 WIDTH: 18'-0"
 SKEW: 0°
 CONDITION: Fair to Poor
 DATE BUILT: Unknown
 LOADING: 5-19.4
 SUBSTRUCTURE: Concrete Gravity
 WEARING SURFACE: Timber & Macadam
 ALIGNMENT: Tangent
 To Be Removed

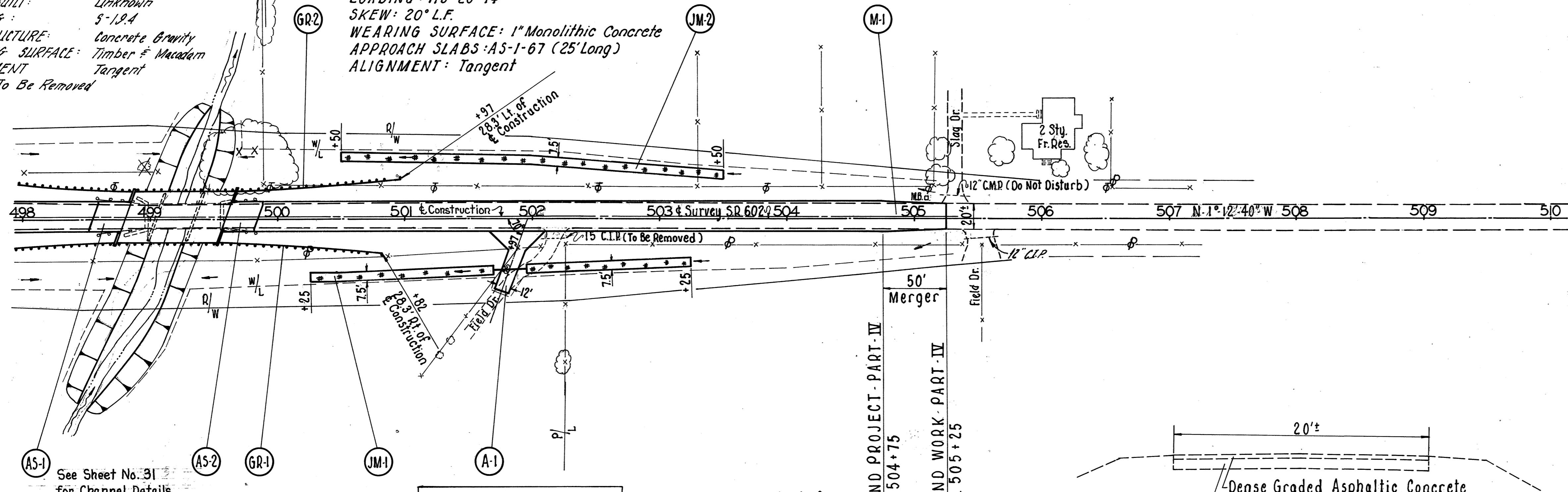
PROPOSED STRUCTURE
 CRA-602-0949
 TYPE: Continuous Reinforced Concrete Slab With
 Capped Pile Substructure.
 SPANS: 24'-0" - 30'-0" - 24'-0" c/c Bearings
 ROADWAY: 40'-0" F/F Guard Rail
 LOADING: HS-20-44
 SKEW: 20° L.F.
 WEARING SURFACE: 1" Monolithic Concrete
 APPROACH SLABS: AS-1-67 (25' Long)
 ALIGNMENT: Tangent



FED. RD. DIVISION	STATE	PROJECT	25 64
2	OHIO		

CRA-98-(15.86)(16.20)(20.93)
 CRA-602-(9.34)(12.02)(13.21)
 PART IV

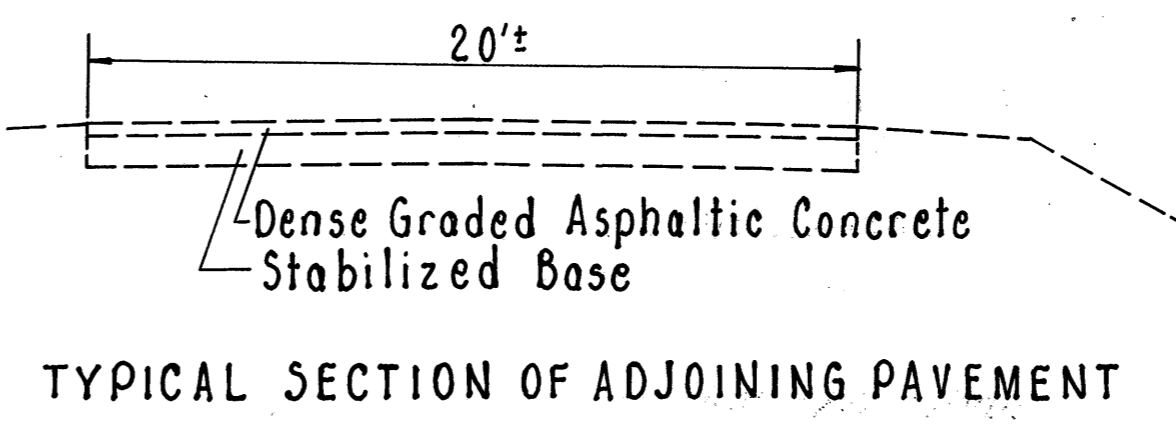
Calc. By: P.G. 1-70
 Chk. By: W.T. 1-70



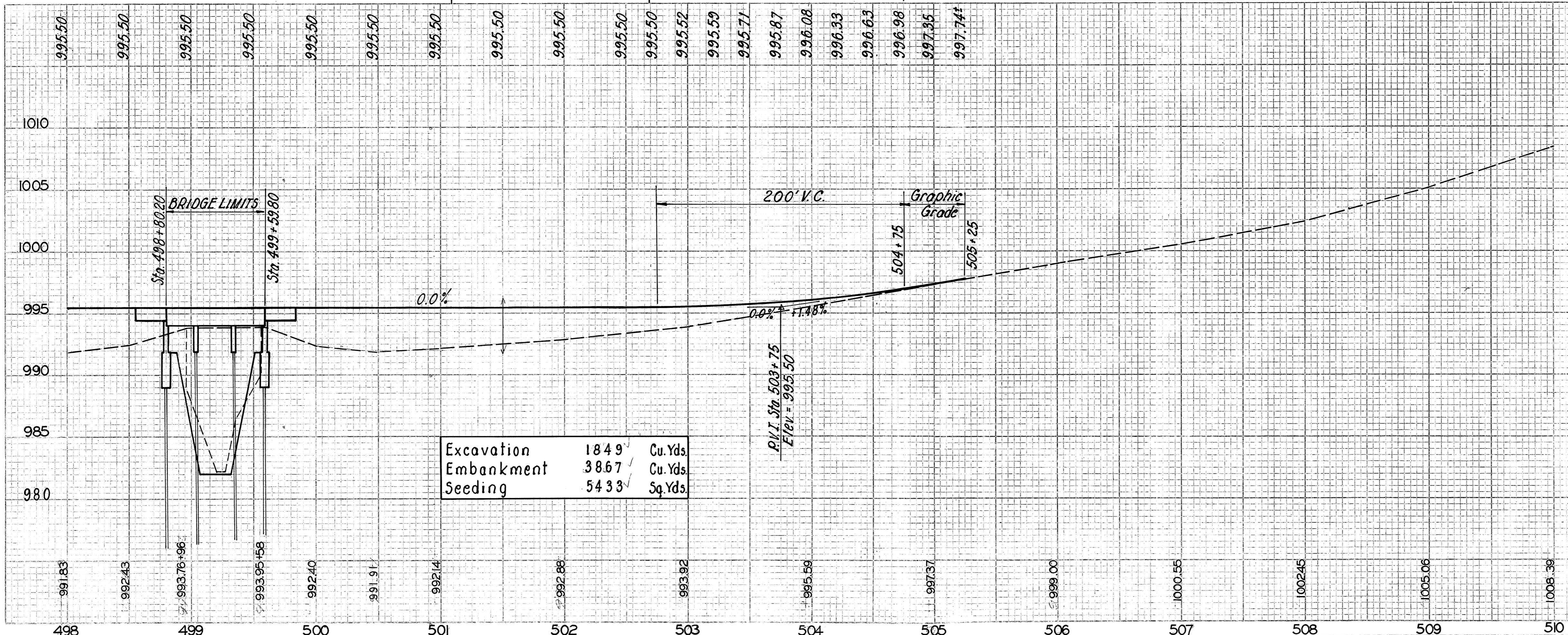
NOTE: See General Note for allowable rate of Embankment Construction.

B.M. Chiseled 'X' on N. End N.E. Wingwall of Bridge
 CRA-602-0949
 Elevation 993.31'

NOTE: Construction & (± of Proposed Pavement) is 2.0' Left of & Survey.



Station	Ref. No.	Description	Unit	Quantity	Notes
498+00 to 499+00	AS-1	Asphalt Concrete (70-85)	Cu. Yds.	1849	
498+00 to 499+00	AS-2	Asphalt Concrete (70-85)	Cu. Yds.	3867	
498+00 to 499+00	GR-1	Seeding	Sq. Yds.	5433	
499+00 to 500+00	JM-1	Excavation	Cu. Yds.	1849	
499+00 to 500+00	JM-2	Excavation	Cu. Yds.	1849	
499+00 to 500+00	M-1	Excavation	Cu. Yds.	1849	
500+00 to 501+00	AS-1	Asphalt Concrete (70-85)	Cu. Yds.	1849	
500+00 to 501+00	AS-2	Asphalt Concrete (70-85)	Cu. Yds.	3867	
500+00 to 501+00	GR-1	Seeding	Sq. Yds.	5433	
501+00 to 502+00	JM-1	Excavation	Cu. Yds.	1849	
501+00 to 502+00	JM-2	Excavation	Cu. Yds.	1849	
501+00 to 502+00	M-1	Excavation	Cu. Yds.	1849	
502+00 to 503+00	AS-1	Asphalt Concrete (70-85)	Cu. Yds.	1849	
502+00 to 503+00	AS-2	Asphalt Concrete (70-85)	Cu. Yds.	3867	
502+00 to 503+00	GR-1	Seeding	Sq. Yds.	5433	
503+00 to 504+00	JM-1	Excavation	Cu. Yds.	1849	
503+00 to 504+00	JM-2	Excavation	Cu. Yds.	1849	
503+00 to 504+00	M-1	Excavation	Cu. Yds.	1849	
504+00 to 505+00	AS-1	Asphalt Concrete (70-85)	Cu. Yds.	1849	
504+00 to 505+00	AS-2	Asphalt Concrete (70-85)	Cu. Yds.	3867	
504+00 to 505+00	GR-1	Seeding	Sq. Yds.	5433	
505+00 to 506+00	JM-1	Excavation	Cu. Yds.	1849	
505+00 to 506+00	JM-2	Excavation	Cu. Yds.	1849	
505+00 to 506+00	M-1	Excavation	Cu. Yds.	1849	
506+00 to 507+00	AS-1	Asphalt Concrete (70-85)	Cu. Yds.	1849	
506+00 to 507+00	AS-2	Asphalt Concrete (70-85)	Cu. Yds.	3867	
506+00 to 507+00	GR-1	Seeding	Sq. Yds.	5433	
507+00 to 508+00	JM-1	Excavation	Cu. Yds.	1849	
507+00 to 508+00	JM-2	Excavation	Cu. Yds.	1849	
507+00 to 508+00	M-1	Excavation	Cu. Yds.	1849	
508+00 to 509+00	AS-1	Asphalt Concrete (70-85)	Cu. Yds.	1849	
508+00 to 509+00	AS-2	Asphalt Concrete (70-85)	Cu. Yds.	3867	
508+00 to 509+00	GR-1	Seeding	Sq. Yds.	5433	
509+00 to 510+00	JM-1	Excavation	Cu. Yds.	1849	
509+00 to 510+00	JM-2	Excavation	Cu. Yds.	1849	
509+00 to 510+00	M-1	Excavation	Cu. Yds.	1849	
Totals					



Excavation	1849	Cu. Yds.
Embankment	3867	Cu. Yds.
Seeding	5433	Sq. Yds.

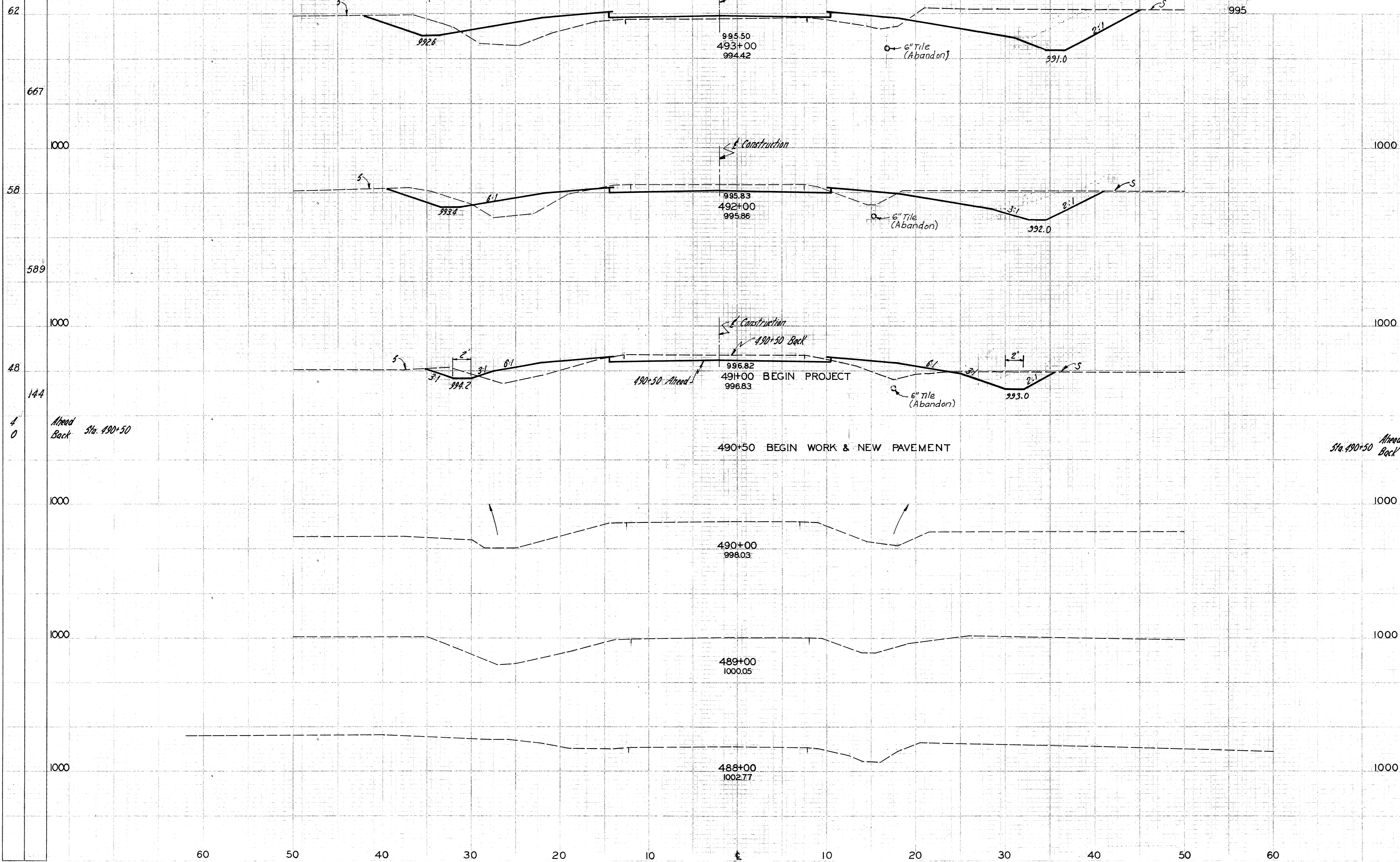
SEEDING
END WIDTH
YDS

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

26
64

CRA-98-(15.86)(16.20)(20.93)
CRA-602-(9.34)(12.02)(13.21)
PART II

Calc: M.M. 6/69
Chkd: R.M. 6/69



END AREA	CUT	FILL	CUT	FILL
79	40			

		257	115
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60	22		
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		163	89
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28	26		
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		40	24
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15	0		
0	0		

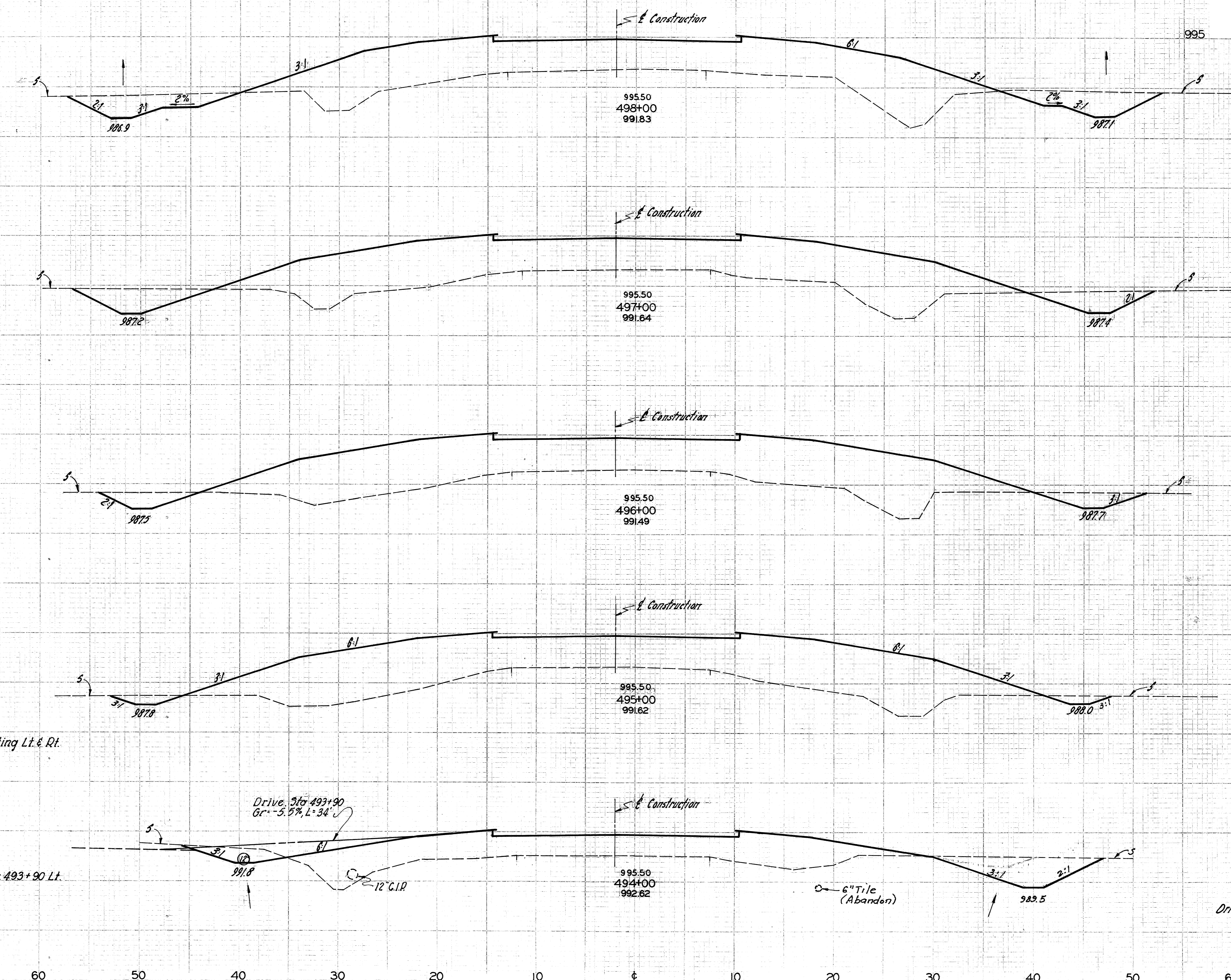
SEEDING	END WIDTH	60	50	40	30	20	10	Survey	10	20	30	40	50	60
80	94													
80	1039													
80	1011													
80	956													
80	83													
246	839													
70	722													
62														

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CRA-98-(15.86)(16.20)(20.93)
 CRA-002-(2.34)(12.02)(13.21)
 PART II

Calc: M.M. 6/69
 Chkd: R.M. 6/69

END AREA	CUT	FILL	CUT	FILL
44	251			
		143	978	
33	277			
		96	1069	
19	300			
		50	1146	
8	319			
		85	848	
38	139			
		2	12	
		217	331	
79	40			



CROSS SECTIONS STA 494+00 TO STA 498+00

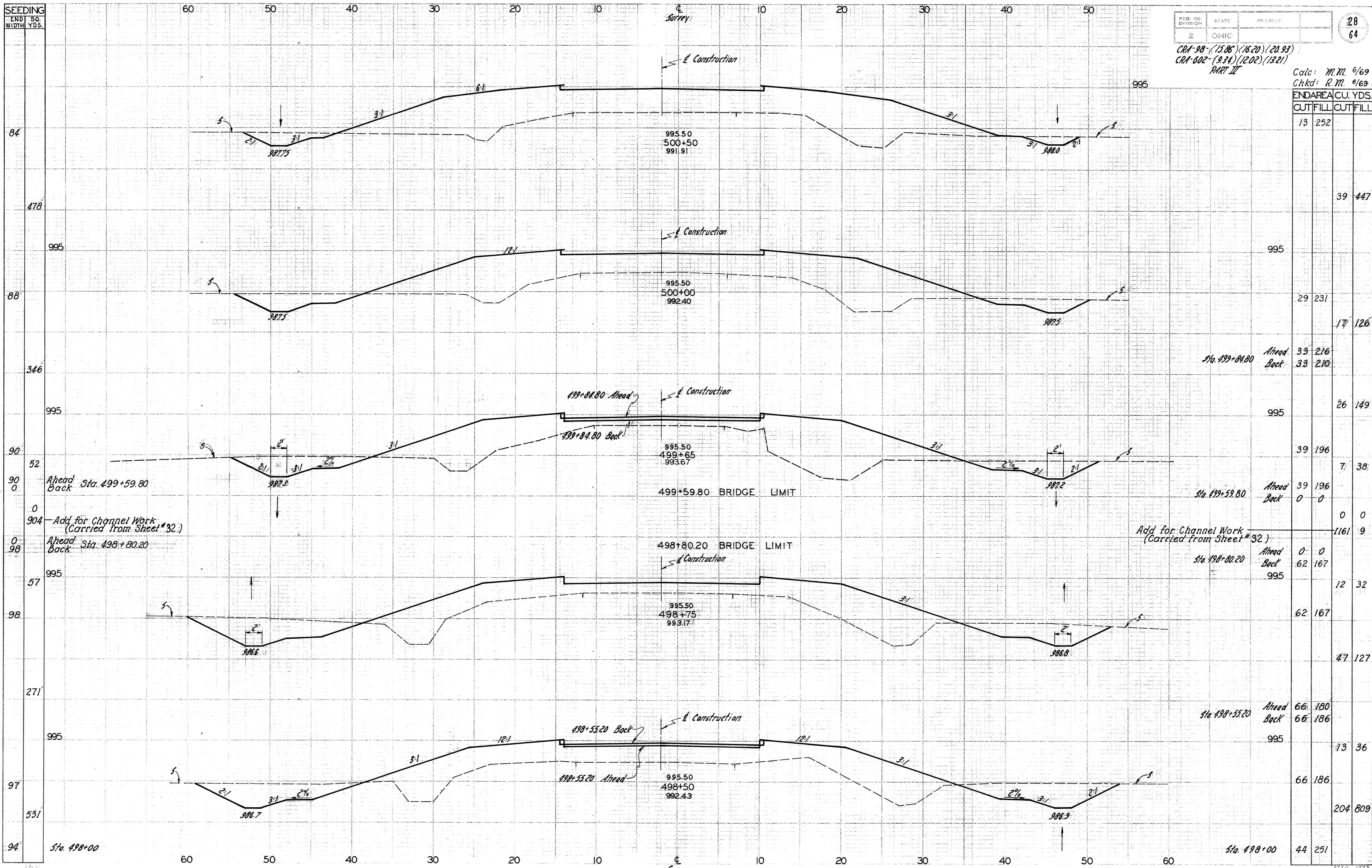
SEEDING
END SO.
WIDTH YDS.

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

CR-98-(15.86)(16.20)(20.93)
CR-602-(9.34)(12.02)(13.21)
PART II

Calc: M.M. 6/69
Chkd: R.M. 6/69

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64



END AREA	CUT	FILL	CUT	FILL
13	252			
		39	447	
		29	231	
		17	126	
33	216			
33	210			
		26	149	
39	196			
7	38			
39	196			
0	0			
		1161	9	
0	0			
62	167			
995				
		12	32	
62	167			
		47	127	
		66	180	
		66	186	
995				
		13	36	
66	186			
		204	809	
44	251			

CROSS SECTIONS-STA 498+50 TO STA 500+50

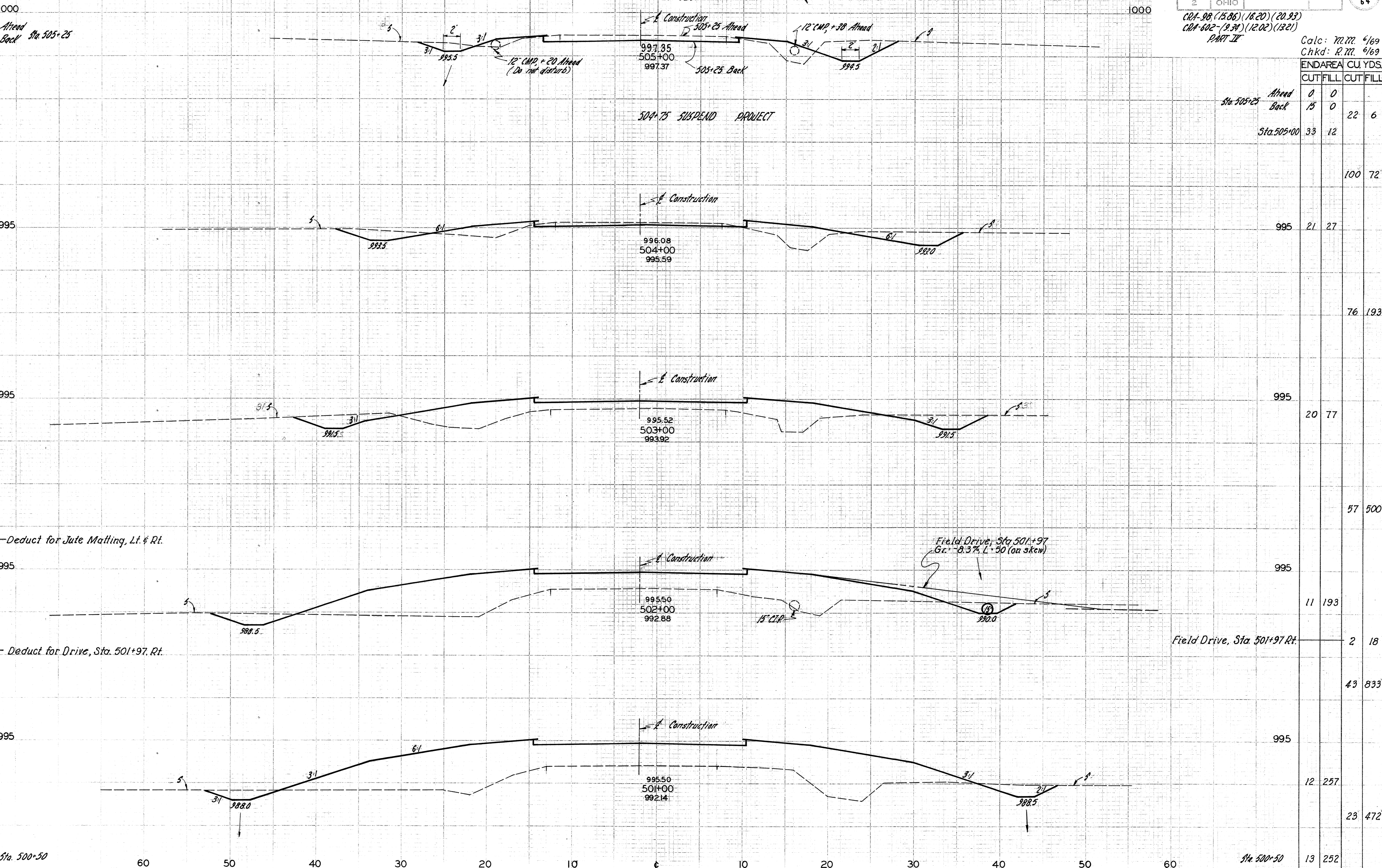
SEEDING	END	Sq.
	WIDTH	YDS.
0		
4		
61		
40		
522		
54		
995		
680		
63		
995		
778		
-478		
995		
77		
-92		
889		
995		
83		
464		
84		

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

CR# 98 (15.88) (16.20) (20.93)
 CR# 602 (9.34) (12.02) (13.21)
 PART II

Calc: M.M. 6/69
 Chkd: R.M. 6/69

29
64



ENDAREA	CUT	FILL	CUT	FILL
0	0	0		
Sta. 505+25	15	0	22	6
Sta. 505+00	33	12		
			100	72
	995	21	27	
			76	193
	995	20	77	
			57	500
	995	11	193	
			2	18
			43	833
	995	12	257	
			23	472
Sta. 500+50	13	252		

CROSS SECTIONS-STA 50+00 TO STA 505+00

SEEDING
END WIDTH SQ. YDS.

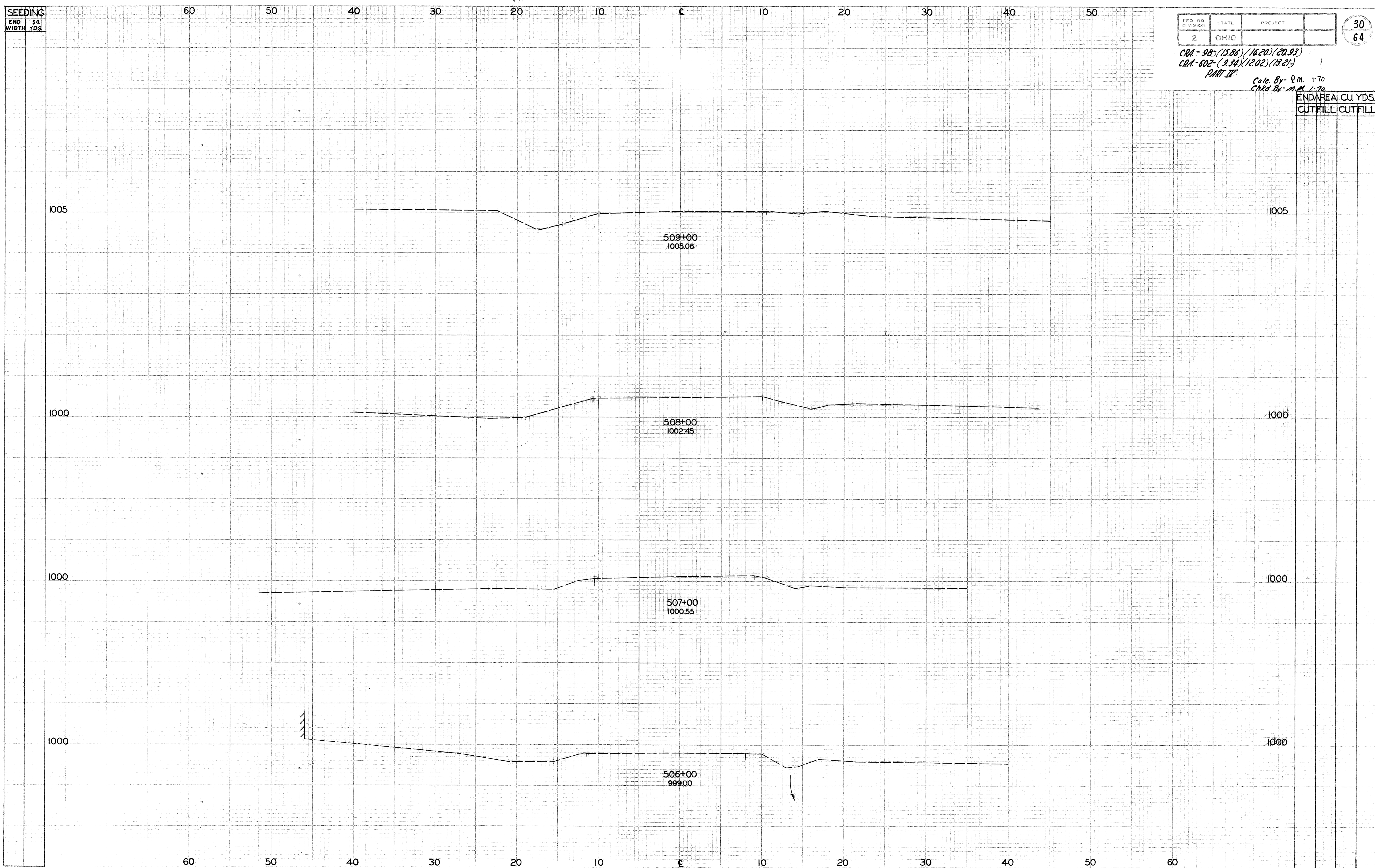
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

30
64

CRA - 98 - (15.86) / (16.20) / (20.93)
CRA - 602 - (9.32) / (12.02) / (13.21)
PART II

Calc. By - R.M. 1-70
Chkd. By - M.M. 1-70

END AREA CU. YDS.
CUT FILL CUT FILL



CROSS SECTIONS-STA 506+00 TO STA 509+00

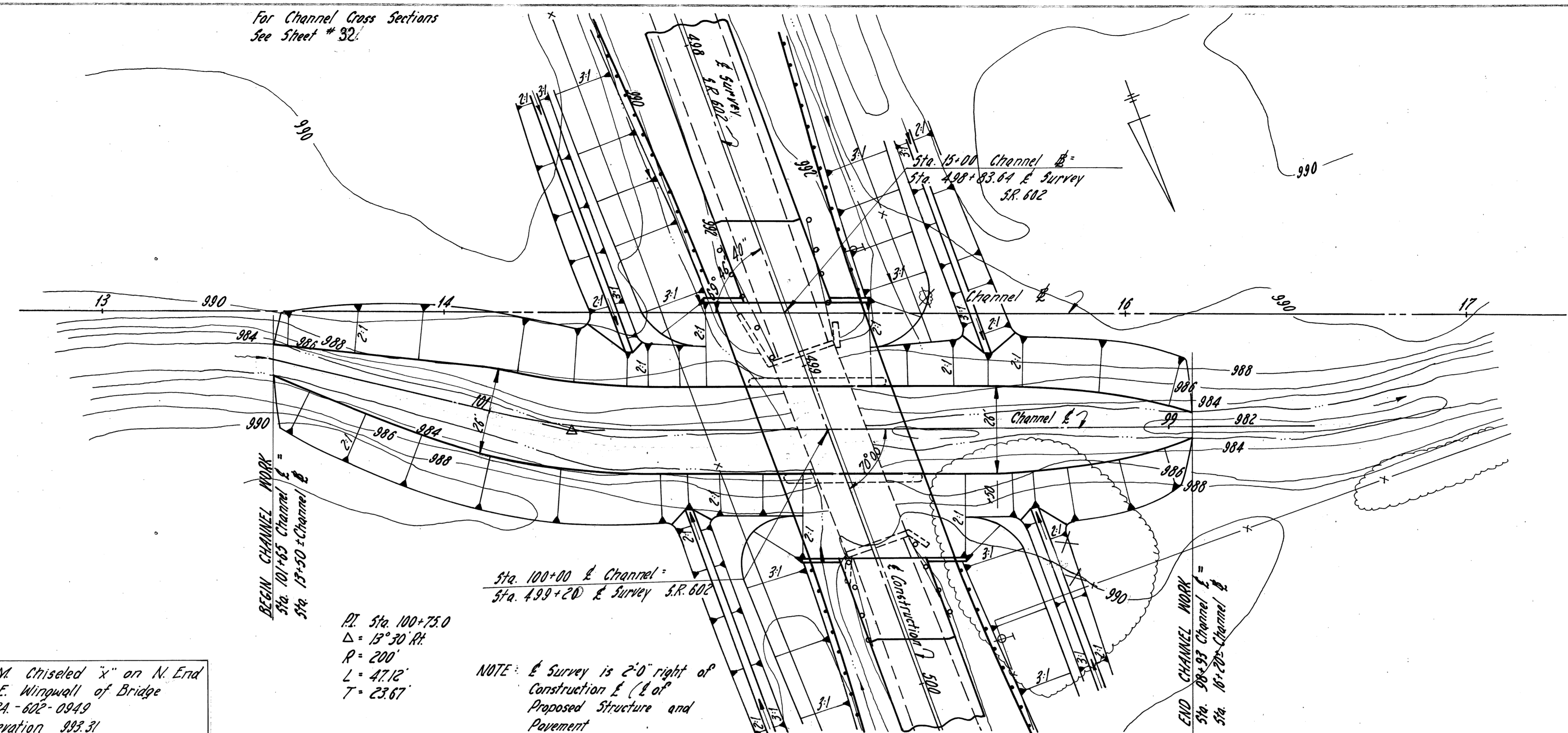
For Channel Cross Sections
See Sheet # 32.

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

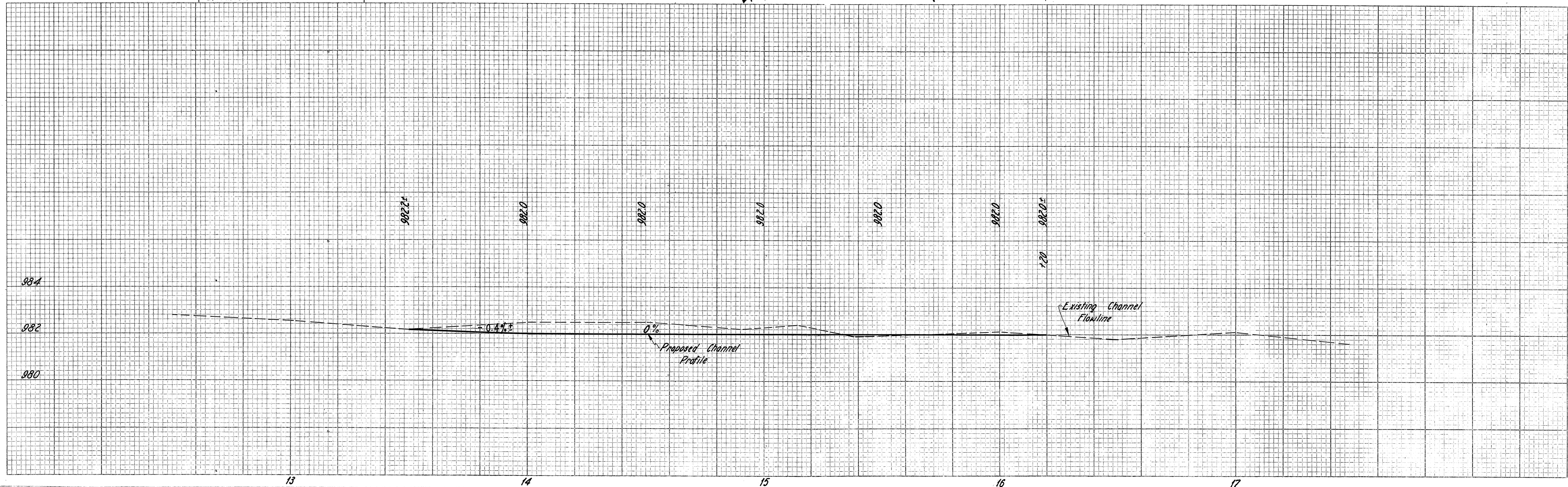
31
64

CRA-98-(15.86)(16.20)(20.97)
CRA-602-(9.34)(12.02)(13.21)
PART-III

Calc. By- 6/69 M.M.
CHKD. By- 4/91 W.T.

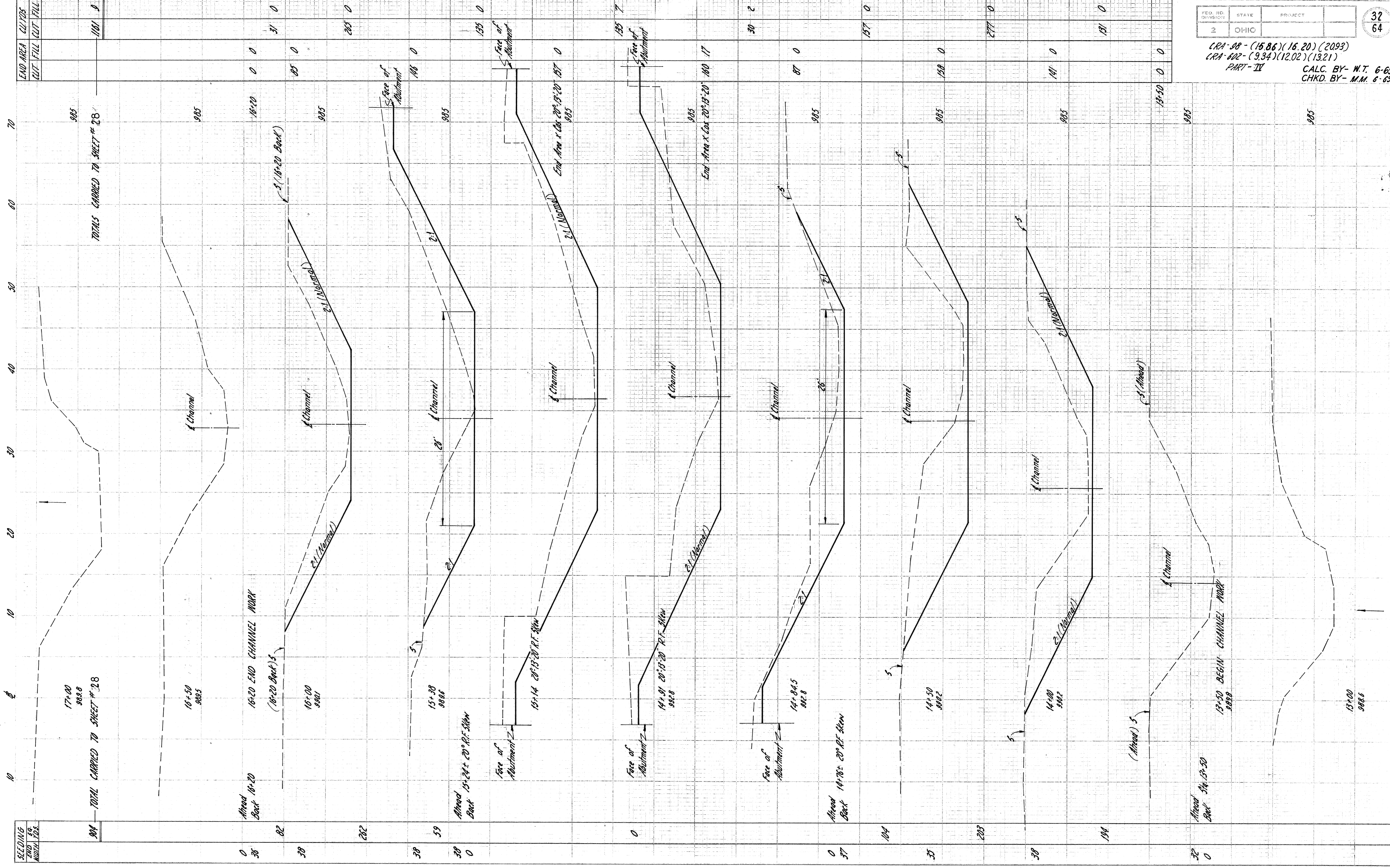


B.M. Chiseled "x" on N. End
N.E. Wingwall of Bridge
CRA-602-0949
Elevation 983.31



SEEDING
END
AREA

CUT FILL CUT FILL
CUT FILL CUT FILL



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CRA-98 - (15.86)(16.20)(2093)
 CRA-602 - (9.34)(12.02)(1321)
 PART - IV
 CALC. BY- W.T. 6-69
 CHKD. BY- M.M. 6-69

32
64

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	70	

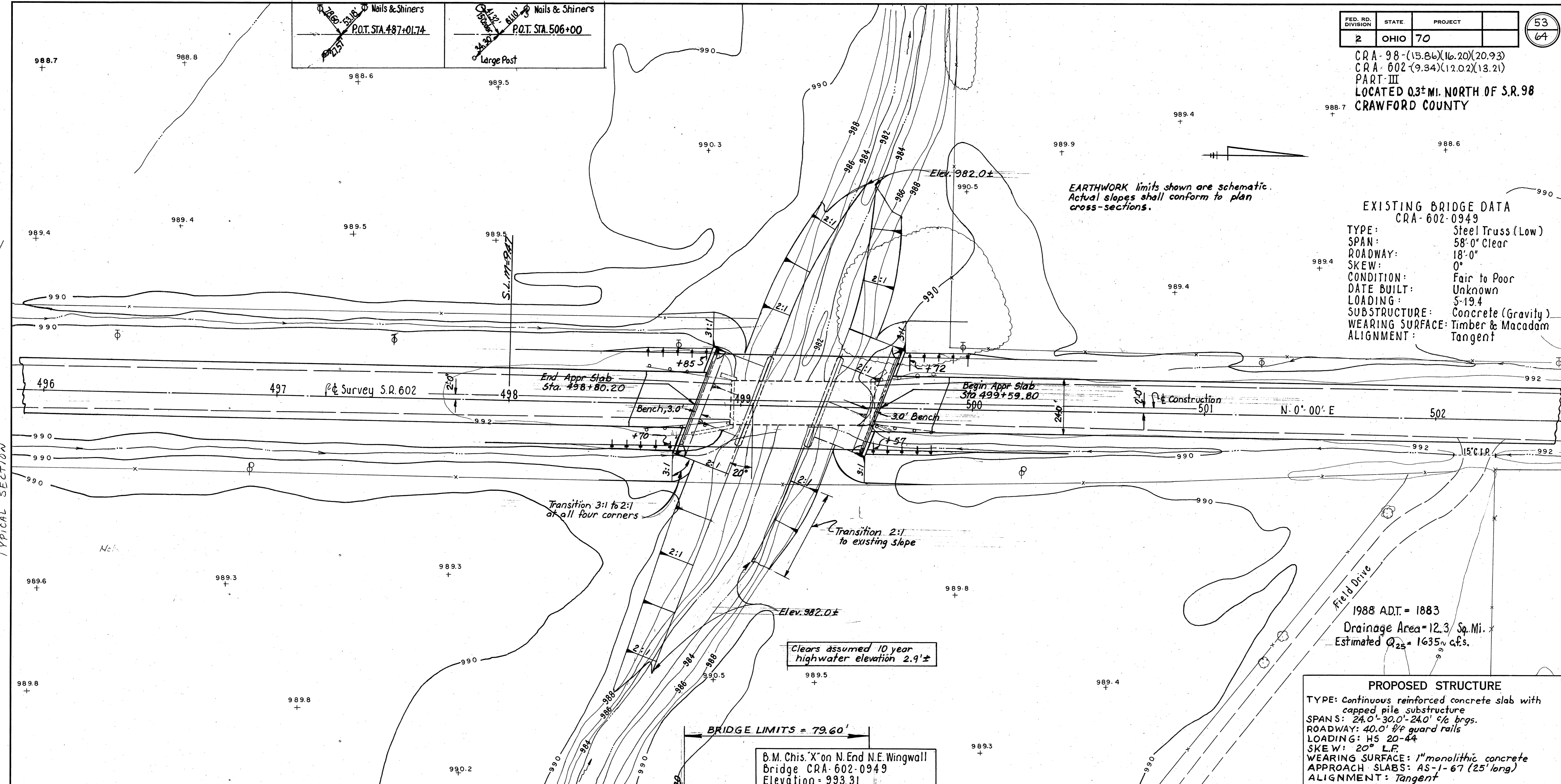
53
64

CRA-98-(15.84)(16.20)(20.93)
CRA-602-(9.34)(12.02)(13.21)
PART-III
LOCATED 0.3± MI. NORTH OF S.R. 98
CRAWFORD COUNTY

EARTHWORK limits shown are schematic.
Actual slopes shall conform to plan
cross-sections.

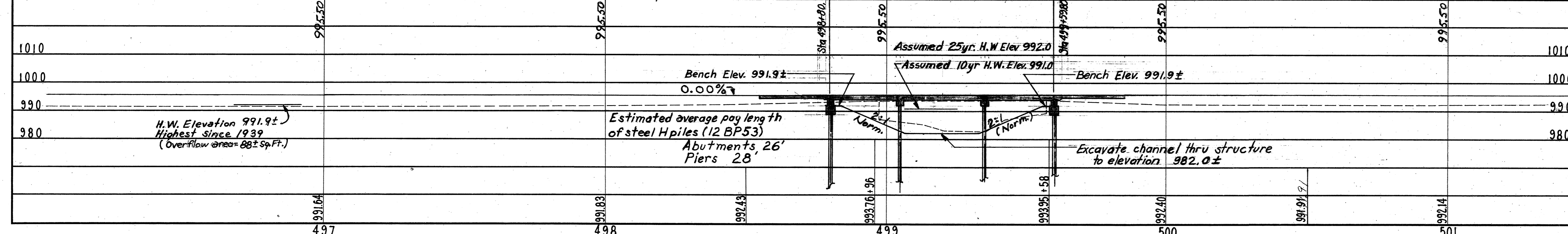
EXISTING BRIDGE DATA
CRA-602-0949
TYPE: Steel Truss (Low)
SPAN: 58'-0" Clear
ROADWAY: 18'-0"
SKEW: 0°
CONDITION: Fair to Poor
DATE BUILT: Unknown
LOADING: 5-19.4
SUBSTRUCTURE: Concrete (Gravity)
WEARING SURFACE: Timber & Macadam
ALIGNMENT: Tangent

Do not ink
2 1/4" Max
12'-0" Construction
20'-0" Survey
20'-0" Survey
3/8" FH
10'-0" To Face of G.R.
1 1/4" FH
Type 404 on 301



1988 ADT = 1883
Drainage Area = 12.3 Sq. Mi.
Estimated $Q_{25} = 1635$ c.f.s.

PROPOSED STRUCTURE
TYPE: Continuous reinforced concrete slab with capped pile substructure
SPANS: 24'-0"-30'-0"-24'-0" c/c brgs.
ROADWAY: 40'-0" w/p guard rails
LOADING: HS 20-44
SKEW: 20° L.R.
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. CRA-602-0949
CRAWFORD CO. Over Broken Sword Creek
SR 602
SEC. STA. 498+80.20
SCALE 1" = 20'
PROPOSED WORK STA. 499+59.80

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
AERIAL SURVEY	AERIAL SURVEY	D.H.S.	D.H.S.	N.J.B.	P.C. &

GENERAL NOTES

REFERENCE shall be made to Standard Drawings A-1-54, revised 11-8-65, P-1-54 revised 11-8-65, and CS-1-65, sheets 1 and 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 - HS 20-44
 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.

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

ENBANKMENT CONSTRUCTION: The embankments shall be constructed to the level of the level of the earth bench. Excavation shall then be made for the abutments and for the benches, and piles driven.

ABUTMENT EXCAVATION QUANTITY, in addition to 503.10, includes the removal of material bounded by the proposed bench, by the front vertical plane described in 503.10 and by the finished slope of the cut.

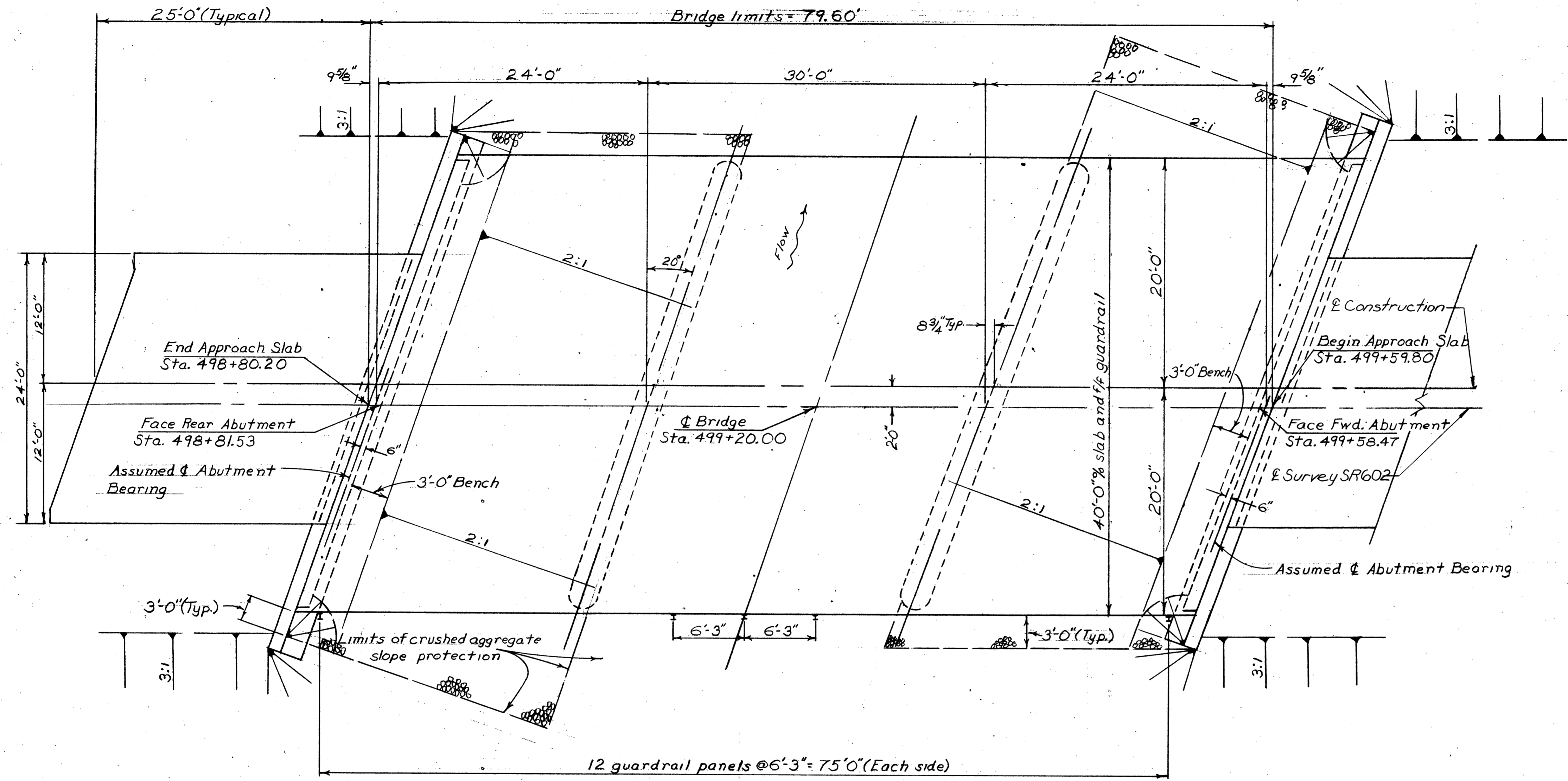
PILES shall be driven to firm contact with bedrock. If the length of penetration is approximately equal to the depth to bedrock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in 507.05 is not less than the following value for a pile hammer of the indicated energy rating:

- For the abutment piles.
 - 40 tons per pile using a 7,000 ft. lb. hammer
 - 35 tons per pile using an 11,000 ft. lb. hammer
 - 30 tons per pile using a 15,000 ft. lb. or greater hammer.
- For the pier piles.
 - 55 tons per pile using a 7,000 ft. lb. hammer
 - 50 tons per pile using an 11,000 ft. lb. hammer
 - 45 tons per pile using a 15,000 ft. lb. or greater hammer.

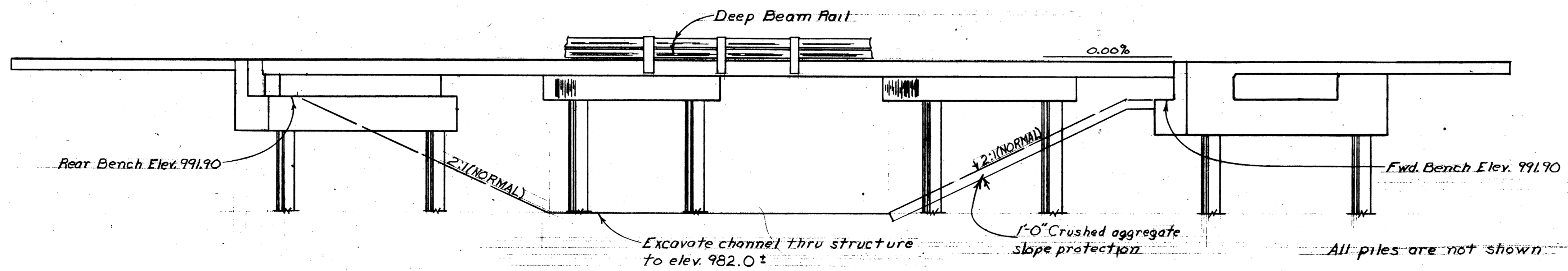
If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 25 tons per pile for the abutment piles and 35 tons per pile for the pier piles.

PIER PILE ENCASEMENT as shown on Std. Dwg. P-1-54 is not required. The painting of the piles shall extend to low water elevation or, if the proposed surface of the ground is above low water, it shall extend to at least one foot below the proposed surface of the ground.

UTILITY LINES: All expense involved in relocating the affected utility lines shall be borne by the Owner. The Contractor and Owner are requested to cooperate by arranging their work in such a manner that inconvenience to either would be held to a minimum.



GENERAL PLAN



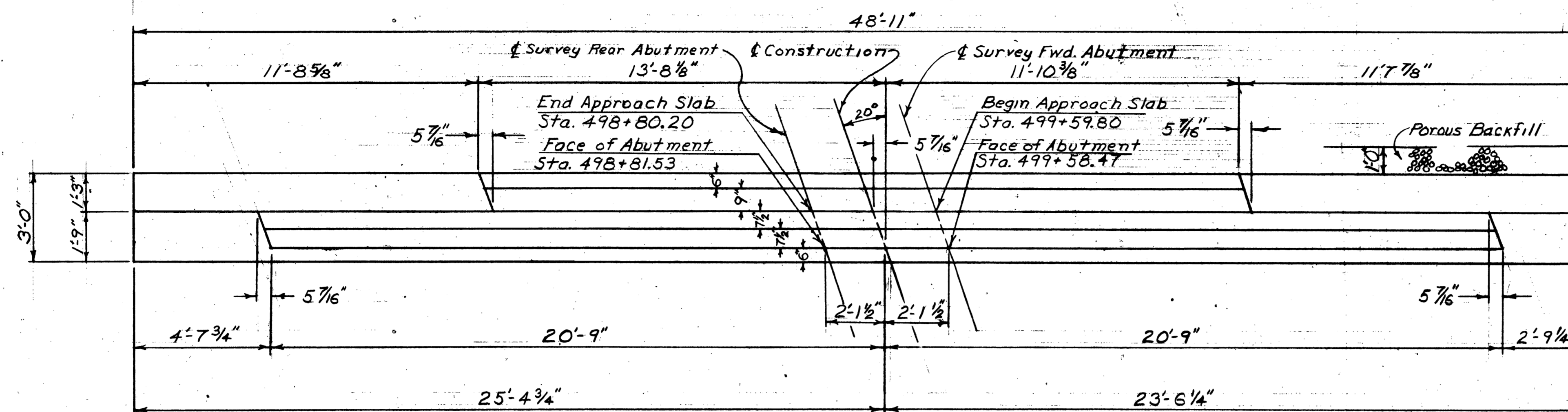
ELEVATION

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES						215
GENERAL PLAN & ELEVATION GENERAL NOTES						
BRIDGE NO. CRA-602-0949 OVER BROKEN SWORD CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTL	WTL		INNES	CDB	11-7-69	

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

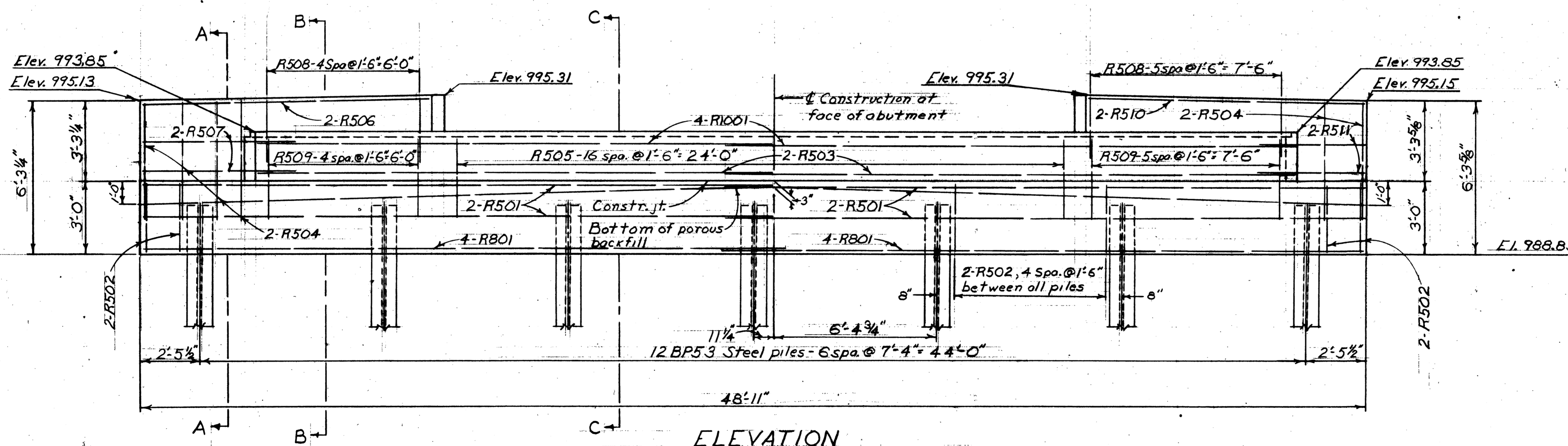
55
64

CRA-98-(15.86)(16.26)(20.93)
CRA-602-(9.34)(12.02)(12.21)



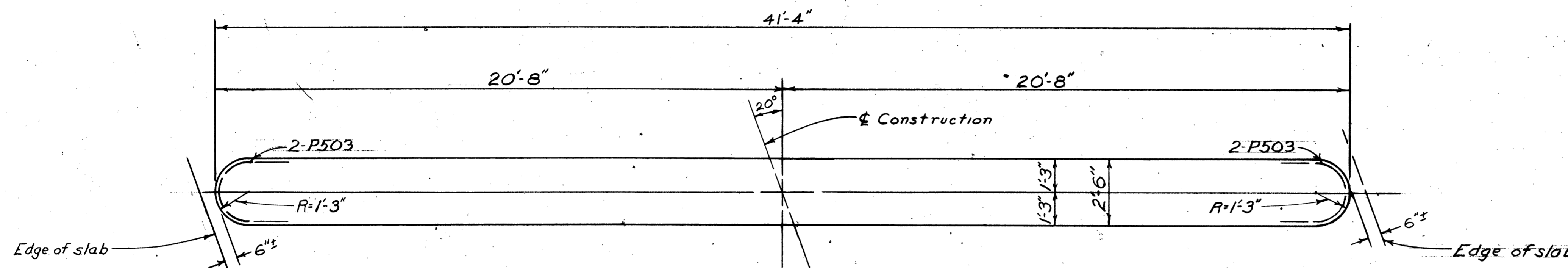
ABUTMENT PLAN

NOTE
Refer to Standard Drawing A-1-54 for additional abutment details. Sections A-A, B-B, and C-C are similar to sections of the same designation on that standard drawing.



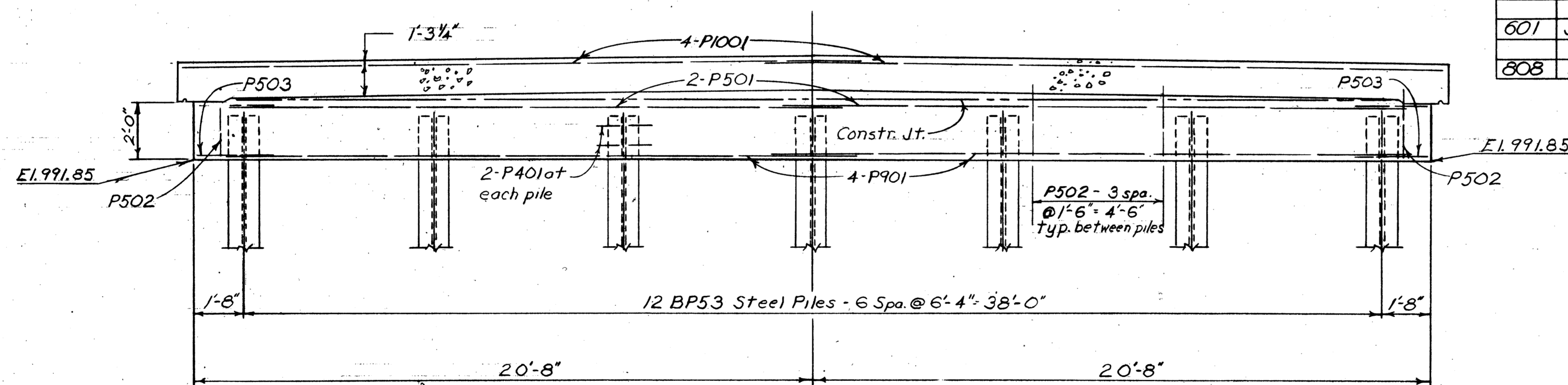
ELEVATION

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES						3 / 5
ABUTMENT DETAILS						
BRIDGE NO. CRA-602-0949 OVER BROKEN SWORD CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
WTL	WTL		INNES	CDB	11-7-69	



PIER PLAN

ESTIMATED QUANTITIES						
Item	Total	Unit	Description	Super.	Abuts	Piers
202	Lump	Sum	Existing structure removed			
503	75	Cu. Yd.	Unclassified excavation		75	
505	Lump	Sum	First test pile			
507	760	Lin. Ft.	Steel piles, 12BP53		365	395
509	42840	Lb.	Reinforcing steel	33994	5293	3553
511	152	Cu. Yd.	Class C concrete, superstructure	152		
511	15	Cu. Yd.	Class C concrete, pier caps			15
511	50	Cu. Yd.	Class C concrete, abutments		50	
517	159.20	Lin. Ft.	Railing (2 deep beam rails with steel posts and bolts)	159.20		
518	18	Cu. Yd.	Porous backfill		18	
601	305	Sq. Yd.	Crushed aggregate slope protection			305
808	152	Units	Chemical Admixtures for Concrete, Type A, B or D	152		

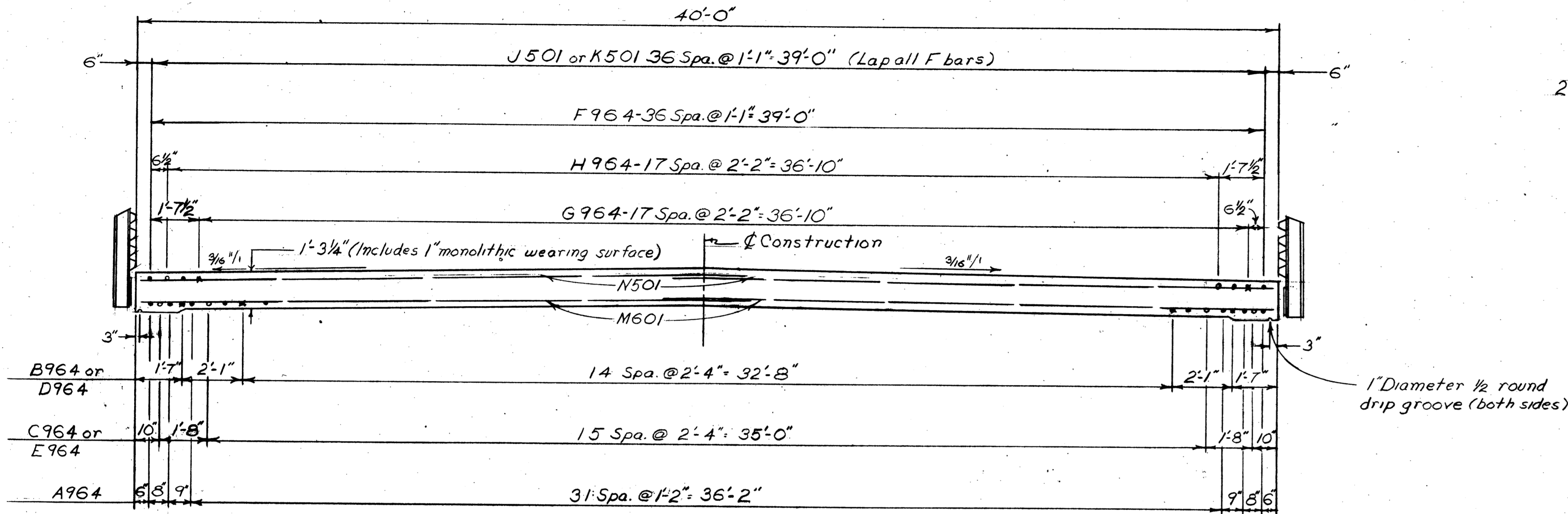


ELEVATION

For additional pier details, refer to Std. Drawing P-1-54

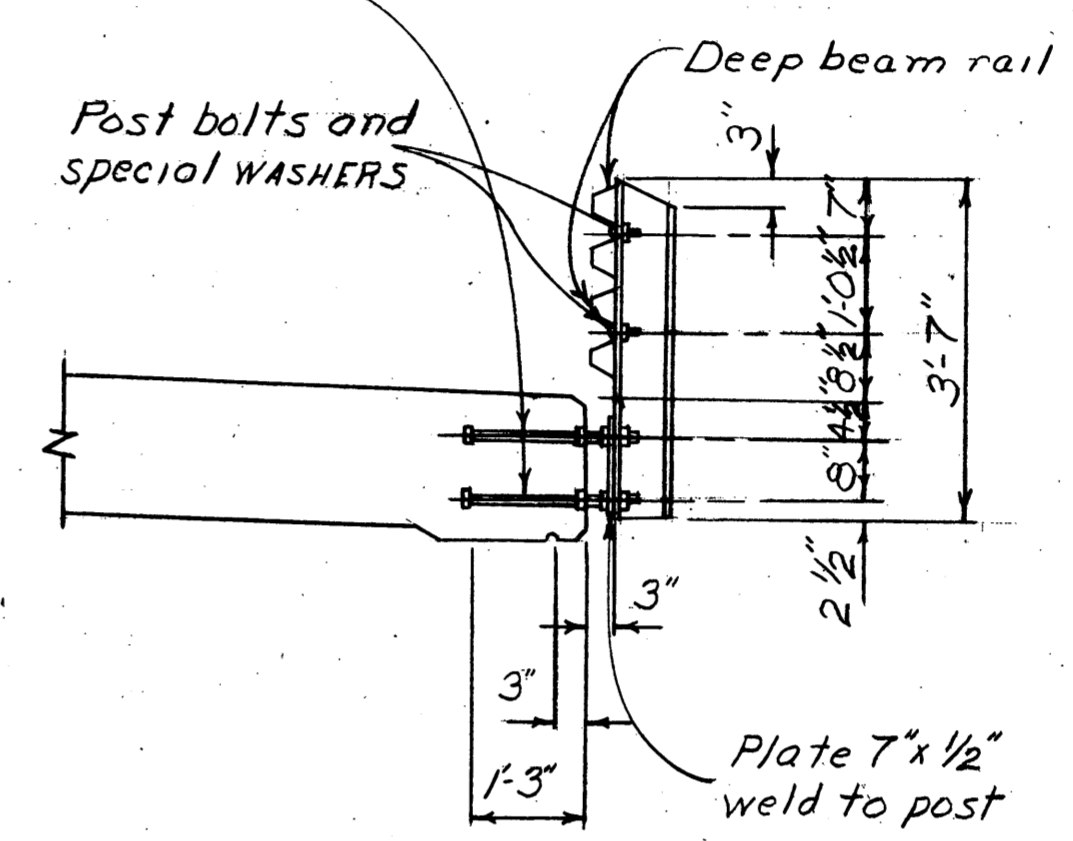
STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES							4/5
PIER DETAILS ESTIMATED QUANTITIES BRIDGE NO. CRA-602-0949 OVER BROKEN SWORD CREEK							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
WTL	WTL		INNES 10-30-69	CDB	11-7-69		

CRA-98-(15.86)(16.20)(20.93)
CRA-602-(9.34)(12.02)(13.21)

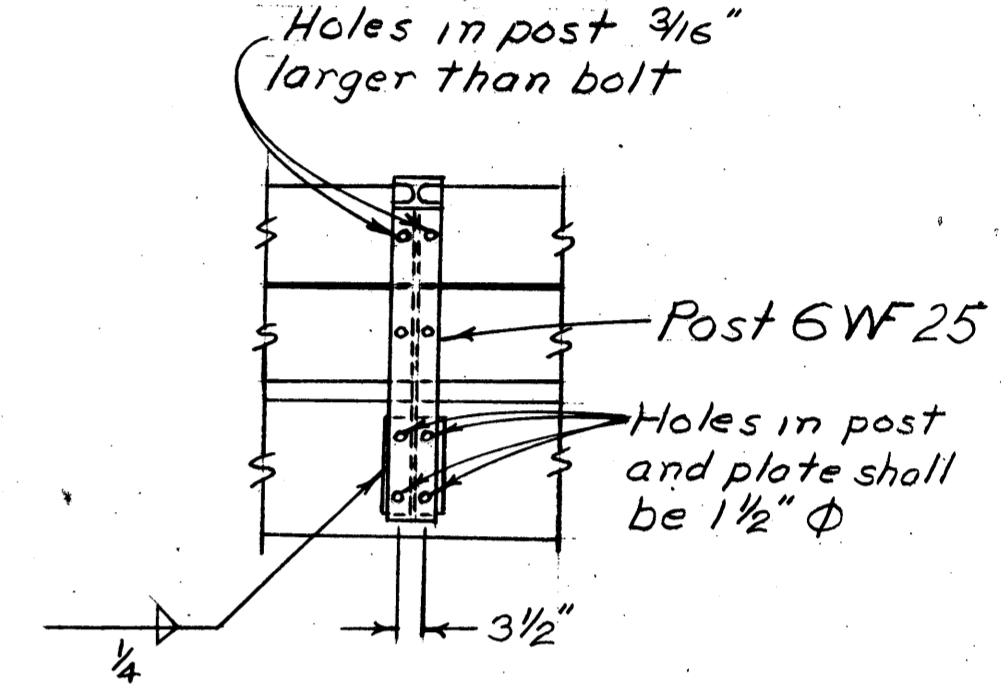


SLAB DETAIL
Transverse section showing reinforcing steel spacing

2-1/4" Φ x 20" galvanized machine bolts with square heads. Thread 8" length and provide three hexagonal nuts per bolt. Fasten bolts rigidly to form before placing concrete. (See Detail A, Std. Drawing CS-1-65, Sht. 1). Bolt material



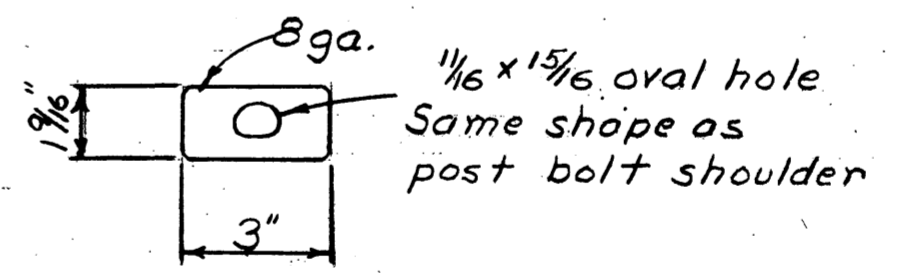
SECTION AT
EDGE OF SLAB



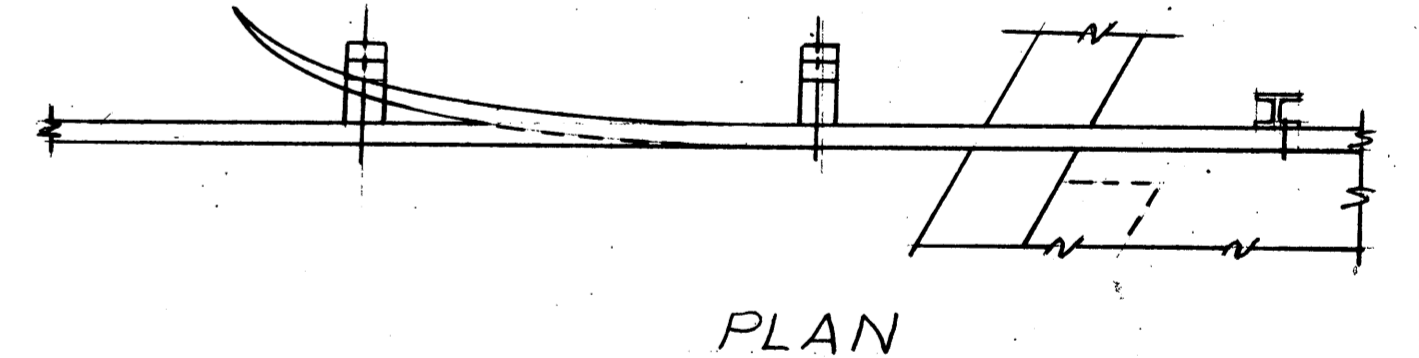
ELEVATION OF
RAILING POST

BAR MARK		DIMENSION
F964	dim "F"	9'-6"
G964	dim "G"	5'-0"
H964	dim "H"	3'-7"
M601	spa. "m"	1'-5"

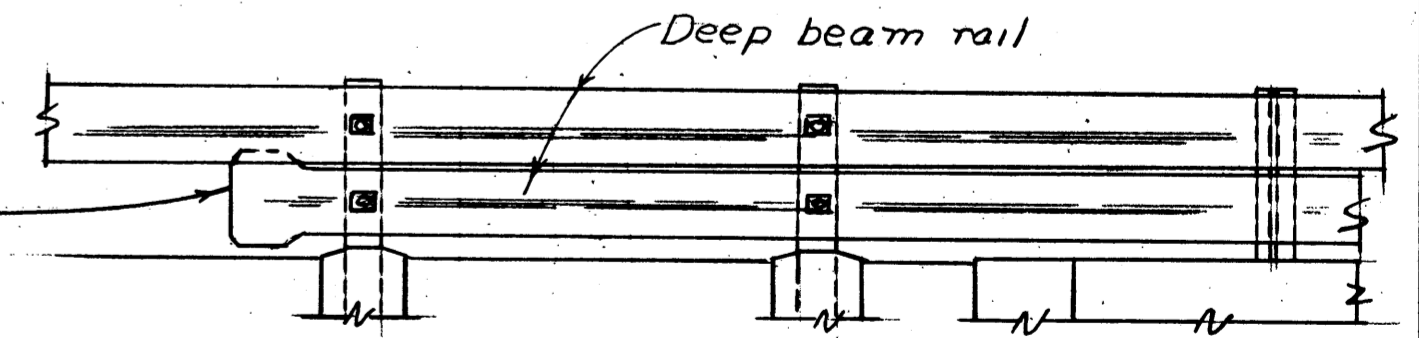
NOTE:
Refer to Std. Dwg. CS-1-65 for additional superstructure details and notes, except M601 bars are spaced at 1'-6" in the regions where 2'-0" spacings are shown on section A-A, sht 1 of 2.
LONGITUDINAL BARS shall be placed parallel to centerline of roadway and TRANSVERSE BARS parallel to piers and abutments.



SPECIAL WASHER
(Use under head of all post bolts)



PLAN



ELEVATION
TYPICAL TERMINATION OF LOWER RAIL

REINFORCING STEEL LIST					Bending Diagrams																																																																															
Mark	No.	Length	Weight	Spd																																																																																
Superstructure																																																																																				
A964	108	28'-5"	10,435	S																																																																																
B964	34	20'-6"	2,370	B																																																																																
C964	36	19'-0"	2,326	B																																																																																
D964	17	18'-9"	1,084	S																																																																																
E964	18	15'-9"	964	S																																																																																
F964	74	20'-11"	5,263	S																																																																																
G964	36	12'-7"	1,540	S																																																																																
H964	36	9'-11"	1,214	S																																																																																
J501	74	16'-9"	1,293	S																																																																																
K501	37	13'-2"	508	S																																																																																
M601	128	21'-10"	4,198	S																																																																																
N501	122	22'-0"	2,799	S																																																																																
PIERS																																																																																				
P1001	16	22'-8"	1,561	S																																																																																
P901	16	20'-10"	1,133	S																																																																																
P501	8	28'-3"	169	S																																																																																
P502	52	8'-0"	434	B																																																																																
P503	8	6'-4"	53	B																																																																																
P401	56	5'-5"	203	B																																																																																
Abutments																																																																																				
R1001	16	22'-3"	1,532	S																																																																																
					<table border="1"> <thead> <tr> <th>REPLACEMENT BARS</th> <th>Length</th> <th>Weight</th> <th>Spd</th> </tr> </thead> <tbody> <tr> <td>RE1001</td> <td>1</td> <td>8'-2"</td> <td>-</td> <td>S</td> </tr> <tr> <td>RE901</td> <td>2</td> <td>7'-10"</td> <td>-</td> <td>S</td> </tr> <tr> <td>RE801</td> <td>1</td> <td>7'-6"</td> <td>-</td> <td>S</td> </tr> <tr> <td>RE601</td> <td>1</td> <td>6'-11"</td> <td>-</td> <td>S</td> </tr> <tr> <td>RE501</td> <td>1</td> <td>6'-7"</td> <td>-</td> <td>S</td> </tr> <tr> <td>RE401</td> <td>1</td> <td>5'-5"</td> <td>-</td> <td>B</td> </tr> </tbody> </table>					REPLACEMENT BARS	Length	Weight	Spd	RE1001	1	8'-2"	-	S	RE901	2	7'-10"	-	S	RE801	1	7'-6"	-	S	RE601	1	6'-11"	-	S	RE501	1	6'-7"	-	S	RE401	1	5'-5"	-	B																																									
REPLACEMENT BARS	Length	Weight	Spd																																																																																	
RE1001	1	8'-2"	-	S																																																																																
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Mark	No.	Length	Weight	Spd																																																																																
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R401	56	5'-5"	203	B																																																																																

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES						5/5
SUPERSTRUCTURE DETAILS, REINFORCING STEEL LIST						
BRIDGE NO. CRA-602-0949 OVER BROKEN SWORD CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTL	WTL		INNES	CDB	11-7-69	

SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

SOLD AS
 CRA-98-(15.86)(16.20)(20.93)
 CRA-602-(9.34)(12.02)(13.21)

STATE JOB NO.	FED. RD. DIVISION	STATE	PROJECT
	2	OHIO	

CRA-98/602-15.85/9.34

58
64
1
7

TOTAL NO. OWNERS-15

TOTAL NO. COMPLETE TAKES-0

TOTAL OWNERS WITH STRUCTURES INVOLVED-0

PARCEL NO.	OWNER	DEED RECORD			DEED AREA	TOTAL PRO	TOTAL TAKE	PRO IN TAKE	NET TAKE	NET RES. LT.	NET RES. RT.	BLDG'S TO BE ACQ'D	SHEET NO.	REMARKS	OTHER DESIGNATED AS ACQUIRED	TYPE FUND
		BOOK	PAGE	DATE												
1 1-X	ALVA W. BROWN	147	585	36	12.08	0.74	0.52	0.28	0.24	11.10	—	—	4		330/89	
2 2-X	M.A. & BETTY J. REX	286	152	63	47.20	2.80	0.50	0.28	0.22	—	44.18	—	4		330/167	
3 3A 3A-X	KERMIT C. & EVELYN KIBLER	310/298	383/302	66 & 64	85.82	4.17	0.84	0.44	0.40	80.42	—	—	4		Appropriation 340/467	
4	LESLIE W. & JEAN E. LINN	223	219	52	82.25	2.21	0.42	0.24	0.18	79.86	—	—	4	TAXED ON 80.07 AC.	330/170	
5 5X	MAYNARD BRUCE	271/242	434/38	61 & 56	0.55	0.15	0.11	0.08	0.03	—	0.37	—	5		330/391	
6 6X	ELWOOD & DOROTHY M. HUMPHREY	313/256	329/91	67 & 58	65.45	3.98	0.17	0.12	0.05	—	61.42	—	5		329/629	
7	LORA MARTIN	323/315	97/6	68 & 67	2.88	0.60	0.09	0.07	0.02	2.26	—	—	5		329/380	
8 8X	RALPH F. & ALLENE S. HATCH	247	566	57	3.26	0.25	0.21	0.14	0.07	2.94	—	—	5		329/641	
9 9X	IVALYNE BAIRD	302/212	176/155	65 & 51	95.753	1.30	1.41	0.68	0.73	93.72	—	—	6		329/636	
10	MARTIN V. & ROSA V. WOOD	155	20	39	86.00	2.09	1.17	0.68	0.49	34.60	48.82	—	6		329/632	

STATE

UTILITIES 1) OHIO POWER 2) UNITED UTILITIES	CENTERLINE-REFERENCE-MONUMENTS	SYMBOLS	TYPE FENCE QUANTITIES	GENERAL NOTES	COMPLETION DATE — 10-01-69 DATE REVISION DESCRIPTION 10-23-69 REV. PARCELS 3 & 4
SURVEYED DRAWN BY DESIGN CHECKED SUPERVISED					

SUMMARY OF ADDITIONAL RIGHT OF WAY REQUIRED

SOLD AS
 CRA-98-(15.86)(16.20)(20.93)
 CRA-602-(9.34)(12.02)(13.21)

STATE JOB NO.	FED. RD. DIVISION	STATE	PROJECT
2	OHIO		

CRA-98/602-15.85/9.34

58
64

2
7

TOTAL NO. OWNERS-15 TOTAL NO. COMPLETE TAKES-0 TOTAL OWNERS WITH STRUCTURES INVOLVED-0

PARCEL NO.	OWNER	DEED RECORD			DEED AREA	TOTAL PRO	TOTAL TAKE	PRO IN TAKE	NET TAKE	NET RES. LT.	NET RES. RT.	BLDG'S TO BE ACQ'D	SHEET NO.	REMARKS	OTHER DESIGNATED As Acquired	TYPE FUND
		BOOK	PAGE	DATE												
11	DALE W. SPRINGER, JR.	305	245	66	62.31	0.79	0.45	0.28	0.17	—	61.35	—	7		329/374	↑
12	PAUL A. & MARGUERITE FEICHTNER - (L.C.) KARL H. BARTH (FEE)	302/161	515/283	65 & 41	188	4.11	0.46	0.28	0.18	183.71	—	—	7		329/377	
13 13X	ROBERT & GENEVIEVE HARRER	262/246/198	352/563/192	59,56 & 48	38.45	0.92	0.22	0.14	0.08	37.45	—	—	7		330/554	
							0.05		0.05			—	7	CHANNEL		
14 14X	ROBERT F. & MARLENE J. FIKE	299	578	65	114.11	0.90	0.22	0.14	0.08	113.84	—	—	7		329/371	
							0.01		0.01			—	7	CHANNEL		
15	LINUS OSWALD & MARIE ROBINSON	319/257	617/213	68 & 58	78.00	0.90	0.48	0.28	0.20	—	76.90	—	7		329/367	

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UTILITIES	CENTERLINE-REFERENCE-MONUMENTS	SYMBOLS	TYPE FENCE QUANTITIES	GENERAL NOTES	COMPLETION DATE - 10-01-69 DATE REVISION DESCRIPTION _____ _____ _____ _____ _____
SURVEYED _____ DRAWN BY _____ DESIGN _____ CHECKED _____ SUPERVISED _____					

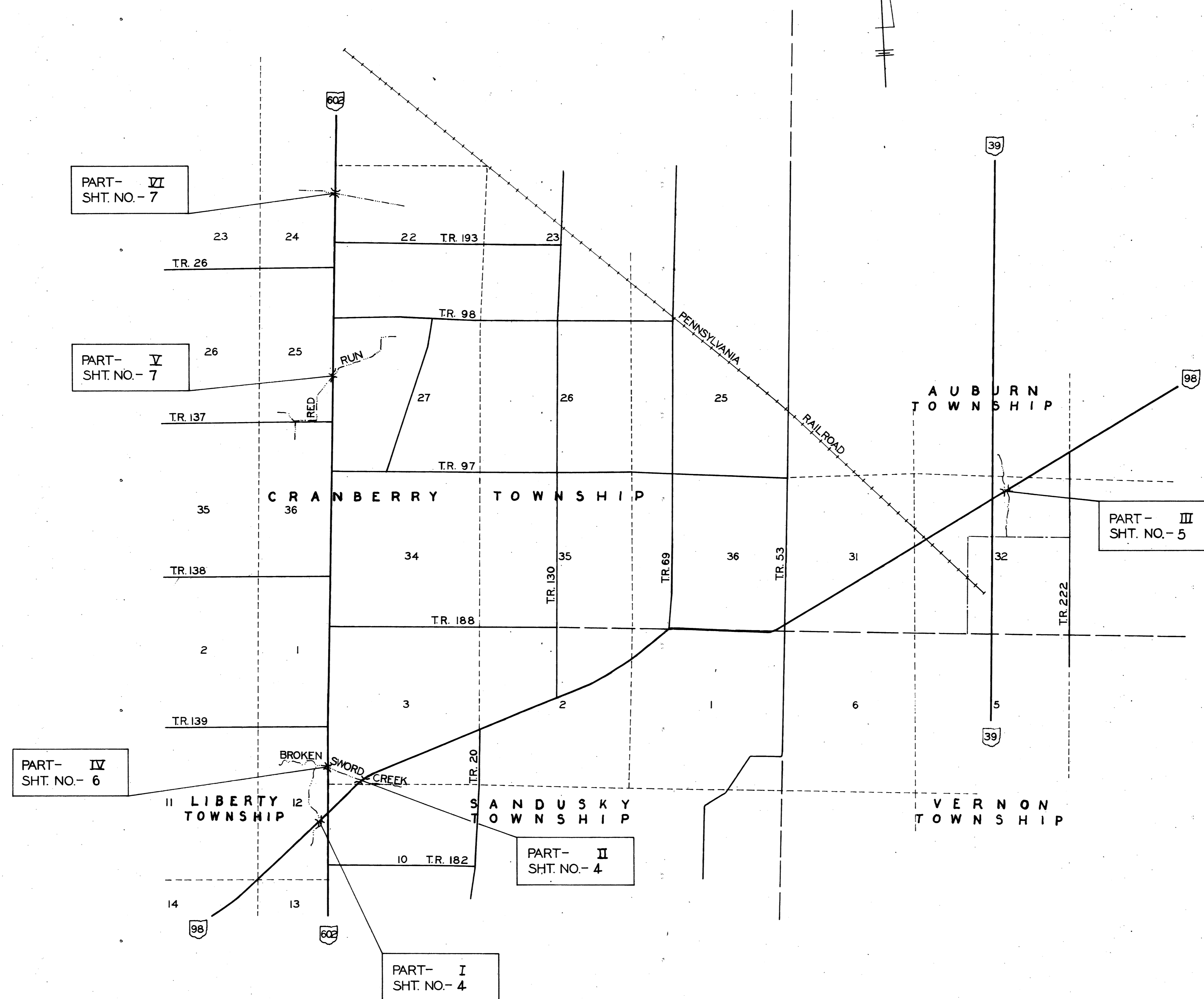
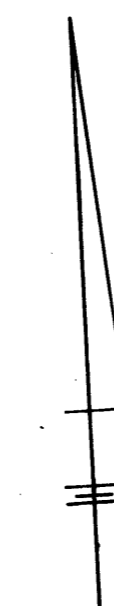
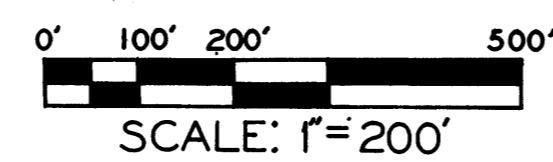
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

60
64

SOLD AS
CRA-98-(15.86)(16.20)(20.93)
CRA-602-(9.34)(12.02)(13.21)

CRA-98/602-15.85/9.34
PROPERTY LOCATION PLAN

3
7

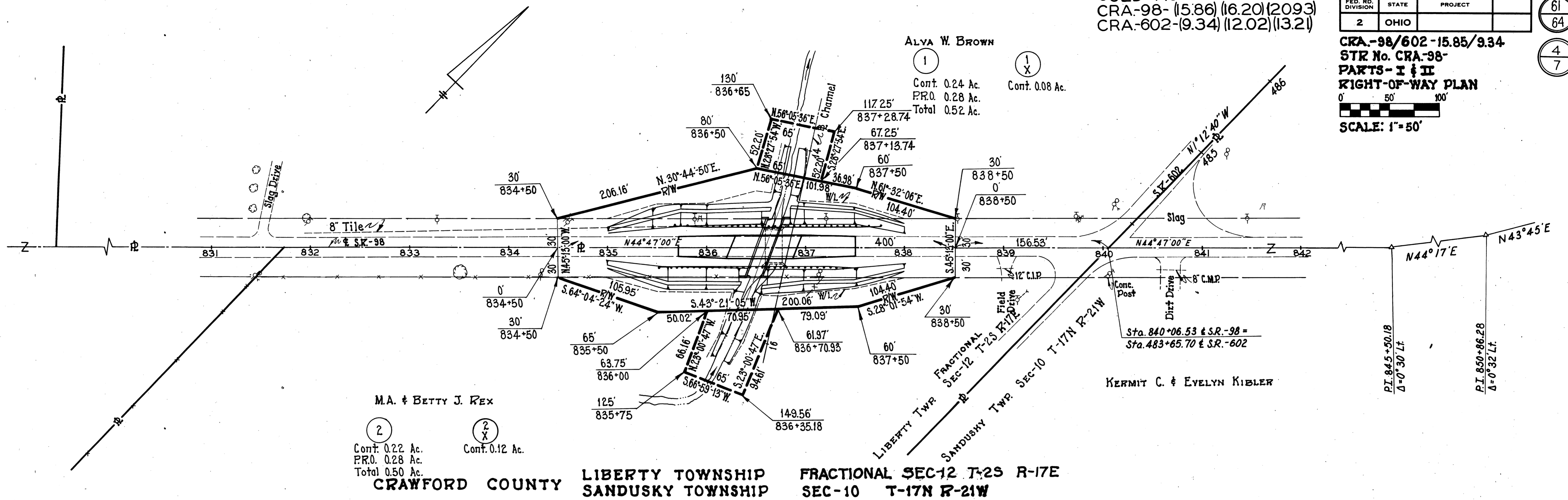


SOLD AS
 CRA-98- (15.86) (16.20) (2093)
 CRA-602-(9.34) (12.02) (13.21)

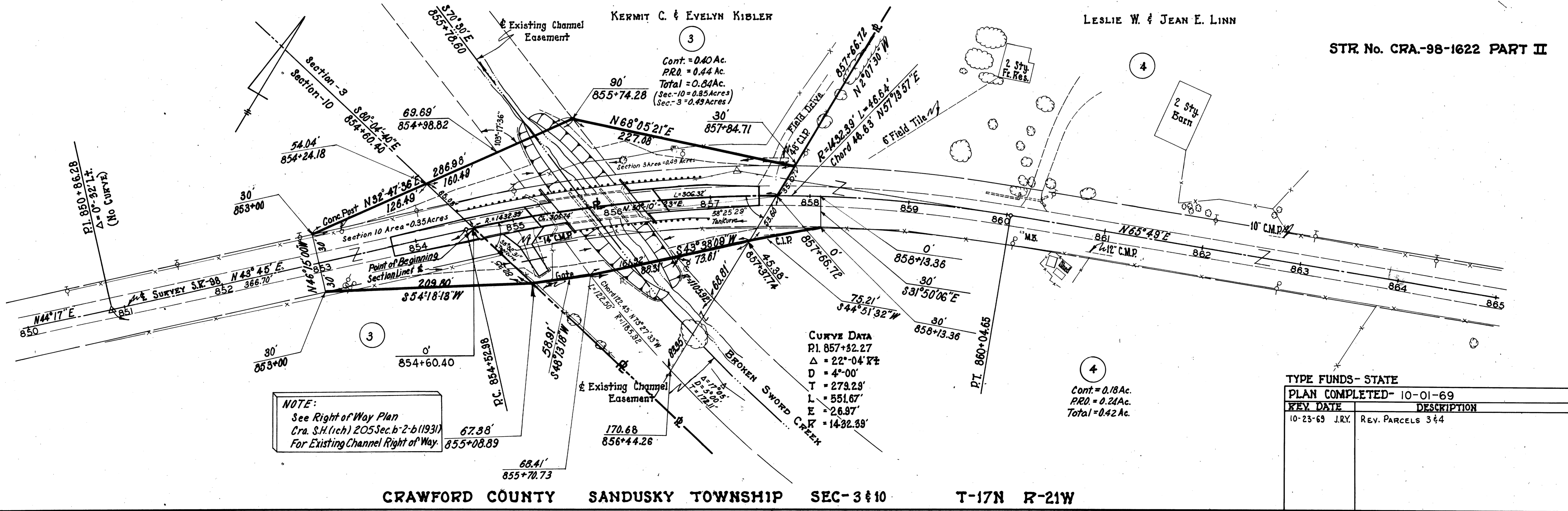
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

61
64
4
7

CRA-98/602-15.85/934
STR No. CRA-98-
PARTS- I & II
RIGHT-OF-WAY PLAN
 0' 50' 100'
 SCALE: 1"=50'



STR No. CRA-98-1622 PART II



TYPE FUNDS- STATE	
PLAN COMPLETED- 10-01-69	
REV. DATE	DESCRIPTION
10-23-69 J.R.Y.	REV. PARCELS 3 & 4

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

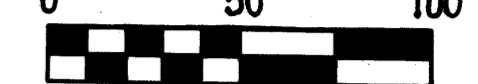
62
64

SOLD AS
CRA-98-(15.86)(16.20)(2093)
CRA-602-(9.34)(12.02)(13.21)

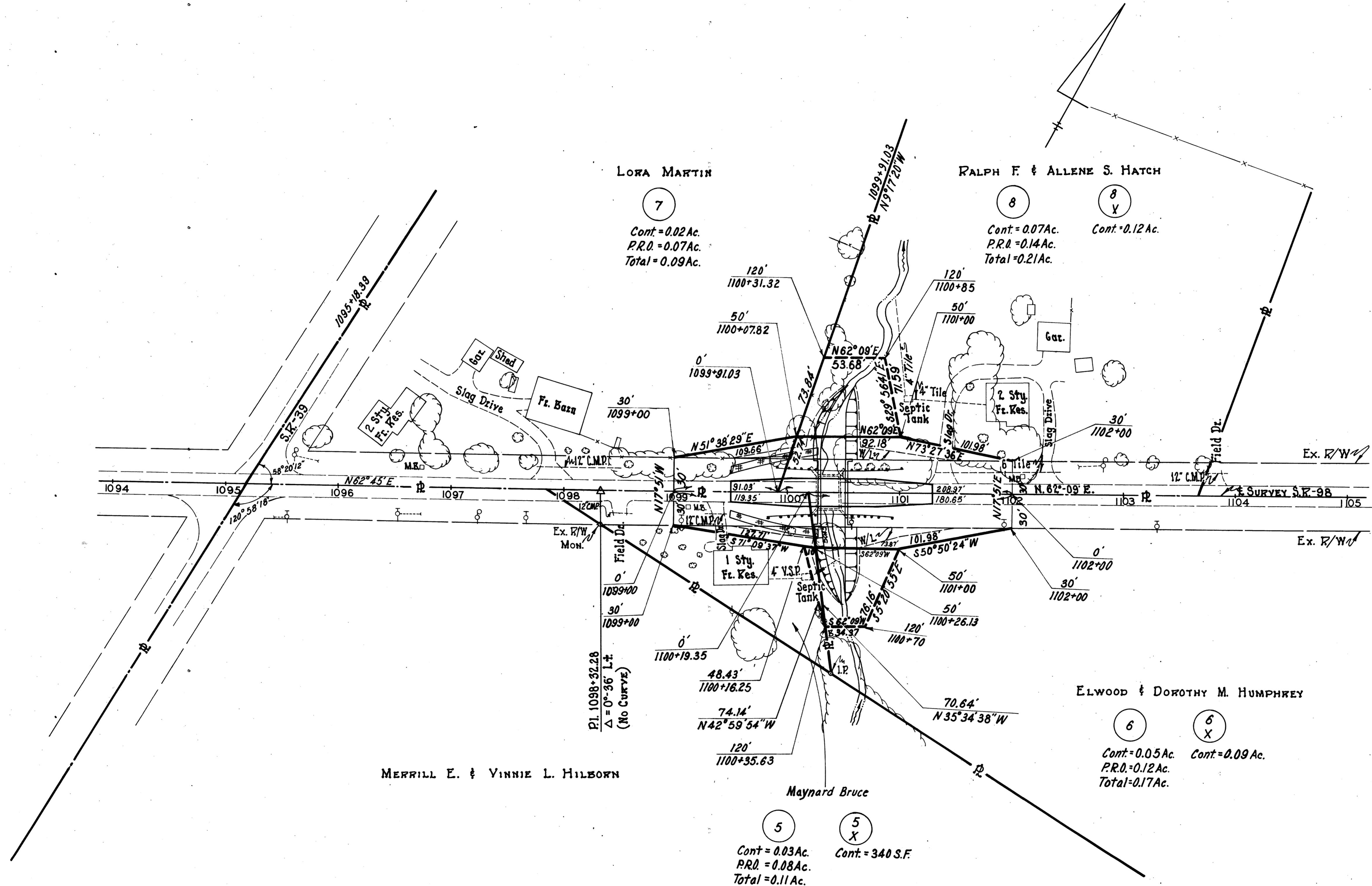
CRA-98/602-15.85/9.34
STR. No. CRA-98-2094 PART III

5
7

PART III
RIGHT-OF-WAY PLAN



SCALE: 1"=50'



CRAWFORD COUNTY AUBURN TOWNSHIP SEC-32 T-22N R-20W

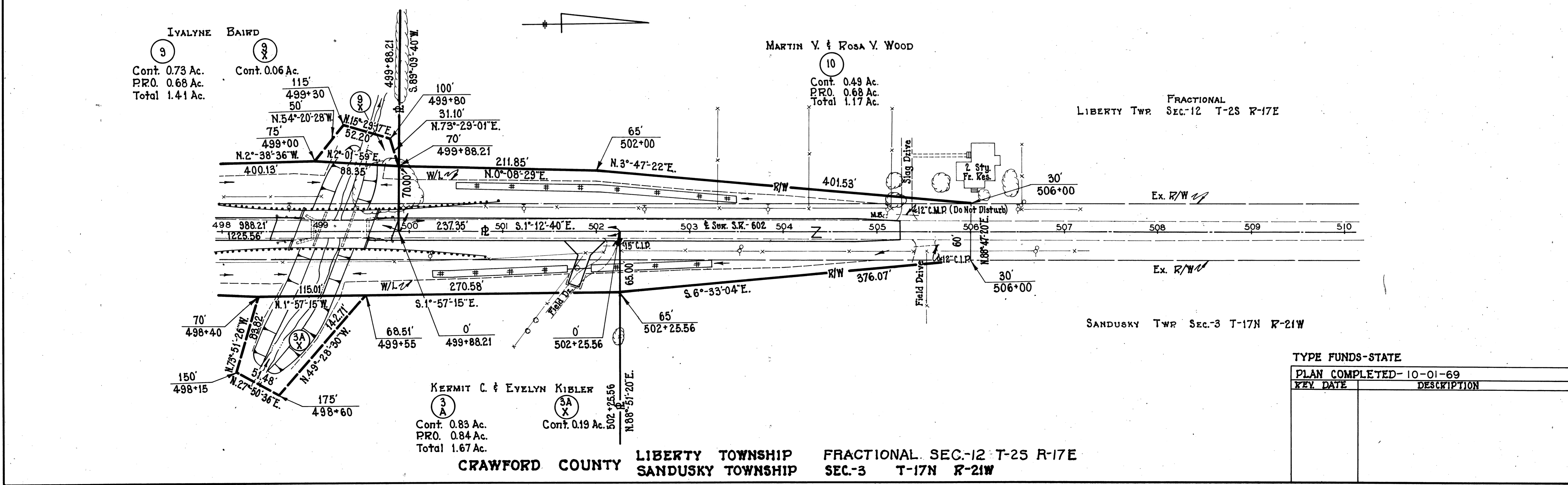
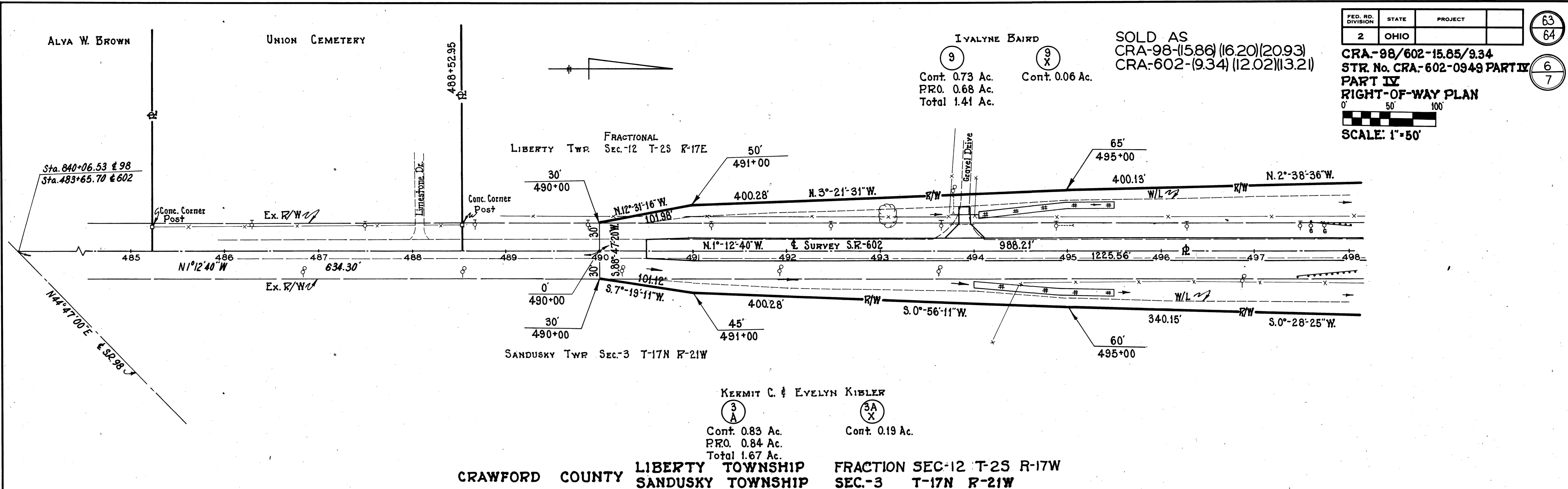
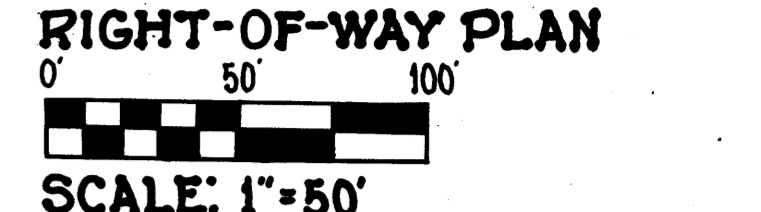
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PLAN COMPLETED-10-01-69	
REV. DATE	DESCRIPTION

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

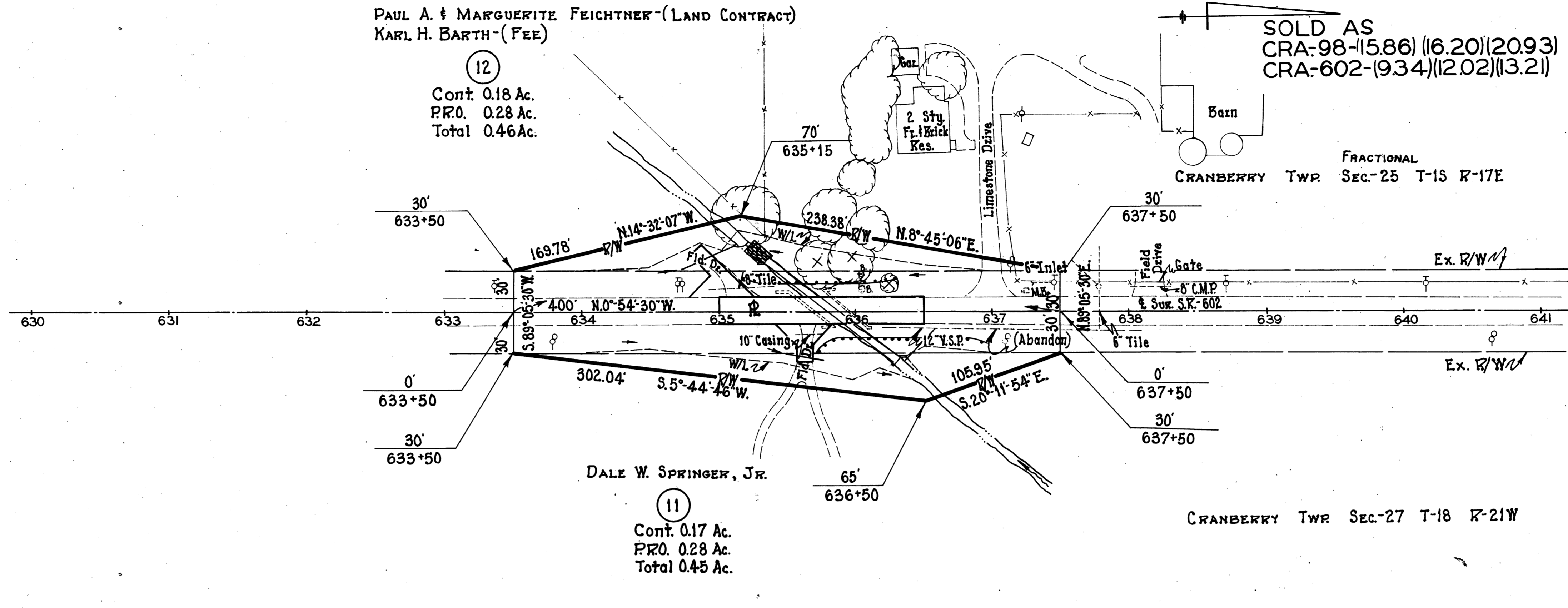
63
64

CRA-98/602-15.85/9.34
STR. No. CRA-602-0949 PART IV
PART IV
RIGHT-OF-WAY PLAN

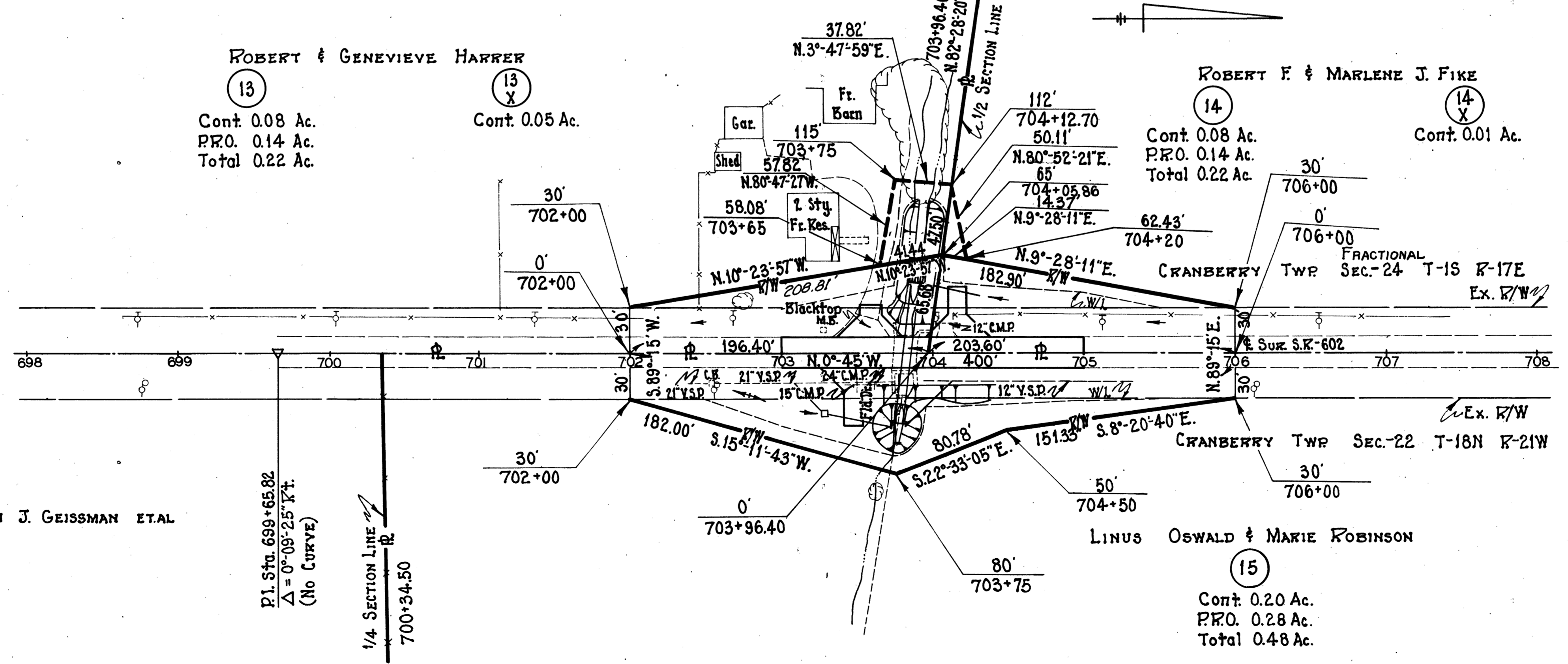
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TYPE FUNDS-STATE	
KEY DATE	DESCRIPTION
10-01-69	PLAN COMPLETED



CRAWFORD COUNTY CRANBERRY TOWNSHIP SEC-27 & FRACTIONAL SEC-25



CRAWFORD COUNTY CRANBERRY TOWNSHIP SEC-22 & FRACTIONAL SEC. 24

STR. No. - CRA-602-1323 PART VI

TYPE FUNDS-STATE	
PLAN COMPLETED-10-01-69	
KEY. DATE	DESCRIPTION