FORM 129 A REV. '64

Fed. Proj. No. _____

STATE OF MINNESOTA

DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR GRADING, BASE, BITUMINOUS SURF, STORM SEWER & CHANNELIZATION

County Highway No. 116

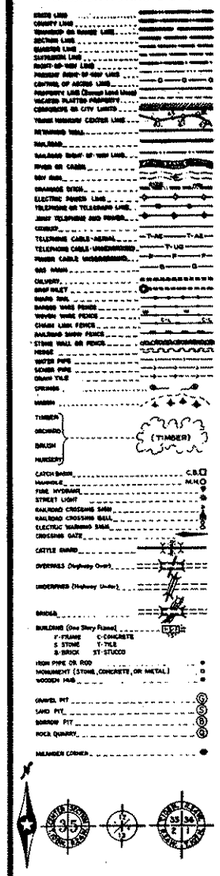
Between 1200' W. OF C.S.A.H. 9 And C.S.A.H. 7

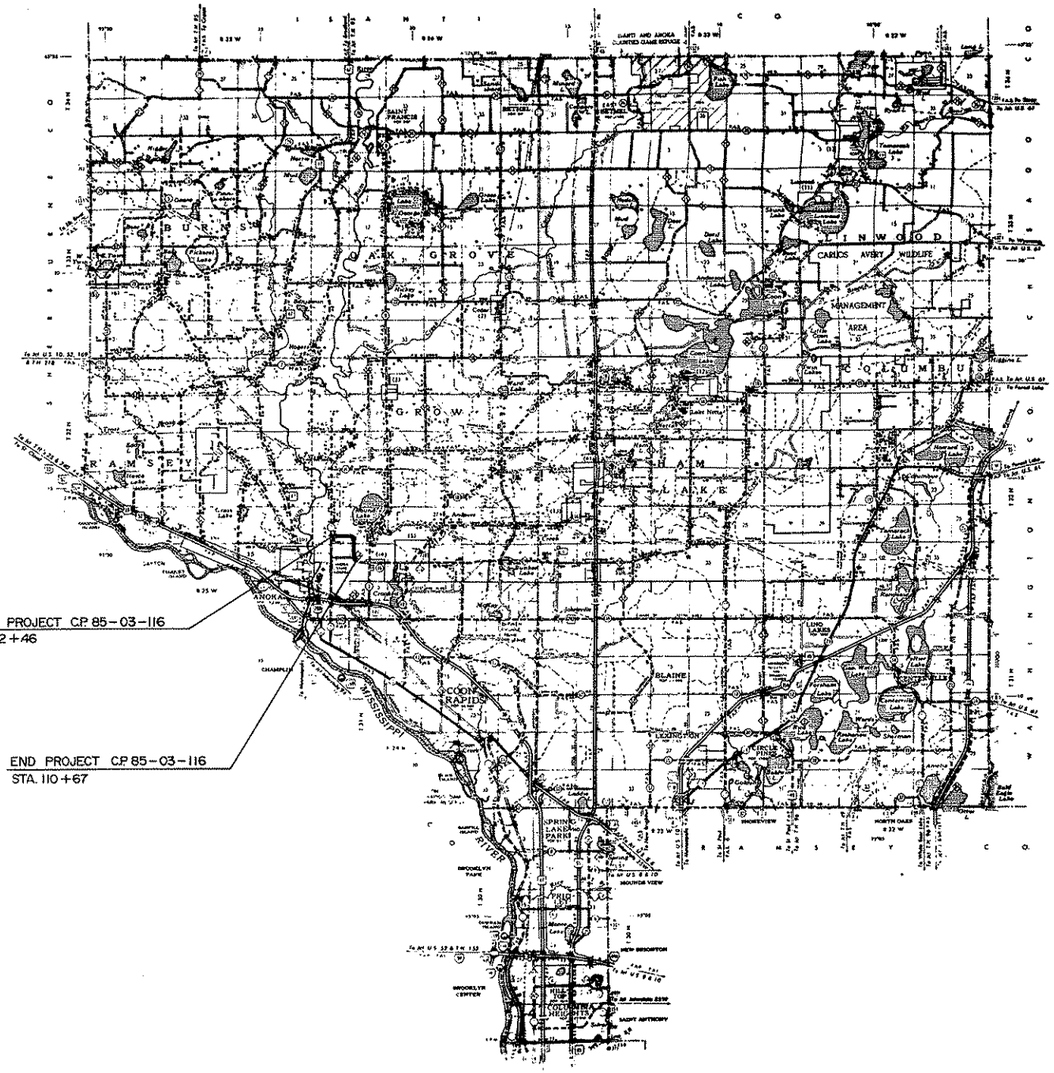
From A POINT 594' N. & 23' E. OF THE N. 1/4 COR. OF SEC. 31, T.32 N., R.24 W. To A POINT 159.74' NORTH & 1,004.17' EAST OF THE E. 1/4 COR. OF SEC. 32, T.32 N., R.24 W.

Give proper reference to Sections, Township and Range

GROSS LENGTH	5,821	FEET	1.10 MILES
BRIDGES-LENGTH	-0-	FEET	-0- MILES
EXCEPTIONS-LENGTH	-0-	FEET	-0- MILES
NET LENGTH	5,821	FEET	1.10 MILES

CONVENTIONAL SIGNS





INDEX OF SHEETS

Sheet No. 1 Title Sheet & Layout Map
" No. 2 Est. Quantities & Typical Sec.
" No. 3 Typical Grading Section
" No. 4 Typical Bituminous Section
" No. 5 Drainage & Erosion Control
" No. 6-10 Plan & Profile
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" No. 12 Drainage Ditch Const.
" No. 13 Superelevation
" No. 14-20 Cross Sections
" No. 21 Road Approach Cross Sections

SCALE

INDEX MAP		2 MI.
PLAN & PROFILE	VERT.	5'
	HORIZ.	50'
CROSS SECTION		10'

DESIGN DESIGNATION

ADT (CURRENT YEAR) 0

ADT (FUTURE YEAR) 11,300

T (HEAVY COMMERCIAL) H.C.A.D.T. 600-1,100

9 Ton Design Soil Factor A-3, 50%

Design Speed 50 MPH

Design Speed not achieved at:

STA _____ TO STA _____ MPH _____

STA _____ TO STA _____ MPH _____

SPECIFICATIONS

THE "STANDARD SPECIFICATIONS FOR CONSTRUCTION," 1983 EDITION AND SUPPLEMENTAL SPECIFICATIONS, DATED MARCH 7, 1985 SHALL GOVERN.

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH, IN THE CONSTRUCTION OF THIS PROJECT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Dane K. Lund DATE 6/9/86
COUNTY ENGINEER

ANOKA COUNTY REG. NO. 6549

RECOMMENDED FOR APPROVAL _____ 19__
DISTRICT STATE AID ENGINEER

RECOMMENDED FOR APPROVAL _____ 19__

APPROVED _____ 19__
STATE AID ENGINEER

Minn. Proj. No. _____ County Proj. No. 85-03-116

State Proj. No. _____ S.A.P. _____

DAHMS PHOTO PRINT CO. MINNEAPOLIS, MINN.

ANOKA County, Minnesota. Plan No. ___ Sheet 1 of 21 Sheets

FORM 21169 - 10 - 69

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM C.P. 85-03-116	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES
	2021.501	MOBILIZATION	LUMP SUM	1	
	2031.501	FIELD OFFICE TYPE D	EACH	1	
	2101.501	CLEARING	ACRE	4.4	
	2101.502	CLEARING	TREE	17	
	2101.506	GRUBBING	ACRE	3.6	
	2101.507	GRUBBING	TREE	10	
	2104.501	REMOVE CULVERT PIPE	LIN. FT.	66	
	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ. YD.	5622	
	2104.513	SAWING BITUMINOUS PAVEMENT	LIN. FT.	74	
	2104.521	SALVAGE FENCE	LIN. FT.	397	
	0557.603	INSTALL FENCE	LIN. FT.	252	
	2104.521	SALVAGE CULV. PIPE	LIN. FT.	112	
	2105.000	CONSTRUCTION FABRIC	SQ. YD.	17,900	
1	2105.501	COMMON EXCAVATION	CU. YD.	50,261	
	2105.505	MUCK EXCAVATION	CU. YD.	8,778	
2	2105.511	COMMON CHANNEL EXCAVATION	CU. YD.	2537	
3	2105.521	GRANULAR BORROW (E.V.)	CU. YD.	72,721	
4	2105.535	SALVAGE TOPSOIL (L.V.)	CU. YD.	3,673	
5	2130.501	WATER	M-GAL.	100	
6	2211.503	AGGREGATE BASE PLACED, CLASS 5	CU. YD.	6164	
	2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	486	
7	2331.510	BINDER COURSE MIXTURE	TON	4000	
8	2331.514	BASE COURSE MIXTURE	TON	6115	
9	2331.531	TEMPORARY LANE MARKING	ROAD STATION	500	
	2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	184	
10	2341.508	WEARING COURSE MIXTURE	TON	2975	
	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	3670	
	2501.511	15" CM PIPE CULVERT	LIN. FT.	196	
	2501.515	15" CM PIPE APRONS	EACH	4	
	2501.515	15" RC PIPE APRONS	EACH	3	
	2501.515	48" RC PIPE APRONS	EACH	2	
	2501.525	22" SPAN RC PIPE-ARCH APRONS	EACH	2	
	2501.525	44" SPAN RC PIPE-ARCH APRONS	EACH	2	
	2501.525	51" SPAN RC PIPE-ARCH APRONS	EACH	2	
	2501.561	48" RC PIPE CULVERT DESIGN 3006 D	LIN. FT.	82	
	2501.521	22" SPAN RC PIPE-ARCH CULVERT	LIN. FT.	78	
	2501.521	44" SPAN RC PIPE-ARCH CULVERT	LIN. FT.	84	
	2501.521	51" SPAN RC PIPE-ARCH CULVERT	LIN. FT.	88	
	2503.541	12" RC PIPE SEWER, DESIGN 3006 D CL III	LIN. FT.	67	
	2503.541	15" RC PIPE SEWER, DESIGN 3006 D CL III	LIN. FT.	143	
	2506.507	CONSTRUCT CATCH BASINS, DESIGN C OR G	LIN. FT.	17.5	
	2506.511	RECONSTRUCT MANHOLE	LIN. FT.	3	
	2506.516	CASTING ASSEMBLIES	EACH	4	
	2506.522	ADJ. FRAME AND RING CASTINGS	EACH	1	
11	2521.501	4" CONCRETE WALK	SQ. FT.	2730	
11	2531.501	CONCRETE CURB & GUTTER DESIGN B-612	LIN. FT.	3417	
12	2531.503	CONCRETE MEDIAN	SQ. YD.	27	
13	2545.521	3" RIGID STEEL CONDUIT - SIGNAL	LIN. FT.	70	
13	2545.553	PULL BOXES - SIGNALS	EACH	1	
	2575.501	ROADSIDE SEEDING	ACRE	11	
	2575.502	SEED MIXTURE #3	POUND	500	
	2575.505	SODDING	SQ. YD.	4025	
	2575.511	MULCH MATERIAL TYPE #1	TON	22	
	2575.519	DISC. ANCHORING	ACRE	11	
	2575.531	COMMERCIAL FERTILIZER, ANALYSIS 10-10-10	TON	3	
	0575.602	HAY OR STRAW BALES	EACH	40	

1. INCLUDES 3728 C.Y. SUB CUT FOR COMPACTION AND 3351 C.Y. SURCHARGE REMOVAL.
2. FOR DITCH CONSTRUCTION RT. STATION 108+26
3. INCLUDES 6702 C.Y. FOR SURCHARGE STA. 70+00 TO 82+00
4. FROM EXCESS MUCK MATERIAL FOR USE AS TOPSOIL COVERING
5. PROVIDED FOR DUST CONTROL AS DIRECTED BY THE ENGINEER
6. INCLUDES 348 C.Y. FOR 38TH AVE CONNECTION AND 159 C.Y. FOR RT. TURN LANE
7. INCLUDES 115 TON FOR 38TH AVE CONNECTION AND 98 TON FOR RT. TURN LANE
8. INCLUDES 207 TON FOR 38TH AVE CONNECTION AND 152 TON FOR RT. TURN LANE
9. INCLUDES QUANTITY FOR 2341 WEARING COURSE
10. INCLUDES 129 TON FOR 38TH AVE CONNECTION AND 70 TON FOR RT. TURN LANE
11. FOR MEDIAN CONSTRUCTION
12. FOR MEDIAN NOSE
13. PROVIDED FOR FUTURE SIGNAL CONSTRUCTION
14. PROVIDED FOR EROSION CONTROL

STANDARD PLATES

PLATE NO.	DESCRIPTION
0004 A	SPECIFICATION REFERENCE TO STANDARD PLATES
3000 I	REINFORCED CONCRETE PIPE
3008 D	GASKET JOINT FOR R.C.PIPE
3014 J	REINFORCED CONCRETE PIPE ARCH DETAIL
3100 F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110 F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
2145 C.	CONCRETE PIPE TIES
4002 E	MANHOLE OR CATCH BASIN
4006 K	MANHOLE OR CATCH BASIN
4101 C	RING CASTING FOR MANHOLE OR CATCH BASIN
4126 E	CATCH BASIN FRAME CASTING
4140 D	SPECIAL GRATE CASTINGS FOR CATCH BASIN
4149 C	GRATE CASTING FOR CATCH BASIN
4161 F	CURB BOX CASTING FOR CATCH BASIN
7100 F	CONCRETE CURB & GUTTER
7111 G	INSTALLATION & REINFORCEMENT OF CATCH BASIN CASTINGS
8000 I	STANDARD BARRICADES
9102 C	SODDING AT PIPE CULVERT ENDS

BASIS OF PLANNED QUANTITIES

2331 PLANT MIXED BASE COURSE.
BITUMINOUS MIXTURE 110 LBS./S.Y. PER 1" THICKNESS.
BITUMINOUS MATERIAL FOR MIXTURE 4.8% BY WT.

2331 PLANT MIXED BINDER COURSE.
BITUMINOUS MIXTURE 110 LBS./S.Y. PER 1" THICKNESS.
BITUMINOUS MATERIAL FOR MIXTURE 4.8% BY WT.

2341 PLANT MIXED WEARING COURSE.
BITUMINOUS MIXTURE 110 LBS./S.Y. PER 1" THICKNESS.
BITUMINOUS MATERIAL FOR MIXTURE 6.2% BY WT.

2357 BITUMINOUS MATERIAL FOR TACK COAT 0.05 GAL. PER S.Y.

2575 COMMERCIAL FERTILIZER,
ANALYSIS 10-10-10, 500#/AC. ON ALL SOD AREAS & SEED AREAS.

2575 ROADSIDE SEEDING BASED ON HORIZONTAL MEASUREMENT PLUS 10%
SEED MIXTURE NO.3 45 LBS. PER ACRE.

SPECIAL DETAILS

EXCAVATED MUCK MATERIAL SHALL BE USED TO CONSTRUCT INSLOPES ADJACENT TO MUCK EXCAVATION AREAS AND AS TOPSOIL COVERING THROUGHOUT THE PROJECT.

APPROXIMATELY 3,673 C.Y. OF EXCESS MUCK MATERIAL SHALL BE SPREAD TO A UNIFORM 3" TO 4" DEPTH OVER THE LENGTH OF THE PROJECT. THIS WORK WILL BE COMPENSATED FOR UNDER ITEM 2105.535 SALVAGE TOPSOIL.

ANY MUCK MATERIAL STOCKPILED ADJACENT TO EXCAVATION AREAS DURING CONSTRUCTION, SHALL BE REMOVED BY THE CONTRACTOR FROM LOW LANDS AND WET LANDS PRIOR TO FINISHING OPERATIONS TO APPROXIMATELY THE ORIGINAL GROUND ELEVATIONS.

THE CONTRACTOR SHALL DISPOSE OF EXCESS MUCK MATERIAL IN OTHER AREAS AS APPROVED BY THE ENGINEER. THIS SHALL BE CONSIDERED AS INCIDENTAL TO MUCK EXCAVATION OR CHANNEL EXCAVATION.

EXCESS GRANULAR MATERIAL FROM CHANNEL EXCAVATION SHALL BE REMOVED FROM SITE AND BE USED AS FILL IN ROADWAY CONSTRUCTION. THIS SHALL BE CONSIDERED AS INCIDENTAL TO CHANNEL EXCAVATION.

MATERIAL TO SURCHARGE SUBGRADE FROM STA. 69+00 TO STA. 82+70 IS INCLUDED IN GRANULAR BORROW QUANTITY. REMOVAL OF EXCESS SURCHARGE MATERIAL IS INCLUDED IN GRANULAR BORROW QUANTITY. REMOVAL OF EXCESS SURCHARGE MATERIAL IS INCLUDED WITH COMMON EXCAVATION QUANTITY AND WILL BE USED ON SLOPES AND SUBGRADE STATION 64+00 TO 89+00 AT THE DIRECTION OF THE ENGINEER.

SUGGESTED PROCEDURE FOR ROADWAY CONSTRUCTION AND FABRIC PLACEMENT STA. 69+00 TO 83+00.
(CONTRACTOR MAY MODIFY THIS PROCEDURE WITH ENGINEERS APPROVAL)

1. PLACE FABRIC AND FIRST LIFT OF FILL TO STA. 70+65
2. EXCAVATE MUCK FOR CULVERT FOUNDATION STA. 70+75
3. PLACE CONSTRUCTION FABRIC IN TRENCH AND BACK FILL WITH GRANULAR MATERIAL.
4. PLACE CONSTRUCTION FABRIC 70+85 TO 72+35 AND FILL WITH GRANULAR MATERIAL TO GROUND LEVEL ELEVATION.
5. PLACE FABRIC 71+00 TO 82+20 AND COMPLETE FIRST LIFT OF FILL FROM 70+65 TO 82+20.
6. Place fill 69+00 TO 83+00 IN 4 LIFTS, ALLOWING 5 TO 10 DAYS SETTLEMENT BETWEEN LIFTS (SEE SPECIAL PROVISIONS).
7. PLACE TEMPORARY 15" C.M.P. CULVERT STA. 70+75 AFTER FIRST LIFT HAS BEEN PLACED, AT DIRECTION OF ENGINEER.
8. REMOVE TEMPORARY 15" C.M.P. CULVERT AND INSTALL PERMENANT 48" R.C.P. CULVERT AFTER ROADWAY IS CONSTRUCTED TO GRADING GRADE.

FORM 21167 - 2-65

CLEARING AND GRUBBING

STATION (TO STATION)	LOC.	CLEARING TREE	CLEARING ACRE	GRUBBING TREE	GRUBBING ACRE
54+27	2'LT	1		1	
54+30	6'RT	1		1	
54+34	9'RT	1		1	
54+42	℄	1		1	
54+54	8'LT	1		1	
54+58	51'LT	1		1	
54+66	2'RT	1		1	
54+75	11'RT	3		1	
55+18	45'LT	1		1	
66+12 - 66+40	30-75'LT		0.05		
67+39 - 67+62	33-37'LT		0.05		
67+82 - 69+63	0-66'LT-		0.60		
	0-59'RT				
70+80	20'LT	1			
70+82	50'LT	1			
71+25	25'RT				
71+25	30'RT				
71+25	40'RT	1			
71+73	45'LT	1			
71+75	48'LT	1			
74+90 - 75+20	45-58'LT		0.05		
79+39 - 81+65	0-66'LT-		0.65		
	0-55'RT				
84+12	31'LT	1		1	
84+40 - 84+50	30-40'RT		0.05		0.05
84+90 - 92+72	74'LT90'RT		2.45		2.45
104+00 - 104+25	36-43'LT		0.05		0.05
L^1 9+52 - L^1 9+72	30-40'LT		0.05		0.05
7+20 - 8+80	DITCH CON.		0.15		0.15
11+00 - 13+35	RT. 108+26		0.25		0.25
	TOTALS	17	4.40	10	3.60

SALVAGE & INSTALL FENCE

STATION	LOC.	SALVAGE	INSTALL	REMARKS
52+84	70'LT-75'RT	145'	0'	LINE FENCE
52+75 TO 52+84	75'RT	9'	9'	
52+75 TO 55+18	75'RT	243'	243'	
TOTALS=		397'	252'	

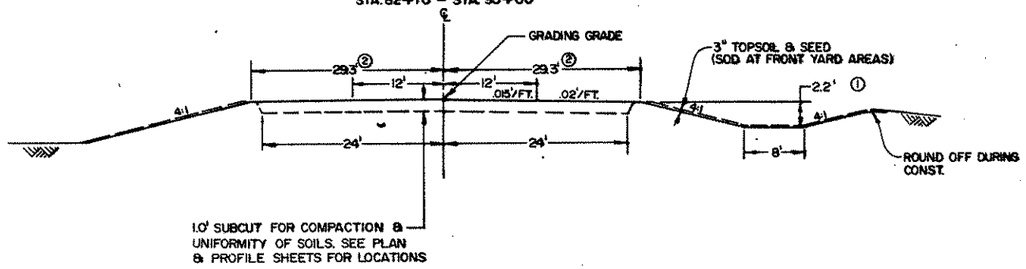
SODDING

STATION	LOC	S Y
56+40 TO 59+90	MEDIAN	445
69+00 TO 88+00	1	1267
92+00 TO109+00	1	1133
98+80 TO 100+55	MEDIAN	235
105+30 TO 108+81	MEDIAN	465
1+50 TO 5+30	1 RT.TURN LANE	255
CULV. ENDS		225
	TOTALS	4025

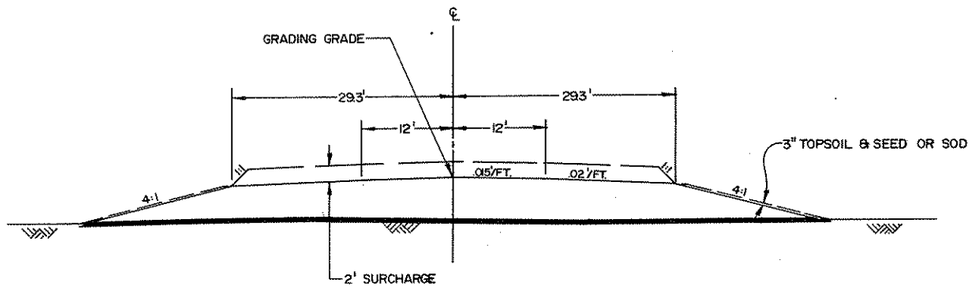
TYPICAL SECTIONS

ALL DIMENSIONS NOMINAL

GRADING
STA. 52+46 – STA. 69+00
STA. 82+70 – STA. 95+00

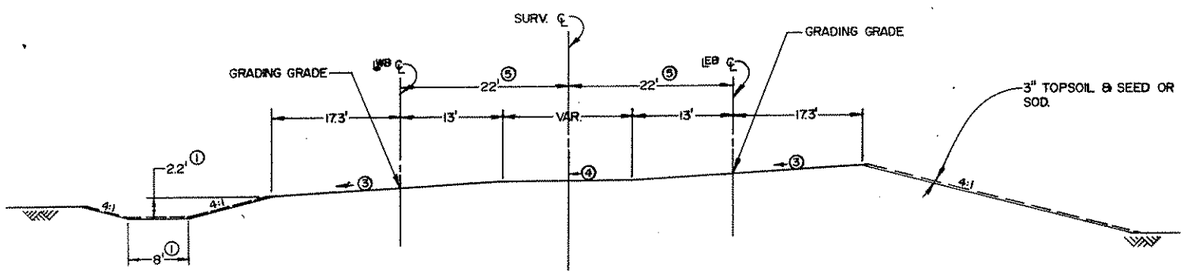


GRADING
STA. 69+00 – STA. 82+70

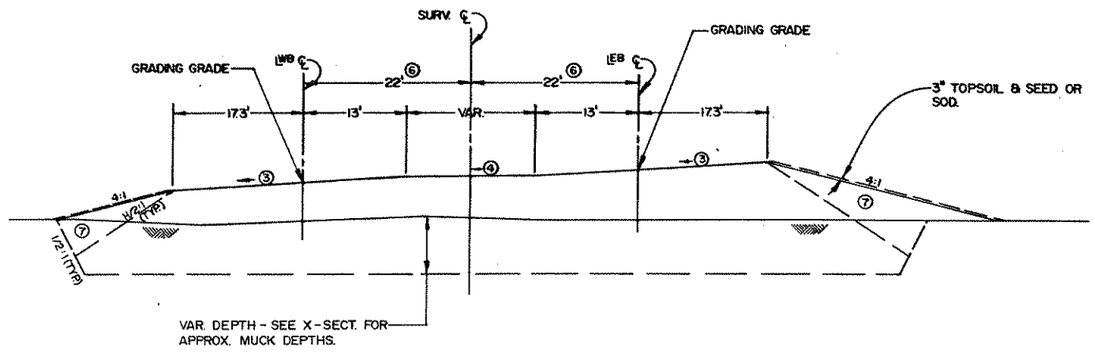


▬ DENOTES APPROX. FABRIC PLACEMENT LIMITS

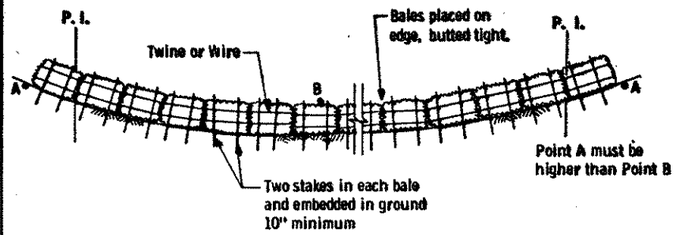
GRADING
STA. 95+00 – STA. 111+00
IN SUPERELEVATION



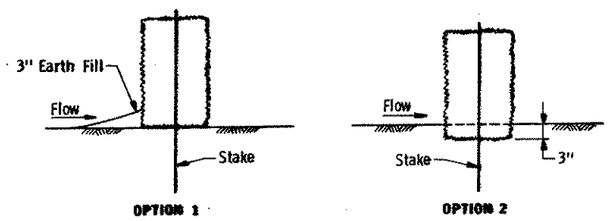
TYPICAL MUCK SECTION
STA. 95+24 – STA. 103+00
IN SUPERELEVATION



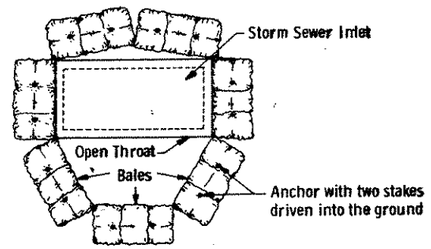
① FOR SPECIAL DITCHES SEE PLANS & CROSS SECTIONS
② VAR. WIDTH IN ISLAND CONST. AREAS SEE PLAN & PROFILE SHEETS FOR GEOMETRICS & E.B. OR W.B. ALIGN.
③ SEE SUPER CHART FOR SLOPE
④ VAR. – .015'/FT. IN LT. TURN LN. AREA
⑤ TAPERS FROM 22' – 12'
STA. 95+00 – STA. 100+00
STA. 106+46.5 – STA. 110+67
SEE PLAN & PROFILE SHEETS FOR GEOMETRICS
⑥ TAPERS FROM 22' – 12'
STA. 95+00 – STA. 100+00
SEE PLAN & PROFILE SHEETS FOR GEOMETRICS.
⑦ FILL WITH SWAMP EXCAVATION MATERIAL.



BALE HAY OR STRAW DITCH CHECK



DITCH CHECK SECTIONS



BALE DIVERSION TO PROTECT STORM SEWER INLETS

STORM SEWER SYSTEM

NO.	STATION	LOCATION	REMARKS	TYPE	DESIGN	LIN. FT.	REMOVE SEWER PIPE	TOP	OUTLET	F&I CASTING ASSEMBLY	DRAINS TO	RCP SEWER 12"CL III		15"CL III			
1	100+00	12.9'LT EBL	F&L 15" RC APRON	CB	C OR G	4.2	-	868.83	864.50	B	PONDING AREA			44'			
2	101+50	12.9'LT EBL	F&L 15" RC APRON	CB	C OR G	5.0	-	869.31	864.14	B	PONDING AREA			58'			
3	101+50	54' RT EBL	CONST. CB IN DEPRESSED MEDIAN	CB	C OR G	3.8	-	868.35	864.68	A	CB 2	67'					
4	108+00	12.9'LT EBL	F&L 15" RC APRON	CB	C OR G	4.5	-	868.71	864.00	B	DITCH			41'			
					TOTALS	17.5						67'		143'			

CASTING ASSEMBLIES

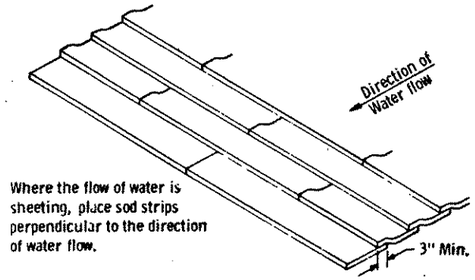
ASSEMBLY	ITEM	CASTING NO.	QUANTITY
A	FRAME GRATE	700-7 721	1
B	FRAME GRATE CURB BOX	301 810 821 B	3

DRAINAGE

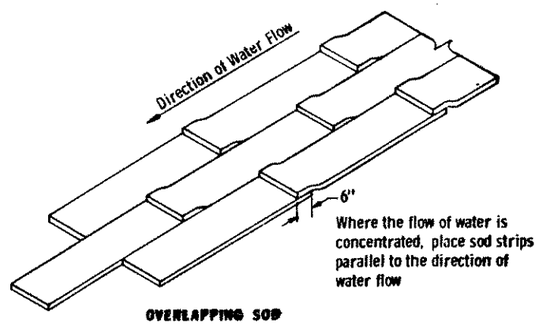
STATION	LOCATION	IN PLACE	REMARKS	REMOVE PORT. CULV. LIN.FT.	REMOVE CONC. STRUCT. CU.YD.	PORTABLE CULVERTS SALVAGE CULV. LIN.FT.	SOD-DING SQ.YD.	RIP-RAP CU.YD	22"SPAN RCP-A LIN.FT.	AP.	48"RCP LIN.FT.	AP.	44"SPAN RCP-A LIN.FT.	AP.	51"SPAN RCP-A LIN.FT.	AP.	15"CMP LIN.FT.	AP.	LIN.FT.	AP.
53+50	℄	-					29		78	2										
61+00	LT.	-	ENT.				17										42	2		
68+00	LT.	-	ENT. NO CULV. REQ.																	
70+75	℄	-				① 112	50				82	2					① 112			
81+90	LT.	-	ENT.				17										42	2		
90+17	LT.	-	RD.APR. NO CULV.REQ.																	
97+00	℄	-					50						84	2	SALVAGE ℄ PIPE CULV.					
108+26	℄	36"X66' CMP		66			58								88	2				
81+00	℄		SALVAGE FROM STA.	97+00									128	2						
			TOTALS	66		112	221		78	2	82	2	84	2	88	2	196	4		

① FOR TEMPORARY USE UNTIL ROADWAY CONSTRUCTED TO GRADING GRADE AND PERMANENT PLACEMENT OF 48" RCP CULV.

NOTE: TIE ALL SECTIONS RCP & RCP-A CULVERT EXCEPT 22" SPAN RCP-A TIE APRON AND 2 SECTIONS OF 22" SPAN RCP-A CULVERT.

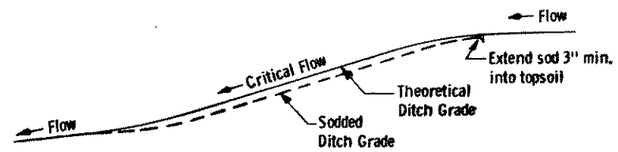


SHINGLING SOD



OVERLAPPING SOD

SPECIAL SOD PLACEMENT TECHNIQUES



NOTE: APPLIES TO DITCH GRADES 2.0% OR GREATER.

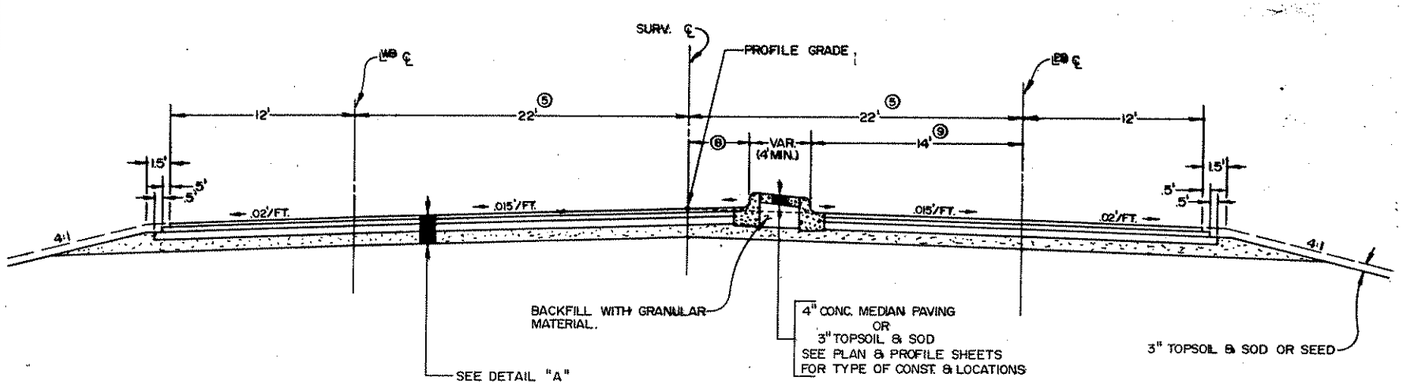
DITCH PROFILE

SODDED DITCH DETAILS

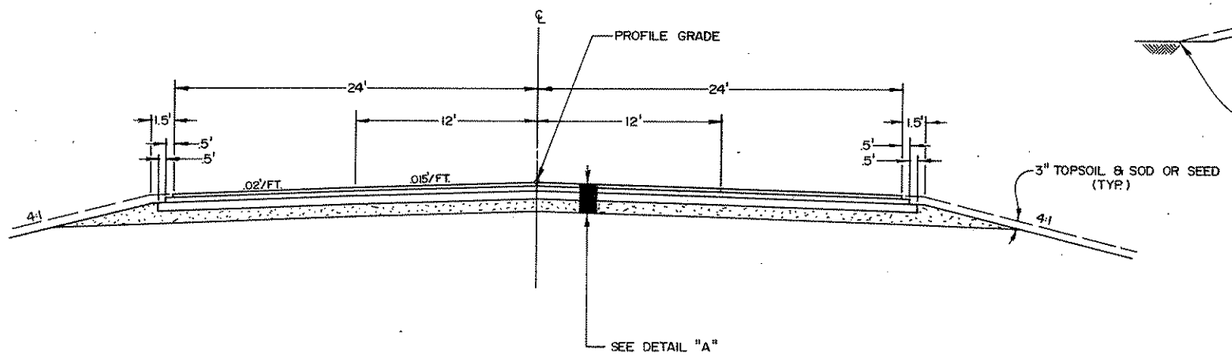
ALL DIMENSIONS NOMINAL

TYPICAL SECTIONS

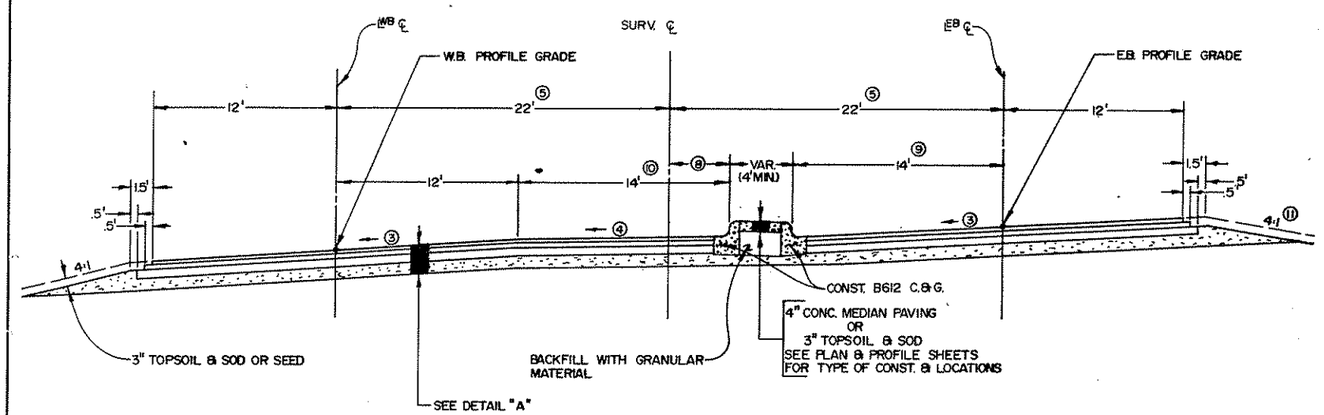
BASE & BITUMINOUS SECTION
STA. 52+46 – STA. 63+75



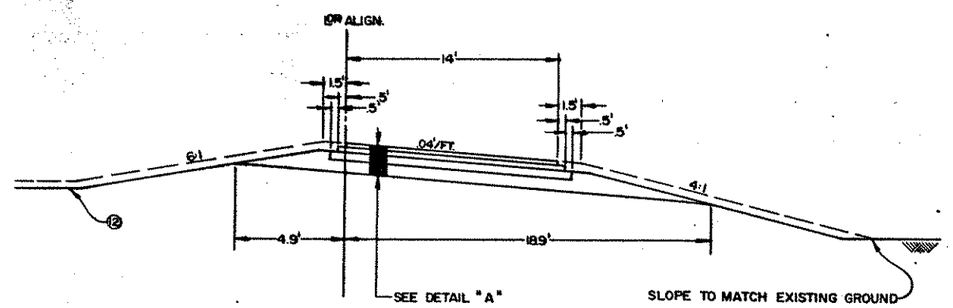
BASE & BITUMINOUS SECTION
STA. 63+75 – STA. 95+00



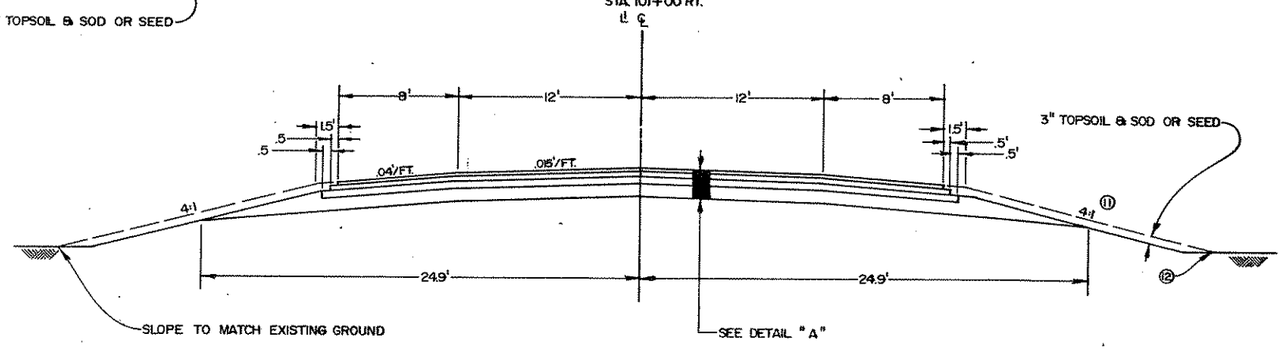
BASE & BITUMINOUS SECTION
STA. 95+00 – STA. 111+00



℄ FREE RIGHT LANE
GRADING, BASE & BITUMINOUS SECTION



℄ ROAD APPROACH
GRADING, BASE & BITUMINOUS SECTION
STA. 101+00 RT.

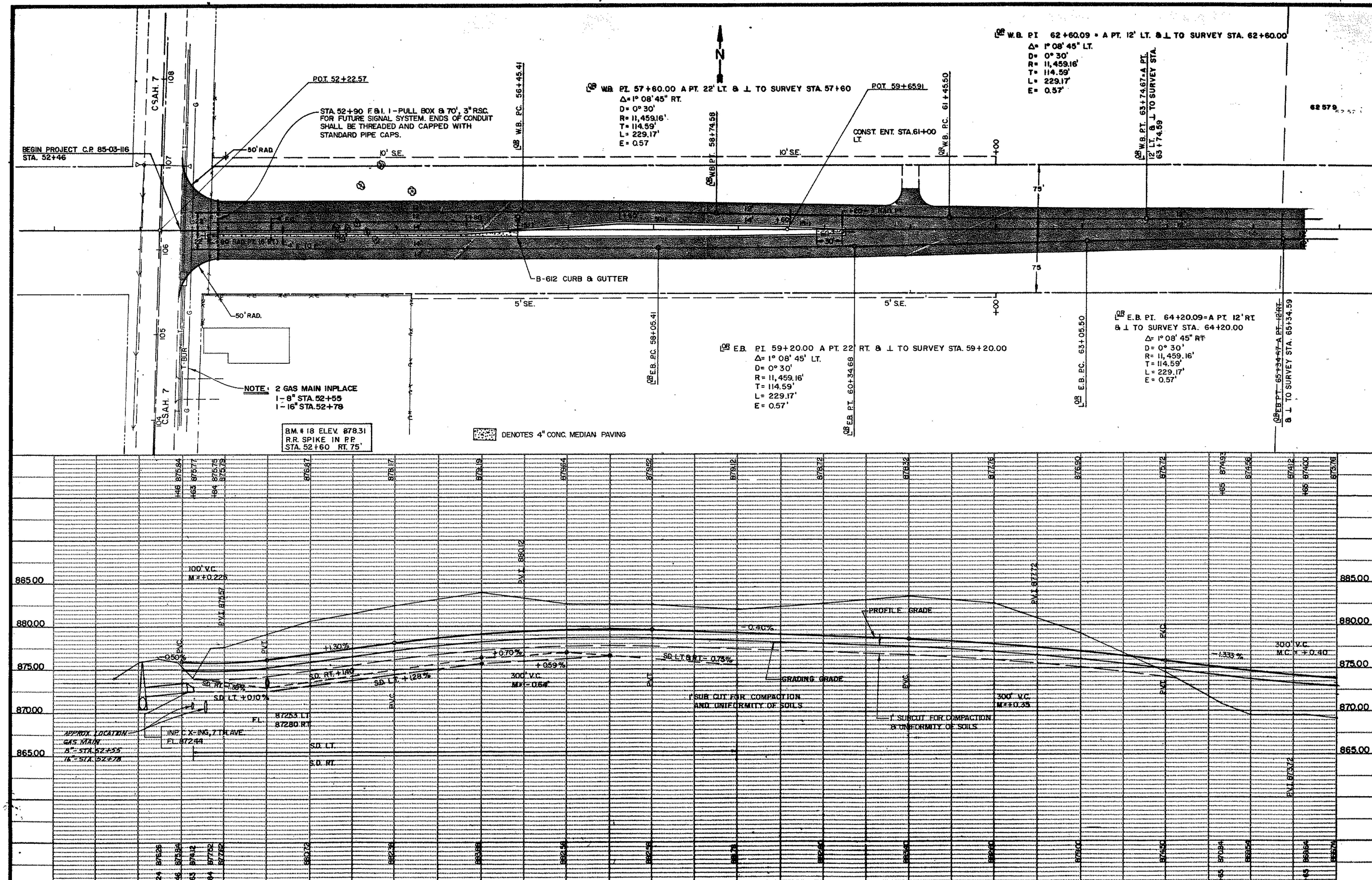


11/2" 2341 WEARING COURSE
2" 2331 BINDER COURSE
3" 2331 BASE COURSE
5" 2211 AGGREGATE BASE CL.–5A

DETAIL "A"

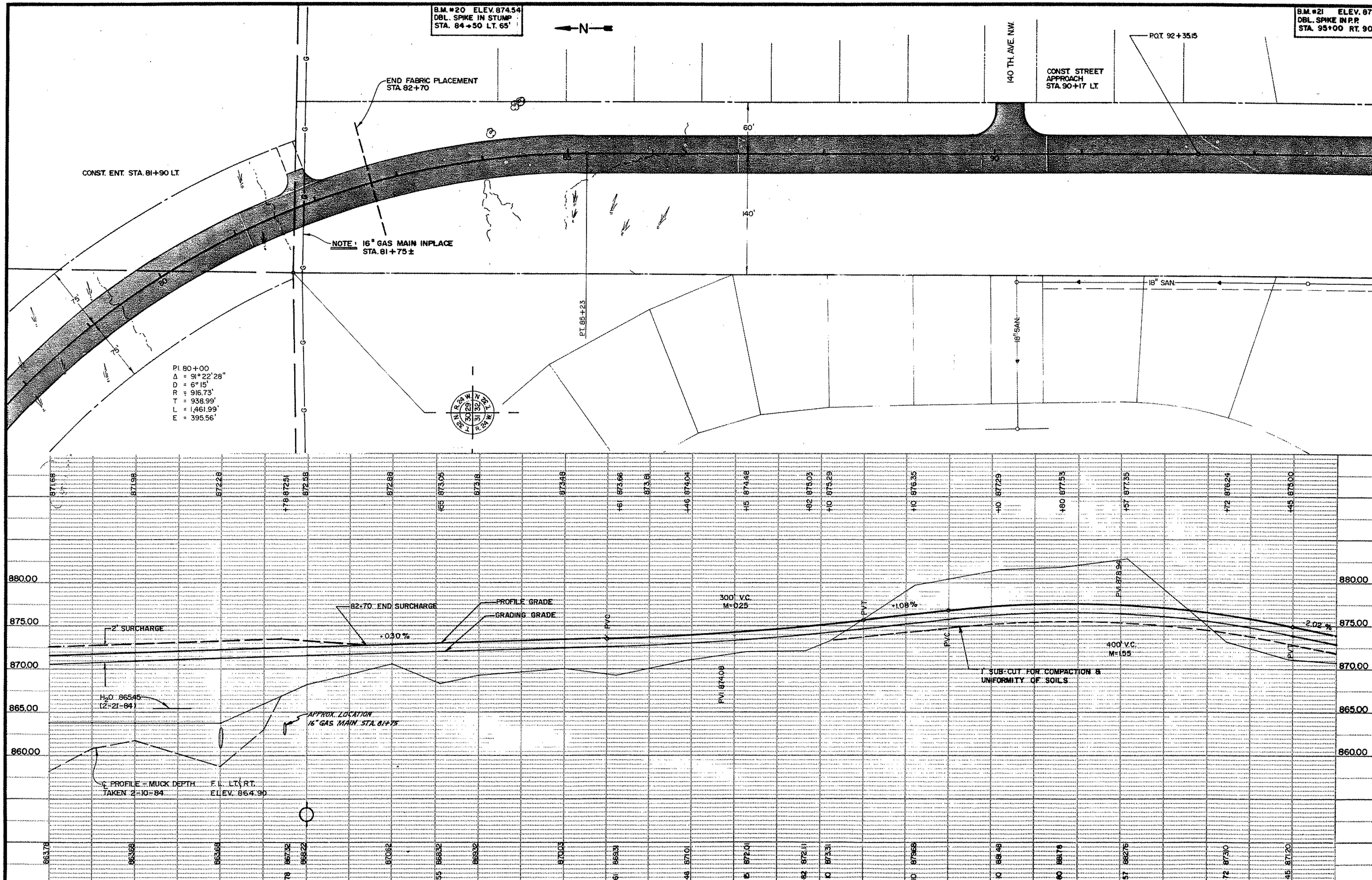
③ SEE SUPER CHART FOR SLOPE
④ VAR. – .015'/FT. IN LT. TURN LN. AREA
⑤ TAPERS FROM 22' – 12'
STA. 95+00 – STA. 100+00
STA. 106+46.5 – STA. 110+67
SEE PLAN & PROFILE SHEETS FOR GEOMETRICS

⑧ VARIES FROM 4' RT. TO 8' LT. SEE PLAN & PROFILE SHEETS FOR ISLAND GEOMETRICS.
⑨ APPLIES IN ISLAND CONST. AREAS ONLY.
⑩ VARIES FROM 2' TO 14'
⑪ 6:1 IN DEPRESSED MEDIAN CONST. AREA.
⑫ SLOPE TO MATCH EXISTING GROUND SEE ℄ ROAD APPROACH X-SECTIONS FOR DEPRESSED MEDIAN CONST.

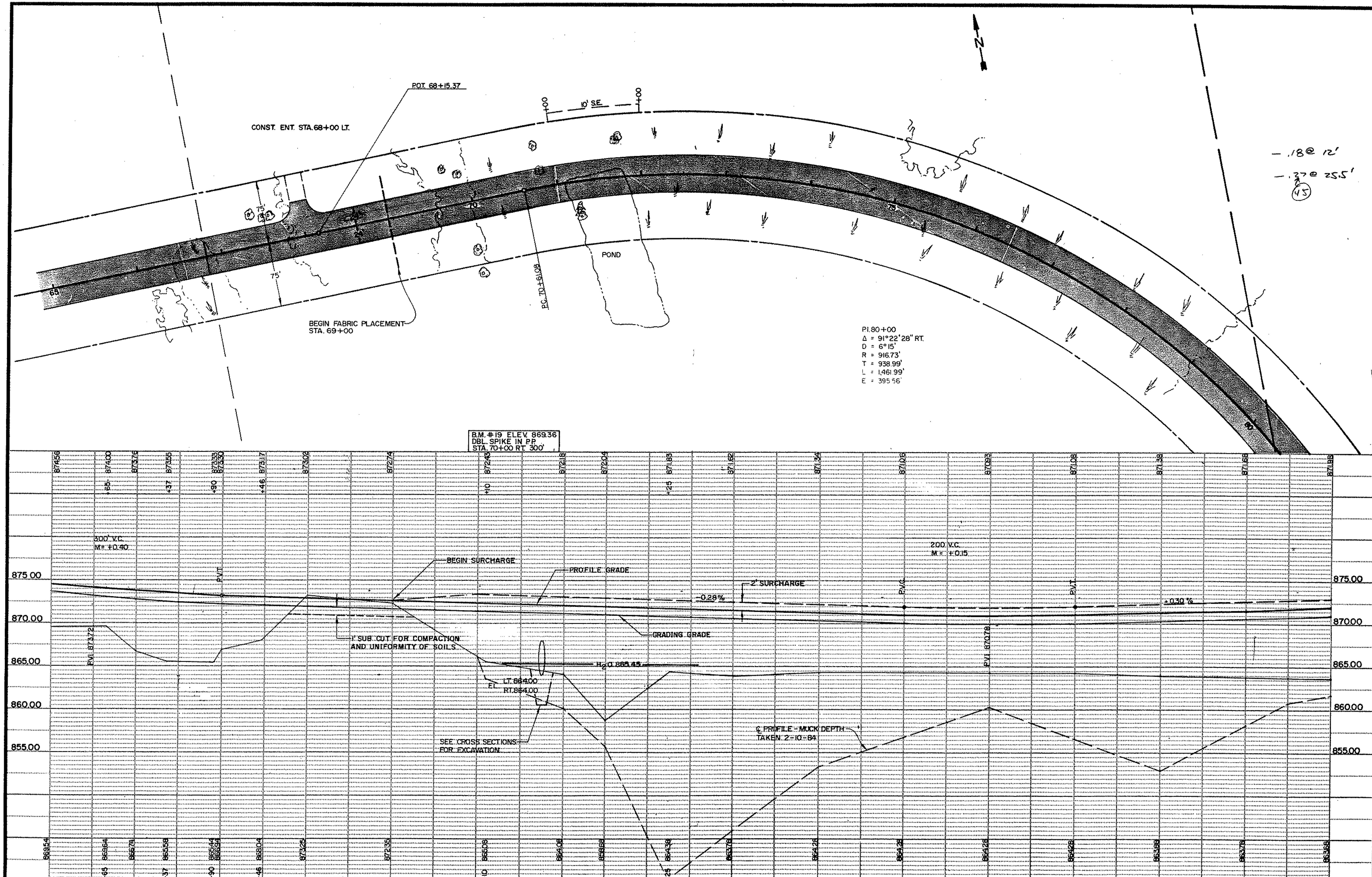


State Proj. No. C.P. 85-03-116

Sheet No. 6 of 21 Sheets

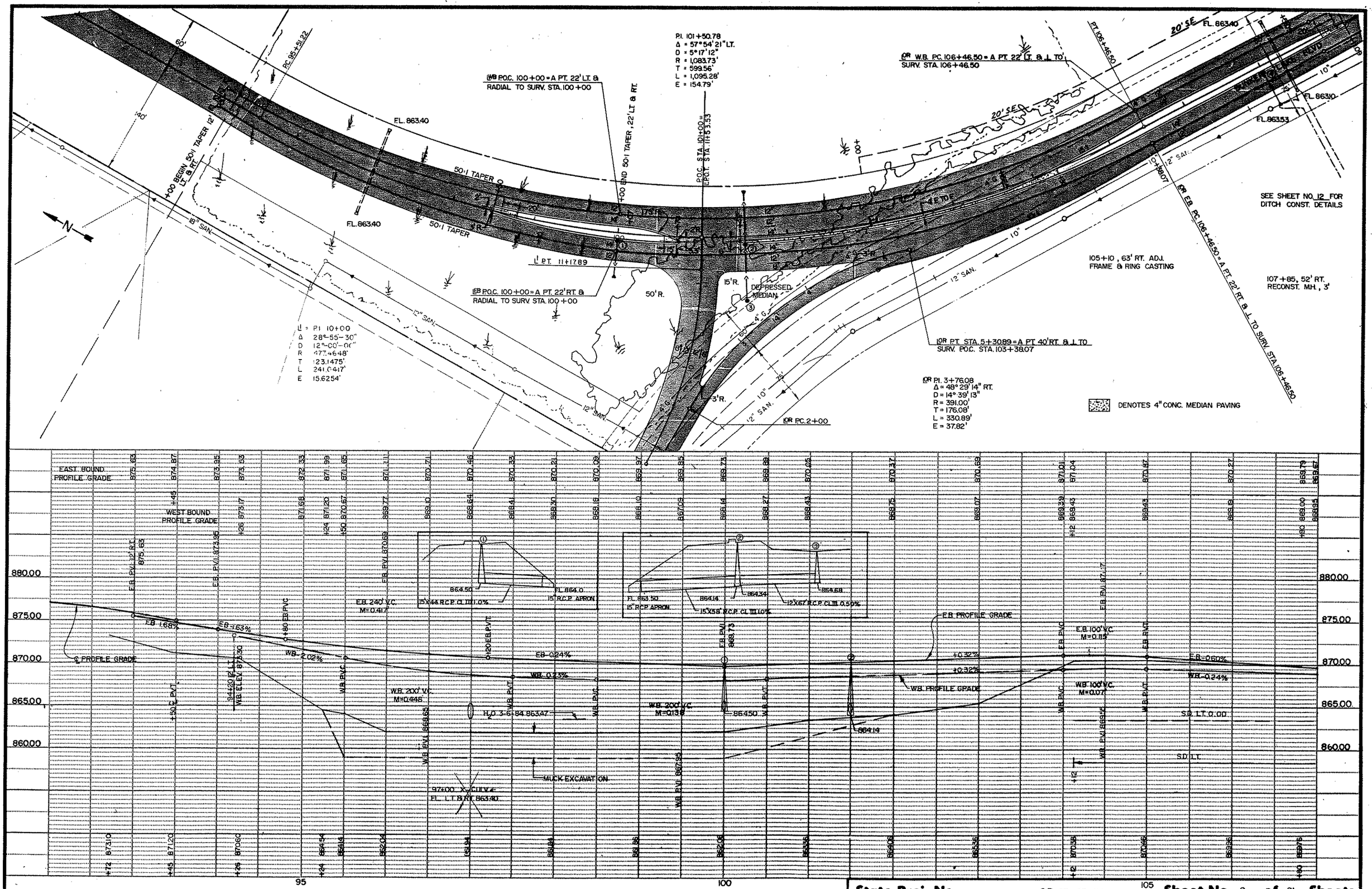


State Proj. No. C.P. 85-03-116 Sheet No. 8 of 21 Sheets



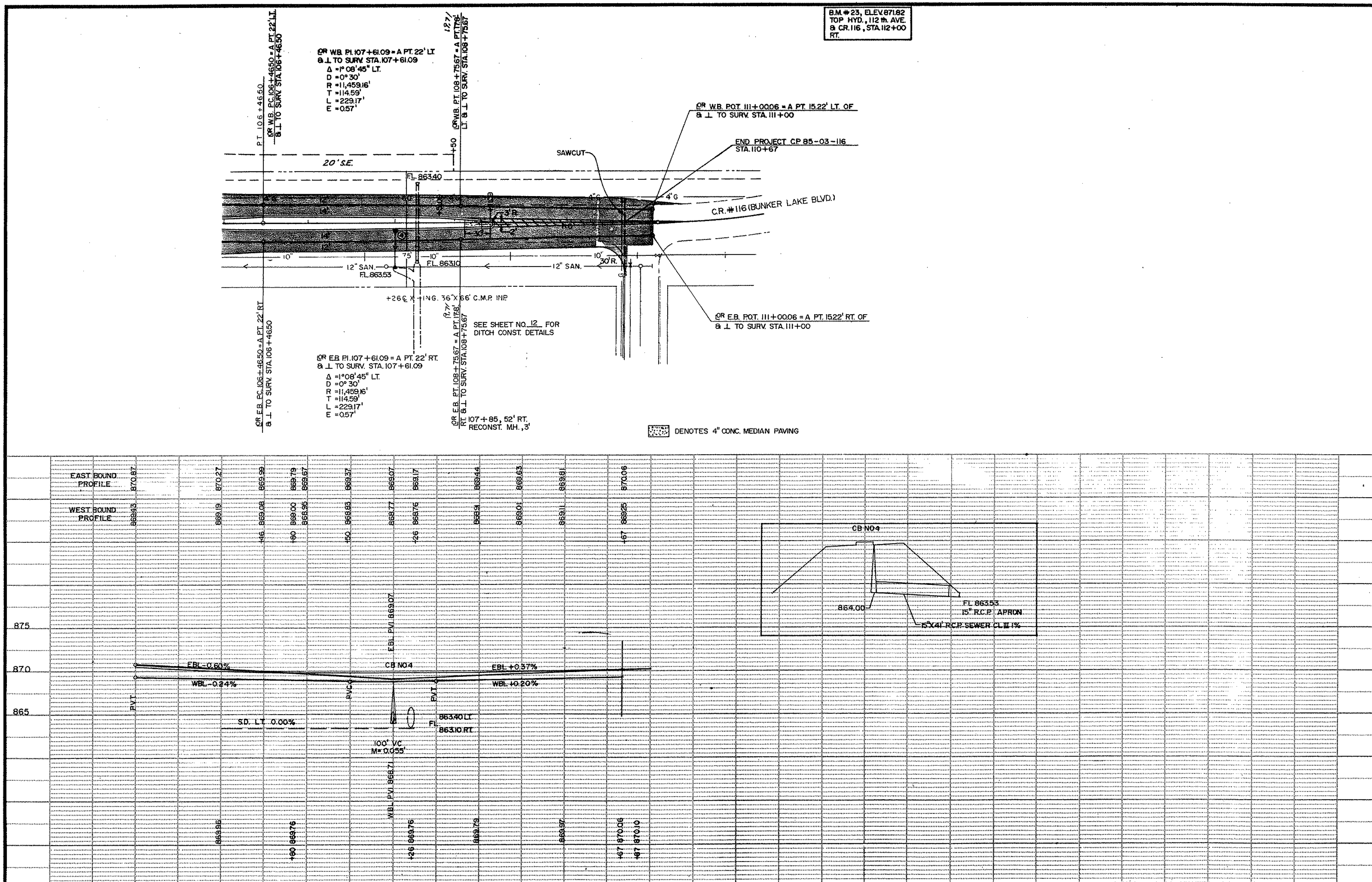
State Proj. No. C.P. 85-03-116 Sheet No. 7 of 21 Sheets

TELEDYNE POST - SINGLE PLAN - PROFILE - 10214

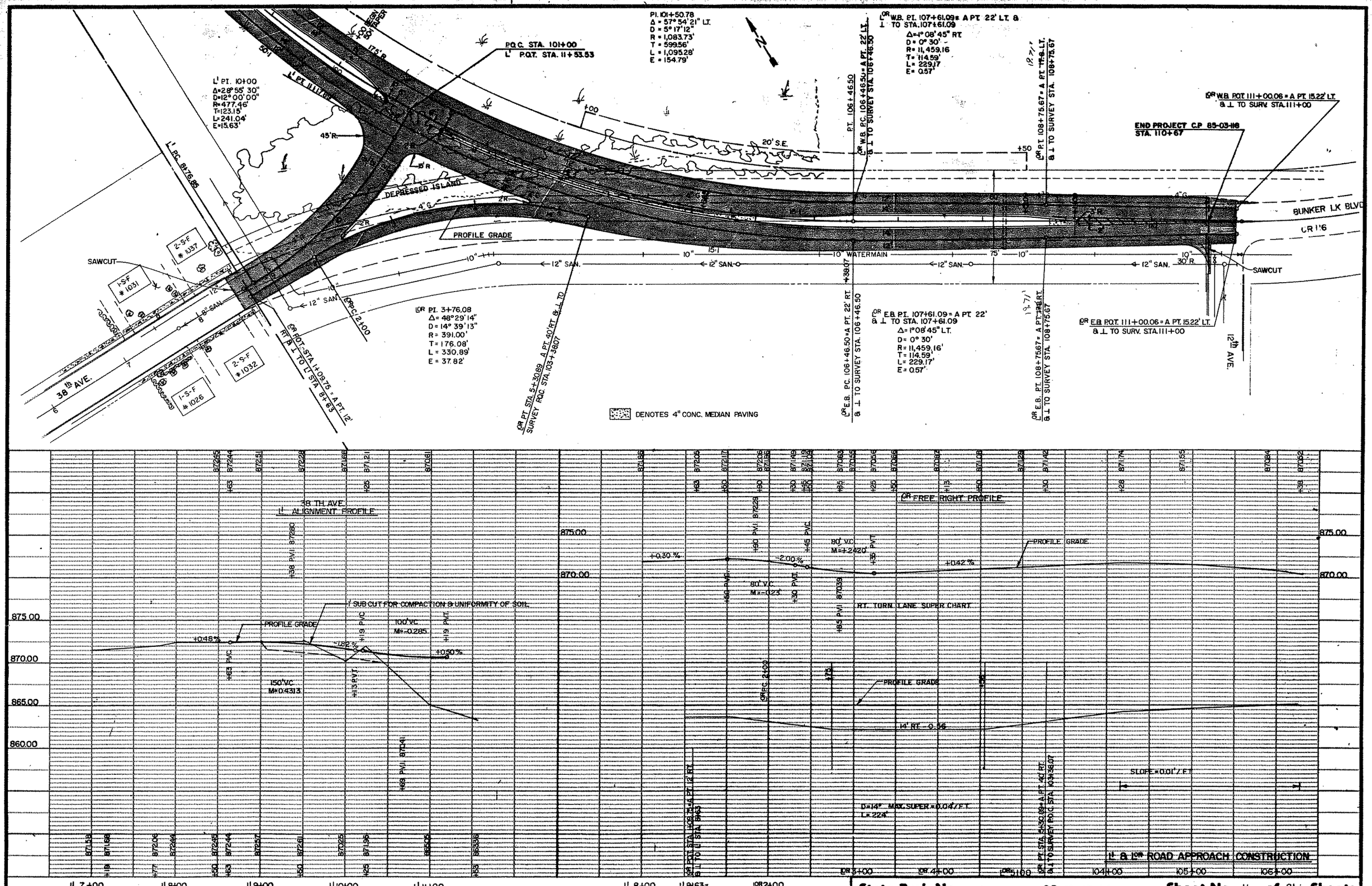


TELEDYNE POST - SINGLE PLAN - PROFILE - 10x14

State Proj. No. C.P. 85-03-116 **Sheet No.** 9 **of** 21 **Sheets**



State Proj. No. C.P. 85-03-116 **Sheet No.** 10 **of** 21 **Sheets**



State Proj. No. C.P. 85-03-116 **Sheet No.** 11 **of** 21 **Sheets**

DITCH CROSS SECTIONS

SCALE: 1"= 10'

11+00 866.28 EXC. FILL

39

10+90 865.72

93

10+00 867.82

340

9+40 867.72

179

9+00 866.52

352

8+00 864.82

94

7+00 863.64

37

6+00 863.54

19

5+52 863.74

8

SQ. EL. OF CULV. (36" CMP. CULV. INPL.)
5+00 863.17

19+47 861.27 EXC. FILL

49

19+00 861.89

161

18+00 861.99

191

17+00 861.89

177

16+00 861.69

93

15+00 862.09

87

14+00 862.19

139

13+00 862.88

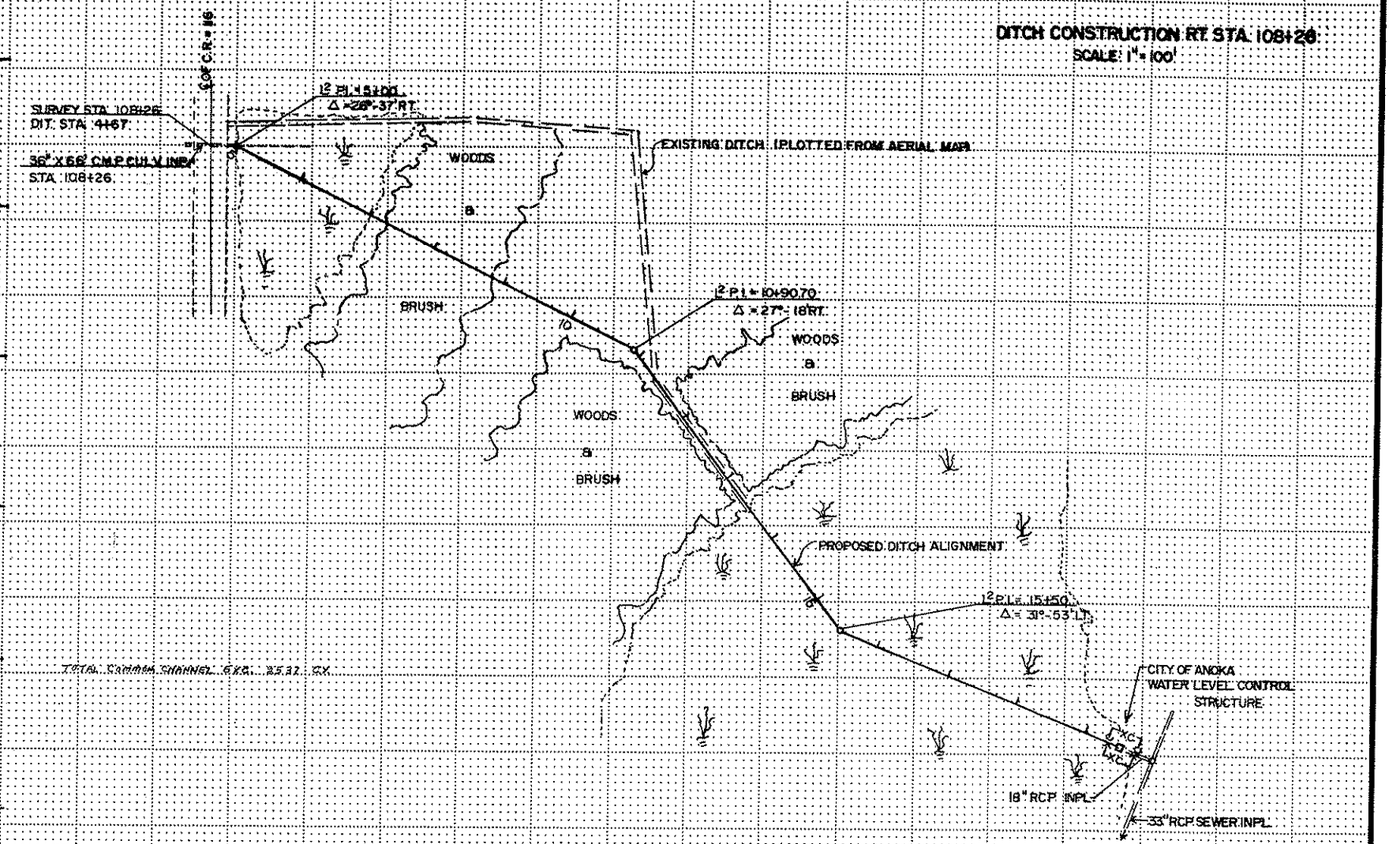
157

12+00 862.98

78

11+38 863.48

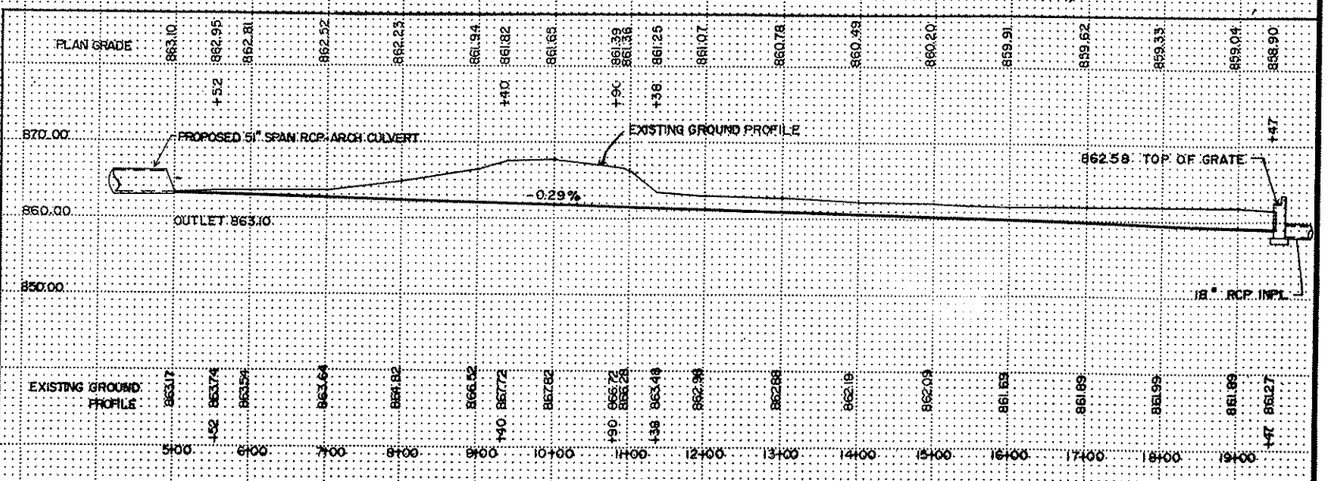
91



TOTAL SUMMER CHANNEL EXC. 2532 C.Y.

DITCH CONSTRUCTION RT. STA. 108+26

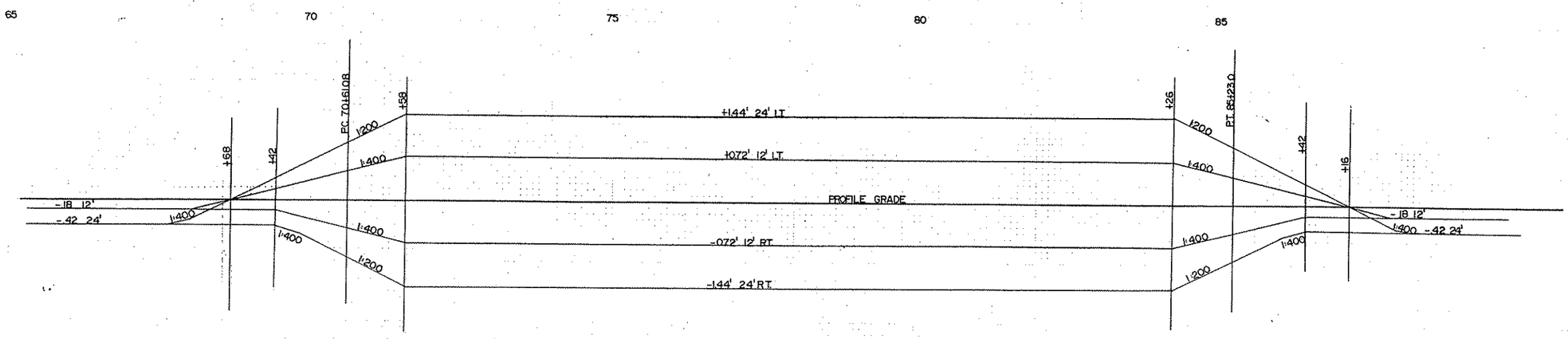
SCALE: 1"= 100'



DITCH PROFILE

SCALE: VERT. 1"= 10'
HORZ. 1"= 100'

SUPER ELEV. CHARTS



.06'/FT. MAX. SUPER

PROFILE GRADE WBL — 160+46 — PROFILE GRADE EBL

12' 14' 14' 12'

.038/1' .038/1'

102+00

12' 12' 14' 4' 14' 12'

.057/1' .015/1' .057/1'

LT. TURN LN.

99+00

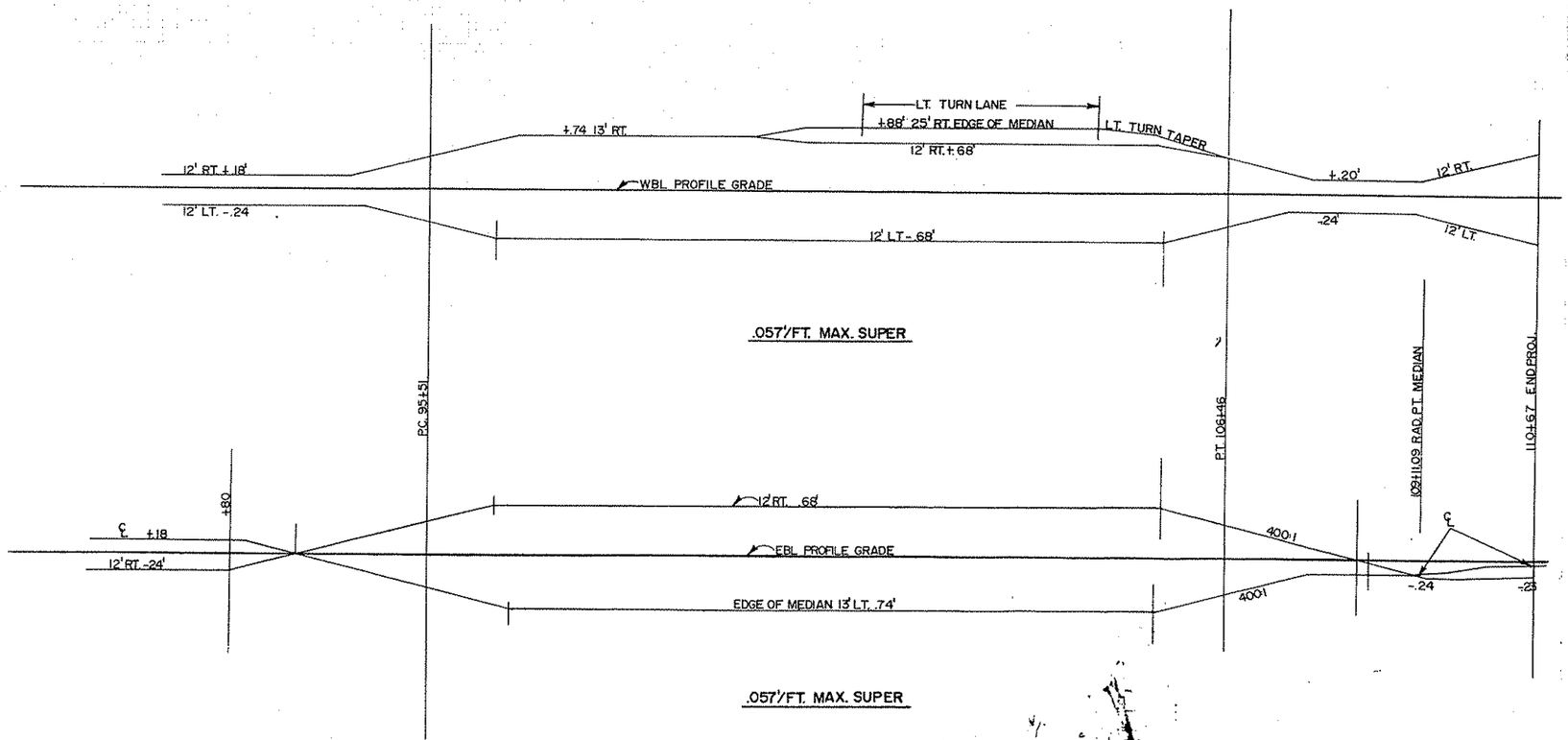
12' 14' 14' 12'

.057/1' .057/1'

PROFILE GR. WBL — 95+00 — PROFILE GR. EBL

12' 12' 12' 12'

.027/1' .027/1'



75 R.W.

EXC. FILL

54+00 882.72

SD 87317

53+50 87930

VAR.

FL. 87253

F&I 22" SPAN x 78" RCP-A CULV.
F&I 22" SPAN RCP-A APRONS

2852 0
VC 255 TS 79

53+00 87792

SD 87248

SD 87350

270 0
VC 93 TS 12

52+84 877.52

52+84 ℄ CROSSING FENCE

SD 87246

SD 87370

APPROX. LOCATION 16" GAS MAIN
STA. 52+78

308 32
VC 81 TS 19

52+63 874.12
EAST INT. C.S.A.H. "7"

SD 87244

SD 87440

APPROX. LOCATION 8" GAS MAIN
STA. 52+55

85 18
VC 70 TS 13

52+46 875.84
EAST SH. CSAH 7 (BIT)

52+24 87526
℄ CSAH 7

50+00 882.60

EXC. FILL

2608 0
VC 237 TS 79

55+00 881.78

2930 0
VC 240 TS 79

58+00 882.58

SD 87625

SD 87625

2532 0
VC 237 TS 79

57+00 882.58

SD 87632

SD 87701

2956 0
VC 255 TS 79

56+00 883.88

SD 87573

SD 87631

3339 0
VC 255 TS 79

55+00 882.38

SD 87445

SD 87490

STA 54+24 TO 60+00

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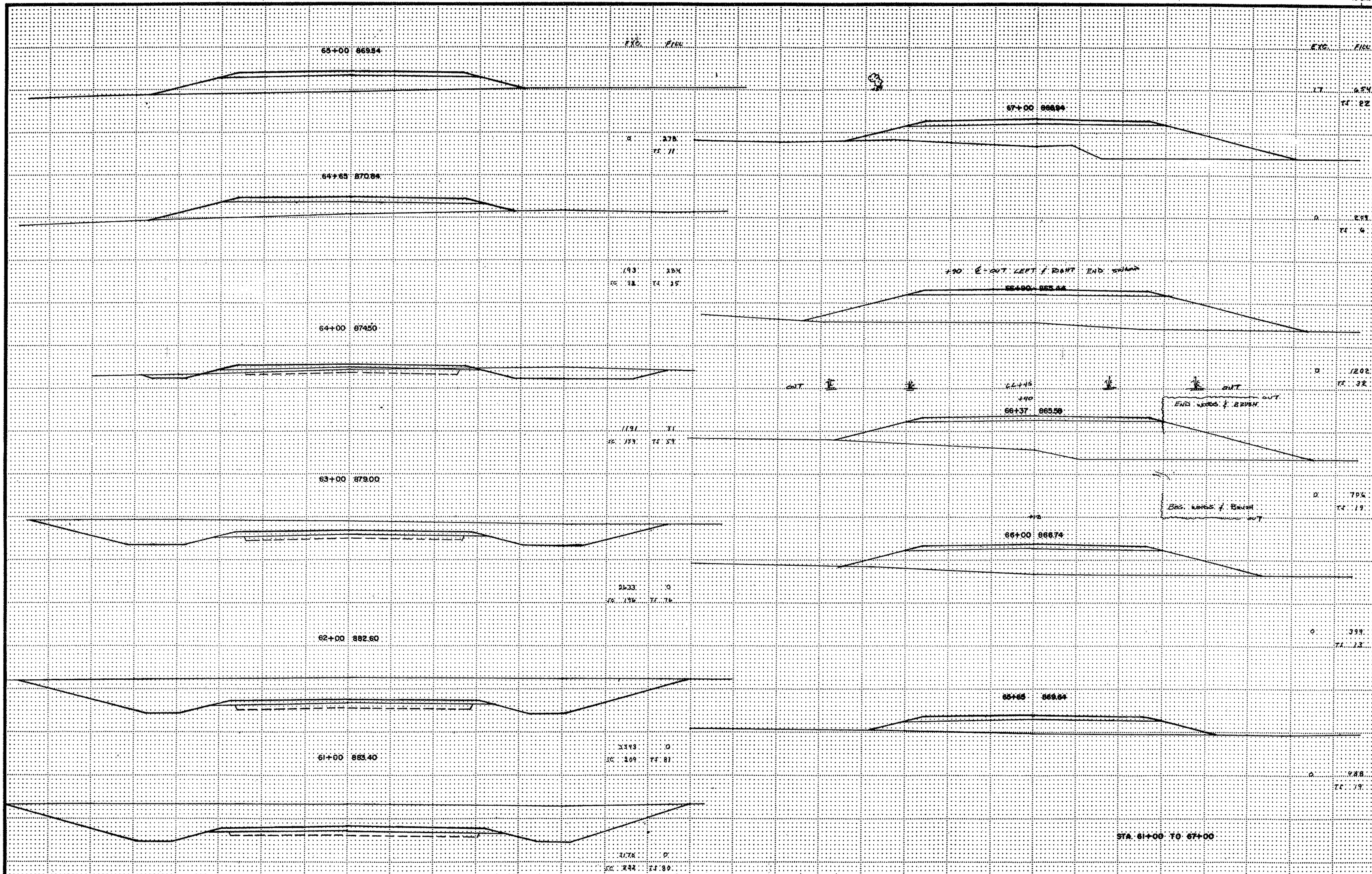
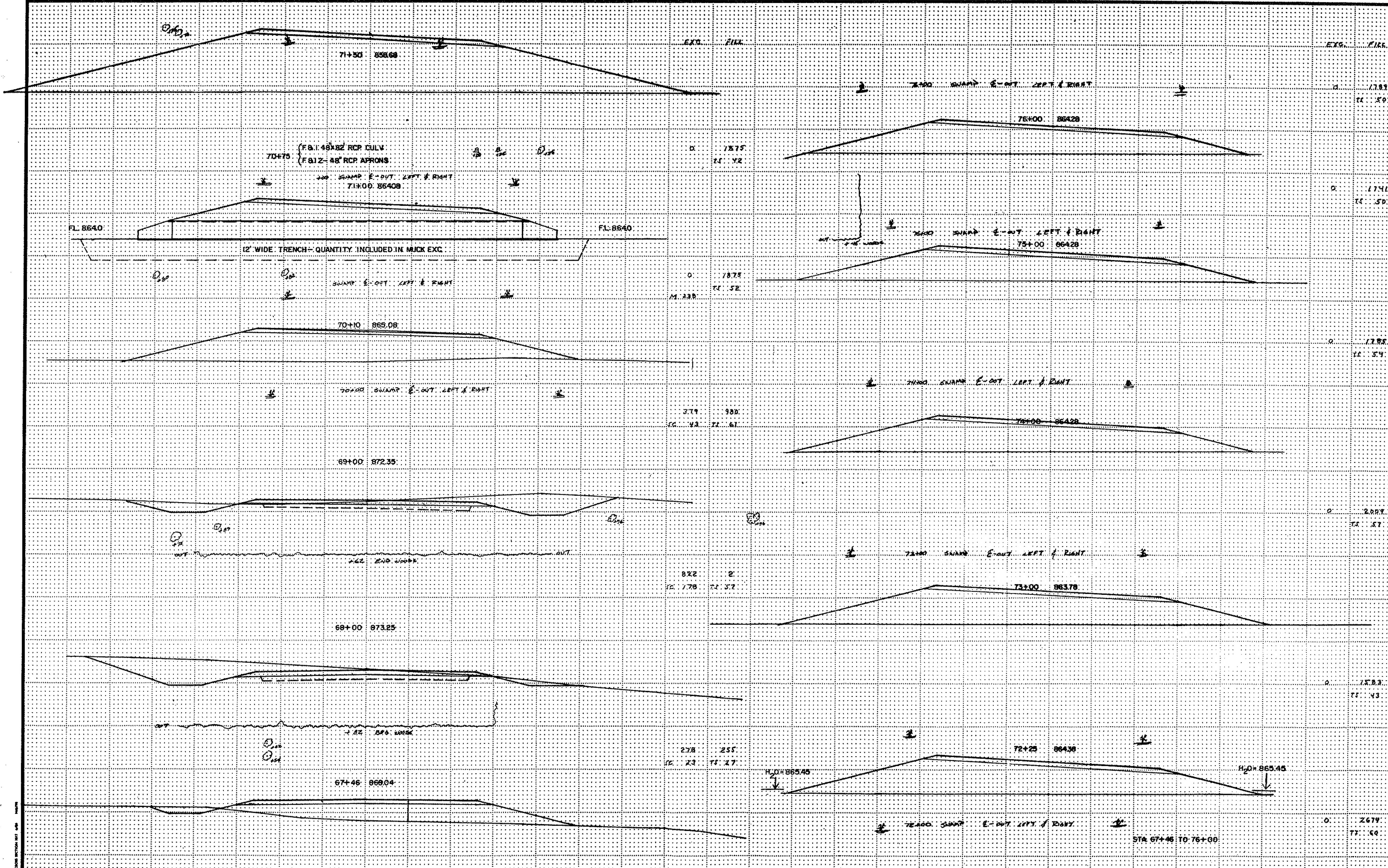
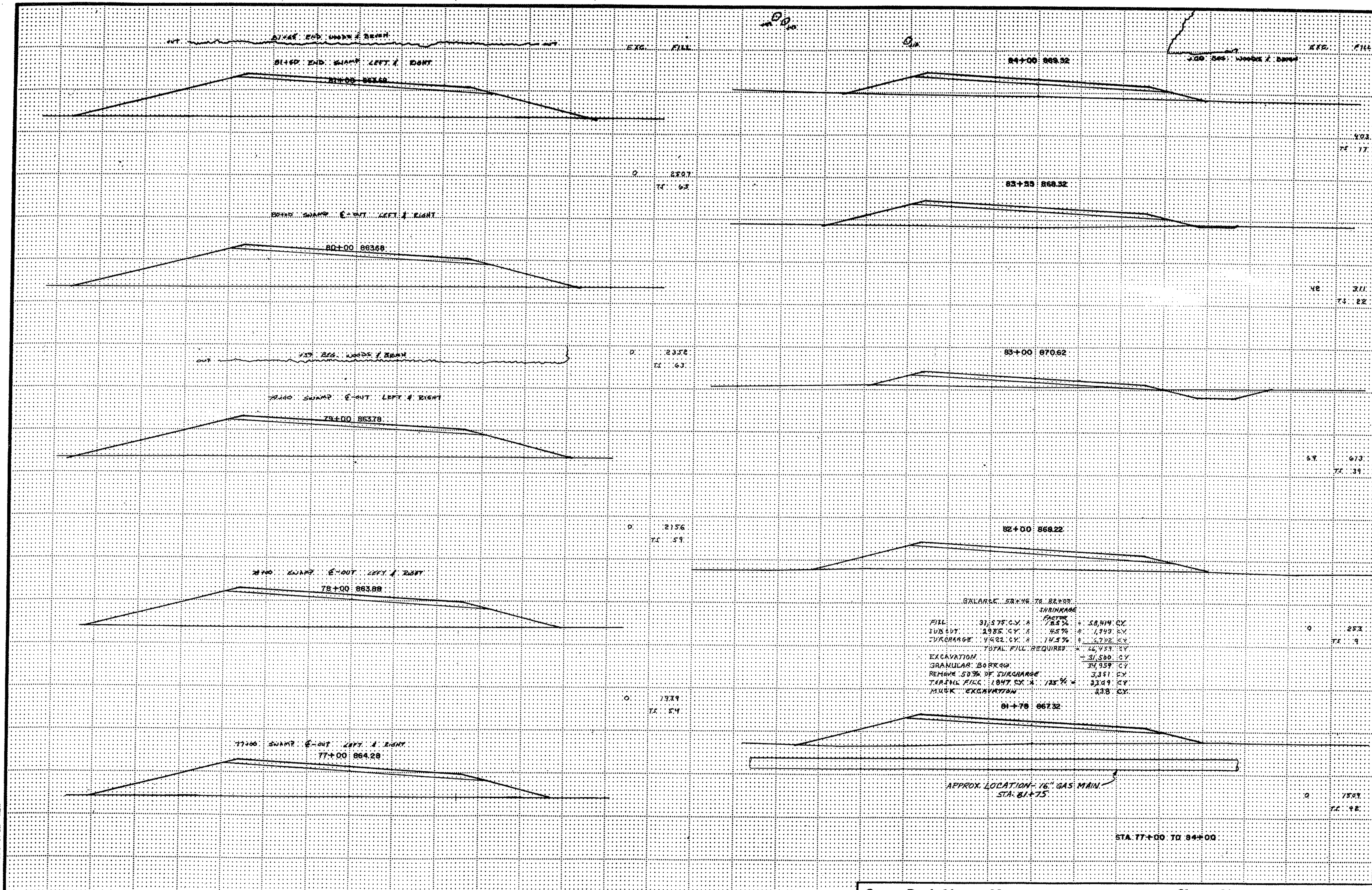


State Proj. No. CP 85-03-116 **Sheet No.** 15 **of** 21 **Sheets**



State Proj. No. C.P. 85-03-116 **Sheet No.** 16 **of** 21 **Sheets**



BALANCE 52+46 TO 82+00

			Shrinkage Factor		
FILL	31,575 C.Y.	x	185 %	=	58,414 C.Y.
SUBCUT	2985 C.Y.	x	45 %	=	1,343 C.Y.
SURCHARGE	4622 C.Y.	x	145 %	=	6,702 C.Y.
	TOTAL FILL REQUIRED			=	66,459 C.Y.
EXCAVATION					− 31,500 C.Y.
GRANULAR BORROW					34,959 C.Y.
REMOVE 50% OF SURCHARGE					3,351 C.Y.
TOPSOIL FILL	1847 C.Y.	x	125 %	=	2,309 C.Y.
MUCK EXCAVATION					238 C.Y.

EXC. FILL

87+82 872.11

87+15 872.01

87+00 WOODS ℄ OUT RIGHT & LEFT

63 396
TS 33

86+46 871.01

86+18 BEG. WOODS

86+00 WOODS ℄ OUT

86+00 WOODS 52' RIGHT-OUT

85+61 869.31

29 792
TS 43

86+00 WOODS 52' RIGHT-OUT

86+00 WOODS 46' RIGHT-OUT

85+00 870.03

0 564
TS 25

0 783
TS 33

EXC. FILL

91+57 882.76

91+00 WOODS ℄ OUT RIGHT & LEFT

1697 10
SC 1760 TS 70

90+80 881.78

1639 9
SC 1727 TS 63

90+10 881.48

2187 9
SC 1851 TS 87

89+10 879.68

1126 83
SC 1111 TS 46

89+00 WOODS ℄ OUT RIGHT & LEFT

88+10 873.31

88+00 WOODS ℄ OUT RIGHT & LEFT

STA. 85+00 TO STA. 91+57

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EXC. FILL

0 157.5

M 6.53 M 2.81

95+50 864.14

0 52.4

M 1.78 M 8.2

95+25 866 SWAMP RIGHT & LEFT

95+24 864.54

BEGIN MUCK CUT ±25

249 85.8

M 4.2

M 1.34

94+26 870.6

263 38.7

M 7.3

93+45 871.2

191 38.3

M 7.0

92+72 873.1

92+20 END WOODS

13.76 25.1

SC 1.94 M 1.11

92+00 END WOODS

EXC. FILL

C.B. #1

T.C. 868.83

100+00 862.06

FL 864.00

FL 864.50

15"X44" RCP SEWER

15" RCP APRON

0 37.31

M 1.296 M 3.17

99+50 SWAMP ℄ OUT RIGHT & LEFT

99+00 861.86

0 71.09

M 1.257 M 3.98

98+50 SWAMP ℄ OUT RIGHT & LEFT

98+00 861.84

0 32.91

M 1.378 M 4.39

97+50 SWAMP ℄ OUT RIGHT & LEFT

F&I 44" SPAN X 84" R.C.P.-A. CULVERT

F&I 2-44" SPAN R.C.P.-A. APRON

97+00 861.94

FL 863.90

FL 863.40

8' WIDE TRENCH QUANTITY INCLUDED IN MUCK EXC.

8' WIDE TRENCH QUANTITY INCLUDED IN MUCK EXC.

0 36.44

M 1.639 M 7.74

96+50 SWAMP ℄ OUT RIGHT & LEFT

96+00 862.08

H_2O 863.47

H_2O 863.47

STA. 92+72 TO STA. 100+00

State Proj. No. C.P. 85-03-116 **Sheet No.** 19 **of** 21 **Sheets**

105+00 870.46

S.D. 863.40

110 M.H. 63

EXC. FILL

110+67 870.06 WEST GUTTER 12TH AVE. SO.

160 GAS VALVE 40

4" G

110+00 869.97

252 G
TF 38
M 15

WOODS & BRUSH

SWAMP

104+12 870.38

S.D. 863.40 SEC. S.D. CT.

109+00 869.79

370 113
TF 83
M 37

199 213
TF 9
M 78

108+26 869.76
℄ X-ING 36"x 65" CMP REMOVE
FBI 51" SPAN X 88' RCP-A CULVERT
FBI 2-51" SPAN RCP-A APRON

103+00 865.36

P.L. 863.40

8' WIDE TRENCH (QUANT. INCL. WITH MUCK EXC.)

FL. 863.10

END MUCK CUT 1.95 CT & RT

102+00 864.06

DEPRESSED ISLAND

RT. TURN LANE

S.D. 863.40

106+80 869.76

106+00 869.96

PROFILE GR. W.B.L.

PROFILE GR. E.B.L.

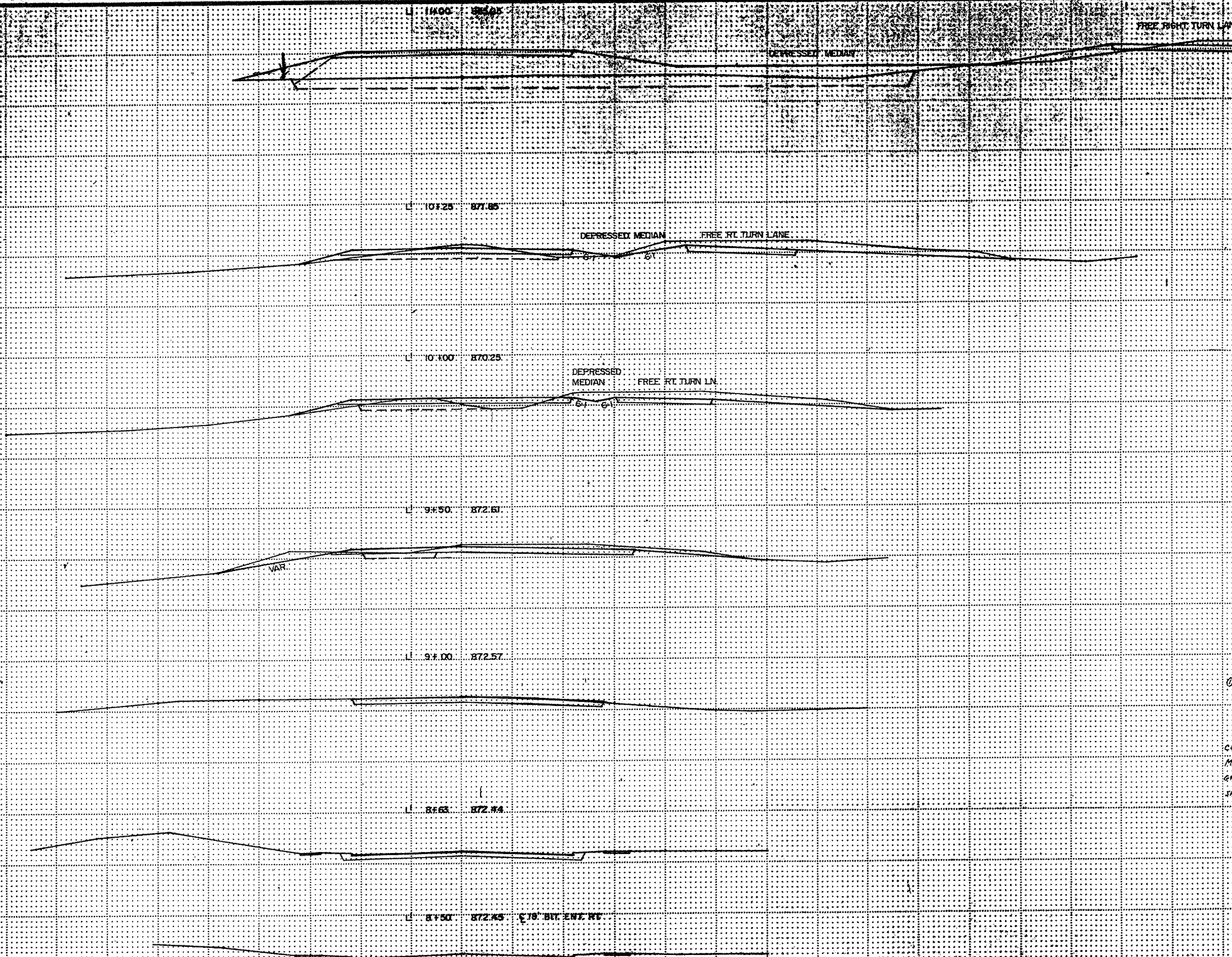
S.D. 863.40

H_2O 863.47

101+00 863.36 38 AVE. APPROACH RT

STA. 101+00 TO STA. 110+67

State Proj. No. C.P. 85-03-116 **Sheet No.** 20 **of** 21 **Sheets**



BALANCE 82+00 TO 110+67
(INCLUDES 38TH AVE. CONNECTION)

			SHRINKAGE FACTOR		
FILL	31,684 C.Y.	×	155 %	=	49,110 C.Y.
SUBCUT	743 C.Y.	×	45 %	=	334 C.Y.
	TOTAL FILL REQUIRED				49,444 C.Y.
EXCAVATION	12,198 C.Y. − 516 ① =				−11,682 C.Y.
GRANULAR BORROW					37,762 C.Y.
TOPSOIL FILL	1,091 C.Y.	×	125 %		1,364 C.Y.
MUCK EXCAVATION					8,540 C.Y.
MUCK FILL					3,344 C.Y.

① BIT. PAVEMENT REMOVAL PAID UNDER 2104.505

PROJECT TOTALS (CONTRACT PAY ITEMS)

			SUBCUT		SURCHARGE REMOVAL		
COMMON EXCAVATION	43,182	+	3,728	+	3,351	=	50,261 C.Y.

MUCK EXCAVATION 8,778 C.Y.

GRANULAR BORROW 72,721 C.Y.

SALVAGED TOPSOIL 3,673 C.Y. (FOR TOPSOIL FILL)

38TH AVE. L APPROACH
L STA. 8+50 = L STA. 0+00