

MINNESOTA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR BITUMINOUS SURFACING, AGGREGATE SHOULDERS AND DRAINAGE CULVERTS

LOCATED ON C.R. 122 BETWEEN C.S.A.H. 5 AND T.H. 47
 FROM 129 S. OF NW CORNER OF THE SW QUARTER OF THE SW QUARTER, SECTION 21, T33, R25 TO 363.06' WEST OF CENTER SECTION 24, T33, R25
 (Geographic Description) (Legal Description)

STATE PROJ. NO. C.P. 89-26-122
 MINN. PROJ. NO.
 GROSS LENGTH 18,333 FEET 3.47 MILES
 BRIDGES-LENGTH FEET MILES
 EXCEPTIONS-LENGTH FEET MILES
 NET LENGTH 18,333 FEET 3.47 MILES
 MILE POINT TO MILE POINT

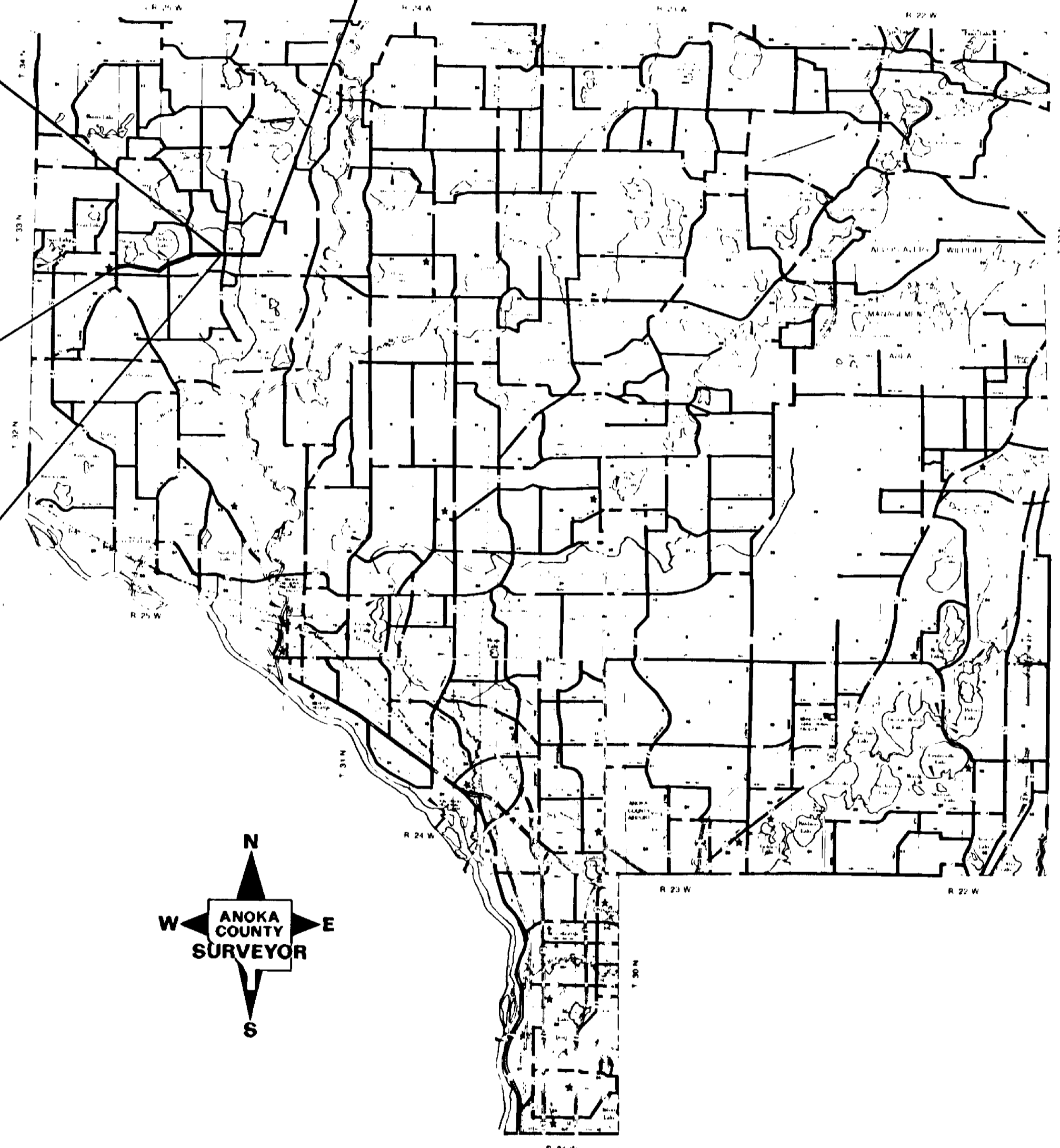
STATE PROJ. NO.
 MINN. PROJ. NO.
 GROSS LENGTH FEET MILES
 BRIDGES-LENGTH FEET MILES
 EXCEPTIONS-LENGTH FEET MILES
 NET LENGTH FEET MILES
 MILE POINT TO MILE POINT

BEGIN SEGMENT 2
 C.P. 89-26-122
 STA. 149+00

END SEGMENT 2
 C.P. 89-26-122
 STA. 193+53

BEGIN SEGMENT 1
 C.P. 89-26-122
 STA. 10+20

END SEGMENT 1
 C.P. 89-26-122
 STA. 149+00

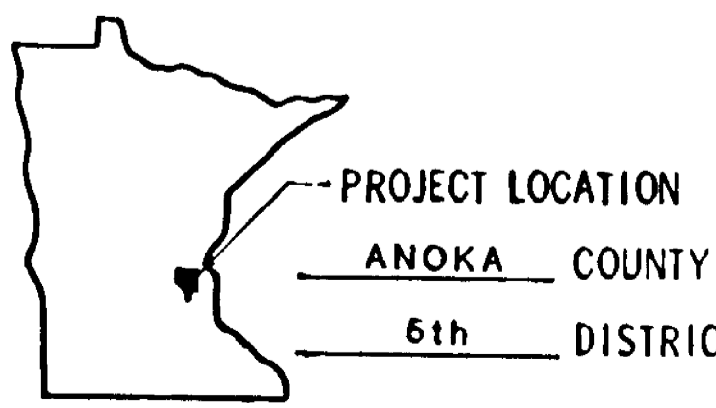


SCALES

PLAN 50
 PROFILE 50 H 5 V
 INDEX MAP 2.18 MI.
 CROSS SECTION 10 H, 10 V

DESIGN DATA

FUNCTIONAL CLASSIFICATION	MINOR COLLECTOR	NO. OF PARKING LANES	0
NO. OF TRAFFIC LANES	= 2	7 TON DESIGN SHOULDER WIDTH	2'
ADT (CURRENT YEAR) 1990	= 399	DESIGN SPEED	40 MPH
ADT (FUTURE YEAR) 2010	= 678	BASED ON STOPPING SIGHT DISTANCE	
DHV (DESIGN HR. VOL.)	= N/A	HEIGHT OF EYE	3.5' HEIGHT OF OBJECT 0.5'
D (DIRECTIONAL DISTR.)	= 50%	DESIGN SPEED NOT ACHIEVED AT:	
T (HEAVY COMMERCIAL)	= N/A	STA. 73+25 TO STA. 76+75	MPH 30
SOIL FACTOR	= 100%	STA. 116+50 TO STA. 120+50	MPH 35
		R-VALUE	N/A OR N 18 FACTOR N/A



FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO. AREA JOB

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND "SUPPLEMENTAL SPECIFICATIONS TO THE 1988 STANDARD SPECIFICATIONS FOR CONSTRUCTION", DATED JANUARY 2, 1991, SHALL GOVERN.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	TYPICAL SECTIONS (C.S.A.H. 5 TO C.R. 66)
4	TYPICAL SECTIONS (C.R. 66 TO T.H. 47)
5	DRAINAGE AND EROSION CONTROL PLAN
6-9	PLAN AND PROFILE SHEETS
10-13	CROSS-SECTIONS
14	DETOUR PLAN SHEET

THIS PLAN CONTAINS 14 SHEETS.

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.

DATE 7-12-91 REG. NO. 6549 ENGR. Paul K. Kuehl COUNTY ENGINEER

DESIGN SQUAD GREG ANDERSON

Right of Way Approval	19
Recommended for Approval	19
Recommended for Approval	19
Recommended for Approval	19
Recommended for Approval	19
Recommended for Approval	19
Approved	19

DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 APPROVED
 DIVISION ADMINISTRATOR DATE

I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, OF THIS PLAN WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE REG. NO.

STATE AID PROJ. NO. COUNTY PROJ. NO. 89-26-122
 STATE PROJ. NO. SHEET NO. 1 OF 14 SHEETS

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	SEGMENT NO. 1		SEGMENT NO. 2		TOTAL	
			ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES
2021.501	MOBILIZATION	LUMP SUM			1		1	
2031.501	FIELD OFFICE, TYPE D	EACH			1		1	
2101.501	CLEARING	ACRE			0.25		0.25	
2101.506	GRUBBING	ACRE			0.25		0.25	
① 2104.501	REMOVE CULVERT PIPE	LIN.FT.			307		307	
② 2104.505	REMOVE BITUMINOUS PAVEMENT	SQ.YD.			5432		5432	
③ 2104.513	SAWING BITUMINOUS PAVEMENT	LIN.FT.			285		285	
2104.521	SALVAGE CULVERT PIPE	LIN.FT.			90		90	
2104.521	SALVAGE FENCE	LIN.FT.			1030		1030	
2105.501	COMMON EXCAVATION	CU.YD.			5323 (P)		5323 (P)	
2105.507	SUBGRADE EXCAVATION (EV)	CU.YD.			2978		2978	
2105.521	GRANULAR BORROW (LV)	CU.YD.			6117		6117	
2105.525	TOPSOIL BORROW (LV)	CU.YD.	780				780	
④ 0112.603	SHOULDER PREPARATION	RD.STA.	139				139	
⑥ 2123.509	DOZER	HR			10		10	
⑦ 2130.501	WATER	M.GAL.			12		12	
2211.501	AGGREGATE BASE, CLASS 5	TON			1675		1675	
2221.501	AGGREGATE SHOULDERING, CLASS 5	TON	632		201		833	
⑧ 2331.508	TYPE 41 WEARING COURSE MIXTURE	TON	2910		920		3830	
⑧ 2331.512	TYPE 31 LEVELING COURSE MIXTURE	TON	2818		676		3494	
⑧ 2331.514	TYPE 31 BASE COURSE MIXTURE	TON			428		428	
2357.502	BITUMINOUS MAT'L FOR TACK COAT	GALLON	3420		848		4268	
2451.509	AGGREGATE BEDDING (LV)	CU.YD.			363		363	
2501.501	CULVERT EXCAVATION, CLASS U	CU.YD.			1530		1530	
2501.511	18" C.M. PIPE CULVERT	LIN.FT.			150		150	
2501.511	24" C.M. PIPE CULVERT	LIN.FT.			46		46	
2501.511	42" C.M. PIPE CULVERT	LIN.FT.			282		282	
2501.515	18" C.M. PIPE APRON	EACH			10		10	
2501.515	24" C.M. PIPE APRON	EACH			2		2	
0501.609	CONSTRUCTION FABRIC	SQ.YD.			1140		1140	
0557.603	INSTALL FENCE	LIN.FT.			1030		1030	
0563.601	TRAFFIC CONTROL	LUMP SUM			1		1	
⑨ 2573.501	BALE CHECK	EACH	20		60		80	
⑨ 2573.503	SILT FENCE, PREASSEMBLED	LIN.FT.			580		580	
2575.501	SEEDING	ACRE	10.6(P)		2.5(P)		13.1(P)	
2575.502	SEED, MIXTURE 500	POUND	530		125		655	
2575.511	MULCH MATERIAL, TYPE-1	TON	21.2		5		26.2	
2575.519	DISC ANCHORING	ACRE	10.6(P)		2.5(P)		13.1(P)	
⑩ 2575.521	POLYPROPYLENE PLASTIC NETTING	SQ.YD.			354		354	
2575.531	COMMERCIAL FERTILIZER ANALY. 10-10-10	TON	2.6		0.6		3.2	
2580.501	TEMPORARY LANE MARKING	RD.STA.	278		90		368	

- ① INCLUDES R.C.P., C.M.P. AND APRONS.
- ② INCLUDES ALL BITUMINOUS SURFACING SCHEDULED FOR REMOVAL REGARDLESS OF THE THICKNESS OF PAVEMENT.
- ③ PAVEMENT CUT TO BE FULL DEPTH.
- ④ TOPSOIL BORROW TO BE USED IN ALL RESIDENTIAL AREAS FOR LANDSCAPING.
- ⑤ SEE EARTHWORK SUMMARY FOR QUANTITY AND TYPE OF MATERIAL REQUIRED.
- ⑥ FOR DITCH CLEAN-OUTS OR OTHER MISCELLANEOUS GRADING REQUIRED IN AREAS NOT RECONSTRUCTED, AS DIRECTED BY THE ENGINEER.
- ⑦ FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.
- ⑧ INCLUDES QUANTITY FOR STREET APPROACHES AND ENTRANCES.
- ⑨ FOR USE AS DIRECTED BY THE ENGINEER.
- ⑩ TO BE USED AT CULVERT ENDS IN LIEU OF SOD.

BASIS OF PLANNED QUANTITIES

2331	TYPE 41 WEARING COURSE MIXTURE BITUMINOUS MIXTURE 110 LBS./SQ.YD. PER 1" THICKNESS
2331	TYPE 31 LEVELING & BASE COURSE MIXTURE BITUMINOUS MIXTURE 110 LBS./SQ.YD. PER 1" THICKNESS
2357	BITUMINOUS MATERIAL FOR TACK: 0.05 GALLONS/SQ.YD./LAYER
2575	SEEDING: BASED ON HORIZONTAL MEASUREMENT + 10%
2575	SEED, MIXTURE 500: 50 LBS./ACRE
2575	MULCH MATERIAL, TYPE 1: 2 TONS/ACRE
2575	COMMERCIAL FERTILIZER, ANALYSIS 10-10-10: 500 LBS./ACRE

CLEARING AND GRUBBING

STATION	LOCATION	CLEARING		GRUBBING	
		TREE	ACRE	TREE	ACRE
149+50 - 152+55	RT.		0.25		0.25
TOTALS			0.25		0.25

SALVAGE & INSTALL FENCE

STATION - STATION	LOCATION	SALVAGE	INSTALL
149+07	36'-48'LT.	12	12
149+07 - 157+00	36'LT.	793	793
167+00 - 169+25	36'RT.	225	225
TOTAL		1030	1030

SAWING BITUMINOUS PAVEMENT

STATION TO STATION	LOCATION	LIN. FT.
149+00	C	40
157+40	C	23
167+00	C	23
169+25	C	23
173+60	C	24
181+40	C	24
192+07	C	24
193+53	C	104
TOTAL		285

EARTHWORK SUMMARY

EXCAVATION (CU.YD.)

① COMMON	5388-65	= 5323	} 9,831
① SUGRADE	3459-481	= 2978	
CULVERT		= 1530	

EMBANKMENT (CU.YD.) (CV)

REGULAR	= 897	} 11,117
② GRANULAR	5670-1301 = 4369	
AGGREGATE BEDDING	= 330	
SHOULDER PREPARATION	= 3812	
TOPSOIL:		
SLOPES	= 1000	
BOULEVARDS	= 709	

BORROW (CU.YD.) (LV)

GRANULAR	4369x140% = 6117
TOPSOIL	709x110% = 780
AGGR. BEDDING	330x110% = 363

WASTE (CU.YD.) (EV)

9831 - (897x120%) - (3812x120%) - 1000 = 3180

- SPECIFIC NOTES:**
- ① NEGATIVE COMMON AND SUBGRADE EXCAVATION QUANTITY REPRESENTS INPLACE BITUMINOUS SURFACE, BASED ON 4" DEPTH.
 - ② NEGATIVE GRANULAR EMBANKMENT QUANTITY REPRESENTS PLANNED THICKNESS OF AGGR. BASE AND BITUMINOUS SURFACING.
- GENERAL NOTES:**
- 1) 120% SHRINKAGE FACTOR FOR NORMAL GRADING (EV TO CV).
 - 2) 140% SHRINKAGE FACTOR FOR BORROW MAT'L'S. (LV TO CV).
 - 3) 110% SHRINKAGE FACTOR FOR TOPSOIL BORROW (LV TO SPREADED THICKNESS).

STANDARD PLATES

PLATE NO.	DESCRIPTION
0005 A	SPECIFICATION REFERENCE TO STANDARD PLATES
3040 F	CORRUGATED METAL PIPE CULVERT
3123 J	METAL APRON FOR C.S. PIPE
3221 C	CORRUGATED STEEL PIPE COUPLING BAND
8000 I	STANDARD BARRICADES
9000 B	APPROACHES AND ENTRANCES
* 9102 C	SODDING AT PIPE CULVERT ENDS

* POLYPROPYLENE PLASTIC NETTING TO BE SUBSTITUTED FOR SOD

BITUMINOUS REMOVAL

STATION TO STATION	LOCATION	DESCRIPTION	SQ. YD.
149+00 - 157+40	C	REMOVE FULL DEPTH BITUMINOUS PAVEMENT	2220
167+00 - 169+25	C	REMOVE FULL DEPTH BITUMINOUS PAVEMENT	582
173+60 - 181+40	C	REMOVE FULL DEPTH BITUMINOUS PAVEMENT	2109
192+07 - 193+53	C	REMOVE FULL DEPTH BITUMINOUS PAVEMENT	521
TOTAL			5432

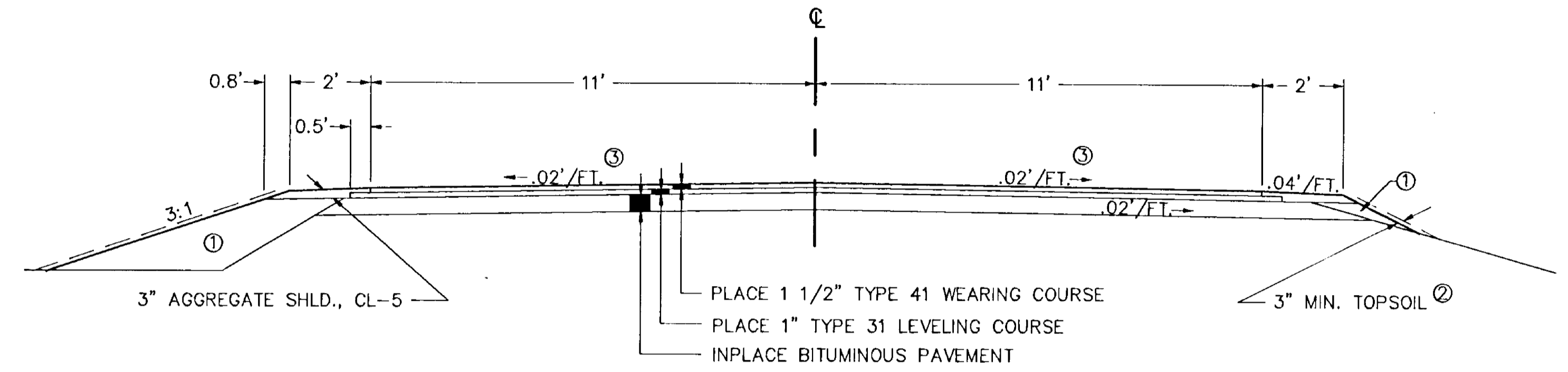
REVISIONS

DATE	BY	DATE	BY

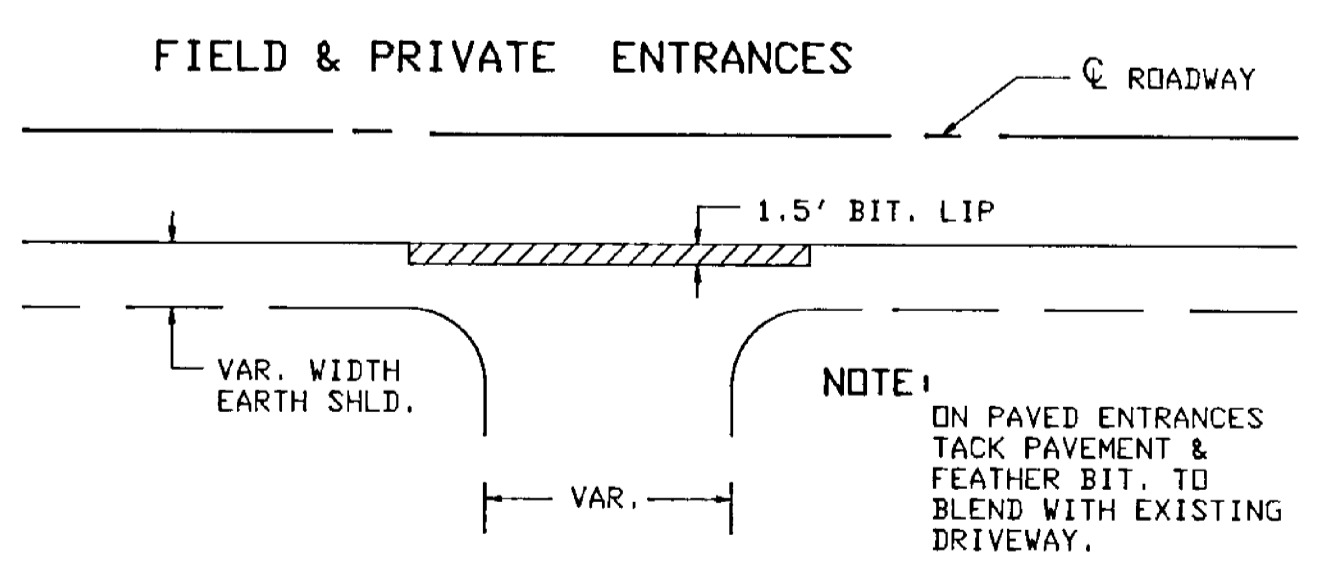
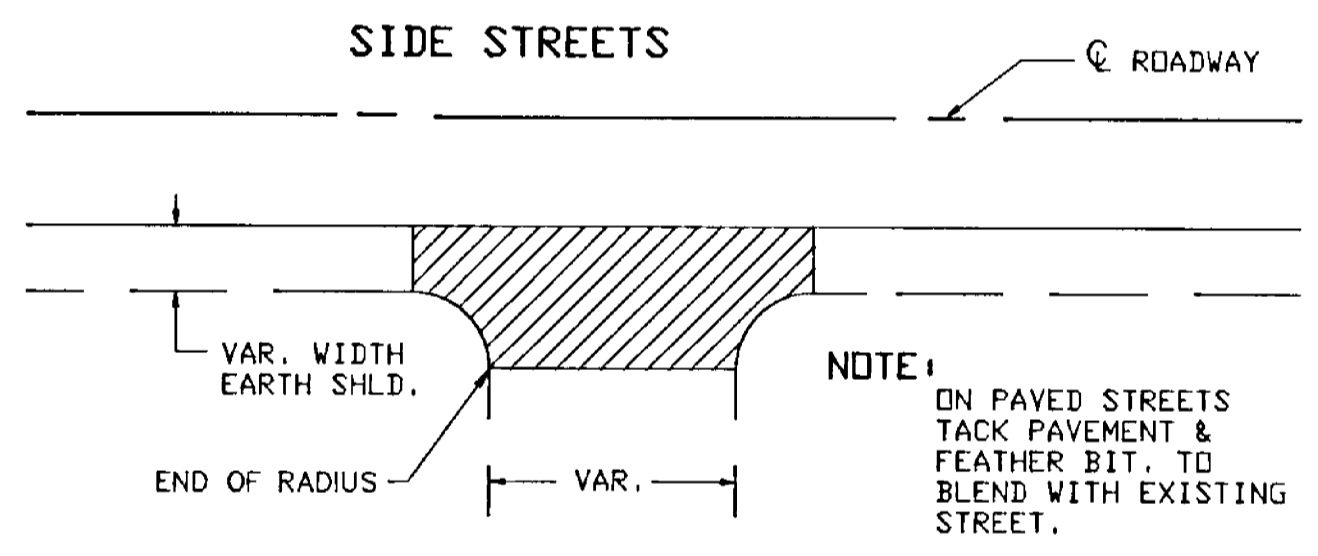
ESTIMATED QUANTITIES AND TABULATIONS

TYPICAL OVERLAY & SHLD. WIDENING SECTION

STATION 9+78 - 148+79



- ① EMBANKMENT PAID FOR AS ITEM NO. 0112.603, "SHOULDER PREPARATION" AND MEASURED PER ROAD STATION. SEE EARTHWORK SUMMARY FOR MATERIAL REQUIRED.
- ② TOPSOIL BORROW TO BE USED IN BOULEVARD AREAS.
- ③ VARIABLE CROSS-SLOPE THROUGH HORIZONTAL CURVATURE TO ACCOMMODATE SUPERELEVATIONS. RATES TO BE DETERMINED BY THE ENGINEER.



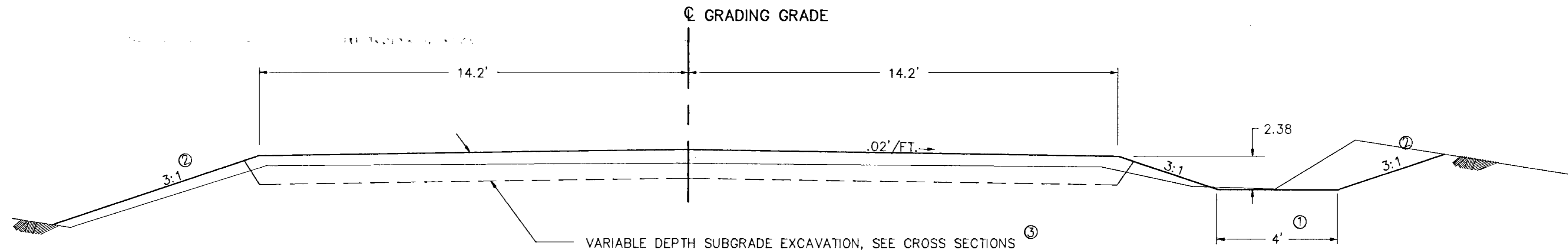
REVISIONS			
DATE	BY	DATE	BY

S.A.P. _____ S.P. _____ C.P. 89-26-122

TYPICAL SECTIONS
C.S.A.H. 5 - C.R. 66

TYPICAL GRADING SECTION

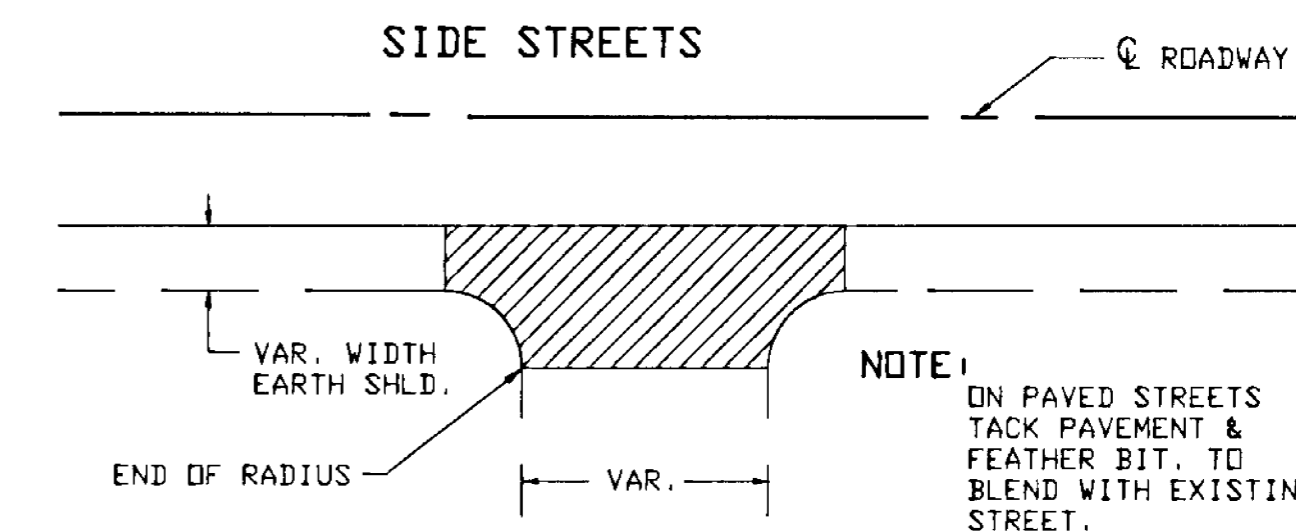
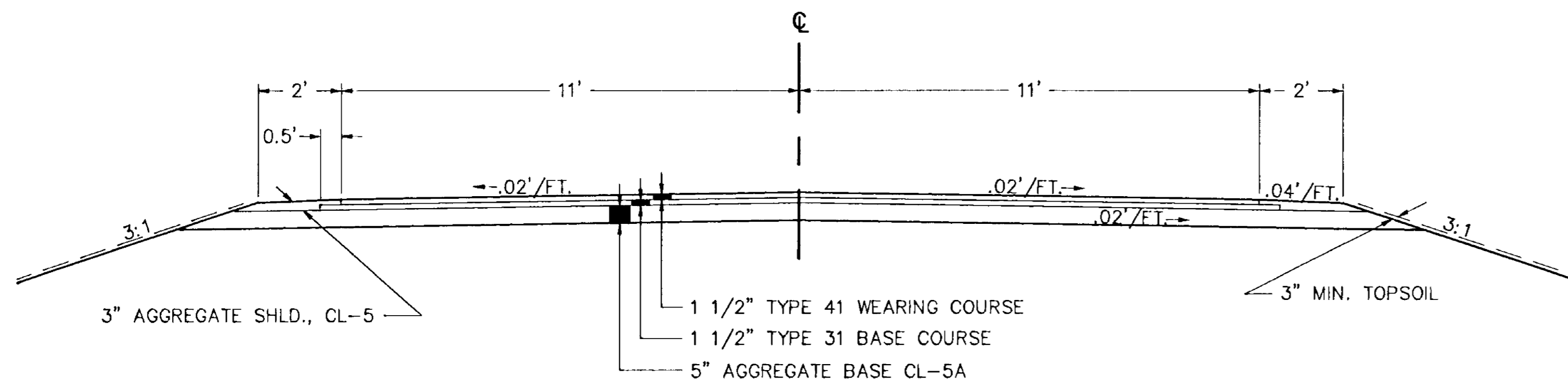
STATION 148+79 - 157+40
 STATION 167+00 - 169+25
 STATION 173+60 - 181+40
 STATION 192+07 - 193+56



- ① FOR SPECIAL DITCHES SEE PROFILE & CROSS SECTION SHEETS
- ② SEE CROSS SECTION SHEETS FOR MODIFIED INSLOPES & BACKSLOPES
- ③ SUBGRADE EXCAVATION AREAS TO BE BACKFILLED WITH GRANULAR BORROW.

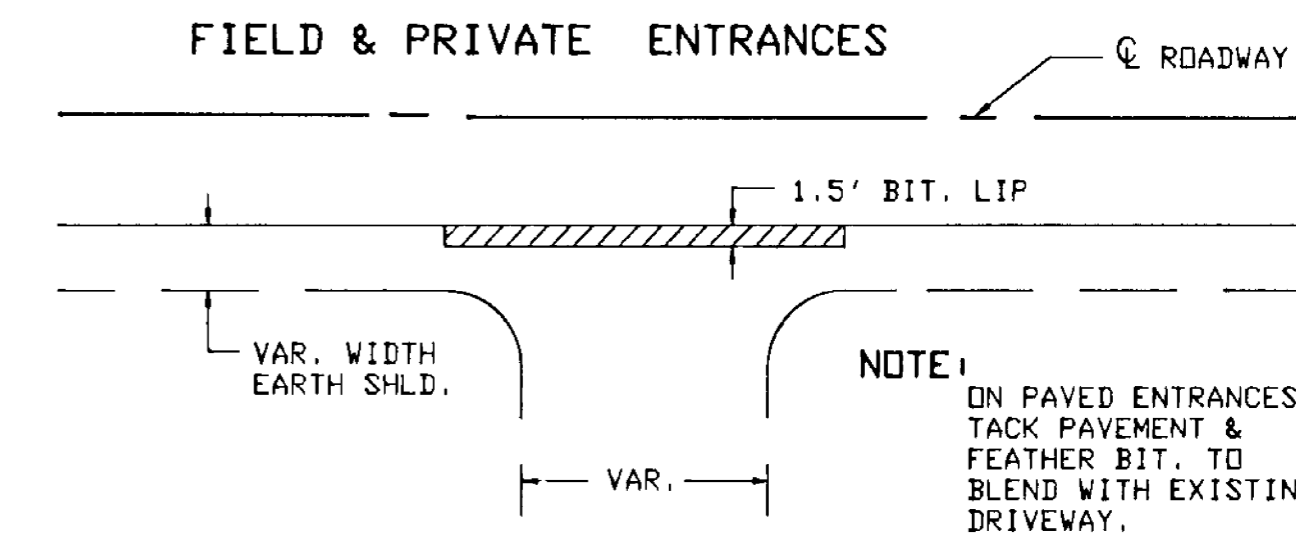
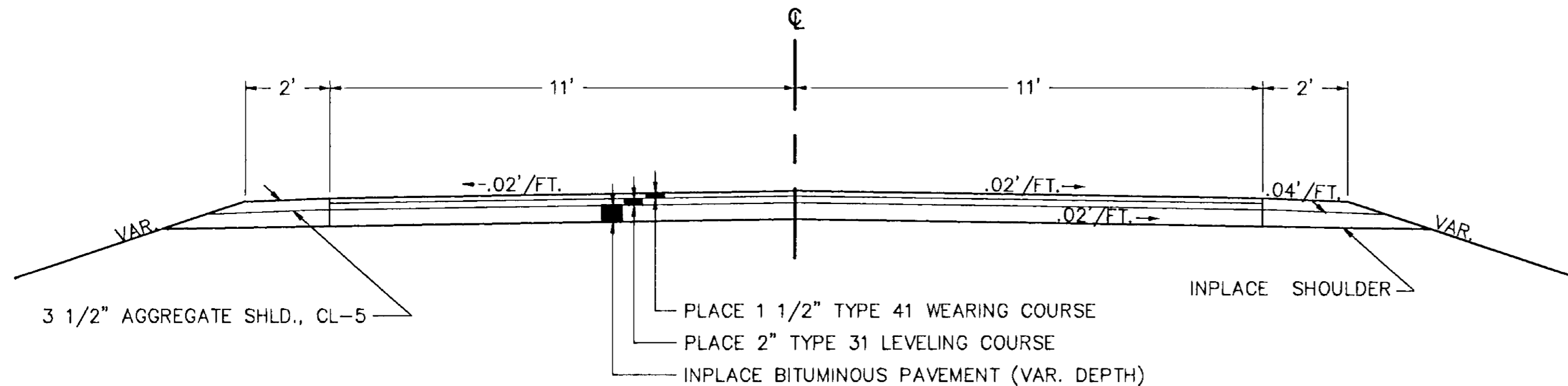
TYPICAL BASE & SURFACE SECTION

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 STATION 167+00 - 169+25
 STATION 173+60 - 181+40
 STATION 192+07 - 193+53



TYPICAL OVERLAY SECTION

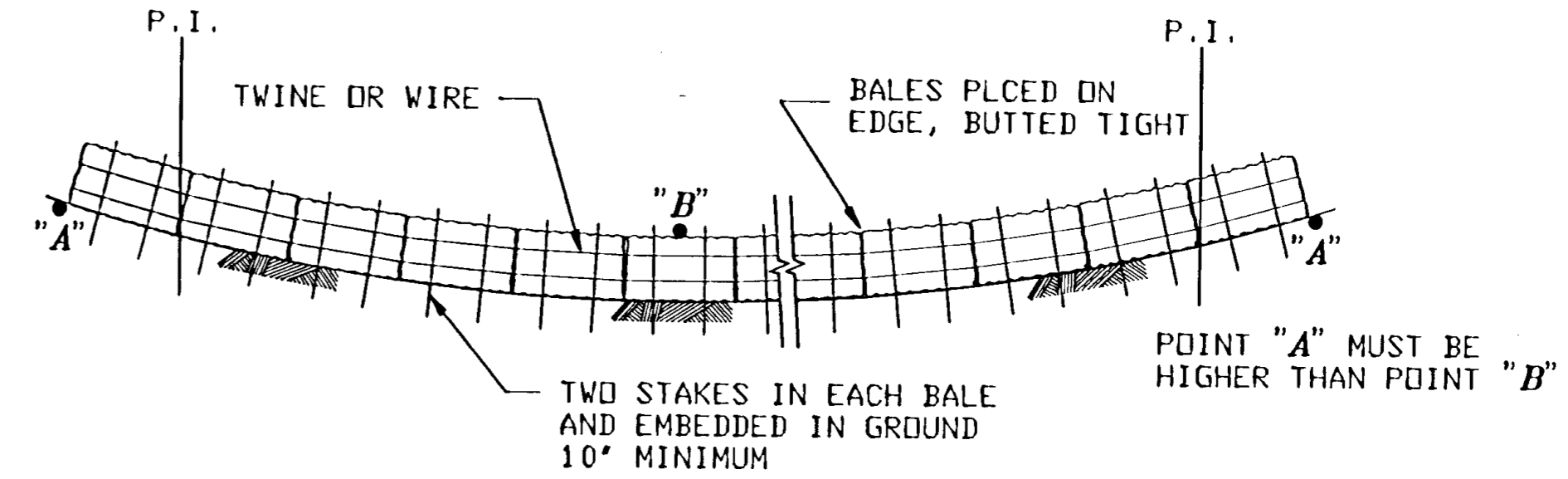
STATION 157+40 - 167+00
 STATION 169+25 - 173+60
 STATION 181+40 - 192+07



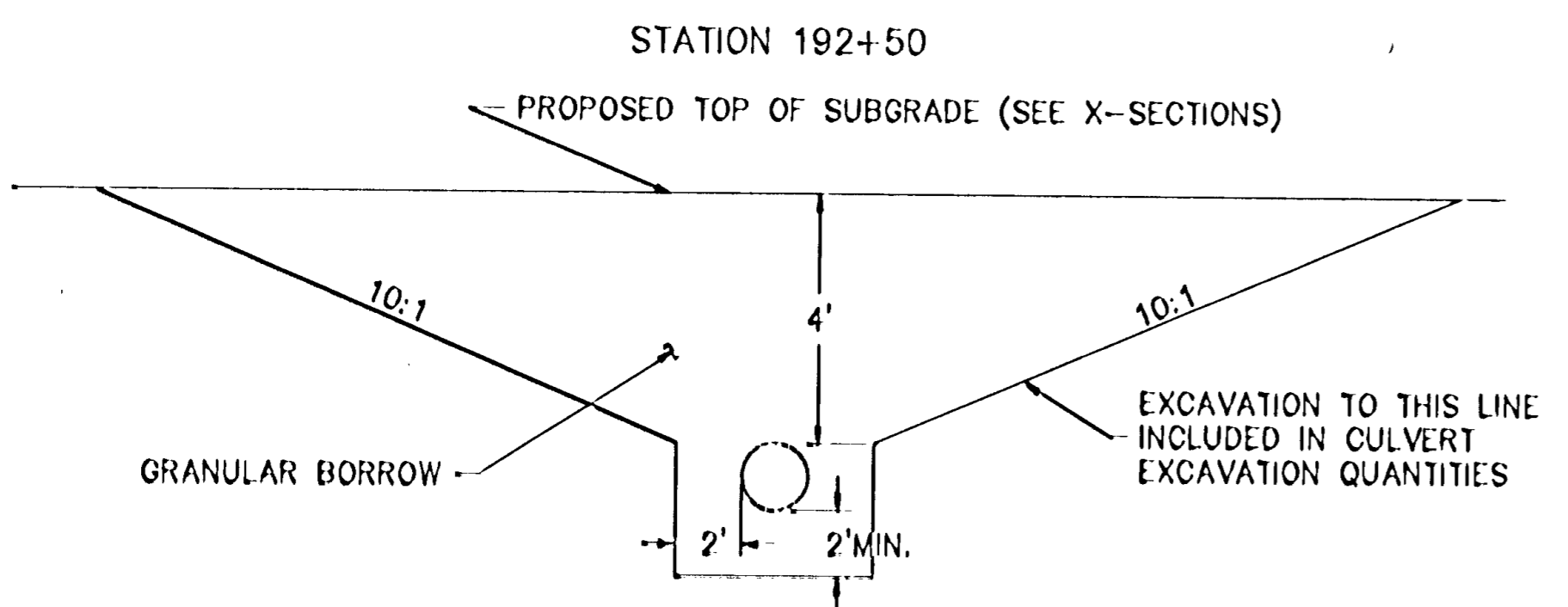
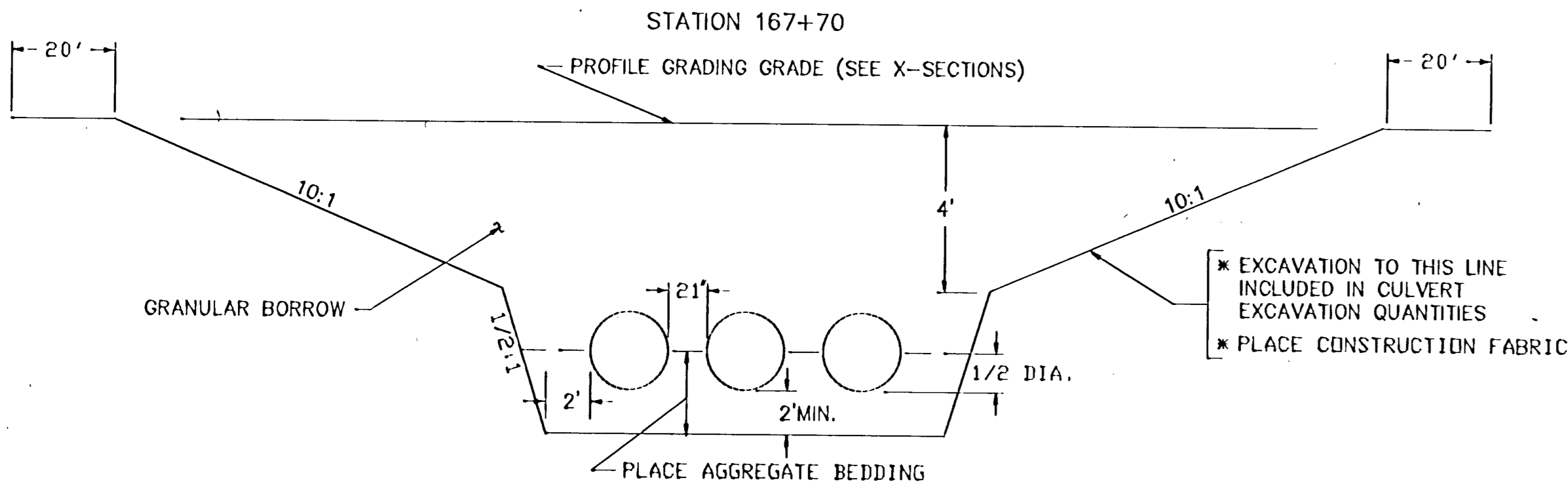
REVISIONS			
DATE	BY	DATE	BY

DRAINAGE CHART					FURNISH & INSTALL CULVERT									
STATION	LOC	INPLACE	REMARKS	POLYPROP. PLAST. NET	REMOVE CULV. PIPE	SALVAGE CULV. PIPE	18' CMP		24' CMP		42' CMP			
				SQ. YD.	LIN. FT. APR.	LIN. FT. APR.	LIN. FT. APR.	LIN. FT. APR.	LIN. FT. APR.	LIN. FT. APR.	LIN. FT. APR.			
167+65	C/L	42'x 94'RCP		72	94	0	0	0				94	0	
167+70	C/L	42'x 94'RCP		72	94	0	0	0				94	0	
167+75	C/L	42'x 94'RCP		72	94	0	0	0				94	0	
				22	0	0	0	0	30	2				
174+53	RT.	15'x 30'CMP		22	0	0	30	0	30	2				
177+91	RT.	15'x 30'CMP		22	0	0	30	0	30	2				
179+77	RT.	12'x 25'RCP		22	25	0	0	0	30	2				
182+37	RT.	15'x 30'CMP		22	0	0	30	0	30	2				
192+50	C/L	NO CULV. INP.		28	0	0	0	0		46	2			
TOTALS				354	307	0	90	0	150	10	46	2	282	0

BALE HAY OR STRAW DITCH CHECK

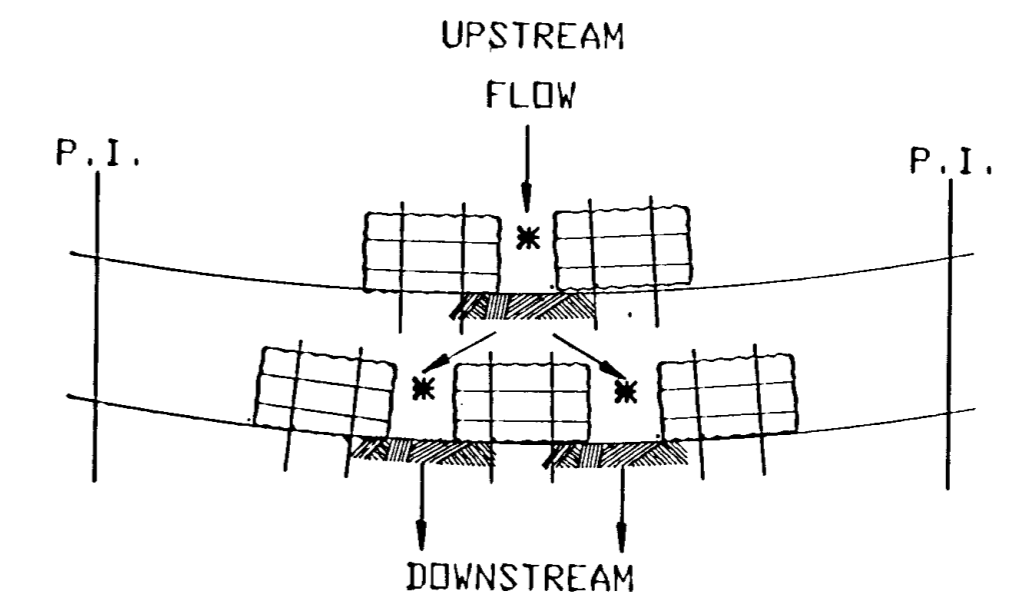


TYPICAL SECTIONS FOR CENTERLINE CULVERT INSTALLATION



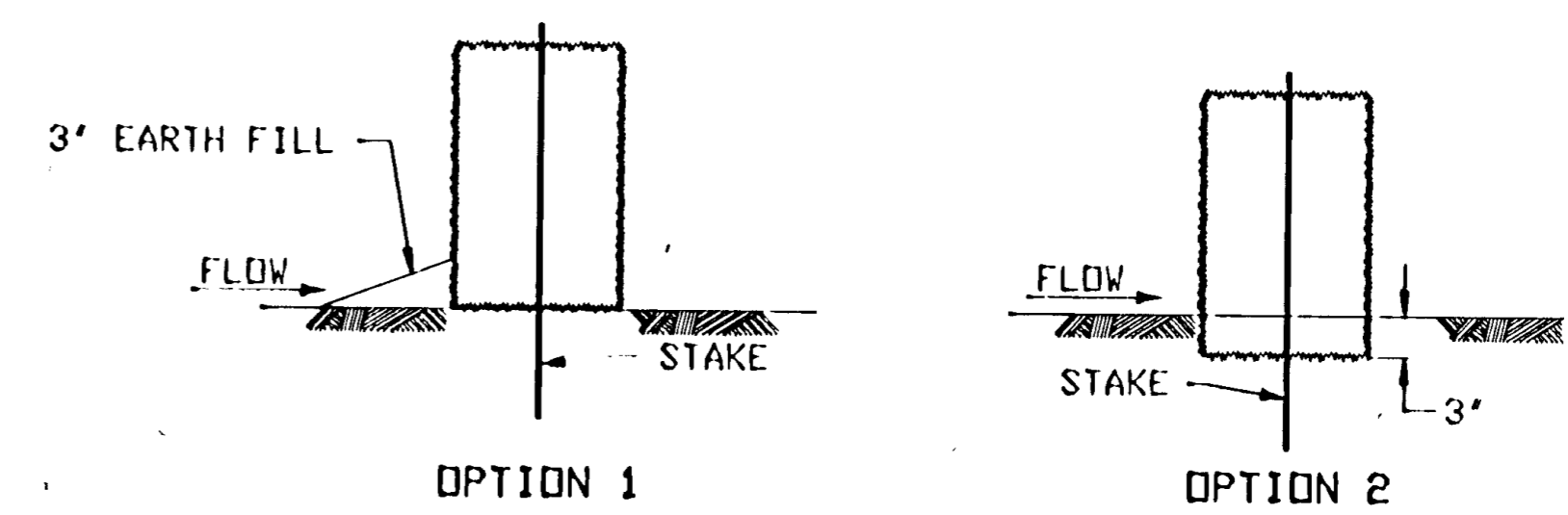
- NOTES:
- HAULING OPERATIONS TO BE COMPLETED PRIOR TO CENTERLINE CULVERT INSTALLATION.
 - FILL AND COMPACT GRANULAR TO 2" ABOVE FLOWLINE BEFORE PLACING CULVERT
 - AT CENTERLINE CULVERT LOCATIONS CULVERT EXC. TO EXTEND 3' BEYOND END OF APRON
 - SEE CROSS SECTION AND PROFILE SHEETS FOR DEPTH AND LIMITS OF CULVERT EXC.

ALTERNATE BALE CHECK

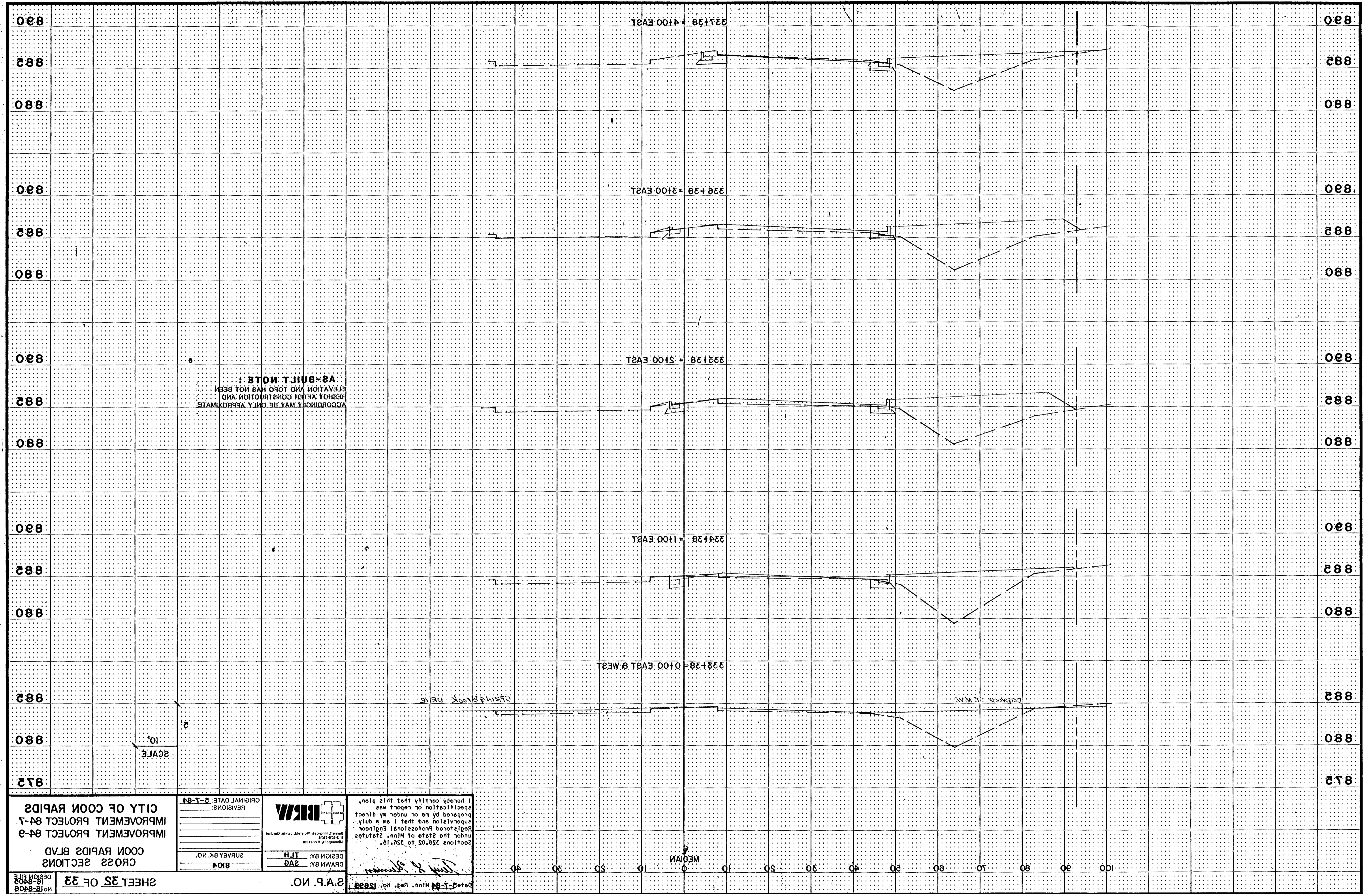


- NOTES:
- PLACEMENT OF BALES WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
 - WHEN USING THE ALTERNATE BALE CHECK, THE TWIN BALES WILL BE ON THE UPSTREAM SIDE.
 - * THE DISTANCE BETWEEN BALES SHALL BE 1 FT. (TYP.)

DITCH CHECK SECTIONS



REVISIONS			
DATE	BY	DATE	BY
7/29/91	JHT		



S.A.P. NO. _____
 SHEET 35 OF 33
 NO. 18-8408
 DESIGN DATE: 3-7-84
 REVISIONS:
 SURVEY BK. NO. _____
 BID# _____
 DESIGN BY: J.L.H.
 DRAWN BY: SAG
 BRW
 CITY OF COON RAPIDS
 IMPROVEMENT PROJECT 84-7
 COON RAPIDS BLVD
 CROSS SECTIONS

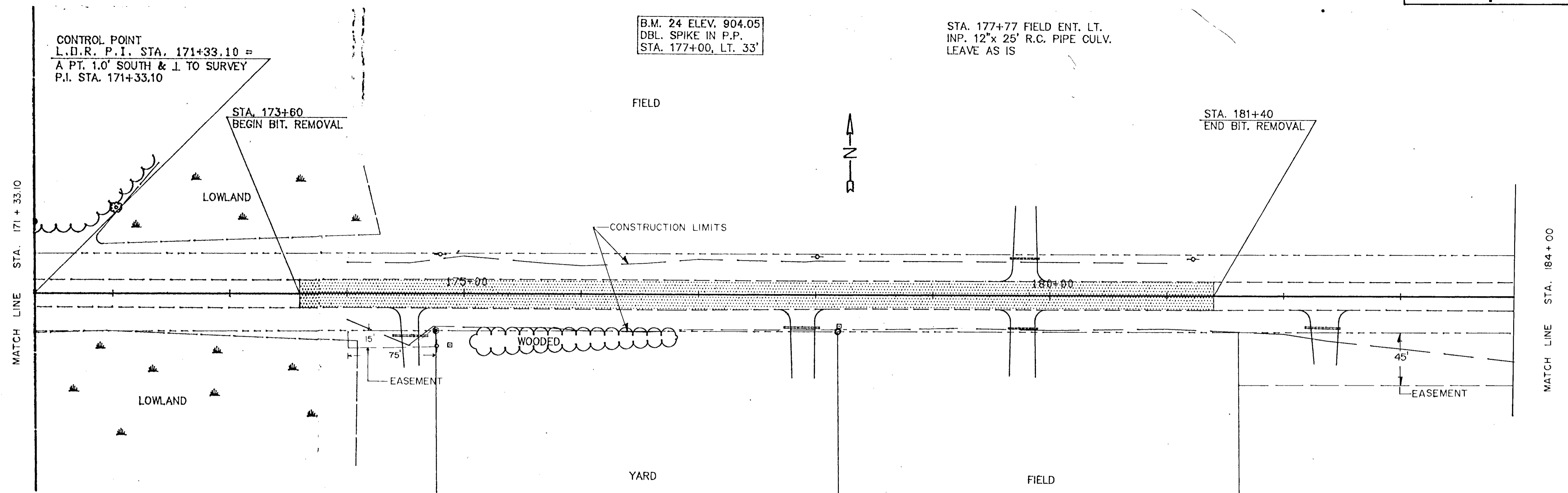
I hereby certify that this plan
 specification or report was
 prepared by me or under my direct
 supervision and that I am a duly
 Registered Professional Engineer
 under the State of Minn. Statutes
 Sections 326.02 to 326.10.
 Tom R. Blum
 Registered Professional Engineer
 No. 15233

A2-BUILT - 1/10/85 - DRN

CONTROL POINT
L.D.R. P.I. STA. 171+33.10 =
A PT. 1.0' SOUTH & I TO SURVEY
P.I. STA. 171+33.10

B.M. 24 ELEV. 904.05
DBL. SPIKE IN P.P.
STA. 177+00, LT. 33'

STA. 177+77 FIELD ENT. LT.
INP. 12"x 25' R.C. PIPE CULV.
LEAVE AS IS

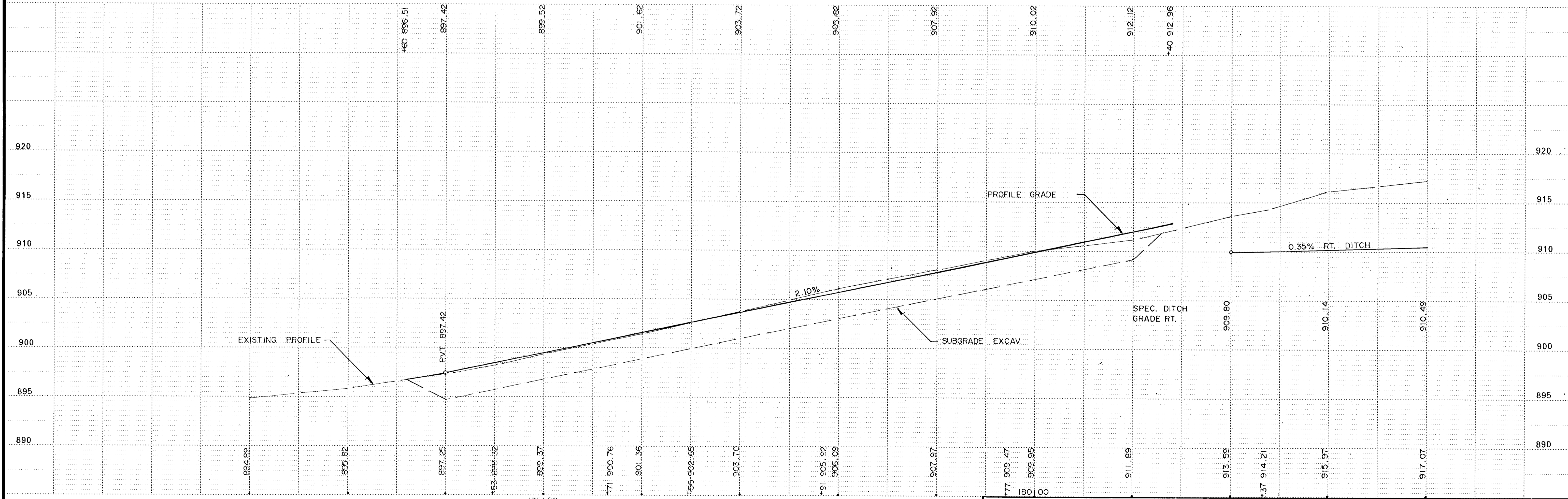
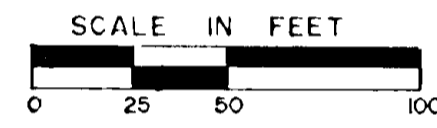


STA. 174+53 RES. ENT. RT.
INP. 15"x 30' C.M. PIPE CULV.
SALVAGE
F.& I. 18" x 30' C.M. PIPE CULVERT
F.& I. 2 - 18" C.M. PIPE APRONS

STA. 177+91 RES. ENT. RT.
INP. 15"x 30' C.M. PIPE CULV.
SALVAGE
F.& I. 18" x 30' C.M. PIPE CULVERT
F.& I. 2 - 18" C.M. PIPE APRONS

STA. 179+77 FIELD ENT. RT.
INP. 12"x 25' R.C. PIPE CULV.
SALVAGE
F.& I. 18" x 30' C.M. PIPE CULVERT
F.& I. 2 - 18" C.M. PIPE APRONS

STA. 182+37 RT., FIELD ENT.
INP. 15"x 30' C.M. PIPE CULV.
SALVAGE
F.& I. 18" x 30' C.M. PIPE CULVERT
F.& I. 2 - 18" C.M. PIPE APRONS

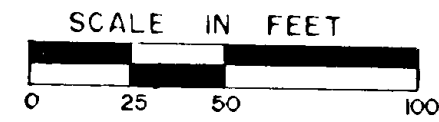
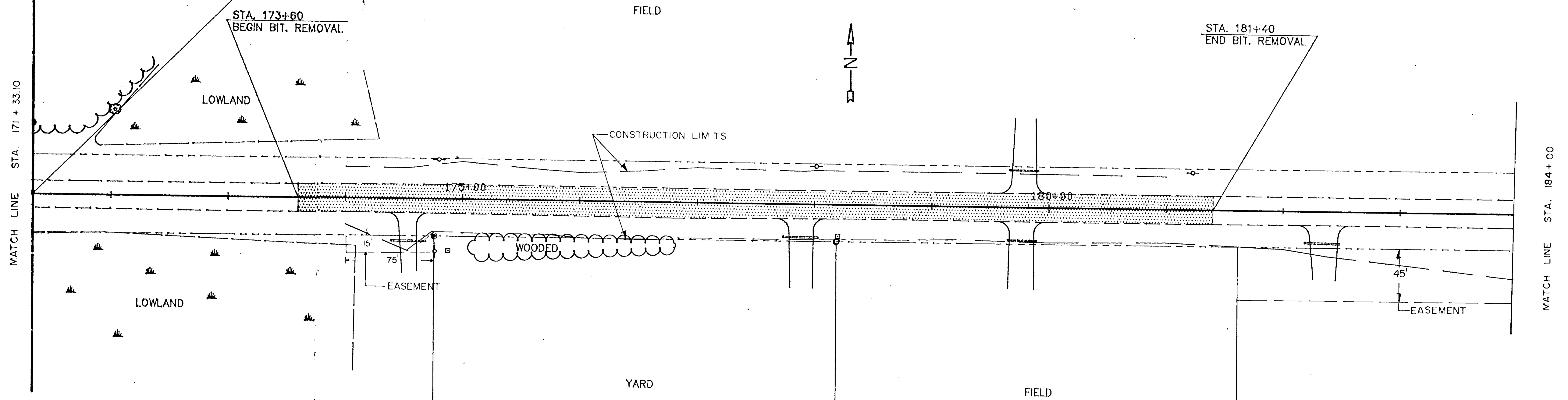


Copy Equipment Form #2

CONTROL POINT
L.D.R. P.I. STA. 171+33.10 =
A PT. 1.0' SOUTH & J TO SURVEY
P.I. STA. 171+33.10

B.M. 24 ELEV. 904.05
DBL. SPIKE IN P.P.
STA. 177+00, LT. 33'

STA. 177+77 FIELD ENT. LT.
INP. 12"x 25' R.C. PIPE CULV.
LEAVE AS IS

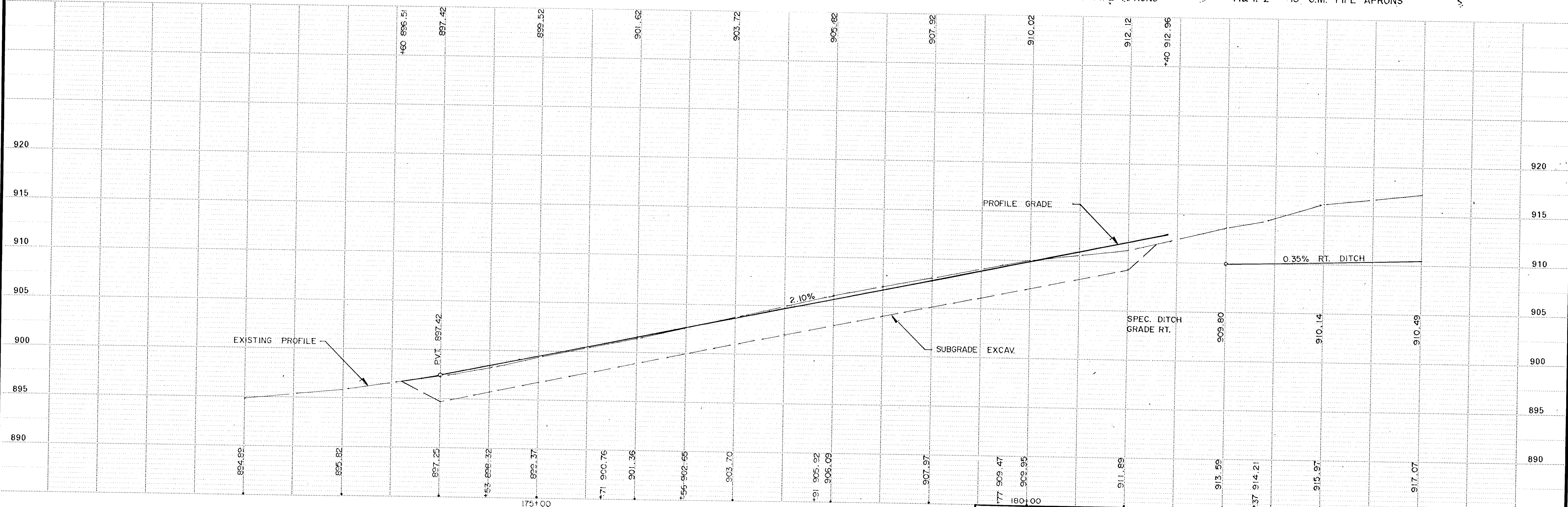


STA. 174+53 RES. ENT. RT.
INP. 15"x 30' C.M. PIPE CULV.
SALVAGE
F.& I. 1 - 18" x 30' C.M. PIPE CULVERT
F.& I. 2 - 18" C.M. PIPE APRONS

STA. 177+91 RES. ENT. RT.
INP. 15"x 30' C.M. PIPE CULV.
SALVAGE
F.& I. 1 - 18" x 30' C.M. PIPE CULVERT
F.& I. 2 - 18" C.M. PIPE APRONS

STA. 179+77 FIELD ENT. RT.
INP. 12"x 25' R.C. PIPE CULV.
SALVAGE
F.& I. 1 - 18" x 30' C.M. PIPE CULVERT
F.& I. 2 - 18" C.M. PIPE APRONS

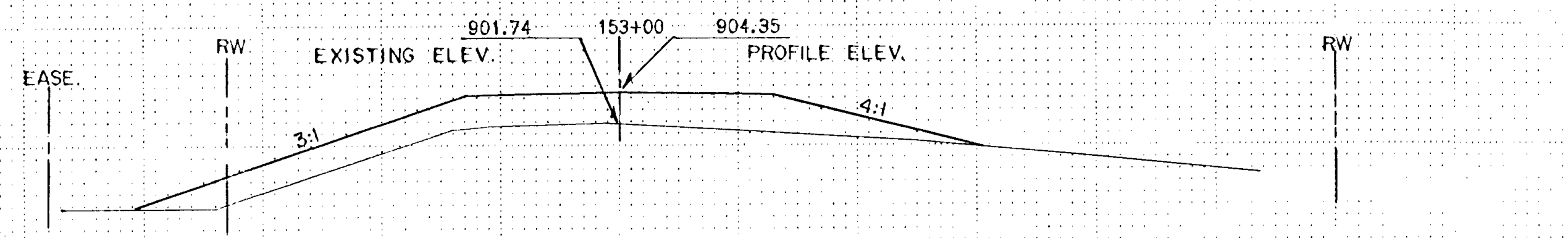
STA. 182+37 RT., FIELD ENT.
INP. 15"x 30' C.M. PIPE CULV.
SALVAGE
F.& I. 1 - 18" x 30' C.M. PIPE CULVERT
F.& I. 2 - 18" C.M. PIPE APRONS



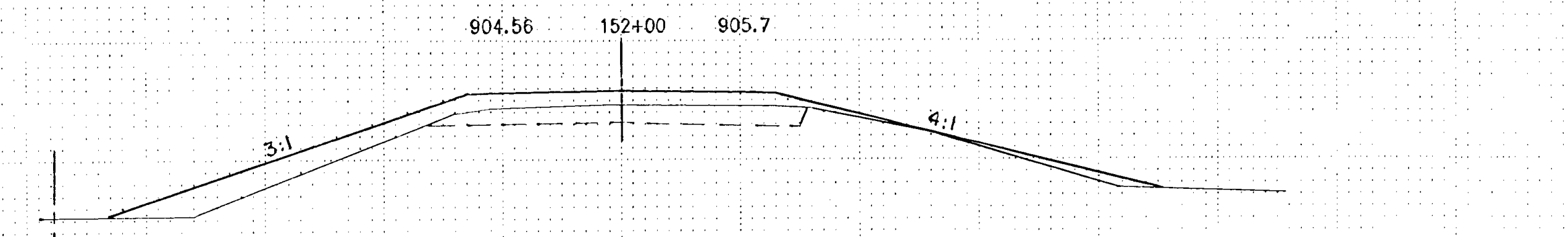
Copy Equipment Form #2

EXCAVATION EMBANKMENT

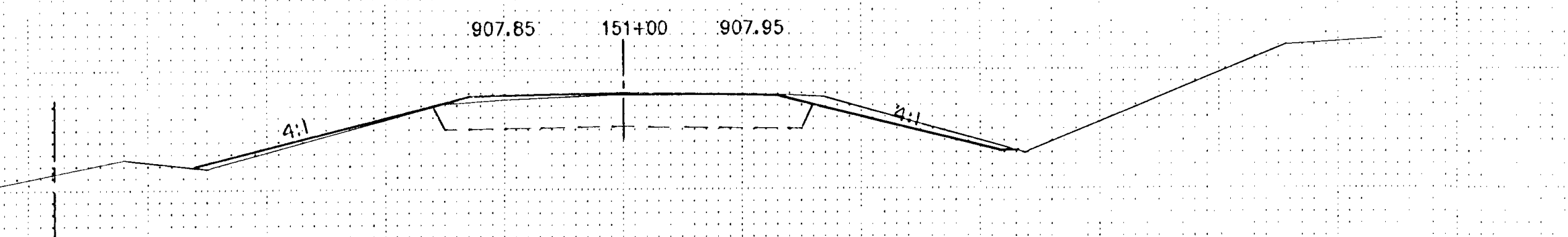
Sub-Totals	Cu. Yds.	Cu. Yds.	Sub-Totals



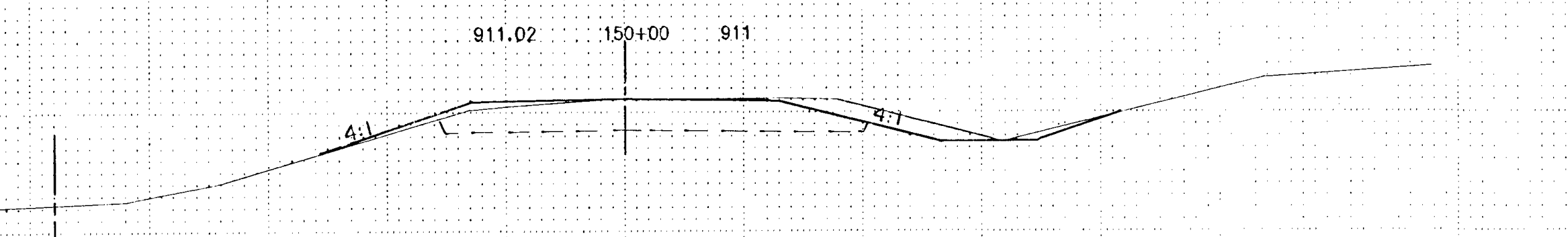
	0		270
SUBGRADE	69		307 GRANULAR



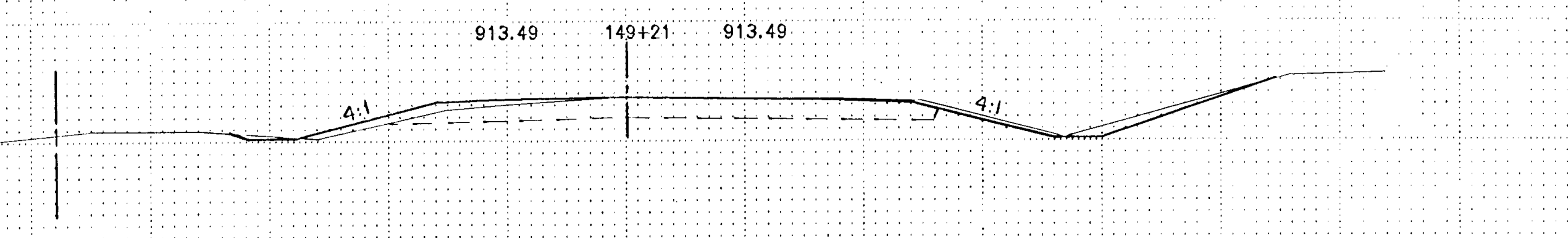
	24		163
	198		270



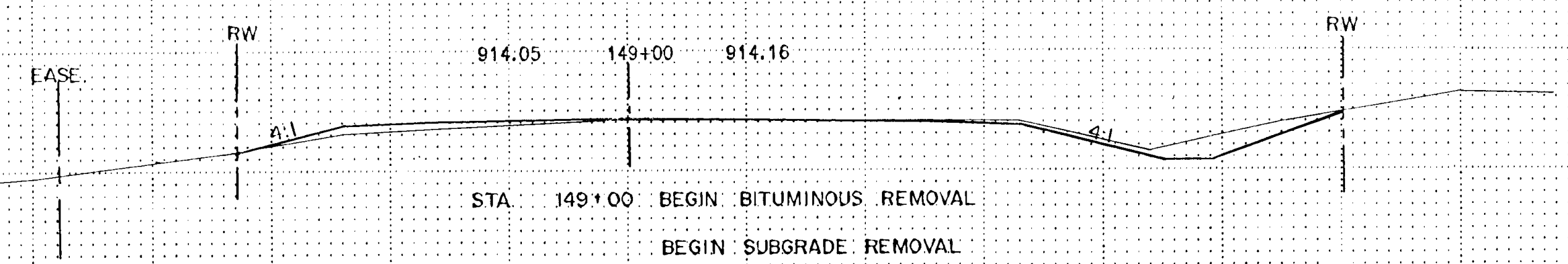
	33		13
	278		291



	32		9
	217		233

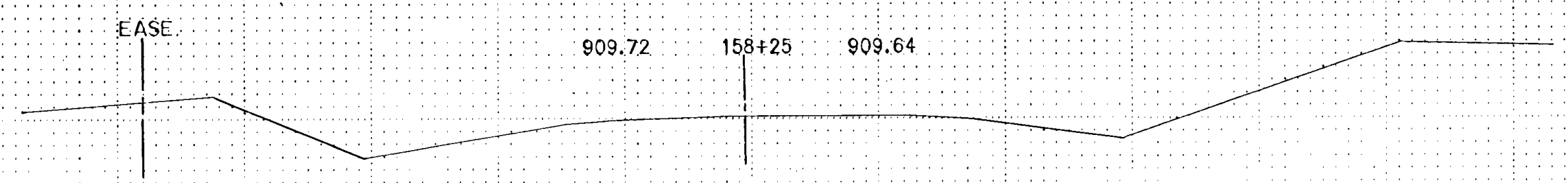


	31		12
SUBGRADE	26		21 GRANULAR

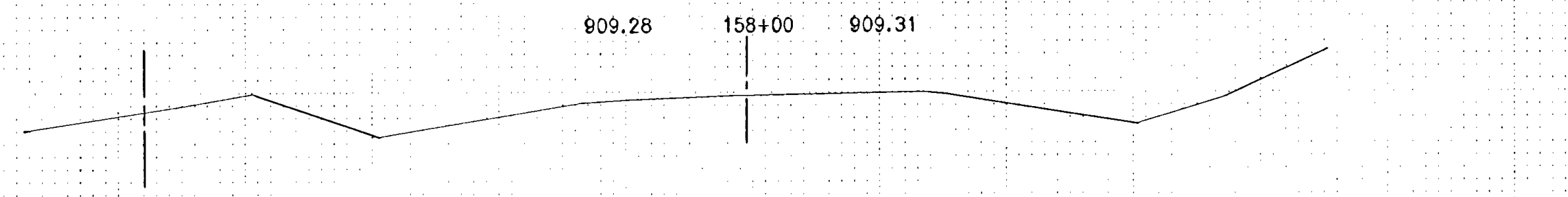


EXCAVATION EMBANKMENT

Sub-Totals	Cu. Yds.	Cu. Yds.	Sub-Totals

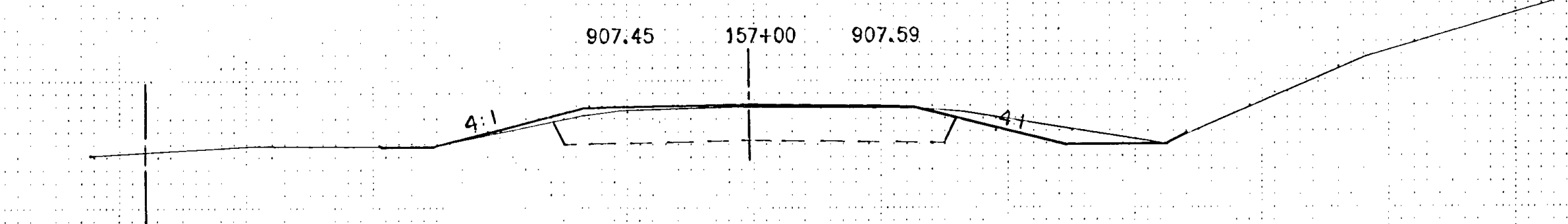


	12		3
SUBGRADE	52		54 GRANULAR

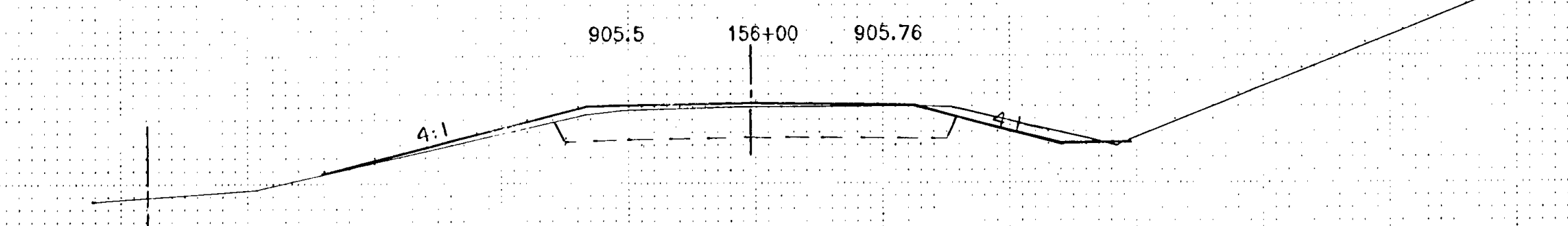


STA. 157+40 END BITUMINOUS REMOVAL
 END SUBGRADE EXCAVATION

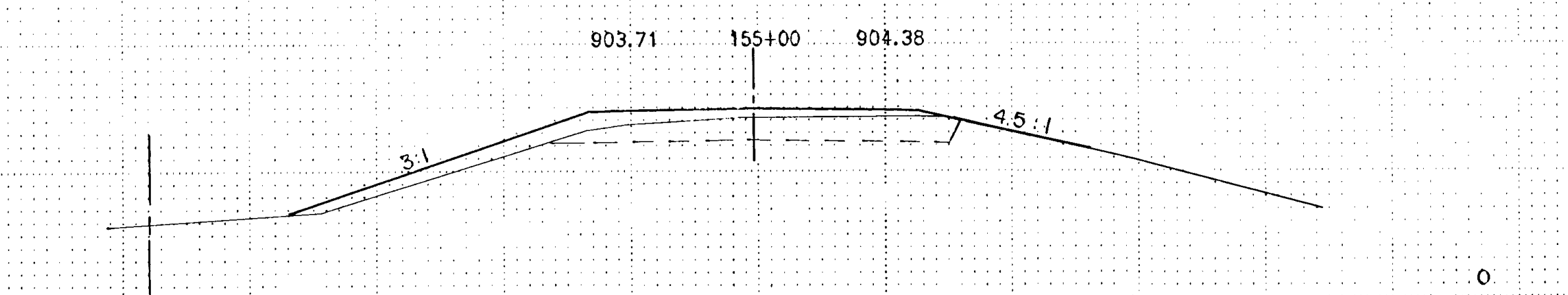
	50		15
	248		274



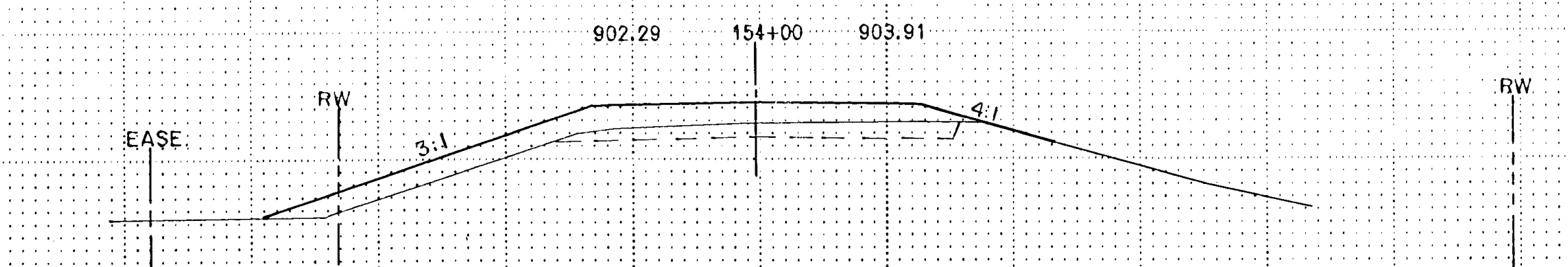
	20		30
	222		298



	0		65
	159		307



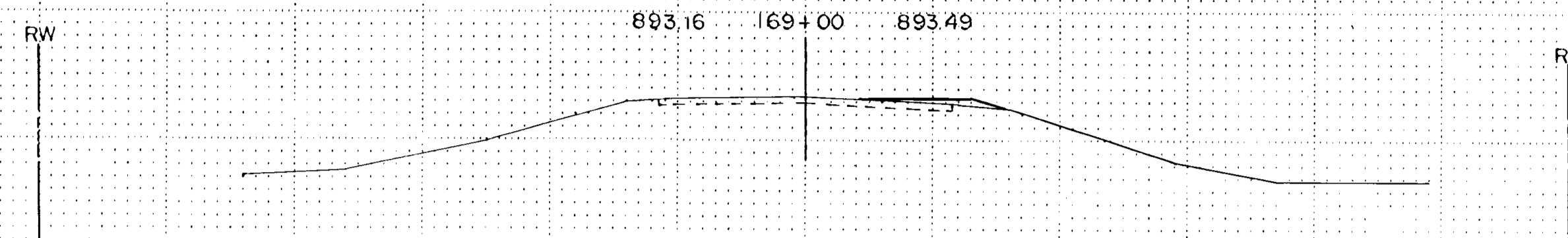
	0		180
SUBGRADE	56		320 GRANULAR



	0		180
SUBGRADE	56		320 GRANULAR

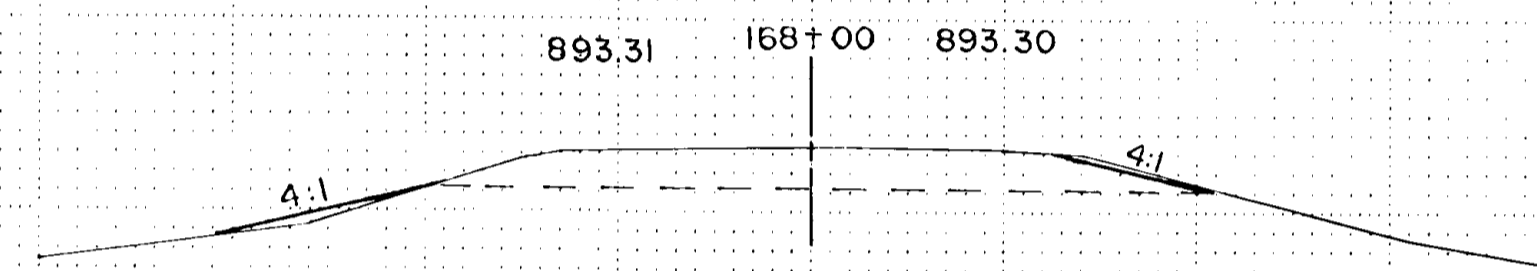
Copyright 1988

STA. 169+50 END BITUMINOUS REMOVAL



EXISTING ELEV. 892.57 168+53 893.39 PROFILE ELEV.

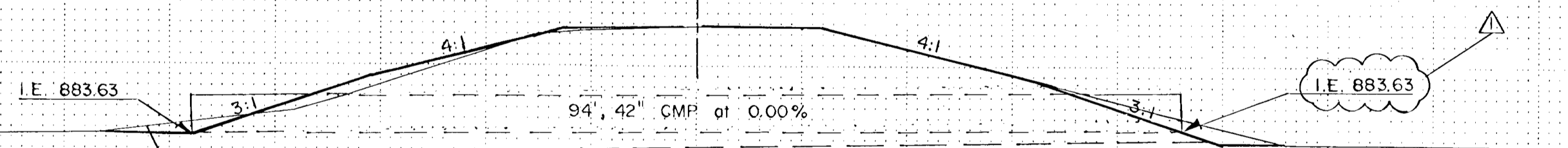
STA. 168+23 END CULVERT EXCAVATION



STA. 167+65
STA. 167+70
STA. 167+75 INPLACE 42" x 94' R.C. PIPE CULVERTS
REMOVE
F. & I. 42" x 94' C.M. PIPE CULVERTS

893.85 167+70

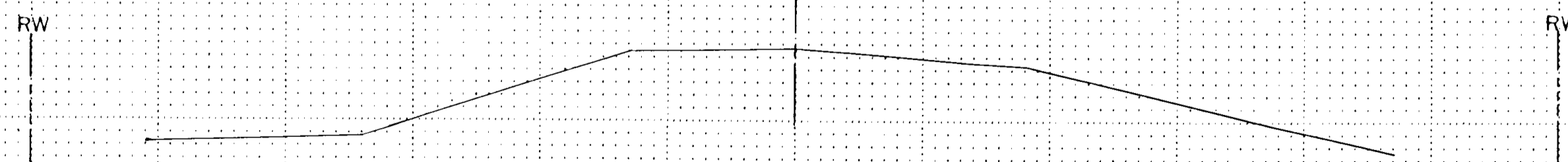
I.E. 883.63



894.48 167+00

STA. 167+00 BEGIN BITUMINOUS REMOVAL
BEGIN CULVERT EXCAVATION

895.91 166+00



EXCAVATION EMBANKMENT

Sub Totals	Cu. Yds.	Cu. Yds.	Sub Totals
	31	0	35
	30	12	58
	26	22	
CULVERT 32	104	GRANULAR	
	0	0	
CULVERT 527	309	GRANULAR	
	165	AGG. BEDDING	
	0	0	
CULVERT 612	393	GRANULAR	
	165	AGG. BEDDING	

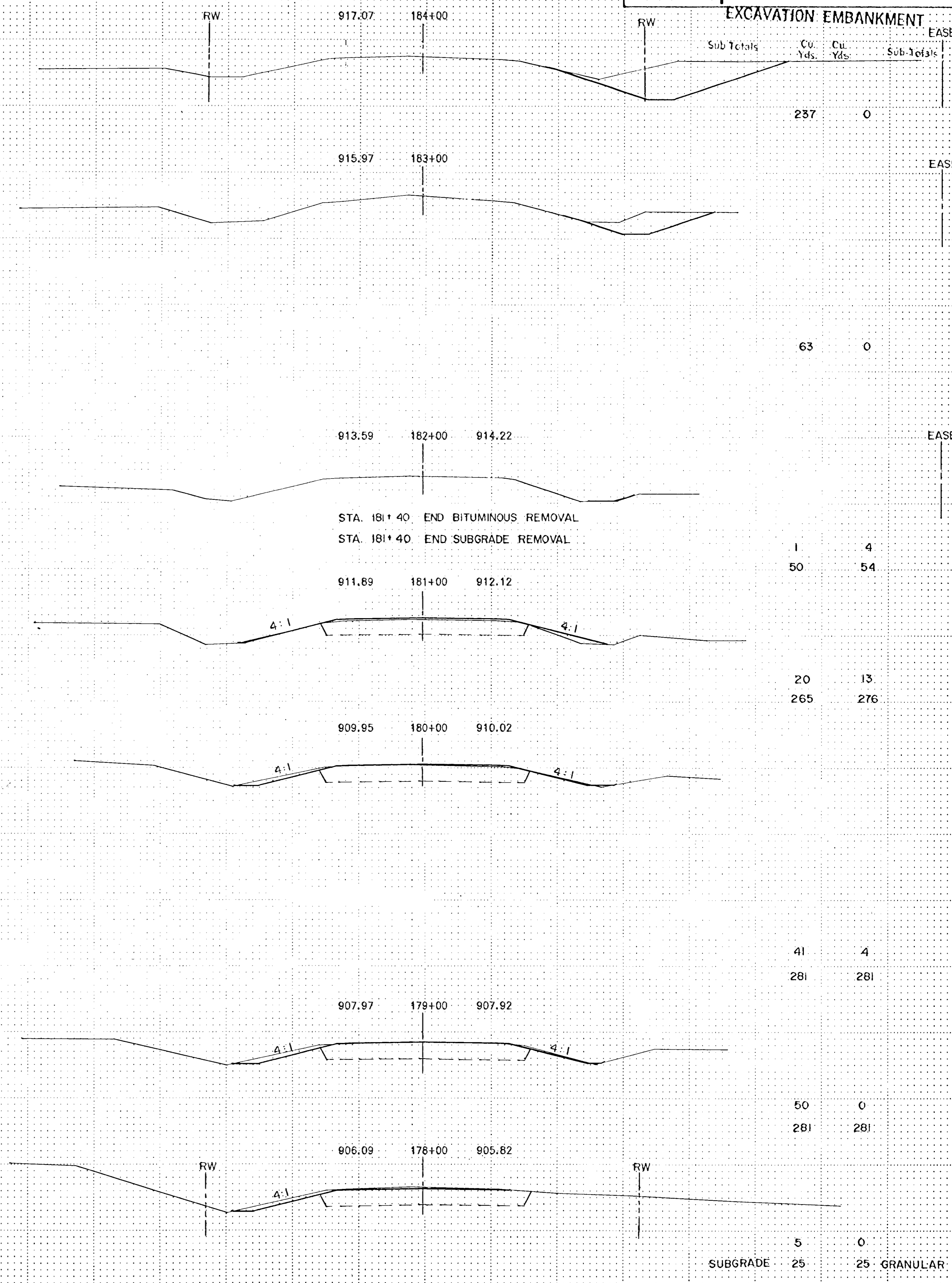
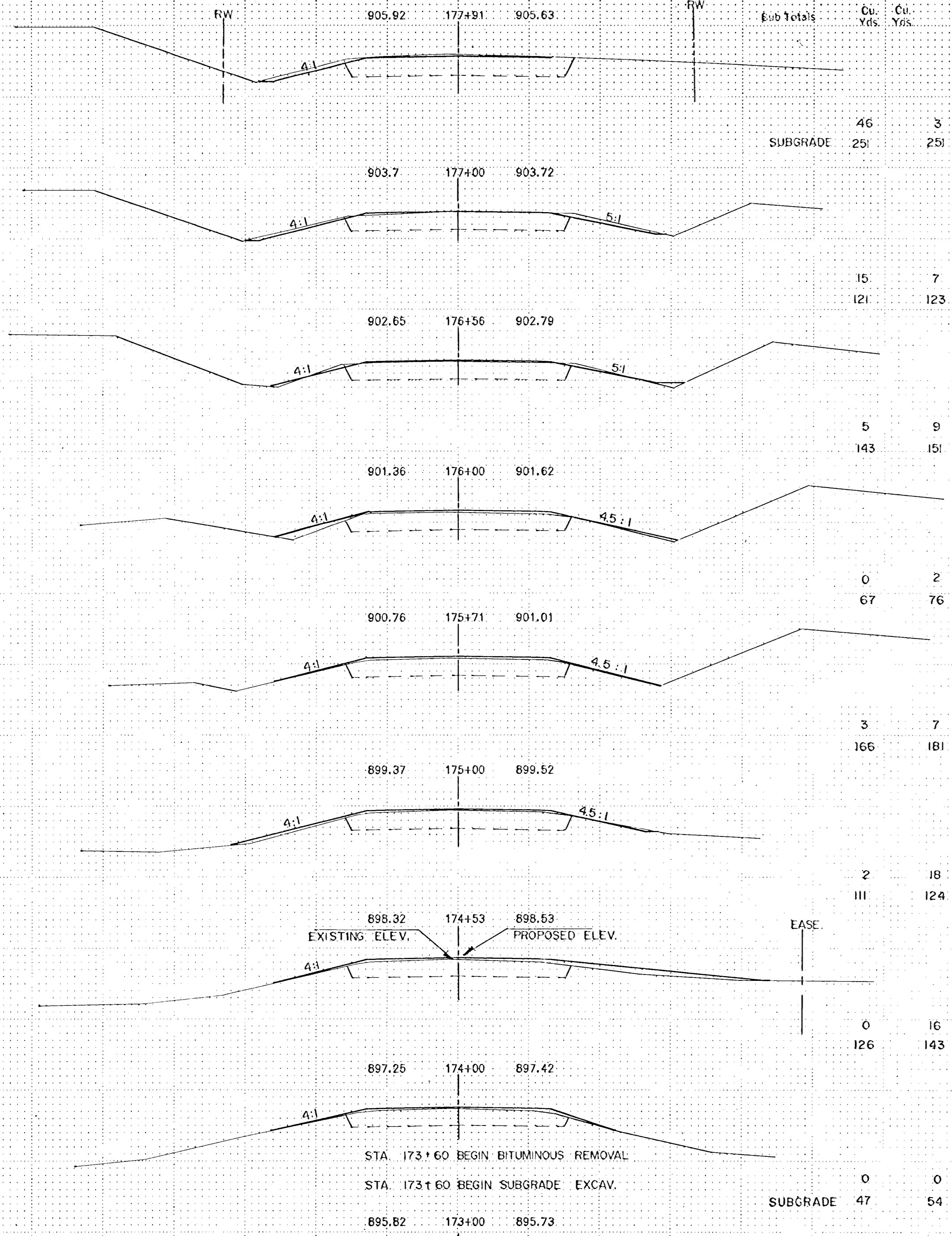
REVISIONS			
DATE	BY	DATE	BY
7/29/91	JHT		

COPY EQUIPMENT FROM #1

EXCAVATION EMBANKMENT

Fed. Proj. No.

EXCAVATION EMBANKMENT



EXISTING ELEV. PROPOSED ELEV.

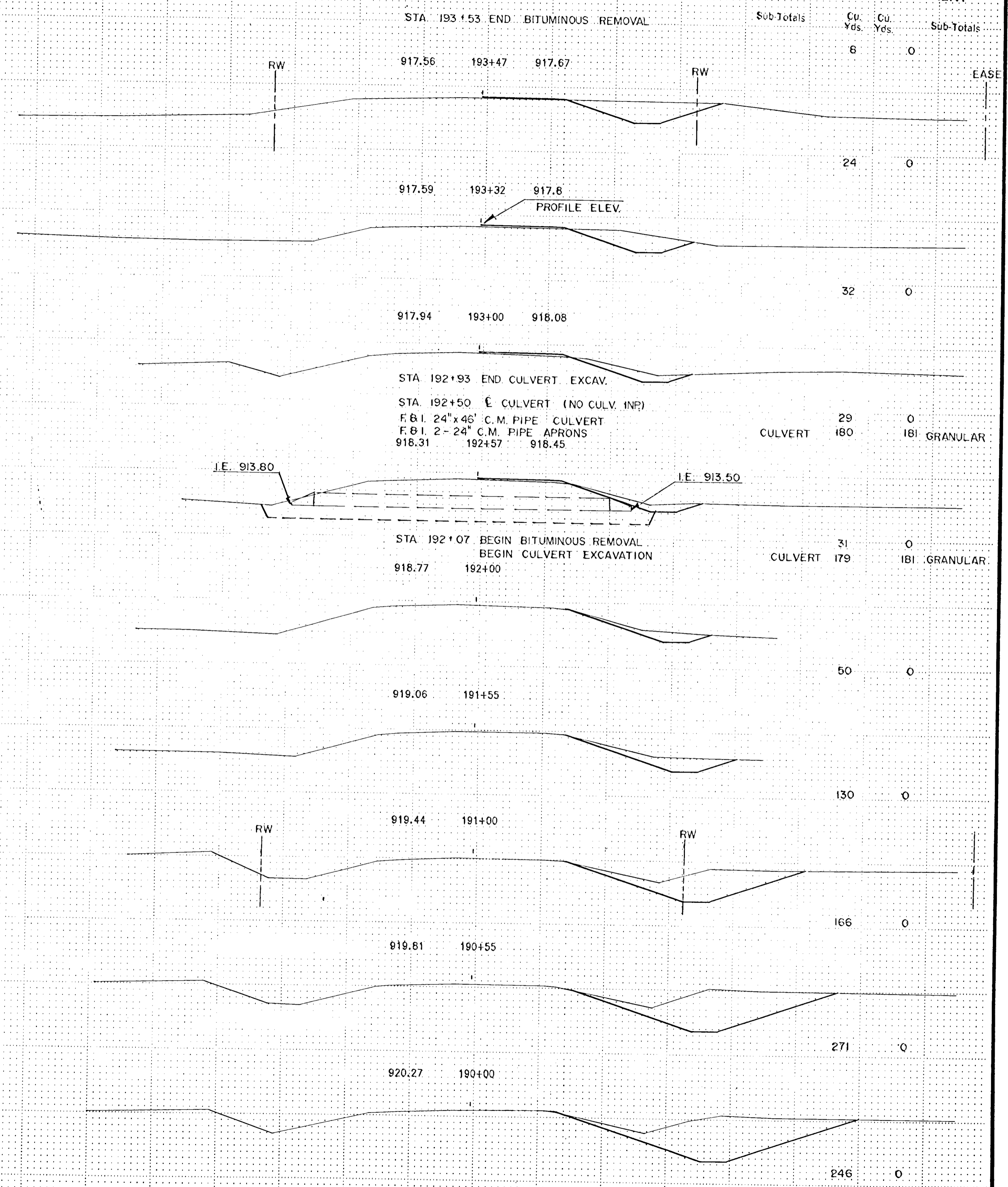
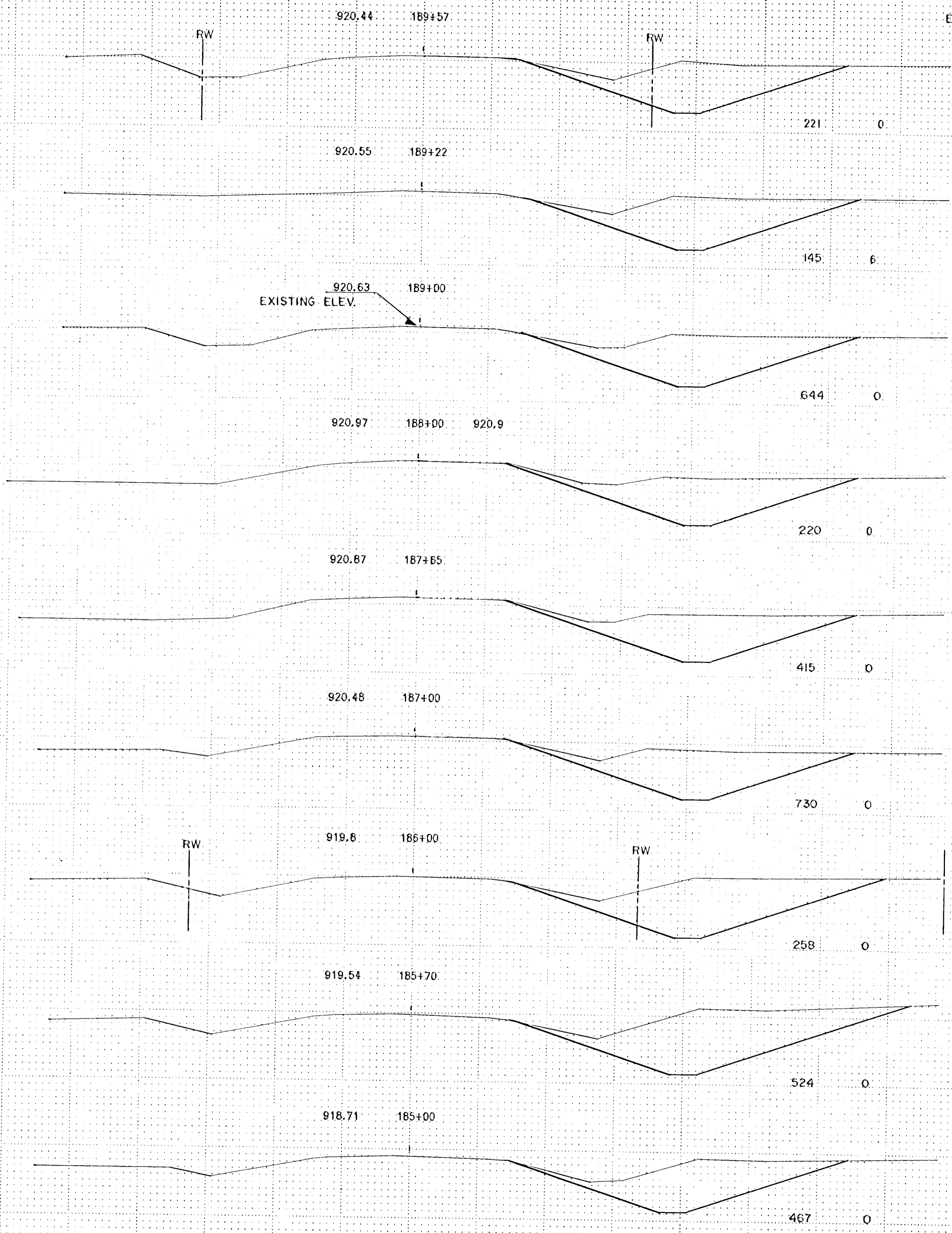
STA. 173+60 BEGIN BITUMINOUS REMOVAL
STA. 173+60 BEGIN SUBGRADE EXCAV.

STA. 181+40 END BITUMINOUS REMOVAL
STA. 181+40 END SUBGRADE REMOVAL

EXCAVATION EMBANKMENT

Fed. Proj. No.

EXCAVATION EMBANKMENT



COPY EQUIPMENT FORM #1

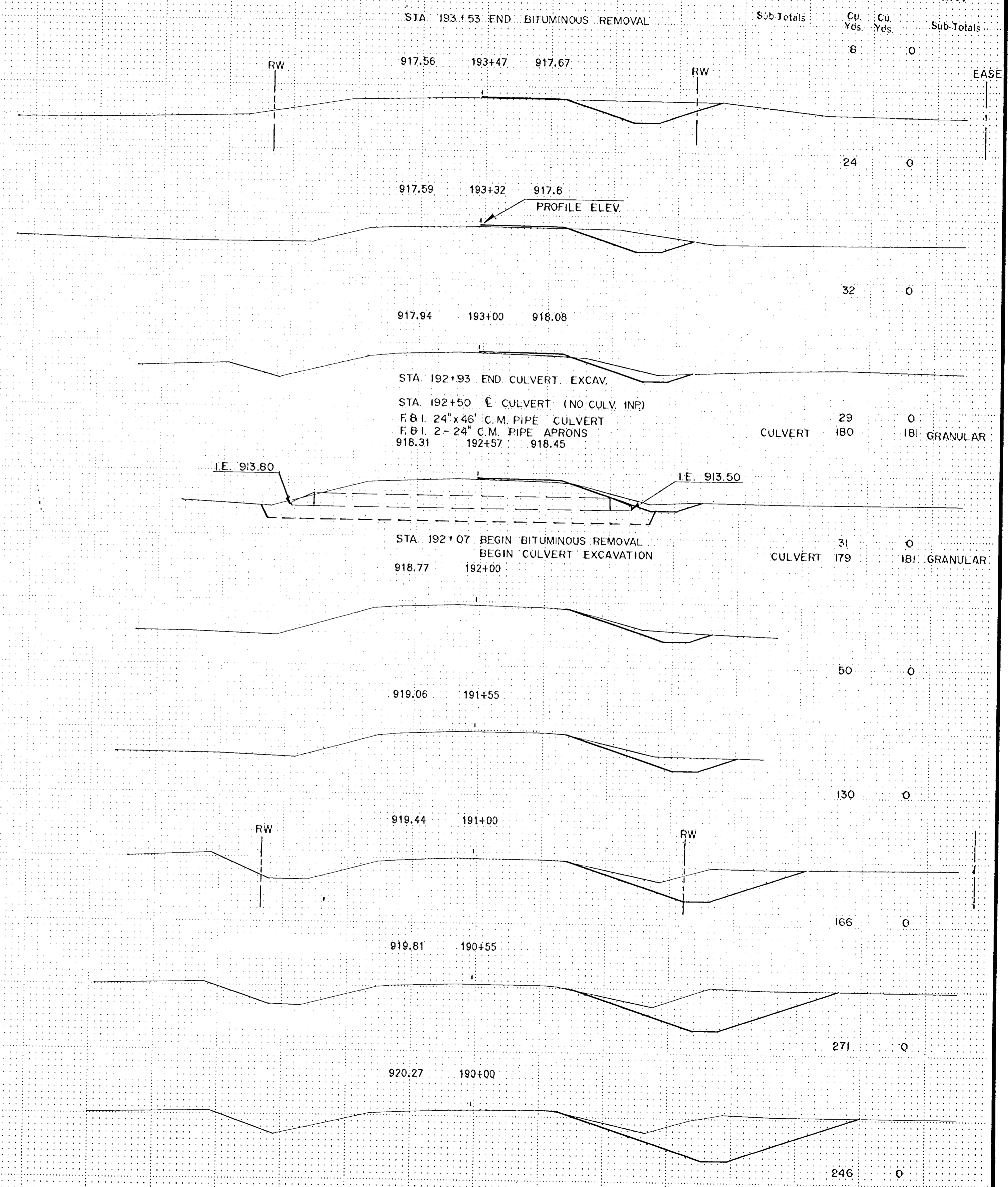
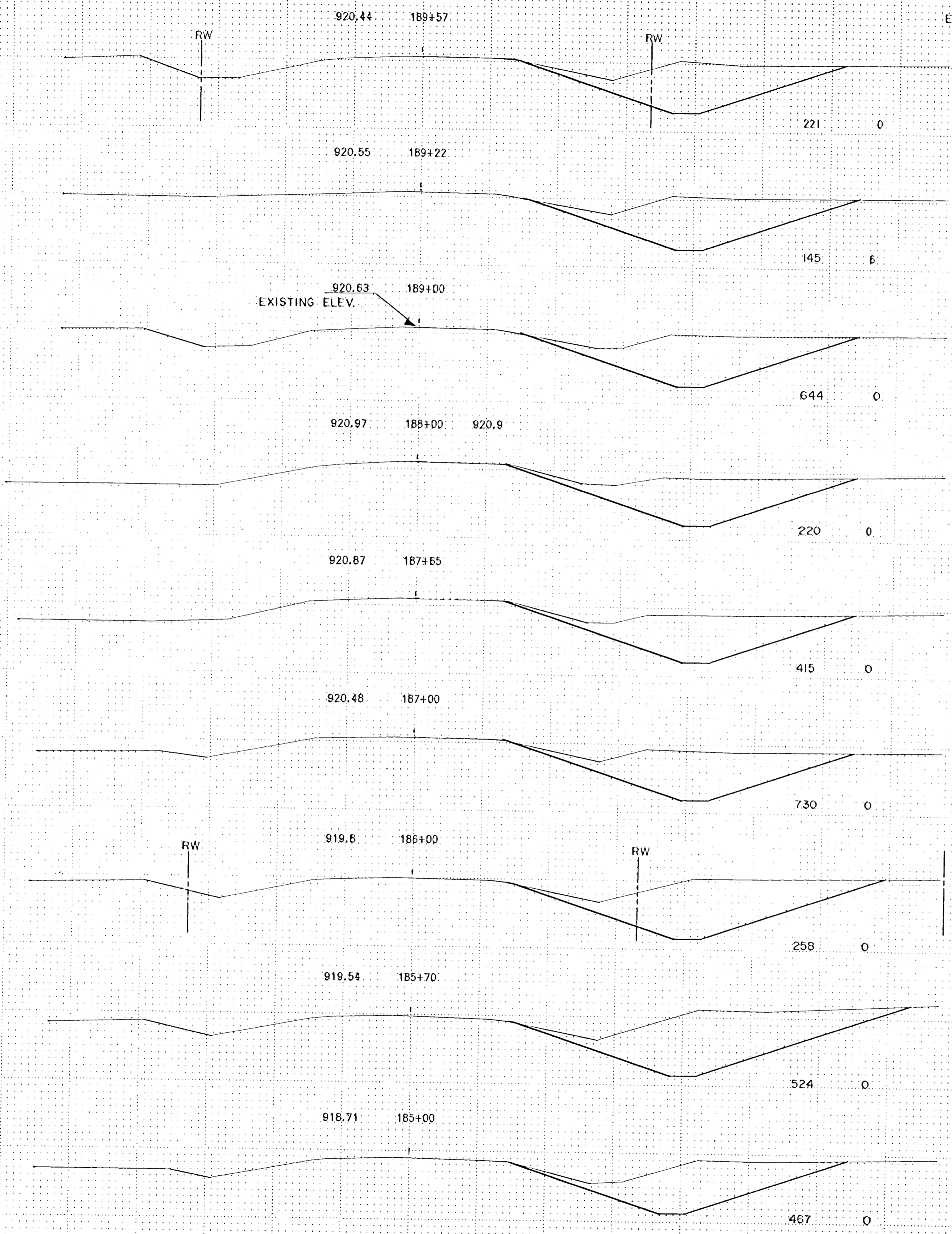
EXCAVATION EMBANKMENT

Sub-Totals	Cu. Yds.	Cu. Yds.	Sub-Totals
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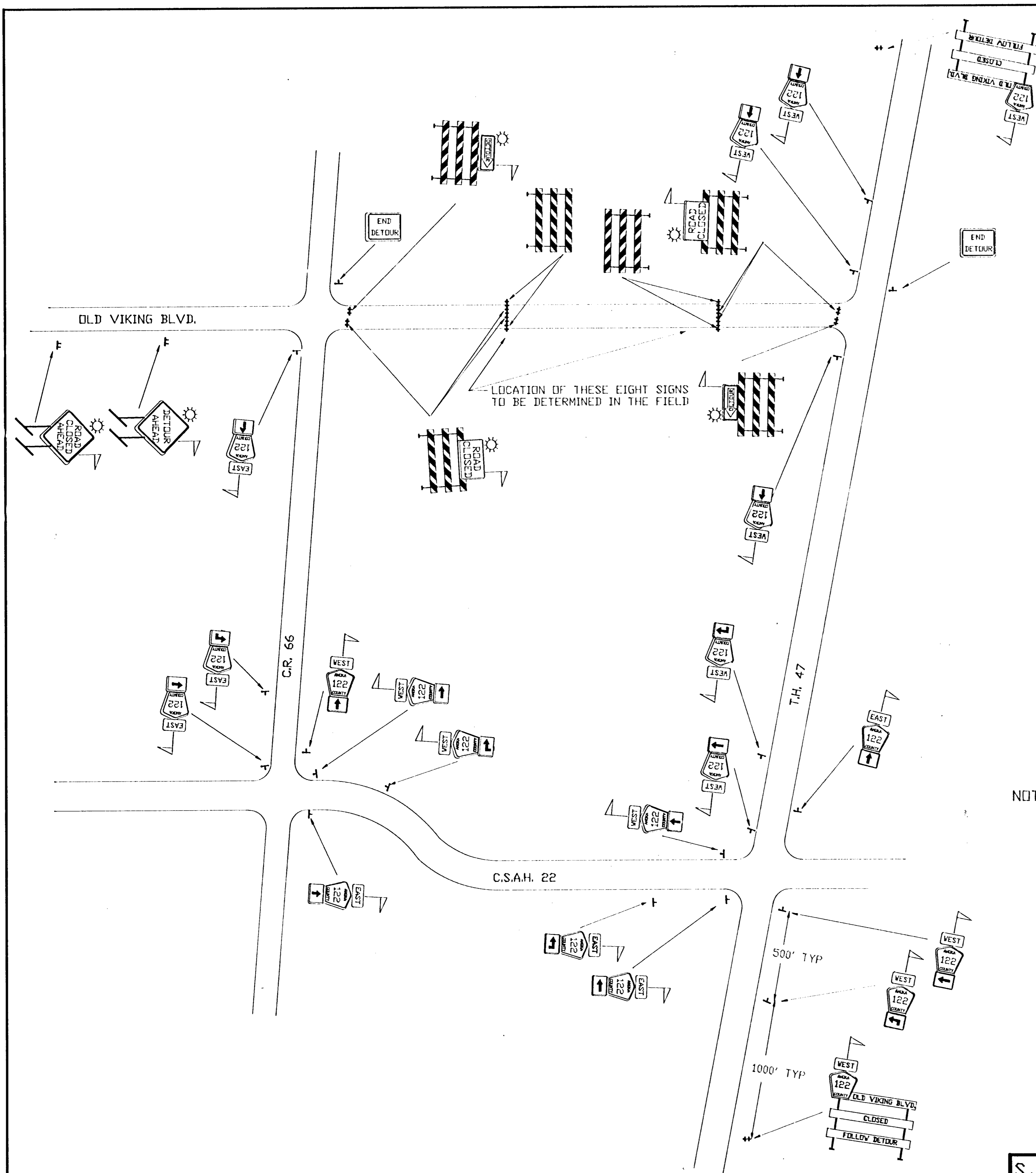
Fed. Proj. No.

EXCAVATION EMBANKMENT

Sub-Totals	Cu. Yds.	Cu. Yds.	Sub-Totals
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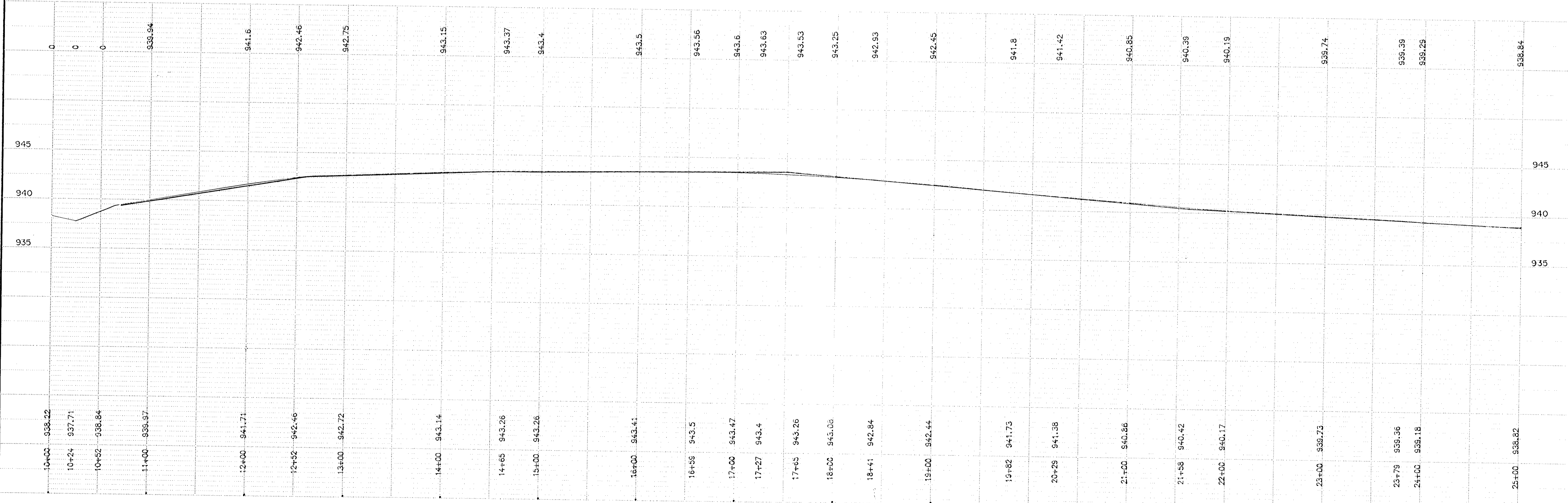
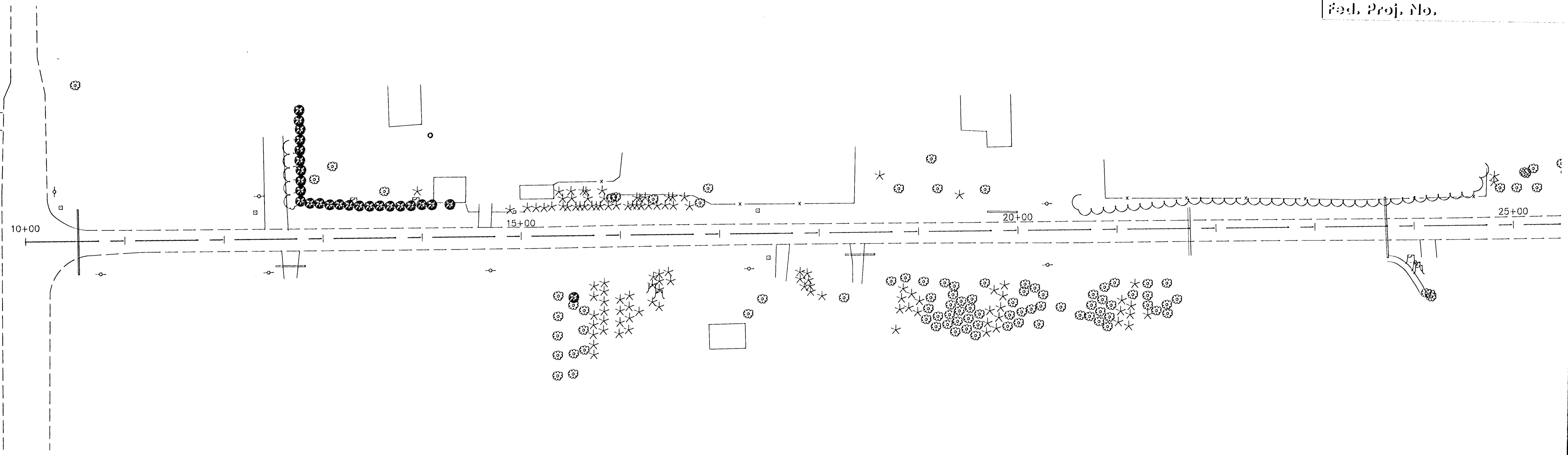
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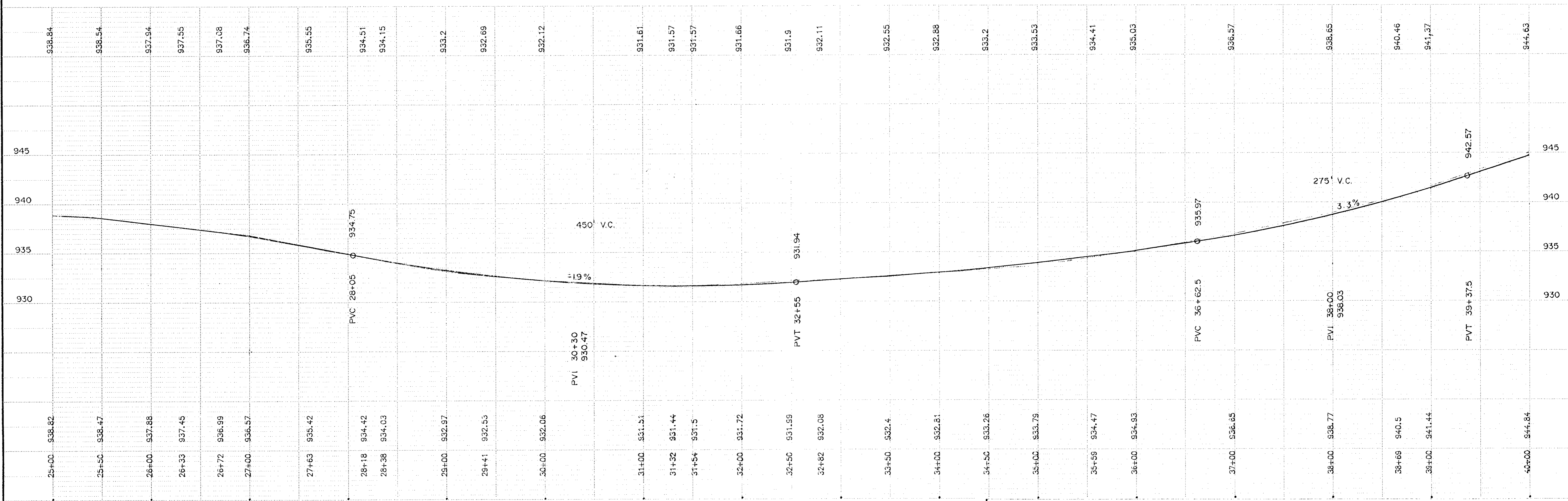
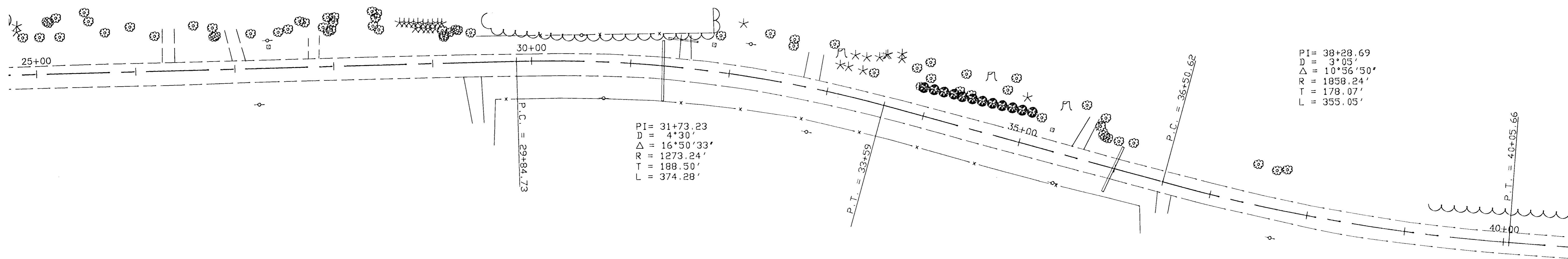
NOTES :

- LOCATIONS OF ALL SIGNS ARE APPROXIMATE, EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL SIGNS SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
- ALL BARRICADES WILL HAVE REFLECTIVE MATERIAL ON BOTH SIDES.
- ALL BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING APPENDIX 'B', DATED MARCH, 1990.
- ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AT ANYTIME AS DETERMINED BY THE ENGINEER.

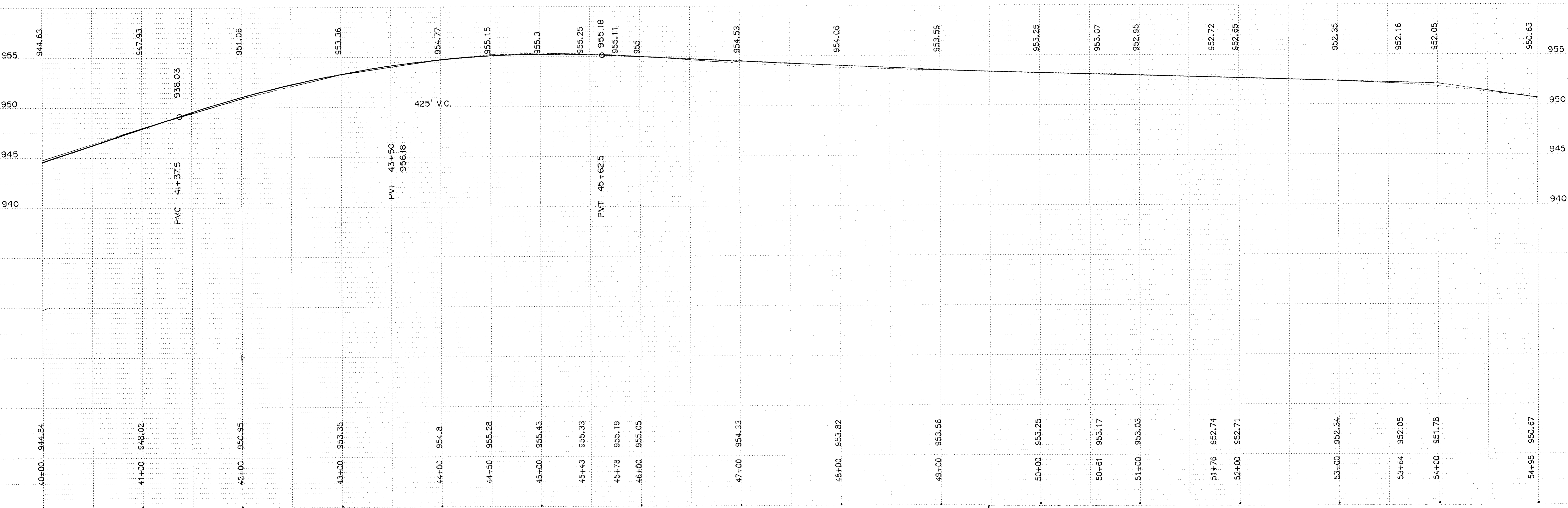
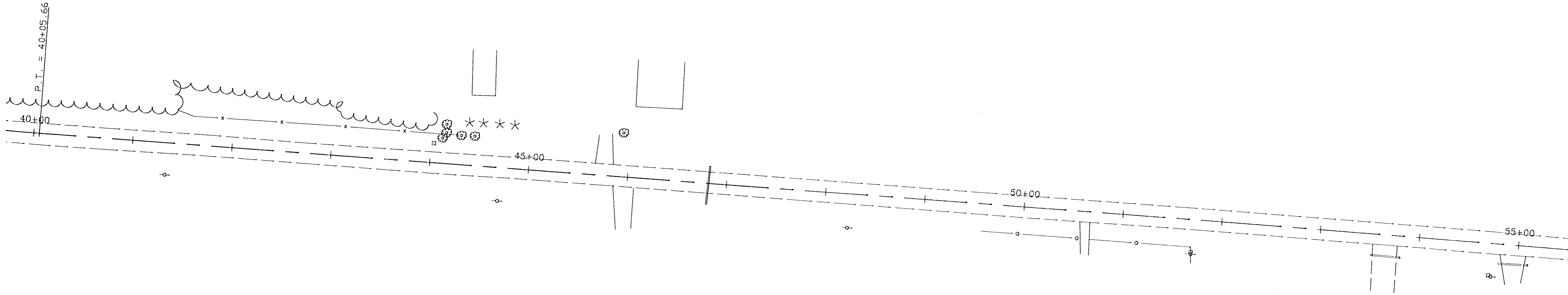
Fed. Project No. _____			
M.U.T.C.D. CODE	SIZE	INSERT	QTY
M4-9_MOD	30 x 24	END DETOUR	2
FLASHER			
W20-2	48 x 48	DETOUR AHEAD	1
FLASHER			
W20-3	48 x 48	ROAD CLOSED AHEAD	1
M3-2	24 x 15	EAST	1
M1-6	24 x 24	ROAD 122	1
	21 x 15	ROAD 122	1
M3-2	24 x 15	WEST	2
M1-6	24 x 24	ROAD 122	1
	21 x 15	ROAD 122	2
		ROAD 122	1
		ROAD 122	4
M3-2	24 x 15	WEST	1
M1-6	24 x 24	ROAD 122	1
TYPE III	8 FT.	CLOSED	2
		FOLLOW DETOUR	
R11-2	48 x 30	ROAD CLOSED	6
TYPE III	8 FT.	ROAD CLOSED	6
R11-2	48 x 30	DETOUR	6
TYPE III	8 FT.	DETOUR	6
R11-2	48 x 30	DETOUR	2
TYPE III	8 FT.	DETOUR	2
TYPE III	8 FT.	DETOUR	4



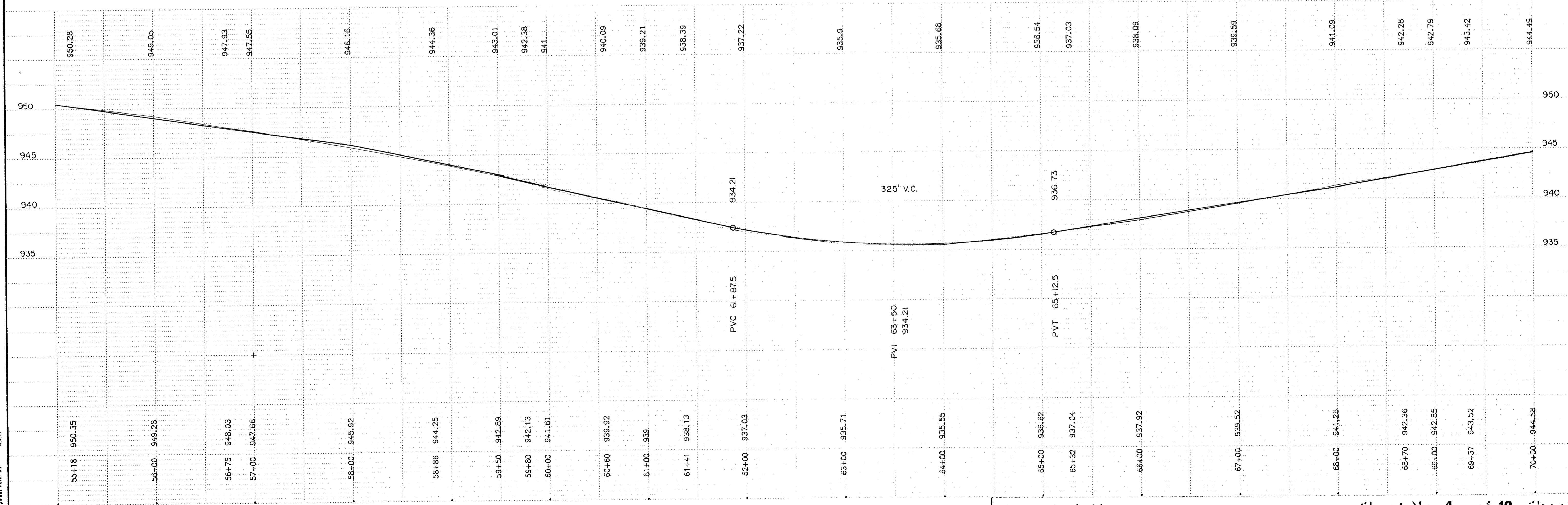
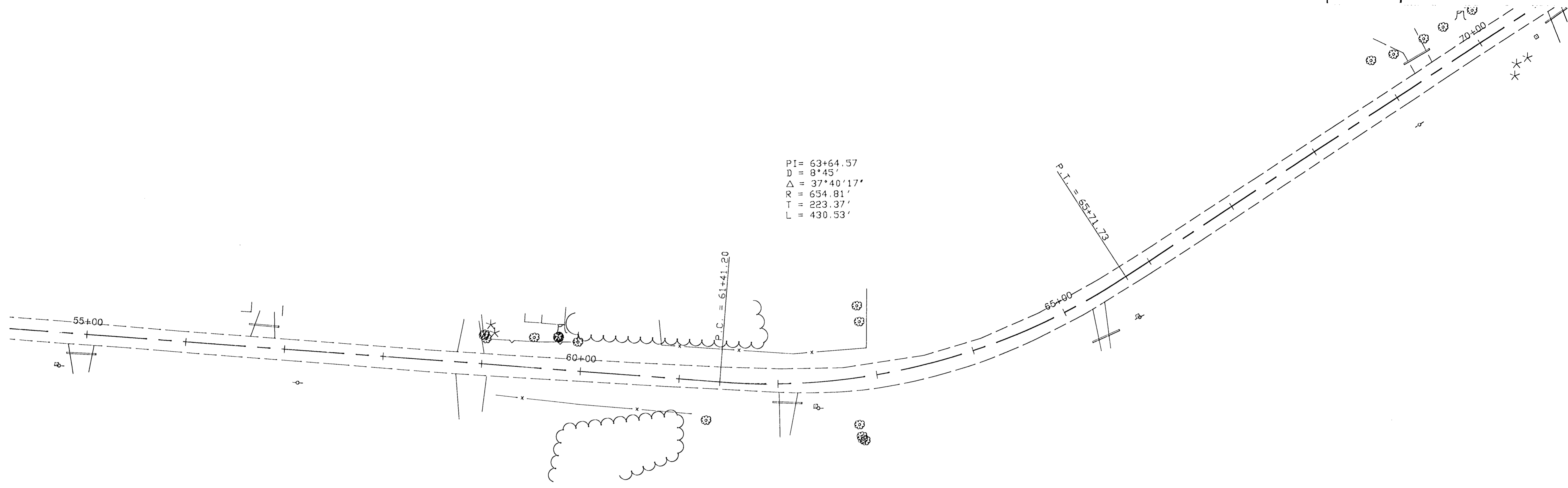
Copy Equipment Form #1



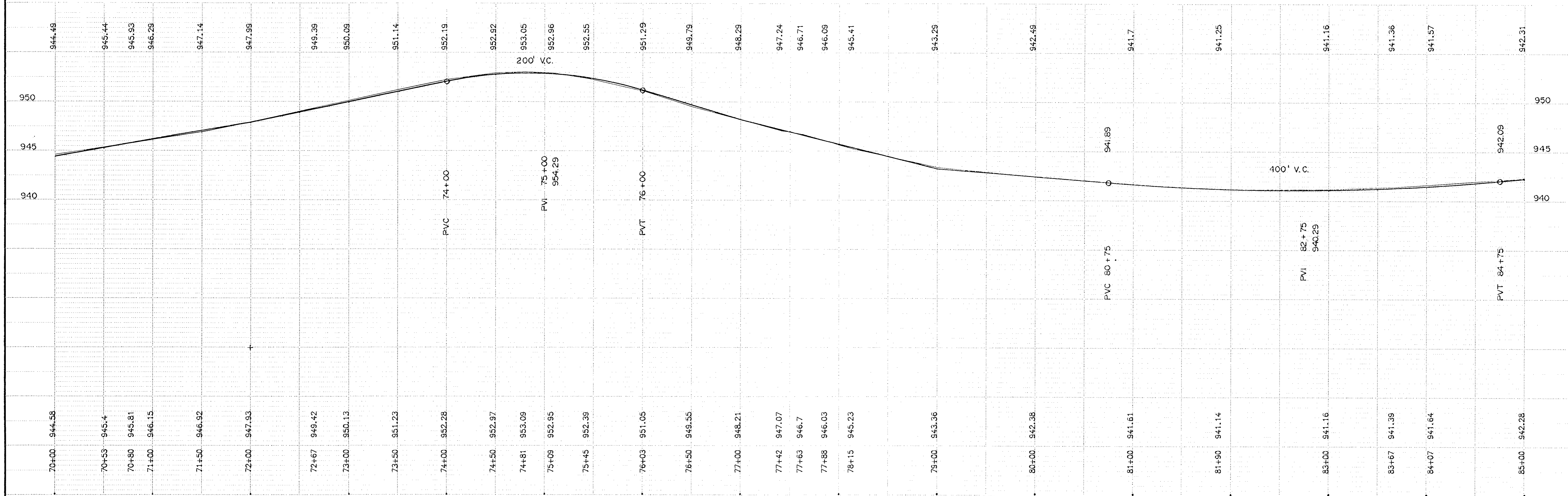
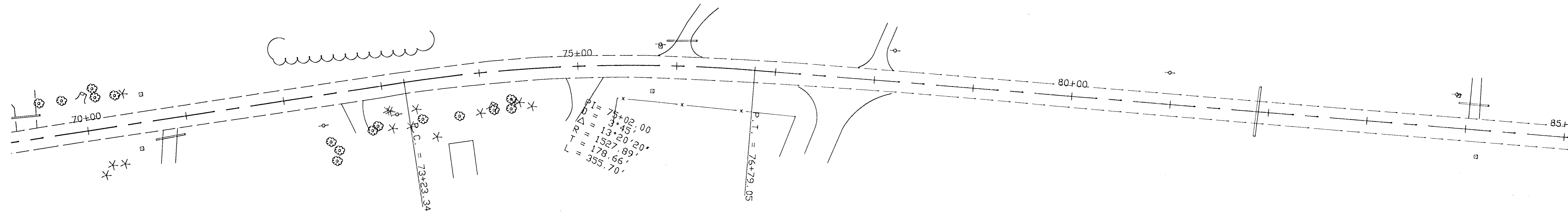
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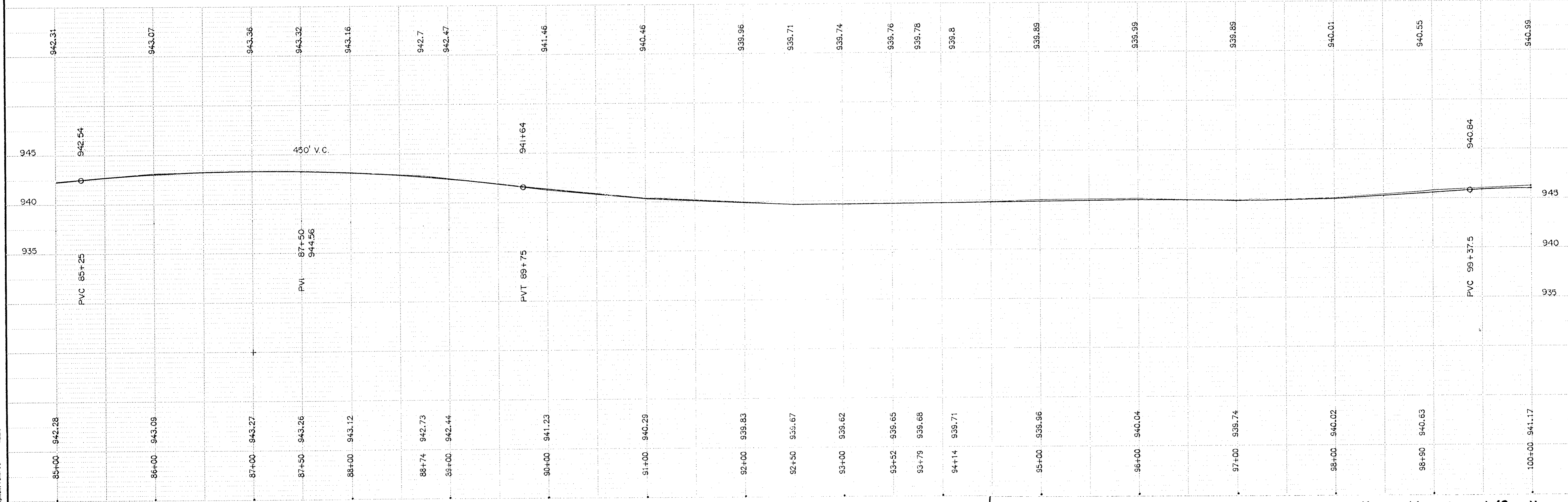
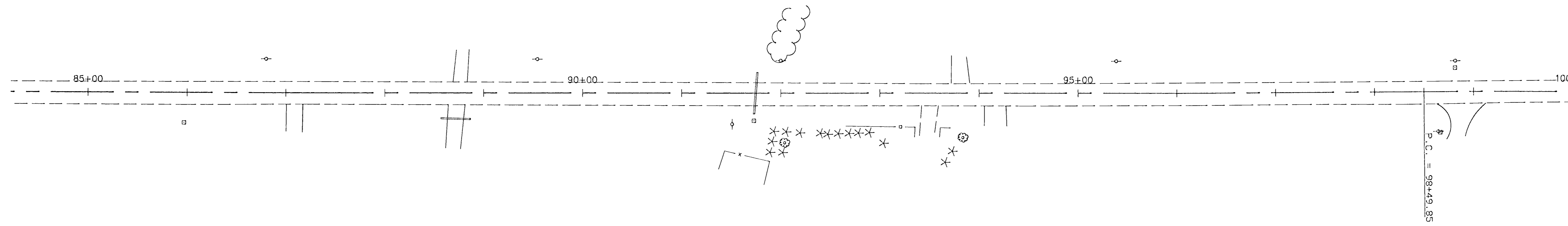


$PI = 63+64.57$
 $D = 8^{\circ}45'$
 $\Delta = 37^{\circ}40'17''$
 $R = 654.81'$
 $T = 223.37'$
 $L = 430.53'$

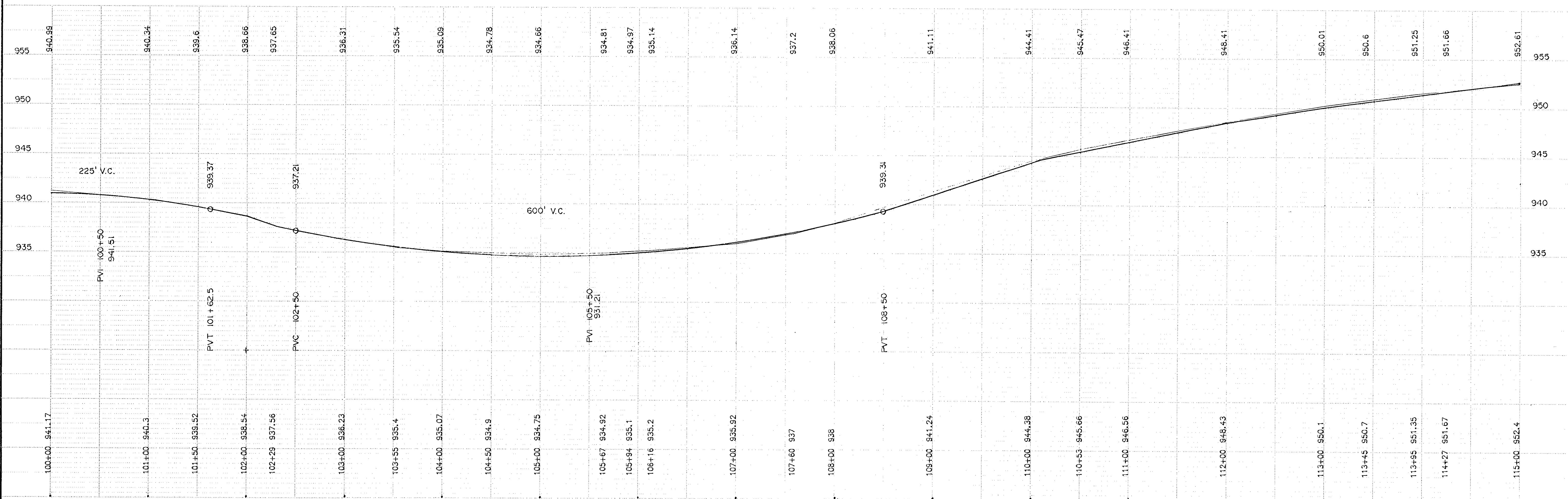
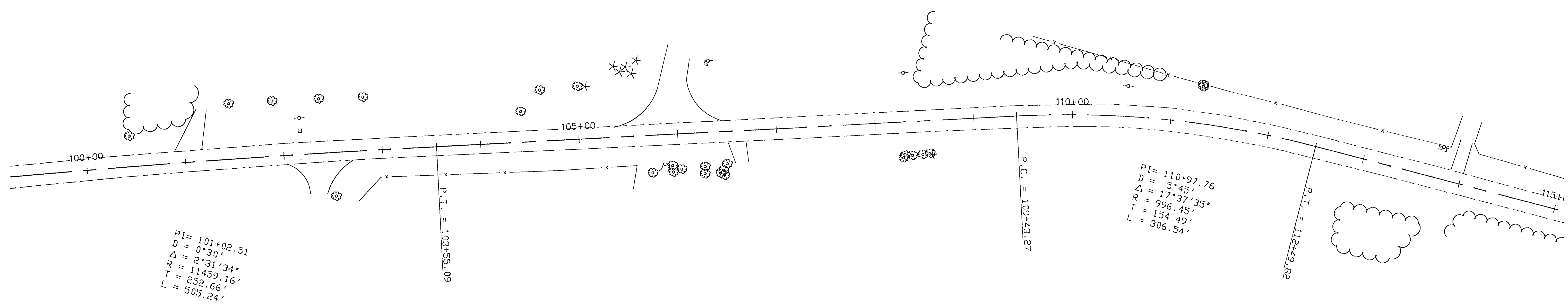


City/Equipment Form #

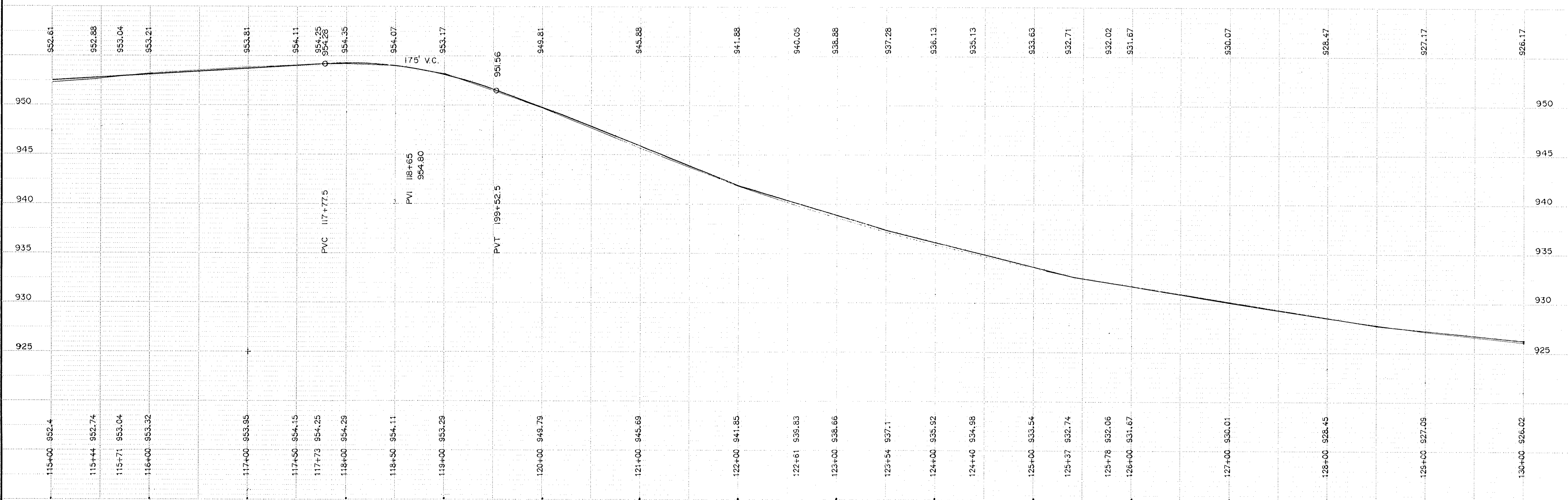
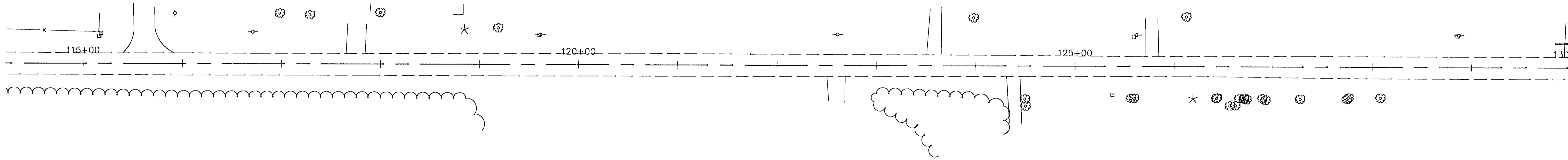




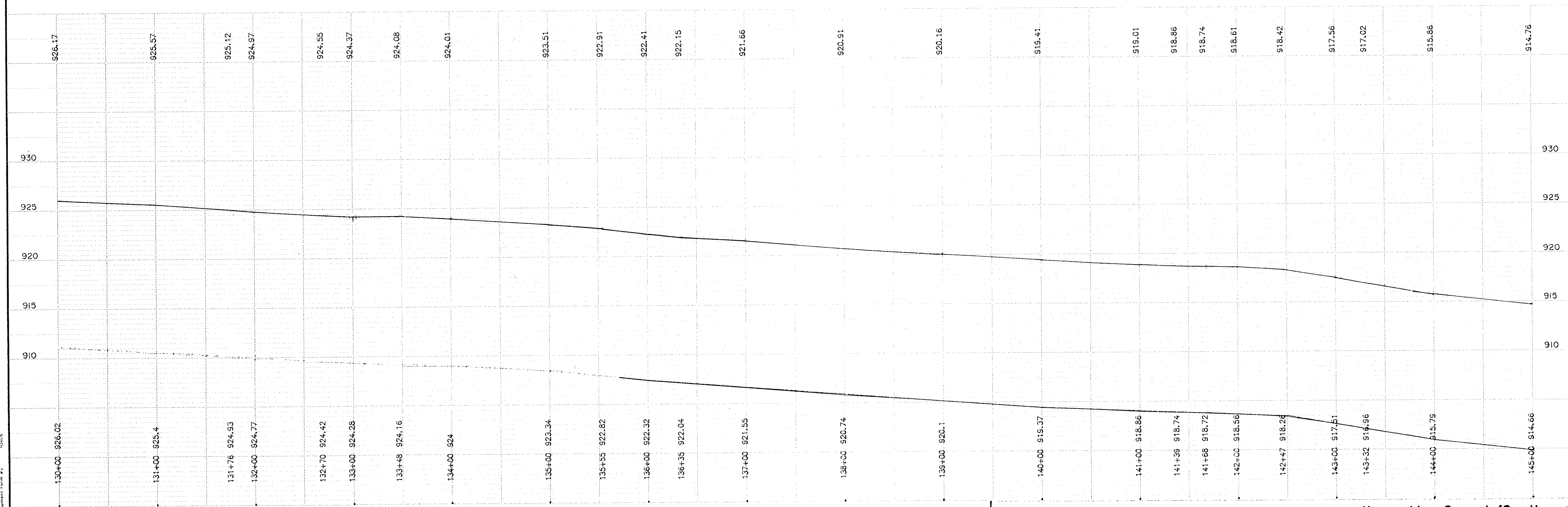
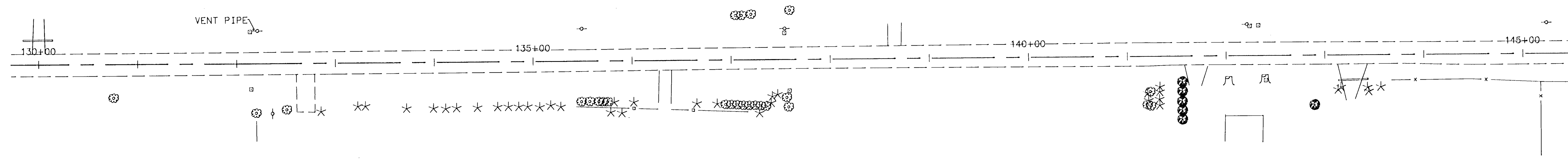
Copy Equipment Form #7



Copy & Reproduction Form #2



Copy Equipment Form #2



Copy Equipment Form #4

