

# MINNESOTA DEPARTMENT OF TRANSPORTATION

## CONSTRUCTION PLAN FOR GRADING BASE & BITUMINOUS SURFACING

LOCATED ON C.R. #78 FROM C.S.A.H. #20 TO C.R. #58

STATE PROJ. NO. \_\_\_\_\_  
 MINN. PROJ. NO. \_\_\_\_\_  
 GROSS LENGTH 13048.510 FEET 2.471 MILES  
 BRIDGES-LENGTH 0.000 FEET 0.000 MILES  
 EXCEPTIONS-LENGTH \_\_\_\_\_ FEET \_\_\_\_\_ MILES  
 NET LENGTH 13048.510 FEET 2.471 MILES  
 MILE POINT NA TO MILE POINT NA

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 \_\_\_\_\_

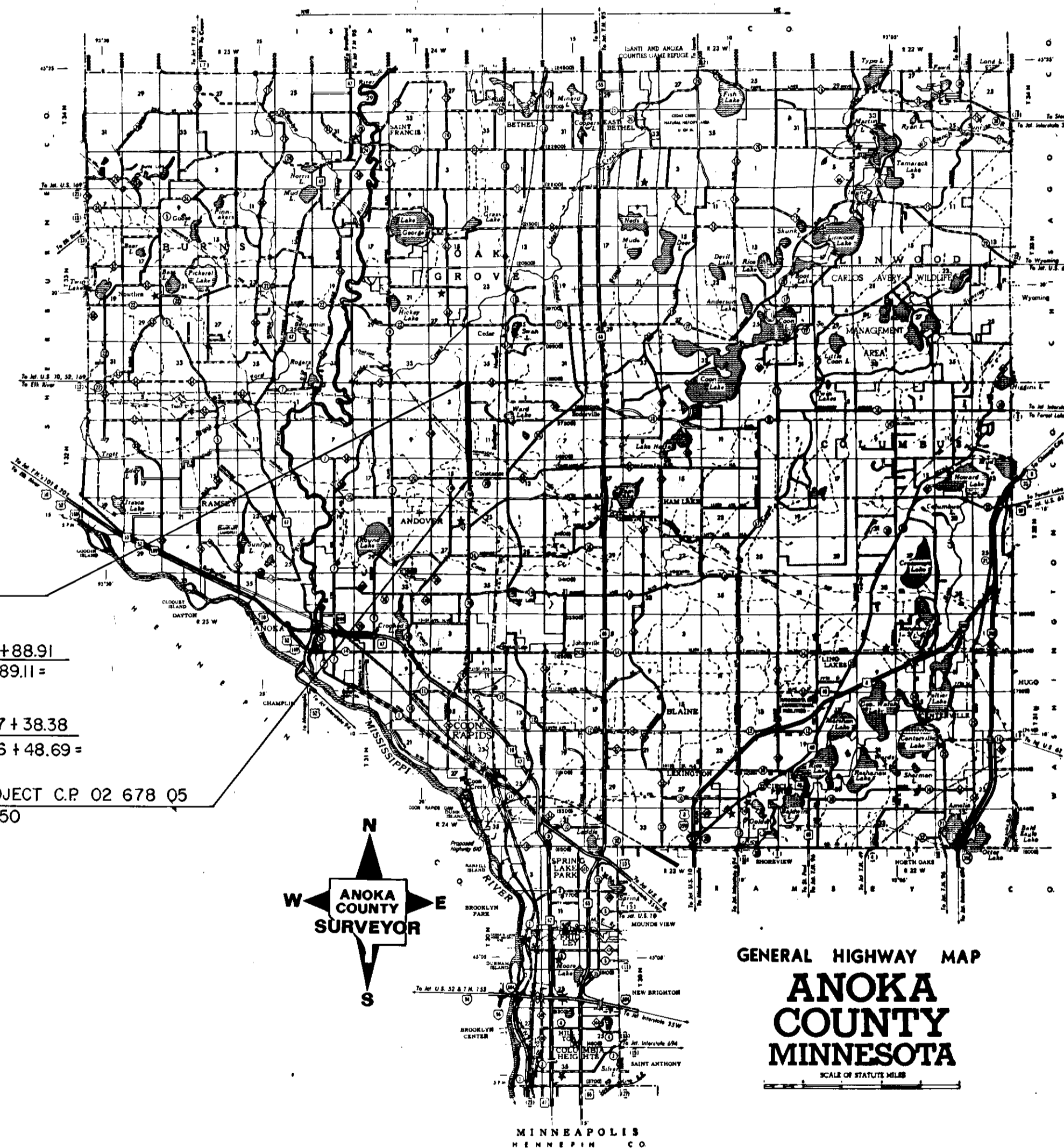
FED. PROJ. NO. \_\_\_\_\_

### GOVERNING SPECIFICATIONS

THE 1983 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATION FOR CONSTRUCTION" AND SUPPLEMENTAL SPECIFICATIONS, DATED JUNE 10, 1986, SHALL GOVERN

### INDEX

SHEET NO.	1	TITLE SHEET
"	2-3	ESTIMATED QUAN. & CHARTS
"	4	TYPICAL SECTIONS
"	5	EROSION CONTROL
"	6-10	PLAN & PROFILE
"	11	L' APPROACH PLAN & PROFILE
"	12	POND CONSTRUCTION
"	13	DITCH CONSTRUCTION 265+75 LT.
"	14	L' APPROACH CROSS SECTION
"	15-	33 CROSS SECTIONS

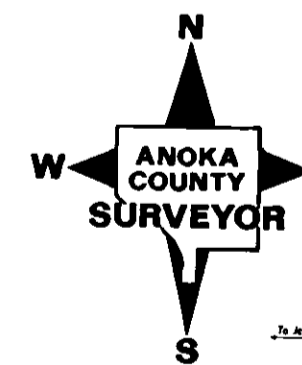


END PROJECT C.P. 02 678 05  
 STA. 296+88

▲ SURV. P.O.T. 272+88.91  
 ▲ OR P.O.T. 272+89.11

▲ SURV. P.O.T. 227+38.38  
 ▲ SURV. P.O.T. 226+48.69

BEGIN PROJECT C.P. 02 678 05  
 STA. 165+50



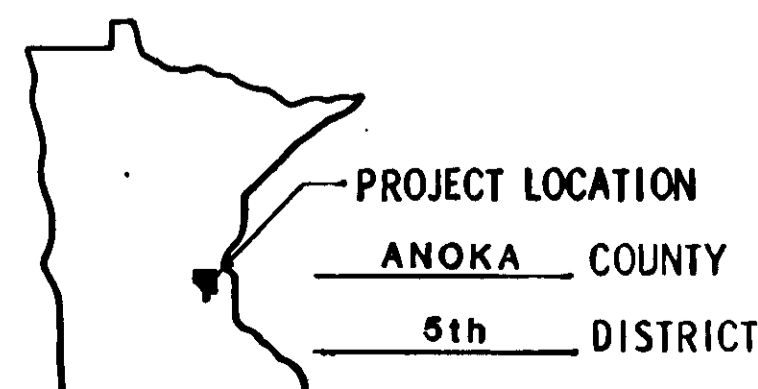
GENERAL HIGHWAY MAP  
**ANOKA COUNTY MINNESOTA**  
 SCALE OF STATUTE MILES

### SCALE

INDEX MAP	2.00 MI.
PLAN & PROFILE	HORIZ. 100'
	VERT. 10'
CROSS SECTIONS	10'
SIGNAL	

### DESIGN DATA

== Design Speed 55 MPH  
 == Based on STOPPING Sight Distance  
 == Height of eye 3.5' Height of object 0.5'  
 == % Design Speed not achieved at:  
 == % STA. TO STA. MPH  
 == A-3.50% STA. TO STA. MPH



FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO. AREA JOB

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 6/5/87 REG. NO. 6549 ENGR. Paul K. Lund COUNTY ENGINEER

DESIGN SQUAD \_\_\_\_\_

Right of Way Approval \_\_\_\_\_ 19  
 DIRECTOR, RIGHT OF WAY OPERATIONS

Recommended for Approval \_\_\_\_\_ 19

Recommended for Approval \_\_\_\_\_ 19

Recommended for Approval \_\_\_\_\_ 19  
 DISTRICT ENGINEER

Recommended for Approval \_\_\_\_\_ 19  
 TRANSPORTATION PLANS ENGINEER

Recommended for Approval \_\_\_\_\_ 19  
 DESIGN SERVICES DIRECTOR

Approved \_\_\_\_\_ 19  
 ASSISTANT DIVISION DIRECTOR  
 TECHNICAL SERVICES DIVISION

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. 02-678-05  
 STATE PROJ. NO. \_\_\_\_\_ SHEET NO. 1 OF 33 SHEETS

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY



30

30

E

30

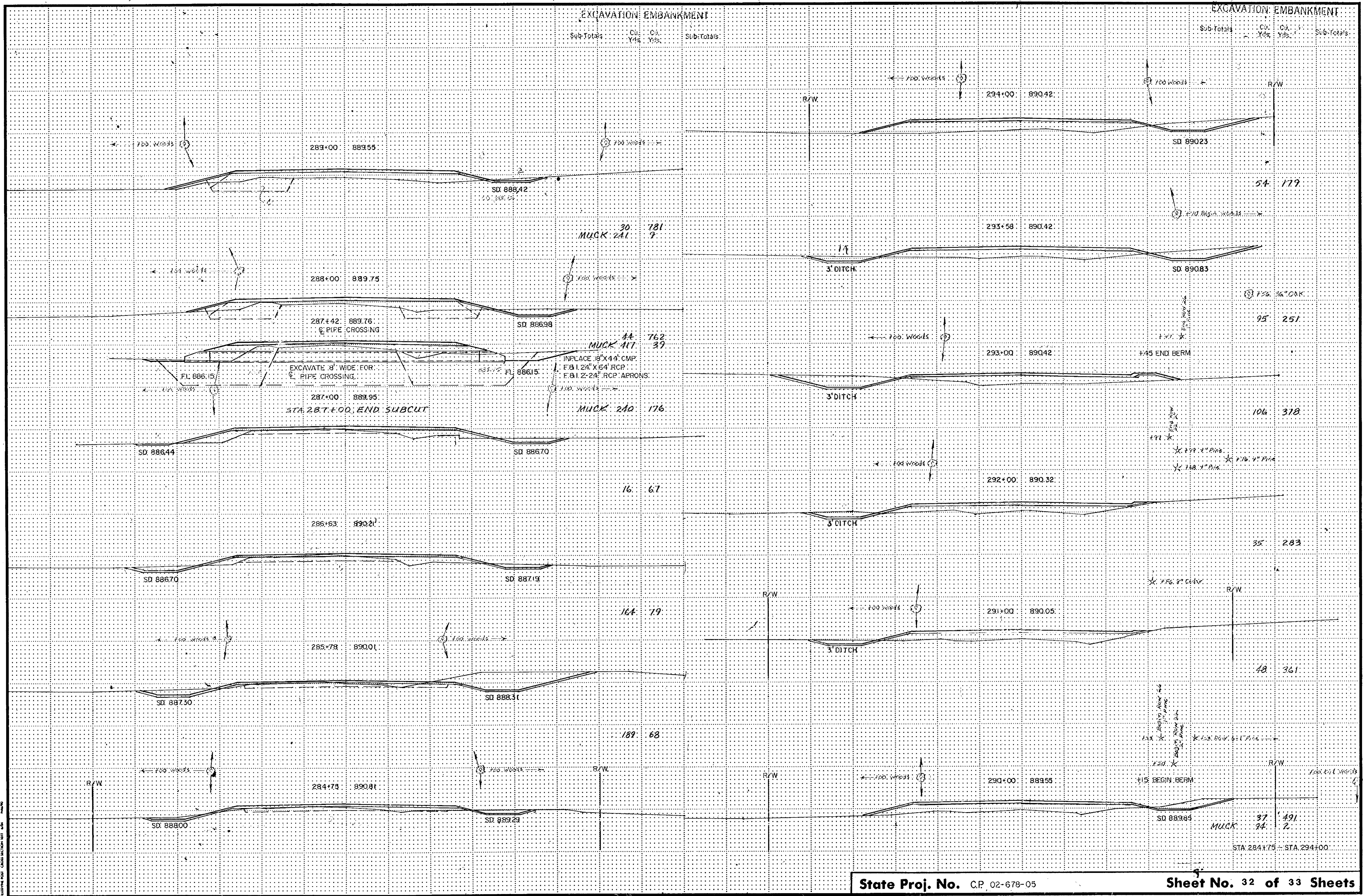
X

EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

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

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



MUCK 30 781 7

MUCK 44 762 39

MUCK 240 176

16 67

164 79

189 68

54 179

95 251

106 318

35 283

48 361

MUCK 37 491 24 2

STA 284+75 - STA 294+00

30

30

12

VERTICAL CURVE CROSS SECTION 001 001



CHECKED BY: M. J. ...

EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

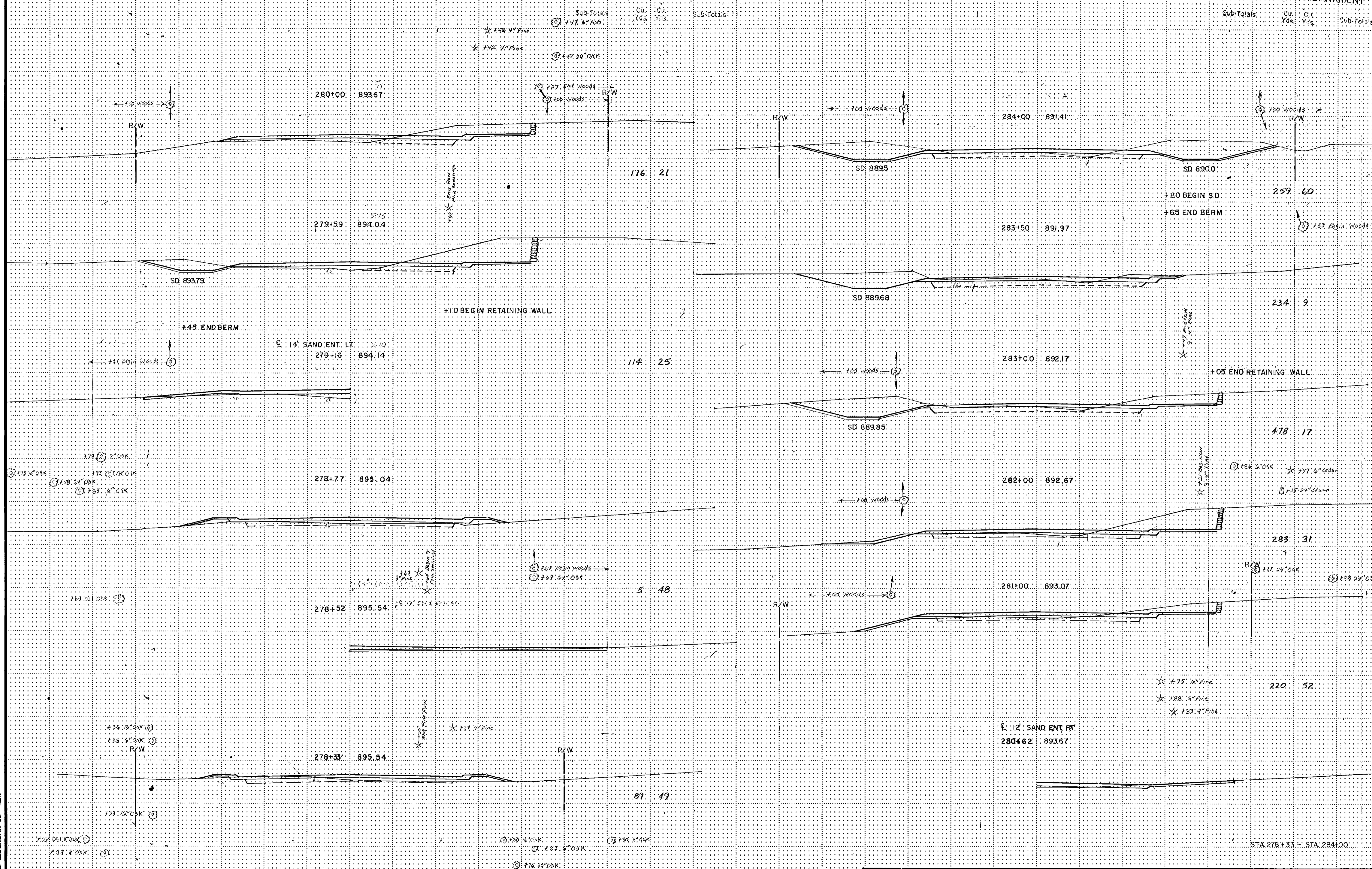


ILLUSTRATION CROSS SECTION UNIT 1/4" = 1'



20' x 40' MET  
CHECKED EST. MET  
4-2-85

EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

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

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

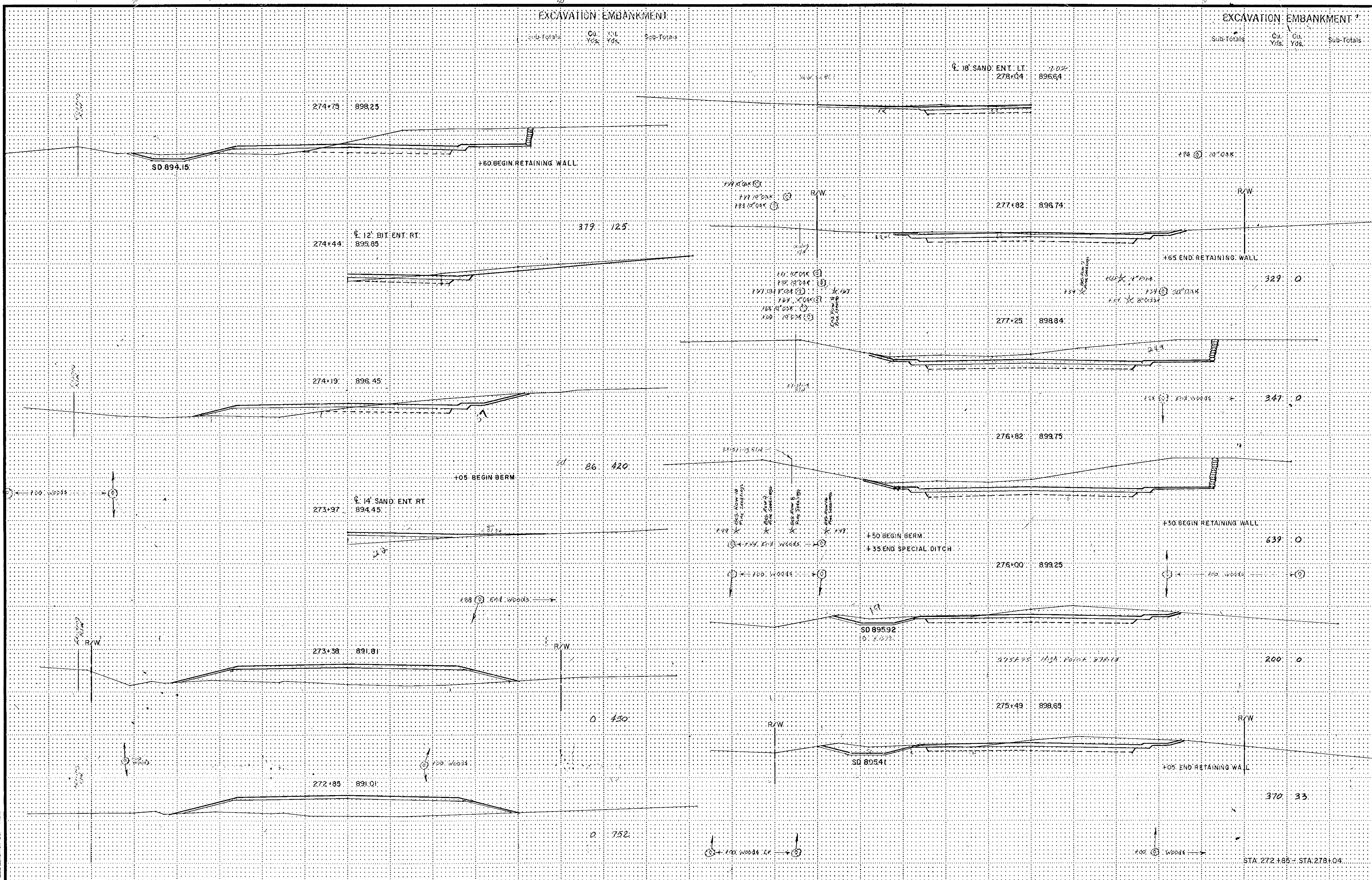
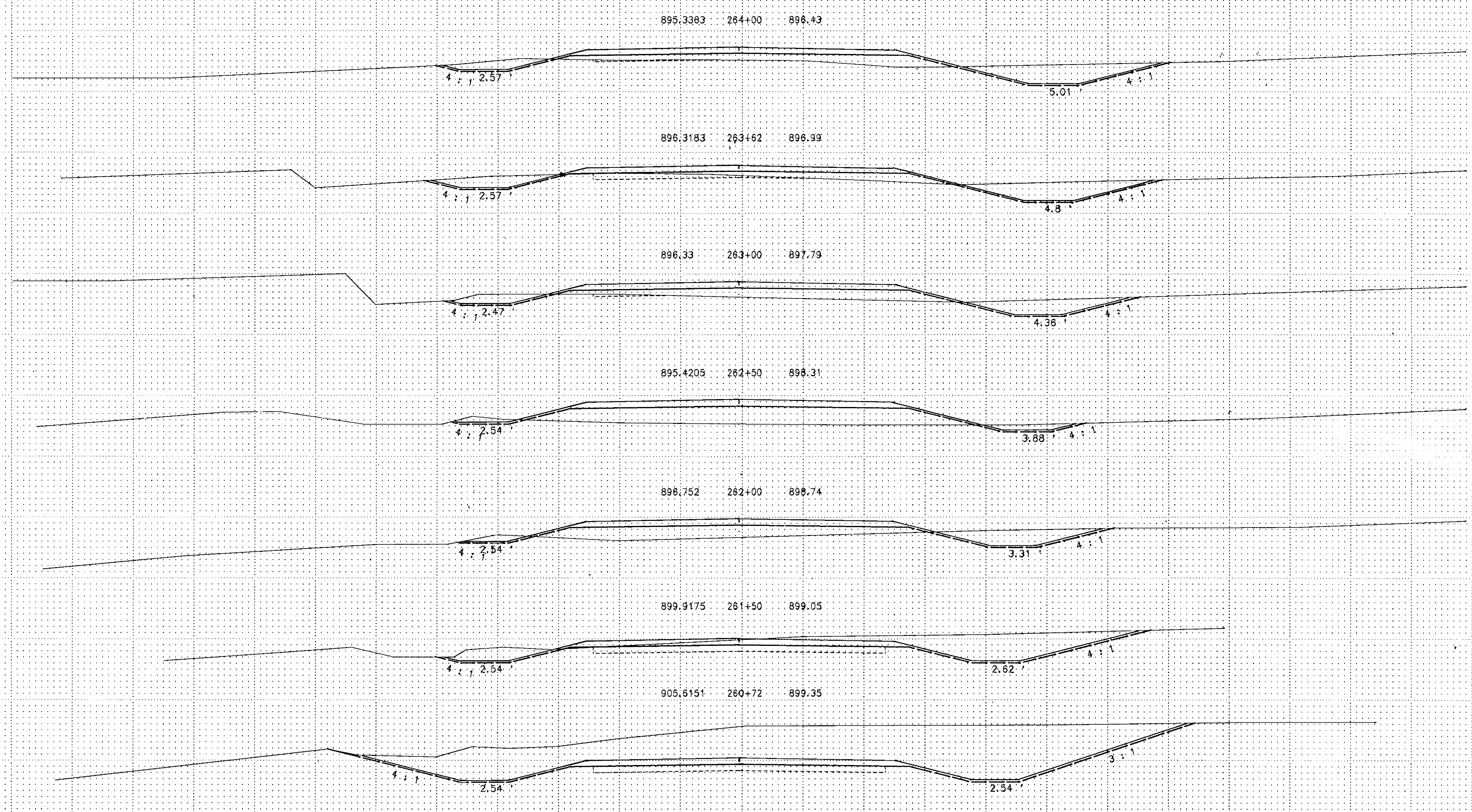


ILLUSTRATION FOR CROSS SECTION ONLY









161	91
235	160
98	230
88	252
302	139
1530	138
1188	69

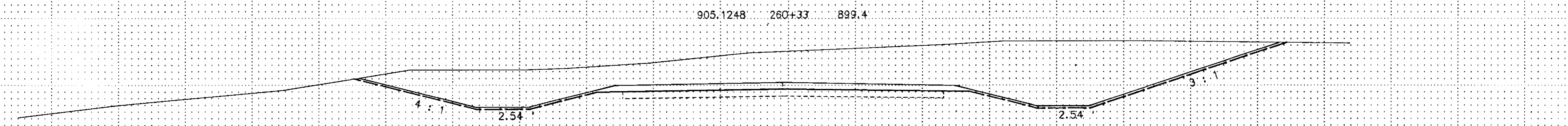
STA. 260+72 TO 264+00

ILLUSTR. FOR CROSS SECTION 811, 10/26/27

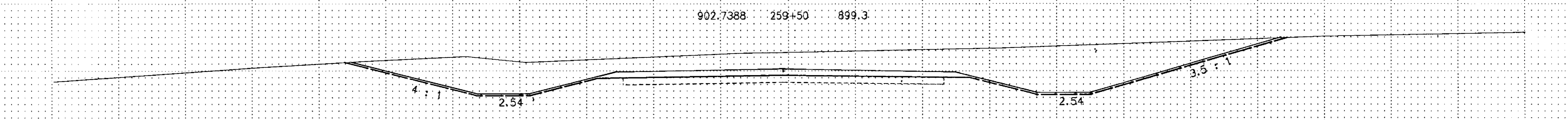


EXCAVATION EMBANKMENT

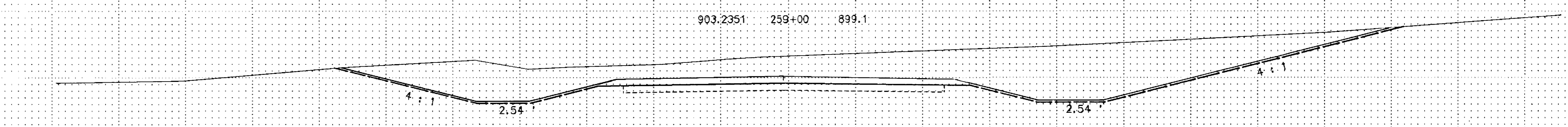
Sub-Totals	Cu. Yds.	Cu. Yds.	Sub-Totals
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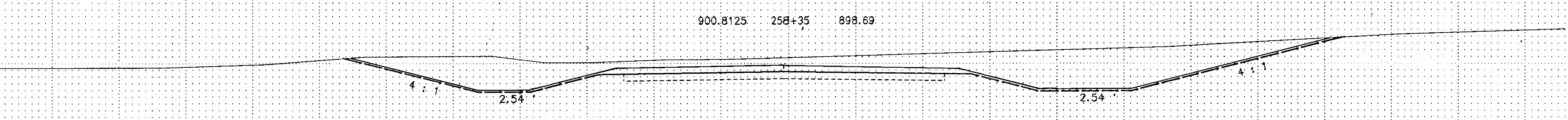
2245 147



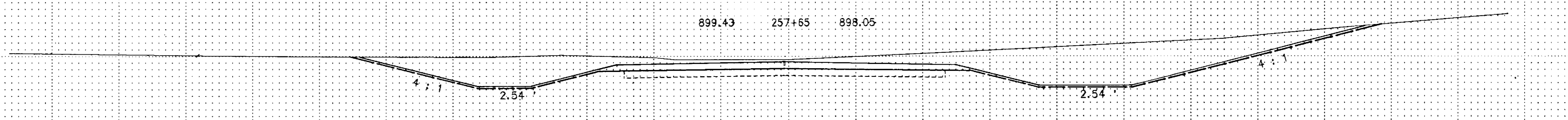
1303 88



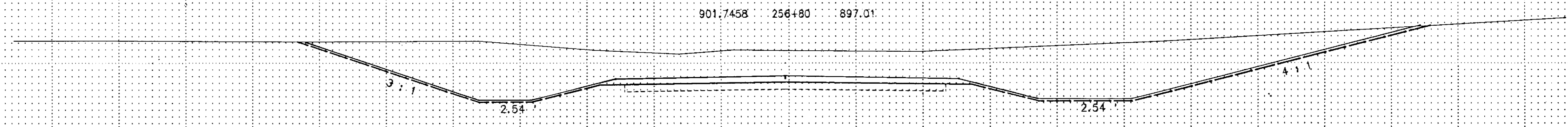
1611 115



1398 124



2355 151



2575 142

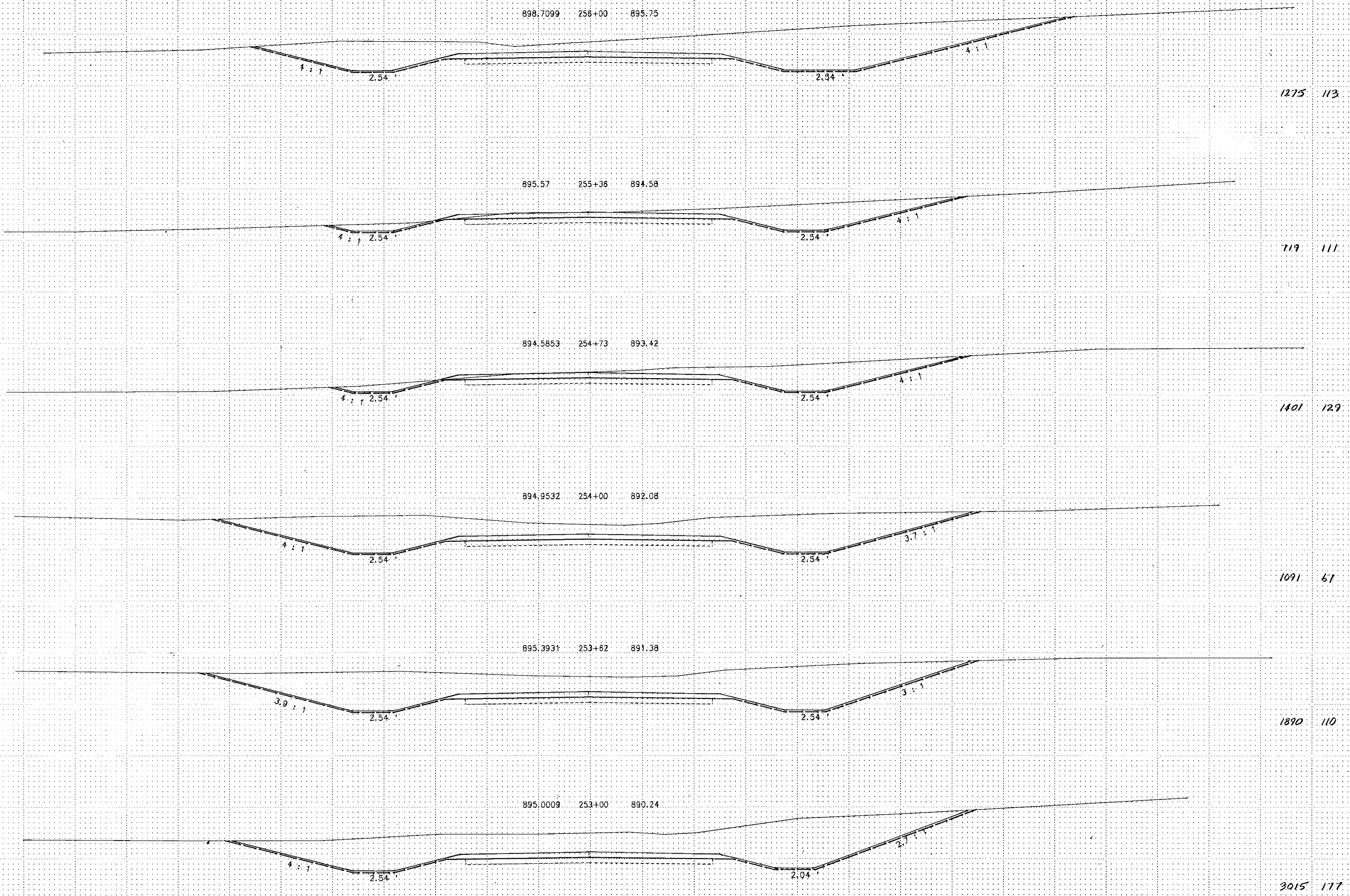
STA 256+80 TO 260+83

ILLUSTRATION POST CARD SECTION 1011 10/28



EXCAVATION EMBANKMENT

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



STA. 253+00 TO 256+00

State Proj. No.

Sheet No. 26 of 33 Sheets

PLANETARY ROAD CROSS SECTION 10/11/06 10:00 AM



EXCAVATION EMBANKMENT

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

EXCAVATION EMBANKMENT

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

889.5 249+10 889.36

891.8544 252+00 888.4

SD 88353

1055 74

MUCK 453 486  
458 0

889.734 248+00 889.72

890.2757 251+58 888.54

SD 88554

SD 88342

1031 103

MUCK 151 545  
372 0

888.5108 247+00 890.05

889.8367 251+00 888.73

SD 88524

SD 88332

1808 177

MUCK 38 559  
149 0

885.19 246+14 890.33

892.7172 250+00 889.06

SD 88498

0 120

1069 79

886.79 246+00 890.38

891.9309 249+55 889.21

SD 88494

SD 88322

MUCK 0 1246  
72 0

883.79 244+95 890.73

890.25 249+30 889.29

MUCK 464 82  
44 36

FL 881.00

FL 881.25

F&I: 72" X 88" CMP  
F&I: 2-72" CMP APRONS  
PLACE AT APPROX. 16° SKEW

EXCAVATE 40' WIDE

MUCK 164 92  
79 31

STA. 244+95 TO 252+00

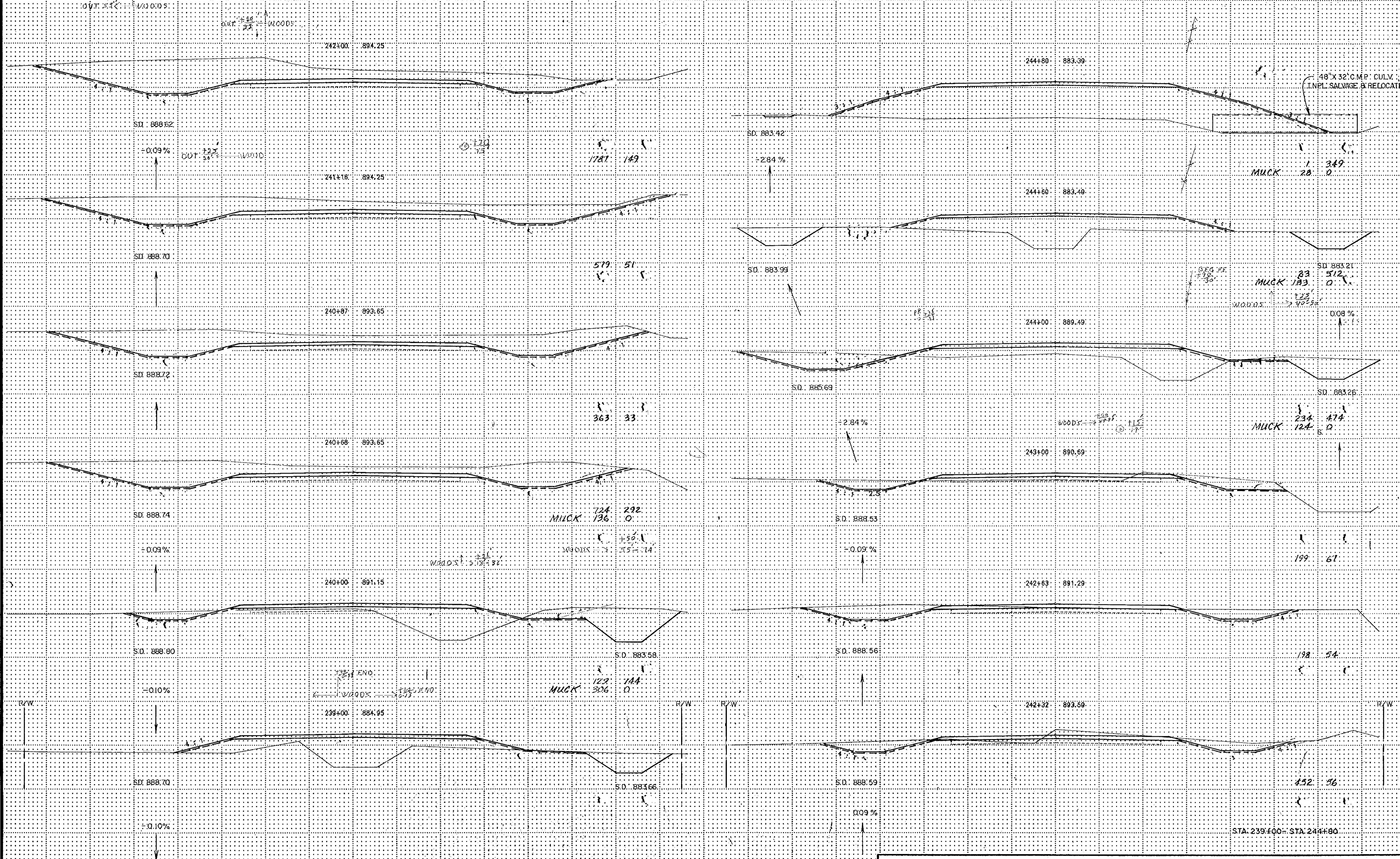


EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

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

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



MUCK 724 292

WOODS 136 0

MUCK 129 144

WOODS 306 0

MUCK 28 0

MUCK 83 512

WOODS 123 405

MUCK 234 474

WOODS 124 0

198 54

452 56

STA. 239+00 - STA. 244+80

REVISION FOR CROSS SECTION INT. 1/8



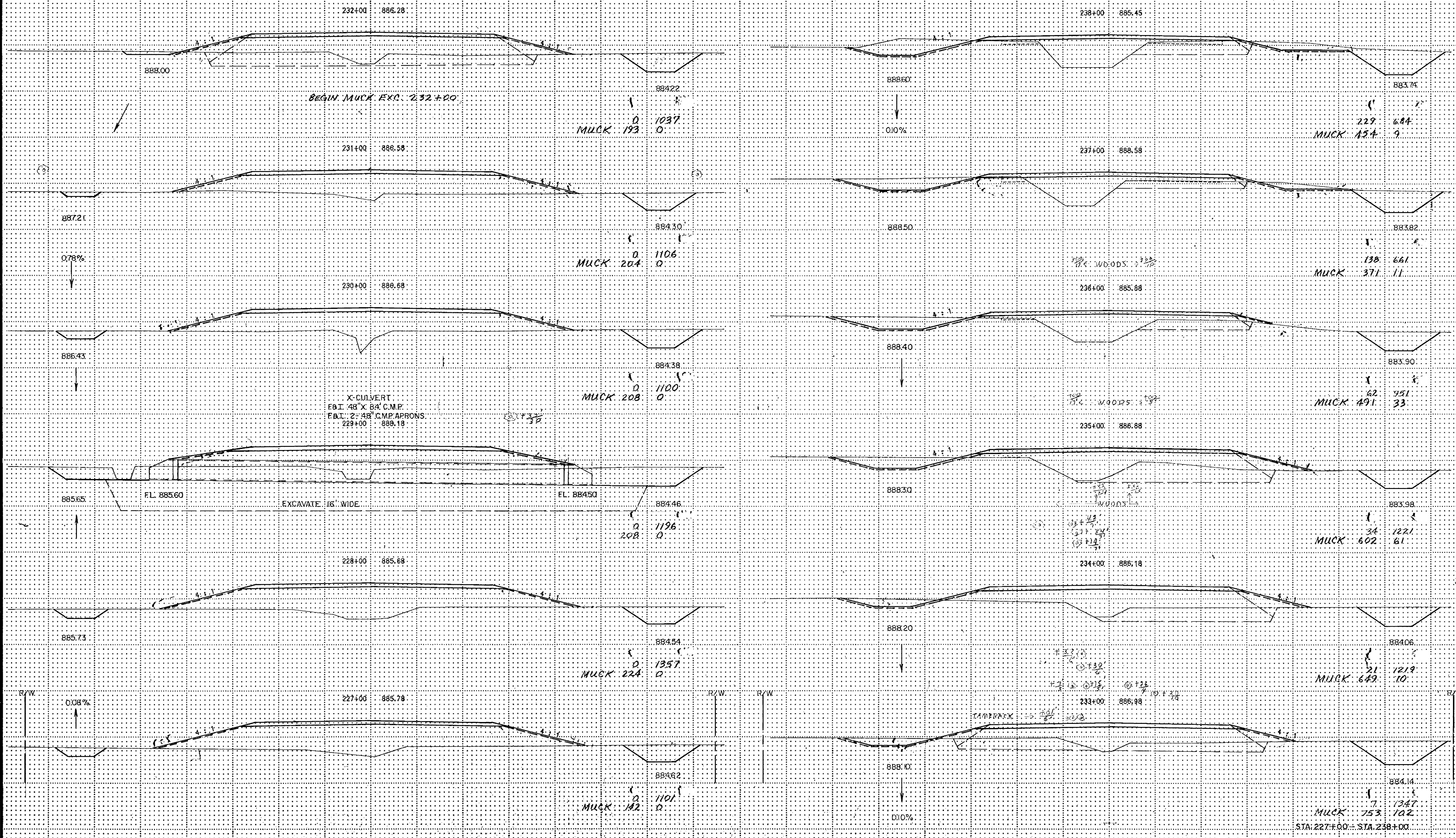
EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

Sub-Totals Cu. Yds. Sub-Totals

Sub-Totals Cu. Yds. Sub-Totals

END MUCK EXC. 238+50, C.C.



BEGIN MUCK EXC. 232+00

X-CULVERT  
FBI 48" X 84" C.M.P.  
FBI 2' 48" C.M.P. APRONS  
229+00 888.18

EXCAVATE 16" WIDE

PLANS FOR CONSTRUCTION NOT TO SCALE

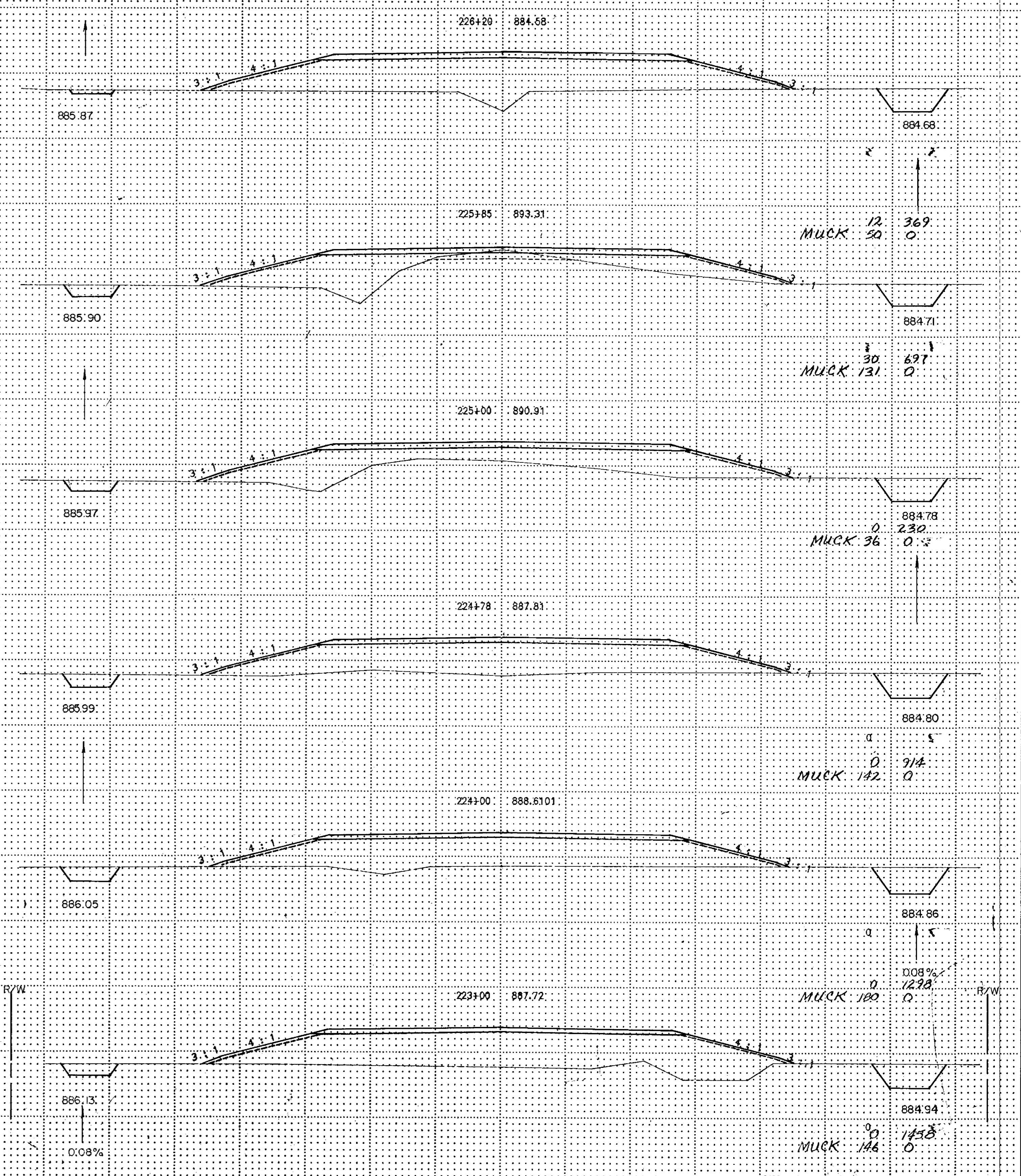
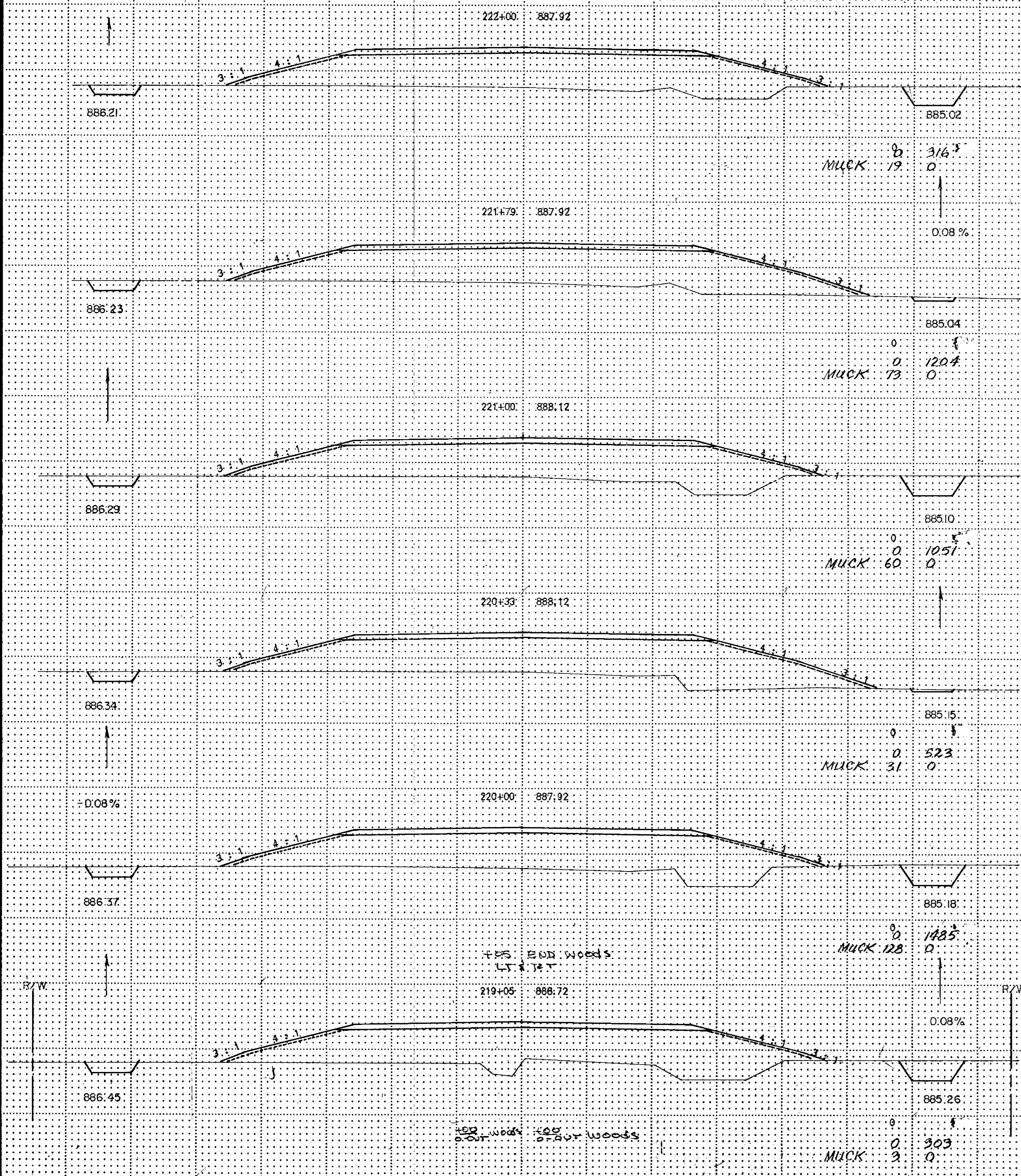


EXCAVATION EMBANKMENT

Sub Totals Cu Yds. C. Yds. Sub Totals

EXCAVATION EMBANKMENT

Sub Totals Cu Yds. C. Yds. Sub Totals



TOP END WOODS  
LT 1/2

TOP END WOODS  
TOP END WOODS

STA 219+05 - STA 226+20

REVISION FOR CROSS SECTION INT. 1/26/07



EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

Sub-Totals Cu. Yes. Cu. Yes. Sub-Totals

Sub-Totals Cu. Yes. Cu. Yes. Sub-Totals

100  
0-20 Woods  
214+00

100  
0-20 Woods  
891.32

100  
0-20 Woods  
218+87

100  
0-20 Woods  
888.42

100  
0-20 Woods  
213+00

100  
0-20 Woods  
890.12

100  
0-20 Woods  
218+81

100  
0-20 Woods  
888.62

100  
0-17 Woods  
212+00

100  
0-17 Woods  
890.22

100  
0-20 Woods  
218+00

100  
0-20 Woods  
889.12

100  
0-15 Woods  
211+00

100  
0-15 Woods  
890.22

100  
0-20 Woods  
217+00

100  
0-20 Woods  
889.22

100  
0-15 Woods  
210+00

100  
0-15 Woods  
890.32

100  
0-20 Woods  
216+00

100  
0-20 Woods  
889.52

100  
0-15 Woods  
209+00

100  
0-15 Woods  
890.62

100  
0-22 Woods  
215+00

100  
0-20 Woods  
889.72

0  
2  
744

0  
0  
929

0  
0  
941

0  
0  
953

0  
0  
937

0  
0  
962

0  
0  
95

0  
0  
1009

0  
0  
1102

0  
0  
1067

0  
0  
1016

2  
778

STA 209+00 - STA 218+87



**CAUTION**  
**OIL PIPELINE CROSSING**  
 CONTRACTOR WILL CONTACT  
 MINNESOTA PIPELINE CO. 24 HOURS  
 BEFORE WORKING IN THIS AREA.  
 PHONE: 612-459-2424

**EXCAVATION EMBANKMENT**

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

**EXCAVATION EMBANKMENT**

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

68 177

+2 5/8 - 15 WOODS +2 3/4 - 40 WOODS  
 +3 9/16 - OUT SWAMP  
 895.08 203+00 897.83

STA 203+08 @ 24' GRAVEL ENT. RT. (CONST.)

15" CMP. FL. AT STA 202+90 = 894.93

+3/8 - OUT SWAMP/WOODS +3/8 - OUT WOODS  
 +1/8 - 50 SWAMP  
 890.82 208+00 894.93

203+00 OUT 52' TOP OF PIPE ELEV. 889.70

203+00 @ TOP OF PIPE ELEV. 890.89

203+00 OUT 61' RT. TOP OF PIPE ELEV. 892.64

NOTE:  
 SUB-CUT FROM STA 202+50 TO STA 203+70  
 APP. 2' DEEP OUT TO TOE OF SLOPE LT. & RT.

+2 1/8 END +2 1/8 - OUT WOODS  
 895.482 202+23 898.28

40 486

+3/8 - OUT SWAMP/WOODS +3/8 - OUT SWAMP/WOODS  
 890.92 207+00 895.51

0 1059

+1 5/8 +1 5/8 - OUT WOODS  
 895.382 201+23 898.86

19 720

+2 7/8 - OUT SWAMP +1 5/8 - OUT SWAMP  
 +1/8 - OUT WOODS +1/8 - OUT WOODS  
 891.58 206+00 896.09

0 1119

895.682 200+73 899.15

6 400

+5/8 - OUT SWAMP +1/8 - 51 WOODS  
 +1 1/8 END +1/8 - 52 WOODS  
 891.98 205+00 896.67

39 1073

895.782 200+00 899.57

8 645

+1 7/8 EXING +3/4 FENCE  
 +1 3/4 - OUT SWAMP +1/8 - 35 WOODS  
 +1/8 - 40 WOODS  
 896.69 204+00 897.25

382 633

+1 5/8 - OUT WOODS

0 610

328 206

894.14 199+50 899.86

0 66

895.79 203+35 897.63

15" CMP. FL. AT STA 203+26 = 894.72

203+19 OUT 52' LT. TOP OF PIPE ELEV. 889.96

203+19 @ TOP OF PIPE ELEV. 892.43

203+19 OUT 54' RT. TOP OF PIPE ELEV. 894.28

STA 199+50 - STA 208+00

VERTICAL CURVE CROSS SECTION (BT 1/8" X 1/8")



















EXCAVATION EMBANKMENT

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

108 104

166+42 897.92 SO SHLDR. CSAH 20

98 96

166+00 897.59

R/W

9 10

165+50 BEGIN PROJECT CP.02-678-05

165+00 897.81

164+00 897.80

163+00 897.88

R/W

STA. 163+00 TO STA. 166+42

ILLUSTRATION OF CROSS SECTION BIT (1/2" = 1' HORIZ.)



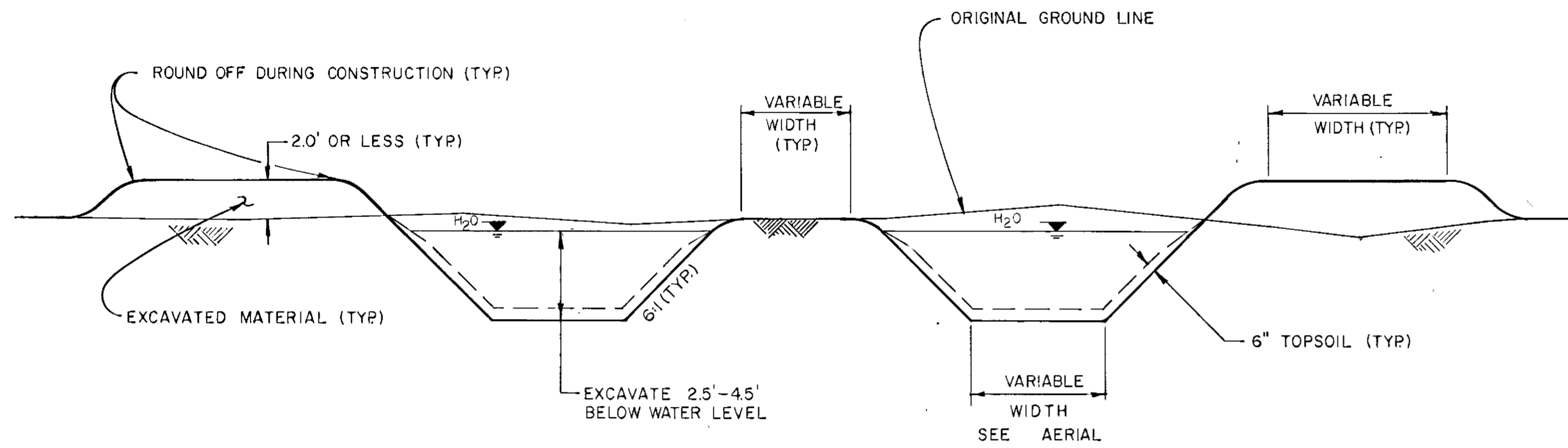








WETLAND MITIGATION PONDS  
CONSTRUCTION DETAILS



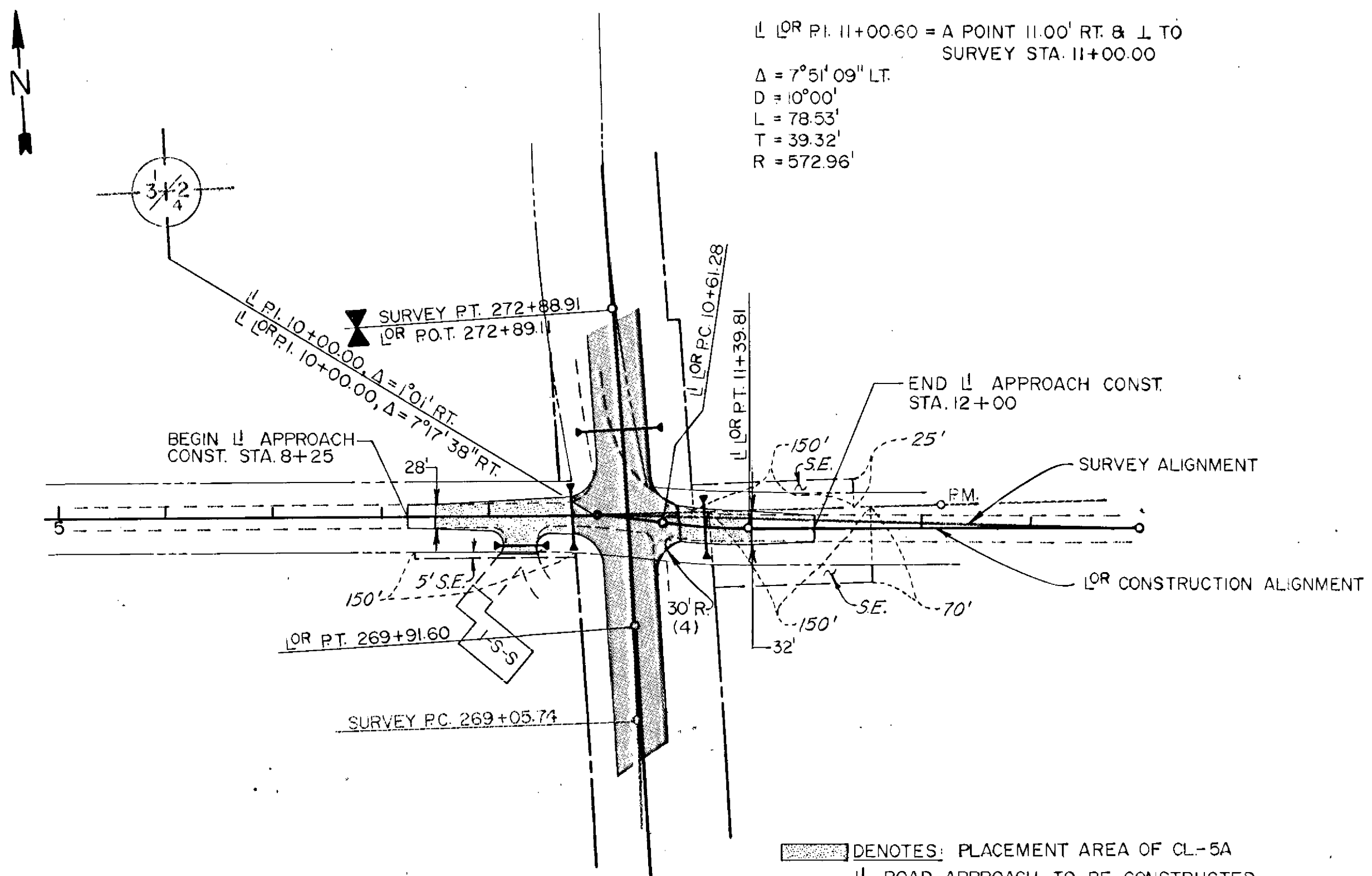
CONSTRUCTION NOTES

THE CONTRACTOR SHALL CONSTRUCT THE WETLANDS TO A DEPTH OF: 2.5' OVER 15% OF THE AREA (NOT INCLUDING SLOPES), 3.5' OVER 60% OF THE AREA & 4.5' OVER 25% OF THE AREA. THE CONTRACTOR SHALL THEN SPREAD, AS UNIFORM AS POSSIBLE, 6" OF THE TOPSOIL OVER THE BOTTOM OF THE WETLAND. THE CONTRACTOR SHALL LEVEL THE EXCAVATED MATERIAL TO APPROXIMATELY A 2' DEPTH IN THE IMMEDIATE AREA OF THE WETLANDS. THE SHAPE OF THE WETLANDS ARE ONLY APPROXIMATE. THE ENGINEER MAY ALTER THE SHAPE OF THE WETLANDS.



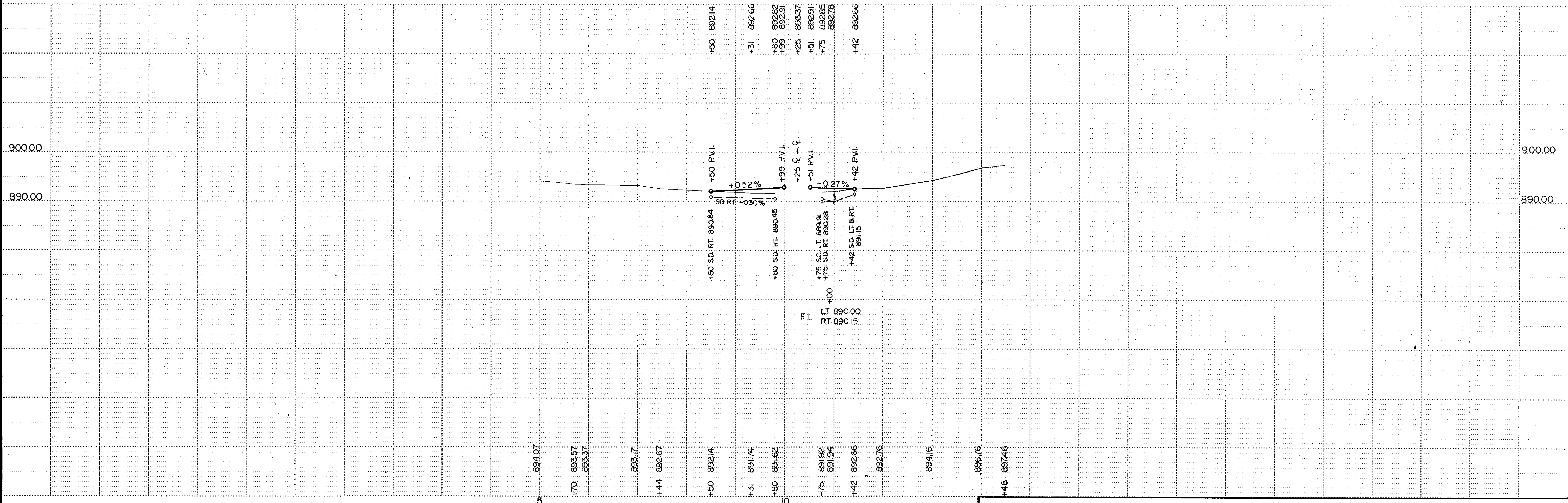
 DENOTES EXCAVATION AREA





$\perp$  OR P.I. 11+00.60 = A POINT 11.00' RT. &  $\perp$  TO SURVEY STA. 11+00.00  
 $\Delta = 7^{\circ}51'09''$  LT.  
 $D = 10^{\circ}00'$   
 $L = 78.53'$   
 $T = 39.32'$   
 $R = 572.96'$

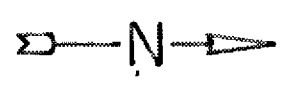
[Shaded Area] DENOTES: PLACEMENT AREA OF CL-5A  
 $\perp$  ROAD APPROACH TO BE CONSTRUCTED WITH 5" OF CL-5A AGGREGATE BASE MATERIAL. AGGREGATE QUAN. INCLUDED WITH ITEM 2211.502 FOR PAYMENT.



TELETYPE POST - SINGLE PLAN - PROFILE - 102M



B.M. # 38 ELEV. 892.26  
TOP BOT. STEP N.E. COR.  
STA. 296+00 LT. 96'

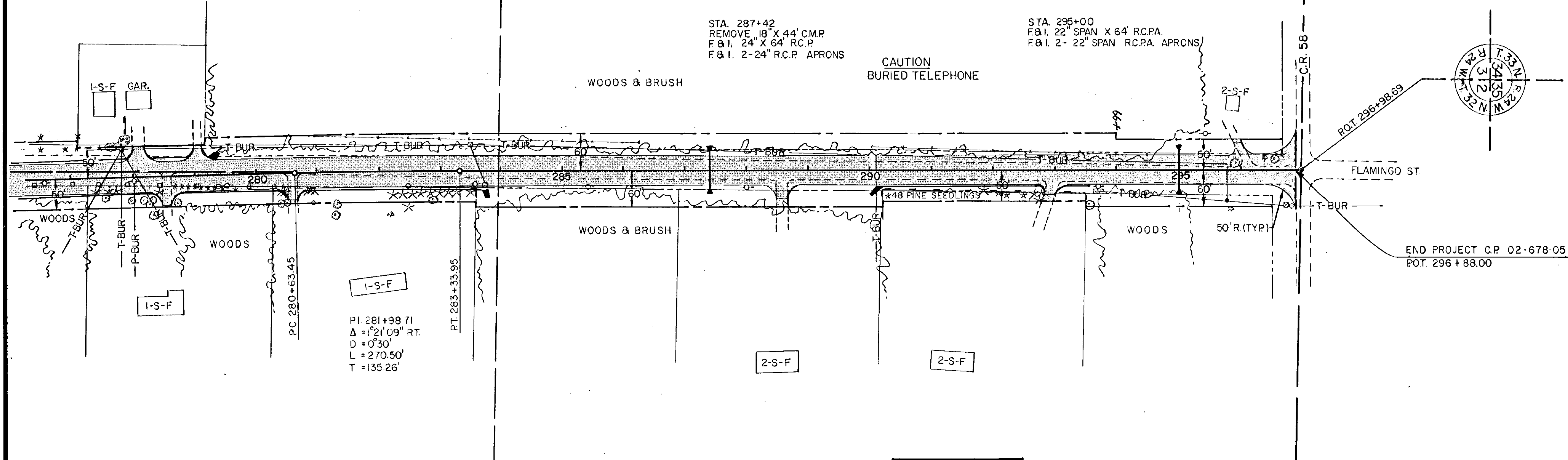
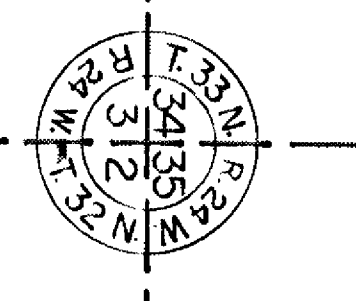


UTILITY LOCATIONS ARE  
ONLY APPROXIMATE

STA. 287+42  
REMOVE 18" X 44' CMP  
F&I. 24" X 64' R.C.P.  
F&I. 2-24" R.C.P. APRONS

STA. 295+00  
F&I. 22" SPAN X 64' R.C.P.A.  
F&I. 2- 22" SPAN R.C.P.A. APRONS

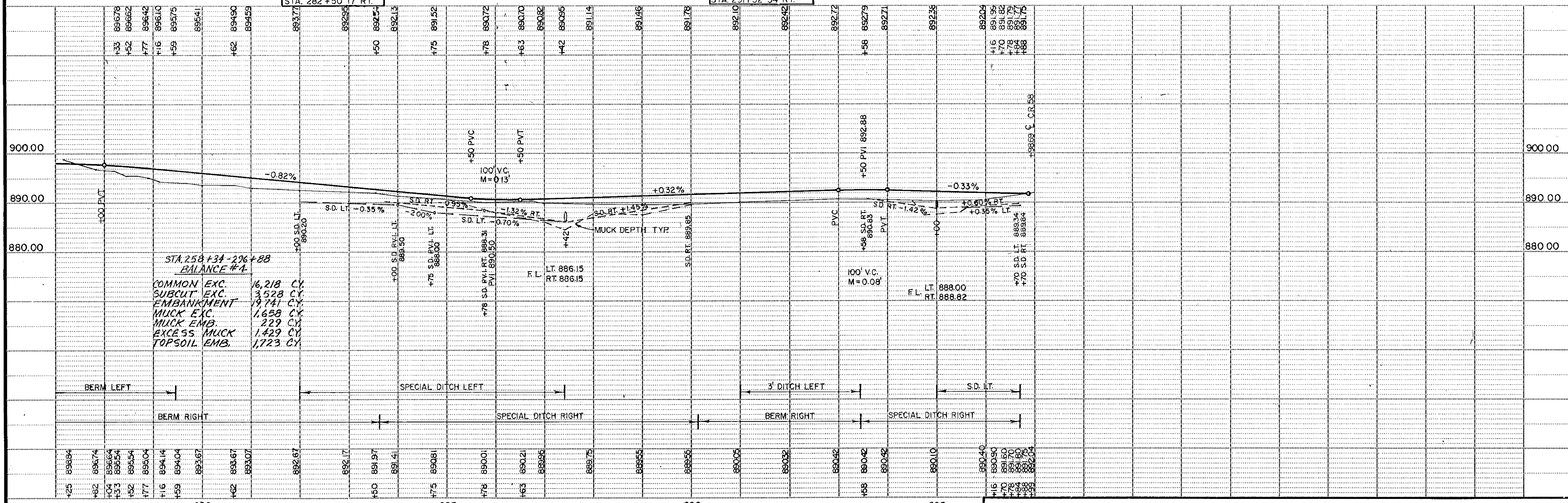
CAUTION  
BURIED TELEPHONE



PI 281+98.71  
Δ = 1°21'09" RT.  
D = 0°30'  
L = 270.50'  
T = 135.26'

B.M. #36 ELEV. 895.41  
DBL. SPK. PP.  
STA. 282+50 17' RT.

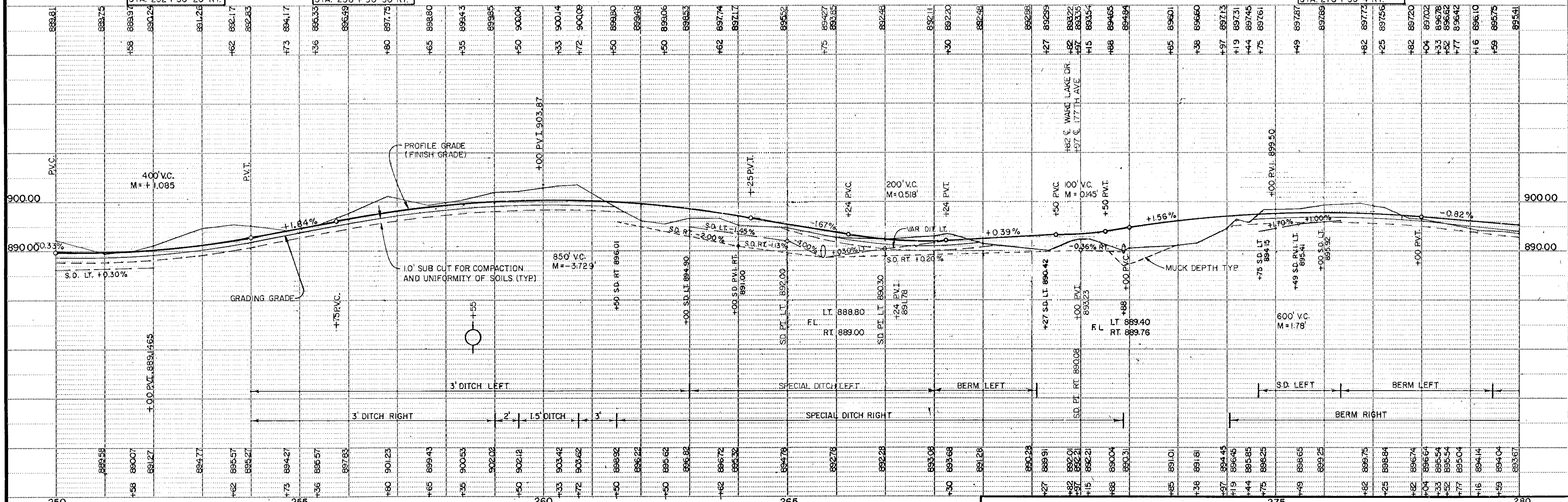
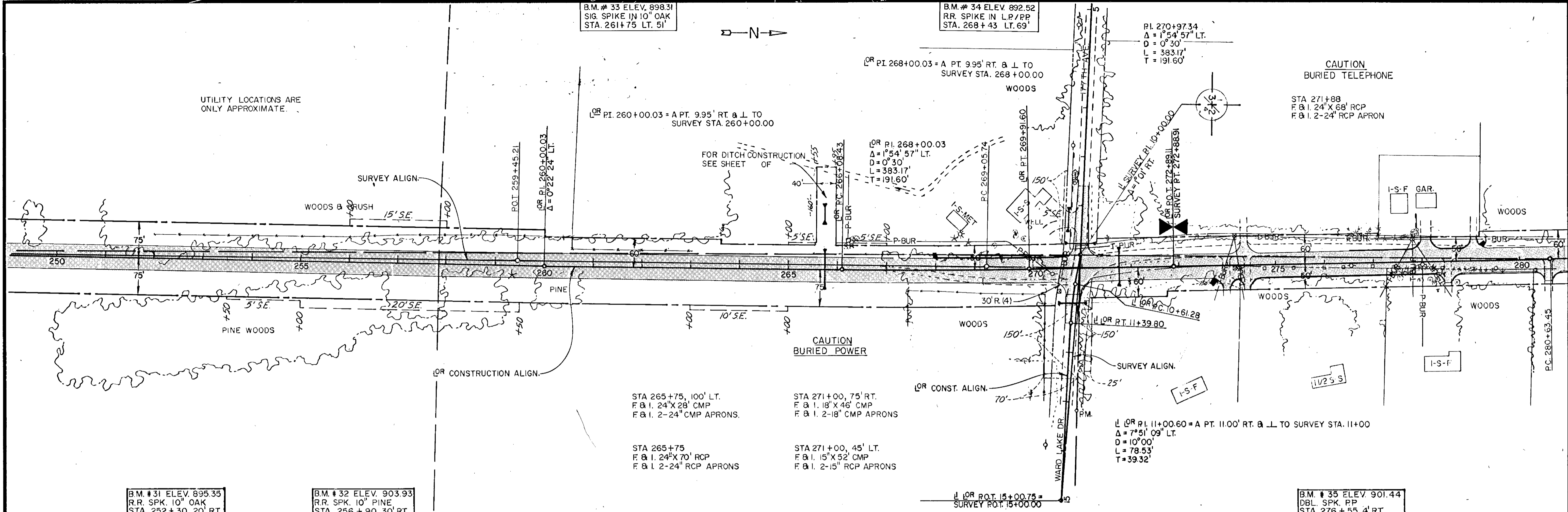
B.M. #37 ELEV. 893.03  
DBL. SPK. PP.  
STA. 291+32 34' RT.



STA. 258+34-296+88  
BALANCE #4  
COMMON EXC. 16,218 CY  
SUBCUT EXC. 3,528 CY  
EMBANKMENT 19,741 CY  
MUCK EXC. 1,658 CY  
MUCK EMB. 229 CY  
EXCESS MUCK 1,429 CY  
TOPSOIL EMB. 1,723 CY

TELEPHONE POST - SINGLE PLAN - PROFILE - 102A





TELEPHONE POST - SINGLE PLAN - PROFILE - 1024

B.M. # 33 ELEV. 898.31  
SIG. SPIKE IN 10" OAK  
STA. 261+75 LT. 51'

B.M. # 34 ELEV. 892.52  
RR. SPIKE IN LP/PP  
STA. 268+43 LT. 69'

PI. 270+97.34  
Δ = 1°54'57" LT.  
D = 0°30'  
L = 383.17'  
T = 191.60'

CAUTION  
BURIED TELEPHONE  
STA 271+88  
F & I. 24" X 68" RCP  
F & I. 2-24" RCP APRON

UTILITY LOCATIONS ARE  
ONLY APPROXIMATE.

FOR DITCH CONSTRUCTION  
SEE SHEET OF

OR PI. 268+00.03  
Δ = 1°54'57" LT.  
D = 0°30'  
L = 383.17'  
T = 191.60'

STA 265+75, 100' LT.  
F & I. 24" X 28" CMP  
F & I. 2-24" CMP APRONS.

STA 271+00, 75' RT.  
F & I. 18" X 46" CMP  
F & I. 2-18" CMP APRONS

STA 265+75  
F & I. 24" X 70" RCP  
F & I. 2-24" RCP APRONS

STA 271+00, 45' LT.  
F & I. 15" X 52" CMP  
F & I. 2-15" RCP APRONS

L OR PI. 11+00.60 = A PT. 11.00' RT. & L TO SURVEY STA. 11+00  
Δ = 7°51'09" LT.  
D = 10°00'  
L = 78.53'  
T = 39.32'

B.M. # 31 ELEV. 895.35  
RR. SPK. 10" OAK  
STA. 252+30 20' RT.

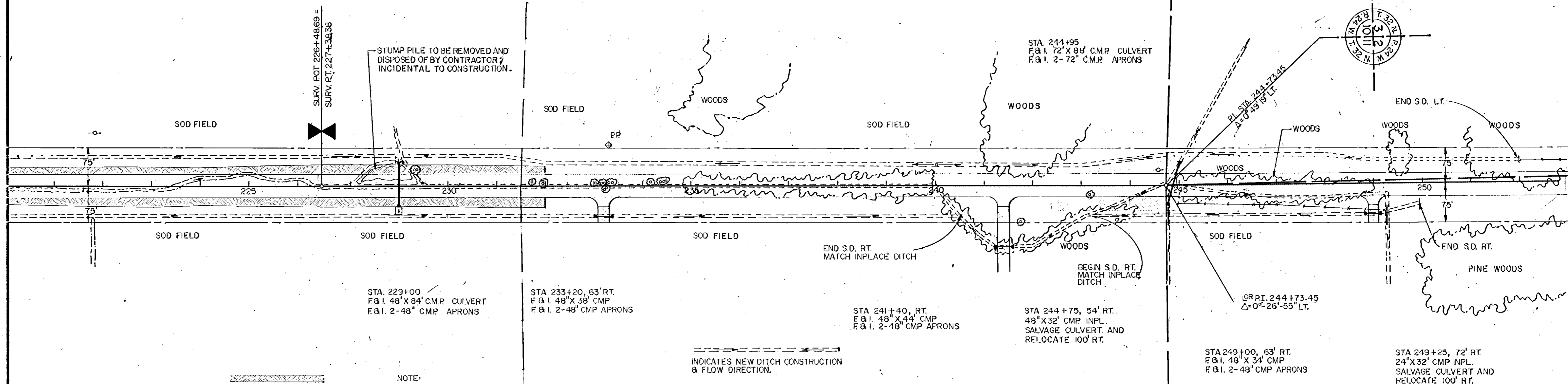
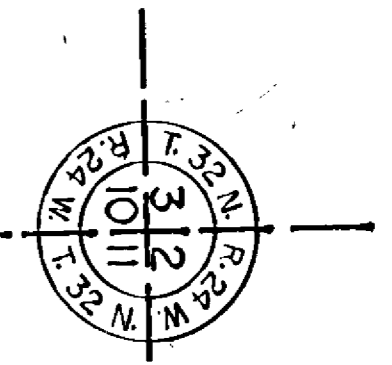
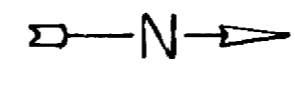
B.M. # 32 ELEV. 903.93  
RR. SPK. 10" PINE  
STA. 256+90 30' RT.

B.M. # 35 ELEV. 901.44  
DBL. SPK. PP  
STA. 276+55 4' RT.



B.M. # 27 ELEV. 891.01  
TOP S.E. COR. PP BASE  
PLATE STA. 221+85 LT. 108'

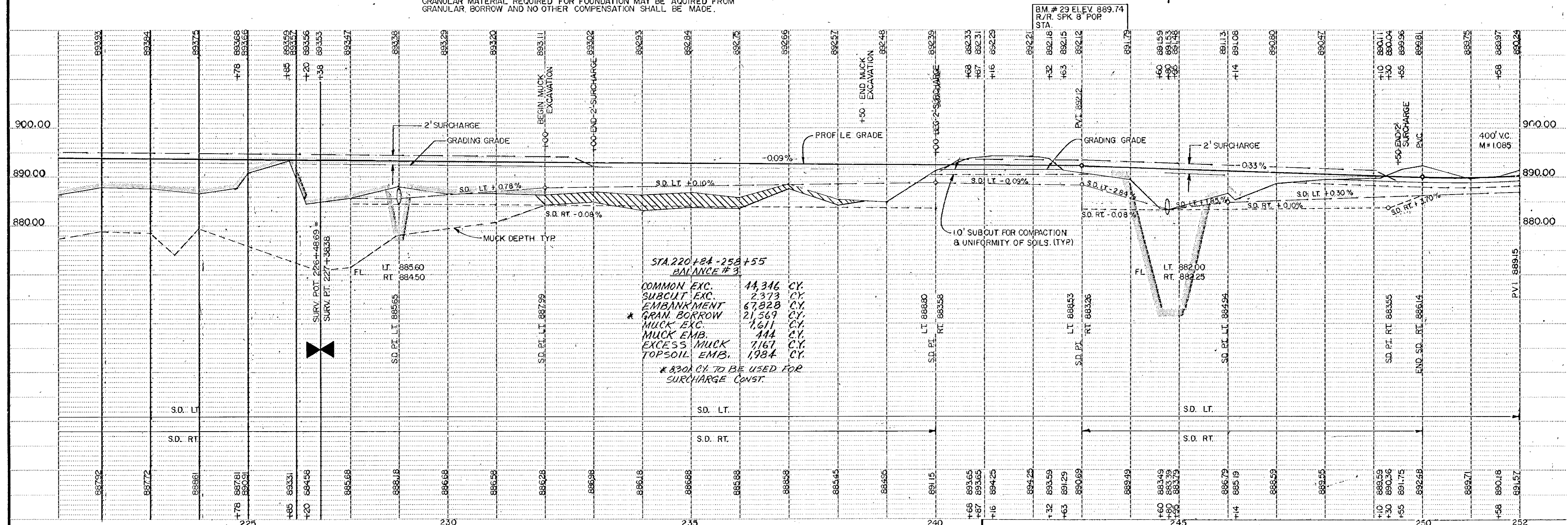
B.M. # 28 ELEV. 890.89  
TOP EAST COR. CONC. BASE  
PP STA. 233+30 LT. 75'



DENOTES FABRIC PLACEMENT AREA

NOTE: EXCAVATION FOR PIPE CULVERTS AND ANY SUBCUTS FOR PIPE CULVERTS AS SHOWN ON CROSS SECTIONS, OR ANY WORK AS NECESSARY TO CONSTRUCT A FIRM FOUNDATION SHALL BE INCIDENTAL TO PIPE CONSTRUCTION. GRANULAR MATERIAL REQUIRED FOR FOUNDATION MAY BE ACQUIRED FROM GRANULAR BORROW AND NO OTHER COMPENSATION SHALL BE MADE.

INDICATES NEW DITCH CONSTRUCTION & FLOW DIRECTION



ELECTRICAL POST - SINGLE PHASE - 120/240



B.M. # 25 ELEV. 896.63  
TOP SE. COR. PP. BASE  
PLATE STA. 202+45 LT. 70'

B.M. # 26 ELEV. 892.42  
TOP SE. COR. PP. BASE  
PLATE STA. 212+00 LT. 108'

B.M. # 27 ELEV. 891.01  
TOP SE. COR. PP. BASE  
PLATE STA. 221+85 LT. 108'

**CAUTION**  
**OIL PIPELINE CROSSING**  
CONTRACTOR WILL CONTACT  
MINNESOTA PIPE LINE CO.  
24 HOURS BEFORE WORKING  
IN THIS AREA.  
PHONE: 612-459-2424

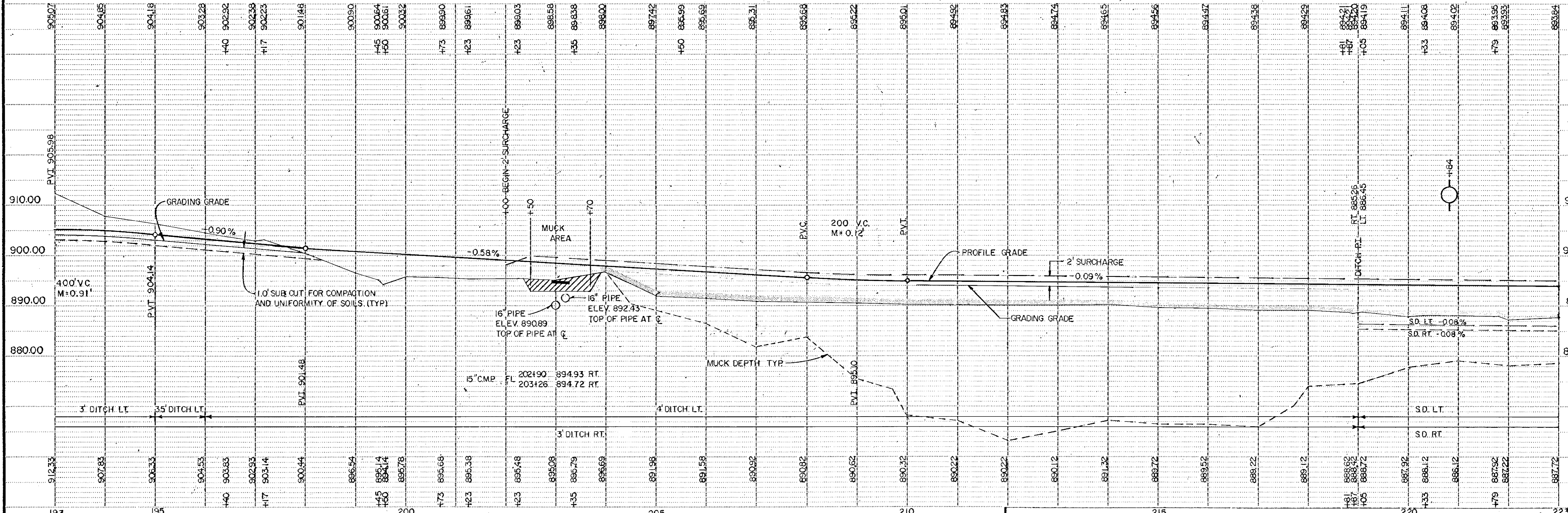
P.I. = 209+70.79  
 $\Delta = 3^\circ-36'-53''$  LT.  
D = 0'-30'-00"  
T = 361.58'  
L = 722.94'  
R = 11,459.16'

P.I. = 202+31.47  
 $\Delta = 3^\circ-24'-21''$  RT.  
D = 0'-30'-00"  
T = 340.68'  
L = 681.17'  
R = 11,459.16'

STA 203+10 RT.  
F&A 1.15' X 36" CMP  
F&A 1.2-15" CMP APRONS

INDICATES NEW DITCH CONSTRUCTION  
& FLOW DIRECTION.

DENOTES FABRIC PLACEMENT AREA  
(FULL WIDTH UNDER FILL AREAS)



TELLOTYPE POST - SINGLE PLAN - PROFILE - 1024

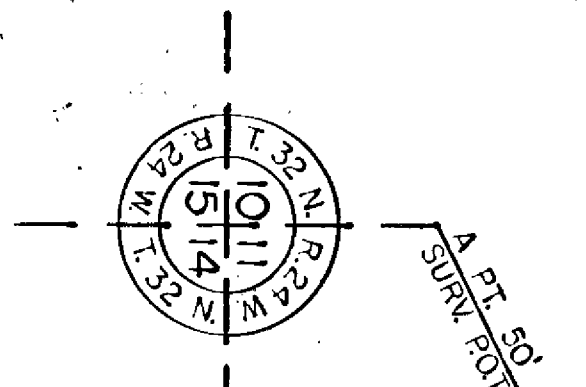


BM. # 21 ELEV. 897.12  
TOP SE. COR. PP BASE  
PLATE STA. 163+70 LT. 58'

BM. # 22 ELEV. 901.01  
TOP SE. COR. PP BASE  
PLATE STA. 179+09 LT. 58'

BM. # 23 ELEV. 904.60  
TOP SE. COR. PP BASE  
PLATE STA. 183+30 LT. 55'

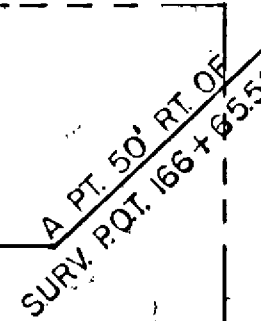
BM. # 24 ELEV. 911.84  
TOP SE. COR. PP BASE  
PLATE STA. 192+82 LT. 62'



STA 167+10  
F&I. 28' X 84' SPAN RCPA CULVERT  
F&I. 2-28' SPAN RCPA APRONS.

STA 186+50  
F&I. 24' X 64' RCP CULVERT  
F&I. 2-24' RCP APRONS.

BEGIN PROJECT CP 02-678-05  
STATION 165+50



A PT. 50' RT. OF  
SURV. ROT. 186+43.50

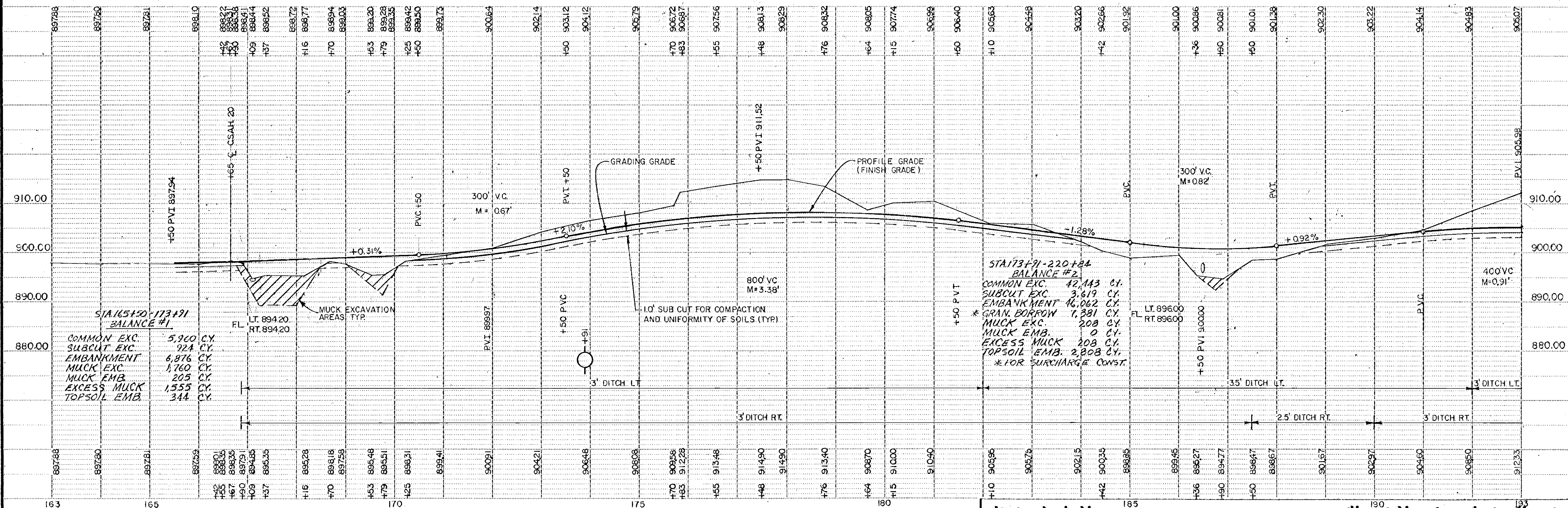
50' R. (TYP)

STA 167+00, RT.  
15' X 32' CMP INPL.  
SALVAGE & RELOCATE  
STA 274+35, LT.

INDICATES BITUMINOUS  
INDICATES CL-5A AGGREGATE

NOTE: SAVE ROW OF TREES  
STA 188+00 TO 189+57  
63' TO 65' RT.

STA 192+82 LT.  
CONSTRUCT DITCHBLOCK  
TO PROTECT POWER POLE.  
(LEAVE A MINIMUM RADIUS  
OF 15' OF UNDISTURBED  
SOIL SURROUNDING THE  
POWER POLE).



STA 165+50 - 173+91  
BALANCE #1

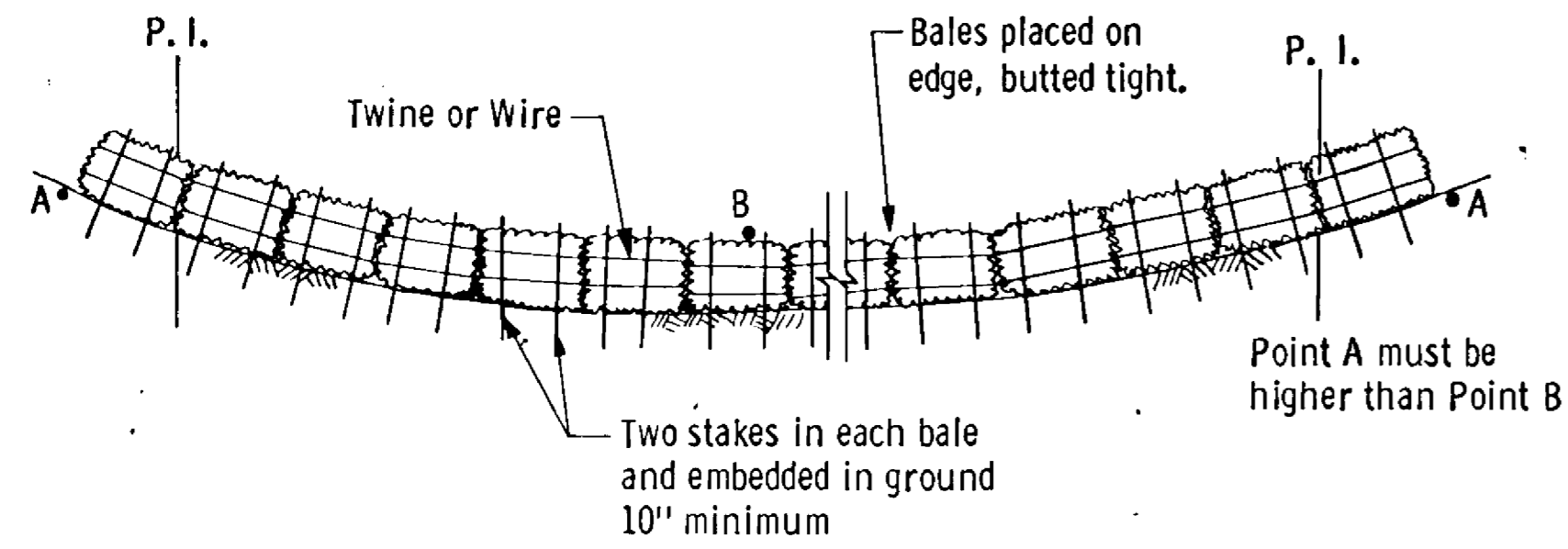
COMMON EXC.	5,960 CY
SUBCUT EXC.	924 CY
EMBANKMENT	6,876 CY
MUCK EXC.	1,760 CY
MUCK EMB.	208 CY
EXCESS MUCK	1,555 CY
TOPSOIL EMB.	344 CY

STA 173+91 - 220+84  
BALANCE #2

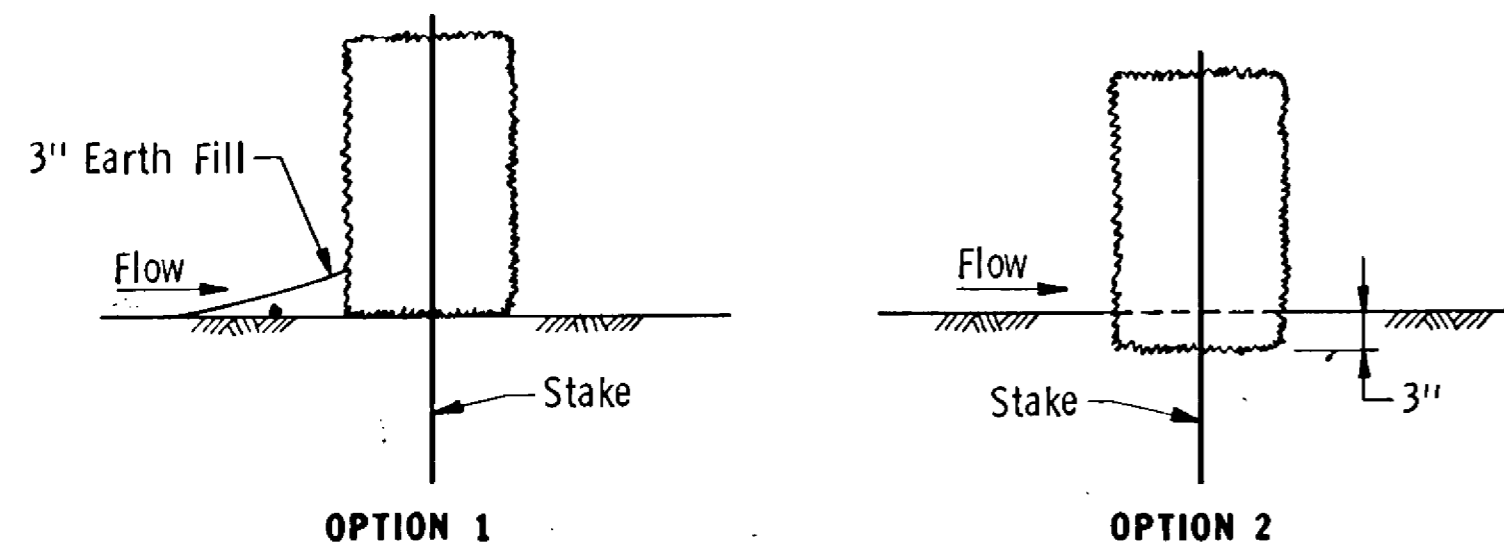
COMMON EXC.	42,143 CY
SUBCUT EXC.	3,619 CY
EMBANKMENT	16,062 CY
* GRAM. BORROW	7,881 CY
MUCK EXC.	208 CY
MUCK EMB.	0 CY
EXCESS MUCK	208 CY
TOPSOIL EMB.	2,808 CY
* FOR SURCHARGE CONST.	

TELETYPE POST - SINGLE PLAN - PNOFILE - 1024

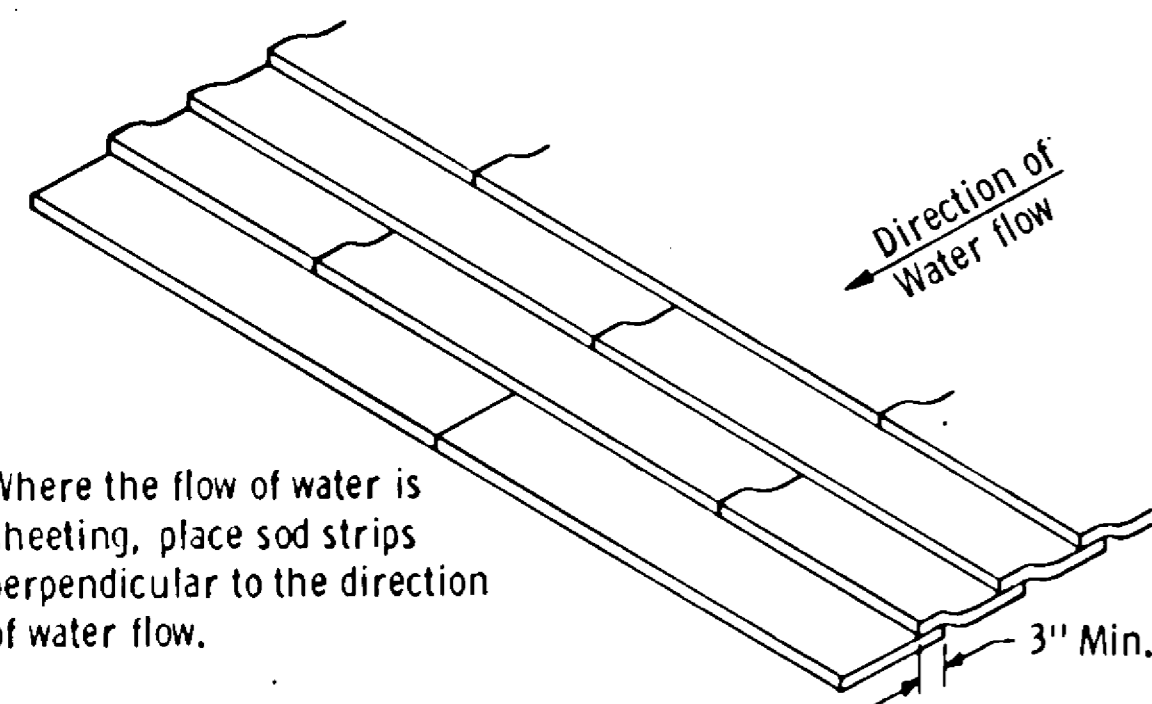




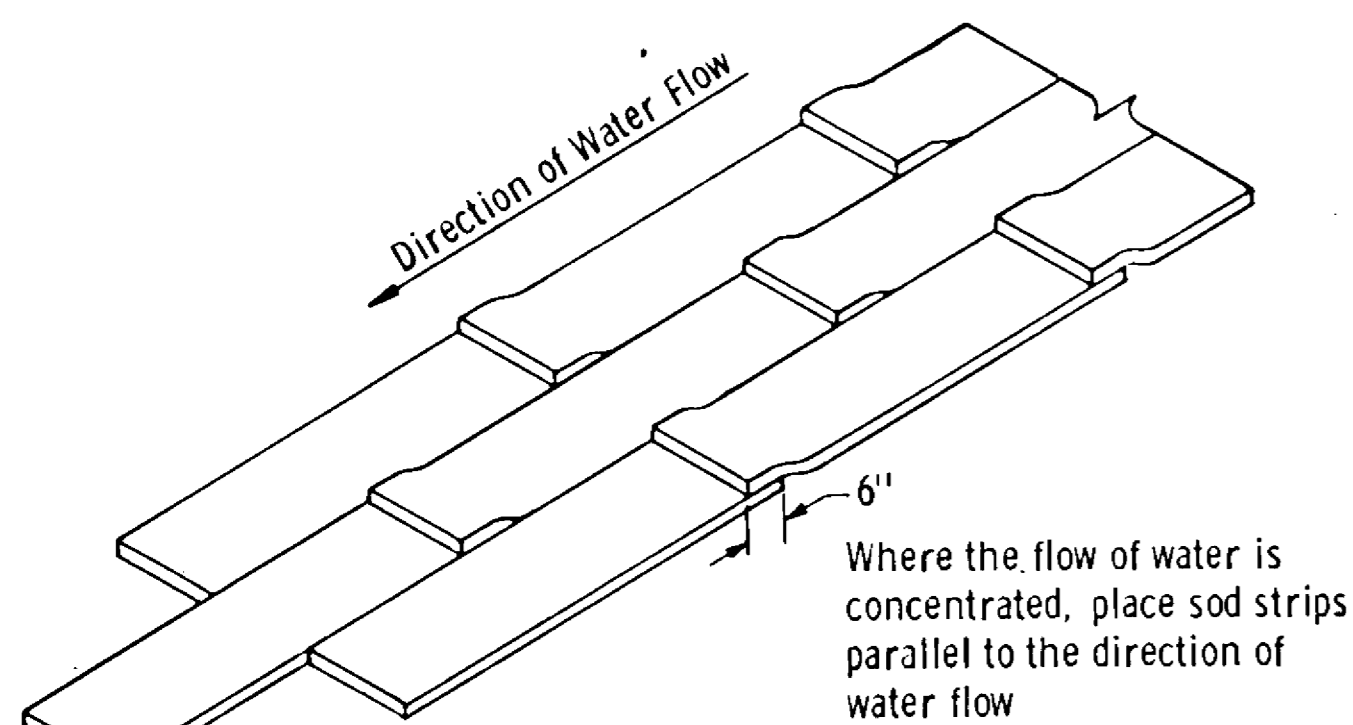
**BALE HAY OR STRAW DITCH CHECK**



**DITCH CHECK SECTIONS**

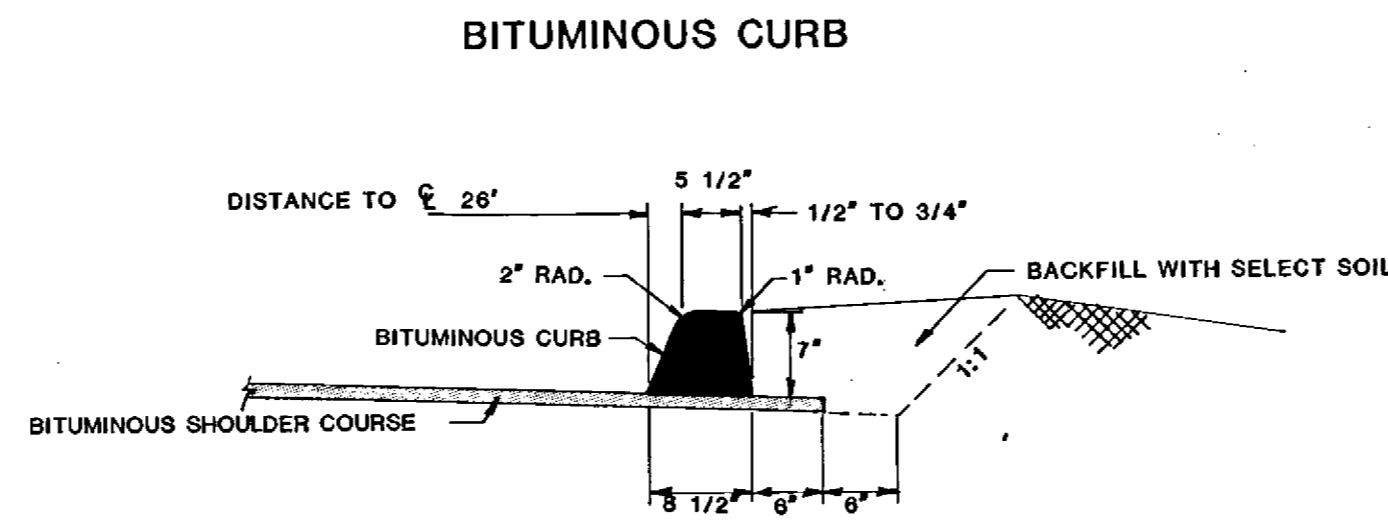


**SHINGLING SOD**

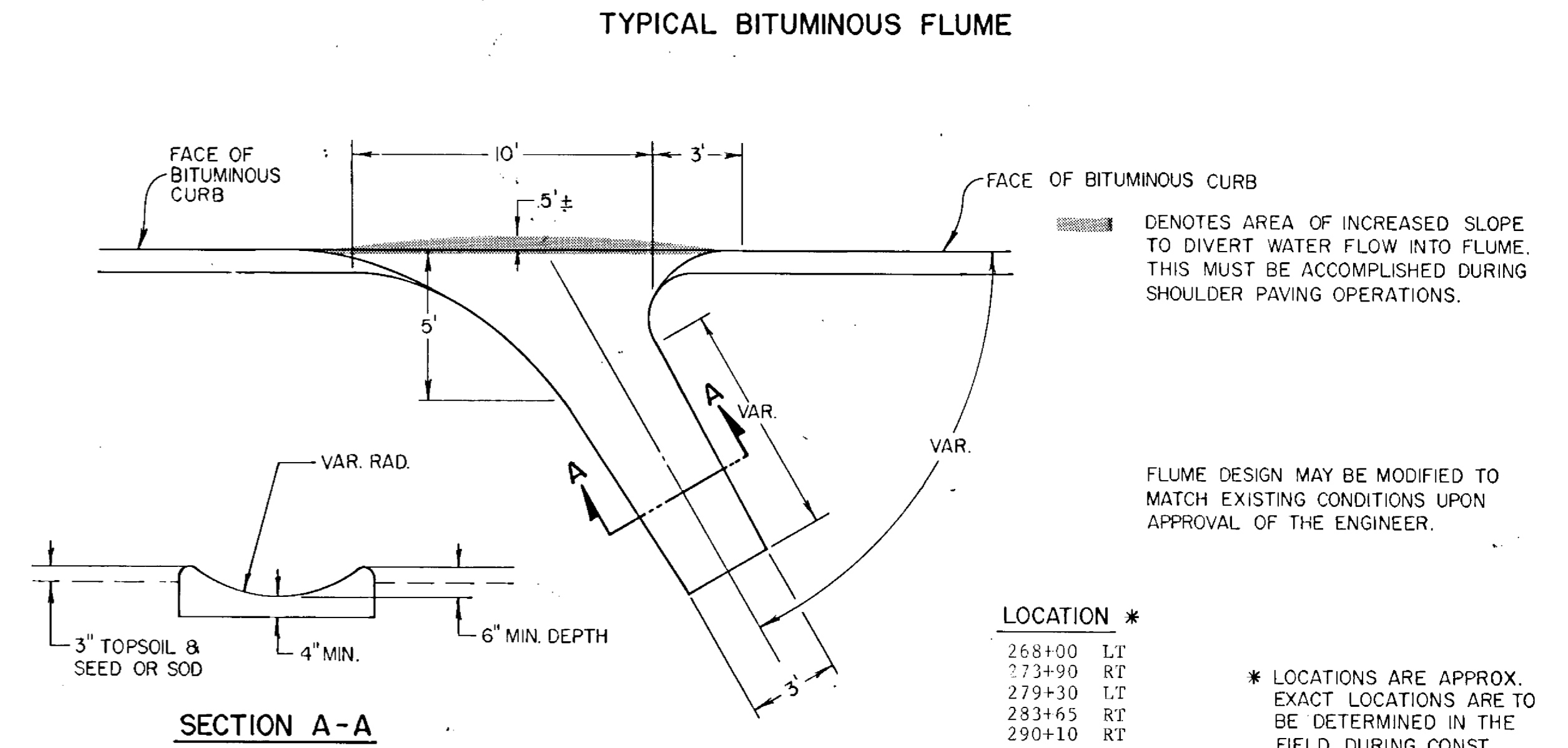


**OVERLAPPING SOD**

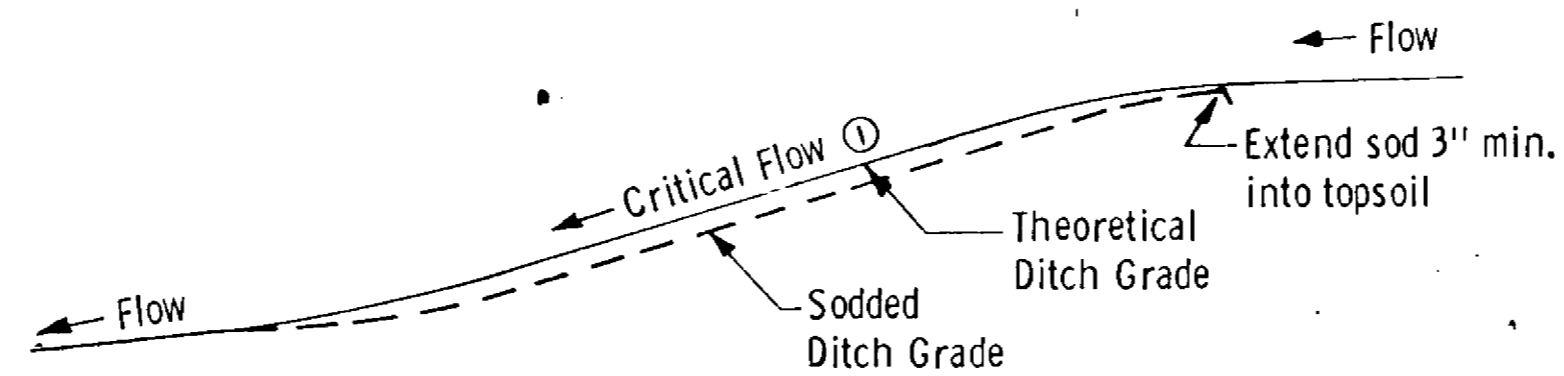
**SPECIAL SOD PLACEMENT TECHNIQUES**



**BITUMINOUS CURB**



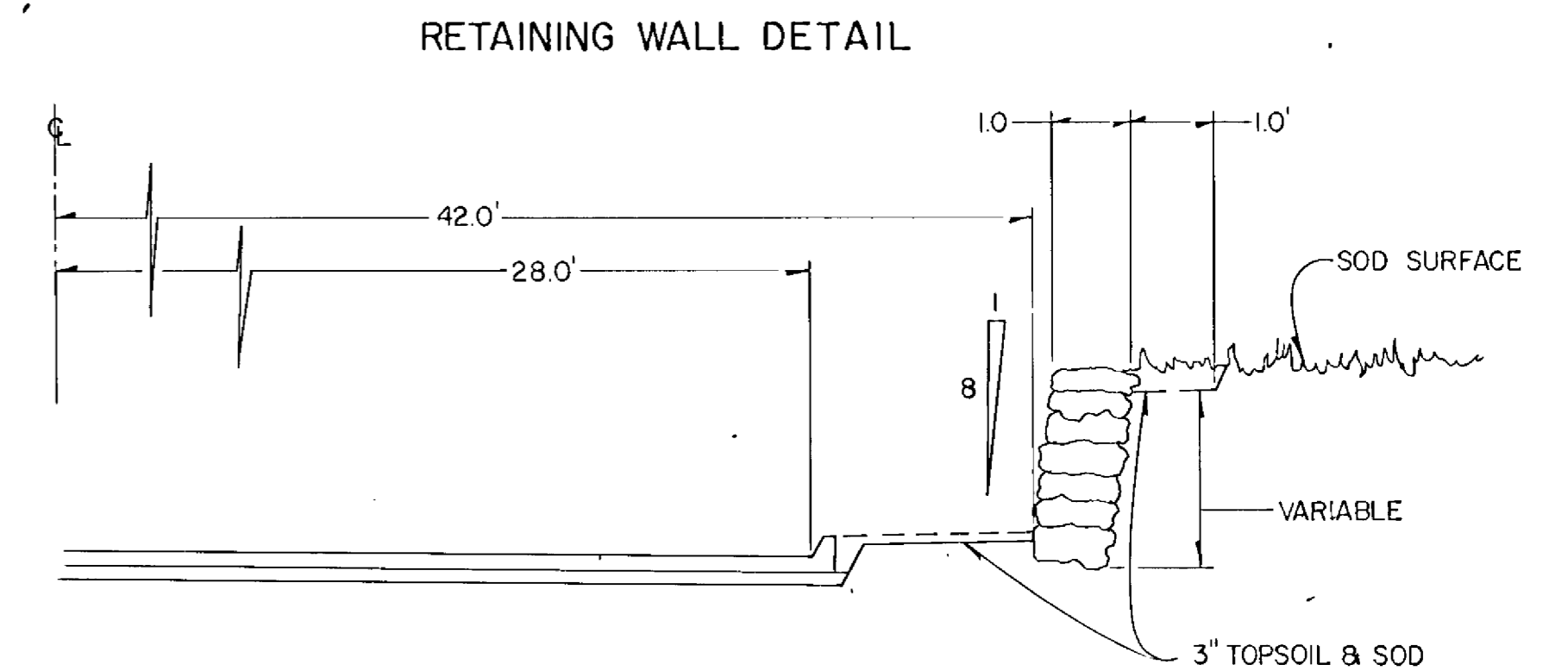
**SECTION A-A**



**DITCH PROFILE**

- ① 2.0% GRADE OR GREATER IN A-3 SOIL.
- 2.5% GRADE OR GREATER IN A-6 SOIL.

**SODDED DITCH DETAILS**



RANDOM COURSED DRY RUBBLE MASONRY (LANNON STONE QUARRY FACED) MORTAR ALL EXCEPT LOWER 2 COURSES (INCIDENTAL TO STONE MASONRY RETAINING WALL)

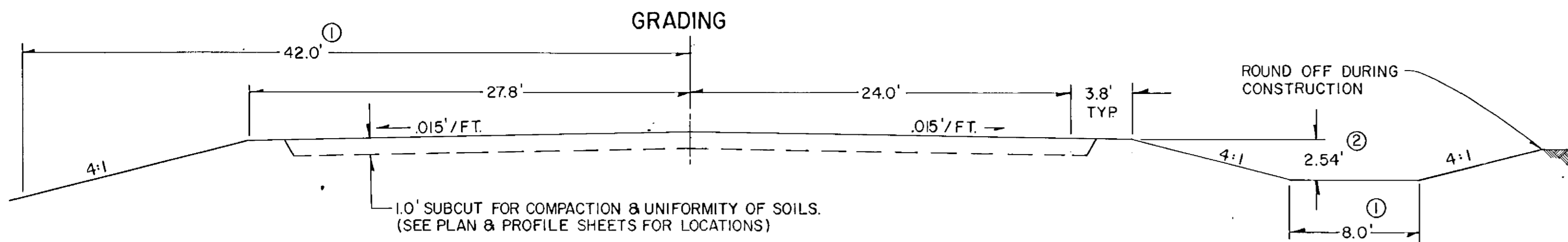
SODDING		
STATION	LOC.	S. Y.
243+00 - 245+00	DITCH LT.	267
265+00 - 266+00	DITCH LT.	133
268+00 - 270+86	LT.	480
273+00 - 283+50	RT.	1859
277+00 - 279+00	LT.	474
288+00 - 294+00	RT.	1178
295+00 - 296+88	LT.	429
177th. AVE.	LT.	302
CULVERT ENDS		895
<b>TOTAL</b>		<b>6017</b>

BALE CHECKS		
STATION ①	LOC.	QTY.
170+50	LT. / RT.	10
184+00	RT.	7
186+00	LT.	7
187+50	LT. / RT.	14
251+00	LT. / RT.	10
265+00	LT. / RT.	12
287+00	LT. / RT.	10
288+00	RT.	5
<b>TOTAL</b>		<b>75</b>

STONE RETAINING WALL		
STATION	LOC.	SQ. FT.
274+60 - 275+05	42' RT.	138
276+30 - 277+65	42' RT.	625
279+10 - 283+05	42' RT.	1329
<b>TOTAL</b>		<b>2092</b>

① APPROXIMATE LOCATIONS ONLY. EXACT LOCATIONS TO BE DETERMINED DURING CONSTRUCTION.

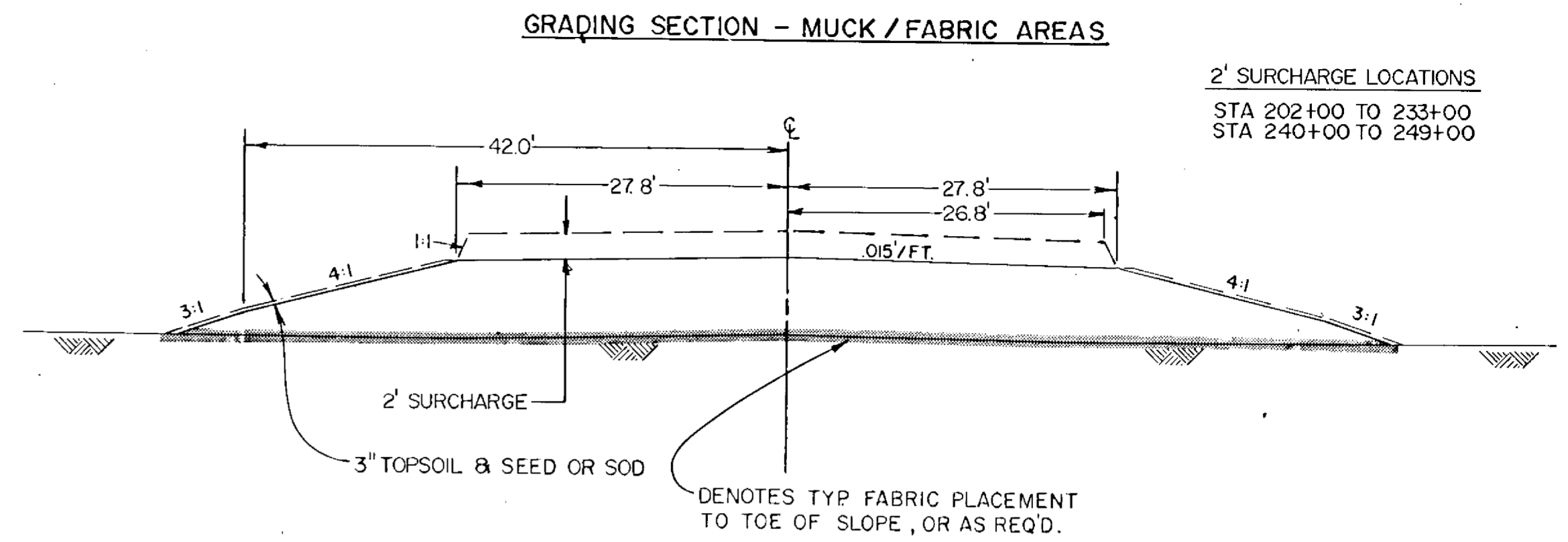




**GRADING**

1.0' SUBCUT FOR COMPACTION & UNIFORMITY OF SOILS.  
(SEE PLAN & PROFILE SHEETS FOR LOCATIONS)

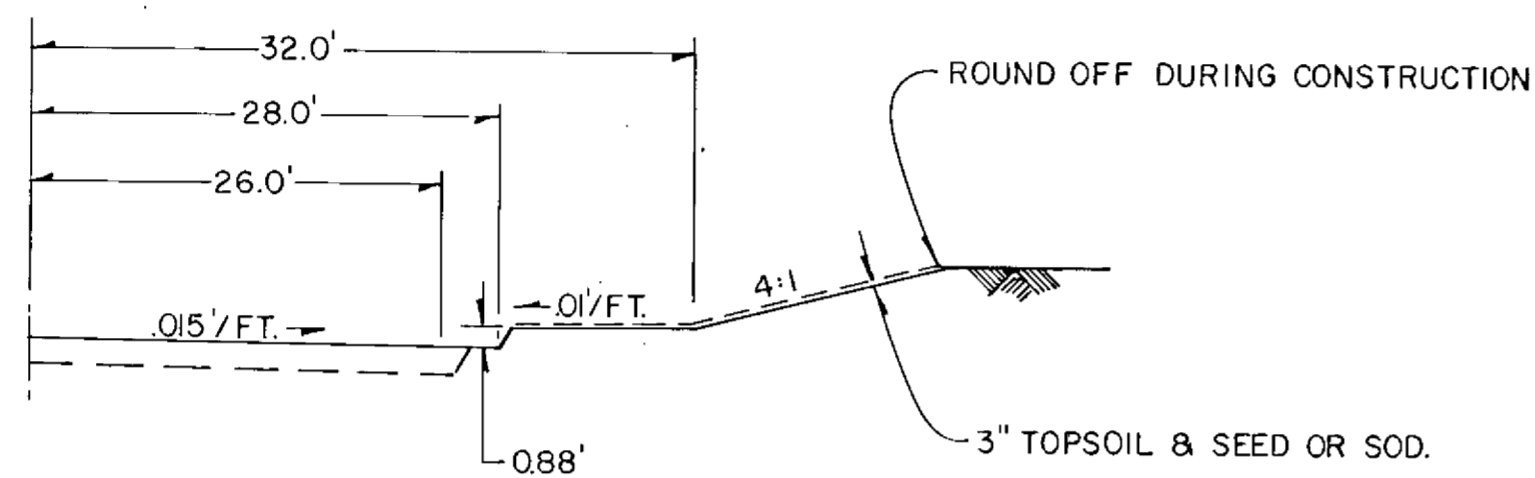
- ① SEE CROSS-SECTIONS FOR MODIFIED DITCH BOTTOMS
- ② SEE CROSS-SECTIONS FOR SPECIAL DITCH ELEVATIONS



**GRADING SECTION - MUCK / FABRIC AREAS**

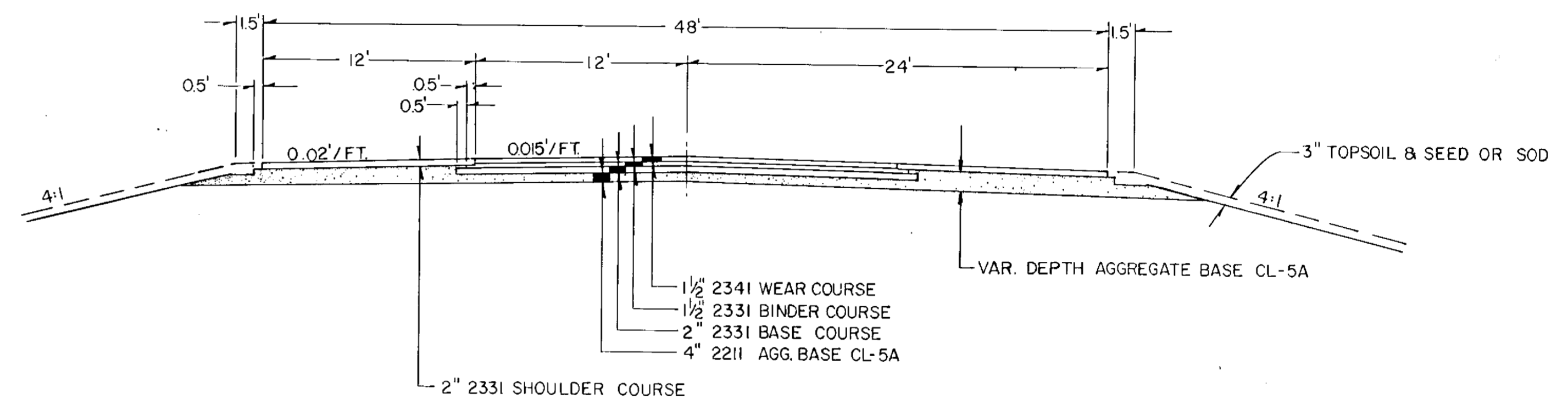
2' SURCHARGE LOCATIONS  
STA 202+00 TO 233+00  
STA 240+00 TO 249+00

**GRADING BERM**

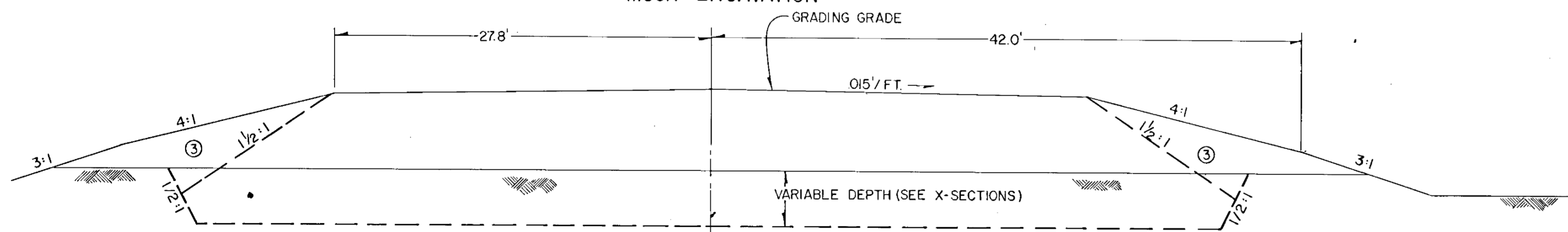


STA. — STA.  
265+00 - 270+27 LT.  
273+05 - 283+65 RT.  
276+50 - 279+45 LT.  
290+15 - 293+45 RT.

**BITUMINOUS SECTION**

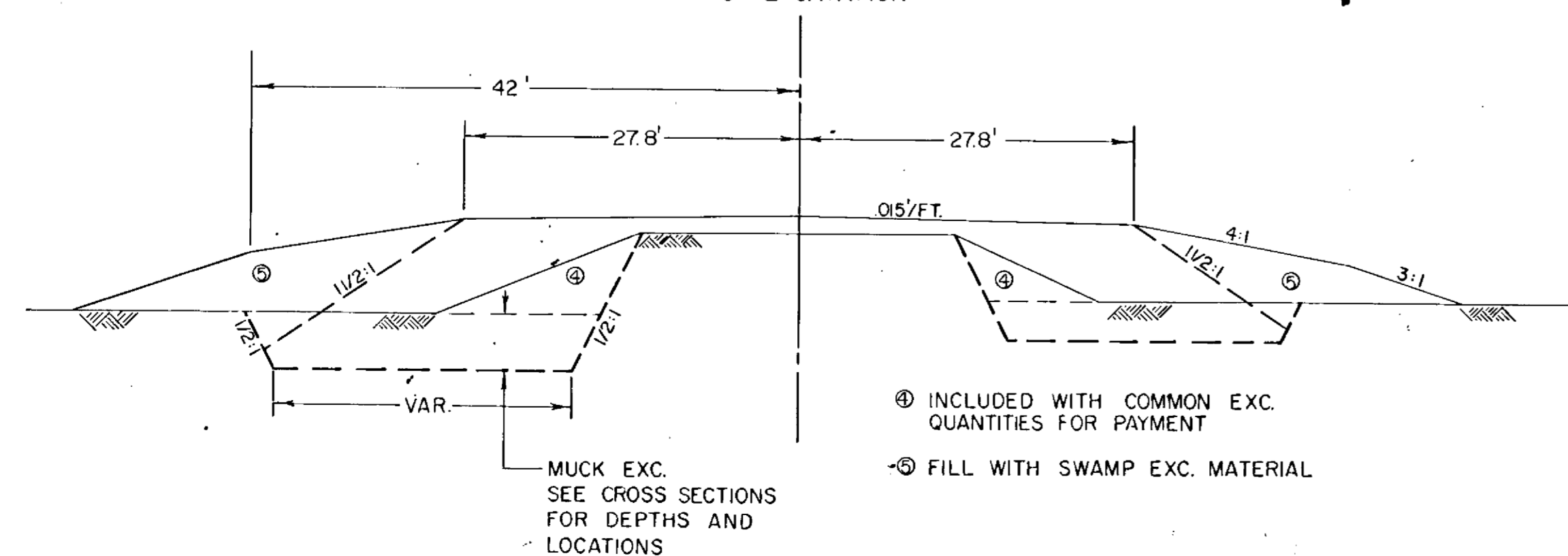


**MUCK EXCAVATION**



③ BACKFILL WITH EXCAVATED MUCK MATERIAL

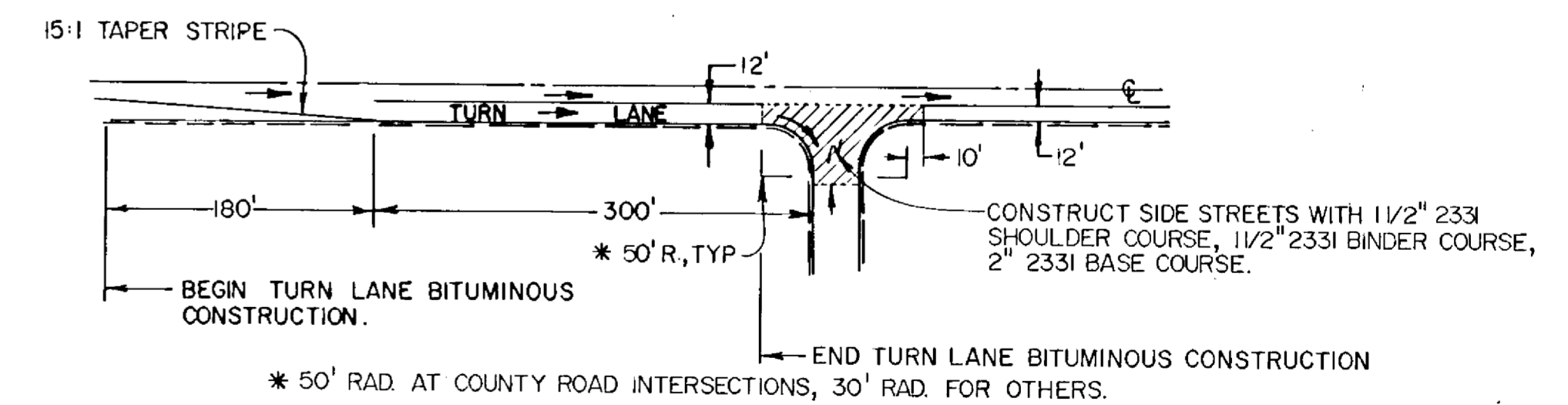
**MUCK EXCAVATION**



- ④ INCLUDED WITH COMMON EXC. QUANTITIES FOR PAYMENT
- ⑤ FILL WITH SWAMP EXC. MATERIAL

MUCK EXC.  
SEE CROSS SECTIONS  
FOR DEPTHS AND  
LOCATIONS

**TYPICAL RIGHT TURN LANE**



\* 50' RAD. AT COUNTY ROAD INTERSECTIONS, 30' RAD. FOR OTHERS.







STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	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	12.25	
2101.502	CLEARING	TREE	94	
2101.506	GRUBBING	ACRE	8.15	
2101.507	GRUBBING	TREE	78	
2104.501	REMOVE CULVERT PIPE	LIN. FT.	44	
2104.521	SALVAGE CULVERT PIPE	LIN. FT.	96	
2104.521	SALVAGE FENCE	LIN. FT.	6719	
0557.604	INSTALL FENCE	LIN. FT.	5987	
2104.523	SALVAGE CULVERT APRONS	EACH	2	
2105.000	CONSTRUCTION FABRIC	SQ. YD.	32,782	
2105.501	COMMON EXCAVATION (P)	CU. YD.	119,411	
2105.505	MUCK EXCAVATION	CU. YD.	11,237	
2105.521	GRANULAR BORROW E.V.	CU. YD.	28,950	
2130.501	WATER	M-GAL	400	
2104.513	SAWING BITUMINOUS PAVEMENT	LIN. FT.	184	
2211.503	AGGREGATE BASE PLACED, CL. 5A (P)	CU. YD.	11,481	
2105.535	SALVAGED TOPSOIL (L.V.) IN STOCKPILE	CU. YD.	6000	
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	660	
2331.510	BINDER COURSE MIXTURE	TON	3110	
2331.514	BASE COURSE MIXTURE	TON	4310	
2331.516	SHOULDER MIXTURE	TON	4095	
2331.531	TEMPORARY LANE MARKING	ROAD STA.	396	
0331.601	2" WEARING COURSE PLACED	SQ. YD.	752	
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	189	
2341.508	WEARING COURSE MIXTURE	TON	2,900	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	4,035	
0211.503	4" AGGREGATE BASE PLACED, CLASS 5A	SQ. YD.	1086	
2501.511	15" C.M. PIPE CULVERT	LIN. FT.	260	
2501.511	18" C.M. PIPE CULVERT	LIN. FT.	46	
2501.511	24" C.M. PIPE CULVERT	LIN. FT.	28	
2501.511	48" C.M. PIPE CULVERT	LIN. FT.	200	
2501.511	72" C.M. PIPE CULVERT	LIN. FT.	88	
2501.515	15" C.M. PIPE APRON	EACH	14	
2501.515	18" C.M. PIPE APRON	EACH	2	
2501.515	24" C.M. PIPE APRON	EACH	2	
2501.515	48" C.M. PIPE APRON	EACH	8	
2501.515	72" C.M. PIPE APRON	EACH	2	
2501.515	24" R.C. PIPE APRON	EACH	8	
2501.521	22" R.C. SPAN PIPE ARCH CULVERT	LIN. FT.	64	
2501.521	28 1/2" R.C. SPAN PIPE ARCH CULVERT	LIN. FT.	84	
2501.525	22" R.C. SPAN PIPE ARCH APRON	EACH	2	
2501.525	28 1/2" R.C. SPAN PIPE ARCH APRON	EACH	2	
2501.561	24" R.C. PIPE CULVERT, DES. 3006 F	LIN. FT.	266	
2501.571	INSTALL 15" C.M. PIPE CULVERT	LIN. FT.	32	
2501.571	INSTALL 48" C.M. PIPE CULVERT	LIN. FT.	32	
2501.571	INSTALL 24" R.C. PIPE CULVERT	LIN. FT.	32	
2501.573	INSTALL 15" C.M. PIPE APRON	EACH	2	
2123.509	DOZER	HOUR	120	
2123.506	1 1/2 C.Y. DRAGLINE	HOUR	120	
0411.603	STONE RETAINING WALL	SQ. FT.	2092	
2535.501.	BITUMINOUS CURB	LIN. FT.	1810	
2573.501.	BALE CHECK	EACH	75	
2573.508	BITUMINOUS LINED FLUME	SQ. YD.	35	
2575.501	ROADSIDE SEEDING (P)	ACRE	18.7	
2575.502	SEED, MIXTURE #3	POUND	842	
2575.505	SODDING	SQ. YD.	6017	
2575.511	MULCH MATERIAL TYPE #1	TON	37.4	
2575.519	DISC. ANCHORING (P)	ACRE	18.7	
2575.531	COMMERCIAL FERTILIZER, ANALYSIS 10-10-10	TON	4.6	

STANDARD PLATES

PLATE NO.	DESCRIPTION
0004A	SPECIFICATION REFERENCE TO STANDARD PLATES
3000K	REINFORCED CONCRETE PIPE
3006F	GASKET JOINT FOR R.C. PIPE
3014J	REINFORCED CONCRETE PIPE ARCH DETAIL
3040F	CORRUGATED METAL PIPE, CULVERT
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110G	CONCRETE APRON FOR REINFORCED CONCRETE ARCH PIPE
3123I	METAL APRON FOR C.S. PIPE
3145E	CONCRETE PIPE TIES
3221C	CORRUGATED STEEL PIPE COUPLING BAND
7065C	BITUMINOUS CURB
8000I	STANDARD BARRICADES
9000B	APPROACHES AND ENTRANCES
9102C	SODDING AT PIPE CULVERT ENDS

BASIS OF PLANNED QUANTITIES

- 2331 PLANT MIXED BASE COURSE. BITUMINOUS MIXTURE 110 LBS./SQ.YD. PER 1" THICKNESS. BITUMINOUS MATERIAL FOR MIXTURE 5.3% BY WT.
  - 2331 PLANT MIXED BINDER COURSE. BITUMINOUS MIXTURE 110 LBS./SQ.YD. PER 1" THICKNESS. BITUMINOUS MATERIAL FOR MIXTURE 5.3% BY WT.
  - 2331 PLANT MIXED SHOULDER COURSE. BITUMINOUS MIXTURE 110 LBS./SQ.YD. PER 1" THICKNESS. BITUMINOUS MATERIAL FOR MIXTURE 6.5% BY WT.
  - 2341 PLANT MIXED WEARING COURSE. BITUMINOUS MIXTURE 110 LBS./SQ.YD. BY WT. BITUMINOUS MATERIAL FOR MIXTURE 6.5% BY WT.
  - 2357 BITUMINOUS MATERIAL FOR TACK COAT 0.05 GAL. PER SQ. YD.
  - 2575 COMMERCIAL FERTILIZER ANALYSIS 10-10-10, 500 LBS. / ACRE ON ALL SEED AND SOD AREAS.
  - 2575 ROADSIDE SEEDING BASED ON HORIZONTAL MEASUREMENT PLUS 10%. SEED MIXTURE NO. 3 AT 45 LBS. PER ACRE.
  - 2575 MULCH MATERIAL, TYPE #1 AT 2 TONS PER ACRE.
- ① INCLUDES 7428CU. YDS. SUBCUT FOR COMPACTION AND UNIFORMITY OF SOILS  
 PROVIDED FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.  
 ② PROVIDED FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.  
 ③ INCLUDES 367 CU. YDS. FOR STREET APPROACHES.  
 ④ INCLUDES 100 TON FOR ROAD APPROACHES.  
 ⑤ INCLUDES 135 TON FOR ROAD APPROACHES.  
 ⑥ INCLUDES 135 TON FOR ROAD APPROACHES.  
 ⑦ QUANTITY INCLUDES 2341 WEARING COURSE.  
 ⑧ PROVIDED FOR DRIVEWAY PAVING, PAYMENT BY SQ. YD. INCLUDES BITUMINOUS MATERIAL AND 3" CL. # 5 AGGREGATE BASE.  
 ⑨ FOR DRIVEWAY AND FIELD ENTRANCE CONSTRUCTION.  
 ⑩ INCLUDES 15,682 C.Y. OF MATERIAL FOR SURCHARGE CONSTRUCTION.

EARTHWORK SUMMARY

EXCAVATION (CU. YD.)			
130,648	COMMON	REGULAR	108,967
		SUBCUT	10,444
	MUCK		11,237
			119,441
EMBANKMENT (CU. YD.)			
	SELECTED GRADING ①		140,507
193,140	GRANULAR BORROW	REGULAR GRADING	13,268
		SURCHARGE	15,682
	MUCK		878
	EXCESS MUCK ②		10,359
	TOPSOIL		6,859

- ① QUANTITY INCLUDES 21,109 CU. YD. OF BORROW MATERIAL OF WHICH 7,841 CU. YD. IS TO COME FROM SURCHARGE MATERIAL UPON REMOVAL OF SURCHARGE.
- ② SEE SPECIAL PROVISIONS FOR HANDLING OF EXCESS MUCK MATERIAL.

SPECIAL DETAILS

THE CONTRACTOR SHALL REMOVE SUFFICIENT TOPSOIL MATERIAL WITHIN THE EXCAVATION AREAS AND AREAS ON WHICH EMBANKMENTS WILL BE PLACED. TO PROVIDE A 3" MINIMUM OF TOPSOIL DRESSING ON THE FINISHED SLOPES AND DITCH BOTTOMS. THIS WILL REQUIRE APPROXIMATELY 6,859 CU. YDS. OF TOPSOIL MATERIAL. THERE WILL BE NO TOPSOIL DRESSING REQUIRED IN AREAS IN WHICH MUCK FILL IS REQUIRED. SALVAGING & REPLACING TOPSOIL SHALL BE CONSIDERED AS INCIDENTAL TO THE EXCAVATION ITEMS AND NO ADDITIONAL COMPENSATION WILL BE MADE.

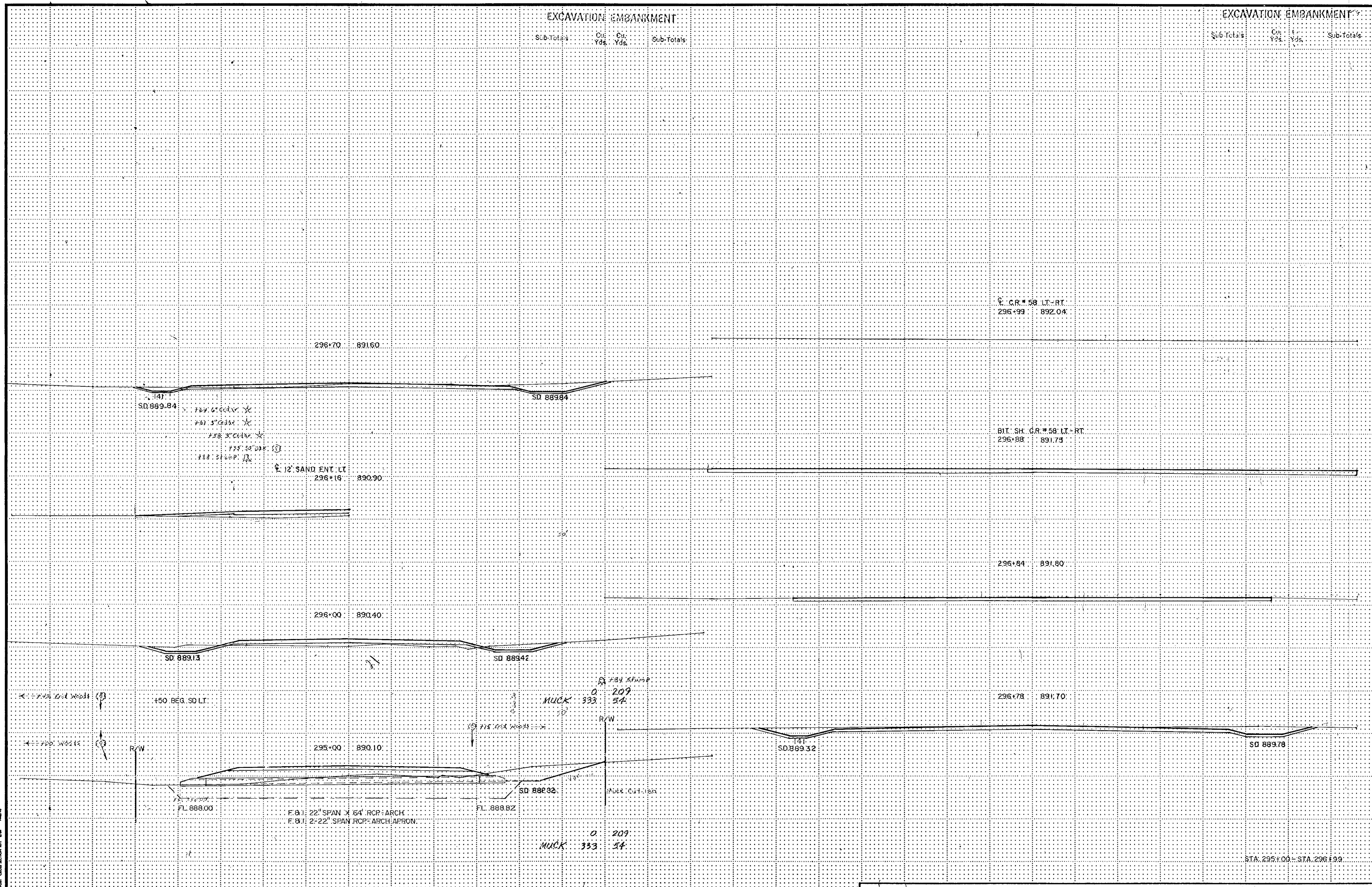
IN AREAS WHERE THE ROADBED IS TO BE CONSTRUCTED OVER LOWLAND AND SWAMP COVERED WITH FABRIC, THE GROUND SURFACE SHOULD BE DISTURBED AS LITTLE AS POSSIBLE WITH NO TOPSOIL BEING REMOVED FROM THESE AREAS. PRIOR TO PLACEMENT OF FABRIC MATERIAL, TREES WILL BE CUT AT GROUND LEVEL AND THE STUMPS WILL BE ALLOWED TO REMAIN.



Cross-section in elevation

EXCAVATION EMBANKMENT  
Sub-Totals Cu. Yds. Cu. Yds. Sub-Totals

EXCAVATION EMBANKMENT  
Sub-Totals Cu. Yds. Cu. Yds. Sub-Totals



141  
SD 889.84  
784 6' C&V \*  
781 5' C&V \*  
778 3' C&V \*  
775 30' D&K \*  
772 5' D&K \*

12' SAND ENT. LT.  
296+16 890.90

C.G.R. # 58 LT-RT  
296+99 892.04

BIT. SH. G.R. # 58 LT-RT  
296+88 891.75

SD 889.13

SD 889.42

150 BEG. SD LT.

R/W #24 Stump  
0 209  
MUCK 333 34  
R/W

296+78 891.70

← 700' Wood 12

R/W

295+00 890.10

← 715' Wood 12

141  
SD 889.32

SD 889.78

FL 888.00

F.B.I. 22' SPAN X 64' RCP ARCH  
F.B.I. 2' 22" SPAN RCP ARCH APRON

FL 888.82

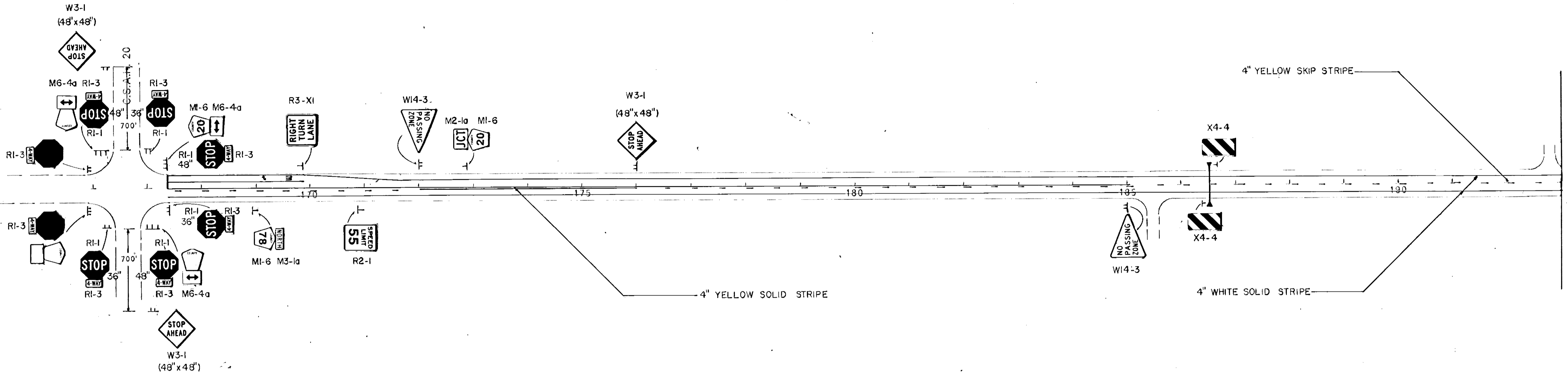
SD 888.92

Muck Cut 12x3

0 209  
MUCK 333 34

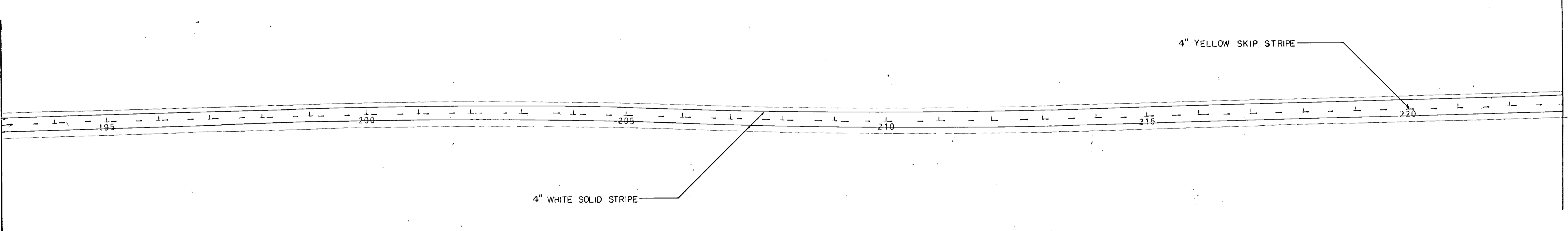
STA. 295+00 - STA. 296+99





DO NOT REMOVE  
SIGNS SHOWN BLANK

C.R. 78 HANSON BLVD. N.W.  
STA. 166+00 TO 193+00



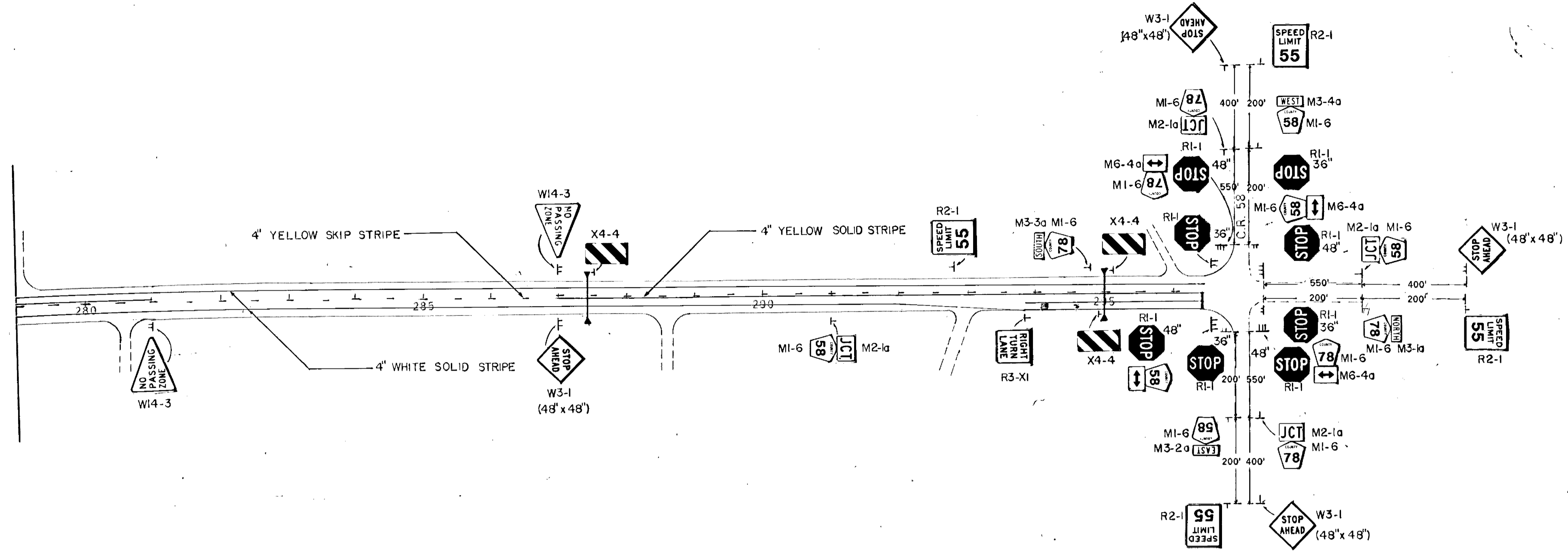
C.R. 78 HANSON BLVD. N.W.  
STA. 193+00 TO 223+00

REVISIONS			
DATE	BY	DATE	BY

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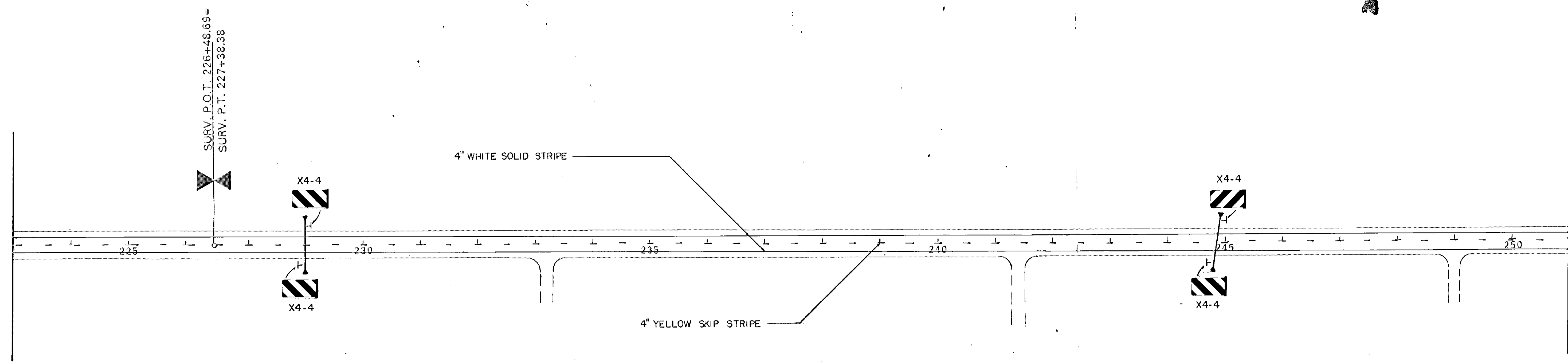


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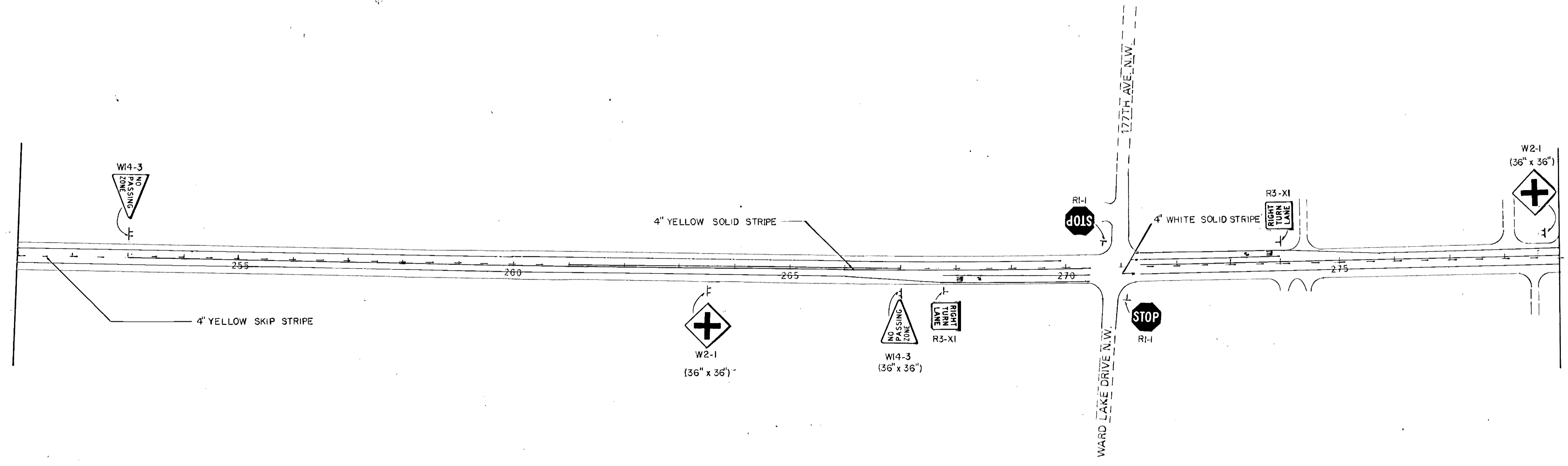
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