MINNESOTA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR BITUMINOUS SURFACING, AGGREGATE SHOULDERS AND DRAINAGE CULVERTS

LOCATED ON C.R. 122 **BETWEEN FROM** C.S.A.H. 5 (128' S. OF NW. CORNER OF THE SW. QUARTER OF THE SW. QUARTER, SECTION 21, T33, R25) **AND TO** T.H. 47 (343.06' WEST OF CENTER SECTION 24, T33, R25) (Geographic Description) (Legal Description)

STATE PROJ. NO. C.P. 89-26-122
MINN. PROJ. NO.

	FEET	MILES
GROSS LENGTH	18,333	3.47
BRIDGES-LENGTH		
EXCEPTIONS-LENGTH		
NET LENGTH	18,333	3.47
MILE POINT	TO MILE POINT	

STATE PROJ. NO.
MINN. PROJ. NO.

	FEET	MILES
GROSS LENGTH		
BRIDGES-LENGTH		
EXCEPTIONS-LENGTH		
NET LENGTH		
MILE POINT	TO MILE POINT	

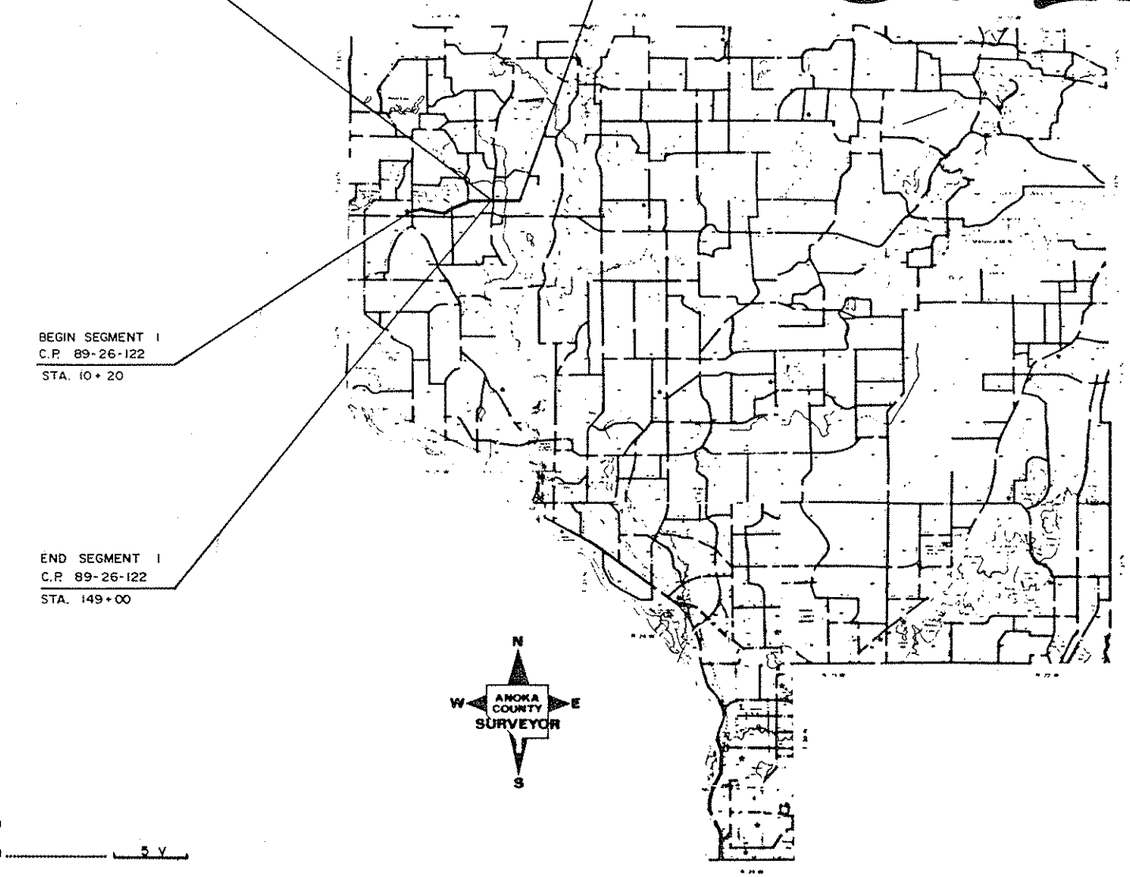
89-26-122

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

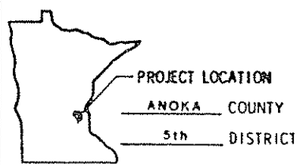
PLAN 50
PROFILE 50 H 5 V
INDEX MAP 2.18 MI.
CROSS SECTION 10 H, 10 V

DESIGN DATA

		MINOR COLLECTOR
FUNCTIONAL CLASIFICATION		
NO. OF TRAFFIC LANES	=	2
ADT (CURRENT YEAR) 1990	=	399
ADT (FUTURE YEAR) 2010	=	678
DHV (DESIGN HR. VOL.)	=	N/A
D (DIRECTIONAL DISTR.)	=	50%
T (HEAVY COMMERCIAL)	=	N/A
SOIL FACTOR	=	100%

NO. OF PARKING LANES 0
7 TON DESIGN SHOULDER WIDTH 2'
DESIGN SPEED 40 MPH
BASED ON STOPPING SIGHT DISTANCE
HEIGHT OF EYE 3.5' HEIGHT OF OBJECT 0.5'
DESIGN SPEED NOT ACHIEVED AT:
STA. 73+25 TO STA. 76+75 MPH 30
STA. 116+50 TO STA. 120+50 MPH 35
R-VALUE N/A OR N 18 FACTOR N/A

PLAN REVISIONS			
DATE	SHEET NO.		APPROVED BY
7/29/91	5,7,11	⚠	DWF



FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO.	AREA	JOB

FED. PROJ. NO. [redacted]

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

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. Kurtz, 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

Fed. Project No. _____

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM	UNIT	SEGMENT NO. 1 ESTIMATED QUANTITIES	SEGMENT NO. 1 FINAL QUANTITIES	SEGMENT NO. 2 ESTIMATED QUANTITIES	SEGMENT NO. 2 FINAL QUANTITIES	TOTAL ESTIMATED QUANTITIES	TOTAL 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	
④	2105.525	TOPSOIL BORROW (LV)	CU.YD.	780				780	
⑤	0112.603	SHOULDER PREPARATION	RD.STA.	139				139	
⑥	2123.509	DOZER	HOUR			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 REGAURDLESS 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, ANAYSIS 10-10-10; 500 LBS./ACRE

CLEARING AND GRUBBING

STATION	LOCATION	CLEARING TREE	CLEARING ACRE	GRUBBING TREE	GRUBBING 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	℄	40
157+40	℄	23
167+00	℄	23
169+25	℄	23
173+60	℄	24
181+40	℄	24
192+07	℄	24
193+53	℄	104
TOTAL		285

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	℄	REMOVE FULL DEPTH BITUMINOUS PAVEMENT	2220
167+00 - 169+25	℄	REMOVE FULL DEPTH BITUMINOUS PAVEMENT	582
173+60 - 181+40	℄	REMOVE FULL DEPTH BITUMINOUS PAVEMENT	2109
192+07 - 193+53	℄	REMOVE FULL DEPTH BITUMINOUS PAVEMENT	521
		TOTAL	5432

EARTHWORK SUMMARY

EXCAVATION (CU.YD.)

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

EMBANKMENT (CU.YD.) (CV)

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

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 MATL'S. (LV TO CV).

3) 110% SHRINKAGE FACTOR FOR TOPSOIL BORROW (LV TO SPREADED THICKNESS).

REVISIONS			
DATE	BY	DATE	BY

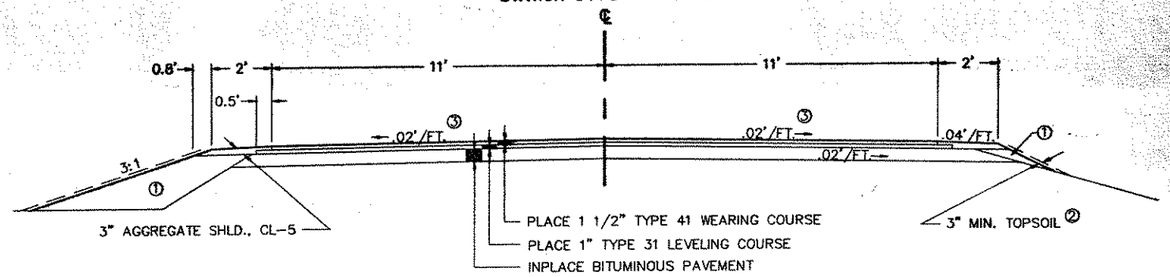
ESTIMATED QUANTITIES AND TABULATIONS

S.A.P. _____ S.P. _____ C.P. 89-26-122 | Sheet No. 2 of 14 Sheets

Fed. Project No. _____

TYPICAL OVERLAY & SHLD. WIDENING SECTION

STATION 9+78 – 148+79

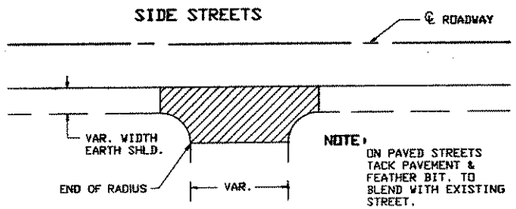


① EMBANKMENT PAID FOR AS ITEM NO. 0112.603, "SHOULDER PREPARATION" AND MEASURED PER ROAD STATION. SEE EARTHWORK SUMMARY FOR MATERIAL REQUIRED.

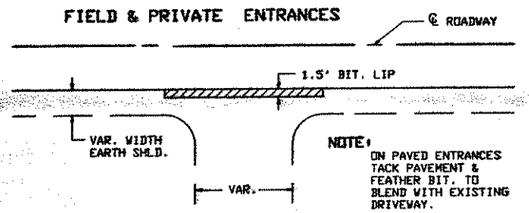
② TOPSOIL BORROW TO BE USED IN BOULEVARD AREAS.

③ VARIABLE CROSS-SLOPE THROUGH HORIZONTAL CURVATURE TO ACCOMODATE SUPERELEVATIONS. RATES TO BE DETERMINED BY THE ENGINEER.

SIDE STREETS



FIELD & PRIVATE ENTRANCES



REVISIONS			
DATE	BY	DATE	BY

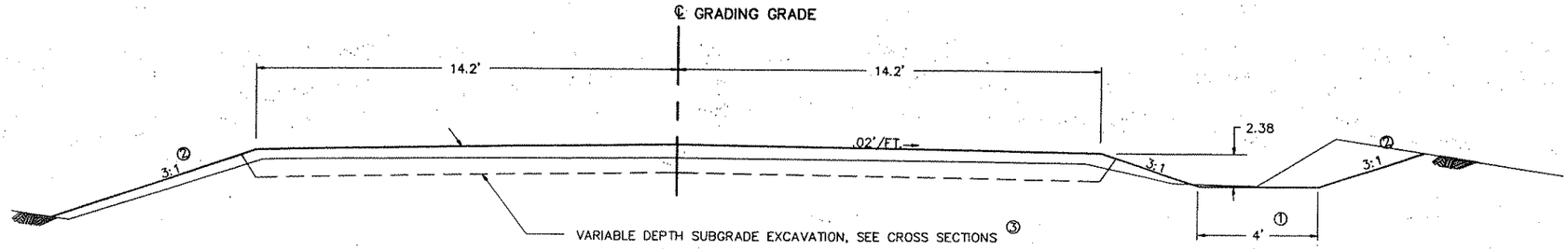
TYPICAL SECTIONS
C.S.A.H. 5 – C.R. 66

S.A.P. _____ S.P. _____ C.P. 89-26-122 | Sheet No. 3 of 14 Sheets

Fed. Project No. _____

TYPICAL GRADING SECTION

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



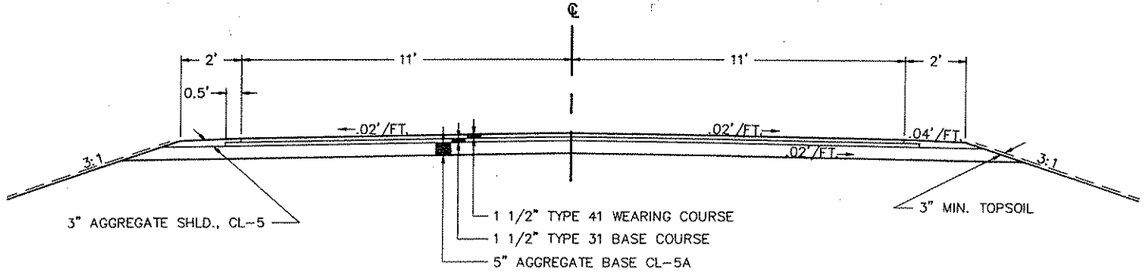
① FOR SPECIAL DITCHES SEE PROFILE & CROSS SECTION SHEETS

② SEE CROSS SECTION SHEETS FOR MODIFIED INSLOPES & BACKSLOPES

③ SUBGRADE EXCAVATION AREAS TO BE BACKFILLED WITH GRANULAR BORROW.

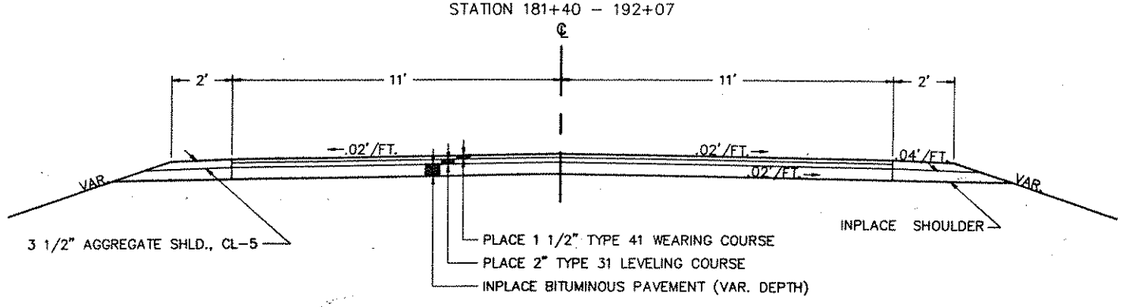
TYPICAL BASE & SURFACE SECTION

STATION 148+79 – 157+40
STATION 167+00 – 169+25
STATION 173+60 – 181+40
STATION 192+07 – 193+53

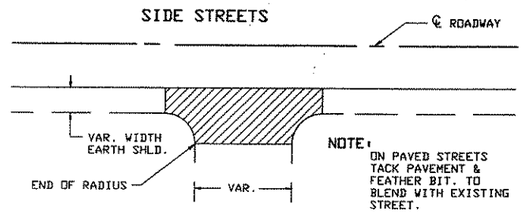


TYPICAL OVERLAY SECTION

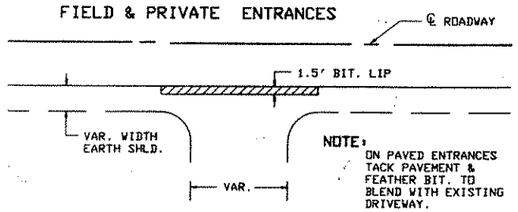
STATION 157+40 – 167+00
STATION 169+25 – 173+60
STATION 181+40 – 192+07



SIDE STREETS



FIELD & PRIVATE ENTRANCES



REVISIONS			
DATE	BY	DATE	BY

TYPICAL SECTIONS
C.R. 66 – T.H. 47

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

Sheet No. 4 of 14 Sheets

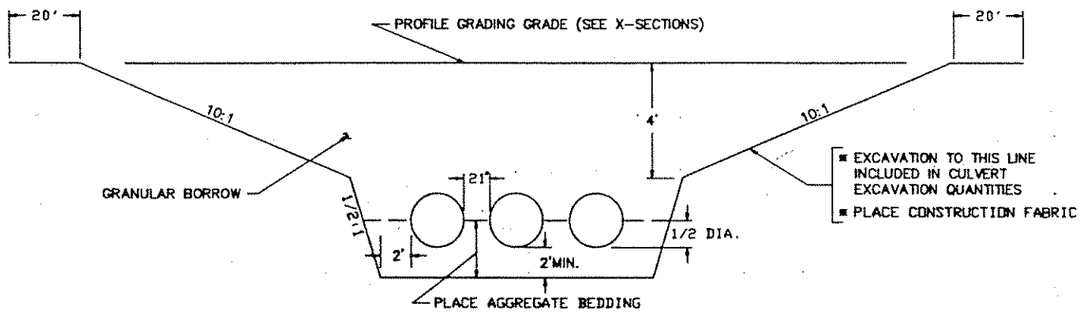
Fed. Project No. _____

DRAINAGE CHART

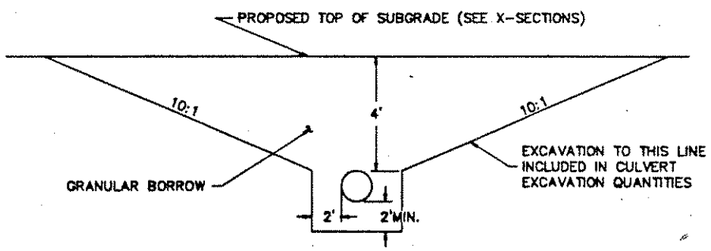
STATION	LOC	INPLACE	REMARKS	POLYPROP. PLAST. NET	REMOVE CULV. PIPE		SALVAGE CULV. PIPE		FURNISH & INSTALL CULVERT 18" CMP		24" CMP		42" CMP			
				SQ. YD.	LIN.FT.	APR.	LIN.FT.	APR.	LIN.FT.	APR.	LIN.FT.	APR.	LIN.FT.	APR.	LIN.FT.	APR.
167+65	C/L	42"x 94'RCP		72	94	0	0	0					94	0		
167+70	C/L	42"x 94'RCP		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		

TYPICAL SECTIONS FOR CENTERLINE CULVERT INSTALLATION

STATION 167+70

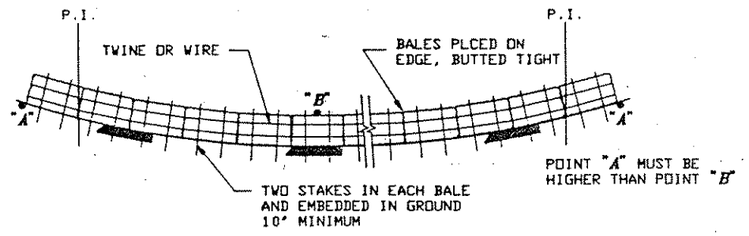


STATION 192+50

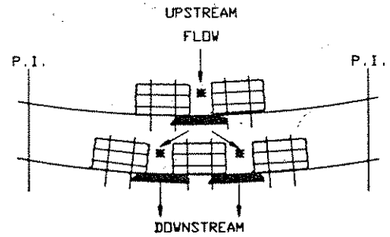


NOTES:
- HAULING OPERATIONS TO BE COMPLETED PRIOR TO CENTERLINE CULVERT INSTALLATION.
- FILL AND COMPACT GRANULAR TO 2" ABOVE FLOWLINE BEFORE PLACING CULVERT
- AT CENTERLINE CULVERT LOCATIONS CULVERT EXC. TO EXTEND 3' BEYOND END OF APRON
- SEE CROSS SECTION AND PROFILE SHEETS FOR DEPTH AND LIMITS OF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

BALE HAY OR STRAW DITCH CHECK

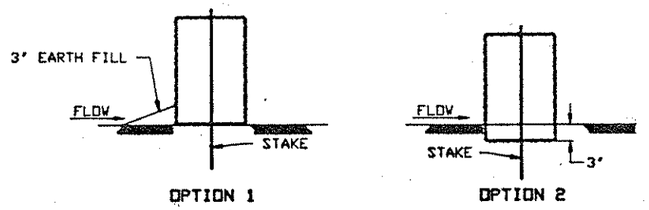


ALTERNATE BALE CHECK



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		

DRAINAGE AND EROSION CONTROL

S.A.P. _____ S.P. _____ C.P. 89-26-122 | Sheet No. 5 of 14 Sheets

Fed. Proj. No.

CONTROL POINT
L.O.R. P.I. STA. 148+65.01 =
A PT. 1.2' SOUTH & ⊥ TO SURVEY
P.I. STA. 148+65.01

STA. 149+00
BEGIN BIT. REMOVAL

B.M. 22 ELEV. 903.96
DBL. SPIKE IN 20" OAK TREE
STA. 157+40, LT. 60'

STA. 157+40
END BIT. REMOVAL

N

CONSTR. 50'R

PASTURE

EASEMENT 15'

LOWLAND

WOODED

LOWLAND

158+00

155+00

LOWLAND

WOODED

C.R. 66

CONSTR. 50'R

FIELD

WOODED

LOWLAND

WOODED

CONSTRUCTION LIMITS

YARD

WEST FORD BROOK DR.

MATCH LINE STA. 159+00

SCALE IN FEET
0 25 50 100

B.M. 21B ELEV. 915.77
R.R. SPIKE IN 8" ELM TREE
STA. 147+75, RT. 60'

914.16 911.00 907.95 905.70 904.35 903.91 904.38 905.76 907.59 908.32

920
915
910
905
900
895

-3.16%

909.42

PROFILE GRADE

550' V.C.
M = 3.43'

EXISTING PROFILE

905.76

1.83%

908.50

+50 PVC

+00 P.V.T.

+25 PVI
ELEV. 900.73

+50 PVC

SUBGRADE EXCAV.

914.09 913.48 911.02 907.85 904.56 901.73 902.23 903.71 905.50 907.45 909.26 909.72 910.18 910.51 910.75

+21 +25 +53 +79

150+00

155+00

State Proj. No. C.P. 89-26-122

Sheet No. 6 of 14 Sheets

Fed. Proj. No.

STA. 160+28 RES. ENT. LT.
NO CULVERT INP.
LEAVE AS IS

YARD

STA. 163+33 TWP. RD. LT.
INP. 15"x 40' C.M. PIPE CULV.
LEAVE AS IS

STA. 167+65 ℄ CULVERT
INP. 42"x 82' R.C. PIPE CULVERT
REMOVE
F.& I. 42"x 94' C.M. PIPE CULVERT
NO APRONS REQUIRED

STA. 167+70 ℄ CULVERT
INP. 42"x 82' R.C. PIPE CULVERT
REMOVE
F.& I. 42"x 94' C.M. PIPE CULVERT
NO APRONS REQUIRED

STA. 167+75 ℄ CULVERT
INP. 42"x 82' R.C. PIPE CULVERT
REMOVE
F.& I. 42"x 94' C.M. PIPE CULVERT
NO APRONS REQUIRED

B.M. 23 ELEV. 890.10
DBL. SPIKE IN 6" POPLAR TREE
STA. 170+00, LT. 82'

STA. 167+00
BEGIN BIT. REMOVAL

STA. 169+50
END BIT. REMOVAL

LOWLAND

WOODED

I.E. 883.63

CONSTRUCTION LIMITS

160+00

165+00

170+00

MATCH LINE STA. 159 + 00

MATCH LINE STA. 171 + 33.10

WOODED

I.E. 885.63

FORD BROOK

LOWLAND

YARD

STA. 160+32 RES. ENT. RT.
NO CULVERT INP.
LEAVE AS IS

STA. 170+72 RES. ENT. RT.
INP. 15"x 30' C.M. PIPE CULV.
LEAVE AS IS
F.& I. 18"x 30' C.M. PIPE CULVERT, 45° RT.
F.& I. 2 – 18" C.M. PIPE APRONS

SCALE IN FEET
0 25 50 100

915
910
905
900
895
890

EXISTING PROFILE

PROFILE GRADE
400' V.C.
M = 1.80

-25 PVI
ELEV. 892.73

+25 PVI
ELEV. 893.63

BITUMINOUS REMOVAL

CULVERT EXCAV.

910.75 911.43 911.34 910.45 908.83 906.63 905.36 905.18 904.48 903.56 902.65 898.92 895.91 894.48 893.80 893.75 893.31 892.87 893.16 894.00 894.20 894.32

899.03 898.92 894.90 893.77 893.55 893.97 894.42

160+00 165+00 170+00

REVISIONS			
DATE	BY	DATE	BY
7/29/91	JHT		

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Fed. Proj. No.

CONTROL POINT
L.O.R. P.I. STA. 171+33.10 =
A PT. 1.0' SOUTH & ⊥ 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. 173+60
BEGIN BIT. REMOVAL

STA. 181+40
END BIT. REMOVAL

FIELD

LOWLAND

CONSTRUCTION LIMITS

MATCH LINE STA. 171 + 33.10

MATCH LINE STA. 184 + 00

175+00

180+00

WOODED

15'

75'

EASEMENT

45'

EASEMENT

LOWLAND

YARD

FIELD

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.

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

SCALE IN FEET
0 25 50 100

PROFILE GRADE

2.10%

0.35% RT. DITCH

EXISTING PROFILE

P.V.T.

SUBGRADE EXCAV.

SPEC. DITCH GRADE RT.

920
915
910
905
900
895
890

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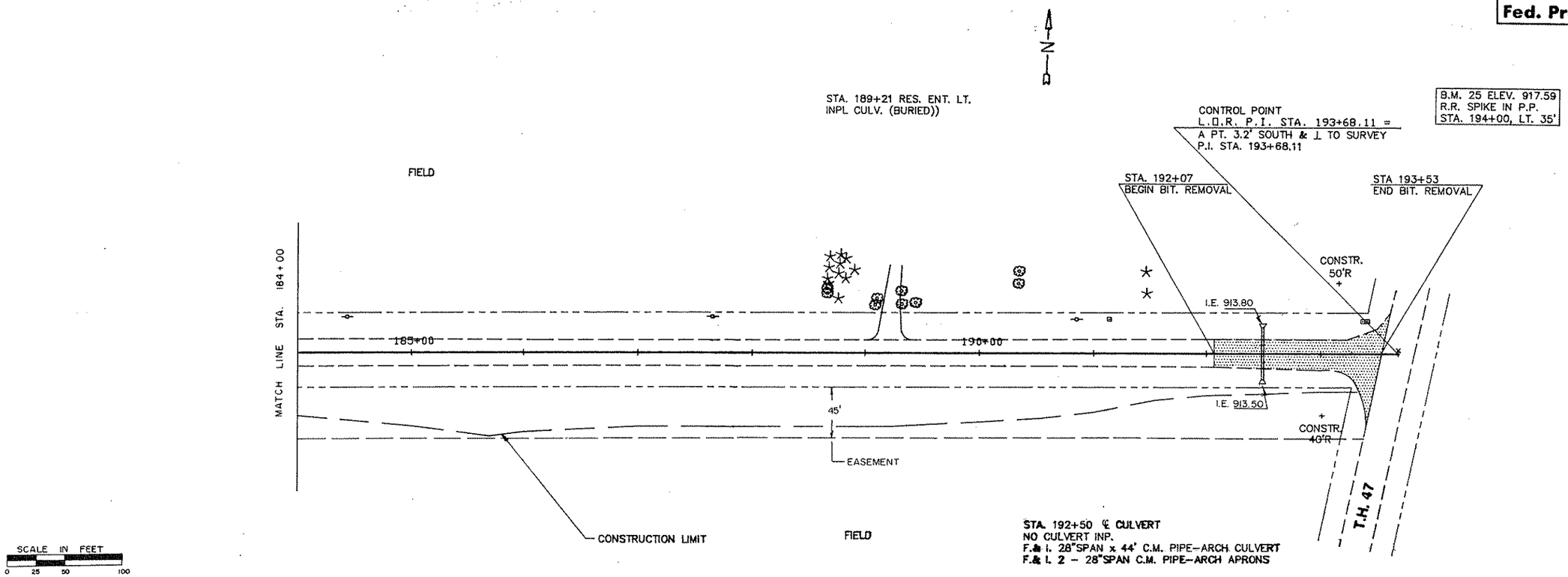
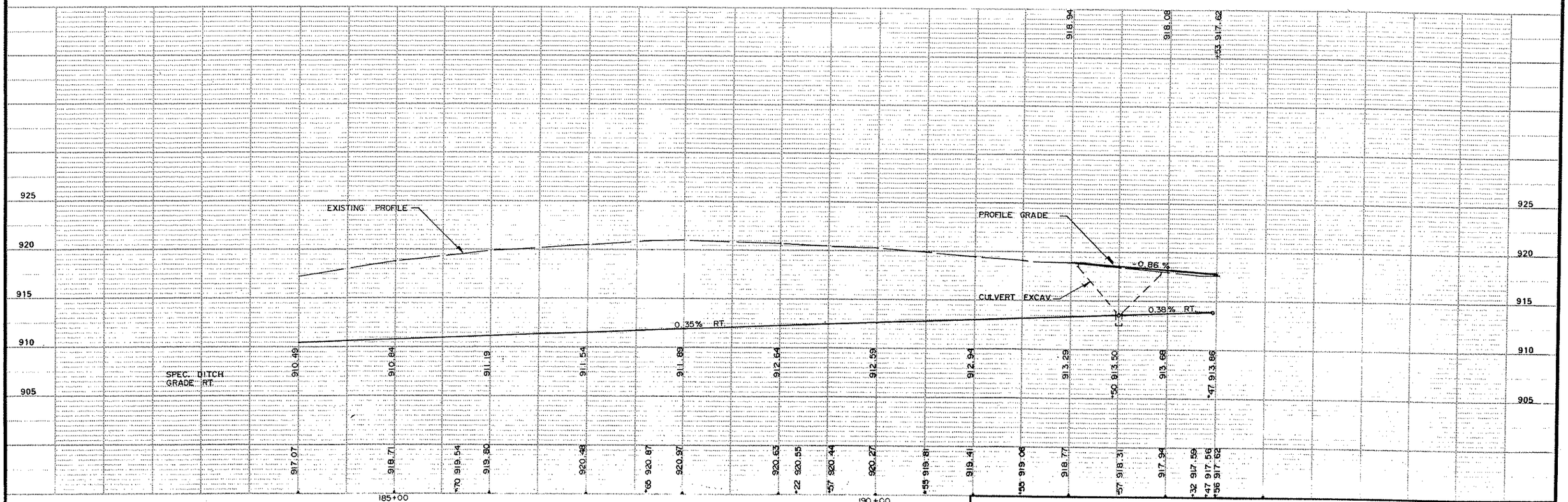
Fed. Proj. No.

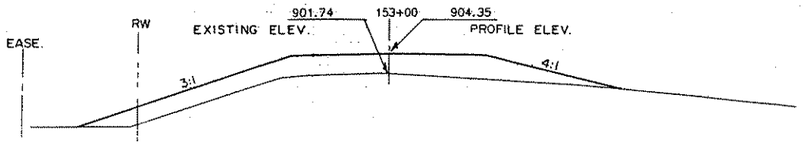

N
STA. 189+21 RES. ENT. LT.
INPL CULV. (BURIED))
FIELD
CONTROL POINT
L.O.R. P.I. STA. 193+68.11 =
A PT. 3.2' SOUTH & ⊥ TO SURVEY
P.I. STA. 193+68.11
B.M. 25 ELEV. 917.59
R.R. SPIKE IN P.P.
STA. 194+00, LT. 35'
STA. 192+07
BEGIN BIT. REMOVAL
STA 193+53
END BIT. REMOVAL
CONSTR.
50'R
MATCH LINE STA. 184+00
185+00
190+00
I.E. 913.80
I.E. 913.50
45'
EASEMENT
CONSTR.
40'R
T.H. 47
CONSTRUCTION LIMIT
FIELD
SCALE IN FEET
0 25 50 100
STA. 192+50 ℄ CULVERT
NO CULVERT INP.
F.& I. 28"SPAN x 44' C.M. PIPE-ARCH CULVERT
F.& I. 2 - 28"SPAN C.M. PIPE-ARCH APRONS


925
920
915
910
905
EXISTING PROFILE
PROFILE GRADE
-0.86 %
CULVERT EXCAV
0.38% RT
0.35% RT
SPEC. DITCH
GRADE RT
917.07
910.45
918.71
910.84
919.80
911.19
920.48
911.54
920.97
911.89
920.55
912.64
920.27
912.59
919.41
912.94
918.77
913.29
917.94
913.68
917.59
913.86
917.62
913.96
185+00
190+00

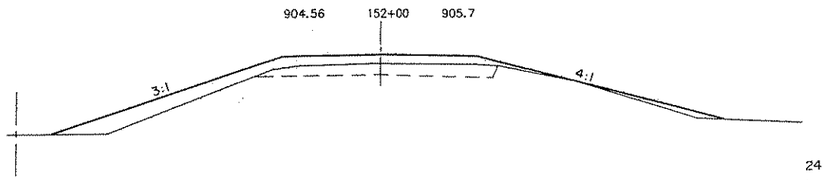
Fed. Proj. No.

EXCAVATION EMBANKMENT

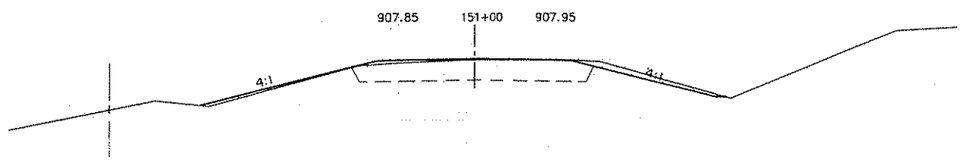
Sub-Totals	Cu. Yds.	Cu. Yds.	Sub-Totals



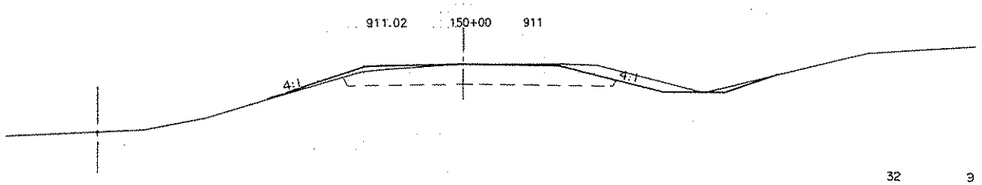
		0	270
SUBGRADE	69		307 GRANULAR



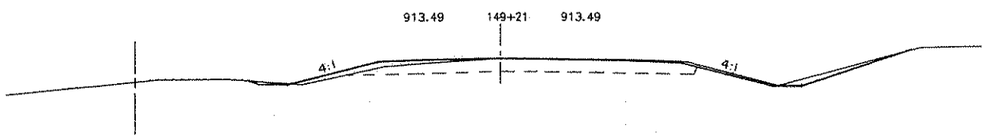
		24	163
		198	270



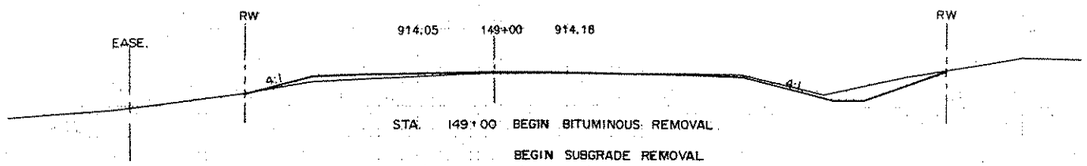
		33	13
		278	291



		32	9
		217	233



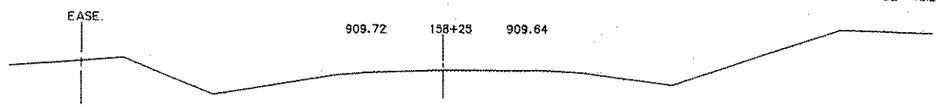
		31	12
SUBGRADE	26		21 GRANULAR

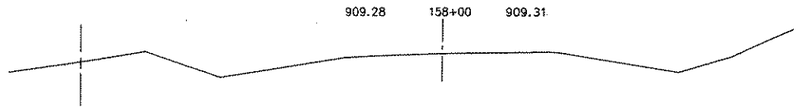


STA. 149+00 BEGIN BITUMINOUS REMOVAL
BEGIN SUBGRADE REMOVAL

EXCAVATION EMBANKMENT

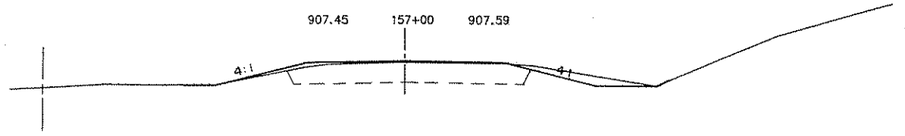
Sub-Totals	Cu. Yds.	Cu. Yds.	Sub-Totals



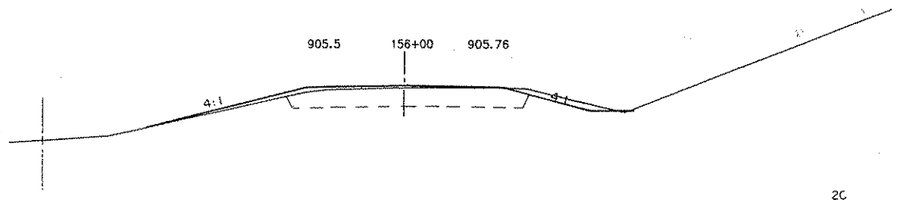


STA. 157+40 END BITUMINOUS REMOVAL
END SUBGRADE EXCAVATION

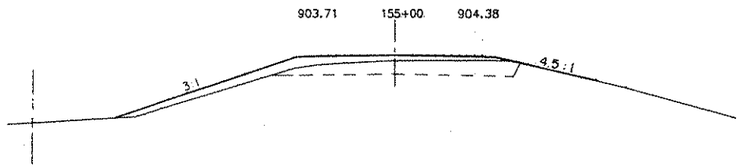
		12	3
SUBGRADE	52		54 GRANULAR



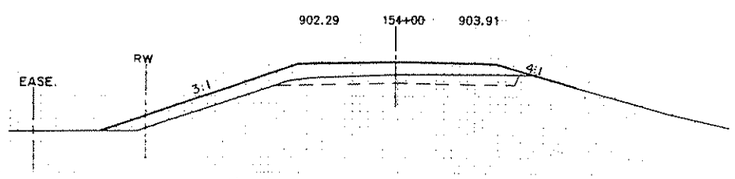
		50	15
		248	274



		20	30
		222	298



		0	85
		159	307



		0	180
SUBGRADE	56		320 GRANULAR

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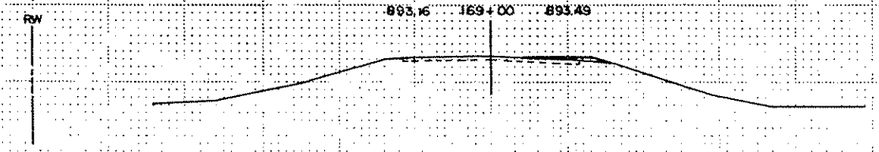
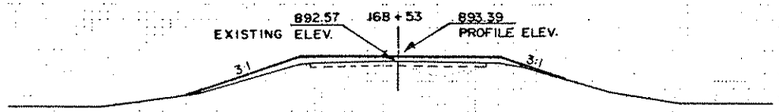
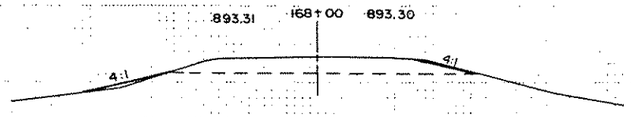
STA. 169+50 END BITUMINOUS REMOVAL

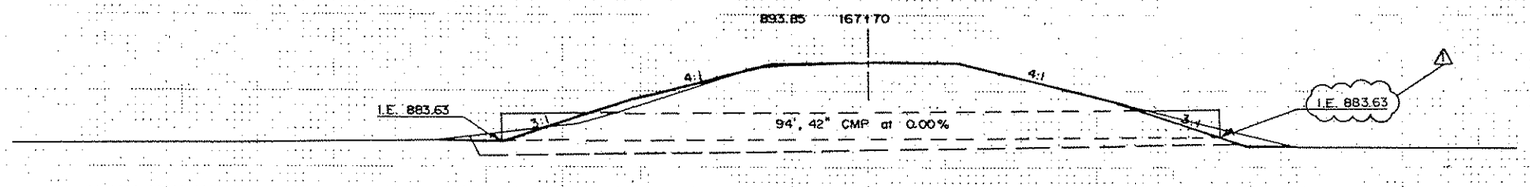


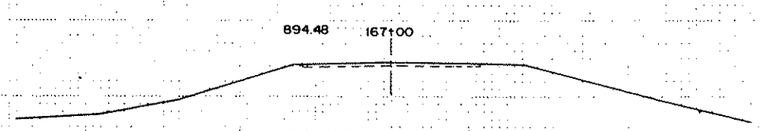


STA. 168+23 END CULVERT EXCAVATION

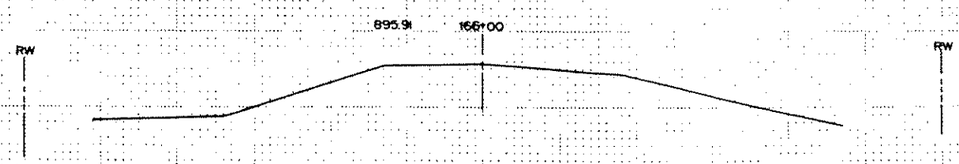


STA. 167+65
STA. 167+70
STA. 167+75 INPLACE 42" x 94' R.C. PIPE CULVERTS
REMOVE
E. & I. 42" x 94' C.M. PIPE CULVERTS





STA. 167+00 BEGIN BITUMINOUS REMOVAL
BEGIN CULVERT EXCAVATION



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
1	7/29/91	JHT		

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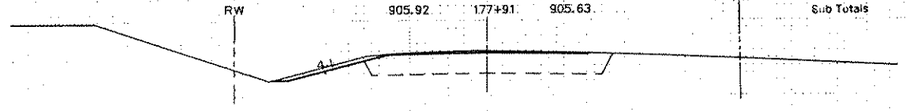
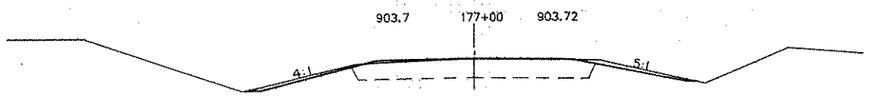
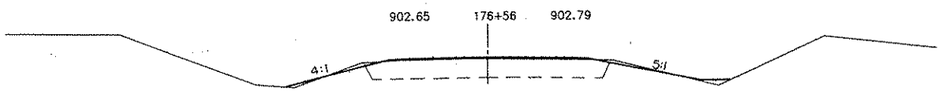
EXCAVATION EMBANKMENT



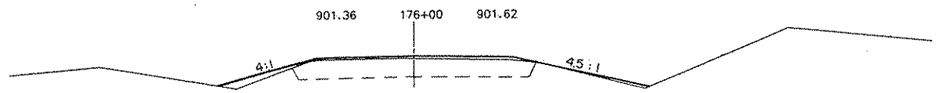
Sub Totals	Cu. Yds.	Cu. Yds.	Sub-Totals
	46	3	
SUBGRADE	251	251	GRANULAR



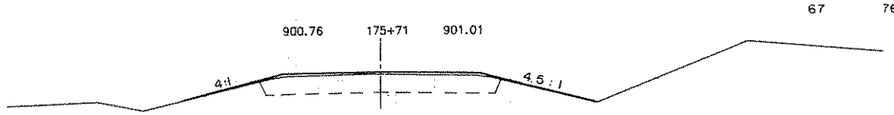
	15	7	
	121	123	



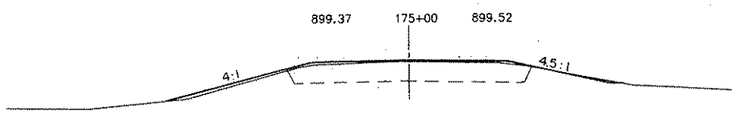
	5	9	
	143	151	



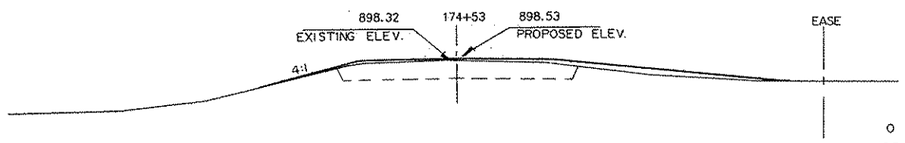
	0	2	
	67	76	



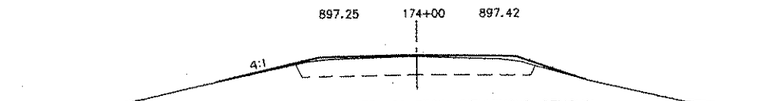
	3	7	
	166	181	



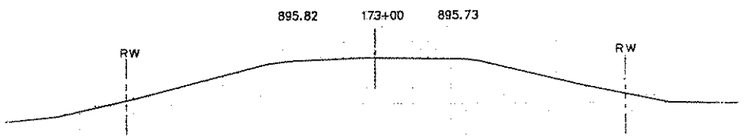
	2	18	
	111	124	

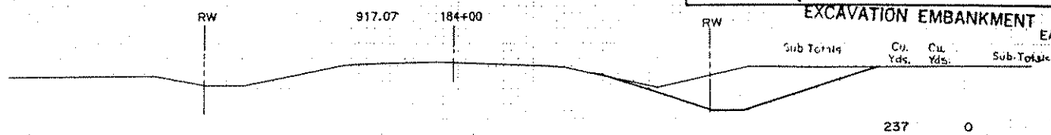


	0	16	
	126	143	

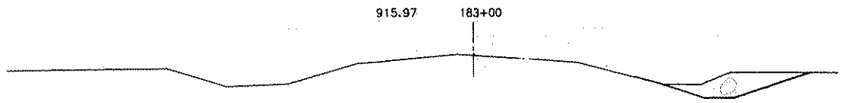


	0	0	
SUBGRADE	47	54	GRANULAR

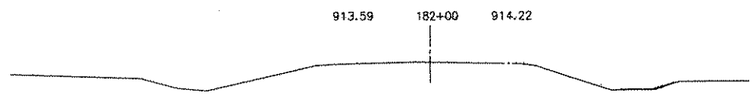




Sub Totals	Cu. Yds.	Cu. Yds.	Sub-Totals
	237	0	



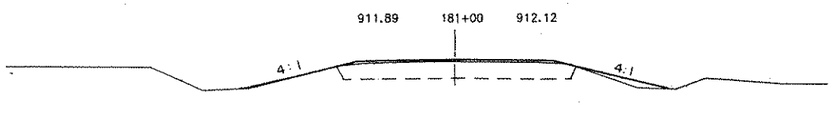
	63	0	



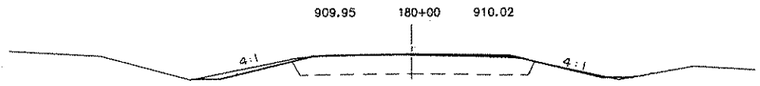
STA. 181 + 40 END BITUMINOUS REMOVAL

STA. 181 + 40 END SUBGRADE REMOVAL

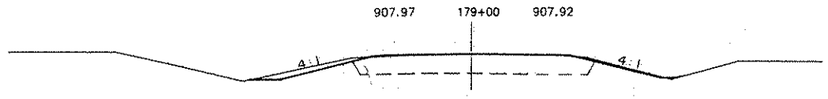
	1	4	
	50	54	



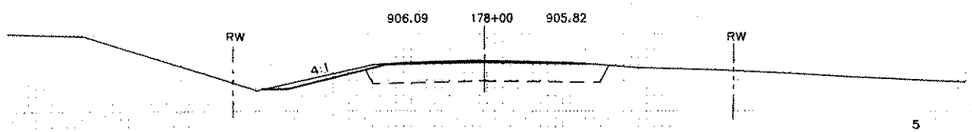
	20	13	
	265	276	



	41	4	
	281	281	



	50	0	
	281	281	



	5	0	
SUBGRADE	25	25	GRANULAR

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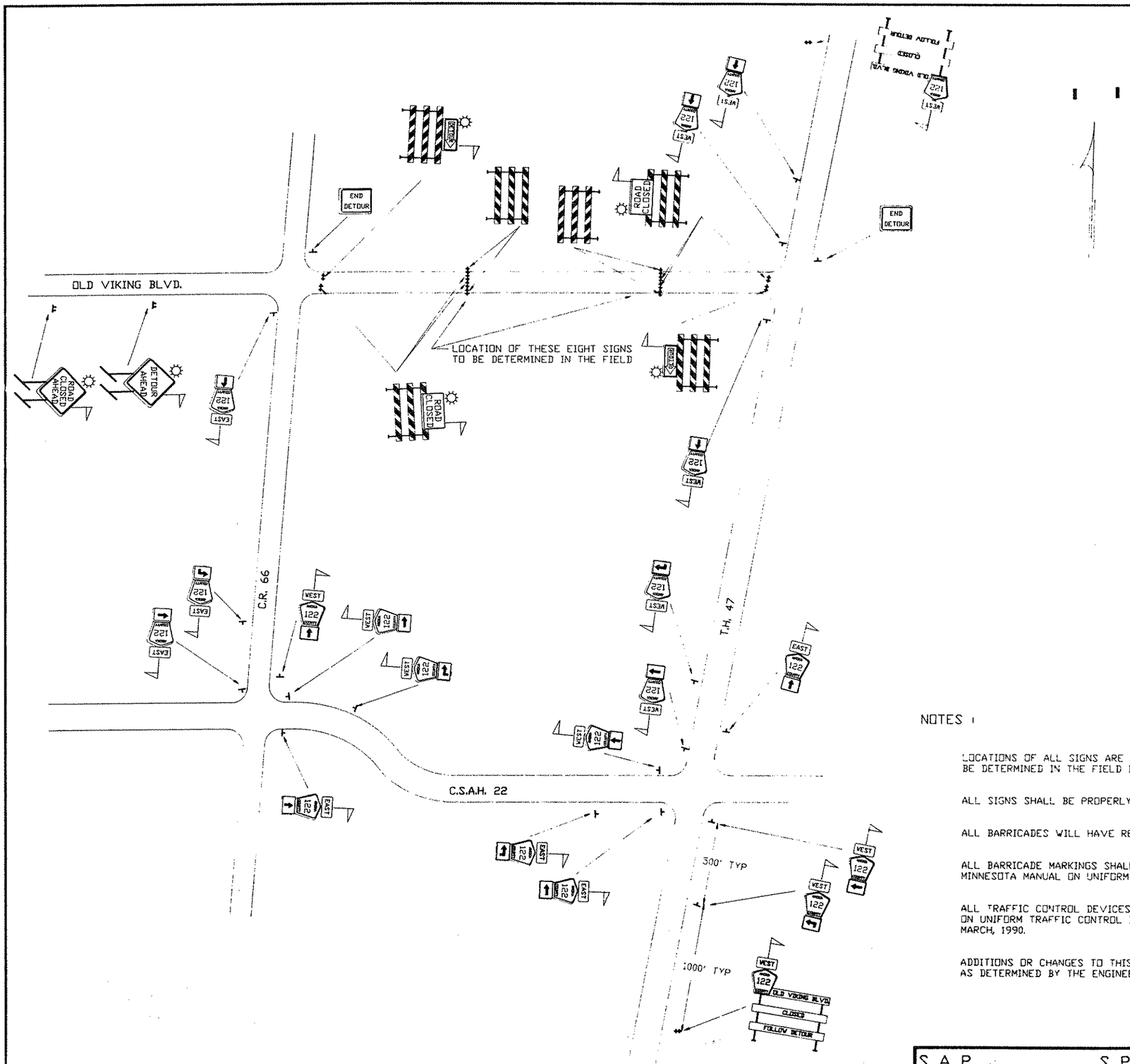
EXCAVATION EMBANKMENT

Sub-Totals	Cu. Yds.	Cu. Yds.	Sub-Totals
920.44 189+57 RW RW EASE			
	221	0	
920.55 189+22			
	145	6	
920.63 189+00 EXISTING ELEV.			
	644	0	
920.97 188+00 920.9			
	220	0	
920.87 187+65			
	415	0	
920.48 187+00			
	730	0	
919.8 186+00 RW RW			
	258	0	
919.54 185+70			
	524	0	
918.71 185+00			
	467	0	

EXCAVATION EMBANKMENT

Sub-Totals	Cu. Yds.	Cu. Yds.	Sub-Totals
STA. 193+53 END BITUMINOUS REMOVAL			
	8	0	
917.56 193+47 917.67 RW RW EASE			
	24	0	
917.59 193+32 917.8 PROFILE ELEV.			
	32	0	
917.94 193+00 918.08			
STA 192+93 END CULVERT EXCAV.			
STA. 192+50 ℄ CULVERT (NO CULV. INP.) F.&I. 24"x46' C.M. PIPE CULVERT F.&I. 2-24" C.M. PIPE APRONS	29	0	
918.31 192+57 918.45	CULVERT 180	181	GRANULAR
I.E. 913.80 I.E. 913.50			
STA. 192+07 BEGIN BITUMINOUS REMOVAL BEGIN CULVERT EXCAVATION	31	0	
918.77 192+00	CULVERT 179	181	GRANULAR
	50	0	
919.06 191+55			
	130	0	
919.44 191+00 RW RW			
	66	0	
919.81 190+55			
	271	0	
920.27 190+00			
	246	0	



NOTES :

LOCATIONS OF ALL SIGNS ARE APPOXIMATE, 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 122	1
M1-6	24 x 24		1
	21 x 15		1
			2
M3-2	24 x 15	WEST 122	1
M1-6	24 x 24		2
	21 x 15		1
			4
M3-2	24 x 15	WEST 122 OLD VIKING BLVD	1
M1-6	24 x 24		1
TYPE III	8 FT.	CLOSED FOLLOW DETOUR	2
R11-2	48 x 30	ROAD CLOSED	6
TYPE III	8 FT.		6
R11-2	48 x 30	DETOUR	
TYPE III	8 FT.		
R11-2	48 x 30	DETOUR	2
TYPE III	8 FT.		2
TYPE III	8 FT.		4

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