As Built

Index of Sheets

TOTAL SHEETS = 74

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

SMITH LAKE – NAMEKAGON RIVER ROAD

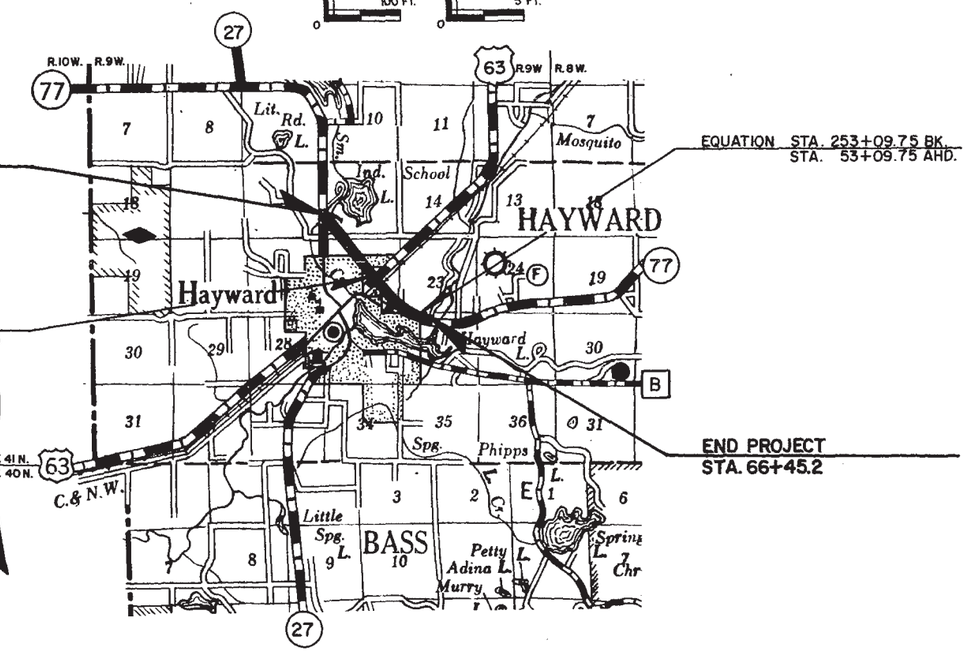
S.T.H. 27 & S.T.H. 77

SAWYER COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8520-1-71	–	–

STATE PROJECT NUMBER
8520-1-71

Scales: 10 FT. / 0 / 100 FT. PLAN & PROFILE; 5 FT. / 0 / 5 FT. CROSS-SECTIONS



Layout Scale 0 1/2 1 MI.

Total Net Length of Centerline = 2.171 Mi. RURAL

ALL COORDINATES SHOWN ON THIS PLAN ARE REFERRENCED TO THE WISCONSIN COORDINATE SYSTEM NORTH ZONE.

Design Designation

A.D.T. (1980)	= 1500
A.D.T. (1998)	= 2400
D.H.V.	= 360
D.	= 50%
T.	= 7%

Conventional Signs

County Line		Caution Symbol (Combustible fluids under pressure)	CAUTION
Township or Range Line		Railroads	
Section Line		Fence	(TYPE)
Corporate or City Limits		Culverts in Place	
Property line		Culverts Required	
Lot Line		Power Pole	
Existing Right of Way Line		Telephone or Telegraph Pole	
New Right of Way Line		Right of Way Markers	
Base or Survey Line		Marsh	
Slope Intercept		Wooded Area	
Existing Roadway or Private Entrance		Grade Elevation	

PLANS AND GRADES WITHIN THE CITY OF HAYWARD

APPROVED:

1/10/80 DATE — Donald Poppe MAYOR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Surveyor M.G.W. — District Checker
Designer J.L. — C O Checker RLS
District Supervisor G.L.M. — C O Coordinator

Approved:
Date 1-9-80 — Donald H. Forshee, District Transportation Director

Approved:
Date 3/31/80 — Chief Design Engineer

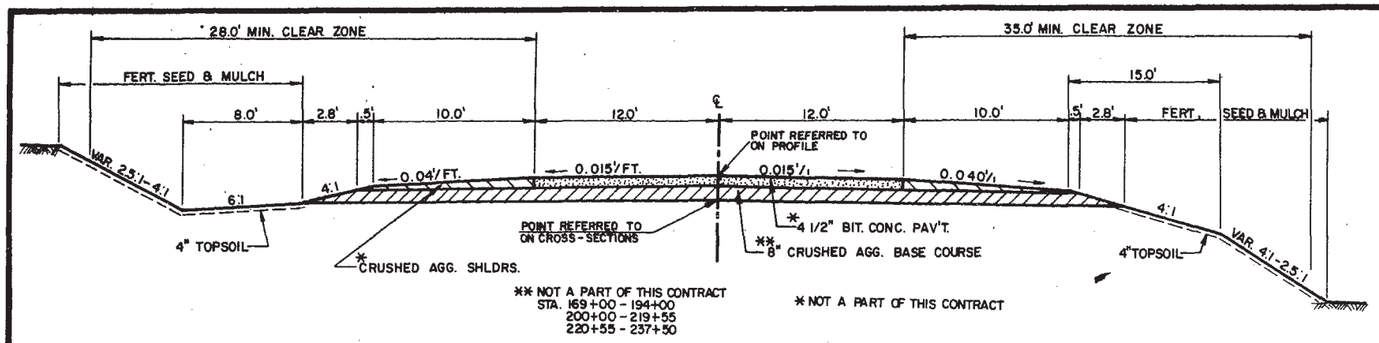
Approved:
Date 4/1/80 — E.J. Bykiek, Director of Development

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 5 WISCONSIN DIVISION

Approved:
Date _____ Division Administrator

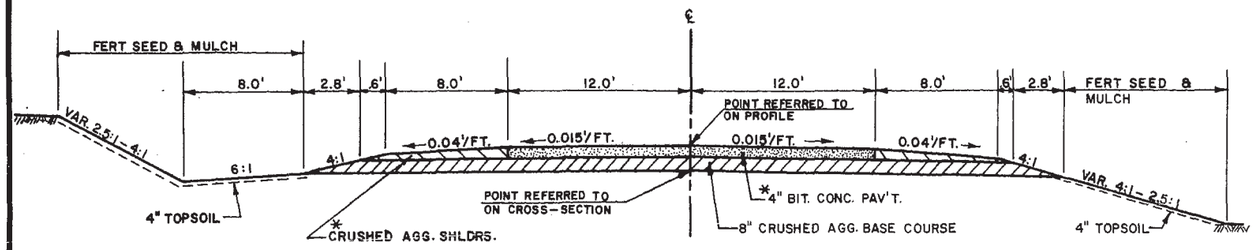
STATE PROJECT NUMBER	SHEET NO.
8520-1-71	2

TYPICAL SECTIONS & DETAILS



TYPICAL FINISHED SECTION

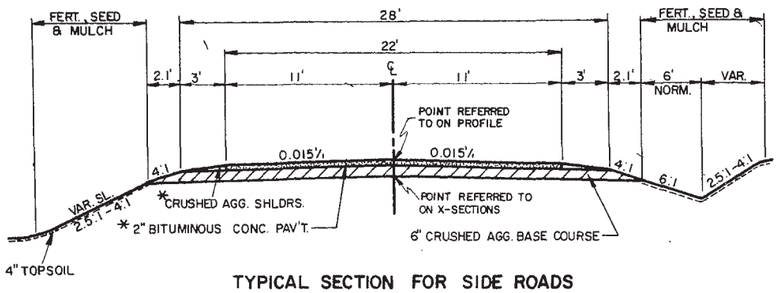
STA. 149+50 – 209+48.2
210+31.3 – 66+45.2



TYPICAL FINISHED SECTION FOR SIDE ROADS

STA. 168+00 RT.

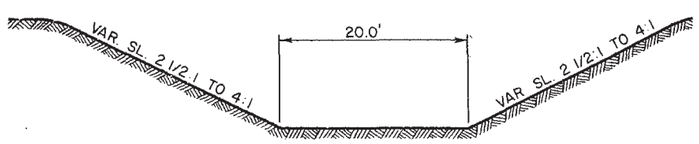
STA. 244+75 RT.



TYPICAL SECTION FOR SIDE ROADS

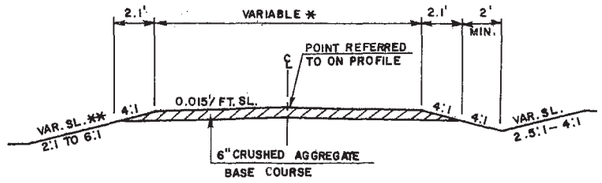
* NOT A PART OF THIS CONTRACT

STA. 168+00 LT. CR. AGG. ONLY
169+00 230' RT. CR. AGG. ONLY
186+00 RT.
186+05 97' RT.
186+00 LT. CR. AGG. ONLY
194+50 RT.
197+75 LT.
199+75 RT.
238+60 LT.
53+60 LT. CR. AGG. ONLY
63+85 LT.



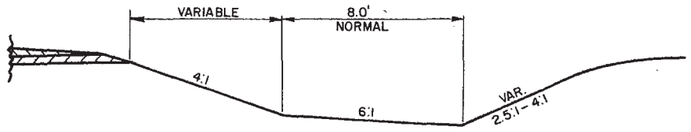
STA. 153+90

CHANNEL CHANGE DETAIL

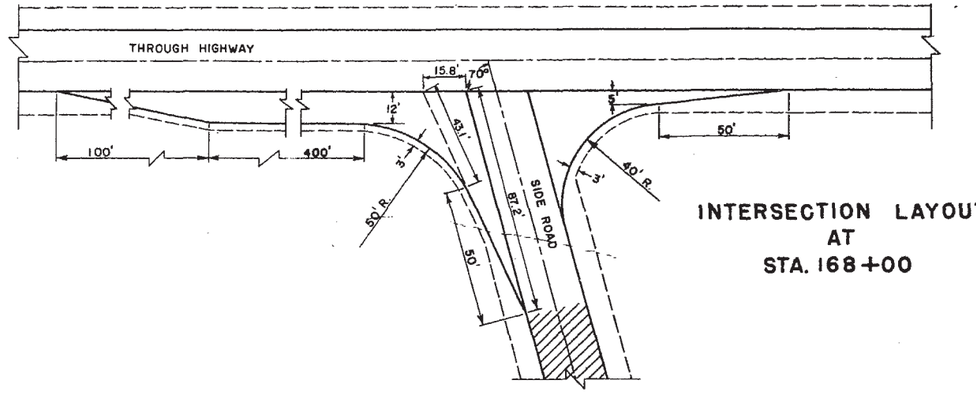


TYPICAL SECTION FOR COMMERCIAL OR PRIVATE ENTRANCES

* WIDTH OF PRIVATE ENTRANCES— 16' MIN., 24' MAX.
WIDTH OF COMMERCIAL ENTRANCES — 35' MAX.
PIPE LENGTHS FOR PRIVATE ENTRANCES BASED ON 16' TOP
PIPE LENGTHS FOR COMMERCIAL ENTRANCES BASED ON 30' TOP.
** USE 6:1 SLOPE WITHIN THE MAINLINE CLEAR ZONE.



DETAIL OF SPECIAL DITCH



INTERSECTION LAYOUT AT STA. 168+00

GENERAL NOTES

WHEN THE QUANTITY OF THE ITEM OF BASE COURSE IS MEASURED BY THE TON, THE DEPTH OR THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

ALL CLEARING AND GRUBBING FOR VISION TRIANGLES ARE INCLUDED IN MAINLINE QUANTITIES.

TOPSOIL SHALL BE PLACED ON SLOPES AT LOCATIONS SHOWN ON THE PLAN OR DESIGNATED BY THE ENGINEER TO AN APPROXIMATE THICKNESS OF 4" AT THE TIME OF PLACEMENT. TOPSOIL AND MULCH ALL SLOPES FROM SUBGRADE SHOULDER TO SLOPE INTERCEPT. SEED AND FERTILIZE ALL DISTURBED AREAS OTHER THAN THE ROADBED. TOPSOIL, FERTILIZE, SEED AND MULCH OLD ROAD OBLITERATION.

THE EXACT LOCATION FOR DRIVEWAYS AND LIMITS FOR NEW DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

SIDE ROAD AND P.E. CULVERT PIPE TO BE PLACED OUTSIDE THE CLEAR ZONE WHERE RIGHT OF WAY ALLOWS.

CUT AND FILL SLOPES SHALL BE ROUNDED 5 FEET BEYOND THE SLOPE INTERCEPT POINT.

BEARINGS SHOWN ON THE PLANS ARE GRID BEARINGS TO THE NEAREST SECOND.

ALL UTILITIES WILL BE MOVED BY THEIR OWNERS WHERE REQUIRED.
UTILITY OWNERS ARE:

LAKE SUPERIOR DISTRICT POWER CO.
MICHEAL B. POPKO SUPV. CIVIL ENGINEERING 715-682-4511
101 W. 2ND ST.
ASHLAND, WISC. 54806

GENERAL TELEPHONE CO.
ROBERT A. MATMILLER FIELD ENGINEER 715-234-5525
P.O. BOX 450
20 SOUTH WILSON
RICE LAKE, WISC. 54868

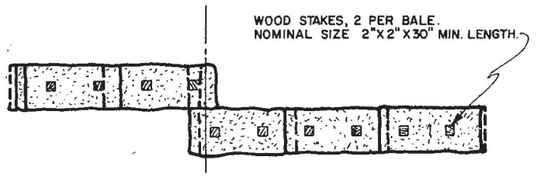
CITY OF HAYWARD
MILO E. KADLEC CITY ENGINEER. 715-634-4612
204 W. 3RD ST
HAYWARD, WISC. 54843

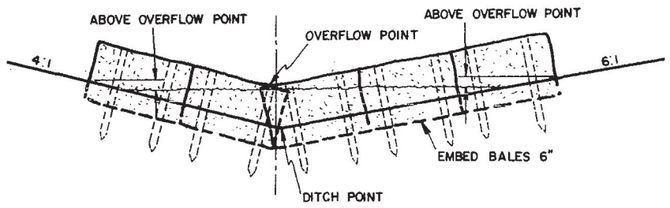
STANDARD DETAIL DRAWINGS

APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH.....8F1-8
LAYOUT DETAILS FOR AT-GRADE SIDE ROAD INTERSECTIONS.....9A1-3
CLASS A STEEL PLATE BEAM GUARD AND STEEL PLATE BEAM MEDIAN GUARD 1482-4a&b
CONSTRUCTION BARRICADES AND STANDARD SIGNS.....15C1-5
CLASS B STEEL PLATE BEAM GUARD.....1483-1
EROSION RAILS.....8E8-1

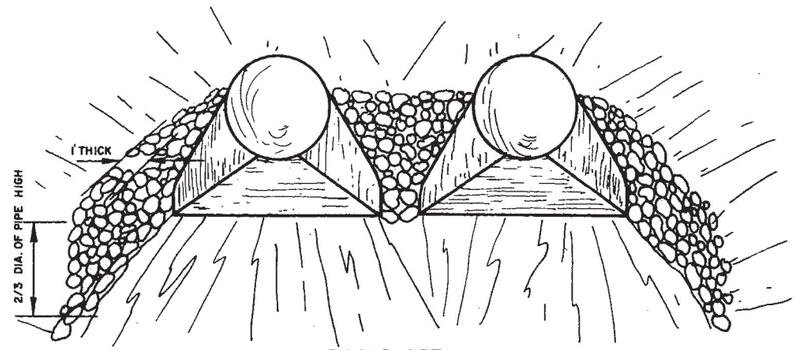
STATE PROJECT NUMBER	SHEET NO.
8520-I-71	2.1

SPECIAL DETAILS

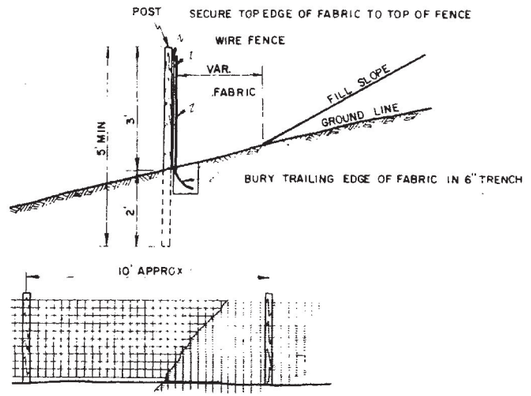




EROSION BALE DITCH CHECK



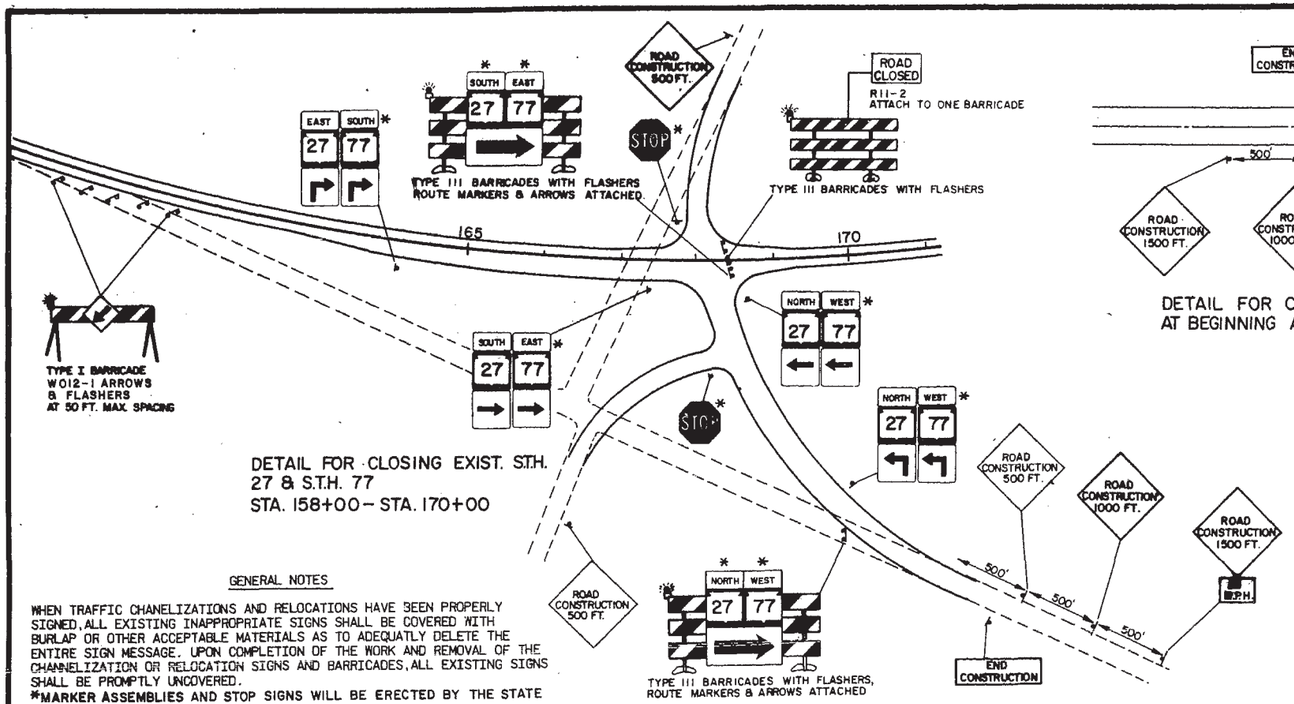
RIPRAP DETAIL
USE AT STA. 153+90
INLET & DISCHARGE



SILT FENCE

STATE PROJECT NUMBER	SHEET NO.
8520-1-71	2.2

TRAFFIC CONTROL PLAN



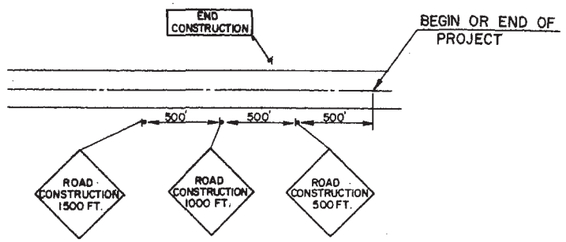
DETAIL FOR CLOSING EXIST. ST.H. 27 & S.T.H. 77
STA. 158+00 – STA. 170+00

GENERAL NOTES

WHEN TRAFFIC CHANELIZATIONS AND RELOCATIONS HAVE BEEN PROPERLY SIGNED, ALL EXISTING INAPPROPRIATE SIGNS SHALL BE COVERED WITH BURLAP OR OTHER ACCEPTABLE MATERIALS AS TO ADEQUATLY DELETE THE ENTIRE SIGN MESSAGE. UPON COMPLETION OF THE WORK AND REMOVAL OF THE CHANNELIZATION OR RELOCATION SIGNS AND BARRICADES, ALL EXISTING SIGNS SHALL BE PROMPTLY UNCOVERED.

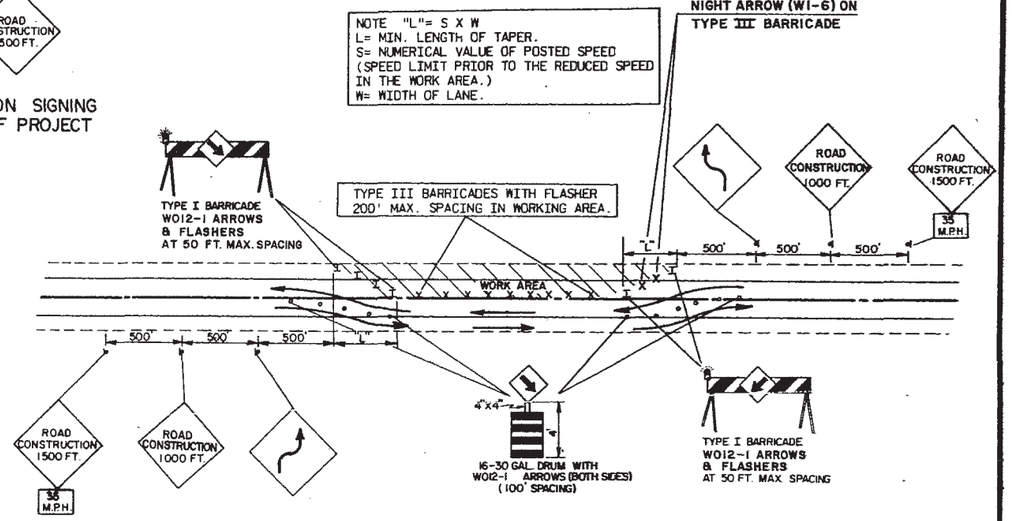
*MARKER ASSEMBLIES AND STOP SIGNS WILL BE ERECTED BY THE STATE

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

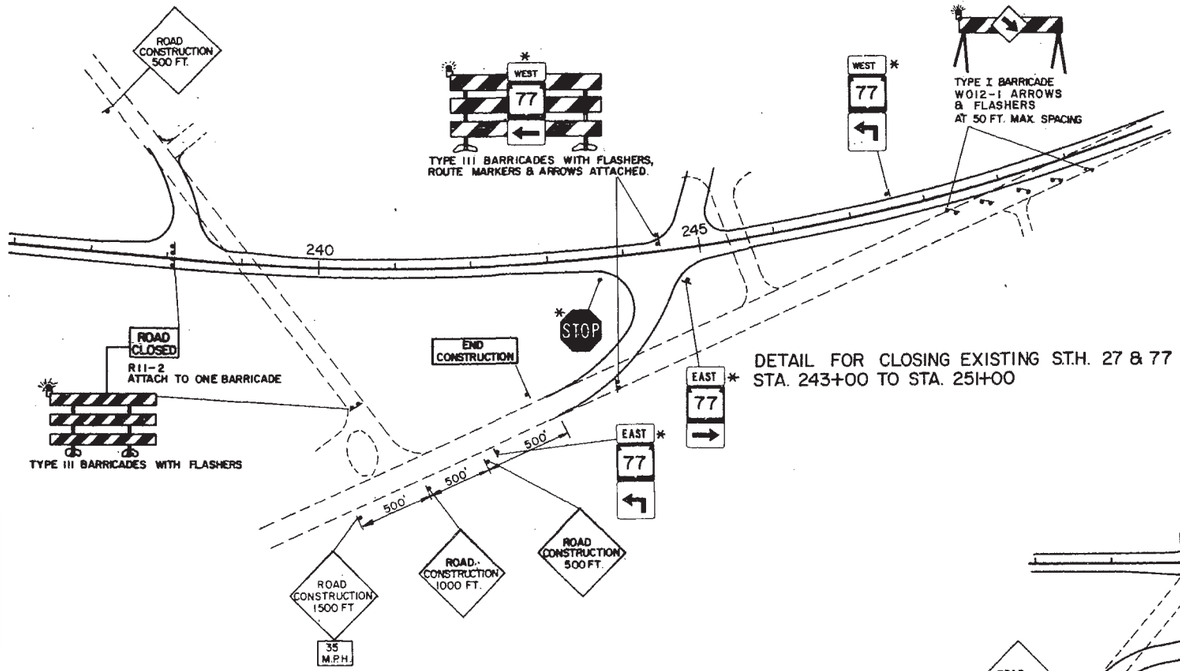


DETAIL FOR CONSTRUCTION SIGNING AT BEGINNING AND END OF PROJECT

NOTE "L"= S X W
L= MIN. LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED (SPEED LIMIT PRIOR TO THE REDUCED SPEED IN THE WORK AREA.)
W= WIDTH OF LANE.

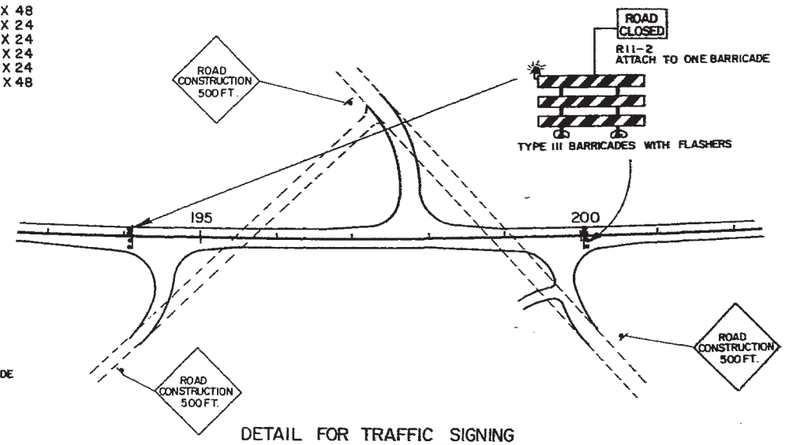


DETAIL FOR TRAFFIC SIGNING FOR PARTIAL CONSTRUCTION UNDER TRAFFIC

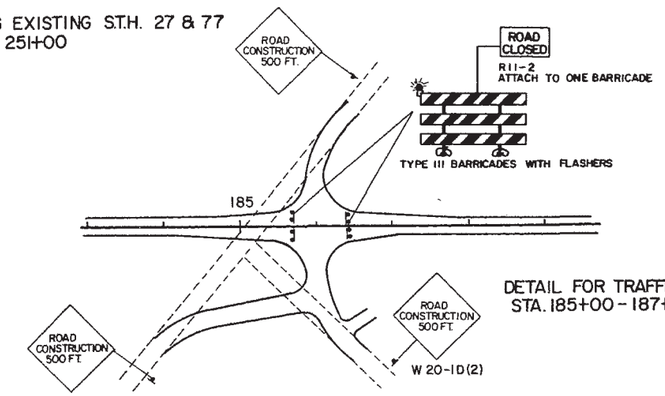


DETAIL FOR CLOSING EXISTING S.T.H. 27 & 77
STA. 243+00 TO STA. 251+00

STANDARD SIGN PLATES		SIZE(IN.)
ROAD CONST. 500 FT, 1000 FT, 1500 FT.	W20-1.3	48 X 48
BARRICADE ARROWS	W12-1.4	24 X 24
END CONSTRUCTION	G 20-2.3	60 X 24
ADVISORY SPEED	W13-1.6	24 X 24
NIGHT ARROW	W1-6.4	48 X 24
REVERSE CURVE	W1-4.5	48 X 48



DETAIL FOR TRAFFIC SIGNING
STA. 194+00 – 200+00



DETAIL FOR TRAFFIC SIGNING
STA. 185+00 – 187+00

ESTIMATE OF QUANTITIES

PROJECT ID: 8520- 1-71
SAWYER COUNTY
SMITH LAKE - NAMEKAGON RIVER ROAD
S.T.H. 27 & S.T.H. 77

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	8520-01-71 QUANTITY
20101	CLEARING	STA.	63.00	63.00
20104	GRUBBING	STA.	64.00	64.00
20411	REMOVING GUARDRAIL	L.F.	233.00	233.00
20417	REMOVING SEPTIC TANKS	EACH	1.00	1.00
20460	REMOVING BUILDING, STATION 197+00	L.S.	1.00	1.00
20503	UNCLASSIFIED EXCAVATION	C.Y.	45,475.00	45,475.00
21301	FINISHING ROADWAY	L.S.	1.00	1.00
21401	OBLITERATING OLD ROAD	STA.	18.00	18.00
30404	CRUSHED AGGREGATE BASE COURSE	TON	17,335.00	17,335.00
52003	CULVERT PIPE, CLASS III, 18-INCH	L.F.	414.00	414.00
52005	CULVERT PIPE, CLASS III, 24-INCH	L.F.	430.00	430.00
52061	APRON ENDWALLS FOR CULVERT PIPE, 18-INCH	EACH	26.00	26.00
52063	APRON ENDWALLS FOR CULVERT PIPE, 24-INCH	EACH	14.00	14.00
52136	CORRUGATED METAL PIPE ARCH, 21X15-INCH	L.F.	26.00	26.00
52138	CORRUGATED METAL PIPE ARCH, 28X20-INCH	L.F.	242.00	242.00
52162	METAL APRON ENDWALLS FOR PIPE ARCH, 21X15-INCH	EACH	2.00	2.00
52164	METAL APRON ENDWALLS FOR PIPE ARCH, 28X20-1NCH	EACH	8.00	8.00
52210	REINFORCED CONCRETE CULVERT PIPE, CLASS III, 42-INCH	L.F.	152.00	152.00
52268	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 42-INCH	EACH	4.00	4.00
60601	RIPRAP	C.Y.	6.00	6.00
61182	ADJUSTING MANHOLE COVERS	EACH	7.00	7.00
61406	ANCHORAGES FOR STEEL PLATE BEAM GUARD	EACH	2.00	2.00
61409	STEEL PLATE BEAM GUARD, CLASS B	L.F.	28.00	28.00
61416	SALVAGED GUARD FENCE, STEEL BEAM TYPE	L.F.	258.00	258.00

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	8520-01-71 QUANTITY
61801	MAINTENANCE AND REPAIR OF HAUL ROADS	L.S.	1.00	1.00
61910	MOBILIZATION	L.S.	1.00	1.00
62301	CALCIUM CHLORIDE SURFACE TREATMENT	TON	25.00	25.00
62501	TOPSOIL	S.Y.	15,405.00	15,405.00
62505	SALVAGED TOPSOIL	S.Y.	43,123.00	43,123.00
62702	MULCHING	S.Y.	58,528.00	58,528.00
62810	EROSION BALES	EACH	50.00	50.00
62901	FERTILIZER	CWT.	47.00	47.00
63002	SEEDING	LB.	1,334.00	1,334.00
63101	SODDING	S.Y.	450.00	450.00
64201	FIELD OFFICE, TYPE A	L.S.	1.00	1.00
64210	FIELD LABORATORY	L.S.	1.00	1.00
64301	TRAFFIC CONTROL	L.S.	1.00	1.00
90001	SILT FENCE	L.F.	380.00	380.00
90002	SITE CLEARANCE	L.S.	1.00	1.00

DETAIL SUMMARY OF MISCELLANEOUS QUANTITIES

STATE PROJECT NUMBER	SHEET NO.
8520-I-71	3A

CLEARING AND GRUBBING

SEC.	STATION TO STATION	CLEAR STA.	GRUBBING STA.
1	161+00 - 162+00		1
1	167+00 - 176+00	9	9
1	179+00 - 183+00	4	4
2	185+00 - 188+00	4	4
2	191+00 - 192+00	1	1
2	193+00 - 194+00	1	1
2	195+00 - 203+00	8	8
3	203+00 - 209+00	6	6
3	210+00 - 212+00	2	2
3	217+00 - 222+00	3	3
3	224+00 - 226+00	2	2
3	227+00 - 247+39.29	20	20
4	247+39.29 - 205+00	3	3
	TOTAL	63	64

MINOR SIDE ROAD AND PRIVATE ENTRANCE PIPES

SEC	STATION	LOCATION	DIA. IN.	LENGTH L.F.	TYPE	RCCP CLASS	THICKNESS IN. STEEL	THICKNESS IN. ALUM.	AEW
1	152+67	PE RT	18	26	CP	III	0.064	0.060	2
1	158+25	PE LT	18	26	CP	III	0.064	0.060	2
1	169+00	SR 230' RT	18	42	CP	III	0.064	0.060	2
1	174+00	PE LT	18	26	CP	III	0.064	0.060	2
1	174+00	PE RT	18	26	CP	III	0.064	0.060	2
2	186+00	SR RT	18	40	CP	III	0.064	0.060	2
2	186+00	SR LT	18	36	CP	III	0.064	0.060	2
2	194+50	SR RT	18	46	CP	III	0.064	0.060	2
3	199+70	PE 70' RT	18	26	CP	III	0.064	0.060	2
3	238+00	PE 140' LT	18	26	CP	III	0.064	0.060	2
3	238+60	SR LT	24	50	CP	III	0.064	0.075	2
3	244+75	CE LT	18	42	CP	III	0.064	0.060	2
3	244+75	SR RT	28 X 20	74	PA		0.064		2
5	54+80	PE RT	21 X 15	26	PA		0.064		2
5	59+70	PE RT	18	26	CP	III	0.064	0.060	2
5	62+90	PE RT	18	26	CP	III	0.064	0.060	2
5	63+85	SR LT	24	36	CP	III	0.064	0.075	2

EROSION CONTROL

SEC.	STATION TO STATION	TOPSOIL S.Y.	SALVAGE TOPSOIL S.Y.	MULCH S.Y.	FERT. CWT.	SEEDING LB
1	151+00 - 185+05 ML	1410	12,692	14,102	11.4	322
1	SIDEROADS	676	2,030	2,706	2.4	70
1	OLD ROAD OBLITERATION	4395		4,395	2.8	79
2	185+05 - 203+32.53 ML	694	6,245	6,939	5.6	161
2	SIDEROADS	554	1,662	2,216	2.1	60
2	OLD ROAD OBLITERATION	1088		1,088	0.7	20
3	203+32.53 - 209+48.2 ML	145	1,302	1,447	1.4	38
3	210+31.3 - 247+39.29 ML	1495	13,462	14,957	12.2	343
3	SIDEROADS	275	825	1,100	1.0	29
3	OLD ROAD OBLITERATION	3038		3,038	1.9	55
4	247+39.29 - 53+97.2	543	1,630	2,173	1.8	52
4	SIDEROADS	26	76	102	0.1	3
5	53+97.2 - 66+45.2	957	2,870	3,827	3.3	94
5	SIDEROADS	109	329	438	0.3	8
	PLAN TOTALS	15,405	43,123	58,528	47	1334

OBLITERATING OLD ROAD

SEC.	STATION TO STATION	STA.
1	161+00 - 165+00 RT	4.2
1	167+30 LT. & RT.	2.2
2	185+30 LT. & RT	1.0
2	195+00 RT	0.6
2	197+90 - 198+65 LT	1.1
3	238+80 - 239+40 LT	0.7
3	239+30 - 241+00 RT	2.7
3	244+00 - 248+70 RT	5.1
3	245+30 - 245+70 LT	0.4
	PLAN TOTAL	18.0

CRUSHED AGGREGATE BASE COURSE

SEC.	STATION TO STATION	LOCATION	TON
1	151+00 - 169+00	℄	4161
1	168+00	SR RT	1315
1	168+00	SR LT	279
1	169+00	SR 230' LT	257
1	P.E.'S UNDIST.		58
2	186+00	SR LT	245
2	186+00	SR RT	218
2	186+05	SR 97' RT	236
2	194+00 - 200+00	℄	1387
2	194+50	SR RT	214
2	197+75	SR LT	214
2	199+75	SR RT	170
2	P.E.'S UNDIST.		36
3	219+55 - 220+55	℄	231
3	237+50 - 247+39.29	℄	2371
3	238+60	SR LT	239
3	244+75	SR RT	667
3	P.E.'S UNDIST.		207
4	247+39.29 - 53+97.2	℄	1505
4	53+60	SR LT	70
4	P.E.'S UNDIST.		75
5	53+97.2 - 66+45.2	℄	2885
5	63+85	SR LT	212
5	P.E.'S UNDIST.		83
	PLAN TOTAL		17,335

CALCIUM CHORIDE SURFACE TREATMENT

SEC.	STATION TO STATION	TONS
1	151+00 - 169+00	6.6
1	SR 168+00	2.4
2	SR 186+00	1.3
2	194+00 - 200+00	2.2
2	SR 194+50 RT	0.3
2	SR 197+75 LT	0.5
2	SR 199+75 RT	0.3
3	SR 238+60 LT	0.5
3	SR 244+75 RT	0.6
3	238+00 - 247+39.29	3.4
4	247+39.29 - 53+97.2	2.4
5	53+97.2 - 66+45.2	4.5
	PLAN TOTAL	25.0

SODDING

SEC.	LOCATION	S.Y.
1	153+00 - 153+62 FLUME RT	40
2	187+00 - 188+00 FLUME RT	67
2	188+00 - 188+50 FLUME LT	33
3	339+50 - 241+00 FLUME RT	100
3	239+50 - 240+00 FLUME LT	33
3	240+55 - 241+00 FLUME LT	30
4	247+00 - 249+00 FLUME LT	133
5	57+00 CP DISCH LT	14
	PLAN TOTAL	450

REMOVING BUILDINGS

SEC. 2	STATION	LOCATION
	197+00	LT.

SALVAGE GUARD FENCE STEEL BEAM TYPE

SEC.	STATION TO STATION	L.F.	ANCHORS EACH
5	65+16 - 66+45 LT	129	1
5	65+16 - 66+45 RT	129	1
	PLAN TOTALS	258	2

RIPRAP

SEC.	STATION		C.Y.
1	153+63	LT.	3.0
1	154+15	RT	3.0
	PLAN TOTAL		6.0

REMOVING GUARDRAIL

SEC. 5	STA. TO STA.	LOCATION	L.F.
	65+16 - 66+45	RT	129
	65+41 - 66+45	LT	104

STEEL PLATE BEAM GUARD CLASS B

SEC.	STATION	L.F.
2	196+10 LT	28

REMOVING SEPTIC TANKS

SEC. 2	STATION	LOCATION	EACH
	196+80	30' LT	1

SILT FENCE

SEC.	STATION TO STATION	L.F.
3	216+85 - 216+75 LT.	30
4	247+90 - 248+20 LT.	30
5	56+40 - 58+00 LT.	160
5	65+75 - 66+25 LT.	70
5	65+45 - 66+25 RT.	90
	PLAN TOTALS	380

ADJUSTING MANHOLES

SEC.	STATION	LOCATION	EACH
1	166+55	180' RT	1
1	168+32	260' RT	1
1	170+68	395' RT	1
2	185+20	30' RT	1
2	186+28	135' RT	1
2	197+35	160' LT	1
2	198+20	68' LT	1
	PLAN TOTAL		7

CROSS DRAINS

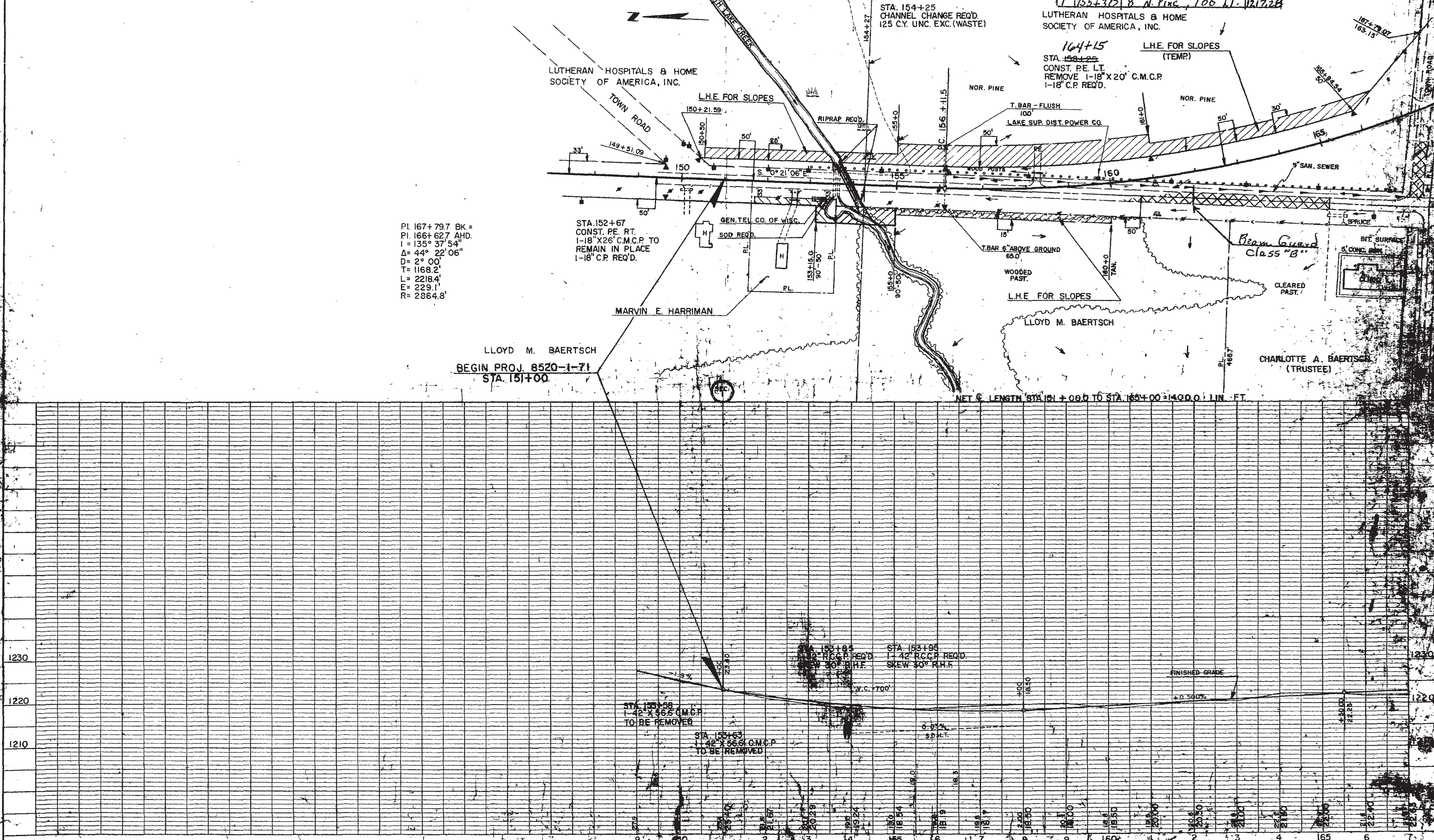
SEC.	STATION	LOCATION	DIA. IN.	LENGTH L.F.	TYPE	RCCP CLASS	IN. THICK STEEL	AEW
1	153+85	℄	42	76	RCCP	III		2
1	153+95	℄	42	76	RCCP	III		2
1	178+51	℄	24	58	CP	III	0.064	2
2	197+24	℄	24	56	CP	III	0.064	2
3	208+00	℄	28 X 20	56	PA		0.064	2
3	216+00	℄	28 X 20	54	PA		0.064	2
3	223+00	℄	28 X 20	58	PA		0.064	2
3	240+00	℄	24	92	CP	III	0.064	2
4	248+00	℄	24	64	CP	III	0.064	2
5	57+00	℄	24	74	CP	III	0.064	2

STATE PROJECT NUMBER	SHEET
8520-1-71	

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
1	~~157+20~~	~~18" J. PINE 100' RT.~~	~~1220.60~~
2	~~166+30~~	~~10" J. PINE 100' RT.~~	~~1223.48~~
1	155+31.0	8" N. Pine, 100' Lt.	1217.28

BEGINNING OF LEVELS
U.S.C. & G.S. P.B.M. HAYWARD LINE 1
BRASS CAPPED CONC. MONUMENT
LOCATED IN CITY OF HAYWARD PARK
ELEV. 1,198.134'



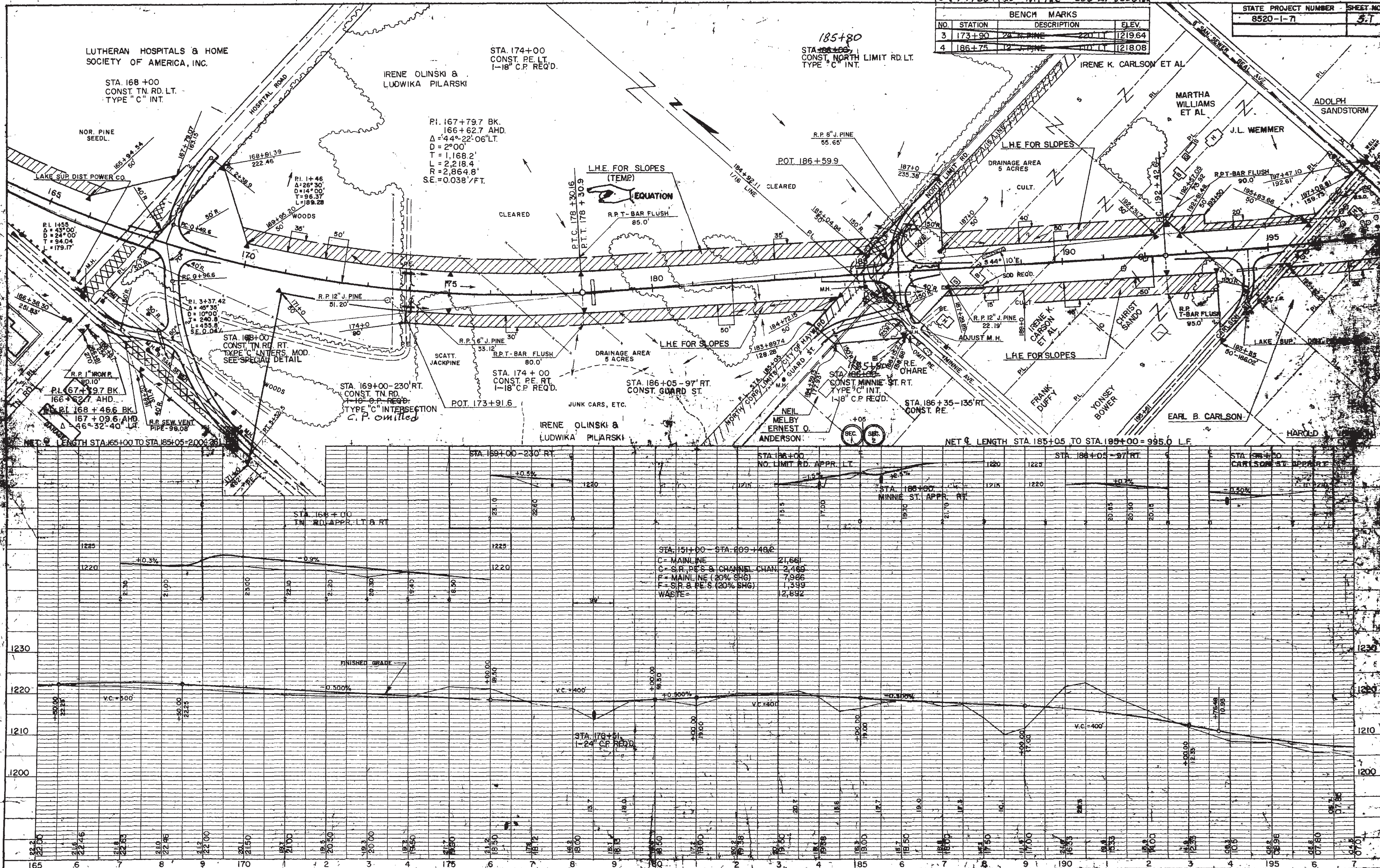
SMITH LAKE CREEK
STA. 154+25
CHANNEL CHANGE REQ'D.
125 C.Y. UNC. EXC. (WASTE)
LUTHERAN HOSPITALS & HOME SOCIETY OF AMERICA, INC.
164+15
STA. 158+25
CONST. P.E. LT.
REMOVE 1-18" X 20' C.M.C.P.
1-18" C.P. REQ'D.
L.H.E. FOR SLOPES (TEMP.)
TOWN ROAD
L.H.E. FOR SLOPES
150+21.59
149+51.09
RIPRAP REQ'D.
NOR. PINE
T. BAR - FLUSH 100'
LAKE SUP. DIST. POWER CO.
P.C. 156+41.5
S. 0° 21' 06" E
9" SAN. SEWER
STA. 152+67
CONST. P.E. RT.
1-18" X 26' C.M.C.P. TO REMAIN IN PLACE
1-18" C.P. REQ'D.
GEN. TEL. CO. OF WISC.
SOD REQ'D.
T. BAR 6" ABOVE GROUND 65.0
WOODED PAST.
Beam Guard Class "B"
CLEARED PAST.
SPRUCE
BIT. SURFACE
6' CONC. WALK
P.I. 167+79.7 BK. =
P.I. 166+62.7 AHD.
I = 135° 37' 54"
Δ = 44° 22' 06"
D = 2° 00'
T = 1168.2'
L = 2218.4'
E = 229.1'
R = 2864.8'
MARVIN E. HARRIMAN
L.H.E. FOR SLOPES
LLOYD M. BAERTSCH
CHARLOTTE A. BAERTSCH (TRUSTEE)
BEGIN PROJ. 8520-1-71
STA. 151+00
NET ℄ LENGTH STA. 151+00.0 TO STA. 165+00 = 1400.0 LIN. FT.
STA. 153+85
1-42" R.C.C.P. REQ'D.
SKEW 30° R.H.F.
STA. 153+95
1-42" R.C.C.P. REQ'D.
SKEW 30° R.H.F.
FINISHED GRADE
+0.500%
V.C. 700'
STA. 153+58
1-42" X 56.6' C.M.C.P.
TO BE REMOVED
STA. 153+63
1-42" X 56.6' C.M.C.P.
TO BE REMOVED
1230
1220
1210
150
155
160
165

2	169+0	Sewer Stand Pipe, 220' RT	1223.33
3	174+20.	20" N. Pine 200' LT	1220.11

STATE PROJECT NUMBER	SHEET NO.
8520-1-71	5.T

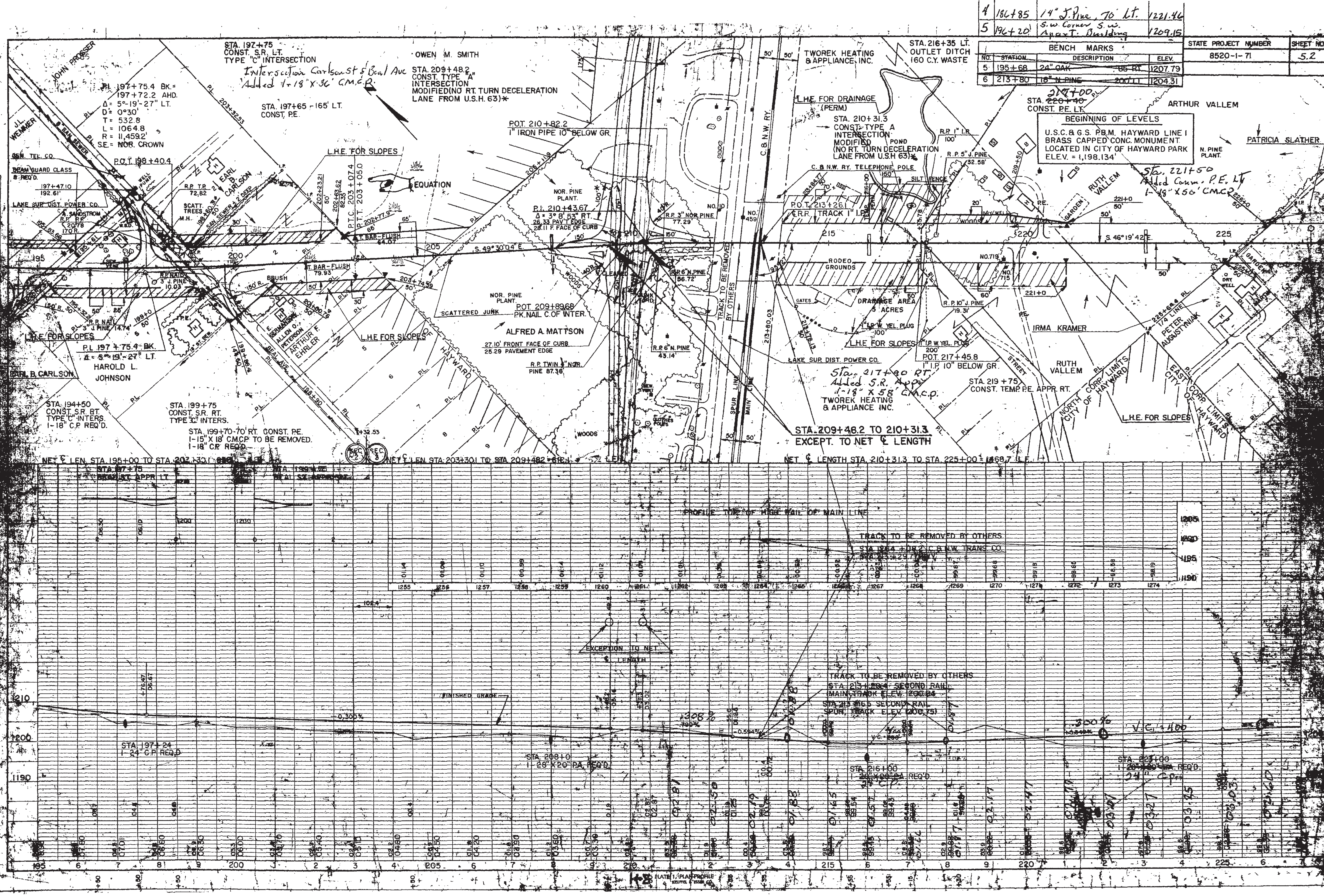
BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
3	173+90	24" N. PINE 220' LT	1219.64
4	186+75	12" J. PINE 110' LT	1218.08



LUTHERAN HOSPITALS & HOME SOCIETY OF AMERICA, INC.
STA. 168 +00 CONST. TN. RD. LT. TYPE "C" INT.
HOSPITAL ROAD
IRENE OLINSKI & LUDWIKA PILARSKI
STA. 174+00 CONST. P.E. LT. 1-18" C.P. REQ'D.
185+80
STA. 185+80 CONST. NORTH LIMIT RD. LT. TYPE "C" INT.
IRENE K. CARLSON ET AL
MARTHA WILLIAMS ET AL
ADOLPH SANDSTORM
J.L. WEMMER
P.I. 167+79.7 BK. 166+62.7 AHD. Δ = 44°-22'-06" LT. D = 2°00' T = 1,168.2' L = 2,218.4 R = 2,864.8' S.E. = 0.038'/FT.
L.H.E. FOR SLOPES (TEMP.)
EQUATION
P.T.C. 178 + 30.16
P.T.T. 178 + 30.9
R.P. T-BAR FLUSH 85.0'
CLEARED
WOODS
LAKE SUP. DIST. POWER CO.
NOR. PINE SEEDL.
P.I. 1+46 Δ = 25°30' D = 14°00' T = 96.37' L = 189.28
P.I. 1+58 Δ = 43°00' D = 24°00' T = 94.04 L = 179.17'
P.I. 3+37.42 Δ = 45°35' D = 10°00' T = 240.8 L = 455.8 S.E. 0.04'/'
STA. 168+00 CONST. TN. RD. RT. TYPE "C" INTERS. MOD. SEE SPECIAL DETAIL
R.P. 12" J. PINE 51.20'
R.P. 6" J. PINE 33.12'
R.P. T-BAR FLUSH 80.0'
SCATT. JACKPINE
DRAINAGE AREA 5 ACRES
STA. 174 + 00 CONST. P.E. RT. 1-18" C.P. REQ'D.
STA. 169+00-230' RT. CONST. TN. RD. 1-18" C.P. REQ'D. TYPE "C" INTERSECTION
C.P. omitted
P.O.T. 173+91.6
JUNK CARS, ETC.
IRENE OLINSKI & LUDWIKA PILARSKI
STA. 186+05 - 97' RT. CONST. GUARD ST.
L.H.E. FOR SLOPES
R.P. 8" J. PINE 55.65'
P.O.T. 186+59.9
1/16 LINE
NORTH LIMIT RD.
DRAINAGE AREA 5 ACRES
CULT.
L.H.E. FOR SLOPES
SOD REQ'D.
R.P. 12" J. PINE 22.19'
ADJUST M.H.
IRENE K. CARSON ET AL
CHRIST SANDO
R.P. T-BAR FLUSH 95.0'
R.P. T-BAR FLUSH 90.0'
LAKE SUP. DIST. POWER CO.
MINNIE AVE.
FRANK DUFFY
YONSEY BOWER
EARL B. CARLSON
HAROLD
STA. 186+05 CONST. MINNIE ST. RT. TYPE "C" INT. 1-18" C.P. REQ'D.
STA. 186+35-135' RT. CONST. P.E.
NORTH CORP. LIMITS CITY OF HAYWARD
GUARD ST.
NEIL MELBY
ERNEST O. ANDERSON
O'HARE
P.I. 167+79.7 BK. 166+62.7 AHD.
P.I. 168 + 46.6 BK. 167 + 09.6 AHD. Δ = 46°-32'-40" LT.
R.P. 1" IRON P. 80.10'
R.P. SEW. VENT PIPE 98.08'
TN. RD.
NET ℄ LENGTH STA. 165+00 TO STA. 185+05 = 2005.35 L.F.
NET ℄ LENGTH STA. 185+05 TO STA. 195+00 = 995.0 L.F.
STA. 169+00 - 230' RT.
STA. 186+00 NO. LIMIT RD. APPR. LT.
STA. 186+00 MINNIE ST. APPR. RT.
STA. 186+05 - 97' RT.
STA. 196+50 CARLSON ST. APPR.
STA. 168 + 00 TN. RD. APPR. LT & RT.
STA. 151+00 - STA. 209+40.2
C = MAINLINE 21,661
C = S.R., P.E.'S & CHANNEL CHAN. 2,469
F = MAINLINE (20% SHG) 7,966
F = S.R. & P.E.S. (20% SHG) 1,399
WASTE = 12,692
FINISHED GRADE
-0.500%
+0.500%
V.C. = 500
V.C. = 400
STA. 178+51 1-24" C.P. REQ'D.
165 6 7 8 9 170 1 2 3 4 175 6 7 8 9 180 1 2 3 4 185 6 7 8 9 190 1 2 3 4 195 6 7
1230 1220 1210 1200

PLATE 1. PLAN-PROFILE KEUFFEL & ESSER CO.

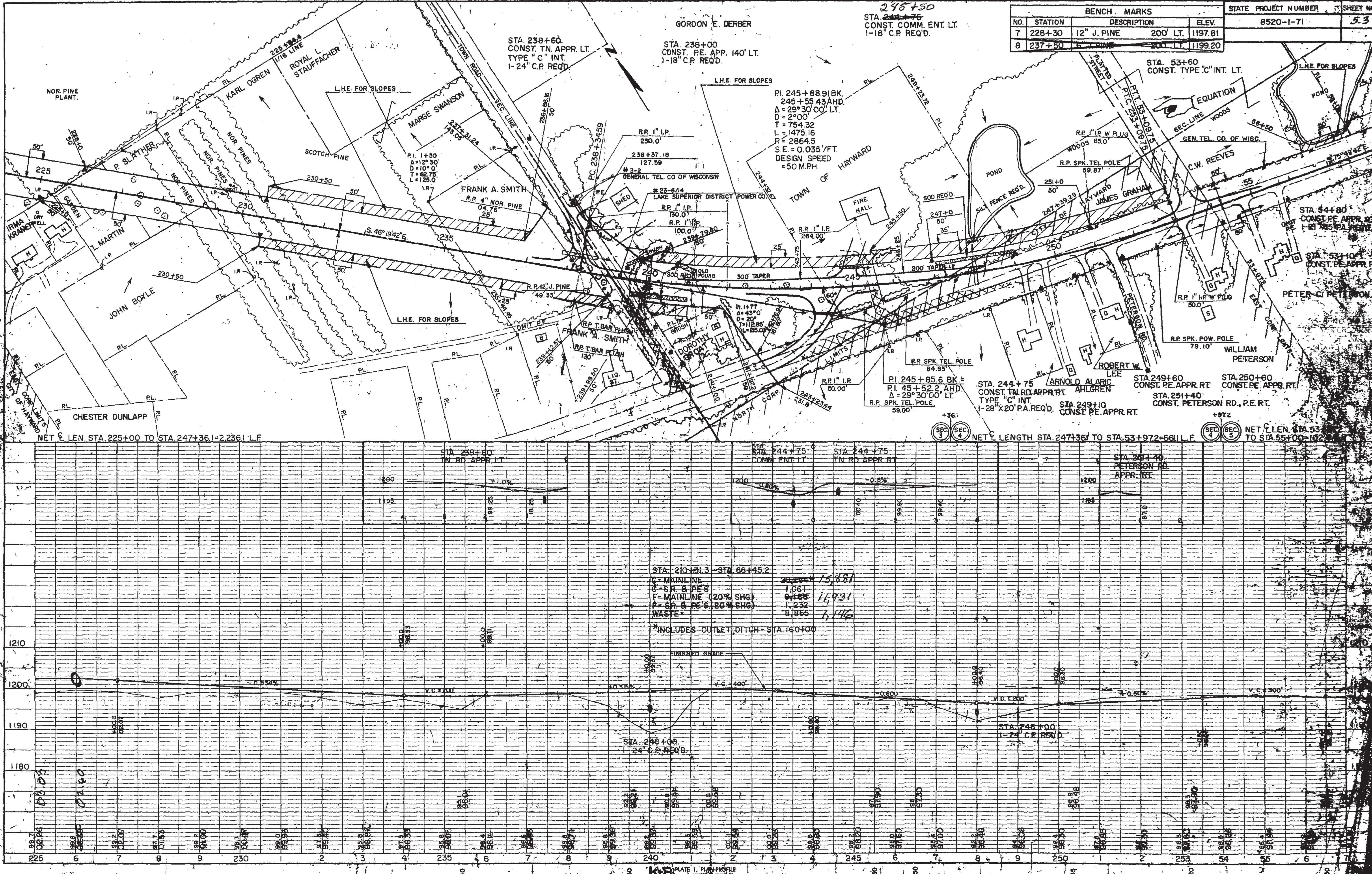


4 186+85 14" J. Pine, 70' Lt. 1221.46
5 196+20 S.W. Corner S.W. Apart. Building 1209.15
BENCH MARKS
NO. STATION DESCRIPTION ELEV.
5 195+68 24" OAK 65' RT. 1207.79
6 213+80 16" N. PINE 200' LT. 1204.31
STATE PROJECT NUMBER 8520-1-71
SHEET NO. 5.2
STA. 197+75
CONST. S.R. LT.
TYPE "C" INTERSECTION
Intersection Carlson St & Beal Ave
Added 1-18" X 36' CMCP
OWEN M. SMITH
STA. 209+48.2
CONST. TYPE "A"
INTERSECTION
MODIFIED (NO RT. TURN DECELERATION LANE FROM U.S.H. 63)*
STA. 197+65 -165' LT.
CONST. P.E.
P.I. 197+75.4 BK. = 197+72.2 AHD.
Δ = 5°-19'-27" LT.
D = 0°30'
T = 532.8
L = 1064.8
R = 11,459.2'
S.E. = NOR. CROWN
JOHN PROSSER
J.L. WEMMER
P.O.T. 198+40.4
EARL B. CARLSON
P.O.T. 210+82.2
1" IRON PIPE 10" BELOW GR.
L.H.E. FOR SLOPES
EQUATION
TWOREK HEATING & APPLIANCE, INC.
STA. 216+35 LT.
OUTLET DITCH
160 C.Y. WASTE
L.H.E. FOR DRAINAGE (PERM)
STA. 210+31.3
CONST. TYPE A
INTERSECTION
MODIFIED
(NO RT. TURN DECELERATION LANE FROM U.S.H 63)*
POND
C. & N.W. RY.
C. & N.W. RY. TELEPHONE POLE
SILT FENCE
STA. 217+00
CONST. P.E. LT.
ARTHUR VALLEM
BEGINNING OF LEVELS
U.S.C.& G.S. P.B.M. HAYWARD LINE I
BRASS CAPPED CONC. MONUMENT
LOCATED IN CITY OF HAYWARD PARK
ELEV. = 1,198.134'
PATRICIA SLATHER
N. PINE PLANT.
Sta. 221+50
Added Conn. P.E. Lt.
1-18" X 50' CMCP
RUTH VALLEM
GARDEN
NOR. PINE PLANT.
P.I. 210+43.67
Δ = 3° 8' 53" RT.
26.33 PAV'T EDGE
28.11 F. FACE OF CURB
R.P. 3" NOR. PINE 77.29'
P.O.T. 213+26.1
R.R. TRACK 1" I.P.
S. 49°30'04" E.
S 46°19'42" E.
RODEO GROUNDS
DRAINAGE AREA 5 ACRES
TRACK TO BE REMOVED BY OTHERS
SPUR LINE
MAIN LINE
GEN. TEL. CO.
BEAM GUARD CLASS B REQ'D.
LAKE SUP. DIST. POWER CO.
SAN. SEWER
SCATT. TREES
T. BAR - FLUSH 64.07
T. BAR - FLUSH 79.93
BRUSH
SCATTERED JUNK
NOR. PINE PLANT.
P.O.T. 209+89.68
P.K. NAIL C. OF INTER.
ALFRED A. MATTSON
27.10' FRONT FACE OF CURB
25.29 PAVEMENT EDGE
R.P. TWIN 4" NOR. PINE 87.36'
R.P. 6" N. PINE 43.14'
WOODS
L.H.E. FOR SLOPES
ALLEN O. PETERSON
ARTHUR F. EHRLER
P.I. 197+75.4 BK.
Δ = 5°-19'-27" LT.
HAROLD L. JOHNSON
EARL B. CARLSON
BEAL AVE.
OF HAYWARD
STA. 194+50
CONST. S.R. RT.
TYPE "C" INTERS.
1-18" C.P. REQ'D.
STA. 199+75
CONST. S.R. RT.
TYPE "C" INTERS.
STA. 199+70-70' RT. CONST. P.E.
1-15" X 18' C.M.C.P. TO BE REMOVED.
1-18" C.P. REQ'D.
LAKE SUP. DIST. POWER CO.
Sta. 217+90 RT.
Added S.R. App.
1-18" X 58' CMCP
TWOREK HEATING & APPLIANCE INC.
P.O.T. 217+45.8
1" I.P. 10" BELOW GR.
STA. 219+75
CONST. TEMP. P.E. APPR. RT.
IRMA KRAMER
RUTH VALLEM
PETER AUGUSTINIAK
STREET
NORTH CORP. LIMITS CITY OF HAYWARD
EAST CORP. LIMITS CITY OF HAYWARD
L.H.E. FOR SLOPES
STA. 209+48.2 TO 210+31.3
EXCEPT. TO NET ℄ LENGTH
NET ℄ LEN. STA. 195+00 TO STA. 203+30.1
NET ℄ LEN. STA. 203+30.1 TO STA. 209+48.2
NET ℄ LENGTH STA. 210+31.3 TO STA. 225+00 = 1468.7 L.F.
PROFILE TOP OF HIGH RAIL OF MAIN LINE
TRACK TO BE REMOVED BY OTHERS
STA. 1264+08.2 C. & N.W. TRANS. CO.
EXCEPTION TO NET ℄ LENGTH
TRACK TO BE REMOVED BY OTHERS
STA. 213+86.4 SECOND RAIL
MAIN TRACK ELEV. 200.84
STA. 213+86.5 SECOND RAIL
SPUR TRACK ELEV. 200.75
FINISHED GRADE
-0.300%
+.308%
-0.594%
.300%
V.C. = 400'
STA. 197+24
1-24" C.P. REQ'D
STA. 208+0
1-28" X 20" P.A. REQ'D.
STA. 216+00
24" C.P.
STA. 223+00
24" C.P.
1210
1200
1190
1205
1200
1195
1190
195
200
205
210
215
220
225
PLATE 1. PLAN-PROFILE
KEUFFEL & ESSER CO.

				7	212+0	14" N. Pine, 115' Rt.	1203.37
6	204+0	9" Poplar, 60' Rt.	1202.65	8	219+35	14" N. Pine, 106' Rt.	1204.06

BENCH MARKS				
NO.	STATION	DESCRIPTION		ELEV.
7	228+30	12" J. PINE	200' LT.	1197.81
8	237+50	~~6" J. PINE~~	~~200' LT.~~	1199.20

STATE PROJECT NUMBER	SHEET NO.
8520-1-71	5.3

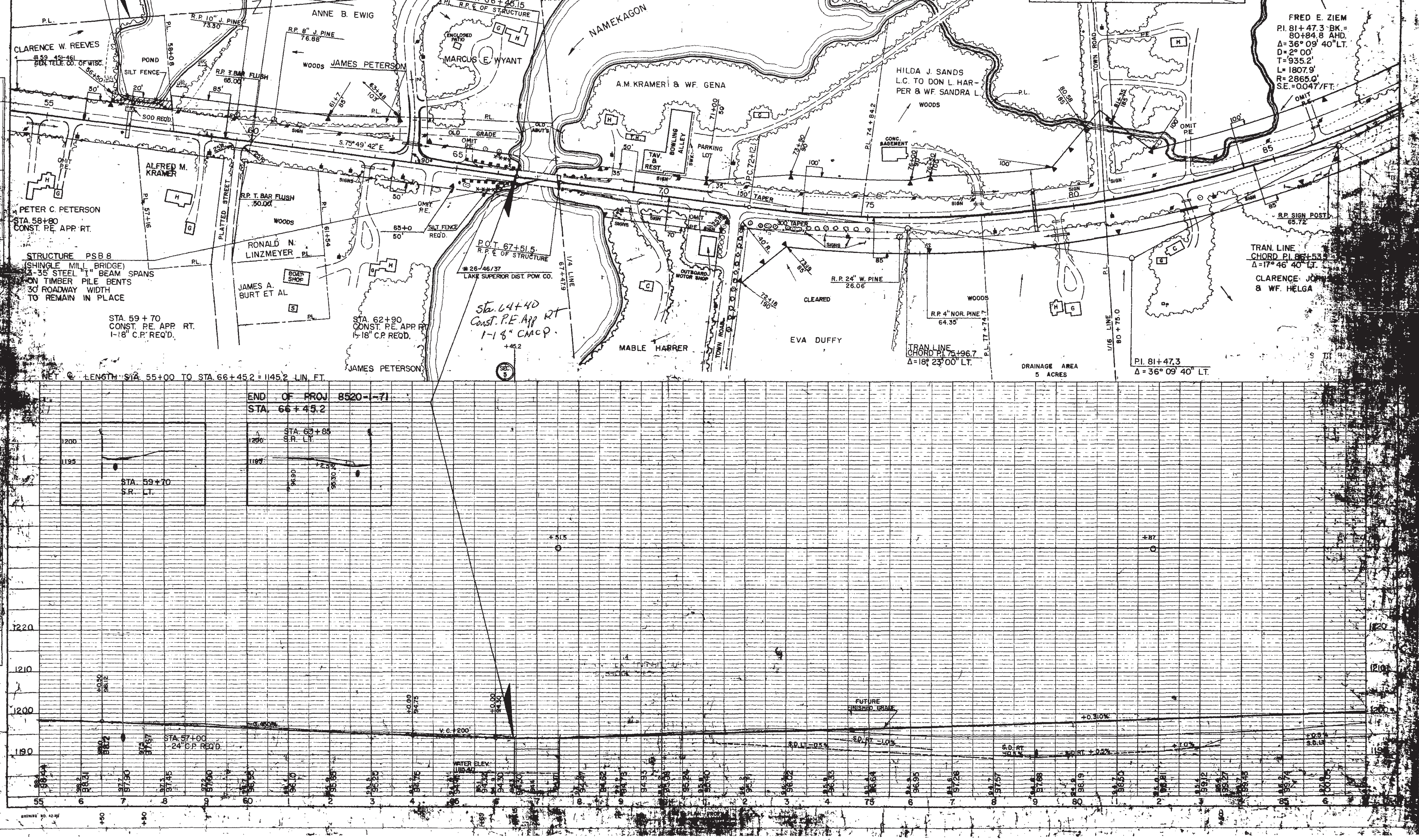


STA. 238+60 CONST. TN. APPR. LT. TYPE "C" INT. 1-24" C.P. REQ'D.
STA. 238+00 CONST. P.E. APP. 140' LT. 1-18" C.P. REQ'D.
GORDON E. DERBER
STA. 245+50 CONST. COMM. ENT. LT. 1-18" C.P. REQ'D.
STA. 53+60 CONST. TYPE "C" INT. LT.
P.I. 245+88.91 BK. 245+55.43 AHD. Δ = 29°30'00" LT. D = 2°00' T = 754.32 L = 1475.16 R = 2864.5 S.E. = 0.035'/FT. DESIGN SPEED = 50 M.P.H.
TOWN OF HAYWARD
EQUATION
P.T. 53+09.75 P.T.C. 253+09.75
KARL OGREN
ROYAL L. STAUFFACHER
MARGE SWANSON
FRANK A. SMITH
P. SLATHER
IRMA KRANER
L. MARTIN
JOHN BOYLE
CHESTER DUNLAPP
DOROTHY GROAT
JAMES GRAHAM
C.W. REEVES
ROBERT W. LEE
ARNOLD ALARIC AHLGREN
WILLIAM PETERSON
PETER C. PETERSON
FIRE HALL
POND
NOR. PINE PLANT.
L.H.E. FOR SLOPES
P.I. 245+85.6 BK. P.I. 45+52.2 AHD. Δ = 29°30'00" LT.
STA. 244+75 CONST. TN. RD. APPR. RT. TYPE "C" INT. 1-28"X20" P.A. REQ'D.
STA. 249+10 CONST. P.E. APPR. RT.
STA. 249+60 CONST. P.E. APPR. RT.
STA. 250+60 CONST. P.E. APPR. RT.
STA. 251+40 CONST. PETERSON RD., P.E. RT.
STA. 54+80 CONST. P.E. APPR. RT.
NET ℄ LEN. STA. 225+00 TO STA. 247+36.1 = 2,236.1 L.F.
NET ℄ LENGTH STA. 247+36.1 TO STA. 53+97.2 = 661 L.F.
STA. 238+60 TN. RD. APPR. LT.
STA. 244+75 COMM. ENT. LT.
STA. 244+75 TN. RD. APPR. RT.
STA. 251+40 PETERSON RD. APPR. RT.
STA. 210+31.3 - STA. 66+45.2
C = MAINLINE 15,881
C = S.R. & P.E.'S 1,061
F = MAINLINE (20% SHG) 11,931
F = S.R. & P.E.'S (20% SHG) 1,232
WASTE* 6,146
*INCLUDES OUTLET DITCH - STA. 160+00
FINISHED GRADE
-0.534%
V.C. = 200'
+0.315%
V.C. = 400'
-0.600
V.C. = 200'
+0.50%
V.C. = 300'
STA. 240+00 1-24" C.P. REQ'D.
STA. 246+00 1-24" C.P. REQ'D.

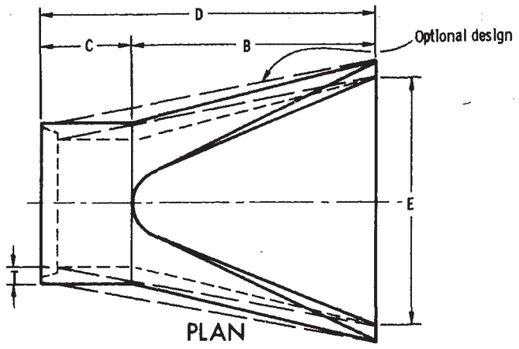
9	228+75	10" N. Pine, 70' Lt.	1198.95	11	245+50	Fire station office S.E. Cor. of S.W.	1199.99
10	238+90	12" J. Pine, 95' Lt.	1199.09	12	57+0	8" Twin Birch, 50' RT	1194.20

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
~~1~~	~~31 + 10~~	~~12" NOR. PINE 80' RT.~~	~~1198.38~~
2	67 + 50	S.E. COR. SO. CURB 15' RT.	1195.15
3	78 + 95	24" NOR. PINE 100' RT.	1191.99

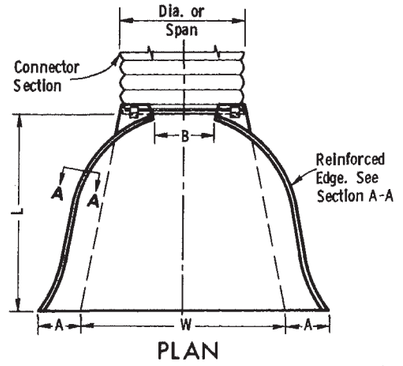
STATE PROJECT NUMBER	SHEET NO.
8520-1-71	5.4



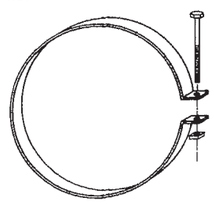
STA. 63 + 85
CONST. TN. RD. APP. LT.
TYPE "C" INT.
1-24" C.P. REQ'D.
1-28x20 x 50'
WM. J. HINRICHS
STA. 64+00
CONST. P.E. APP. 140' LT.
L.H.E. FOR SLOPES
P.O.T. 60+00.0
ANNE B. EWIG
P.O.T. 66+46.15
R.P. ℄ OF STRUCTURE
M.E. WYANT
NAMEKAGON RIVER
SEC. LINE
TOWN ROAD
CLARENCE W. REEVES
POND
SILT FENCE
R.P. 10" J. PINE 73.30
R.P. 8" J. PINE 76.88
JAMES PETERSON
MARCUS E. WYANT
ENCLOSED PATIO
WOODS
R.P. T BAR FLUSH 66.00
A.M. KRAMER & WF. GENA
HILDA J. SANDS
L.C. TO DON L. HARPER & WF. SANDRA L.
FRED E. ZIEM
P.I. 81+47.3 BK. = 80+84.8 AHD.
Δ= 36° 09' 40" LT.
D= 2° 00'
T= 935.2'
L= 1807.9'
R= 2865.0'
S.E.= 0.047'/FT.
SOD REQ'D.
OLD GRADE
OMIT P.E.
S.75° 49' 42" E.
BOWLING ALLEY
TAV. & REST.
PARKING LOT
CONC. BASEMENT
P.C. 72+12.1
150' TAPER
ALFRED M. KRAMER
PETER C. PETERSON
STA. 58+80
CONST. P.E. APP. RT.
PLATTED STREET
R.P. T BAR FLUSH 50.00
RONALD N. LINZMEYER
SILT FENCE REQ'D.
P.O.T. 67+51.5
R.P. ℄ OF STRUCTURE
#26-46/37
LAKE SUPERIOR DIST. POW. CO.
1/4 LINE 67+47.9
OUTBOARD MOTOR SHOP
300 TAPER
SIGNS
CLEARED
R.P. 24" W. PINE 26.06
R.P. 4" NOR. PINE 64.35
R.P. SIGN POST 65.72
TRAN. LINE
CHORD P.I. 86+53.5
Δ=17° 46' 40" LT.
CLARENCE JOHN & WF. HELGA
STRUCTURE PSB 8
(SHINGLE MILL BRIDGE)
3-35' STEEL "I" BEAM SPANS
ON TIMBER PILE BENTS
30' ROADWAY WIDTH
TO REMAIN IN PLACE
JAMES A. BURT ET AL
BOAT SHOP
STA. 59 + 70
CONST. P.E. APP. RT.
1-18" C.P. REQ'D.
STA. 62+90
CONST. P.E. APP. RT.
1-18" C.P. REQD.
Sta. 64+40
Const. P.E. App RT
1-18" CMCP
JAMES PETERSON
MABLE HARRER
EVA DUFFY
TRAN LINE
CHORD P.I. 75+96.7
Δ=18° 23' 00" LT.
DRAINAGE AREA
5 ACRES
1/16 LINE 80+75.0
P.I. 81+47.3
Δ= 36° 09' 40" LT.
NET ℄ LENGTH STA. 55+00 TO STA. 66+45.2 = 1145.2 LIN. FT.
END OF PROJ. 8520-1-71
STA. 66+45.2
STA. 59+70
S.R. LT.
STA. 63+85
S.R. LT.
FUTURE FINISHED GRADE
STA. 57+00
1-24" C.P. REQ'D.
V.C. 200'
WATER ELEV. 1185.40
+0.310%
S.D. LT. -0.5%
S.D. RT. -1.0%
S.D. RT. +0.5%



PLAN



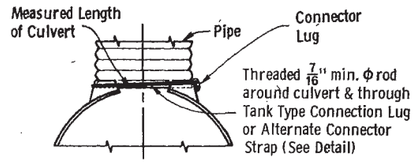
PLAN



1" Wide, 12 Ga. galvanized (0.109" thick) strap with standard 6" x $\frac{1}{2}$" band bolt and nut

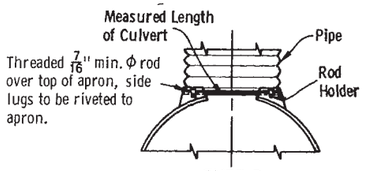
Alternate for Type 1 Connection

END SECTION CONNECTOR STRAP



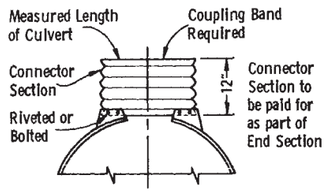
TYPE 1

For 12" thru 24" only (Circular Pipe)



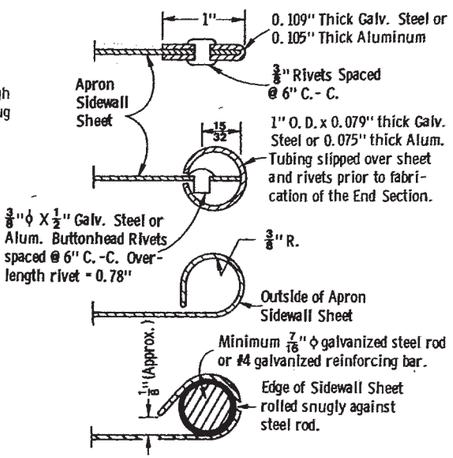
TYPE 2

For 30" and 36" only (Circular Pipe)
For 17" X 13" thru 57" X 38" only (Pipe Arch)

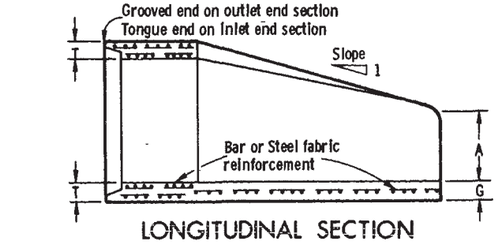


TYPE 3

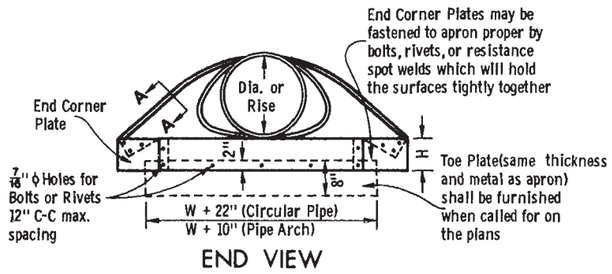
For 42" thru 84" only (Circular Pipe)
For 64" X 43" & 71" X 47" (Pipe Arch)



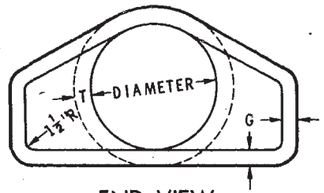
SECTION A-A



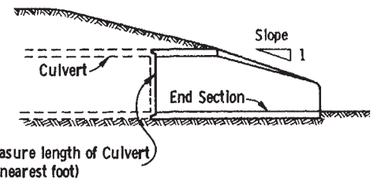
LONGITUDINAL SECTION



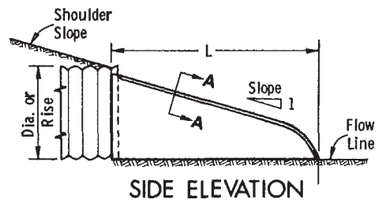
END VIEW



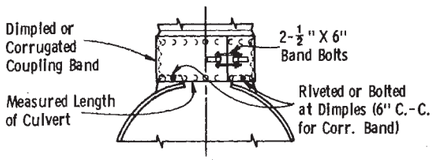
END VIEW



SIDE ELEVATION



SIDE ELEVATION



TYPE 5

Alternate for
All sizes Corrugated Circular Pipe and Pipe Arch

NOTE: Dimpled Band fits over Outside of Endwall, and Corr. Band fits Inside Endwall. Dimpled Band may be used with Helically Corrugated Pipe

GENERAL NOTES

Details of construction, materials, and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Variations of the dimensions and designs shown hereon will be permitted providing equivilent capacity and structural integrity are attained, and prior approval of the Engineer is obtained.

Concrete culvert endwalls may not be used with galvanized steel or aluminum culvert pipe or vice versa.

Galvanized steel or aluminum endwalls shall normally be installed on culvert pipe of the same metal. The use of galvanized steel endwalls on aluminum pipes is permitted, provided the two metals at the joint interface are kept separated by a suitable insulating material approximately $\frac{1}{16}$" thick or greater. Such material would be an asphalt impregnated fabric, a sheet plastic, a rubber gasket or other nondegradable material of substantial strength.

When two or more pipe arches with apron endwalls are to be laid adjacent to each other, they shall be separated by the following amount.

Pipes: Total width of apron endwall less the diameter of pipe plus 6 inches.

Pipe Arches: Total width of apron endwall less the span dimension of the pipe arch plus 6 inches.

DIA.	APPROX. WEIGHT/ SECTION	T	A	B	C	D	E	G	APPROX. SLOPE
12"	530	2"	4"	24"	48 $\frac{7}{8}$"	72 $\frac{7}{8}$"	24"	2"	3 to 1
15"	740	2 $\frac{1}{4}$"	6"	27"	46"	73"	30"	2 $\frac{1}{4}$"	↑
18"	990	2 $\frac{1}{2}$"	9"	27"	46"	73"	36"	2 $\frac{1}{2}$"	
21"	1,280	2 $\frac{3}{4}$"	9"	36"	37 $\frac{1}{2}$"	73 $\frac{1}{2}$"	42"	2 $\frac{3}{4}$"	
24"	1,520	3"	9 $\frac{1}{2}$"	43 $\frac{1}{2}$"	30"	73 $\frac{1}{2}$"	48"	3"	
27"	1,930	3 $\frac{1}{4}$"	10 $\frac{1}{2}$"	49 $\frac{1}{2}$"	24"	73 $\frac{1}{2}$"	54"	3 $\frac{1}{4}$"	
30"	2,190	3 $\frac{1}{2}$"	12"	54"	19 $\frac{3}{4}$"	73 $\frac{3}{4}$"	60"	3 $\frac{1}{2}$"	
36"	4,100	4"	15"	63"	34 $\frac{3}{4}$"	97 $\frac{3}{4}$"	72"	4"	
42"	5,380	4 $\frac{1}{2}$"	21"	63"	35"	98"	78"	4 $\frac{1}{2}$"	↓
48"	6,550	5"	24"	72"	26"	98"	84"	5"	3 to 1
54"	8,040	5 $\frac{1}{2}$"	27"	65"	**33 $\frac{1}{4}$" - *35"	**98 $\frac{1}{4}$" - *100"	90"	5"	2 $\frac{2}{3}$ to 1
60"	8,730	6"	**30" - *35"	60"	39"	99"	96"	5"	2 to 1
66"	10,630	6 $\frac{1}{2}$"	**24" - *30"	**72" - *78"	**21" - *27"	↑	102"	5 $\frac{1}{2}$"	↑
72"	12,520	7"	**24" - *36"	78"	21"	↓	108"	6"	↓
78"	14,430	7 $\frac{1}{2}$"	**24" - *36"	78"	21"	99"	114"	6 $\frac{1}{2}$"	2 to 1
84"	18,160	8"	36"	90 $\frac{1}{2}$"	21"	111 $\frac{1}{2}$"	120"	6 $\frac{1}{2}$"	1 $\frac{1}{2}$ to 1

** Minimum
* Maximum

REINFORCED CONCRETE APRON ENDWALLS

D PIPE DIAM.	MIN. METAL THICKNESS		DIMENSIONS					APPROX. SLOPE
	MIN. METAL THICKNESS	MIN. ALUM.	A ± 1"	B MAX.	H ± 1"	L ± 1 $\frac{1}{2}$"	W ± 2"	
12"	0.064	0.060	6"	6"	6"	21"	24"	2 $\frac{1}{2}$ to 1
15"	↑	↓	7"	8"	↑	26"	30"	↑
18"			8"	10"		31"	36"	
21"	↓	0.060	9"	12"	↓	36"	42"	
24"	0.064	0.075	10"	13"	6"	41"	48"	
30"	0.079	0.075	12"	16"	8"	51"	60"	
36"	0.079	0.105	14"	19"	9"	60"	72"	↓
42"	0.109	↑	16"	22"	11"	69"	84"	2 $\frac{1}{2}$ to 1
48"	↑	↓	18"	27"	12"	78"	90"	2 $\frac{1}{4}$ to 1
54"		0.105	↑	30"	↑	84"	102"	2 to 1
60"		NA		33"		87"	114"	1 $\frac{3}{4}$ to 1
66"		↑		36"		87"	120"	1 $\frac{1}{2}$ to 1
72"		↓		39"		87"	126"	1 $\frac{1}{3}$ to 1
78"	↓		↓	42"	↓	87"	132"	1 $\frac{1}{4}$ to 1
84"	0.109	NA	18"	45"	12"	87"	138"	1 $\frac{1}{6}$ to 1

NOTE: All splices to be lap riveted or bolted

METAL OR ALUMINUM APRON ENDWALLS FOR CIRCULAR PIPES

PIPE – ARCH DIMENSIONS		MIN. METAL	DIMENSIONS					APPROX. SLOPE
SPAN	RISE	THICK.	A ± 1"	B MAX.	H ± 1"	L ± 1 $\frac{1}{2}$"	W ± 2"	
17"	13"	0.064	7"	9"	6"	19"	30"	2 $\frac{1}{2}$ to 1
21"	15"	↑	7"	10"	↑	23"	36"	↑
24"	18"	↓	8"	12"		28"	42"	
28"	20"	0.064	9"	14"	↓	32"	48"	
35"	24"	0.079	10"	16"	6"	39"	60"	
42"	29"	0.079	12"	18"	8"	46"	75"	
49"	33"	0.109	13"	21"	9"	53"	85"	↓
57"	38"	↑	18"	26"	12"	63"	90"	2 $\frac{1}{2}$ to 1
64"	43"		18"	30"	12"	70"	102"	2 $\frac{1}{4}$ to 1
71"	47"		18"	33"	12"	77"	114"	2 $\frac{1}{4}$ to 1
77"	52"	↓	18"	36"	12"	77"	126"	2 to 1
83"	57"	0.109	18"	39"	12"	77"	138"	2 to 1

NOTE: All splices to be lap riveted or bolted

METAL APRON ENDWALLS FOR PIPE ARCHES

CONNECTION DETAILS

CIRCULAR PIPE

For Circumferentially Corrugated Pipe use Endwall Connection Details 1, 2, 3, or 5 as applicable.

For Helically Corrugated Pipe use Endwall Connection Details 1, 2 or 5.

For Helically Corrugated Pipes with two Circumferential Corrugations at each end use Endwall Connection Details 1, 2, or 3

PIPE ARCH

Use Endwall Connection Details 2, 3, or 5 as applicable.

APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

State of Wisconsin
Department of Transportation
Division of Highways

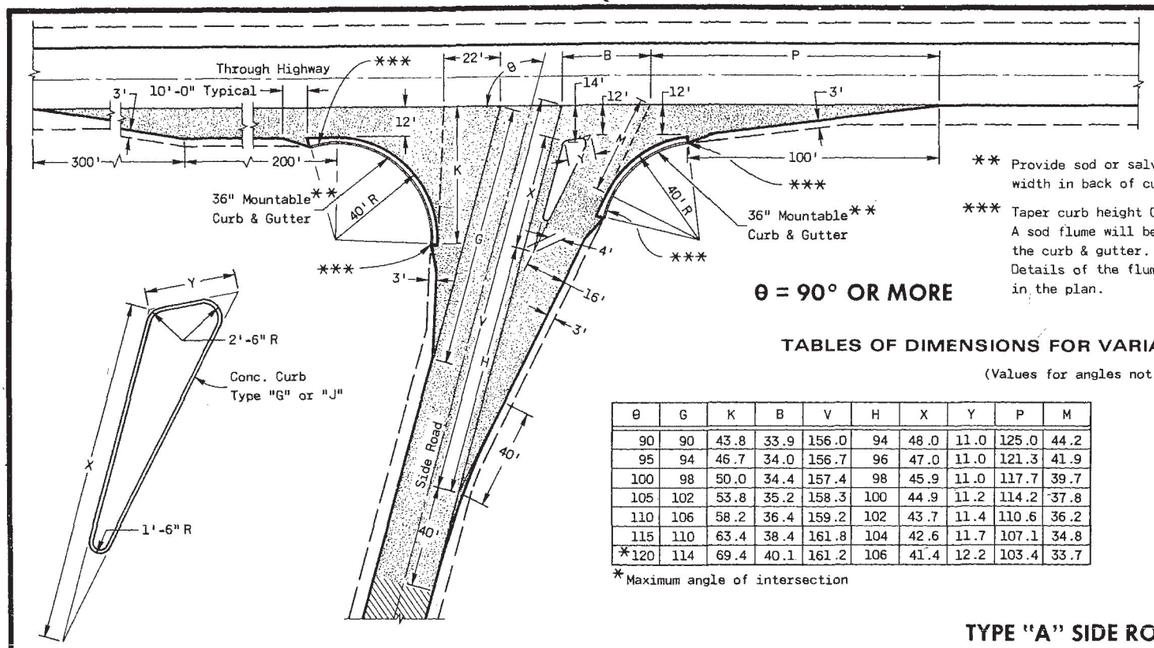
APPROVED 7-14-78 DATE — SUPERVISING DEVELOPMENT ENGINEER

APPROVED 7-17-78 DATE — CHIEF OF TECH. DEV. DEVELOPMENT

FHWA

S.D.D. 8 F 1-8

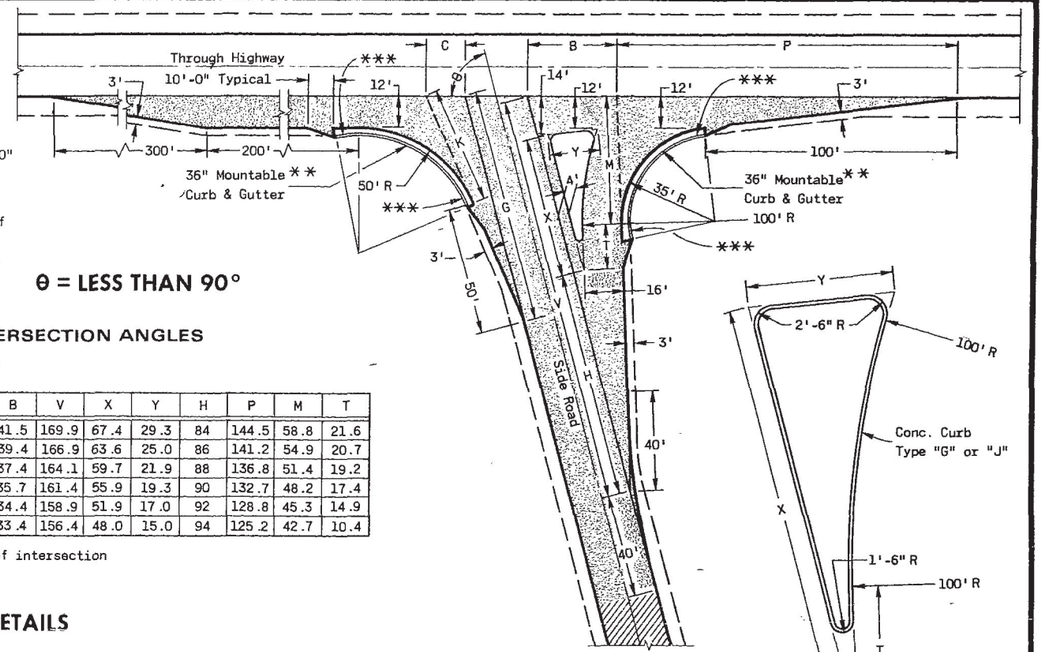
S.D.D. 8 F 1-8



θ = 90° OR MORE

** Provide sod or salvaged topsoil & seed to a 3'-0" width in back of curb & gutter sections.

*** Taper curb height 0" to 6" in 10'-0". A sod flume will be required at discharge end of the curb & gutter. Details of the flume(s) will be shown elsewhere in the plan.



θ = LESS THAN 90°

TABLES OF DIMENSIONS FOR VARIABLE SIDE ROAD INTERSECTION ANGLES

(Values for angles not shown shall be interpolated)

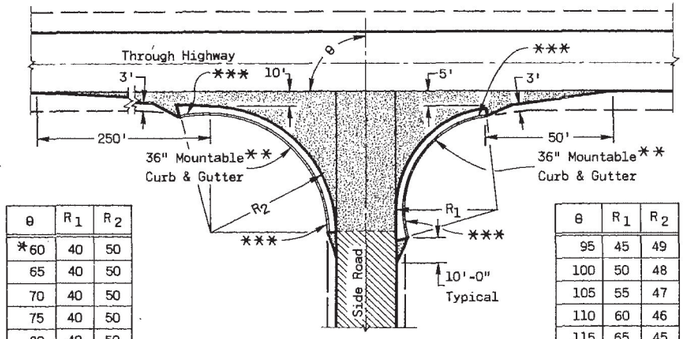
θ	G	K	B	V	H	X	Y	P	M
90	90	43.8	33.9	156.0	94	48.0	11.0	125.0	44.2
95	94	46.7	34.0	156.7	96	47.0	11.0	121.3	41.9
100	98	50.0	34.4	157.4	98	45.9	11.0	117.7	39.7
105	102	53.8	35.2	158.3	100	44.9	11.2	114.2	37.8
110	106	58.2	36.4	159.2	102	43.7	11.4	110.6	36.2
115	110	63.4	38.4	161.8	104	42.6	11.7	107.1	34.8
*120	114	69.4	40.1	161.2	106	41.4	12.2	103.4	33.7

*Maximum angle of intersection

θ	C	G	K	B	V	H	X	Y	P	M	T
*60	19.7	76.3	38.6	41.5	169.9	67.4	29.3	84	144.5	58.8	21.6
65	17.8	82.6	40.6	39.4	166.9	63.6	25.0	86	141.2	54.9	20.7
70	15.8	87.2	43.1	37.4	164.1	59.7	21.9	88	136.8	51.4	19.2
75	15.7	90.9	45.6	35.7	161.4	55.9	19.3	90	132.7	48.2	17.4
80	15.9	94.9	48.3	34.4	158.9	51.9	17.0	92	128.8	45.3	14.9
85	16.2	99.3	51.4	33.4	156.4	48.0	15.0	94	125.2	42.7	10.4

*Desirable minimum angle of intersection

TYPE "A" SIDE ROAD INTERSECTION DETAILS



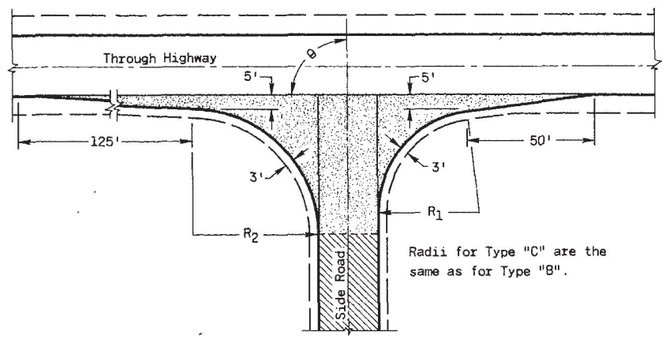
θ	R_1	R_2
*60	40	50
65	40	50
70	40	50
75	40	50
80	40	50
85	40	50
90	40	50

*Min. Angle of Intersection

θ	R_1	R_2
95	45	49
100	50	48
105	55	47
110	60	46
115	65	45
*120	70	44

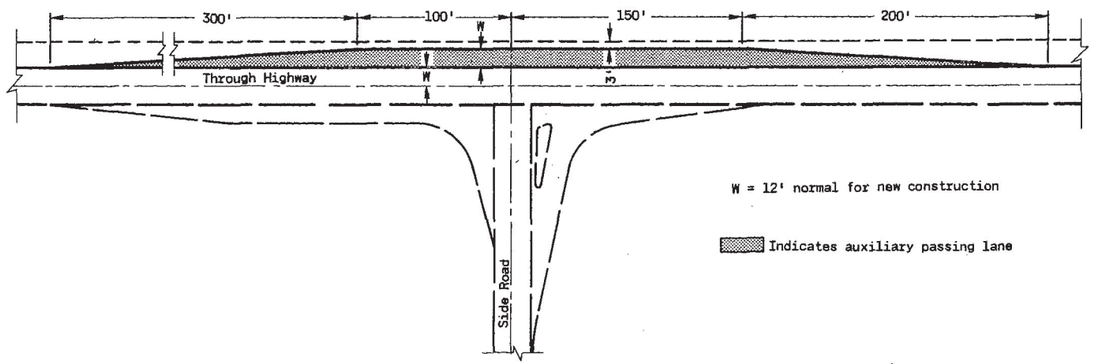
*Max. Angle of Intersection

TYPE "B" SIDE ROAD INTERSECTION DETAILS



Radii for Type "C" are the same as for Type "B".

TYPE "C" SIDE ROAD INTERSECTION DETAILS



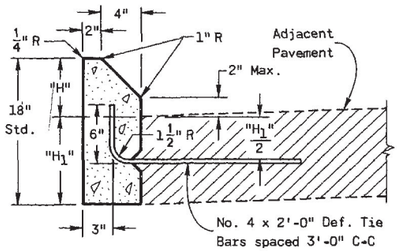
W = 12' normal for new construction

Indicates auxiliary passing lane

PASSING LANE DETAIL

"H"= 6" Max. and 4" Min. and shall be 6" unless otherwise shown on the plans.

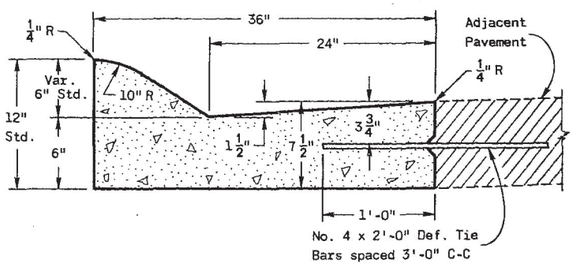
"H_1"= Same as adjacent pavement thickness for rigid pavement and 12" for non-rigid pavement (Tie Bars omitted).



TYPE "G" (INCLUDING TIE BARS)

TYPE "J" (EXCLUDING TIE BARS)

MOUNTABLE CONCRETE CURB



TYPE "A" (INCLUDING TIE BARS)

TYPE "D" (EXCLUDING TIE BARS)

MOUNTABLE CONCRETE CURB & GUTTER 36"

GENERAL NOTES

Designs may be used interchangeably in combination or separately for any one complete intersection depending upon intersection angle and surfacing of each approach roadway.

Details on this drawing are for minimum design only, and not applicable to special conditions, as shown elsewhere on the plans.

SIDE ROAD SURFACING NOTE

If the side road is not presently paved, pavement shall be placed to the limits shown. In the case where the construction limits are beyond the paving limits, gravel or crushed stone surfacing shall be placed between the paving limits and construction limits.

If the side road is presently paved, new pavement shall be placed to the limits of design as shown and beyond, if necessary, to meet existing pavement.

If the side road is the construction project, the intersection surfacing shall be the same as for the project.

New Pavement

Existing Surface

LAYOUT DETAILS FOR AT-GRADE SIDE ROAD INTERSECTIONS

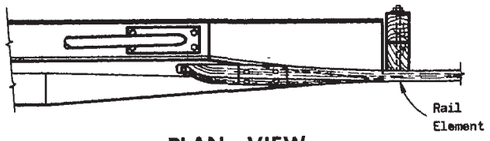
State of Wisconsin
Department of Transportation
Division of Highways

RECOMMENDED FOR APPROVAL:
9-10-76 DATE — CHIEF of FACILITIES DEVELOPMENT

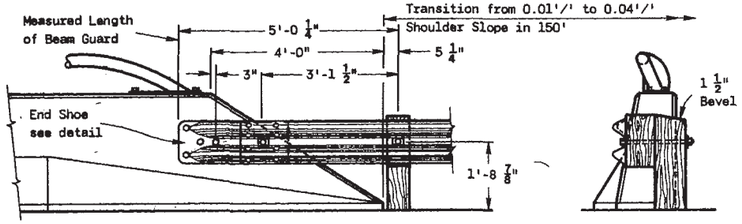
APPROVED
9-10-76 DATE — STATE HIGHWAY ENGINEER

S. D. D. 9A 1-3

S. D. D. 9A 1-3



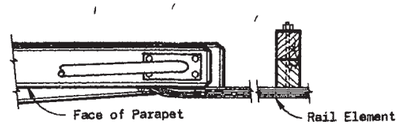
PLAN VIEW



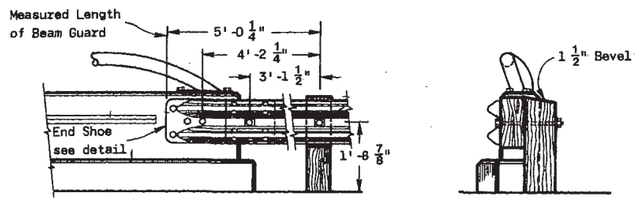
FRONT ELEVATION END ELEVATION

STRUCTURE MOUNTING DETAIL

SLOPING TYPE PARAPET WALL



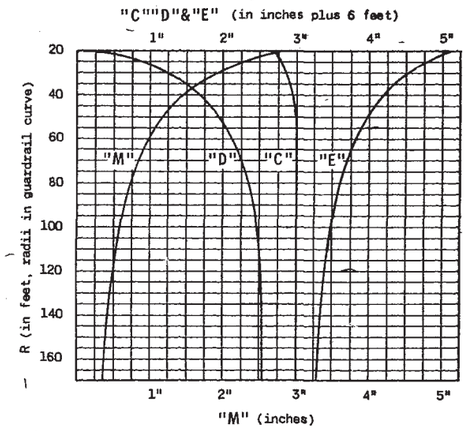
PLAN VIEW



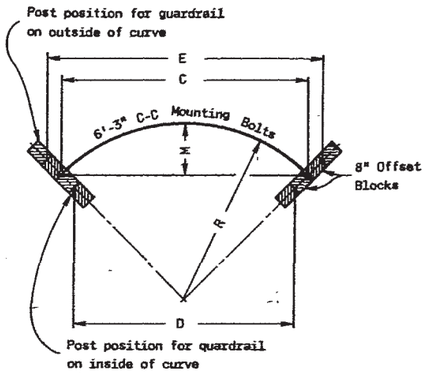
FRONT ELEVATION END ELEVATION

STRUCTURE MOUNTING DETAIL

VERTICAL TYPE PAPAPET WALL

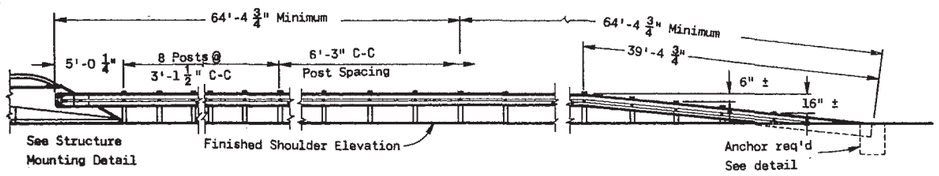


CURVE DATA FOR POST SPACING AND BEAM CURVING



CHORD LENGTHS FOR POST SPACING AND MIDDLE ORDINATES FOR BEAM CURVING

PLAN VIEW

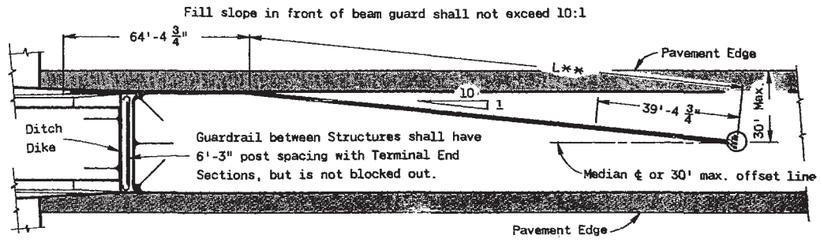


FRONT ELEVATION

TYPICAL INSTALLATION AT STRUCTURES

PLAN VIEW

TYPICAL INSTALLATION AT LOCATIONS OTHER THAN STRUCTURES



** Variable based on Median width or 30' max. offset

PLAN VIEW

MEDIAN PROTECTION

GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

The exact location of the beginning and end of each Guardrail installation shall be as shown on the plans or as directed by the Engineer.

Square anchor alternates will be permitted. Square anchors shall be a minimun of 24 inches x 24 inches.

The shoulder widening to accommodate the anchored end of the guardrail shall be accomplished at the rate of widening not to exceed 15 to 1.

Upon approval of the Engineer, the 6 foot anchor offset may be reduced to nothing for replacement installations where existing conditions will not permit the desirable offset. However, when no offset greater than or equal to 3 feet can be provided, the minimum length of guardrail in advance of an obstacle (obstacle to anchor) shall be 150 feet.

The minimum clearance from the front face of guardrail to obstacle shall be 3 feet unless otherwise shown on contract plans. When clearance is less than 3 feet post spacing shall be reduced to 3 feet - 1 1/2 inches C.C.

The "Post Footing Details At Piers" shall be used when guardrail posts are over structure footings and less than 3 feet - 6 inches of earth is provided over the top of the footing.

NOTE:
THIS STANDARD DETAIL DRAWING CONSISTS OF TWO PLATES. AND BOTH PLATES ARE REQUIRED WHEN THIS STANDARD IS CALLED FOR IN THE PLANS.

CLASS "A"
STEEL PLATE BEAM GUARD &
STEEL PLATE BEAM MEDIAN GUARD

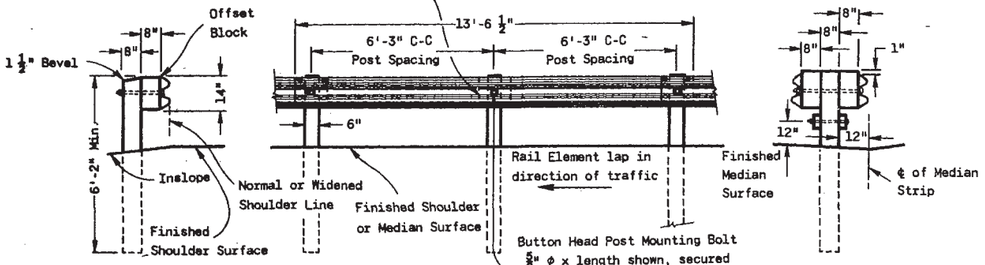
State of Wisconsin
Department of Transportation
Division of Highways

S.D.D. 14 B 2-4a

S.D.D. 14 B 2-4a

One foot long section of rail element, with a $\frac{3}{4}$" slotted hole for mounting, shall be placed behind the continuous rail element at the intermediate posts.

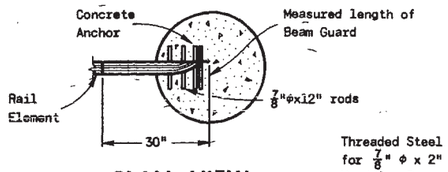
Sawed and treated timber posts and offset blocks shall be furnished and placed in accordance with Standard Specifacations. Posts shall be 6" x 8" x 6'-6" and have 6" x 8" x 14" offset blocks.



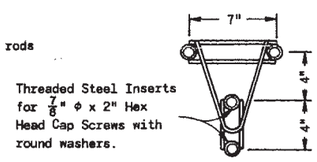
END ELEVATION FRONT ELEVATION END ELEVATION

STEEL PLATE BEAM GUARD **STEEL PLATE BEAM MEDIAN GUARD**

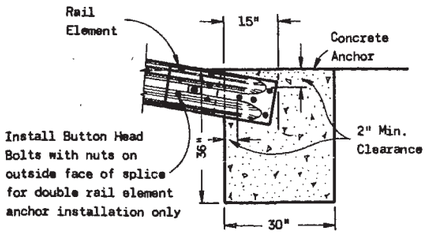
STEEL PLATE BEAM GUARD OR STEEL PLATE BEAM MEDIAN GUARD



PLAN VIEW



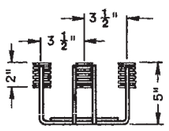
PLAN VIEW



SECTION VIEW

ANCHOR DETAIL

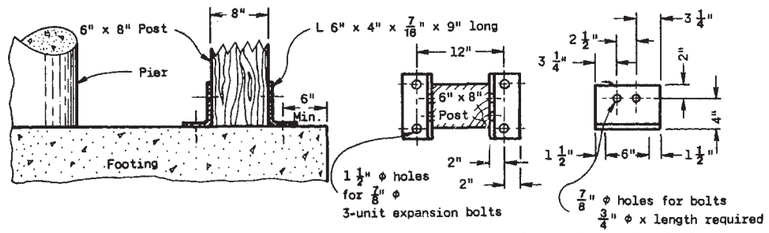
SINGLE RAIL ELEMENT INSTALLATION



ELEVATION

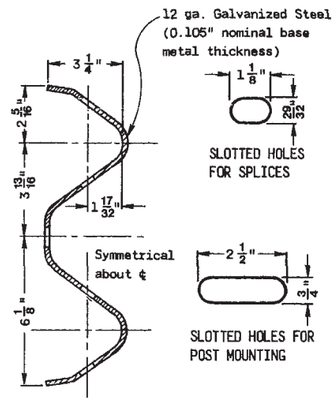
4 BOLT INSERT ASSEMBLY

NOTE: Installation of 4 Bolt Insert Assembly (with Cap Screws inserted) to be part of Bridge Contract.

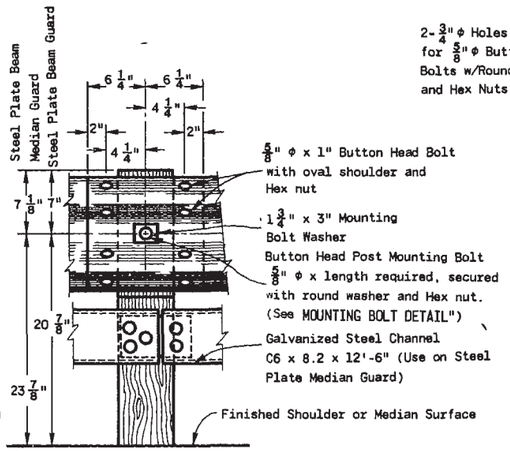


SECTION VIEW PLAN VIEW ELEVATION

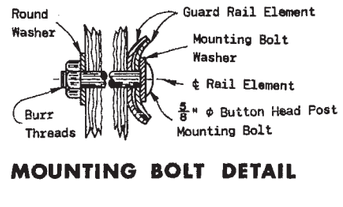
POST FOOTING DETAIL AT PIERS



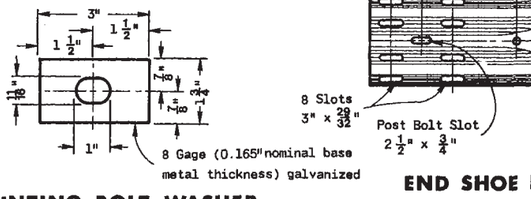
SECTION THRU RAIL ELEMENT



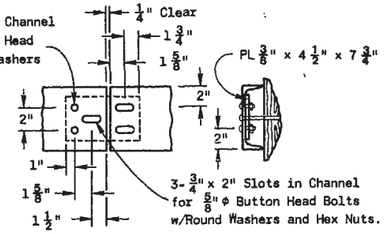
RAIL ELEMENT SPLICING AND POST MOUNTING DETAIL



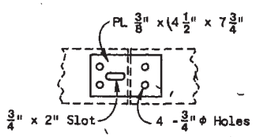
MOUNTING BOLT DETAIL



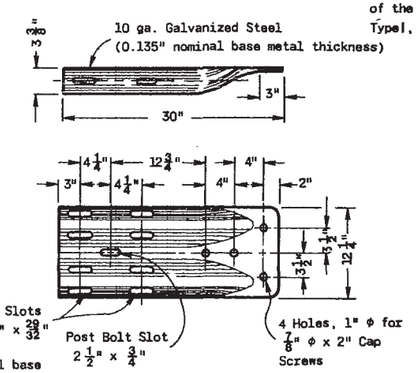
MOUNTING BOLT WASHER



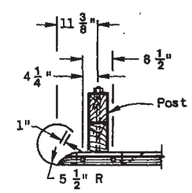
RUB RAIL SPLICE DETAIL



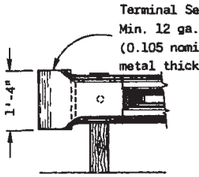
SPLICE PLATE



END SHOE DETAIL

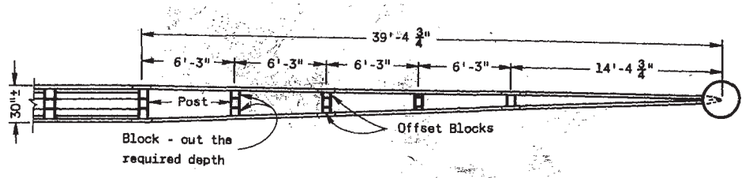


PLAN VIEW

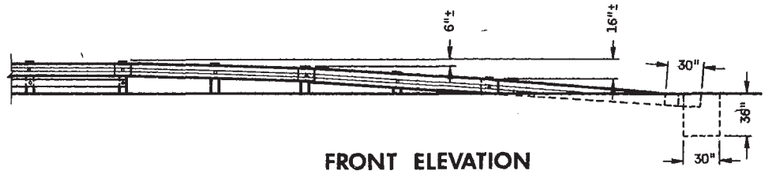


FRONT ELEVATION

TERMINAL SECTION DETAILS



PLAN VIEW

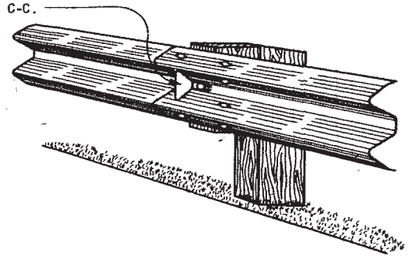


FRONT ELEVATION

ANCHOR DETAIL FOR DOUBLE RAIL ELEMENT INSTALLATION

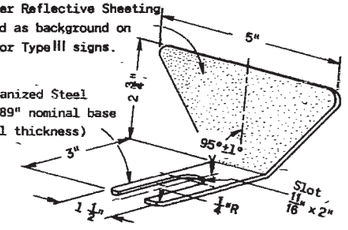
NOTE: (DIVIDED HIGHWAYS) Reflector spacing shall be 50' C-C on installations less than 200' long, with a minimum of 3 reflecters on any installation. For installations 200' or longer, spacing shall be 100' C-C.

(COUNTER-DIRECTIONAL HIGHWAYS) Reflector spacing shall be 25' C-C on installations less than 200' long, with a minimum of 6 reflectors on any installation, and every other reflectorized surface shall be reversed. For installations 200' or longer, spacing shall be 50' C-C.

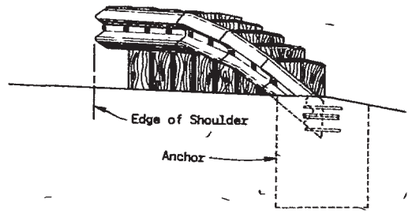


TYPICAL INSTALLATION

The reflectorized surface shall consist of Silver Reflective Sheeting of the type used as background on Type I, Type II, or Type III signs.



REFLECTOR DETAIL



TYPICAL TERMINAL END ELEVATION

NOTE:
THIS STANDARD DETAIL DRAWING CONSISTS OF TWO PLATES. AND BOTH PLATES ARE REQUIRED WHEN THIS STANDARD IS CALLED FOR IN THE PLANS.

CLASS "A"
STEEL PLATE BEAM GUARD & STEEL PLATE BEAM MEDIAN GUARD

State of Wisconsin
Department of Transportation
Division of Highways

RECOMMENDED FOR APPROVAL
5-7-76 DATE — CHIEF of FACILITIES DEVELOPMENT

APPROVED
5-11-76 DATE — STATE HIGHWAY ENGINEER

S.D.D. 14 B 2-4b

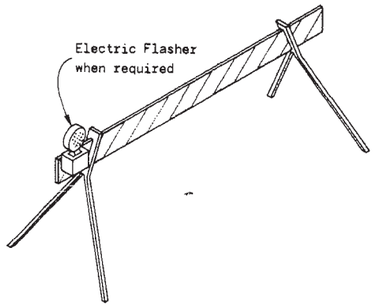
S.D.D. 14 B 2-4b

TABLE OF BARRICADE CHARACTERISTICS

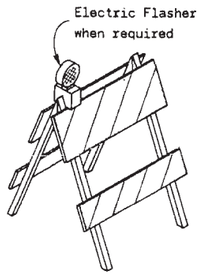
BARRICADE TYPE	I	II	III
Height	3' Minimum		5' Minimum
* Rail Width	8" Minimum to 12" Maximum		
Rail Length	2' Minimum to variable Maximum		
** Stripe Width	6" at 45° Angle		
Stripe Colors	Reflectorized Orange & White		

* Nominal dimensions when barricade is constructed of lumber.

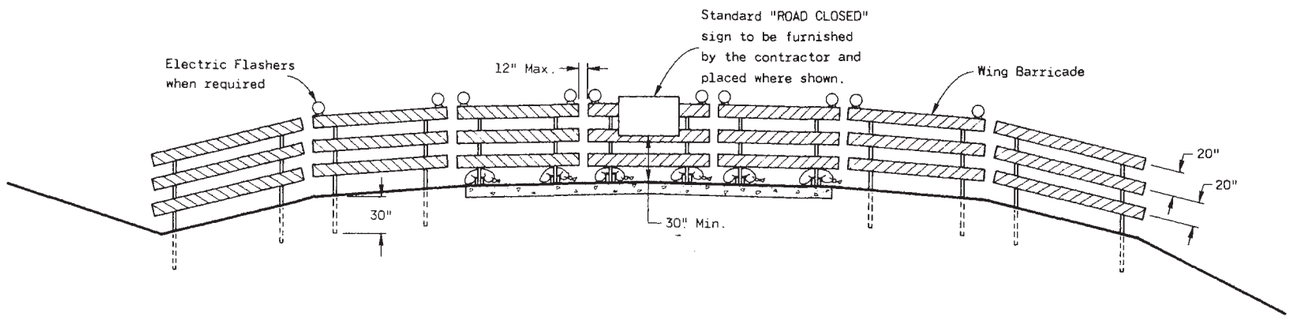
** May be 4" for rail lengths less than 3'.



TYPICAL TYPE I BARRICADE



TYPICAL TYPE II BARRICADE



TYPICAL INSTALLATION SHOWING TYPE III BARRICADE

CONSTRUCTION BARRICADES

R11-2

48" x 30"

Black Lettering on Reflective
White Background
Letter Series "D"
Letter height 8"

W20-3

48" x 48"

Black Lettering on Reflective
Orange Background
Letter Series "D"
Letter height 7"

STANDARD SIGNS-TYPE II

GENERAL NOTES

The contractor shall furnish, erect and maintain Barricades and Signs Details regarding location, spacing, dimensions, fabrication, material, sign lettering, lighting devices and color of Barricades and Signs shall conform to this drawing, the Wisconsin Manual on Uniform Traffic Control Devices, the Standard Specifications, Special Provisions and/or plans.

Type III Barricades and Signs shall be erected at the termini of projects and at other road or street locations where it is necessary to control or eliminate public access to the con - struction area.

Type I and II Barricades shall be used on projects when traffic is to be maintained through the construction area.

The actual field location of barricade installations and advance signs shall be as directed by the Engineer.

Each barricade shall have the name and telephone number of a person responsible for 24 hour emergency service printed in letters at least 3/4 inch in height.

CONSTRUCTION BARRICADES & STANDARD SIGNS

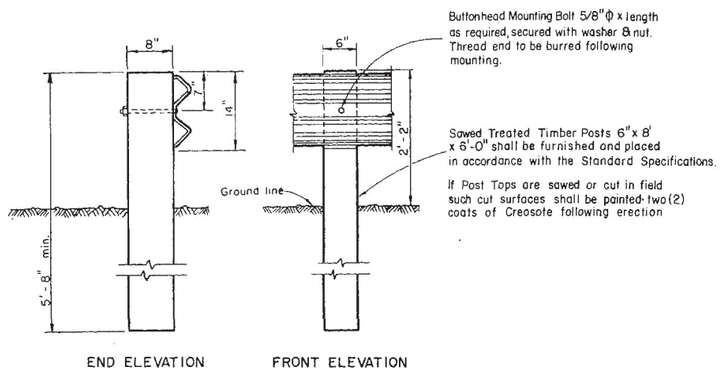
State of Wisconsin
Department of Transportation
Division of Highways

APPROVED 10-1-76 DATE — CHIEF OF FACILITIES DEVELOPMENT

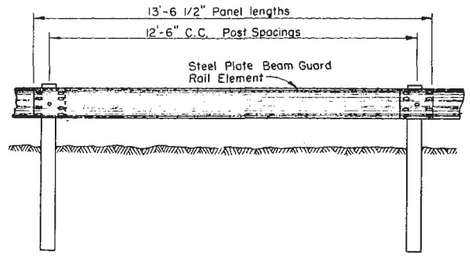
APPROVED 10-1-76 DATE — STATE HIGHWAY ENGINEER

S.D.D. 15C1-5

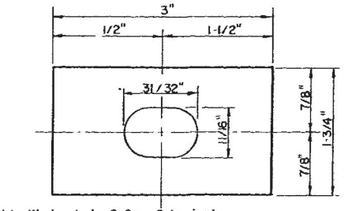
S.D.D. 15C1-5



END ELEVATION FRONT ELEVATION



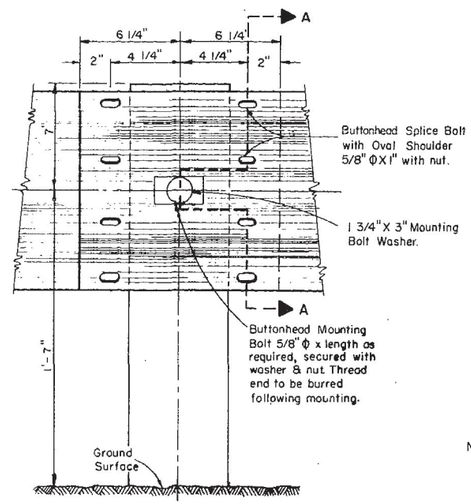
FRONT ELEVATION

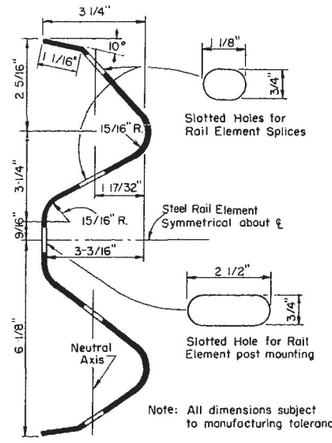


Note: Washer to be 8 Gage Galvanized.

MOUNTING BOLT WASHER DETAILS

POST DETAIL

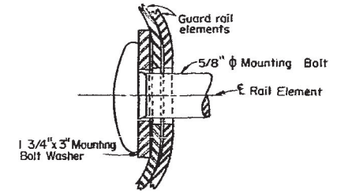




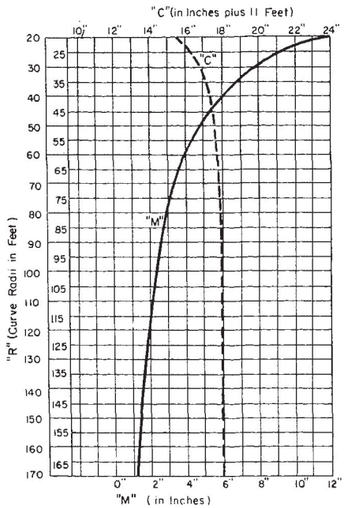
Note: Rail Element to be Min. 12 Gage Steel.

SECTION A-A

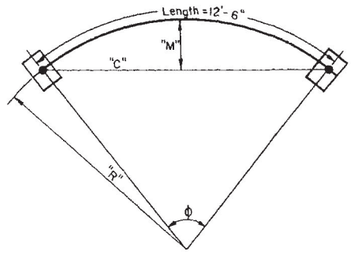
RAIL ELEMENT & POST MOUNTING DETAILS

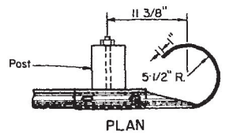


MOUNTING BOLT DETAIL

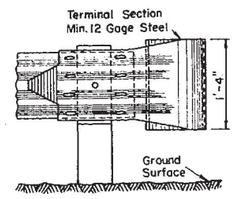


CURVE DATA FOR POST SPACING & BEAM CURVING





PLAN



FRONT ELEVATION

TERMINAL SECTION DETAILS

GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the Standard Specifications and the applicable Special Provisions.

STEEL PLATE BEAM GUARD
CLASS B

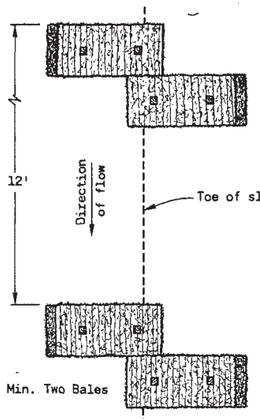
State of Wisconsin
Department of Transportation
Division of Highways

RECOMMENDED FOR APPROVAL:
1/25/68 DATE — E. J. Barkett CHIEF DESIGN ENGINEER

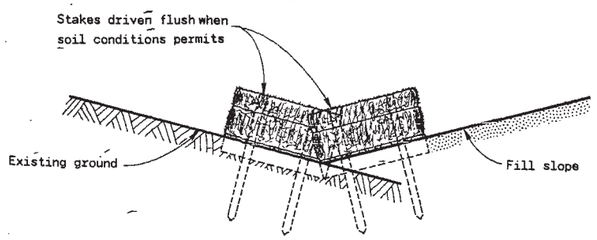
APPROVED:
2/8/68 DATE — STATE HIGHWAY ENGINEER

S.D.D. 14B 3-1

S.D.D. 14B 3-1

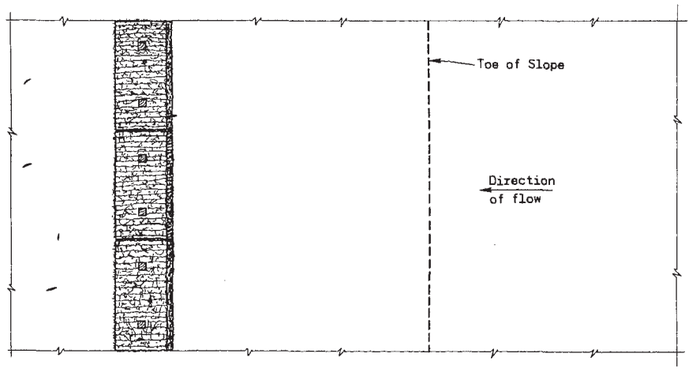


PLAN VIEW

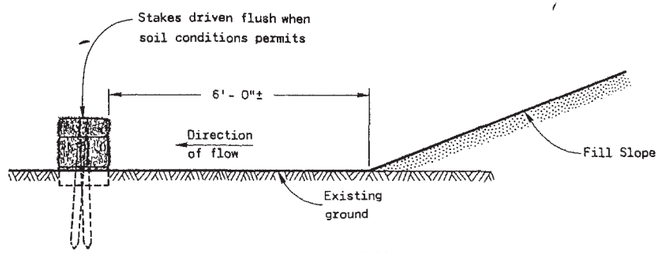


FRONT ELEVATION

WHEN EXISTING GROUND SLOPES TOWARD FILL SLOPE



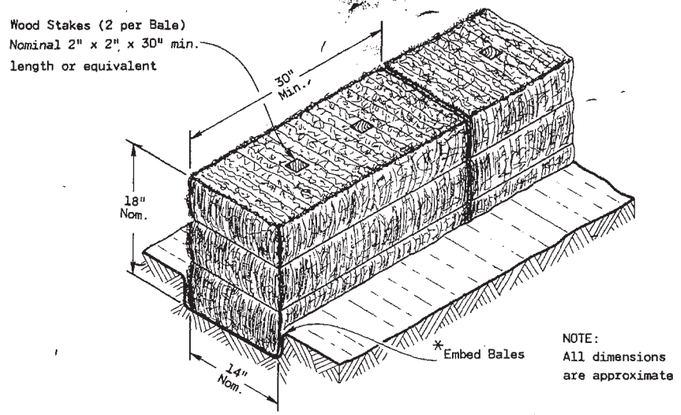
PLAN VIEW



FRONT ELEVATION

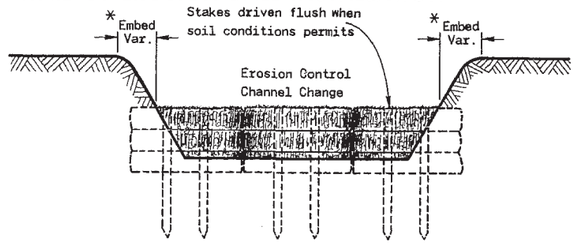
EROSION BALES AT TOE OF SLOPE

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

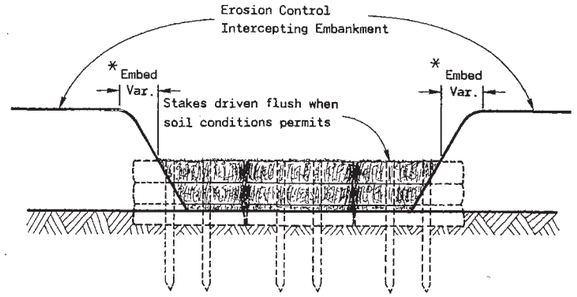


NOTE:
All dimensions are approximate

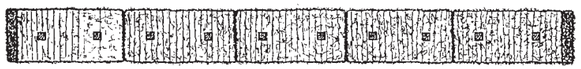
DETAIL OF EROSION BALE INSTALLATION



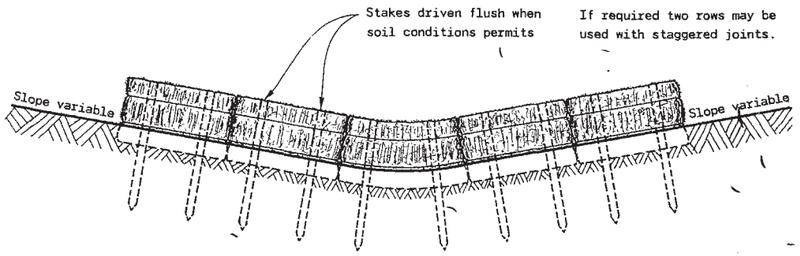
EROSION CONTROL CHANNEL CHANGE



EROSION CONTROL INTERCEPTING EMBANKMENT



PLAN VIEW



FRONT ELEVATION

EROSION BALES ACROSS DITCH BOTTOM

GENERAL NOTES

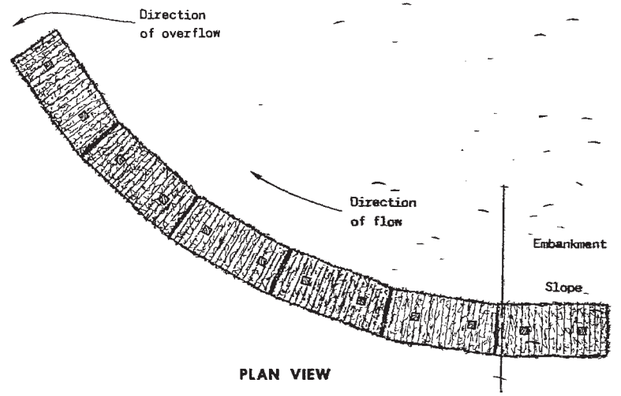
Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Bales shall be placed end to end or overlapping at right angles to the direction of flow and far enough up the sides of the ditch to prevent eroding around ends.

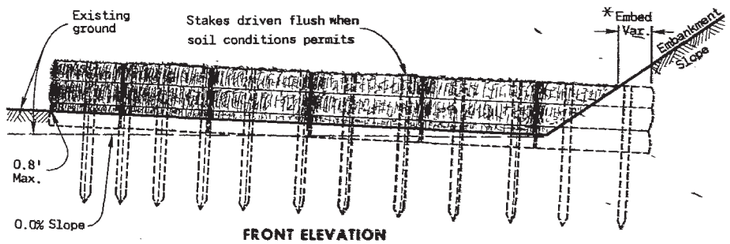
Bales shall be placed with twine or tie wires parallel to the ground.

Stakes to be battered in opposite directions.

* As determined by the Engineer.



PLAN VIEW



FRONT ELEVATION

EROSION BALES AT TOE OF SLOPE

TYPICAL INSTALLATIONS OF EROSION BALES

State of Wisconsin
Department of Transportation
Division of Highways

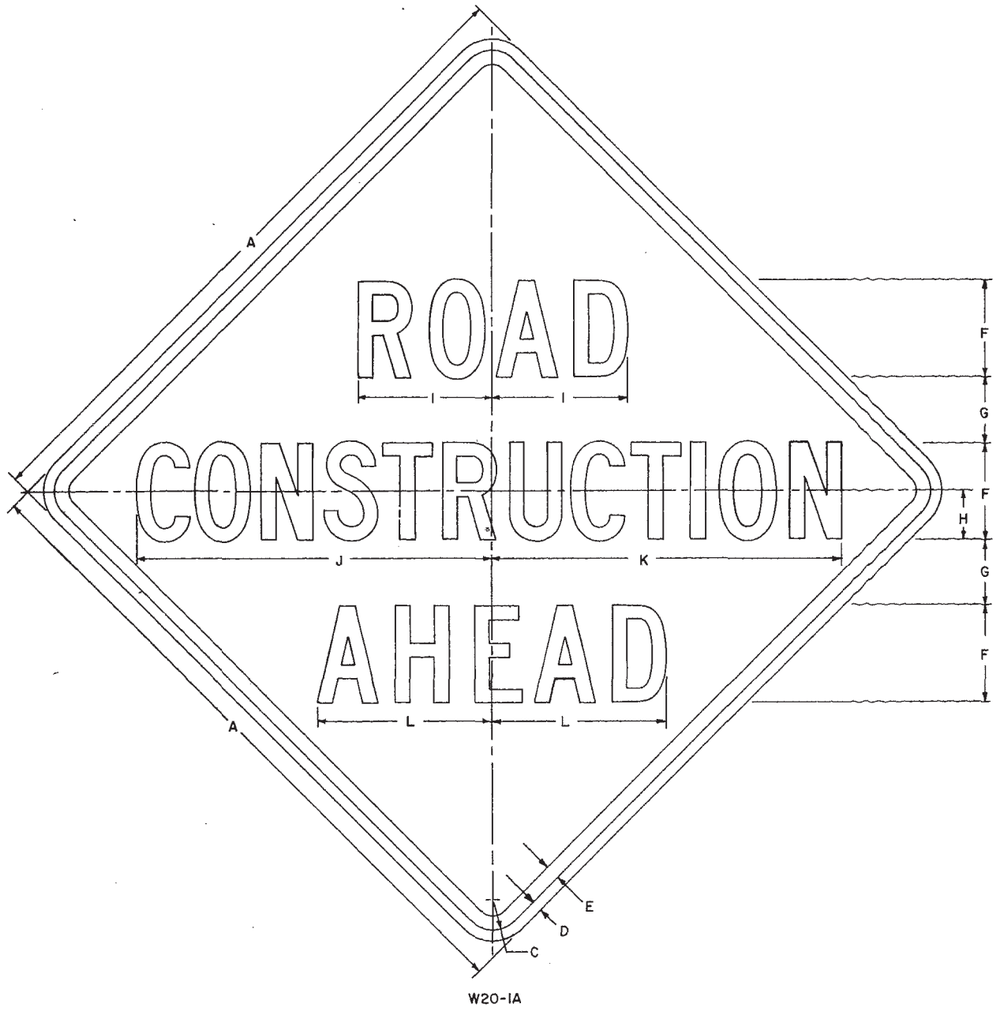
RECOMMENDED FOR APPROVAL:
10/14/75 DATE — CHIEF of FACILITIES DEVELOPMENT

APPROVED
10/16/75 DATE — STATE HIGHWAY ENGINEER

S.D.D. 8E8-1

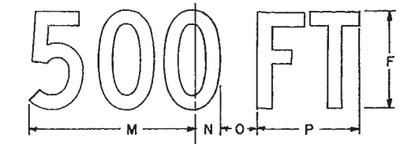
S.D.D. 8E8-1

PROJECT I.D.	SHEET NUMBER	TOTAL SHEETS
PROJECT DESIGNATION		

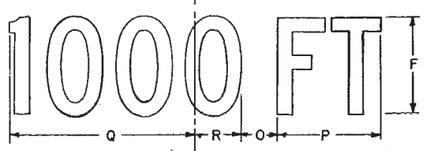


W20-1A

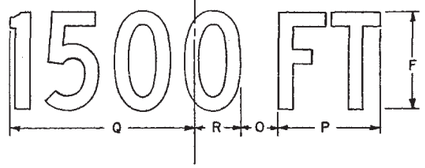
W20-1F



W20-1D



W20-1C



W20-1B

W20-1G

NOTES:

1. Sign is Type II
2. Color:
   Background – Reflectorized Orange
   Message – Black
3. Face Material – Reflective Sheeting
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. All letters & numbers are Series "C".
6. Substitute distances shown for "AHEAD" as Code requires.
7. Drawing may be scaled for standard size only.

SIZE	CODE SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Bid Area Sq. Ft.
Minimum	1	36		1 5/8	5/8	3/4	5	3 5/8	2 1/2	6 15/16	18 1/2	18 3/16	9 1/16	8 9/16	1 5/16	1 7/8	5 3/8	9 5/8	2 3/8	1	4 1/4	3 5/16	8 11/16	7 3/8	1 11/16	10 1/4	6	9.00
Standard	2	48		2 1/4	3/4	1	7	4 13/16	3 1/2	9 3/4	26	25 9/16	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 7/16	6	4 5/8	12 1/8	10 5/8	2 3/8	14 3/8	8	16.00
Oversize	3	48		2 1/4	3/4	1	7	4 13/16	3 1/2	9 3/4	26	25 9/16	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 7/16	6	4 5/8	12 1/8	10 5/8	2 3/8	14 3/8	8	16.00
Exp-way	4	48		2 1/4	3/4	1	7	4 13/16	3 1/2	9 3/4	26	25 9/16	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 7/16	6	4 5/8	12 1/8	10 5/8	2 3/8	14 3/8	8	16.00
Freeway	5	48		2 1/4	3/4	1	7	4 13/16	3 1/2	9 3/4	26	25 9/16	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 7/16	6	4 5/8	12 1/8	10 5/8	2 3/8	14 3/8	8	16.00
		AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	
Minimum	1																											
Standard	2																											
Oversize	3																											
Exp-way	4																											
Freeway	5																											

Date Drawn – 9-17-62 Date Redrawn – 9-8-72 MR

Date Revised – 9-7-72, 4-28-78 CM

STANDARD SIGN
W20-1 A,B,C,D,F & G

WISCONSIN DIVISION OF HIGHWAYS

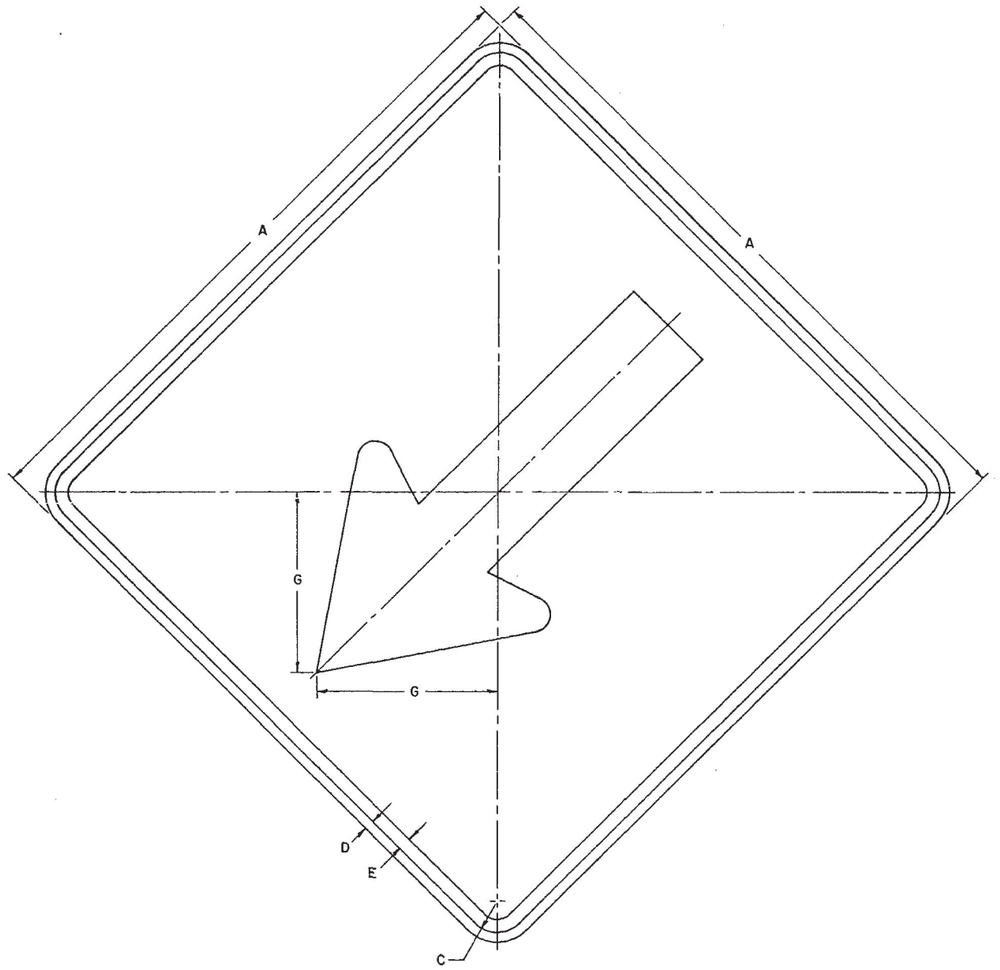
APPROVED
CHIEF TRAFFIC ENGINEER

DATE 6-9-78 PLATE NO. W20-1.3

PROJECT I. D.	SHEET NUMBER	TOTAL SHEETS
PROJECT DESIGNATION		

NOTES:

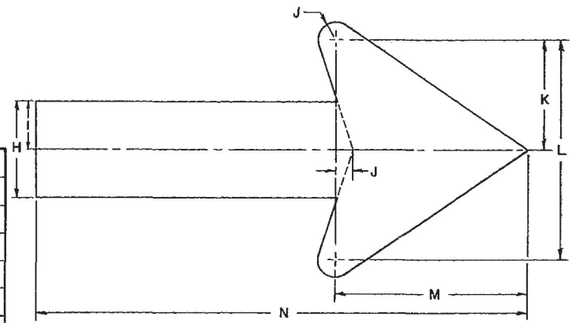
1. Sign is Type II
2. Color:
   Background — Reflectorized Yellow
   Message — Black
3. Face Material — Reflective Sheeting
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. W12-1R same as W12-1L except arrow points down right.



W12-1L

SIZE	CODE SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Bid Area Sq. Ft.
Minimum	1																											
Standard	2	24		1 1/8	3/8	1/2		6 17/32	3 1/2	1 3/4	5/8	4	8	7	17 7/8													4
Oversize	3																											
Exp-way	4																											
Freeway	5																											

		AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	
Minimum	1																											
Standard	2																											
Oversize	3																											
Exp-way	4																											
Freeway	5																											



ARROW DETAIL

Date Drawn — 8-7-62	Date Redrawn — 5-4-73
Date Revised — 1-10-78	

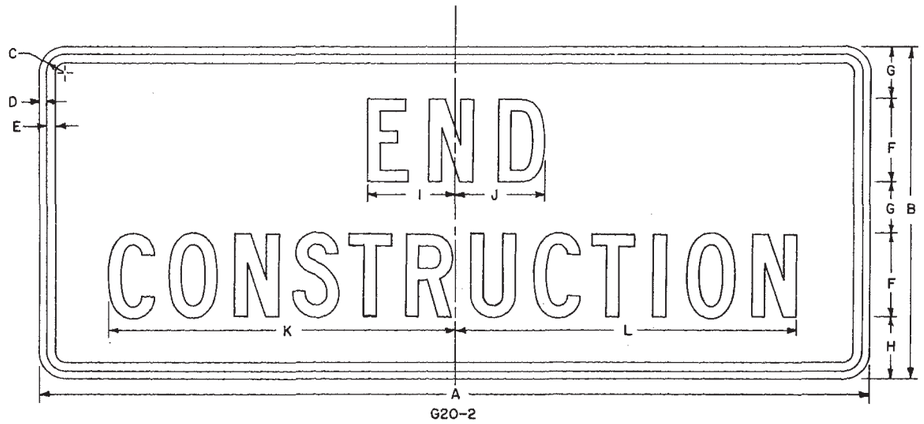
STANDARD SIGN
W12-1L & R

WISCONSIN DIVISION OF HIGHWAYS

APPROVED _____
CHIEF TRAFFIC ENGINEER

DATE 1-20-78 PLATE NO. W12-1.4

PROJECT I.D.	SHEET NUMBER	TOTAL SHEETS
PROJECT DESIGNATION		



G20-2

NOTES:

1. Sign is Type II
2. Color:
   Background – Reflectorized Orange
   Message – Black
3. Face Material – Reflective Sheeting
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. All letters are Series "C"

SIZE	CODE SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Bid Area Sq. Ft.
Minimum	1	60	24	1 3/8	1/2	5/8	6	3 3/4	4 1/2	6 1/4	6 3/8	25	24 5/8															10.00
Standard	2	60	24	1 3/8	1/2	5/8	6	3 3/4	4 1/2	6 1/4	6 3/8	25	24 5/8															10.00
Oversize	3																											
Exp-way	4	60	24	1 3/8	1/2	5/8	6	3 3/4	4 1/2	6 1/4	6 3/8	25	24 5/8															10.00
Freeway	5																											
		AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	
Minimum	1																											
Standard	2																											
Oversize	3																											
Exp-way	4																											
Freeway	5																											

RA	RA

Date Drawn – 8-7-62 Date Redrawn – 4-12-73 WCR

Date Revised – 4-12-73 WCR
12-6-77 LHJ

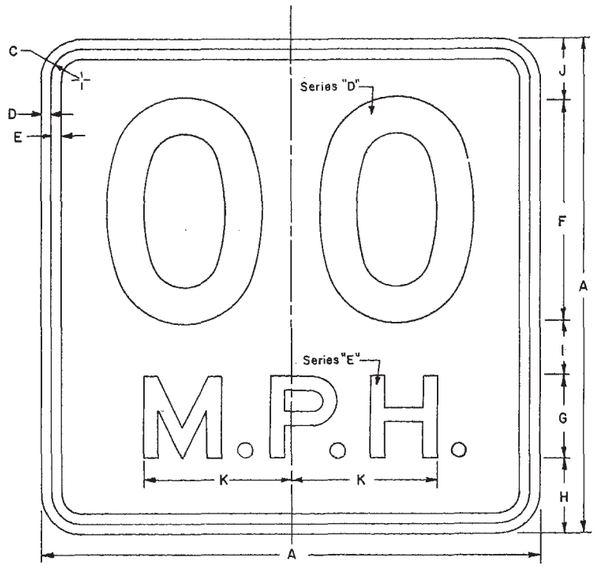
STANDARD SIGN
G20-2

WISCONSIN DIVISION OF HIGHWAYS

APPROVED _____
CHIEF TRAFFIC ENGINEER

DATE 12-19-77 PLATE NO. G20-2.3

PROJECT I.D.	SHEET NUMBER	TOTAL SHEETS
PROJECT DESIGNATION		



W13–1

NOTES:

1. Sign is Type II
2. Color:

   Background – Reflectorized Yellow

   Message – Black
3. Face Material – Reflective Sheeting
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. This drawing may be scaled for Standard Size only.
6. Substitute appropriate numerals & adjust spacing to achieve proper balance.
7. This sign shall not be used alone. It shall be subordinate to another Warning Sign. Use combination of sign sizes as follows:

Primary Sign	Corresponding W13–1
24 x 24 24 x 30 30 x 30	18 x 18
36 x 36 36 x 48	24 x 24
48 x 48 48 x 60	36 x 36

8. When required the W13–1 may be ordered with a white reflective background by using the code W13–1W and using the above table for determining the proper size.

SIZE	CODE SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Bid Area Sq. Ft.
Minimum	1	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 5/16																2.25
Standard	2	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 5/16																2.25
Oversize	3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
Exp-way	4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
Freeway	5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
		AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	
Minimum	1																											
Standard	2																											
Oversize	3																											
Exp-way	4																											
Freeway	5																											

RA

Date Drawn –	Date Redrawn – 2-19-73 WEK
Date Revised –	7-12-63 2-19-73 WEK 2-7-75 JW 12-7-77 DH

STANDARD SIGN
W13–1

WISCONSIN DIVISION OF HIGHWAYS

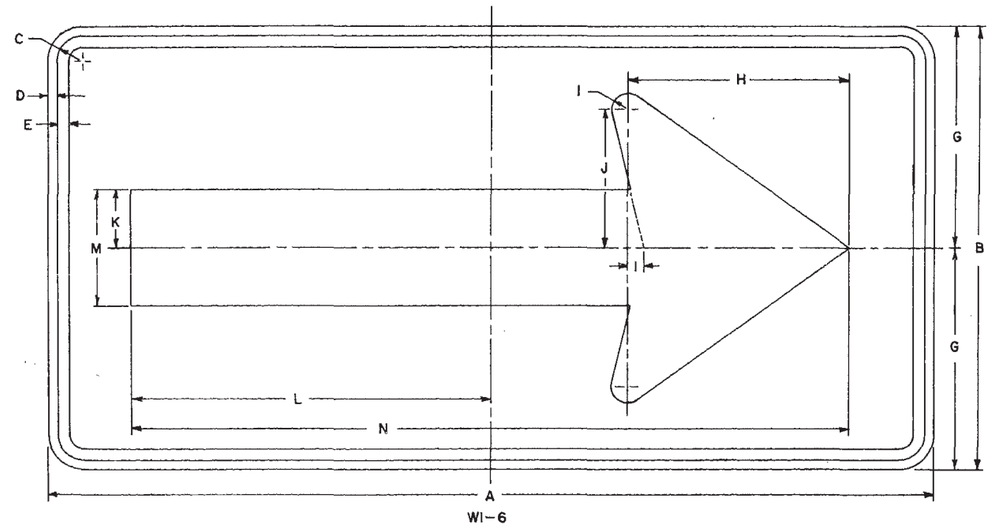
APPROVED _____ CHIEF TRAFFIC ENGINEER

DATE 12/19/77 PLATE NO. W13-1.6

PROJECT I. D.	SHEET NUMBER	TOTAL SHEETS
PROJECT DESIGNATION		

NOTES:

1. Sign is Type II
2. Color:
   Background — Reflectorized Yellow
   Message — Black
3. Face Material — Reflective Sheeting
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be roundad.



WI–6

SIZE	CODE SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Bid Area Sq. Ft.
Minimum	1	40	20	1 1/8	3/8	1/4		10	10 3/8	5/8	6 1/4	2 5/8	16 1/4	5 1/4	32 1/2													5.56
Standard	2	48	24	1 3/8	1/2	5/16		12	12 1/2	7/8	7 1/2	3 1/8	19 1/2	6 1/4	39													8.00
Oversize	3	60	30	1 3/8	1/2	5/8		15	15 5/8	1 1/8	9 3/8	3 15/16	24 3/8	7 7/8	48 3/4													12.50
Exp-way	4	60	30	1 3/8	1/2	5/8		15	15 5/8	1 1/8	9 3/8	3 15/16	24 3/8	7 7/8	48 3/4													12.50
Freeway	5	96	48	2 1/4	3/4	1		24	25	1 3/4	15	6 1/4	39	12 1/2	78													32.00
		AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	
Minimum	1																											
Standard	2																											
Oversize	3																											
Exp-way	4																											
Freeway	5																											

Date Drawn — Date Redrawn — 5-12-78 mkr

Date Revised — 5-12-78 mkr

STANDARD SIGN
WI–6

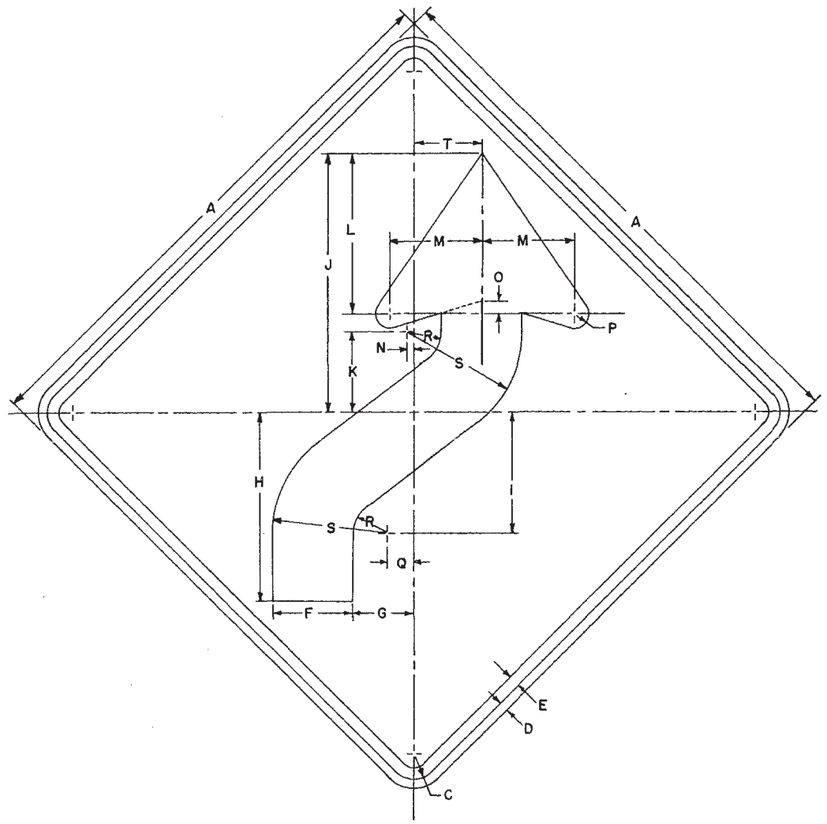
WISCONSIN DIVISION OF HIGHWAYS

APPROVED

CHIEF TRAFFIC ENGINEER

DATE 7-13-78 PLATE NO. WI-6.4

PROJECT I.D.	SHEET NUMBER	TOTAL SHEETS
PROJECT DESIGNATION		



WI-4R

NOTES:

1. Sign is Type II
2. Color:
   Background — Reflective Yellow
   Message — Black
3. Face Material — Reflective Sheeting
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. WI-4L is the same as WI-4R except the Arrow is reversed along the vertical ℄.
6. This drawing may be scaled for Standard Size Only.

SIZE	CODE SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Bid Area Sq. Ft.
Minimum	1																											
Standard	2	30		1 3/8	1/2	5/8	4 3/8	3 9/32	10 5/16	6 9/16	14 1/16	4 3/8	8 3/4	5	3/8	5/8	3/4	1 15/32	1 7/8	6 1/4	3 11/16							6.25
Oversize	3	36		1 5/8	5/8	3/4	5 1/4	3 15/16	12 3/8	7 7/8	16 7/8	5 1/4	10 1/2	6	7/16	3/4	15/16	1 11/16	2 1/4	7 1/2	4 3/16							9
Exp-way	4	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	7	14	8	9/16	1	1 1/4	2 1/4	3	10	5 15/16							16
Freeway	5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	7	14	8	9/16	1	1 1/4	2 1/4	3	10	5 15/16							16

		AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	
Minimum	1																											
Standard	2																											
Oversize	3																											
Exp-way	4																											
Freeway	5																											

RA

Date Drawn — 6-1-64 Date Redrawn — 1-10-78 WR

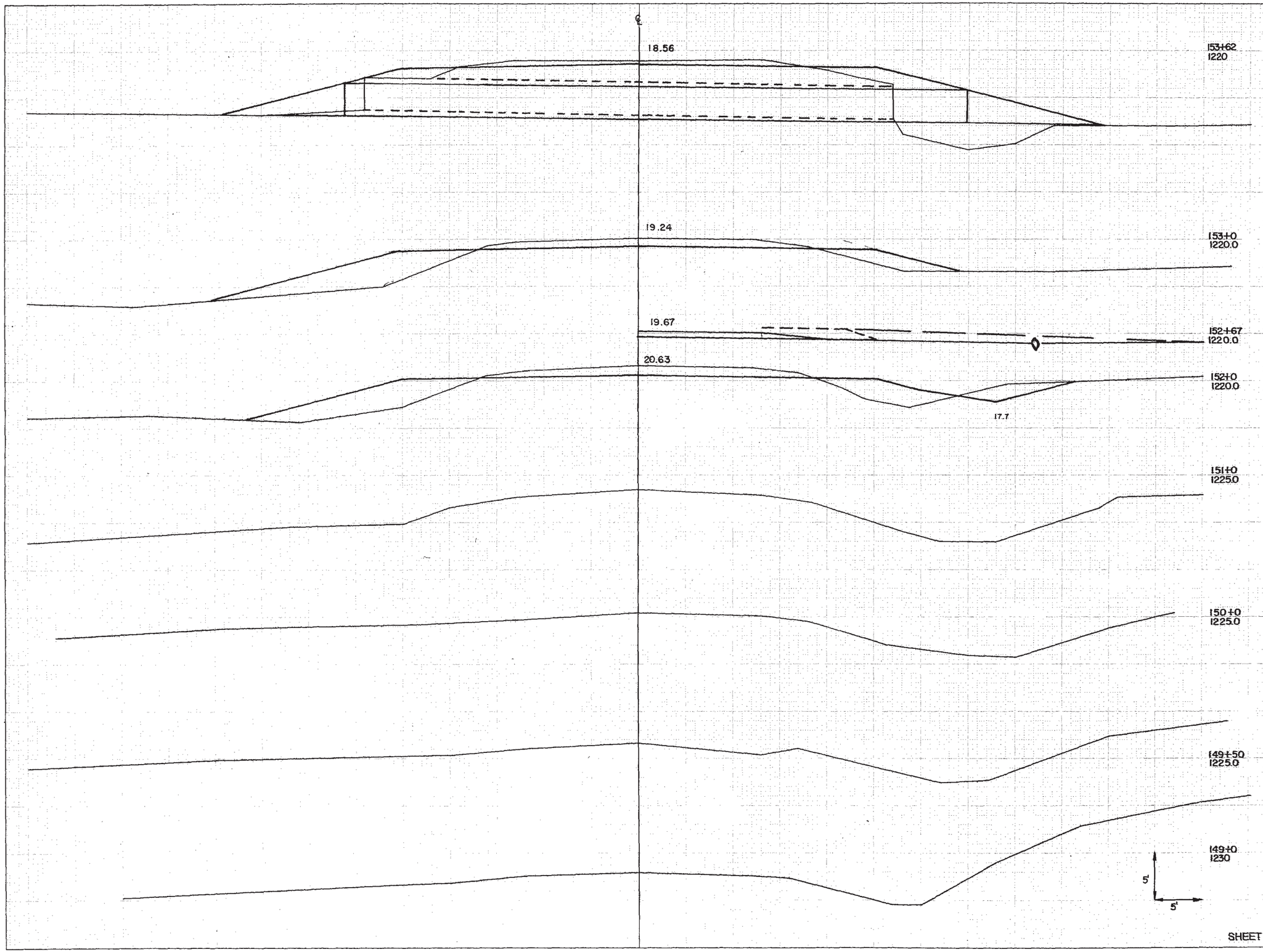
Date Revised —

STANDARD SIGN
WI-4R & WI-4L

WISCONSIN DIVISION OF HIGHWAYS

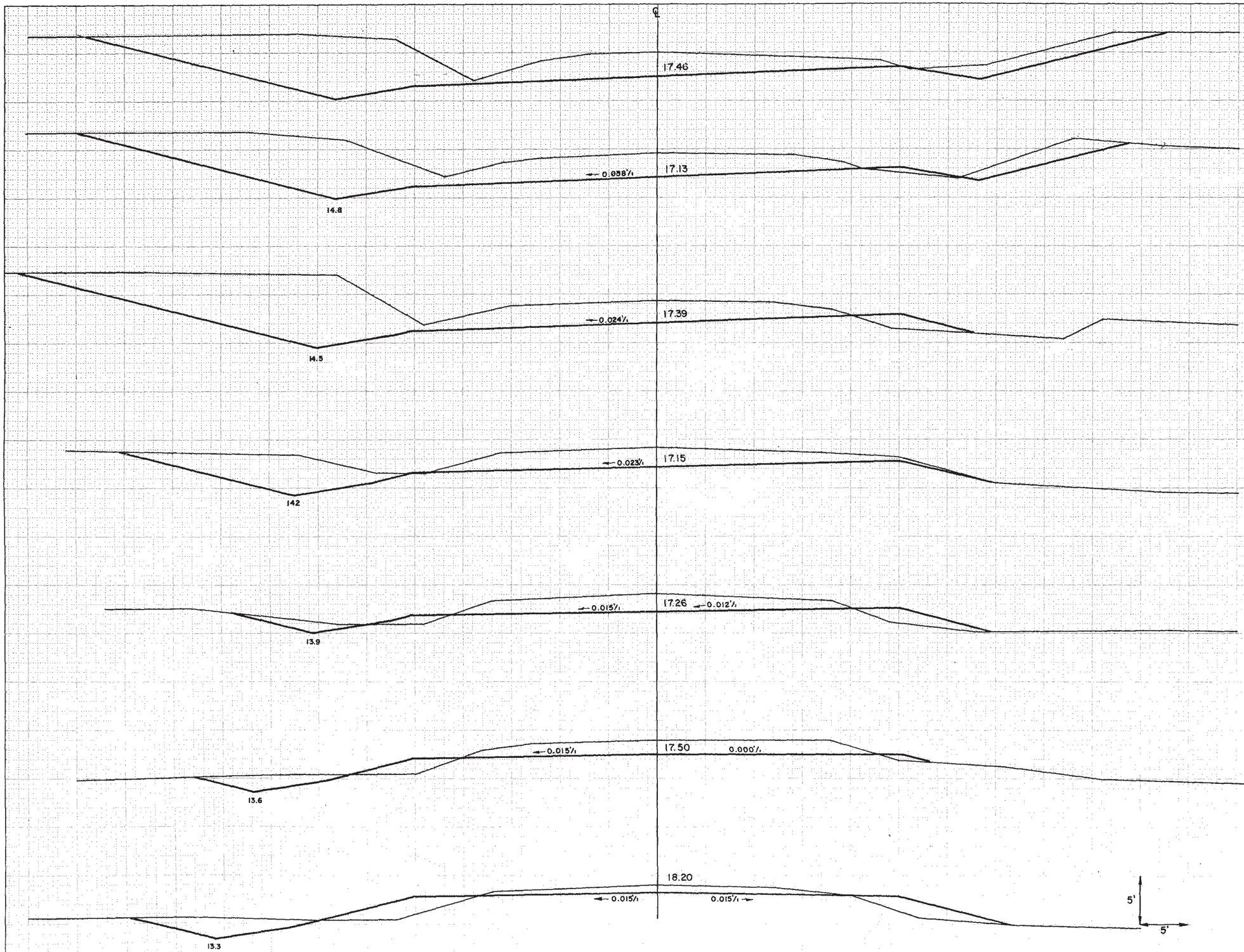
APPROVED _____
CHIEF TRAFFIC ENGINEER

DATE 1-29-78 PLATE NO. WI-4.5



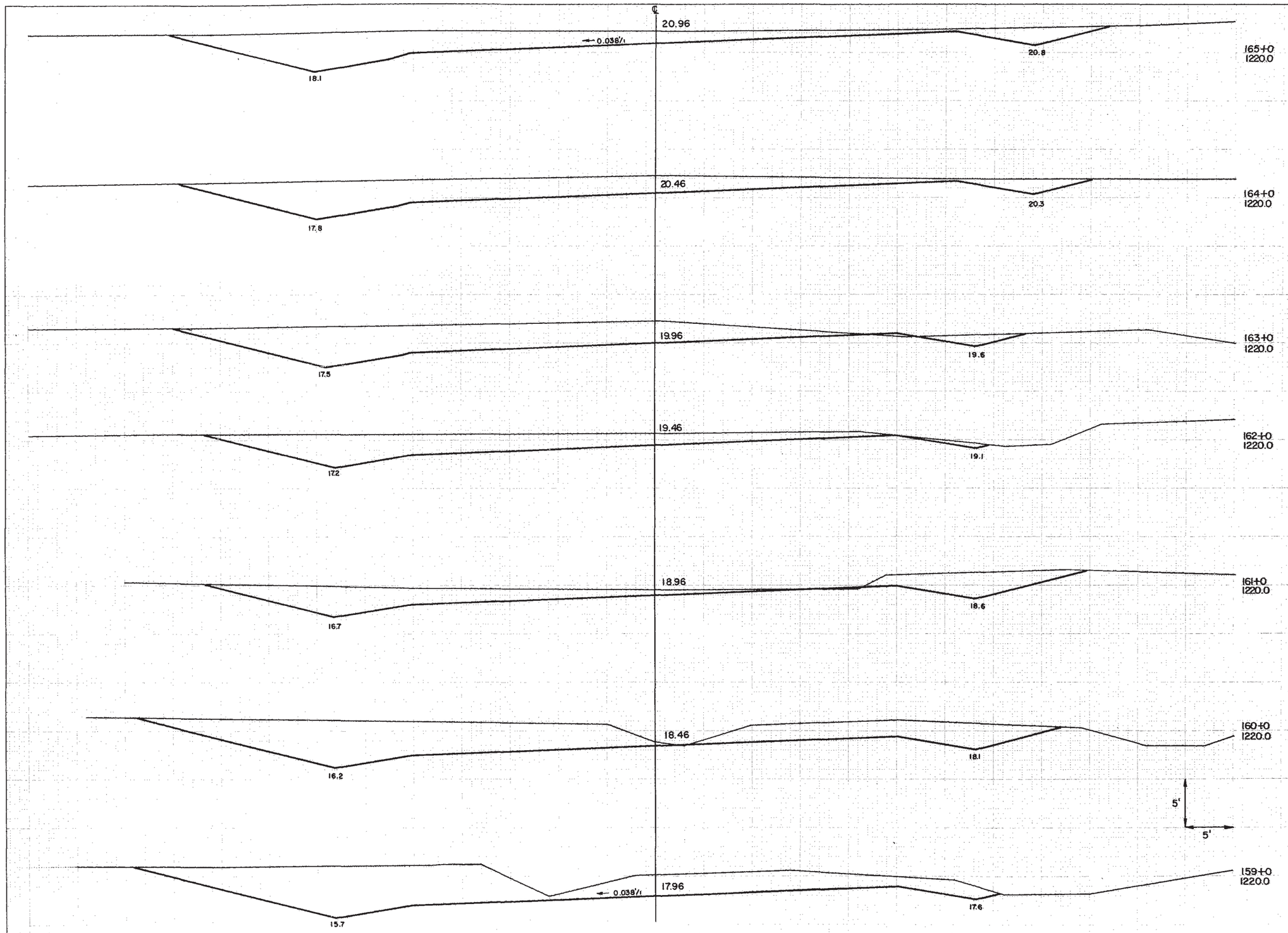
STATE PROJECT NUMBER	SHEET NUMBER
8520-I-71	9

STATION	DISTANCE	YARDAGE EXCAVATION UNCL.	FILL
151			
		74	117
152			
		122	233
153			
SHEET TOTAL		196	350



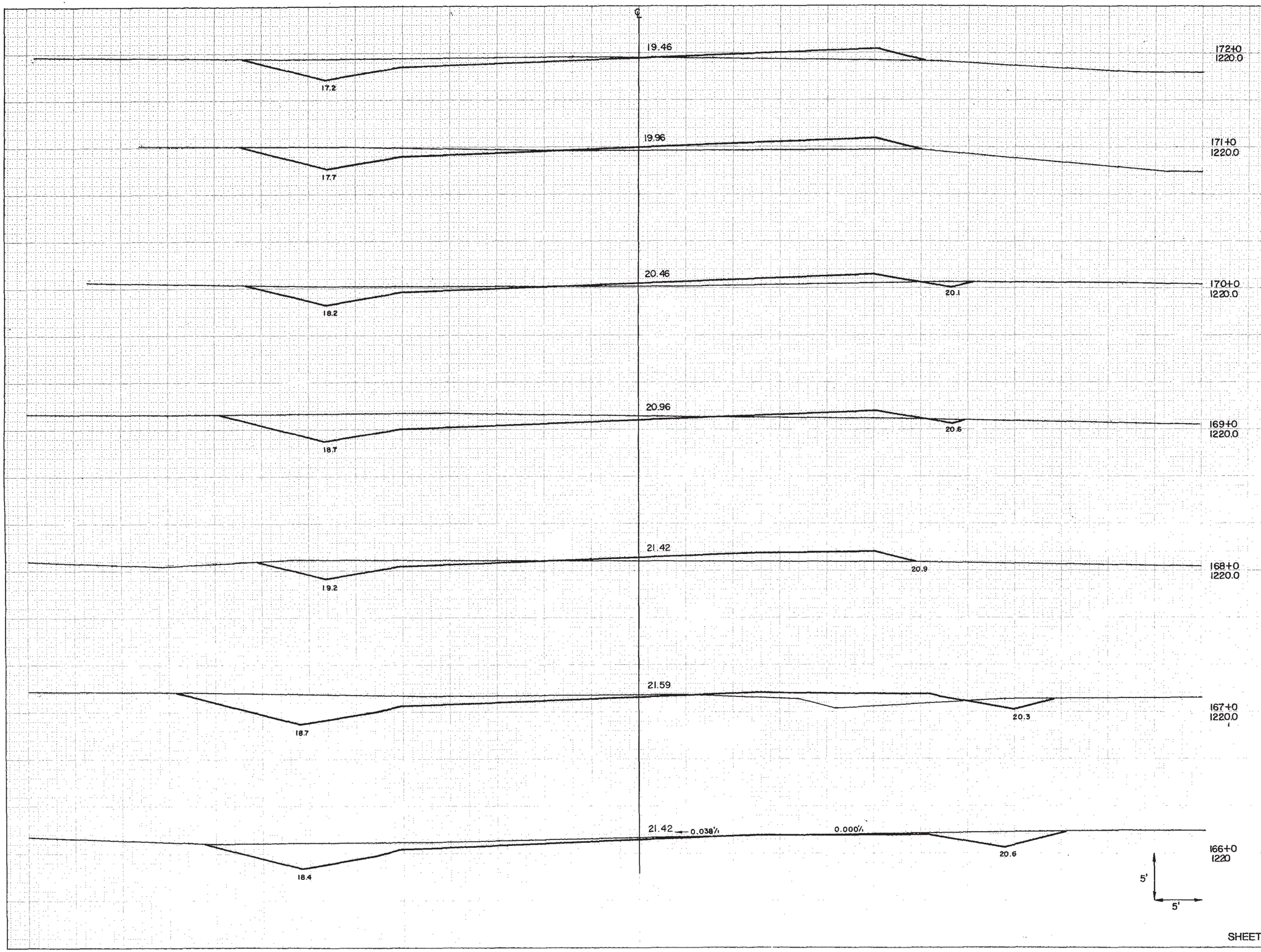
STATE PROJECT NUMBER	SHEET NUMBER
8520 – 1 – 71	9.1

STATION	DISTANCE	YARDAGE EXCAVATION	FILL
153			
	130		178
154			
	206		85
155			
	133		31
+55			
	163		15
156			
	348		9
+50			
	439		13
157			
	881		7
158			
SHEET TOTAL		2300	338



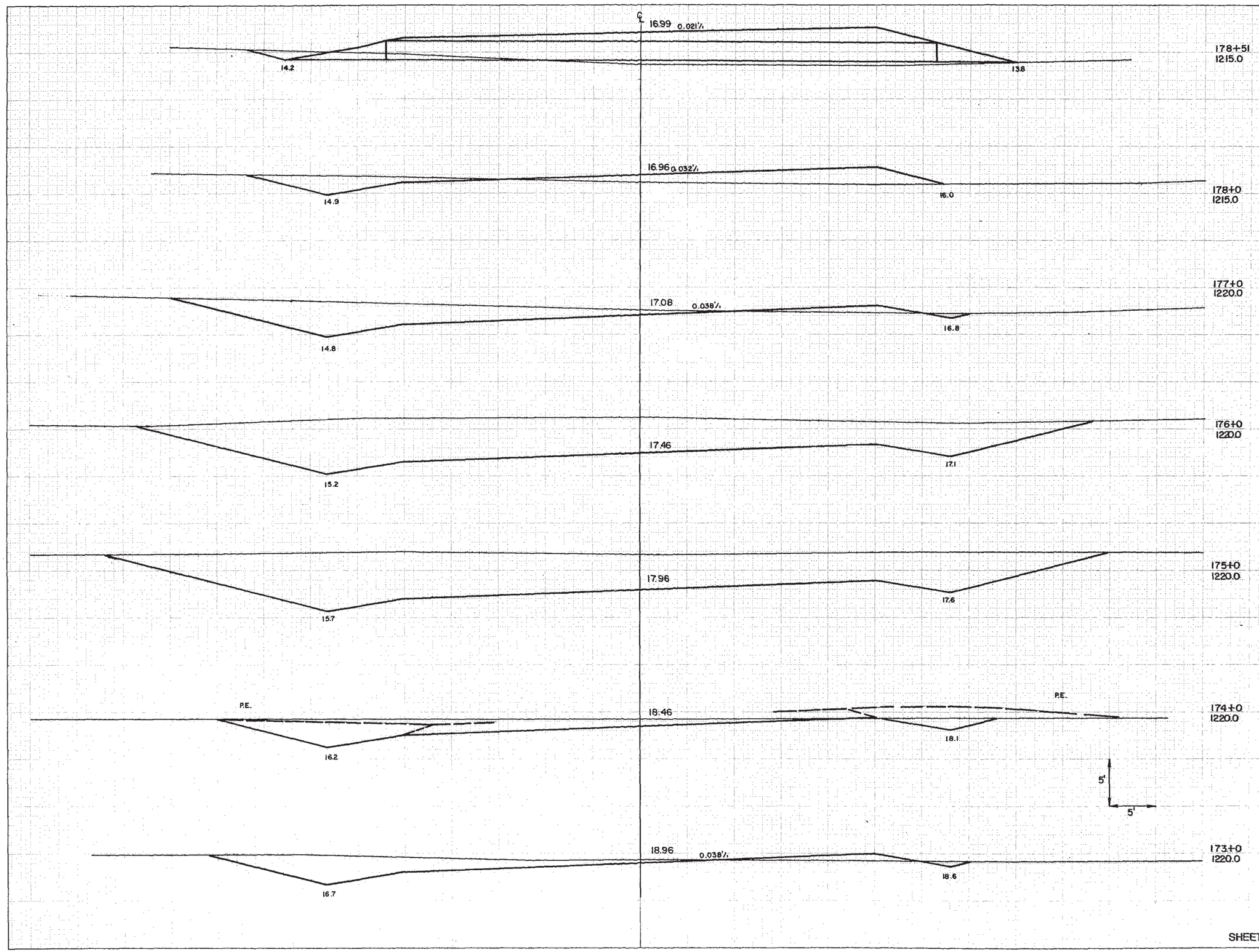
STATE PROJECT NUMBER	SHEET NUMBER
8520 – I – 71	9.2

STATION	DISTANCE	YARDAGE EXCAVATION UNC.				FILL
158						
		844				0
159						
		785				0
160						
		592				2
161						
		396				2
162						
		491				2
163						
		572				2
164						
		537				0
165						
SHEET TOTAL		4217				8



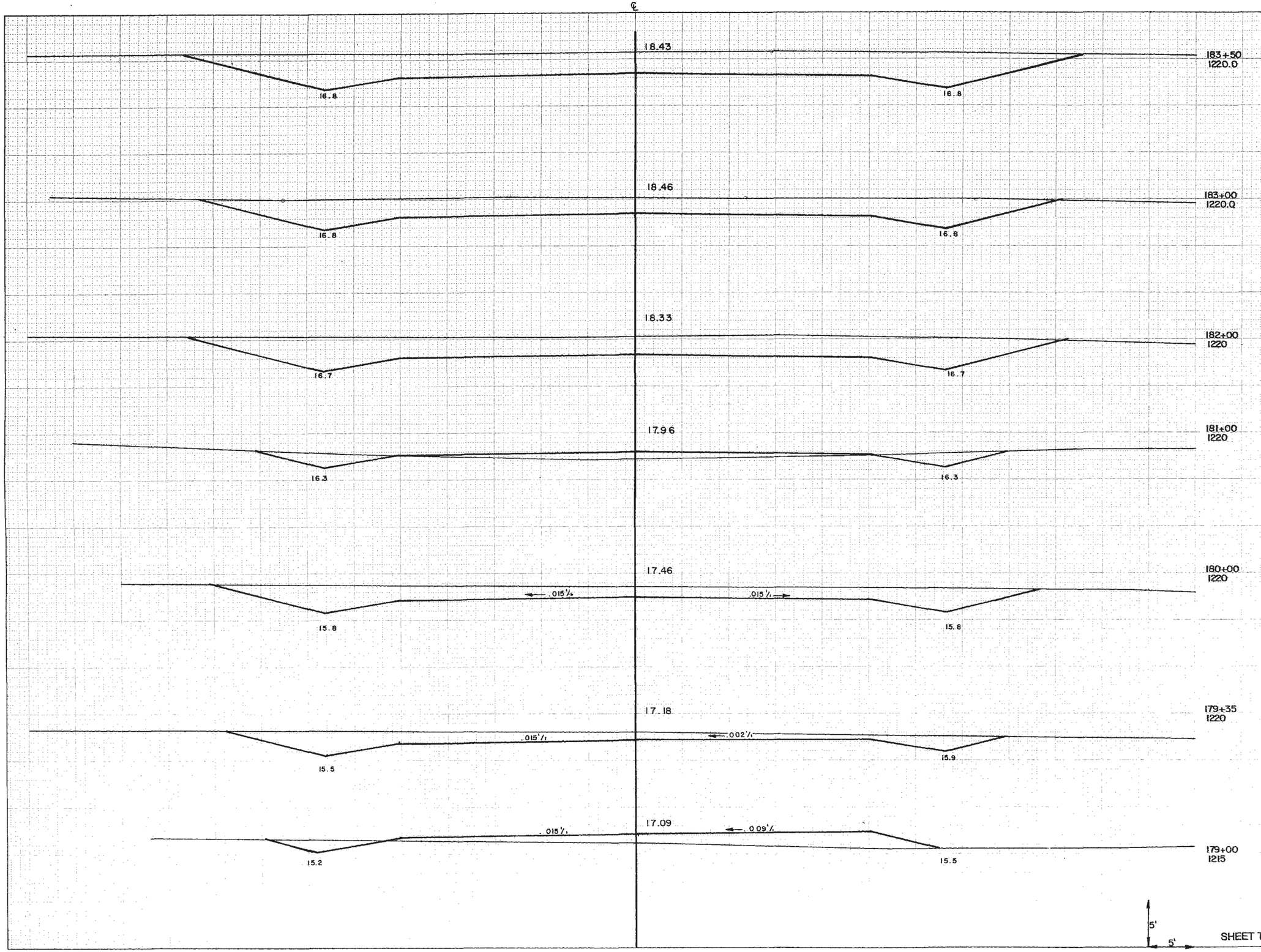
STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.3

STATION	DISTANCE	YARDAGE EXCAVATION UNC.				FILL
165						
		361				0
166						
		222				44
167						
		156				94
168						
		159				67
169						
		167				54
170						
		98				85
171						
		117				81
172						
SHEET TOTAL		1280				425



STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.4

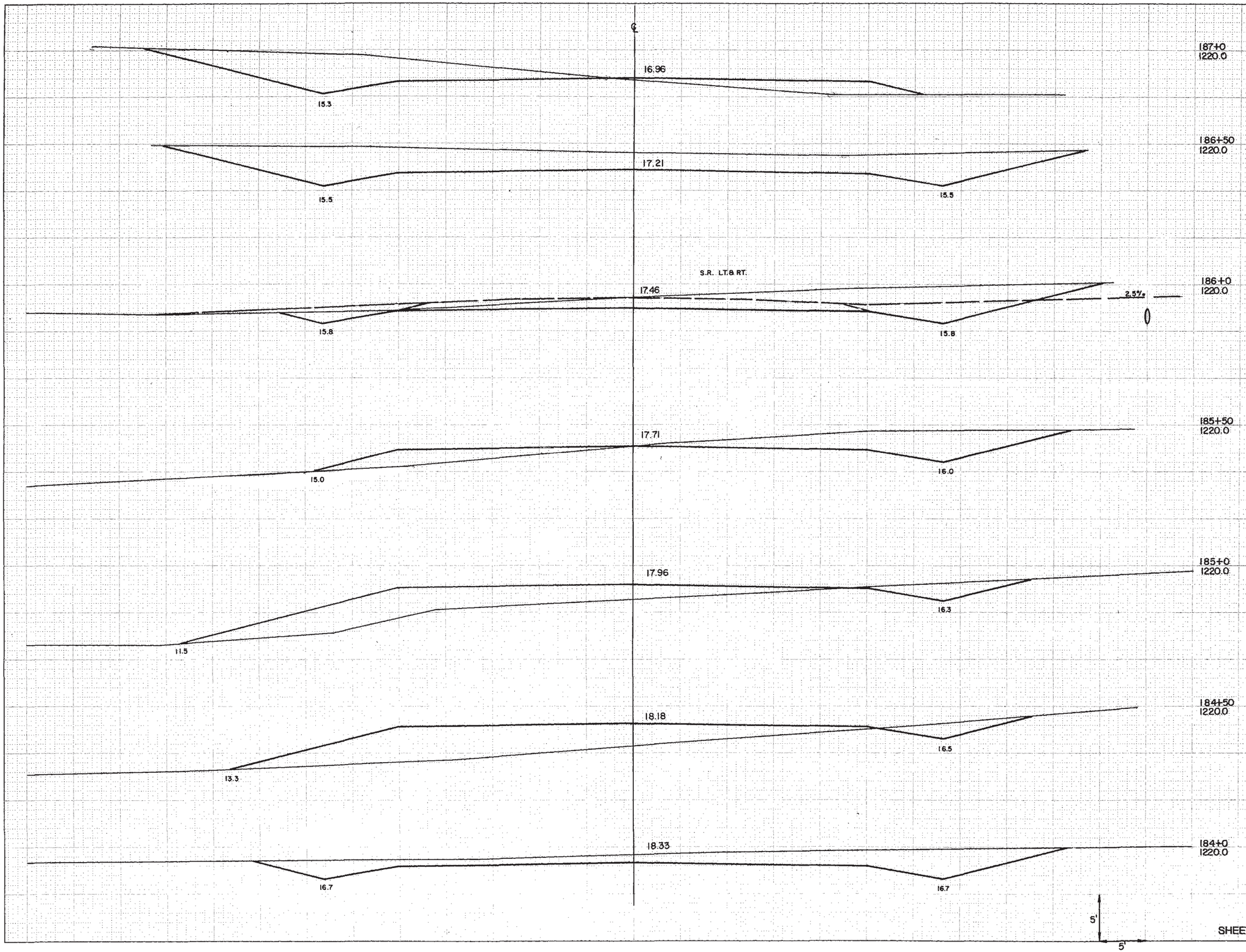
STATION	DISTANCE	YARDAGE EXCAVATION UNC.				FILL
172						
		168				50
173						
		254				17
174						
		842				0
175						
		1311				0
176						
		792				17
177						
		213				106
178						
		24				228
+51						
SHEET TOTAL		3604				418



STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.5

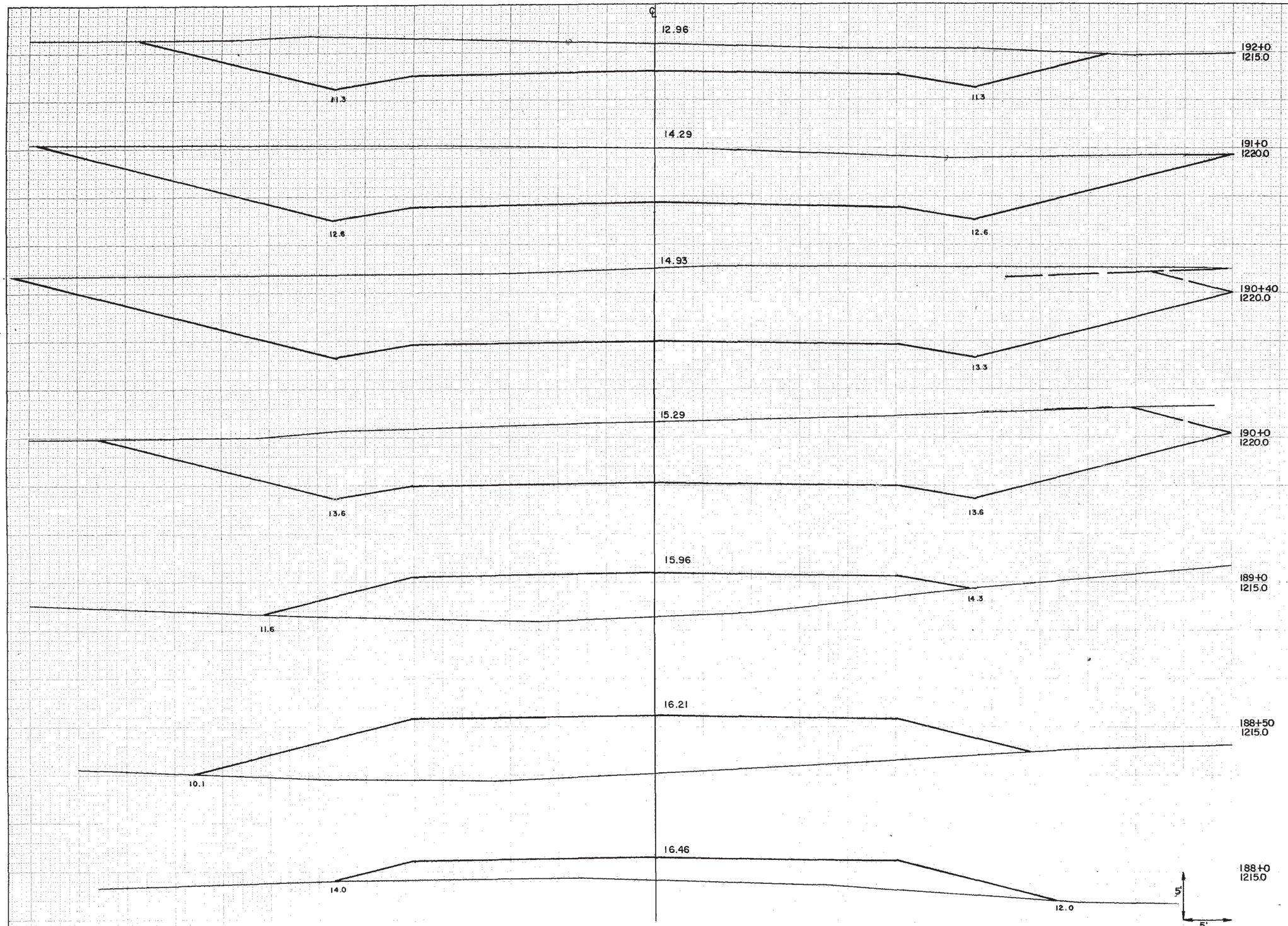
STATION	DISTANCE	YARDAGE EXCAVATION UNCL.	FILL
178+51			
		9	228
179			
		59	37
+35			
		257	0
180			
		276	41
181			
		413	41
182			
		696	0
183			
		374	0
+50			
SHEET TOTAL		2084	347

STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.6



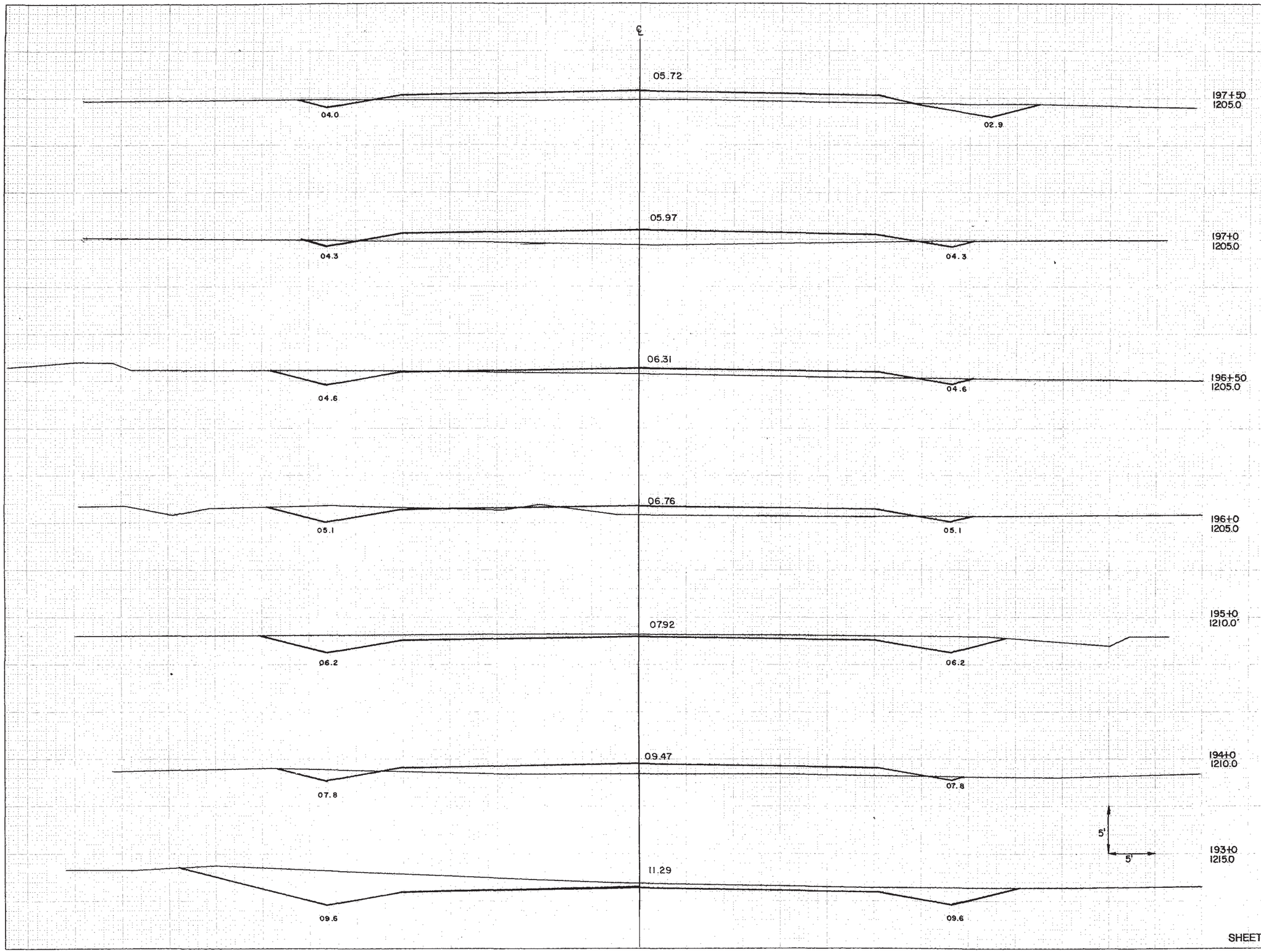
STATION	DISTANCE	YARDAGE EXCAVATION UNC.	FILL
183 50+			
		311	0
184			
		111	139
+50			
		30	252
185			
		81	141
+50			
		181	30
186			
		315	0
+50			
		289	26
187			
SHEET TOTAL		1318	588

Catalog No. 2130-C121



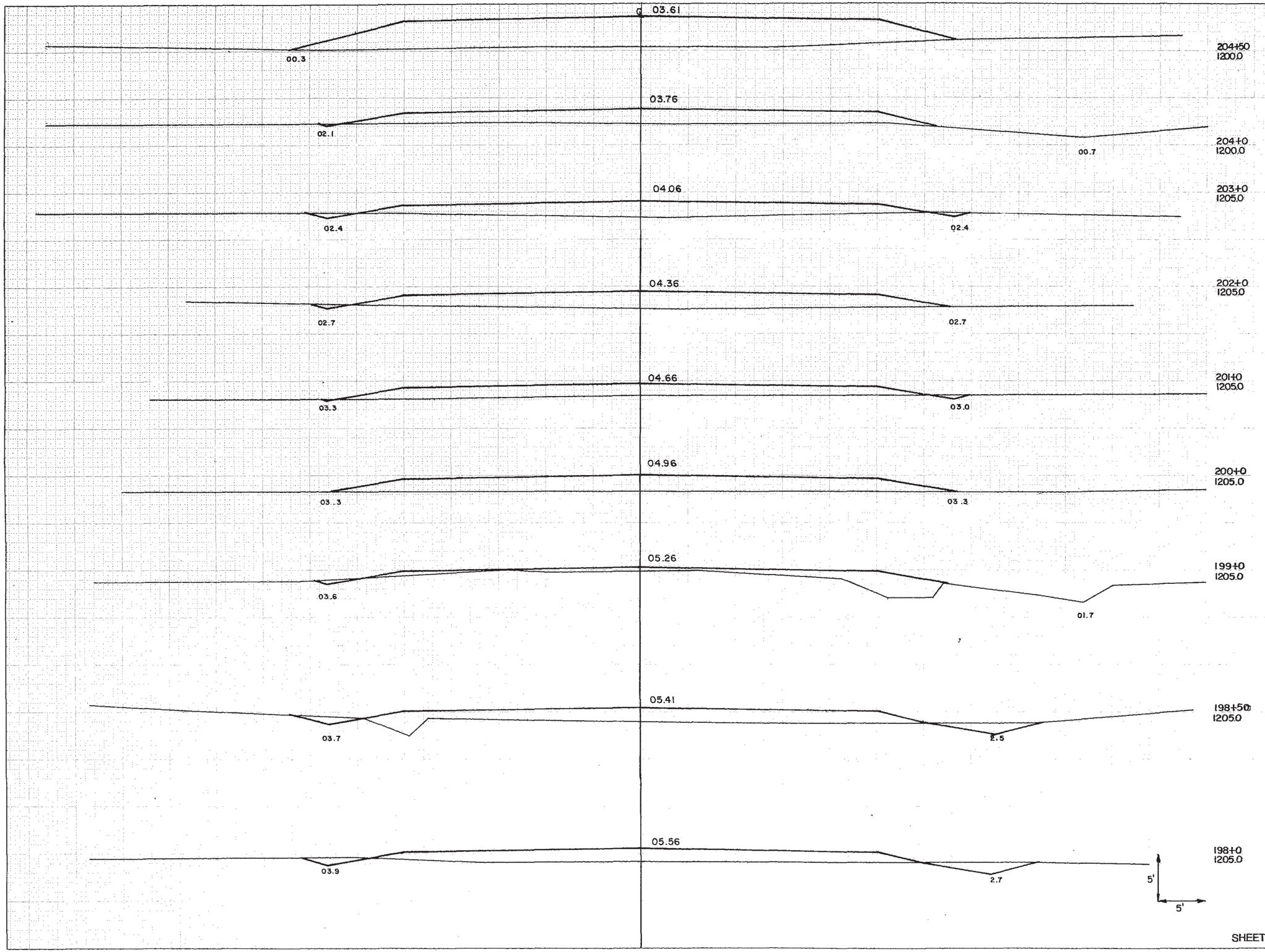
STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.7

STATION	DISTANCE	YARDAGE EXCAVATION UNCL.	FILL
187			
		181	331
188			
		0	507
+50			
		0	598
189			
		646	231
190			
		1133	0
+40			
		1591	0
191			
		1668	0
192			
SHEET TOTAL		5219	1667



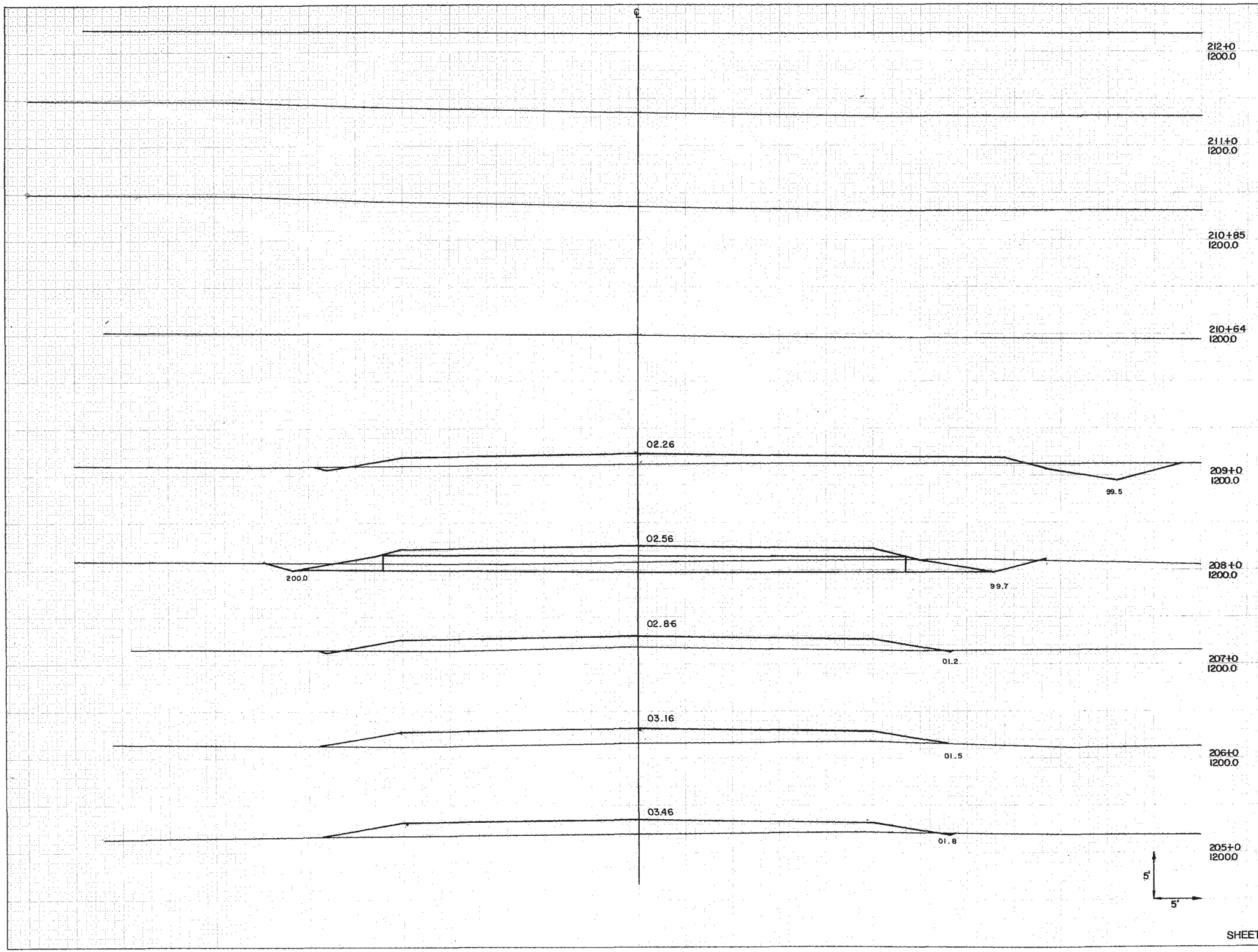
STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.8

STATION	DISTANCE	YARDAGE EXCAVATION UNCL.	YARDAGE EXCAVATION	YARDAGE EXCAVATION	YARDAGE EXCAVATION	YARDAGE FILL
192						
		781				0
193						
		239				89
194						
		106				89
195						
		120				56
196						
		28				28
+50						
		18				59
197						
		11				102
+50						
SHEET TOTAL		1303				423



STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.9

STATION	DISTANCE	YARDAGE EXCAVATION UNCL.	YARDAGE EXCAVATION	YARDAGE EXCAVATION	YARDAGE EXCAVATION	YARDAGE FILL
197 + 50						
		7				107
198		7				139
+50		4				113
199		2				242
200		2				285
201		4				278
202		9				289
203		9				283
204		0				242
+50						
SHEET TOTAL		44				1978

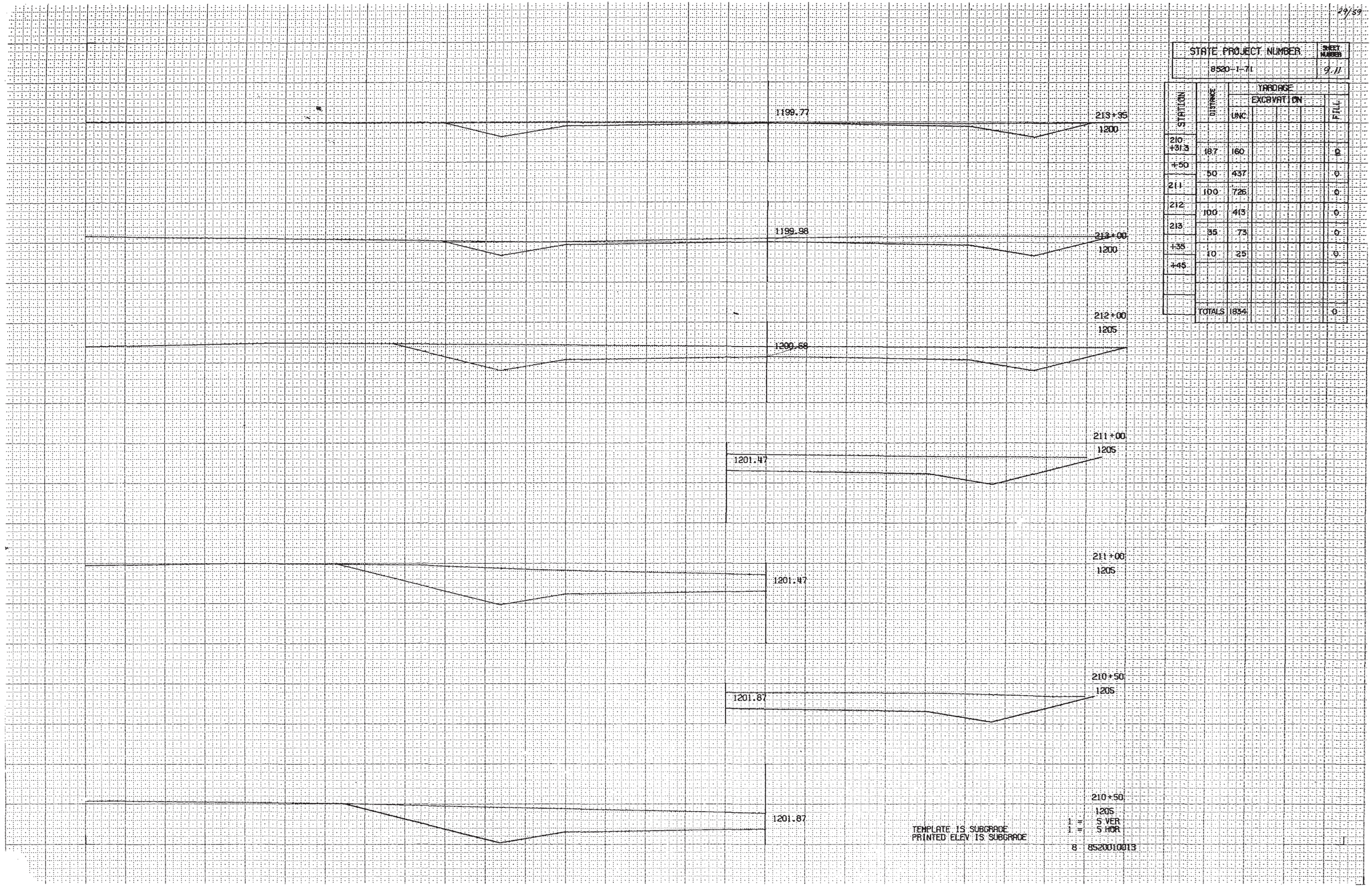


STATE PROJECT NUMBER	SHEET NUMBER
8520 -1-71	9.10

STATION	DISTANCE	YARDAGE					
		EXCAVATION					FILL
		UNCL.					
204 + 50							
		0					241
205							
		0					296
206							
		2					278
207							
		26					294
208							
		57					278
209							
		11					37
209 + 33							
SHEET TOTAL		96					1424

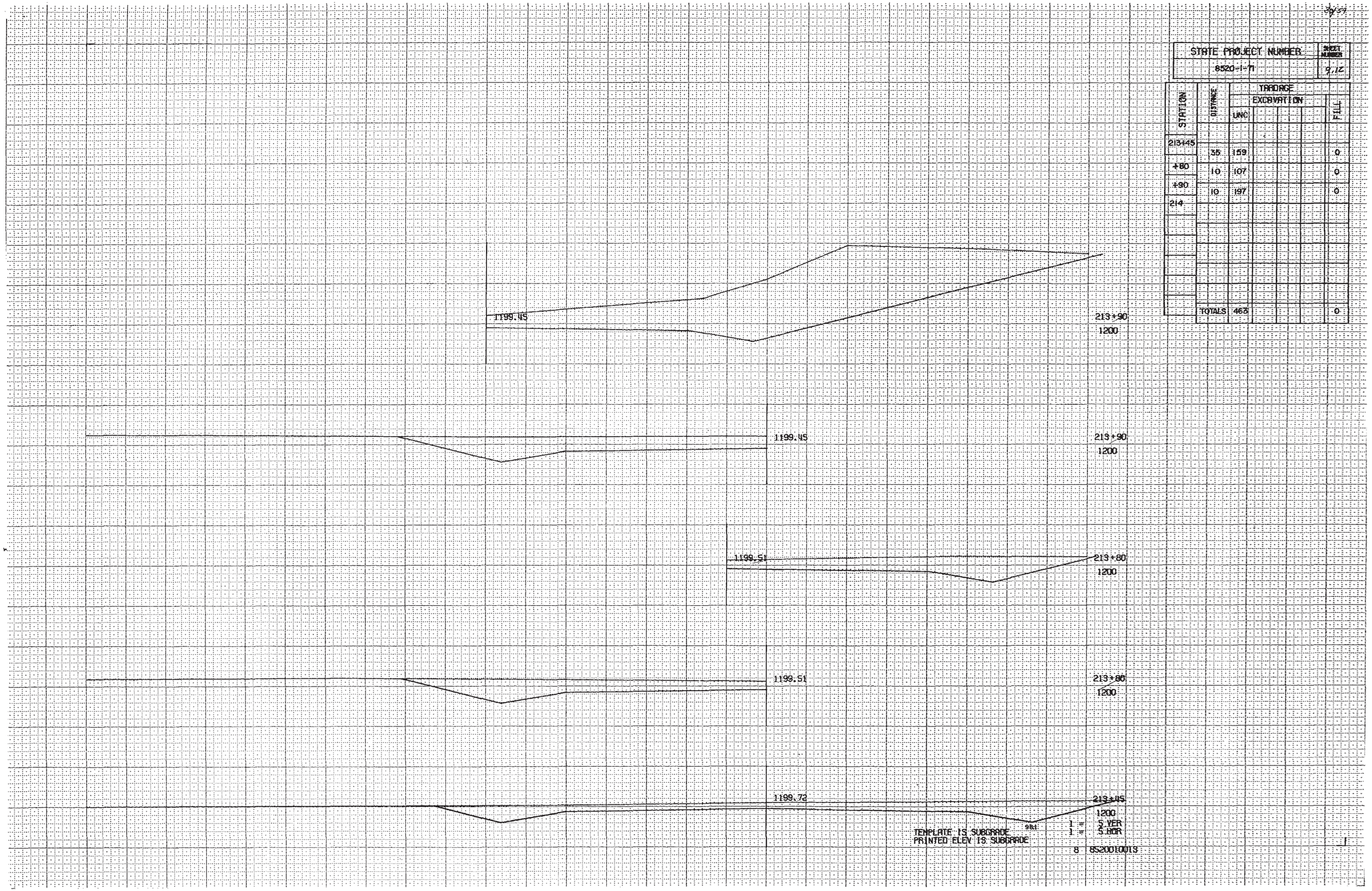
STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.11

STATION	DISTANCE	YARDAGE EXCAVATION UNC	FILL
210 +31.3	18.7	160	0
+50	50	437	0
211	100	726	0
212	100	413	0
213	35	73	0
+35	10	25	0
+45			
	TOTALS	1834	0



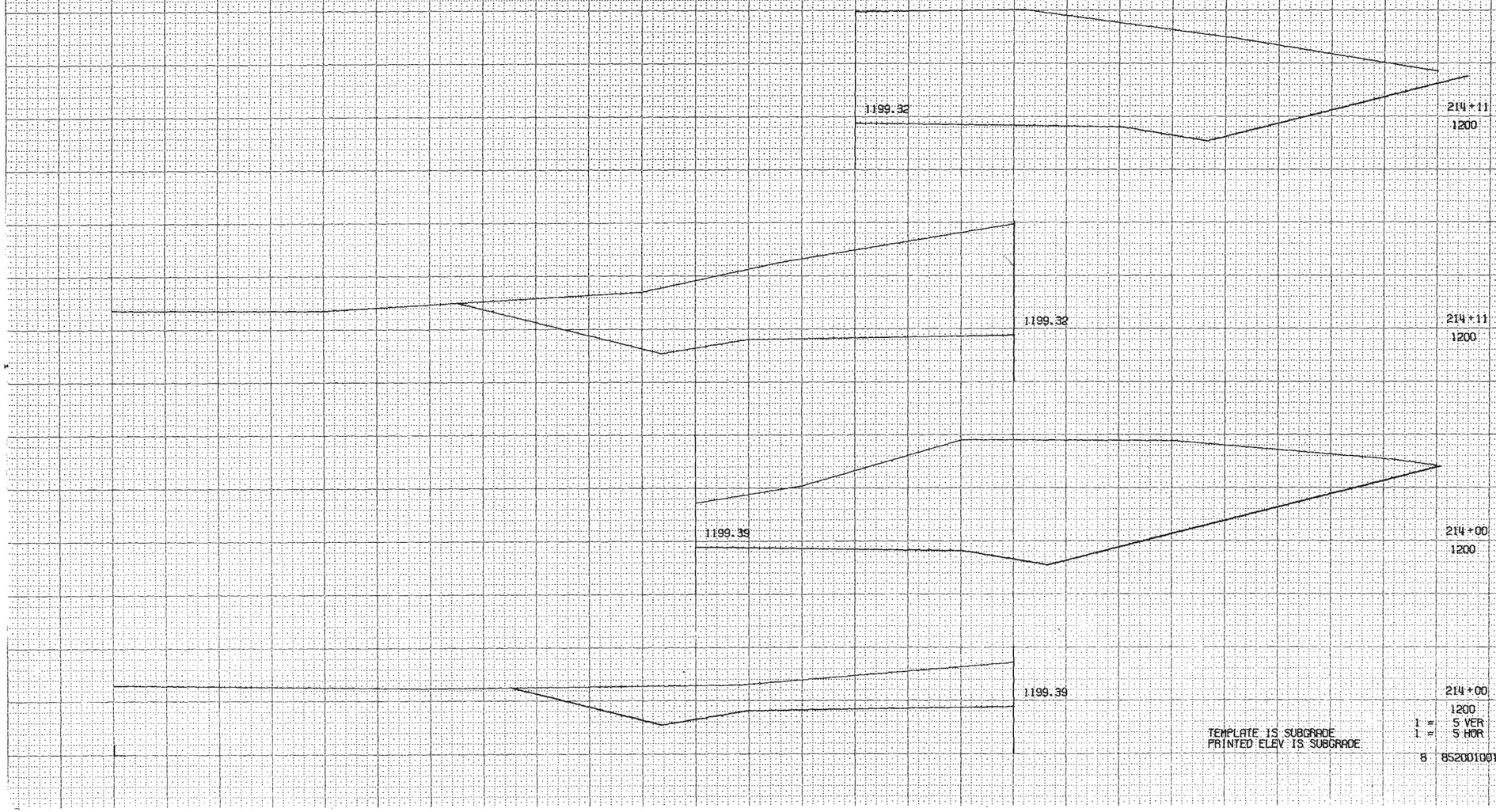
STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.12

STATION	DISTANCE	TAPDAGE EXCAVATION UNC	FILL
213+45			
	35	159	0
+80	10	107	0
+90	10	197	0
214			
TOTALS	465		0



STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9/13

STATION	DISTANCE	YARDAGE EXCAVATION UNC.	FILL
214	11	291	0
+11	9	281	0
+20			
	TOTALS	572	0



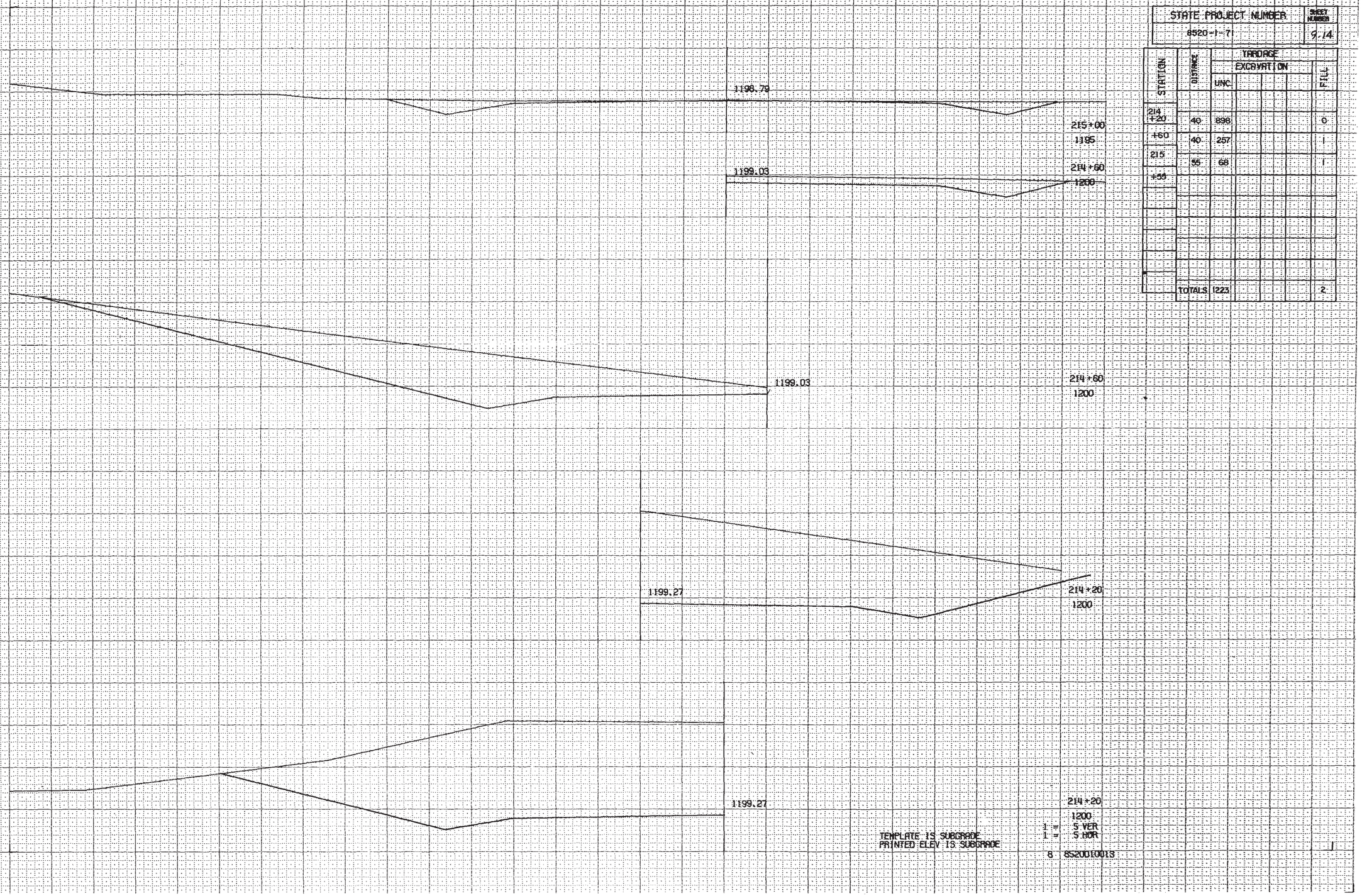
TEMPLATE IS SUBGRADE
PRINTED ELEV IS SUBGRADE

1 = 5 VER
1 = 5 HOR

8 8520010013

STATE PROJECT NUMBER	SHEET NUMBER
8520-1-7	9.14

STATION	DISTANCE	TARDAGE EXCAVATION UNC.	FILL
214 +20	40	898	0
+60	40	257	1
215	55	68	1
+55			
TOTALS		1223	2



TEMPLATE IS SUBGRADE
PRINTED ELEV IS SUBGRADE

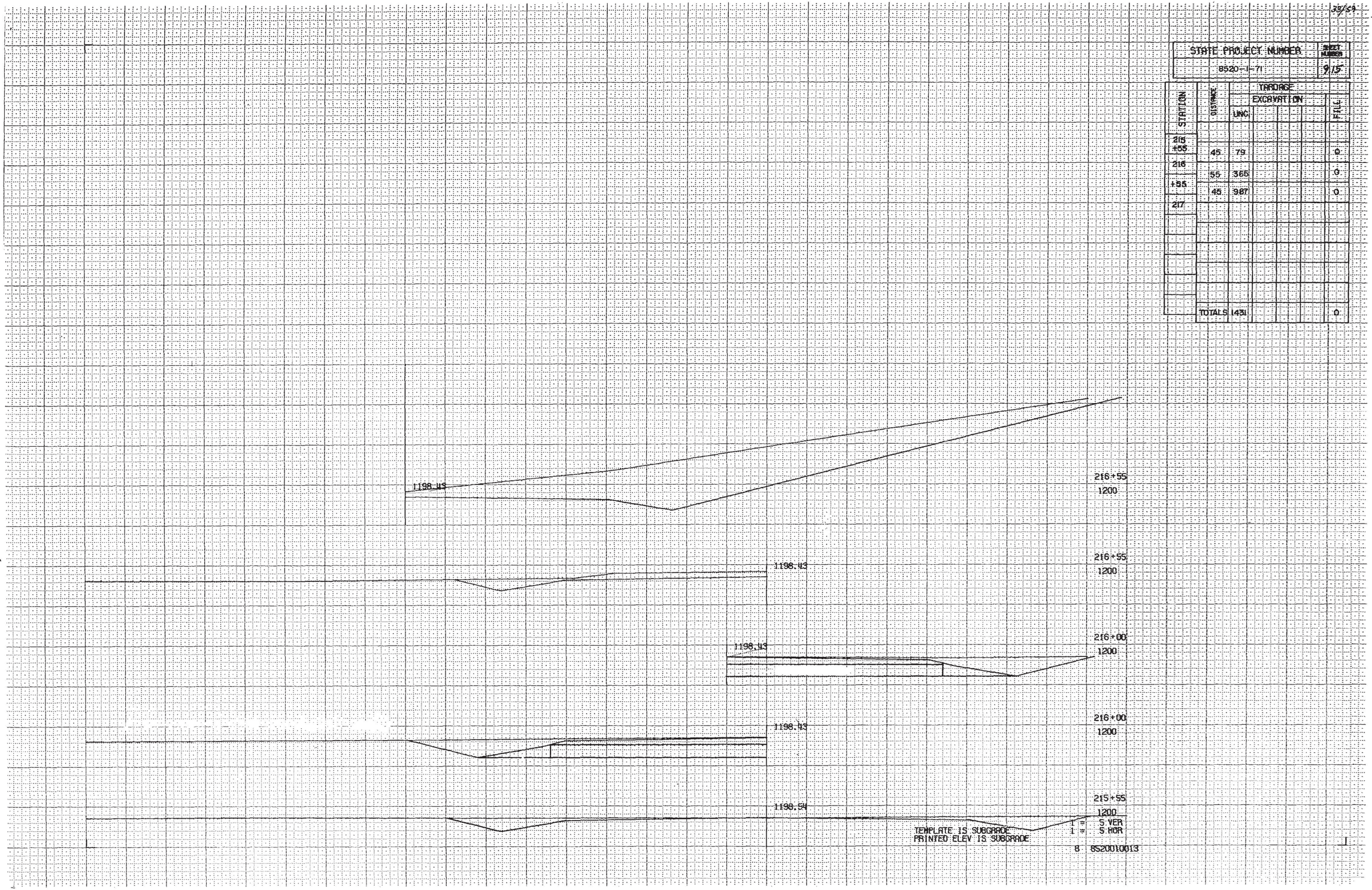
1 = 5 VER
1 = 5 HOR

8 8S2001C013

38/59

STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9/15

STATION	DISTANCE	TARGRADE EXCAVATION UNC	FILL
215 +55	45	79	0
216	55	365	0
+55	45	987	0
217			
TOTALS	1451		0



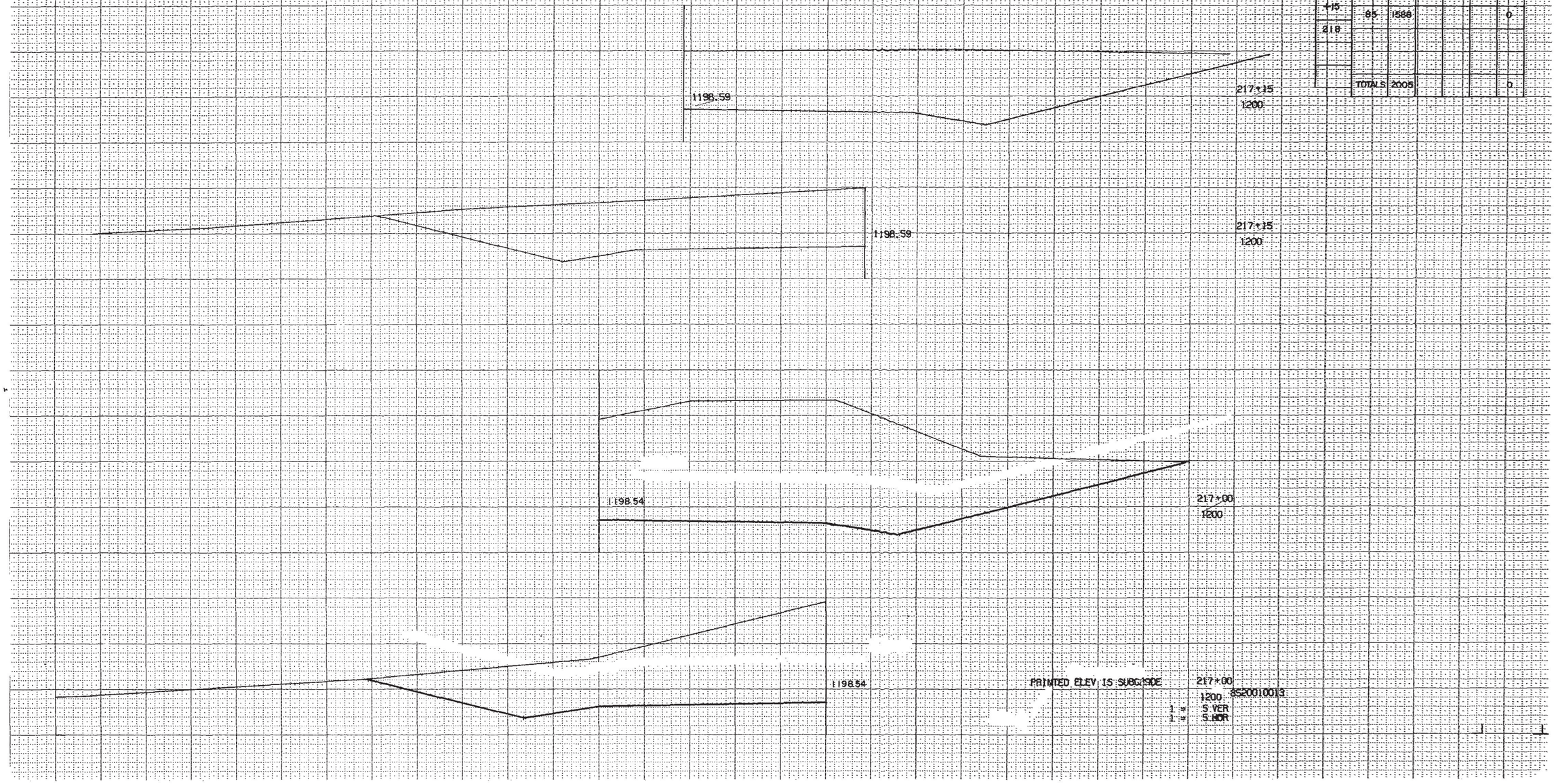
TEMPLATE IS SUBGRADE
PRINTED ELEV IS SUBGRADE

1 = S:VER
1 = S:HOR

8 8S20010013

STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.16

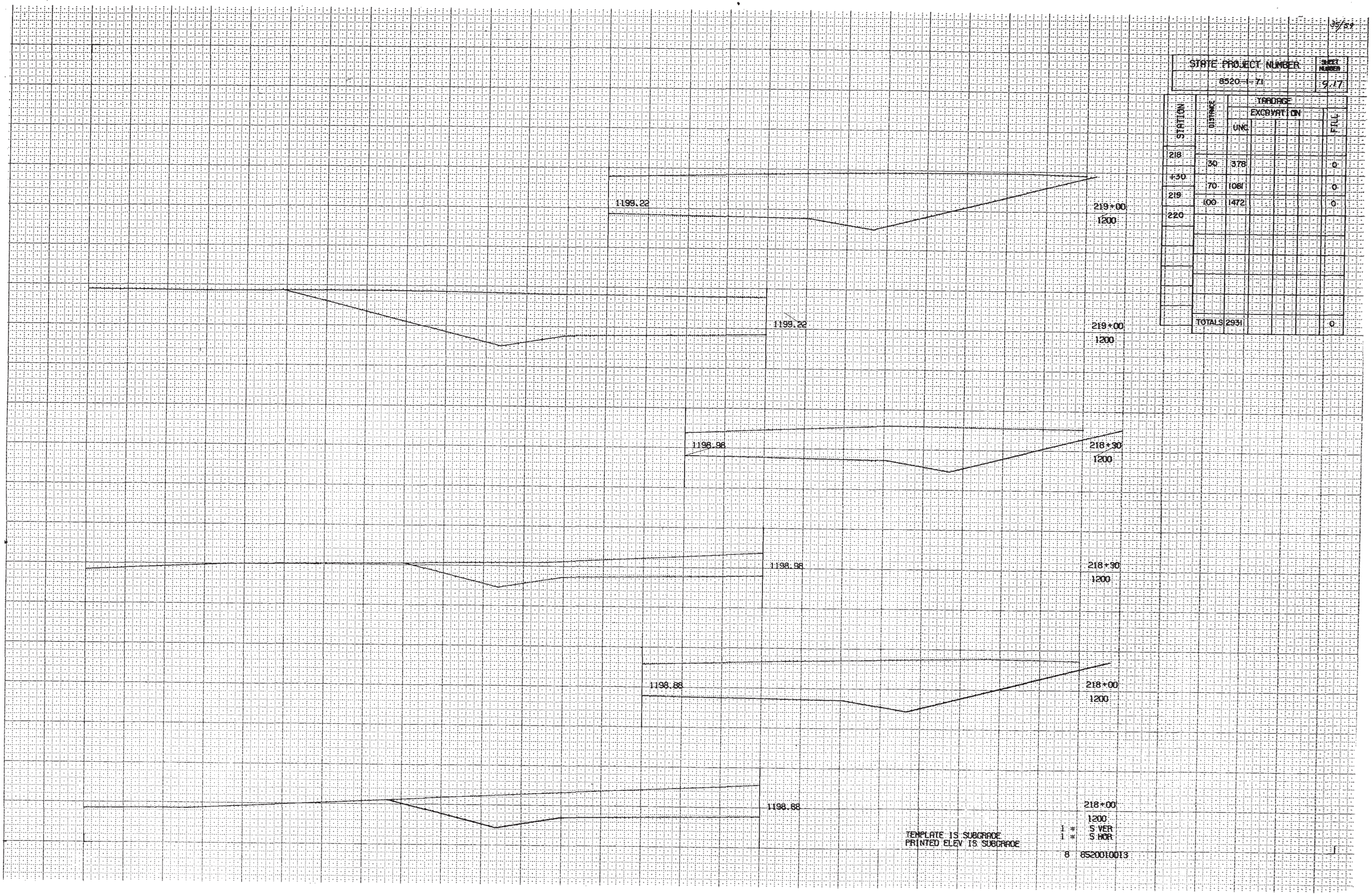
STA.	DIS.	YARDAGE EXCAVATION UNC.	FILL
217 +15	15	417	0
218	85	1588	0
TOTALS	2005		0



35/39

STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.17

STATION	DISTANCE	YARDAGE EXCAVATION UNC.	FILL
218			
+30	30	378	0
219	70	1081	0
220	100	1472	0
TOTALS		2931	0



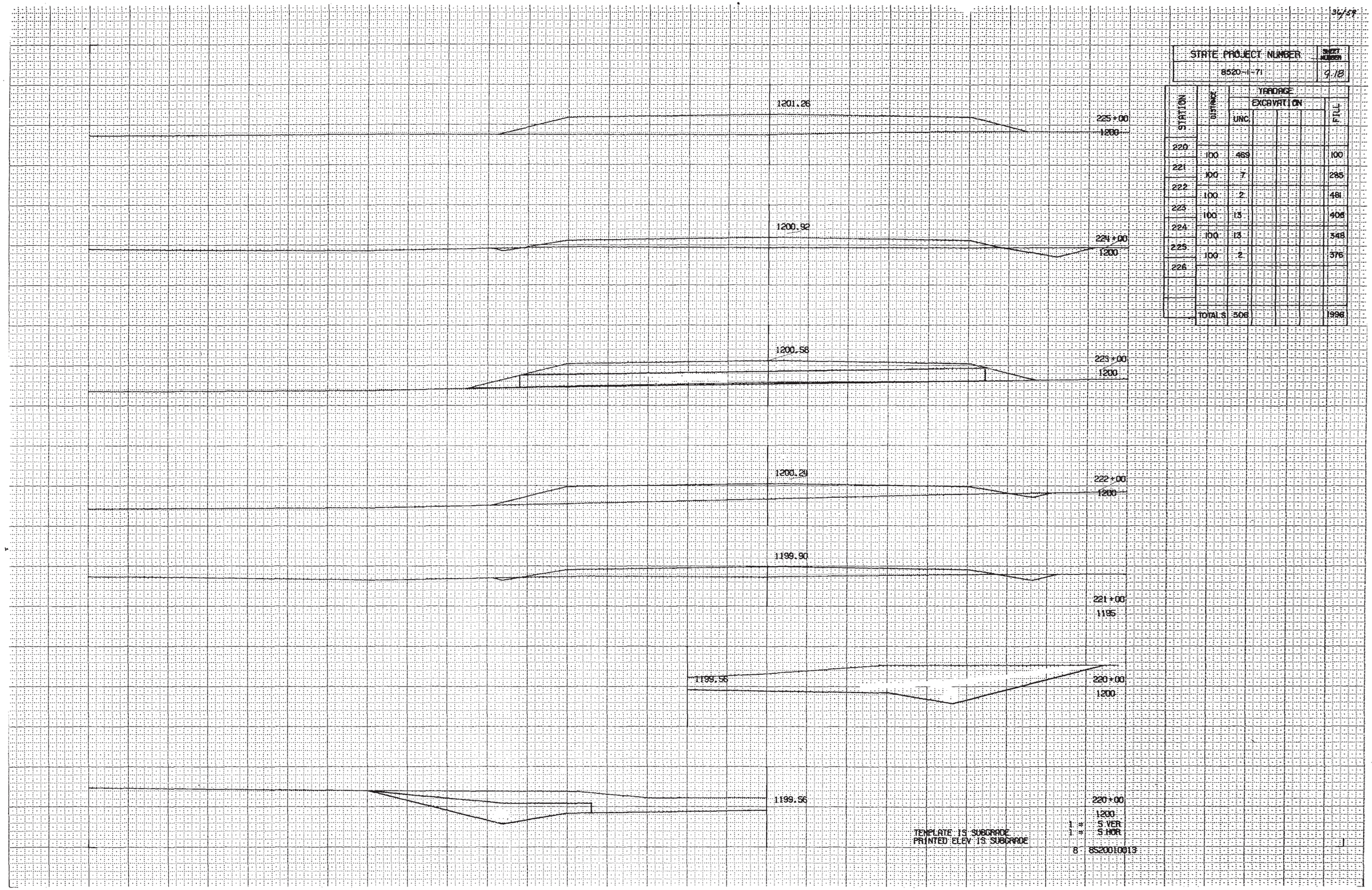
TEMPLATE IS SUBGRADE
PRINTED ELEV IS SUBGRADE

1 = S VER
1 = S HOR

8 8S2001013

STATE PROJECT NUMBER	SHEET NUMBER
8520-I-71	9/18

STATION	DISTANCE	EARTHWORK EXCAVATION UNC.	FILL
220			
	100	469	100
221	100	7	285
222	100	2	481
223	100	13	406
224	100	13	348
225	100	2	376
226			
TOTALS		506	1998



STATE PROJECT NUMBER	SHEET NUMBER
8520-(1-7)	9.19

STATION	DISTANCE	YARDAGE EXCAVATION UNC	FILL
226			
	100	2	307
227			
	100	0	430
228			
	100	26	313
229			
	100	37	126
230			
	100	80	74
231			
	100	94	52
232			
	100	28	231
233			
	100	94	180
234	TOTALS	361	1715

1197.87
239+00
1195

1196.40
232+00
1195

1196.93
231+00
1200

1199.47
230+00
1195

1200.00
229+00
1200

1200.53
228+00
1200

1201.07
227+00
1200

1201.36
226+00
1200

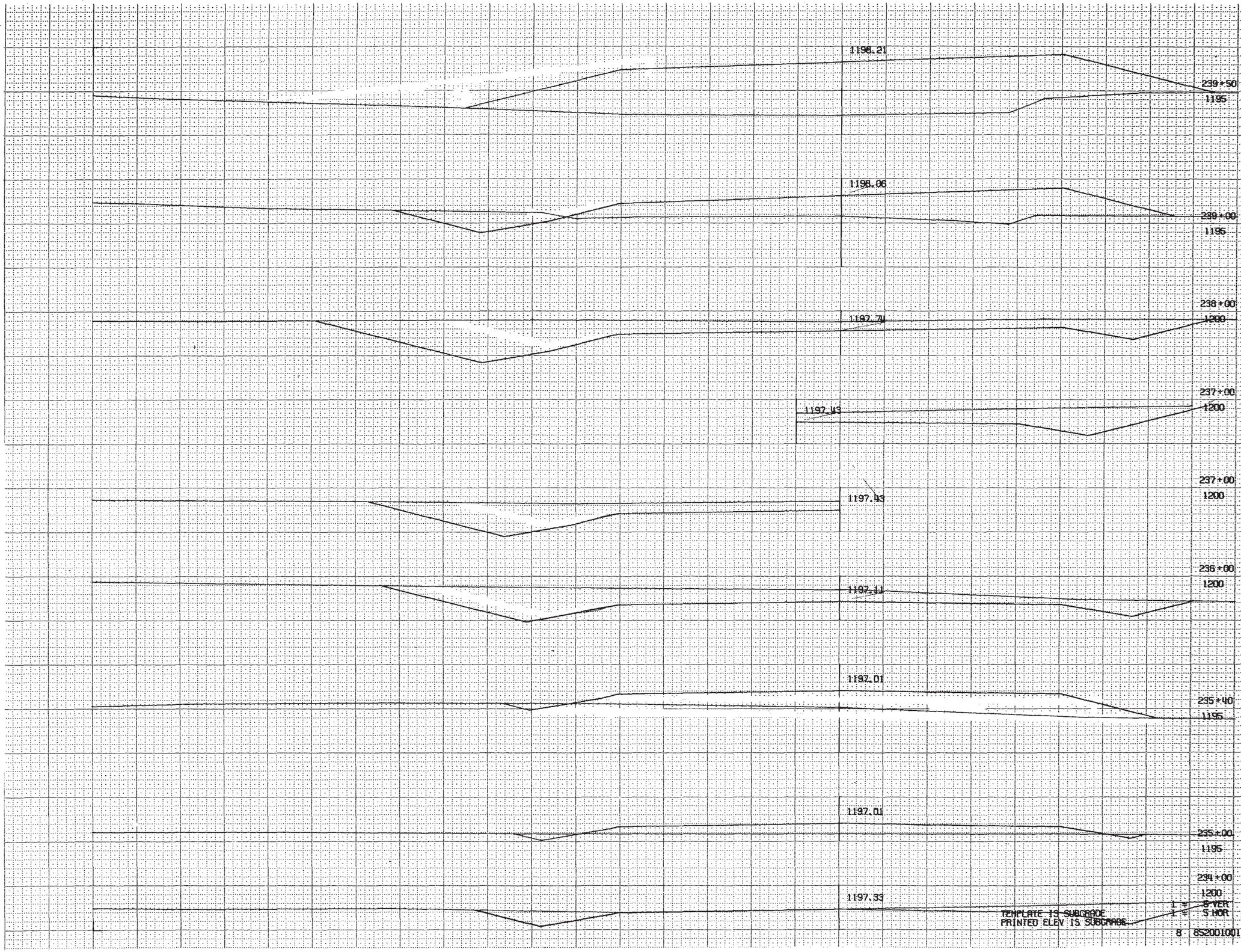
TEMPLATE IS SUBGRADE
PRINTED ELEV IS SUBGRADE

1 IN = 5 VER
1 IN = 5 HOR

8 8520I0013

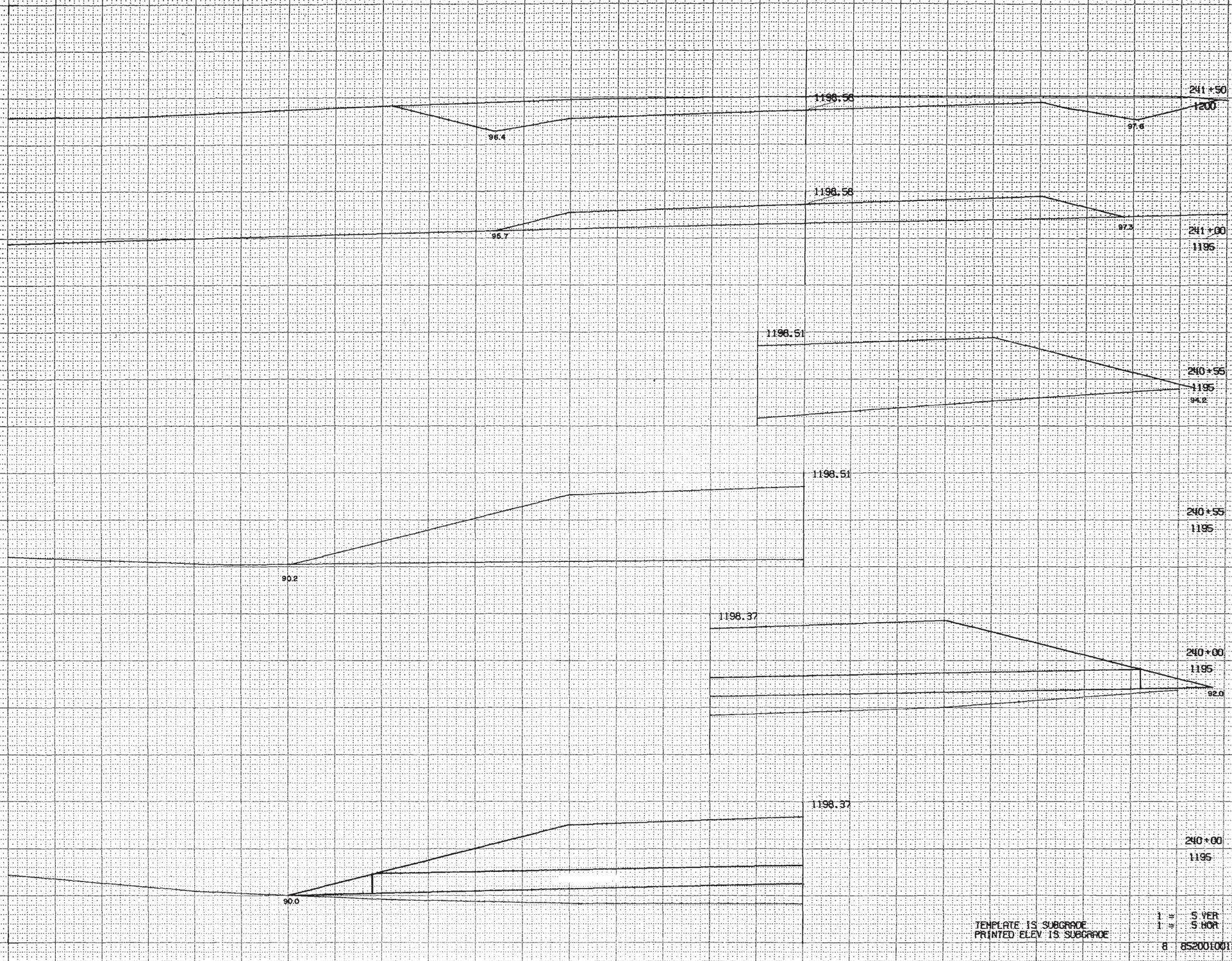
STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.20

STATION	DISTANCE	YARDAGE EXCAVATION UNC.	FILL
234			
	100	100	98
235	40	5	120
+40	60	169	121
236	100	582	0
237	100	635	0
238	100	378	283
239	50	23	491
+50	50	0	1008
240	TOTALS	1892	2121



STATE PROJECT NUMBER	SHEET NUMBER
6520-1-71	9.21

STATION	DISTANCE	YARDAGE EXCAVATION UNC	FILL
240			
+55	55	0	283
241	46	0	557
+50	50	126	112
242	50	265	0
TOTALS	391		1952



TEMPLATE IS SUBGRADE
PRINTED ELEV IS SUBGRADE

1 = 5 VER
1 = 5 HOR

8 8520010013

STATE PROJECT NUMBER	SHEET NUMBER
8520-(4-71	9.22

STATION	DISTANCE	YARDAGE EXCAVATION UNC.	FILL
242			
	100	494	4
243			
	100	378	31
244			
	100	347	43
245			
	50	123	19
+50			
	50	237	11
246			
	50	374	0
+50			
	50	273	52
247			
TOTALS		2246	160

246+50
1200
1196.30

246+00
1200
1196.80
95.6

245+50
1200
1196.90
95.8

245+00
1200
1197.20
96.0

244+00
1200
1197.80

243+00
1200
1196.26

242+00
1200
1196.54

TEMPLATE IS SUBGRADE
PRINTED ELEV IS SUBGRADE

1 = 5 VER
1 = 5 HOR

8 8S200I0013

41/59

STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.23

STATION	DISTANCE	YARDAGE EXCAVATION UNC.				FILL
247	100	200				361
248	100	133				309
249	100	187				89
250	35	65				10
+35	65	161				10
251						
	TOTALS	746				759

250+35
1200

1195.98

250+00
1200

1195.38

1195.06

248+00
1195

DITCH TO DRAIN

1195.40

248+00
1195

1195.40

248+00
1195

1196.00

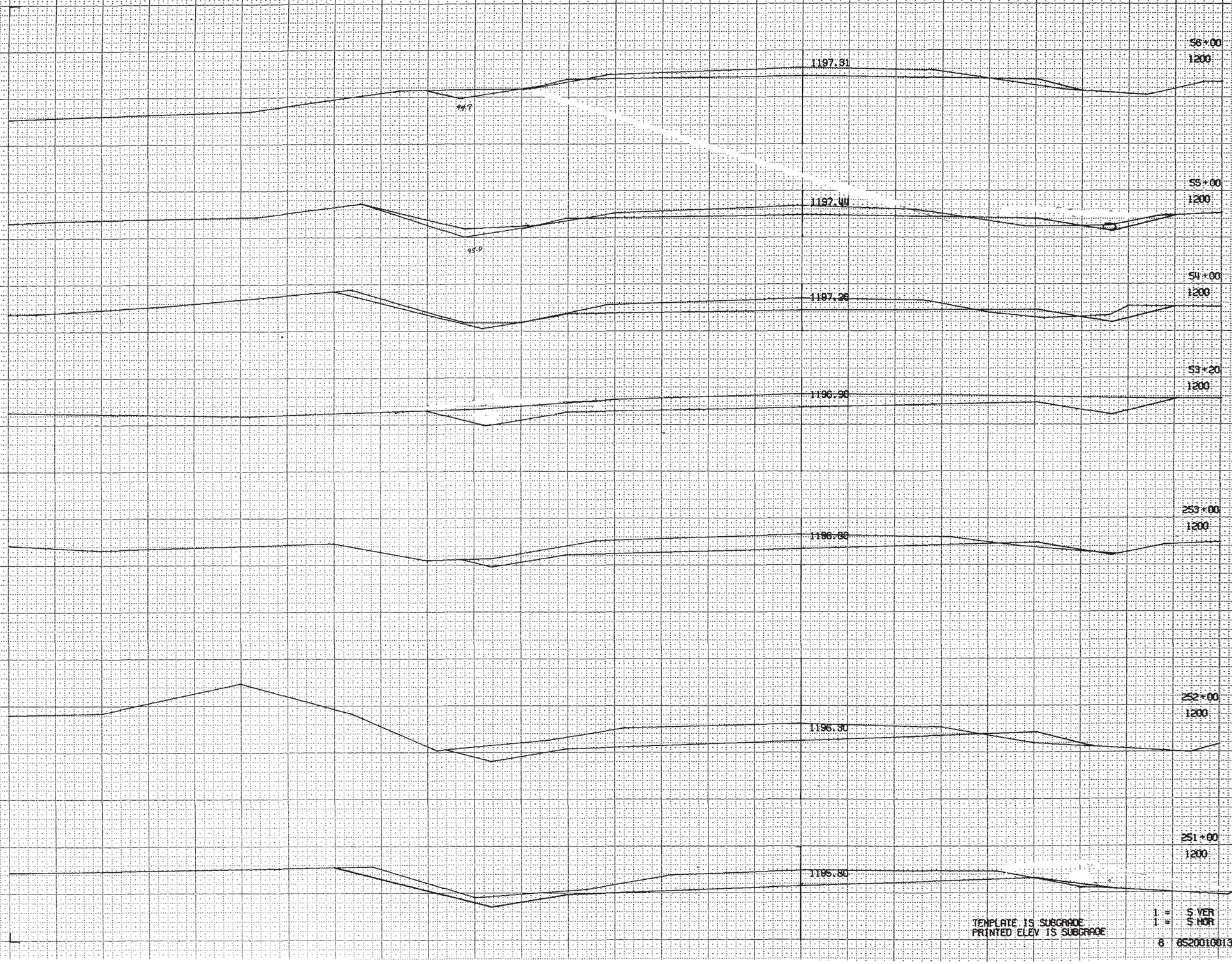
247+00
1195

TEMPLATE IS SUBGRADE
PRINTED ELEV IS SUBGRADE

1 = 5 VER
1 = 5 HOR

8 8520010013

STATE PROJECT NUMBER	SHEET NUMBER
8520-I-7H	9.24



STATION	DISTANCE	TARDAGE EXCAVATION UNC.	FILL
251			
	100	306	17
252			
	100	274	19
253			
	220	59	1
53 +20			
	80	221	7
54			
	100	163	22
55			
	100	111	20
56			
	50	52	14
+50			
	TOTALS	1186	100

STATE PROJECT NUMBER	SHEET NUMBER
8820-1-71	9.25

STATION	DISTANCE	YARDAGE EXCAVATION CMC					FILL
56 +50							
	50	46					29
57							
	50	44					31
+50							
	50	51					20
58							
	100	189					28
59							
	TOTALS	330					108

58+00
1200
1196.95

57+50
1200
1196.67

57+00
1200
1196.90

56+50
1200
1197.12

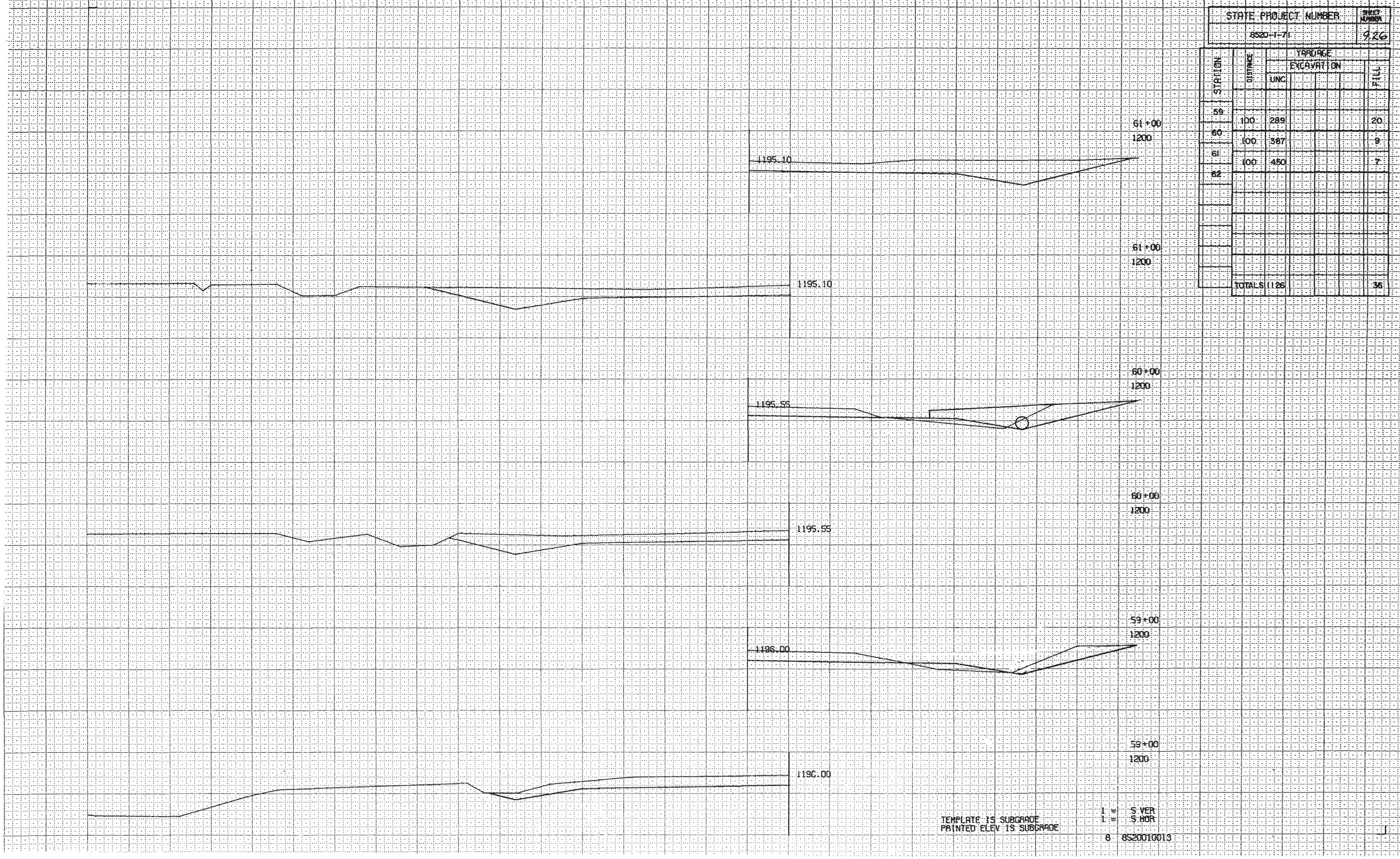
TEMPLATE IS SUBGRADE
PRINTED ELEV IS SUBGRADE

1 = 5 VER
1 = 5 HOR

G 652001001?

STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	926

STATION	DISTANCE	EARTHWORK EXCAVATION UNC	FILL
59			
	100	289	20
60			
	100	387	9
61			
	100	450	7
62			
TOTALS	1126		36



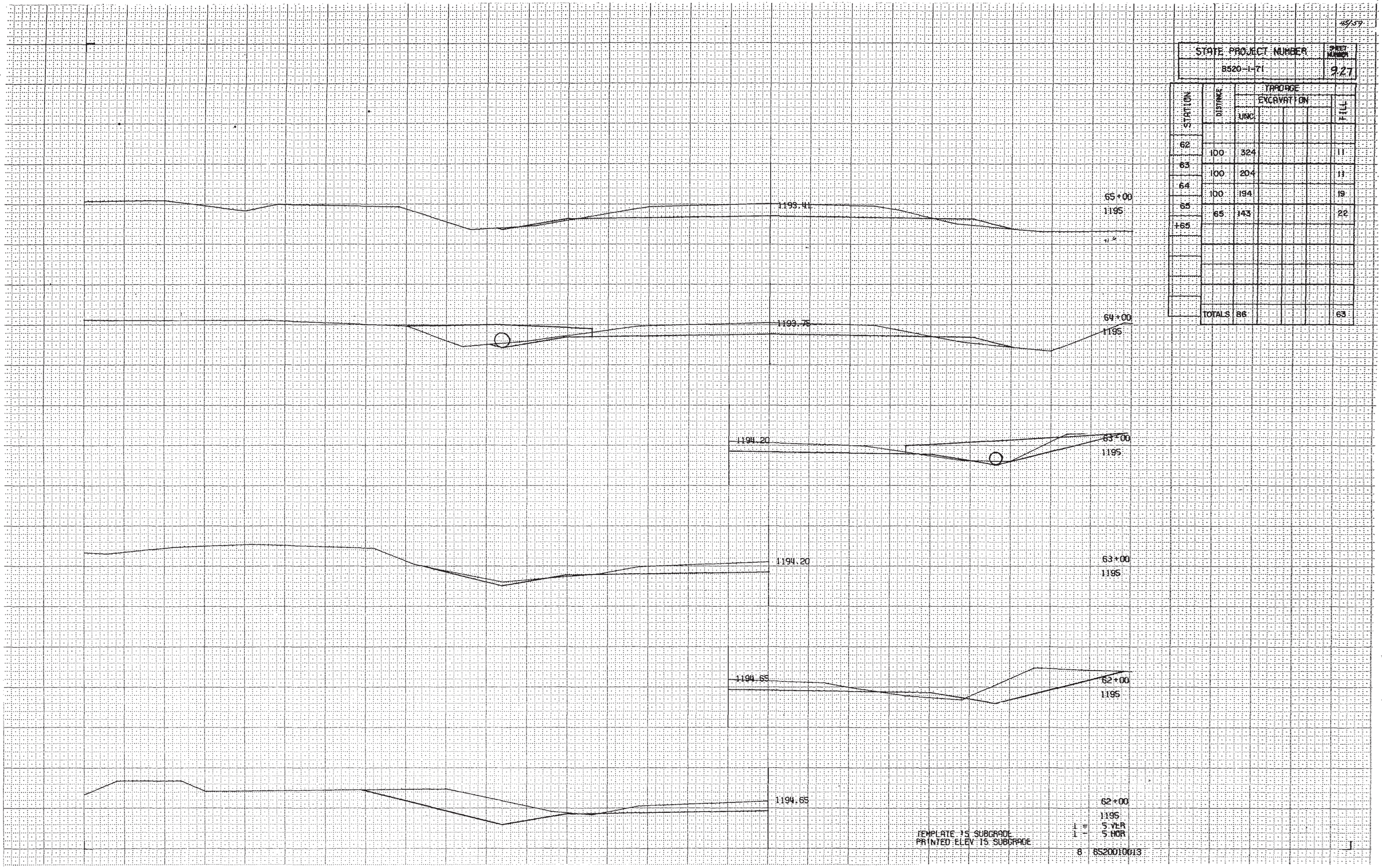
TEMPLATE IS SUBGRADE
PRINTED ELEV IS SUBGRADE

1 " S VER
1 " S HOR

8 8520010013

STATE PROJECT NUMBER	SHEET NUMBER
8520-I-71	9.27

STATION	DISTANCE	TRAPEZOIDAL EXCAVATION UNC				FILL
62						
	100	324				11
63						
	100	204				11
64						
	100	194				19
65						
	65	143				22
+65						
TOTALS	86					63



TEMPLATE IS SUBGRADE
PRINTED ELEV IS SUBGRADE

1 = 5 VER
1 = 5 HOR

STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.28

STATION	DISTANCE	TAROGE EXCAVATION UNC	FILL
65+65			
	35	80	49
66			
	45.2	95	107
+45.2			
	TOTALS	175	156

66+00
1195

1193.30

66+00
1195

1193.30

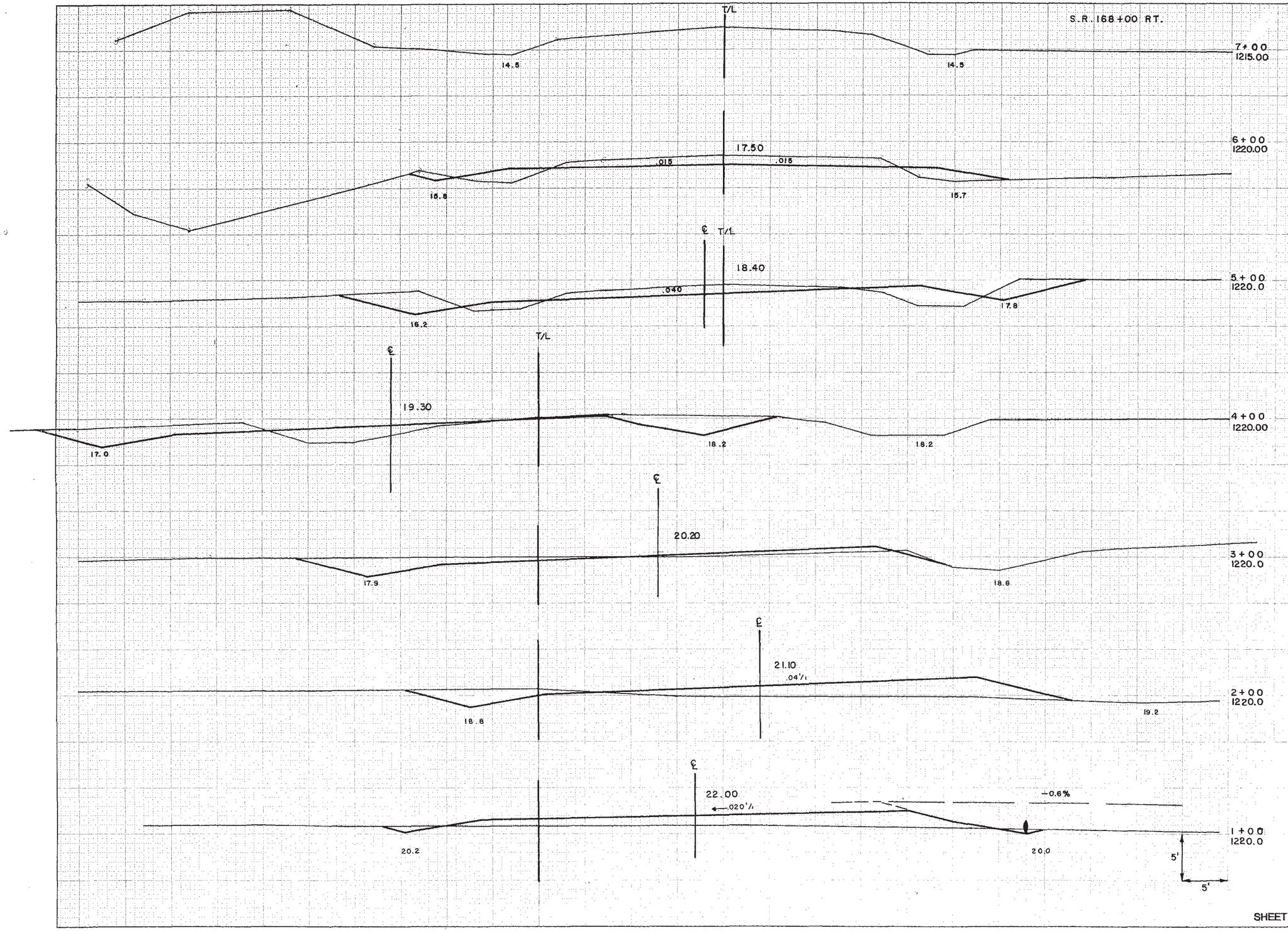
65+65
1195

1193.32

TEMPLATE IS SUBGRADE
PRINTED ELEV IS SUBGRADE

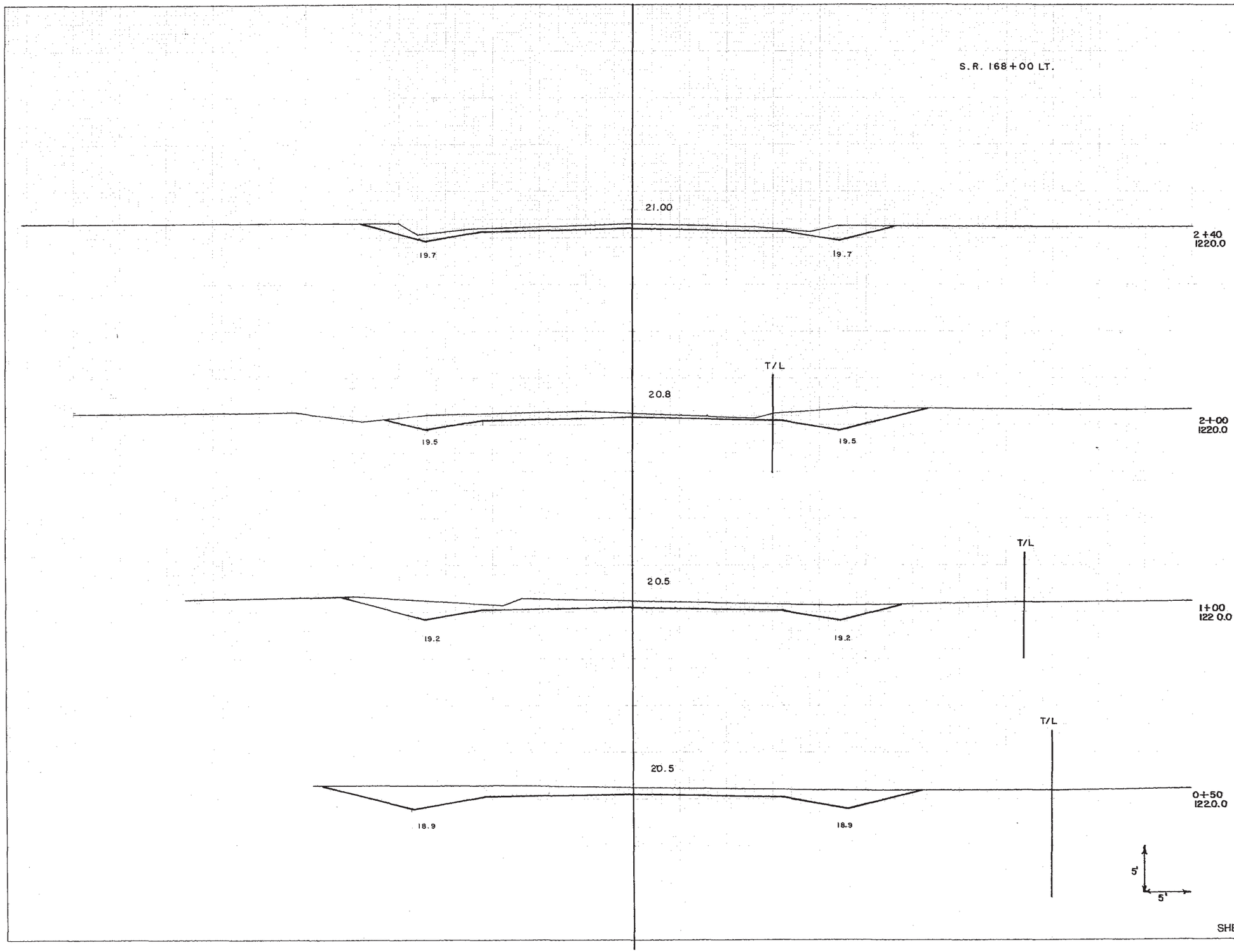
1 = 5 VER
1 = 5 HOR

8 8520010013



STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.29

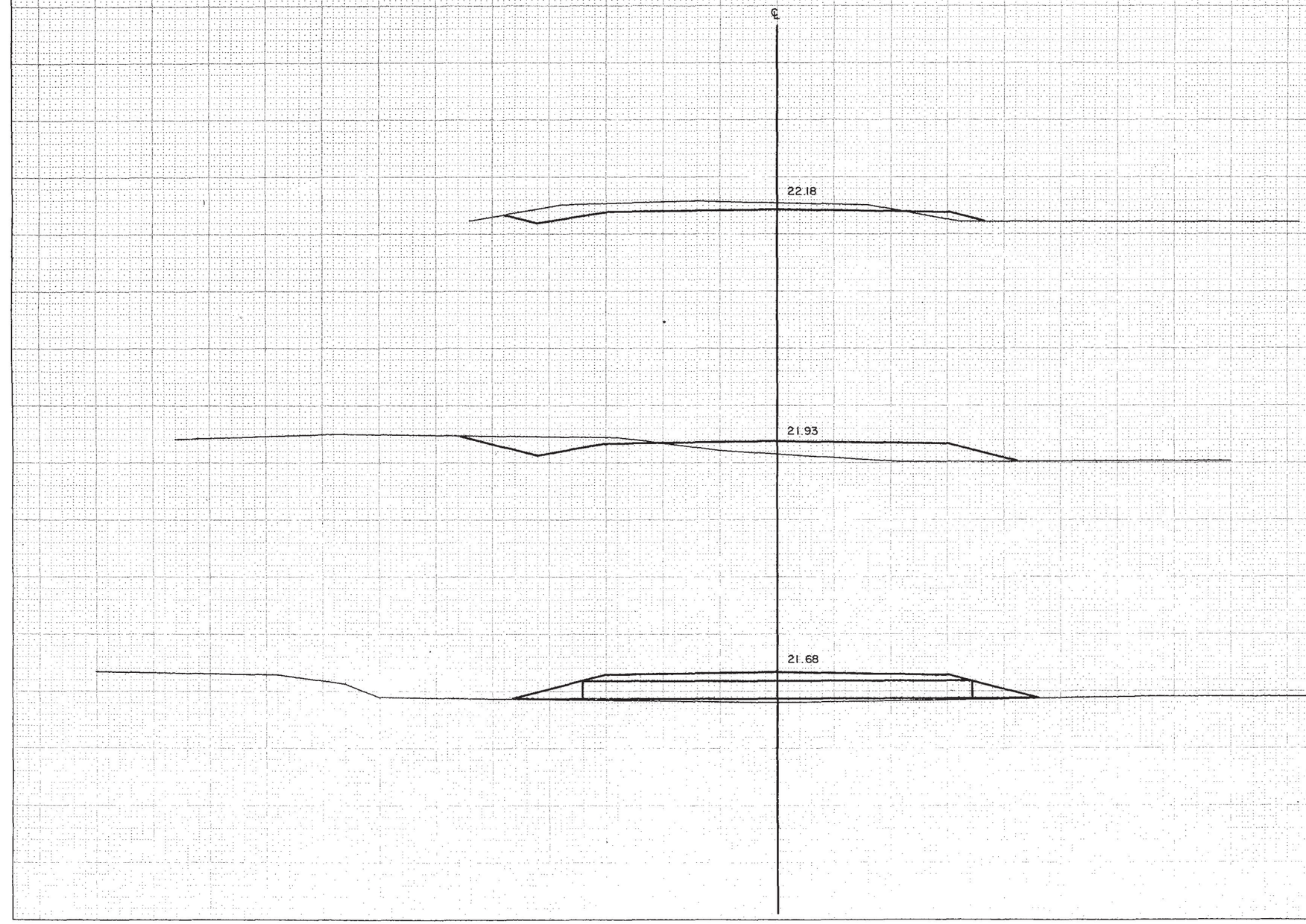
STATION	DISTANCE	YARDAGE EXCAVATION UNCL	FILL
0+30		7	85
1		44	239
2		85	139
3		139	61
4		183	85
5		154	78
6		30	17
+50			
SHEET TOTAL		642	704



STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.30

STATION	DISTANCE	YARDAGE EXCAVATION UNCL.	FILL
0+33			
		22	
0+50			
		119	
1+0			
		196	
2+0			
		59	
2+40			
		11	
2+60			
SHEET TOTAL		407	

S.R. 169+00 230' RT.



1+0
1220.0

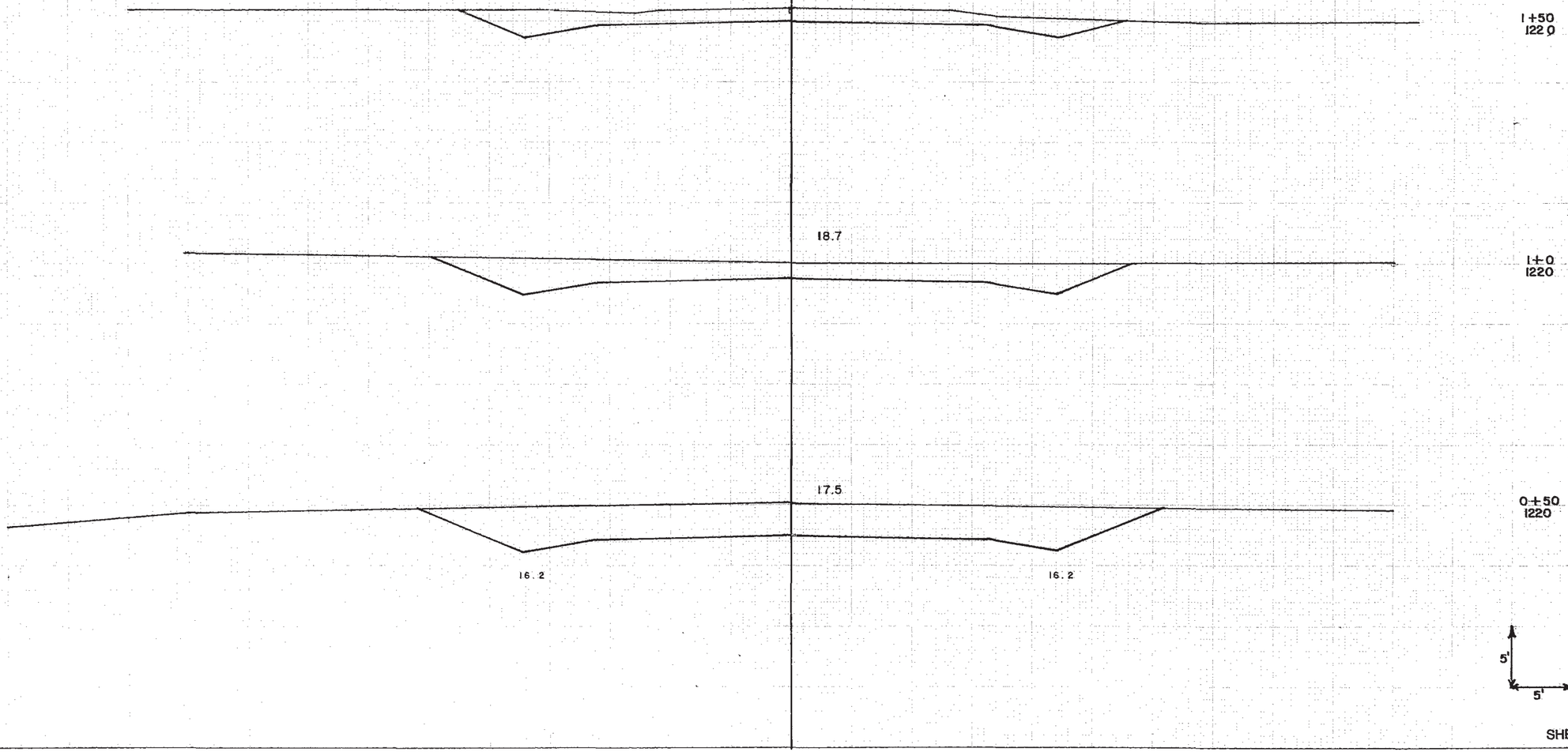
0+50
1220.0

5'
5'

STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.31

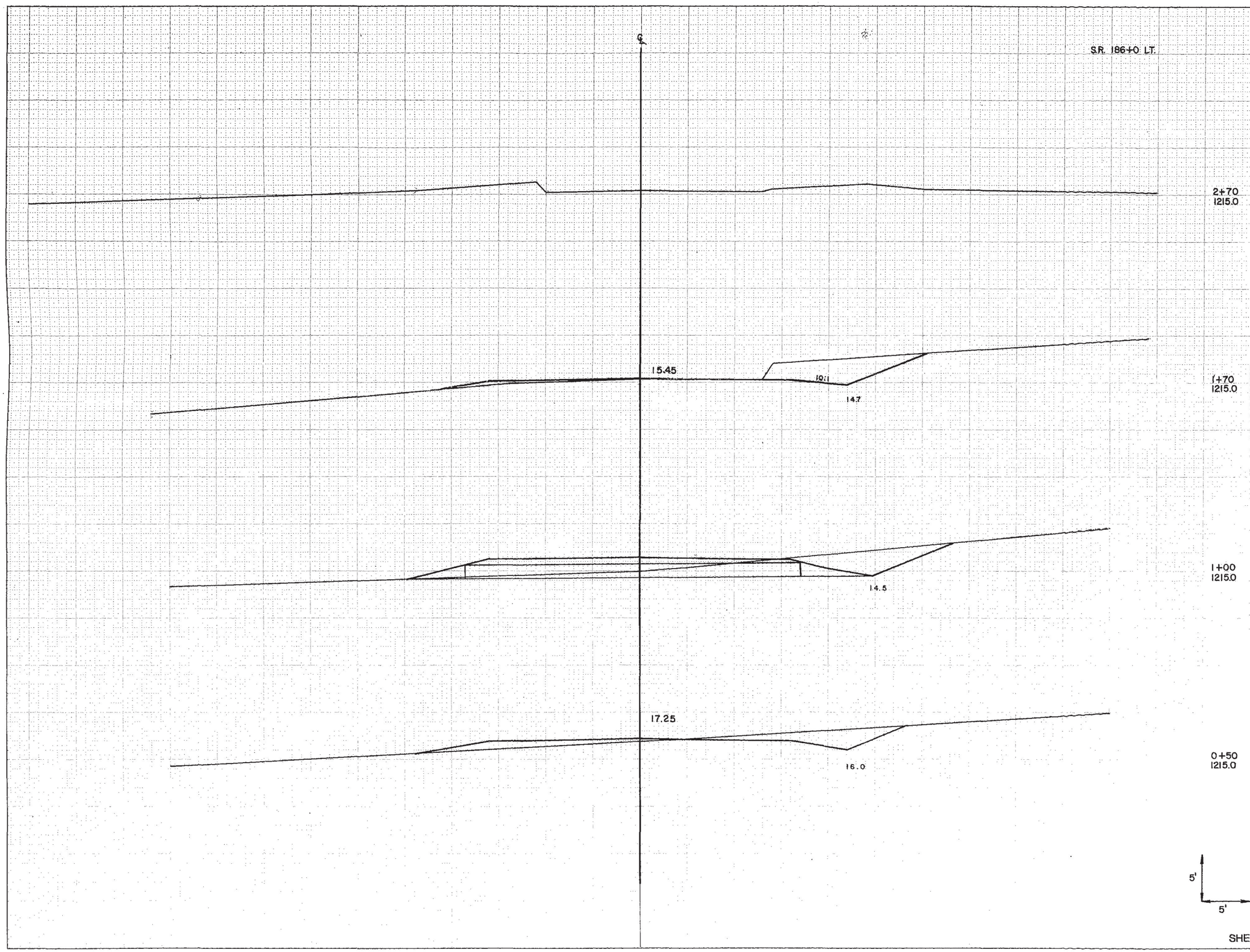
STATION	DISTANCE	YARDAGE EXCAVATION UNCL	FILL
0+15			
		0	61
0+50			
		15	120
1+0			
		37	33
1+50			
		48	2
2+0			
SHEET TOTAL		100	216

S.R. 186+0 RT.



STATE PROJECT NUMBER	SHEET NUMBER
8520-I-71	9.32

STATION	DISTANCE	YARDAGE EXCAVATION UNCL.				FILL
0+35						
		42				
0+50						
		233				
1+0						
		148				
1+90						
		59				
2+10						
SHEET TOTAL		482				

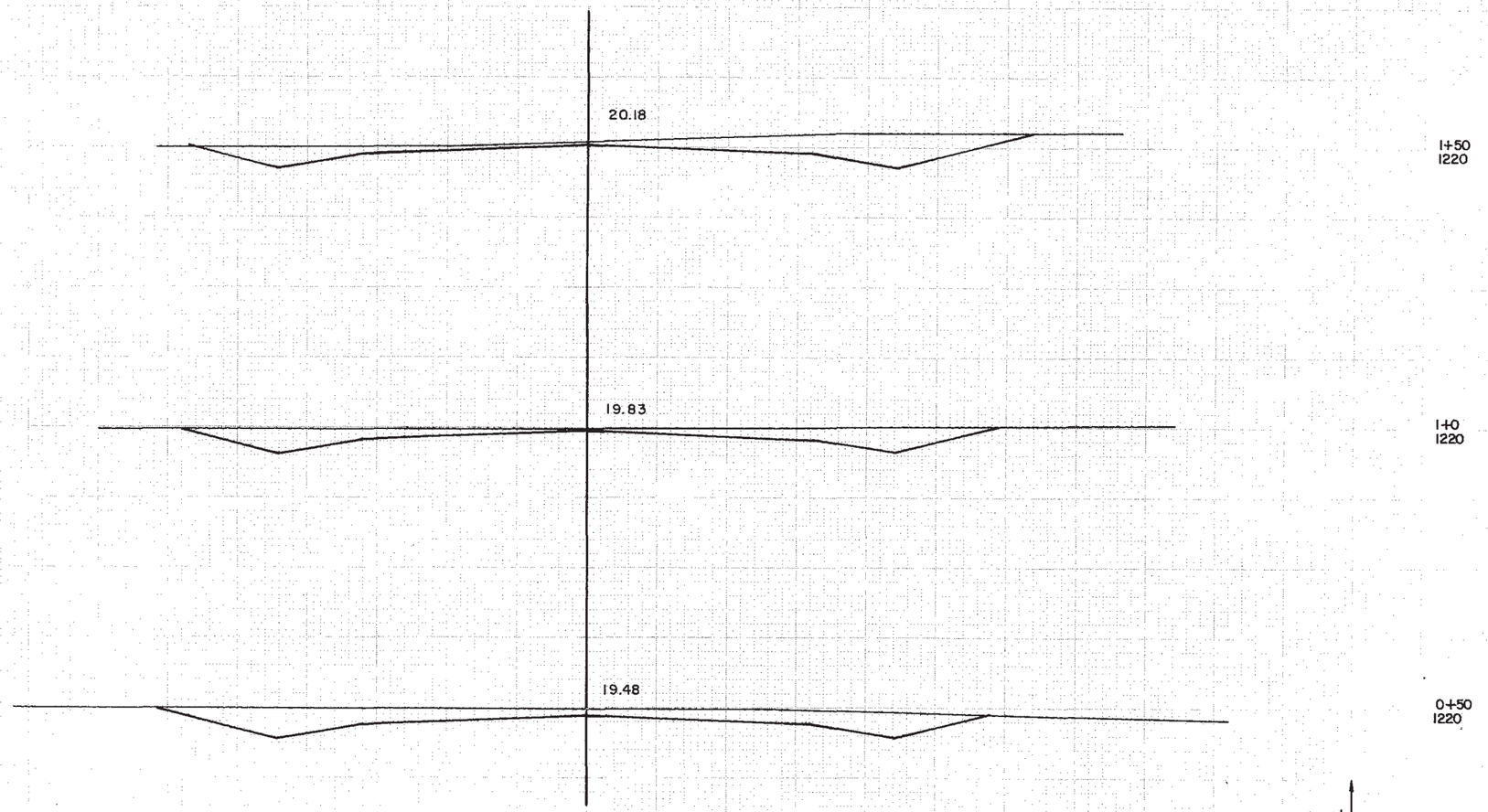


STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.33

STATION	DISTANCE	YARDAGE				
		EXCAVATION				FILL
		UNCL.				
0+35						
		6				4
0+50						
		44				56
1+0						
		74				65
1+70						
		17				2
2+0						
SHEET TOTAL		141				127

STATE PROJECT NUMBER	SHEET NUMBER
8520 -1-71	9.34

S.R. 186+05 97' RT.



1+50
1220

1+0
1220

0+50
1220

5'
5'

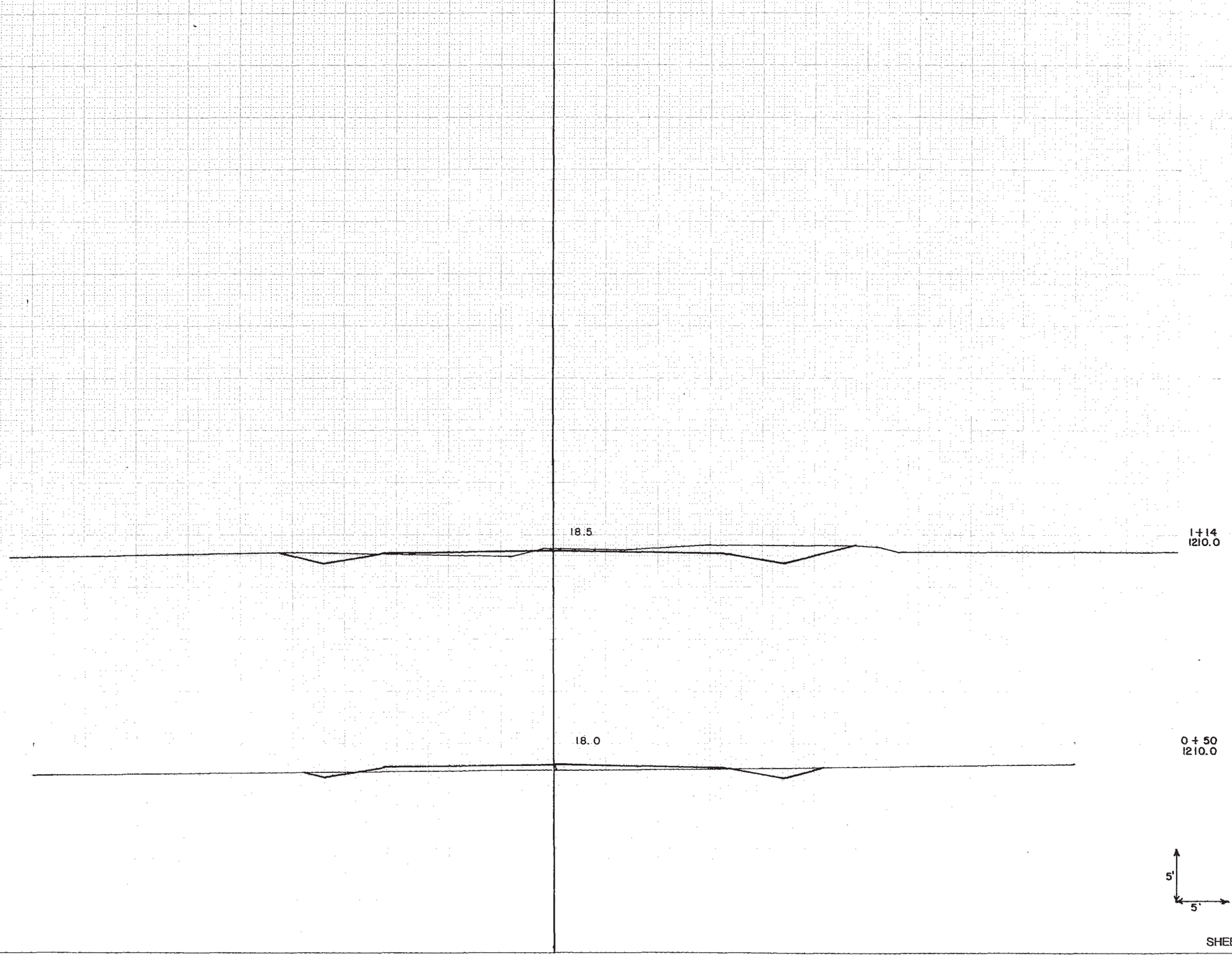
STATION	DISTANCE	YARDAGE EXCAVATION UNC.				YARDAGE FILL
0+25						
		28				
0+50						
		94				
1+0						
		85				
1+50						
		46				
2+00						
SHEET TOTAL		253				

℄

S.R. 194 + 50 RT.

STATE PROJECT NUMBER	SHEET NUMBER
8520-1-00	9.35

STATION	DISTANCE	YARDAGE EXCAVATION UNCL				YARDAGE FILL
0+25						
		2				9
0+50						
		37				35
1+14						
		41				7
2+0						
SHEET TOTAL		80				51



S.R. 197+75 LT.

STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.36

STATION	DISTANCE	YARDAGE EXCAVATION UNCL.				FILL
0+25						
		4				4
0+50						
		24				13
1+0						
		78				41
1+65						
		31				26
2+0						
SHEET TOTAL		137				84

℄

S.R. 199 +75 RT.

STATE PROJECT NUMBER						SHEET NUMBER
8520-1-71						9.37

STATION	DISTANCE	YARDAGE				
		EXCAVATION				FILL
		UNCL.				
0+25						
		6				39
0+50						
		37				48
1+60						
SHEET TOTAL		43				87

Catalog No. 2130-C121

S.R. 238+60 LT.

98.33

1+77
1200.0

98.03

1+48
1200.0

97.33

0+76
1200.0

5'

5'

℄

STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.38

STATION	DISTANCE	YARDAGE EXCAVATION UNCL.	YARDAGE EXCAVATION	YARDAGE EXCAVATION	YARDAGE EXCAVATION	YARDAGE FILL
0+33						
		63				
0+76						
		256				
1+77						
		24				
2+00						
SHEET TOTAL		343				

S.R. 238+60 LT.

98.33

1+77
1200.0

98.03

1+48
1200.0

97.33

0+76
1200.0

5'

5'

℄

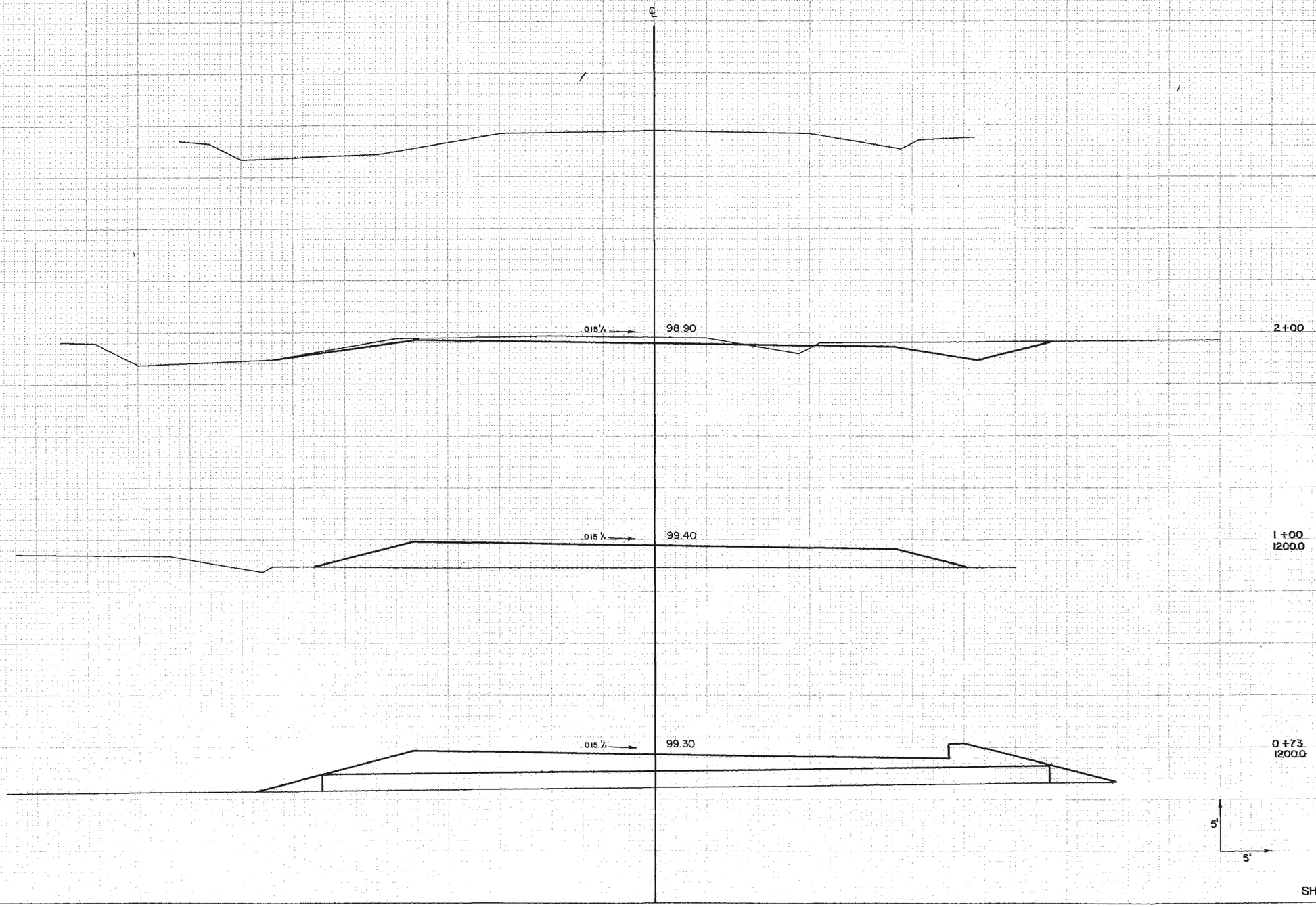
STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9.38

STATION	DISTANCE	YARDAGE EXCAVATION UNCL.				YARDAGE FILL
0+33						
		63				
0+76						
		256				
1+77						
		24				
2+0						
SHEET TOTAL		343				

Catalog No. 2130-C121

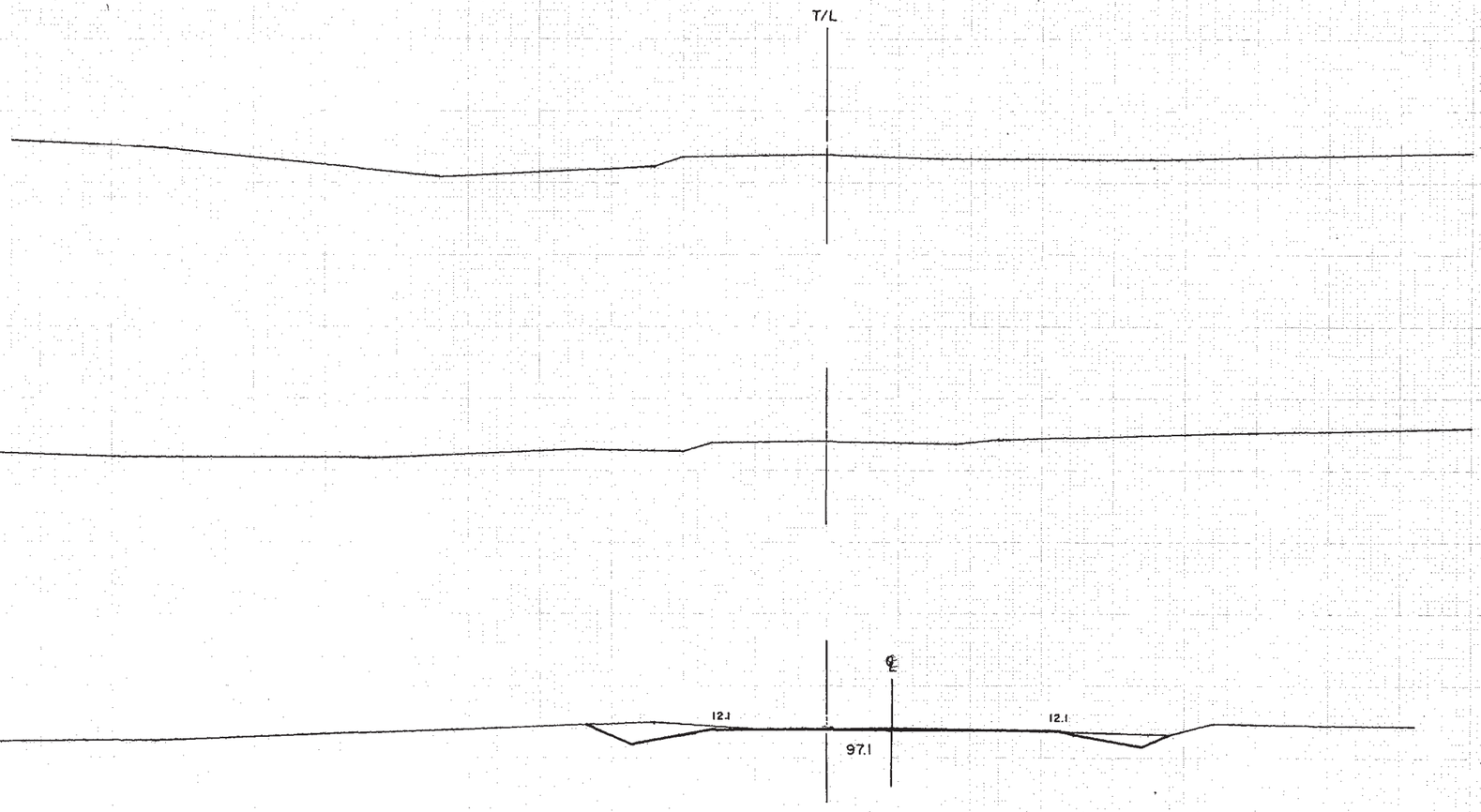
STATE PROJECT NUMBER	SHEET NUMBER
8520-1-71	9,39

S.R. STA. 244+75 RT.



STATION	DISTANCE	YARDAGE EXCAVATION UNCL				FILL
0+30						
						365
0+73						
						174
1+00						
		63				224
2+00						
		133				4
3+00						
SHEET TOTAL		196				767

S.R. STA. 251 + 40 RT.



2+0
1200.0

1+00
1200.0

0+50
1200.0

5'
5'

STATE PROJECT NUMBER	SHEET NUMBER
8520-I-71	9.40

STATION	DISTANCE	YARDAGE EXCAVATION UNCL.	YARDAGE EXCAVATION	YARDAGE EXCAVATION	YARDAGE EXCAVATION	YARDAGE FILL
0+35						
		4				
0+50						
		15				
1+0						
SHEET TOTAL		19				

STATE PROJECT NUMBER	SHEET NUMBER
8520—1—71	9.41

STATION	DISTANCE	YARDAGE		
		EXCAVATION		FILL
		UNCL.		
0+30				
		85		
0+60				
		200		
1+0				
		218		
2+0				
SHEET TOTAL		503		

S.R. 63 + 85 LT.

95.8

95.5

2+00
1195.0

94.63

93.4

93.4

1+00
1195.0

93.73

92.5

92.5

0+60
1195.0

5'

5'

℄