MINNESOTA DEPARTMENT OF TRANSPORTATION

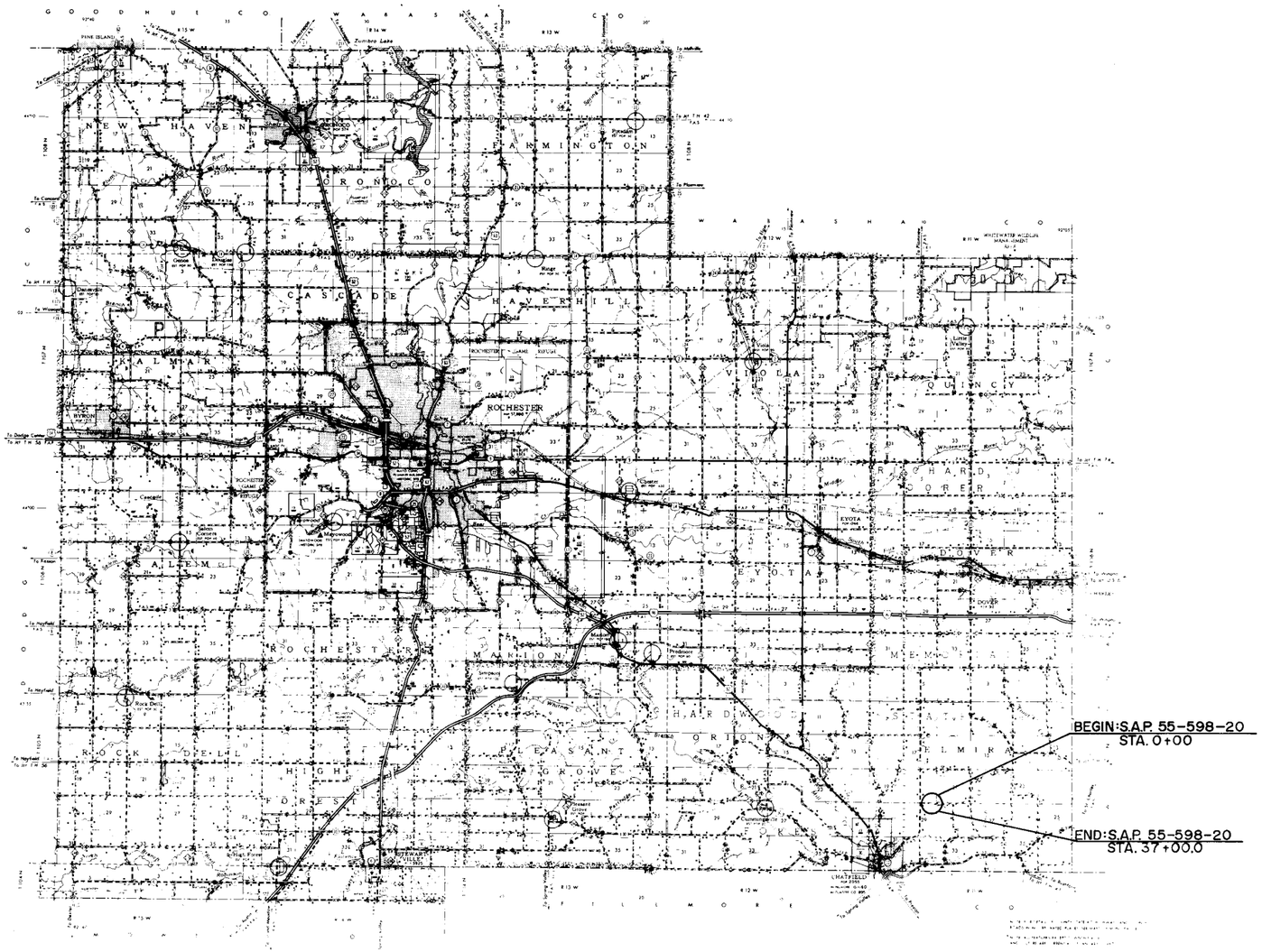
THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE & REPLACE BR. NO. L6172

LOCATED ON C.R. 110 **BETWEEN** C.S.A.H. 10 AND 0.7 MILE EAST ~~AND~~ 1.5 MILES N.E. OF CHATFIELD. **(GEOGRAPHIC DESCRIPTION)**

FROM APPROX. 16.55' N.E. OF N1/4 COR. SEC. 29 T105N-R11W. **TO** APPROX. 830' W. NW. COR. SEC. 28 T105N-R11W. **(LEGAL DESCRIPTION)**

STATE PROJ. NO.				~~**STATE PROJ. NO.**~~ SAP 55-598-20		
GROSS LENGTH	FEET	MILES		GROSS LENGTH 3,700.0	FEET 0.701	MILES
BRIDGES-LENGTH	FEET	MILES		BRIDGES-LENGTH 0	FEET 0	MILES
EXCEPTIONS-LENGTH	FEET	MILES		EXCEPTIONS-LENGTH 0	FEET 0	MILES
NET LENGTH	FEET	MILES		NET LENGTH 3,700.0	FEET 0.701	MILES



PLANS SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT OF WAY LINE
PRESENT RIGHT OF WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT OF WAY LINE
RIVER OR CREEK (NAME)
DRY RUN
DRAINAGE DITCH (SIZE)
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH (TIMBER)
NURSERY
CATCH BASIN C.B.
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame) F.F.
F FRAME C CONCRETE
S STONE T TILE
B BRICK ST STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE OR METAL)
WOODEN HUB
GRAVEL PIT G
SAND PIT S
BORROW PIT B
ROCK QUARRY Q
SLOPE EASEMENT SE

UTILITIES SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN G
WATER MAIN W
CONDUIT
TELEPHONE CABLE IN CONDUIT T
ELECTRIC CABLE IN CONDUIT P
TELEPHONE MANHOLE T
ELECTRIC MANHOLE P
BURIED TELEPHONE CABLE T-BUR
BURIED ELECTRIC CABLE P-BUR
AERIAL TELEPHONE CABLE T-AE
SEWER, (SANITARY OR STORM)
SEWER MANHOLE

SCALES

PLAN 0 100'
PROFILE 0 100'
INDEX MAP 0 10,560'
CROSS SECTIONS 0 10'

AI 8/1/2005 10:45 55-598

MINN. PROJ. NO.

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN

INDEX

SHEET NO. 1	TITLE SHEET & LAYOUT MAP
SHEET NO. 2	ESTIMATE OF QUANTITIES & TYPICAL SECTIONS
SHEET NO. 3-4	PLAN & PROFILE
SHEET NO. 5-10	CROSS SECTIONS
SHEET NO. 11	BRIDGE SHEET

DESIGN DESIGNATION

R
ADT (Current Year) = 67 (1989)
ADT (Future Year) =
DHV (Design Hr. Vol.) =
D (Directional Distr.) = %
T (Heavy Commercial) = E.S.T. 5%
SOIL FACTOR 130%
SHOULDER WIDTH 3
TON DESIGN

EN18 (20)
Design Speed 30 M.P.H.
Based on STOPPING Sight Distance
Height of eye 3.5' Height of object 0.5'
Design Speed not achieved at:

STA.	TO STA.	MPH
STA.	TO STA.	MPH
STA.	TO STA.	MPH

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

DATE 4/28/89 REG. NO. 10397 ENGR. Michael Sheehan

COUNTY Olmsted

Recommended for Approval _____ 19__
DISTRICT STATE AID ENGINEER

Recommended for Approval Julie Stallman 7/21 1989
STATE AID PLANS AND SPECS ENGINEER

Approved 7-24 1989 for Roy L. Wilson
STATE AID ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR DATE

STATE AID PROJ. NO. 55-598-20
~~**STATE PROJ. NO.**~~ C.R. 110 OLMSTED COUNTY **SHEET NO.** 1 **OF** 11 **SHEETS**

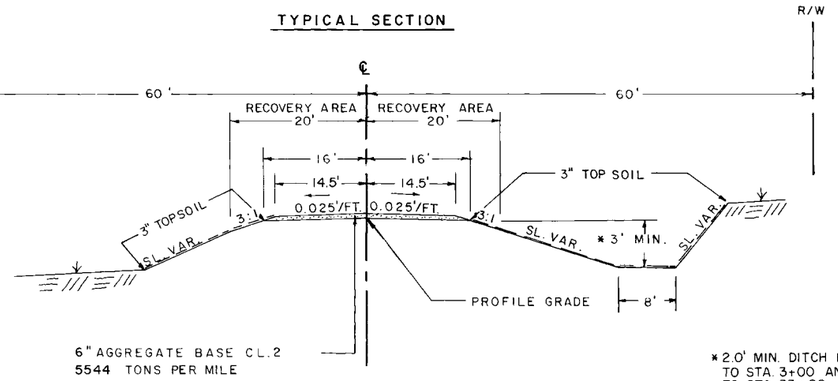
ESTIMATED QUANTITIES

SPECIFICATION NO.	ITEM	UNIT	PARTICIPATING RURAL	NON PARTICIPATING RURAL	TOTAL ESTIMATED QUANTITIES
2101.501	CLEARING	ACRE		0.8	0.8
2101.502	CLEARING	TREE		46	46
2101.506	GRUBBING	ACRE		0.8	0.8
2101.507	GRUBBING	TREE		54	54
2104.501	REMOVE PIPE CULVERT	LIN. FT.		72	72
① 2105.515	UNCLASSIFIED EXCAVATION (P)	CU. YD.		21,351	21,351
2105.535	SALVAGED TOPSOIL (EV) (P)	CU. YD.		2,319	2,319
② 2211.501	AGGREGATE BASE CL. 2	TON		3,950	3,950
2442.501	REMOVE OLD BRIDGE	LUMP SUM		1	1
2451.507	GRANULAR BEDDING (CV) (P)	CU. YD.	77		77
2501.511	30" RCP CULVERT CL. II	LIN. FT.		48	48
2501.515	30" RCP CULVERT APRON	EACH		2	2
2501.511	36" RCP CULVERT CL. II	LIN. FT		56	56
2501.515	36" RCP CULVERT APRON	EACH		2	2
2501.521	115" SPAN RCP-ARCH CULV. CL. II A	LIN. FT.	24		24
2501.521	115" SPAN RCP-ARCH CULV. CL. III A.	LIN. FT.	62		62
2501.525	115" SPAN RCP-ARCH APRON	EACH	2		2
2501.521	49" SPAN CSP-ARCH CULV.	LIN. FT.		56	56
2501.525	49" SPAN GSP-ARCH APRON	EACH		4	4
Ⓑ③ 2511.501	RANDOM RIPRAP CL. III	CU. YD.	60	120	180
2575.501	SEEDING (P)	ACRE		6	6
④ 2575.502	SEED MIXTURE 500	POUND		300	300
⑤ 2575.511	MULCH MATERIAL TYPE 1	TON		12	12
2575.519	DISC ANCHORING (P)	ACRE		6	6
⑥ 2575.532	COMMERCIAL FERT. ANALYSIS 12-12-12	POUND		1200	1200
⑦ 2575.502	SEED MIXTURE 1100	POUND		600	600

(P) PLAN QUANTITY

ALL UTILITY POLES AND UNYIELDING OBJECTS SHALL BE REMOVED AND RELOCATED OUTSIDE THE 20' RECOVERY AREA.

TYPICAL SECTION



STA. 0+00 TO STA. 37+00

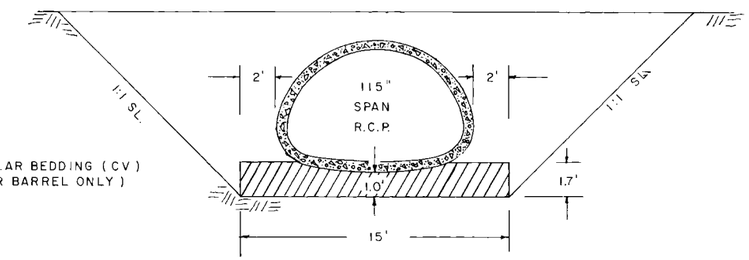
* 2.0' MIN. DITCH RIGHT FROM STA. 1+00 TO STA. 3+00 AND RIGHT FROM STA. 32+00 TO STA. 33+00.

GENERAL NOTES

1. EXCAVATION FOR CULVERTS WILL BE INCIDENTAL
2. ALL DIMENSIONS AND SLOPES SHOWN ON TYPICAL SECTION ARE APPROXIMATE.

GRANULAR BEDDING DETAIL

FOR CENTERLINE CULVERT AT STA. 28+17



GRANULAR BEDDING (CV)
(UNDER BARREL ONLY)

STANDARD PLATES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

PLATE NO		DESCRIPTION
0005	A	SPECIFICATION REFERANCE TO STANDARD PLATES
3000	K	REINFORCED CONCRETE PIPE
3007	B	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3014	J	REINFORCED CONCRETE PIPE ARCH DETAIL
3040	F	CORRUGATED METAL PIPE CULVERT
3100	G	CONCRETE APRON FOR REINFORCED CONC. PIPE
3114	G	SECTIONAL CONC. APRON FOR REINFORCED CONC. PIPE-ARCH
3122	I	METAL APRON FOR CMP-ARCH CULVERT
3133	B	RIPRAP AT R.C.P. OUTLETS
3145	E	CONCRETE PIPE TIES EYE BOLTS
8000	I	STANDARD BARRICADES
8003	B	BREAKAWAY SIGN SUPPORT (PLASTIC)
9000	B	APPROACHES AND ENTRANCES
3124	B	METAL APRON CONNECTION
3221	C	CORRUGATED STEEL PIPE COUPLING BAND

① UNCLASSIFIED EXCAVATION INCLUDES SUBGRADE TREATMENT AS SHOWN ON PLAN.

② INCLUDES 3880 TONS FOR MAINLINE AND 70 TONS FOR TWO APPROACHES.

③ INCLUDES 80 CU. YDS. TO BE PLACED AT APRONS OF CULVERTS AS SHOWN ON THE PLAN AND 100 CU. YDS. FOR 25 DITCH CHECKS AT LOCATIONS DESIGNATED BY THE ENGINEER.

④ APPLICATION RATE 50 LBS. PER ACRE.

⑤ APPLICATION RATE 2 TONS PER ACRE.

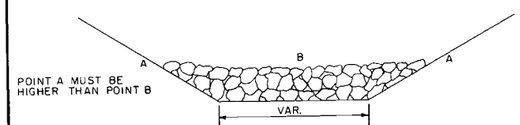
⑥ APPLICATION RATE 200 LBS. PER ACRE.

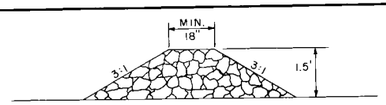
⑦ APPLICATION RATE 100 LBS. PER ACRE.

Ⓑ GRANULAR FILTER MATERIAL WILL BE CONSIDERED INCIDENTAL TO RIPRAP CONSTRUCTION AND NO DIRECT COMPENSATION WILL BE MADE THEREFOR.

ROCK OR STONE DITCH CHECK

SECTIONS





NOTES FOR ROCK DITCH CHECKS

1. DITCH CHECKS MAY BE CONSTRUCTED WITH ROCKS OR STONES OBTAINED FROM THIS PROJECT.
2. DITCH CHECKS SHALL BE LEFT IN PLACE.
3. BASIS OF PAYMENT FOR DITCH CHECKS SHALL BE UNDER ITEM NO. 2511.501 RANDOM RIP RAP CLASS III.
4. DITCH CHECKS SHALL BE CONSTRUCTED AT LOCATIONS DESIGNATED BY THE ENGINEER DURING CONSTRUCTION.
5. APPROXIMATELY 25 DITCH CHECKS TO BE CONSTRUCTED ON PROJECT.

S.A.P. 55-598-20

~~State Proj. No.~~

ALPHON INC. MINNEAPOLIS 55455

℄ CULV. 9+09
INPL. 18" x 40' C.M.P.
NO APRONS
REMOVE
CONST. ℄ CULV. STA. 9+18 ON "B" BEDDING
36"x56' R.C.P. CULV. CL. III
2-36" R.C.P. APRONS
F & I APPROVED JOINT TIES
SKEW CULV. 20°
CULV. OUTLET 11 CU. YDS. CL. III RIPRIP
CULV. INLET CONST. DITCH BLOCK

℄ CULV. 19+80
INPL. 18"x 32' C.M.P.
NO APRONS
REMOVE
CONST. ℄ CULV. STA. 19+92 ON "B" BEDDING
30"x 48' R.C.P. CULV. CL. II
2-30" R.C.P. APRONS
F & I APPROVED JOINT TIES
SKEW CULV. 30°
CULV. OUTLET 9 CU. YDS. CL. III RIPRAP
CULV. INLET CONST. DITCH BLOCK

BR. NO. L6172 28+21
STEEL BEAM SPAN
96 SQ. FT. WATERWAY OPENING
REMOVE OLD BRIDGE

F.E. LT. 28+88
INPL. 24" x 24' C.M.P.
NO APRONS
MOVE TO STA. 30+00
49" SPANX 28' C.S. PIPE
- ARCH CULV.
2-49" SPAN G.S. PIPE
- ARCH APRONS

BEGIN: S.A.P. 55-598-20
STA. 0+00.0

P.O.T. 1+95.05

P.O.T. 12+23.82

P.I. 25+31.40
ΔLT. 37°36'08"
D - 19°00'
T - 102.66'
L - 197.91'
E - 16.99'
RATE SUPER ELEV. .060'/FT.
LENGTH OF RUNOFF 290'

P.C. 24+28.74

P.T. 26+26.65

P.C. 21+32.37

P.T. 23+16.78

P.I. 22+26.41
ΔRT. 27°39'42"
D - 15°00'
T - 94.04'
L - 184.41'
E - 11.41'
RATE SUPER ELEV. .057/FT.
LENGTH OF RUNOFF 275'

CONST. ℄ CULV. STA. 28+17
115" SPAN x 62' R.C.P. ARCH CULV. CL. III A
115" SPAN x 24' R.C.P. ARCH CULV. CL. II A
2-115" SPAN R.C.P. ARCH APRONS
F & I APPROVED JOINT TIES
INLET 7 CU. YDS. CL. III RIPRAP 15" DEPTH
OUTLET 53 CU. YDS. CL. III RIPRAP 18" DEPTH
26 CU. YDS. GRANULAR FILTER 9" DEPTH

F.E. RT. 28+98
NO CULV. INPL.
MOVE TO STA. 30+00
49" SPAN x 28' C.S.P. ARCH CULV.
2-49" SPAN G.S.P.-ARCH APRONS

CONST. DITCH BLOCK
CONST. DITCH BLOCK
WOODS
CORN CRIB
HO.
BARN
℄ C.S.A.H. 10
CONST. BERM SEC

B.M. EL. 1292.49
SPK. IN P.P. W. JCT.
110 & 10

B.M. EL. 1230.43
SPK. IN CTTWD. RT.
16' STA. 13+39

B.M. EL. 1187.40
TOP INLET ℄ CULV.
17' LT. 19+80

B.M. EL. 1134.82
SPK. IN GATE POST
50' SE. BR. L6172

P.V.C. +35.0 ELEV. 1290.775
P.V.T. +65.0 ELEV. 1283.30
P.I. +50.0 ELEV. 291.35 230' V.C. M=2.15625
P.V.C. +25.0 ELEV. 1265.10
P.I. +50.0 ELEV. 1256.35 250' V.C. M=1.1875
P.V.T. +75.0 ELEV. 1249.50
P.V.C. +00 ELEV. 1248.35
P.I. +00 ELEV. 1241.95 400' V.C. M=2.15
P.V.T. +00 ELEV. 1226.95
P.V.C. +50.0 ELEV. 1208.80
P.I. +00 ELEV. 1196.95 300' V.C. M=0.91875
P.V.T. +50.0 ELEV. 1189.375
P.V.C. +40.0 ELEV. 1149.50
P.I. +00 ELEV. 1136.35 520' V.C. M=9.2625

7.0%
3.2%
7.2%
5.05%
5.05%

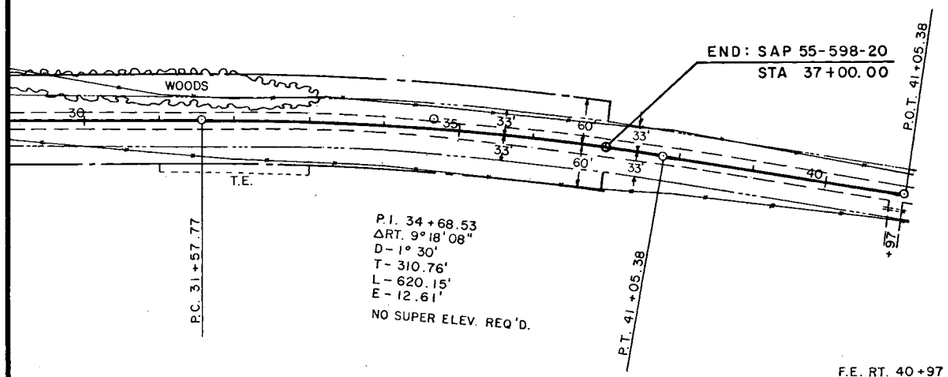
INLET ELEV. 1246.0
OUTLET ELEV. 1243.0
INLET ELEV. 1184.0
OUTLET ELEV. 1183.2
INLET ELEV. 1126.0
OUTLET ELEV. 1125.5

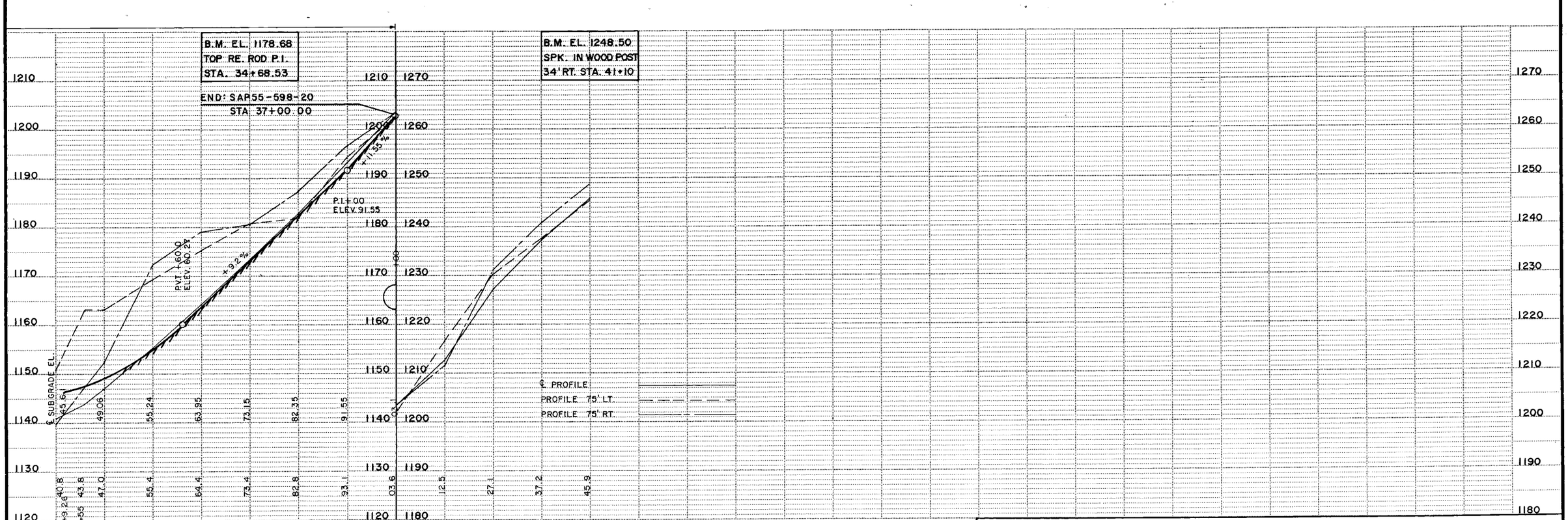
℄ PROFILE
PROFILE 75' LT.
PROFILE 75' RT.

UNCLASSIFIED EXC.	21351 CU. YDS.	
SALVAGED TOPSOIL	2319 CU. YDS.	
EMB.	16473 CU. YDS.	

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 0+20 TO STA. 5+70,
STA. 10+00 TO STA. 17+25,
STA. 19+35 TO STA. 25+80 AND
STA. 30+40 TO STA. 37+00.

SUBGRADE ELEVATION





~~State Proj. No.~~ S.A.P. 55-598-20 CRIIO OLMSTED CO. **Sheet No.** 4 **of** 11 **Sheets**