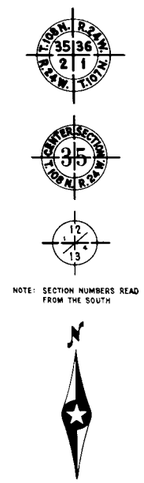
FORM 129A REV. '54

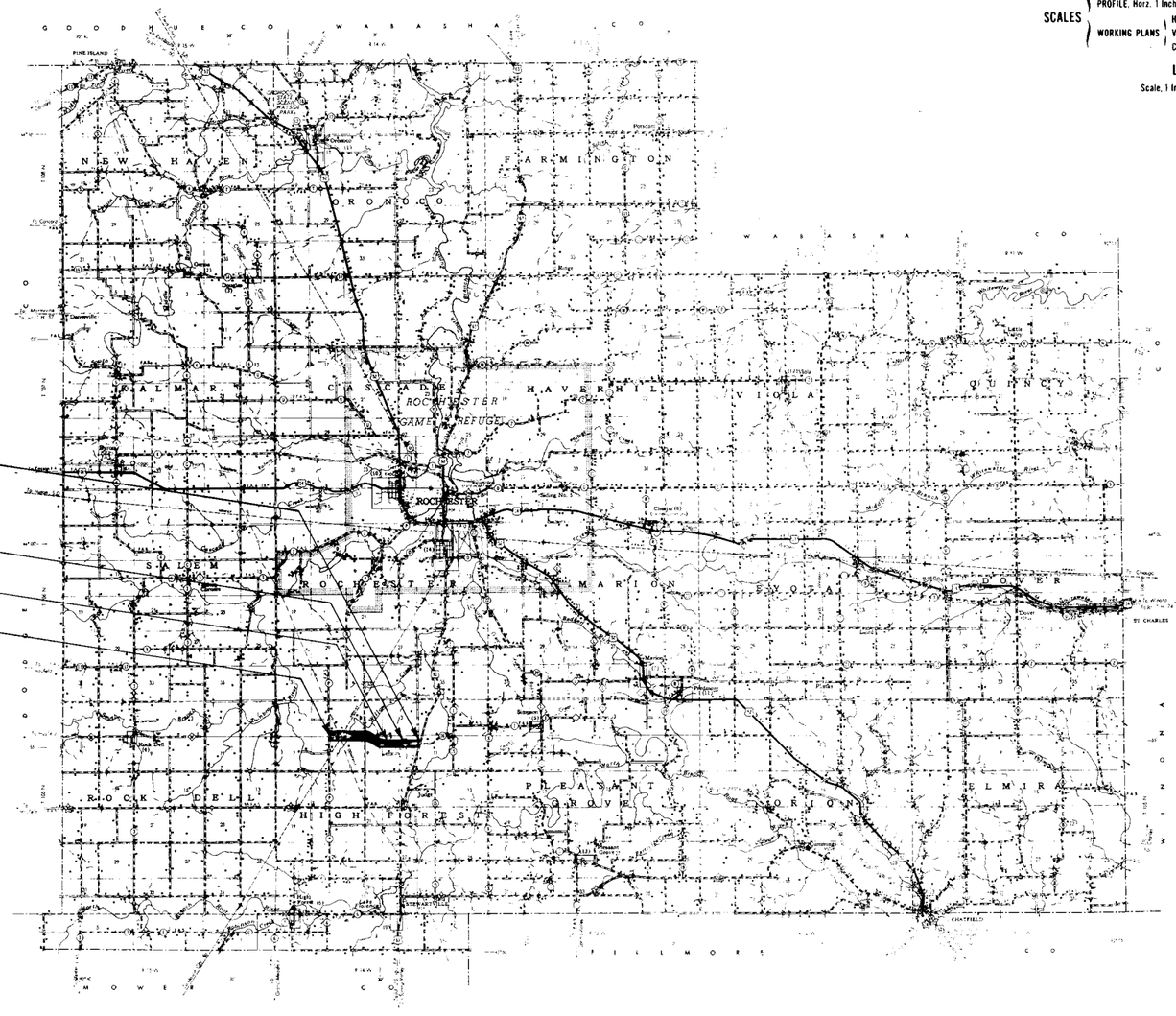
CONVENTIONAL SIGNS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
PRESENT ROAD R/W LINE
LIMITED ACCESS
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
STEAM RAILROAD
ELECTRIC RAILROAD
RAILROAD RIGHT-OF-WAY LINE
CREEK
RAPIDS OR WATERFALL
DRY RUN
DRAINAGE DITCH
HIGH TENSION LINE
POWER POLE LINE
TELEPHONE OR TELEGRAPH LINE
TELEPHONE CONDUIT
GUARD RAIL
WIRE FENCE
RAILROAD SNOW FENCE
BOARD OR HIGHWAY SNOW FENCE
STONE WALL OR FENCE
GAS MAIN
WATER PIPE
SEWER PIPE
DRAIN TILE
GRAVEL PIT
SAND PIT
CLAY PIT
ROCK QUARRY
SPRINGS
MARSH

TIMBER
BRUSH
ORCHARD
ROCK LEDGE
SAND
EDGE OF CUT
TOE OF EMBANKMENT
CATCH BASIN
MANHOLE
DROP INLET
FIRE HYDRANT
ARC LAMP
OTHER LAMPS (State Kind)
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
CATTLE GUARD
OVERHEAD (Highway Over)
UNDERPASS (Highway Under)
ABUTMENT, WALL & PIER
BRIDGE
CULVERT
BUILDING (One Story Frame)
C-CONCRETE S-STONE T-TILE B-BRICK ST-STUCCO
HEDGE
IRON PIPE
STONE MONUMENT
WOOD STAKE OR HUB
MEANDER CORNER



NOTE: SECTION NUMBERS READ FROM THE SOUTH



STATE OF MINNESOTA

DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR GRADE AND CRUSHED ROCK SURFACE

COUNTY State Aid Road No. 16

BETWEEN Sta 0+00 AND Sta 138+65.30

From South 1/4 Cor. Sec. 5 T105N R14W To 298.3' East of SE Cor. of NE 1/4 NE 1/4 Sec 10 T105N R14W

(Give proper reference to Sections, Township and Range)

GROSS LENGTH 13,818.54 FEET 2.617 MILES
BRIDGES LENGTH 0.0 FEET 0.0 MILES
EXCEPTIONS LENGTH 0.0 FEET 0.0 MILES
NET LENGTH 13,818.54 FEET 2.617 MILES

SCALES
PLAN, 1 Inch = 200 Feet
PROFILE, Horz. 1 Inch = 200 Feet. Vert. 1 Inch = 20 Feet
WORKING PLANS: Horz. 1 Inch = 100 Feet; Vert. 1 Inch = 10 Feet; Cross-Section 1 Inch = 10 Feet

LAYOUT
Scale, 1 Inch = 10560 Feet

INDEX OF SHEETS

Sheet No. 1. Title Sheet & Layout Map
" No. 2. Est. Quantities & Typical Sec.
" No. 3. To 7. Plan & Profile
" No. 8. To 19. Cross Sections

DESIGN SPEED 55 M.P.H.

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

OLMSTED COUNTY HIGHWAY ENGINEER

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

COUNTY ENGINEER _____ DATE _____

COUNTY _____ REG. NO. _____

RECOMMENDED FOR APPROVAL _____ 19__
DISTRICT ENGINEER

RECOMMENDED FOR APPROVAL _____ 19__

APPROVED _____ 19__
STATE AID ENGINEER

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED

DISTRICT ENGINEER _____ DATE _____

—SPECIFICATIONS—

THE "SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED JULY 1, 1947 AND SUBMITTED FOR APPROVAL BY THE DIVISION ENGINEER OF THE BUREAU OF PUBLIC ROADS ON OCTOBER 15, 1947, AS MODIFIED BY "SUPPLEMENT 1" THERETO DATED APRIL 15, 1953 AND SUBMITTED FOR APPROVAL BY THE DIVISION ENGINEER OF THE BUREAU OF PUBLIC ROADS ON MARCH 25, 1953, SHALL GOVERN.

State Aid Project 55-671-01.

OLMSTED County, Minnesota County Proj. No. _____ Plan No. _____ Sheet No. 1 of 19 Sheets

H. A. ROGERS CO. Minneapolis

FORM 129 C - # 1 Rev. '46

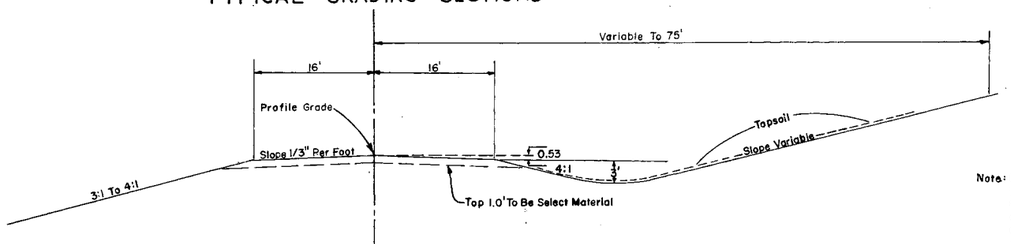
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.		FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5N	MINN.					

ESTIMATED QUANTITIES

SPECIFICATION NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
2101.502	Clearing	Tree	108
2101.507	Grubbing	Tree	104
2104.501	Remove Portable Culverts	Linear Foot	240
2105.503	Class C Excavation	Cubic Yard	117,559
2109.501	Obliterate Old Road	Acre	0.45
2501.511-18"	F.A.I. C.M.P. Culvert-18"	Linear Foot	652
2501.521-24"	F.A.I. S.C.P. Culvert-24"	Linear Foot	204
2501.521-30"	F.A.I. Extra Strength S.C.P. Culvert-30"	Linear Foot	144
2501.521-36"	F.A.I. S.C.P. Culvert-36"	Linear Foot	82
2501.521-48"	F.A.I. S.C.P. Culvert-48"	Linear Foot	70
2501.531-18"	F.A.I. Metal Aprons for C.M.P.-18"	Apron	44
2501.541-24"	F.A.I. Conc. Aprons for S.C.P.-24"	Apron	6
2501.541-30"	F.A.I. Conc. Aprons for S.C.P.-30"	Apron	2
2501.541-36"	F.A.I. Conc. Aprons for S.C.P.-36"	Apron	2
2501.541-48"	F.A.I. Conc. Aprons for S.C.P.-48"	Apron	2
2411.501	Concrete	Cubic Yard	171.1
2411.525	Class U Excavation	Cubic Yard	150
2411.541	Reinforcement Bars	Pound	22,046
2441.502	Single-lane By-pass	By-pass	1
2442.501	Remove Old Structure	Structure	2
2252.527	Crushed Rock Wearing Course in Place	Cubic Yards (V.M.)	6,230
2414.511-60"	F.A.I. 60" P.C. Conc. Cattle Pass	Linear Foot	58
2414.512-60"	F.A.I. 60" P.C. Conc. Cattle Pass End Sections	End Section	2

(1) Note: Item 2252.527, Include 200 Cu. Yds. for Approaches and 300 Cu. Yds. for T.W.P. Roads.

TYPICAL GRADING SECTIONS



EARTH SECTION

SPECIAL DETAILS

Note: Material from the top 1.0' of the natural topsoil shall not be used in the upper 1.0' of the Roadway. Part of this material shall be spread uniformly on slopes and ditch bottoms to a depth of 3". No payment in addition to the Contract price for Class A Excavation will be made for spreading the topsoil as provided above, nor will any undercutting made in excavations prior to placing the topsoil be measured for payment.

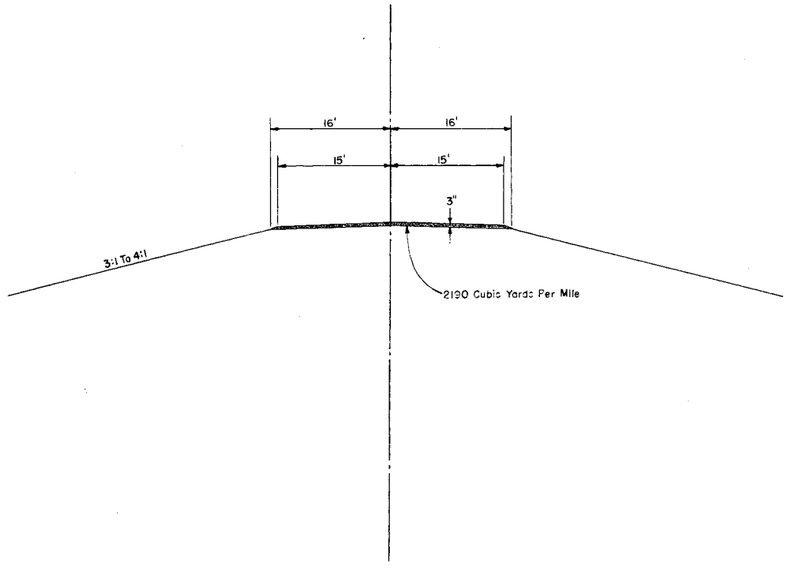
Note: Corrugated Metal and Sectional Concrete Pipe Culvert excavation shall be considered incidental and will be paid under unit price for Furnish and Install Culvert Pipe.

STANDARD DETAIL PLATES

THE FOLLOWING STANDARD DETAIL PLATES, APPROVED BY THE BUREAU OF PUBLIC ROADS, SHALL APPLY ON THIS PROJECT.

PLATE NO.	DESCRIPTION
3100 A	CONCRETE APRON FOR REINFORCED S.C. PIPE
3123 A	METAL APRON FOR C.M. PIPE

TYPICAL BASE & SURFACE SECTIONS



S.A.P. 55-

OLMSTED County, Minn. Proj. No. Plan No. Sheet No. 2 of 19 Sheets

DAHMS PHOTO PRINT CO. ST. PAUL 1, MINN.

CL Sta 0+23
Inpl 18"X34' CMP
Remove
No Culv Req'd

Sta 10+77 FE Lt
No Culv Inpl
F&I 18"X 28' CMP
F&I 2-18" CMP Aprons

CL Sta 11+00
Inpl 18"X 30' CMP
Remove
F&I 24"X 54' SCP
F&I 2-24" Conc Aprons

Sta 18+67 FE Lt
No Culv Inpl
F&I 18"X 28' CMP
F&I 2-18" CMP Aprons

Sta 28+83 FE Lt
No Culv Inpl
F&I 18"X 28' CMP
F&I 2-18" CMP Aprons

CL Sta 29+31
Inpl 4' X 6'X 20'
Stone Arch
Remove
Pl C108X61'
Class A Conc 104.33 Cu Yds
Reinf Steel 15954 lbs
Class U Exc 110 Cu Yds
Single Lane Bypass

Sta. 1+65 FE Rt
F&I 18"X 32' CMP
F&I 2-18" CMP Aprons

Sta 10+77 FE Rt
No Culv Inpl
F&I 18"X 28' CMP
F&I 2-18" CMP Aprons

Sta 14+16
Standard Oil Co Pipe Line

Sta 26+29 FE Rt
No Culv Inpl
F&I 18"X 28' CMP
F&I 2-18" CMP Aprons

B.M. Elev. 1258.52
X in Sch. Step
94' Rt. 1+10

B.M. Elev. 1262.83
Spike in Twin Oak
28' Rt. 19+52

Subgrade Treatment
Exc. 1.0' Below Grade
Sta. 2+00 to 5+00

Subgrade Treatment
Exc. 1.0' Below Grade
Sta. 17+00 to 21+00

Subgrade Treatment
Exc. 1.0' Below Grade
Sta. 23+00 to 26+60

EXC. 581
FILL 395

EXC. 3562
FILL 2415

EXC. 3780
FILL 2714

EXC. 8141
FILL 5602

Profile 75' Lt.
Profile 75' Rt.

S.A.P. 55-671-01

Sta 30+95 FE Lt
No Culv Inpl
F&I 18"X28' CMP
F&I 2-18" CMP Aprons

Sta 31+95 FE Lt
Inpl 12"X 16' CMP
Remove
F&I 18"X28' CMP
F&I 2-18" CMP Aprons

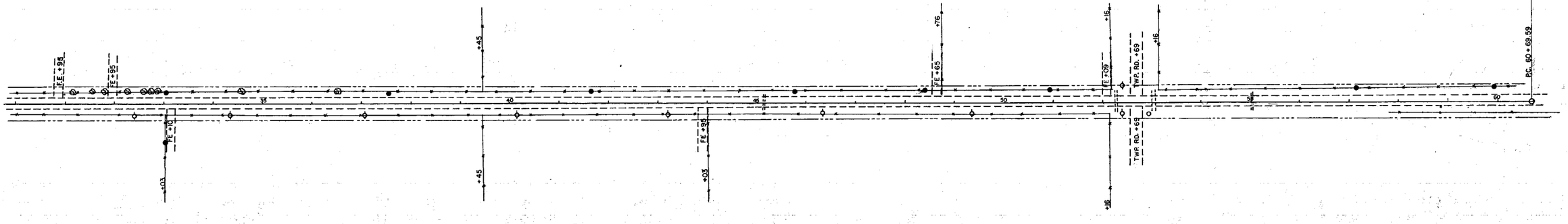
CL Sta 45+16
Inpl 18"X 30' CMP
Remove
No Culv Req'd

Sta 48+65 FE Lt
No Culv Inpl
F&I 18"X28' CMP
F&I 2-18" CMP Aprons

Sta 52+09 FE Lt
No Culv Inpl
F&I 18"X28' CMP
F&I 2-18" CMP Aprons

CL Sta 53+06
Inpl 24"X 44' CMP
Remove
No Culv Req'd

CL Sta 55+07
Inpl 18"X 30' CMP
Remove
F&I 24"X 66' SCP
F&I 2-24" Conc Aprons



Sta 33+10 FE Rt
Inpl 12"X 16' CMP
Remove
F&I 18"X28' CMP
F&I 2-18" CMP Aprons

Sta 43+95 FE Rt
No Culv Inpl
F&I 18"X28' CMP
F&I 2-18" CMP Aprons

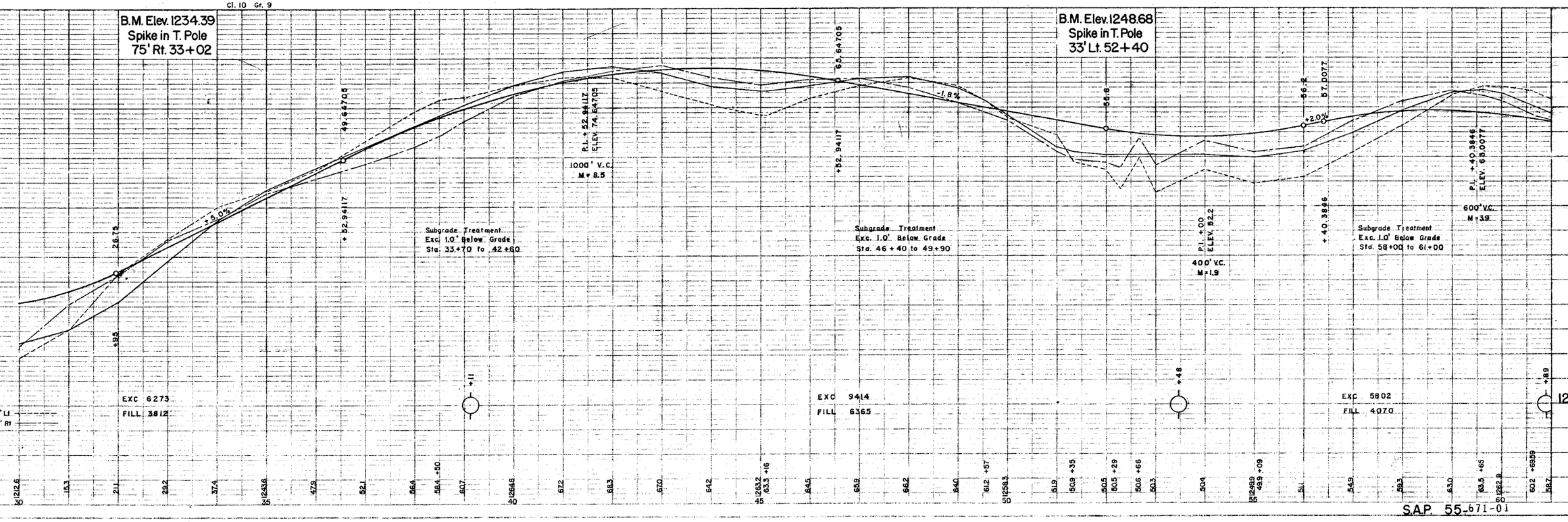
CL Sta 52+29
Inpl 24"X 40' CMP
Remove
F&I 24"X84' SCP
F&I 2-24" Conc Aprons

Sta 52+69 T.WP. RD. Lt & Rt
No Culv Inpl
No Culv Req'd

Cl. 10 Gr. 9

B.M. Elev. 1234.39
Spike in T. Pole
75' Rt. 33+02

B.M. Elev. 1248.68
Spike in T. Pole
33' Lt. 52+40



S.A.P. 55-671-01

Sheet 4 19 Sheets

Sta. 63+18 F.E. Lt.
No Culv Inpl
F&I 18"X28' CMP
F&I 2-18" CMP Aprons

Sta. 65+78 Lt.
Inpl 36"X38' C.M.P.

Obliterate Old Road
0.45 Acres

Sta. 69+00 F.E. Lt.
No Culv Inpl
F&I 18"X28' CMP
F&I 2-18" CMP Aprons

Sta. 83+55 C.L.
F&I 48"X 70' SCP
F&I 2- 48" Conc Aprons

P.I. 68+00
ΔRt. 41° 51'
D 3° 00'
T 730.41
L 1395.0

P.I. 87+00.20
ΔLt. 42° 28'
D 3° 00'
T. 742.12
L 1415.58

P.T. 74+64.57

P.C. 79+57.90

Sta. 66+40 F.E. Lt
No Culv Inpl
No Culv Req'd

Sta. 66+00 C.L.
F&I 60" (P-C Conc) Cattle Pass 58' Long
F&I 2-60" Conc Aprons – Cattle Pass

Sta. 72+30
Construct F.E. Rt.
No Culv Req'd

Sta. 75+80 C.L.
F&I 30" X 144' SCP (Extra Strength)
F&I 2-30" Conc Aprons

Cl. 4 Gr. 4

Cl. 18 Gr. 16

B.M. Elev. 1238.75
Spike in Twin Oak
97' Rt. 74+79

B.M. Elev. 1252.56
Spike in Cor. F.P.
130' Rt. 86+45

P.I. +42.1875
ELEV 43.76

600' V.C.
M=4.8

-3.2%

+3.2%

P.I. +26.1905
ELEV 62.4381

550' V.C.
M=2.8875

-1.0%

+0.1905

+64.4444

P.I. +64.4444
ELEV 50.0555

600' V.C.
M=3375

+3.5%

+00.96888

Subgrade Treatment
Exc. 1.0' Below Grade
Sta. 68+30 to 73+60

Subgrade Treatment
Exc. 1.0' Below Grade
Sta. 77+00 to 81+80

Profile 75' Lt.
Profile 75' Rt.

EXC 1074
FILL 757

EXC 9079
FILL 6508

EXC 5707
FILL 4024

EXC 15289
FILL 10983

EXC 4062
FILL 2877

EXC 7860
FILL 5132

S.A.P. 55-671-01

5 19

Sta 93+12 Present C.S.A.H. No 16
F&I 18"X36' CMP
F&I 2-18" CMP Aprons

Sta 102+80 FE Lt
No Culv Inpl
F&I 18"X28' CMP
F&I 2-18" CMP Aprons

Sta 108+30 FE Lt
No Culv Inpl
F&I 18"X28' CMP
F&I 2-18" CMP Aprons

Sta 118+72 FE Lt
No Culv Inpl
F&I 18"X36' CMP
F&I 2-18" CMP Aprons

Equation 93+73.48 = 93+08.8

Equation 109+06.2 = 110+17.64

Sta 95+12 FE Rt
No Culv Inpl
No Culv Reqd

CL Sta 101+13
Inpl 3'span 3'rise Conc Arch 24'
Also 6' Deformed Pipe
Remove
F&I 36"X82' SCP
F&I 2-36" Conc Aprons

Sta 105+30 FE Rt
No Culv Inpl
F&I 18"X32' CMP
F&I 2-18" CMP Aprons

Sta 108+30 T.W.P. RD Rt
No Culv Inpl
F&I 18"X36' CMP
F&I 2-18" CMP Aprons

CL Sta 118+05
Inpl W66X35'
Ext 34.5' Lt & 34.5' Rt
Class A Conc 66.8 cu. yds
Reinf Steel 6092 lbs
Class U Exc 40 cu yds

B.M. Elev. 1279.11
Spike in T. Pole
6' Rt. 94+88

B.M. Elev. 1282.11
Spike in P. Pole
35' Rt. 110+50

B.M. Elev. 1258.53
Spike in T. Pole
25' Lt. 116+85

P.I. + 50.96688
ELEV. 84.5839
900' V.C.
M=7.0875

P.I. +50
ELEV. 63.2
600' V.C.
M = 3.75

P.I. + 26.07666
ELEV. 82.22201
600' V.C.
M = 3.6

P.I. +00
ELEV. 82.1
600' V.C.
M=3.525

-2.8%
+2.2%
-2.6%
+2.1%

Subgrade Treatment
Exc. 1.0' Below Grade
Sta. 69+40 to 96+35
EXC. 5646
FILL 4085

Subgrade Treatment
Exc. 1.0' Below Grade
Sta. 103 to 106+50
EXC. 7522
FILL 5211
EXC. 556
FILL 352

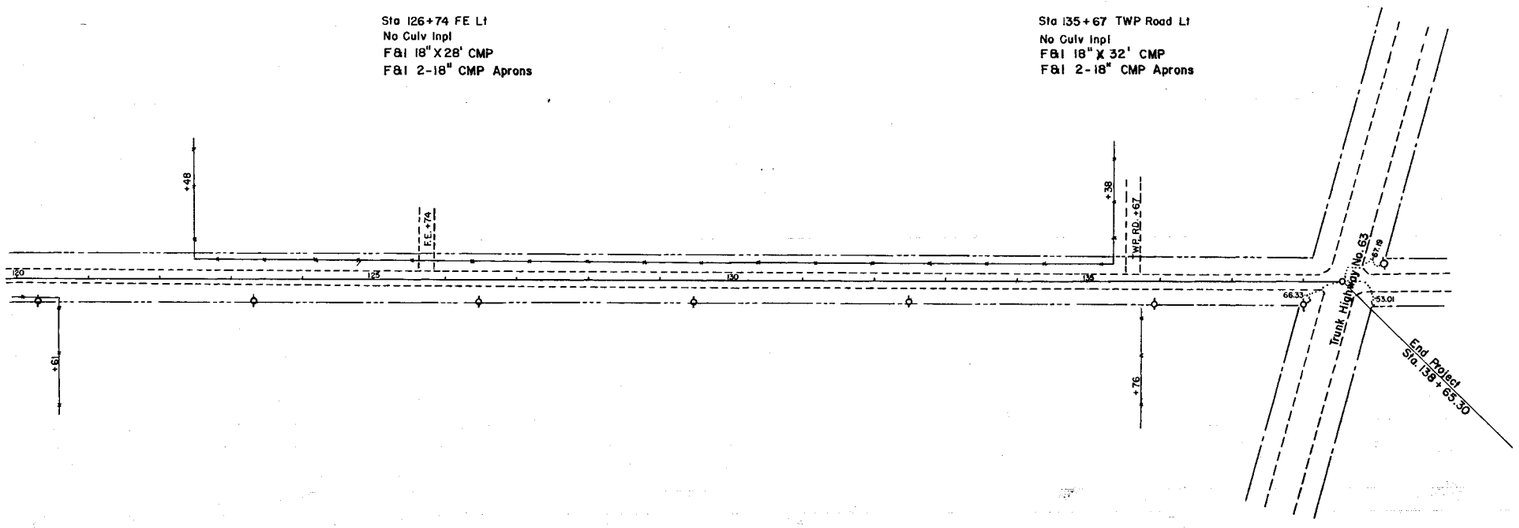
Subgrade Treatment
Exc 1.0' Below Grade
Sta 109+00 to 115+10
EXC. 7036
FILL 4740

Profile 75' Lt.
Profile 75' Rt.

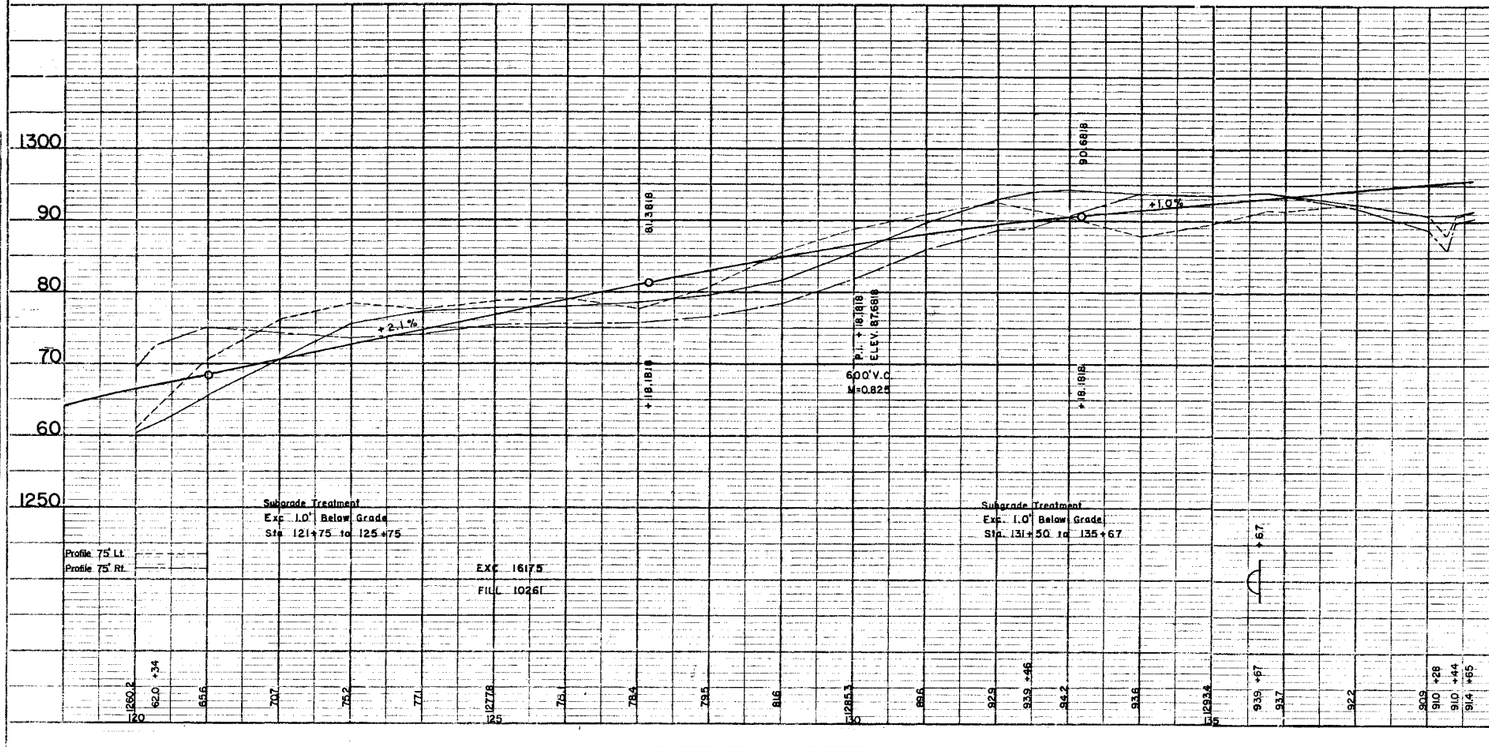
S.A.P. 55-671-01

Sta 126+74 FE Lt
No Culv Inpl
F&I 18" X 28' CMP
F&I 2-18" CMP Aprons

Sta 135+67 TWP Road Lt
No Culv Inpl
F&I 18" X 32' CMP
F&I 2-18" CMP Aprons



B.M. Elev. 1290.10
Spike in P. Pole
N.E. of P.I.



PLAN
NOTE BOOK
NO.

PROJECT
NOTE BOOK
NO.

S.A.P. 55-671-01

PLATE 1 PLAN PROFILE P.P.R. STANDARD

Sheet No. 7 of 19 Sheets