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), (1-S-F)
C-CONCRETE S-STONE T-TILE B-BRICK ST-STUCCO
HEDGE
IRON PIPE
STONE MONUMENT
WOOD STAKE OR HUB
MEANDER CORNER

T.106N. R.24W. / 35 36 / 2 1 / R.24W. T.105N.

CENTER SECTION 35 T.106N. R.24W.

12 / 1 / 24 / 13

NOTE: SECTION NUMBERS READ FROM THE SOUTH

N

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
CONSTRUCTION PLAN FOR GRADING-CR.ROCK BASE--BOX CULVERTS

COUNTY **State Aid Road No. 15**

BETWEEN T.H. No. 30 AND N.E. Cor. Sec. 35 T106N-R15W

From 46.2 Ft. NORTH of S.W. Cor. Sec. 13 T105N-To N.E. Cor. Sec. 35 T106N-R15W
Give proper reference to Sections, Township and Range R15W

GROSS LENGTH 21064 FEET 3.989 MILES
BRIDGES LENGTH 48 FEET .009 MILES
EXCEPTIONS LENGTH 48 FEET .009 MILES
NET LENGTH 21016 FEET 3.980 MILES

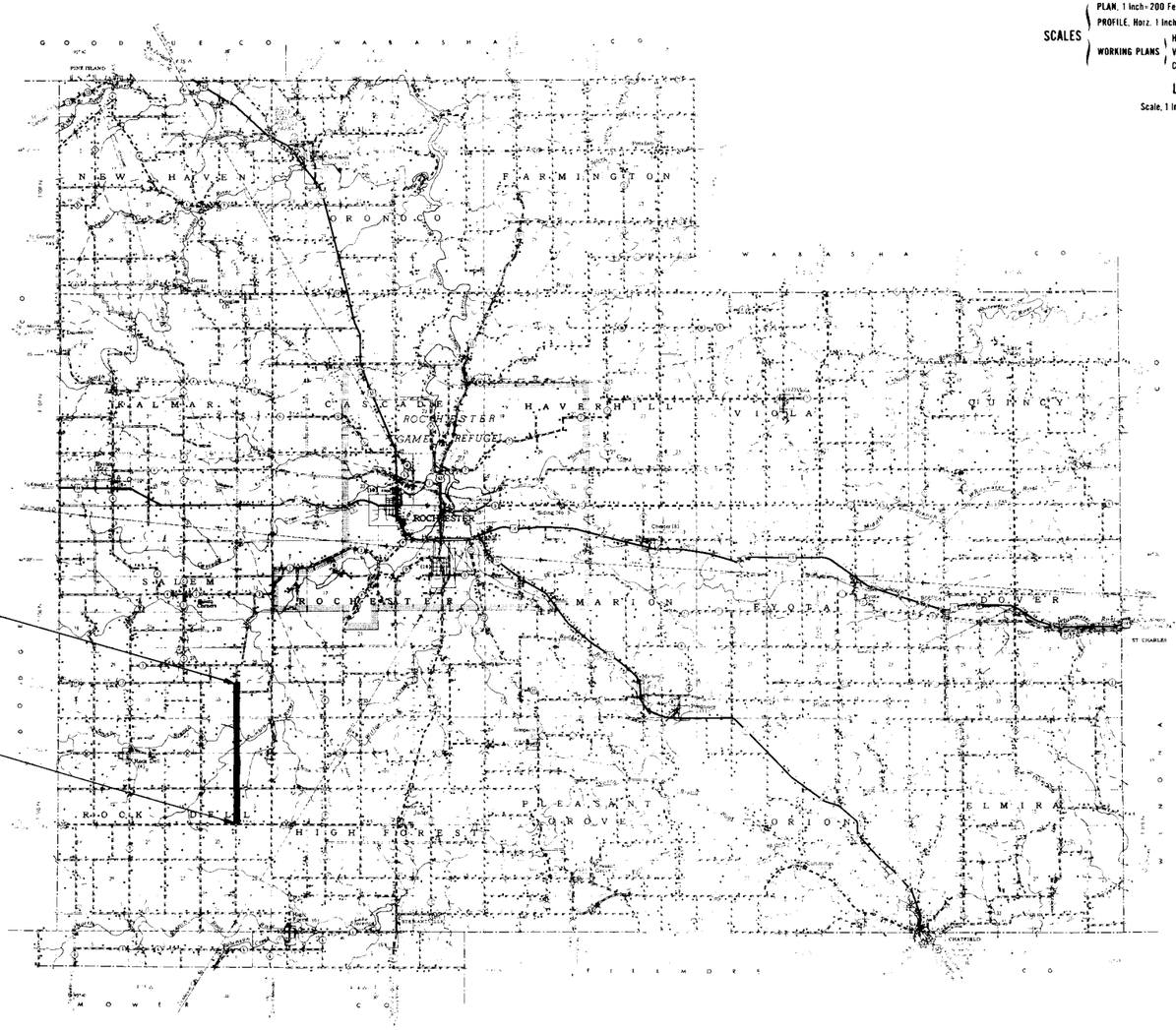
MINN. PROJ. S 7474 (1)

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 = 1056 0 Feet

INDEX OF SHEETS

Sheet No. 1. Title Sheet & Layout Map
" No. 2. Est. Quantities & Typical Sec.
" No. 3. To 9 Plan & Profile
" No. 10 To 41 Cross Sections



END 55-615-01 S 7474 (1)
STA. 420+63.90

BRIDGE EXCEPTION
STA. 357+81 TO STA. 358+29

Begin 55-615-01 S 7474 (1)
STA. 210+00

DESIGN SPEED 50 M.P.H.

ALL APPLICABLE FEDERAL, STATE, AND, LOCAL LAWS WILL BE COMPLIED WITHIN 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 H. A. Rogers Jr. 19 5-

APPROVED 19
STATE AID ENGINEER

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED

DISTRICT ENGINEER DATE

— SPECIFICATIONS —

THE "SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED MAY 1, 1954 AND SUBMITTED FOR APPROVAL BY THE DIVISION ENGINEER OF THE BUREAU OF PUBLIC ROADS ON MARCH 26, 1959 SHALL GOVERN.

Minn. Proj. No. S 7474 (1) State Proj. No. 55-615-01

OLMSTED County, Minnesota County Proj. No. Plan No. Sheet No. 1 of 41 Sheets

H. A. ROGERS CO. Minneapolis

FORM 129c - #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
	2101.501	Clearing	Acre	1.51
	2101.502	Clearing	Tree	167
	2101.506	Grubbing	Acre	1.51
	2101.507	Grubbing	Tree	440
	2104.501	Remove Portable Culvert	Linear Foot	783
	2105.501	Class "A" Excavation	Cubic Yard	124,844
	2105.502	Class "B" Excavation	Cubic Yard	24,038
	2501.511-18"	F&I C.M.P. Culverts - 18"	Linear Foot	796
	2501.511-24"	F&I C.M.P. Culverts - 24"	Linear Foot	252
	2501.521-24	F&I S.C.P. Culvert-24" Class IV	Linear Foot	176
	2501.521-24"	F&I S.C.P. Culvert-24" Class III	Linear Foot	304
	2501.521-30"	F&I S.C.P. Culverts-30" Class IV	Linear Foot	78
	2501.521-48"	F&I S.C.P. Culvert-48" Class IV	Linear Foot	40
	2501.521-60"	F&I S.C.P. Culverts-50 Class IV	Linear Foot	40
	2515.531-18	F&I Metal Aprons For C.M.P-18"	Apron	48
	2515.531-24"	F&I Metal Aprons For C.M.P.-24"	Apron.	10
	2515.541-24"	F&I Conc. Aprons For S.C.P. -24"	Apron	18
	2515.541-30"	F&I Conc. Aprons For S.C.P. - 30"	Apron	4
	2515.541-48"	F&I Conc. Apron For S.C.P.-48"	Apron	2
	2515.541-60"	F&I Conc. Aprons For S.C.P. - 60"	Aprons	2
	2511.502	Random Rip-Rap Class 'B'	Cubic Yard	200
*	2104.520	Remove Concrete Box Culverts	Structure	2
	2411.501	Concrete	Cubic Yard	230.4
	2411.525	Class "U" Excavation	Cubic Yard	150
	2411.541	Reinforcement Bars	Pound	26,645
	2441.502	Single-Lane By-Pass (Sta. 320+55)	By-Pass	1
	2210.527	Crushed Rock Base In Place	Cubic Yard (V.M.)	9,308
	2130.501	Water	M-Gal.	232

NOTE: Item 2252.527 Includes 420 Cubic Yards For Approaches And 150 Cubic Yards For Twp. Rds.

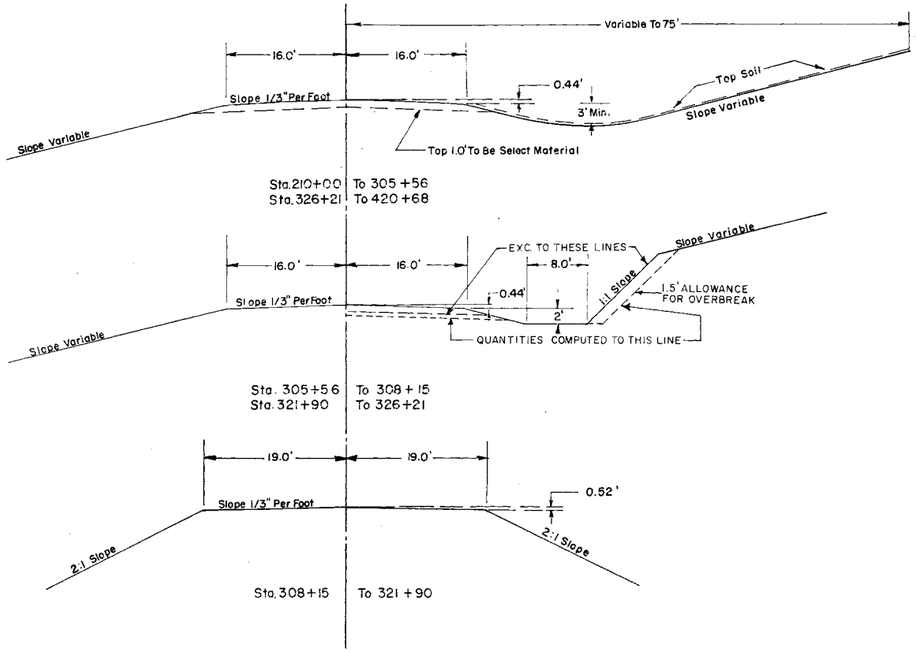
* Sta. 320+55 - 4' x 10' x 24'
Sta. 413+14 - 4' x 3' x 18'

STANDARD DETAIL PLATES

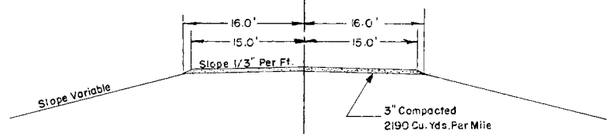
THE FOLLOWING STANDARD DETAIL PLATES, APPROVED BY THE BUREAU OF PUBLIC ROADS, SHALL APPLY ON THIS PROJECT

PLATE NO.	DESCRIPTION
3100.B	Concrete Apron For Reinforced Concrete Pipes
3123.A	Metal Apron For C.M. Pipes

TYPICAL GRADING SECTIONS



TYPICAL BASE & SURFACE SECTIONS



SPECIAL DETAILS

NOTE: Material from the 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 uniformily on the slope and ditch bottom 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 be made in excavation prior to placing the the topsoil be measured for payment.

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

NOTE: Subgrade Treatment,
Excavation 1.0' below Profile Grade for compaction as shown on Plan and Profile Sheets. Excavation has been computed and is included in Balanced Quantities. Backfill with Select Material from R.O.W. Tapers shall be 50:1 in all cases

NOTE: Place Sectional Concrete Pipe on Class C Bedding

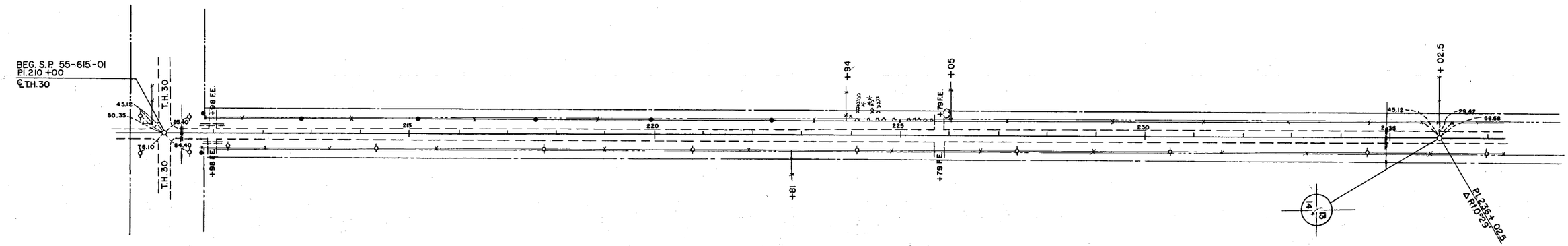
DAHMS PHOTO PRINT CO
ROCHESTER, MINN

210+36 ℄ Culv.
Inpl. 18"x40' C.M.P.
Inpl. 2-18" C.M.P. Aprons
Remove Aprons
F&I 2-18"x8' C.M.P. Extentions
Replace Aprons

210+98 F.E. Lt.
Inpl. 15"x26' C.M.P.
Remove
F&I 18"x28' C.M.P.
F&I 2-18" C.M.P. Aprons

225+79 F.E. Lt.
No Culv. Inpl.
F&I 18"x32' C.M.P.
F&I 2-18" C.M.P. Aprons

234+99 ℄ Culv.
Inpl. 18"x26' C.M.P.
Remove
F&I 24"x56' S.C.P. Class III
F&I 2-24" S.C.P. Aprons

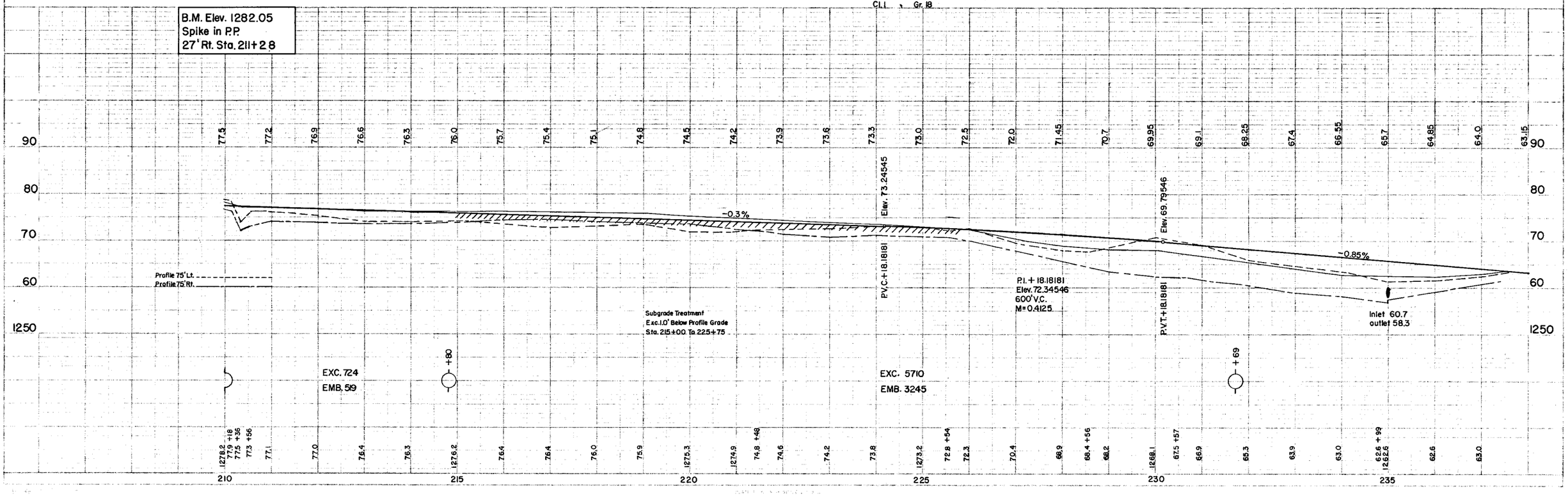


210+98 F.E. Rt.
Inpl. 15"x26' C.M.P.
Remove
F&I 18"x28' C.M.P.
F&I 2-18" C.M.P. Aprons

225+79 F.E. Rt.
No Culv. Inpl.
F&I 18"x28' C.M.P.
F&I 2-18" C.M.P. Aprons

B.M. Elev. 1282.05
Spike in P.P.
27' Rt. Sta. 211+28

Cl. I Gr. 18



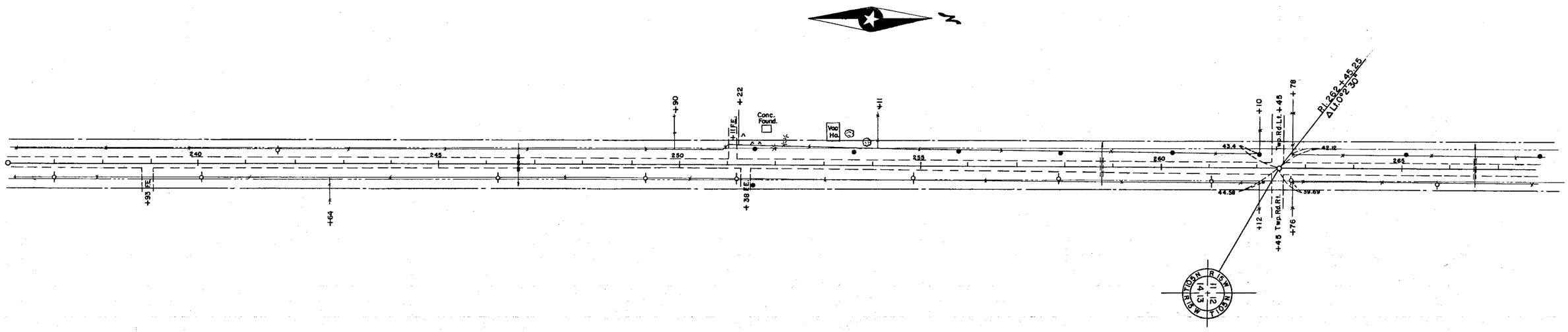
246+65 ℄ Culv.
Inpl. 18"x26' C.M.P.
Remove
F&I 24"x38' S.C.P. Class IV
F&I 2-24" S.C.P. Aprons
Pl. Ditch Block

251+11 F.E. Lt.
No Culv. Inpl.
F&I 18"x32' C.M.P.
F&I 2-18" C.M.P. Aprons

258+76 ℄ Culv.
Inpl. 15"x 26' C.M.P.
Remove
F&I 24"x60' S.C.P. Class IV
F&I 2-24" S.C.P. Aprons

262+45 Twp. Rd. Lt.
No Culv. Inpl.
No Culv. Req'd

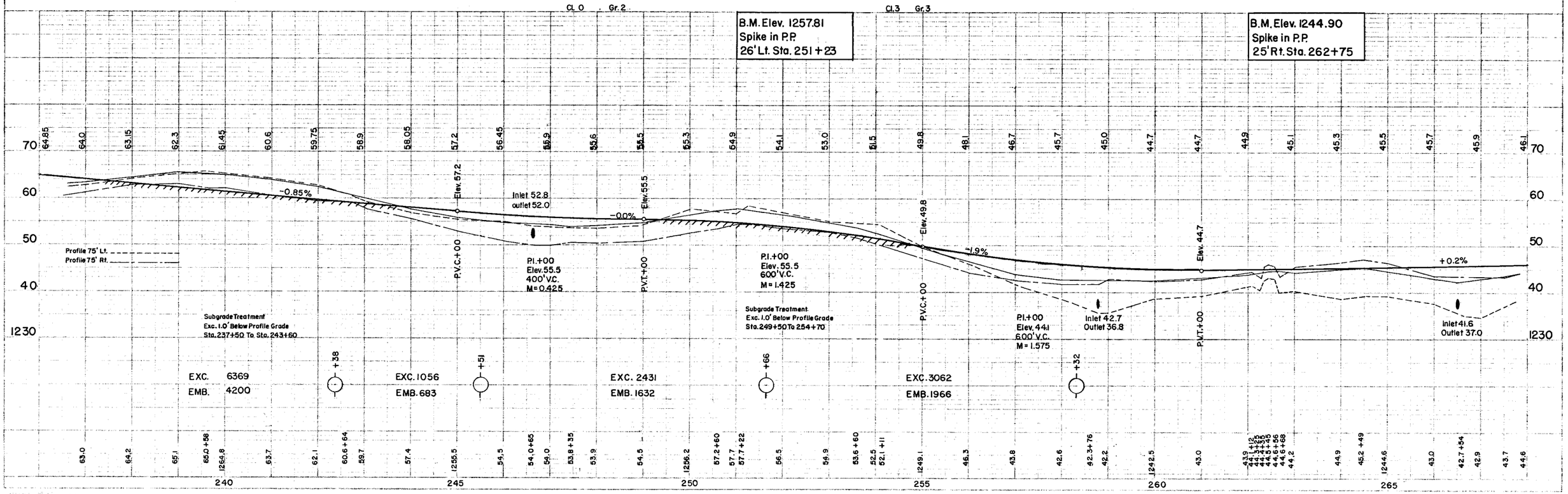
266+54 ℄ Culv.
Inpl. 18"x24' C.M.P.
Remove
F&I 24"x58' S.C.P. Class III
F&I 2-24" S.C.P. Aprons
Pl. Ditch Block



238+93 F.E. Rt.
No Culv. Inpl.
F&I 18"x28' C.M.P.
F&I 2-18" C.M.P. Aprons

251+38 F.E. Rt.
No Culv. Inpl.
F&I 18"x32' C.M.P.
F&I 2-18" C.M.P. Aprons

262+45 Twp Rd-Rt.
No Culv. Inpl.
F&I 18"x36' C.M.P.
F&I 2-18" C.M.P. Aprons

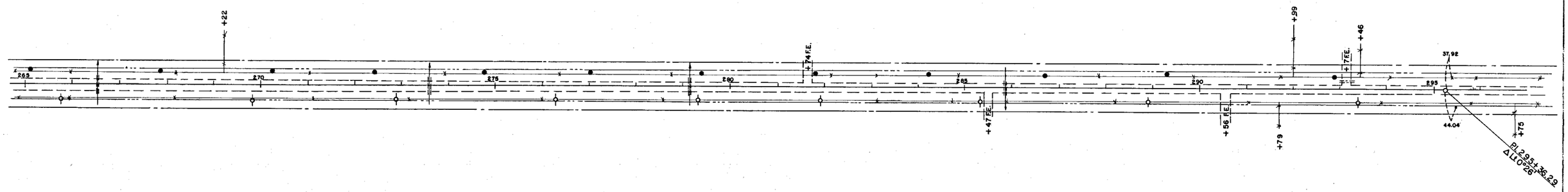


273+62 ℄ Culv.
Inpl. 24"x24'C.M.P.
Remove
F&I 24"x40'S.C.P. Class IV
F&I 2-24" S.C.P. Aprons
Pl. Ditch Block

281+74 F.E.Lt.
No Culv. Inpl.
F&I 18"x28'C.M.P.
F&I 2-18"C.M.P. Aprons

285+86 ℄ Culv.
Inpl. 24"x24'
Remove
F&I 24"x72' S.C.P. Class III
F&I 2-24" S.C.P. Aprons

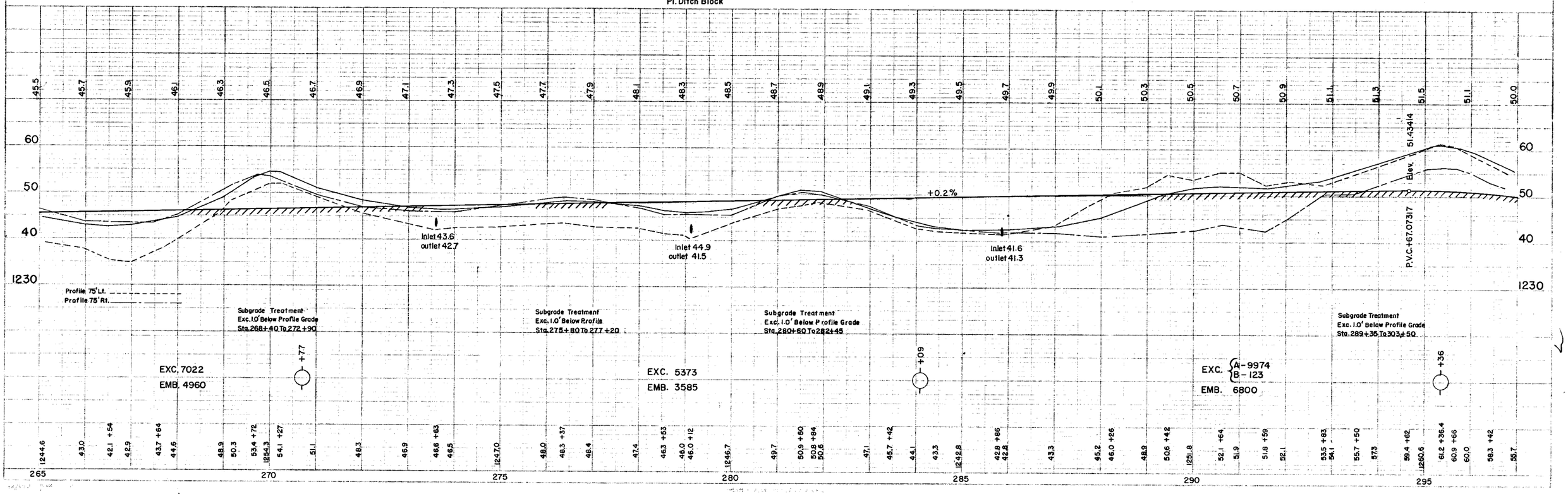
293+17 F.E.Lt.
Inpl. 18"x26'C.M.P.
Remove
F&I 18"x32'C.M.P.
F&I 2-18"C.M.P. Aprons



279+12 L Culv.
Inpl. 18"x25'C.M.P.
Remove
F&I 24"x48'S.C.P.
F&I 2-24" S.C.P. Aprons
Pl. Ditch Block

285+47 F.E. Rt.
No Culv. Inpl.
No Culv. Req'd

290+56 F.E. Rt.
No Culv. Inpl.
No Culv. Req'd



PLAN

NOTE: SHOWN ELEVATIONS ARE BASED ON MEAN SEA LEVEL DATUM OF 1912

NO. | REVISIONS | BY | DATE

3I5+I2 F.E.Lt.
Inpl. I5"x20' C.M.P.
Remove
F&I 24"x66' C.M.P.
F&I 2-24" C.M.P.

3I9+40 F.E.Lt.
No Culv. Inpl.
F&I I8"x56' C.M.P.
F&I 2-I8" C.M.P. Aprons

320+36 ℄ Culv.
Inpl. 60"x24" C.M.P.
Remove

220+44 ℄ Culv.
Inpl. 60"x24" C.M.P.
Remove

324+88 F.E.Lt.
No Culv. Inpl.
F&I I8"x32' C.M.P.
F&I 2-I8" C.M.P. Aprons

327+55 L Culv.
Inpl. I5"x30' C.M.P.
Remove
F&I 24"x90' C.M.P.
F&I 2-24" C.M.P. Aprons
Pl. 200 Cu. Yds.
Random Rip-Rap

HEAVY WOODS

HEAVY WOODS

+07 +76 +29 +40 F.E. +12 F.E. +38 F.E. +69 +03 +48

300 305 310 315 320 325

301+50 F.E.Rt.
F&I I8"x28' C.M.P.
F&I 2-I8" C.M.P. Aprons

324+38 F.E.Rt.
No Culv. Inpl.
F&I I8"x56' C.M.P.
F&I 2-I8" C.M.P. Aprons

320+55 ℄ Culv., Conc. Box
Inpl. 4'x I0'x 24'
Remove
Pl. C I2I0D x52'
Class A Concrete 230.4 Cu. Yds.
Reinf. Steel 28,845 lbs.
Class U Exc. I50 Cu. Yds.
Single Lane By-Pass

B.M. Elev. I247.50
Spike in Twin Oak
39' Rt. Sta. 301+91

B.M. Elev. III6.36
"X" in S.E. Wing Bridge
22' Rt. Sta. 319+71

B.M. Elev. II42.46
Spike in Box Elder
43' Lt. Sta. 325+10

Cl. 2 | Cl. 1.51 Acres | Gr. 1.51 Acres | Gr. 48 | Cl. 61 | Gr. 115

Profile 75' Lt.
Profile 75' Rt.

P.I. +67.07317
Elev. 52.63415
I2.00' V.C.
M = I2.30

P.V.T. +67.07317

Elev. II.6

-8.0%

Subgrade Treatment
Exc. I.0' Below Profile Grade
Sta. 289+35 To 303+50

EXC. A-36692 B-8098
EMB. 34167

P.V.C. +50
Elev. 50.0

P.I. +50
Elev. I0.0
I000' V.C.
M = I5.0

+00

Inlet 09.1
outlet 08.2

EXC. A-9 B-9083
EMB. 9075

P.V.T. +50
Elev. 30.0

+41

+4.0%

P.V.C. +00
Elev. 44.0

EXC. A-77 B-6434
EMB. 5443

Inlet 39.4
Outlet 28.0

329+61 F.E. Lt.
Inpl. 12"x20' C.M.P.
Remove
F & I 18"x32' C.M.P.
F & I 2-18" C.M.P. Aprons

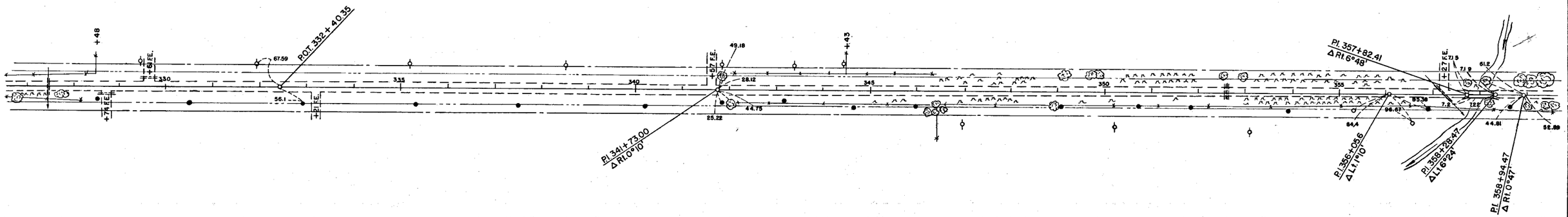
341+57 F.E. Lt.
No Culv. Inpl.
F & I 18"x28' C.M.P.
F & I 2-18" C.M.P. Aprons

352+60 ℄ Culv.
Inpl. 24"x24'
Remove
No Culv. Req'd

358+05.0 ℄
Inpl. Bridge
48' Span 16' Roadway
Light Truss
No Change

Protective Devises & Narrow Bridge Signs TO BE INSTALLED BY COUNTY.

357+27 F.E. Lt.
No Culv. Inpl.
F & I 24"x28' C.M.P.
F & I 2-24" C.M.P. Aprons



329+74 F.E. Rt.
Inpl. 8½ 20' C.M.P.
Remove
F & I 18"x32' C.M.P.
F & I 2-18" C.M.P. Aprons

333+21 F.E. Rt.
No Culv. Inpl.
No Culv. Req'd

352+56 ℄ Culv.
Inpl. 30"x24' C.M.P.
Remove
No Culv. Req'd

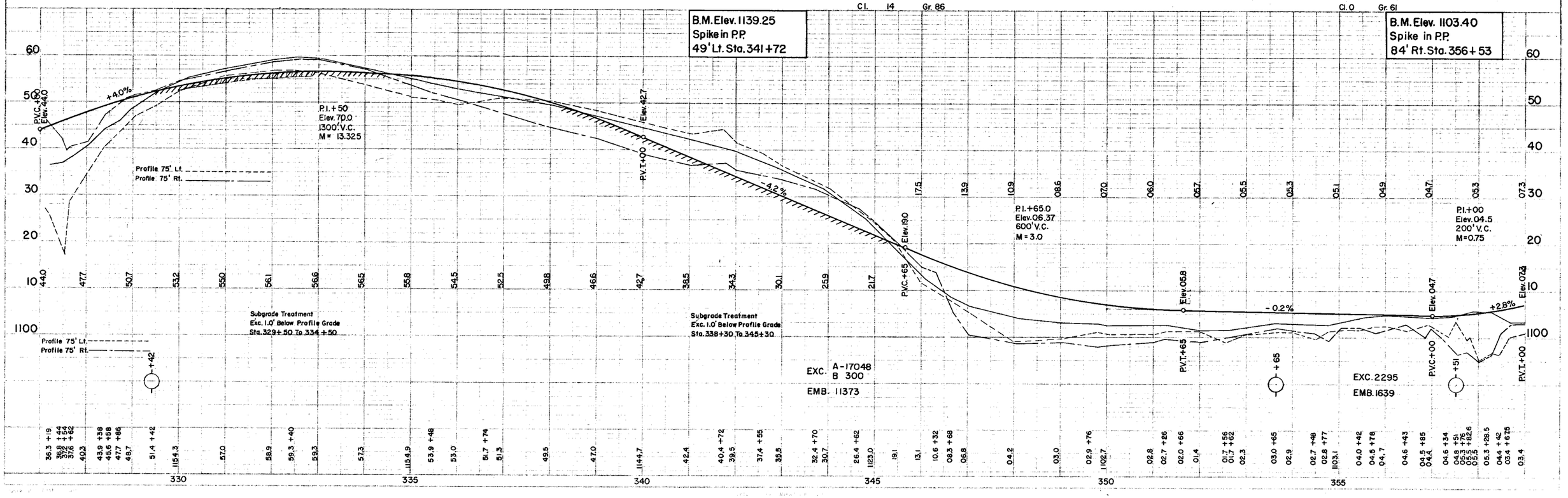
357+35 ℄ Culv. Skewed 30°
Inpl. 24"x54' C.M.P.
Remove
No Culv. Req'd

Cl. 14 Gr. 86

B.M. Elev. 1139.25
Spike in P.P.
49' Lt. Sta. 341+72

Cl. 0 Gr. 61

B.M. Elev. 1103.40
Spike in P.P.
84' Rt. Sta. 356+53

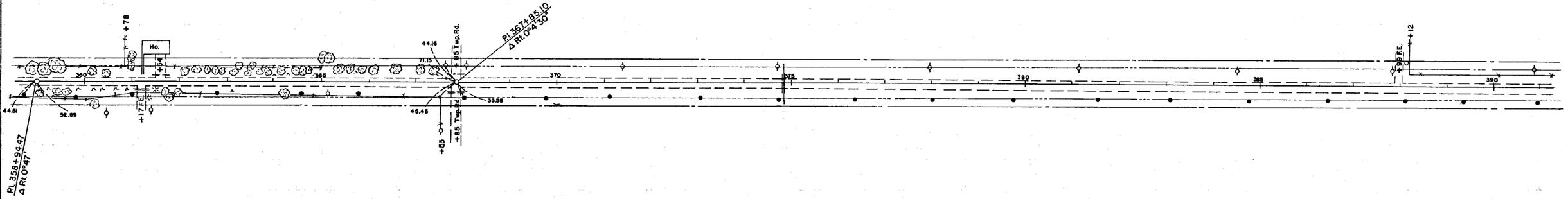


361+54 F.E. Lt.
Inpl.18"x20' C.M.P.
Remove
F&I 24"x32' C.M.P.
F&I 2-24" C.M.P.

361+85 Twp. Rd. Lt.
Inpl. 24"x36' C.M.P.
Remove
F&I 24"x36' C.M.P.
F&I 2-24" C.M.P. Aprons

374+81 ℄ Culv.
Inpl. 24"x36' C.M.P.
Remove
F&I 30"x36' S.C.P. Class IV
F&I 2-30" S.C.P. Aprons
Pl. Ditch Block

387+99 F.E. Lt.
No Culv. Inpl.
F&I 18"x32' C.M.P.
F&I 218" C.M.P. Aprons



361+17 F.E. Rt.
Inpl. 12"x20' C.M.P.
Remove
F&I 18"x32' C.M.P.
F&I 2-18" C.M.P. Aprons

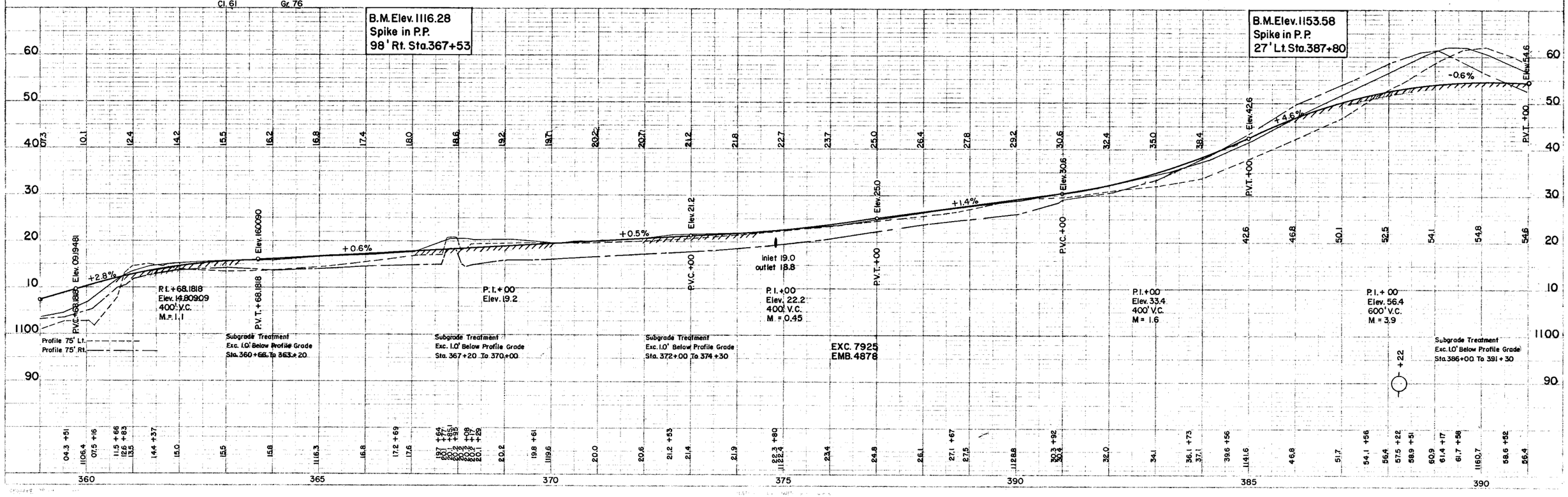
367+85 Twp. Rd. Rt.
Inpl. 24"x36' C.M.P.
Remove
No Culv. Req'd

390+00 F.E. Rt.
F&I 18"x28' C.M.P.
F&I 2-18" C.M.P. Aprons

Cl. 61 Gr. 76

B.M. Elev. 1116.28
Spike in P.P.
98' Rt. Sta. 367+53

B.M. Elev. 1153.58
Spike in P.P.
27' Lt. Sta. 387+80



PLAN
PROFILE

395+48 ℄ Culv.
Inpl. 18"x32' C.M.P.
Remove
F&I 24"x70' S.C.P. Class III
F&I 2-24" S.C.P. Aprons

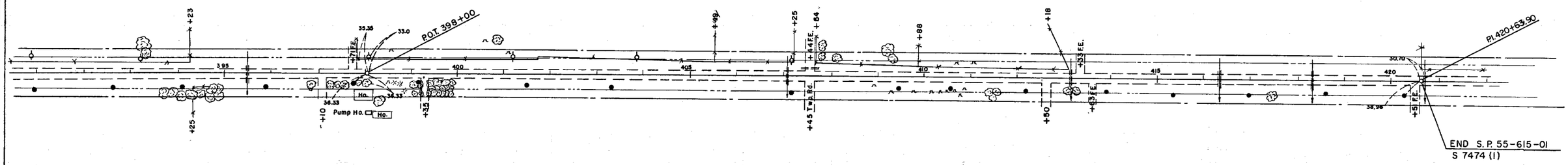
397+71 F.E. Lt.
No Culv. inpl.
F&I 18"x28' C.M.P.
F&I 2-18" C.M.P. Aprons

407+44 F.E. Lt.
Inpl. 12"x18' C.M.P.
Remove
No Culv. Req'd

413+33 F.E. Lt.
No Culv. Inpl.
No Culv. Req'd

416+36 ℄ Culv.
Inpl. 24"x20' C.M.P.
+2 Conc. Headers
Remove
No Culv. Req'd

420+68 ℄ Culv.
Inpl. 24"x34' C.M.P.
Remove
F&I 48"x40' S.C.P.
F&I 2-48" S.C.P. Apron
Pl. Ditch Block



397+10 F.E. Rt.
No Culv. Inpl.
F&I 18"x32' C.M.P.
F&I 2-18" C.M.P. Aprons

399+35 F.E. Rt.
No Culv. Inpl.
F&I 18"x32' C.M.P.
F&I 2-18" C.M.P. Aprons

407+04 ℄ Culv.
Inpl. 18"x24' C.M.P.
Remove
F&I 24"x38' S.C.P. Class IV
F&I 2-24" S.C.P. Aprons

40+45 Twp. Rd. Rt.
No Culv. Inpl.
No Culv. Req'd

412+50 F.E. Rt.
F&I 18"x28' C.M.P.
F&I 2-18" C.M.P.

413+14 ℄ Box Culv.
Inpl. 4'x3'x18' Conc.
Remove
F&I 60"x40' S.C.P. Class IV
F&I 2-60" S.C.P. Aprons

413+63 F.E. Rt.
No Culv. Inpl.
No Culv. Req'd

418+29 ℄ Culv.
Inpl. 36"x20'
+2 Conc. Headers
Remove
F&I 30"x42' S.C.P. Class IV
F&I 2-30" S.C.P. Aprons

420+51 F.E. Rt.
No Culv. Inpl.
No Culv. Req'd

