

**STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
Plan and Profile of C. S. A. H. No. 17**

A POINT 963.1' NORTH OF THE
From S.W. COR. SEC. 25, T.31N., R.23 W. To THE S.W. COR. SEC. 1, T.31N., R.23 W.
(Give proper reference to Sections, Township and Range)

S.P. 02-607-03 DS 6722 (5)
NET LENGTH 11661.5 FEET = 2.209 MILES

GROSS LENGTH 20,123.7 FEET = 3.811 MILES
LENGTH OF EXCEPTIONS _____ FEET _____ MILES
NET LENGTH 20,123.7 FEET = 3.811 MILES

S.P. 02-607-01 S 6722 (3)
NET LENGTH 8462.2 FEET = 1.602 MILES

PLAN: Inch = 100 Feet
PROFILE: Horiz. Inch = 100 Feet, Vert. Inch = 10 Feet
WORKING PLANS: Vert. Inch = Feet, Cross-Section, Inch = 10 Feet

LAYOUT
Scale, Inch = 100 Feet

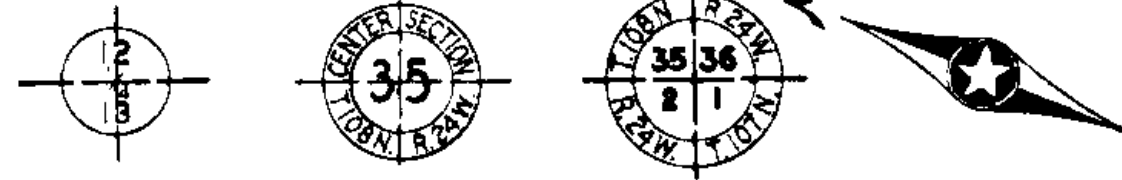
CONVENTIONAL SIGNS

STATE LINE	-----
COUNTY LINE	-----
TWP. OR RANGE LINE	-----
SECTION LINE	-----
RIGHT OF WAY LINE	-----
CORPORATE OR CITY LIMITS	-----
ROAD CENTER LINE	-----
RETAINING WALL	-----
RAILROADS	-----
CREEK	-----
DRY RUN	-----
DRAINAGE DITCH	-----
POWER POLE LINE	-----
TELEPHONE OR TELEGRAPH LINE	-----
CULVERTS - PLAN	-----
WITH ENDWALLS	-----
WITH WINGWALLS	-----
DROP INLET	-----
FENCE LINE	-----
GRAVEL PIT	-----
SAND PIT	-----
CLAY PIT	-----
ROCK QUARRY	-----
SPRINGS	-----
MARSH	-----
BRUSH OR TIMBER	-----
HEDGE	-----
ROCK LEDGE	-----
SAND	-----
EDGE OF CUT	-----
TOE OF EMBANKMENT	-----
RAILROAD R.W. LINE	-----
BUILDING (One Story Frame)	-----

ABBREVIATIONS

EXCAVATION	.....	EXC.
EARTH	.....	E.
LOOSE ROCK	.....	L.R.
SOLID ROCK	.....	S.R.
EMBANKMENT	.....	E.M.
OVERHAUL	.....	O.V.
SURFACING	.....	S.
HAND DITCHING	.....	H.D.
SPECIAL EXCAVATION	.....	S.E.
SPECIAL PLOWING	.....	S.P.
GUARD RAIL	.....	G.R.
CORRUGATED METAL CULVERT	.....	C.M.C.
SECTIONAL CONCRETE CULVERT	.....	S.C.C.
SECTIONAL CONCRETE CULVERT (Heavy Type)	.....	S.C.C.H.
TON MILES	.....	T.M.
TELEPHONE POLE	.....	T.P.
POWER POLE	.....	P.P.
PLACE	.....	P.
INPLACE	.....	I.P.
REPLACE	.....	R.P.
RIGHT	.....	R.
LEFT	.....	L.
INTERSECTION ANGLE	.....	I.A.
RADIUS	.....	R.
"ANGEN"	.....	A.
LENGTH OF CURVE	.....	L.C.
POINT OF CURVE	.....	P.C.
POINT OF TANGENT	.....	P.T.
POINT OF INTERSECTION	.....	P.I.
VERTICAL CURVE	.....	V.C.
BENCH MARK	.....	B.M.
ELEVATION	.....	E.L.
ACRES	.....	A.

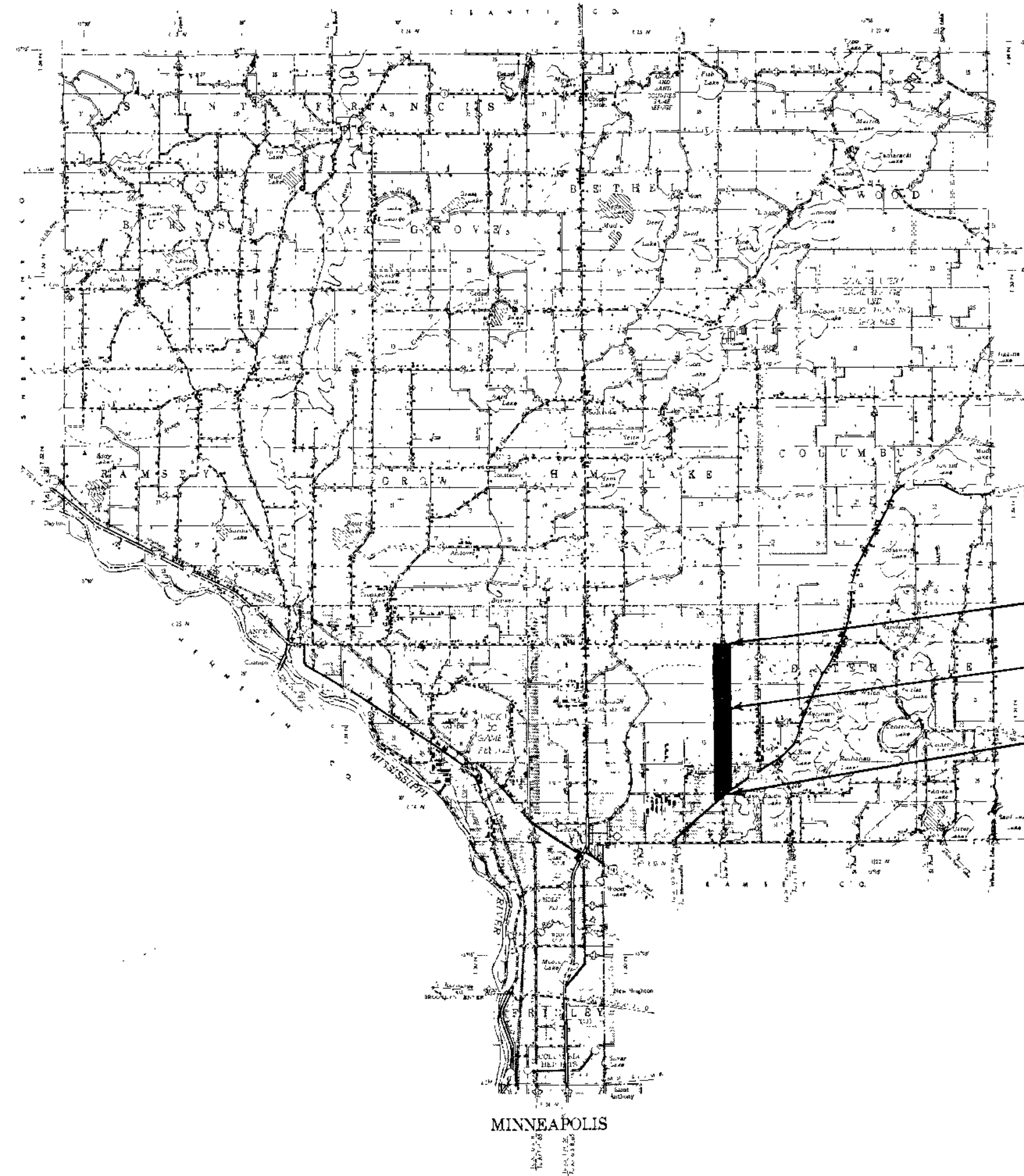
NOTE: SECT. OR NUMBERS READ FROM THE SOUTH



INDEX OF SHEETS

Sheet No. 1.	Title Sheet and Layout Map
" No. 2.	Typical Cross-Sections and Statement
" No. 3.	Plan and Profile, Sta. 53+39.5 to Sta. 110+00.
" No. 4.	" " " 110+00 " 172+00
" " 5.	" " " 172+00 " 234+00
" " 6.	" " " 234+00 " 254+62.2
" " 7.	Offtake Ditch Lt. Sta. 119+00
" " 8-36.	Cross-Section Sheets
" " 37,38.	Storm-Sewer Plans
" " 39-44.	Borrow Pits

SPECIFICATION REFERENCE
The specifications for Highway Construction, dated July 1, 1947, and submitted for approval by the Division Engineer of the Bureau of Public Roads 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.



END S.P. 02-607-01 S-6722 (3)
STA. 254 + 62.2

BEGIN S' PROJECT STA. 170+00 S.P. 02-607-01
END D' PROJECT STA. 170+00 S.P. 02-607-03

BEGIN S.P. 02-607-03 DS-6722 (5)
STA. 53 + 39.5

PLANNED BY E. J. LUNDHEIM 1958
COUNTY ENGINEER FOR ANDOKA COUNTY

RECOMMENDED FOR APPROVAL [Signature] 9/27
DISTRICT ENGINEER

RECOMMENDED FOR APPROVAL [Signature] 7/28 1958

APPROVED [Signature] 7-28 1958
STATE HIGHWAY ENGINEER

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

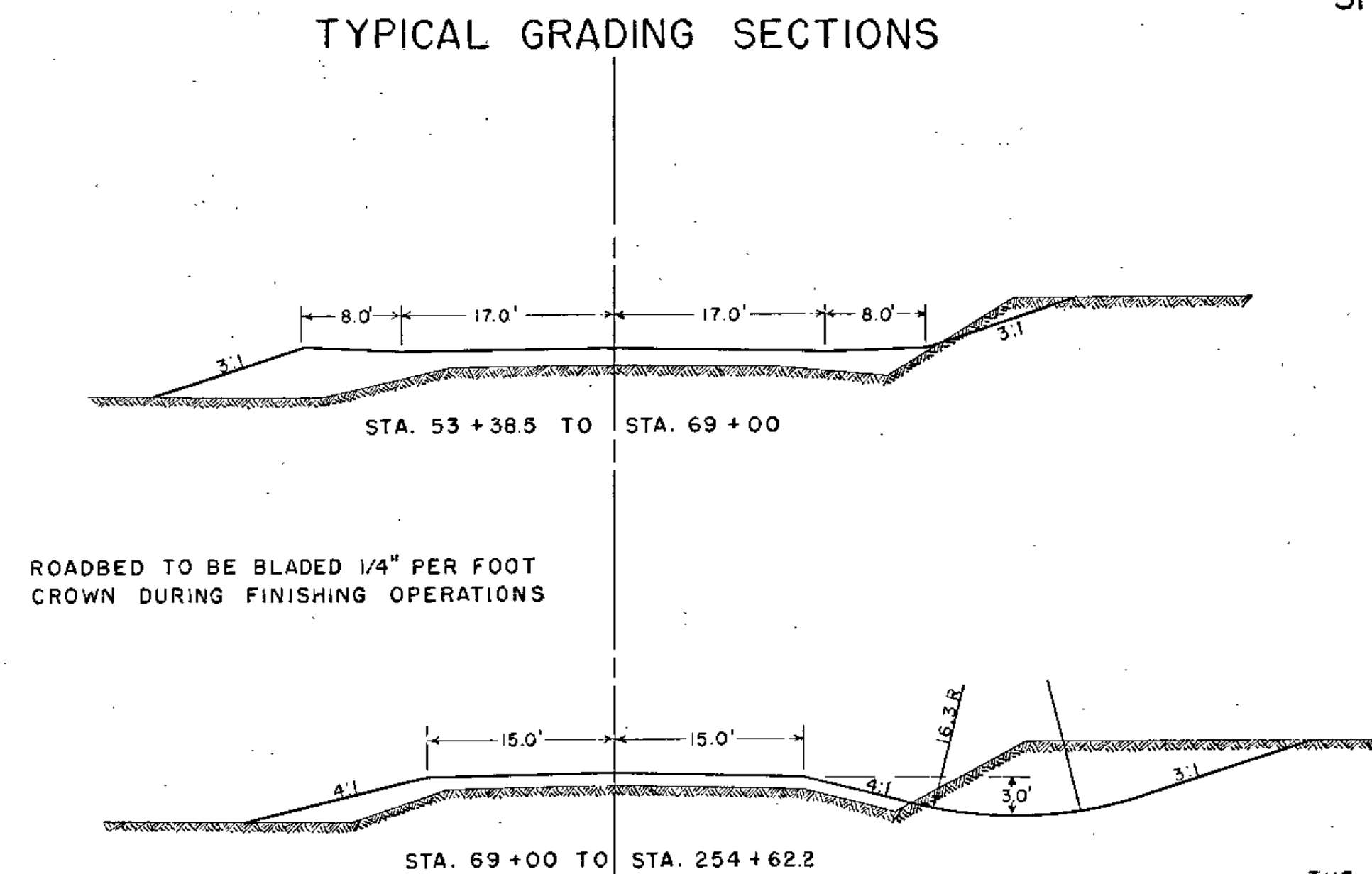
APPROVED _____
DISTRICT ENGINEER DATE _____

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

SPECIFICATION NO.	ITEM	UNIT	D' PROJECT				S' PROJECT		COLS 386 TOTAL FOR BLAINE	COLS 485 TOTAL ESTIMATE QUANTITIES
			1 LEXINGTON	2 CIRCLE PINES	3 D' PROJECT BLAINE	4 TOTAL D' PROJECT COLS 1,2,3	5 S' PROJECT BLAINE	6 TOTAL S' PROJECT		
2101.501	CLEARING	ACRE	0	0.16	0.12	0.28	0.55	0.67	0.83	
2101.502	CLEARING	TREE	0	0	8	8	26	34	34	
2101.506	GRUBBING	ACRE	0	0.52	0.12	0.64	0.55	0.67	1.19	
2101.507	GRUBBING	TREE	0	1	12	13	25	37	38	
2104.501	REMOVE PORTABLE CULV.	LIN. FT.	0	0	81	81	168	249	249	
2104.510	REMOVE FENCE	LIN. FT.	0	1400	11,485	12,885	7,057	18,542	19,942	
2105.501	CLASS 'A' EXCAVATION	CU. YD.	616	319	17,148	20,883	34,045	51,933	54,928	
2105.506	BORROW EXC. (CLASS 'A')	CU. YD.	0	0	11,021	11,021	0	0	11,021	
2108.501	SPECIAL DITCH EXC	CU. YD.	0	0	219	219	0	219	219	
2413.501	EXC FOR TIMBER BOX CULV.	CU. YD.	0	37.5	37.5	75	0	37.5	75	
2413.506	SAND GRAVEL SUB-FOUNDATION	CU. YD.	0	52.5	52.5	105	0	52.5	105	
2413.511	TIMBER BOX CULV DOUBLE 5'x5'	LIN. FT.	0	26.0	26.0	52.0	0	26.0	52	
2413.512	TIMBER CULV END SECTION	SECTION	0	1	1	2	0	1	2	
2441.502	SINGLE LANE BY PASS	BY PASS	0	0	1	1	0	1	1	
2442.501	REMOVE OLD STRUCTURE (Sta 95+64)	STRUCTURE	0	0.5	0.5	1	0	0.5	1	
2501.501	PIPE CULV. EXC	CU. YD.	0	27	101	128	217	318	345	
2501.511-12	FBI 12" CMP CULV.	LIN. FT.	32	68	0	100	0	0	100	
2501.511-15	FBI 15" CMP CULV.	LIN. FT.	0	0	532	532	270	802	802	
2501.511-18	FBI 18" CMP CULV.	LIN. FT.	0	0	100	100	400	500	500	
2501.511-24	FBI 24" CMP CULV.	LIN. FT.	0	0	122	122	0	122	122	
2501.511-48	FBI 48" CMP CULV.	LIN. FT.	0	0	0	0	70	70	70	
2501.521-24	FBI 24" SCP CULV.	LIN. FT.	0	26	136	162	106	142	268	
2501.551	SAND GRAVEL BACKFILL	CU. YD.	37	39	98	171	286	384	457	
2574.501	ROADSIDE SEEDING	ACRE	0.12	1.8	11.34	12.52	12.36	23.7	24.88	
2103.514	SALVAGE BIT MIXTURE ON ROAD	CU. YD.	253	681	2348	3282	2337	4685	5,619	
2506.501	EXC FOR MH, 3 C BASINS	CU. YD.	20.5	41.4	0	61.9	0	0	61.9	
2506.506	CONSTRUCT MANHOLES TYPE C	LIN. FT.	0	7.3	0	7.3	0	0	7.3	
2506.507	CONSTRUCT CATCH BASINS TYPE C	LIN. FT.	6.3	6.7	0	13.0	0	0	13.0	
2506.516	FBI CASTING ASSY	ASSY	2	4	0	6	0	0	6	
2503.501	TRENCH EXC. 0-6 FEET	LIN. FT.	34.5	630.5	0	665	0	0	665	
2503.512-12	FBI 12" RCP SEWER	LIN. FT.	17	70	0	87	0	0	87	
2503.512-15	FBI 15" RCP SEWER	LIN. FT.	17.5	560.5	0	578	0	0	578	
2513.541-15	FBI CONCRETE APRON FOR 15" S.C.P	AFRON	0	1	0	1	0	0	1	

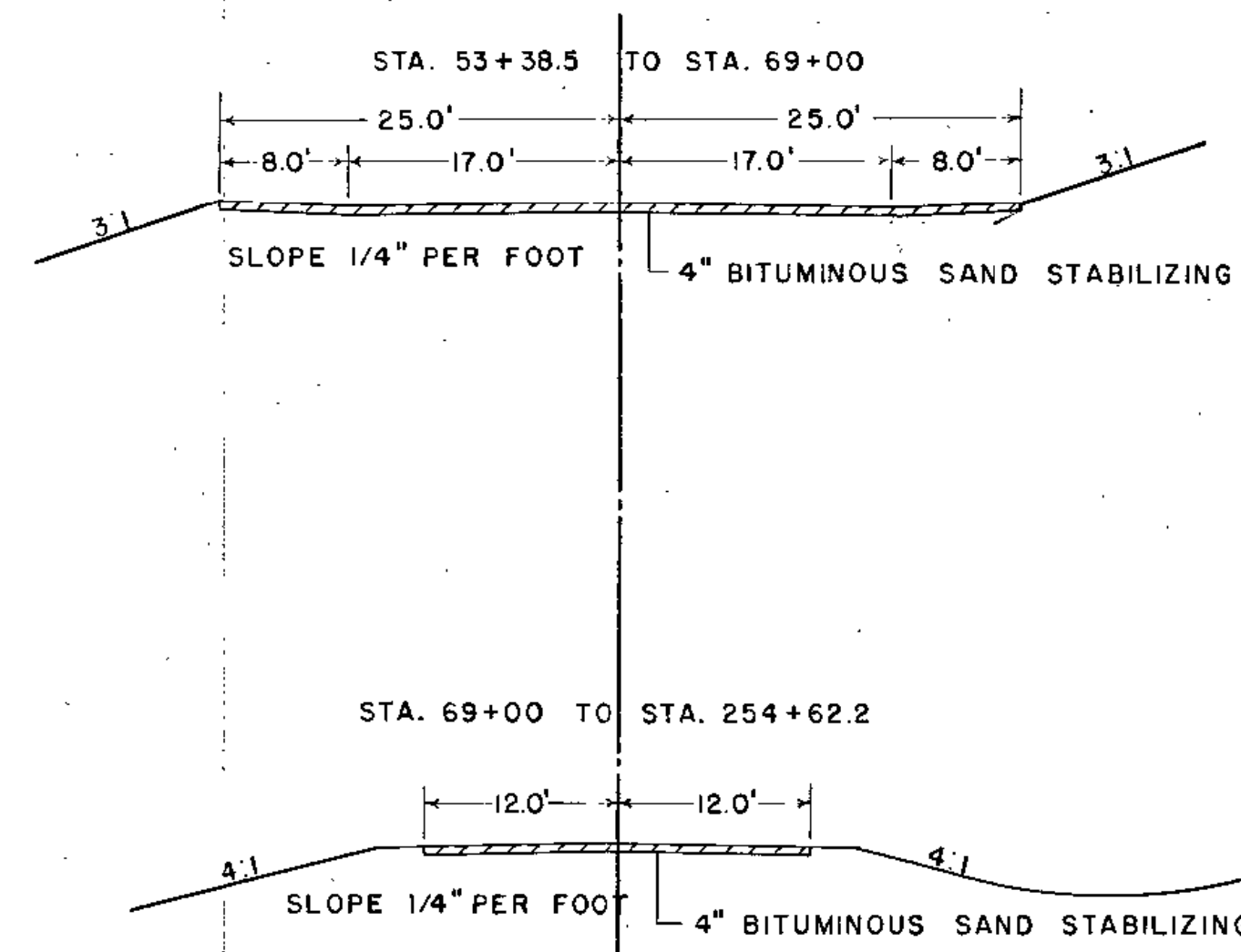
* 2574.501 SEED SHALL BE FURNISHED BY CONTRACTOR (CLASS 18) 60 LBS. PER ACRE (25.0 ACRES ROADSIDE SEEDING, 7.0 ACRES BORROW PIT SEEDING)

SPECIAL DETAILS



THE UPPER 1.0' OF NATURAL SOIL IS CONSIDERED UNSUITABLE FOR USE IN THE UPPER 10' OF ROADWAY. THE UPPER PORTION OF THIS LAYER SHALL BE USED TO COVER DITCH BOTTOMS AND SLOPES. THE REMAINDER TO BE PLACED BELOW THE UPPER 1.0' OF THE EMBANKMENT.

TYPICAL BASE & SURFACE SECTIONS



STANDARD DETAIL PLATES

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

PLATE NO.	DESCRIPTION
9000	APPROACHES & ENTRANCES
3000-3001	SC CULVERT PIPE
3050-3061	TIMBER BOX CULVERT
4101	RING CASTING NO. 700-7
4141 B	GRATE CASTING NO. 721
4110 B	COVER CASTING NO. 711
4002 B	MANHOLE OR CATCH BASIN DESIGN C

Begin S.P. 02-607-03 DS 6722 (5)
Sta. 53+38.5

LOVELL RD.=STA.56+71 LT.
No Culv. Req.

Ent.=Sta.61+33 Lt.
No Culv. Req.

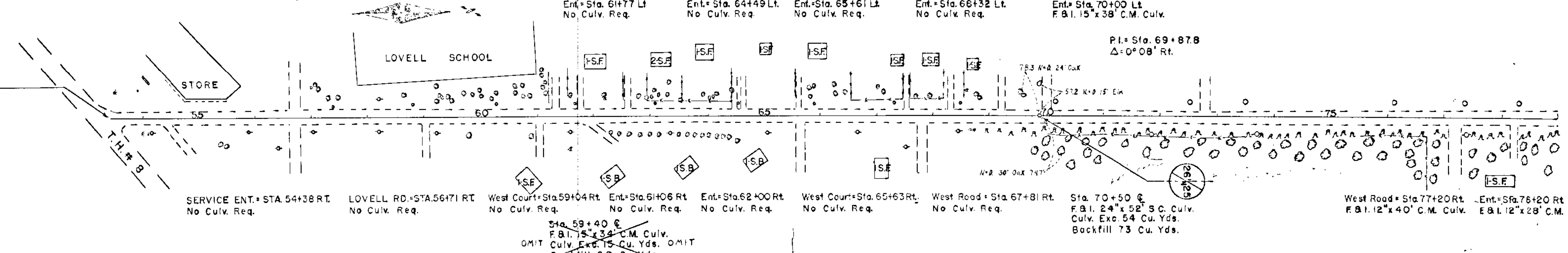
Ent.=Sta.62+58 Lt.
No Culv. Req.

Ent.=Sta.64+62 Lt.
No Culv. Req.

Ent.=Sta.67+50 Lt.
No Culv. Req.

Ent.=Sta.69+22 Lt.
F&I. 12"x32' C.M. Culv.

Ent.=Sta.72+76 Lt.
F&I. 15"x38' C.M. Culv.



SERVICE ENT.=STA.54+38 RT.
No Culv. Req.

LOVELL RD.=STA.56+71 RT.
No Culv. Req.

West Court.=Sta.59+04 RT.
No Culv. Req.

Ent.=Sta.61+06 RT.
No Culv. Req.

Ent.=Sta.62+00 RT.
No Culv. Req.

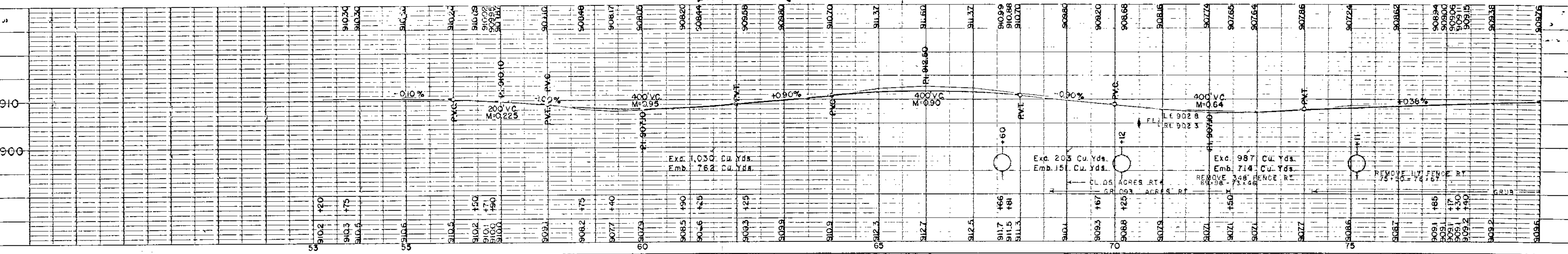
West Court.=Sta.65+63 RT.
No Culv. Req.

West Road.=Sta.67+81 RT.
No Culv. Req.

Sta. 70+50 C.
F&I. 24"x52' S.C. Culv.
Culv. Exc. 54 Cu. Yds.
Backfill 73 Cu. Yds.

West Road.=Sta.77+20 RT. Ent.=Sta.76+20 RT.
F&I. 12"x40' C.M. Culv. F&I. 12"x28' C.M. Culv.

Sta. 59+40 P.
M.B.I. 15"x38' C.M. Culv.
Culv. Exc. 15 Cu. Yds. Omit
Backfill 20 Cu. Yds.



FE.=STA.88+97 LT.
F&I. 15"x38' C.M. Culv.

FE.=STA.95+30 LT.
F&I. 15"x38' C.M. Culv.

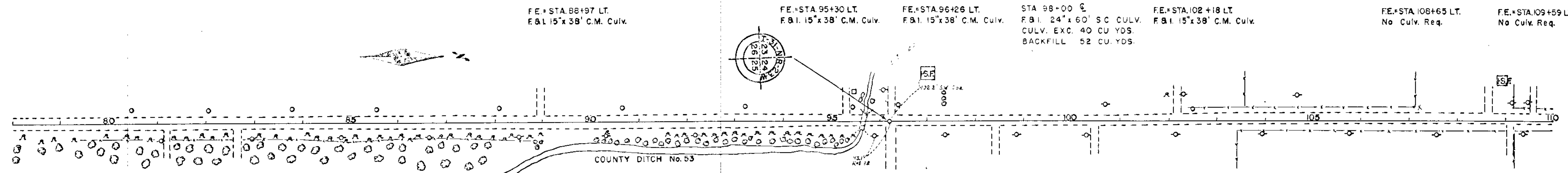
FE.=STA.96+26 LT.
F&I. 15"x38' C.M. Culv.

STA. 98+00 C.
F&I. 24"x60' S.C. Culv.
Culv. Exc. 40 Cu. Yds.
Backfill 52 Cu. Yds.

FE.=STA.102+18 LT.
F&I. 15"x38' C.M. Culv.

FE.=STA.108+65 LT.
No Culv. Req.

FE.=STA.109+59 LT.
No Culv. Req.



FE.=STA.81+15 RT.
Omit in Const.

FE.=STA.82+65 RT.
Omit in Const.

STA. 95+64 C.
INP. 85x340 CONC BRIDGE
REMOVE
F&I. DOUBLE 5'x5' TIMBER BOX CULV.
F&I. 2 END SECTIONS
Exc. 75 Cu. Yds.
SAND-GRAVEL SUB-FOUND 105 CU. YDS.
SINGLE LANE 5Y-PASS

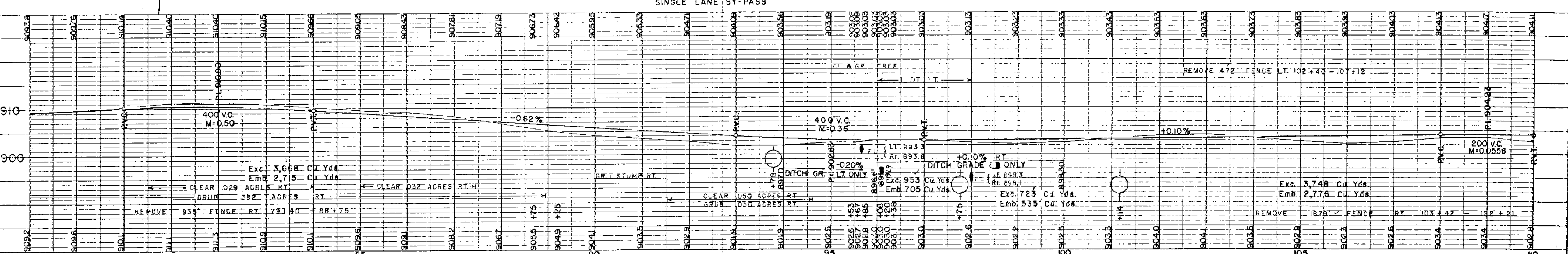
PI.=STA.96+20.8
Δ=0°09' LT.

NORTH RD.=STA.96+21 RT.
F&I. 15"x56' C.M. Culv.

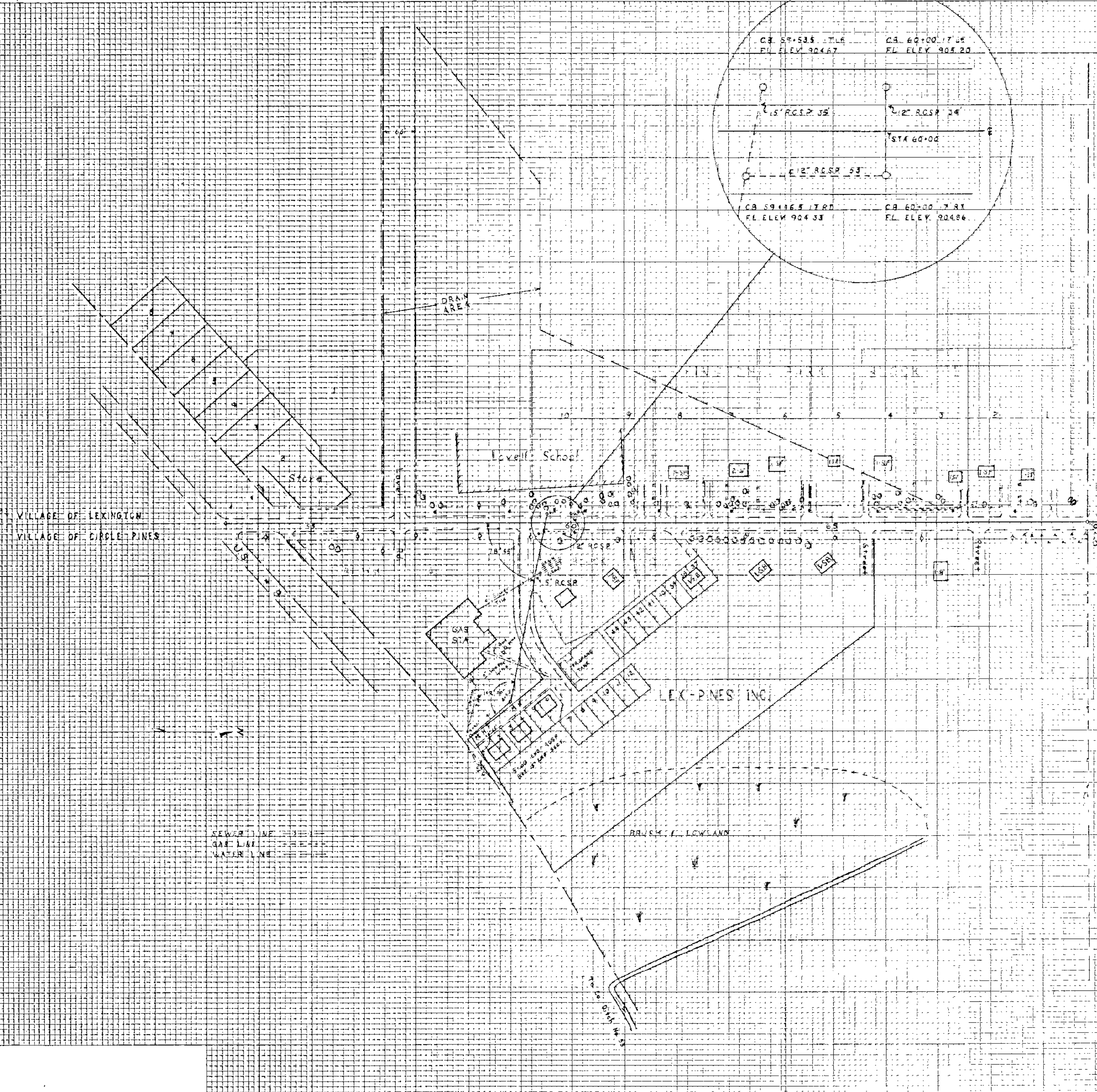
FE.=STA.98+41 RT.
F&I. 15"x38' C.M. Culv.

FE.=STA.100+33 RT.
Omit in Const.

FE.=STA.109+10 RT.
No Culv. Req.



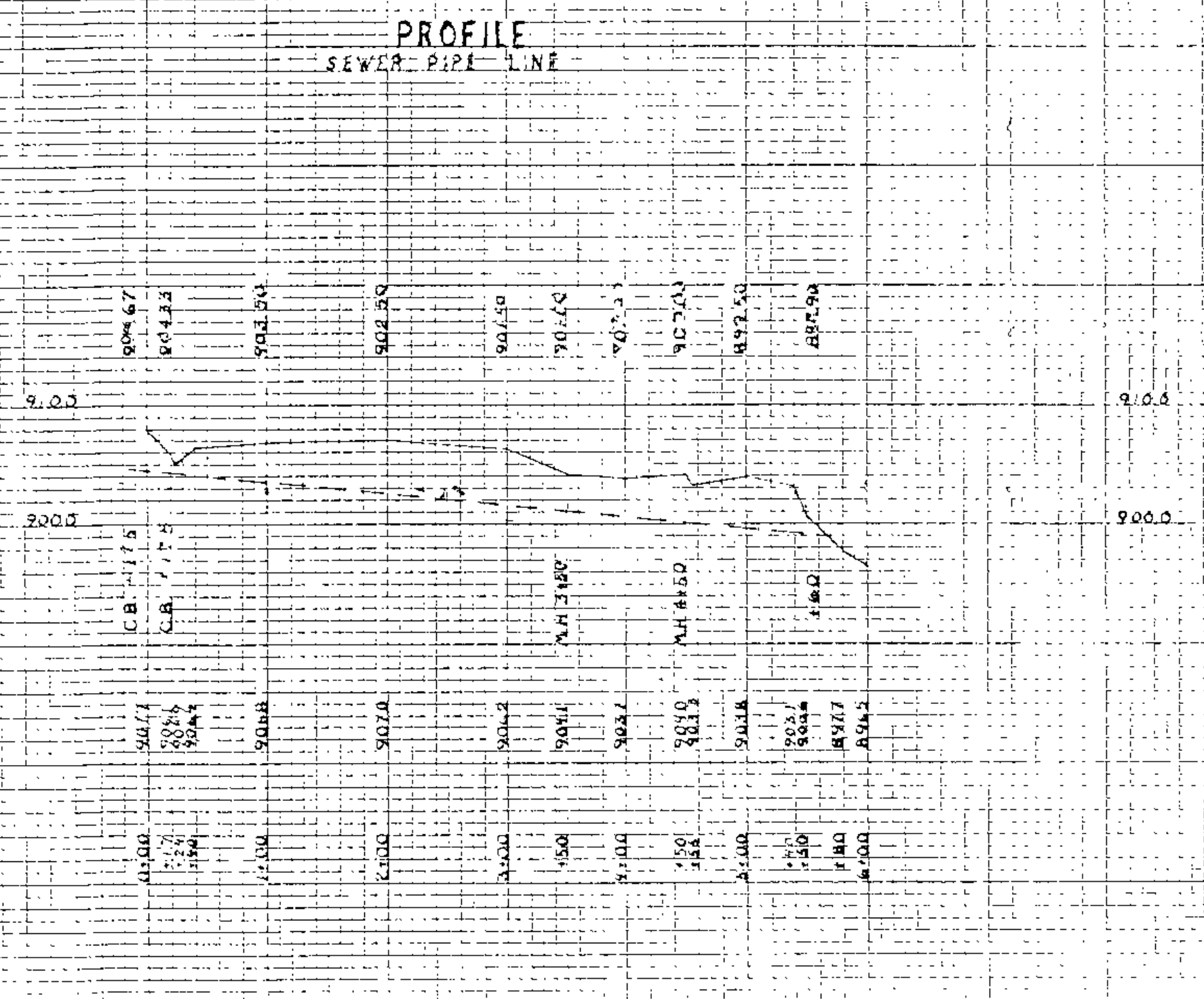
STORM SEWER PLAN



STATION	DESIGN	CONSTR.	HUG.	EXC.	CAST	ORATE	TRENCH	EXC.	LEA.	RODS	EST.	EST.
59+53.5	12"	C.B.	3.2	7.9	A	721	35'	35'				
59+53.5	15"	C.B.	4.0	2.1	A	721	35'	35'				
60+00	12"	C.B.	2.7	10.3	A	721	34'	34'				
60+00	12"	C.B.	3.1	9.4	A	721	33'	33'				
3+50	M.H.	M.H.	32	89	B	711	100'	100'				
4+50	M.H.	M.H.	47	100	B	711	100'	100'				
5+50	M.H.	M.H.	47	100	B	711	100'	100'				
TOTALS			203	618			665.0	578				

*SEWER RECEIPT LINE
 CASTING ASSY. A CONSISTS OF CASTINGS NO. 700-7 & 721
 CASTING ASSY. B CONSISTS OF CASTINGS NO. 700-7 & 711

DRAINAGE STRUCTURE CASTINGS			
CASTING NO.	700-7	721	711
CASTINGS REQUIRED	5	4	2



Special offtake ditch
STA. 119+00 LT.
See Cross Section Sheet No. 1

FE. STA. 122+32 LT.
OMIT IN CONST.

FE. STA. 123+69 LT.
NO CULV. REQ.

FE. STA. 129+63 LT.
F&I 15'x38' C.M. CULV.

FE. STA. 135+44 LT.
F&I 15'x38' C.M. CULV.

FE. STA. 140+22 LT.
F&I 15'x38' C.M. CULV.

FE. STA. 113+14 RT.
OMIT IN CONST.

FE. STA. 114+65 RT.
F&I 15'x38' C.M. CULV.

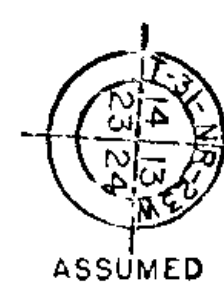
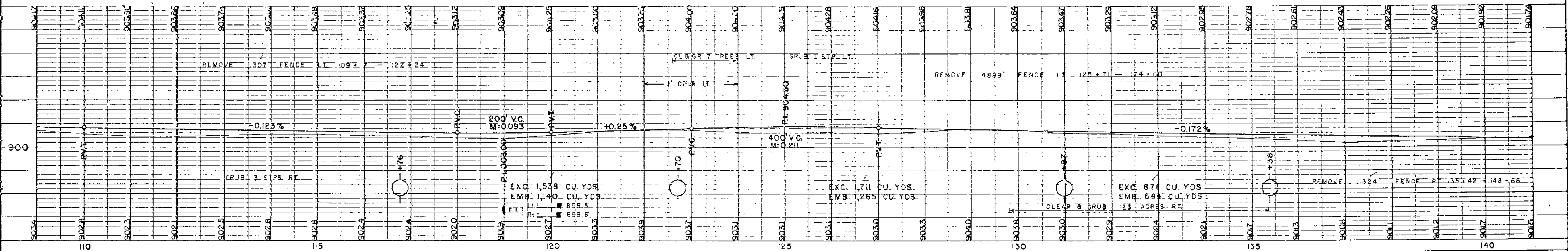
STA. 119+00
F&I 24'x18' S.C. CULV.
CULV. EXC. 34 CU. YDS.
BACKFILL 46 CU. YDS.

FE. STA. 123+50 RT.
NO CULV. REQ.

FE. STA. 129+51 RT.
F&I 15'x38' C.M. CULV.

FE. STA. 132+18 RT.
F&I 15'x38' C.M. CULV.

FE. STA. 135+77 RT.
INP. 12'x20' C.M.
REMOVE
F&I 15'x38' C.M. CULV.

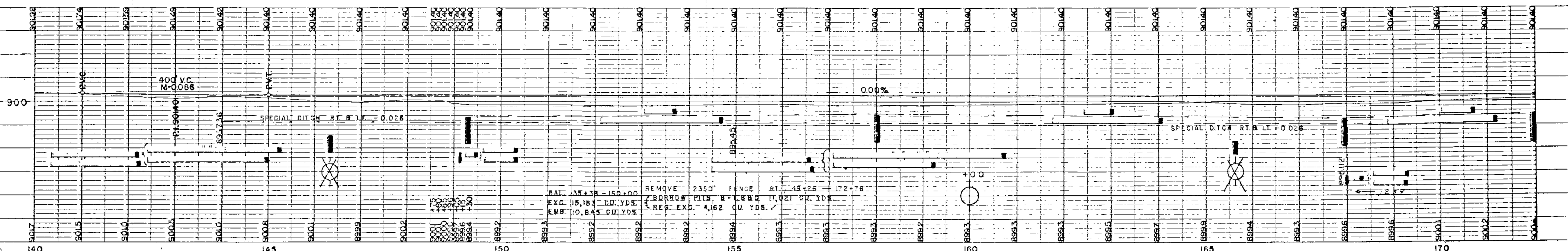
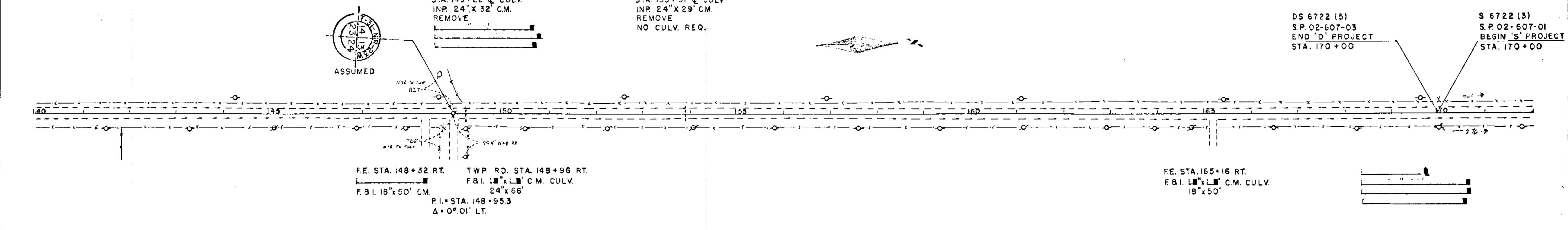


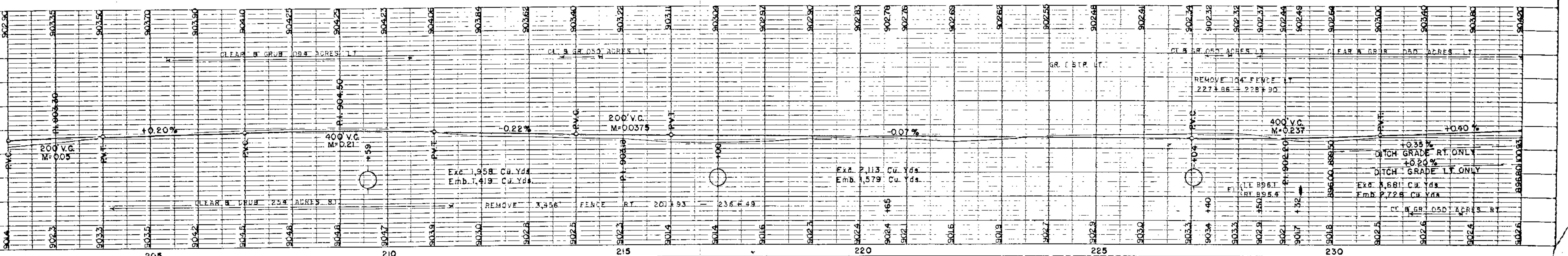
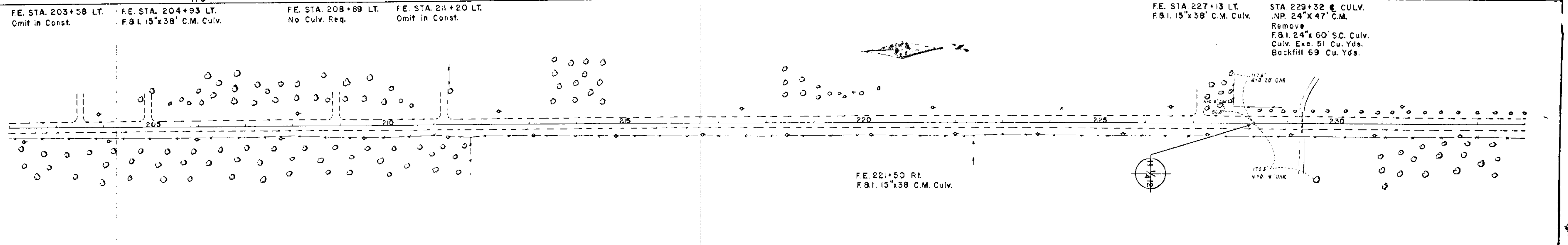
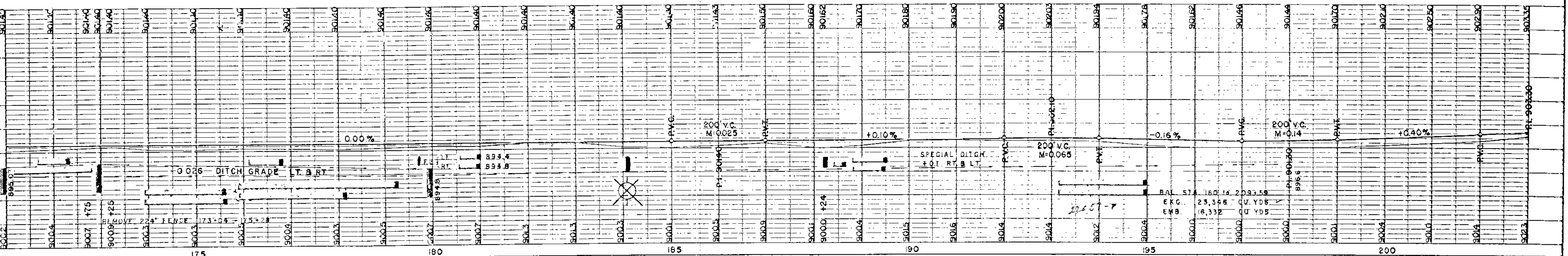
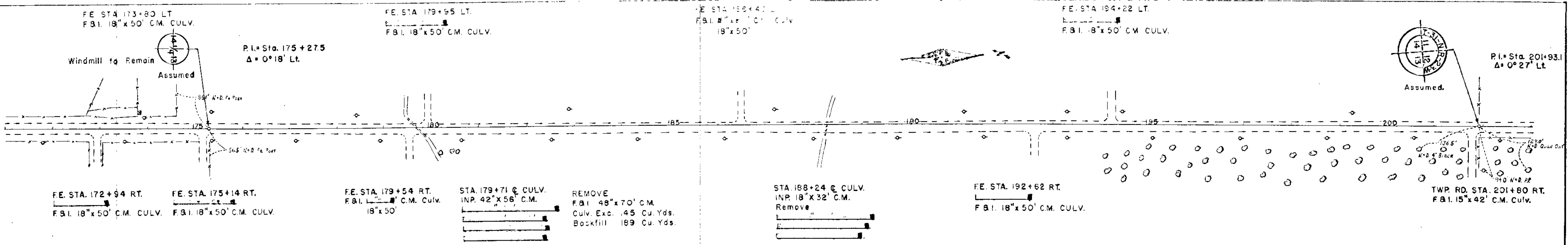
STA. 149+22 @ CULV.
INP. 24'x32' C.M.
REMOVE

STA. 153+91 @ CULV.
INP. 24'x29' C.M.
REMOVE
NO CULV. REQ.

DS 6722 (5)
S.P. 02-607-03
END 'D' PROJECT
STA. 170+00

S 6722 (3)
S.P. 02-607-01
BEGIN 'S' PROJECT
STA. 170+00





FE Sta 234+63 LT
15'x33' S.C.
Remove
F&I 15'x38' C.M. Culv.

FE Sta 238+11 LT
No Culv Fea

FE Sta 244+00 LT
F&I 5'x38' C.M. Culv

