

**STATE OF MINNESOTA**  
**DEPARTMENT OF HIGHWAYS**  
**Plan and Profile of State Aid Road No. 2**

From SW COR. SEC. 16-T33N-R25W To E 1/4 COR. SEC. 8 T.33N-R25W  
Give proper reference to Section, Township and Range

GROSS LENGTH 7,876.5 FEET 1.492 MILES  
 LENGTH OF EXCEPTIONS 0 FEET 0 MILES  
 NET LENGTH 7,876.5 FEET 1.492 MILES

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

LAYOUT  
 Scale, Inch = 100 Feet

CONVENTIONAL SIGNS	ABBREVIATIONS
STATE LINE	EXCAVATION . . . . . EXC
COUNTY LINE	EARTH . . . . . E
TWP. OR RANGE LINE	LOOSE ROCK . . . . . LR
SECTION LINE	SOLID ROCK . . . . . SR
RIGHT OF WAY LINE	EMBANKMENT . . . . . E
CORPORATE OR CITY LIMITS	OVERHAUL . . . . . O
ROAD CENTER LINE	SURFACING . . . . . S
RETAINING WALL	HAND DITCHING . . . . . H.D.
RAILROADS	SPECIAL EXCAVATION . . . . . S.E.
CREEK	SPECIAL FLOWING . . . . . S.F.
DRY RUN	GUARD RAIL . . . . . G.R.
DRAINAGE DITCH	CORRUGATED METAL CULVERT . . . . . C.M.CULV.
POWER POLE LINE	SECTIONAL CONCRETE CULVERT . . . . . S.CULV.
TELEPHONE OR TELEGRAPH LINE	SECTIONAL CONCRETE CULVERT Heavy Type . . . . . H.CULV.
CULVERTS - PLAN	T.M. MILES . . . . . T.M.
WITH ENDWALLS	TELEPHONE POLE . . . . . T.P.
WITH WINGWALLS	POWER POLE . . . . . P.P.
DROP INLET	PLACE . . . . . P
FENCE LINE	IN PLACE . . . . . INP
GRAVEL PIT	REPLACE . . . . . REP
SAND PIT	RIGHT . . . . . RT
CLAY PIT	LEFT . . . . . LT
ROCK QUARRY	INTERSECTION ANGLE . . . . . I.A.
SPRINGS	RADIALS . . . . . R
MARSH	TANGENT . . . . . T
BRUSH OR TIMBER	LENGTH OF CURVE . . . . . L.C.
HEDGE	POINT OF CURVE . . . . . P.C.
ROCK LEDGE	POINT OF TANGENT . . . . . P.T.
SAND	POINT OF INTERSECTION . . . . . P.I.
EDGE OF CUT	VERTICAL CURVE . . . . . V.C.
EDGE OF EMBANKMENT	BENCH MARK . . . . . B.M.
RAILROAD R/W LINE	ELEVATION . . . . . EL
BUILDING (One Story Frame)	ACRES . . . . . A

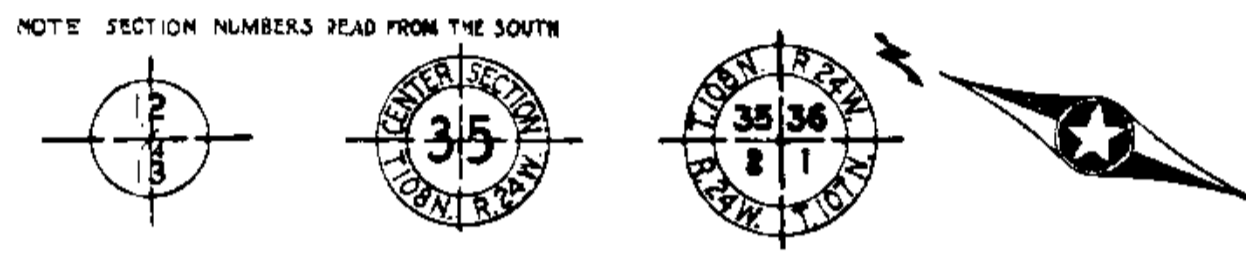
**INDEX OF SHEETS**

Sheet No. 1.	Title Sheet and Layout Map
" No. 2.	Typical Cross-Sections and Statement
" No. 3.	Plan and Profile, Sta. 104+00 to Sta. 164+00
" No. 4.	" " " " 163+00 " 182+76.5
" No. 5-14.	Cross-Sections
" No. 15-17.	SAND-GRAVEL LEFT BORROW PIT

NOTE: PLANS FOR CONTRACTOR TO INCLUDE SHEETS 1, 2, 3, 4, 15, 16 & 17.

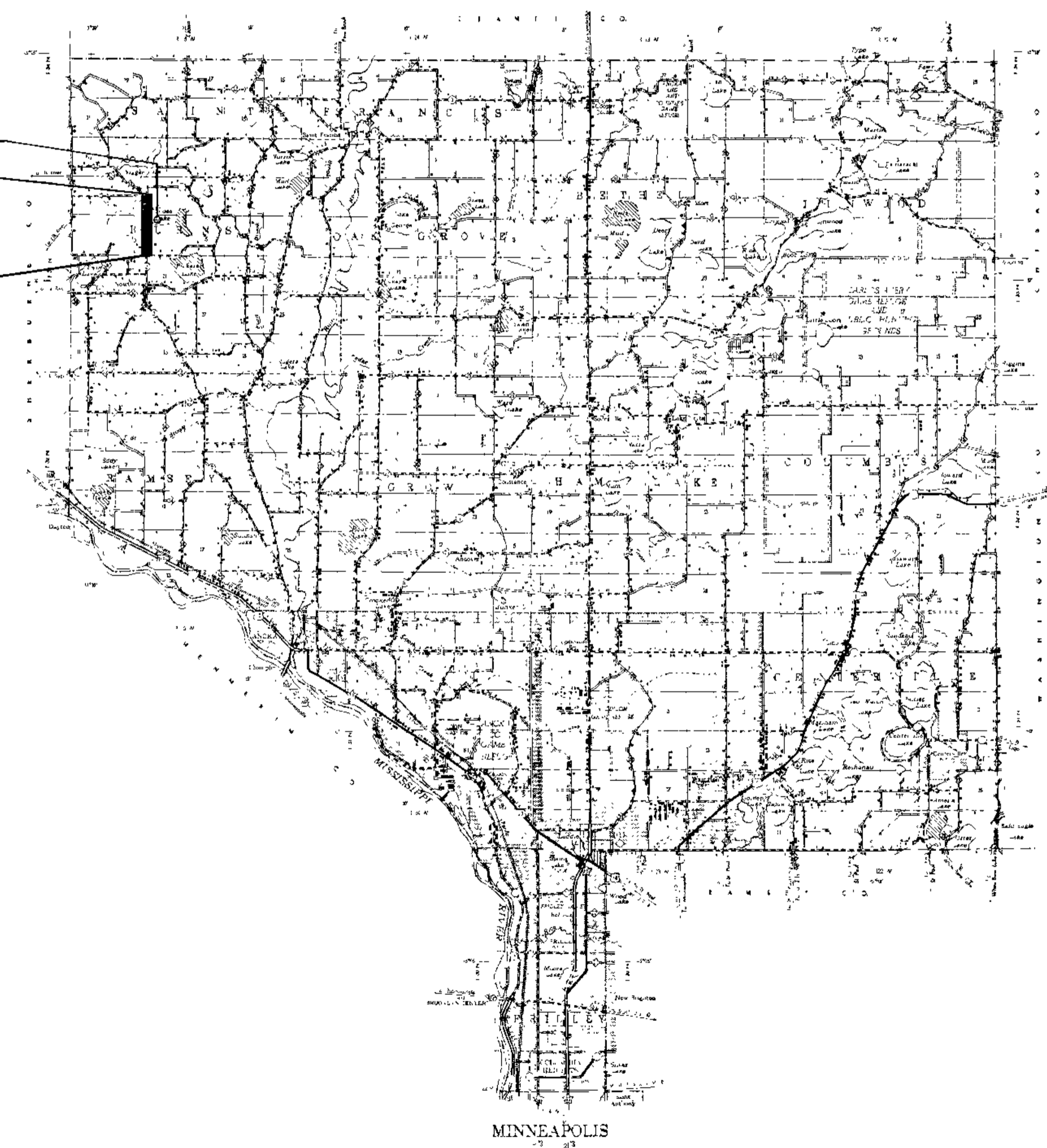
**SPECIFICATION REFERENCE:**  
 The specifications for Highway Construction, dated July 1, 1937 and submitted for approval by the Division Engineer of the Bureau of Public Roads October 15, 1947, as modified by supplement thereto dated April 15, 1953, and submitted for approval by the Division Engineer of the Bureau of Public Roads on March 25, 1953 shall govern.

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.  
*E. S. Vevea*  
 DATE *7-11-50* REG. NO. 2865



BORROW PIT  
 END S.P. 02-510-04 S-6352(2)  
 STA. 182+76.5

BEGIN S.P. 02-510-04 S-6352(2)  
 STA. 104+00



PLANNED BY E. S. VEVEA 1950  
 COUNTY ENGINEER FOR ANOKA COUNTY

RECOMMENDED FOR APPROVAL *A. J. W. [Signature]* 1950  
 DISTRICT ENGINEER

RECOMMENDED FOR APPROVAL \_\_\_\_\_ 19\_\_\_\_

APPROVED 7-11-50 *E. S. Vevea*  
 LEGISLATOR OF COUNTY DEPARTMENT

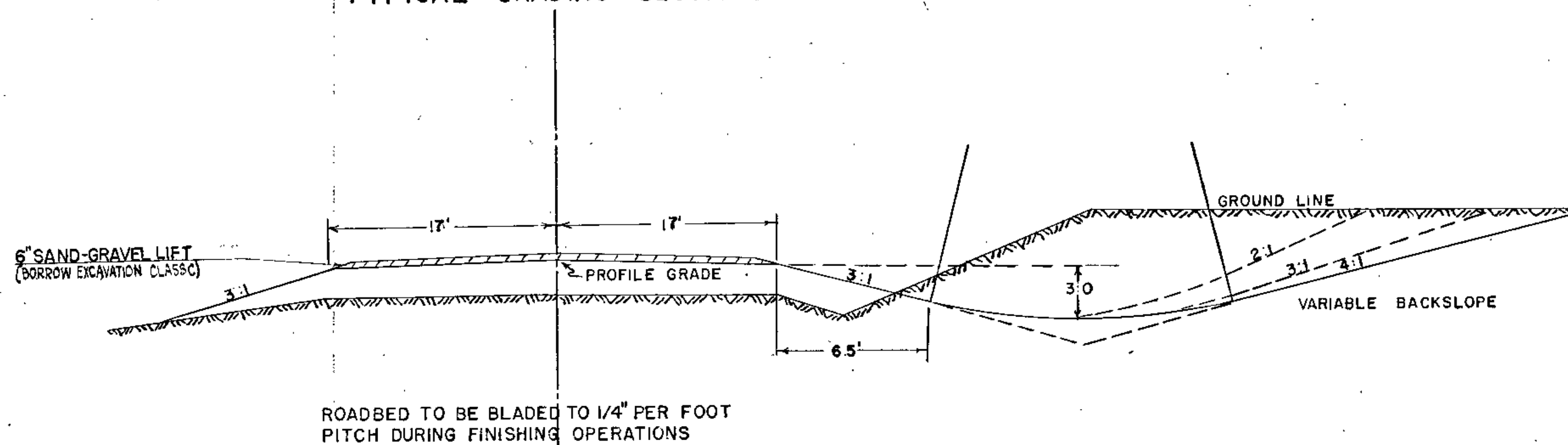
DEPARTMENT OF COMMERCE  
 BUREAU OF PUBLIC ROADS

APPROVED \_\_\_\_\_  
 DISTRICT ENGINEER DATE \_\_\_\_\_

ESTIMATED QUANTITIES			
SPECIFICATION NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
** 2101.501	CLEARING	ACRE	0.6
2101.502	CLEARING	TREE	3
** 2101.506	GRUBBING	ACRE	0.6
2101.507	GRUBBING	TREE	13
2104.501	REMOVE PORT. CULV.	LIN. FT.	183
2104.510	REMOVE FENCE	LIN. FT.	3,196
2105.503	CLASS "C" EXCAVATION	CU. YDS.	22,315
2501.501	PIPE CULVERT EXCAVATION	CU. YDS.	77
2501.511-12	FURNISH & INSTALL 12" C.M.P. CULVERT	LIN. FT.	152
2501.511-15	" " " 15" " " " " "	LIN. FT.	472
2501.511-18	" " " 18" " " " " "	" "	42
2501.511-60	" " " 60" " " " " "	" "	26
2501.521-18	FURNISH & INSTALL 18" S.C.P. CULVERT	LIN. FT.	70
2501.521-24	" " " 24" " " " " "	" "	56
2501.551	SAND-GRAVEL BACKFILL	CU. YDS.	100
* 2574.501	ROADSIDE SEEDING	ACRE	7.83
2106.508	6" SAND-GRAVEL LIFT (BORROW EXCAVATION CLASS "C")	CU. YDS.	5,539

TYPICAL GRADING SECTIONS

SPECIAL DETAILS



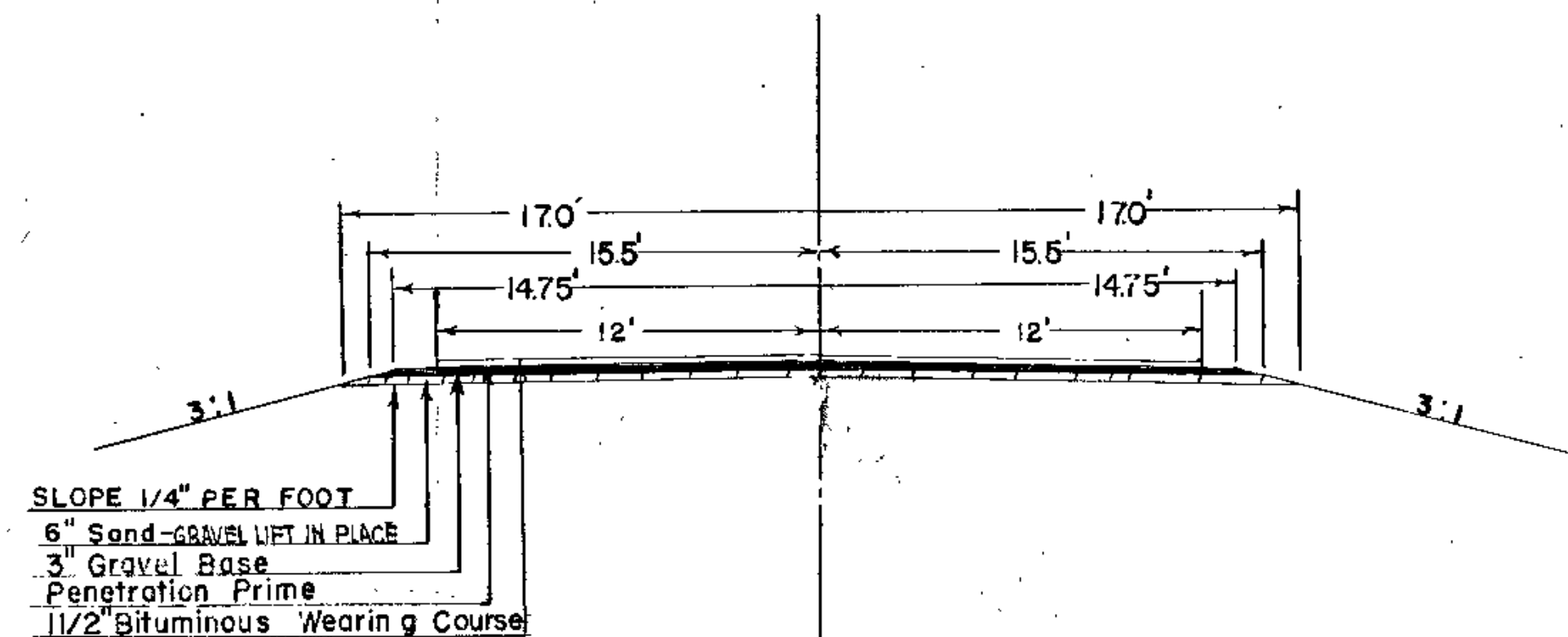
ROADBED TO BE BLADED TO 1/4" PER FOOT PITCH DURING FINISHING OPERATIONS

SUPERELEVATED CURVES  
ALL CURVES FOR WHICH NO SUPERELEVATION HAS BEEN PROVIDED IN THE PLANS SHALL BE SUPERELEVATED IN ACCORDANCE WITH DESIGN STANDARDS DURING CONSTRUCTION.

THE UPPER 10' 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 10' OF THE EMBANKMENT.

BORROW MATERIAL FOR SAND-GRAVEL LIFT TO COME FROM PIT FURNISHED BY ANOKA CO. - 475' RT. OF STA. 154+00.

FUTURE CONSTRUCTION  
TYPICAL BASE & SURFACE SECTIONS



FUTURE CONSTRUCTION  
BASIS FOR COMPUTATION OF QUANTITIES  
PRIME COAT 0.30 GAL. PER SQ. YD. (MC-0 OR MC-1)  
BITUMINOUS MATERIAL FOR MIXTURE 1.10 GAL. PER SQ. YD. (MC-2 OR MC-3)  
AGGREGATE 150# PER SQ. YD. - 3139 BA-2  
MOTOR GRADER 10 HRS. PER MILE  
PNEUMATIC-TIRED ROLLER 5 HRS. PER MILE  
(ESTIMATE QUANTITIES INCLUDE MATERIAL FOR ENTRANCES & X-ROADS TO BE USED AS DIRECTED BY THE ENGINEER)  
GRAVEL MATERIAL ASSUMED TO WEIGH 2,800 LBS. PER CU. YD.  
WATER FOR COMPACTION 20 GALS. PER CU. YD. OF BASE CONSTRUCTION.  
3" DEPTH BASE CONSTRUCTION - 28.7 CU. YD. PER STA. - 3138 (CLASS 5)  
NOTE: PENETRATION PRIME ON 3" GRAVEL BASE.

\* 2574.501 - SEED SHALL BE FURNISHED BY CONTRACTOR AT 60 LBS. PER ACRE.

\*\* 2101.501 & 2101.506 -- INCLUDE CLEARING AND GRUBBING FOR BORROW PIT.

NOTE: 6" SAND-GRAVEL LIFT COMPUTED AT THE RATE OF 63 CU. YDS. PER STATION.

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	S.C. CULVERT PIPE



FE- Sta. 104+12 LT  
NO CULV. REQ.

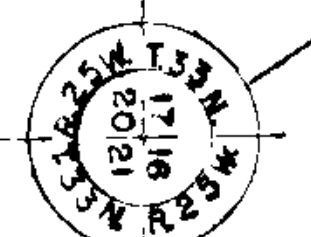
Sta. 113+03 C  
INP. 24' X 40' S.C. CULV.  
F&I. 24' X 12' S.C. CULV.  
EXT. 6' LT. 86' RT.  
CULV. EXC. 53 CU. YDS.  
BACKFILL 69 CU. YDS.

FE- Sta. 116+90 LT  
INP. 12' X 24' S.C. & C.M. CULV.  
REMOVE  
F&I. 15' X 38' C.M. CULV.

TWP. ROAD - Sta. 117+20 LT  
INP. 15' X 34' C.M. CULV.  
REMOVE  
F&I. 15' X 42' C.M. CULV.

Sta. 130+31 C  
INP. 15' X 35' C.M. CULV.  
REMOVE  
F&I. 24' X 44' S.C. CULV.  
CULV. EXC. 19.6 CU. YDS.  
BACKFILL 25.4 CU. YDS.

Begin S.P. 02-510-04  
Sta. 104+06



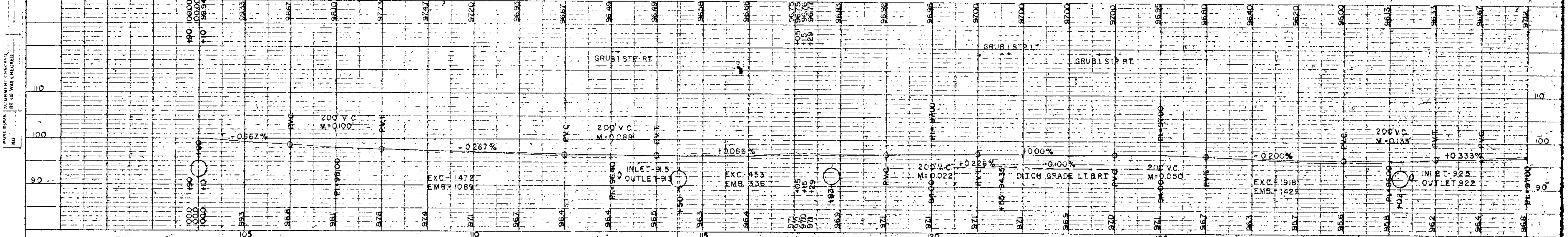
ASSUMED  
TWP. ROAD EAST  
NO CULV. REQ.

Sta. 115+66 - End  
Bituminous Surface

TWP. ROAD - Sta. 117+15 RT.  
F&I. 15' X 42' C.M. CULV.

FE- Sta. 121+55 RT.  
NO CULV. REQ.

ASSUMED FENCE LINE EAST  
STA. 130+42



FE- Sta. 135+94 LT  
INP. 12' X 24' S.C. - REMOVE  
F&I. 15' X 38' C.M. CULV.

TWP. ROAD - Sta. 143+51 LT  
NO CULV. REQ.

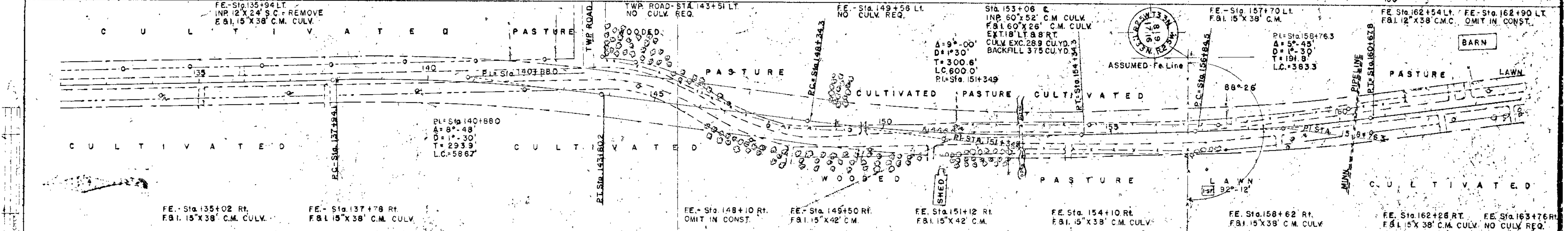
FE- Sta. 149+56 LT  
NO CULV. REQ.

Sta. 153+08 C  
INP. 60' X 52' C.M. CULV.  
F&I. 60' X 26' C.M. CULV.  
EXT. 18' LT. 88' RT.  
CULV. EXC. 28.9 CU. YD.  
BACKFILL 37.5 CU. YD.

FE- Sta. 157+70 LT  
F&I. 15' X 38' C.M.

FE- Sta. 162+54 LT  
F&I. 12' X 38' C.M.C. OMIT IN CONST.

BARN



FE- Sta. 135+02 RT.  
F&I. 15' X 38' C.M. CULV.

FE- Sta. 137+78 RT.  
F&I. 15' X 38' C.M. CULV.

FE- Sta. 148+10 RT.  
OMIT IN CONST.

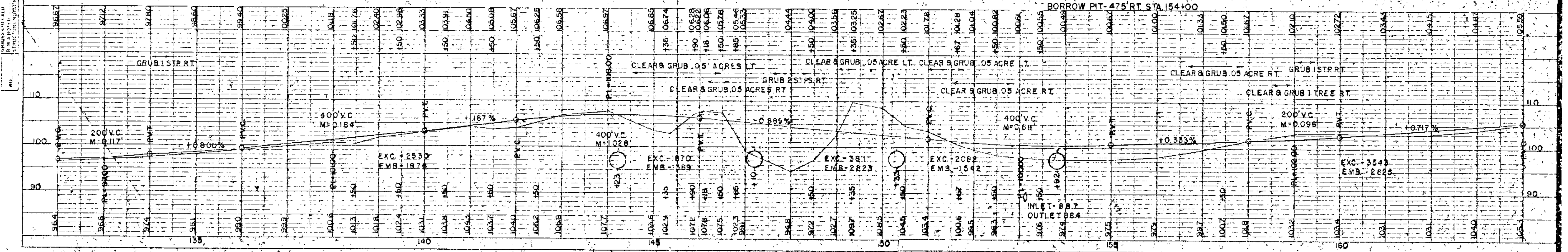
FE- Sta. 149+50 RT.  
F&I. 15' X 42' C.M.

FE- Sta. 151+12 RT.  
F&I. 15' X 42' C.M.

FE- Sta. 154+10 RT.  
F&I. 15' X 38' C.M. CULV.

FE- Sta. 158+62 RT.  
F&I. 15' X 38' C.M. CULV.

FE- Sta. 162+26 RT.  
F&I. 15' X 38' C.M. CULV. NO CULV. REQ.



F.E. Sta. 164+39 Lt.  
NO CULV. REQ.

F.E. Sta. 166+10 Lt.  
F&I 12'x38' C.M. CULV.

F.E. Sta. 174+00 Lt.  
OMIT IN CONST.

TWP. RD. - STA. 182+76.5 Lt.  
F&I 18'x24' C.M. CULV.

Sta. 167+00 @  
INR 12'x40' S.C. & C.M. CULV.  
REMOVE  
F&I 18'x70' S.C. CULV.  
CULV. EXC. - 233 CU. YDS.  
BACKFILL - 30.3 CU. YDS.

BARN

LAWN

berry patch

C U L T I V A T E D

90°29'

END S.P. 02-510-C-4  
STA. 182+76.5

ASSUMED - CAR. NO. 32 WEST

$\Delta = 7^\circ - 10'$   
 $D = 1^\circ - 30'$   
 $T = 239.2$   
 $L.C. 477.8$   
 $P.I. = Sta. 172+02.2$

P.I. = Sta. 174+40.8

F.E. Sta. 163+78 Rt.  
NO CULV. REQ.

F.E. Sta. 165+73 Rt.  
F&I 12'x38' C.M. CULV.

F.E. Sta. 169+79 Rt.  
OMIT IN CONST.

F.E. Sta. 177+33 Rt.  
INR 12'x26' S.C. CULV. - REMOVE - F&I 12'x38' S.C. CULV.

CLEAR TREE & GRUB 2 STPS. RT.

CLEAR TREE & GRUB 2 STPS. RT.

CLEAR GRUB 05 ACRE RT. CLEAR GRUB 06 ACRE RT.

GRUB STR RT.

