

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR GRADING, BIT STABILIZED SUBGRADE, BIT SURFACING
AGGREGATE SHOULDERING & TIMBER BRIDGE
County State Aid Highway No.16

Between C.S.A.H. NO. 9 And C.S.A.H. NO. 18 & C.R. 116

From CENTER SECTION, T32N & R24W To APT. 916.75' E. & 404.80' N. OF CENTER 33
T32N, R24W

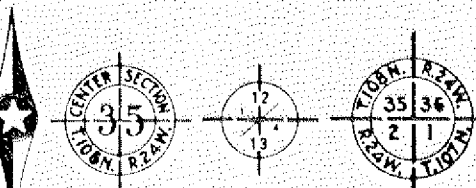
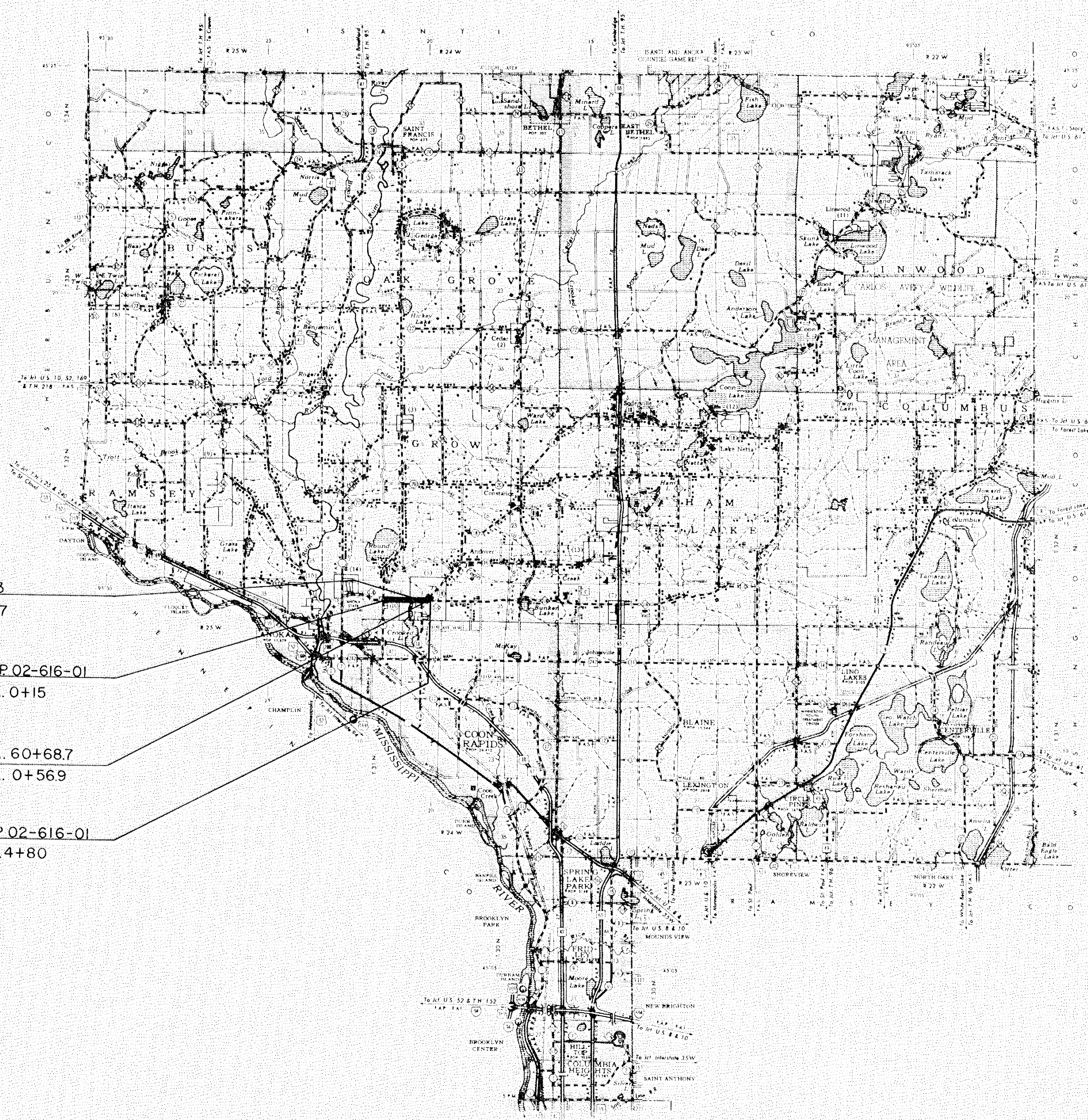
GROSS LENGTH 6476.80 FEET 1.226 MILES
BRIDGES LENGTH 66 FEET 0.012 MILES
EXCEPTIONS LENGTH _____ FEET _____ MILES
NET LENGTH 6476.80 FEET 1.226 MILES

INDEX OF SHEETS

- Sheet No. 1 Title Sheet & Layout Map
- No. 2 Est. Quantities & Typical Sec.
- No. 3 To 5 Plan & Profile
- No. 6 To 12 Cross Sections
- No. 1 To 5 Bridge

CONVENTIONAL SIGNS

- 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 (EVEN LINE 1949)
- VACATED PLATTED PROPERTY
- CORPORATE OR CITY LIMITS
- TRUNK HIGHWAY CENTER LINE
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT OF WAY LINE
- RIVER OR CREEK
- DRY RUN
- DRAINAGE DITCH
- ELECTRIC POWER LINE
- TELEPHONE OR TELEGRAPH LINE
- JOINT TELEPHONE AND POWER
- CONDUIT
- TELEPHONE CABLE - AERIAL
- TELEPHONE CABLE - UNDERGROUND
- POWER CABLE - UNDERGROUND
- GAS MAIN
- CULVERT
- DROP INLET
- GUARD RAIL
- RABBIT WIRE FENCE
- WOODEN WIRE FENCE
- CHAIN LINK FENCE
- RAILROAD SNOW FENCE
- STONE WALL OR FENCE
- HEDGE
- WATER PIPE
- SEWER PIPE
- DRAIN TILE
- SPRINGS
- MARSH
- TIMBER
- ORCHARD
- BURSH
- NURSERY
- CATCH BASIN
- MANHOLE
- FIRE HYDRANT
- STREET LIGHT
- RAILROAD CROSSING SIGN
- RAILROAD CROSSING BELL
- ELECTRIC WARNING SIGN
- CROSSING GATE
- CATTLE GUARD
- OVERPASS (Highway Over)
- UNDERPASS (Highway Under)
- BRIDGE
- BUILDING (One Story Frame)
- PIPES
- CONCRETE
- STONE
- TILE
- BRICK
- STUCCO
- IRON PIPE OR BOX
- MONUMENT (STONE, CONCRETE, OR METAL)
- WOODEN HUB
- GRAVEL PIT
- SAND PIT
- BORROW PIT
- ROCK QUARRY
- MEANDER CORNER



DESIGN DESIGNATION

ADT (CURRENT YEAR) 788
ADT (FUTURE YEAR) 1812
T (HEAVY COMMERCIAL)
7T-ULT.9 Ton Design
Design Speed 50 MPH
Design Speed not achieved at:
STA _____ TO STA _____ MPH
STA _____ TO STA _____ MPH

SPECIFICATIONS

THE "STANDARD" SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, DATED JAN. 1, 1968, SHALL GOVERN.

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

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. J. Lundheim COUNTY ENGINEER DATE 6-19-69

ANOKA COUNTY REG. NO. 2551

RECOMMENDED FOR APPROVAL *G. F. Walsh* 6/19/69 DISTRICT STATE AID ENGINEER

RECOMMENDED FOR APPROVAL _____ 19____

APPROVED _____ 19____ STATE AID ENGINEER

Minn. Proj. No. _____ County Proj. No. _____
State Proj. No. _____ S. A. P. 02-616-01

STATEMENT OF ESTIMATED QUANTITIES

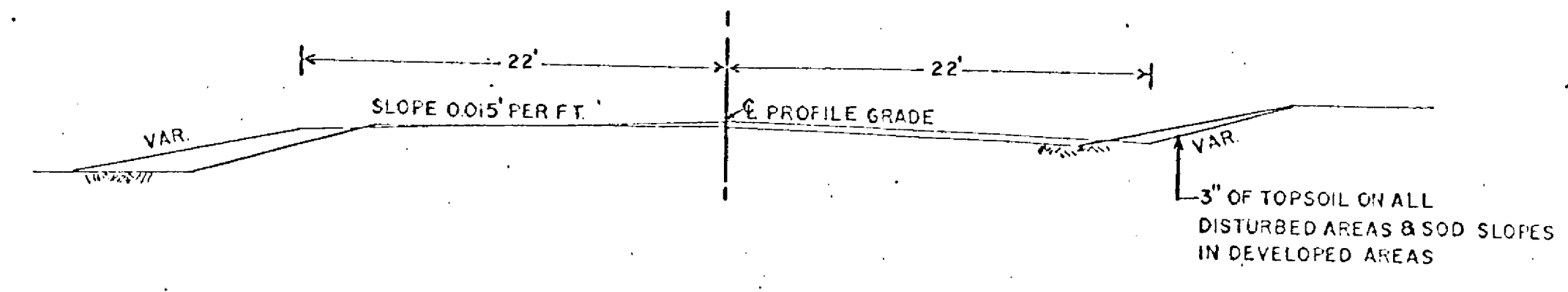
ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
2101.501	CLEARING	ACRE	0.40
2101.502	CLEARING	TREE	56
2101.506	GRUBBING	ACRE	0.40
2101.507	GRUBBING	TREE	55
2104.501	REMOVE PORTABLE CULVERTS	LIN. FT.	102
2104.507	REMOVE MASONRY STRUCTURES	CU. YD.	0.38
* 2104.510	REMOVE FENCE	LIN. FT.	761
* 557.621	RESET FENCE	LIN. FT.	311
2105.501	COMMON EXCAVATION	CU. YD.	3,834
2105.531	SALVAGED BITUMINOUS MIXTURE	CU. YD.	2,931
2123.503	MOTOR GRADER	HOUR	5
2123.509	DOZER	HOUR	8
2130.501	WATER	M. GAL.	35
(2) 2135.01	WATER	M. GAL.	11
2207.503	BIT. MAT. FOR MIX. (ASPHALT EMULSION)	GAL.	83,300
2207.512	BIT. STAB. SUB-GRADE (6" THICK)	SQ. YD.	19,360
* 2221.501	AGGREGATE SHOULDERING (CLASS 5)	TON	1,080
* 2331.504	BIT. MAT. FOR MIXTURE	TON	90
2331.509	WEARING COURSE MIX. & FILLER	TON	1,500
2357.502	BIT. MAT. FOR TACK COAT	GAL.	843
2501.523	18" CONCRETE CULVERT (CLASS 4)	LIN. FT.	94
2501.536	18" CONCRETE APRON	APRON	4
2501.571	INSTALL METAL CULVERTS	LIN. FT.	102
(1) 2575.501	ROADSIDE SEEDING	ACRE	2.50
* 2575.505	SODDING	SQ. YD.	2,516
(1) 2575.511	MULCH MATERIAL - TYPE 5	TON	2
* 2575.551	TOPSOIL	CU. YD. (V.M.)	1,650
2105.511	COMMON CHANNEL EXC.	CU. YD.	1,100
2402.521	STRUCTURAL STEEL (3306)	LBS.	540
2402.586	PLATE RAILING	LIN. FT.	134
2403.502	TREATED TIMBER	M.B.M.	46,54
2403.506	HARDWARE	LBS.	5,300
2442.501	REMOVE OLD BRIDGE	BRIDGE	1
2452.503	TREATED TIMBER PILING (DELIVERED)	LIN. FT.	2,130
2452.504	TREATED TIMBER PILING (DRIVEN)	LIN. FT.	2,022
2452.517	TREATED TIMBER TESTPILE (50' PILE)	PILE	4
2511.501	RANDOM RIPRAP - CLASS A	CU. YD.	125

- (1) COUNTY SHALL FURNISH SEED & FERTILIZER
- (2) FOR BASE MOISTURE CONTROL AT THE DIRECTION OF THE ENGINEER
- * THE PROVISION OF 1903 SHALL NOT APPLY TO THESE ITEMS. ALL AREAS TO BE SODDED SHALL BE COVERED WITH A MINIMUM OF 3 INCHES OF TOPSOIL.
- NOTE: CROSS SECTIONS ARE TO BE CONSTRUCTED IN CONFORMANCE WITH TYPICAL SECTIONS ON THIS PAGE.
- NOTE: ALL DIMENSIONS AND SLOPES SHOWN ON TYPICAL SECTIONS ARE APPROXIMATELY ONLY.
- NOTE: WORKING AROUND MISC. UTILITY POLES WILL BE CONSIDERED INCIDENTAL TO COMMON EXCAVATION.
- NOTE: COMMON CHANNEL EXCAVATION BASED ON A CHANNEL BOTTOM OF 28 FT. WITH 2:1 SLOPES, FOR A DISTANCE OF 70 FT. LEFT AND 120 FT. RIGHT OF CENTER LINE.

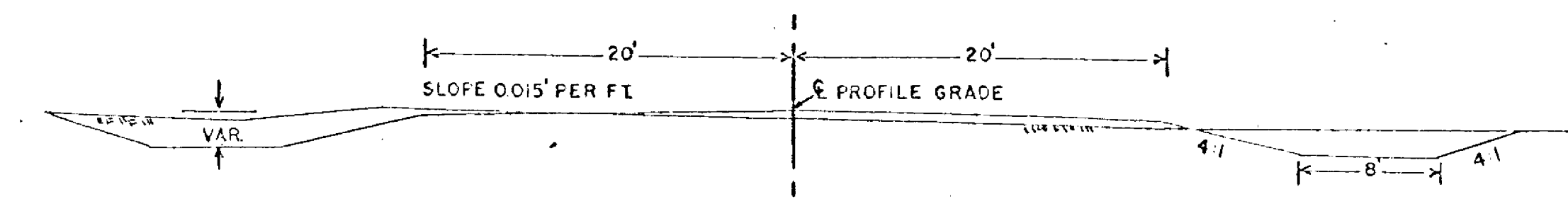
The following Standard Detail plates, approved by the Bureau of Public Roads, shall apply on this project.

PLATE NO.	DESCRIPTION
3000 F	REINFORCED CONCRETE PIPE
3100 E	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
8000 C 8008 C	STANDARD SIGNS & BARRICADES
8002 B	

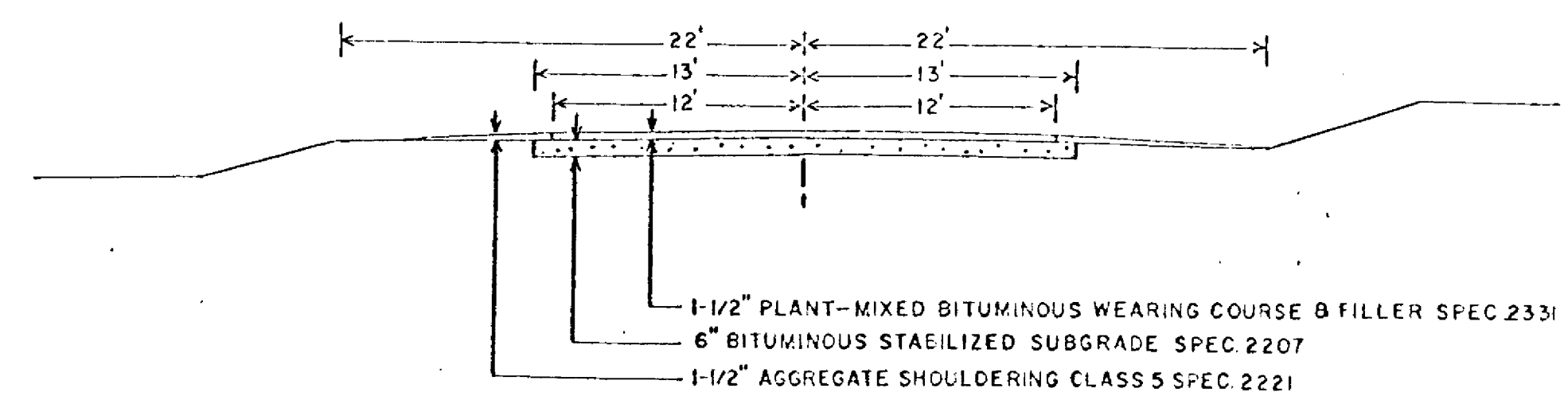
CSAH NO. 16
TYPICAL GRADING SECTION
STA. 0+15 TO STA. 60+68.7



CSAH NO. 18
TYPICAL GRADING SECTION
STA. 0+569 TO STA. 4+80



TYPICAL BITUMINOUS SECTION



BASIS OF PLANNED QUANTITIES

- 2207 BITUMINOUS STABILIZED SUBGRADE
BITUMINOUS MATERIAL FOR MIXTURE 0.50 GAL. PER SQ. YD. PER INCH OF COMPACTED THICKNESS.
BITUMINOUS MATERIAL FOR FOG SEAL 0.10 GAL. PER SQ. YD.
- 2331 PLANT MIXED BITUMINOUS WEARING COURSE
BITUMINOUS MATERIAL 6.0% OF MIXTURE BY WEIGHT.
BITUMINOUS MIXTURE 165 POUNDS PER SQ. YD.
BITUMINOUS MATERIAL FOR TACK COAT 0.05 GAL. PER SQ. YD.
- 2221 AGGREGATE SHOULDERING CLASS 5
150 POUNDS PER SQ. YD. PER 1 1/2" OF THICKNESS

P.O.T. STA. 0+00



BEGIN PROJECT 0+15
OPEN FIELD

BEGIN IOR

C.S.A.H. # 9

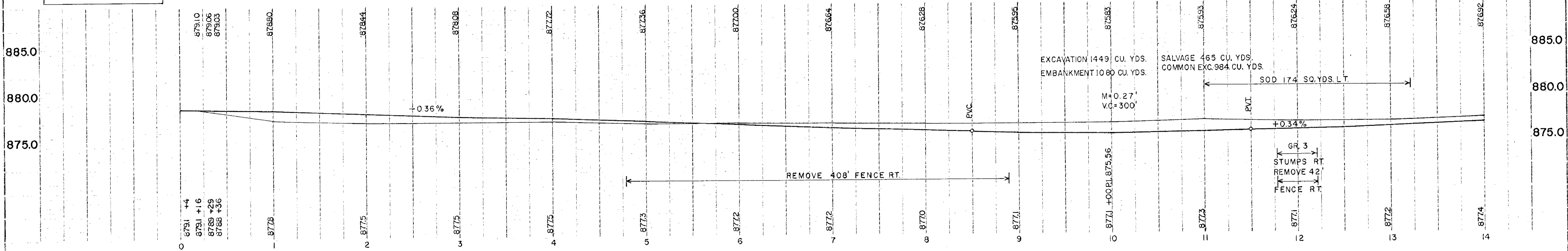
CHURCH

OPEN FIELD

BRUSH

WOODS

B.M.#1 ELEV. 878.59
SPIKE IN NORTHSIDE OF T.P.
SOUTHWEST OF #116 & #9

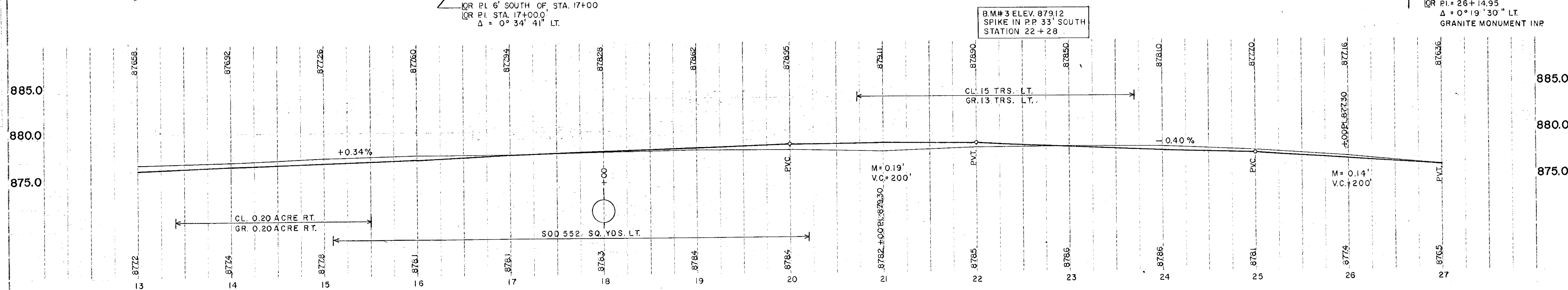
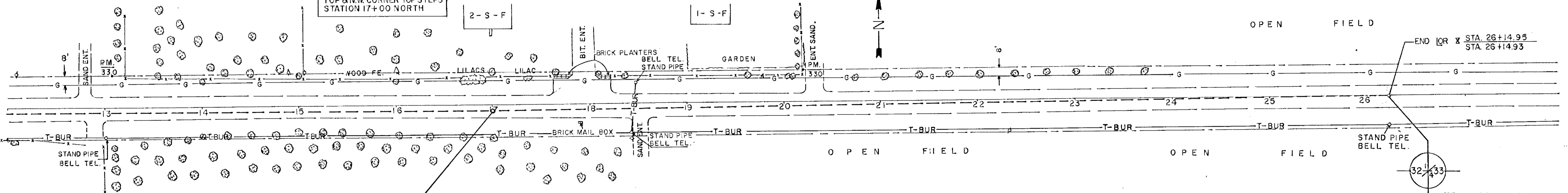


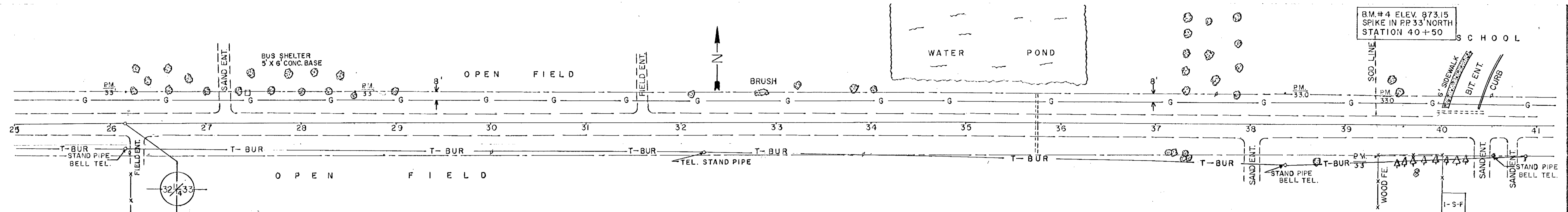
B.M.#2 ELEV. 882.64
TOP S.W. CORNER TOP STEPS
STATION 17+00 NORTH

2-S-F

1-S-F

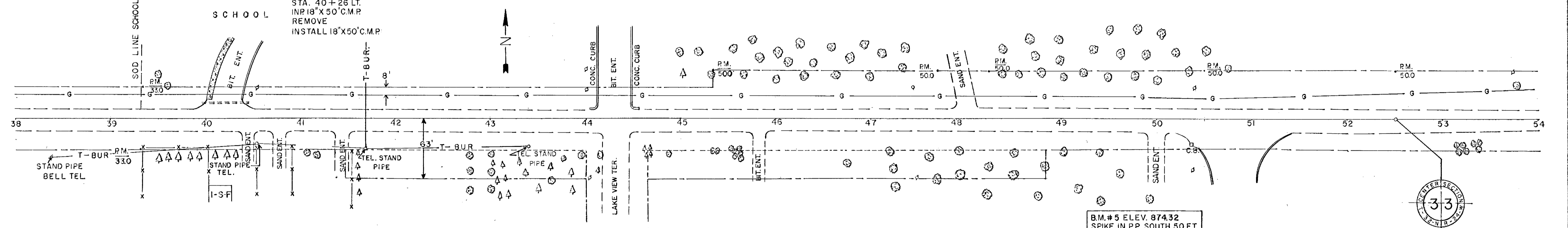
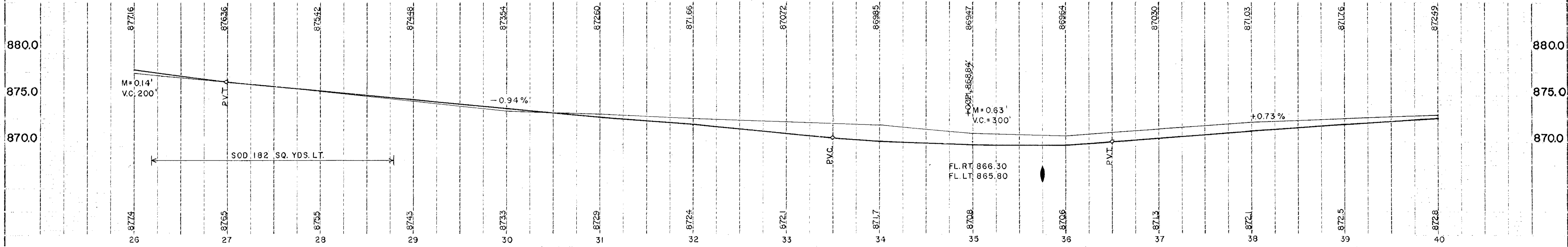
OPEN FIELD





PI. STA. 26+14.93
 $\Delta = 0^\circ 42' 03''$
 GRANITE MONUMENT INP.

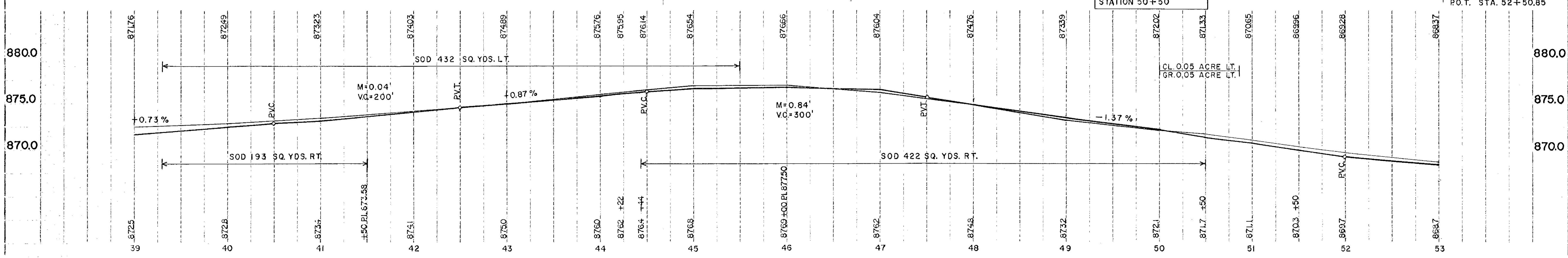
STA. 35+75 C.
 18" X 50' RCP
 2 APRON

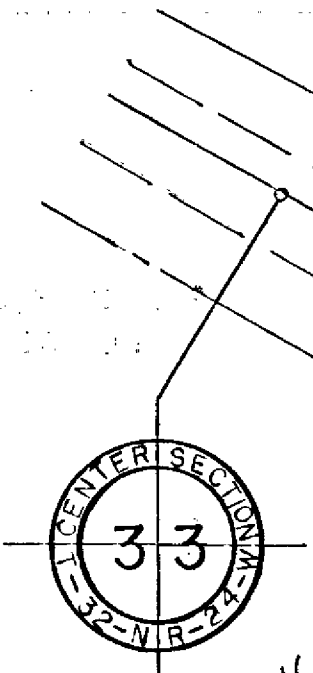


STA. 40+26 LT.
 INP 18" X 50' C.M.P.
 REMOVE
 INSTALL 18" X 50' C.M.P.

B.M.# 5 ELEV. 874.32
 SPIKE IN RR SOUTH 50 FT.
 STATION 50+50

P.O.T. STA. 52+50.85





NOTE: BURIED GAS LINE
 STA. 55+68 LT.
 INP 12" X 20' C.M.P.
 REMOVE
 INSTALL 12" X 20' C.M.P.

B.M.#6 ELEV. 879.29
 SPIKE IN PP NORTH
 STATION 58+67 OUT 49 FT.

PROPOSED BRIDGE NO. 02513
 LOCATION STA. 54+27

C.S.A.H. NO. 18
 CONNECTION

END OF PROJECT 4+80

POT. STA. 52+50.85

PRESENT BRIDGE LOCATION

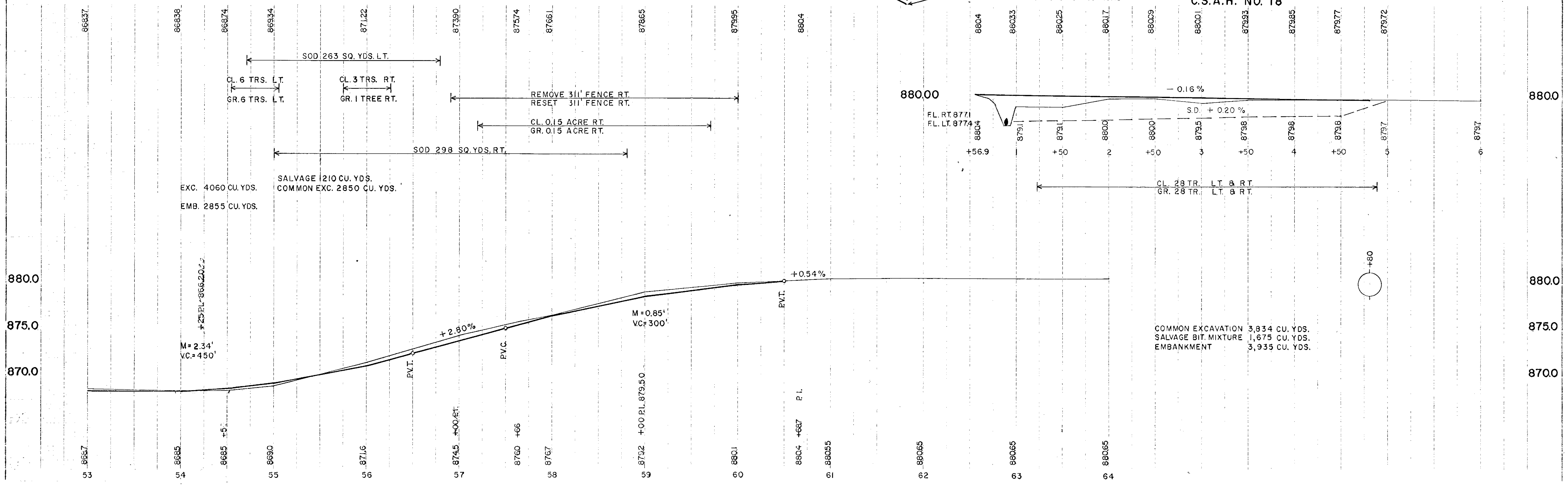
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STA. 55+68 RT.
 INP 12" X 32' C.M.P.
 REMOVE
 INSTALL 12" X 32' C.M.P.

STA. 0+94 C
 18" X 44" R.C.P.
 2 APRONS

CONSTRUCT TAPERS TO EXISTING ROAD

C.S.A.H. NO. 18



COMMON EXCAVATION 3,834 CU. YDS.
 SALVAGE BIT MIXTURE 1,675 CU. YDS.
 EMBANKMENT 3,935 CU. YDS.