

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE & BITUMINOUS

County State Aid Highway No. 78

Between C.S.A.H. #16 And C.S.A.H. #20

From A POINT 50' WLY. OF W. 1/4 COR. SEC. 26, T. 32, R. 24 To A POINT 50' WLY. OF W. 1/4 COR. SEC. 14, T. 32, R. 24
Give proper reference to Sections, Township and Range

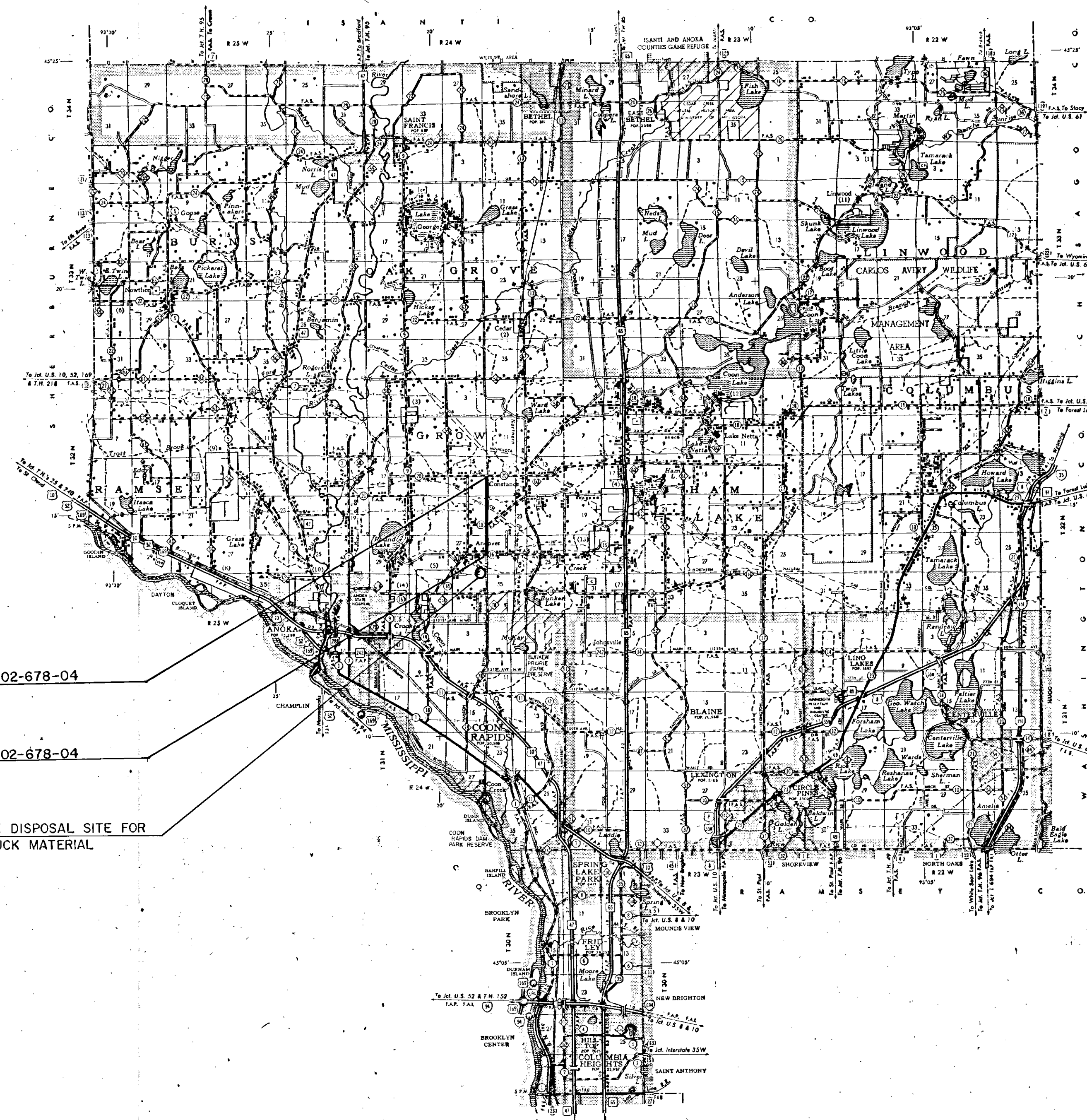
GROSS LENGTH 10,523.63 FEET 1.99 MILES
BRIDGES-LENGTH _____ FEET _____ MILES
EXCEPTIONS-LENGTH 24 FEET .004 MILES
NET LENGTH 10,499.63 FEET 1.99 MILES

INDEX OF SHEETS

- Sheet No. 1. Title Sheet & Layout Map
- No. 2. Est. Quantities
- No. 3. Typical Section
- No. 4&5. Plan & Profile
- No. 6-16. Cross Sections

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	-----
COVERAGE OF ACCESS LINE	-----
PROPERTY LINE (Except Land Line)	-----
VACATED PLATTED PROPERTY	-----
CONDUIT 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 TELEGRAM LINE	-----
JOINT TELEPHONE AND POWER	-----
CONDUIT	-----
TELEPHONE CABLE - ALUM.	-----
TELEPHONE CABLE - UNDERGROUND	-----
POWER CABLE - UNDERGROUND	-----
GAS MAIN	-----
CULVERT	-----
SEWER INLET	-----
GUARD RAIL	-----
BARRERED WIRE FENCE	-----
WOODEN WIRE FENCE	-----
CHAIN LINK FENCE	-----
RAILROAD SHOW FENCE	-----
STONE WALL OR FENCE	-----
WATER PIPE	-----
SEWER PIPE	-----
DRAIN TILE	-----
SPRING	-----
MARSH	-----
TIMBER	-----
ORCHARD	-----
BRUSH	-----
NURSERIES	-----
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)	-----
FRAMED	-----
CONCRETE	-----
STONE	-----
BRICK	-----
ST. STUDES	-----
IRON PIPE OR ROD	-----
MONUMENT (STONE, CONCRETE, OR METAL)	-----
WOODEN PILE	-----
GRAVEL PIT	-----
SAND PIT	-----
BORROW PIT	-----
ROCK QUARRY	-----
MEANDER CORNER	-----



END PROJECT S.A.P. 02-678-04
STA. 166+65.60

BEGIN PROJECT S.A.P. 02-678-04
STA. 61+41.97

ALTERNATE DISPOSAL SITE FOR
EXCESS MUCK MATERIAL

SCALE
INDEX MAP 2 MILES
PLAN & PROFILE VERT. 10'
HORIZ. 100'
CROSS SECTIONS 10'

DESIGN DESIGNATION
ADT (CURRENT YEAR) 0 (NEW LOCATION)
ADT (FUTURE YEAR) 4000 (20 YR. PROJ.)
T (HEAVY COMMERCIAL) 150-300
9 Ton Design Soil Factor A-3, 50%
Design Speed 55 MPH
Design Speed not achieved at:
STA. _____ TO STA. _____ MPH
STA. _____ TO STA. _____ MPH

SPECIFICATIONS
THE "STANDARD" SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 1983 EDITION, 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.

Paul K. Kuntz DATE 3/8/83
COUNTY ENGINEER

ANOKA COUNTY REG. NO. 6549

RECOMMENDED FOR APPROVAL *C.E. Weichselbaum* 5/12/83
DISTRICT STATE AID ENGINEER

RECOMMENDED FOR APPROVAL *Delbert D. Otfedahl* 5-16-1983

APPROVED 5/17/83 *Arthur M. Sieg*
STATE AID ENGINEER

Minn. Proj. No. _____ County Proj. No. _____
State Proj. No. _____ S.A.P. 02-678-04

FORM HWY 2105 - 10 - 58

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES
2021.501	MOBILIZATION	LUMP SUM	1	
2031.501	FIELD OFFICE TYPE D	EACH	1	
2101.501	CLEARING	ACRE	7.45	
2101.502	CLEARING	TREE	11	
2101.506	GRUBBING	ACRE	7.55	
2101.507	GRUBBING	TREE	15	
2104.521	SALVAGE FENCE	LIN. FT.	474.7	
0557.604	INSTALL FENCE	LIN. FT.	464.7	
① 2105.501	COMMON EXCAVATION	CU. YD.	52569	
2105.505	MUCK EXCAVATION	CU. YD.	50726	
2105.521	GRANULAR BORROW (FY)	CU. YD.	93246	
2105.535	SALVAGE TOPSOIL (LV)	CU. YD.	5812	
② 2130.501	WATER	M-GAL.	150	
③ 2211.503	AGGREGATE BASE PLACED, CLASS 5	CU. YD.	8936	
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	453	
2331.510	BINDER COURSE MIXTURE	TON	2659	
2331.514	BASE COURSE MIXTURE	TON	3677	
④ 2331.516	SHOULDER MIXTURE	TON	2814	
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	154	
2341.508	WEARING COURSE MIXTURE	TON	2559	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	3120	
2501.511	15" C.M. PIPE CULVERT	LIN. FT.	286	
2501.561	24" R.C. PIPE CULVERT CLASS -2 DESIGN 3006 D	LIN. FT.	92	
2501.515	15" C.M. PIPE APRONS	EACH	16	
2501.515	24" R.C. PIPE APRONS	EACH	2	
2501.561	36" R.C. PIPE CULVERT CL-2 DESIGN 3006 D	LIN. FT.	80	
2501.521	28 1/2" SPAN RCP-A CULVERT CL-2A	LIN. FT.	178	
2501.515	36" R.C. PIPE APRONS	EACH	2	
2501.525	28 1/2" SPAN RCP-A APRONS	EACH	6	
2575.501	ROADSIDE SEEDING	ACRE	14.3	
2575.502	SEED MIXTURE NO. 3	POUND	572	
2575.505	SODDING	SQ. YD.	335	
2575.511	MULCH MATERIAL, TYPE 1	TON	29	
2575.519	DISC ANCHORING	ACRE	14.3	
2575.531	COMMERCIAL FERTILIZER, ANALYSIS 10-10-10	TON	3.6	
0575.602	HAY OR STRAW BALES	EACH	28	
⑤ 0105.535	HAUL SALVAGED TOPSOIL (LV)	CU. YD.	39,383	

- ① INCLUDES 6,961 CU. YD. SUBCUT FOR COMPACTION.
- ② FOR DUST CONTROL.
- ③ INCLUDES 61 CU. YDS. FOR RADI AND 16 CU. YDS. FOR ENTRANCES.
- ④ INCLUDES 1 TON FOR BERM AND 22 TON FOR ENTRANCES.
- ⑤ TO BE USED FOR EROSION CONTROL AT THE DIRECTION OF THE ENGINEER.
- ⑥ ALTERNATE NO. 2 (SEE SPECIAL DETAILS & SPECIAL PROVISIONS)

BASIS OF PLANNED QUANTITIES

2331	PLANT MIXED SHOULDER COURSE BITUMINOUS MIXTURE 220 LBS./S.Y. PER 2" THICKNESS BITUMINOUS MATERIAL FOR MIXTURE 6.0% BY WT.
2331	PLANT MIXED BASE COURSE BITUMINOUS MIXTURE 220 LBS./S.Y. PER 2" THICKNESS BITUMINOUS MATERIAL FOR MIXTURE 4.5% BY WT.
2331	PLANT BINDER COURSE BITUMINOUS MIXTURE 165 LBS./S.Y. PER 1 1/2" THICKNESS BITUMINOUS MATERIAL FOR MIXTURE 4.5% BY WT.
2341	PLANT MIXED WEARING COURSE BITUMINOUS MIXTURE 165 LBS./S.Y. PER 1 1/2" THICKNESS BITUMINOUS MATERIAL FOR MIXTURE 6.0% BY WT.
2357	BITUMINOUS MATERIAL FOR TACK COAT 0.05 GAL. PER S.Y.
2575	ROADSIDE SEEDING BASED ON HORIZONTAL MEASUREMENTS PLUS 10%

DRAINAGE

STATION	LOCATION	IN PLACE	REMARKS	REMOVE				PORTABLE CULVERTS							
				PORT. CULV.	CONC. STRUCT.	EXC.	SOD-DING	RIP-RAP	15" CMP	24" RCP CL-2	28 1/2" SPAN RCP-A	36" RCP CL-2			
				LIN. FT.	CU. YD.	CU. YD.	SQ. YD.	CU. YD.	LIN. FT.	AP.	LIN. FT.	AP.	LIN. FT.	AP.	
62 + 75	E							40						56	2
70 + 43	LT.		DITCH BLOCK					17		38	2				
80 + 00	E							40						62	2
91 + 00	LT.		DITCH BLOCK					17		38	2				
94 + 00	E							29				92	2		
110 + 00	LT.							17		42	2				
112 + 58	LT.		DITCH BLOCK					17		38	2				
122 + 00	LT.		DITCH BLOCK					17		30	2				
126 + 25	RT.							17		38	2				
133 + 20	LT.		DITCH BLOCK					17		38	2				
138 + 20	E							50							80
143 + 40	LT.		DITCH BLOCK					17		24	2				
158 + 00	E							40						60	2
TOTALS								335		286	16	92	2	173	6

STANDARD PLATES	
PLATE NO.	DESCRIPTION
0003A	SPECIFICATION REFERENCE TO STANDARD PLATES
3000H	REINFORCED CONCRETE PIPE
3006 D	GASKET JOINT FOR R.C. PIPE
3014J	REINFORCED CONCRETE PIPE ARCH DETAIL
3040F	CORRUGATED METAL PIPE CULVERT
3100F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3123H	METAL APRON FOR C.M. PIPE
8000G	STANDARD BARRICADES
9000B	APPROACHES AND ENTRANCES
9102C	SODDING AT PIPE CULVERT ENDS

CLEARING AND GRUBBING					
STATION (TO STATION)	LOC.	CLEARING		GRUBBING	
		TREE	ACRE	TREE	ACRE
Sta. 63+16	15' Rt.	1		1	
Sta. 65+00 to Sta. 64+92	21-46 Lt.		.05		.05
Sta. 65+00 to Sta. 68+25	31-50 Rt.		.25		.25
Sta. 63+48 to Sta. 69+35	25-59 Rt.		.15		.15
Sta. 68+60 to Sta. 70+52	0-34 Lt.		.20		.20
Sta. 70+30	42' Rt.	1		1	
Sta. 72+33 to Sta. 73+12	47-56 Rt.		.05		.05
Sta. 75+66	46' Rt.	--		1	
Sta. 75+95	4' Rt.	2		1	
Sta. 76+15	9' Rt.	2		1	
Sta. 86+91 (Dead)	5' Rt.	1		1	
Sta. 92+13	40' Rt.	--		1	
Sta. 92+49	5' Lt.-34' Rt.		.05		.05
Sta. 93+89	38' Rt.	--		1	
Sta. 96+46 to Sta. 96+59	24-37 Lt.		.05		.05
Sta. 105+09	45' Rt.	1		1	
Sta. 105+11	45' Rt.	1		1	
Sta. 108+49	21' Lt.	1		1	
Sta. 114+85	22' Lt.	--		1	
Sta. 115+60 to Sta. 125+88	50-59 Rt.		.70		.70
Sta. 123+06 to Sta. 123+36	16-26 Lt.		--		.05
Sta. 124+03 to Sta. 124+12	22-37 Lt.		--		.05
Sta. 126+51 to Sta. 134+50	8' Lt.-75 Rt.		1.25		1.25
Sta. 131+30	42' Lt.	--		1	
Sta. 136+40	36' Rt.	1		1	
Sta. 136+65	3' Lt.	--		1	
Sta. 139+00 to Sta. 140+20	9-15 Rt.		.10		.10
Sta. 142+08 to Sta. 146+00	45 Lt.-48 Rt.		.55		.55
Sta. 148+10 to Sta. 166+00	45 Lt.-72 Rt.		4.05		4.05
TOTALS		11	7.45	15	7.55

ALL POWER AND TELEPHONE POLES WILL BE LOCATED OUTSIDE THE 42' CLEAR ZONE.

SPECIAL DETAILS

EXCAVATED MUCK MATERIAL SHALL BE USED TO CONSTRUCT INSLOPES ADJACENT TO MUCK EXCAVATION AREAS AND AS TOPSOIL THROUGHOUT THE PROJECT. APPROXIMATELY 5812 CU. YDS. OF EXCESS MUCK MATERIAL SHALL BE UTILIZED AS TOPSOIL. THE MATERIAL SHALL BE SPREAD TO A UNIFORM 3" MINIMUM DEPTH OVER THE LENGTH OF THE PROJECT. THIS WORK WILL BE PAID UNDER ITEM 2105.535 SALVAGED TOPSOIL.

ALTERNATE NO. 1
EXCESS MUCK MATERIAL, APPROXIMATELY 39,383 CU. YDS. SHALL BE DISPOSED OF OUTSIDE OF THE R/W. BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF 2104.3C. THIS WORK SHALL BE CONSIDERED AS INCIDENTAL TO MUCK EXCAVATION AND NO ADDITIONAL COMPENSATION SHALL BE MADE.

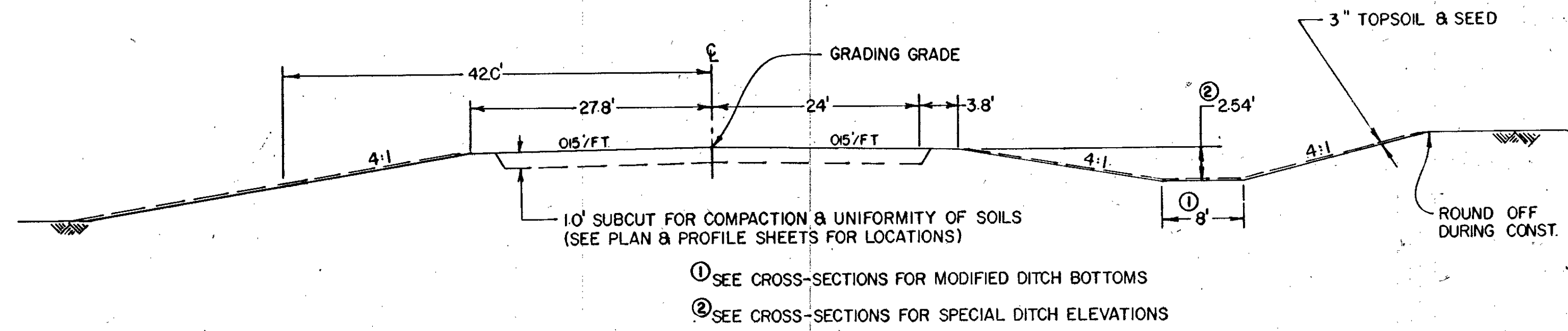
ALTERNATE NO. 2
EXCESS MUCK MATERIAL, APPROXIMATELY 39,383 CU. YDS. SHALL BE SALVAGED AND HAUL TO LANDFILL DISPOSAL SITE (LOCATED APPROXIMATELY 1/2 MILE SOUTH OF C.S.A.H. 16 ON WEST SIDE OF HANSON BLVD.) TO BE USED FOR TOPSOIL COVERING.

SALVAGE & INSTALL FENCE				
STATION	LOC.	SALVAGE	INSTALL	REMARKS
72+33 to 74+75	RT	242	242	
74+75	RT	25	0	LINE FENCE
74+75 to 88+04	RT	1329	1329	
88+04	RT	25	0	LINE FENCE
88+04 to 101+04	RT	1300	1300	
105+64 to 107+00	LT	136	136	
114+24	LT	50	0	LINE FENCE
114+30 to 130+70	RT	1640	1640	
TOTALS		4747	4647	

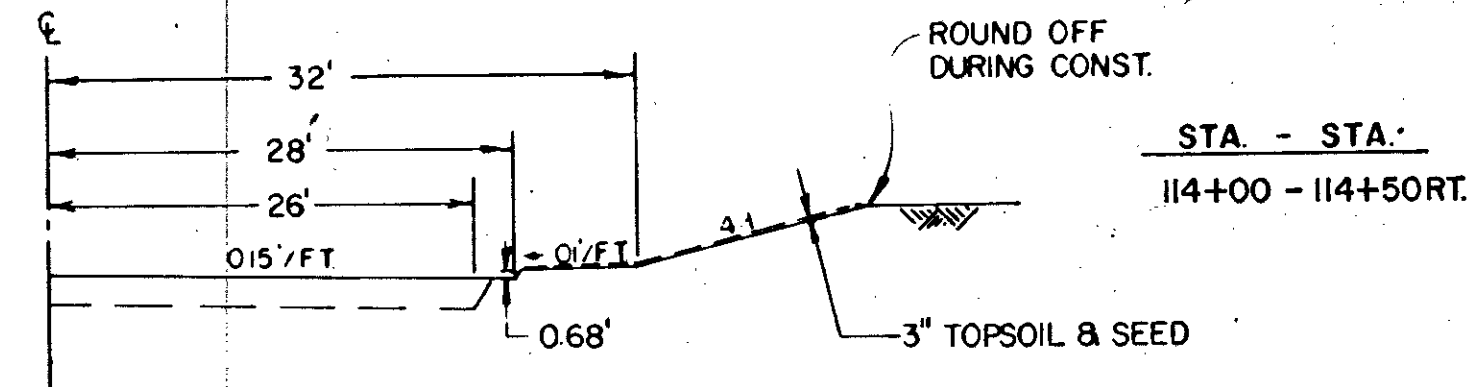
TYPICAL SECTIONS

ALL DIMENSIONS NOMINAL

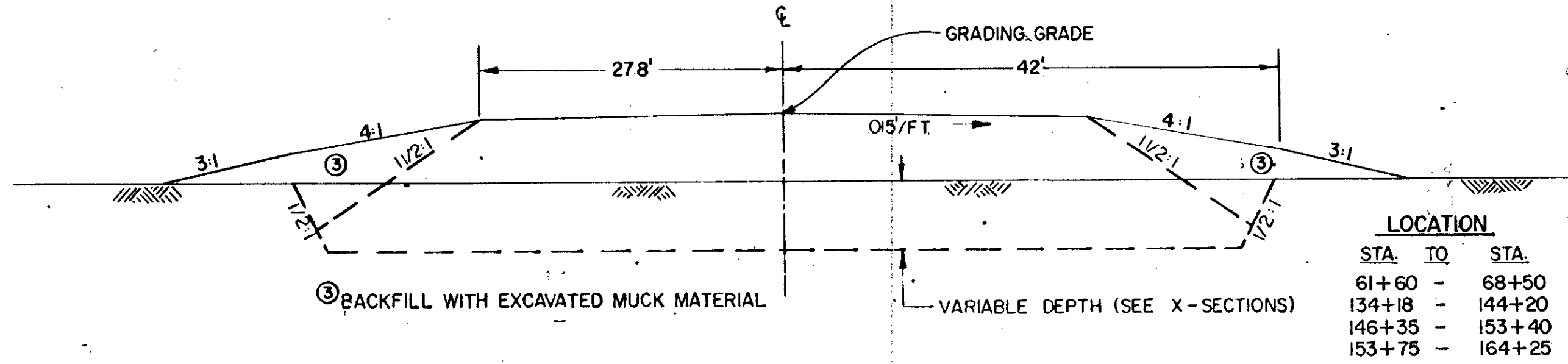
GRADING



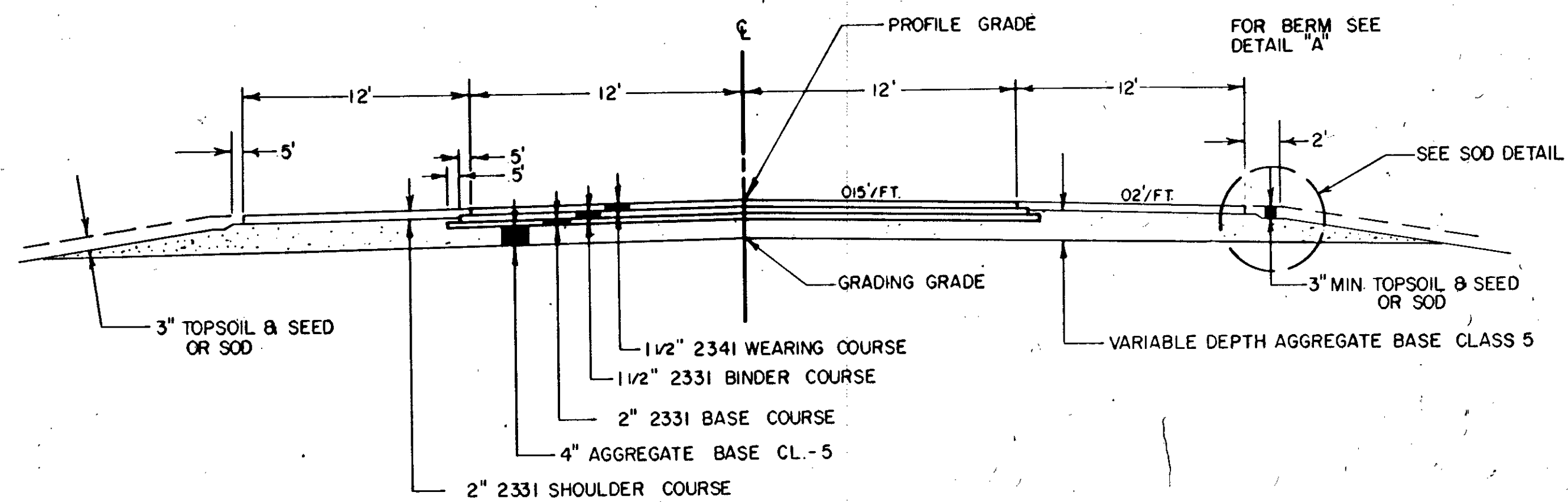
GRADING BERM



MUCK EXCAVATION

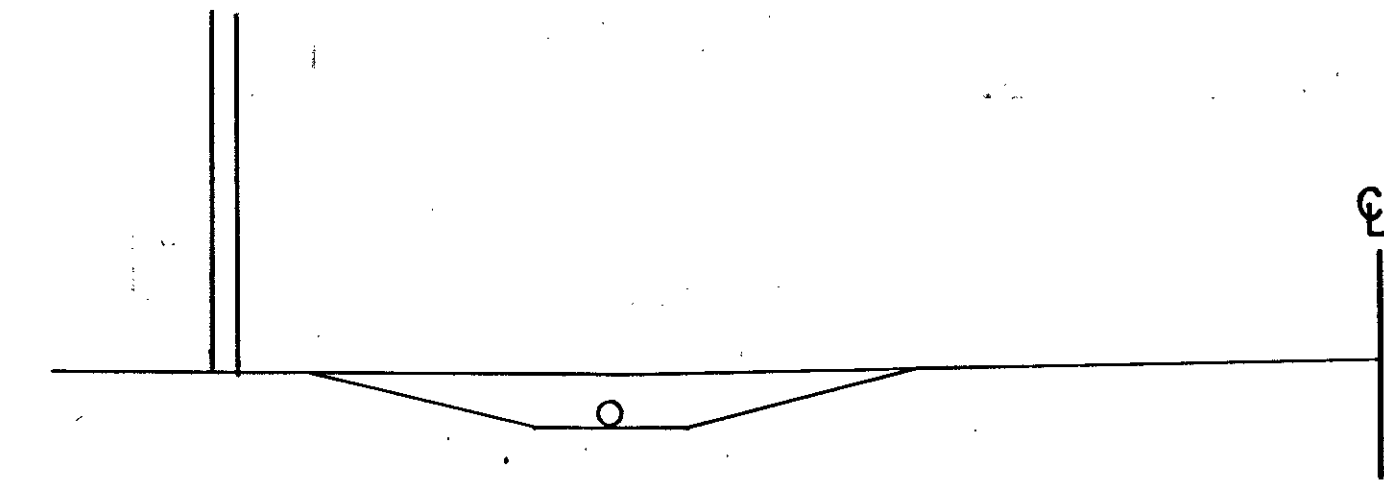


BASE & SURFACING

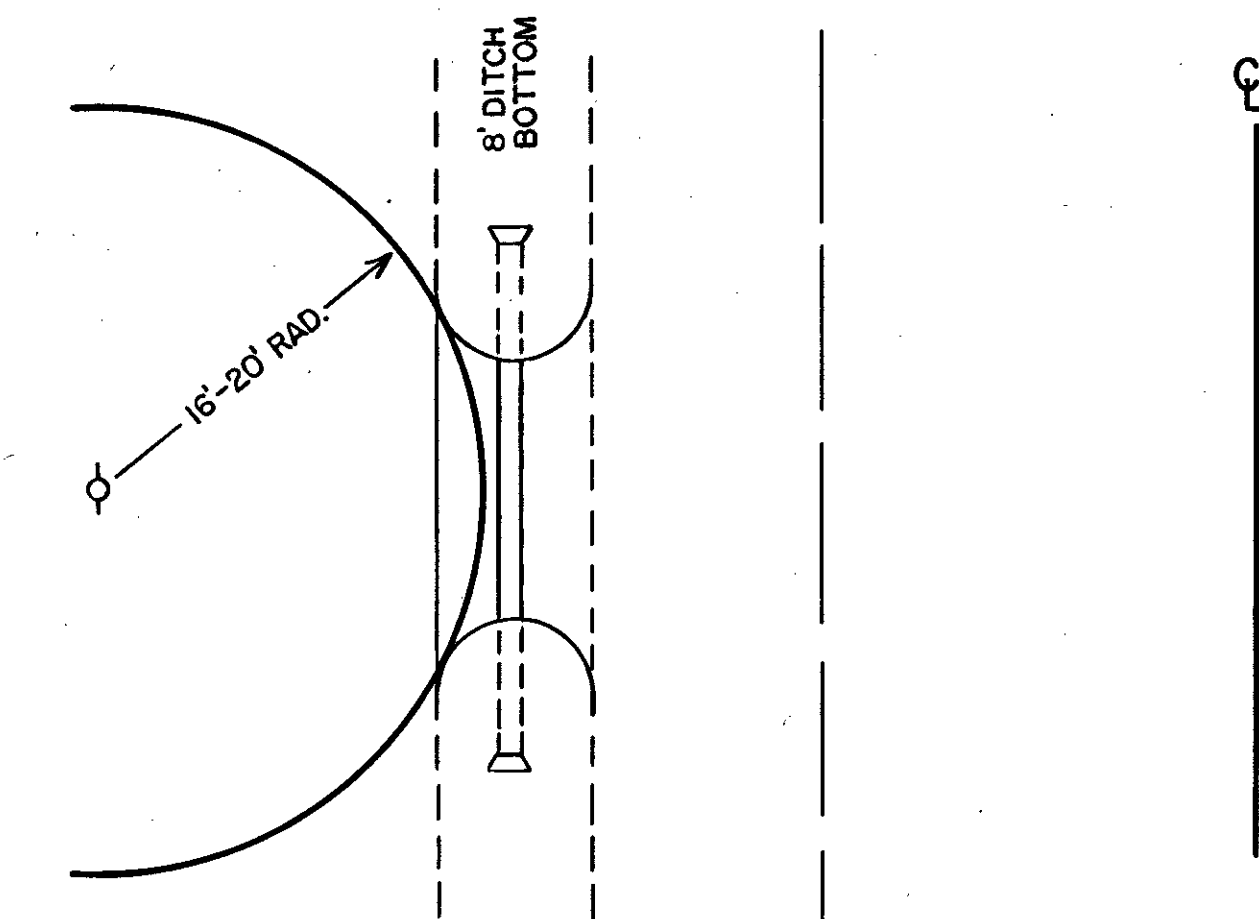


TYPICAL DITCH BLOCK AT POWER POLES

ELEVATION



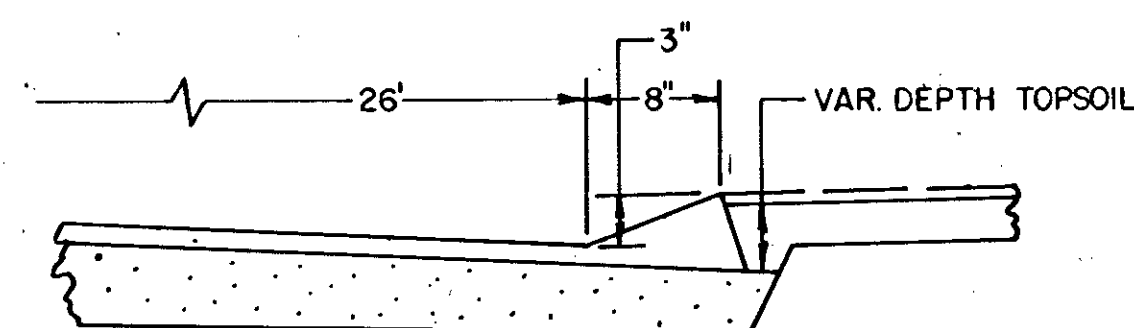
PLAN VIEW



SEE DRAINAGE CHART FOR LOCATIONS.
DITCH BLOCKS TO BE TOPSOILED & SEEDDED (NO CL-5 BASE)

BITUMINOUS LIP

DETAIL "A"



NOTE: CONTRACTOR MAY MODIFY LIP DESIGN UPON APPROVAL OF ENGINEER.

SOD DETAIL

