

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR BY-PASS LANE & SHOULDER CONSTRUCTION

STATE TRUNK HIGHWAY NO. 47

Between 0.2 MI. S. OF CSAH 5 And 0.2 MI. N. OF CSAH 5
 A PT. 528' N & 30' E. OF THE S. 1/4 COR. OF From SEC. 25, T. 32 N., R. 25 W. A PT. 373' S & 257' W OF THE CENTER OF To SEC. 25, T. 32 N., R. 25 W.
City and/or reference to Sections, Township and Range

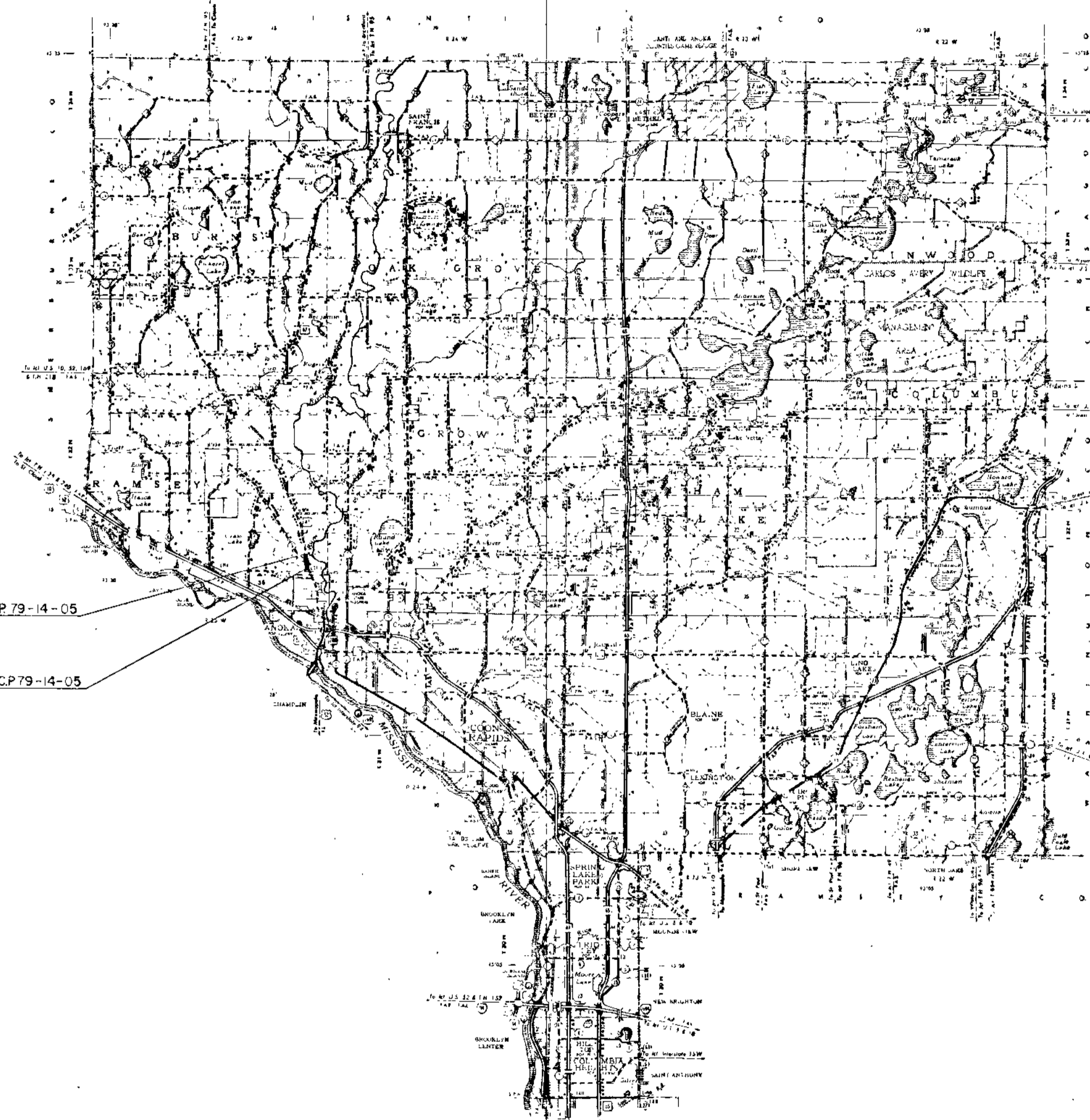
GROSS LENGTH 1,793.00 FEET 0.340 MILES
 BRIDGES LENGTH _____ FEET _____ MILES
 EXCEPTIONS LENGTH _____ FEET _____ MILES
 NET LENGTH 1,793.00 FEET 0.340 MILES

INDEX OF SHEETS

- Sheet No. 1. Title Sheet & Layout Map
- No. 2-3 Est. Quantities & Typical Sec.
- No. 4 Plan & Profile
- No. 5 To 9 Cross Sections

SCALE

INDEX MAP 2 MI.
 PLAN & PROFILE { VERT. 10'
 { HORIZ. 100'
 CROSS SECTIONS 10'



CONVENTIONAL SIGNS

- STATE LINE
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT OF WAY LINE
- PRESENT POINT OF VIEW LINE
- CONTROL OF ACCESS LINE
- PROPERTY LINE (Design Line Line)
- UNPAVED PLAZED PROPERTY
- CORPORATE OR CITY LIMITS
- TRUNK HIGHWAY CENTER LINE
- RAILROAD CENTER LINE
- RAILROAD RIGHT OF WAY LINE
- RIVER OR CREEK
- DRY RUM
- DRAINAGE DITCH
- ELECTRIC POWER LINE
- TELEPHONE OR TELEGRAM LINE
- JOINT TELEPHONE AND POWER
- CONDUIT
- TELEPHONE CABLE ABOVE
- TELEPHONE CABLE UNDERGROUND
- POWER CABLE UNDERGROUND
- GAS MAIN
- CULVERT
- DITCH
- GUARD RAIL
- BARBED WIRE FENCE
- WOODEN ALINE FENCE
- CHAIN LINK FENCE
- RAILROAD SHOW FENCE
- STONE WALL OR FENCE
- MEADOW
- WATER PIPE
- SEWER PIPE
- CRACK TILE
- OPENING
- MARSH
- TIMBER
- SHALLOWS
- BRUSH
- HURDLES
- CATCH BASIN
- MANHOLE
- FINE HYDRANT
- STREET LIGHT
- RAILROAD CROSSING SIGN
- RAILROAD CROSSING SIGN
- ELECTRIC WARNING SIGN
- CROSSING SIGN
- CATTLE GUARD
- OVERPASS (Highway Over)
- UNDERPASS (Highway Under)
- BRIDGE
- BUILDING (One Story Frame)
- F. FRAME C. CONCRETE
- S. STONE T. TILE
- B. BRICK ST. STUCCO
- IRON PIPE ON ROOF
- MONUMENT (STONE, CONCRETE OR METAL)
- WOODEN HUB
- GRAVEL PIT
- SAND PIT
- BURNED PIT
- ROCK QUARRY
- MEANDER CORNER

END PROJECT C.P. 79-14-05
STA 82+75

BEGIN PROJECT C.P. 79-14-05
STA 64+82

RIGHT OF WAY APPROVAL _____ DIRECTOR, RIGHT OF WAY OPERATIONS _____ DATE _____
 RECOMMENDED FOR APPROVAL _____ DISTRICT ENGINEER _____ DATE _____
 RECOMMENDED FOR APPROVAL _____ PLANS ENGINEER _____ DATE _____
 RECOMMENDED FOR APPROVAL _____ DESIGN SERVICES DIRECTOR _____ DATE _____
 RECOMMENDED FOR APPROVAL _____ TRAFFIC ENGINEER _____ DATE _____
 APPROVED _____ DATE _____ DIRECTOR, OFFICE OF ENGINEERING SERVICES

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. Kunt _____ DATE 9-24-80
 COUNTY ENGINEER

ANOKA COUNTY REG NO. 6549

DESIGN DESIGNATION
 ADT (CURRENT YEAR) 7,200 (1978)
 ADT (FUTURE YEAR) _____
 T (HEAVY COMMERCIAL)
9 Ton Design Soil Factor A-3, 50%
 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, 1978, SHALL GOVERN.

Minn. Proj. No. _____ County Proj. No. 79-14-05
 State Proj. No. _____ S. A. P.

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES
③ 0575.511	HAY OR STRAW BALES	EACH	30	
2021.501	MOBILIZATION	LUMP SUM	1	
2101.501	CLEARING	ACRE	0.15	
2101.508	GRUBBING	ACRE	0.15	
2104.501	REMOVE PIPE CULVERT	LIN. FT.	10	
② 2105.501	COMMON EXCAVATION	CU. YD.	3,344 (P)	
① 2211.501	AGGREGATE BASE, CLASS - 5	TON	850	
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	61	
2331.514	BASE COURSE MIXTURE	TON	900	
2331.508	WEARING COURSE MIXTURE	TON	310	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	200	
2501.501	CULVERT EXCAVATION, CLASS - U	CU. YD.	111	
2501.521	28" SPAN C.M. PIPE - ARCH CULVERT	LIN. FT.	118	
2501.525	28" SPAN C.M. PIPE - ARCH APRONS	EACH	4	
2575.501	ROADSIDE SEEDING	ACRE	0.9 (P)	
2575.502	SEED, MIXTURE - 5	POUND	15	
2575.505	SODDING	SQ. YD.	79	
2575.511	MULCH MATERIAL, TYPE - 1	TON	1.8	
2575.519	DISC AND HERBING	ACRE	0.9 (P)	
2575.531	COMMERCIAL FERTILIZER, ANALYSIS 19-12-10	TON	0.23	

① INCLUDES 7 TON FOR ENTRANCES
 ② INCLUDES APPROX. 1,250 C.Y. FOR SUB-CUT
 ③ TO BE USED FOR EROSION CONTROL AS DIRECTED BY THE ENGINEER
 (P) DENOTES PLAN QUANTITY ACCORDING TO SPEC. 1901

BASIS OF PLANNED QUANTITIES

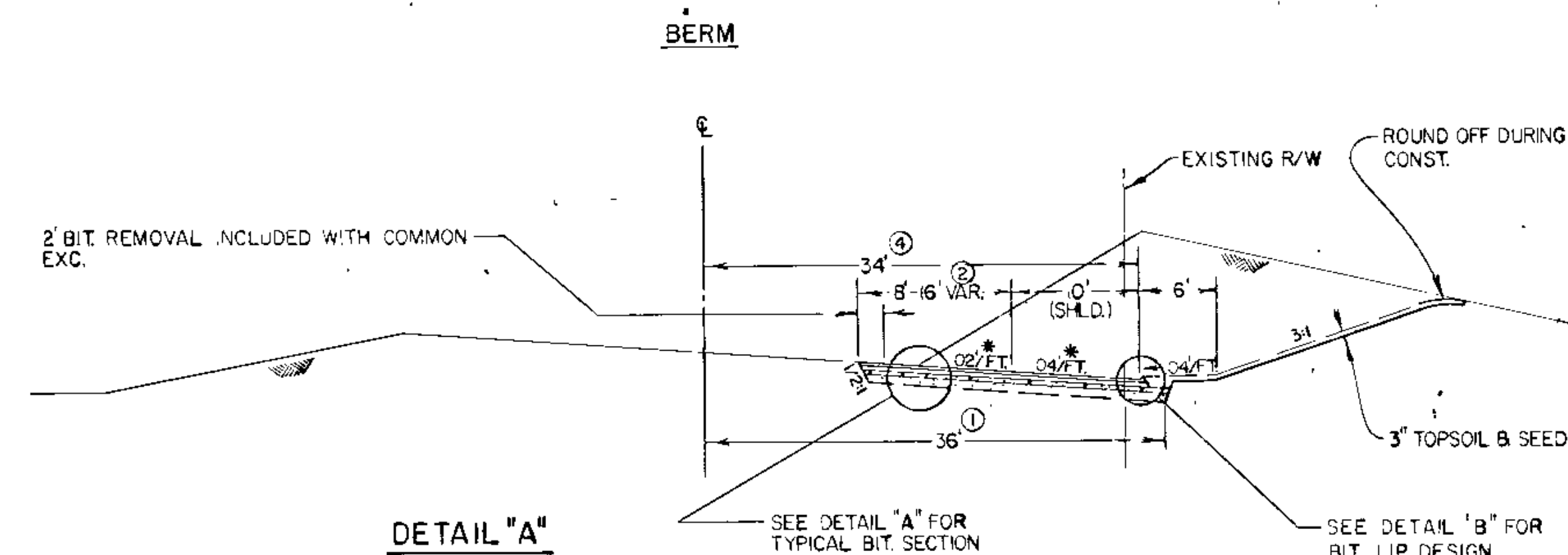
- 2211 AGGREGATE BASE CLASS - 5, 45 LBS. CU. FT. COMPACTED
- 2331 PLANT MIXED BASE COURSE
BITUMINOUS MIXTURE 110 LBS. S.Y. PER INCH THICKNESS
BITUMINOUS MATERIAL FOR MIXTURE 4.5% BY WT.
- 2331 PLANT MIXED WEARING COURSE
BITUMINOUS MIXTURE 110 LBS. S.Y. PER INCH THICKNESS
BITUMINOUS MATERIAL FOR MIXTURE 6.5% BY WT.
- 2357 BITUMINOUS MATERIAL FOR TACK COAT 0.05 GAL. PER S.Y.
- 2575 ROADSIDE SEEDING BASED ON HORIZONTAL MEASUREMENTS PLUS 10%

PLATE NO.	DESCRIPTION
0003 A	SPECIFICATION REFERENCE TO STANDARD PLATES
3040 F	CORRUGATED METAL PIPE CULVERT
3122 I	METAL APRON FOR C.M. PIPE - ARCH CULVERT
8000 H	STANDARD BARRICADES
8003 B	BREAKAWAY SIGN SUPPORT (PLASTIC)
9000 B	APPROACHES AND ENTRANCES
9102 C	SODDING AT PIPE CULVERT ENDS

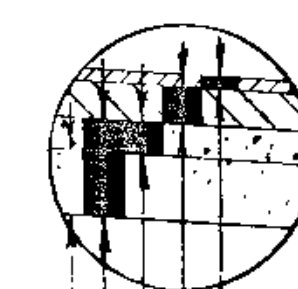
SPECIAL DETAILS

THE CONTRACTOR SHALL REMOVE SUFFICIENT TOPSOIL MATERIAL WITHIN THE EXCAVATION AREAS AND AREAS ON WHICH SUBGRADE WILL BE PLACED, STOCKPILE IF NECESSARY, AND USE IT FOR TOPSOIL COVERING ON THE NEW SLOPES AND DITCH-BOTTOMS. THIS WILL REQUIRE APPROXIMATELY 385 CU. YDS. TO PROVIDE A MINIMUM COVER OF 3". THIS WORK SHALL BE CONSIDERED AS INCIDENTAL TO COMMON EXCAVATION AND NO ADDITIONAL COMPENSATION SHALL BE MADE THEREFORE.
 APPROXIMATELY 1,250 CU. YDS OF EXCESS COMMON EXCAVATION MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR OFF THE RIGHT OF WAY

CLEARING AND GRUBBING				
STATION (TO STATION)	LOC.	CLEARING TREE	GRUBBING TREE	ACRE
78+95 - 79+77	38'-58" RT.	.05		.05
80+54 - 82+00	30'-56" RT.	.0		.10
TOTAL =		.05		.15



DETAIL "A"

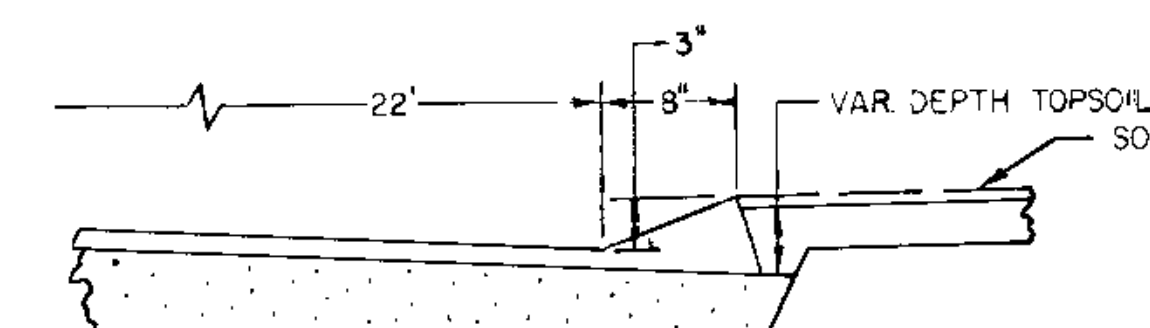


1/2" 2331 WEARING COURSE
 4 1/2" 2331 BASE COURSE
 4" AGGREGATE BASE CL-5
 10' SUBCUT FOR COMPACTION & UNIFORMITY OF SOILS
 BACKFILL WITH SUITABLE COMMON EXCAVATION MATERIAL

LOCATION
 STA 65+00 - STA. 66+00 RT.
 STA 71+00 - STA. 78+00 RT.

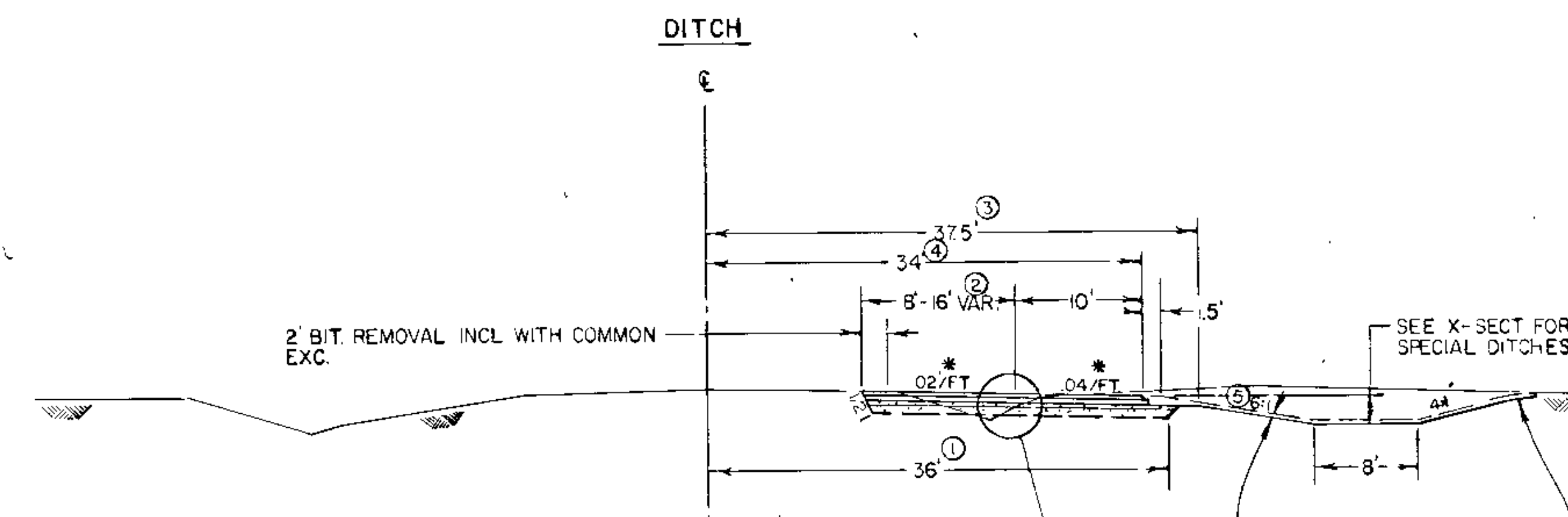
* SLOPE APPLIES IN NORMAL GRADING SECTION ONLY. SLOPE IN SUPERELEVATION SHOULD MATCH THE SLOPE OF THE EXISTING ROADWAY.

DETAIL "B"

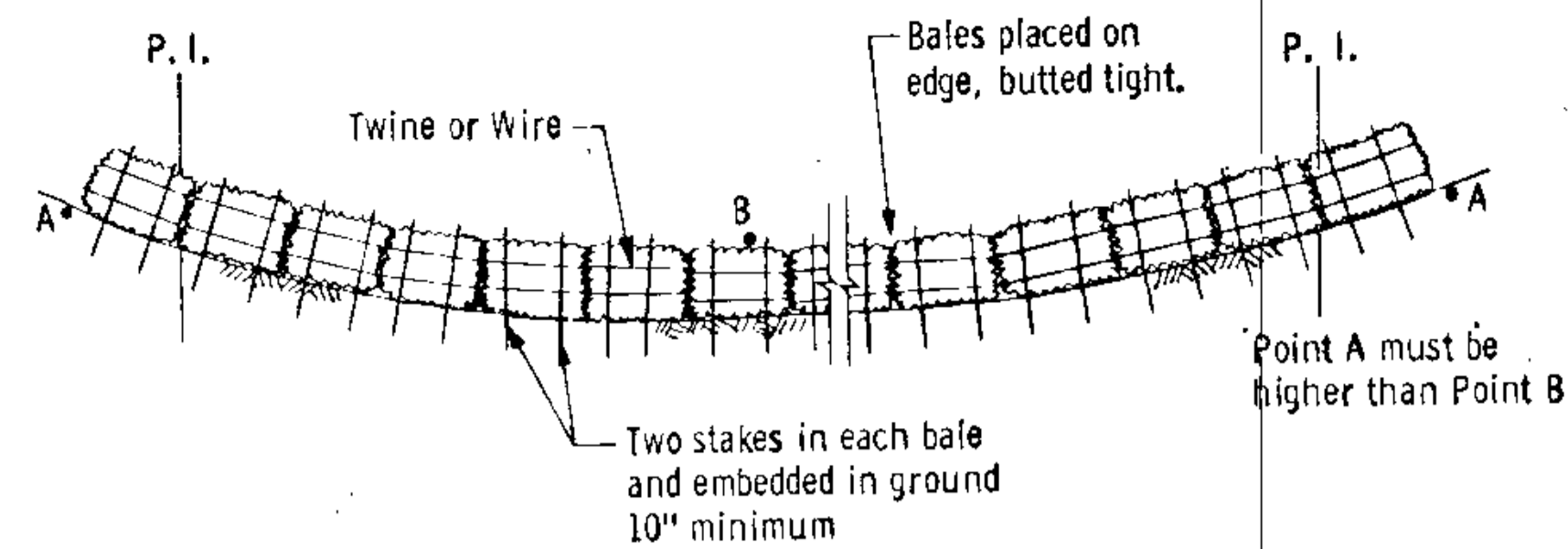


NOTE: CONTRACTOR MAY MODIFY LIP DESIGN UPON APPROVAL OF ENGINEER

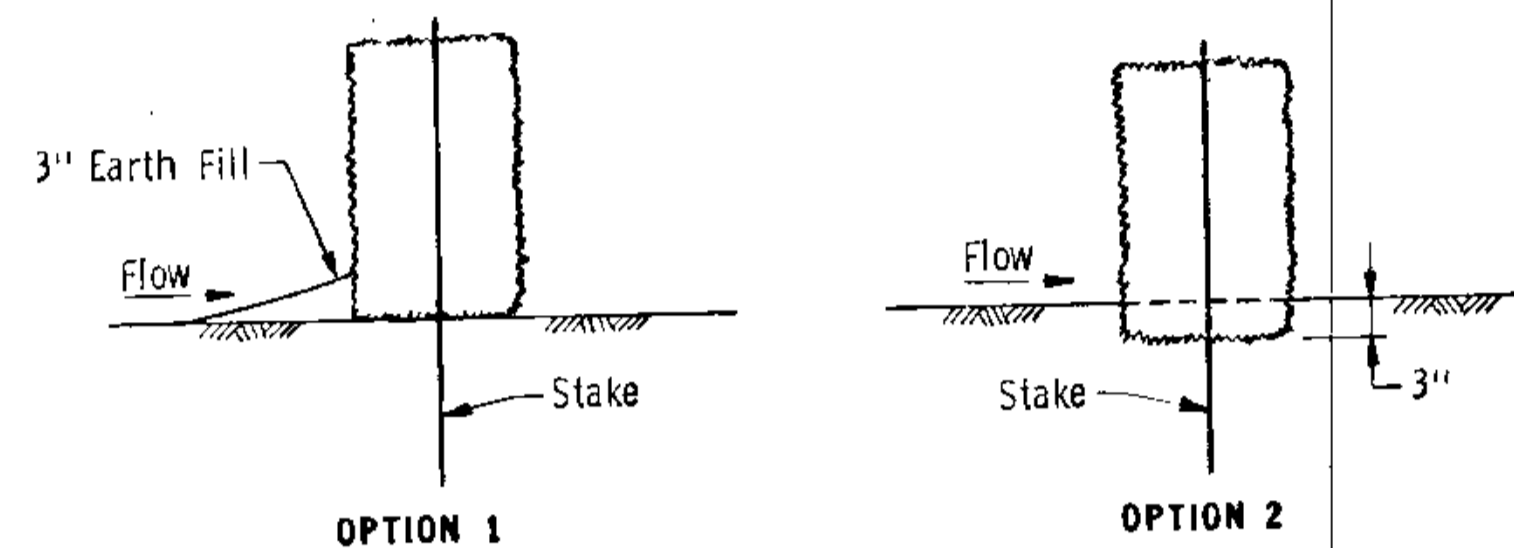
TYPICAL SECTION



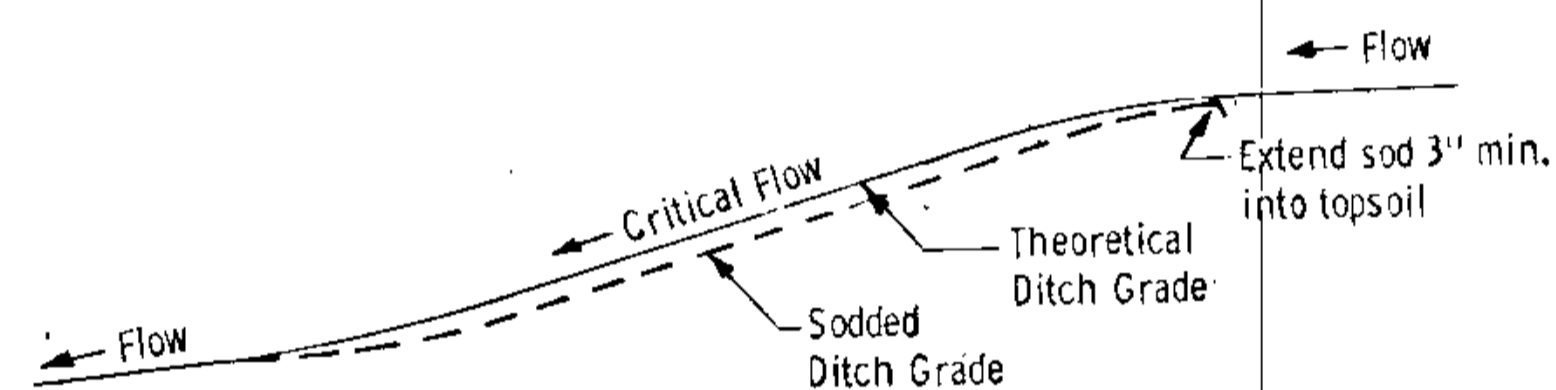
- ① STA 70+82 TO STA 76+75
TAPERS FROM 24'-36" STA 64+82 - STA 70+82
TAPERS FROM 36'-24" STA 76+75 - STA 82+75
- ② SEE X-SECTIONS FOR EXACT WIDTH
- ③ TAPERS FROM 25.5' - 37.5' STA. 64+82 - STA. 70+82
TAPERS FROM 37.5' - 25.5' STA 76+75 - STA 82+75
- ④ TAPERS FROM 22' - 34' STA. 64+82 - STA. 70+82
TAPERS FROM 34' - 22' STA. 76+75 - STA. 82+75
- ⑤ SEE X-SECTIONS FOR MODIFIED SLOPES.



BALE HAY OR STRAW DITCH CHECK

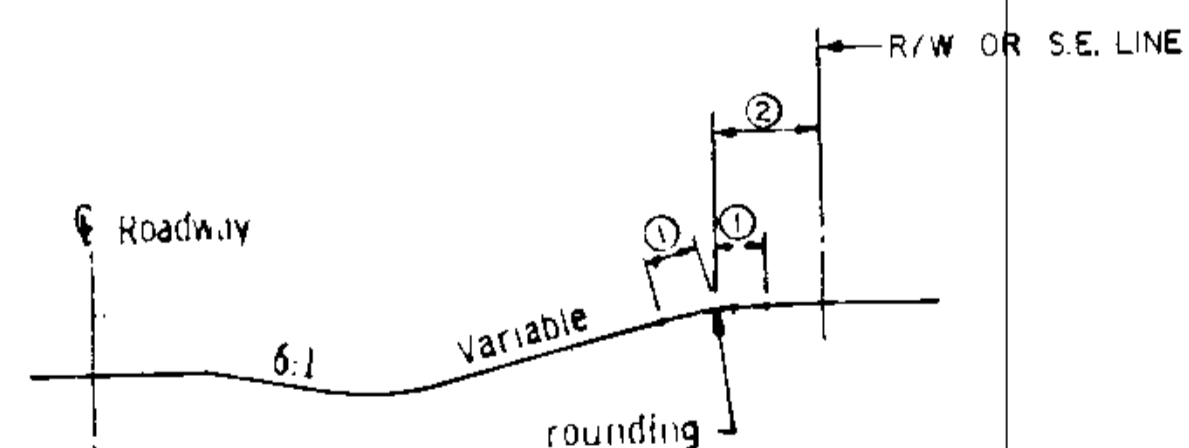


DITCH CHECK SECTIONS



DITCH PROFILE

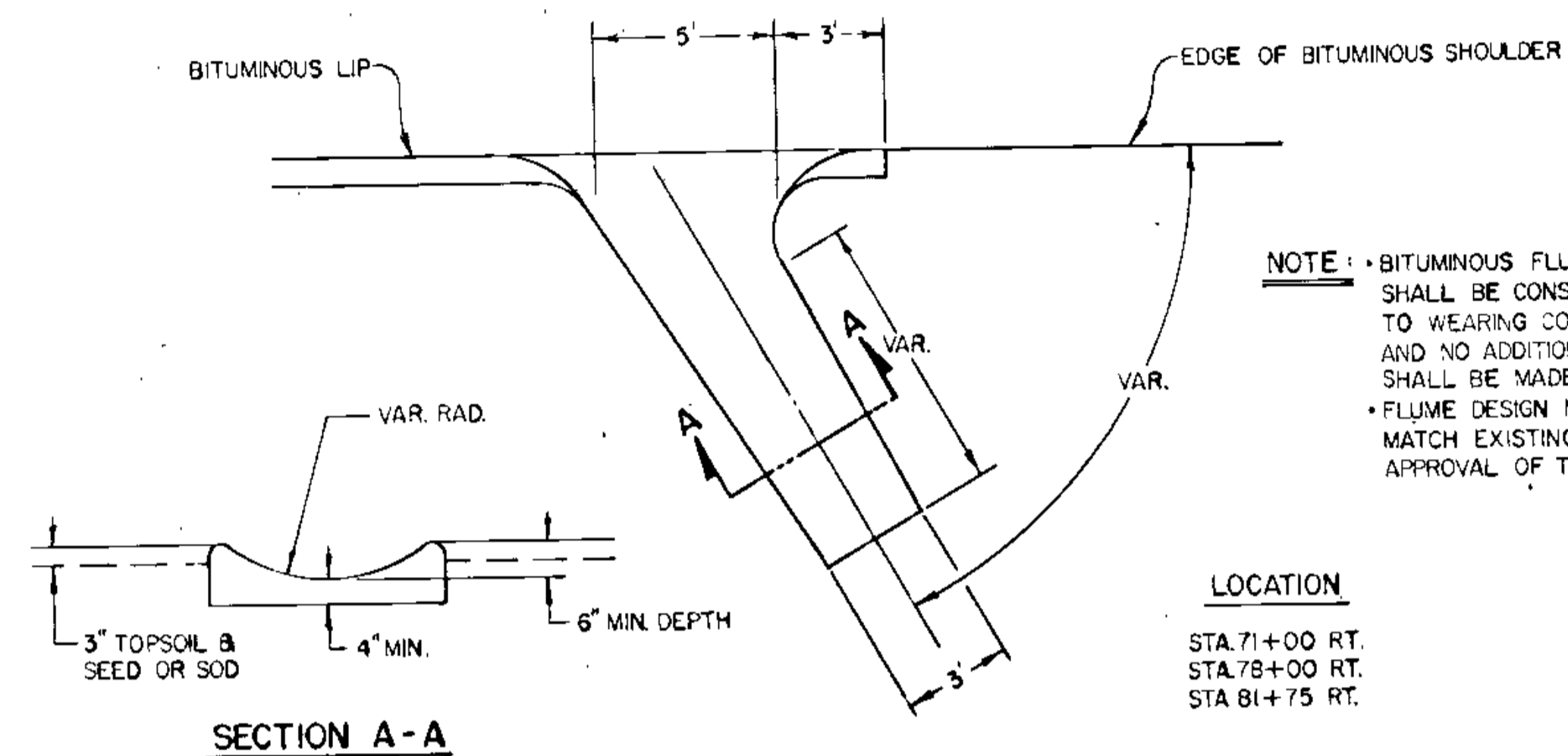
SODDED DITCH DETAILS

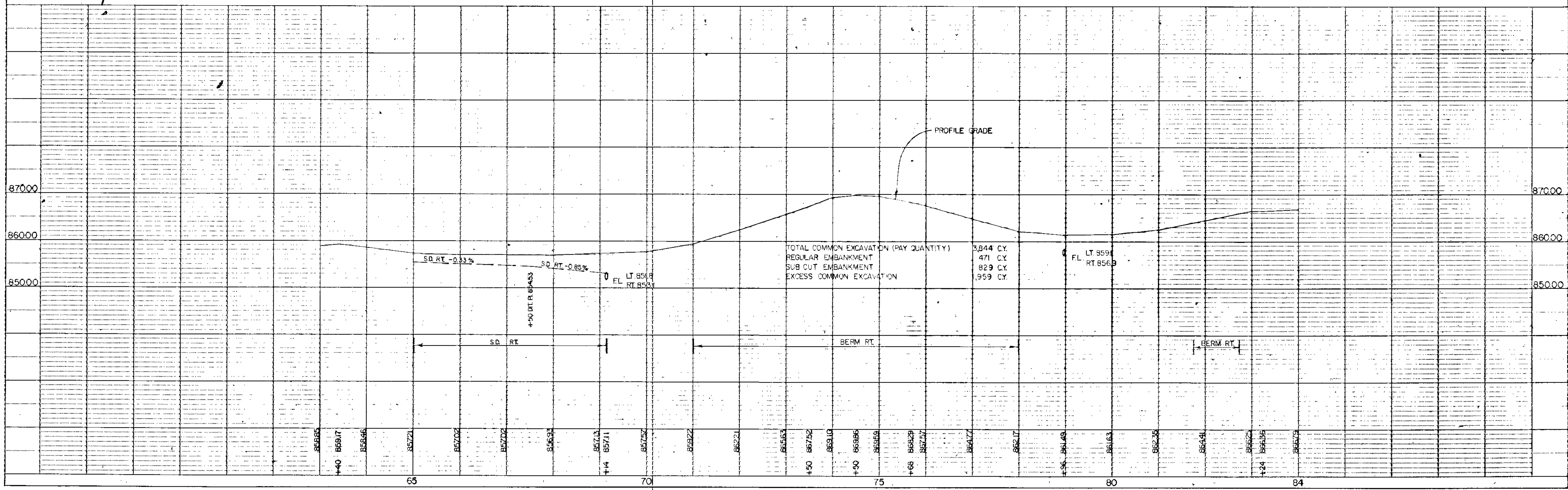
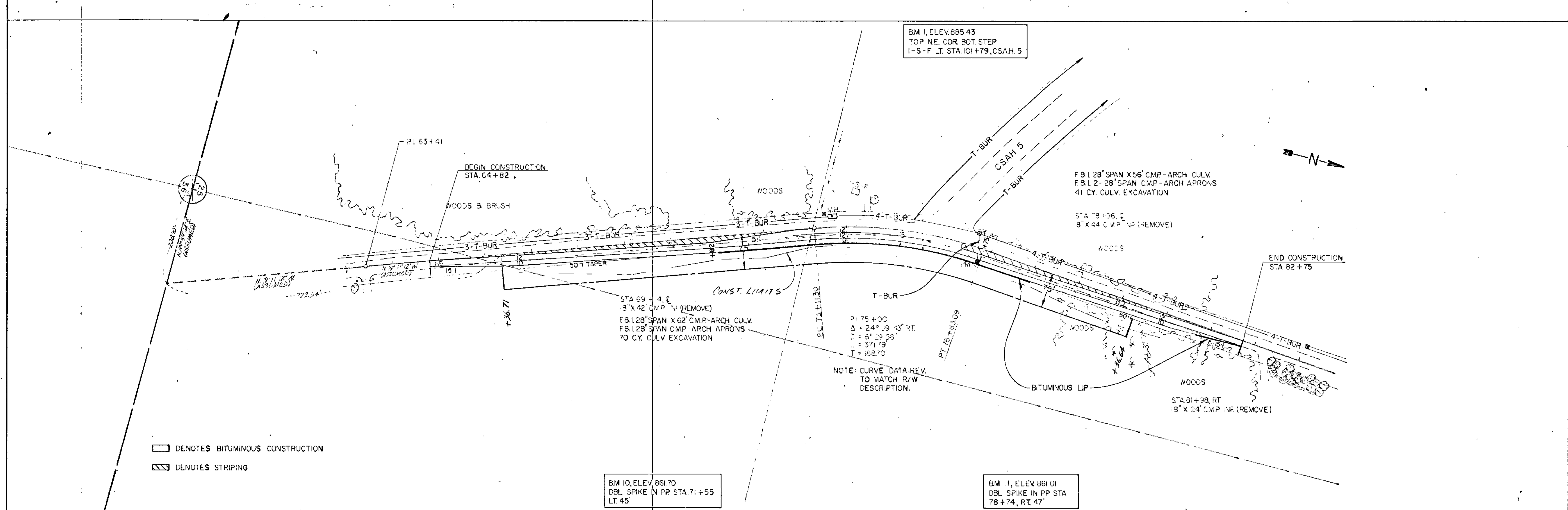


ROUNDING BACK SLOPES

- ① VAR. (10' DESIRABLE)
- ② VAR. (20' DESIRABLE)

TYPICAL BITUMINOUS FLUME





EXCAVATION EMBANKMENT

Excavation Embankment

67+00 857.02 152 76

66+37 857.02 91 40

66+00 857.02

65+00 857.21 19 15

64+00 858.46

63+40 859.17 SAND ENT

63+00 858.88

SD 854.69
SD 854.90

SD 855.02

TOP BEGIN CONST.

NOTE: EMBANKMENT QUANTITIES INCLUDE QUANTITIES FOR SUB-CUT FILL

STA. 63+00 - STA. 67+00

VERTICAL CURVE SECTION INT. 5/79

50

50

EXCAVATION EMBANKMENT

Exc. Below Cu. Cu. Sub. Gravel

217 67

72+00 852.21

238 62

71+00 859.22

253 67

70+00 857.57

276 83

15' DITCH

69+14 857.11 X-ING 19' x 14.2' CMP (IN REMOVE)

FL. 851.8

6' WIDE

F.B.C. 28' x 62' SPAN CMP ARCH CULV.
F.B.C. 2' - 28' SPAN CMP ARCH APRONS
70' C.Y. CULV. EXC.

S.O. 85313

FL. 853.3

38 17

69+00 857.13

S.O. 85325

219 107

68+00 856.93

S.O. 85411

NOTE: EMBANKMENT QUANTITIES INCLUDE QUANTITIES FOR SUB-CUT FILL.

STA. 68+00 THRU STA. 72+00

EXCAVATION EMBANKMENT

Fed. Proj. No.

Excavation	Emb.	Subcut
170	19	
430	44	
332	32	
190	31	
76	34	
49	38	

75+68 86829 E. CSAH 5 (ON RANGE)

75+00 86959

74+50 86986

74+00 86910

73+50 86752

73+00 86563

VAR.

VAR.

190

76

49

NOTE: EMBANKMENT QUANTITIES INCLUDE QUANTITIES FOR SUBCUT FILL.

STA. 73+00 THRU STA. 75+68

State Proj. No.

C.P. 79-14-05

Sheet No. 7 of 9 Sheets

ILLUSTRATION FOR CROSS SECTION 1911 7/76

EXCAVATION EMBANKMENT

Excavation Embankment

104 64

81+00 862.35

3.54 BEB Woods

109 104

80+00 861.63

2.77 END Woods

79 142

78+96 861.49 @ 1-ING 18" x 44" CMP IN (REMOVE)

EL 8591

6 WIDE

FS 1.28' x 36' SPAN C.M.P. - ARCH CULVERT
FS 1.2 - 28' SPAN C.M.P. - ARCH APRONS
41 CUYDS CULVERT EXCAVATION

EL 8569

3.96 BEB Woods

100 103

78+00 862.17

202 52

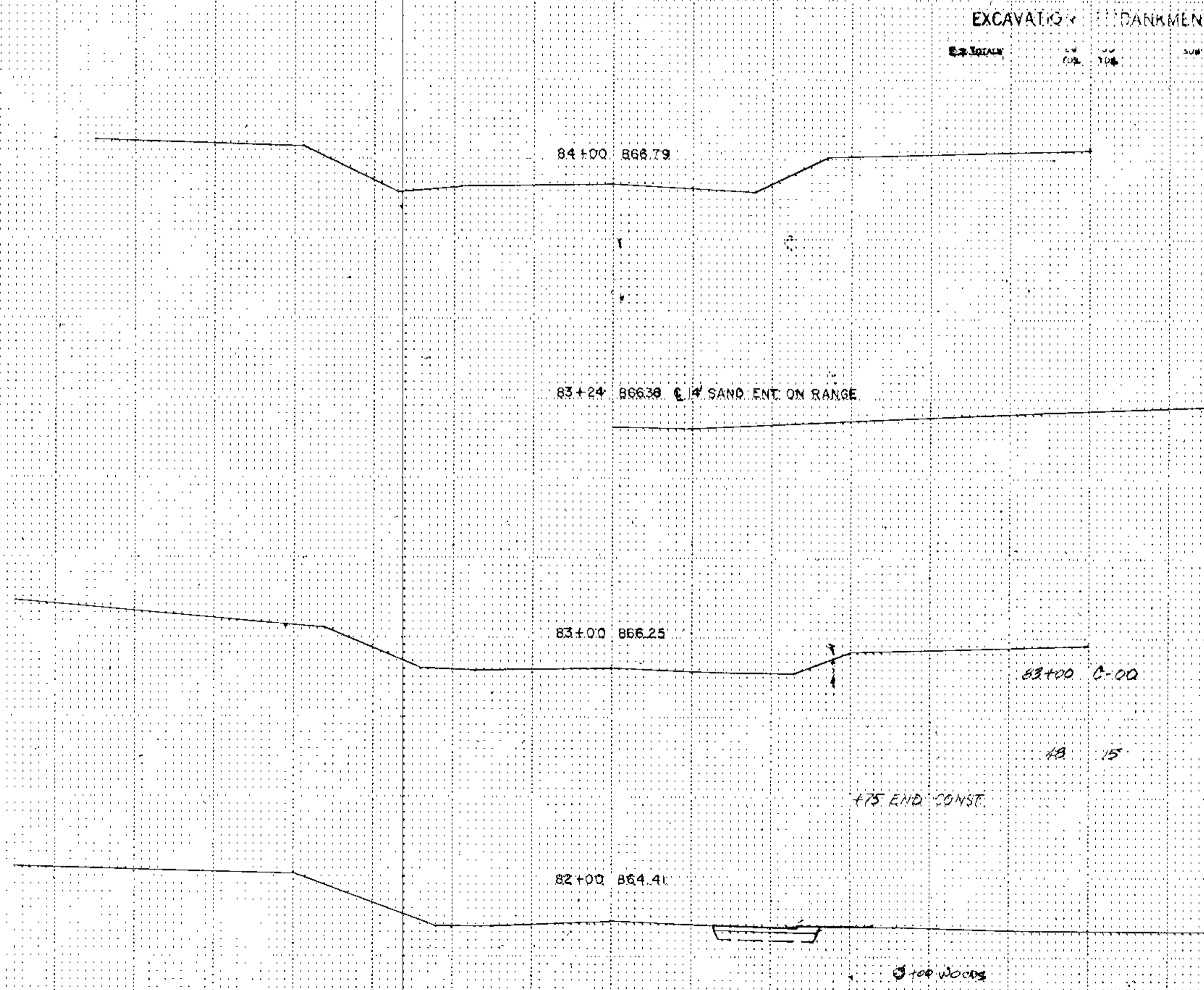
77+00 864.7

370 56

76+00 867.57

NOTE: EMBANKMENT QUANTITIES INCLUDE QUANTITIES FOR SUB-CUT FILL

STA. 76+00 THRU STA. 81+00



NOTE: EMBANKMENT QUANTITIES INCLUDE QUANTITIES FOR SUB-CUT FILL

STA. 82+00 THRU STA. 84+00

125074 101 CROSS SECTION 101 1/76