

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR STORM SEWER, CONCRETE CURB & GUTTER,
& BITUMINOUS SURFACING
County State Aid Highway No. 18

Between A POINT 140' N. of C.S.A.H. 11 And A.P.T. 1314' S.&W. of STATE T.H. 242
From A PT. 140.14' N. of the S. 1/4 COR. of SEC. 9, T.31N., R.24W. To A PT. 1314.17' S. & 15' W. of the N. 1/4 COR. of SEC. 9, T.31N., R.24W.
Give proper reference to Sections, Township and Range

GROSS LENGTH 3970.0 FEET 0.75 MILES
BRIDGES-LENGTH --- FEET --- MILES
EXCEPTIONS-LENGTH --- FEET --- MILES
NET LENGTH 3970.0 FEET 0.75 MILES

INDEX OF SHEETS

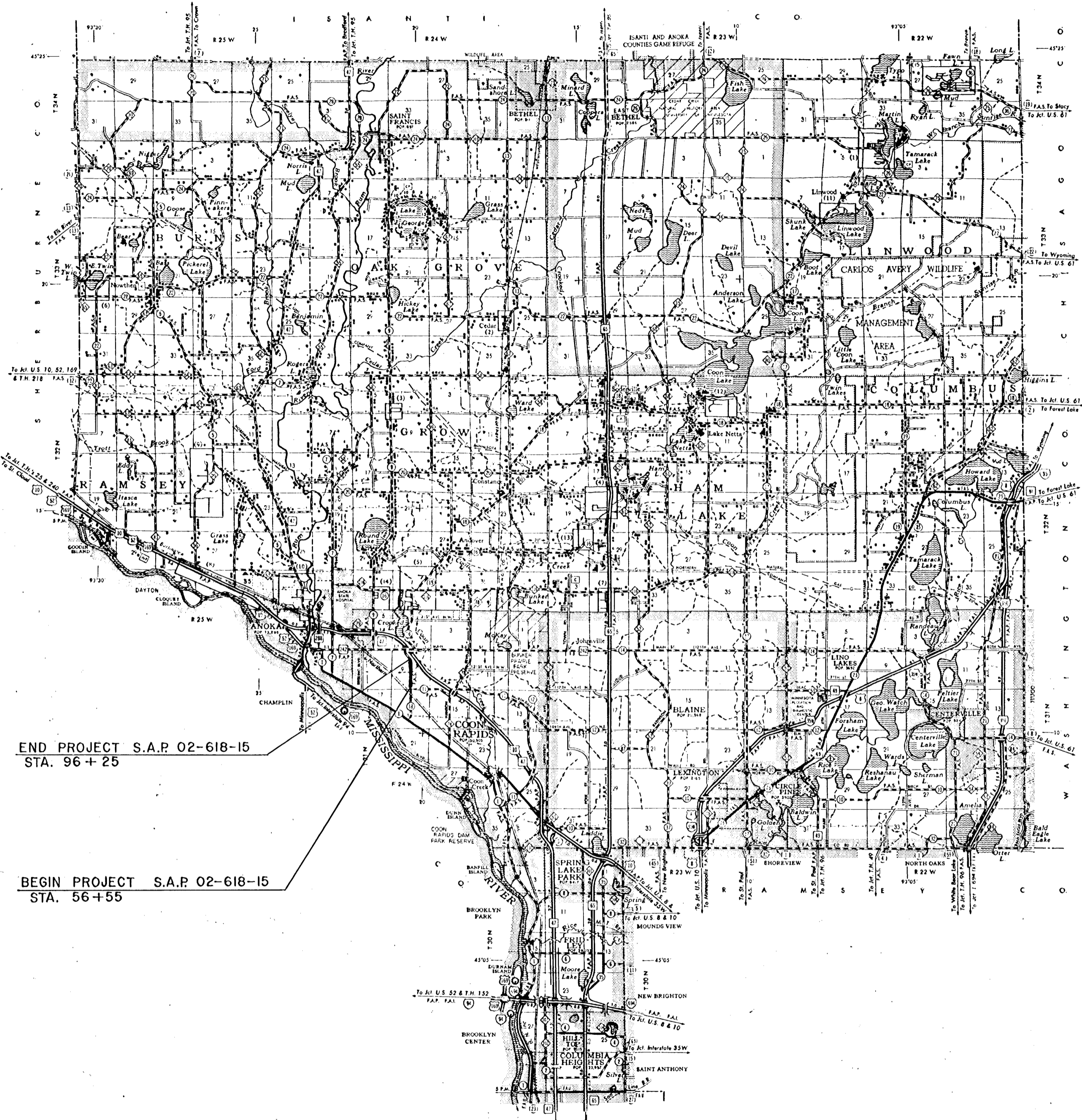
- Sheet No. 1. Title Sheet & Layout Map
- No. 2-4. Est. Quantities B Typical Sec.
- No. 5. Drainage Chart
- No. 6-8. Plan B Profile
- No. 9-17. Cross Sections

SCALE

INDEX MAP 2 MI.
PLAN & PROFILE { VERT. 5'
 { HORIZ. 50'
CROSS SECTIONS 10'

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 (Except Land Line)
- VACATED PLATTED PROPERTY
- CORPORATE OR CITY LIMITS
- TRUNK HIGHWAY CENTER LINE
- RESTRAINING 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
- COLLETER
- DROP PILE
- GUARD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- RAILROAD SHOW FENCE
- *STONE WALL OR FENCE
- WATER PIPE
- SEWER PIPE
- DRAIN TILE
- SPRINGS
- MARSH
- TIMBER
- ORCHARD
- BRUSH
- 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)
- F-FRAME
- C-CONCRETE
- S-STONE
- T-TILE
- B-BRICK
- ST-STUCCO
- IRON PIPE OR ROD
- MONUMENT (STONE, CONCRETE, OR METAL)
- WOODEN PUS
- GRAVEL PIT
- SAND PIT
- BORROW PIT
- ROCK QUARRY
- MEANDER CORNER



END PROJECT S.A.P. 02-618-15
STA. 96+25

BEGIN PROJECT S.A.P. 02-618-15
STA. 56+55

DESIGN DESIGNATION

ADT (CURRENT YEAR) 6988
ADT (FUTURE YEAR) 13,975
T (HEAVY COMMERCIAL) 300-600
9 Ton Design Soil Factor 50%
Design Speed 40 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.

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. Reed
COUNTY ENGINEER DATE 6/30/82

ANOKA COUNTY REG. NO. 6549

RECOMMENDED FOR APPROVAL *C. W. ...* 7-16, 1982
DISTRICT STATE AID ENGINEER

RECOMMENDED FOR APPROVAL *Delbert D. ...* 7-8, 1982

APPROVED *[Signature]* 9-14, 1982
STATE AID ENGINEER

Minn. Proj. No. _____ County Proj. No. _____
State Proj. No. _____ S.A.P. 02-618-15

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	
2101.502	CLEARING	TREE	7	
2101.507	GRUBBING	TREE	1	
2104.501	REMOVE CURB AND GUTTER	LN. FT.	185	
2104.501	REMOVE SEWER PIPE	LN. FT.	82	
2104.503	REMOVE CONCRETE WALK	SQ. FT.	290	
2104.505	REMOVE BITUMINOUS WALK	SQ. YD.	354	
2104.505	REMOVE BITUMINOUS PAVEMENT	SQ. YD.	2309	
2104.505	REMOVE CONCRETE PAVEMENT	SQ. YD.	14	
2104.509	REMOVE MANHOLES AND CATCH BASINS	EACH	6	
2104.521	SALVAGE FENCE	LN. FT.	87	
2104.523	SALVAGE C.B. OR M.H. CASTINGS	EACH	9	
2104.523	SALVAGE 36" R.C.P. APRONS	EACH	2	
0557.604	INSTALL FENCE	LN. FT.	80	
2105.501	COMMON EXCAVATION	CU. YD.	917(P)	
2105.523	COMMON BORROW (L.V.)	CU. YD.	157	
2105.525	TOPSOIL BORROW (L.V.)	CU. YD.	456	
2130.501	WATER	M-GAL.	50	
2111.501	AGGREGATE BASE, CLASS 5	TON	85	
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	192	
2331.510	BINDER COURSE MIXTURE	TON	2520	
2331.512	LEVELING COURSE MIXTURE	TON	665	
2331.514	BASE COURSE MIXTURE	TON	1090	
0331.508	BITUMINOUS MIXTURE FOR DRIVEWAYS	SQ. YD.	479	
2331.531	TEMPORARY LANE MARKING	ROAD STA.	80	
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	114	
2341.508	WEARING COURSE MIXTURE	TON	1900	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	3430	
2501.515	15" R.C. PIPE APRONS	EACH	4	
2501.573	INSTALL 36" R.C. PIPE APRONS	EACH	1	
2503.511	12" R.C. PIPE SEWER CL-2	LN. FT.	161	
2503.511	15" R.C. PIPE SEWER CL-2	LN. FT.	153	
2503.511	18" R.C. PIPE SEWER CL-2	LN. FT.	23	
2503.511	36" R.C. PIPE SEWER CL-2	LN. FT.	16	
2503.511	4" C.I. PIPE SEWER EXTRA HEAVY	LN. FT.	160	
0411.603	STONE RETAINING WALL	SQ. FT.	379	
0504.677	ADJUST CURB STOP BOXES	EACH	2	
0504.685	ADJUST WATER GATE HOUSING	HOUSING	5	
2506.506	CONSTRUCT MANHOLES, DESIGN A OR F	LN. FT.	12.1	
2506.506	CONSTRUCT MANHOLES, DESIGN C OR G	LN. FT.	3.7	
2506.507	CONSTRUCT CATCH BASINS, DESIGN A OR F	LN. FT.	10.7	
2506.507	CONSTRUCT CATCH BASINS, DESIGN C, G, OR H	LN. FT.	44.7	
2506.509	CONSTRUCT CATCH BASINS, DESIGN 54"-4020	EACH	1	
2506.511	RECONSTRUCT MANHOLES	LN. FT.	6.2	
2506.516	CASTING ASSEMBLES	EACH	19	
2506.521	INSTALL CASTINGS	EACH	3	
2506.522	ADJUST FRAME AND RING CASTINGS	EACH	4	
2521.501	4" CONCRETE WALK	SQ. FT.	5332	
2521.501	6" CONCRETE WALK	SQ. FT.	190	
2521.511	2" BITUMINOUS WALK	SQ. FT.	200	
2531.501	CONCRETE CURB AND GUTTER, DESIGN B-618	LN. FT.	7545	
2531.501	CONCRETE GUTTER	LN. FT.	200	
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	SQ. YD.	615.6	
2535.501	BITUMINOUS CURB	LN. FT.	70	
2575.501	ROADSIDE SEEDING	ACRE	0.70	
2575.502	SEED MIXTURE NO. 6	POUND	53	
2575.505	SODDING	SQ. YD.	8164	
2575.511	MULCH MATERIAL, TYPE 1	TON	1.40	
2575.519	DISC ANCHORING	ACRE	0.70	
2575.531	COMMERCIAL FERTILIZER, ANALYZE 10-10-10	TON	0.60	

- ① INCLUDES BITUMINOUS PAVEMENT IN EXCAVATION AREAS FOR CURB AND GUTTER CONSTRUCTION
 ② FOR DUST CONTROL
 ③ BASE FOR BITUMINOUS DRIVEWAY CONSTRUCTION
 ④ INCLUDES 135 TON FOR STREET APPROACHES
 ⑤ PAYMENT BY THE SQ. YD. INCLUDES BITUMINOUS MATERIAL FOR MIXTURE
 ⑥ INCLUDES 100 TON FOR STREET APPROACHES

STANDARD PLATES

PLATE NO.	DESCRIPTION
0003 A	SPECIFICATION REFERENCE TO STANDARD PLATES
3000 I	REINFORCED CONCRETE PIPES
3006 C	GASKET JOINT FOR R.C. PIPE
3100 F.	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
4000 H	MANHOLE OR CATCH BASIN
4002 D	MANHOLE OR CATCH BASIN
4005 K	MANHOLE OR CATCH BASIN
4006 K	MANHOLE OR CATCH BASIN
4011 D	PRECAST CONCRETE BASE
4020 B,C	MANHOLE OR CATCH BASIN
4101 C	RING CASTING FOR MANHOLE OF CATCH BASIN
4110 D	COVER CASTING FOR MANHOLE
4126 E	CATCH BASIN FRAME CASTING
4149 C	GRATE CASTING FOR CATCH BASIN
4180 G	MANHOLE OR CATCH BASIN STEP
7035 J	CONCRETE WALK & CURB RETURNS AT ENTRANCES
7036 C	PEDESTRIAN CURB RAMP
7065 C	BITUMINOUS CURB
7100 E	CONCRETE CURB & GUTTER
7110 E	CURB & GUTTER CONSTRUCTION AT CATCH BASIN
7111 E	INSTALLATION OF CATCH BASIN CASTINGS
8000 H	STANDARD BARRICADES
9102 C	SODDING AT PIPE CULVERT ENDS

BASIS OF PLANNED QUANTITIES

- 2211 AGGREGATE BASE, CLASS 5
 COMPACTED DENSITY 145 LBS./CU. FT.
 2331 BITUMINOUS BASE COURSE
 BIT. MIXTURE 110 LBS./SQ. YD. INCH OF DEPTH
 BITUMINOUS MATERIAL 4.5% OF MIXTURE BY WEIGHT
 2331 BITUMINOUS BINDER AND LEVELING COURSE
 BIT. MIXTURE 110 LBS./SQ. YD. INCH OF DEPTH
 BITUMINOUS MATERIAL 4.5% OF MIXTURE BY WEIGHT
 2341 BITUMINOUS WEARING COURSE
 BIT. MIXTURE 110 LBS./SQ. YD. INCH OF DEPTH
 BITUMINOUS MATERIAL 6.0% OF MIXTURE BY WEIGHT
 2575 MULCH MATERIAL, TYPE 1
 2 TONS/ACRE
 2575 SEED MIXTURE #6
 75 LBS/ACRE
 2575 COMMERCIAL FERTILIZER ANALYSIS 10-10-10
 500 LBS/ACRE

DRIVEWAY CONSTRUCTION

NOTE: PAVE ALL DRIVEWAYS TO PROPERTY LINE, SIDEWALK OR MATCH EXISTING PAVEMENT

STATION	ADDRESS	REMARKS	REMOVE		6" CONC. DRIVEWAY PAVEMENT				BITUMINOUS PAVEMENT	
			CONCRETE	BITUMINOUS	APRON	DRIVEWAY	DRIVEWAY	DRIVEWAY	DRIVEWAY	
			S.Y.	S.Y.	WIDTH	SQ. YDS.	WIDTH	SQ. YDS.	WIDTH	SQ. YDS.
56+70 RT.	11709	REMOVE BIT. & PAVE TO WALK	8.9	30'	15.0				30'	85
57+39 RT.	11711	REMOVE BIT. & PAVE TO 35'	22	16'35"	8-3'88"				16'35"	-
58+26 RT.	11725	REMOVE BIT. & PAVE TO WALK	9	12' MIN	7.0		10' ②	26	-	-
59+04 RT.	11733	REMOVE BIT. & PAVE TO WALK	10.7	14'	7.9		14' ②	35.36	-	-
59+86 RT.	11741	REMOVE BIT. & PAVE TO WALK	12.9	12'	7.0				12' ③	9
60+60 RT.	11749	REMOVE BIT. & PAVE TO WALK	9.7	12'	7.0		10' ②	24	-	-
61+27 RT.	11757	REMOVE BIT. & PAVE TO WALK	10.7	12'	7.0		10' ②	24	-	-
62+13 RT.	11801	REMOVE BIT. & PAVE TO WALK	12	12'	7.0		11' ②	26	-	-
63+25 RT.	11809	REMOVE BIT. & PAVE TO WALK	8.10	20'	10.6		20' ②	46.45	-	-
63+60 RT.	11817	REMOVE BIT. & PAVE TO WALK	9.42	22'	11.4		22' ②	58.99	-	-
63+67 LT.	2800 118TH. LA.	PAVE TO PROP. LINE	-	20'	10.6		20' ②	46.45	-	-
64+33 RT.	11825	REMOVE BIT. & PAVE TO WALK	10.8	12'	7.0		9' ②	20	-	-
65+08 RT.	11833	PAVE TO WALK	-	16'	8.8		16' ②	36	-	-
66+33 RT.	11841	PAVE TO WALK	-	12'	7.0				-	-
66+53 LT.	2801 118TH. LA.	REMOVE BIT. & PAVE W/ CONC. TO P.L.	33	30' ③	15.0		30' ③	18	12' ③	-23.27
67+47 LT.	2800 119TH. LA.	REMOVE & REPLACE BIT. TO 33'	20	24'38"	8-7'23"				18' ③	17.41
67+91 RT.	11901	REMOVE BIT. & PAVE TO WALK	16.18	18'	9.7				18' ③	23.22
74+81 RT.	-	REMOVE BIT. & PAVE TO WALK	89.70	40'35"	17-2'17"				40'35"	86.30
79+00 RT.	12061	REMOVE BIT. & PAVE WITH CONCRETE	11.7	12'	7.0		8' ②	9	-	-
80+71 RT.	12101	REMOVE BIT. TO 47' & REPLACE	48.44	16' ③	8.8				16' ③	31.30
82+07 RT.	12111	REMOVE BIT. TO 40' & REPLACE	48.40	20' ③	10.6				20' ③	35.24
82+48 LT.	12114	REMOVE BIT. TO 35' & REPLACE	21.14	21' ④	10.6				20' ③	28.12
84+35 RT.	12121	REMOVE BIT. & 1 SECTION OF CONCRETE	40.36	16' ③	8.8		16' ③	21.34	16' ③	24.23
84+95 RT.	-	PAVE TO PROPERTY LINE	-	20' ②	10.6				27' 20'	47.44
85+20 LT.	12138	PAVE APRON TO SIDEWALK	-	4.5' X 12'	7-4'76"				-	-
85+96 LT.	12138	PAVE APRON TO SIDEWALK	-	4.5' X 12'	7-4'76"				-	-
86+28 LT.	12140	PAVE APRON TO SIDEWALK	-	4.5' X 16'34"	8-4'96"				-	-
86+47 RT.	-	PAVE TO PROPERTY LINE	-	20' ②	10.6				20' ②	47.44
90+00 RT.	-	REMOVE BIT. TO 50' & REPLACE	100.90	26' ③	13.2				26' ③	63.59
TOTALS			21.14	494.87	276.6		339.316		275	183
				53.75	223.5		316		233	246

- ① 2" MIN COMPACTED THICKNESS 2331 WEAR COURSE
 ② WIDTH REQUESTED BY OWNER
 ③ MATCH EXISTING DRIVEWAY WIDTH

State Proj. No.

S.A.P.

02-618-15

Sheet No. 2 of 17 Sheets

Fed. Proj. No.

REMOVE CURB & GUTTER

STATION	LOCATION	LN. FT.	REMARKS
60+38	36'-46' LT.	10'	REMOVE AND REPLACE WITH RADIUS
60+62	36'-46' LT.	10'	REMOVE AND REPLACE WITH RADIUS
64+72	38'-55' LT.	17'	REMOVE TO MIN. OF 55' FOR CB #8
65+01	37'-55' LT.	18'	REMOVE TO MIN. OF 55' FOR CB #10
66+75	60'-63' RT.	3'	REMOVE MIN. OF 3' TO CONST. PED. RAMP
67+03	60'-63' RT.	3'	REMOVE MIN. OF 3' TO CONST. PED. RAMP
68+37	33'-47' LT.	14'	REMOVE TO 47' MIN. TO CONST. 20' RADIUS
68+75	44'-63' RT.	19'	REMOVE TO 63' MIN. TO CONST. 30' RAD. & PED. RAMP
68+95	44'-57' RT.	13'	REMOVE TO 57' MIN. TO CONST. 30' RADIUS
79+64	46'-56' RT.	10'	REMOVE TO 50' MIN. TO CONST. RAD. & PED. RAMP
79+94	47'-57' RT.	10'	REMOVE TO 50' MIN. TO CONST. RAD. & PED. RAMP
79+94	35'-50' LT.	15'	
82+86	44'-54' RT.	10'	
83+16	44'-54' RT.	10'	
83+39	42'-65' LT.	23'	REMOVE C&C & REPLACE TO NEW GRADE
TOTALS		185	

CONCRETE WALK

STATION	LOCATION	SQ. FT.	
		4"	6"
66+70 - 66+75	54'-59' RT.	38	
67+07 - 67+12	54'-59' RT.	38	
68+70 - 69+75	44'-62' RT.	90	
79+59 - 79+64	41'-46' RT.	38	
79+94 - 79+99	41'-46' RT.	38	
80+58 - 80+63	41'-46' RT.	25	
80+79 - 80+84	41'-46' RT.	25	
84+22 - 84+27	37'-42' RT.	25	
84+43 - 84+48	37'-42' RT.	25	
83+27	CURB TO WALK	80	
83+40 - 85+14	31'-36' LT.	870	
85+14 - 85+26	31'-36' LT.		60
85+26 - 85+90	31'-36' LT.	320	
85+90 - 86+02	31'-36' LT.		60
86+02 - 86+21	31'-36' LT.	95	
86+21 - 86+35	31'-36' LT.		70
86+35 - 87+25	31'-36' LT.	450	
87+25 - 88+00	VAR. TAPER	375	
88+00 - 93+60	34'-39' LT.	2800	
TOTALS		5332	190

REMOVE CONCRETE WALK

STATION	LOCATION	SQ. FT.
66+70 - 66+75	54'-59' RT.	25
67+07 - 67+12	54'-59' RT.	25
68+70 - 69+75	44'-62' RT.	90
79+59 - 79+64	41'-46' RT.	25
79+94 - 79+99	41'-46' RT.	25
80+58 - 80+63	41'-46' RT.	25
80+79 - 80+84	41'-46' RT.	25
84+22 - 84+27	37'-42' RT.	25
84+43 - 84+48	37'-42' RT.	25
TOTAL		290 SQ. FT.

REMOVE WALK AND REPLACE WITH PEDESTRIAN RAMP
 REMOVE 1 SECTION OF WALK EACH SIDE OF DRIVEWAY
 MATCH PROPOSED DRIVEWAY GRADE

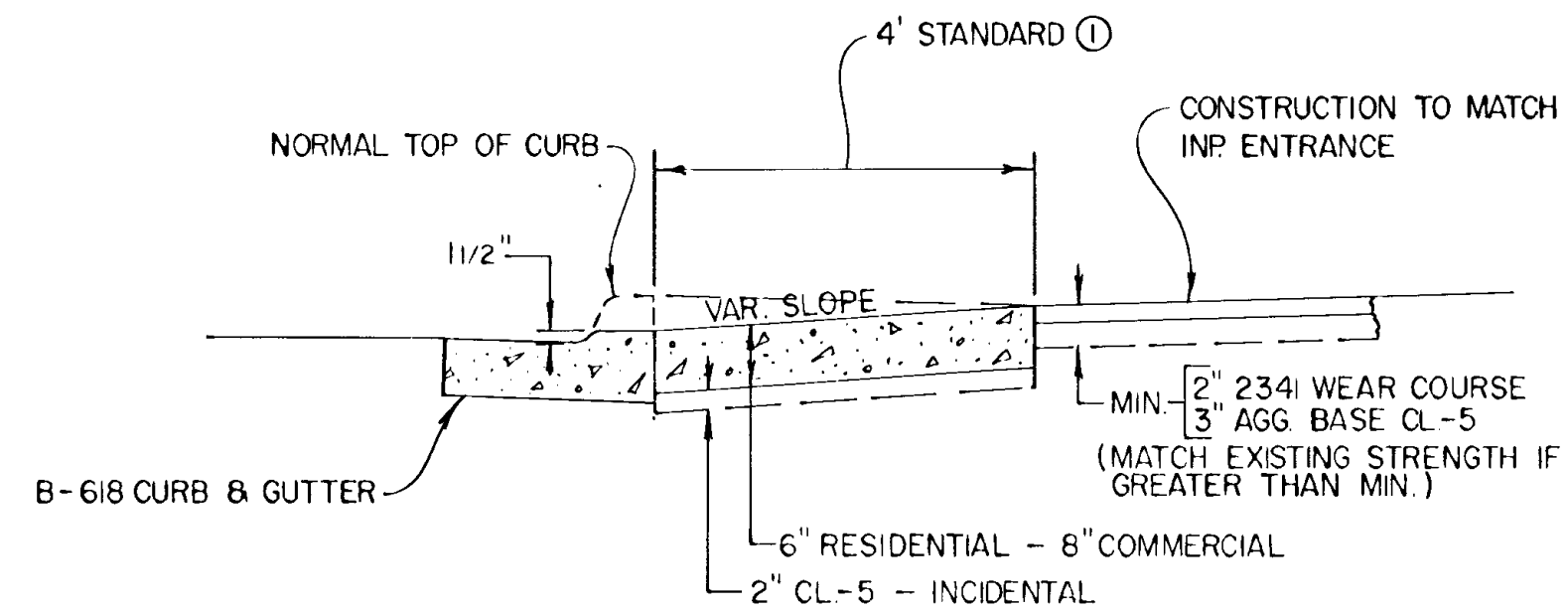
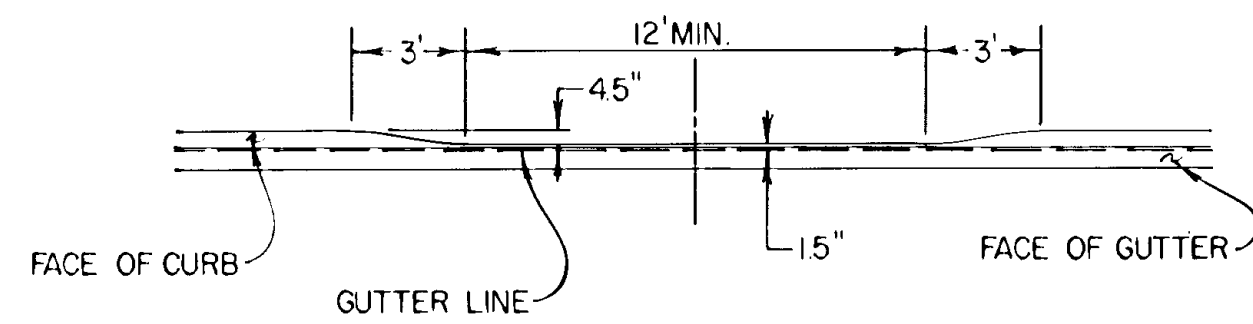
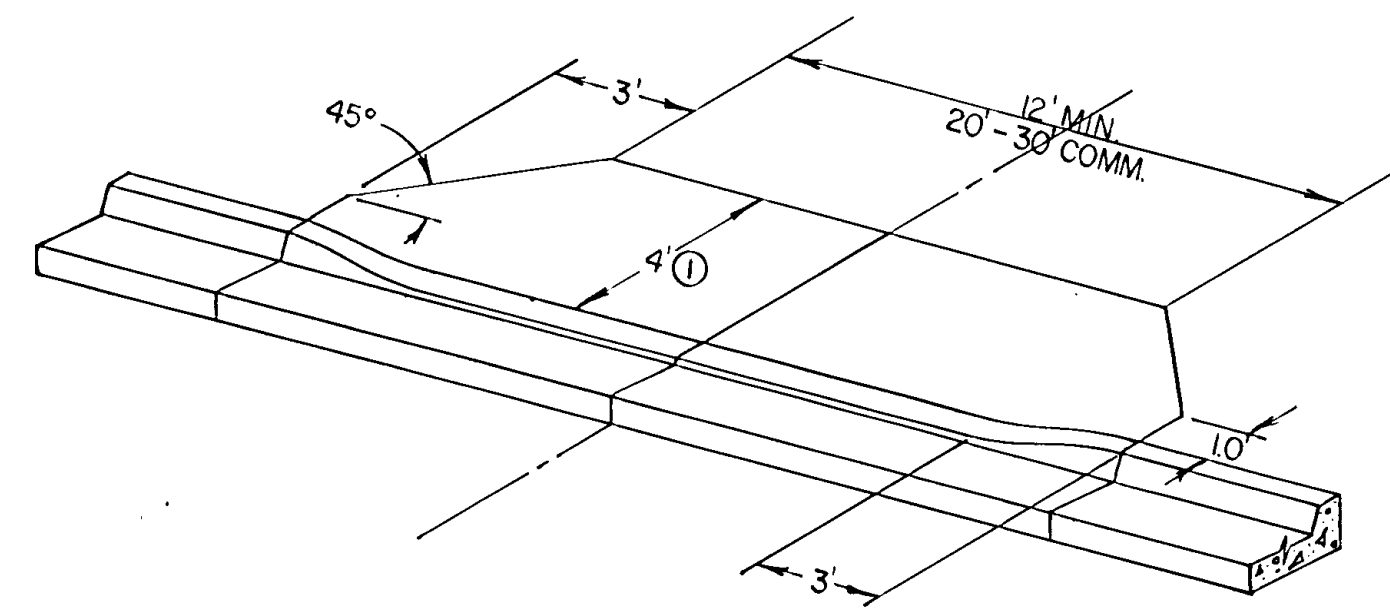
GATE VALUES
ADJ. WATER GATE HOUSING

STATION	LOCATION
64+67	38' LT.
64+75	31' LT.
68+42	32' LT.
79+66	32' LT.
33+13	31' LT.
TOTAL	5

ADJUST CURB
STOP BOXES

STATION	LOCATION
85+65	35' LT.
86+75	37' LT.
TOTAL	

CONCRETE APRON DETAIL

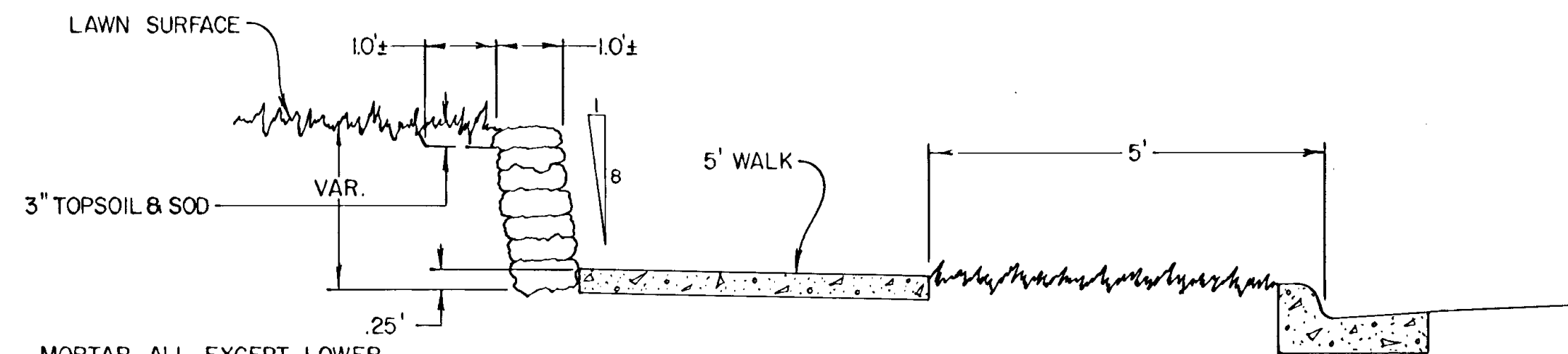


① IN SIDEWALK AREAS EXTEND CONC. APRON TO MATCH SIDEWALK. STA. 83+40 TO STA. 93+60 LT.

NOTE: ALSO SEE STD. PLATE NO. 7035 J

RETAINING WALL DETAIL

STA. 82+54 TO STA. 85+13 LT.



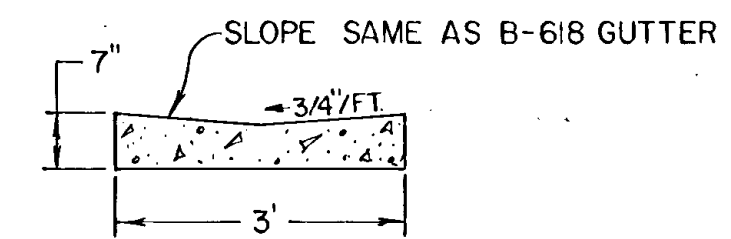
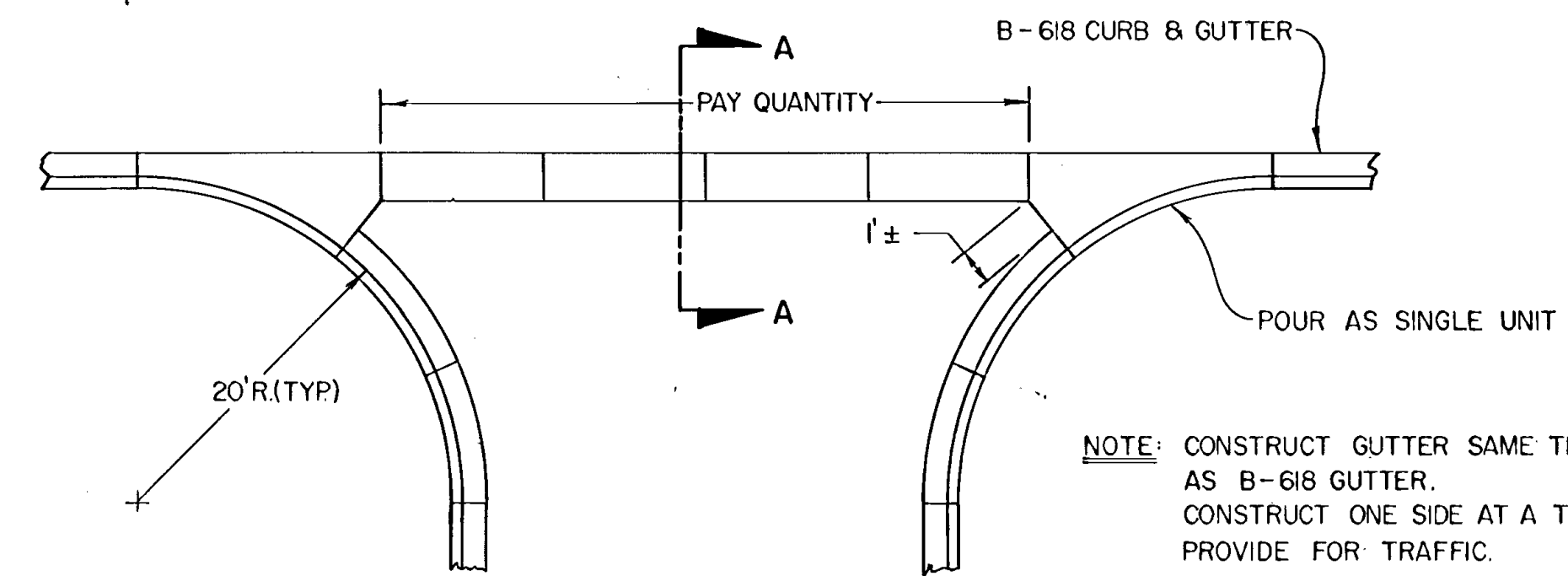
MORTAR ALL EXCEPT LOWER 2 COURSES (INCIDENTAL TO STONE MASONRY RETAINING WALL)

RANDOM COURSED DRY RUBBLE MASONRY (LANNON STONE QUARRY FACED)

CROSS GUTTER DETAIL

LOCATION

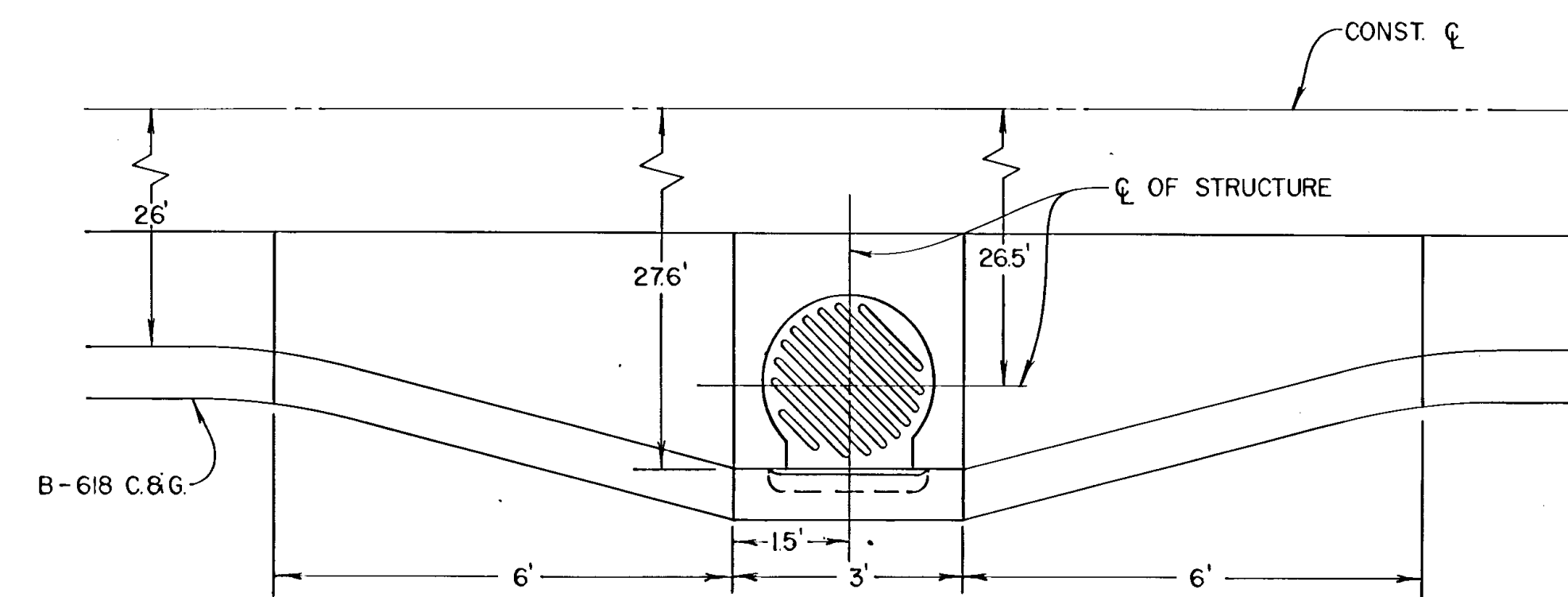
121 ST. AVE. NW, LT. & RT.
121 ST. LN. NW, LT. & RT.



SECTION A-A

CATCH BASIN DETAIL

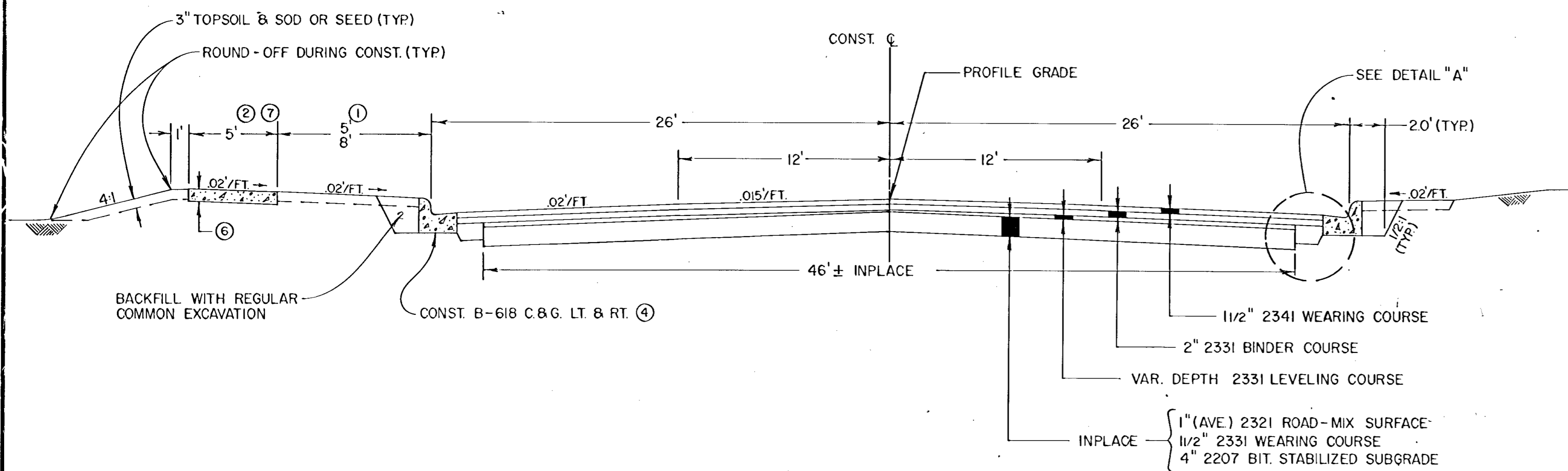
STRUCT. NO. 2 & 6



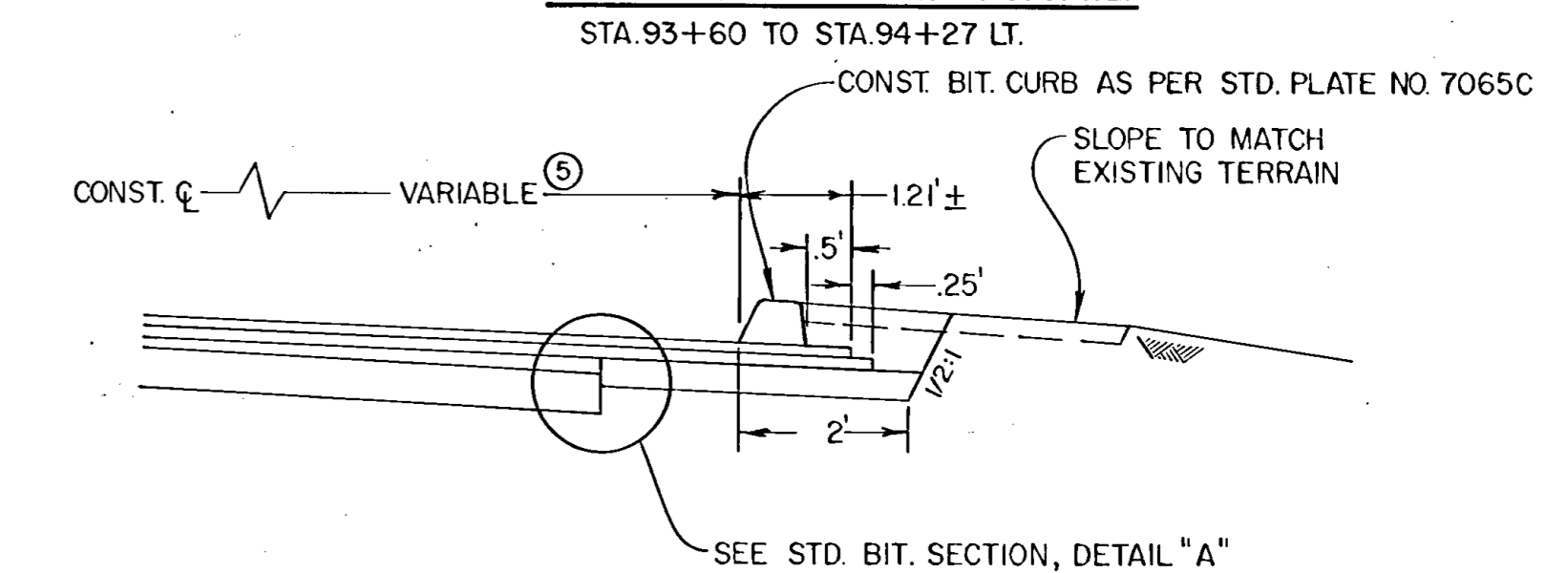
ALL DIMENSIONS NOMINAL

TYPICAL SECTIONS

GRADING & BITUMINOUS SECTION

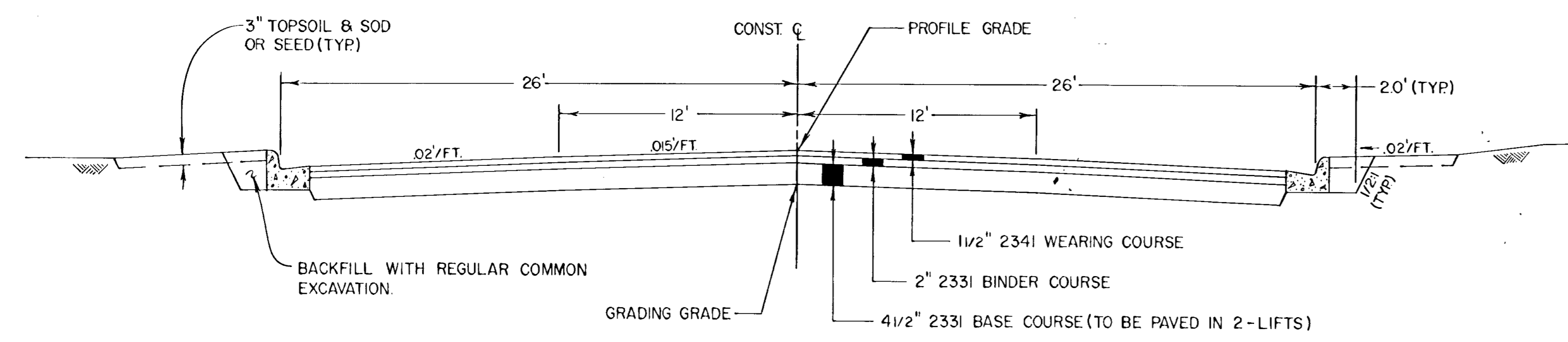


BITUMINOUS CURB DETAIL

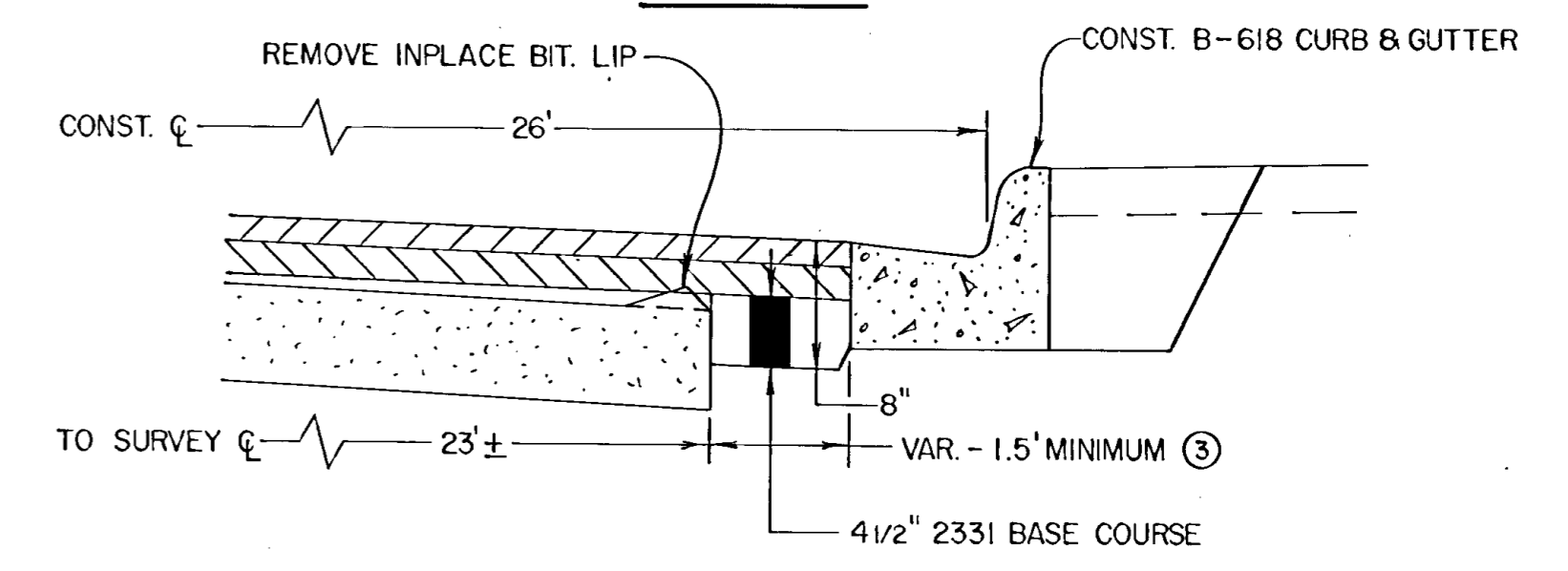


GRADING & BITUMINOUS SECTION

STA. 65+00 TO STA. 68+15

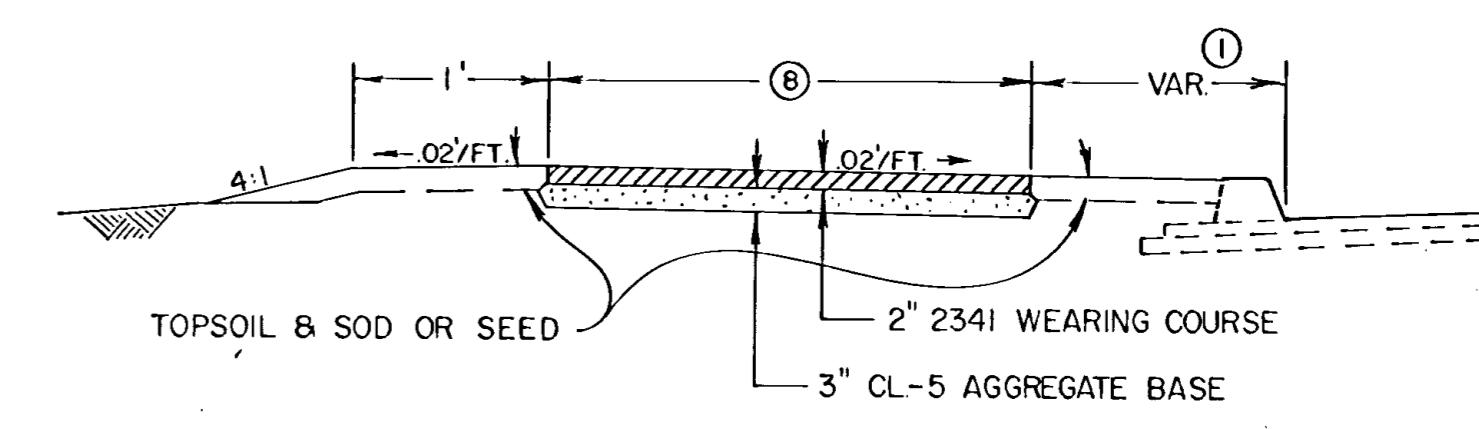


DETAIL "A"

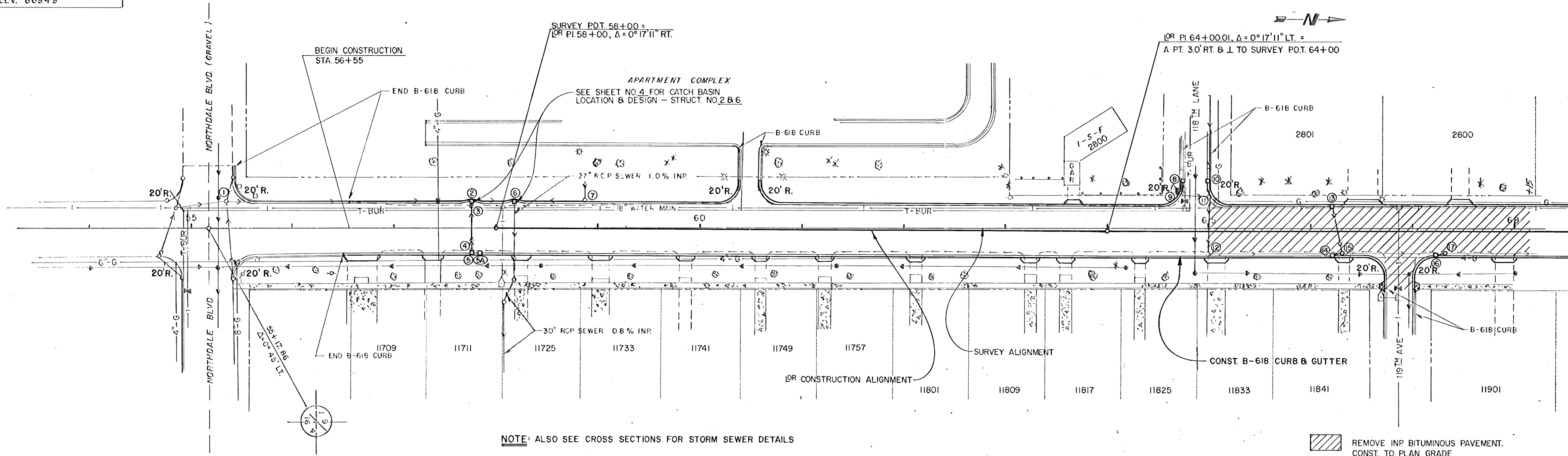


BITUMINOUS WALK DETAIL

STA. 93+60 TO STA. 94+00

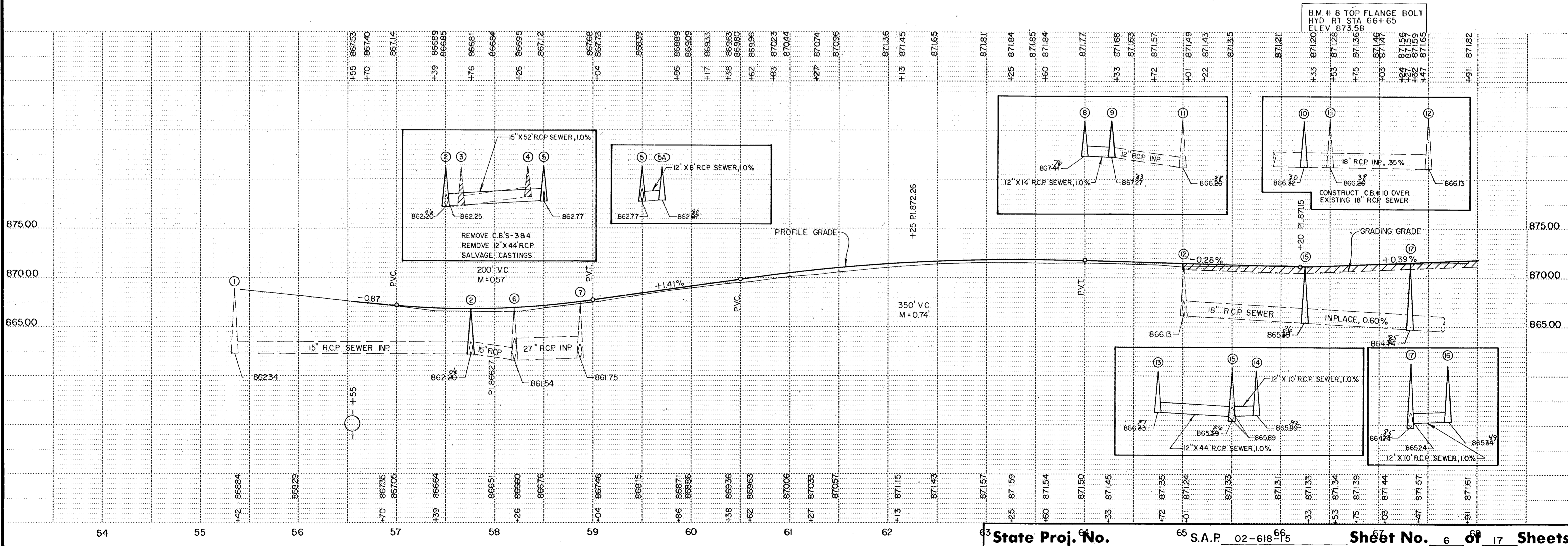


- ① SEE PLAN & PROFILE SHEETS FOR WIDTH LOCATIONS, 8' STD.
- ② CONST. 5' CONC. SIDEWALK STA. 83+40 TO STA. 93+60 LT.
- ③ IN SOME AREAS THERE WILL BE SOME BITUMINOUS TO REMOVE. THESE AREAS WILL BE CONSIDERED AS INCIDENTAL TO COMMON EXCAVATION.
- ④ SEE BIT. CURB DETAIL & PLAN - PROFILE SHEETS FOR BIT. CURB CONST. DETAILS & LOCATION.
- ⑤ SEE PLAN - PROFILE SHEET FOR VAR. WIDTH.
- ⑥ 4" - STANDARD
6" - ENTRANCE
- ⑦ CONST. BIT. WALK STA. 93+60 TO STA. 94+00 LT. SEE "BIT. WALK DETAIL" FOR WALK CONST. DETAILS.
- ⑧ TAPERS FROM 5' TO MATCH INPLACE BITUMINOUS WALK.



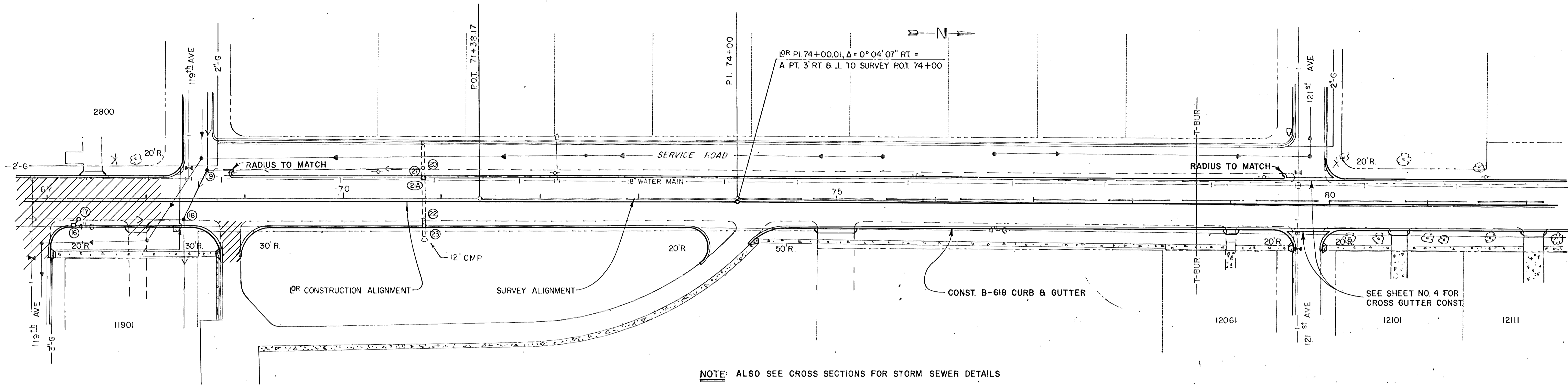
NOTE: ALSO SEE CROSS SECTIONS FOR STORM SEWER DETAILS

REMOVE INP BITUMINOUS PAVEMENT.
 CONST. TO PLAN GRADE



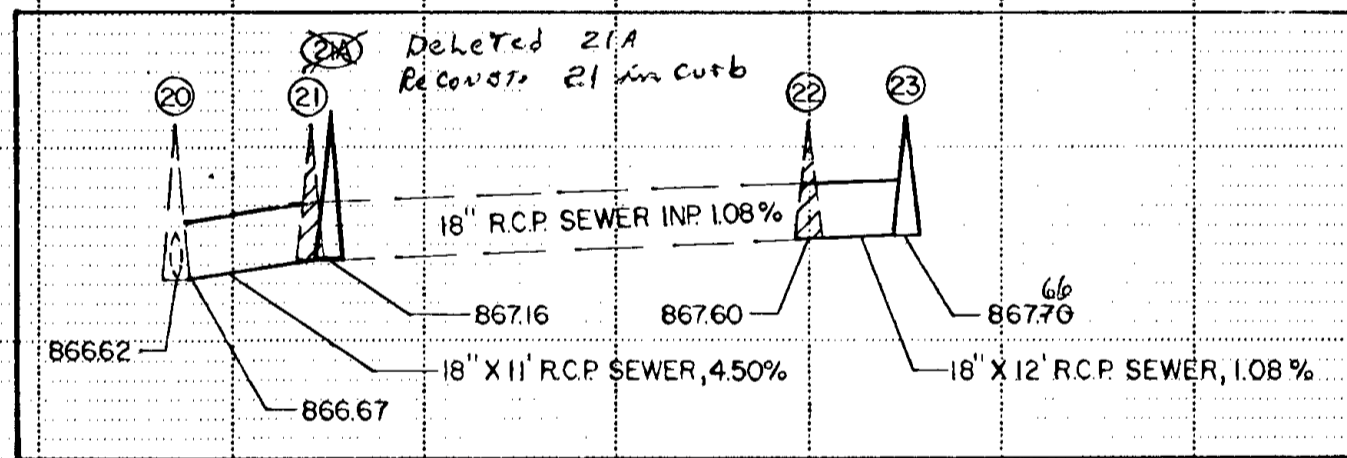
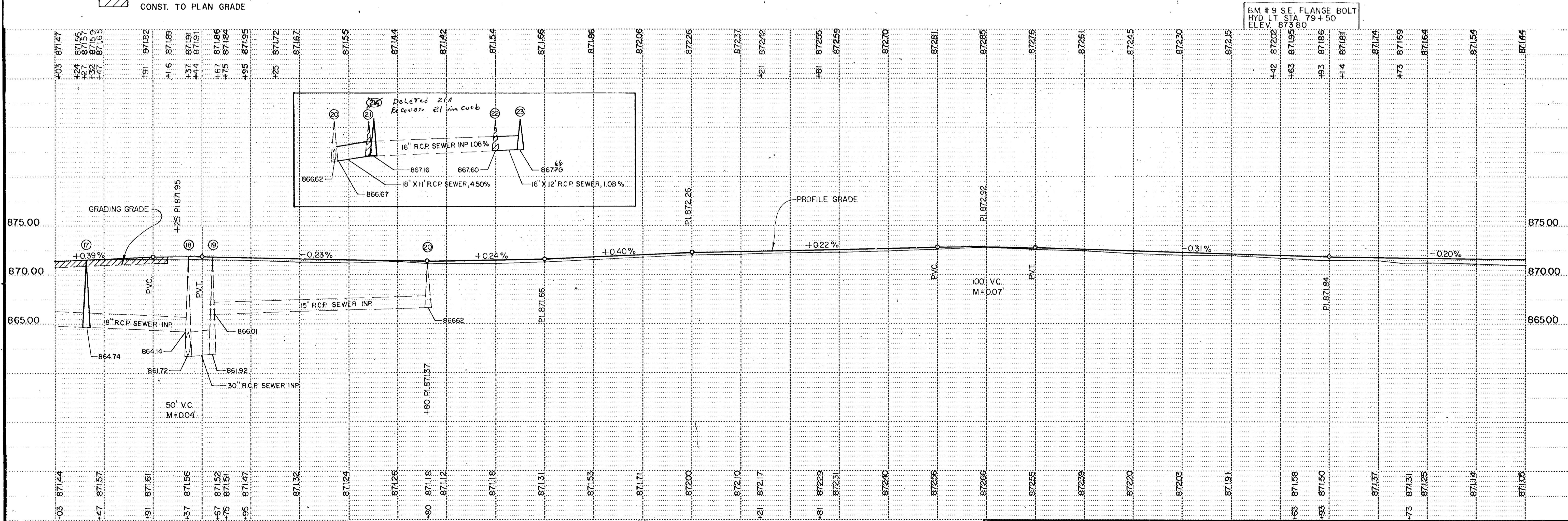
as Built 12-7-82 W.A.H.

TELETYPE POST - SINGLE PLAN - PROFILE - 107M



NOTE: ALSO SEE CROSS SECTIONS FOR STORM SEWER DETAILS

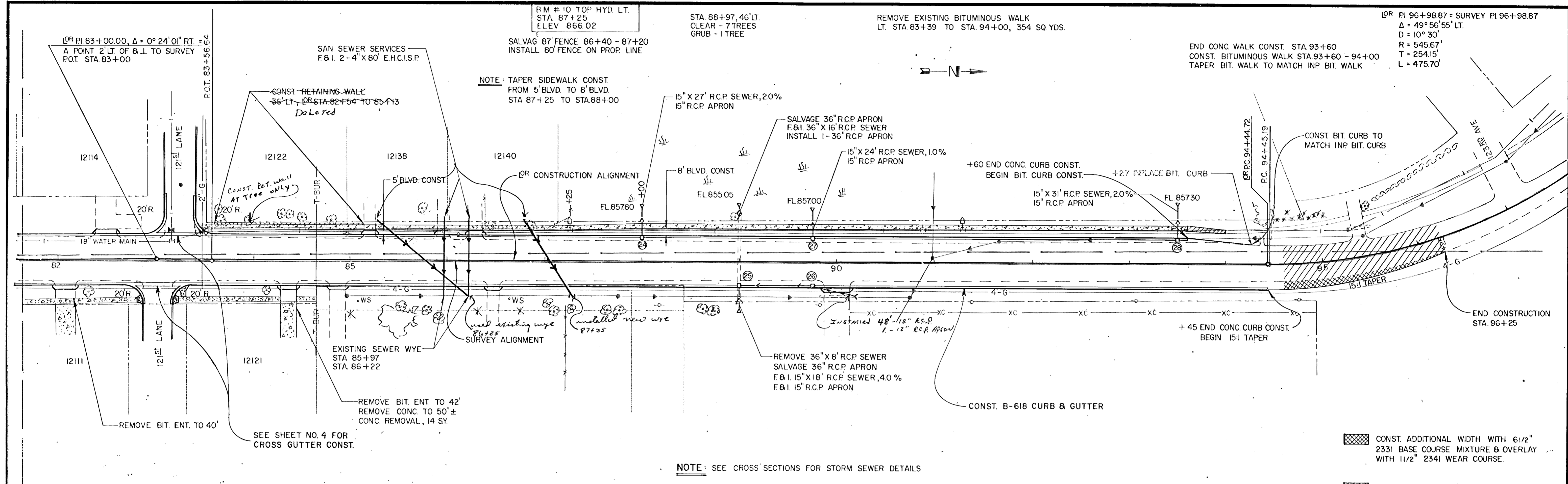
REMOVE INP. BITUMINOUS PAVEMENT
CONST. TO PLAN GRADE



BM # 9 SE. FLANGE BOLT
HYD. LT. STA. 79+50
ELEV. 873.80

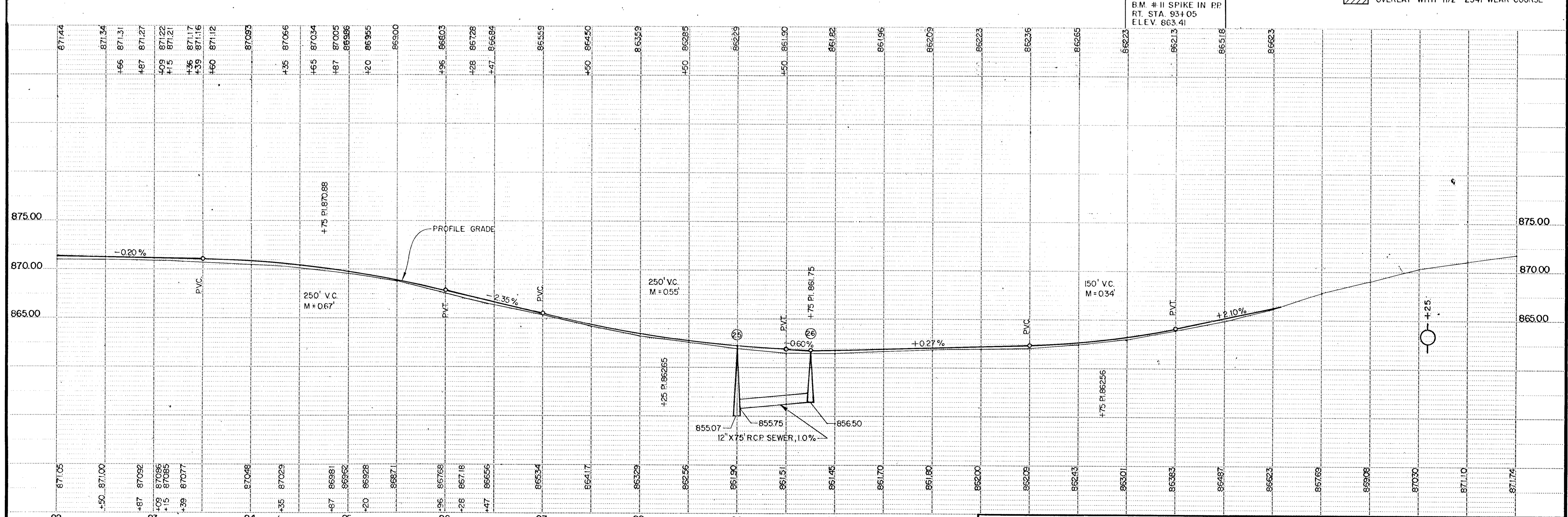
as built 12-7-82 W.R.H.

TELETYPE POST - SINGLE PLAN - PROFILE - 1024



NOTE: SEE CROSS SECTIONS FOR STORM SEWER DETAILS

- CONST. ADDITIONAL WIDTH WITH 6 1/2" 2331 BASE COURSE MIXTURE & OVERLAY WITH 1 1/2" 2341 WEAR COURSE.
- OVERLAY WITH 1 1/2" 2341 WEAR COURSE

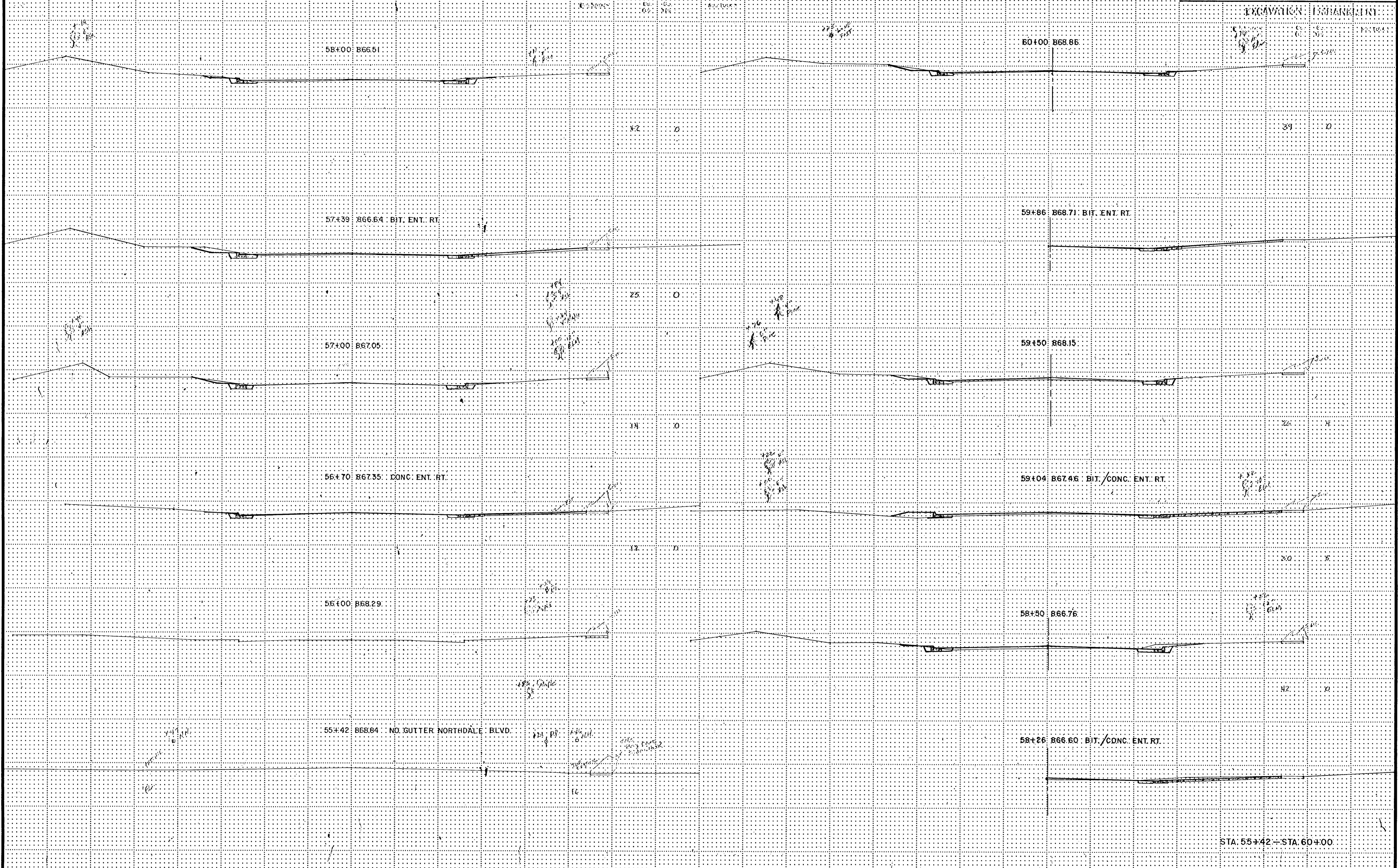


TELETYPE POST - SINGLE PLAN - PROFILE - 102M

as Built 12-7-82 WAA

EXCAVATION (EMBANKMENT)

Fed. Proj. No.



STA. 55+42--STA. 60+00

State Proj. No.

S.A.P. 02-618-15

Sheet No. 9 of 17 Sheets

TELEPHONE POLE CROSS SECTION 1817

EXCAVATION EMBANKMENT

EXCAVATION EMBANKMENT

62+13 871.15 CONC. ENT. RT.

64+33 871.45 CONC. ENT. RT.

61+50 870.57

64+00 871.50

61+27 870.33 CONC. ENT. RT.

63+60 871.43 CONC. ENT. RT.

61+00 870.06

63+25 871.59 CONC. ENT. RT.

60+52 869.63 NO GUTTER LT. (APT) CONC. ENT. RT.

63+00 871.57

60+38 869.36 SO. GUTTER LT. (APT.)

62+50 871.43

STA. 60+38+STA. 64+33

TELEPHONE CROSS SECTION 1971

EXCAVATION EMBANKMENT

NO GUTTER 119th AVE. LT.

EXCAVATION EMBANKMENT

68+67 871.52

NO GUTTER 119th AVE. LT.

EXCAVATION EMBANKMENT

68+120

66+53 871.34 BIT. ENT. LT.

68+37 871.56

SO. GUTTER 119th AVE. LT.

66+33 871.33 CONC. ENT. RT.

68+15 END BIT REMOVAL

67+91 871.61 BIT. ENT. RT.

66+00 871.31

67+47 871.57 BIT. ENT. LT.

65+50 871.33

67+03 871.44 NO. GUTTER 119th AVE. RT.

65+01 871.24 NO GUTTER 118th LN. LT.

66+75 871.39 SO. GUTTER 119th AVE. RT.

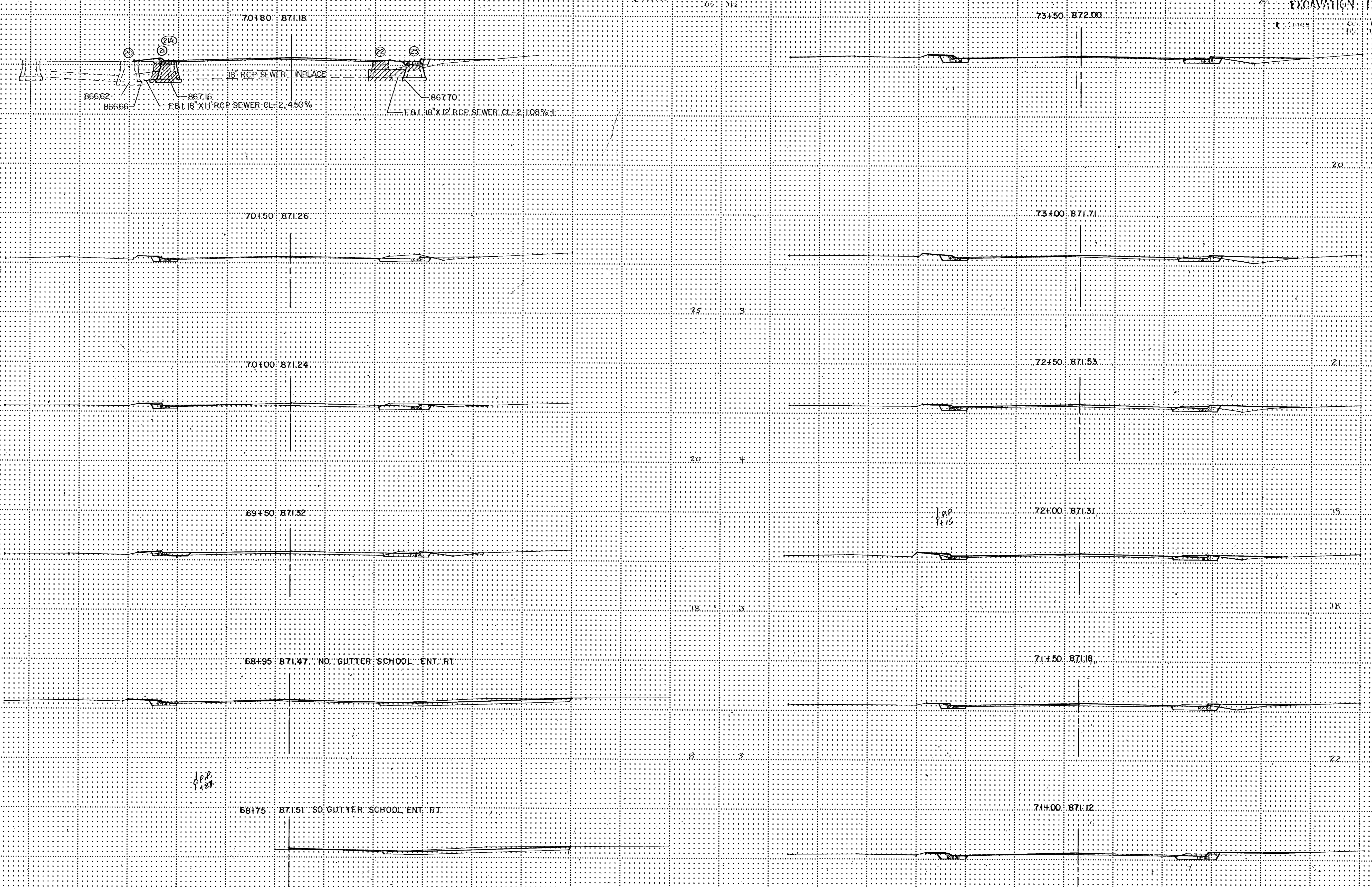
64+72 871.35 SO. GUTTER 118th LN. LT.

STA. 64+72—STA. 68+67

TELEPHONE CROSS SECTION BIT 11/2/58

EXCAVATION	EMBANKMENT
CUYMASS	CUYMASS
02	02
02	02
02	02

Fed. Proj. No.



STA. 68+75=STA. 73+50

TYPING NOT CROSS SECTION UNIT NUMBER

79+63 871.58 SO. GUTTER 12th AVE. LT./RT

76+00 872.56

79+00 871.91 CONC. ENT. RT

75+50 872.40

78+50 872.03

75+00 872.31

77+50 872.39

74+81 872.29 BIT. ENT. RT

77+00 872.55

74+21 872.17 NO. GUTTER SCHOOL ENT. RT

76+50 872.66

74+00 872.10 SO. GUTTER SCHOOL ENT. RT

STA. 74+00--STA. 79+63

TRAVERSE FOR CROSS SECTION INT. 11/28/58

EXCAVATION EMBANKMENT

Station	Excavation	Embankment
B4+35	870.29	CONC./BIT ENT. RT.
B4+00	870.48	
B3+39	870.77	NO GUTTER 12' LANE LT.
B3+15	870.85	NO GUTTER 12' LANE RT.
B3+09	870.86	SD. GUTTER 12' LANE LT.
B2+87	870.92	SD. GUTTER 12' LANE RT.
79+93	871.50	NO GUTTER 12' AVE. LT/RT

BIT. ENT. LT. B2+50 871.00

B2+00 871.05 ENT. RT.

B1+50 871.14

B1+00 871.25

80+73 871.31 BIT. ENT. RT.

80+50 871.37

79+93 871.50 NO GUTTER 12' AVE. LT/RT

CONST. RETAINING WALL
83+54 TO 85+13
RETAINING WALL DELETED
EXCEPT TO PROTECT OAK
TREE LT. 83+45

EP 12/11/13

EP 12/11/13

EP 12/11/13

EP 12/11/13

EP 12/11/13

EP 12/11/13

EP 12/11/13

SP 12/11/13

EP 12/11/13

STA. 79+93 - STA. 84+35

as Built 12-7-82 wad.

TELEPHONE POST CROSS SECTION WPT 11/8/87

Excavation	Embarkment
85+00	86+00

85+00 861.90 36" X 88" RCP W/ APRONS

Excavation	Embarkment
86+00	87+00

86+28 867.18 SAND ENT. LT.

X 10" RCP
+31

FL. 856.05
SALVAGE 36" RCP APRON
FBI 36" X 16" RCP SEWER CL-2
INSTALL 36" RCP APRON

36" X 88" RCP IN PLACE

855.07 856.62

EL. 857.50
FBI 15" X 18" RCP SEWER CL-2 2.20%
FBI 15" RCP APRON
SALVAGE 36" RCP APRON
REMOVE 36" X 8" RCP

Handwritten notes:
Elev. 857.50
Elev. 856.62

85+96 867.68 SAND ENT. LT.

Handwritten notes:
Elev. 857.00
Elev. 856.00
Elev. 855.00
Elev. 854.00
Elev. 853.00
Elev. 852.00
Elev. 851.00
Elev. 850.00
Elev. 849.00
Elev. 848.00
Elev. 847.00
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Elev. 843.00
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Elev. 806.00
Elev. 805.00
Elev. 804.00
Elev. 803.00
Elev. 802.00
Elev. 801.00
Elev. 800.00

88+50 862.56

85+50 868.71

FL. 857.80

FBI 15" X 27" RCP SEWER CL-2 2.20%
FBI 15" RCP APRON

858.46

88+00 863.29

Handwritten notes:
Elev. 863.29

85+20 869.28 SAND ENT. LT.

Handwritten notes:
Elev. 869.28
Elev. 868.00
Elev. 867.00
Elev. 866.00
Elev. 865.00
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Elev. 800.00

END RETAINING WALL
CONST. 85+13

87+50 864.17

Handwritten notes:
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85+00 869.62

87+00 863.34

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Elev. 804.00
Elev. 803.00
Elev. 802.00
Elev. 801.00
Elev. 800.00

Handwritten notes:
Elev. 869.62

84+87 869.81 SAND ENT. RT.

86+47 866.56 SAND ENT. RT.

Handwritten notes:
Elev. 866.56
Elev. 865.00
Elev. 864.00
Elev. 863.00
Elev. 862.00
Elev. 861.00
Elev. 860.00
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Elev. 800.00

STA. 84+87 - STA. 89+00

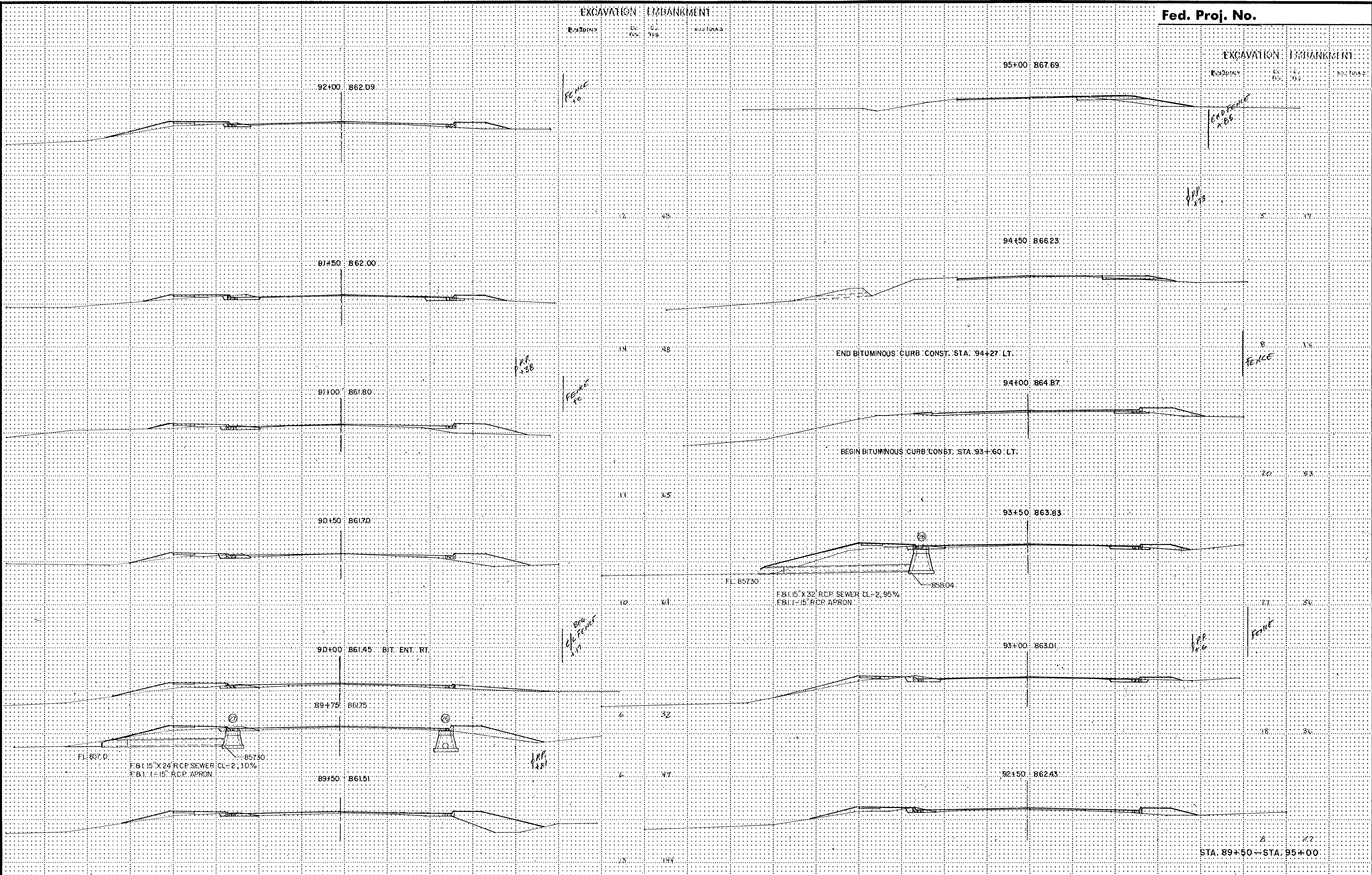
VERTICAL CURVE SECTION

EXCAVATION EMBANKMENT

EXCAVATION	EMBANKMENT
RESIDUAL	CL. TO
YES	YES

EXCAVATION EMBANKMENT

EXCAVATION	EMBANKMENT
RESIDUAL	CL. TO
YES	YES



TYPICAL CROSS SECTION

EXCAVATION		EMBANKMENT	
Subtotal	Gr. (45)	Gr. (15)	Subtotal
2076	161	1101	2738
1917		237	2154
127		456	583

98+00 872.35

97+50 872.09

97+00 871.74

96+50 871.10

96+00 870.30

95+50 869.08

99+00 872.80

98+50 872.57

TOTAL EXC.	2076	1101	REG. FILL	TOTAL REQ.
BIT. REMOVAL	161	363	TOPSOIL SALVAGED	(INCIDENTAL TO COMMON EXC.)
PAY QUANT.	1917	237	TOPSOIL BORROW	
COMMON BORROW	127	456		

STA. 95+50 - STA. 99+00

RETURN FOR CROSS SECTION UNIT

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR GRADING, BASE AND BITUMINOUS SURFACING

County State Aid Highway No. 18

Between CSAH 20 And T.H. 65

From A PT. 120' N. OF W. 1/4 COR. SEC. 13, T32N, R24W To A PT. 1323.14' N. & 85.76' W. OF S. 1/4 COR. SEC. 8, T32N, R25W
Give proper reference to Sections, Township and Range

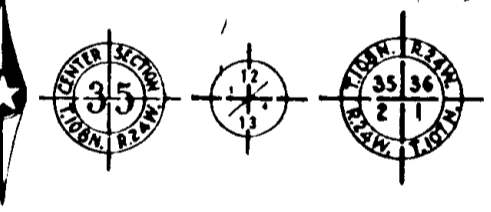
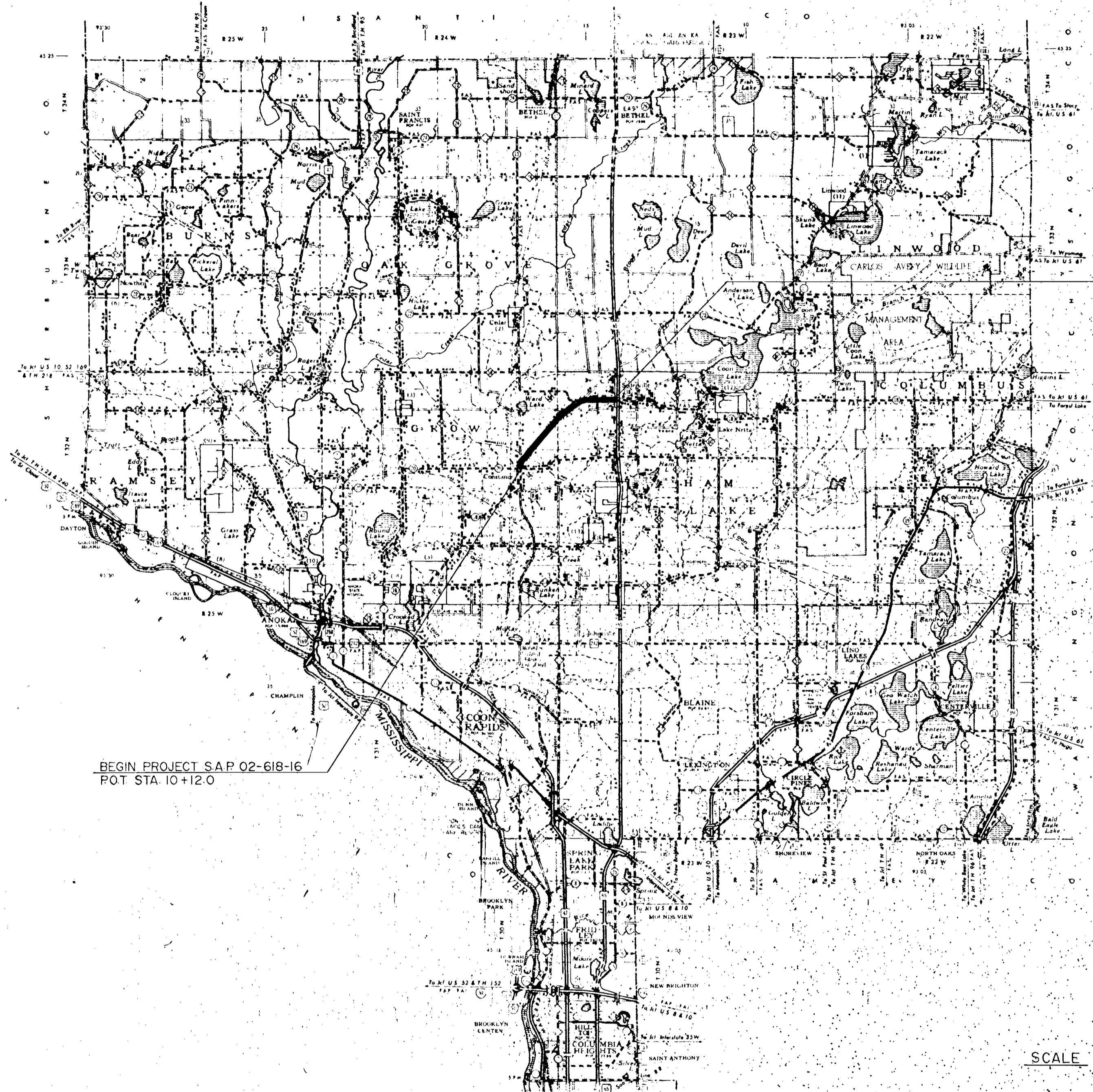
GROSS LENGTH 17,318.0 FEET 3.280 MILES
BRIDGES-LENGTH 0.0 FEET 0 MILES
EXCEPTIONS-LENGTH 0.0 FEET 0 MILES
NET LENGTH 17,318.0 FEET 3.280 MILES

INDEX OF SHEETS

- Sheet No. 1 Title Sheet & Layout Map
- " No. 2 To 5 Est. Quan. & Typicals
- " No. 6 To 12 Plan & Profile
- " No. 13 Retention Pond Construction
- " No. 14 CR 56 Construction
- " No. 15 Superelevation Charts
- " No. 16 To 41 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
- CONTROL OF ACCESS LINE
- PROPERTY LINE (Easement Line)
- VACATED PLATTED PROPERTY
- CORPORATE OR CITY LIMITS
- TRUNK HIGHWAY CENTER LINE
- RESIDING WALL
- 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
- DRAIN INLET
- GUARD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- RAILROAD SHOW FENCE
- STONE WALL OR FENCE
- HEDGE
- WATER PIPE
- SEWER PIPE
- DRAIN TILE
- SPRINGS
- MARSH
- TIMBER
- ORCHARD
- BRUSH
- 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)
- FRAME
- CONCRETE
- STONE
- TILE
- BRICK
- STUCCO
- IRON PIPE OR ROD
- MONUMENT (STONE, CONCRETE, OR METAL)
- WOODEN PILE
- GRAVEL PIT
- SAND PIT
- BORROW PIT
- ROCK QUARRY
- MEANDER CORNER



DESIGN DESIGNATION
 ADT (CURRENT YEAR) 2675
 ADT (FUTURE YEAR) 4300
 T (HEAVY COMMERCIAL) 300-600
9 Ton Design Soil Factor 50%
 Design Speed 55 MPH
 Design Speed not achieved at:
 STA. _____ TO STA. _____ MPH
 STA. _____ TO STA. _____ MPH

SPECIFICATIONS

THE "STANDARD SPECIFICATIONS FOR CONSTRUCTION," 1983 EDITION AND SUPPLEMENTAL SPECIFICATIONS, DATED AUGUST 29, 1985 SHALL GOVERN.

SCALE

- INDEX MAP 1" = 2 MI.
- PLAN & PROFILE VERT. 1" = 10'
- HORIZ. 1" = 100'
- CROSS SECTIONS VERT. 1" = 10'
- HORIZ. 1" = 10'

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. Lund
COUNTY ENGINEER DATE 12/23/85

ANOKA COUNTY REG. NO. 6548

RECOMMENDED FOR APPROVAL *C. W. Wechsler* 1/4 1986
DISTRICT STATE AID ENGINEER

RECOMMENDED FOR APPROVAL *Julie Stallman* 2/4 1986

APPROVED 2/5 1986 *Andrew M. Hoy*
STATE AID ENGINEER

Minn. Proj. No. _____ County Proj. No. _____
State Proj. No. _____ S. A. P. 02-618-16