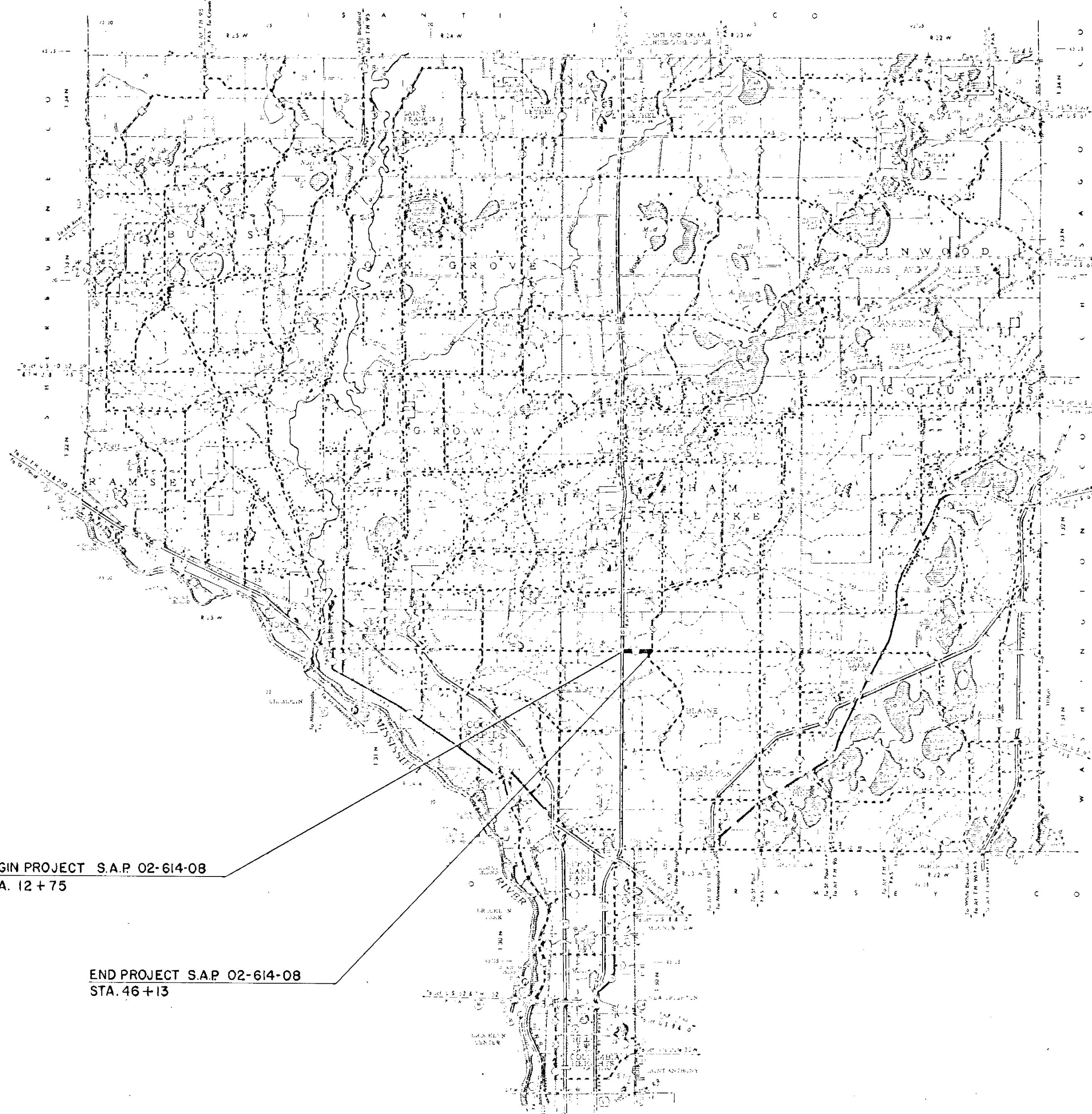
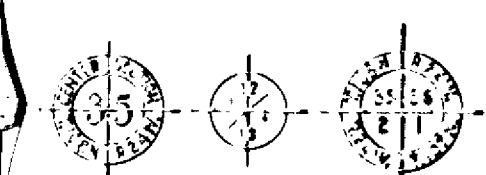


CONVENTIONAL SIGNS

Table of conventional signs including symbols for state, county, township, and various road types and conditions.



BEGIN PROJECT S.A.P. 02-614-08
STA. 12 + 75

END PROJECT S.A.P. 02-614-08
STA. 46 + 13

Fed. Proj. No. _____
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE & BITUMINOUS
County State Aid Highway No. 14
Between T.H. 65 And C.R. 52
From A PT. 887.62' E. OF S. 1/4 COR. OF SEC. #5 T. 31 N., R. 23 W. To A PT. 1388.40' E. OF THE S.E. COR. OF SEC. 5 T. 31 N., R. 23 W.

Summary statistics table:
GROSS LENGTH 3338.000 FEET 0.63 MILES
BRIDGES LENGTH FEET MILES
EXCEPTIONS LENGTH FEET MILES
NET LENGTH 3338.000 FEET 0.63 MILES

INDEX OF SHEETS
Sheet No. 1 Title Sheet & Layout Map
No 2 Est. Quantities
No 3 Typical Sections
No 4 Erosion Control
No 5-8 Plan & Profile
No 9-13 Cross Sections

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

DESIGN DESIGNATION
ADT (CURRENT YEAR) 7913
ADT (FUTURE YEAR) 12660
T (HEAVY COMMERCIAL) 600-1100
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, AND SUPPLEMENTAL SPECIFICATIONS DATED JUNE 1, 1984, 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 R. Kuehn COUNTY ENGINEER DATE 1/4/84

ANOKA COUNTY REG. NO. 6549

RECOMMENDED FOR APPROVAL *C. E. Weichselbaum* 4/13, 1984 DISTRICT STATE AID ENGINEER

RECOMMENDED FOR APPROVAL *Delbert D. Oltedal* 5-4, 84

APPROVED *5/12 1984* STATE AID ENGINEER

Minn. Proj. No. _____ County Proj. No. _____
State Proj. No. _____ S.A.P. 02-614-08

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 | 0.25 | |
| 2101.502 | CLEARING | ACRE | 4 | |
| 2101.505 | GRUBBING | ACRE | 2.25 | |
| 2101.507 | GRUBBING | ACRE | 4 | |
| 2104.501 | REMOVE OUTSIDE PIPE | LINE FT. | 153 | |
| 2104.505 | REMOVE BITUMINOUS PAVEMENT | SQ. YD. | 11,150 (2) | |
| 2104.521 | REMOVE OUTSIDE PIPE | LINE FT. | 50 | |
| 2104.521 | REMOVE INKBE | LINE FT. | 1,802 | |
| 0557.504 | INSTALL INKBE | LINE FT. | 1,761 | |
| 2105.501 | GRAVEL REPLENISHMENT | CU. YD. | 3,872 | |
| 2105.525 | TOPSOIL BORROW (E.V.) | CU. YD. | 1,240 | |
| 2105.523 | COMMON BORROW (E.V.) | CU. YD. | 325 | |
| 2110.501 | WATER | M. GAL. | 75 | |
| 2211.503 | ASPHALT BASE PLANTED, CLASS BA | CU. YD. | 3,750 | |
| 2331.504 | BITUMINOUS MATERIAL FOR MIXTURE | TON | 245 | |
| 2331.510 | SINKER COURSE MIXTURE | TON | 2,155 | |
| 2331.514 | BASE COURSE MIXTURE | TON | 3,375 | |
| 2331.531 | TEMPORARY LAKE MARKING | ROAD STA. | 102 | |
| 2341.525 | BITUMINOUS MATERIAL FOR MIXTURE | TON | 104 | |
| 2341.503 | WEARING COURSE MIXTURE | TON | 3,725 | |
| 2352.502 | BITUMINOUS MATERIAL FOR TOP COURSE | CU. | 1,355 | |
| 2501.511 | 15" C.M. PIPE OUTLET | LINE FT. | 300 | |
| 2501.511 | 15" C.M. PIPE OUTLET | LINE FT. | 74 | |
| 2501.515 | 15" C.M. PIPE APPROX. | EA | 5 | |
| 2501.515 | 15" C.M. PIPE APPROX. | EA | 2 | |
| 2501.521 | 22" SPAN R.O. PIPE-ARCH OUTLET CL-BA | LINE FT. | 33 | |
| 2501.525 | 22" SPAN R.O. PIPE-ARCH APPROX. | EA | 2 | |
| 2573.503 | CONCRETE BEDDING | SQ. YD. | 621 | |
| 2573.501 | GRAVISE SPREADING | ACRE | 3.7 | |
| 2573.502 | SEED MIXTURE NO. 5 | TON | 135 | |
| 2573.505 | SOEDING | SQ. YD. | 2,535 | |
| 2573.511 | MULCH MATERIAL, TYPE 1 | TON | 7.4 | |
| 2573.512 | DISC MOWING | ACRE | 3.7 | |
| 2573.531 | GRAVEL REPLENISHMENT, ANALYSIS 10-10-10 | TON | 1,055 | |
| 0513.502 | RAY ON SPRAY RAIS | EA | 24 | |

- ① PROVIDED FOR COST CONTROL AS DIRECTED BY THE ENGINEER.
- ② INCLUDES 55 YD FOR APPROXIMATES AND 55 YD FOR ROAD APPROXIMATES.
- ③ INCLUDES 60 YD FOR ROAD APPROXIMATES.
- ④ INCLUDES 90 YD FOR ROAD APPROXIMATES.
- ⑤ INCLUDES 50 YD FOR ROAD APPROXIMATES AND 125 YD FOR APPROXIMATES.
- ⑥ FOR USE AS DIRECTED BY THE ENGINEER FOR SHOULDER CONSTRUCTION.

BASIS OF PLACED QUANTITIES

| | |
|------|--|
| 2331 | PLANT MIXED BASE AND SINKER COURSE BITUMINOUS MIXTURE 110 LBS./SQ. YD. PER 1" THICKNESS BITUMINOUS MATERIAL FOR MIXTURE 4.5% BY WEIGHT |
| 2341 | PLANT MIXED WEARING COURSE BITUMINOUS MIXTURE 110 LBS./SQ. YD. PER 1" THICKNESS BITUMINOUS MATERIAL FOR MIXTURE 6% BY WEIGHT |
| 2575 | MULCH MATERIAL, TYPE - 1 2 TONS/ACRE |
| 2575 | SEED MIXTURE NO. 5 50 LBS./ACRE |
| 2575 | GRAVEL REPLENISHMENT, ANALYSIS 10-10-10 500 LBS./ACRE ON ALL SHED AND ROAD AREAS |
| 2575 | GRAVISE SPREADING BASED ON HORIZONTAL MEASUREMENT PLUS 10% |

BODDING

| STATION | LOC. | S Y |
|-----------------|------|------|
| 13+63 TO 13+82 | LT. | 192 |
| 20+95 TO 22+50 | RT. | 920 |
| 31+00 TO 32+00 | LT. | 204 |
| 33+00 TO 36+00 | RT. | 765 |
| 33+50 TO 42+50 | LT. | 393 |
| OUTSIDE APPROX. | | 111 |
| TOTAL | | 2585 |

CLEARING AND GRUBBING

| STATION (TO STATION) | LOC. | CLEARING TREE/ACRE | GRUBBING TREE/ACRE |
|----------------------|-------------|--------------------|--------------------|
| 13+23 | 44' LT. | 1 | 1 |
| 20+13 | 53' LT. | 1 | 1 |
| 26+52 | 52' LT. | 1 | 1 |
| 30+54 | 46' LT. | 1 | 1 |
| 32+44 TO 32+78 | 50'-73' LT. | 0.25 | 0.25 |
| APPROX. | | 4 | 4 |

SPECIAL DETAILS

THE CONTRACTOR SHALL REMOVE TOPSOIL MATERIAL WITHIN THE EYEWALLION AREAS AND AREAS ON WHICH GRASSING WILL BE PLACED, STOCKPILE IF NECESSARY, AND USE IT AS TOPSOIL COVERING ON THE NEW SHOULDS AND DITCH BORDERS. THIS MATERIAL, ALONG WITH 1,240 CUBIC YARDS OF TOPSOIL BORROW MATERIAL, WILL BE USED TO PROVIDE A MINIMUM COVER OF 3". THIS WORK SHALL BE CONSIDERED AS INCIDENTAL TO GUTTER RECONSTRUCTION.
TOPSOIL BORROW SHALL BE USED FOR FRONT YARD AREAS TO BE SOGGED.

DRAINAGE

| STATION | LOCATION | IN PLACE | REMARKS | PORTABLE CULVERTS | | | | | | | | | |
|----------------|----------|------------------|----------------|-------------------------------|-------------------------|-----------------------------|--------------------|-------------------|-----------------------|-----------------------|---------------------------|---|----|
| | | | | REMOVE PORT. CULV. (LINE FT.) | CONC. STRUCT. (CU. YD.) | ENLV. CULV. PIPE (LINE FT.) | SOO-ENG. (SQ. YD.) | RIP-RAP (CU. YD.) | 15" C.M.P. (LINE FT.) | 18" C.M.P. (LINE FT.) | 22" SPAN RCP-A (LINE FT.) | | |
| 15+13 | LT. | - | | | | | 17 | | 35 | 2 | | | |
| 19+45 | LT. | - | 100 CULV. REQ. | | | | | | | | | | |
| 20+35 | RT. | - | 100 CULV. REQ. | | | | | | | | | | |
| 20+59 | LT. | - | 100 CULV. REQ. | | | | | | | | | | |
| 23+95 TO 36+05 | LT. | - | | | | | 17 | | 210 | 2 | | | |
| 30+53 | RT. | - | 100 CULV. REQ. | | | | | | | | | | |
| 35+73 | RT. | 12" x 26" C.M.P. | 100 CULV. REQ. | 25 | | | | | | | | | |
| 37+50 | X-CULV. | | | | | | 31 | | | | 53 | 2 | |
| 33+63 | LT. | 15" x 30" C.M.P. | 100 CULV. REQ. | | | | 30 | | | | | | |
| 39+55 | RT. | 12" x 30" C.M.P. | RADISON ROAD | 30 | | | | | | | 74 | 2 | |
| 40+32 | LT. | 15" x 30" C.M.P. | 100 CULV. REQ. | 30 | | | | | | | | | |
| 40+95 | LT. | 18" x 22" C.M.P. | 100 CULV. REQ. | 22 | | | | | | | | | |
| 41+22 | LT. | 15" x 30" C.M.P. | 100 CULV. REQ. | | | | 30 | | | | | | |
| 43+57 | LT. | | RADISON ROAD | | | | | | 74 | 2 | | | |
| TOTALS | | | | 153 | | 60 | 111 | | 320 | 5 | 74 | 2 | 53 |

SALVAGE & INSTALL FENCE

| STATION | LOC. | SALVAGE | INSTALL | REMARKS |
|---------------|------|---------|---------|---------------------------|
| 14+21 - 13+00 | RT. | 473' | 489' | INSTALL FENCE ON R/W LINE |
| 16+95 | RT. | 5' | | LINE MARK |
| 19+60 - 30+43 | LT. | 1105' | 1030' | |
| 35+35 - 42+00 | RT. | 213' | 204' | INSTALL FENCE ON R/W LINE |
| TOTALS | | 1502' | 1761' | |

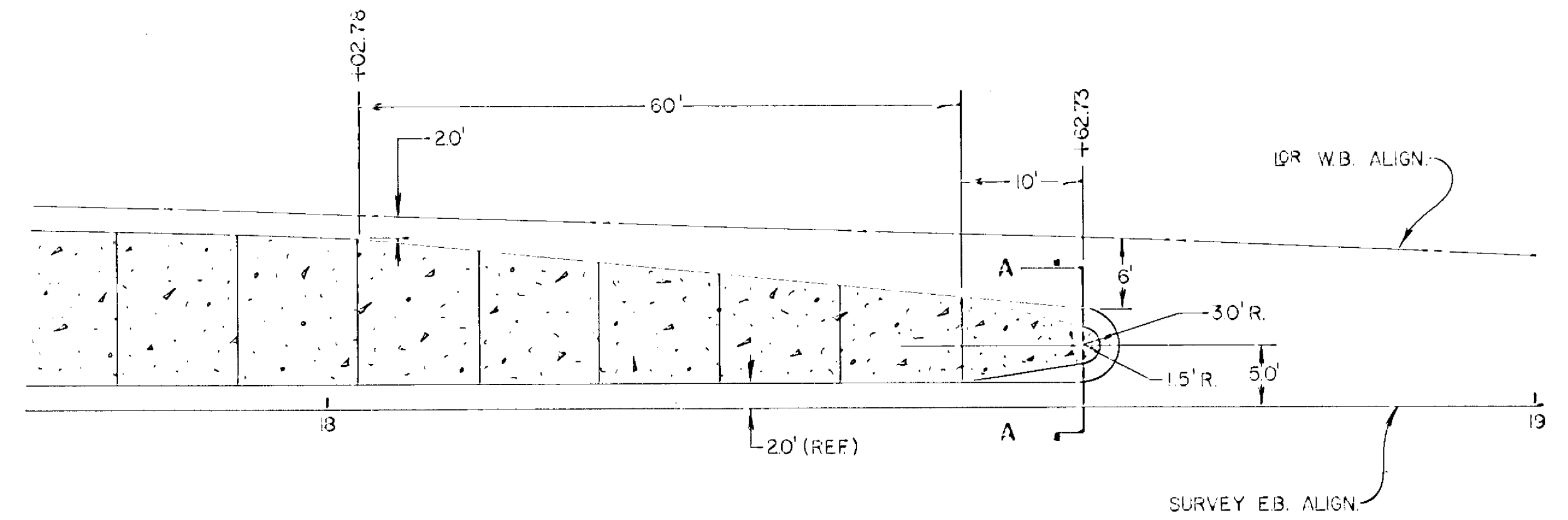
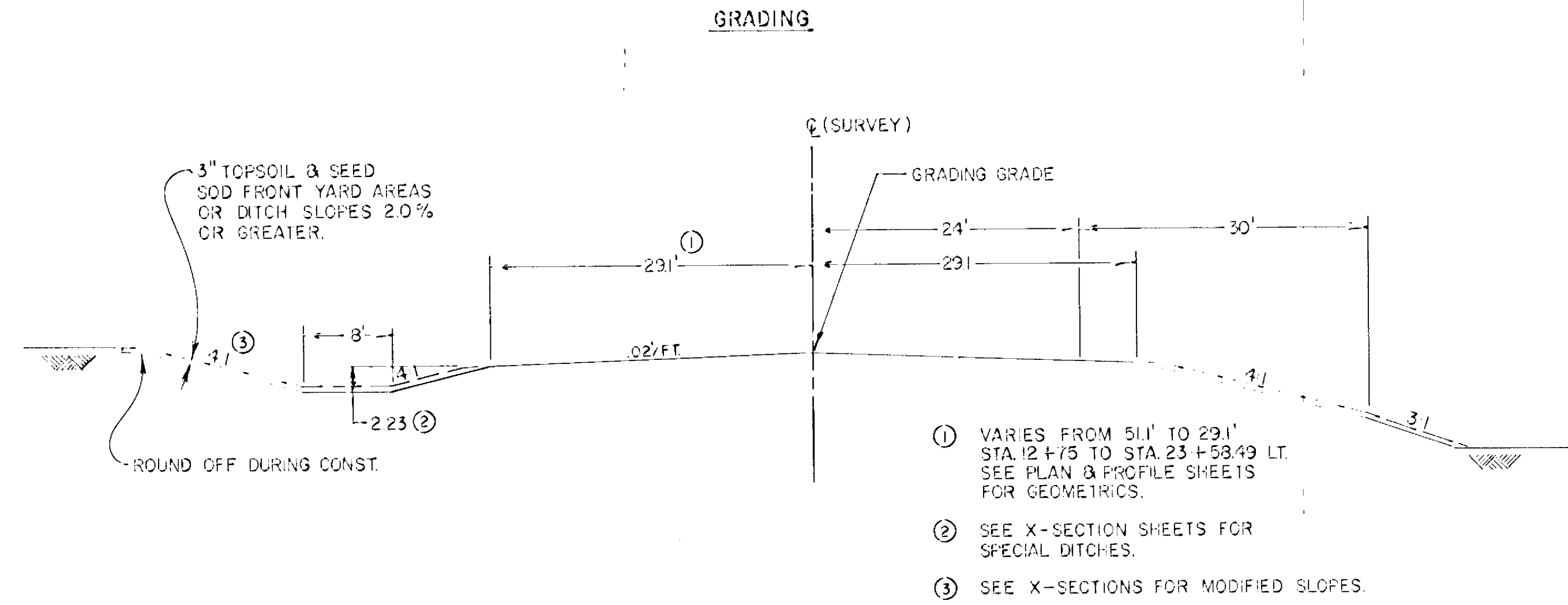
STANDARD PLATES

| PLATE NO. | DESCRIPTION |
|-----------|---|
| 6001 A | SPECIFICATION REFERENCE TO STANDARD PLATES |
| 9000 F | UNDRERGROUND DRAIN PIPE OUTLET |
| 3014 F | REINFORCED CONCRETE PIPE-ARCH DETAIL |
| 3110 F | CONCRETE ARCH FOR REINFORCED CONCRETE PIPE-ARCH |
| 3123 H | METAL ARCH FOR C.M. PIPS |
| 3000 H | STANDARD PARAPETS |
| 9000 B | APPROACHES AND ENRICHES |
| 9102 C | SOURCING AT PIPE OUTLET ENDS |

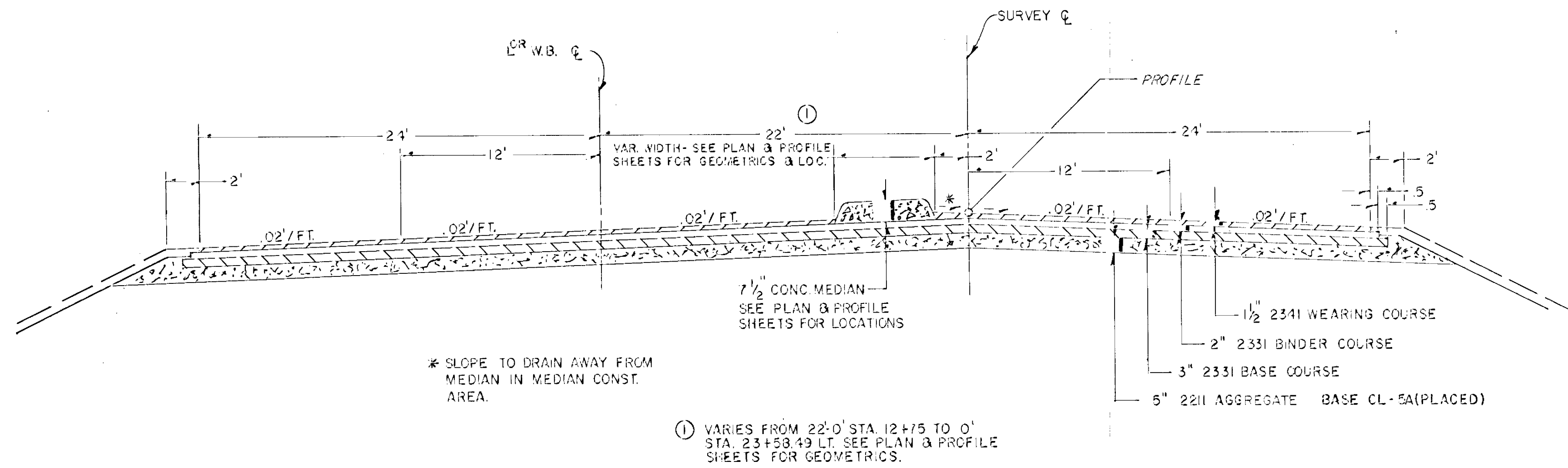
ALL DIMENSIONS NOMINAL

TYPICAL SECTIONS

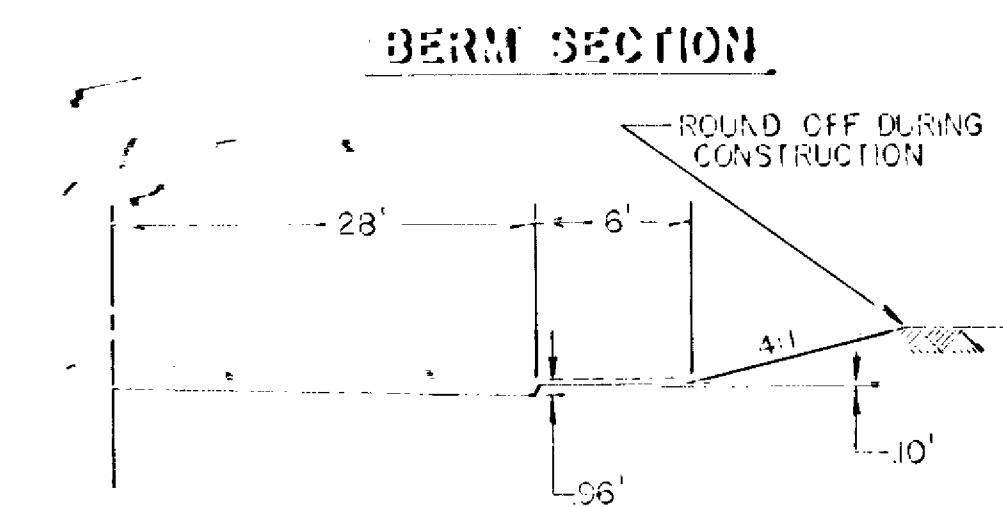
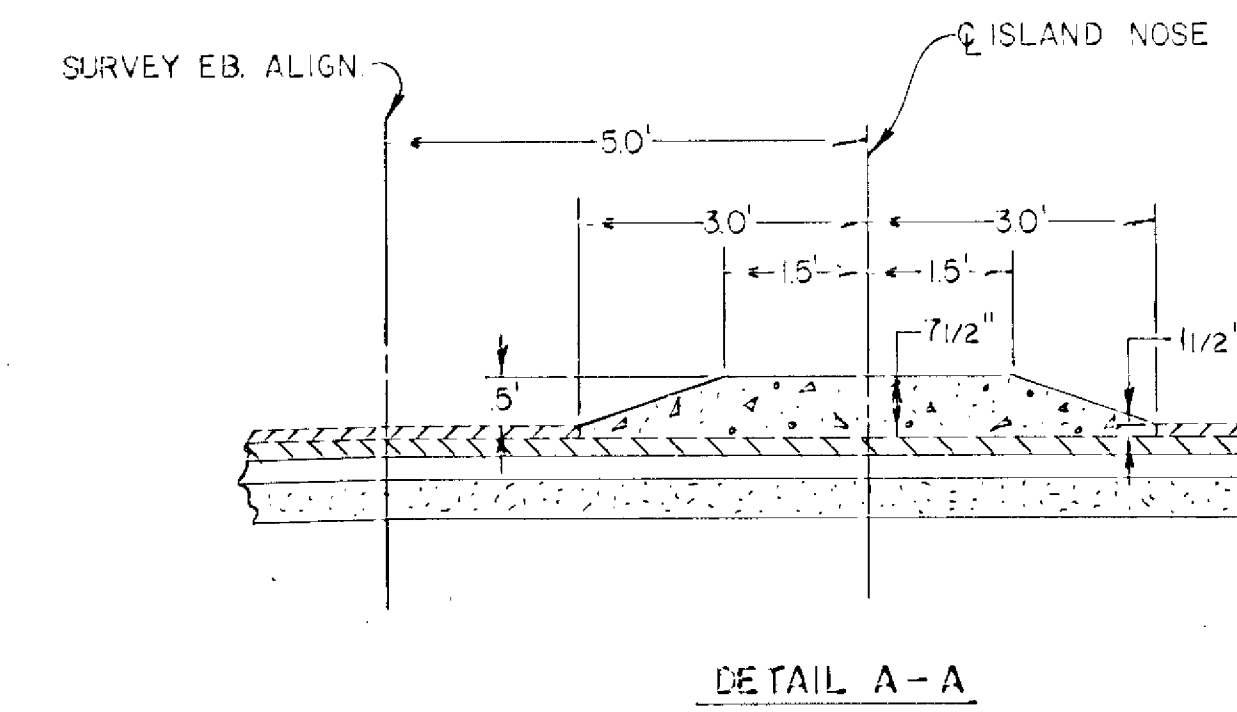
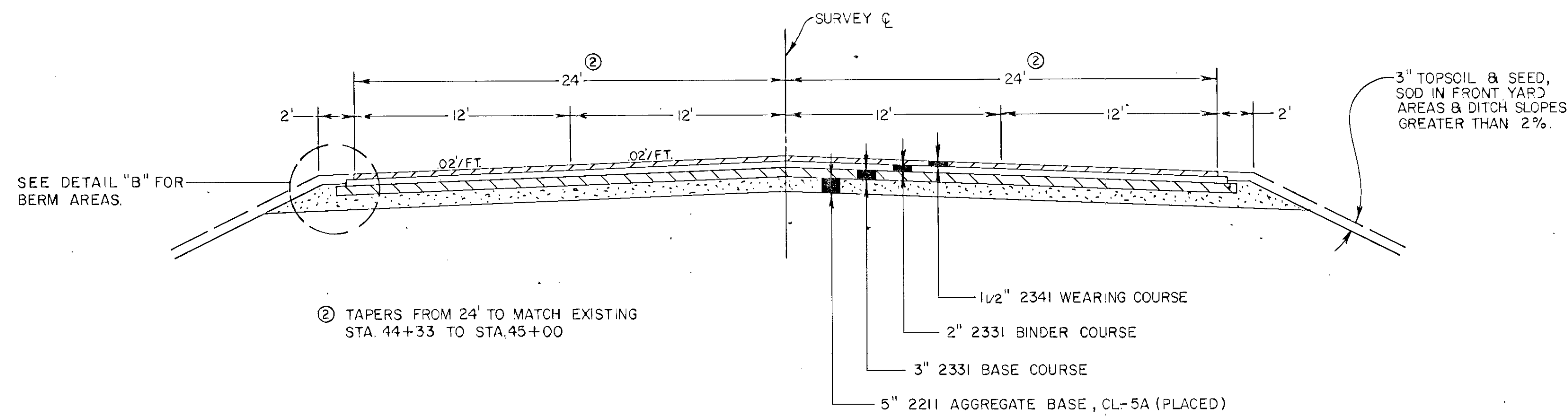
MEDIAN NOSE DETAIL



BASE & BITUMINOUS SECTION
STA. 12+75 - STA. 23+58.49

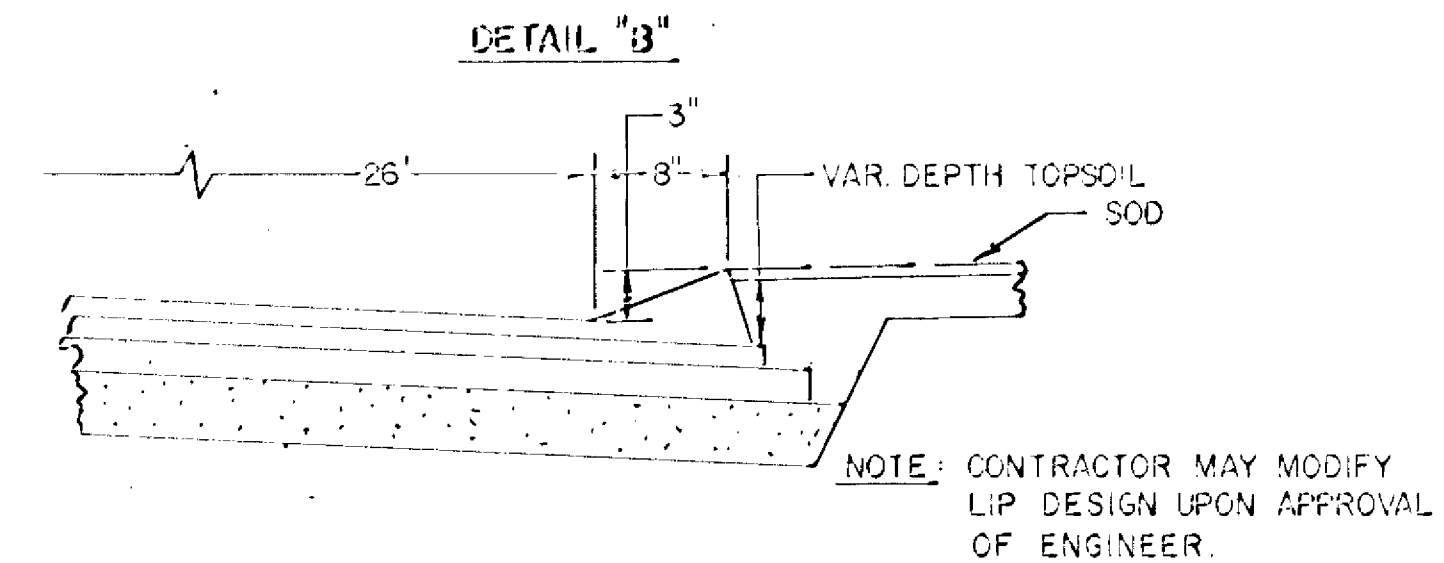


BASE & BITUMINOUS SECTION
STA. 23+58.49 - STA. 44+33

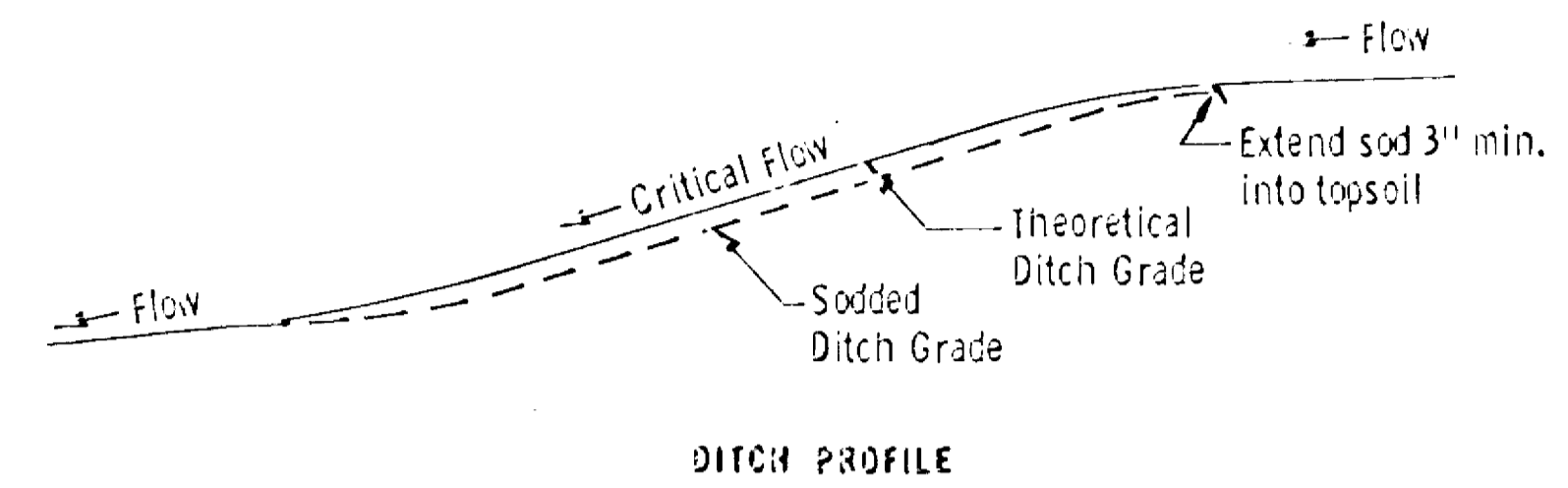
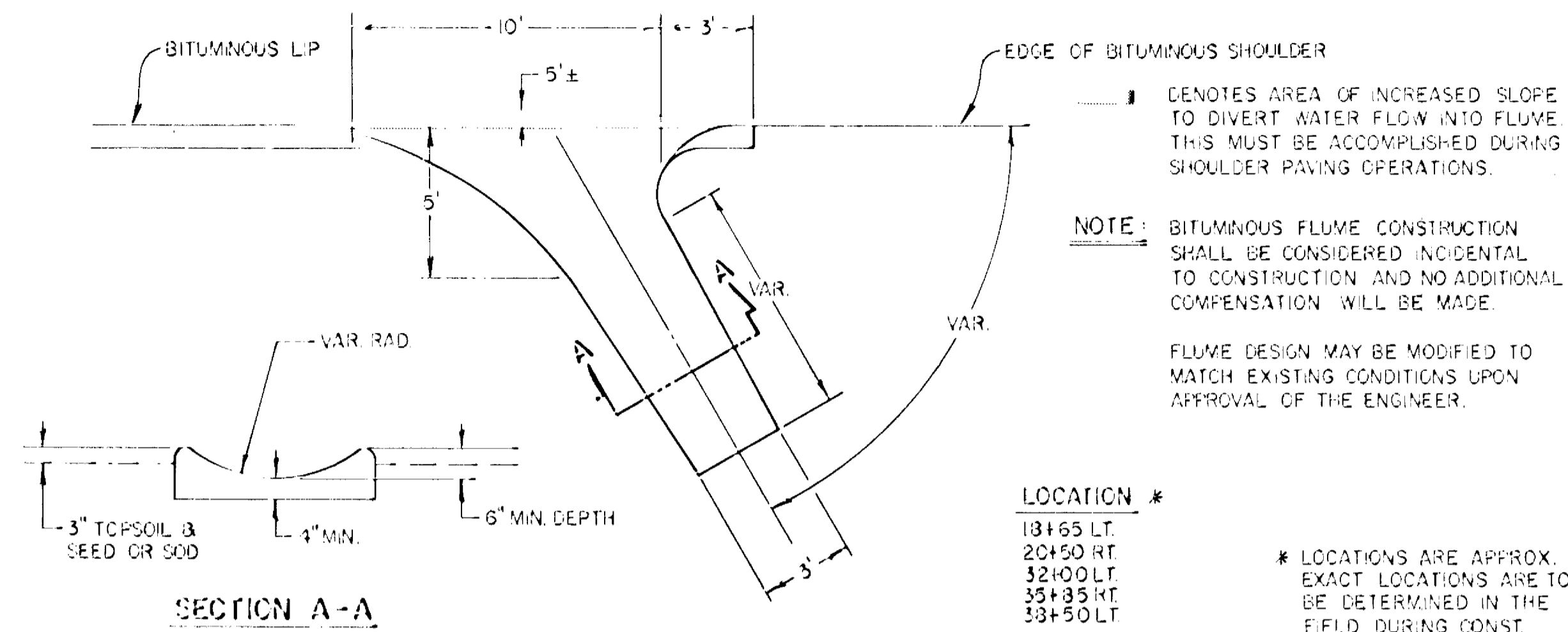


LOCATIONS

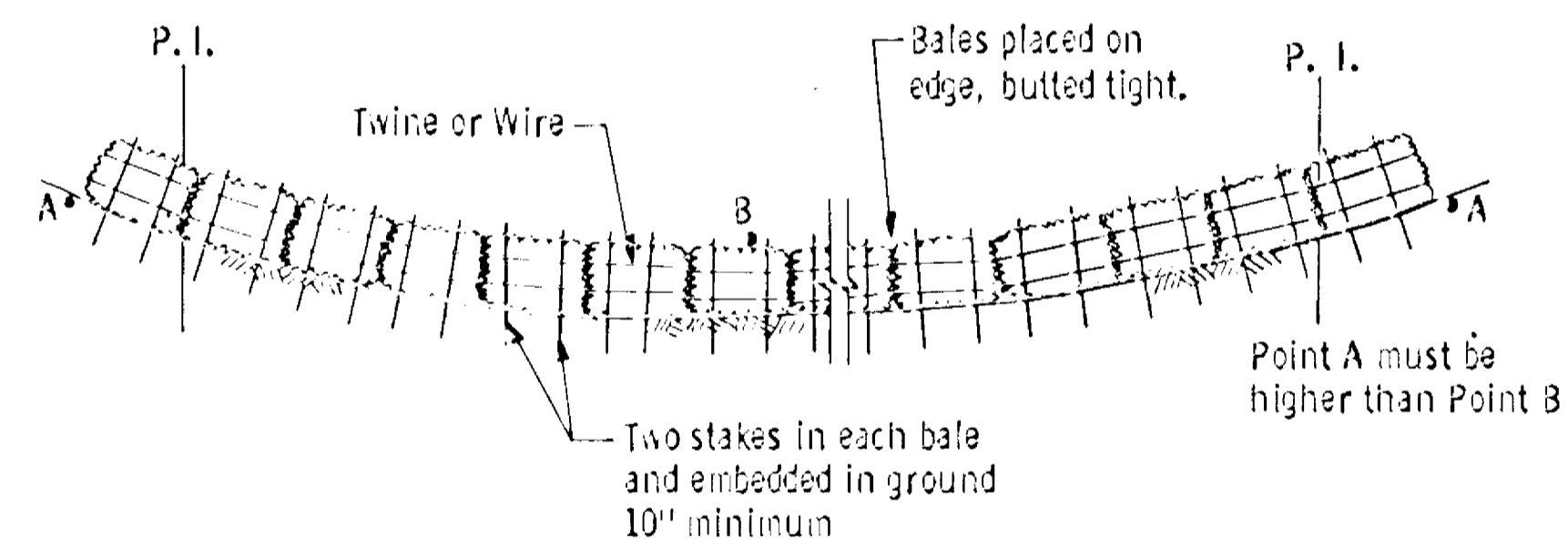
- 18+65 - 21+00 LT.
- 20+50 - 22+00 RT.
- 30+00 - 32+00 LT.
- 33+00 - 35+65 RT.
- 38+50 - 42+50 LT.



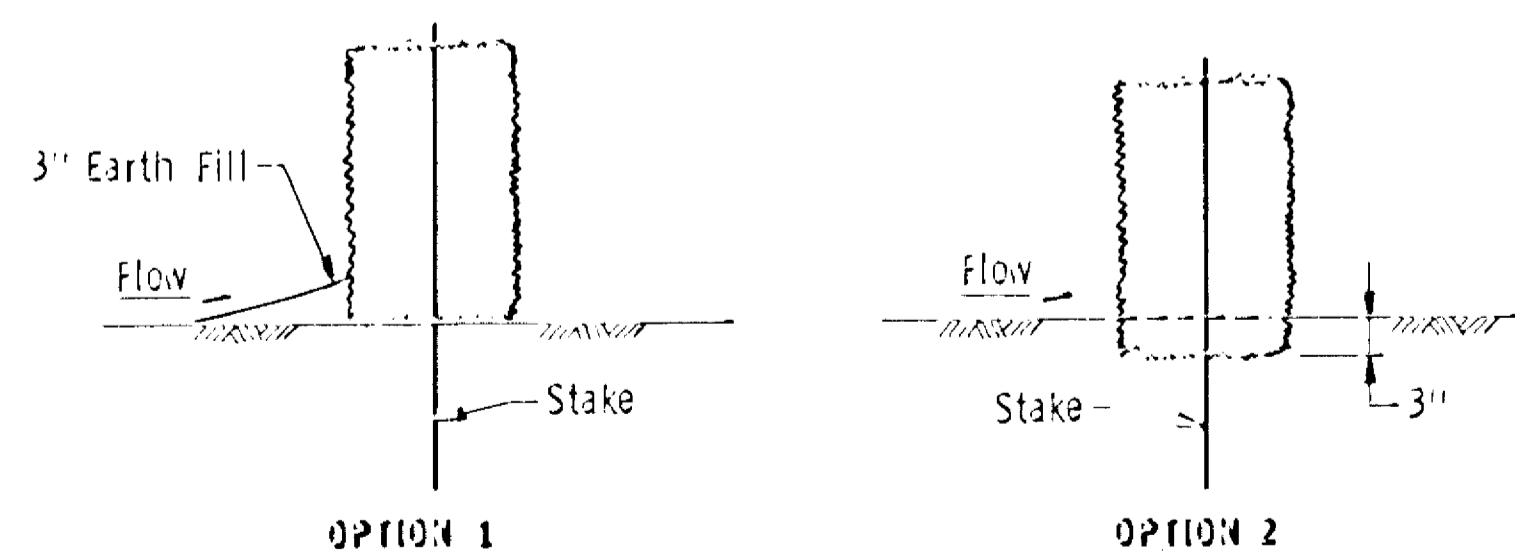
TYPICAL BITUMINOUS FLUME



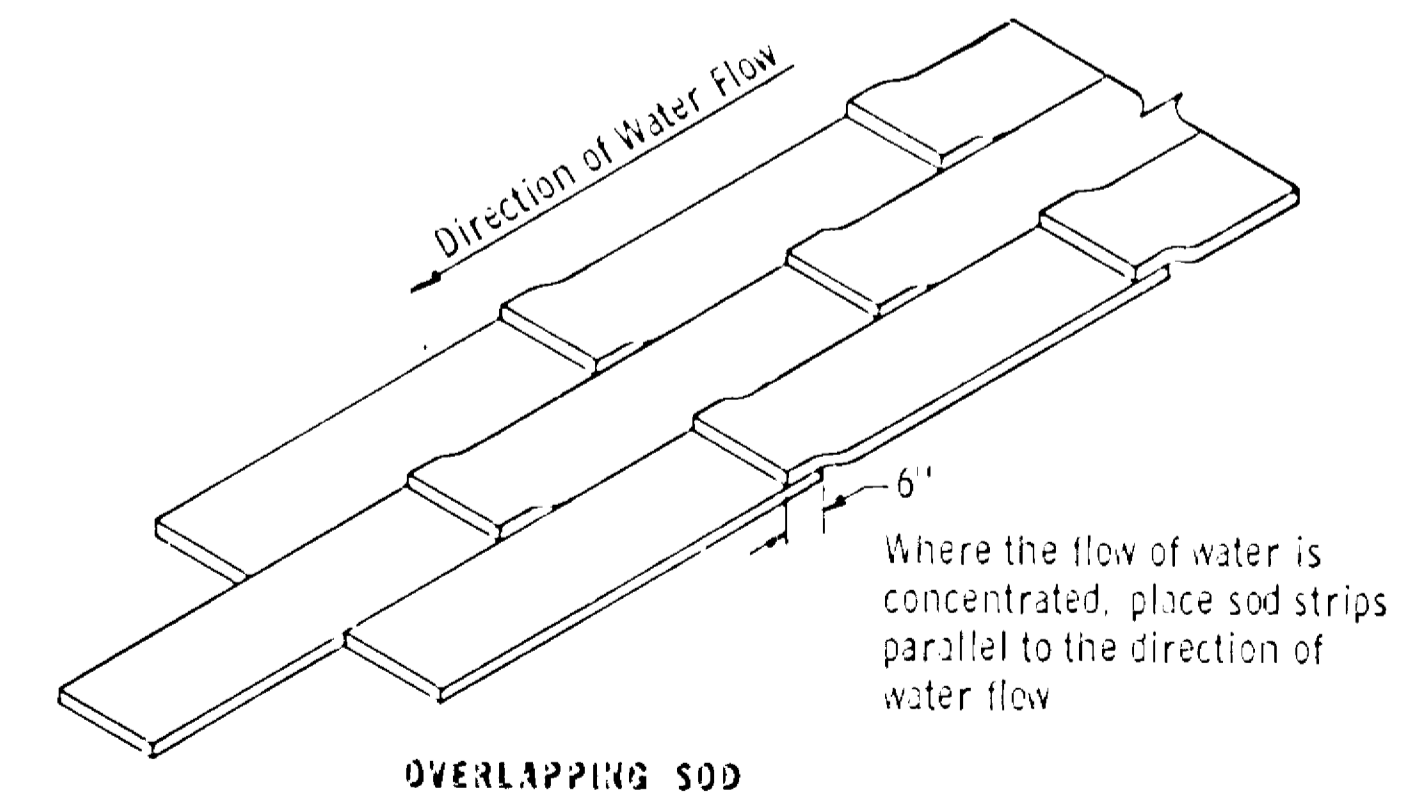
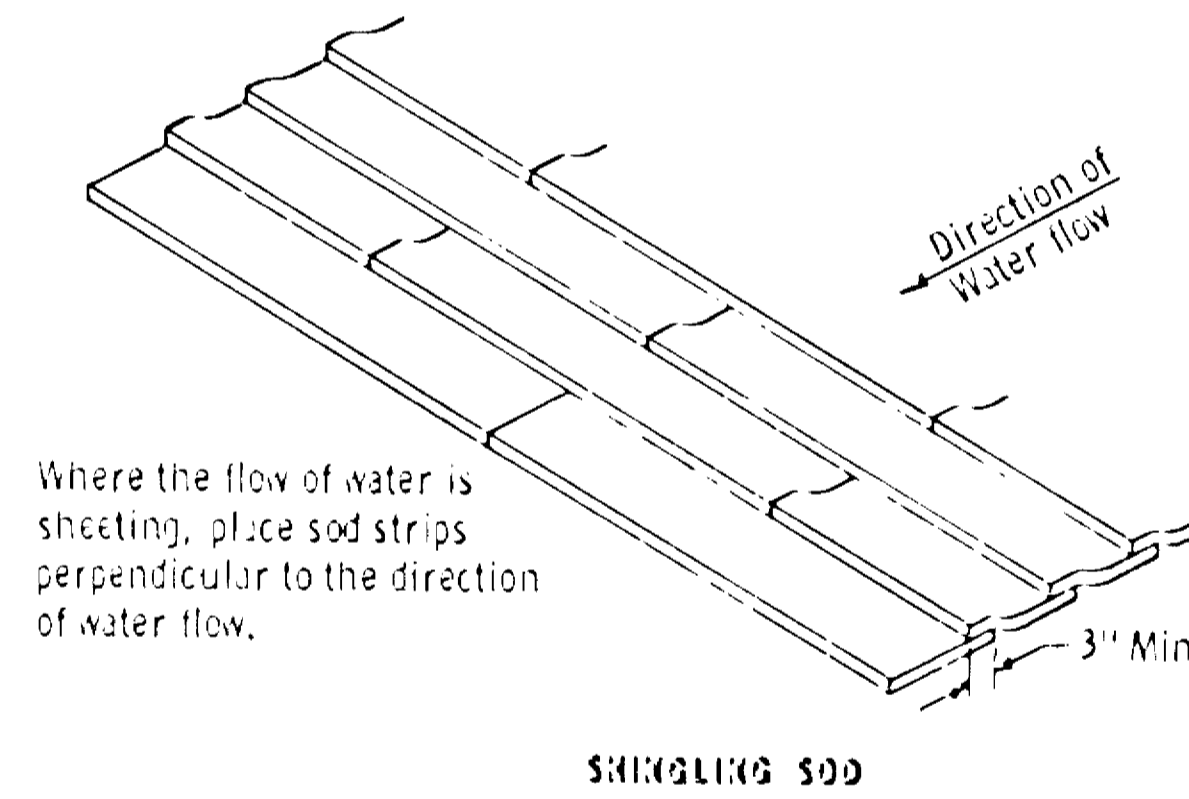
SODDED DITCH DETAILS



BALE HAY OR STRAW DITCH CHECK

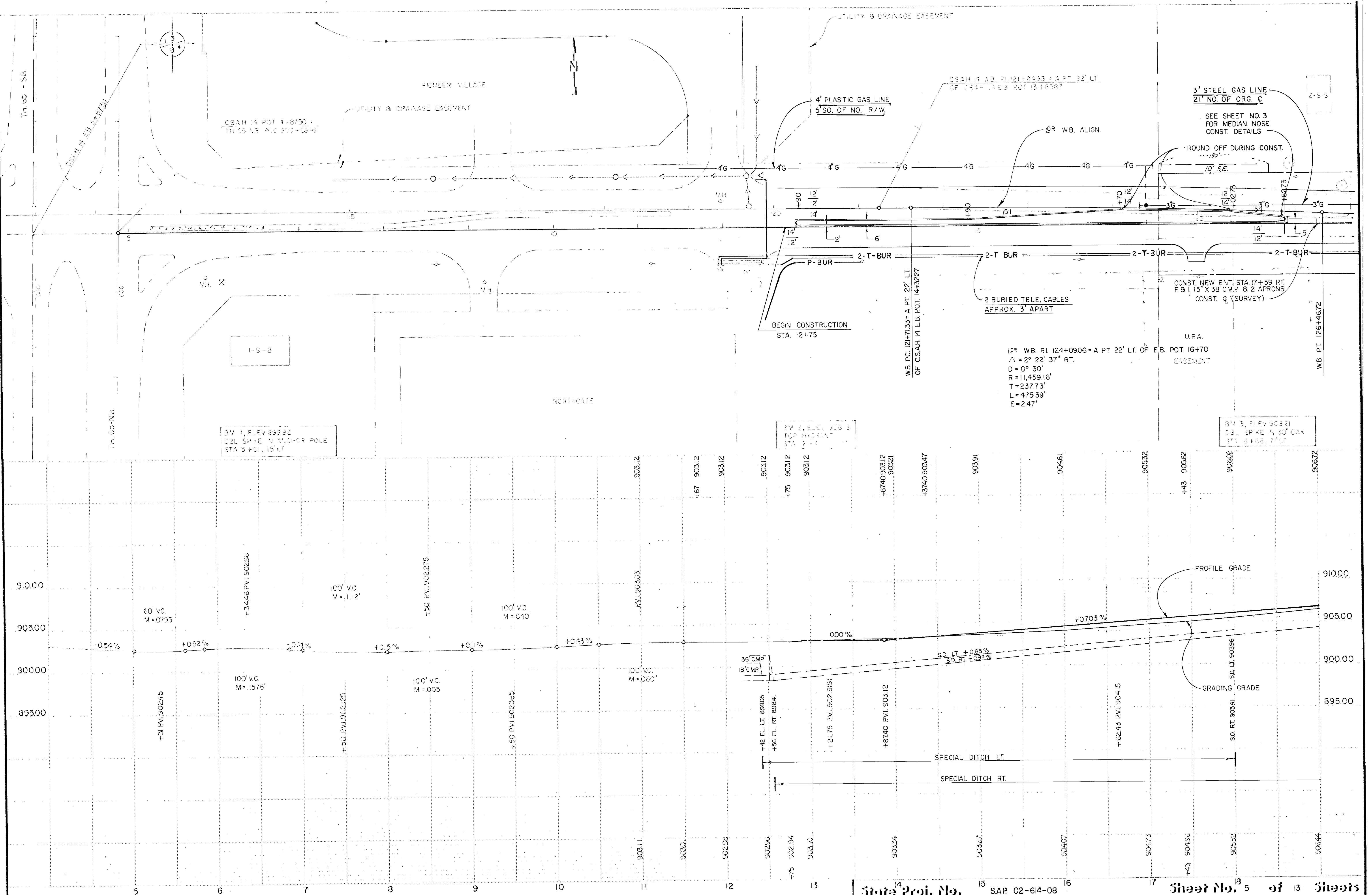


DITCH CHECK SECTIONS



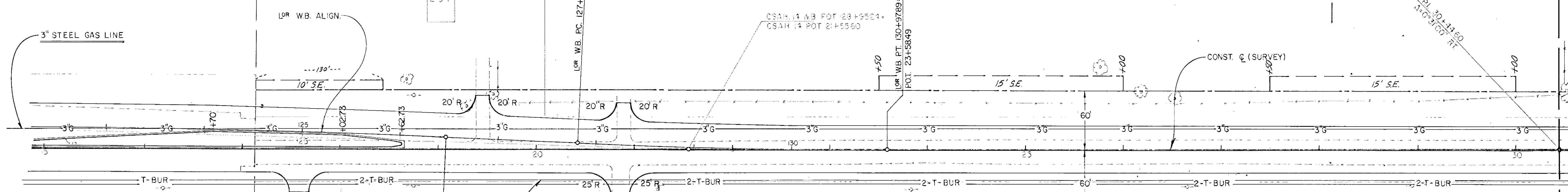
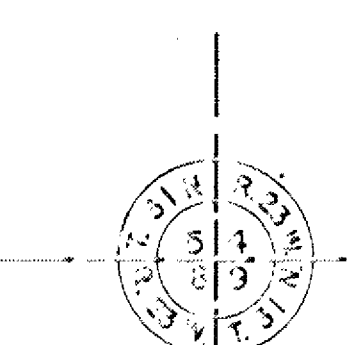
SPECIAL SOD PLACEMENT TECHNIQUES

ILLUSTRATION POST - SINGLE PLAN - PROFILE - 100' HORIZ. SCALE



REV. 3-1-84 702 Rev. 2-10-84 703

LOR WB. PI. 129+39.45 = P.O.T. 22+00
 $\Delta = 2^\circ 22' 37''$ LT.
 $D = 0^\circ 45'$
 $R = 7,639.44'$
 $T = 158.49'$
 $L = 316.93'$
 $E = 164'$



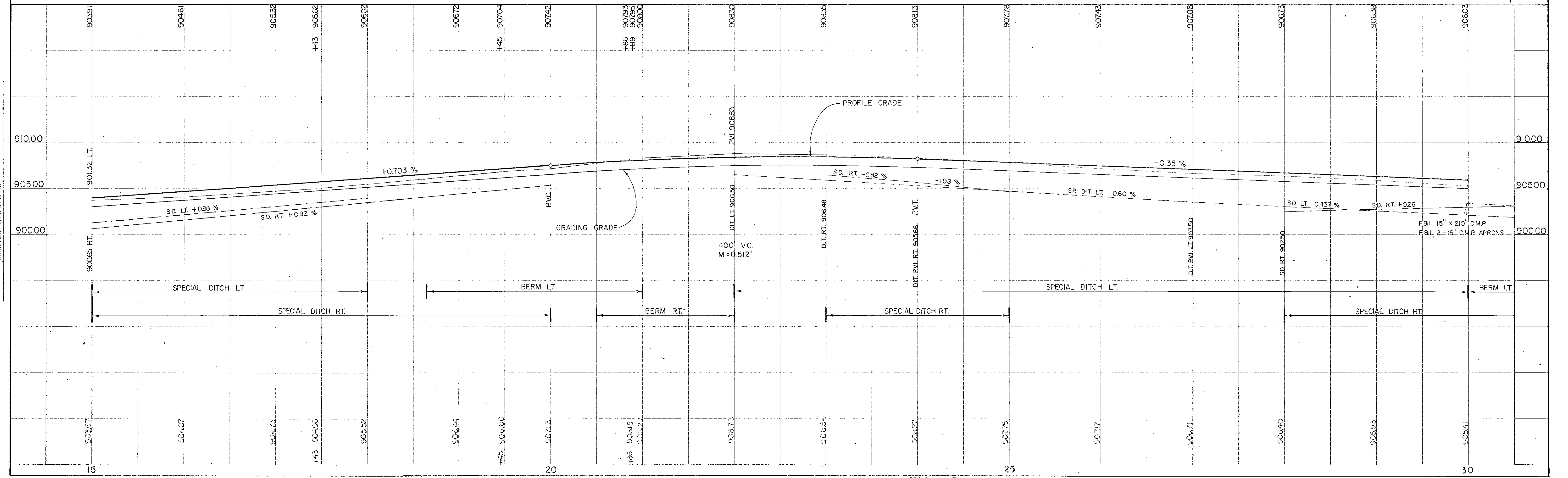
LOR WB. PI. 124+09.06 = A PT. 22' LT. OF P.O.T. 16+70
 $\Delta = 2^\circ 22' 37''$ RT.
 $D = 0^\circ 30'$
 $R = 11,459.16'$
 $T = 237.73'$
 $L = 475.39'$
 $E = 2.47'$

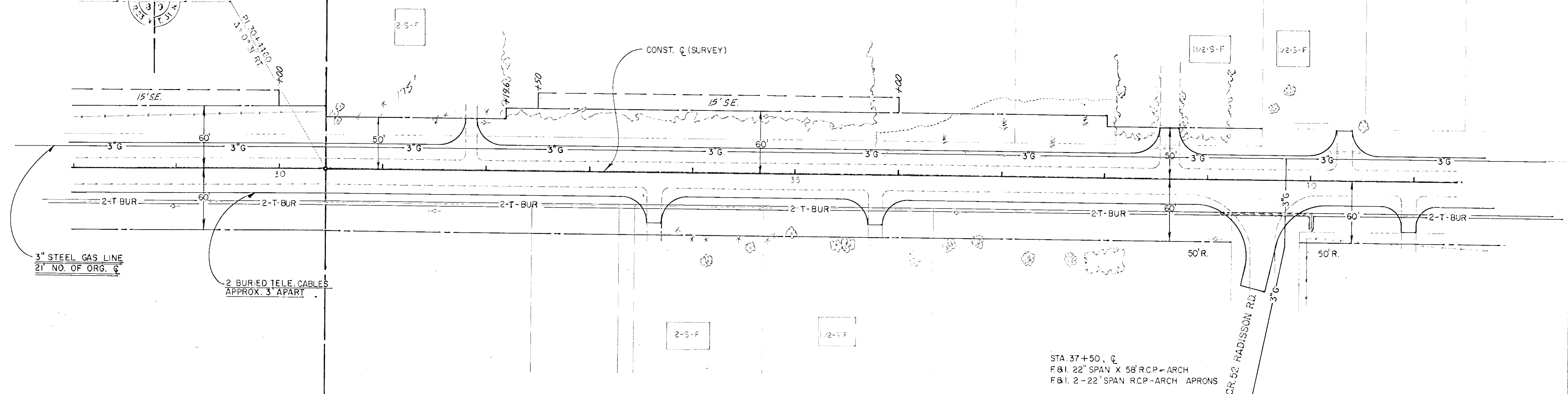
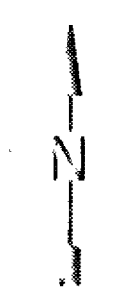
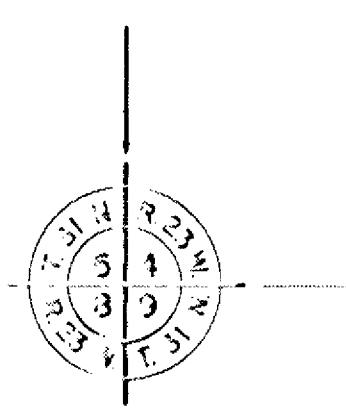
CONST. NEW ENT. STA. 17+59 RT.
 F&I. 15" X 38" C.M.P. & 2-APRONS

U.P.A.
 EASEMENT

2 BURIED TELE CABLES
 APPROX. 3' APART

BM 3 ELEV. 903.21
 DBL. SP. IN 30" C.A.K.
 STA. 3+83, 71' LT.

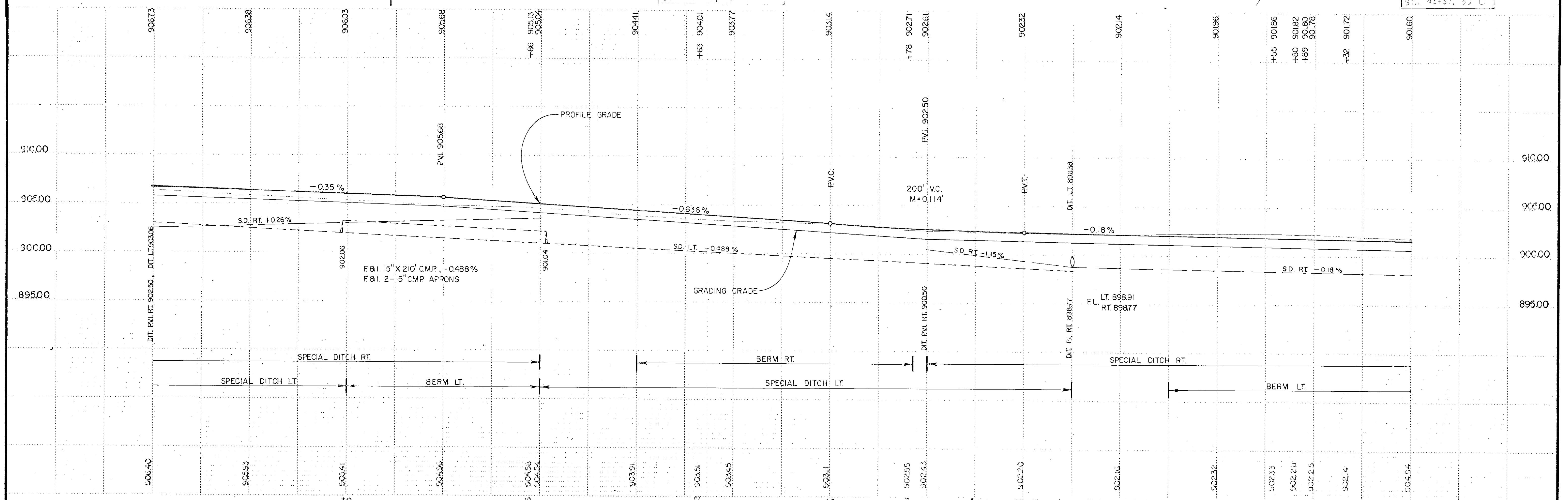




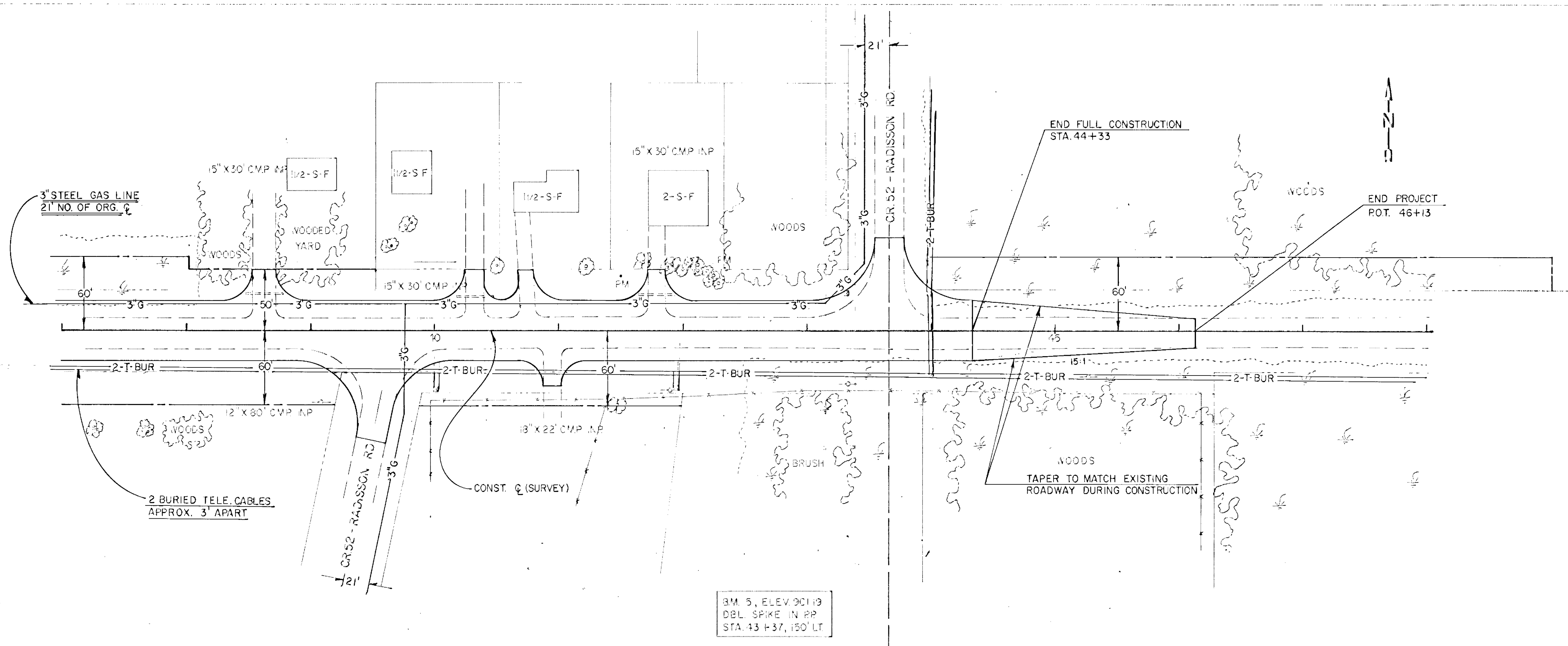
B.M. 1 ELEV. 90317
TOP N.W. COR. COND. PATH
STA. 35+70, 140' RT.

STA. 37+50, C
F&I. 22' SPAN X 58' RCP-ARCH
F&I. 2-22' SPAN RCP-ARCH APRONS

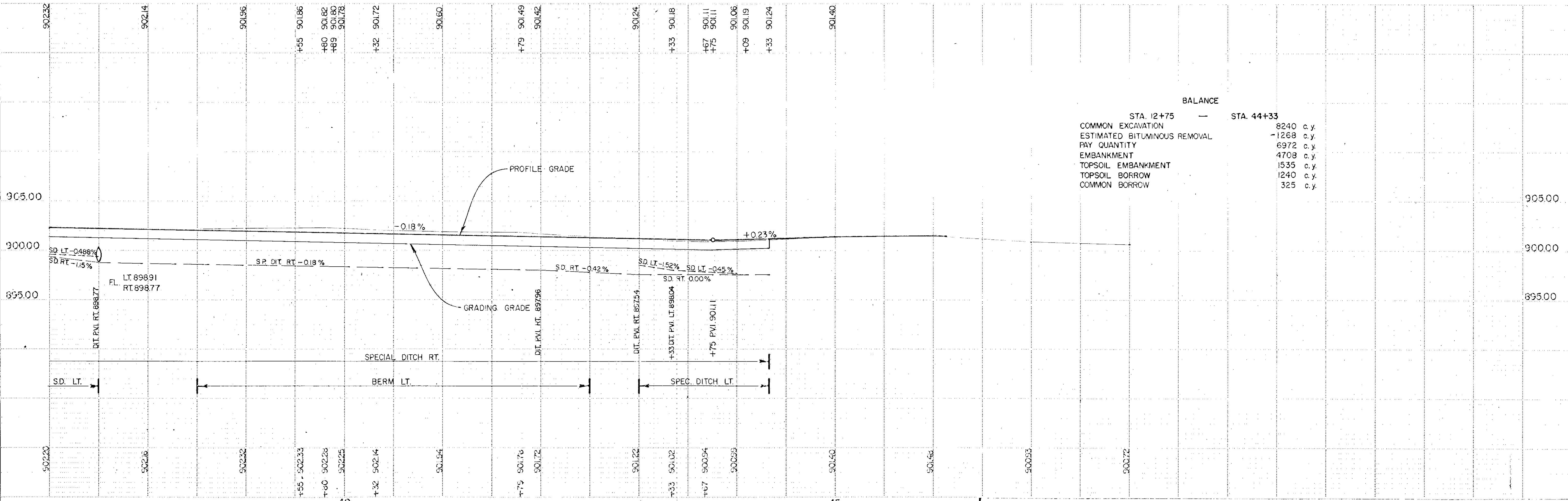
B.M. 5 ELEV. 90119
DBL. SP. KE. N. RP.
STA. 42+37, 50' LT.



11 ELEVING POS. - SINGLE PLAN - PROFILE - INVA
 DATE



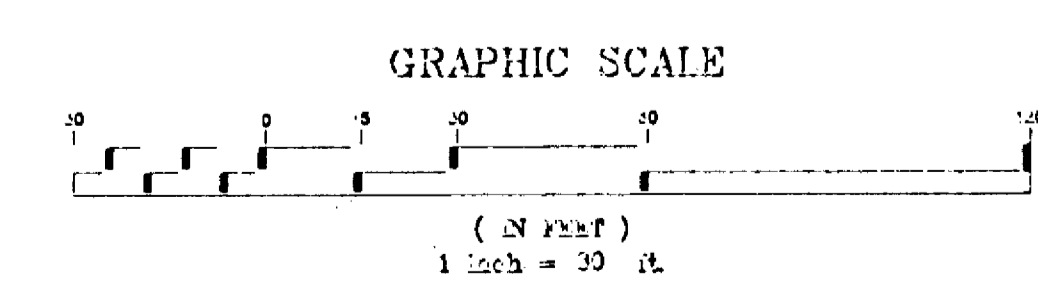
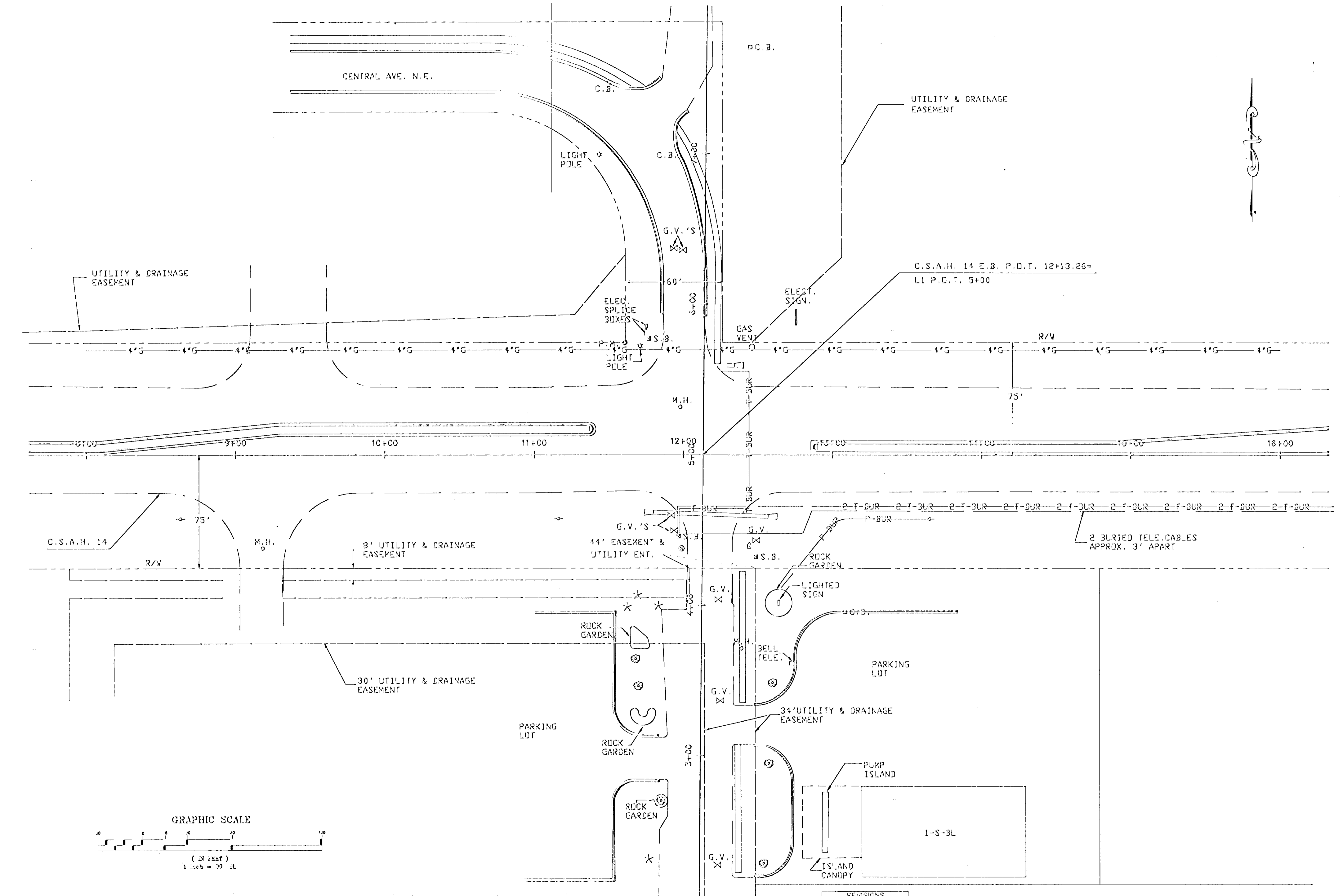
BM 5, ELEV. 901.19
DBL SPIKE IN PP
STA. 43+37, 150' LT



| BALANCE | |
|------------------------------|------------|
| STA. 42+75 | STA. 44+33 |
| COMMON EXCAVATION | 8240 c.y. |
| ESTIMATED BITUMINOUS REMOVAL | -1268 c.y. |
| PAY QUANTITY | 6972 c.y. |
| EMBANKMENT | 4708 c.y. |
| TOPSOIL EMBANKMENT | 1535 c.y. |
| TOPSOIL BORROW | 1240 c.y. |
| COMMON BORROW | 325 c.y. |

ELEVATION POST - SINGLE PLAN - PROFILE - LEGEND

REV 3-2-84 JFW



| REVISIONS | | | |
|-----------|----|------|----|
| DATE | BY | DATE | BY |
| | | | |
| | | | |

S.A.P. S.P. C.P. 02-614-08

Sheet No. _____ of _____ Sheets