

M. W. C. D.

| FED. RD. DIV. NO. | STATE | PROJECT | FISCAL YEAR |      |
|-------------------|-------|---------|-------------|------|
| 2                 | OHIO  |         | 1947        | 1/56 |

TUSCARAWAS COUNTY  
S.H. 712 SEC. N (PT) & O (PT)  
DOVER BASIN  
UNIT N<sup>o</sup> 1 AND N<sup>o</sup> 2

# STATE OF OHIO DEPARTMENT OF HIGHWAYS

## BEACH CITY-BOLIVAR-SHERRODSVILLE ROAD

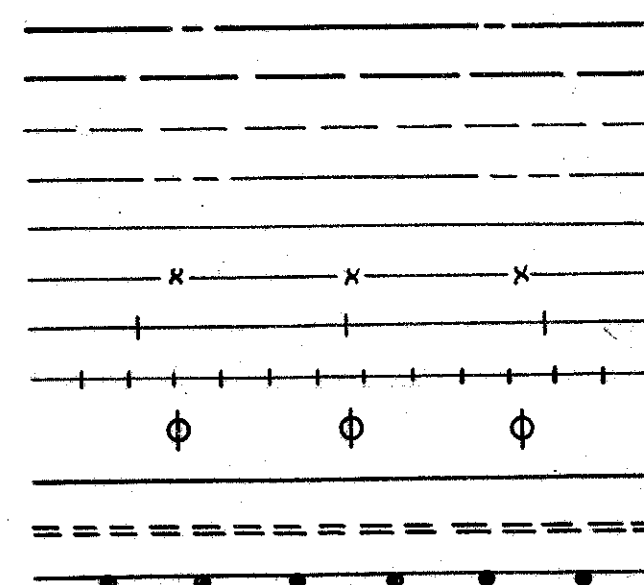
### S.H. 712 SEC. N (PT) & O (PT)

## TUSCARAWAS COUNTY

### LAWRENCE-SANDY-& FAIRFIELD TOWNSHIPS

**CONVENTIONAL**

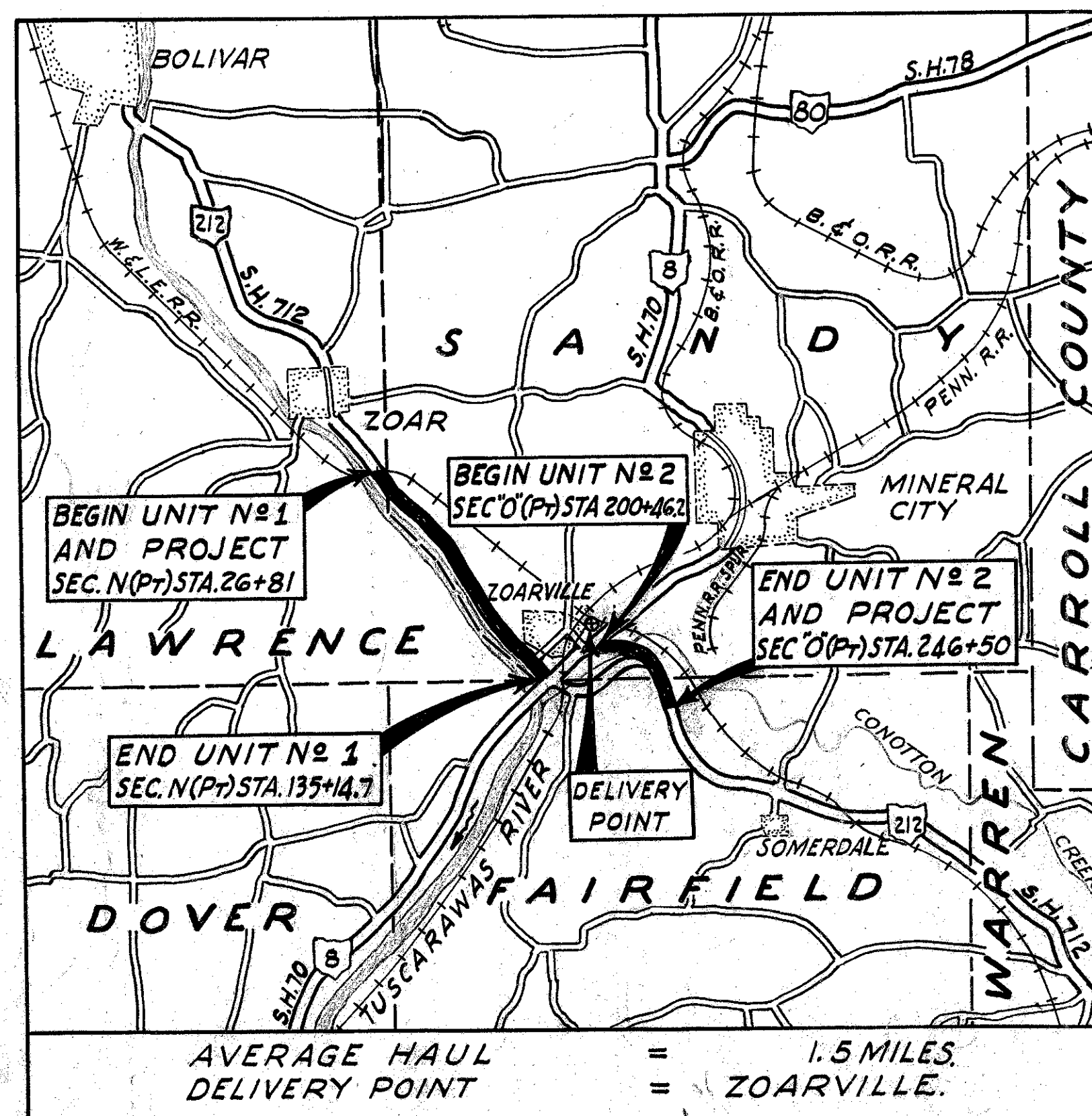
COUNTY LINE  
TOWNSHIP LINE  
SECTION LINE  
CORPORATION LINE  
PROPERTY LINE  
FENCE LINE  
CENTER LINE  
STEAM RAILROAD  
POLE LINE  
DRAIN PIPE (NEW)  
DRAIN PIPE (OLD)  
GUARD RAIL (NEW)

**SIGNS****INDEX OF SHEETS**

| TITLE SHEET                       | SHEET |  |
|-----------------------------------|-------|--|
| TYPICAL SECTION AND GENERAL NOTES | 1     |  |
| TYPICAL DETAILS AND GENERAL NOTES | 2     |  |
| PLAN & PROFILE                    | 3     |  |
| CURVE TABLES                      | 4-12  |  |
| CROSS SECTIONS                    | 13-14 |  |
| APPROACHES                        | 15-33 |  |
| STRUCTURES 20' SPAN & UNDER       | 34    |  |
| STRUCTURES OVER 20' SPAN          | 35-47 |  |
| SUMMARY OF QUANTITIES             | 48-54 |  |
|                                   | 55-56 |  |

**LINE DATA**

|                                          |                                  |
|------------------------------------------|----------------------------------|
| BEGIN PROJECT AND UNIT N <sup>o</sup> 1. | STA. 26+81                       |
| END UNIT N <sup>o</sup> 1.               | STA. 135+14.7                    |
| NO ADDITIONS OR DEDUCTIONS               |                                  |
| NET LENGTH OF UNIT N <sup>o</sup> 1.     | 10,833.70 LIN. FT. = 205.1 MILES |
| BEGIN UNIT N <sup>o</sup> 2.             | STA. 200+46.2                    |
| END UNIT N <sup>o</sup> 2 AND PROJECT.   | STA. 246+50                      |
| GROSS LENGTH UNIT N <sup>o</sup> 2.      | 4603.80 LIN. FT.                 |
| DEDUCTIONS :- RAILROAD CROSSING          | 18.00 LIN. FT.                   |
| NET LENGTH UNIT N <sup>o</sup> 2.        | 4585.80 LIN. FT. = 0.868 MILES   |
| NET LENGTH OF PROJECT.                   | 15419.50 LIN. FT. = 2.920 MILES  |

**LOCATION PLAN**

Scale 1" = 1 Mile  
PORTION TO BE IMPROVED  
STATE HIGHWAYS  
OTHER ROADS

**SCALES**

|                    |           |
|--------------------|-----------|
| PLAN               | 1" = 100' |
| PROFILE HORIZONTAL | 1" = 100' |
| PROFILE VERTICAL   | 1" = 10'  |
| CROSS SECTIONS     | 1" = 10'  |

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF HIGHWAYS, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY, AND THAT TRAFFIC WILL BE MAINTAINED AS PROVIDED IN THESE PLANS AND ESTIMATES.

THE RIGHT OF WAY NECESSARY FOR THIS IMPROVEMENT WILL BE PROVIDED BY THE STATE OF OHIO.

APPROVED Harvey F. Brown  
DATE 12-10-47 RESIDENT DEPUTY DIRECTOR.

APPROVED E. R. McCullough  
DATE 2/14/48 DIVISION DEPUTY DIRECTOR.

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ CHIEF ENGINEER BUREAU OF MAINTENANCE.

APPROVED G. V. Laque  
DATE 9-24-47 CHIEF ENGINEER BUREAU OF BRIDGES & R.R. CROSSINGS.

APPROVED Wm. J. Thomsen  
DATE 9/30/47 CHIEF ENGINEER, BUREAU OF LOCATION & DESIGN.

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ FIRST ASST. DIRECTOR & CHIEF ENGINEER.

APPROVED M. W. C. D.  
DATE 10-1-47 DIRECTOR OF HIGHWAYS.

APPROVED  
U.S. ENGINEERING DEPARTMENT  
BY \_\_\_\_\_

DISTRICT ENGINEER

|                     |                                                                                                                                                               |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FILE N <sup>o</sup> | TUSCARAWAS COUNTY S.H. 712<br>SEC. N (PT) & O (PT) UNIT N <sup>o</sup> 1 & N <sup>o</sup> 2<br>DATE OF LETTING _____ 194____<br>CONTRACT N <sup>o</sup> _____ |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|

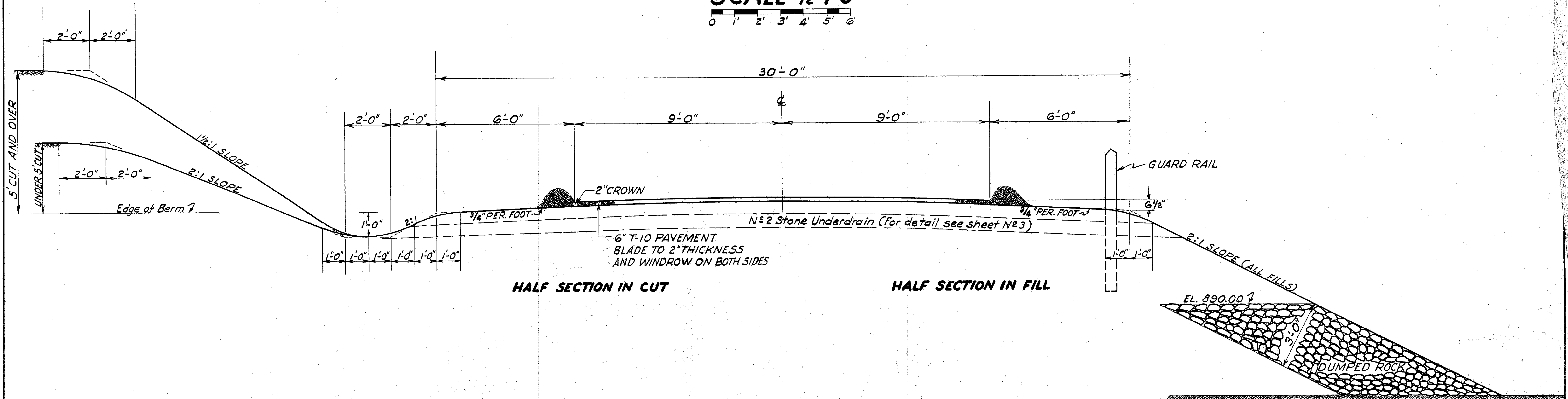
| STANDARD DRAWINGS      |          |                       |         |                       |        |
|------------------------|----------|-----------------------|---------|-----------------------|--------|
| G-3.07                 | 2-1-47   | S-27 P.C. 1           | 3-1-39  | I-15 N <sup>o</sup> 6 | 2-1-47 |
| I-1, 2, 3, 4 & 5       | 2-20-45  | S-27 P.C. 2           | 12-1-41 | I-15 N <sup>o</sup> 7 | 2-1-47 |
| I-8 C. B. 1-2 & 3      | 12-15-41 | S-27 P.C. 3           | 2-20-45 | I-15 N <sup>o</sup> 9 | 2-1-47 |
| I-8 C. B. 2-2 & 3      | 12-15-41 | STC-3A                | 3-8-39  | L-3                   | 2-1-47 |
| I-15 N <sup>o</sup> 1. | 3-1-47   | AS-41-F               | 3-31-41 |                       |        |
| I-15 N <sup>o</sup> 2. | 2-1-47   | I-15 N <sup>o</sup> 4 | 2-1-47  |                       |        |
|                        |          | I-15 N <sup>o</sup> 5 | 2-1-47  |                       |        |

| SUPPLEMENTAL SPECIFICATIONS |                |
|-----------------------------|----------------|
| E-401                       | 11-1-44        |
| T-110                       | Revised 8-3-36 |



# TYPICAL SECTION FOR TYPE T-10

SCALE 1/2"=1'-0"  
0 1' 2' 3' 4' 5' 6'



## GENERAL NOTES

**CURVES:-**Superelevated curves shall be built without crown. The crown shall be worked out of the pavement in that portion between the beginning of the transition and the point where the superelevation equals twice the crown.

**TREES:-**No tree shall be removed unless specifically marked for removal by the Engineer.

**STONE UNDERDRAIN:-** Stone underdrain shall be placed at the junction of cuts and fills and at the low points on vertical curves. Actual locations shall be determined by the Engineer.

**PIPE:-** All existing pipe marked "Remove and Store" shall be neatly stored within the right of way and left at the disposal of the State forces.

**SEEDING:-** Seeding on this project shall be performed in accordance with Item 1-9.01 on back slopes, ditches and fill slopes except where sodding or dumped rock fill is specified.

**COMPACTION:-** Compaction will not be required on the top three inches (3") of areas to be seeded.

**FERTILIZER:-** Fertilizer of 10-6-4 formula shall be used on all seeded areas at the rate of twenty (20) pounds per thousand (1000) square feet.

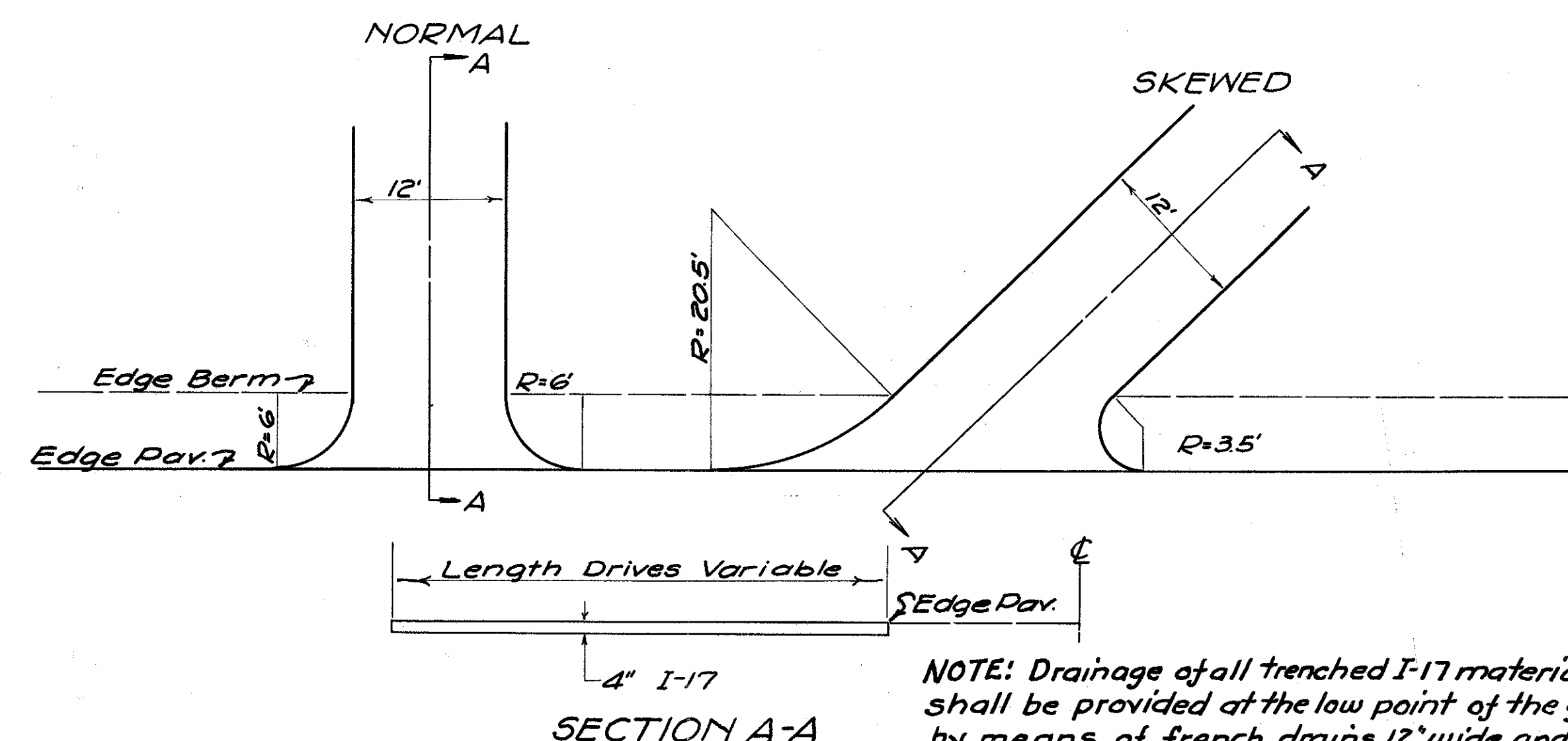
**SODDING:-** Areas to be sodded shall be loosened to a depth of two (2) inches just prior to laying the sod. This work shall be included for payment in the price bid per square yard for sodding.

**NOTE:-** For continuation of notes (see sheet N<sup>o</sup> 3)



# TYPICAL DETAILS

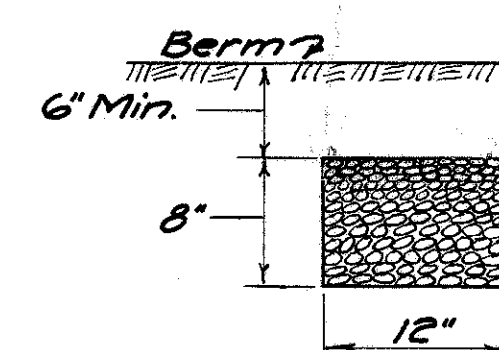
## PRIVATE DRIVES



SECTION A-A

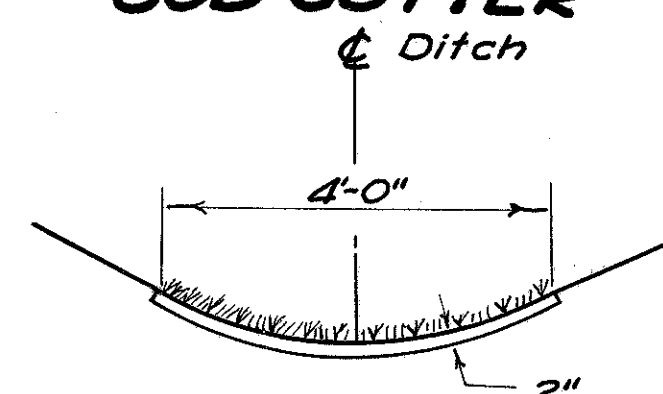
NOTE: Drainage of all trenched I-17 material shall be provided at the low point of the grade by means of french drains 12" wide and 8" deep. Cost of drains to be included in price bid for Item I-17.

## No. 2 STONE UNDERDRAIN



## CONTINUATION OF GENERAL NOTES (See Sheet No. 2)

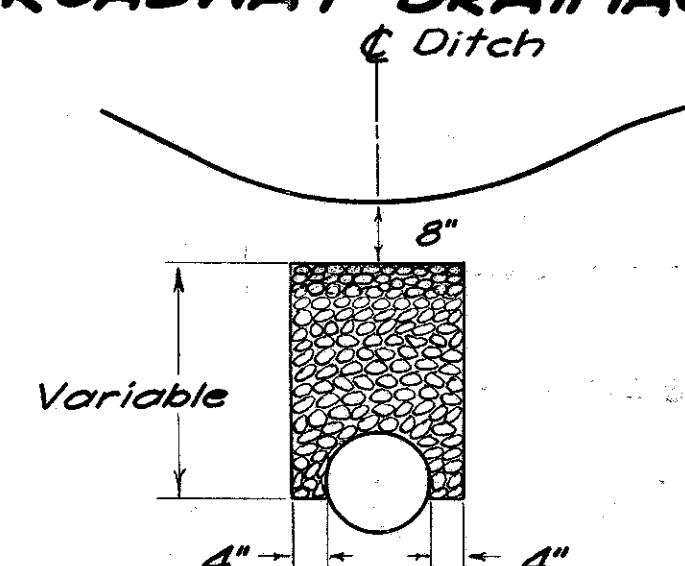
### SOD GUTTER



**SALVAGE TRAFFIC BOUND SURFACE COURSE:**—Ballast on old railroad fill shall be removed to elevation indicated by the heavy dashed lines on cross sections and stock piled for later use as salvaged traffic bound material. This material shall be placed on the finished grade to a depth of six (6) inches and then bladed to a depth of two (2) inches and wind rowed on both sides as indicated on the typical section. All sod, weeds and other foreign material shall be removed during the blading operations. The unit price bid for Item T-10 Salvaged Traffic Bound Surface Course shall include the removal of material from the old railroad embankment stock piling and final placing on the finished grade.

In lieu of the requirements of Sec. T-10.08, the quantities of salvaged material to be paid for shall be the actual number of cubic yards placed, measured loose in the vehicle at the point of delivery, completed and accepted.

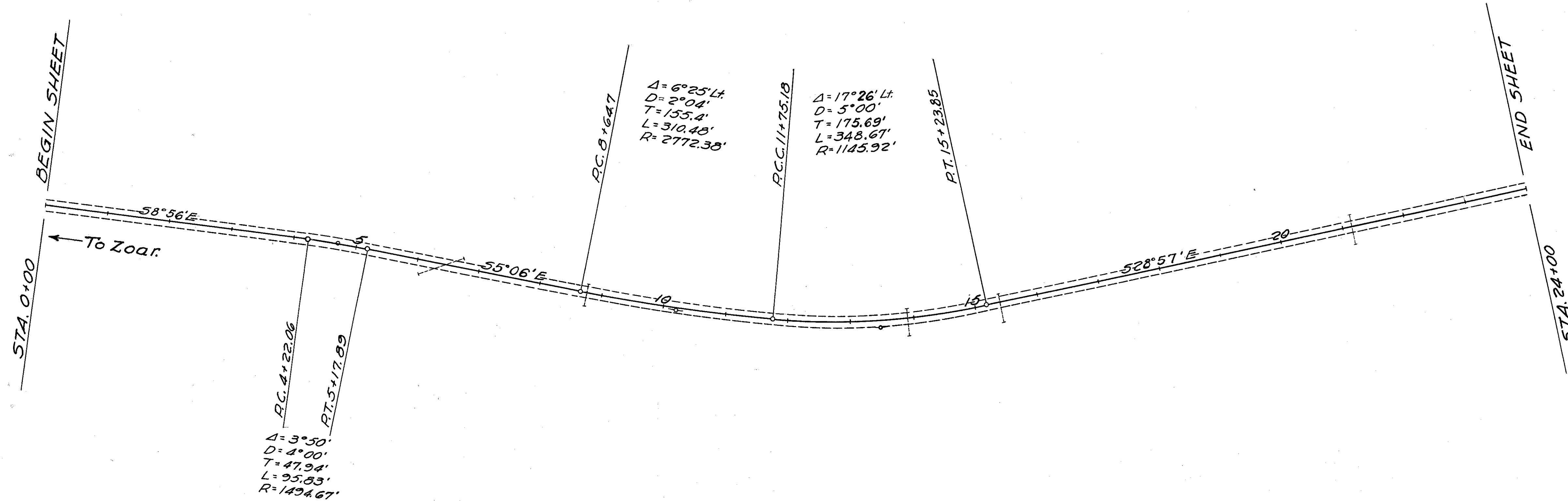
### ROADWAY DRAINAGE



**TRAFFIC:**—Two way traffic shall be maintained on the portions of existing pavement lying outside the limits of new construction. The portions of existing pavement being used for traffic lanes shall be kept free of stored materials, equipment, employees autos and other obstructions. In all cases where the new construction limits include the existing pavement or berms, the cuts, fills and connecting ramps shall be built in such a manner as to provide for two way traffic lanes with a surface not less than twenty (20) feet in width and embankment need not be constructed full cross section width. Two way traffic shall be maintained at all times unless permission is granted by the Engineer in writing for one way traffic between specified stations for a definite period of time. In event one way traffic is permitted, the surfacing material shall be not less than twelve (12) feet in width. Watchmen shall be posted at each end of the one way traffic zone and maintained twenty four (24) hours daily. All temporary traffic lanes shall be surfaced with T-110 material, treated with calcium chloride and the surface maintained daily to the satisfaction of the Engineer. When it becomes necessary to relocate temporary traffic lanes, the T-110 material shall be salvaged and re-used on each succeeding location where practicable. The contractor will be required to maintain trucks or tractors in the vicinity of all temporary traffic lanes at all times to render the necessary assistance in the movement of traffic. The lump sum bid for maintaining traffic, including lights, signs, barricades and watchmen for twenty four (24) hour service shall include all the foregoing and all the labor, material and equipment necessary to complete this item, except calcium-chloride and T-110 material which items are included in the estimate.

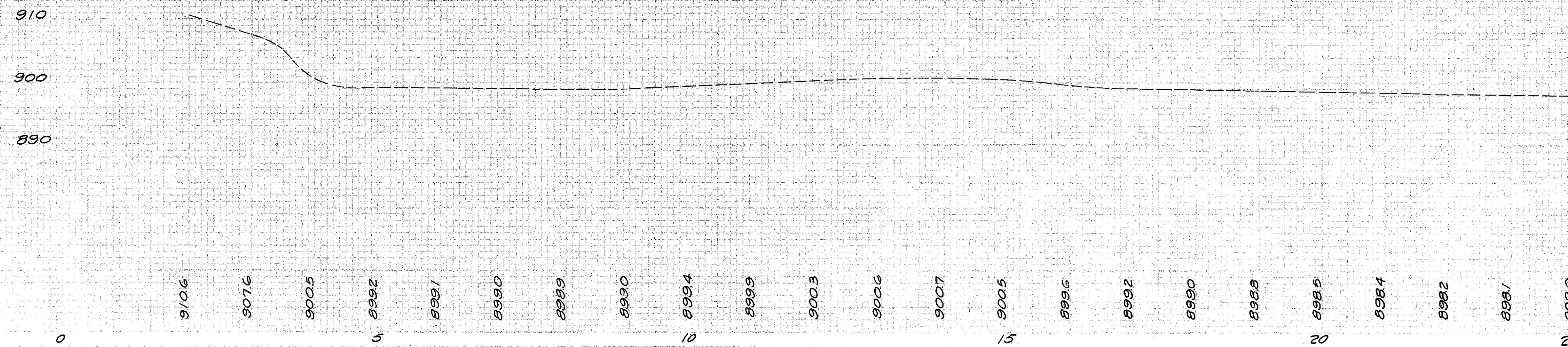


TUSCARAWAS COUNTY  
S.H. 712 SEC. N(PT) & O(PT)  
DOVER BASIN UNIT No. 1

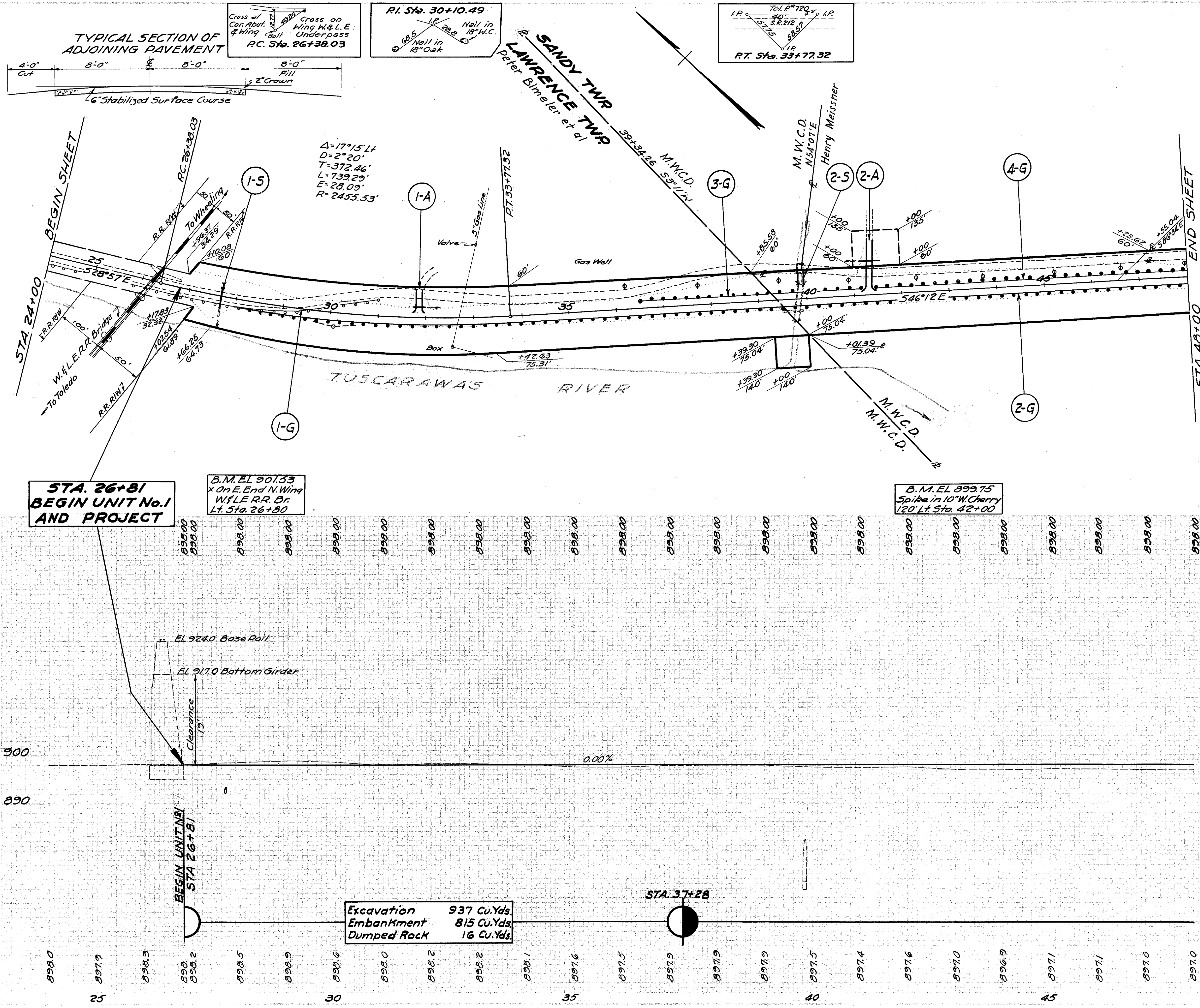


B.M. Station 2+20  
Spike in 15" Apple  
70' Left  
Elevation 922.34

B.M. Station 11+04  
x on Rock Ledge  
15' Left  
Elevation 901.56







DIV. 2 0410 1947 56

TUSCARAWAS COUNTY  
S.H. 712 SEC. N (PT) 50 (PT)  
DOVER BASIN UNIT No. 1

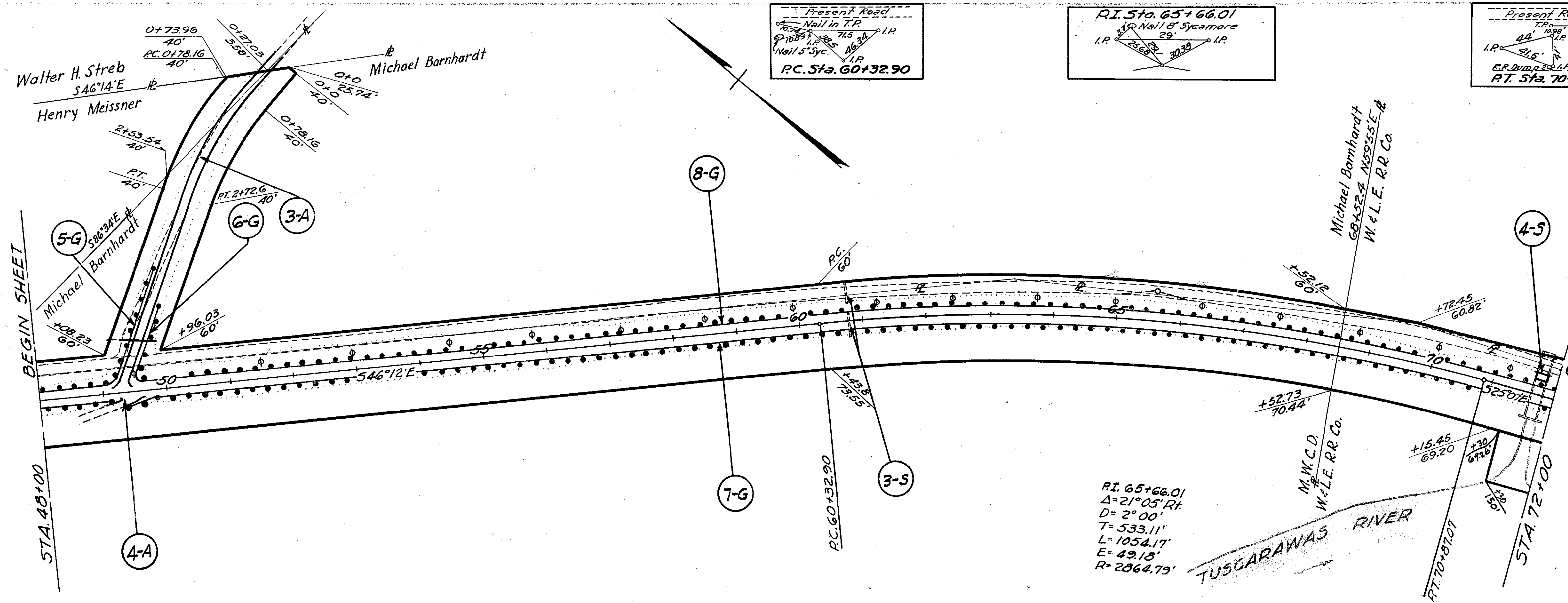
| APPROACHES |         |      |               |                             |                     |  |
|------------|---------|------|---------------|-----------------------------|---------------------|--|
| REF. NO.   | STATION | SIDE | SEE SHEET NO. | PIPE FOR DRIVEWAYS LIN. FT. | I-17 AGGR. CU. YDS. |  |
| 1-A        | 31+85   | LT.  | 15            | 26                          | 4                   |  |
| 2-A        | 41+42   | LT.  | 16            | 44                          | 15                  |  |
| TOTALS     |         |      |               | 26 44                       | 19                  |  |

| STRUCTURES-20' SPAN & UNDER |         |       |         |      |        |               |              |
|-----------------------------|---------|-------|---------|------|--------|---------------|--------------|
| REF. NO.                    | STATION | SHEET | TYPE    | SIZE | LENGTH | NEW WORK TYPE | SIZE LENGTH  |
| 1-S                         | 27+69   | 35    | V.S.P.  | 12"  | 60'    | PIPE          | 15" 46'      |
| 2-S                         | 39+83.9 | 36    | Masonry |      |        | S.T.C.        | 9'x8' 20'-9" |

| GUARD RAIL |              |            |      |                           |                    |  |
|------------|--------------|------------|------|---------------------------|--------------------|--|
| REF. NO.   | STATION FROM | STATION TO | SIDE | REMOVE AND STORE LIN. FT. | PLACE NEW LIN. FT. |  |
| 1-G        | 28+20        | 31+00      | RT.  | 280                       |                    |  |
| 2-G        | 28+25        | 40+18      | RT.  |                           | 2096               |  |
| 3-G        | 36+50        | 41+30      | LT.  |                           | 480                |  |
| 4-G        | 41+54        | 49+06      | LT.  |                           | 752                |  |
| TOTALS     |              |            |      | 280                       | 3328               |  |

| ROADSIDE IMPROVEMENT |            |      |                  |                  |
|----------------------|------------|------|------------------|------------------|
| STATION FROM         | STATION TO | SIDE | SEEDING SQ. YDS. | FERTILIZER LB'S. |
| 26+81                | 48+00      | BOTH | 6500             | 1170             |
| TOTALS               |            |      | 6500             | 1170             |





Present Road  
Nail in T.P.  
10' Nail 8' Sycamore  
29' I.P.  
10' Nail 5' Syc.  
I.P.  
P.C. Sta. 60+32.90

R.I. Sta. 65+66.01  
Δ=21°05' Rt  
D=2°00'  
T=533.11'  
L=1054.17'  
E=49.18'  
R=2364.79'

Present Road  
T.P. 33'  
20' Syc.  
3rd  
I.P. 44'  
41.5'  
B.R. Dump 18' I.P.  
P.T. Sta. 70+87.07

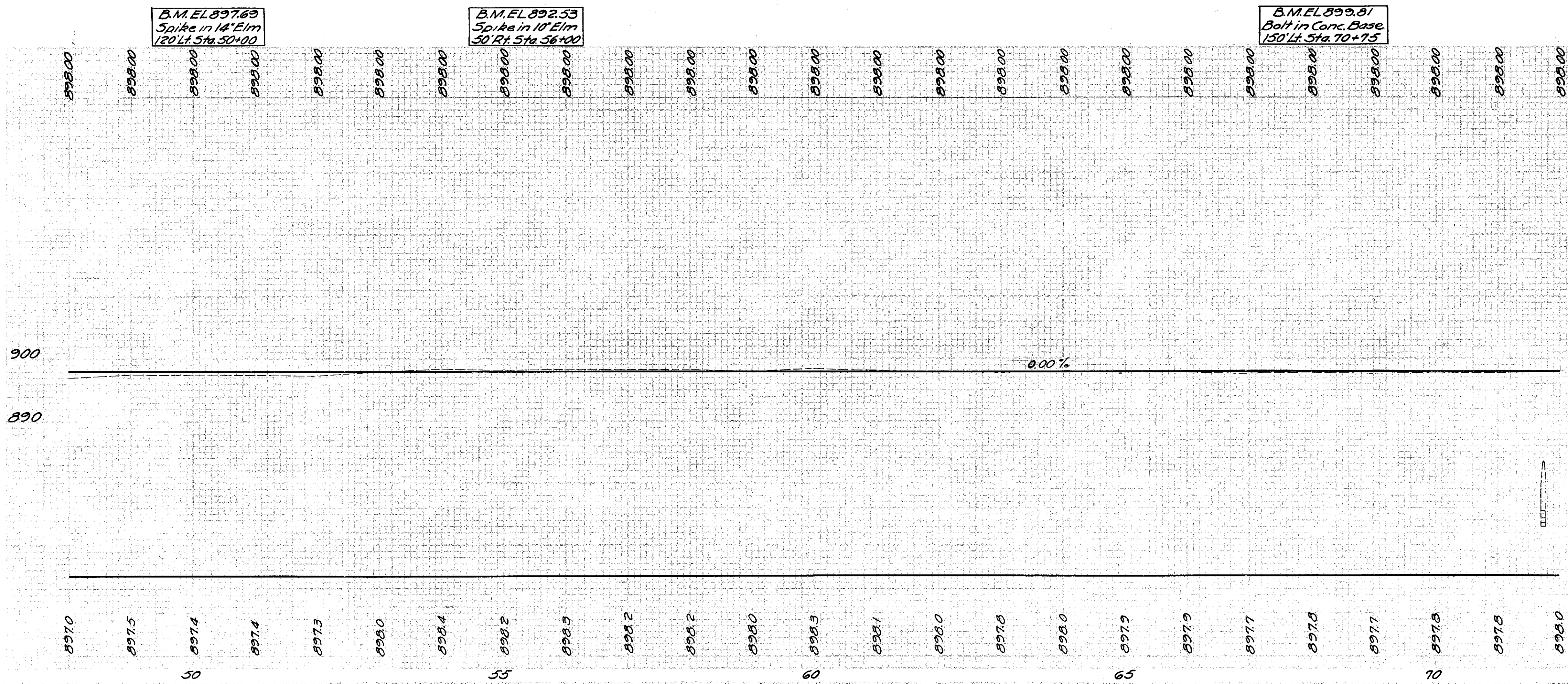
DIV. 2 OHIO 1947 50  
TUSCARAWAS COUNTY  
S.H. 712 SEC. N(Pt) & O(Pt)  
DOVER BASIN UNIT No. 1

| APPROACHES |         |      |               |                             |                     |
|------------|---------|------|---------------|-----------------------------|---------------------|
| REF. No.   | STATION | SIDE | SEE SHEET No. | PIPE FOR DRIVEWAYS LIN. FT. | I-17 AGGR. CU. YDS. |
| 3-A        | 49+25   | LT.  | 34            | 52                          | 170                 |
| 4-A        | 49+50   | RT.  | 16            |                             | 3                   |
| TOTALS     |         |      |               | 52                          | 173                 |

| STRUCTURES-20' SPAN & UNDER |         |           |          |      |          |           |           |
|-----------------------------|---------|-----------|----------|------|----------|-----------|-----------|
| REF. No.                    | STATION | SEE SHEET | REMOVALS |      | NEW WORK |           |           |
|                             |         |           | TYPE     | SIZE | LENGTH   | TYPE      | SIZE      |
| 3-S                         | 60+79   | 6         | G.M.P.   | 15"  | 75'      |           |           |
| 4-S                         | 71+73.7 | 37        |          |      |          | CONC. CAP | 12'-6" 6' |

| GUARD RAIL |         |       |      |                    |             |
|------------|---------|-------|------|--------------------|-------------|
| REF. No.   | STATION |       | SIDE | PLACE NEW LIN. FT. | REMARKS     |
| 5-G        | 3+92    | 5+90  | RT.  | 208                | ON APPR 3-A |
| 6-G        | 4+50    | 5+73  | LT.  | 128                | ON APPR 3-A |
| 7-G        | 49+40   | 72+00 | RT.  | 2256               |             |
| 8-G        | 49+64   | 73+59 | LT.  | 2400               |             |
| TOTALS     |         |       |      | 4992               |             |

| ROADSIDE IMPROVEMENT |       |      |          |            |
|----------------------|-------|------|----------|------------|
| STATION              |       | SIDE | SEEDING  | FERTILIZER |
| FROM                 | TO    |      | SQ. YDS. | LB'S.      |
| 48+00                | 72+00 | BOTH | 8000     | 1440       |
| TOTALS               |       |      | 8000     | 1440       |

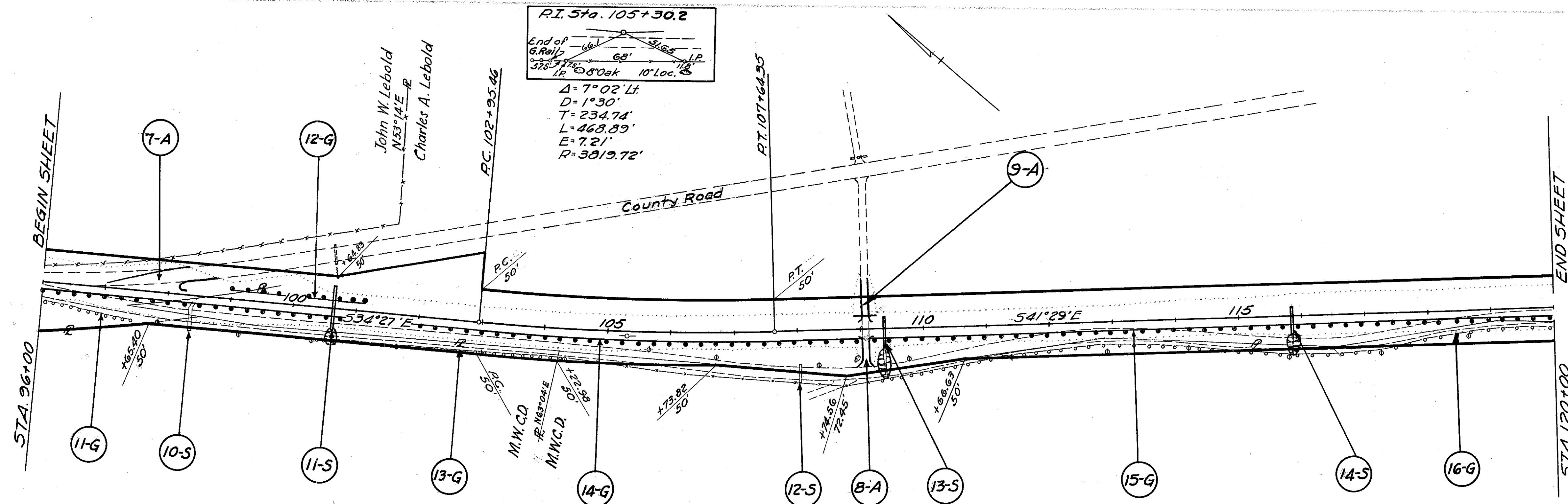






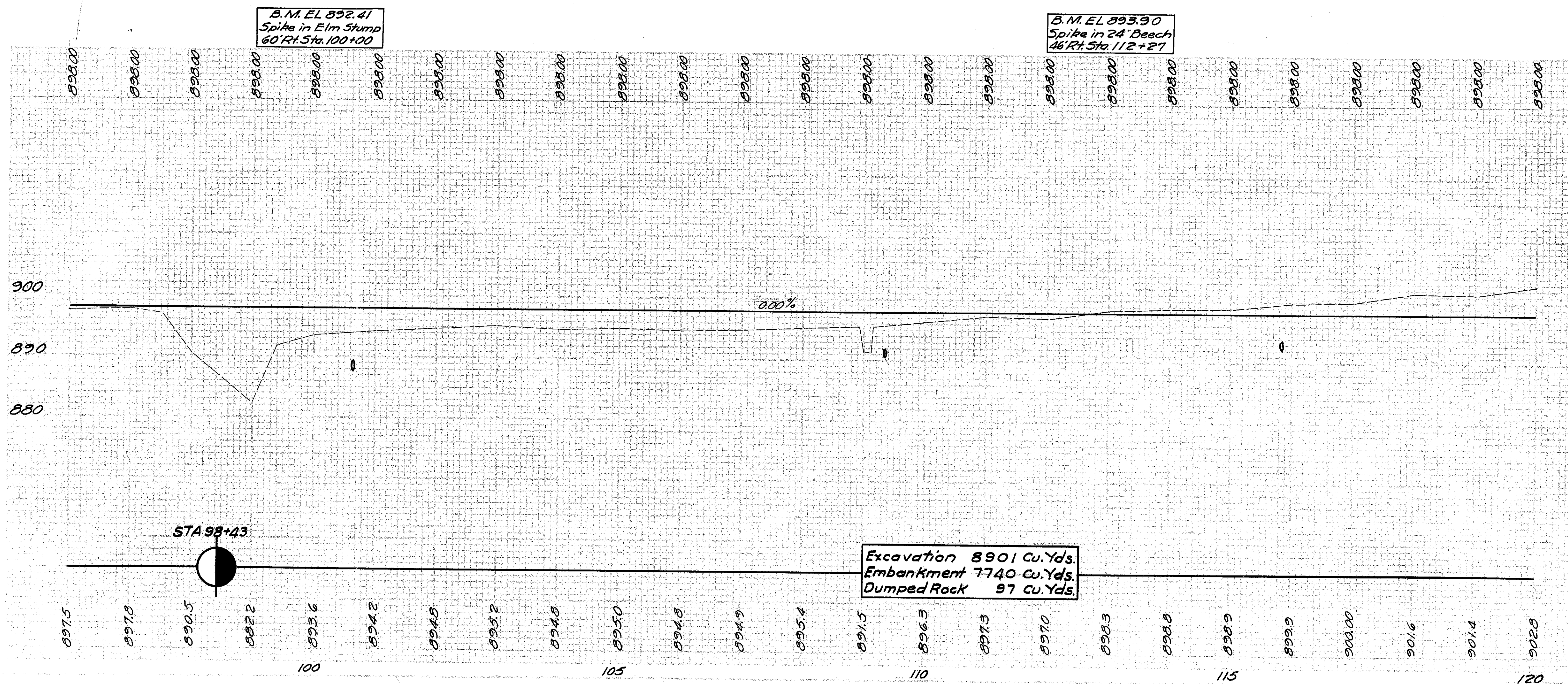


TUSCARAWAS COUNTY  
S.H. 712 SEC. N(PT) & O(PT)  
DOVER BASIN UNIT No. 1



| APPROACHES |         |      |           |                                |  |                          |
|------------|---------|------|-----------|--------------------------------|--|--------------------------|
| REF        | STATION | SIDE | SEE SHEET | PIPE FOR DRIVEWAYS<br>LIN. FT. |  | I-17<br>AGGR<br>CU. YDS. |
| Nº         |         |      | Nº        | 12"                            |  |                          |
| 7-A        | 97+75   | Lt.  | 20        |                                |  | 30                       |
| 8-A        | 109+06  | Rt.  | 21        |                                |  | 12                       |
| 9-A        | 109+06  | Lt.  | 21        | 30                             |  | 12                       |
| TOTALS     |         |      |           | 30                             |  | 54                       |

| STRUCTURES 20' SPAN & UNDER |               |          |        |        |          |      |        |     |
|-----------------------------|---------------|----------|--------|--------|----------|------|--------|-----|
| REF                         | SEE           | REMOVALS |        |        | NEW WORK |      |        |     |
| N <sup>o</sup>              | STATION SHEET | TYPE     | SIZE   | LENGTH | TYPE     | SIZE | LENGTH |     |
| 10-S                        | 98+44         | 8        | C.M.P. | 18"    | 44'      |      |        |     |
| 11-S                        | 100+62        | 40       |        |        | PIPE     | 24"  | 72'    |     |
| 12-S                        | 108+05        | 8        | C.M.P. | 12"    | 24'      |      |        |     |
| 13-S                        | 109+37        | 40       | C.M.P. | 12"    | 24'      | PIPE | 18"    | 51' |
| 14-S                        | 115+84        | 41       | C.M.P. | 12"    | 24'      | PIPE | 18"    | 46' |
|                             |               |          |        |        |          |      |        |     |
|                             |               |          |        |        |          |      |        |     |



| GUARD RAIL            |         |        |      |                               |              |                        |
|-----------------------|---------|--------|------|-------------------------------|--------------|------------------------|
| REF<br>N <sup>o</sup> | STATION |        | SIDE | REMOVE<br>& STORE<br>LIN. FT. | PLACE<br>NEW | REMARKS                |
|                       | FROM    | TO     |      |                               | LIN. FT.     |                        |
| 11-G                  | 96+00   | 97+50  | Rt.  | 150                           |              |                        |
| 12-G                  | 99+00   | 101+08 | Lt.  |                               | 208          |                        |
| 13-G                  | 100+40  | 104+30 | Rt.  | 390                           |              |                        |
| 14-G                  | 96+00   | 108+92 | Rt.  |                               | 1294         | Continuation<br>of 9-G |
| 15-G                  | 109+16  | 120+00 | Rt.  |                               | 1084         |                        |
| 16-G                  | 109+30  | 124+10 | Rt   | 1480                          |              |                        |
| TOTALS                |         |        |      | 2020                          | 2586         |                        |

| ROADSIDE IMPROVEMENT |        |      |  |  |  |
|----------------------|--------|------|--|--|--|
| STATION              |        | SIDE |  |  |  |
| FROM                 | TO     |      |  |  |  |
| 96+00                | 120+00 |      |  |  |  |
|                      |        |      |  |  |  |
|                      |        |      |  |  |  |
| TOTALS               |        |      |  |  |  |



TUSCARAWAS COUNTY

S.H. 712 SEC. N (PT) & O (PT)

DOVER BASIN UNIT No. 1

| APPROACHES |         |       |                 |                                          |  |
|------------|---------|-------|-----------------|------------------------------------------|--|
| REF<br>Nº  | STATION | SIDE  | SEE<br>SHEET Nº | PIPE FOR<br>DRIVEWAYS<br>LIN. FT.<br>18" |  |
| 10-A       | 134+72  | Lt+Rt | 24              | 16                                       |  |
| TOTALS     |         |       |                 | 16                                       |  |

| STRUCTURES 20' SPAN & UNDER |         |              |          |      |          |      |      |
|-----------------------------|---------|--------------|----------|------|----------|------|------|
| REF<br>Nº                   | STATION | SEE<br>SHEET | REMOVALS |      | NEW WORK |      |      |
|                             |         |              | TYPE     | SIZE | LENGTH   | TYPE | SIZE |
| 15-S                        | 123+82  | 41           |          |      |          | PIPE | 15"  |
| 16-S                        | 131+36  | 35           |          |      |          | PIPE | 18"  |
|                             |         |              |          |      |          |      | 45'  |
|                             |         |              |          |      |          |      | 43'  |

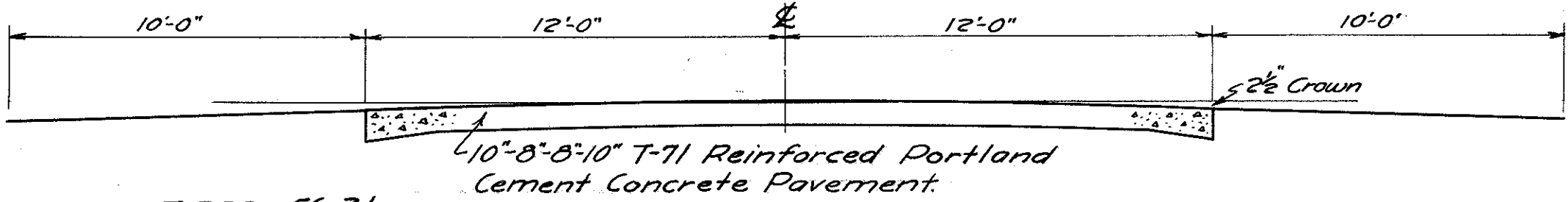
| GUARD RAIL |         |        |     |                                 |                          |                               |  |
|------------|---------|--------|-----|---------------------------------|--------------------------|-------------------------------|--|
| REF<br>Nº  | STATION |        |     | REMOVE AND<br>STORE<br>LIN. FT. | PLACE<br>NEW<br>LIN. FT. | REMOVE<br>& RESET<br>LIN. FT. |  |
| 17-G       | 124+50  | 125+30 | Rt. | 80'                             |                          |                               |  |
| 18-G       | 124+75  | 132+75 | Lt. |                                 | 800                      |                               |  |
| 19-G       | 126+00  | 128+20 | Rt. | 220'                            |                          |                               |  |
| 20-G       | 126+10  | 128+90 | Rt. | 80'                             |                          |                               |  |
| *21-G      | 120+00  | 134+14 | Rt. |                                 | 1412                     |                               |  |
| 22-G       | 134+14  | 135+08 | Rt. |                                 |                          | 96                            |  |
| 23-G       | 134+59  | 135+02 | Lt. |                                 |                          | 48                            |  |
| TOTALS     |         |        |     | 380                             | 2212                     | 144                           |  |

\*(21-G is continuation of 15-G)

| ROADSIDE IMPROVEMENT |          |      |                     |                    |  |
|----------------------|----------|------|---------------------|--------------------|--|
| STATION              |          | SIDE |                     |                    |  |
| FROM                 | TO       |      | SEEDING<br>SQ. YDS. | FERTILIZER<br>LBS. |  |
| 120+00               | 135+14.7 | BOTH | 6700                | 1206               |  |
| TOTALS               |          |      | 6700                | 1206               |  |

| TREE REMOVAL    |        |      |                 |   |
|-----------------|--------|------|-----------------|---|
| STATION<br>FROM | TO     | SIDE | REMOVAL<br>EACH |   |
| 129+00          | 129+50 | Rt.  | 2               |   |
| TOTAL           |        |      |                 | 2 |

TYPICAL SECTION OF  
ADJOINING PAVEMENT



RT. 322+56.31

Δ = 6°40'

D = 0°45'

T = 444.95'

L = 889.89'

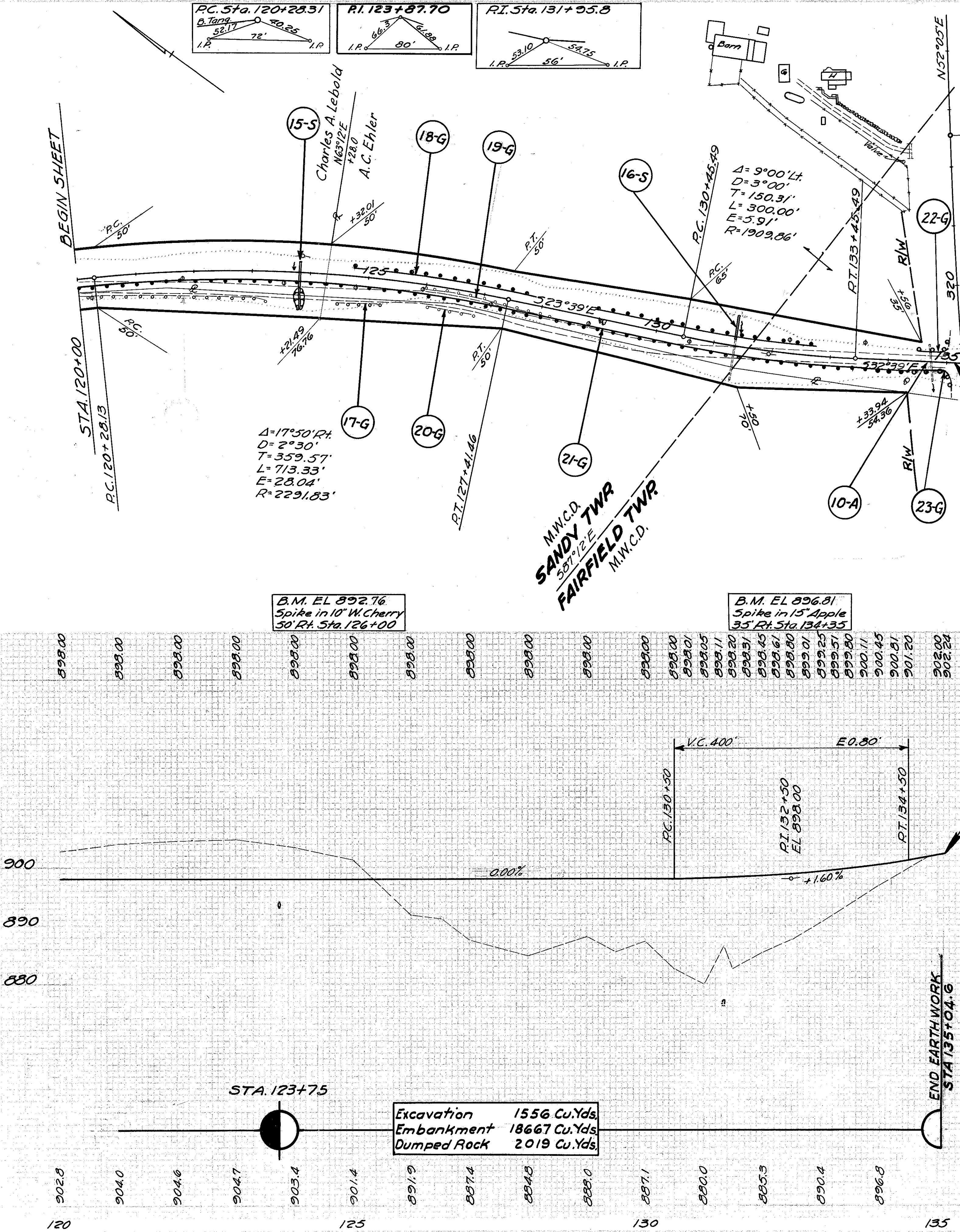
R = 7639.44'

STA. 135+26.9 on S.H. 712 =

STA. 318+66.0 on S.H. 70

STA. 135+14.7

END UNIT No. 1

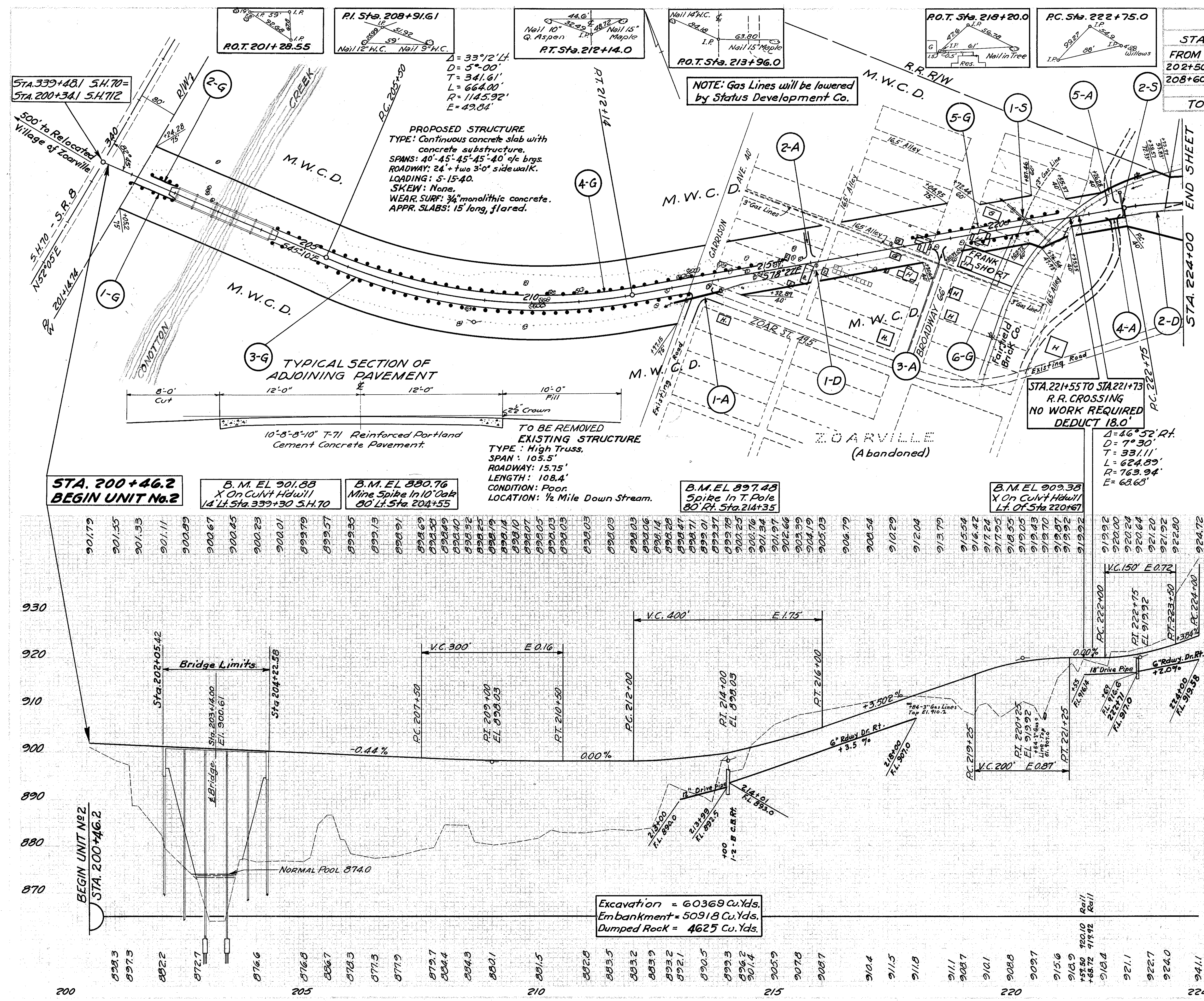


Excavation 1556 Cu. Yds

Embankment 18667 Cu. Yds

Dumped Rock 2019 Cu. Yds





| TREE REMOVAL |        |         |      |
|--------------|--------|---------|------|
| STATION      |        | REMOVAL |      |
| FROM         | TO     | SIDE    | EACH |
| 202+50       | 220+50 | Lt.     | 30   |
| 208+60       | 219+30 | Rt.     | 12   |
| TOTAL        |        |         | 42   |

DIV. 2 OHIO 1947 50  
TUSCARAWAS COUNTY  
S.H. 712 SEC. N(PT) & O(PT)  
DOVER BASIN UNIT No. 2

| APPROACHES |         |      |           |                             |
|------------|---------|------|-----------|-----------------------------|
| REF NO     | STATION | SIDE | SEE SHEET | PIPE FOR DRIVEWAYS LIN. FT. |
| 1-A        | 213+64  | Rt.  | 28        | 100                         |
| 2-A        | 216+00  | Lt.  | 28        |                             |
| 3-A        | 218+75  | Rt.  | 28        |                             |
| 4-A        | 222+50  | Rt.  | 29        | 114                         |
| 5-A        | 222+50  | Lt.  | 29        |                             |
| TOTALS     |         |      |           | 100 114                     |

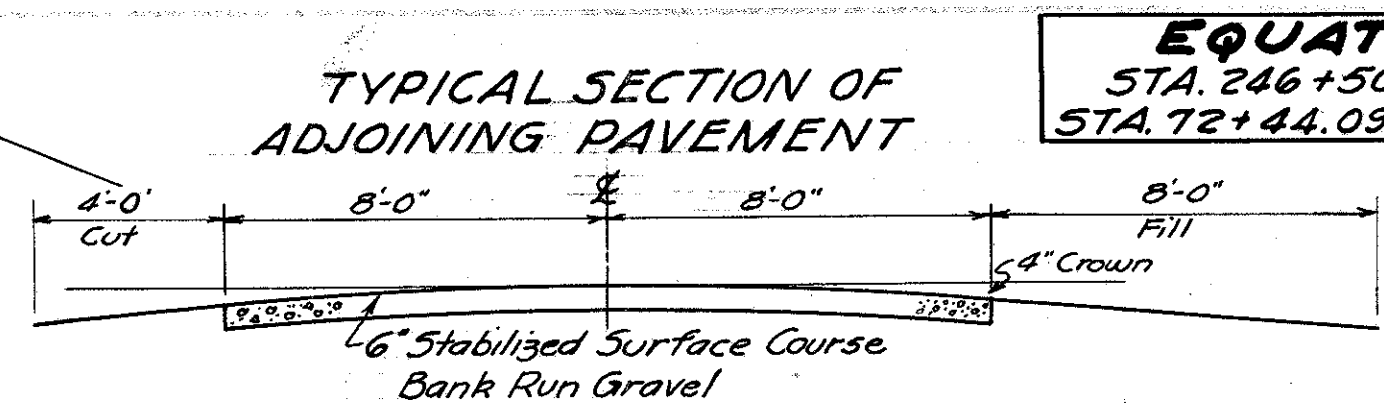
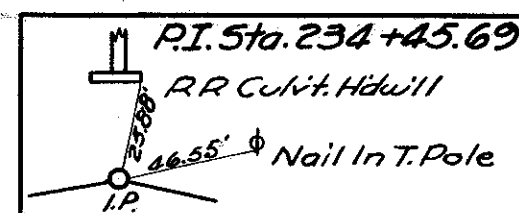
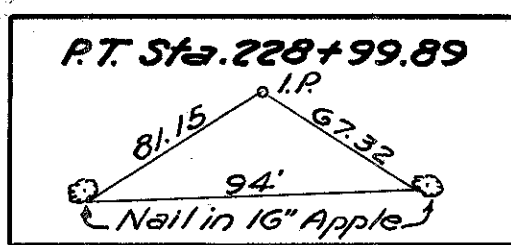
| STRUCTURE 20' SPAN & UNDER |          |           |          |         |
|----------------------------|----------|-----------|----------|---------|
| REF NO                     | STATION  | SEE SHEET | NEW WORK |         |
| 1-S                        | 220+71.8 |           | PIPE     | 18" 55' |
| 2-S                        | 222+70   |           | PIPE     | 15" 52' |

| ROADWAY DRAINAGE |         |      |                                         |                         |
|------------------|---------|------|-----------------------------------------|-------------------------|
| REF NO           | STATION | SIDE | PIPE INCLUDING POROUS BACKFILL LIN. FT. | CATCH BASINS 1-2 B EACH |
| 1-D              | 214+01  | Rt.  | 400                                     | 1                       |
| 2-D              | 222+71  | Rt.  | 126                                     |                         |
| TOTALS           |         |      | 526                                     | 1                       |

| GUARD RAIL |         |      |                    |  |
|------------|---------|------|--------------------|--|
| REF NO     | STATION | SIDE | PLACE NEW LIN. FT. |  |
| 1-G        | 201+06  | Rt.  | 96                 |  |
| 2-G        | 201+38  | Lt.  | 64                 |  |
| 3-G        | 204+26  | Rt.  | 912                |  |
| 4-G        | 204+26  | Lt.  | 1104               |  |
| 5-G        | 218+20  | Lt.  | 320                |  |
| 6-G        | 219+40  | Rt.  | 144                |  |
| TOTALS     |         |      | 2640               |  |

| ROADSIDE IMPROVEMENT |        |      |                    |       |
|----------------------|--------|------|--------------------|-------|
| STATION              |        |      | SEEDING FERTILIZER |       |
| FROM                 | TO     | SIDE | SQ. YDS.           | LB'S. |
| 200+46.2             | 224+00 | Both | 9400               | 1692  |
| TOTALS               |        |      | 9400               | 1692  |





**EQUATION**  
 STA. 246+50 S.H. 712 Back=  
 STA. 72+44.09 DO-TU-70A Ahead.

| TREE REMOVAL |         |      |              |
|--------------|---------|------|--------------|
| STATION      | FROM TO | SIDE | REMOVAL EACH |
| 229+50       | 242+75  | Lt.  | 30           |
| 224+90       | 243+00  | Rt.  | 53           |
| TOTAL        |         |      | 83           |

DIV. 2 OHIO 1947 56  
 TUSCARAWAS COUNTY  
 S.H. 712 SEC. N(PT) & O(PT)  
 DOVER BASIN UNIT No. 2

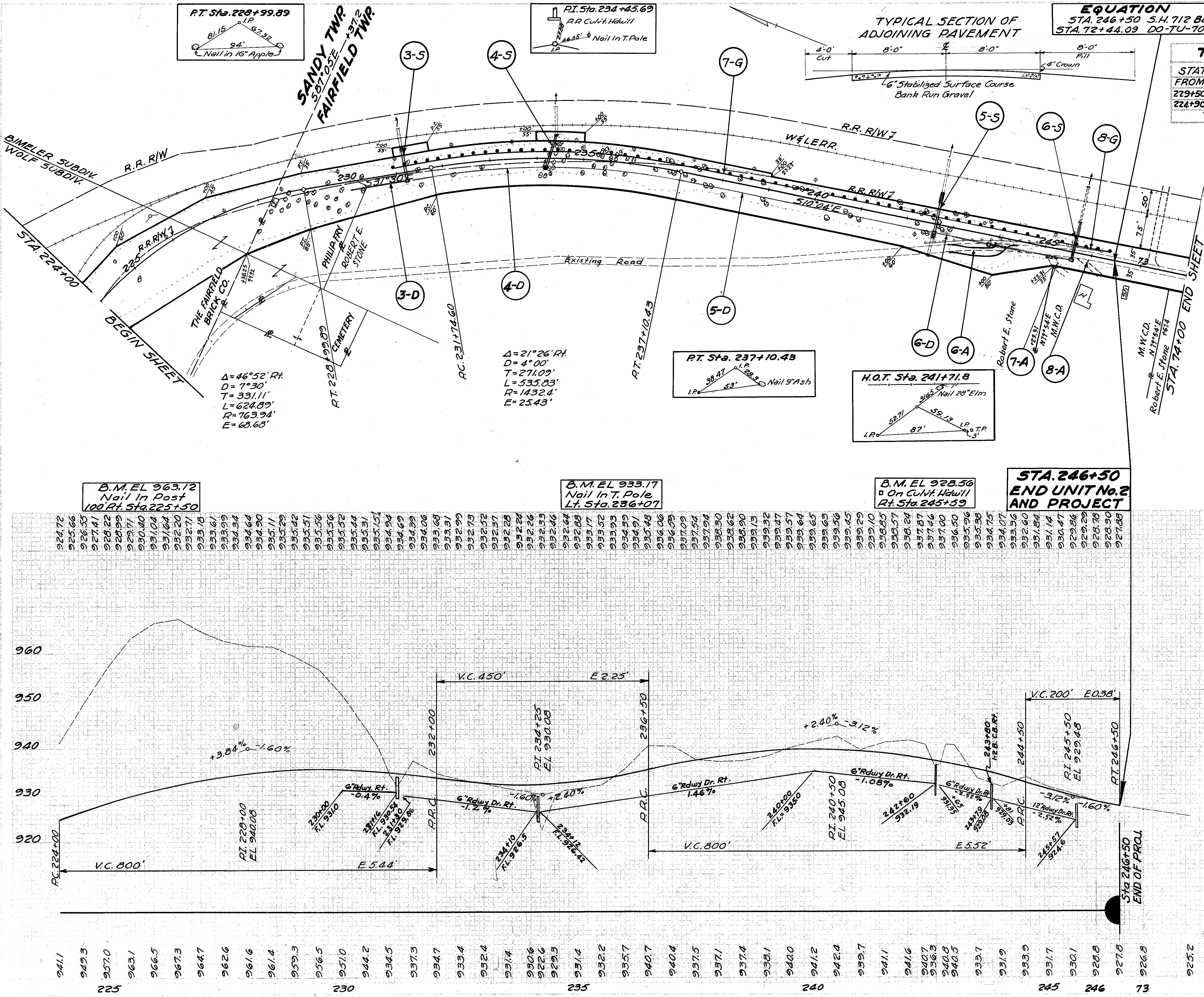
| APPROACHES |         |      |              |                                      |                     |
|------------|---------|------|--------------|--------------------------------------|---------------------|
| REF NO     | STATION | SIDE | SEE SHEET NO | PIPE REMOVED & REPLACED LIN. FT. 12" | I-17 AGG'R CU. YDS. |
| 6-A        | 244+00  | Rt.  | 33           |                                      | 24                  |
| 7-A        | 245+20  | Rt.  | 33           | 22                                   | 2                   |
| 8-A        | 245+85  | Rt.  | 33           |                                      | 2                   |
| TOTALS     |         |      |              | 22                                   | 28                  |

| STRUCTURES 20' SPAN & UNDER |          |           |          |             |          |             |
|-----------------------------|----------|-----------|----------|-------------|----------|-------------|
| REF NO                      | STATION  | SEE SHEET | REMOVALS |             | NEW WORK |             |
|                             |          |           | TYPE     | SIZE LENGTH | TYPE     | SIZE LENGTH |
| 3-S                         | 231+17   | 44        |          |             | Pipe     | 18" 70'     |
| 4-S                         | 234+20.5 | 45        |          |             | Pipe     | 18" 75'     |
| 5-S                         | 242+61.4 | 46        |          |             | Pipe     | 18" 63'     |
| 6-S                         | 245+58   | 47        | C.M.P.   | 18" 42      | Pipe     | 18" 51'     |

| GUARD RAIL |                 |         |                           |                    |
|------------|-----------------|---------|---------------------------|--------------------|
| REF NO     | STATION FROM TO | SIDE    | REMOVE AND STORE LIN. FT. | PLACE NEW LIN. FT. |
| 7-G        | 230+83.2 246+30 | Lt.     |                           | 1552               |
| 8-G        | 242+90 246+22   | Rt.+Lt. | 340                       |                    |
| TOTALS     |                 |         | 340                       | 1552               |

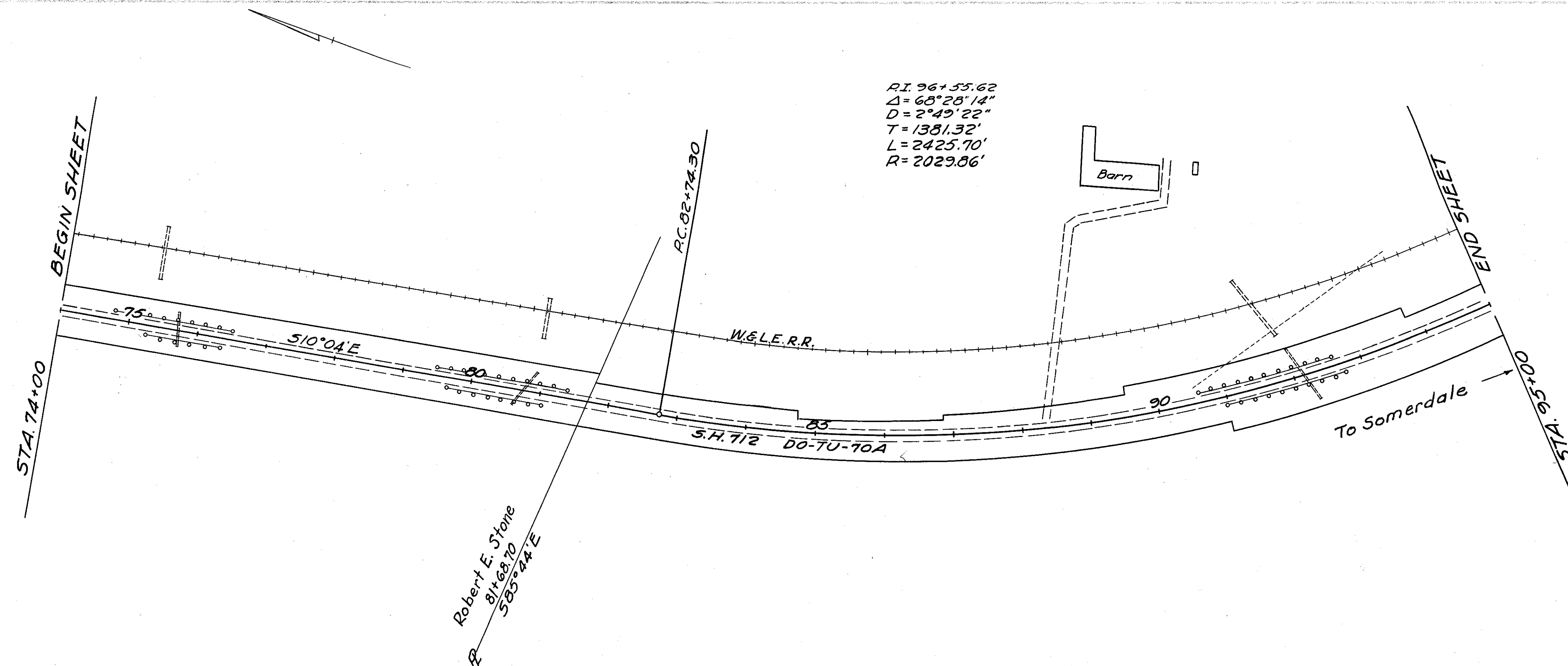
| ROADSIDE IMPROVEMENT |      |                  |                  |  |
|----------------------|------|------------------|------------------|--|
| STATION FROM TO      | SIDE | SEEDING SQ. YDS. | FERTILIZER LB'S. |  |
| 224+00 246+50        | Both | 13,800           | 2,484            |  |
| Total                |      | 13800            | 2484             |  |

| ROADWAY DRAINAGE |                 |      |                                         |      |                         |
|------------------|-----------------|------|-----------------------------------------|------|-------------------------|
| REF NO           | STATION FROM TO | SIDE | PIPE INCLUDING POROUS BACKFILL LIN. FT. |      | CATCH BASINS 1-2 B EACH |
|                  |                 |      | 12"                                     | 6"   |                         |
| 3-D              | 230+00 231+16   | Rt.  |                                         | 116  |                         |
| 4-D              | 231+30 234+10   | Rt.  |                                         | 278  |                         |
| 5-D              | 234+12 242+60   | Rt.  |                                         | 844  |                         |
| 6-D              | 242+65 245+57   | Rt.  | 176                                     | 114  | 1                       |
| TOTALS           |                 |      | 176                                     | 1352 | 1                       |

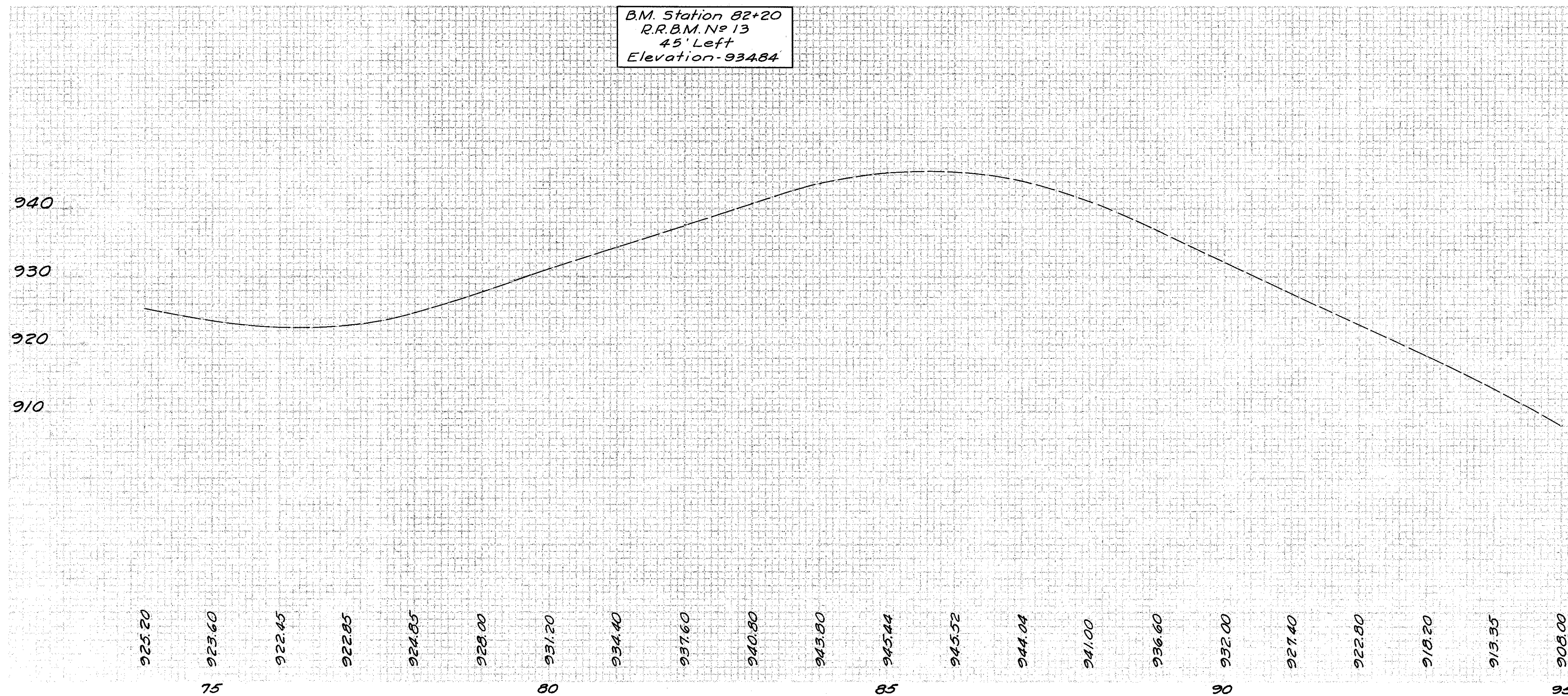




TUSCARAWAS COUNTY  
S.H. 712 SEC. N(PT) 50(PT)  
DOVER BASIN UNIT No. 2



B.M. Station 82+20  
R.R.B.M. No 13  
45' Left  
Elevation 934.84





TUSCARAWAS COUNTY  
S.H. 712 SECS. N(PT) & O(PT).  
DOVER BASIN. UNIT No. 1.

| P.C.102+95.46 D=1°30'LT. P.T.107+64.35 |              |       |           |             |       |           |                |
|----------------------------------------|--------------|-------|-----------|-------------|-------|-----------|----------------|
| LEFT                                   |              |       |           |             | RIGHT |           |                |
| EDGE OF PAV'T.                         | DEDUCT CROWN | WIDTH | STATION   | GRADE ELEV. | WIDTH | ADD SUPER | EDGE OF PAV'T. |
| 897.83                                 | 0.17'        | 9.00' | 101+95.46 | 898.00      | 9.00' | 0.00'     | 897.83         |
|                                        |              |       | 102+00    |             |       | 0.01      | 897.84         |
|                                        |              |       | +25       |             |       | 0.08      | 897.91         |
|                                        |              |       | +50       |             |       | 0.15      | 897.98         |
|                                        |              |       | +75       |             |       | 0.22      | 898.05         |
|                                        |              |       | +95.46    |             |       | 0.27      | 898.10         |
|                                        |              |       | 103+00    |             |       | 0.29      | 898.12         |
|                                        |              |       | +25       |             |       | 0.35      | 898.18         |
|                                        |              |       | +45.46    |             |       | 0.41      | 898.24         |
|                                        |              |       |           |             |       |           |                |
|                                        |              |       |           |             |       |           |                |
|                                        |              |       |           |             |       |           |                |
|                                        |              |       | 107+14.35 |             |       | 0.41      | 898.24         |
|                                        |              |       | +25       |             |       | 0.38      | 898.21         |
|                                        |              |       | +50       |             |       | 0.31      | 898.14         |
|                                        |              |       | +64.35    |             |       | 0.27      | 898.10         |
|                                        |              |       | +75       |             |       | 0.24      | 898.07         |
|                                        |              |       | 108+00    |             |       | 0.18      | 898.01         |
|                                        |              |       | +25       |             |       | 0.11      | 897.94         |
|                                        |              |       | +50       |             |       | 0.04      | 897.87         |
| 897.83                                 | 0.17'        | 9.00' | +64.35    | 898.00      | 9.00' | 0.00      | 897.83         |

**NO EXTRA PAVEMENT**

| PC. 130+45.49 D=3°00'LT. PT. 133+45.49 |              |       |           |             |       |           |                |
|----------------------------------------|--------------|-------|-----------|-------------|-------|-----------|----------------|
| LEFT                                   |              |       |           |             | RIGHT |           |                |
| EDGE OF PAV'T.                         | DEDUCT CROWN | WIDTH | STATION   | GRADE ELEV. | WIDTH | ADD SUPER | EDGE OF PAV'T. |
| 897.83                                 | 0.17'        | 9.00' | 129+45.49 | 898.00      | 9.00' | 0.00'     | 897.83         |
|                                        |              |       | +50       |             |       | 0.02      | 897.88         |
|                                        |              |       | +75       |             |       | 0.13      | 897.96         |
|                                        |              |       | 130+00    |             |       | 0.24      | 898.07         |
|                                        |              |       | +25       |             |       | 0.34      | 898.17         |
|                                        |              |       | +45.49    |             |       | 0.43      | 898.26         |
| 897.83                                 |              |       | +50       | 898.00      |       | 0.45      | 898.28         |
| 897.84                                 |              |       | +75       | 898.01      |       | 0.56      | 898.40         |
| 897.87                                 |              |       | +95.49    | 898.04      |       | 0.65      | 898.52         |
| 897.88                                 |              |       | 131+00    | 898.05      |       | 0.65      | 898.53         |
| 897.94                                 |              |       | +25       | 898.11      |       |           | 898.59         |
| 898.03                                 |              |       | +50       | 898.20      |       |           | 898.68         |
| 898.14                                 |              |       | +75       | 898.31      |       |           | 898.79         |
| 898.28                                 |              |       | 132+00    | 898.45      |       |           | 898.93         |
| 898.44                                 |              |       | +25       | 898.61      |       |           | 899.09         |
| 898.63                                 |              |       | +50       | 898.80      |       |           | 899.28         |
| 898.84                                 |              |       | +75       | 899.01      |       |           | 899.49         |
| 899.04                                 |              |       | +95.49    | 899.21      |       | 0.65      | 899.69         |
| 899.08                                 |              |       | 133+00    | 899.25      |       | 0.63      | 899.71         |
| 899.34                                 |              |       | +25       | 899.51      |       | 0.52      | 899.86         |
| 899.58                                 |              |       | +45.49    | 899.75      |       | 0.43      | 900.01         |
| 899.63                                 |              |       | +50       | 899.80      |       | 0.41      | 900.04         |
| 899.94                                 |              |       | +75       | 900.11      |       | 0.31      | 900.25         |
| 900.28                                 |              |       | 134+00    | 900.45      |       | 0.20      | 900.48         |
| 900.64                                 |              |       | +25       | 900.81      |       | 0.09      | 900.73         |
| 900.96                                 | 0.17'        | 9.00' | +45.49    | 901.13      | 9.00' | 0.00      | 900.99         |
| NO EXTRA PAVEMENT                      |              |       |           |             |       |           |                |

NOTE:- Superelevation computed from  
old Standard Construction  
Drawing No. 116-18 (9-26-27).



# CURVE TABLES

|                      |       |         |                |          |
|----------------------|-------|---------|----------------|----------|
| FED. RD.<br>DIV. NO. | STATE | PROJECT | FISCAL<br>YEAR | 14<br>56 |
| 2                    | OHIO  |         | 1947           |          |

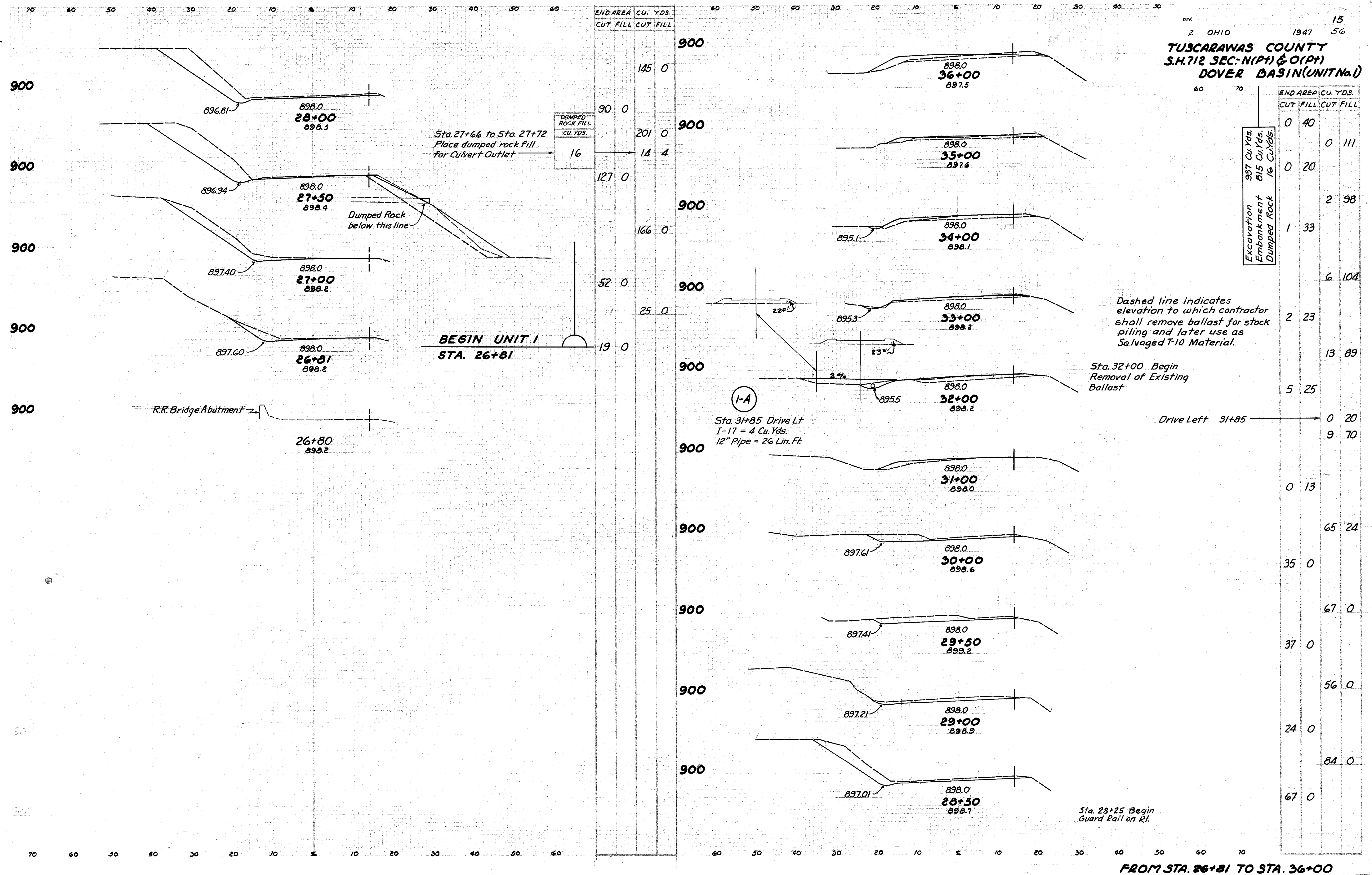
TUSCARAWAS COUNTY  
S.H. 712 SEC'S. N (Pt.) & O (Pt.)  
DOVER BASIN UNIT N#2

| P.C. 205+50.00 D=5°-00'LT. P.T. 212+14.00 |                 |       |          |                |       |              |                  |  |
|-------------------------------------------|-----------------|-------|----------|----------------|-------|--------------|------------------|--|
| LEFT                                      |                 |       |          |                | RIGHT |              |                  |  |
| EDGE OF<br>PAV'T                          | DEDUCT<br>CROWN | WIDTH | STATION  | GRADE<br>ELEV. | WIDTH | ADD<br>SUPER | EDGE OF<br>PAV'T |  |
| 899.84                                    | 0.17'           | 9.00' | 204 + 50 | 900.01         | 9.00' | 0.00'        | 899.84           |  |
| 899.73                                    |                 | 9.07  | + 75     | 899.90         |       | 0.18         | 899.91           |  |
| 899.62                                    |                 | 9.27  | 205 + 00 | 899.79         |       | 0.36         | 899.98           |  |
| 899.55                                    |                 | 9.46  | + 15     | 899.72         |       | 0.47         | 900.02           |  |
| 899.51                                    |                 | 9.61  | + 25     | 899.68         |       | 0.54         | 900.05           |  |
| 899.48                                    |                 | 9.71  | + 31     | 899.65         |       | 0.58         | 900.06           |  |
| 899.40                                    |                 | 10.15 | + 50     | 899.57         |       | 0.72         | 900.12           |  |
| 899.34                                    |                 | 10.48 | + 63     | 899.51         |       | 0.81         | 900.15           |  |
| 899.29                                    |                 | 10.73 | + 75     | 899.46         |       | 0.90         | 900.19           |  |
| 899.28                                    |                 | 10.78 | + 78     | 899.45         |       | 0.92         | 900.20           |  |
| 899.23                                    |                 | 10.92 | + 88     | 899.40         |       | 0.99         | 900.22           |  |
| 899.18                                    |                 | 11.00 | 206 + 00 | 899.35         |       | 1.08         | 900.26           |  |
| 899.07                                    |                 |       | + 25     | 899.24         |       |              | 900.15           |  |
| 898.96                                    |                 |       | + 50     | 899.13         |       |              | 900.04           |  |
| 898.85                                    |                 |       | + 75     | 899.02         |       |              | 899.93           |  |
| 898.74                                    |                 |       | 207 + 00 | 898.91         |       |              | 899.82           |  |
| 898.63                                    |                 |       | + 25     | 898.80         |       |              | 899.71           |  |
| 898.52                                    |                 |       | + 50     | 898.69         |       |              | 899.60           |  |
| 898.41                                    |                 |       | + 75     | 898.58         |       |              | 899.49           |  |
| 898.41                                    |                 |       | + 77     | 898.58         |       |              | 899.49           |  |
| 898.32                                    |                 |       | 208 + 00 | 898.49         |       |              | 899.40           |  |
| 898.23                                    |                 |       | + 25     | 898.40         |       |              | 899.31           |  |
| 898.15                                    |                 |       | + 50     | 898.32         |       |              | 899.23           |  |
| 898.11                                    |                 |       | + 63     | 898.28         |       |              | 899.19           |  |
| 898.08                                    |                 |       | + 75     | 898.25         |       |              | 899.16           |  |
| 898.02                                    |                 |       | 209 + 00 | 898.19         |       |              | 899.10           |  |
| 897.97                                    |                 |       | + 25     | 898.14         |       |              | 899.05           |  |
| 897.93                                    |                 |       | + 50     | 898.10         |       |              | 899.01           |  |
| 897.90                                    |                 |       | + 75     | 898.07         |       |              | 898.98           |  |
| 897.88                                    |                 |       | 210 + 00 | 898.05         |       |              | 898.96           |  |
| 897.86                                    |                 |       | + 25     | 898.03         |       |              | 898.94           |  |
| 897.86                                    |                 |       | + 50     | 898.03         |       |              | 898.94           |  |
| 897.86                                    |                 |       | + 75     | 898.03         |       |              | 898.94           |  |
| 897.86                                    |                 |       | 211 + 00 | 898.03         |       |              | 898.94           |  |
| 897.86                                    |                 |       | + 25     | 898.03         |       |              | 898.94           |  |
| 897.86                                    |                 |       | + 50     | 898.03         |       |              | 898.94           |  |
| 897.86                                    |                 | 11.00 | + 64     | 898.03         |       | 1.08'        | 898.94           |  |
| 897.86                                    |                 | 10.93 | + 75     | 898.03         |       |              | 898.93           |  |
| 897.86                                    |                 | 10.50 | 212 + 00 | 898.03         |       |              | 898.84           |  |
| 897.87                                    |                 | 10.15 | + 14     | 898.04         |       |              | 898.76           |  |
| 897.89                                    |                 | 9.87  | + 25     | 898.06         |       |              | 898.68           |  |
| 897.93                                    |                 | 9.59  | + 40     | 898.10         |       |              | 898.58           |  |
| 897.97                                    |                 | 9.45  | + 50     | 898.14         |       |              | 898.54           |  |
| 898.11                                    |                 | 9.16  | + 75     | 898.28         |       |              | 898.55           |  |
| 898.30                                    |                 | 9.02  | 213 + 00 | 898.47         |       |              | 898.62           |  |
| 898.43                                    |                 | 9.00  | + 14     | 898.60         |       |              | 898.67           |  |
| 898.54                                    |                 | 9.00  | + 25     | 898.71         |       |              | 898.72           |  |
| 898.84                                    |                 | 9.00  | + 50     | 899.01         |       |              | 898.84           |  |
| 899.04                                    | 0.17'           | 9.00  | + 64     | 899.21         | 9.00' |              | 899.04           |  |
| 151 Sq. Yds. Extra Pavement.              |                 |       |          |                |       |              |                  |  |

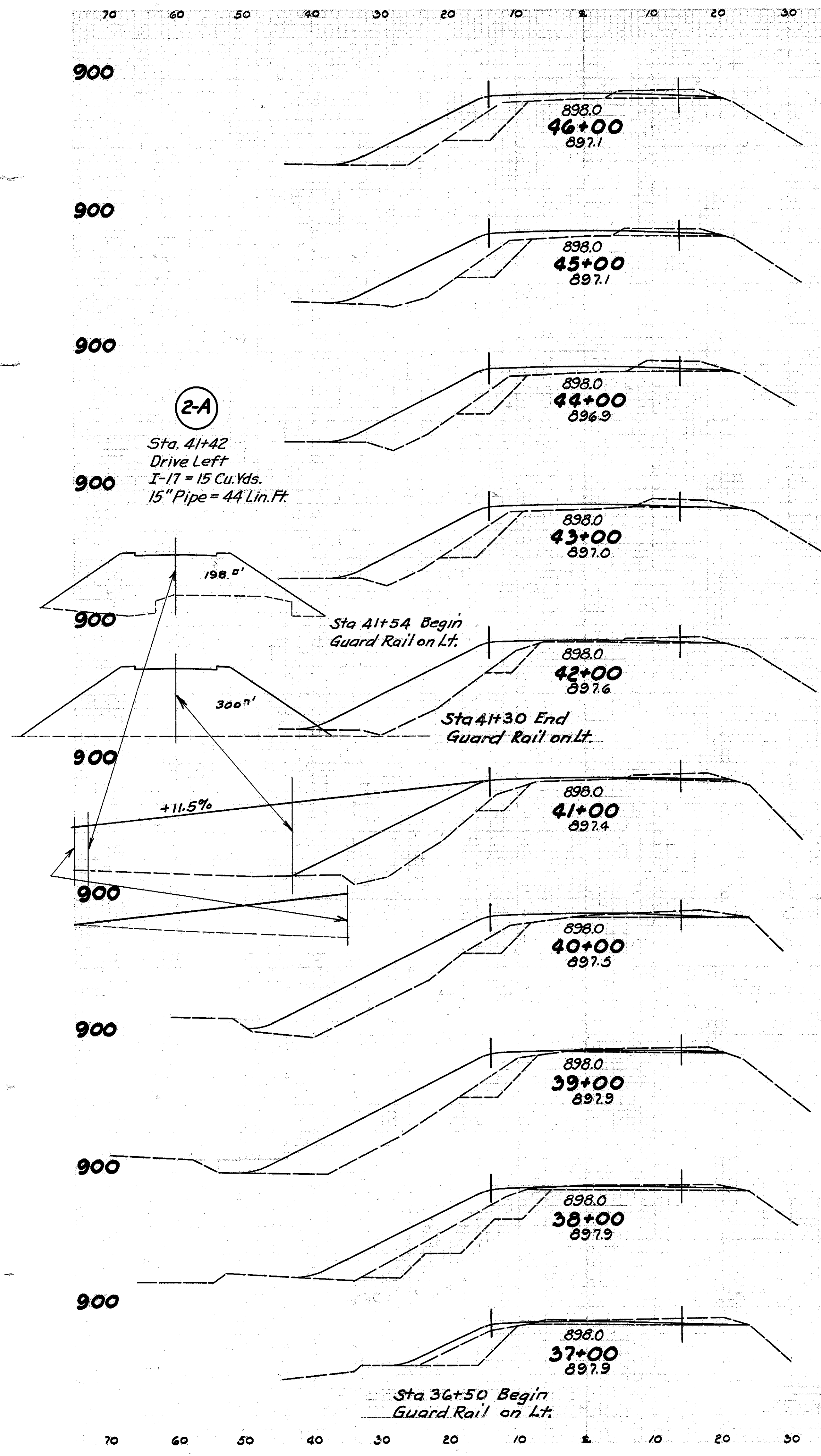
| P.C. 222+75.00 D=7°-30'RT. P.T. 228+99.89 |              |       |         |                |       |                 |                  |
|-------------------------------------------|--------------|-------|---------|----------------|-------|-----------------|------------------|
| LEFT                                      |              |       |         |                | RIGHT |                 |                  |
| EDGE OF<br>PAV'T                          | ADD<br>SUPER | WIDTH | STATION | GRADE<br>ELEV. | WIDTH | DEDUCT<br>CROWN | EDGE OF<br>PAV'T |
| 919.75                                    | 0.00'        | 9.00' | 221+75  | 919.92         | 9.00' | 0.17'           | 919.75           |
| 919.82                                    | 0.07         |       | +83     | 919.92         | 9.02  |                 | 919.75           |
| 919.97                                    | 0.22         |       | 222+00  | 919.92         | 9.10  |                 | 919.75           |
| 920.04                                    | 0.28         |       | +07     | 919.93         | 9.16  |                 | 919.76           |
| 920.13                                    | 0.35         |       | +14     | 919.95         | 9.23  |                 | 919.78           |
| 920.27                                    | 0.44         |       | +25     | 920.00         | 9.37  |                 | 919.83           |
| 920.73                                    | 0.66         |       | +50     | 920.24         | 9.84  |                 | 920.07           |
| 921.36                                    | 0.89         |       | +75     | 920.64         | 10.55 |                 | 920.47           |
| 922.14                                    | 1.11         |       | 223+00  | 921.20         | 11.21 |                 | 921.03           |
| 923.08                                    | 1.33         |       | +25     | 921.92         | 11.50 |                 | 921.75           |
| 923.41                                    |              |       | +35     | 922.25         |       |                 | 922.08           |
| 923.96                                    |              |       | +50     | 922.80         |       |                 | 922.63           |
| 924.88                                    |              |       | +74     | 923.72         |       |                 | 923.55           |
| 924.92                                    |              |       | +75     | 923.76         |       |                 | 923.59           |
| 925.88                                    |              |       | 224+00  | 924.72         |       |                 | 924.55           |
| 926.82                                    |              |       | +25     | 925.66         |       |                 | 925.49           |
| 927.71                                    |              |       | +50     | 926.55         |       |                 | 926.38           |
| 928.57                                    |              |       | +75     | 927.41         |       |                 | 927.24           |
| 929.38                                    |              |       | 225+00  | 928.22         |       |                 | 928.05           |
| 930.15                                    |              |       | +25     | 928.99         |       |                 | 928.82           |
| 930.87                                    |              |       | +50     | 929.71         |       |                 | 929.54           |
| 931.56                                    |              |       | +75     | 930.40         |       |                 | 930.23           |
| 932.20                                    |              |       | 226+00  | 931.04         |       |                 | 930.87           |
| 932.80                                    |              |       | +25     | 931.64         |       |                 | 931.47           |
| 933.36                                    |              |       | +50     | 932.20         |       |                 | 932.03           |
| 933.87                                    |              |       | +75     | 932.71         |       |                 | 932.54           |
| 934.34                                    |              |       | 227+00  | 933.18         |       |                 | 933.01           |
| 934.77                                    |              |       | +25     | 933.61         |       |                 | 933.44           |
| 935.15                                    |              |       | +50     | 933.99         |       |                 | 933.82           |
| 935.50                                    |              |       | +75     | 934.34         |       |                 | 934.17           |
| 935.80                                    |              |       | 228+00  | 934.64         |       |                 | 934.47           |
| 936.06                                    |              |       | +25     | 934.90         |       |                 | 934.73           |
| 936.27                                    | 1.33         |       | +49.89  | 935.11         | 11.50 |                 | 934.94           |
| 936.27                                    |              |       | +50     | 935.11         | 11.50 |                 | 934.94           |
| 936.40                                    |              |       | +75     | 935.29         | 11.20 |                 | 935.12           |
| 936.43                                    |              |       | +99.89  | 935.42         | 10.55 |                 | 935.25           |
| 936.43                                    |              |       | 229+00  | 935.42         | 10.55 |                 | 935.25           |
| 936.40                                    |              |       | +25     | 935.51         | 9.84  |                 | 935.34           |
| 936.32                                    |              |       | +50     | 935.56         | 9.37  |                 | 935.39           |
| 936.20                                    |              |       | +75     | 935.56         | 9.10  |                 | 935.39           |
| 936.04                                    |              |       | +99.89  | 935.52         | 9.00  |                 | 935.35           |
| 936.04                                    |              |       | 230+00  | 935.52         |       |                 | 935.35           |
| 935.87                                    |              |       | +25     | 935.44         |       |                 | 935.27           |
| 935.67                                    |              | 9.00' | +50     | 935.31         | 9.00  | 0.17'           | 935.14           |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |
|                                           |              |       |         |                |       |                 |                  |

| P.C. 231+74.60 D=4°00'RT. P.T. 237+10.43 |                         |       |         |                |       |                 |                  |  |
|------------------------------------------|-------------------------|-------|---------|----------------|-------|-----------------|------------------|--|
| LEFT                                     |                         |       | RIGHT   |                |       |                 |                  |  |
| EDGE OF<br>PAV'T                         | ADD<br>SUPER            | WIDTH | STATION | GRADE<br>ELEV. | WIDTH | DEDUCT<br>CROWN | EDGE OF<br>PAV'T |  |
| 935.67                                   | Obtained<br>Graphically | 9.00' | 230+50  | 935.31         | 9.00' | 0.17'           | 935.14           |  |
| 935.47                                   |                         |       | +74.60  | 935.16         |       |                 | 934.99           |  |
| 935.46                                   |                         |       | +75     | 935.15         |       |                 | 934.98           |  |
| 935.24                                   |                         |       | 231+00  | 934.94         |       |                 | 934.77           |  |
| 935.07                                   |                         |       | +17     | 934.78         |       |                 | 934.61           |  |
| 935.01                                   |                         |       | +25     | 934.69         |       |                 | 934.52           |  |
| 934.75                                   |                         |       | +50     | 934.39         |       |                 | 934.22           |  |
| 934.51                                   |                         |       | +74.60  | 934.07         |       |                 | 933.90           |  |
| 934.50                                   |                         |       | +75     | 934.06         |       |                 | 933.89           |  |
| 934.22                                   |                         |       | 232+00  | 933.68         |       |                 | 933.51           |  |
| 933.96                                   | 0.81'                   |       | +24.60  | 933.32         |       |                 | 933.15           |  |
| 933.95                                   |                         |       | +25     | 933.31         |       |                 | 933.14           |  |
| 933.63                                   |                         |       | +50     | 932.99         |       |                 | 932.82           |  |
| 933.37                                   |                         |       | +75     | 932.73         |       |                 | 932.56           |  |
| 933.16                                   |                         |       | 233+00  | 932.52         |       |                 | 932.35           |  |
| 933.01                                   |                         |       | +25     | 932.37         |       |                 | 932.20           |  |
| 932.92                                   |                         |       | +50     | 932.28         |       |                 | 932.11           |  |
| 932.88                                   |                         |       | +75     | 932.24         |       |                 | 932.07           |  |
| 932.90                                   |                         |       | 234+00  | 932.26         |       |                 | 932.09           |  |
| 932.97                                   |                         |       | +24     | 932.33         |       |                 | 932.16           |  |
| 932.97                                   |                         |       | +25     | 932.33         |       |                 | 932.16           |  |
| 933.10                                   |                         |       | +50     | 932.46         |       |                 | 932.29           |  |
| 933.24                                   |                         |       | +70     | 932.60         |       |                 | 932.43           |  |
| 933.28                                   |                         |       | +75     | 932.64         |       |                 | 932.47           |  |
| 933.52                                   |                         |       | 235+00  | 932.88         |       |                 | 932.71           |  |
| 933.81                                   |                         |       | +25     | 933.17         |       |                 | 933.00           |  |
| 934.16                                   |                         |       | +50     | 933.52         |       |                 | 933.35           |  |
| 934.57                                   |                         |       | +75     | 933.93         |       |                 | 933.76           |  |
| 935.03                                   |                         |       | 236+00  | 934.39         |       |                 | 934.22           |  |
| 935.55                                   |                         |       | +25     | 934.91         |       |                 | 934.74           |  |
| 936.12                                   |                         |       | +50     | 935.48         |       |                 | 935.31           |  |
| 936.37                                   | 0.81'                   |       | +60.43  | 935.73         |       |                 | 935.56           |  |
| 936.62                                   | 0.73                    |       | +75     | 936.06         |       |                 | 935.89           |  |
| 937.02                                   | 0.60                    |       | 237+00  | 936.59         |       |                 | 936.42           |  |
| 937.17                                   | 0.54                    |       | +10.43  | 936.80         |       |                 | 936.63           |  |
| 937.38                                   | 0.46                    |       | +25     | 937.09         |       |                 | 936.92           |  |
| 937.70                                   | 0.33                    |       | +50     | 937.54         |       |                 | 937.37           |  |
| 937.96                                   | 0.19                    |       | +75     | 937.94         |       |                 | 937.77           |  |
| 938.19                                   | 0.06                    |       | 238+00  | 938.30         |       |                 | 938.13           |  |
| 938.27                                   | 0.00                    | 9.00' | +10.43  | 938.44         | 9.00' | 0.17'           | 938.27           |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |
|                                          |                         |       |         |                |       |                 |                  |  |

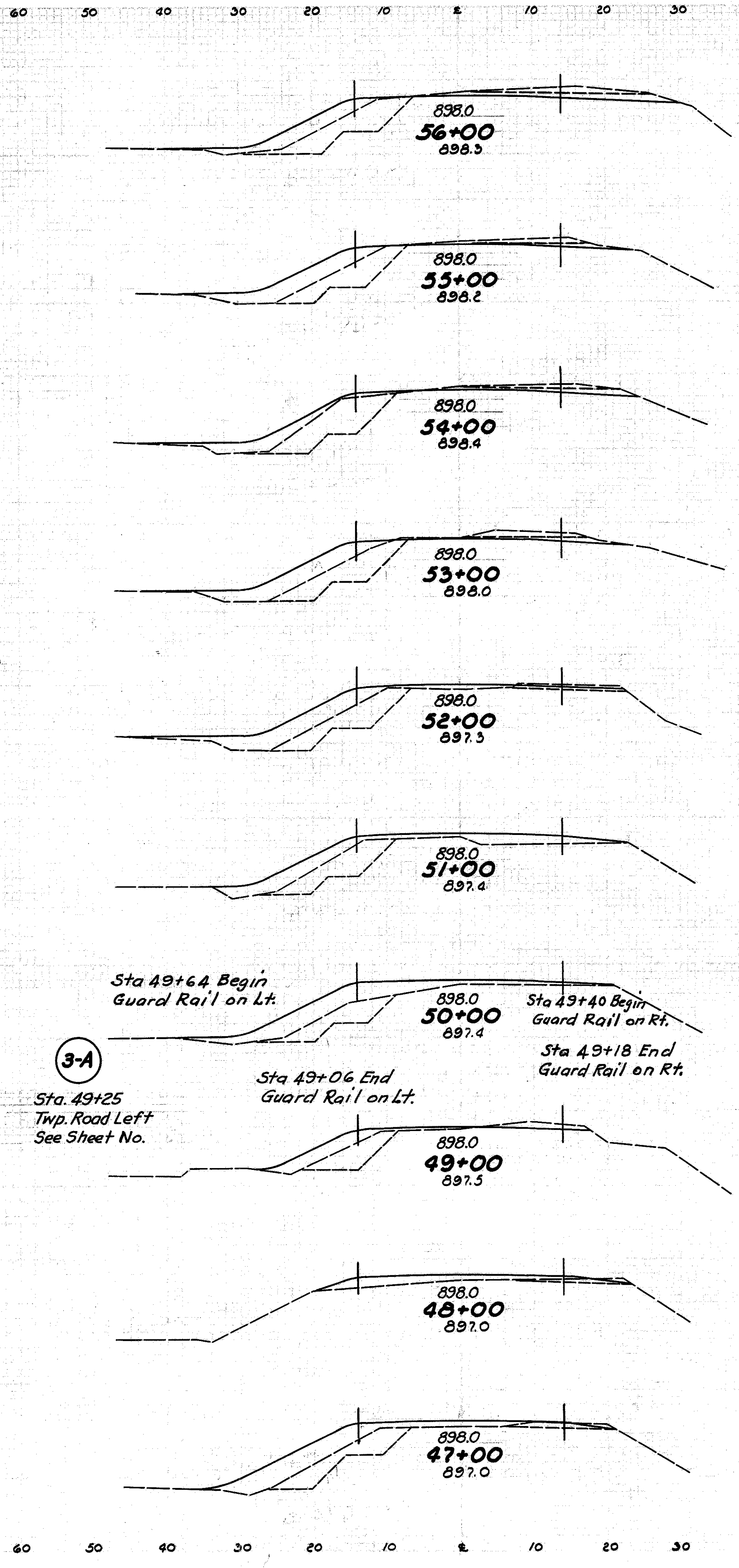






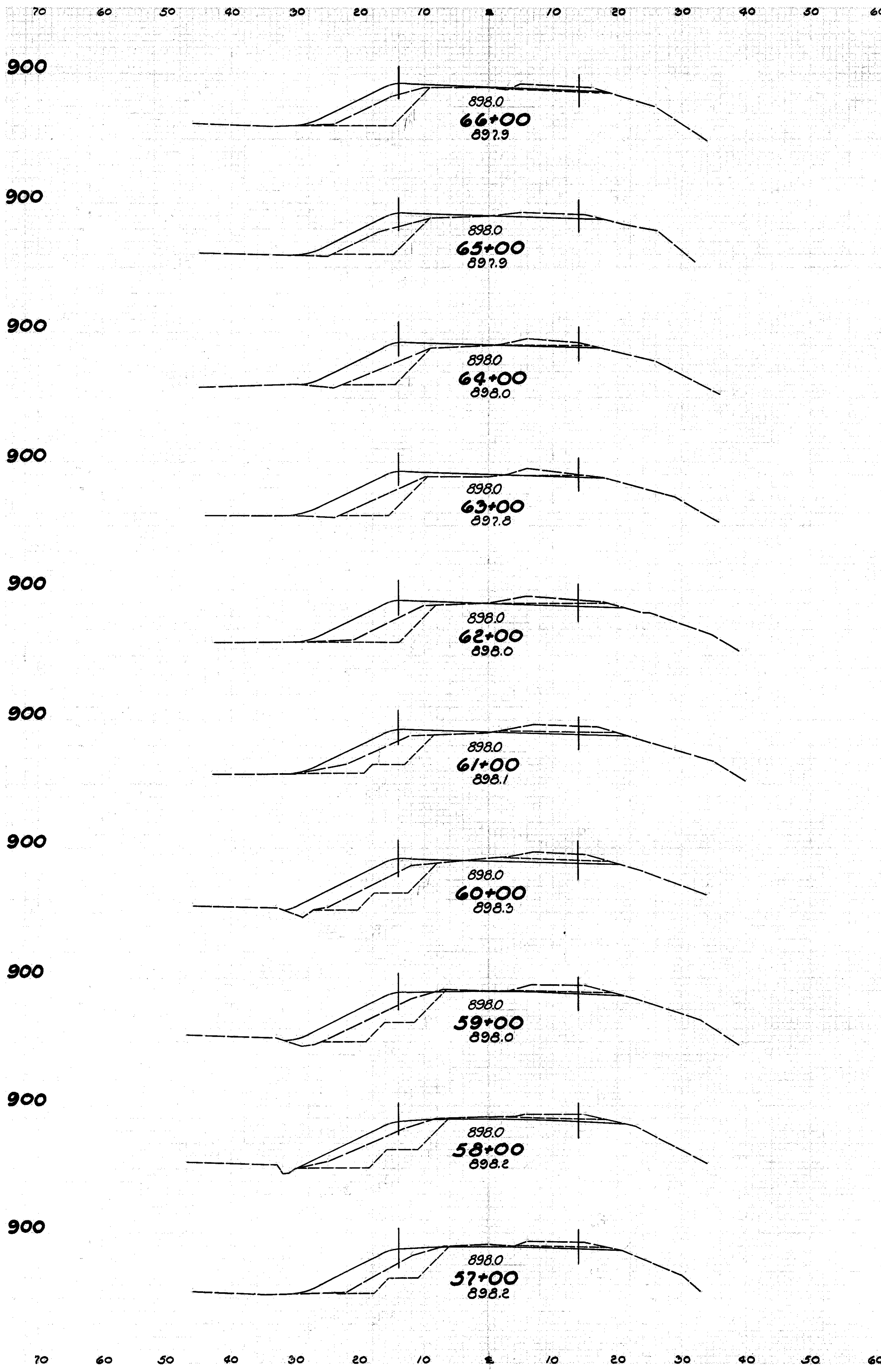


| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| CUT      | FILL | CUT      | FILL |
| 28       | 120  |          |      |
|          |      | 96       | 467  |
| 24       | 132  |          |      |
|          |      | 81       | 480  |
| 20       | 127  |          |      |
|          |      | 81       | 456  |
| 24       | 119  |          |      |
|          |      | 65       | 483  |
| 11       | 142  |          |      |
|          |      | 43       | 578  |
|          |      | 0        | 592  |
| 12       | 170  |          |      |
|          |      | 52       | 669  |
| 16       | 191  |          |      |
|          |      | 76       | 709  |
| 25       | 192  |          |      |
|          |      | 185      | 672  |
| 75       | 171  |          |      |
|          |      | 141      | 303  |
|          |      | 196      | 420  |
|          |      | 55       | 117  |
| 31       | 56   |          |      |
|          |      | 29       | 178  |
| 0        |      |          |      |

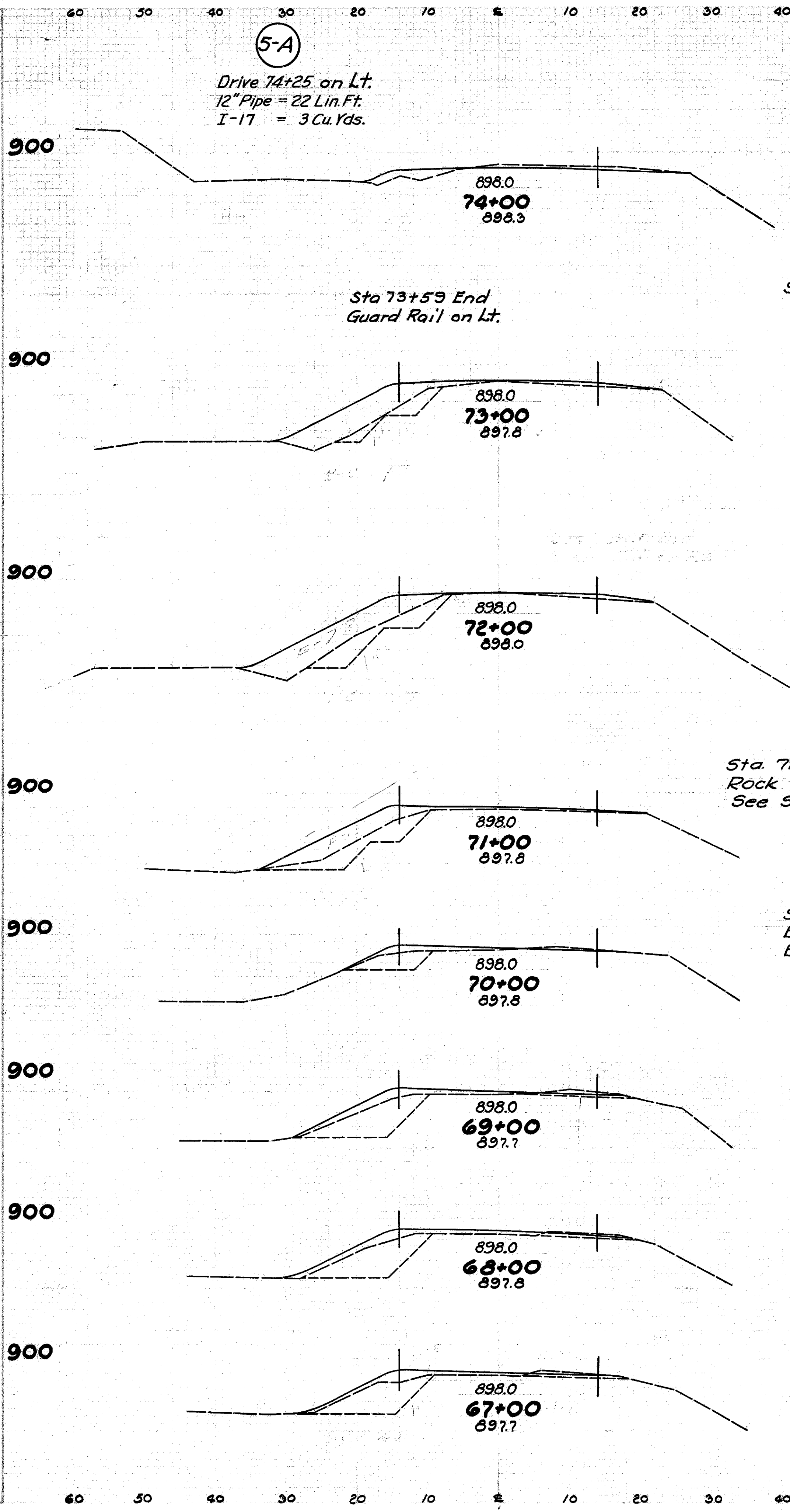


| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| CUT      | FILL | CUT      | FILL |
| 59       | 79   |          |      |
|          |      | 193      | 291  |
| 45       | 78   |          |      |
|          |      | 200      | 294  |
| 63       | 81   |          |      |
|          |      | 209      | 319  |
| 50       | 91   |          |      |
|          |      | 172      | 365  |
| 43       | 106  |          |      |
|          |      | 154      | 391  |
| 40       | 105  |          |      |
|          |      | 131      | 398  |
| 31       | 110  |          |      |
|          |      | 0        | 0    |
| 17       | 2187 |          |      |
|          | 107  | 306      |      |
| 27       | 55   |          |      |
|          |      | 50       | 169  |
| 0        | 36   |          |      |
|          |      | 70       | 291  |
| 38       | 121  |          |      |
|          |      | 122      | 446  |





| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| CUT      | FILL | CUT      | FILL |
|          |      | 141      | 244  |
| 36       | 67   |          |      |
|          |      | 126      | 239  |
| 32       | 62   |          |      |
|          |      | 107      | 248  |
| 26       | 72   |          |      |
|          |      | 96       | 261  |
| 26       | 69   |          |      |
|          |      | 106      | 252  |
| 31       | 67   |          |      |
|          |      | 137      | 246  |
| 43       | 66   |          |      |
|          |      | 167      | 281  |
| 47       | 86   |          |      |
|          |      | 169      | 306  |
| 44       | 79   |          |      |
|          |      | 189      | 283  |
| 58       | 74   |          |      |
|          |      | 174      | 265  |
| 36       | 69   |          |      |
|          |      | 176      | 274  |



| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| CUT      | FILL | CUT      | FILL |
| 5        | 10   |          |      |
|          |      | 0        | 0    |
|          |      | 43       | 191  |
| 18       | 93   |          |      |
|          |      | 102      | 398  |
| 37       | 122  |          |      |
|          |      | 135      | 391  |
| 36       | 89   |          |      |
|          |      | 100      | 220  |
| 18       | 30   |          |      |
|          |      | 120      | 206  |
| 47       | 81   |          |      |
|          |      | 181      | 307  |
| 51       | 85   |          |      |
|          |      | 169      | 278  |
| 40       | 65   |          |      |

5-A  
Drive 74+25 on Lt.  
12" Pipe = 22 Lin. Ft.  
I-17 = 3 Cu. Yds.

DIV. 2 OHIO 1947 56  
TUSCARAWAS COUNTY  
S.H. 712 SEC. N(PT) & O(PT)  
DOVER BASIN (UNIT)

Sta 73+59 End  
Guard Rail on Lt.

Sta. 74+25 Drive Left

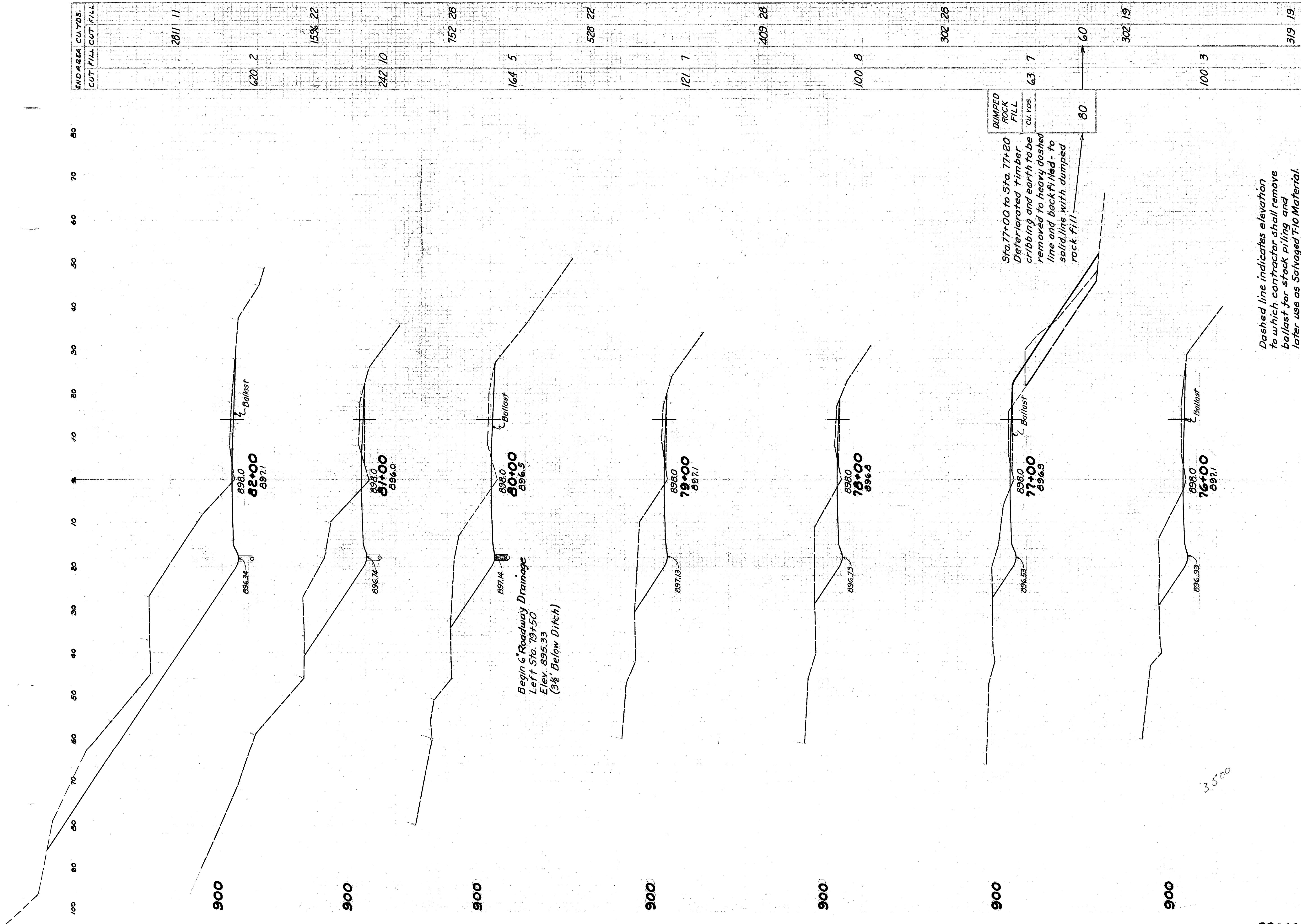
Sta. 71+73.7 Dumped  
Rock Fill.  
See Sheet No. 37

Sta. 70+00  
End Removal of  
Existing Ballast

DUMPED  
ROCK  
FILL  
CU. YDS.  
50

FROM STA. 57+00 TO STA. 74+00





|          |  |     |      |     |      |
|----------|--|-----|------|-----|------|
| END AREA |  | CUT | FILL | CUT | FILL |
| CU. YDS. |  | 72  | 7    | 143 | 31   |

|          |  |     |      |     |      |
|----------|--|-----|------|-----|------|
| END AREA |  | CUT | FILL | CUT | FILL |
| CU. YDS. |  | 72  | 7    | 143 | 31   |

DIV. 2 OHIO

1947

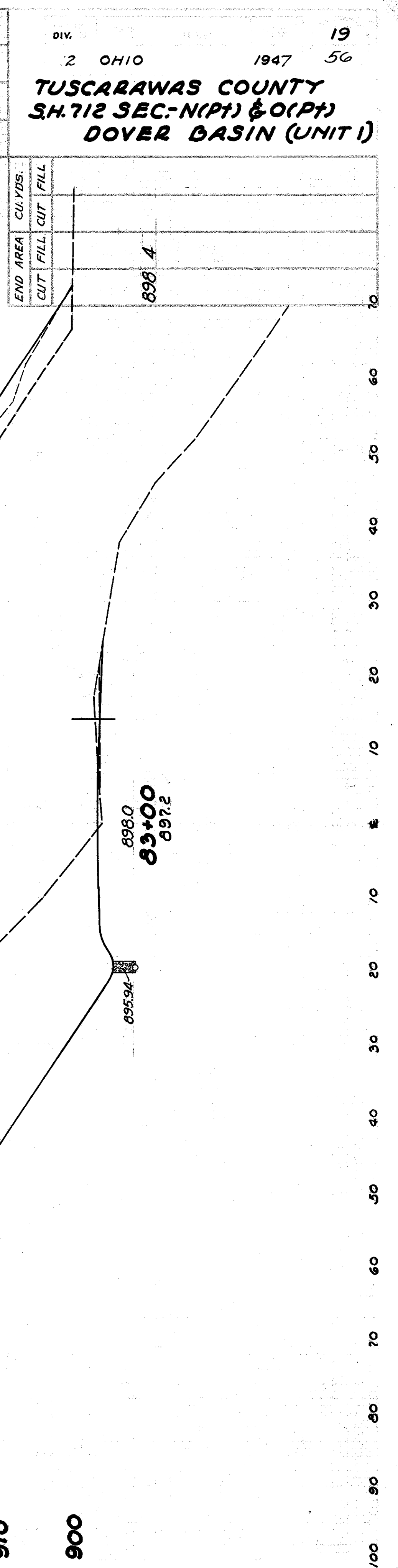
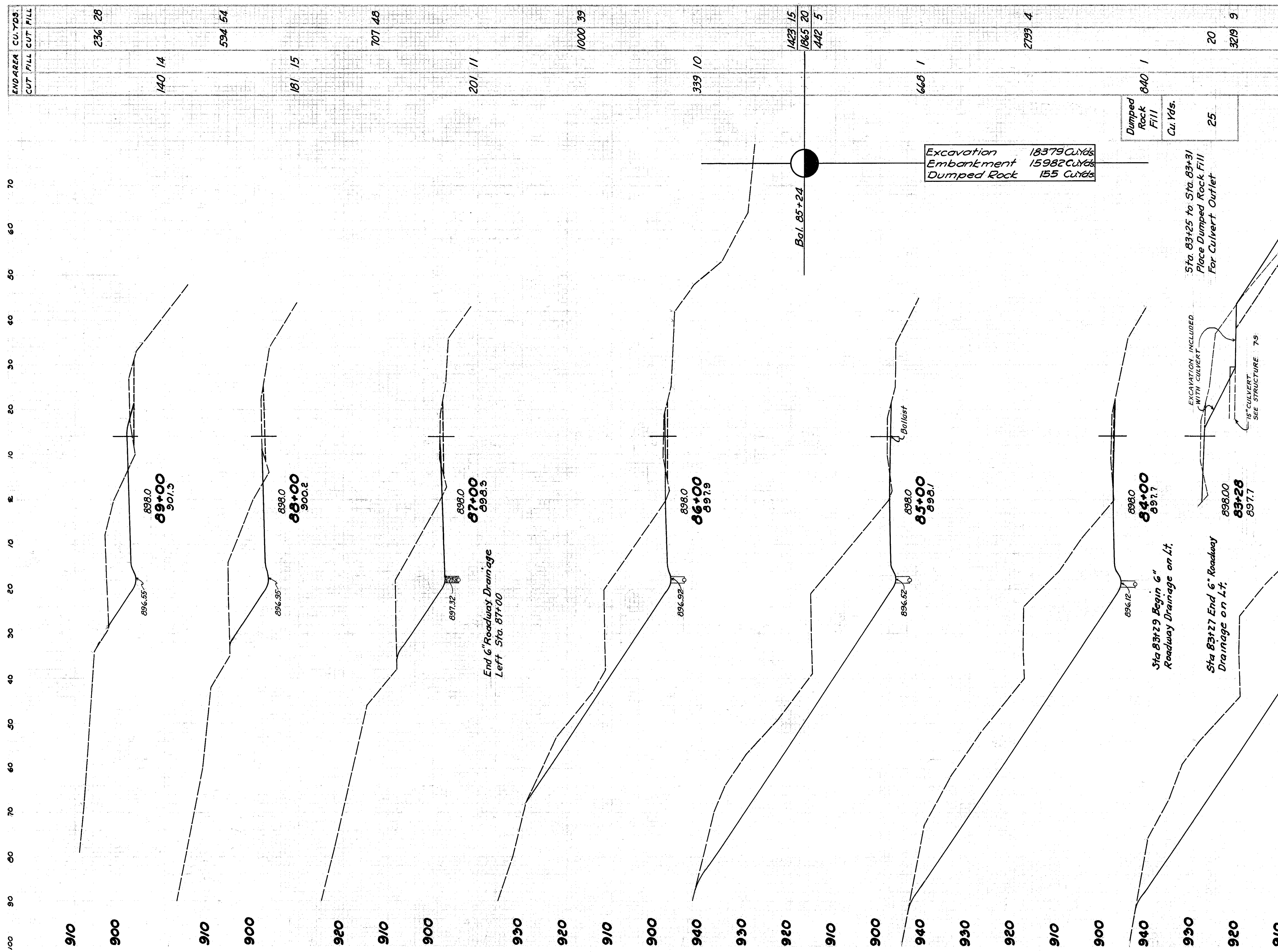
18 56

TUSCARAWAS COUNTY  
S.H. 712 SEC. N (PT) & O (PT)  
DOVER BASIN (UNIT)

FROM STA. 75+00 TO STA. 82+00

3500

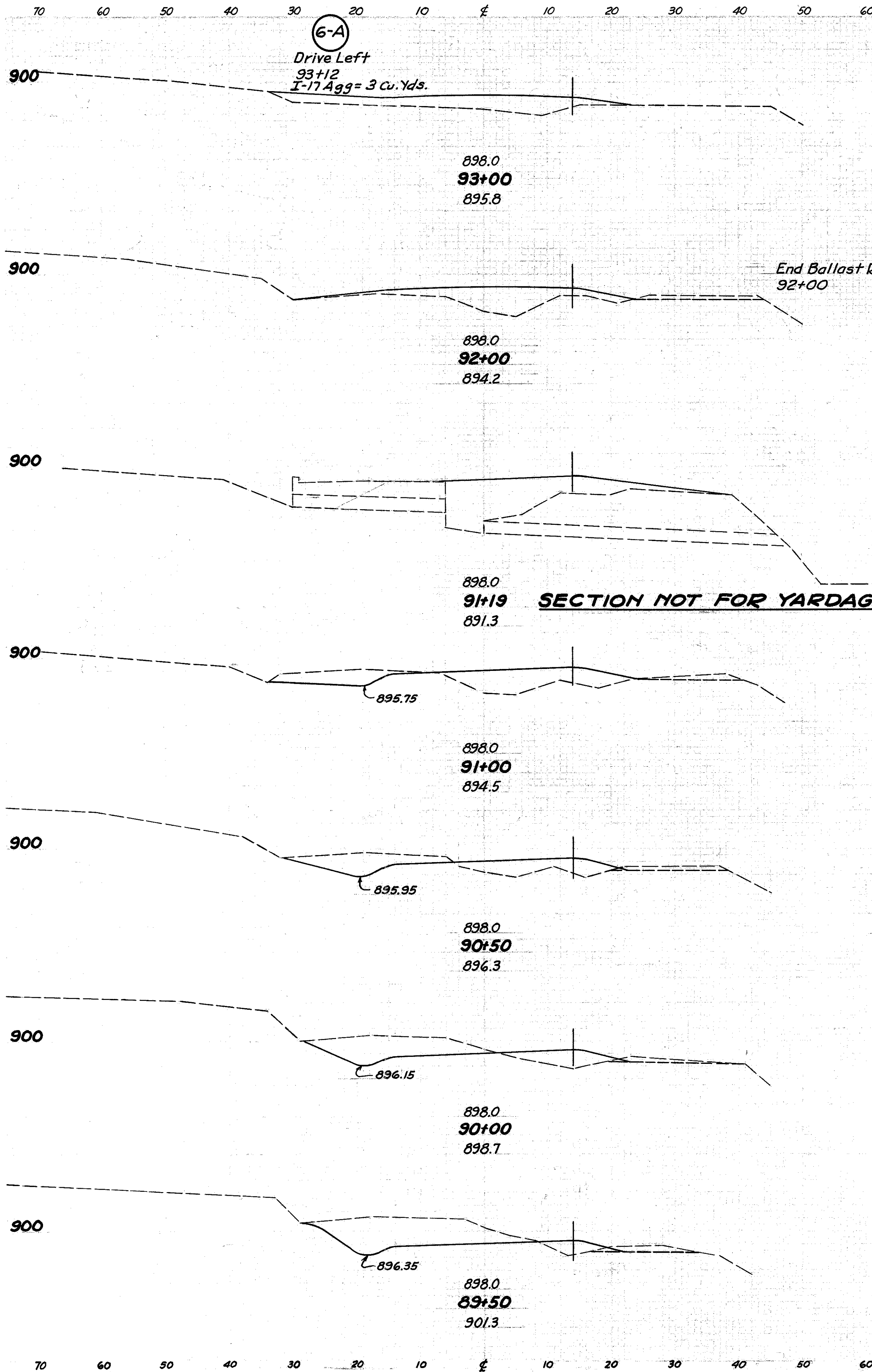




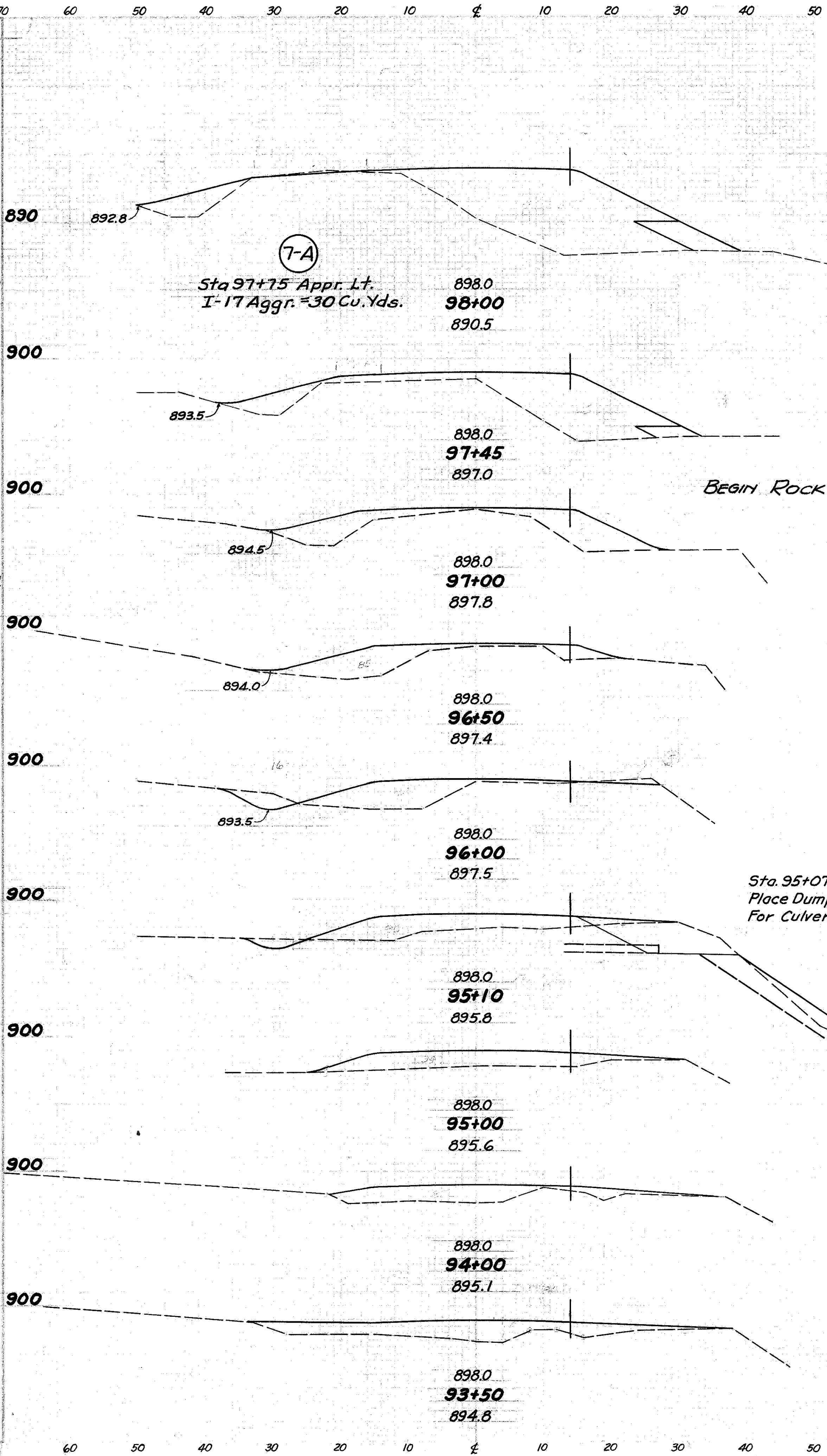
DIV. 2 OHIO 1947 19 56  
**TUSCARAWAS COUNTY**  
**SH. 712 SEC. N(PT) & O(PT)**  
**DOVER BASIN (UNIT 1)**

FROM STA. 83+00 TO STA. 89+00





| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| CUT      | FILL | CUT      | FILL |
|          |      | 0        | 177  |
| 0        | 88   |          |      |
| 0        | 300  |          |      |
| 0        | 74   |          |      |
| 61       | 274  |          |      |
| 33       | 74   |          |      |
| 73       | 112  |          |      |
| 46       | 47   |          |      |
| 112      | 71   |          |      |
| 75       | 30   |          |      |
| 176      | 43   |          |      |
| 115      | 16   |          |      |



DIV.  
2 OHIO

1947

56

TUSCARAWAS COUNTY

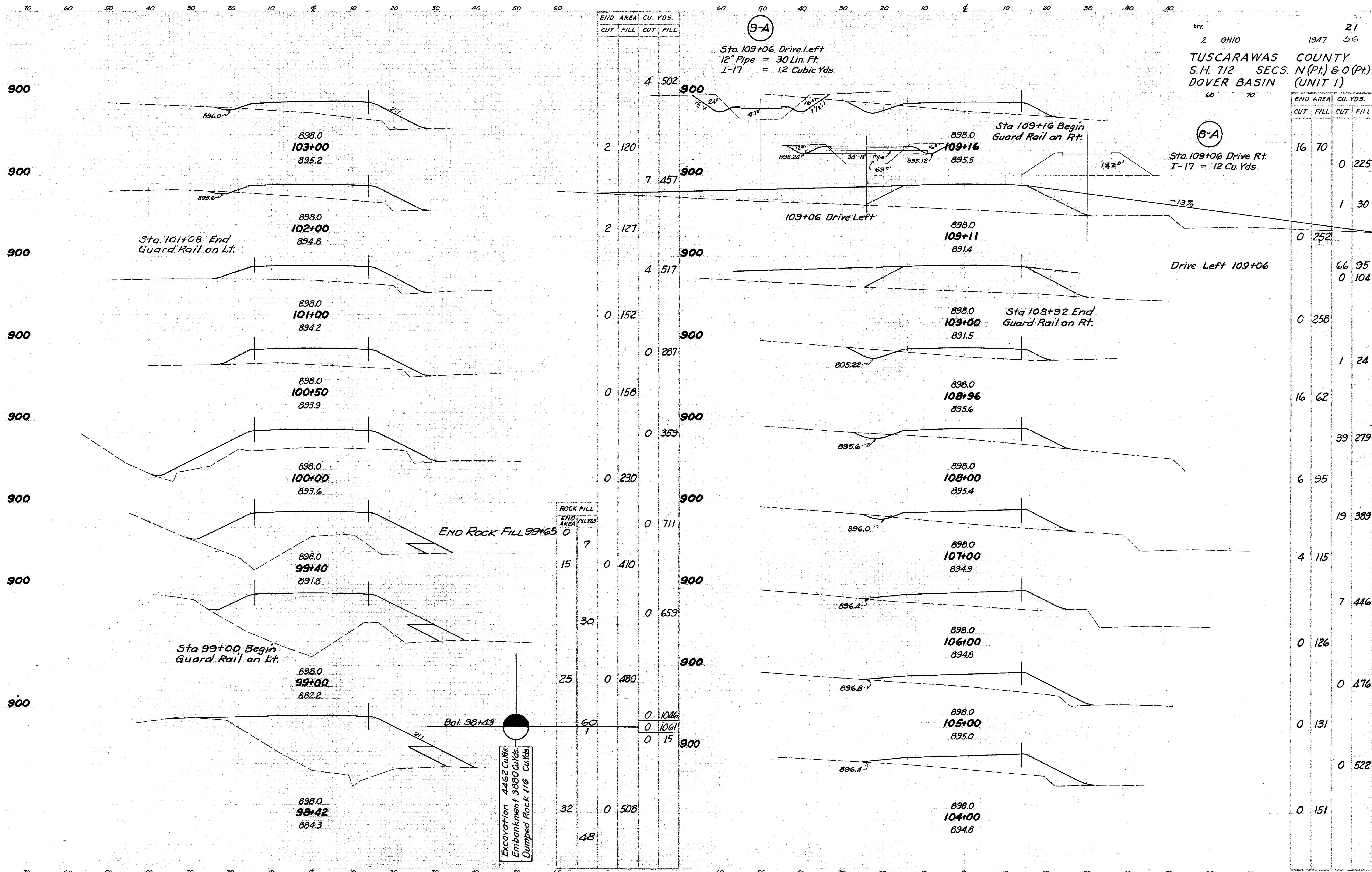
S.H. 712 SECS. N (Pt) & O (Pt)

DOVER BASIN (UNIT 1)

| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| CUT      | FILL | CUT      | FILL |
|          |      | 0        | 670  |
| 30       | 0    | 353      |      |
| 43       | 0    | 579      |      |
| 12       | 4    | 215      |      |
| 0        | 0    | 282      |      |
| 0        | 0    | 123      |      |
| 0        | 0    | 193      |      |
| 0        | 0    | 85       |      |
| 19       | 150  |          |      |
| 21       | 77   |          |      |
| 48       | 287  |          |      |
| 8        | 95   |          |      |
| 12       | 1    | 35       |      |
| 0        | 94   |          |      |
| 0        | 0    | 333      |      |
| 0        | 86   |          |      |
| 0        | 0    | 175      |      |
| 0        | 0    | 103      |      |

FROM STA. 89+50 TO STA. 98+00





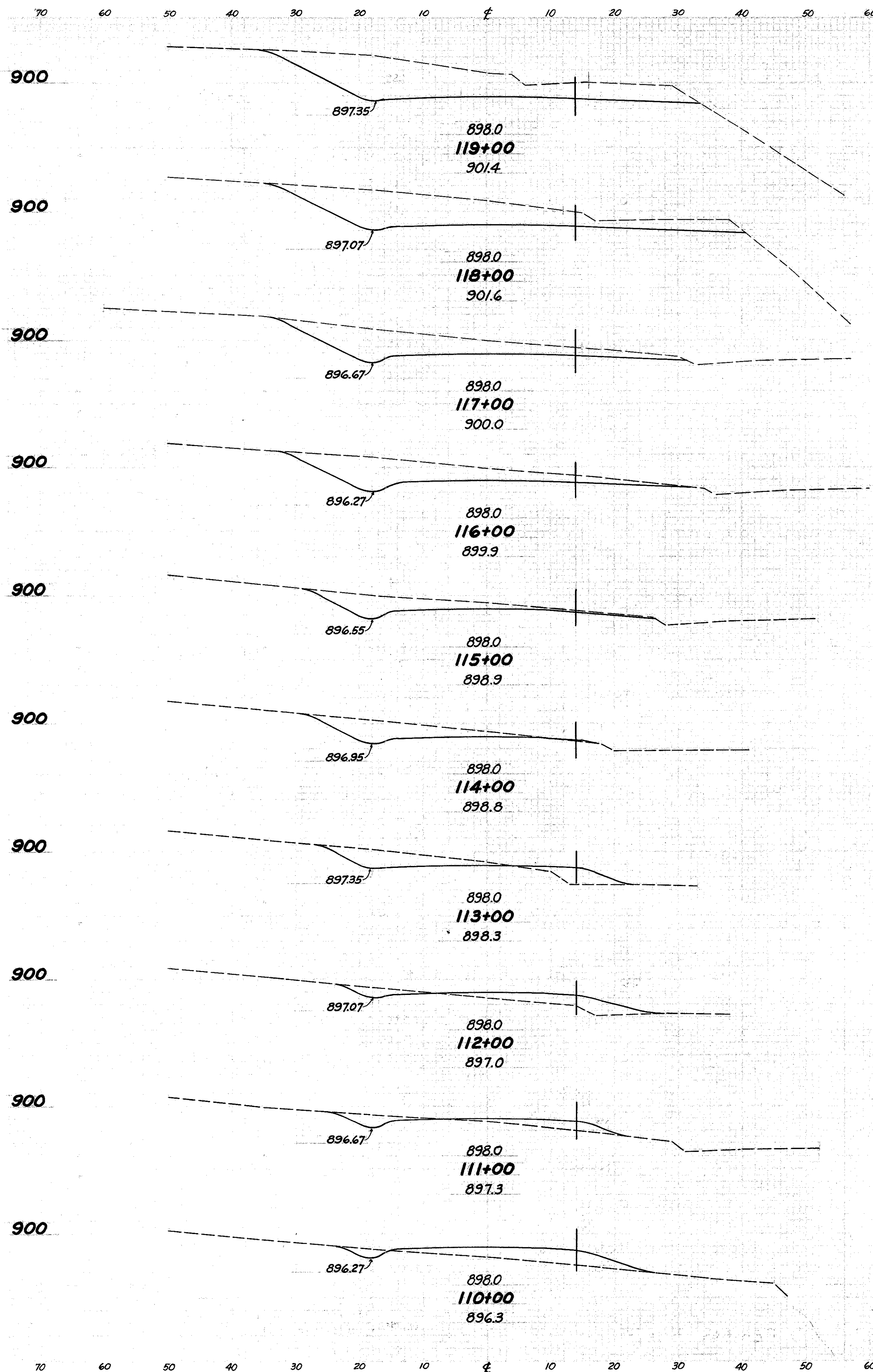
DIV. 2 OHIO 1947 56  
TUSCARAWAS COUNTY  
S.H. 712 SECS. N (Pt.) & O (Pt.)  
DOVER BASIN (UNIT 1)

| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| CUT      | FILL | CUT      | FILL |
| 4        | 502  | 900      |      |
| 2        | 120  |          |      |
| 7        | 457  | 900      |      |
| 2        | 127  |          |      |
| 4        | 517  | 900      |      |
| 0        | 152  |          |      |
| 0        | 287  | 900      |      |
| 0        | 158  |          |      |
| 0        | 359  | 900      |      |
| 0        | 230  |          |      |
| 0        | 711  | 900      |      |
| 7        | 0    |          |      |
| 15       | 0    | 410      |      |
| 30       | 0    | 659      |      |
| 25       | 0    | 480      |      |
| 60       | 0    | 1046     |      |
| 1        | 0    | 1061     |      |
| 1        | 0    | 15       |      |
| 32       | 0    | 508      |      |
| 48       |      |          |      |

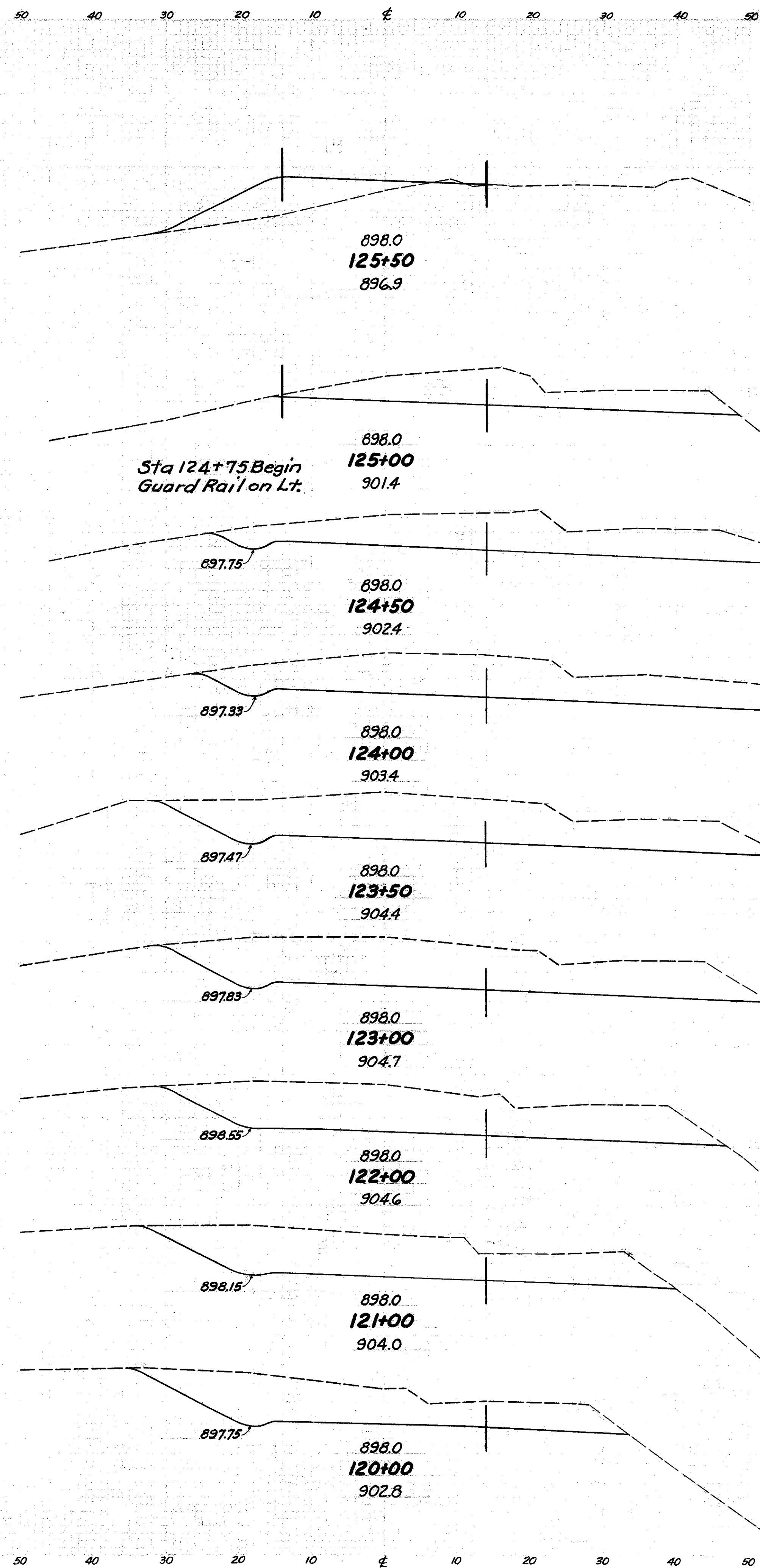
| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| CUT      | FILL | CUT      | FILL |
| 16       | 70   |          |      |
|          |      | 0        | 225  |
|          |      | 1        | 30   |
| 0        | 252  |          |      |
|          |      | 66       | 95   |
|          |      | 0        | 104  |
| 0        | 258  |          |      |
|          |      | 1        | 24   |
| 16       | 62   |          |      |
|          |      | 39       | 279  |
| 6        | 95   |          |      |
|          |      | 19       | 389  |
| 4        | 115  |          |      |
|          |      | 7        | 446  |
| 0        | 126  |          |      |
|          |      | 0        | 476  |
| 0        | 131  |          |      |
|          |      | 0        | 522  |
| 0        | 151  |          |      |

FROM STA. 98+42 TO STA. 109+16





| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| CUT      | FILL | CUT      | FILL |
| 222      | 0    |          |      |
| 804      | 0    |          |      |
| 212      | 0    |          |      |
| 633      | 0    |          |      |
| 130      | 0    |          |      |
| 467      | 0    |          |      |
| 122      | 0    |          |      |
| 341      | 0    |          |      |
| 62       | 0    |          |      |
| 219      | 2    |          |      |
| 56       | 1    |          |      |
| 181      | 44   |          |      |
| 42       | 23   |          |      |
| 100      | 117  |          |      |
| 12       | 40   |          |      |
| 48       | 115  |          |      |
| 14       | 22   |          |      |
| 37       | 141  |          |      |
| 6        | 54   |          |      |
| 34       | 193  |          |      |



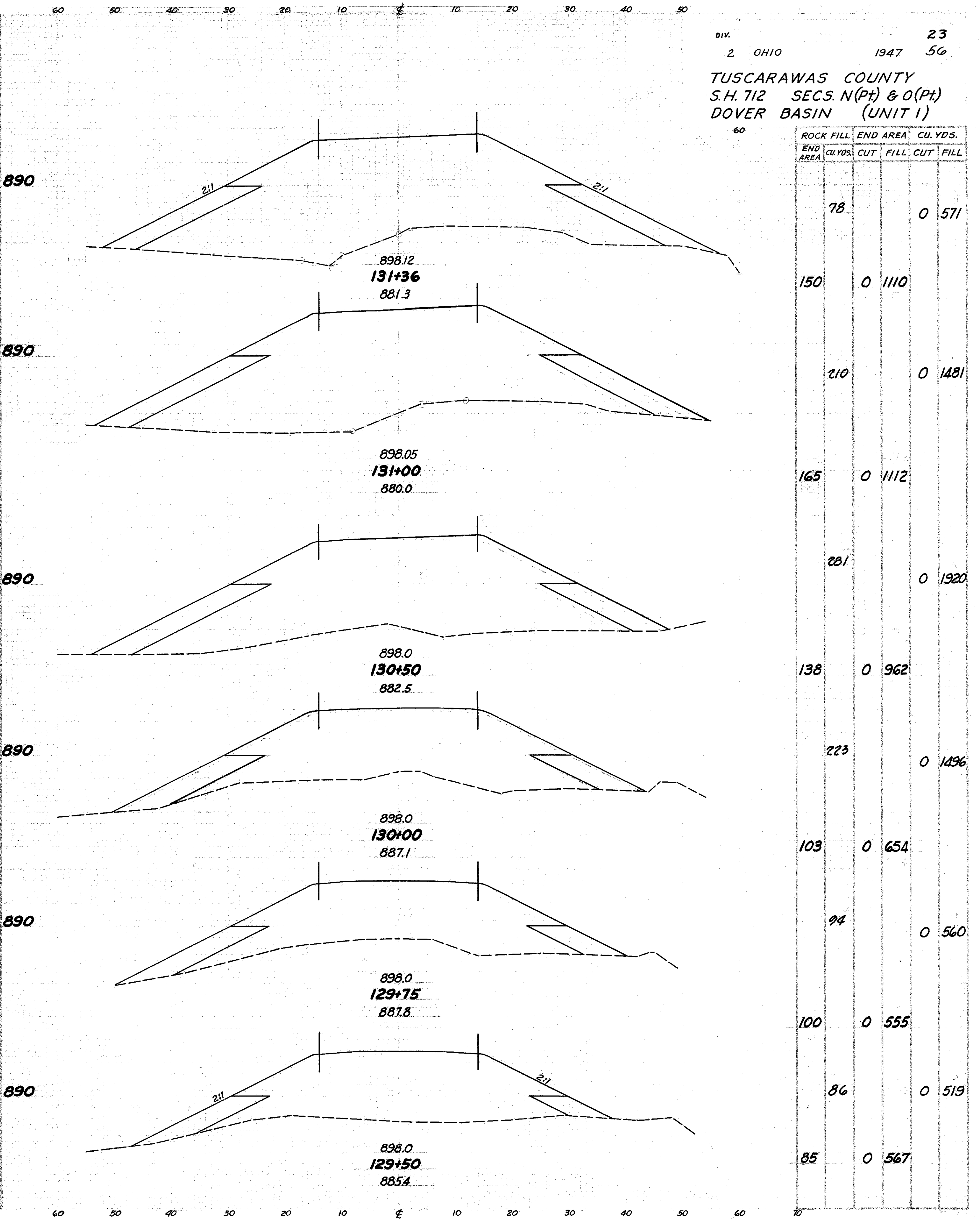
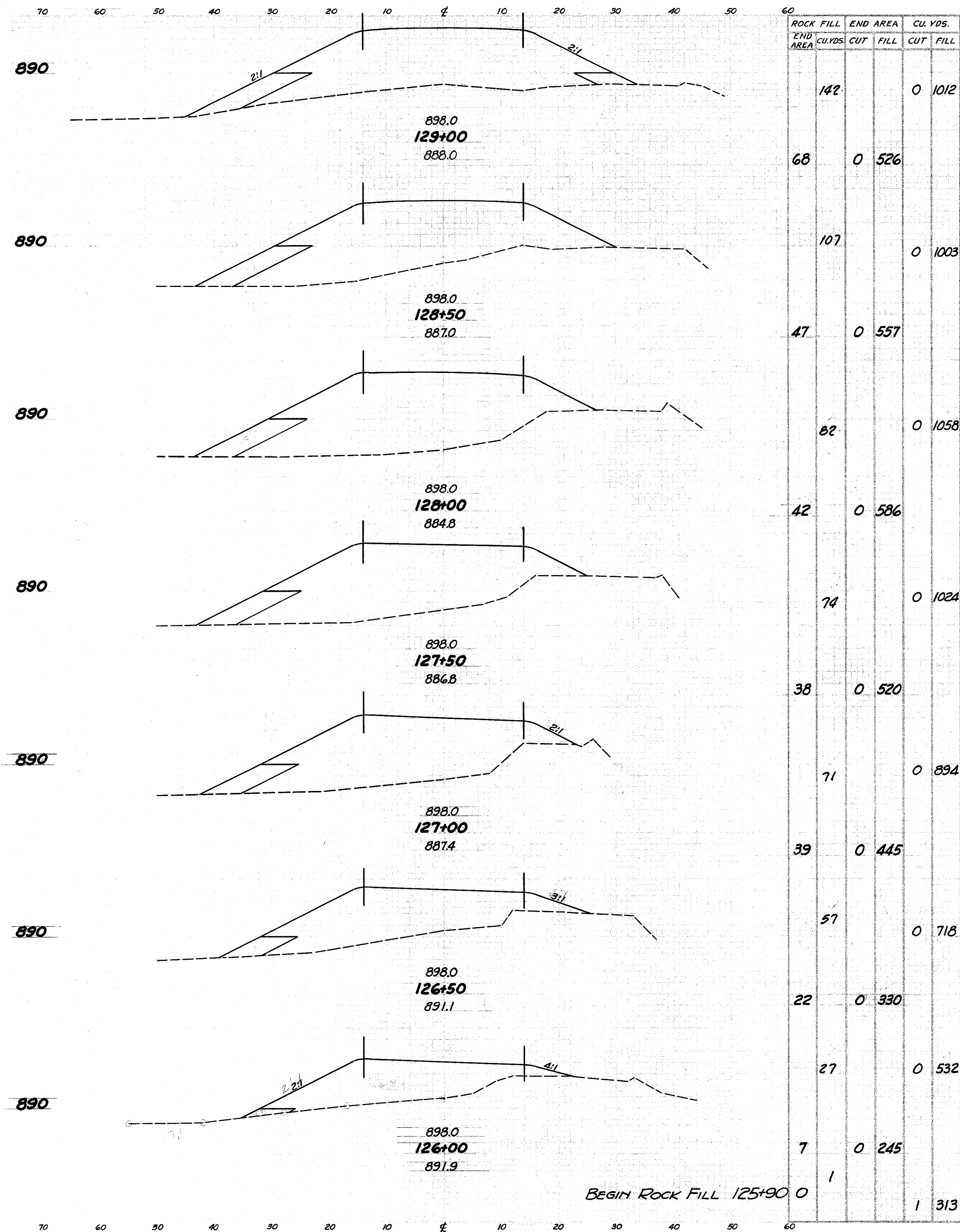
DIV. 2 OHIO  
 TUSCARAWAS COUNTY  
 S.H. 712 SECS. N(PT) & O(PT)  
 DOVER BASIN (UNIT 1)

| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| CUT      | FILL | CUT      | FILL |
| 1        | 93   |          |      |
|          |      | 168      | 86   |
| 180      | 0    |          |      |
| 435      | 0    |          |      |
| 290      | 0    |          |      |
| 606      | 0    |          |      |
| 365      | 0    |          |      |
| 346      | 0    |          |      |
| 699      | 0    |          |      |
| 353      | 0    |          |      |
| 390      | 0    |          |      |
| 727      | 0    |          |      |
| 395      | 0    |          |      |
| 1435     | 0    |          |      |
| 380      | 0    |          |      |
| 1333     | 0    |          |      |
| 340      | 0    |          |      |
| 1130     | 0    |          |      |
| 270      | 0    |          |      |
| 911      | 0    |          |      |

Excavation 8901 Cu.Yds.  
 Embankment 7740 Cu.Yds.  
 Dumped Rock 97 Cu.Yds.

FROM STA. 110+00 TO STA. 125+50



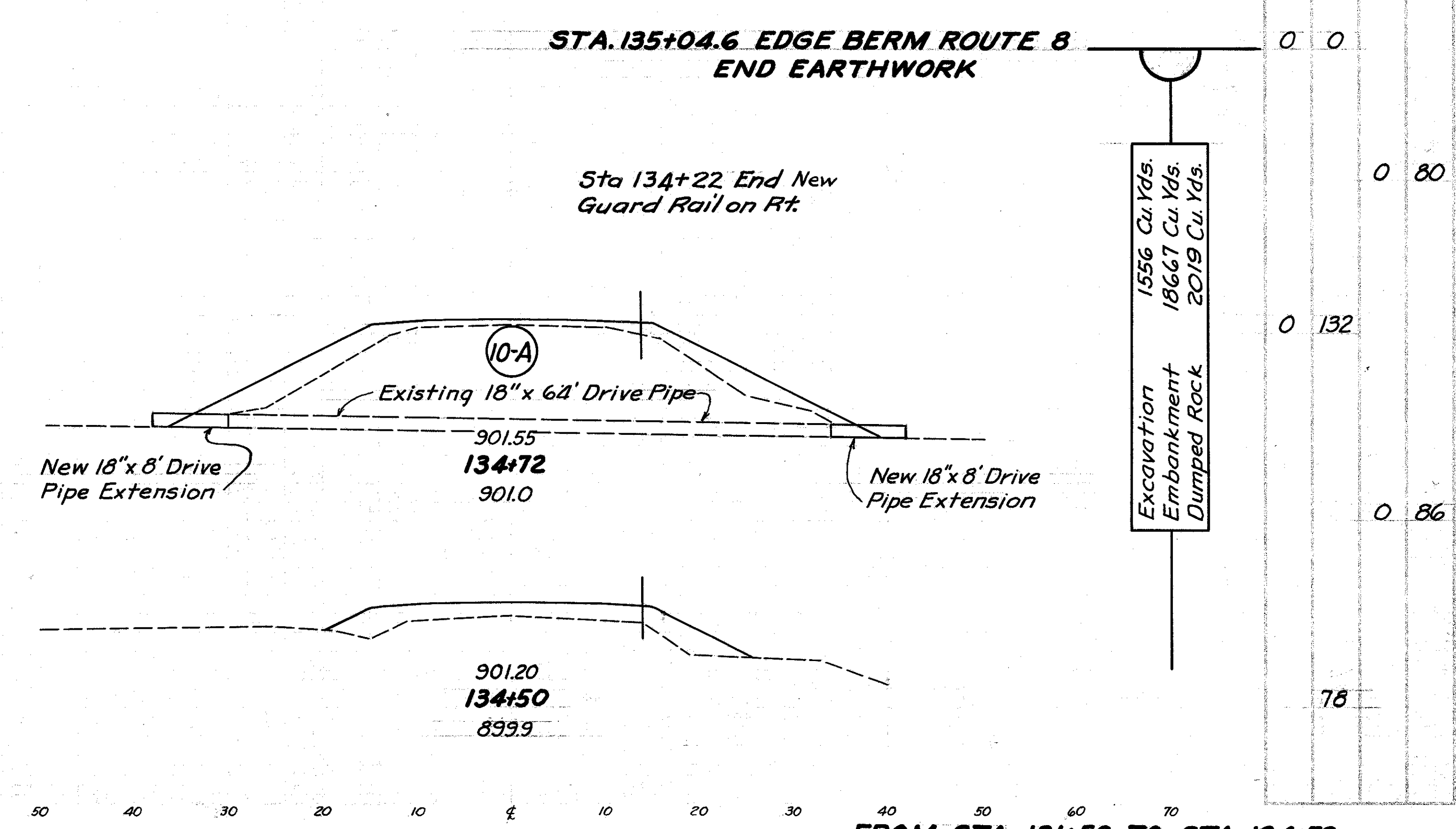
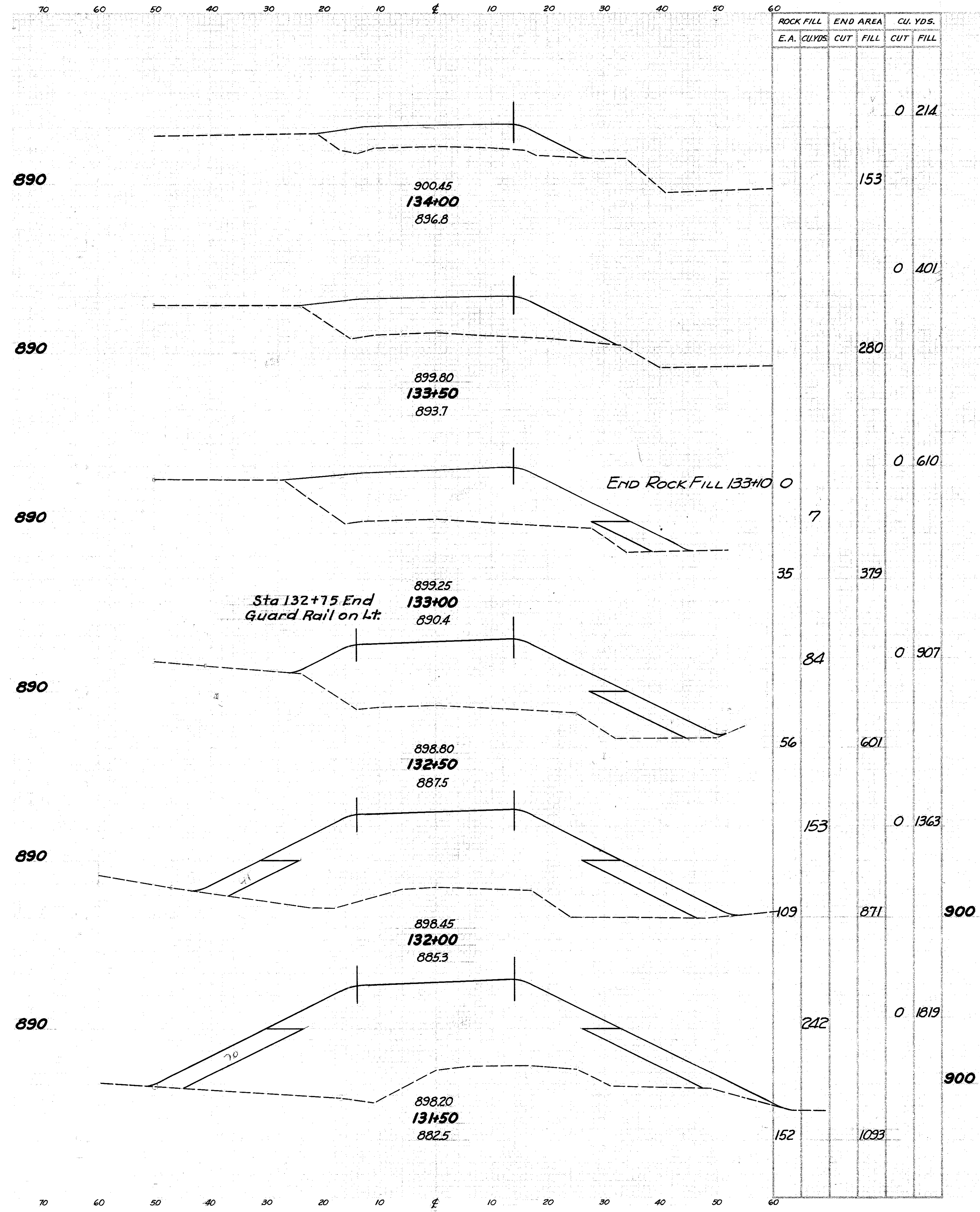




| ROCK FILL    | END AREA | CUT | FILL | CUT | FILL |
|--------------|----------|-----|------|-----|------|
| E.A. CU.YDS. |          |     |      |     |      |

DIV. 2 OHIO 1947 24 56  
 TUSCARAWAS COUNTY  
 S.H. 712 SECS. N(Pt) & O(Pt)  
 DOVER BASIN (UNIT I)

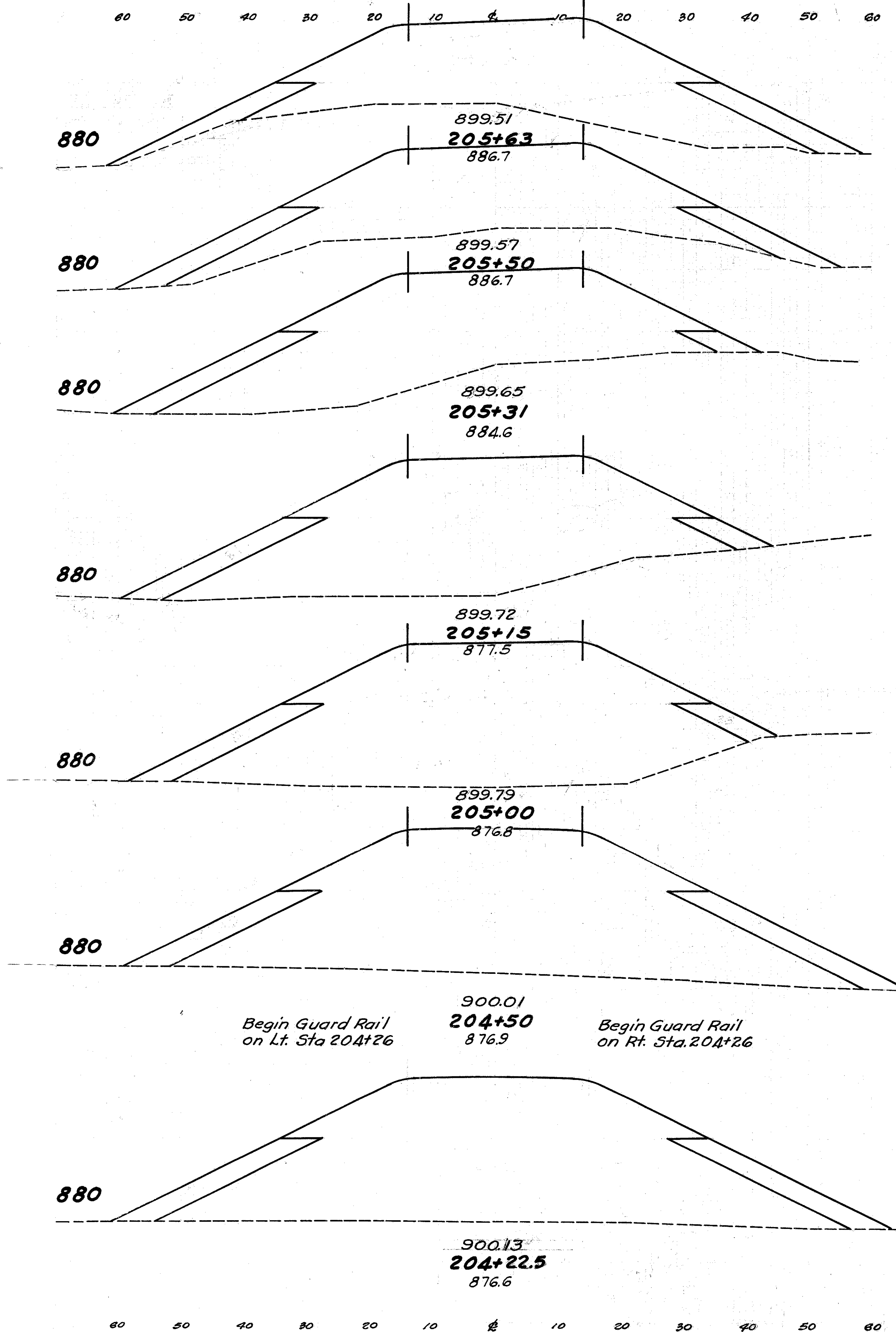
| END AREA | CUT | FILL | CUT | FILL |
|----------|-----|------|-----|------|
| CU. YDS. |     |      |     |      |



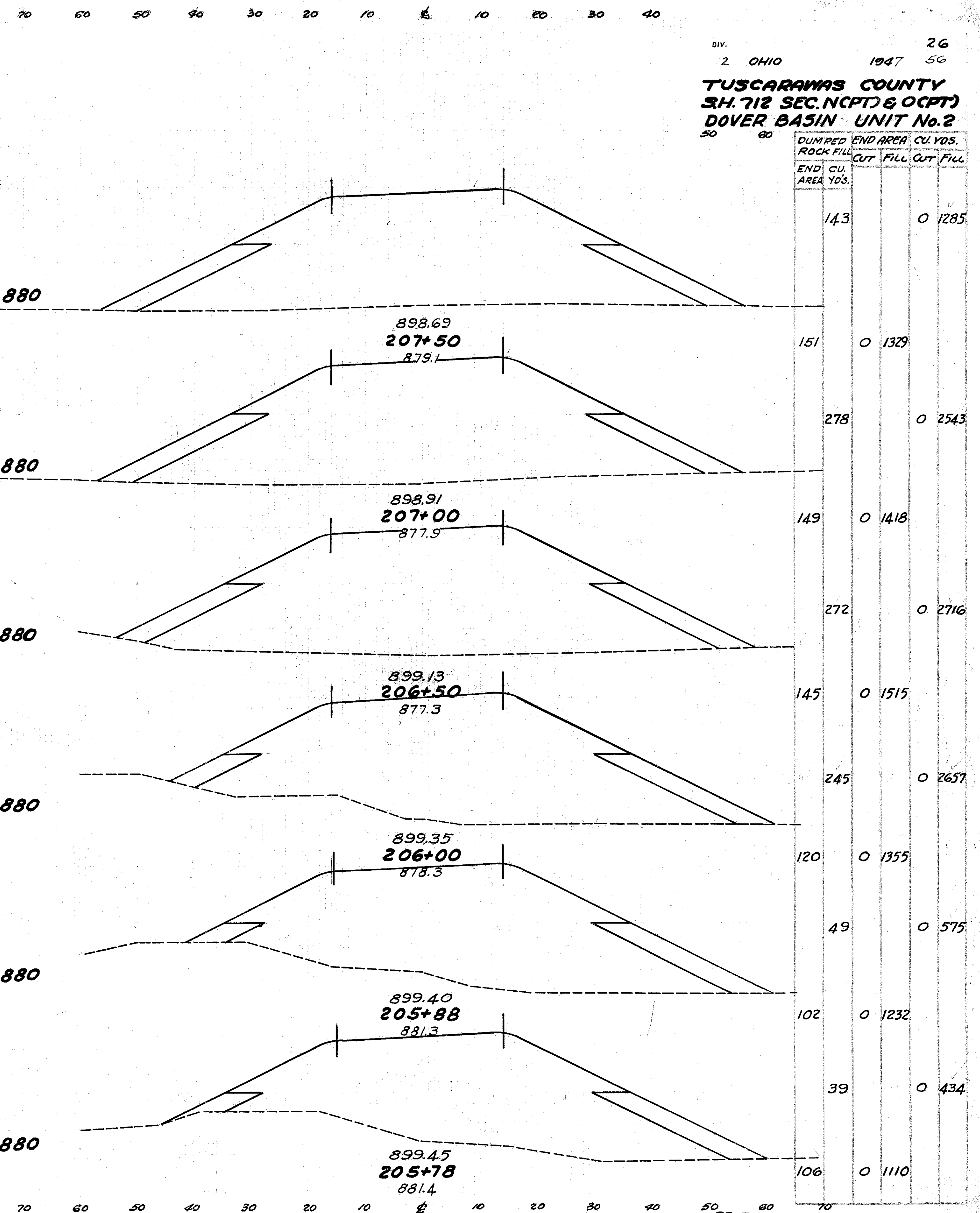








| DUMPED<br>ROCK FILL | END<br>AREA<br>YDS. | END AREA |      | CU. YDS. |      |
|---------------------|---------------------|----------|------|----------|------|
|                     |                     | CUT      | FILL | CUT      | FILL |
|                     | 71                  |          |      | 0        | 569  |
| 149                 |                     | 0        | 937  |          |      |
| 71                  |                     |          |      | 0        | 432  |
| 147                 |                     | 0        | 857  |          |      |
| 91                  |                     |          |      | 0        | 683  |
| 112                 |                     | 0        | 1085 |          |      |
| 69                  |                     |          |      | 0        | 708  |
| 121                 |                     | 0        | 1304 |          |      |
| 67                  |                     |          |      | 0        | 759  |
| 120                 |                     | 0        | 1428 |          |      |
| 284                 |                     |          |      | 0        | 2827 |
| 187                 |                     | 0        | 1625 |          |      |
| 191                 |                     |          |      | 0        | 1658 |
| 189                 |                     | 0        | 1632 |          |      |

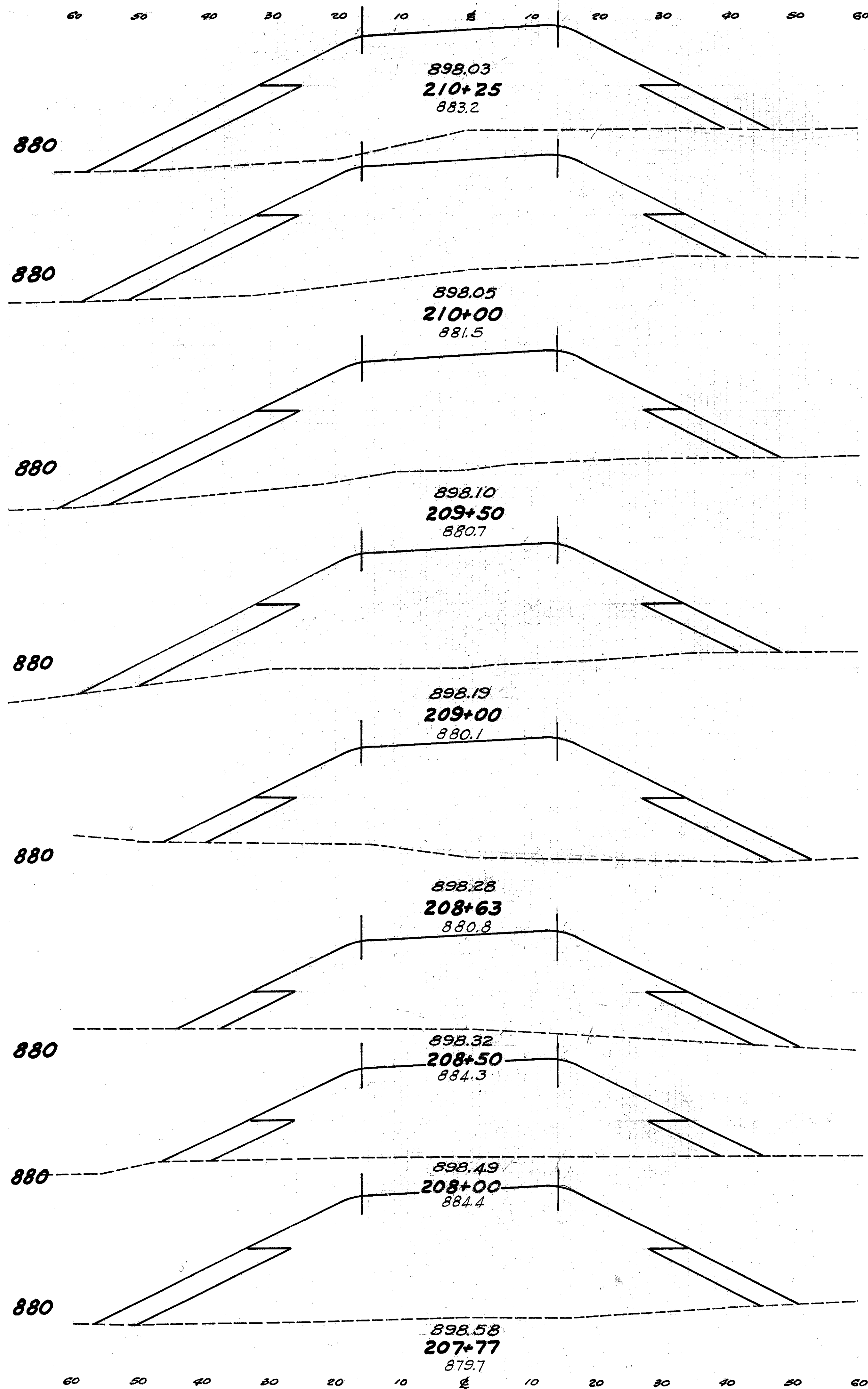


DIV. 2 OHIO 1947 26 56  
TUSCARAWAS COUNTY  
SH. 712 SEC. N(CPT) & O(CPT)  
DOVER BASIN UNIT No. 2

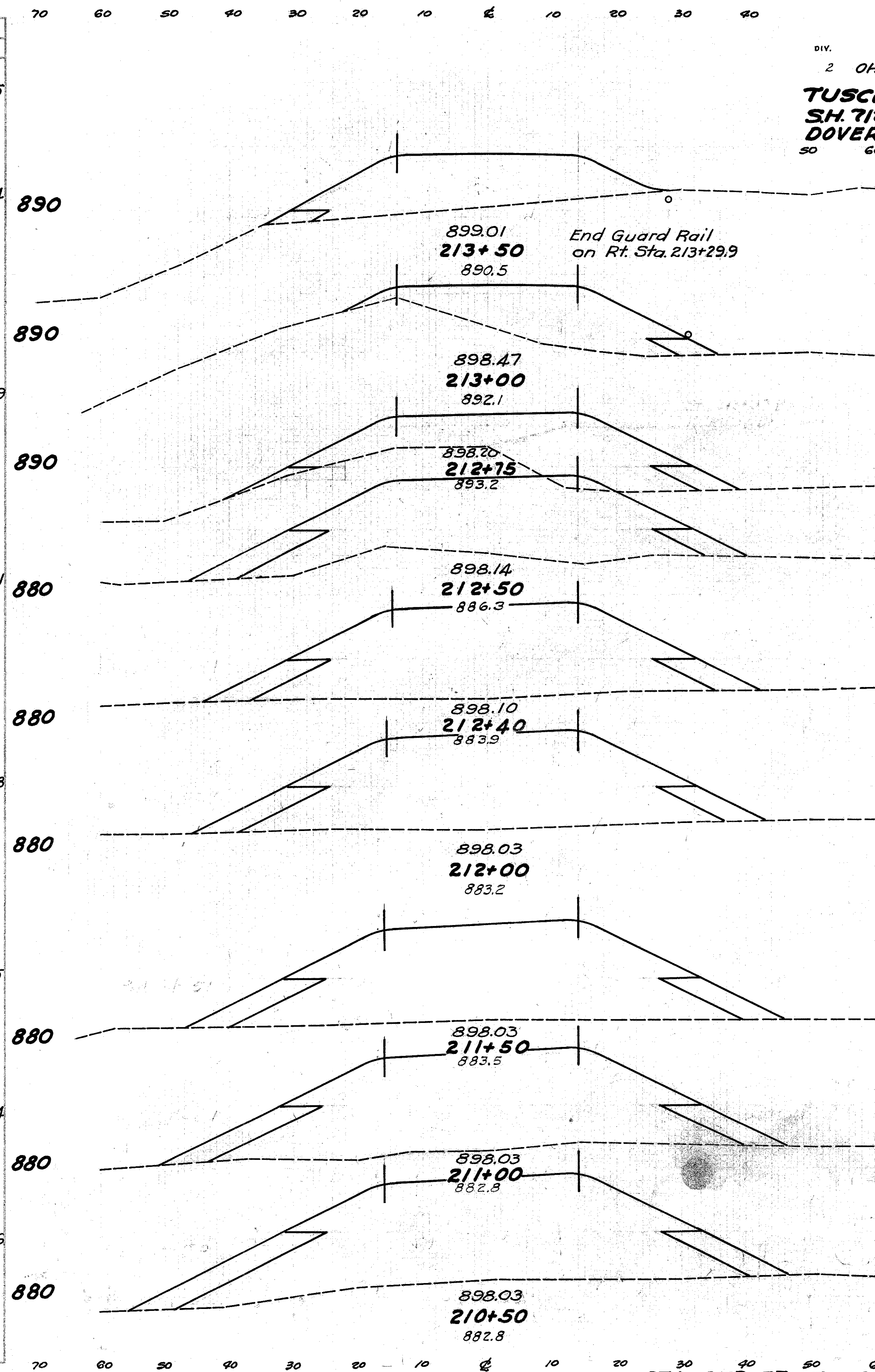
| DUMPED<br>ROCK FILL | END<br>AREA<br>YDS. | END AREA |      | CU. YDS. |      |
|---------------------|---------------------|----------|------|----------|------|
|                     |                     | CUT      | FILL | CUT      | FILL |
|                     | 143                 |          |      | 0        | 1285 |
| 151                 |                     | 0        | 1329 |          |      |
| 278                 |                     |          |      | 0        | 2543 |
| 149                 |                     | 0        | 1418 |          |      |
| 272                 |                     |          |      | 0        | 2716 |
| 145                 |                     | 0        | 1515 |          |      |
| 245                 |                     |          |      | 0        | 2657 |
| 120                 |                     | 0        | 1355 |          |      |
| 49                  |                     |          |      | 0        | 575  |
| 102                 |                     | 0        | 1232 |          |      |
| 39                  |                     |          |      | 0        | 434  |
| 106                 |                     | 0        | 1110 |          |      |

STA. 204+22.5 TO STA. 207+50





| DUMPED<br>ROCK FILL | END AREA |      | CU YDS. |      |
|---------------------|----------|------|---------|------|
|                     | Cut      | Fill | Cut     | Fill |
| 119                 |          |      | 0       | 925  |
| 132                 | 0        | 1024 |         |      |
| 122                 |          | 0    | 984     |      |
| 131                 | 0        | 1101 |         |      |
| 260                 |          | 0    | 2069    |      |
| 150                 | 0        | 1134 |         |      |
| 268                 |          | 0    | 2071    |      |
| 139                 | 0        | 1103 |         |      |
| 173                 |          | 0    | 1468    |      |
| 114                 | 0        | 1039 |         |      |
| 50                  |          | 0    | 455     |      |
| 94                  | 0        | 850  |         |      |
| 160                 |          | 0    | 1564    |      |
| 79                  | 0        | 839  |         |      |
| 91                  |          | 0    | 886     |      |
| 134                 | 0        | 1241 |         |      |



DIV. 2 OHIO  
TUSCARAWAS COUNTY  
SH. 712 SEC. N (PT) 60 (PT)  
DOVER BASIN UNIT No. 2

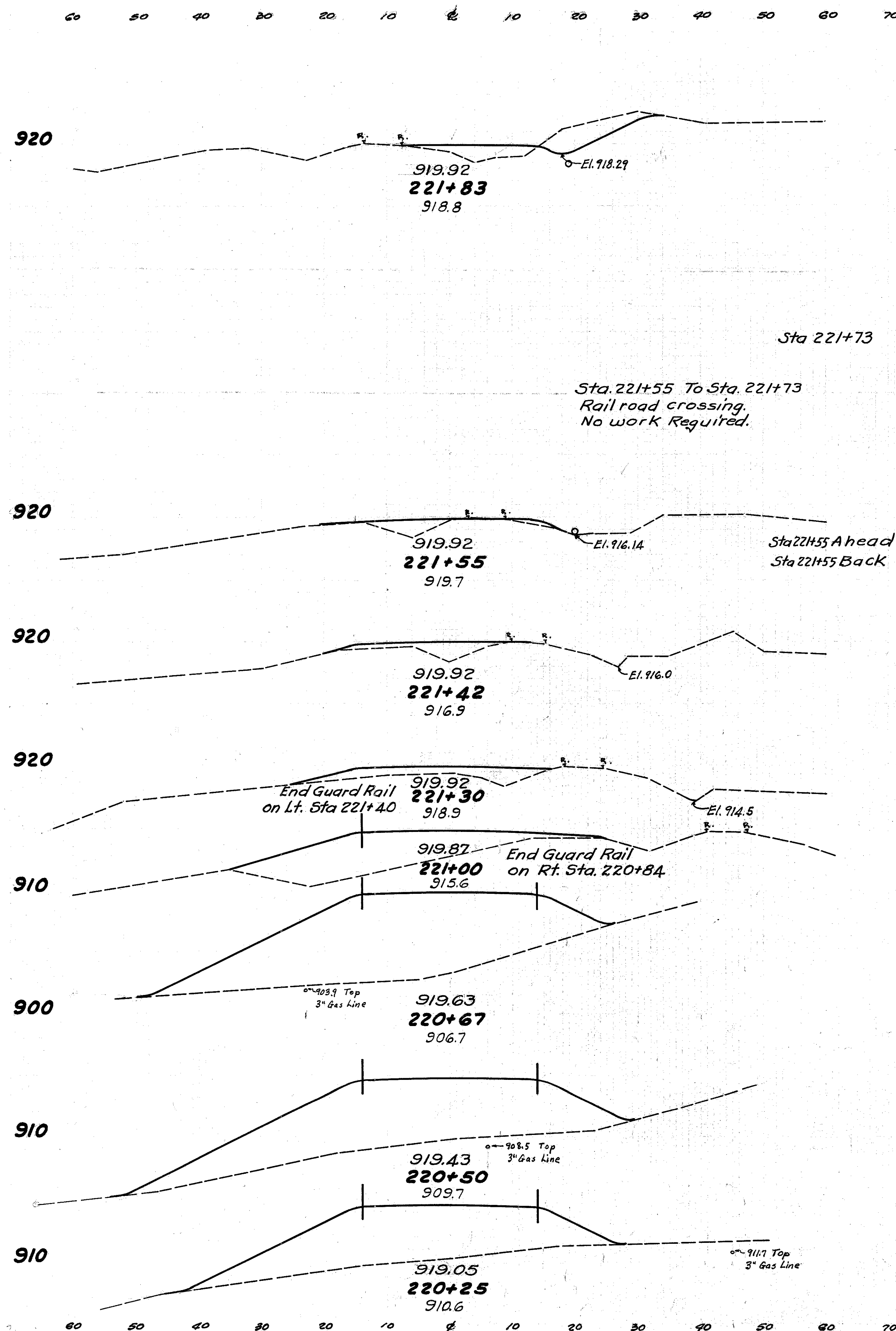
| DUMPED<br>ROCK FILL | END AREA |      | CU YDS. |      |
|---------------------|----------|------|---------|------|
|                     | Cut      | Fill | Cut     | Fill |
| 9                   |          | 0    | 218     |      |
| 10                  | 0        | 363  |         |      |
| 23                  |          | 0    | 606     |      |
| 15                  | 0        | 292  |         |      |
| 23                  |          | 0    | 314     |      |
| 34                  | 0        | 386  |         |      |
| 52                  |          | 0    | 476     |      |
| 79                  | 0        | 643  |         |      |
| 29                  |          | 0    | 257     |      |
| 77                  | 0        | 747  |         |      |
| 120                 |          | 0    | 1155    |      |
| 85                  | 0        | 813  |         |      |
| 167                 |          | 0    | 1543    |      |
| 95                  | 0        | 853  |         |      |
| 184                 |          | 0    | 1622    |      |
| 104                 | 0        | 899  |         |      |
| 213                 |          | 0    | 1734    |      |
| 126                 | 0        | 974  |         |      |

STA. 207+77 TO STA. 213+50

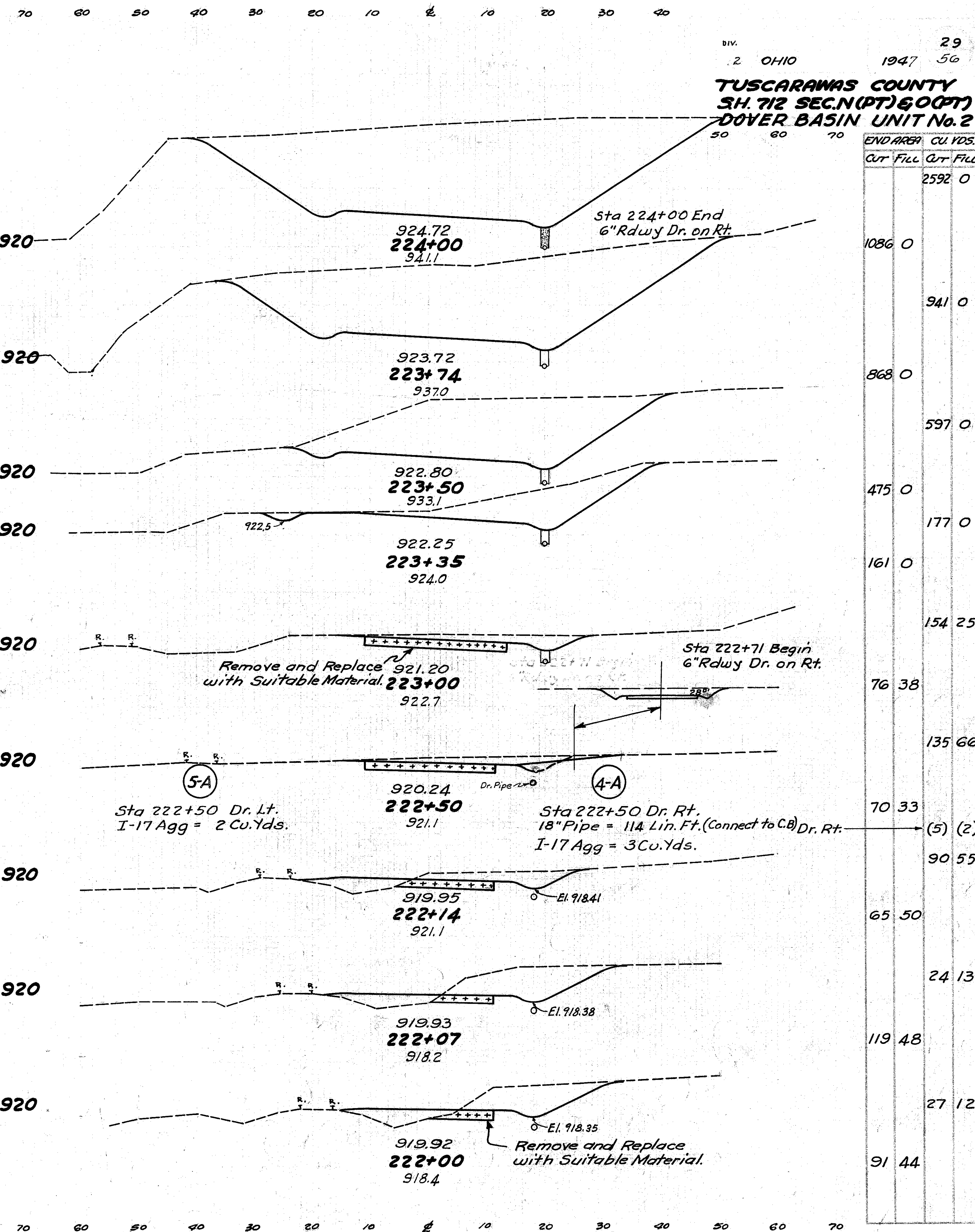








| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| Cut      | Fill | Cut      | Fill |
|          |      | 43       | 23   |
| 47       | 30   |          |      |
| 9        | 5    |          |      |
| 0        | 0    |          |      |
| 0        | 0    |          |      |
| 0        | 0    |          |      |
| 0        | 15   |          |      |
| 0        | 29   |          |      |
| 0        | 18   |          |      |
| 0        | 52   |          |      |
| 0        | 154  |          |      |
| 0        | 226  |          |      |
| 0        | 536  |          |      |
| 0        | 651  |          |      |
| 0        | 385  |          |      |
| 0        | 571  |          |      |
| 0        | 457  |          |      |
| 0        | 415  |          |      |
| 0        | 432  |          |      |

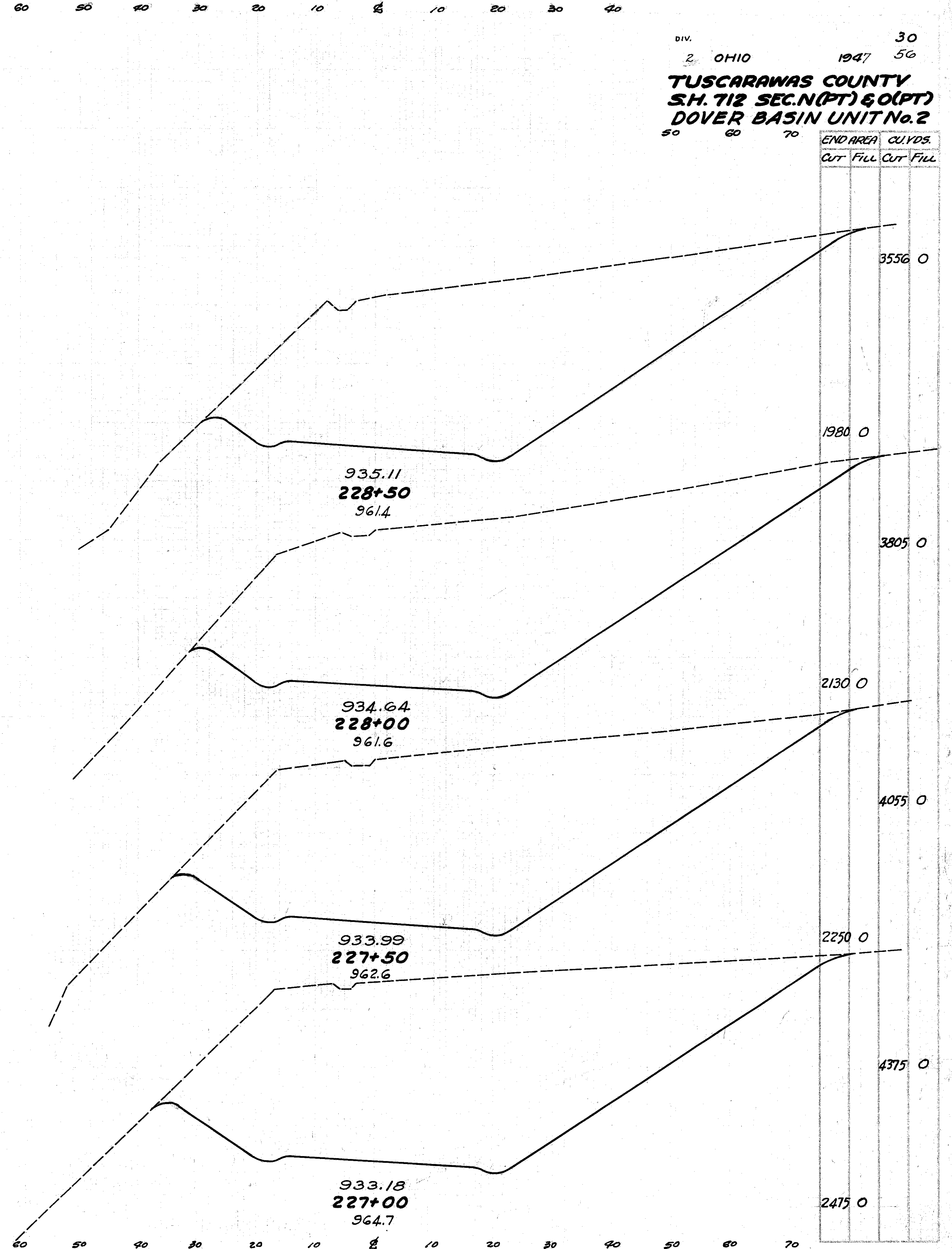
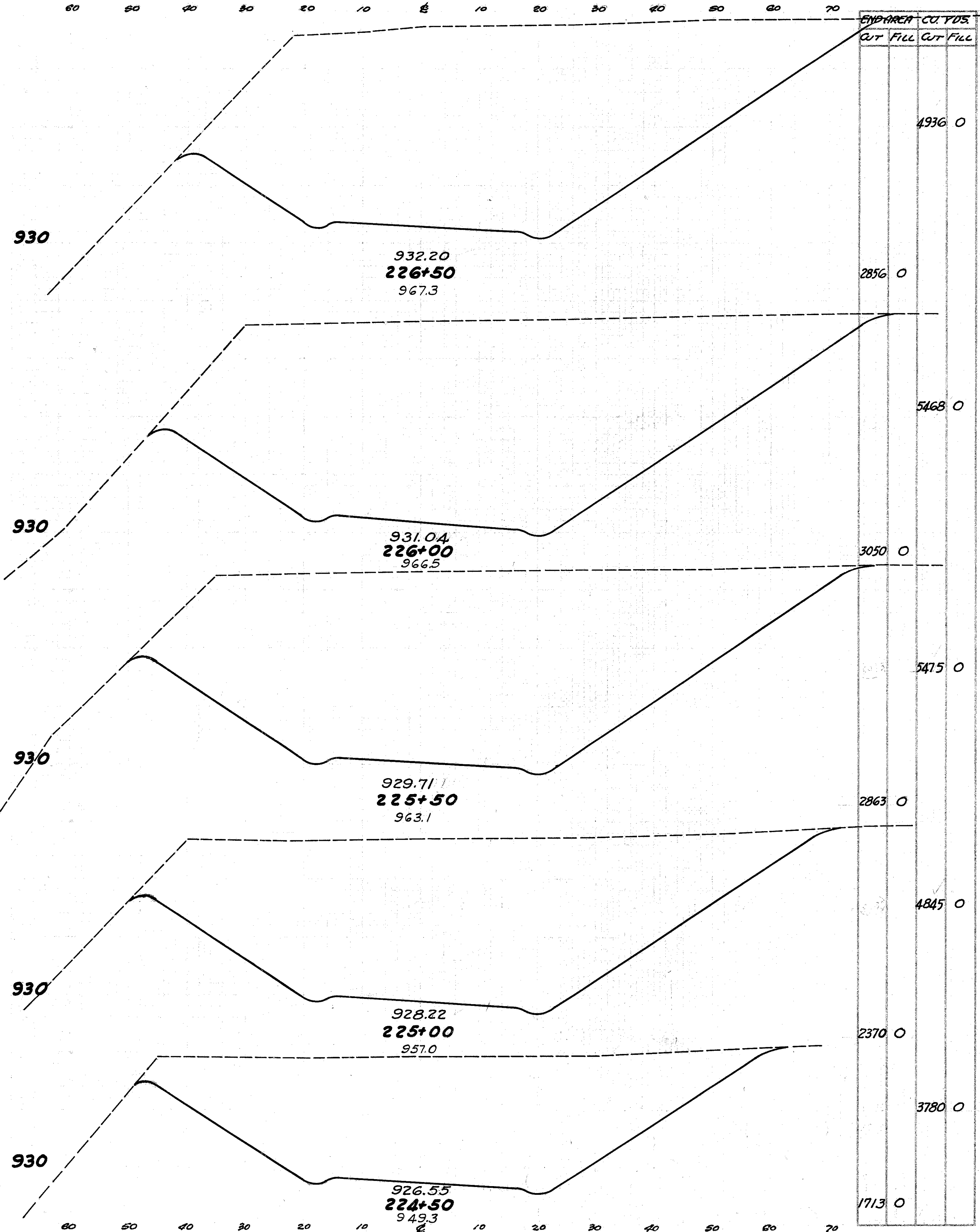


DIV. 2 OHIO  
TUSCARAWAS COUNTY  
SH. 712 SEC. N (PT) & O (PT)  
DOVER BASIN UNIT No. 2

| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| Cut      | Fill | Cut      | Fill |
|          |      | 2592     | 0    |
| 1086     | 0    |          |      |
|          |      | 941      | 0    |
| 868      | 0    |          |      |
|          |      | 597      | 0    |
| 475      | 0    |          |      |
|          |      | 177      | 0    |
| 161      | 0    |          |      |
|          |      | 154      | 25   |
| 76       | 38   |          |      |
|          |      | 135      | 66   |
| 70       | 33   |          |      |
|          |      | (5)      | (2)  |
|          |      | 90       | 55   |
|          |      | 65       | 50   |
|          |      | 24       | 13   |
|          |      | 119      | 48   |
|          |      | 27       | 12   |
| 91       | 44   |          |      |

STA. 220+25 TO STA. 224+00



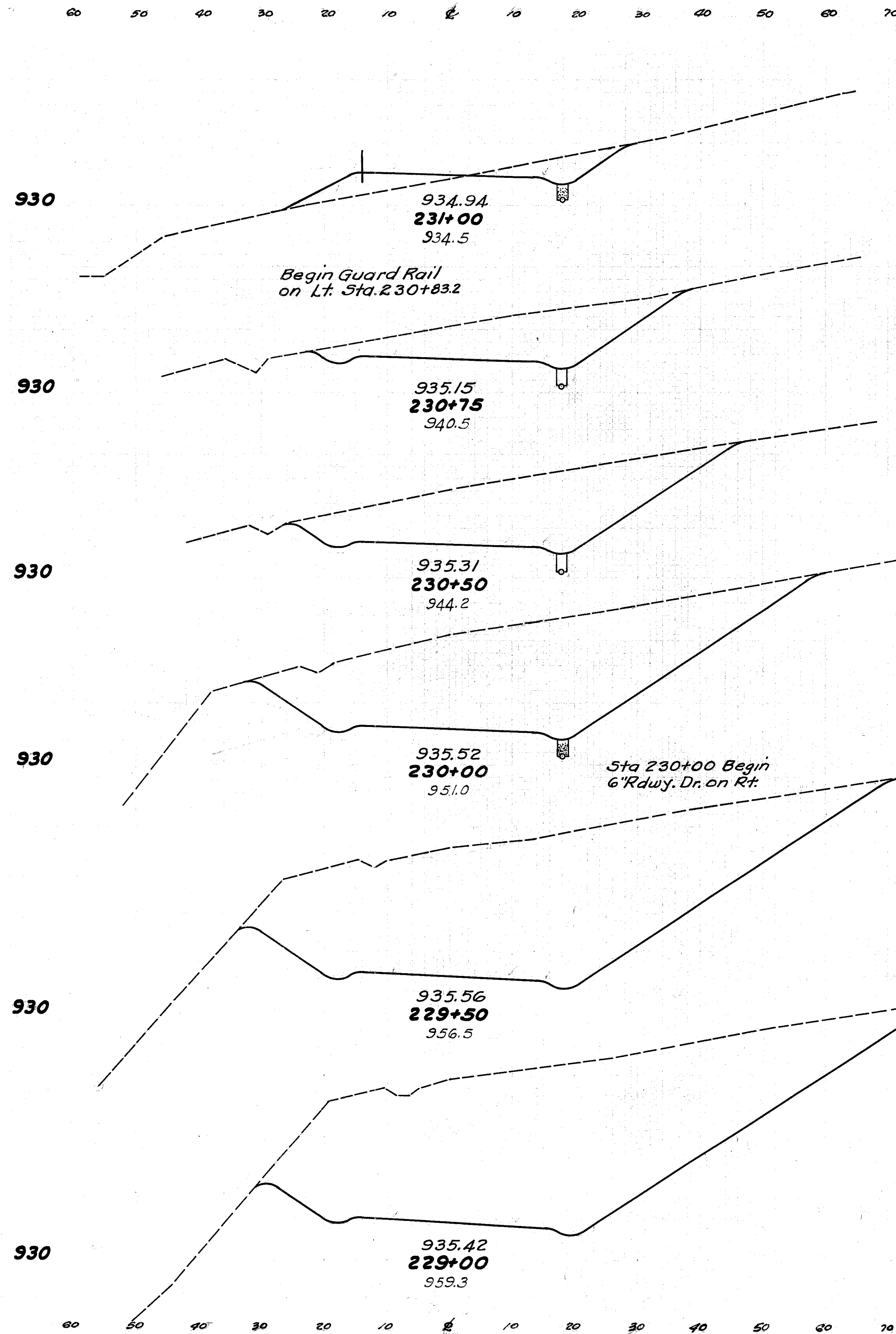


DIV. 2 OHIO 1947 30 56  
**TUSCARAWAS COUNTY**  
**S.H. 712 SEC. N (PT) & O (PT)**  
**DOVER BASIN UNIT No. 2**

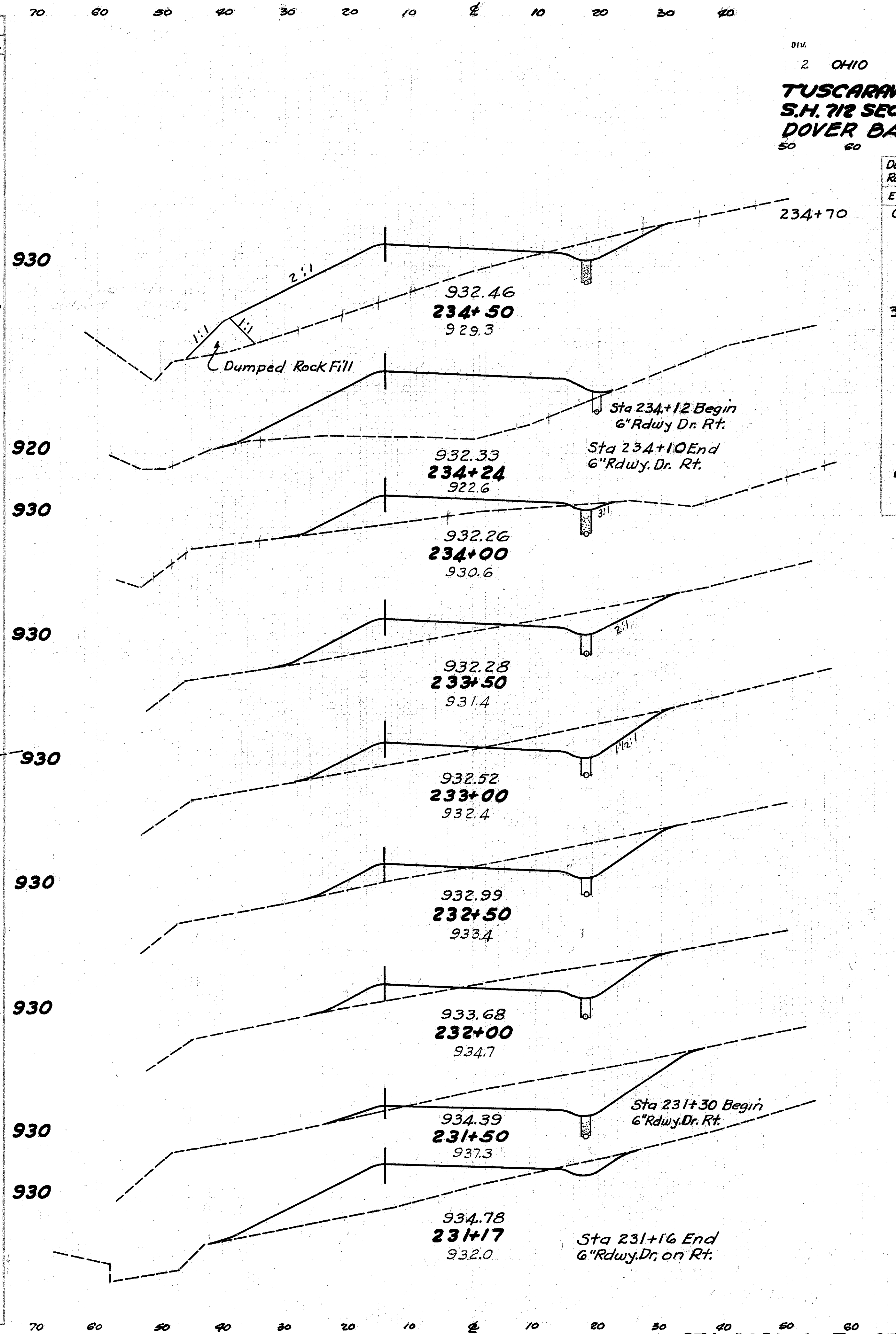
| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| Cut      | Fill | Cut      | Fill |
| 1713     | 0    | 3556     | 0    |
| 2370     | 0    | 1980     | 0    |
| 2863     | 0    | 3805     | 0    |
| 3050     | 0    | 2130     | 0    |
| 2856     | 0    | 4055     | 0    |
| 2856     | 0    | 2250     | 0    |
| 2370     | 0    | 4375     | 0    |
| 1713     | 0    | 2475     | 0    |

STA. 224+50 TO STA. 228+50





| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| Cut      | Fill | Cut      | Fill |
|          |      | 22       | 76   |
| 55       | 56   |          |      |
| 161      | 26   |          |      |
| 293      | 0    |          |      |
| 381      | 0    |          |      |
| 529      | 0    |          |      |
| 1434     | 0    |          |      |
| 1020     | 0    |          |      |
| 2408     | 0    |          |      |
| 1581     | 0    |          |      |
| 3187     | 0    |          |      |
| 1861     | 0    |          |      |



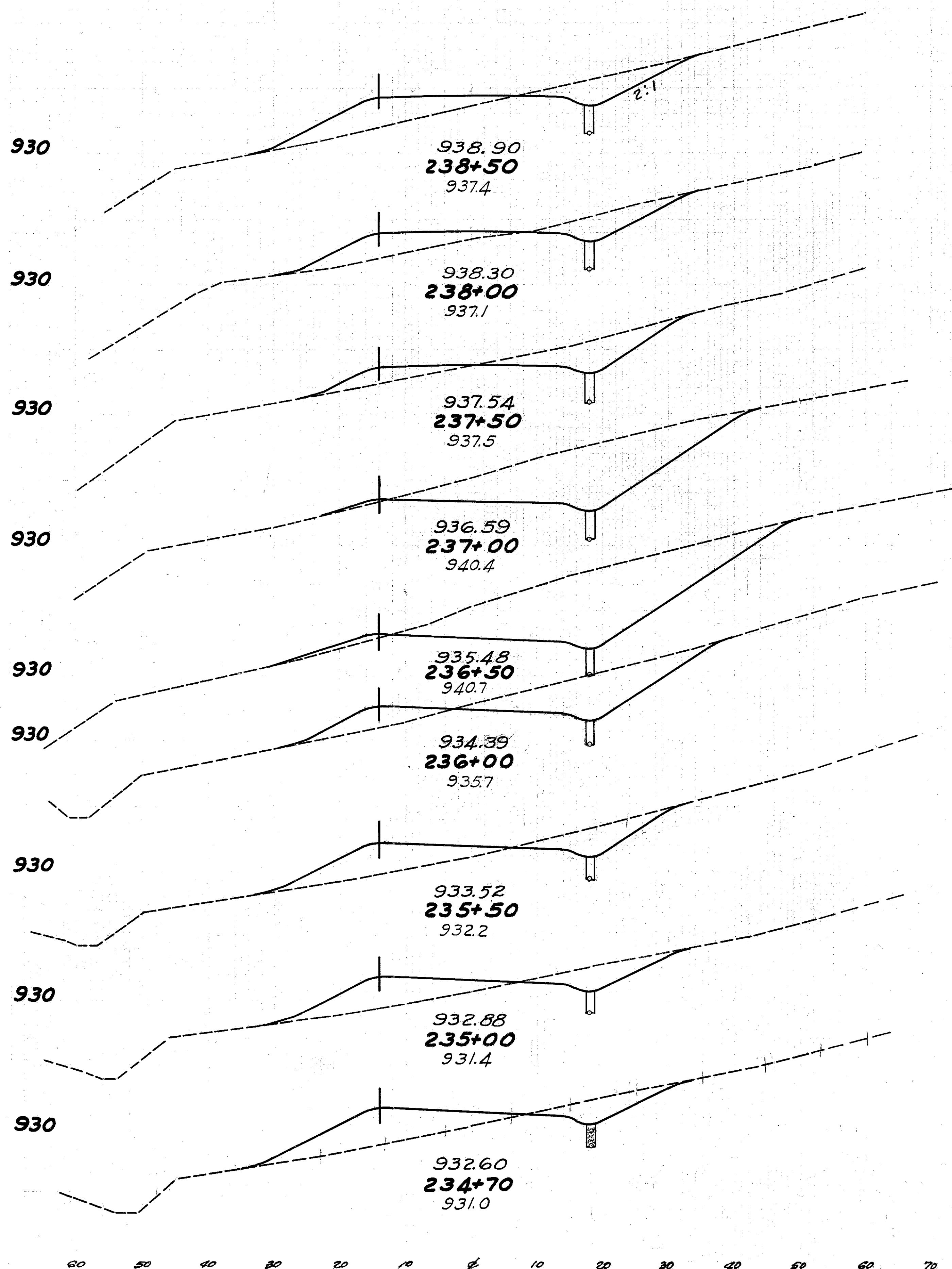
DIV. 2 OHIO 1947 31 56  
**TUSCARAWAS COUNTY**  
**S.H. 712 SEC. N (PT) 60 (PT)**  
**DOVER BASIN UNIT No. 2**

| END AREA         |     | CU. YDS. |     |
|------------------|-----|----------|-----|
| Dumped Rock Fill | Cut | Fill     | Cut |
| E.A. C.Y.        |     |          |     |
| 0                |     | 24       | 170 |
| 12               |     |          |     |
| 32               | 29  | 335      |     |
| 15               |     | 14       | 354 |
| 0                | 0   | 400      |     |
|                  |     | 2        | 224 |
|                  | 4   | 103      |     |
|                  |     | 50       | 176 |
|                  | 50  | 87       |     |
|                  |     | 111      | 129 |
|                  | 70  | 52       |     |
|                  |     | 145      | 81  |
|                  | 87  | 36       |     |
|                  |     | 155      | 63  |
|                  | 80  | 32       |     |
|                  |     | 219      | 34  |
|                  | 156 | 5        |     |
|                  |     | 104      | 116 |
|                  | 14  | 185      |     |

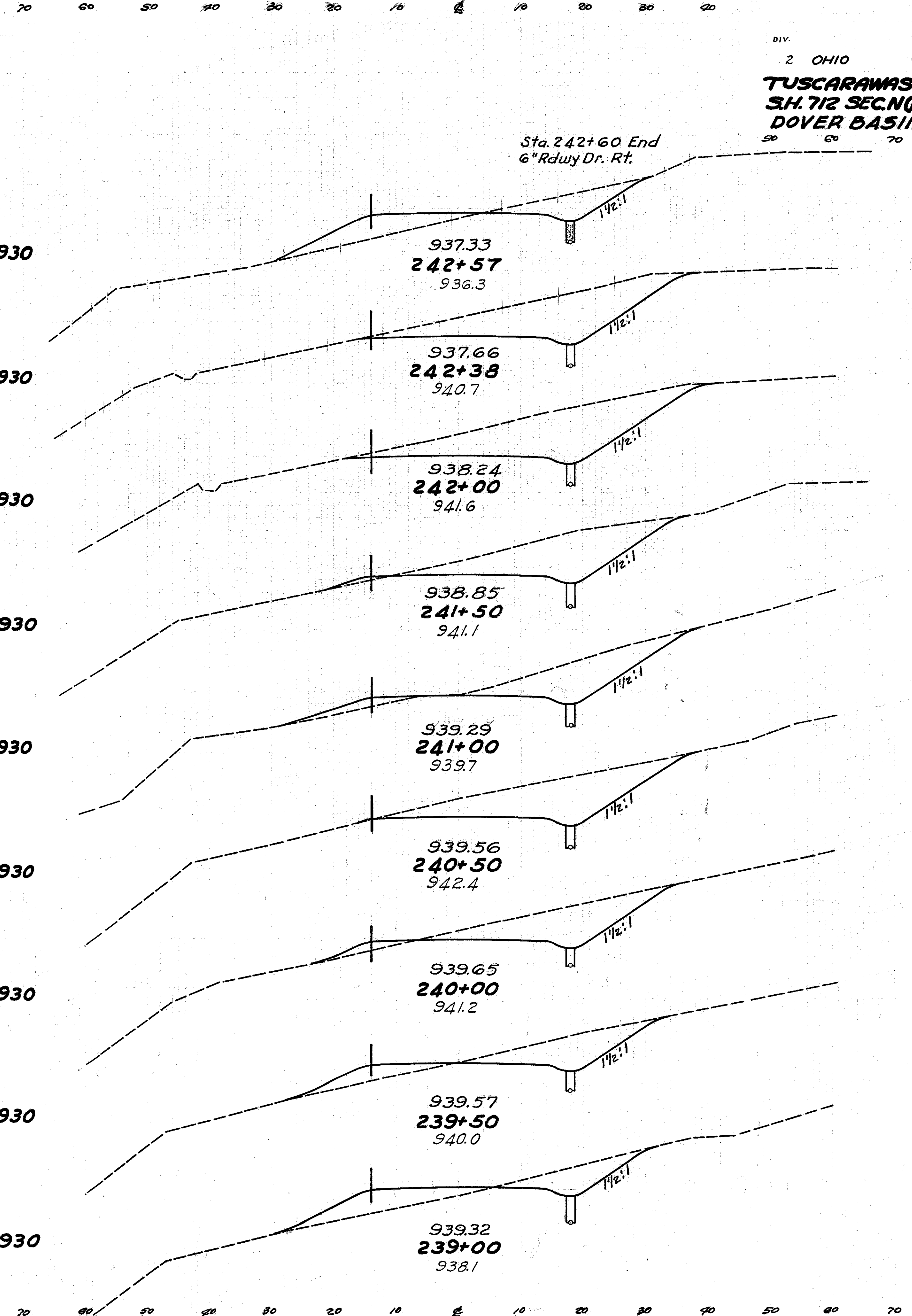
STA. 229+00 TO STA. 234+50



70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| Cut      | Fill | Cut      | Fill |
|          |      | 102      | 154  |
| 55       | 100  |          |      |
|          |      | 94       | 156  |
| 47       | 68   |          |      |
|          |      | 111      | 96   |
| 73       | 36   |          |      |
|          |      | 315      | 37   |
| 267      | 4    |          |      |
|          |      | 571      | 13   |
| 350      | 10   |          |      |
|          |      | 444      | 48   |
| 129      | 42   |          |      |
|          |      | 164      | 130  |
| 48       | 98   |          |      |
|          |      | 85       | 176  |
| 44       | 92   |          |      |
|          |      | 45       | 120  |
| 37       | 124  |          |      |



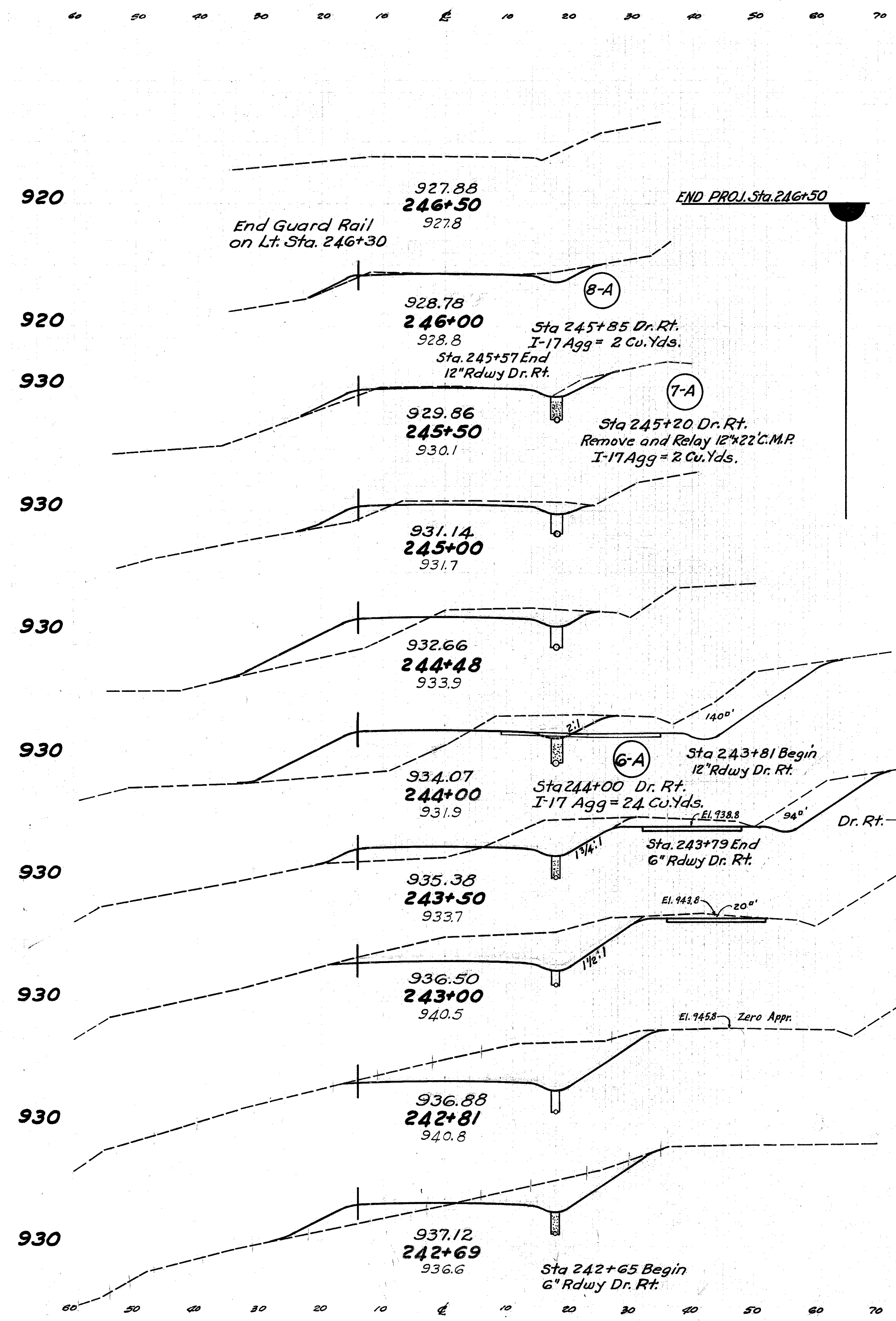
DIV. 2 OHIO  
TUSCARAWAS COUNTY  
SH. 712 SEC. N(PT) 60(PT)  
DOVER BASIN UNIT No. 2

| END AREA |      | CU. YDS. |      |
|----------|------|----------|------|
| Cut      | Fill | Cut      | Fill |
|          |      | 29       | 26   |
| 55       | 68   |          |      |
|          |      | 88       | 24   |
| 196      | 0    |          |      |
|          |      | 298      | 0    |
| 227      | 0    |          |      |
|          |      | 368      | 3    |
| 170      | 3    |          |      |
|          |      | 271      | 19   |
| 123      | 18   |          |      |
|          |      | 281      | 18   |
| 181      | 1    |          |      |
|          |      | 286      | 10   |
| 128      | 10   |          |      |
|          |      | 196      | 43   |
| 84       | 36   |          |      |
|          |      | 129      | 94   |
| 55       | 66   |          |      |

STA. 234+70 TO STA. 242+57



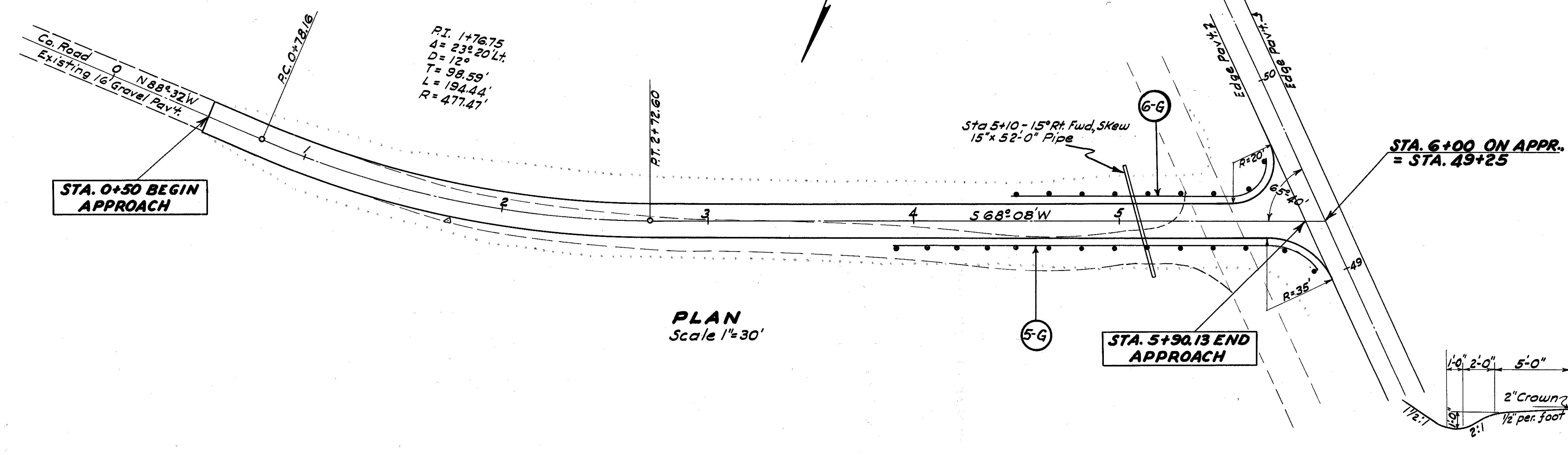
| END AREA |       | CU. YDS. |      |
|----------|-------|----------|------|
| Cut      | Fill  | Cut      | Fill |
| 0        | 0     |          |      |
|          | 13    | 2        |      |
| 14       | 2     |          |      |
|          | 26    | 6        |      |
| 14       | 5     |          |      |
|          | 33    | 19       |      |
| 22       | 15    |          |      |
|          | 57    | 94       |      |
| 37       | 83    |          |      |
|          | 77    | 195      |      |
| 50       | 136   |          |      |
|          | (454) |          |      |
| 111      | 162   |          |      |
| 70       | 39    |          |      |
|          | 222   | 36       |      |
| 170      | 0     |          |      |
|          | 127   | 0        |      |
| 191      | 0     |          |      |
|          | 59    | 11       |      |
| 75       | 49    |          |      |





TUSCARAWAS COUNTY  
S.H. 712 SECS. N(Pt) & O(Pt).  
DOVER BASIN UNIT No. 1.

3-A

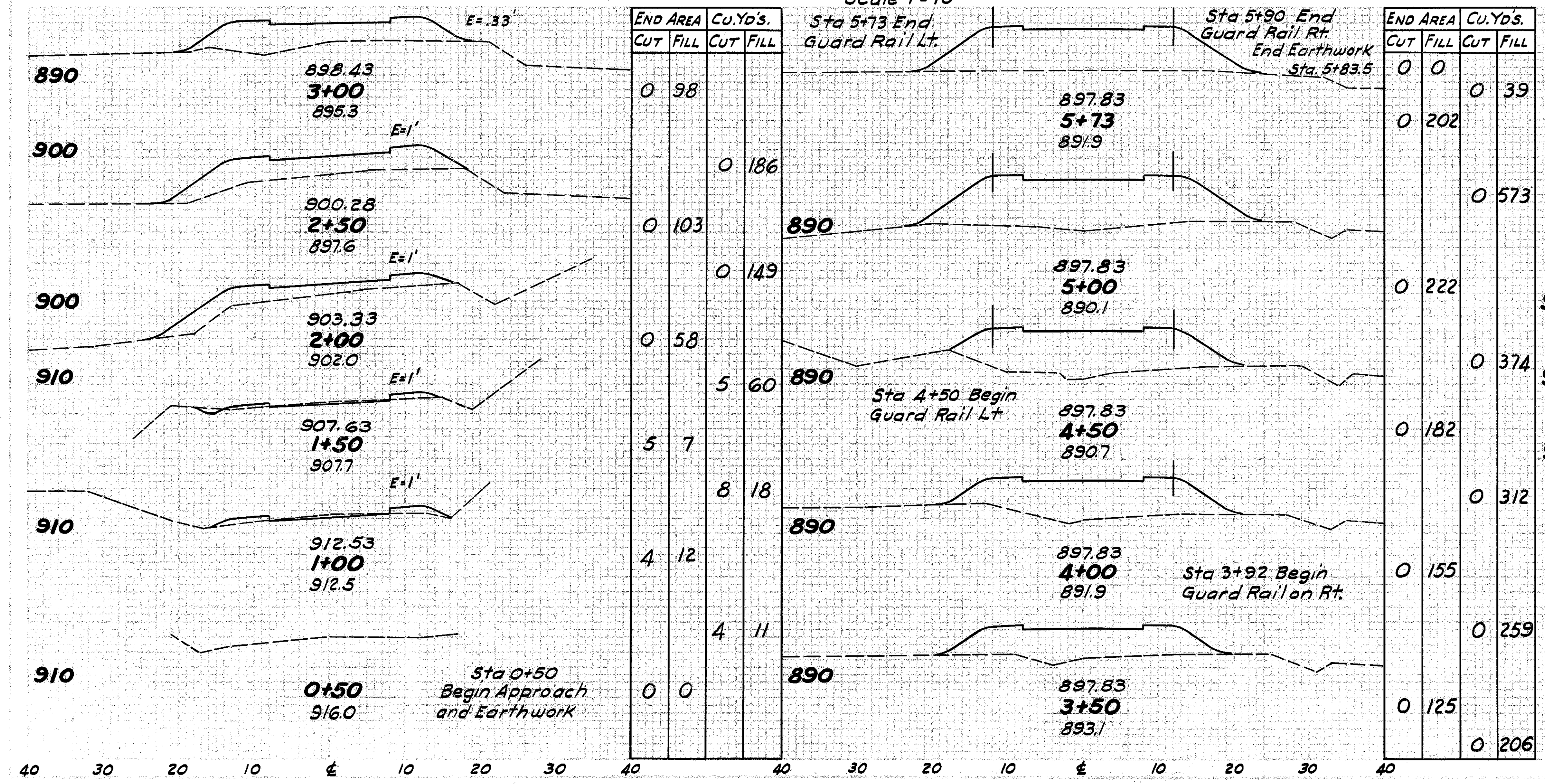


**ESTIMATED QUANTITIES**

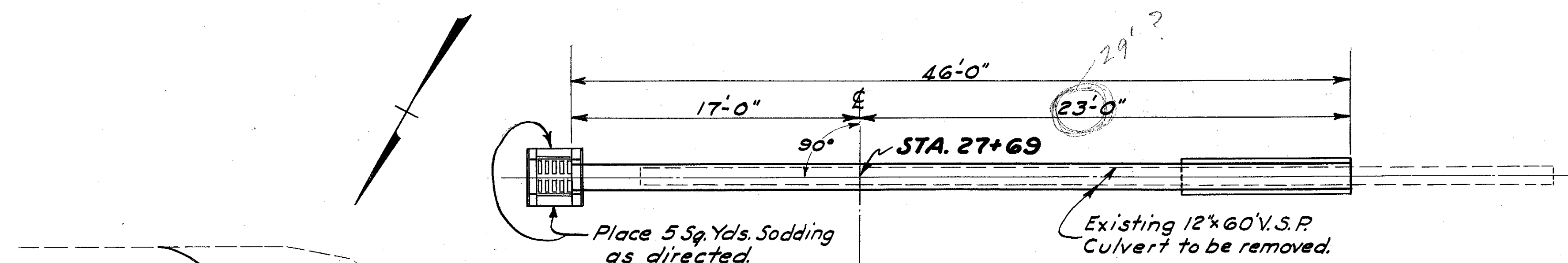
|                        |               |
|------------------------|---------------|
| 15" Pipe for Driveways | 52 Lin. Ft.   |
| Guard Rail             | 336 Lin. Ft.  |
| I-17 Aggregate         | 170 Cu. Yd's. |

NOTE: These quantities tabulated on sheet No. 6.

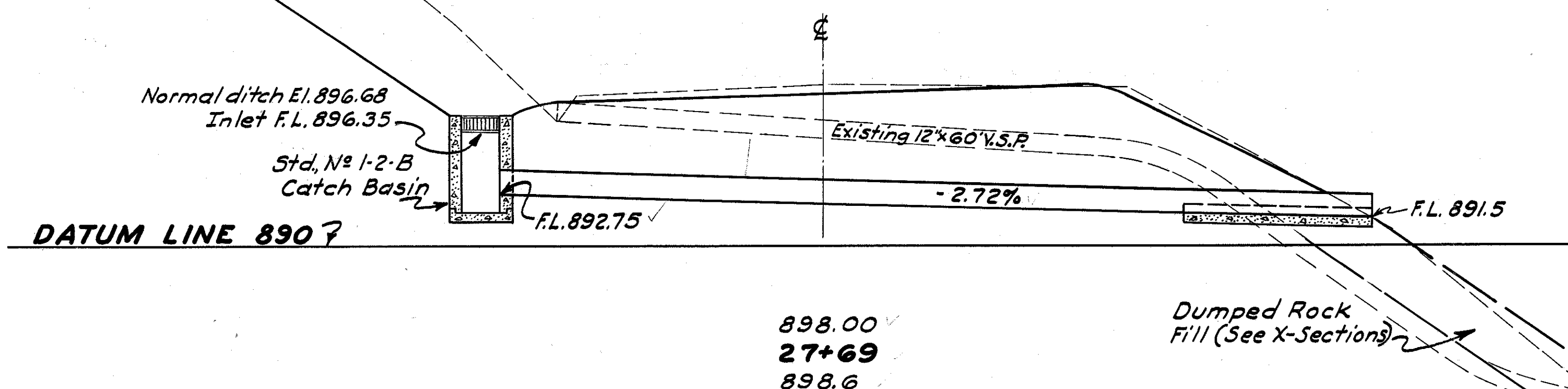
**CROSS SECTION**  
Scale 1"=10'







PLAN  
Scale 1"=5'



CROSS SECTION  
Scale 1"=5'

•STRUCTURE DATA•

Type :- Std. Pipe Culvert.  
Size :- 15"x46'-0"  
Work Req. :- Remove 12"x60" V.S.P. Pipe Culvert (not encased). Build Std. Pipe Culvert with Std. No. 1-2-B Catch Basin at inlet and Std. Cradle at outlet end.

•REFERENCE DRAWINGS•

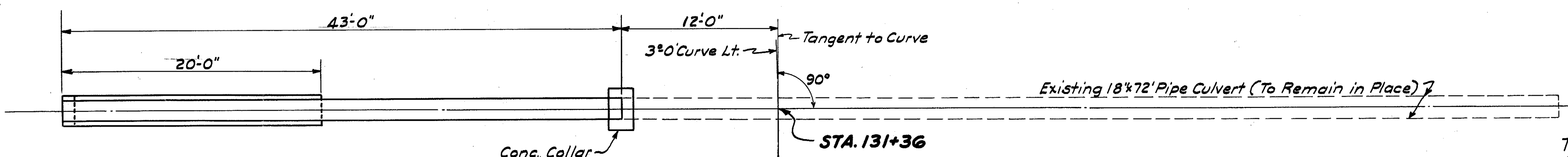
S-27 P.C. 2- Pipe Culvert Ends.  
I-8 C.B. 1-2-A & B- Catch Basins.

•ESTIMATED QUANTITIES•

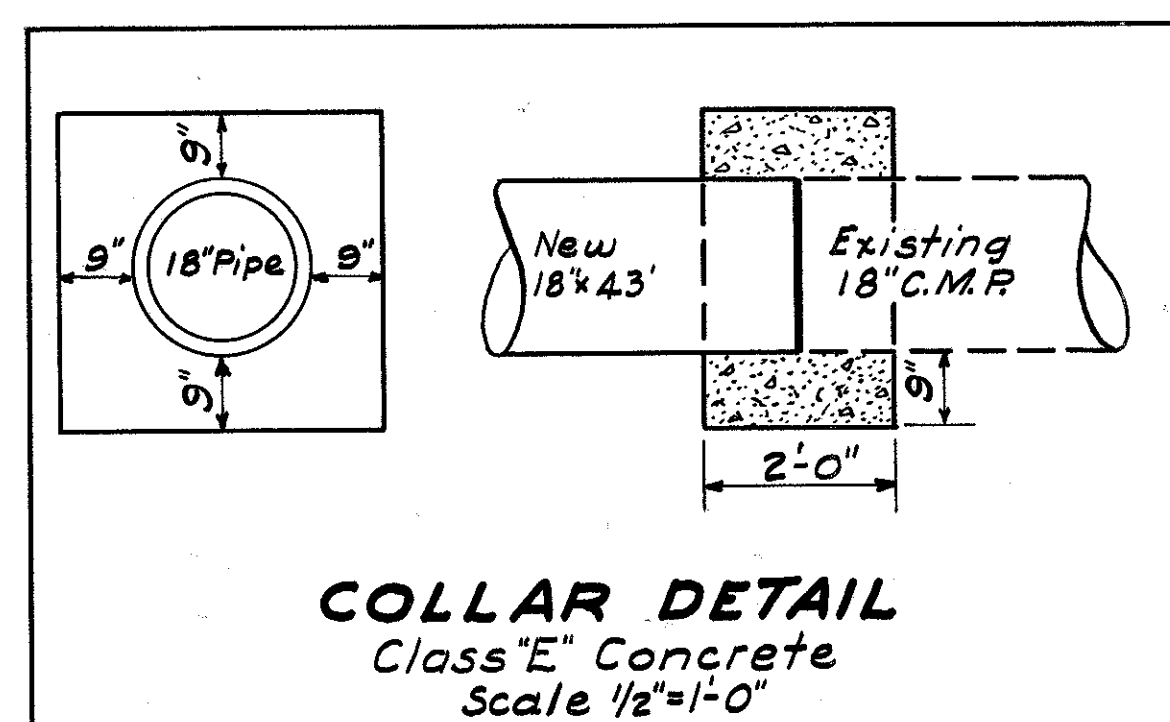
12" V.S.P. Removed and Disposed of. 60 Lin. Ft.  
\*Structure Excavation. 35 Cu. Yds.  
Std. No. 1-2-B- Catch Basin. 1 Only  
Concrete Class "E" 0.6 Cu. Yds.  
15" Pipe for Roadway Culverts. 46 Lin. Ft.  
Sodding. 5 Sq. Yds.  
\*Note:- Existing Structure has been deducted from Structure Excavation.

15"x46'-0" PIPE CULV.  
STA. 27+69

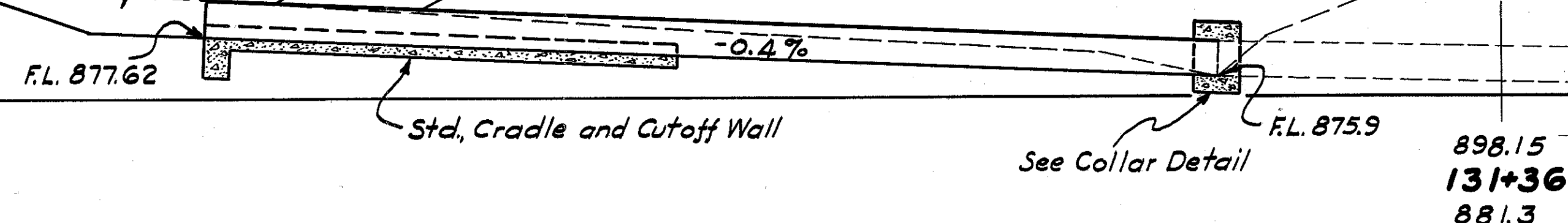
1-5



PLAN  
Scale 1"=5'



Excavate inlet  
Zero end area 10' back  
and 10' ahead



CROSS SECTION  
Scale 1"=5'

•STRUCTURE DATA•

TYPE :- Std. Pipe Culvert (Extension).  
SIZE :- 18"x43'-0"  
WORK REQUIRED :- Build Std. Pipe Culvert Extension with concrete Collar at connection with existing pipe. Build Std. Cradle and Cutoff Wall at inlet end. Excavate Inlet as shown.

•REFERENCE DRAWINGS•  
Pipe Culvert Ends. S-27 P.C. 2

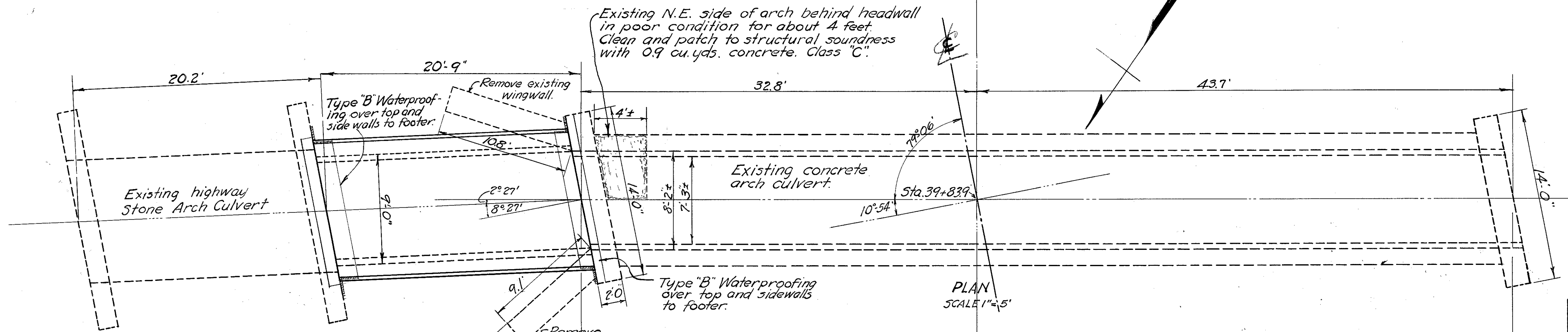
•ESTIMATED QUANTITIES•

18" Pipe for Roadway Culverts. 43 Lin. Ft.  
Structure Excavation. 10 Cu. Yds.  
Channel Excavation. 5 Cu. Yds.  
Concrete Class "E" (Cradle, Cutoff Wall, and Collar) 2.3 Cu. Yds.

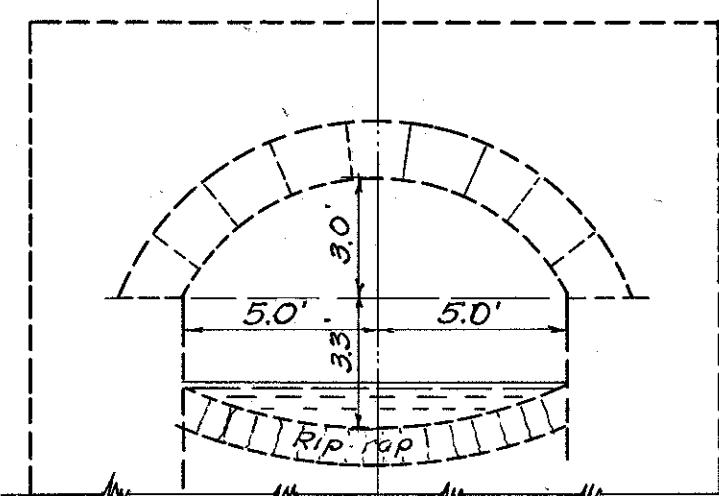
18"x43' PIPE CULV.(EXT)  
STA. 131+36

16-5

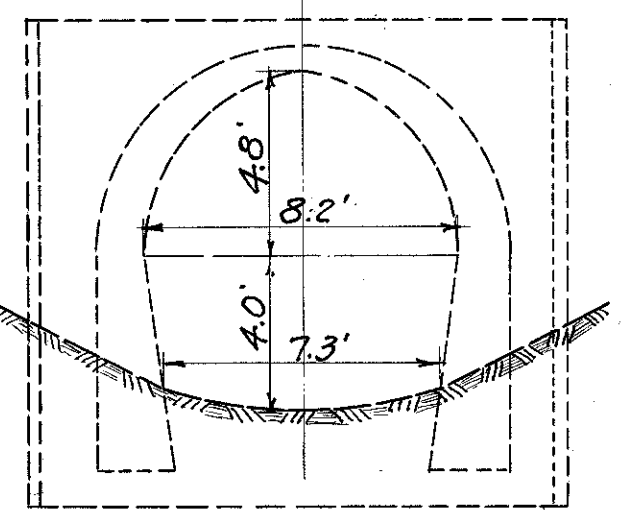
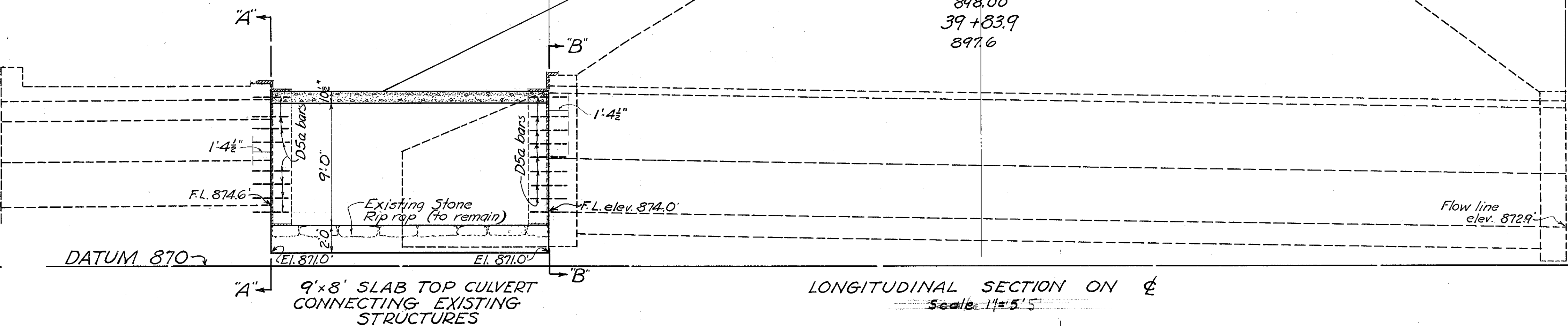




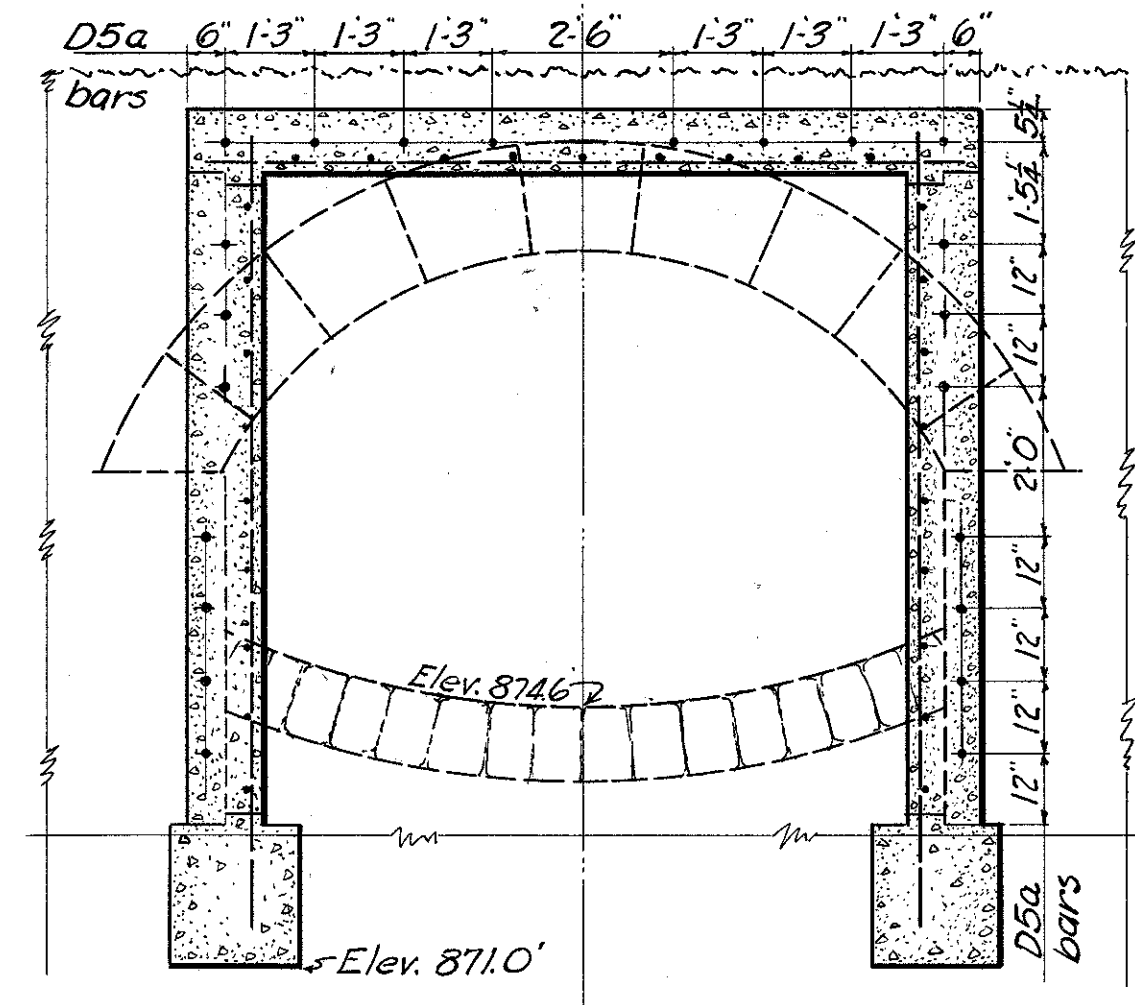
| STEEL LIST   |      |      |          |        |        |
|--------------|------|------|----------|--------|--------|
| NO.          | MARK | SIZE | SPACING  | LENGTH | WEIGHT |
| 44           | D5a  | 3/4" | as shown | 2'-9"  | 182    |
| 56           | S5a  | 1/2" | 0'-4"    | 10'-6" | 834    |
| 42           | W4a  | 3/4" | 1'-0"    | 11'-0" | 482    |
| 27           | T2a  | 1/2" | 1'-0"    | 20'-3" | 365    |
| 1            | R2a  | 3/4" | —        | 7'-0"  | 11     |
| 1            | R2a  | 3/4" | —        | 6'-6"  | 7      |
| 1            | R2a  | 1/2" | —        | 6'-0"  | 4      |
| TOTAL POUNDS |      |      |          |        | 1935   |



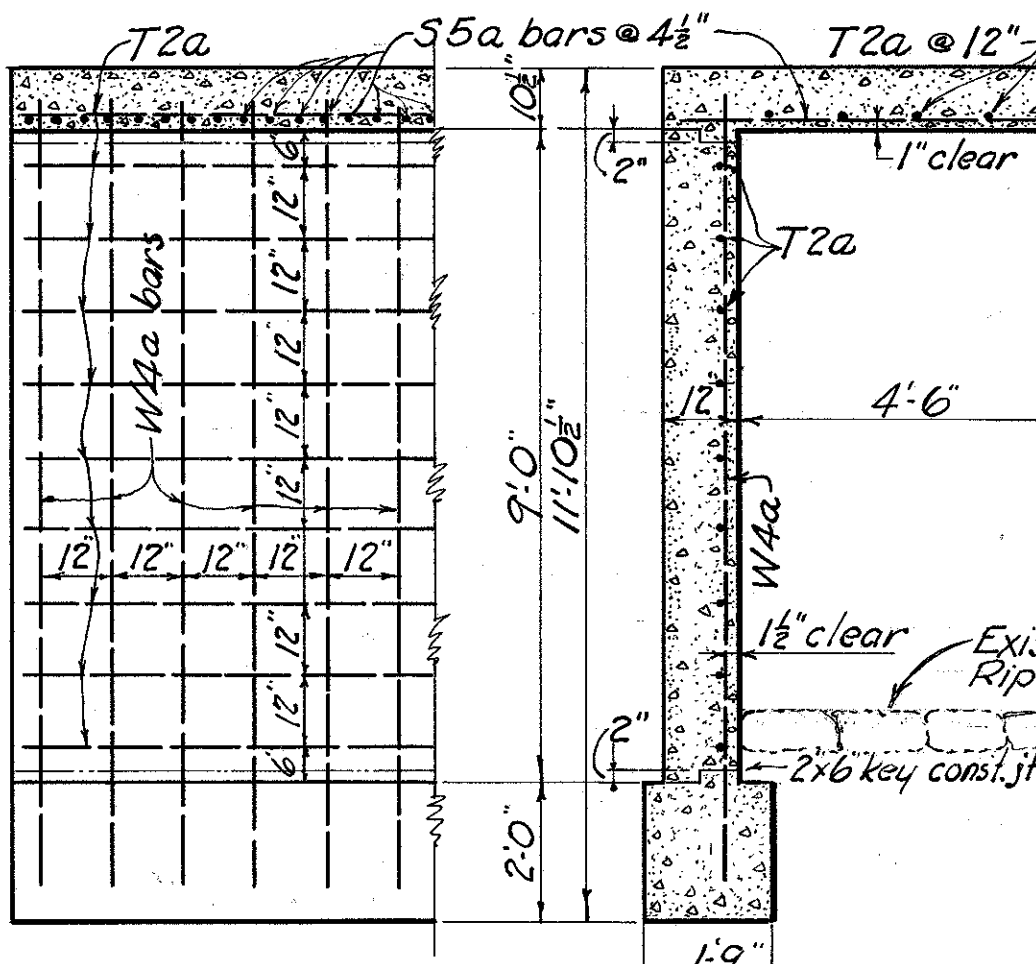
END VIEW OF EXISTING STONE ARCH HIGHWAY CULVERT



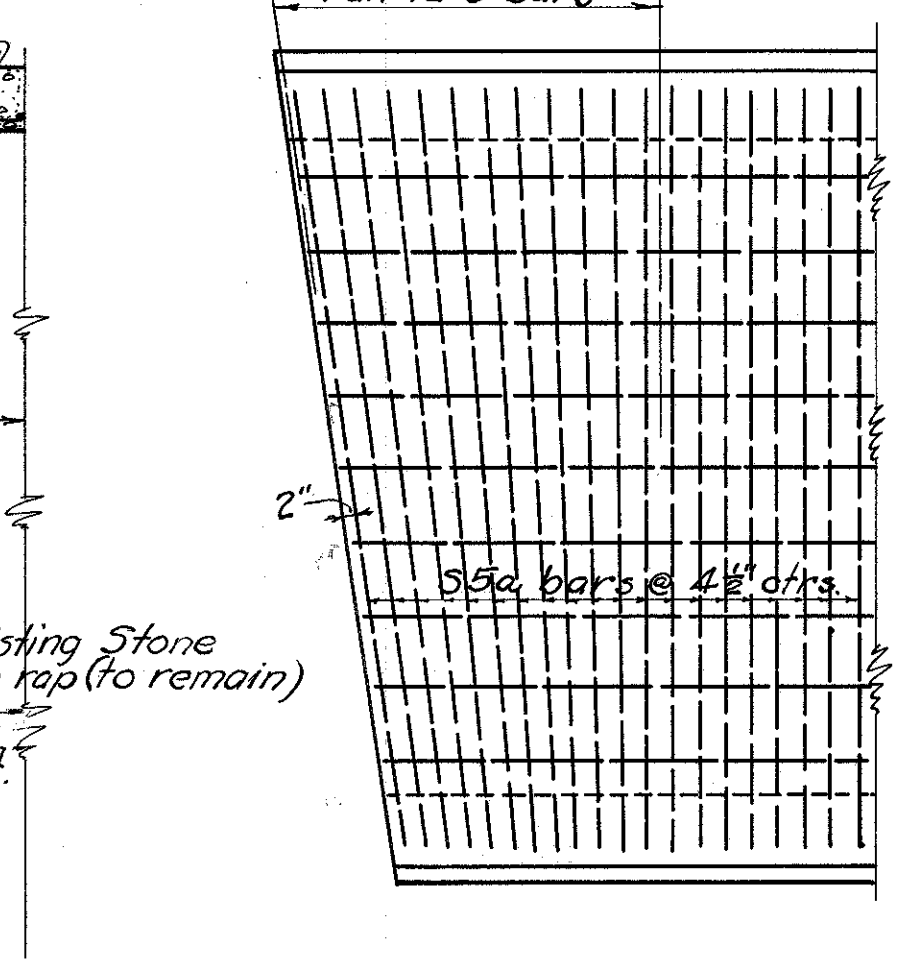
END VIEW OF EXISTING CONCRETE ARCH CULVERT



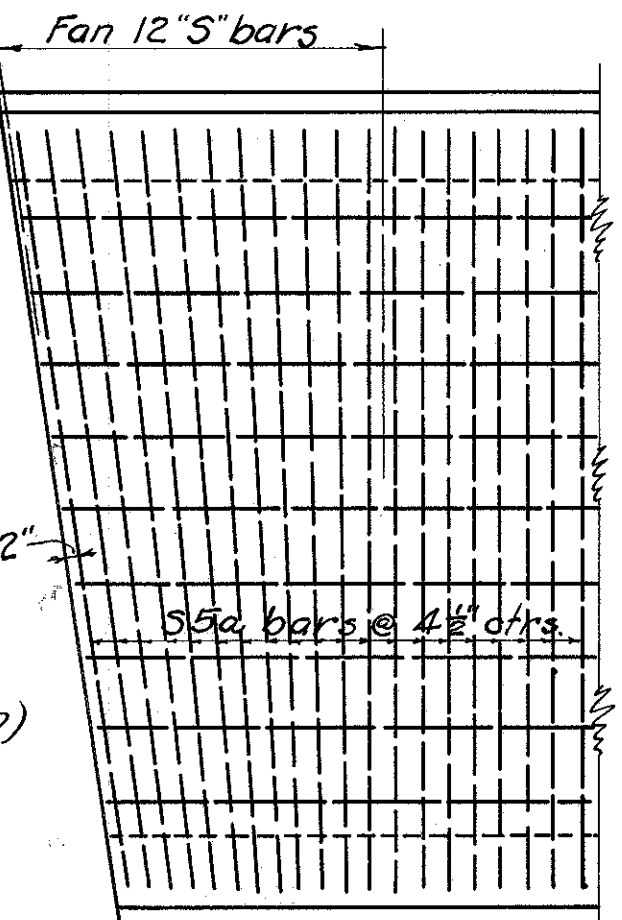
SEC. "A-A" DOWEL SPACING



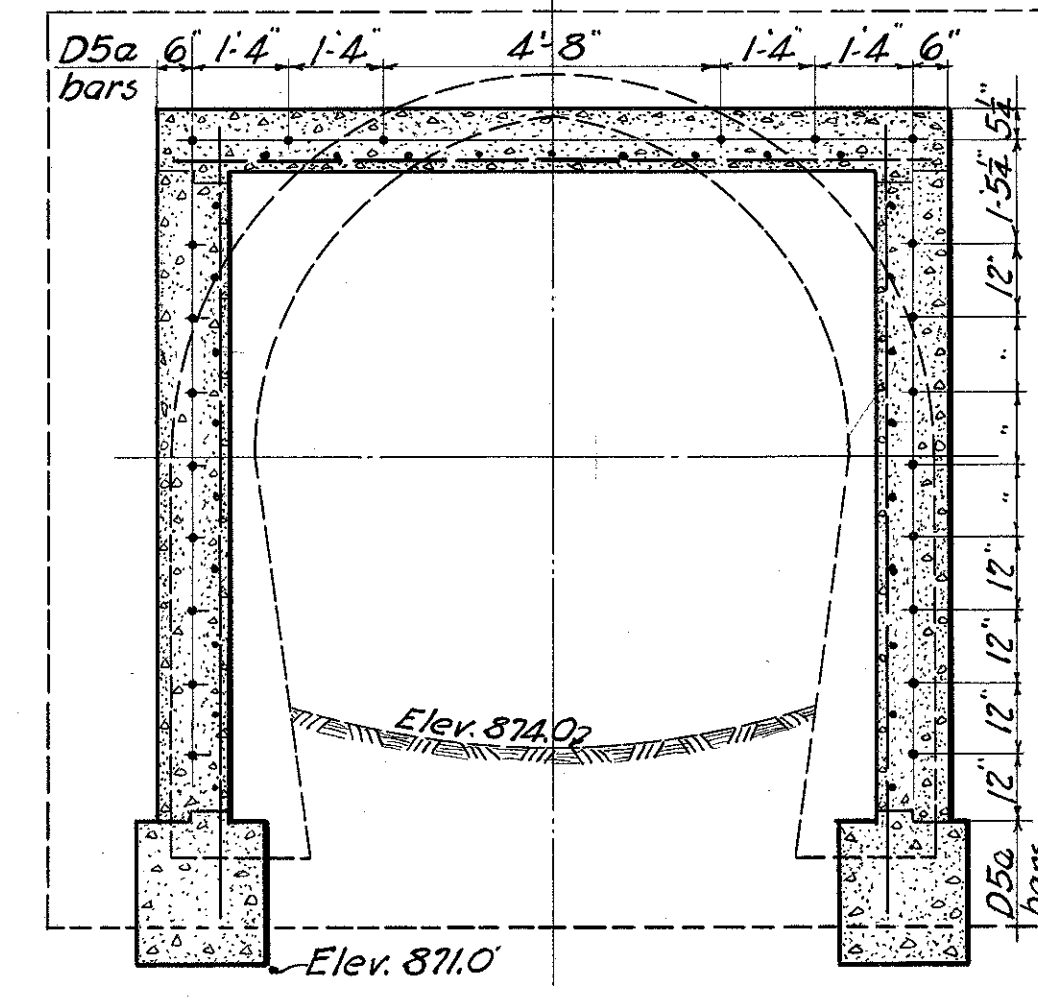
PART LONGTL. SECTION



HALF SECTION



PART PLAN



SEC. "B-B" DOWEL SPACING

# STRUCTURE DATA

Type:- Slab Top Culvert Extension  
Size:- 9' x 8' x 20.9'  
Work Reqd:- Join existing 10' x 6' stone arch culvert to existing 8' x 8' concrete arch culvert by building connecting section of 9' x 8' Slab Top Culvert. Remove existing wing walls at inlet end from face of headwall. Remove disintegrated concrete in exposed north east corner of existing concrete arch culvert for a length of four feet or more, if the condition so warrants, and clean and patch with Class "C" Concrete. Place Type "B" Waterproofing over joints between existing and new work.

## REFERENCE DRAWINGS

STC - 34 Slab Top Culverts

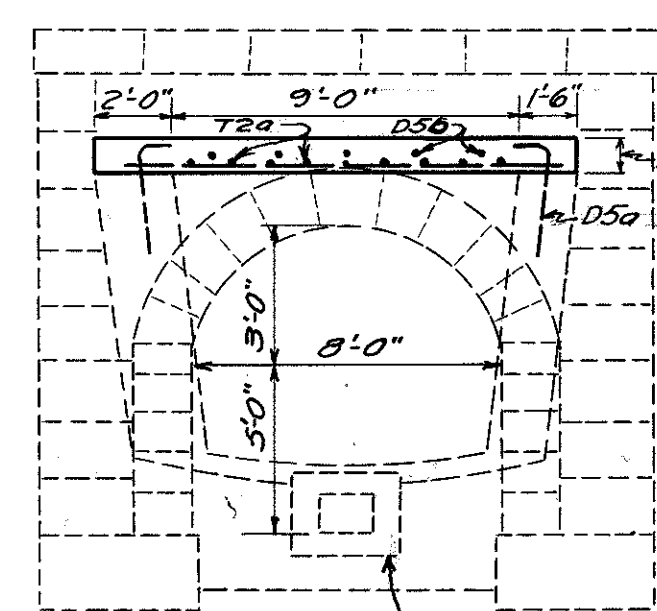
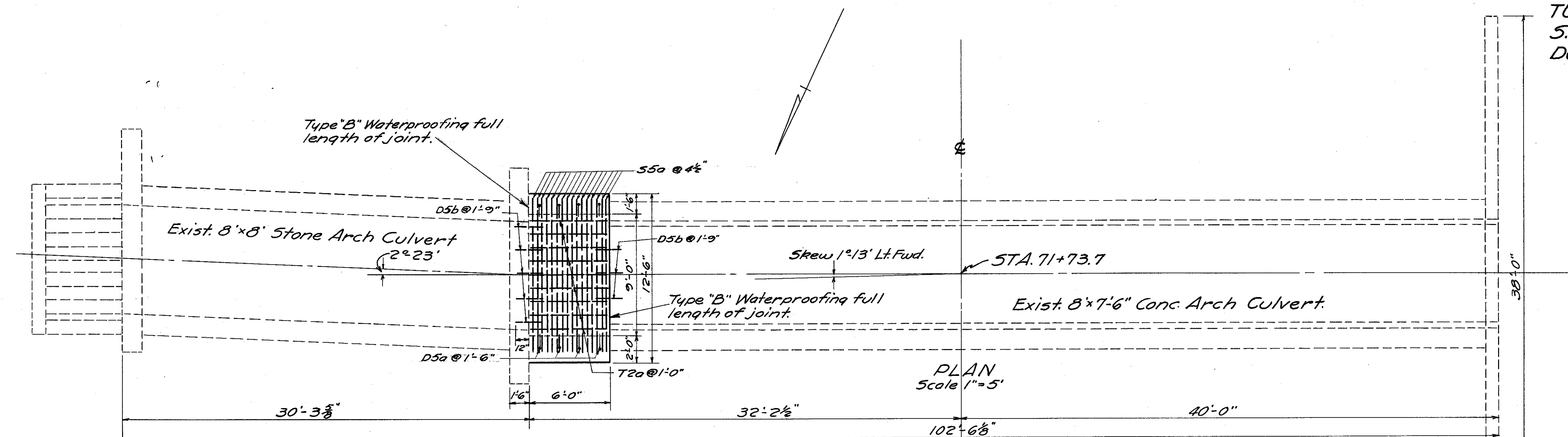
## ESTIMATED QUANTITIES

|                                           |               |
|-------------------------------------------|---------------|
| Dowel Holes                               | 61 lin. feet  |
| Concrete, Class "E"                       | 5.5 cu. yds.  |
| Concrete, Class "C"                       | 22.0 cu. yds. |
| Reinforcing Steel                         | 1935 pounds   |
| Structure Excavation                      | 20 cu. yds.   |
| Removal of portions of existing structure | 15 cu. yds.   |
| Type "B" Waterproofing, 36" wide          | 21 sq. yds.   |

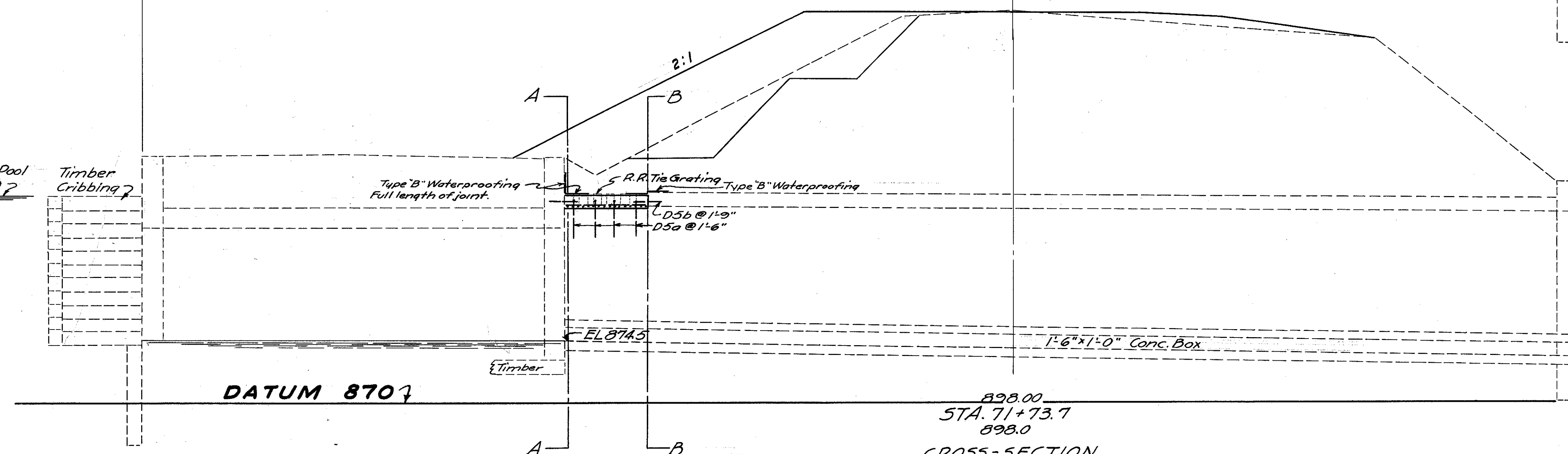
9' x 8' x 20.9" S.T.C. EXT.  
STA. 39+83.9



TUSCARAWAS COUNTY  
S.H. 712 SEC. N(pt) & O(pt)  
DOVER BASIN UNIT No. 1



SECTION A-A

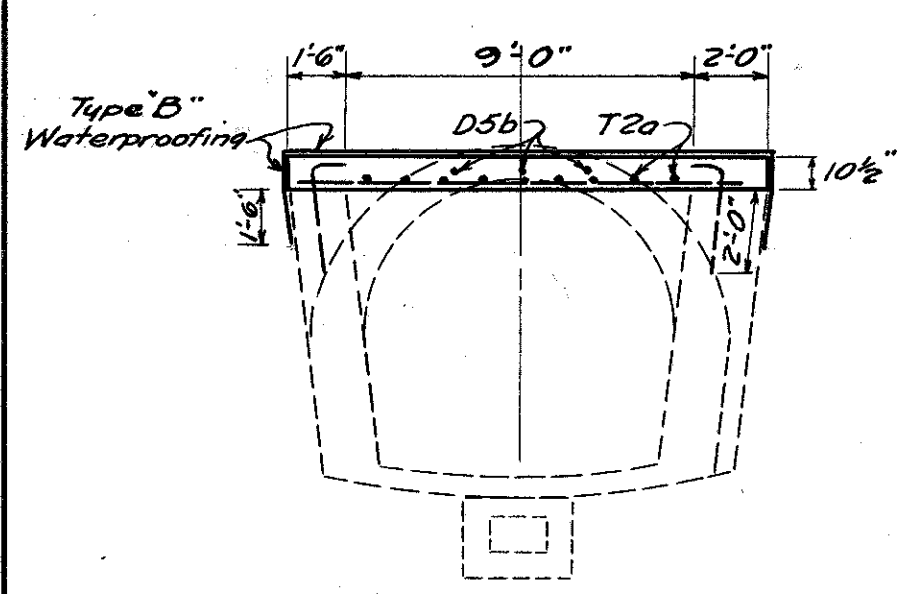


CROSS-SECTION  
Scale: 1"=5'

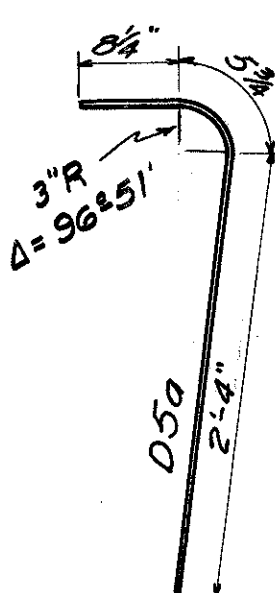
**STRUCTURE DATA**  
TYPE - Reinforced Concrete Cap  
SIZE - 12'-6" x 6'-0" x 0'-10 1/2"  
WORK REQUIRED - Build reinforced concrete cap on  
sidewalls of existing structure as detailed hereon.  
Fill outlet as directed by Engineer.

**ESTIMATED QUANTITIES**  
Structure Excavation 12 Cu.Yds.  
Concrete, Class "C" 2.5 Cu.Yds.  
Reinforcing Steel 378 Lbs.  
Dowel Holes 24 Lin. Ft.  
Type "B" Waterproofing, 36" wide 12 Sq.Yds.

| STEEL LIST |      |      |           |        |        |   |
|------------|------|------|-----------|--------|--------|---|
| No.        | Mark | Size | Spacing   | Length | Weight |   |
| 8          | D5a  | 3/8" | 1'-6"     | 3'-6"  | 42     |   |
| 8          | D5b  | 3/8" | 1'-9"     | 2'-0"  | 24     |   |
| 16         | S5a  | 3/8" | 0'-4 1/2" | 11'-6" | 277    |   |
| 9          | T2a  | 1/2" | 1'-0"     | 5'-9"  | 35     |   |
| TOTAL      |      |      |           |        | 378    | # |



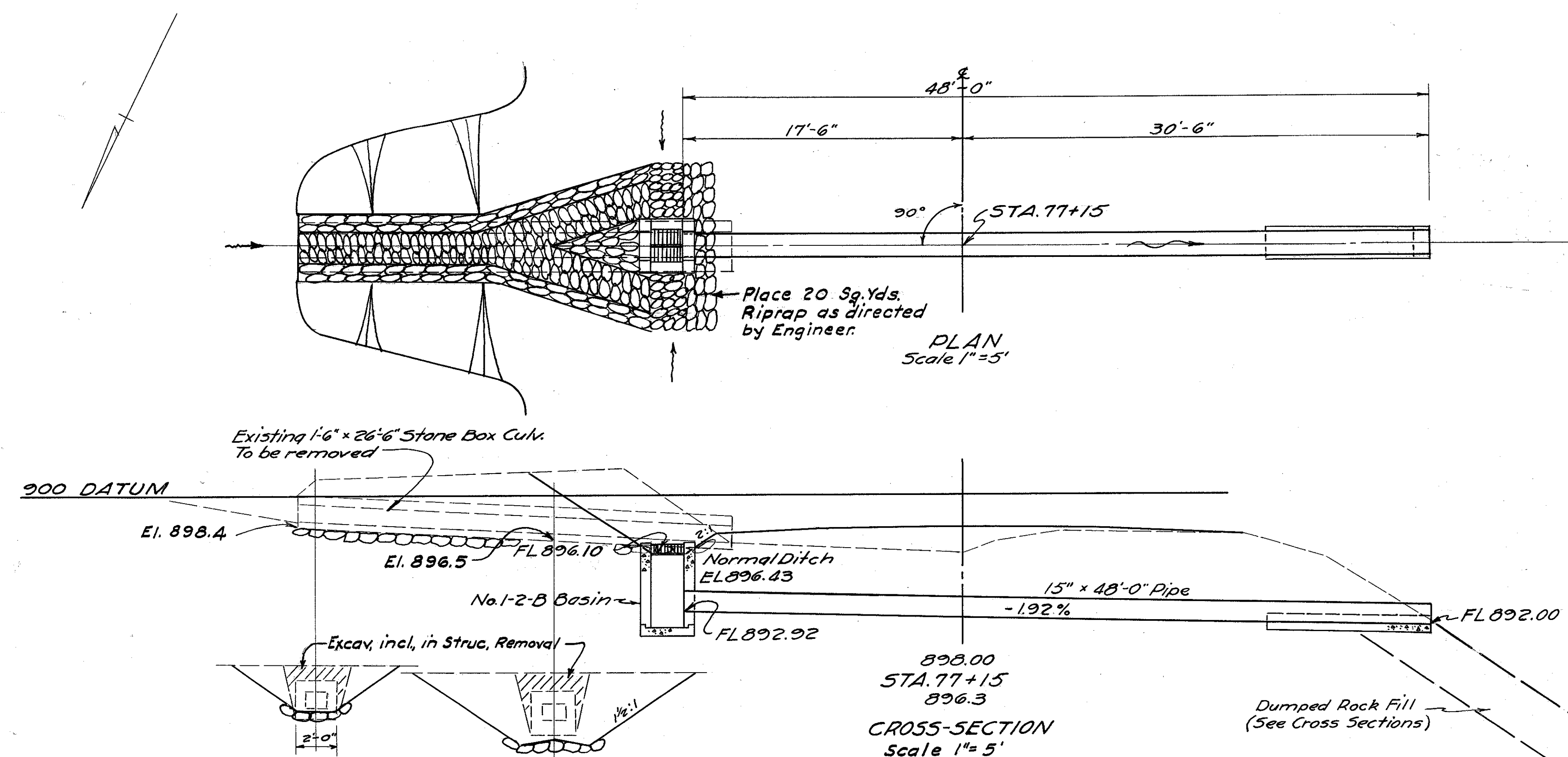
SECTION B-B



**12'-6" x 6'-0" x 0'-10 1/2" REINF. CONC. CAP  
STA. 71+73.7**



TUSCARAWAS COUNTY  
S.H. 712 SEC. N(PT) & O(PT)  
DOVER BASIN UNIT No. 1



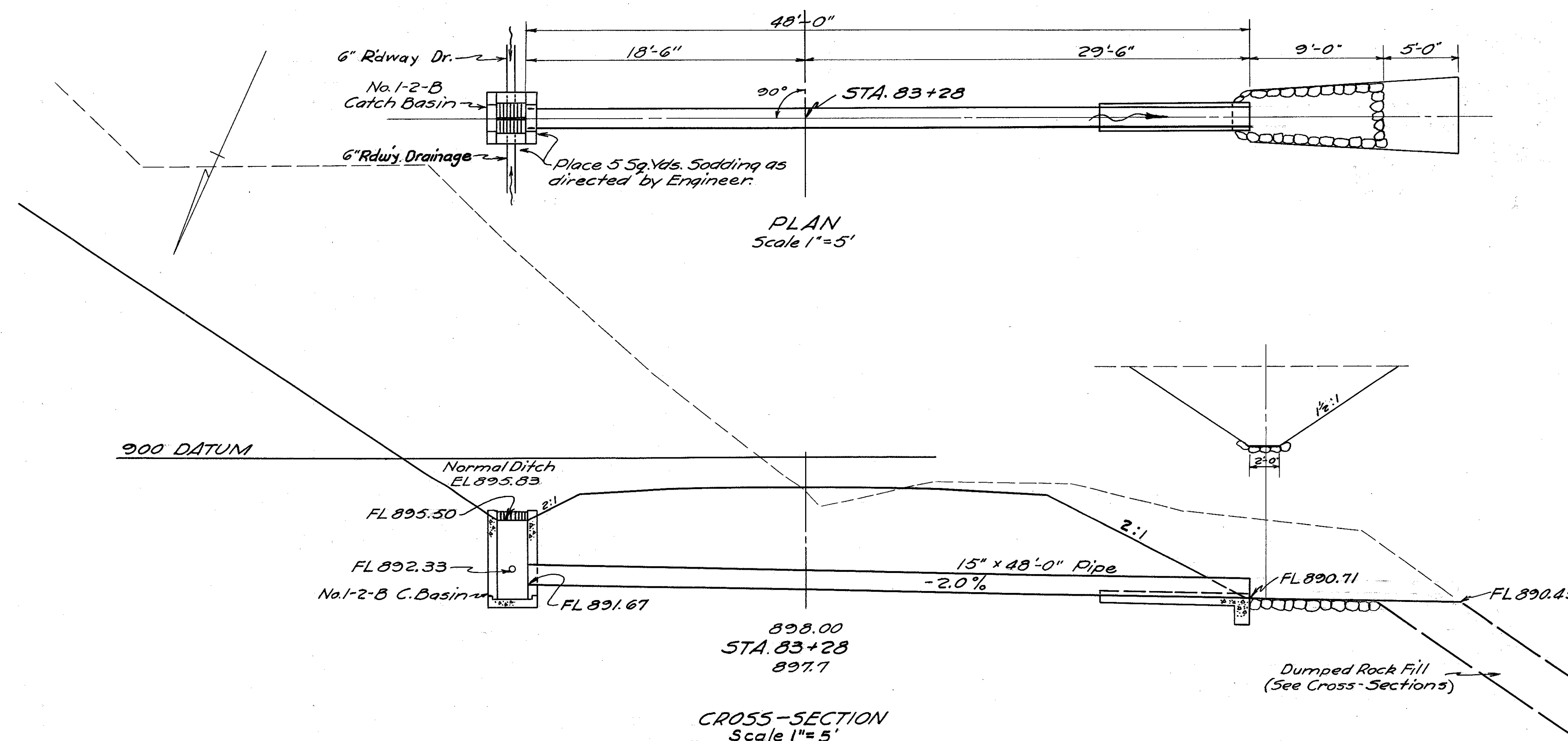
**• STRUCTURE DATA •**  
TYPE - Standard Pipe Culvert.  
SIZE - 15" x 48'-0"  
WORK REQUIRED - Build 15" x 48'-0" Pipe Culvert with No. 1-2-B Catch Basin at inlet end and Std. Cradle at outlet end. Remove existing Stone Box Culvert. Excavate inlet and rip rap as shown.

**• ESTIMATED QUANTITIES •**

|                                           |              |
|-------------------------------------------|--------------|
| Channel Excav.                            | 15 Cu. Yds.  |
| Structure Excav.                          | 24 Cu. Yds.  |
| Rip Rap Type "A" (Grouted)                | 20 Sq. Yds.  |
| Concrete Class "E" (Cradle)               | 0.6 Cu. Yds. |
| No. 1-2-B Catch Basin                     | 1 Each       |
| 15" Pipe for Roadway Culverts.            | 48 Lin. Ft.  |
| Removal of Portions of Existing Structure | 5 Cu. Yds.   |

**• REFERENCE DRAWINGS •**  
Pipe Culvert Ends. 5-27 P.C. 2  
Catch Basins I-8 C.B. No. 1-2-B

**15" x 48'-0" PIPE CULV.  
STA. 77+15**



**• STRUCTURE DATA •**  
TYPE - Standard Pipe Culvert.  
SIZE - 15" x 48'-0"  
WORK REQUIRED - Build 15" x 48'-0" Pipe Culvert with No. 1-2-B Catch Basin at inlet end and Std. Cradle and Cutoff Wall at outlet. Pave outlet with Type "A" (Grouted) Rip Rap. Sod ditch around Catch Basin at inlet.

**• ESTIMATED QUANTITIES •**

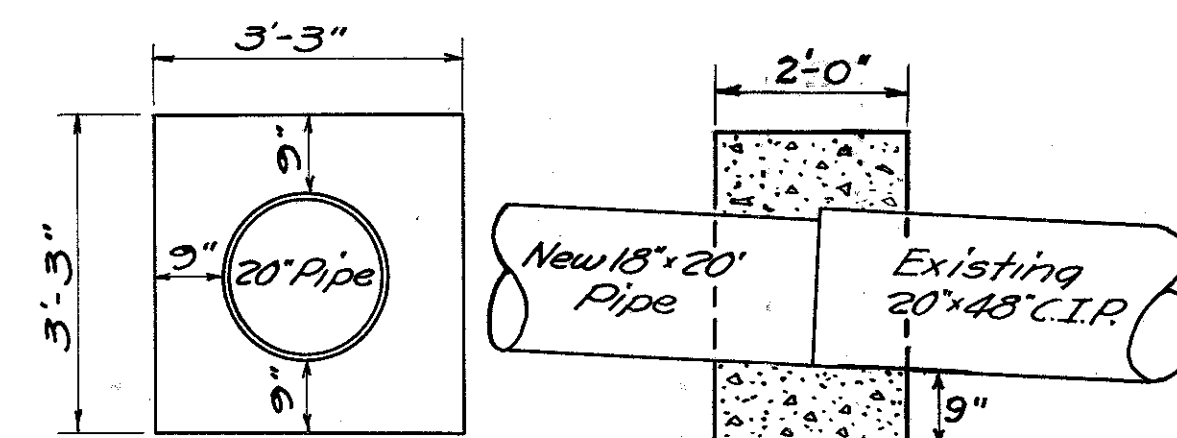
|                               |              |
|-------------------------------|--------------|
| Channel Excavation            | 15 Cu. Yds.  |
| Structure Excav.              | 50 Cu. Yds.  |
| Rip Rap Type "A" (Grouted)    | 4 Sq. Yds.   |
| Concrete Class "E"            | 0.7 Cu. Yds. |
| No. 1-2-B Catch Basin         | 1 Each       |
| Sodding                       | 5 Sq. Yds.   |
| 15" Pipe for Roadway Culverts | 48 Lin. Ft.  |

**• REFERENCE DRAWINGS •**  
Pipe Culvert Ends. 5-27 P.C. 2  
Catch Basins I-8 C.B. 1-2-B

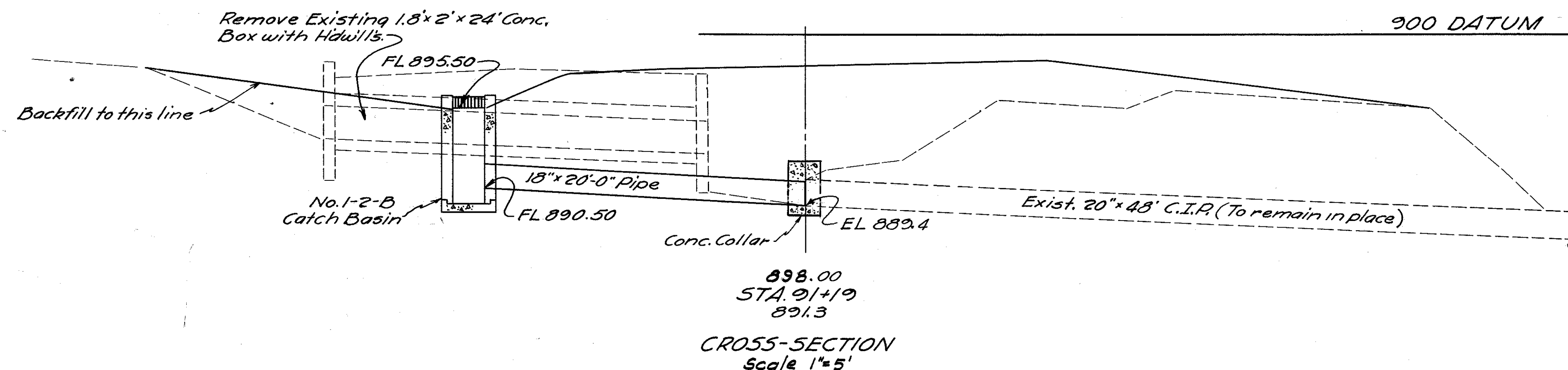
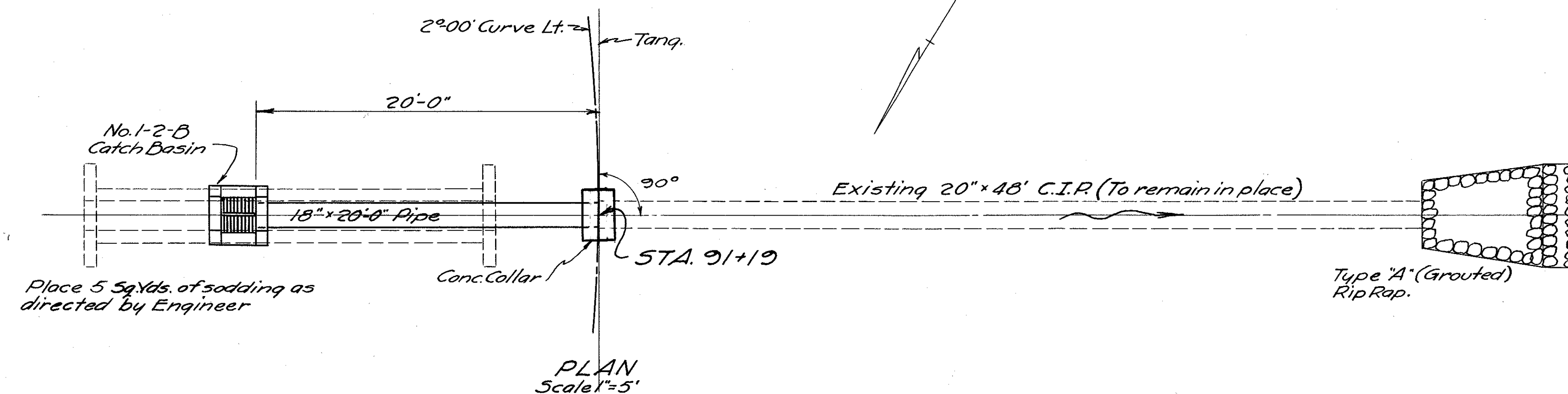
**15" x 48'-0" PIPE CULV.  
STA. 83+28**



TUSCARAWAS COUNTY  
S.H. 712 SEC. N(PT) & O(PT)  
DOVER BASIN UNIT No. 1



• COLLAR DETAIL •  
Class 'E' Concrete



• **STRUCTURE DATA** •  
TYPE - Standard Pipe Culvert. (Extension)  
SIZE - 18" x 20'-0"  
WORK REQUIRED - Remove existing 18" x 2' x 24' Conc. Box with headwalls. Extend existing 20" x 48' C.I.P. with new 18" x 20' pipe. Build Std. No. 1-2-B C. Basin at inlet end and connect existing pipe to new pipe with concrete collar as shown. Pave outlet of existing C.I.P. with Type 'A' (Grouted) Rip Rap. Sod ditch around C. Basin at inlet.

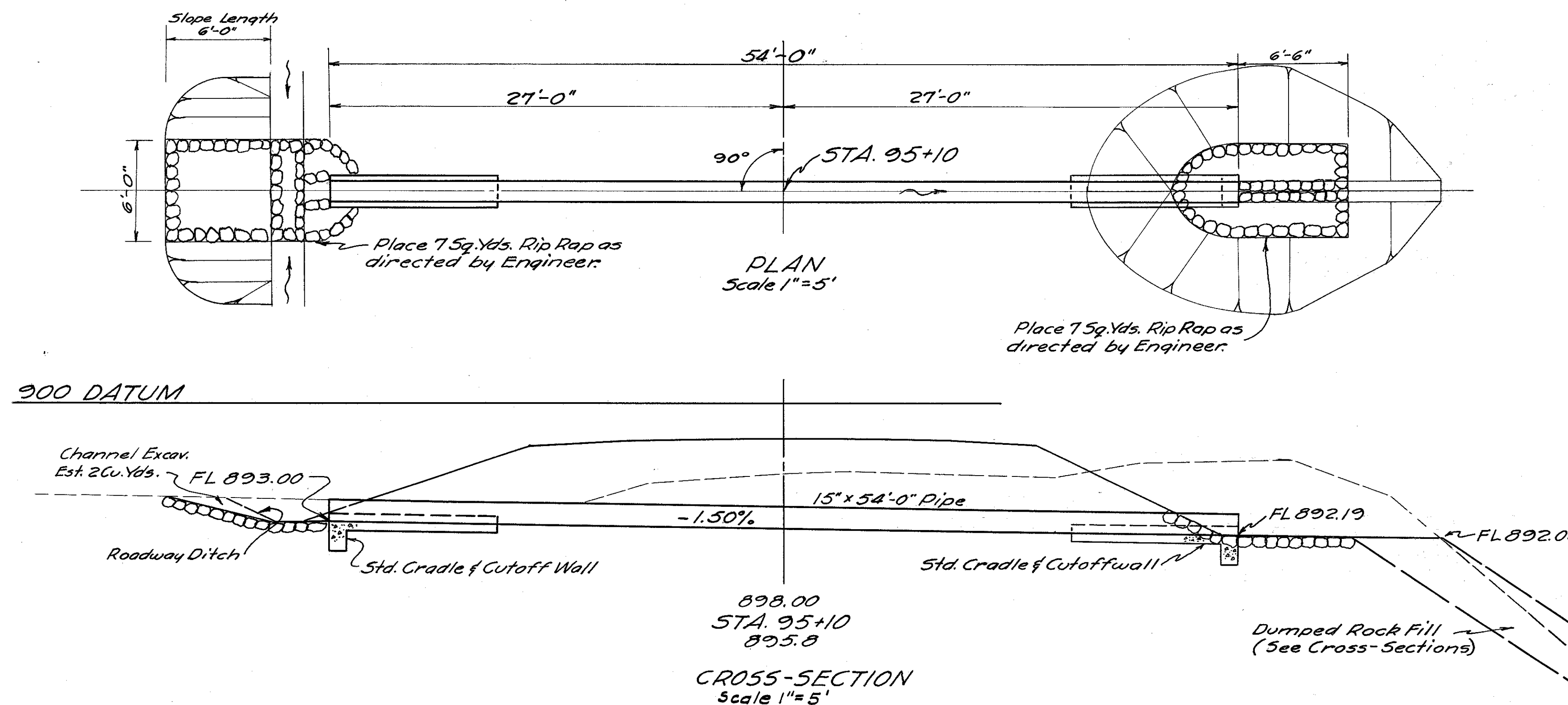
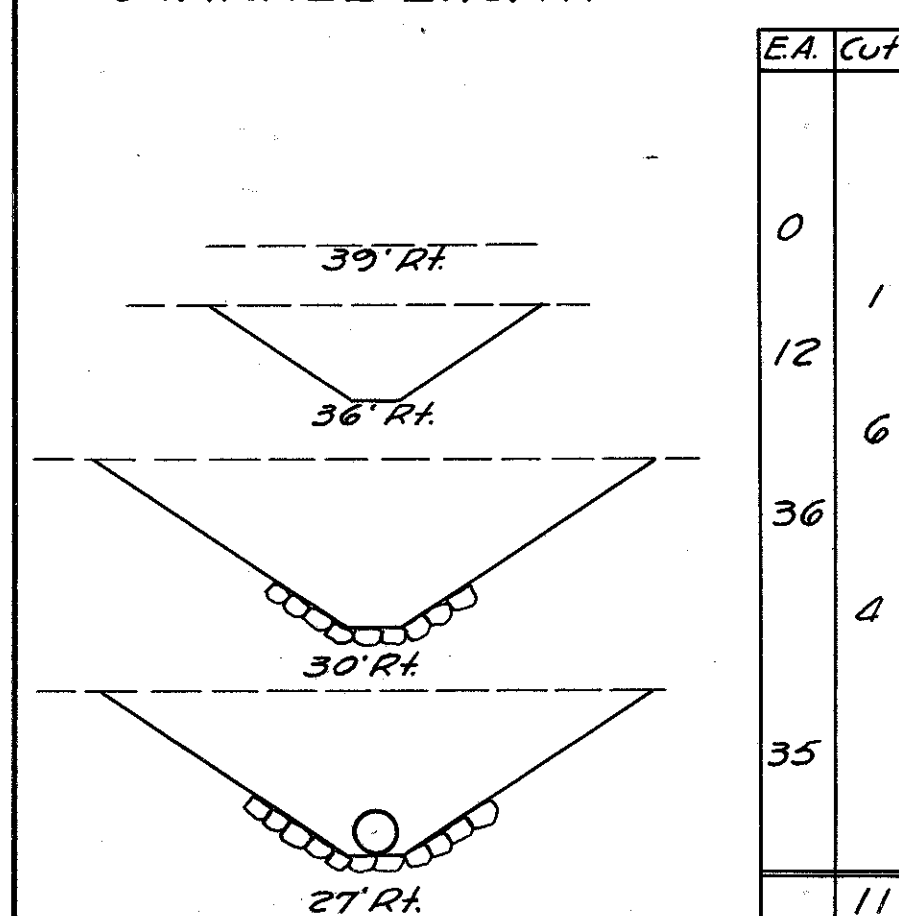
• **ESTIMATED QUANTITIES** •  
18" Pipe for Roadway Culverts 20 Lin. Ft.  
Removal of exist. structure 9 Cu. Yds.  
Structure excavation 2 Cu. Yds.  
Type 'A' (Grouted) Rip Rap 5 Sq. Yds.  
Concrete, Class 'E' (Collar) 0.6 Cu. Yds.  
Sodding 5 Sq. Yds.  
No. 1-2 B Catch Basin 1 Each.

• **REFERENCE DRAWINGS** •  
Catch Basins I-8 C.B. 1-2-B

**18" x 20'-0" PIPE CULV.**  
**STA. 91+19**

8-S

CHANNEL EXCAV.



• **STRUCTURE DATA** •  
TYPE - Standard Pipe Culvert.  
SIZE - 15" x 54'-0"  
WORK REQUIRED - Build 15" x 54'-0" Std. Pipe Culvert with Std. Cradles and Cutoff Walls at inlet and outlet ends. Pave inlet and outlet with Type 'A' (Grouted) Rip Rap as shown. Excavate channel at inlet and outlet as shown.

• **ESTIMATED QUANTITIES** •  
15" Pipe for Roadway Culverts. 54 Lin. Ft.  
Structure Excavation 15 Cu. Yds.  
Channel Excavation 13 Cu. Yds.  
Type 'A' (Grouted) Rip Rap. 14 Sq. Yds.  
Concrete, Class 'E' (Cradles & Cutoff Walls) 1.4 Cu. Yds.

• **REFERENCE DRAWINGS** •  
Pipe Culvert Ends. S-27 RC. 2

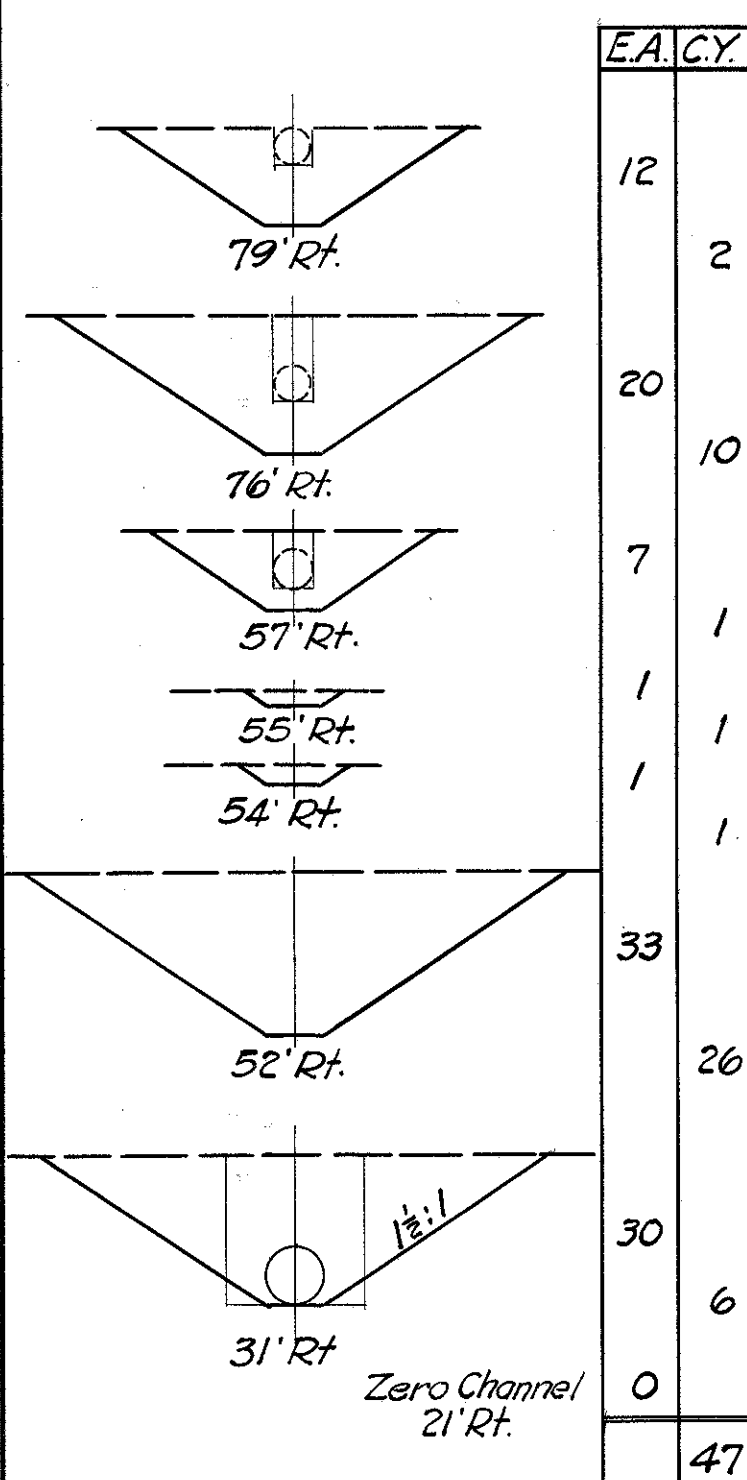
**15" x 54'-0" PIPE CULV.**  
**STA. 95+10**

9-S



TUSCARAWAS COUNTY  
S.H. 712, SEC. N(pt) & O(pt)  
DOVER BASIN, UNIT No. 1

# CHANNEL EXCAVATION



No. 1-2-B  
Catch Basin

Place 5 sq. yds. Sodding  
as directed.

PLAN  
SCALE 1"=5'

Place 16 sq. yds. Sodding in  
outlet ditch as directed

## STRUCTURE DATA

TYPE:- Standard Pipe Culvert  
SIZE:- 18" x 51'-0"  
WORK REQUIRED:- Build 18" x 51'-0" Pipe Culvert with No. 1-2-B  
Catch Basin at inlet end and Std. Cradle and Cut off Wall  
at outlet end. Excavate outlet channel. Sod around C.B. at  
inlet and outlet ditch. Remove existing 12" x 24" C.M.P. under present road.

## ESTIMATED QUANTITIES

|                                         |    |          |
|-----------------------------------------|----|----------|
| Structure Excavation                    | 31 | cu. yds. |
| Channel Excavation                      | 47 | cu. yds. |
| Concrete, Class "E"                     | 09 | cu. yds. |
| 18" Pipe for Roadway Culverts           | 51 | lin. ft. |
| No. 1-2-B Catch Basin                   | 1  | each     |
| Sodding                                 | 21 | sq. yds. |
| Remove and Store Existing 12" C.M. Pipe | 24 | lin. ft. |

## REFERENCE DRAWINGS

Pipe Culverts Ends.  
Catch Basins  
S-27 PC.2  
I-B.C.B. No. 1-2-B

900 DATUM

F.L. 895.00

No. 1-2-B  
Catch Basin

F.L. 890.75

CROSS SECTION  
SCALE 1"=5'

898.00  
STA. 109+37  
896.1

18" x 51'-0" Pipe

Std. Cradle

F.L. 889.73

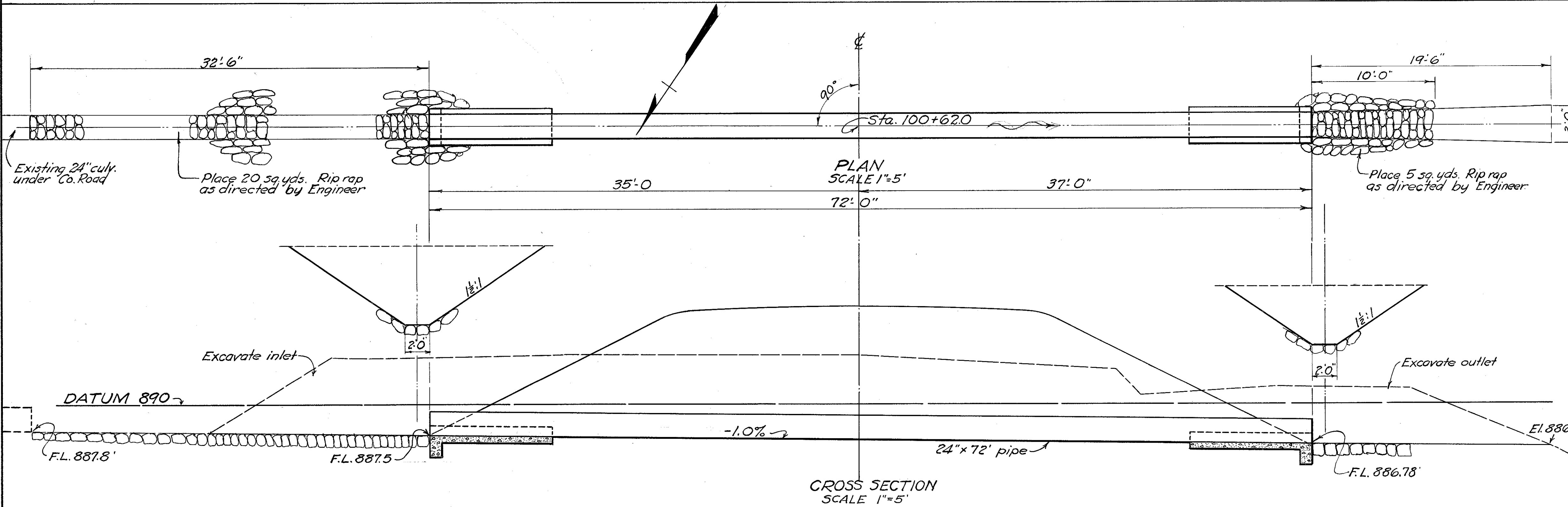
-8.8%

Existing 12" x 24" C.M.P. (Remove)

F.L. 885.5

**18" x 51'-0" PIPE CULV.**  
**STA. 109+37**

13-S



## STRUCTURE DATA

TYPE:- Standard Pipe Culvert.  
SIZE:- 24" x 72"  
WORK REQUIRED:- Build Std. Pipe Culvert including  
Std. Pipe Culvert Ends. Excavate channel at inlet and  
outlet ends and rip rap as directed.

## ESTIMATED QUANTITIES

|                                |    |          |
|--------------------------------|----|----------|
| Structure Excavation           | 90 | cu. yds. |
| Channel Excavation             | 55 | cu. yds. |
| 24" Pipe for Roadway Culverts. | 72 | lin. ft. |
| Concrete, Class "E"            | 22 | cu. yds. |
| Rip-rap Type "A" Grouted       | 25 | sq. yds. |

## REFERENCE DRAWINGS

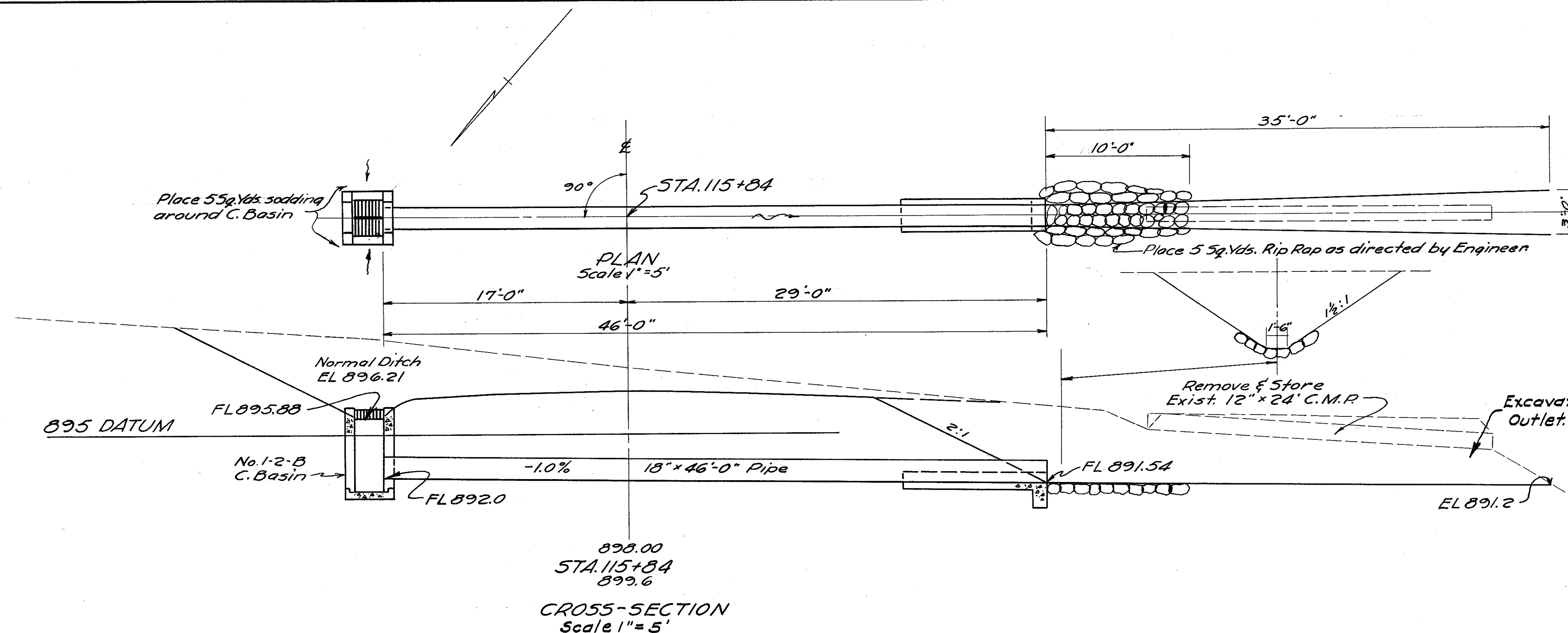
Pipe Culvert Ends  
S-27 PC.2

**24" x 72'-0" PIPE CULV.**  
**STA. 100+62**

11-S



TUSCARAWAS COUNTY  
S.H. 712 SEC. N(pt) & O(pt)  
DOVER BASIN UNIT No.1



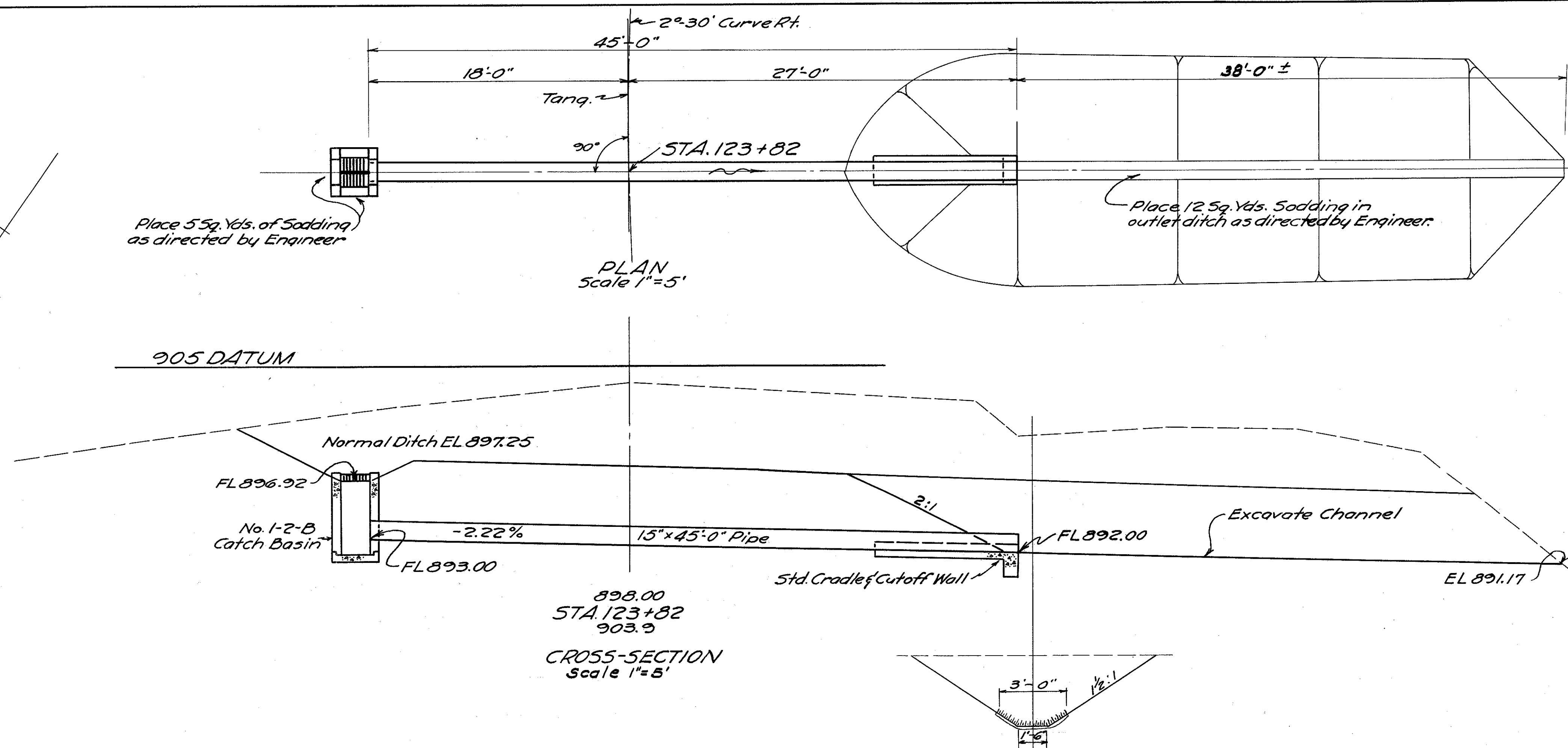
**• STRUCTURE DATA •**  
TYPE - Standard Pipe Culvert.  
SIZE - 18"x46'-0"  
WORK REQUIRED - Build 18"x46'-0" Std. Pipe Culvert with Std. No.1-2-B C.Basin at inlet end and Std. Cradle and Cutoff Wall at outlet. Excavate outlet channel and place rip rap as directed. Place 5 Sq.Yds. of sodding around C.Basin. Remove and store exist. 12"x24" C.M.R.

**• REFERENCE DRAWINGS •**  
Pipe Culvert Ends. 5-27 P.C.2  
Catch Basins I-8 C.B. No.1-2-B

**• ESTIMATED QUANTITIES •**  
Structure Excavation 45 Cu.Yds.  
Channel Excavation 50 Cu.Yds.  
18" Pipe for Roadway Culvert 46 Lin.Ft.  
Std. No.1-2-B Catch Basin 1 Each  
Concrete, Class "E" 0.9 Cu.Yds.  
Type "A" (Grouted) Rip Rap 5 Sq.Yds.  
Sodding 5 Sq.Yds.  
Remove & Store Exist. 12" C.M.R. 24 Lin.Ft.

**18"x46'-0" PIPE CULV.**  
**STA. 115+84**

14-5



**• STRUCTURE DATA •**  
TYPE - Standard Pipe Culvert.  
SIZE - 15"x45'-0"  
WORK REQUIRED - Build 15"x45'-0" Std. Pipe Culvert with Std. No.1-2-B C.Basin at inlet end and Std. Cradle and Cutoff Wall at outlet. Excavate channel as shown. Sod ditch around C.Basin at inlet and outlet ditch.

**• REFERENCE DRAWINGS •**  
Pipe Culvert Ends. 5-27 P.C.2  
Catch Basins I-8 C.B. No.1-2-B

**• ESTIMATED QUANTITIES •**  
Channel Excavation 75 Cu.Yds.  
Structure Excavation 25 Cu.Yds.  
15" Pipe for Roadway Culvert 45 Lin.Ft.  
Concrete, Class "E" 0.7 Cu.Yds.  
Sodding 17 Sq.Yds.  
Std. No.1-2-B Catch Basin. 1 Each

**15"x45'-0" PIPE CULV.**  
**STA. 123+82**

15-5



55'-0"

4'-0"

18" Automatic Drainage Gate

Collar (See Detail)

STA 220+71.8

37°47' R+ Fwd Skew.

← Road

5'-9"

New Location of 18" Automatic Drainage Gate

• STRUCTURE DATA

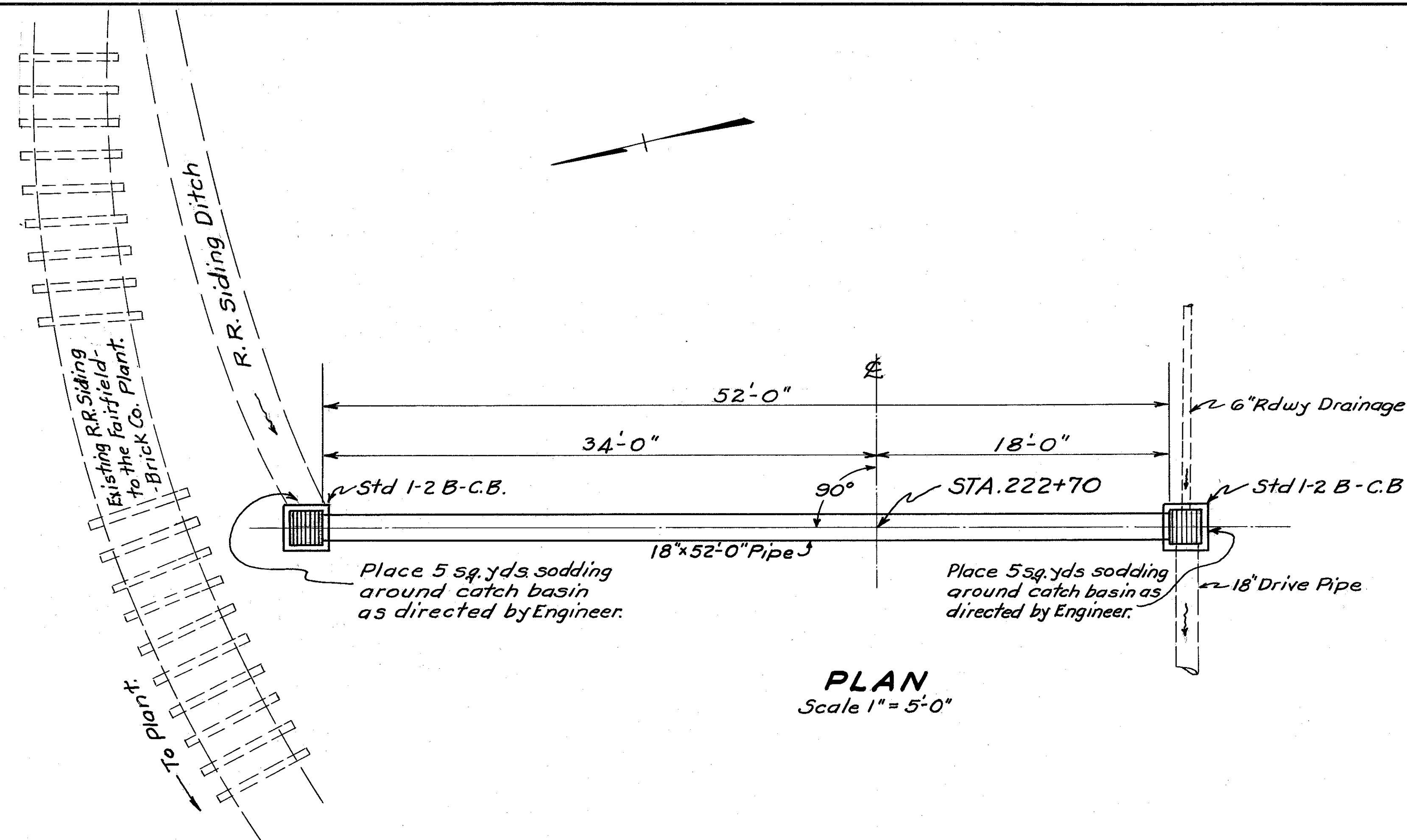
1-S



| FED. RD.<br>DIV. NO. | STATE | PROJECT | FISCAL<br>YEAR |
|----------------------|-------|---------|----------------|
| 2                    | OHIO  |         | 1947           |

43  
56

TUSCARAWAS COUNTY  
S.H. 712 SEC. N (Pt) & O (Pt)  
DOVER BASIN UNIT No 2



**PLAN**  
Scale 1" = 5'-0"

• **STRUCTURE DATA** •

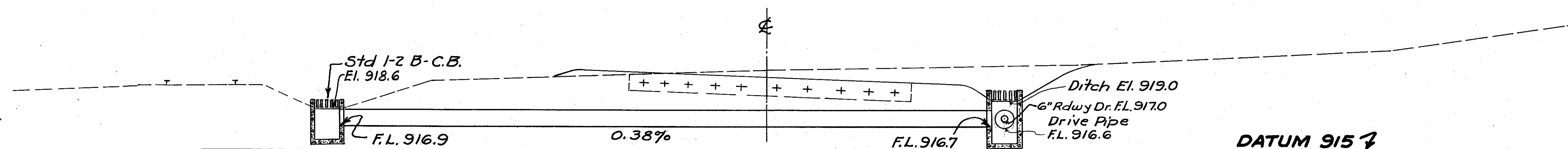
TYPE:- Standard Pipe Culvert.  
SIZE:- 15" x 52'-0"  
WORK REQUIRED:- Build 15" x 52'-0" pipe culvert with 1-2 B catch basin at inlet and outlet. Connect 6" roadway drainage and 18" drive pipe to catch basin on Rt. as shown. Place sodding as directed.

• **STANDARD DRAWINGS** •

Pipe Culverts. S 27- P.C. 3  
Catch Basins. I-8 C.B. I-2 A & B.

• **ESTIMATED QUANTITIES** •

Structure Excavation. 20 Cu.Yds.  
15" Pipe for Roadway Culverts. 52 Lin.Ft.  
1-2 B. Catch Basins. 2 Each.  
Sodding 10 Sq.Yds.



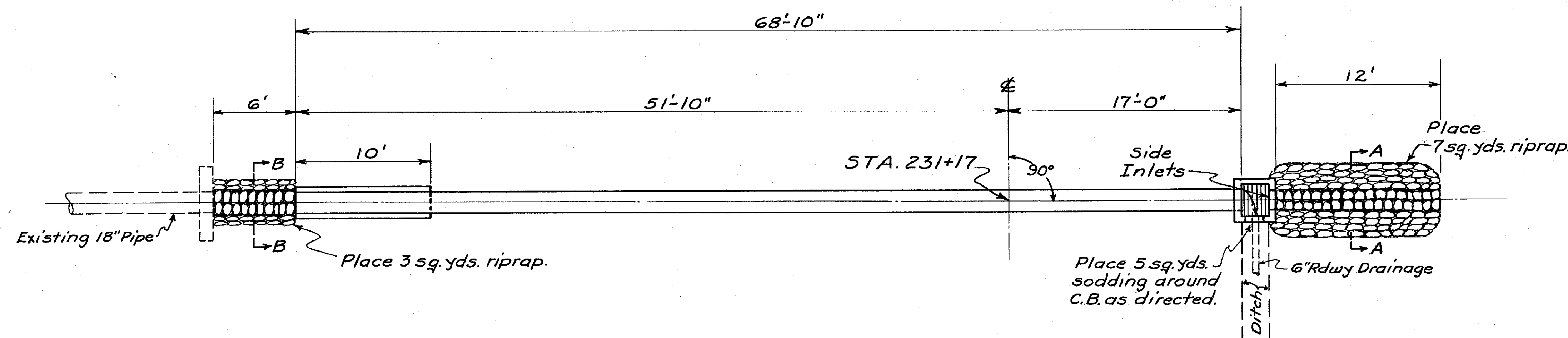
920.56  
222+70  
921.5  
**CROSS SECTION**  
Scale 1" = 5'-0"

15" x 52'-0" PIPE CULV.  
STA. 222+70

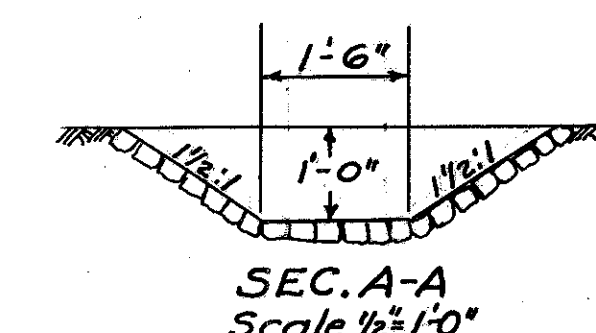
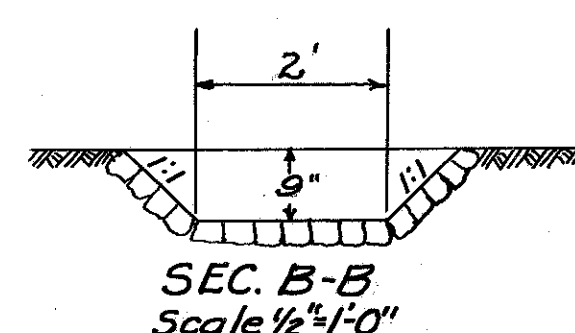
2-5



TUSCARAWAS COUNTY  
S.H. 712 SEC. N(Pt) & O(Pt).  
DOVER BASIN UNIT No 2.



**PLAN**  
Scale 1"=5'



### •STRUCTURE DATA•

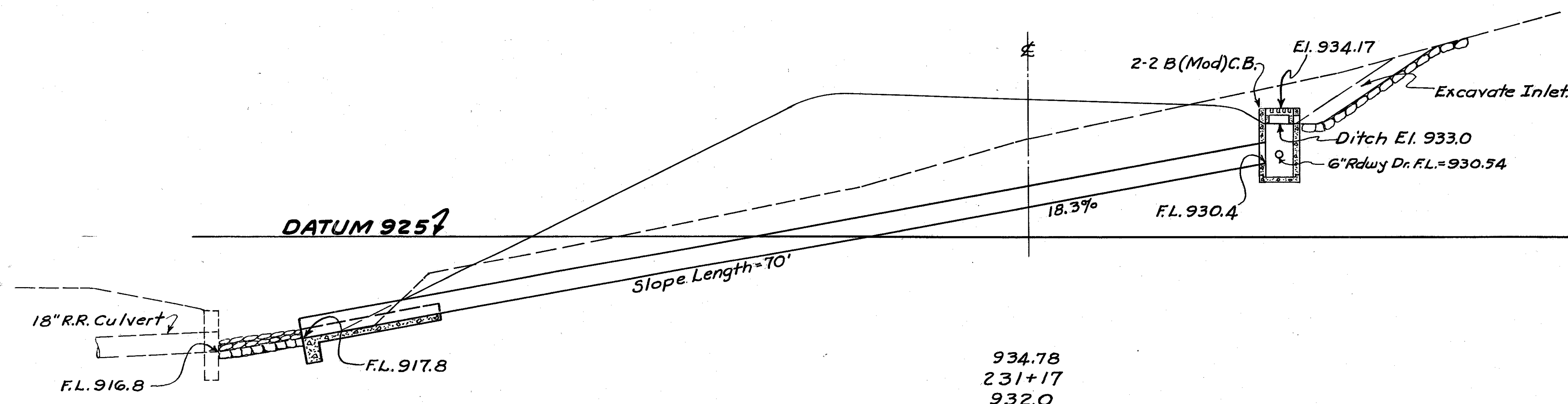
TYPE:- Standard Pipe Culvert.  
SIZE:- 18"x70'-0"  
WORK REQUIRED:- Build standard 18"x70'-0" pipe culvert with a 2-2 B (Mod) catch basin at inlet and connect 6" roadway drainage to catch basin. Build standard culvert end at outlet. Place riprap and sodding as shown.

### •REFERENCE DRAWINGS•

Pipe Culverts. S-27 P.C.2  
Catch Basins. I-8 C.B. 2-2 A & B.

### •ESTIMATED QUANTITIES•

|                                  |             |
|----------------------------------|-------------|
| Structure Excavation.            | 35 Cu.Yds.  |
| 18" Pipe for Roadway Culvert.    | 70 Lin. Ft. |
| No 2-2 B (Mod) Catch Basin.      | 1 Each.     |
| Concrete Class "E".              | 0.9 Cu.Yds. |
| Riprap (Type A, (Grout Filled)). | 10 Sq.Yds.  |
| Sodding.                         | 5 Sq.Yds.   |



**CROSS SECTION**  
Scale 1"=5'

18"x70'-0" PIPE CULV.  
STA. 231+17

3-5



TUSCARAWAS COUNTY  
S. H. 712 SEC. N(Pt) & O(Pt).  
DOVER BASIN UNIT N<sup>o</sup> 2



TYPE:- Standard Pipe Culvert.  
 SIZE:- 18"x 75" O"  
 WORK REQUIRED:- Build std, 18"x75 pipe culvert with a 2'-2" B (Mod) catch basin at inlet and std, cradle and cut-off wall at outlet. Connect 6" rdwy, drainage to catch basin. Sod inlet, and riprap outlet as directed.

Pipe Culvert Ends. S-27- P.C. 2.  
Catch Basins. 1-8-C.B-22-A&B.

|                               |     |          |
|-------------------------------|-----|----------|
| Structure Excavation.         | 25  | Cu.Yds.  |
| 18" Pipe for Roadway Culvert. | 75  | Lin. Ft. |
| Concrete Class "E"            | 0.9 | Cu.Yds.  |
| Riprap (Type "A") Grouted.    | 3   | Sq.Yds.  |
| 2-2 B (Mod.) Catch Basin.     | 1   | Each.    |
| Sodding.                      | 10  | Sq. Yds. |

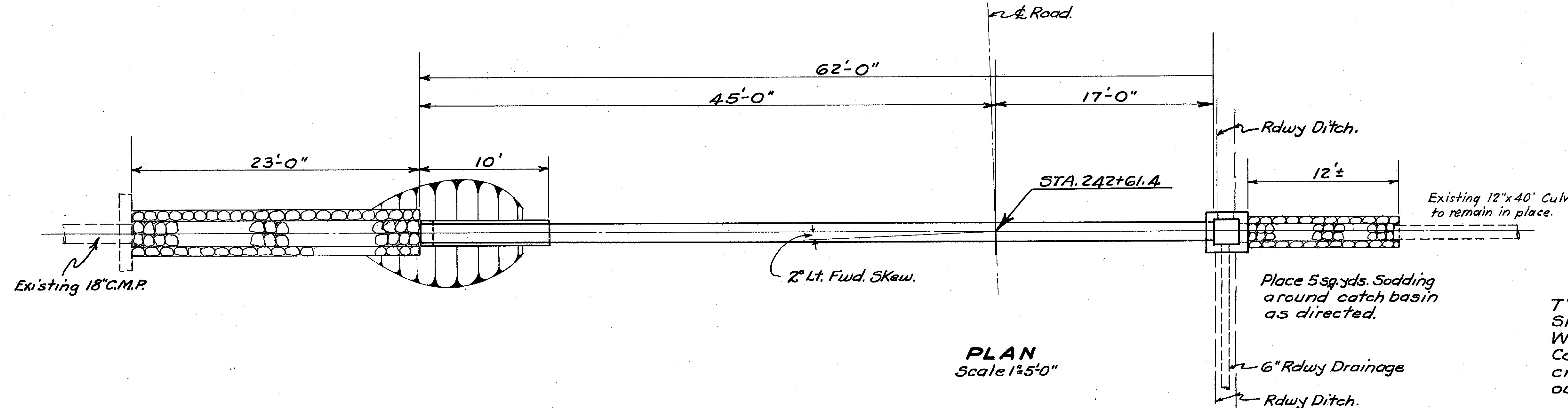

$$\begin{array}{r} 932.32 \\ 234 + 20.5 \\ \hline 923.7 \end{array}$$

18"x75'-0" PIPE CULV.  
STA. 234+20.5

4-5



TUSCARAWAS COUNTY  
S.H. 712 SEC. N(Pt) & O(Pt).  
DOVER BASIN UNIT N<sup>o</sup> 2.



• STRUCTURE DATA •

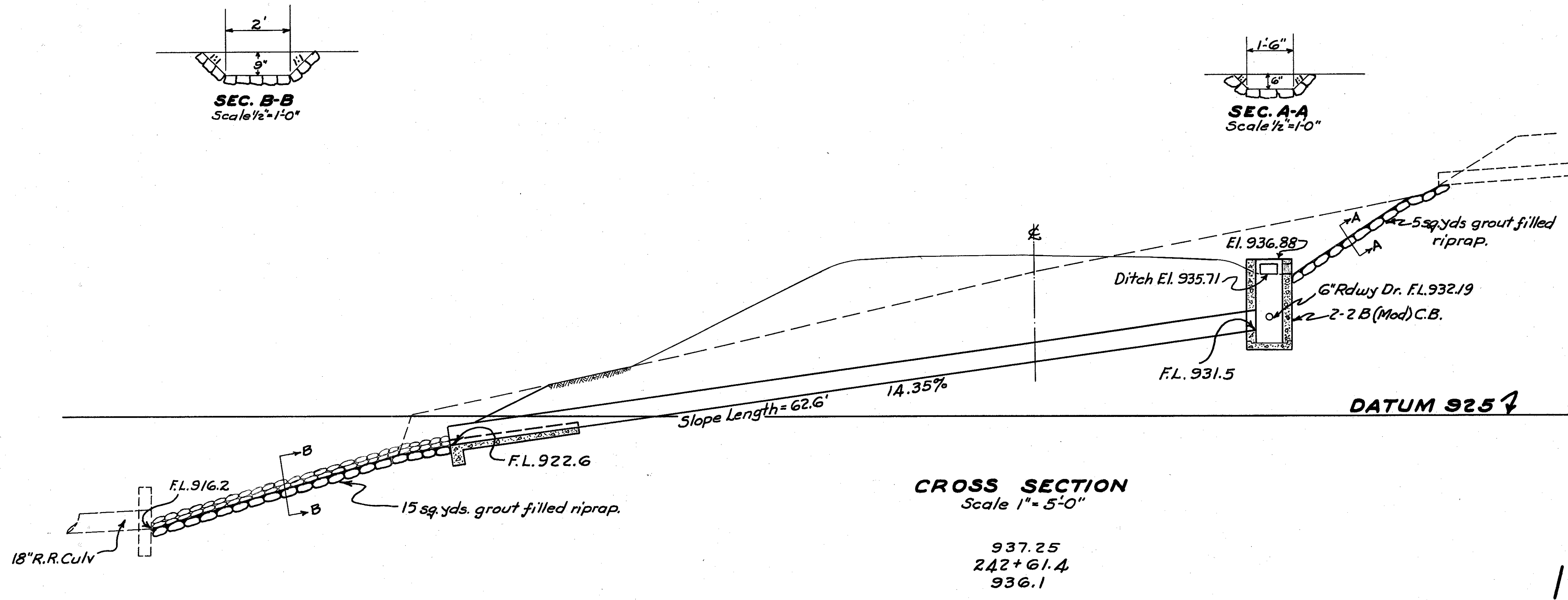
TYPE:- Standard Pipe Culvert.  
SIZE:- 18"x 63'-0"  
WORK REQUIRED:- Build std 18"x63' pipe culvert. Construct 2-2 B(Mod) catch basin at inlet end and std, cradle and cut-off wall at out let end. Riprap inlet and outlet, and sod inlet as directed. Connect 6" Rdwy Dr. to C.B.

• STANDARD DRAWINGS •

Pipe Culvert Ends. S-27 P.C.2  
Catch Basins. I-8 C.B. N<sup>o</sup> 2-2B.

• ESTIMATED QUANTITIES •

|                                                 |             |
|-------------------------------------------------|-------------|
| Structure Excavation.                           | 50 Cu.Yds.  |
| 18" Pipe for Roadway Culvert.                   | 63 Lin. Ft. |
| Std. N <sup>o</sup> 2-2 Catch Basin (Modified). | 1 Each.     |
| Concrete Class "E".                             | 0.9 Cu.Yds. |
| Type "A" Riprap (Grouted).                      | 20 Sq.Yds.  |
| Sodding.                                        | 5 Sq.Yds.   |

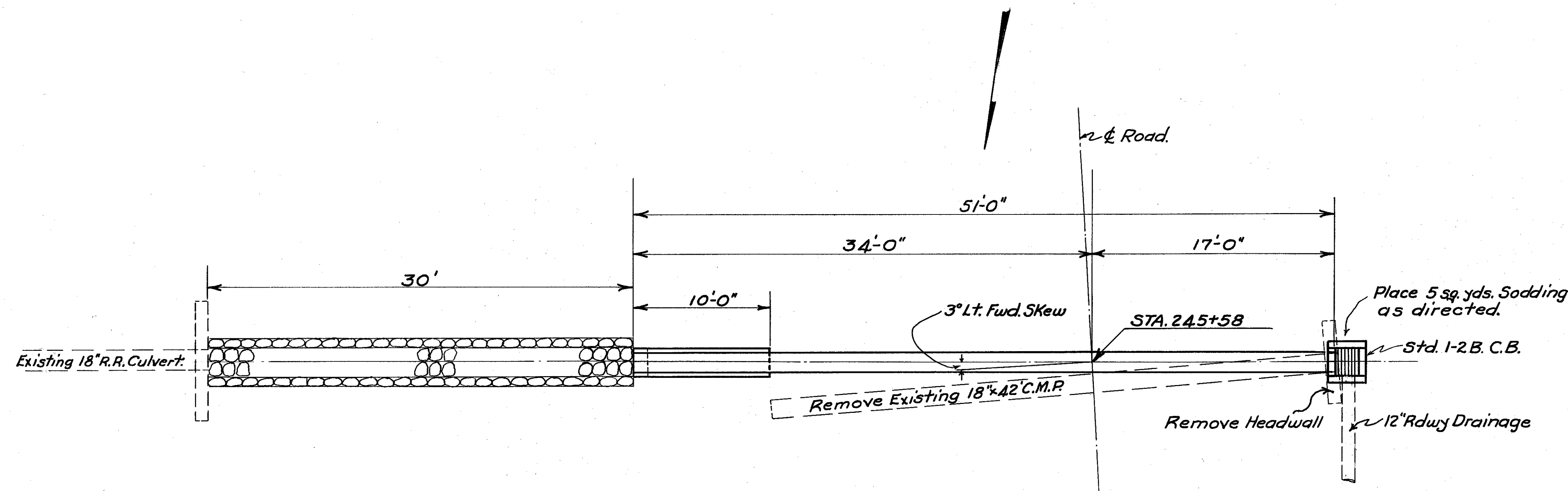


18"x63'-0" PIPE CULV. STA. 242+61.4 (5-S)



| FED. RD. DIV. NO. | STATE | PROJECT | FISCAL YEAR | 47<br>56 |
|-------------------|-------|---------|-------------|----------|
| 2                 | OHIO  |         | 1947        |          |

TUSCARAWAS COUNTY  
S.H. 712 SEC. N(Pt) & O(Pt).  
DOVER BASIN UNIT N<sup>o</sup> 2



PLAN  
Scale 1"=5'-0"

#### •STRUCTURE DATA•

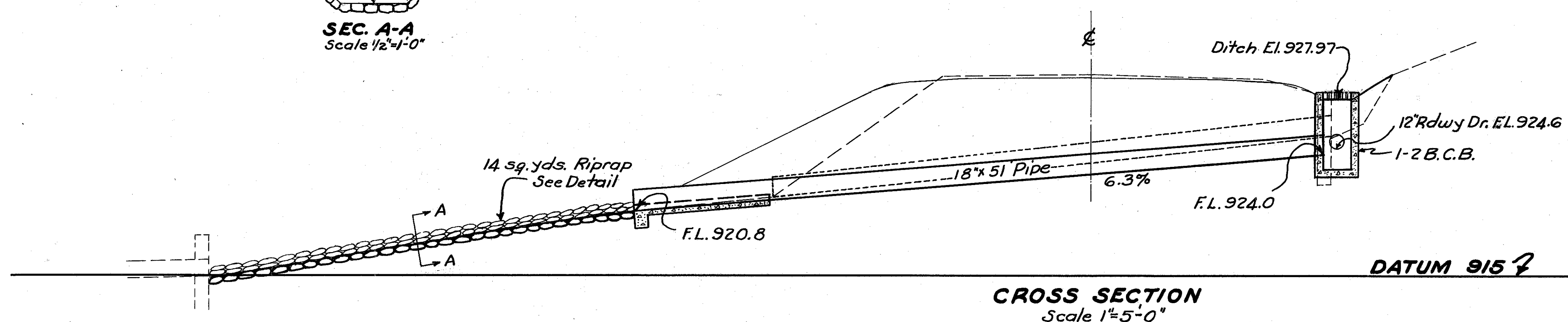
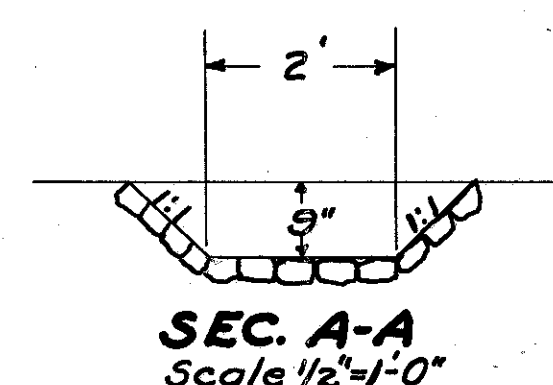
TYPE :- Standard Pipe Culvert.  
SIZE :- 18"x51'-0"  
WORK REQUIRED :- Build 18"x51' Pipe Culvert with Std. 1-2 B catch basin at inlet, and Std. cradle and cut-off wall at out let. Sod inlet and riprap outlet. Remove and store 18"x42' C.M.P. Connect rdwy, dr. to C.B.

#### •STANDARD DRAWINGS•

Pipe Culvert Ends. S-27 P.C.2  
Catch Basins. I-8. C.B. N<sup>o</sup> 1-2-B.

#### •ESTIMATED QUANTITIES•

|                                  |             |
|----------------------------------|-------------|
| Structure Excavation             | 30 Cu.Yds.  |
| Class "E" Concrete.              | 0.9 Cu.Yds. |
| 18" Pipe for Roadway Culvert.    | 51 Lin.Ft.  |
| Remove Existing Headwall (Str.). | 1 Cu.Yds.   |
| Riprap (Type "A" Grout Filled).  | 14 Sq.Yds.  |
| Remove and Store 18" C.M.P.      | 42 Lin.Ft.  |
| Std 1-2 B Catch Basin.           | 1 Each.     |
| Sodding.                         | 5 Sq.Yds.   |



CROSS SECTION  
Scale 1"=5'-0"

929.68  
245+58  
929.9

18"x51'-0" PIPE CULV.  
STA. 245+58

6-5



TUSCARAWAS COUNTY  
S.H. 712 SEC. N (PT.) 80 (PT.)  
DOVER BASIN

At Zoarville

The estimated average pile-lengths shown hereon, used as the basis for approx. estimate, have been chosen as result of rod-soundings at the site.  
These sounding data are available to bidders, but Contractor assumes responsibility for pile-lengths selected.

$\Delta = 33^\circ 12' L$   
 $D = 5^\circ 00'$   
 $T = 341.62'$   
 $R = 1145.92'$   
 $L = 664.00'$

**PROPOSED STRUCTURE**  
Type: Continuous concrete slab with concrete substructure.  
Spans: 40'-45'-45'-45'-40' 5/8 brgs.  
Roadway: 24' + two 3'-0" sidewalks.  
Loading: S-15-40.  
Skew: None.  
Wear. Surf.: 3/4" Monolithic Concrete.  
Appr. Slabs: 15' long flared.

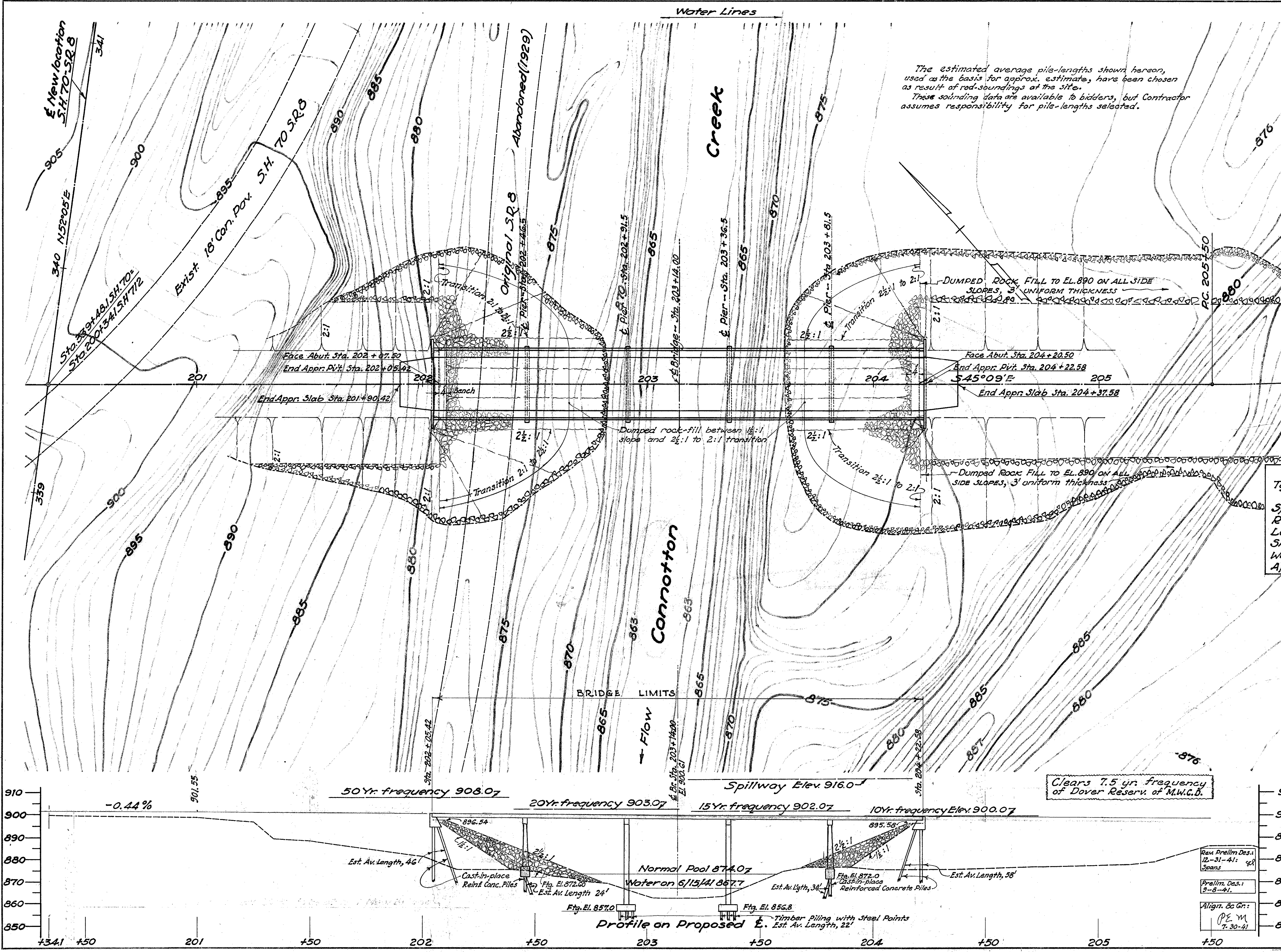
**DRAINAGE AREA**  
286 SQ. MILES  
70 Sq. Mi.: Atwood Basin  
48 Sq. Mi.: Leesville Basin

**EXISTING STRUCTURE TO-212-81**  
(1/2 MI. BELOW PROPOSED STRUCTURE)  
— TO BE REMOVED —  
TYPE: High Truss  
SPAN: 105.5'  
ROADWAY: 15.75'  
OVERALL LENGTH: 108.4'

**SITE - PLAN**  
BRIDGE N<sup>o</sup> TU. 212-76 OVER  
CONNOTTON CREEK  
S.H. 712 SEC. 0 TUSCARAWAS CO.  
STATE OF OHIO  
Scale 1" = 20'

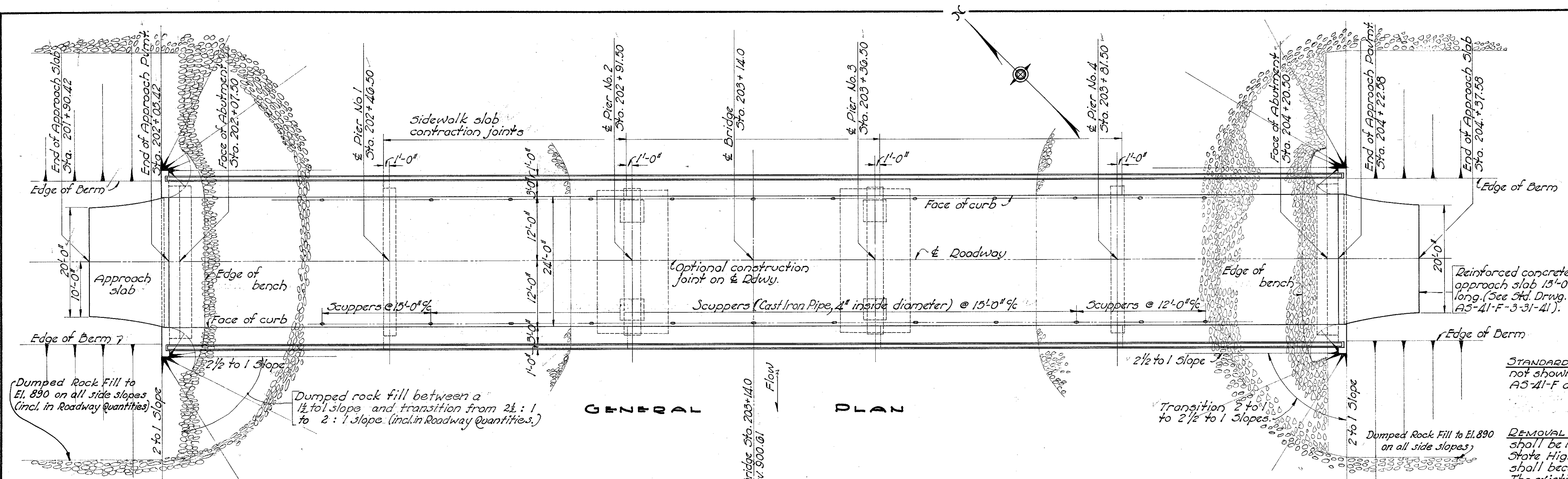
| Present Topo |               | Proposed Work |         |
|--------------|---------------|---------------|---------|
| Surveyed     | Drawn         | Designed      | Checked |
| W.C.R. & G.  | E.H.T.        | B.H.A.        | Mc.B.   |
| C.S.C.       | W.H.T. & B.H. |               |         |

Revised 9-5-47



Approx. 100 ft. to be 7-10 ft. wide, Barnes





### GENERAL NOTES

**STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:** For details not shown on these drawings, reference shall be made to Std. Dwgs. A5-41-F dated 3-31-41.

**REMOVAL OF EXISTING STRUCTURE:** The existing superstructure shall be removed. Floor beams and stringers shall be delivered to the State Highway Garage at New Philadelphia, Ohio. The remainder shall become property of contractor as part payment for removal. The existing substructure is to remain in place.

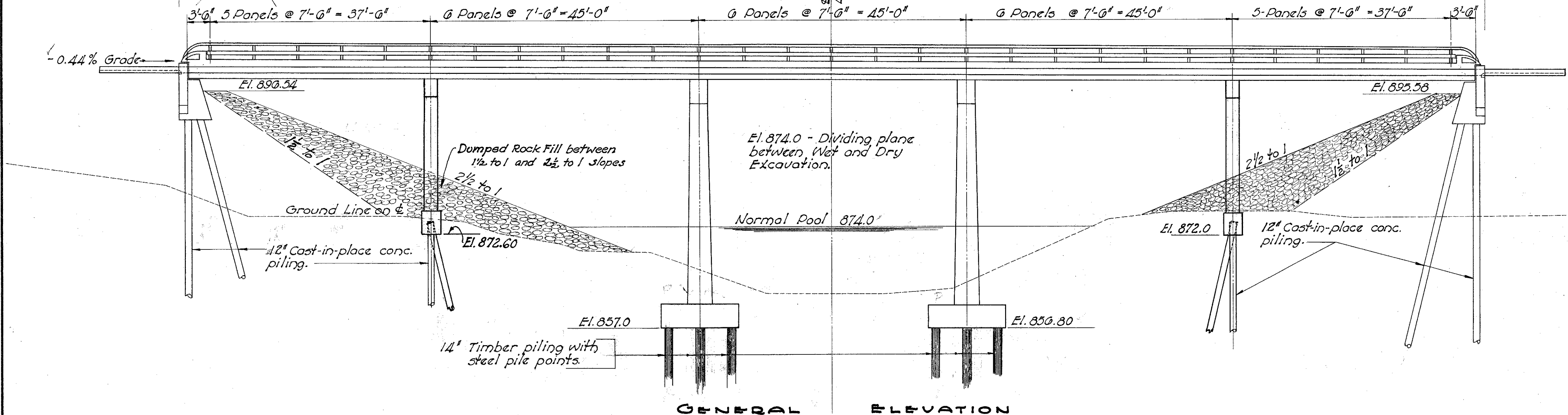
**EXCAVATION** quantity includes the removal of fill material between top of bench and bottom of abutment cap. If bottom forms are used for abutment cap they shall be left in place.

**FALSE WORK PLANS:** Not less than 15 days prior to beginning of falsework construction the contractor shall submit 3 blue prints of false work plans to the Director for approval by the Bureau of Bridges. False work shall be supported on piling designed to carry the superimposed loads and driven in accordance with an accepted pile driving formula.

**DUMPED ROCK FILL** is included with Roadway Quantities.

**PILING:** Timber piling shall be driven to a minimum bearing capacity of 23 tons. Cast-in-place reinforced concrete piling shall be driven to a minimum bearing capacity of 30 tons at abuts & 35 tons at piers.

**STEEL END FINISH:** All elements of end finish, except bent anchors, shall be copper-bearing steel.



| ESTIMATED |                                                |            |           | QUANTITIES |           |           |            |                |         |               | AS BUILT          |                |
|-----------|------------------------------------------------|------------|-----------|------------|-----------|-----------|------------|----------------|---------|---------------|-------------------|----------------|
| Item No.  | Description                                    | West Abut. | Pier No.1 | Pier No.2  | Pier No.3 | Pier No.4 | East Abut. | Superstructure | General | Total         | Change Orders     | Final Quantity |
| E-2       | Cofferdams and pumping                         |            |           |            |           |           |            |                | lump    | lump sum      |                   | Lump           |
| E-2       | Excavation for structures, wet                 |            | 10        | 100        | 130       | 15        |            |                |         | 315 Cu.Yds.   |                   | 315            |
| E-2       | Excavation for structures, dry                 | 40         | 10        |            |           | 20        | 40         |                |         | 110 Cu.Yds.   |                   | 110            |
| 5-1       | Class "C" concrete, superstructure             |            |           |            |           |           |            | 442            |         | 442 Cu.Yds.   |                   | 442            |
| 5-1       | Class "E" concrete, walls, columns & caps      | 30         | 22        | 50         | 50        | 22        | 30         |                |         | 216 Cu.Yds.   |                   | 216            |
| 5-1       | Class "E" concrete, footings                   |            | 15        | 50         | 50        | 15        |            |                |         | 130 Cu.Yds.   |                   | 130            |
| 5-3       | Type "D" waterproofing (30" wide)              | 12         |           |            |           |           | 12         |                | 1       | 25 Sq.Yds.    |                   | 25             |
| 5-4       | Reinforcing steel                              | 2080       | 9072      | 10624      | 10624     | 9072      | 2080       | 113232         | 170     | 158,154 Lbs.  | #1, +589          | 158,743        |
| 5-9       | 1/4" Premolded expansion joint filler          | 55         | 27        | 27         | 27        | 27        | 55         |                | 1       | 219 Sq.Ft.    |                   | 219            |
| 5-9       | 1/2" Cast leaded bronze sliding plates         | 285        |           |            |           |           | 285        |                |         | 570 Lbs.      |                   | 570            |
| 5-9       | Structural steel end finish (copper bearing)   | 1400       |           |            |           |           | 1400       |                |         | 2800 Lbs.     |                   | 2800           |
| 5-14      | Bridge railing (steel)                         |            |           |            |           |           |            | 434.8          |         | 434.8 Lin.Ft. |                   | 434.8          |
| 5-16      | First test pile (concrete or timber)           |            |           |            |           |           |            |                | lump    | lump sum      |                   | Lump           |
| 5-18      | 14" Timber piling (untreated)                  |            |           | 600        | 600       |           |            |                |         | 1200 Lin.Ft.  | #2, -10           | 1190           |
| 5-18      | Steel pile points                              |            |           | 27         | 27        |           |            |                |         | 54 each       | #4, -1            | 53             |
| 5-18      | 12" Reinforced concrete piling (cast in place) | 450        | 250       |            |           | 350       | 550        |                |         | 1600 Lin.Ft.  | #2, -321          | 1279           |
| 5-17      | First test load (concrete pile)                |            |           |            |           |           |            |                | lump    | lump sum      |                   | Lump           |
| 5-17      | Subsequent test load (concrete pile)           |            |           |            |           |           |            |                | 1       | each          | #2, -1            | 0              |
| 5-24      | Removal of existing superstructure             |            |           |            |           |           |            |                | lump    | lump sum      | #3,               | Non-performed  |
| 5-29      | Cast-iron-pipe scuppers, 4" dia. (Sec. M-G.3)  |            |           |            |           |           |            | 20             |         | 20 each       | #4, -2            | 24             |
| E-401     | Dumped rock or slag fill                       |            |           |            |           |           |            |                |         |               | #1, +500 ft. 1791 | 2291           |

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION  
NOTES & ESTIMATED QUANTITIES  
Bridge No. TU-212-78  
over Connocton Creek  
Tuscarawas County S. H. 712  
Section "O" Sta. 203+14.0

|                    |                 |                |                   |                  |                 |                   |
|--------------------|-----------------|----------------|-------------------|------------------|-----------------|-------------------|
| DESIGNED<br>P.E.S. | DRAWN<br>P.E.S. | TRACED<br>E.J. | CHECKED<br>H.S.R. | REVIEWED<br>W.B. | DATE<br>1-15-45 | REVISED<br>9-5-47 |
|--------------------|-----------------|----------------|-------------------|------------------|-----------------|-------------------|



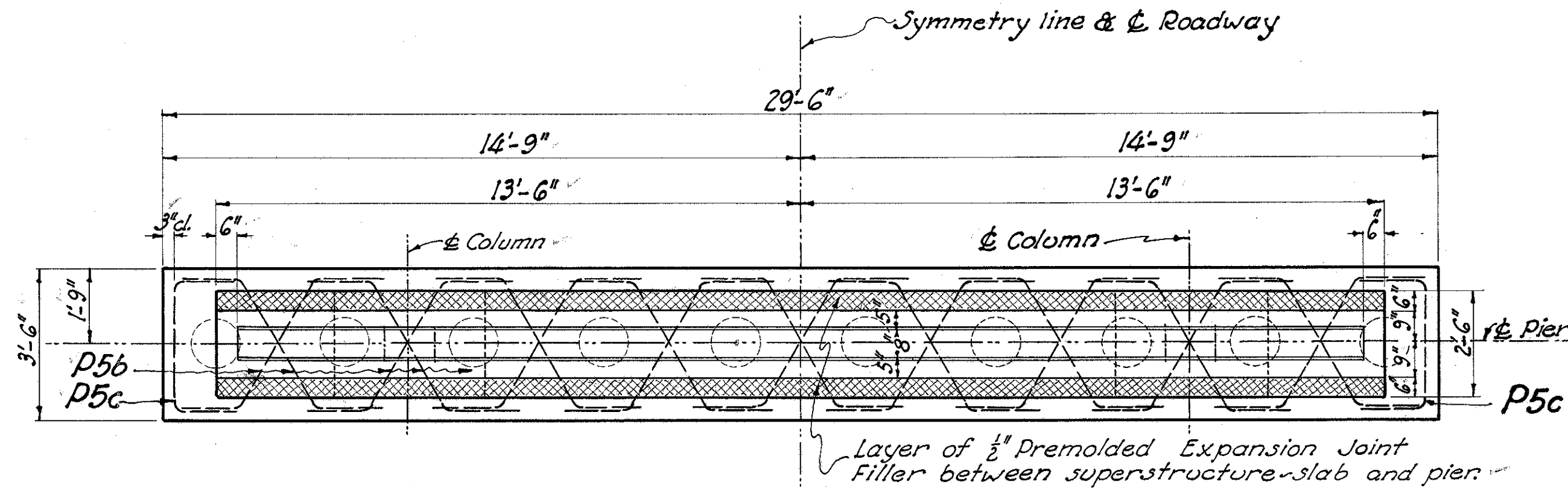
TUSCARAWAS COUNTY  
S. H. 712 SEC. N (PT.) & O (PT.)



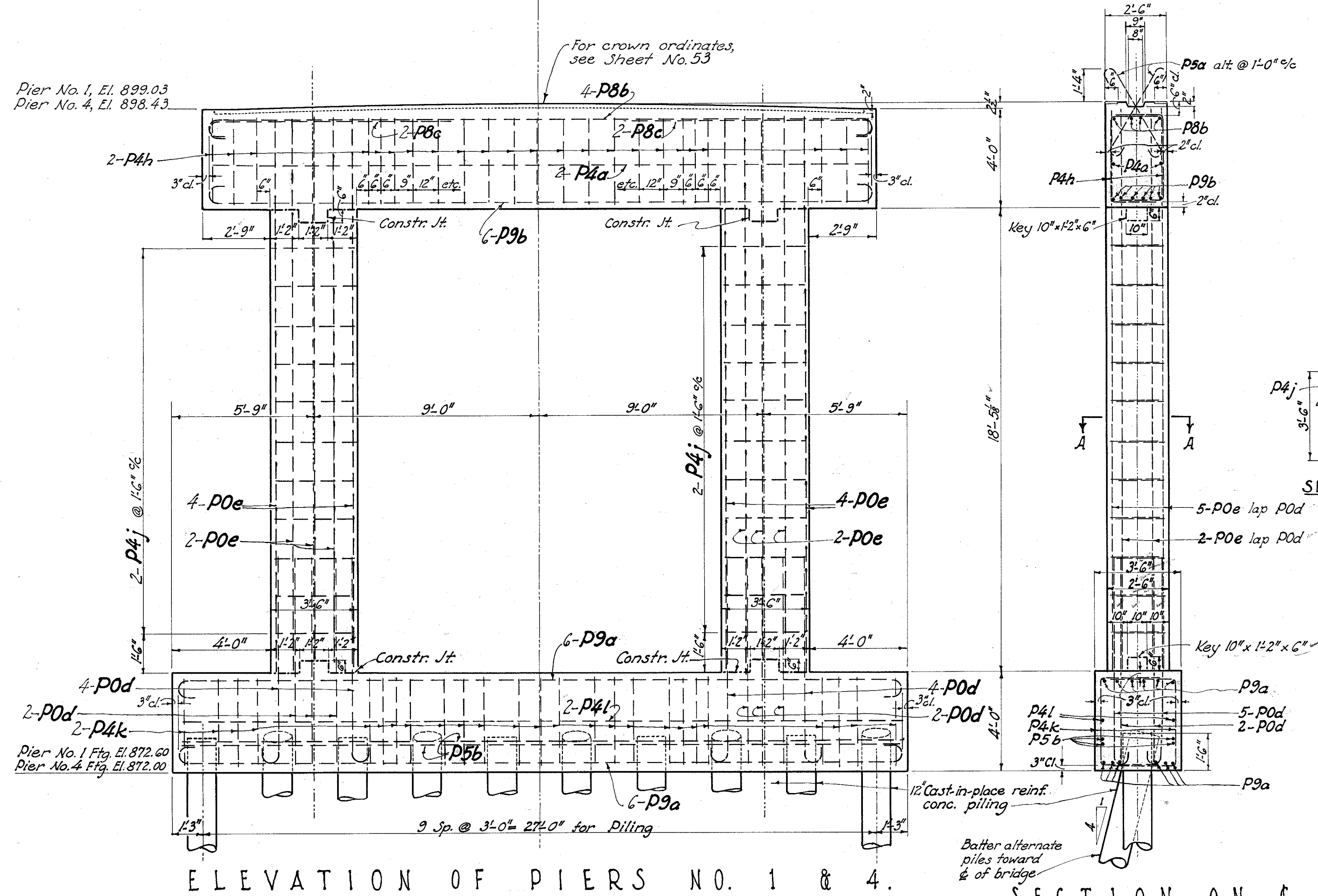
SECTION ON E ROADWAY  
PIERS NO. 1 AND 4  
All columns are alike.

|                                                              |                 |                  |                            |                            |                |
|--------------------------------------------------------------|-----------------|------------------|----------------------------|----------------------------|----------------|
| STATE OF OHIO<br>DEPARTMENT OF HIGHWAYS<br>BUREAU OF BRIDGES |                 |                  |                            |                            |                |
| <h1>ABUTMENT DETAILS</h1>                                    |                 |                  |                            |                            |                |
| BRIDGE NO. TU-212-78<br>OVER CONNOTON CREEK                  |                 |                  |                            |                            |                |
| TUSCARAWAS COUNTY<br>SECTION 0                               |                 |                  | S. H. 712<br>STA. 203 + 14 |                            |                |
| DESIGNED<br>P.E.L.                                           | DRAWN<br>P.E.L. | TRACED<br>J.M.P. | CHECKED<br>H.A.R.          | REVIEWED<br>M.H.R. 1-15-45 | DATE<br>3-5-47 |



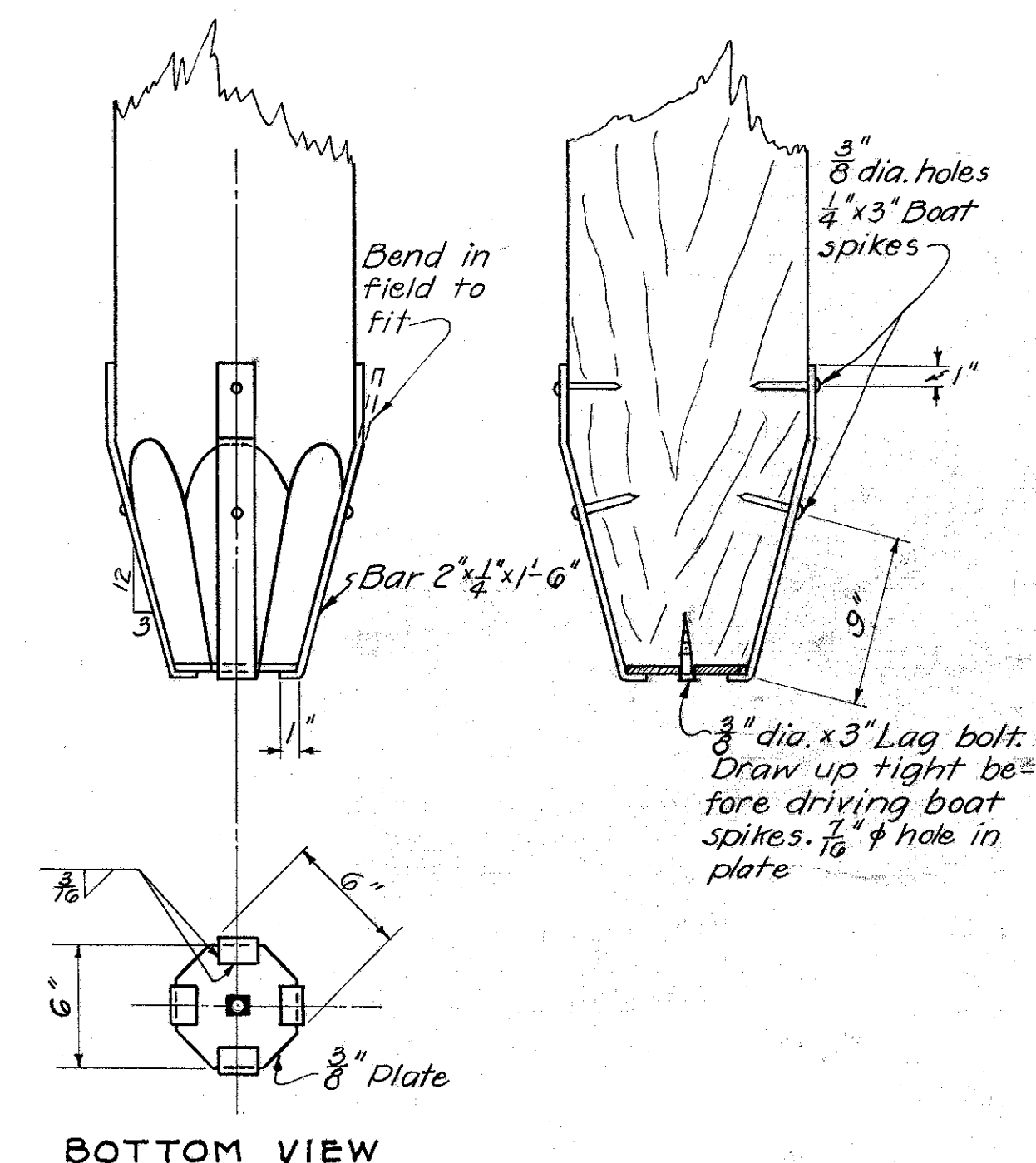
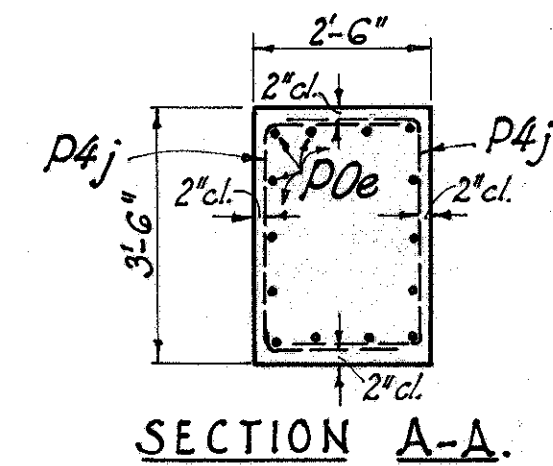


PLAN OF PIERS NO 1 & 4.



ELEVATION OF PIERS NO. 1 & 4.

SECTION ON C.



STEEL PILE POINT

| STATE OF OHIO<br>DEPARTMENT OF HIGHWAYS<br>BUREAU OF BRIDGES                                                   |                 |              |                 |                  |                   |
|----------------------------------------------------------------------------------------------------------------|-----------------|--------------|-----------------|------------------|-------------------|
| PIERS NO. 1 & 4<br>BRIDGE NO. TU-212-78<br>CONNOTTON CREEK<br>TUSCARAWAS CO. S.H. 712<br>SEC. 'O' STA. 203+14. |                 |              |                 |                  |                   |
| DESIGNED<br>P.E.S.                                                                                             | DRAWN<br>P.E.S. | TRACED<br>A. | CHECKED<br>H.C. | REVIEWED<br>H.C. | DATE<br>1-15-45   |
|                                                                                                                |                 |              |                 |                  | REVISED<br>9-5-47 |



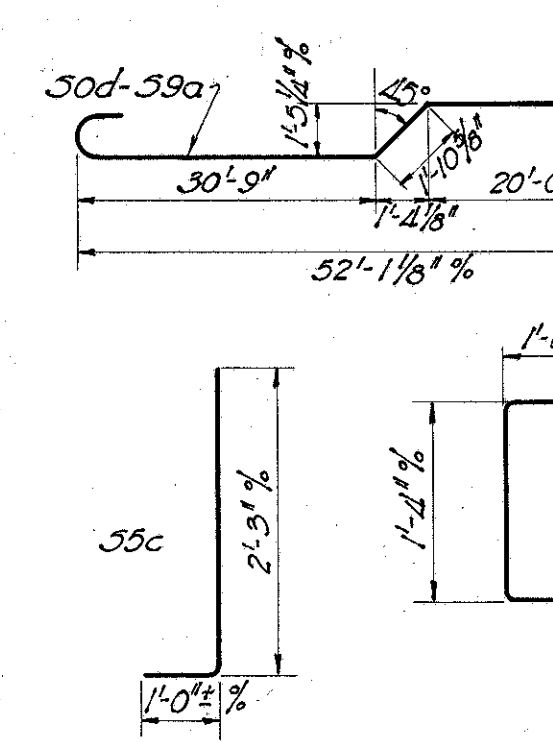
TUSCARAWAS, COUNTY  
S.H. 712 SEC. N (PT.) & O (PT.)

REINFORCING STEEL LIST

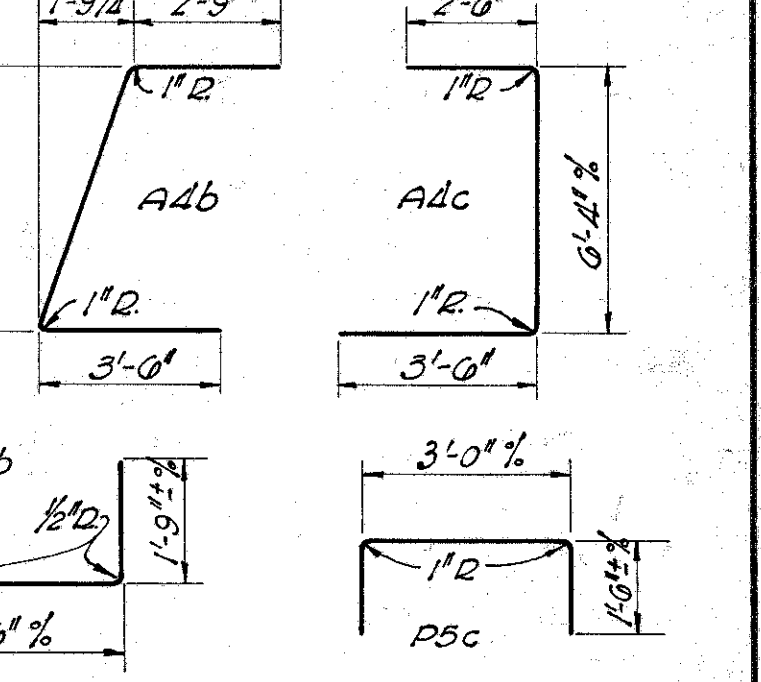
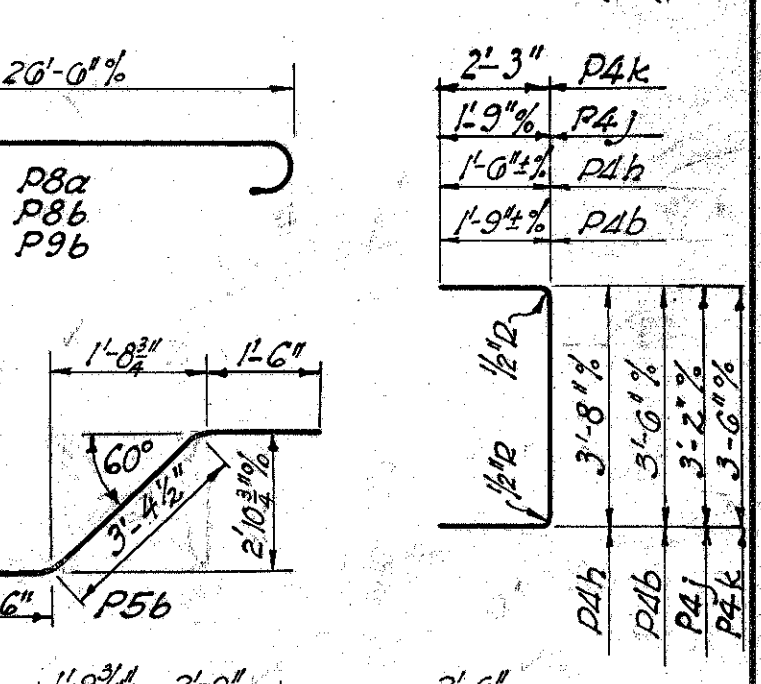
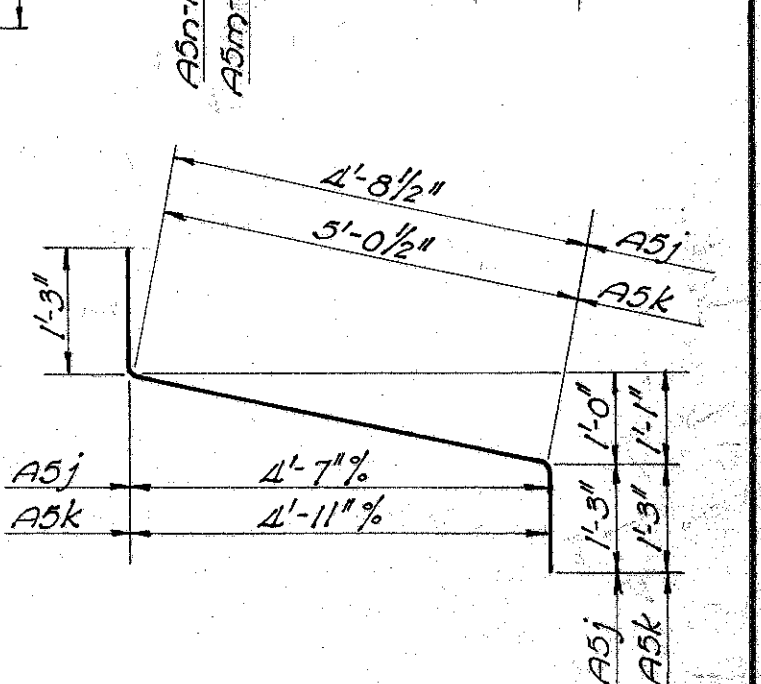
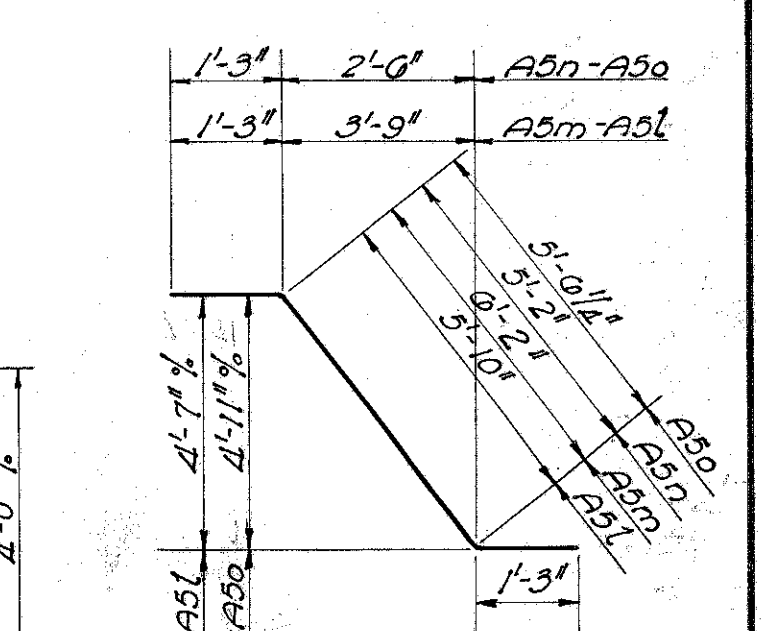
| Mark           | Size   | No. | Length | Weight | Sh.  |
|----------------|--------|-----|--------|--------|------|
| Piers (Cont'd) |        |     |        |        |      |
| P0d            | 1 1/4" | 56  | 9'-3"  | 2752   | Bt   |
| P0e            | 1 1/4" | 56  | 22'-0" | 6546   | Str. |
| P9a            | 1 1/8" | 24  | 3'-0"  | 3201   | Bt   |
| P9b            | 1 1/8" | 12  | 28'-6" | 1470   | Bt   |
| P8b            | 1"     | 8   | 28'-6" | 775    | Bt   |
| P8c            | 1"     | 8   | 11'-0" | 299    | Bt   |
| P4h            | 3/8"   | 32  | 6'-6"  | 624    | Bt   |
| P4j            | 3/8"   | 88  | 6'-6"  | 597    | Bt   |
| P4k            | 3/8"   | 100 | 8'-0"  | 832    | Bt   |
| P4L            | 3/8"   | 4   | 29'-0" | 121    | Str. |

| Mark           | Size   | No. | Length  | Weight | Sh.  |
|----------------|--------|-----|---------|--------|------|
| Superstructure |        |     |         |        |      |
| 50a            | 1 1/4" | 80  | 32'-6"  | 13814  | Str. |
| 50b            | 1 1/4" | 40  | 14'-0"  | 2975   | Str. |
| 50c            | 1 1/4" | 32  | 52'-0"  | 8841   | Str. |
| 50d            | 1 1/4" | 28  | 53'-10" | 8008   | Bt   |
| 50e            | 1 1/4" | 42  | 24'-3"  | 5411   | Str. |
| 59a            | 1 1/8" | 30  | 53'-10" | 8339   | Bt   |
| 59b            | 1 1/8" | 54  | 24'-3"  | 5635   | Str. |
| 59c            | 1 1/8" | 68  | 32'-0"  | 9510   | Str. |
| 59d            | 1 1/8" | 32  | 14'-0"  | 1928   | Str. |

Bending Diagrams

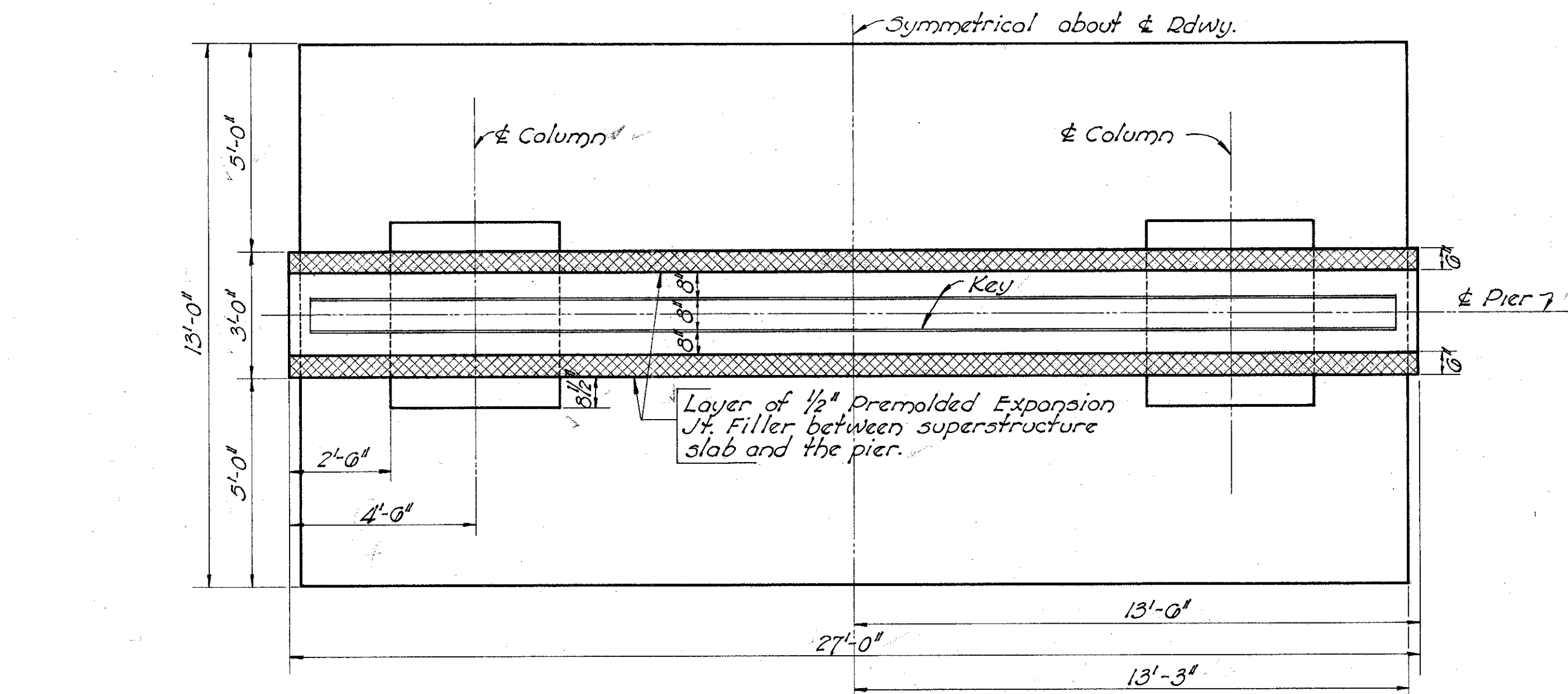
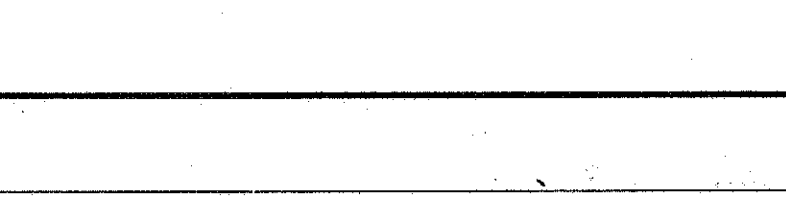
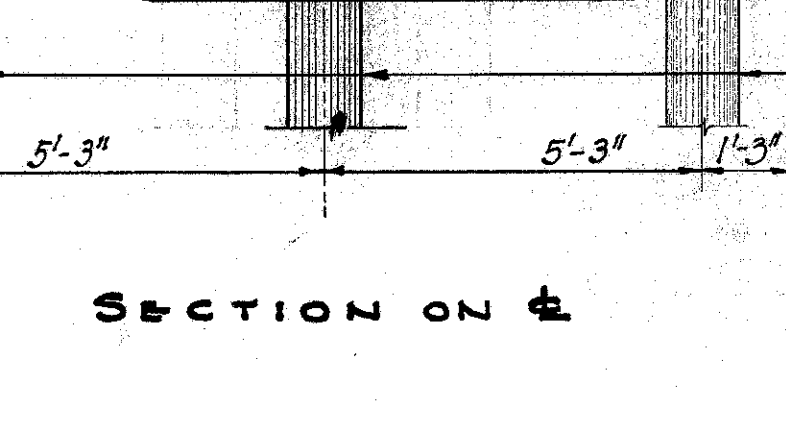
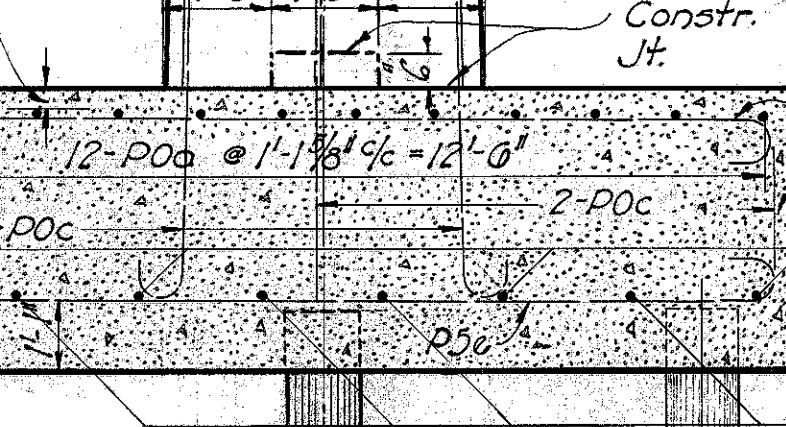
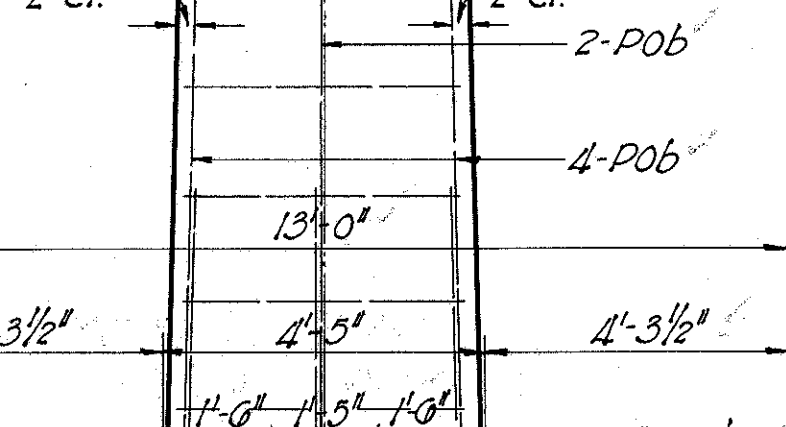
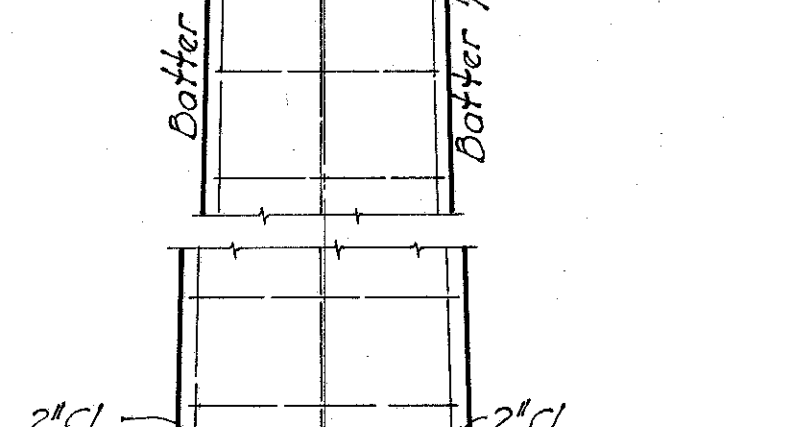
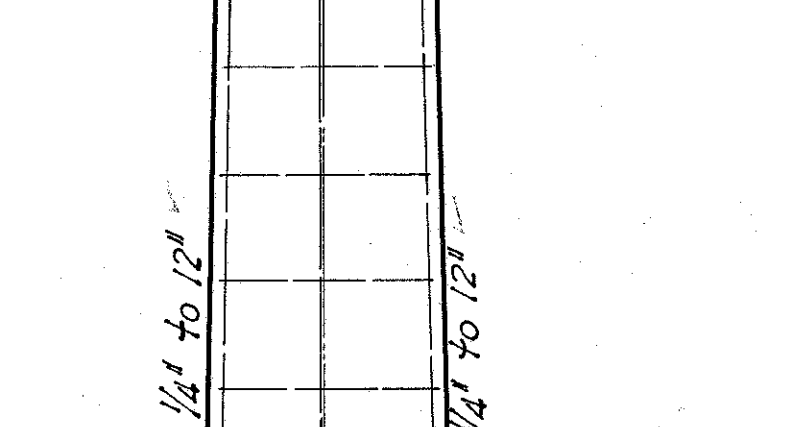
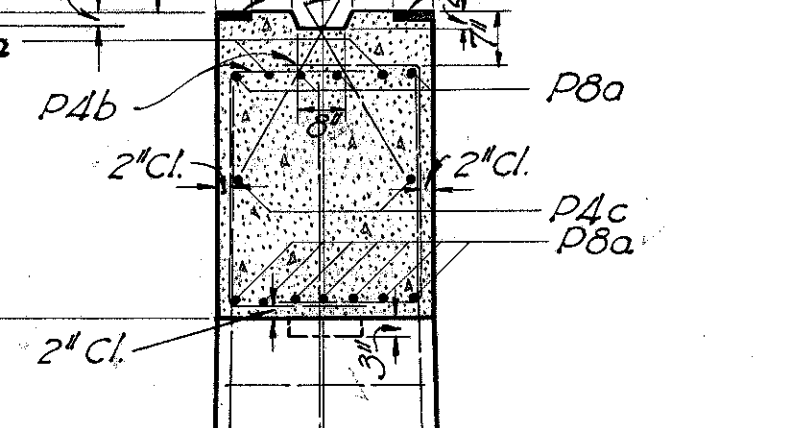
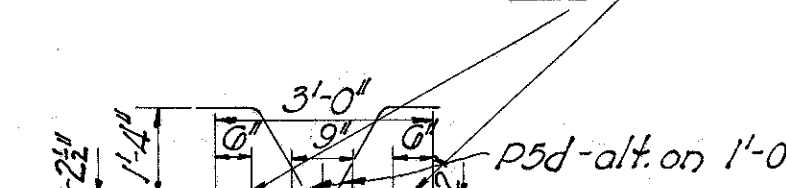


| Mark              | Size   | No. | Length | Weight | Sh.  |
|-------------------|--------|-----|--------|--------|------|
| Replacement Steel |        |     |        |        |      |
| DE0               | 1 1/4" | 1   | 9'-0"  | 48     | Str. |
| DE8               | 1 1/8" | 1   | 8'-0"  | 37     | Str. |
| DE7               | 1"     | 1   | 8'-0"  | 27     | Str. |
| DE0               | 3/4"   | 1   | 8'-0"  | 15     | Str. |
| DE5               | 3/4"   | 1   | 7'-0"  | 11     | Str. |
| DE4               | 3/4"   | 1   | 6'-0"  | 7      | Str. |
| DE2               | 3/4"   | 1   | 6'-0"  | 4      | Str. |



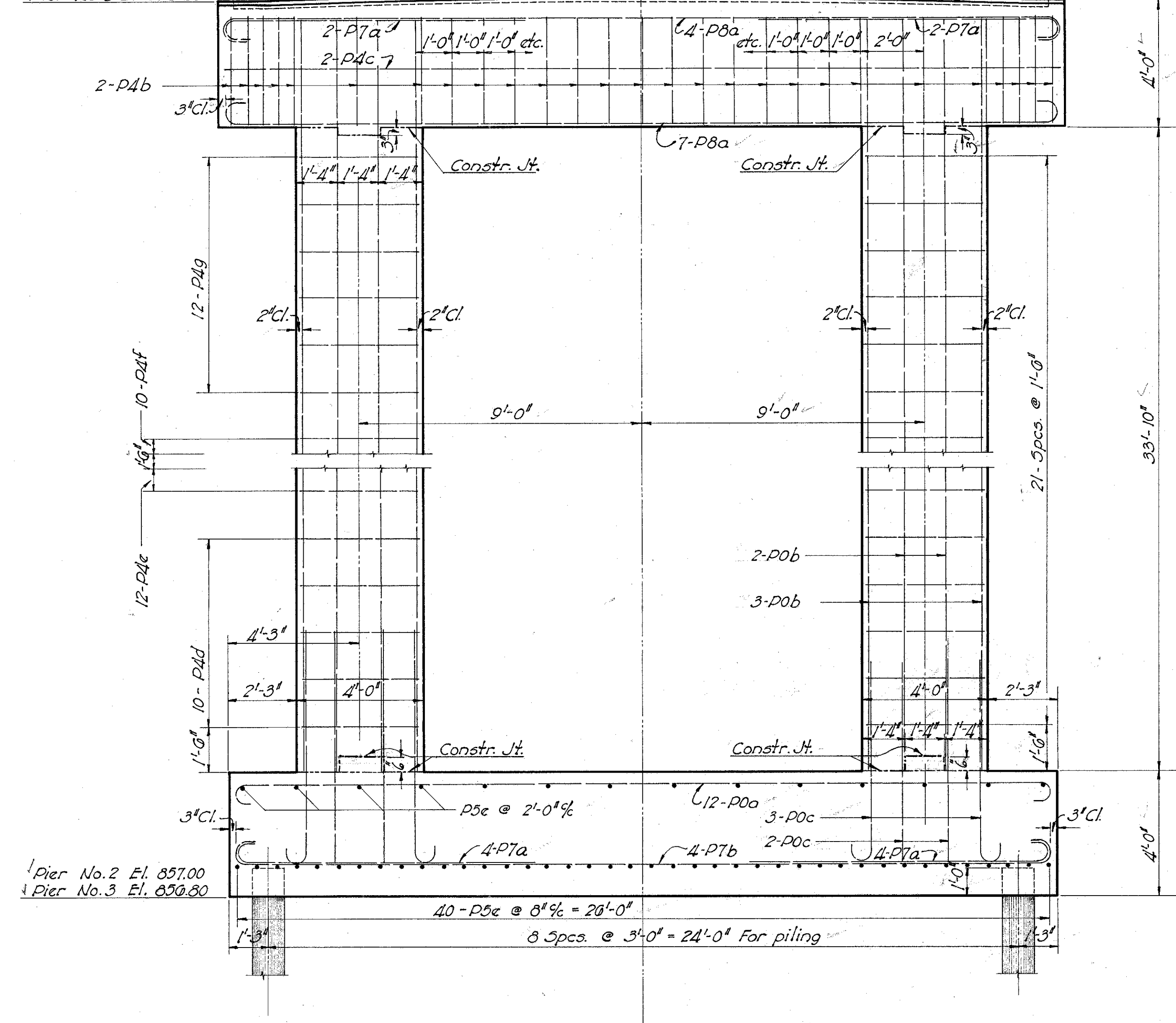
| Mark           | Size   | No. | Length | Weight | Sh.  |
|----------------|--------|-----|--------|--------|------|
| Piers (Cont'd) |        |     |        |        |      |
| P0a            | 1 1/4" | 24  | 28'-3" | 3003   | Bt   |
| P0b            | 1 1/4" | 40  | 37'-0" | 7970   | Str. |
| P0c            | 1 1/4" | 40  | 8'-0"  | 1807   | Bt   |
| P8a            | 1"     | 22  | 28'-6" | 2130   | Bt   |
| P7a            | 1 1/4" | 24  | 10'-6" | 873    | Bt   |
| P7b            | 1 1/4" | 8   | 28'-0" | 598    | Bt   |
| P5a            | 3/4"   | 54  | 5'-3"  | 426    | Bt   |
| P5b            | 3/4"   | 36  | 6'-6"  | 351    | Bt   |
| P5c            | 3/4"   | 4   | 5'-9"  | 35     | Bt   |
| P5d            | 3/4"   | 54  | 5'-0"  | 406    | Bt   |
| P5e            | 3/4"   | 80  | 14'-0" | 1682   | Bt   |
| P4a            | 3/8"   | 4   | 26'-0" | 111    | Str. |
| P4b            | 3/8"   | 108 | 6'-9"  | 760    | Bt   |
| P4c            | 3/8"   | 4   | 20'-0" | 109    | Str. |
| P4d            | 3/8"   | 40  | 9'-0"  | 375    | Bt   |
| P4e            | 3/8"   | 48  | 8'-0"  | 420    | Bt   |
| P4f            | 3/8"   | 40  | 8'-0"  | 334    | Bt   |
| P4g            | 3/8"   | 48  | 7'-0"  | 375    | Bt   |

Layer of 1/2" Premolded Expansion Joint Filler.



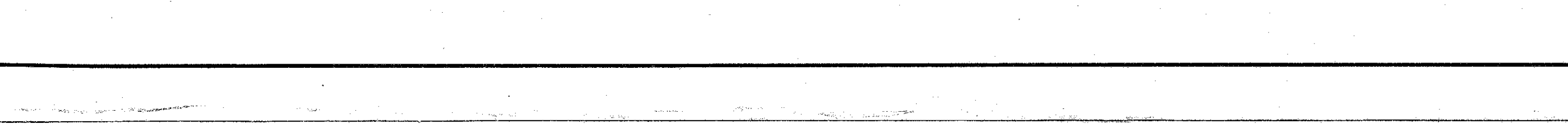
PLAN OF PIERS NO. 2 & 3

Pier No. 2 El. 898.83  
Pier No. 3 El. 898.83

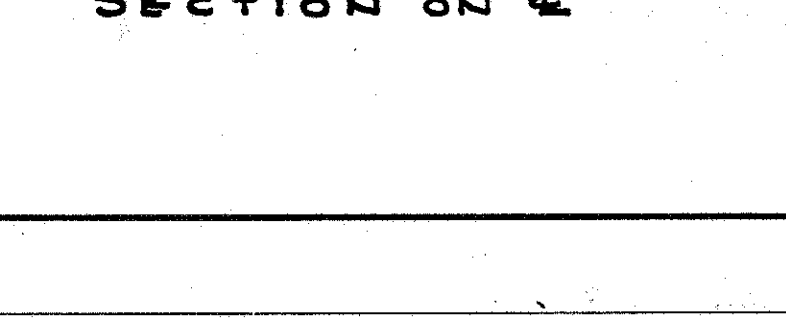


ELEVATION OF PIERS NO. 2 & 3

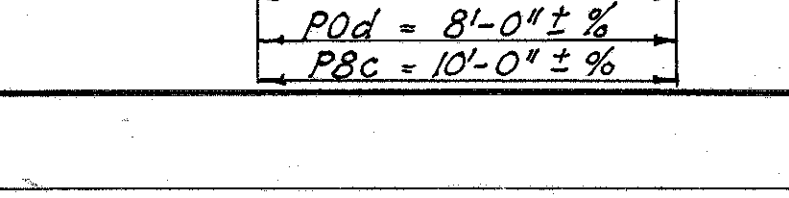
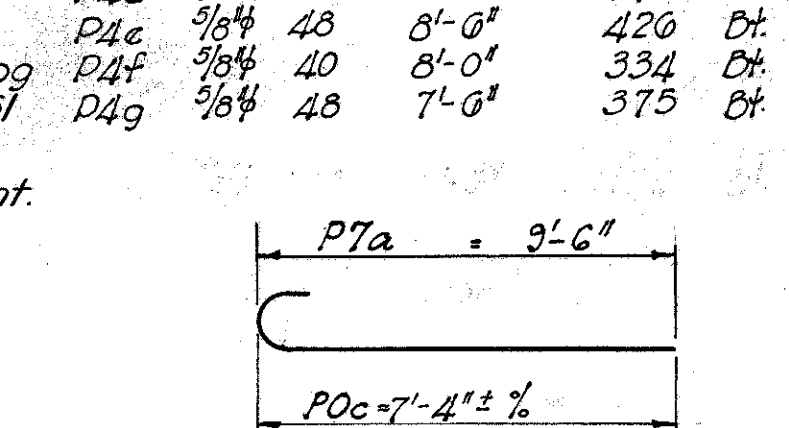
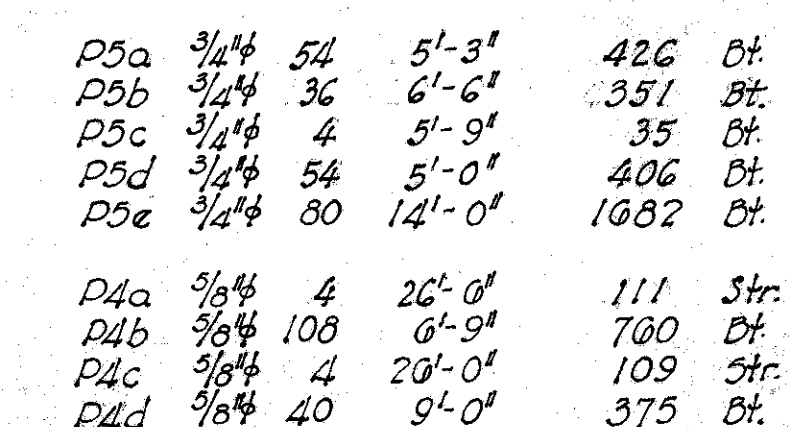
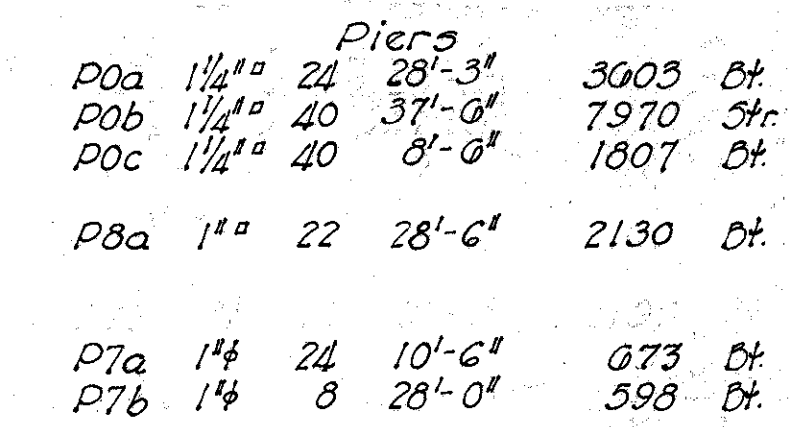
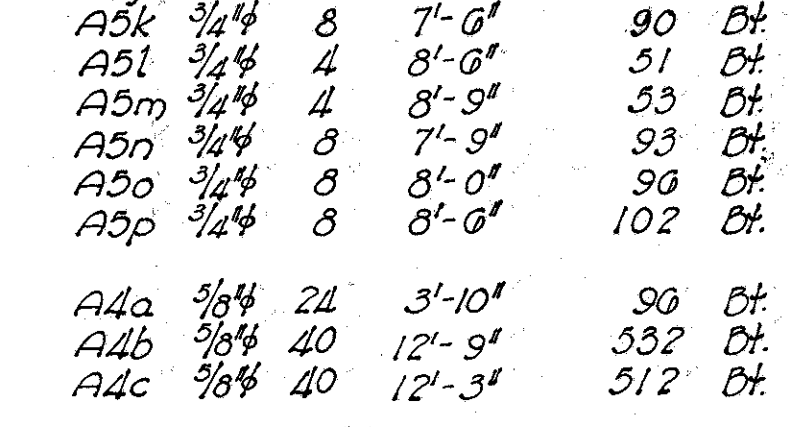
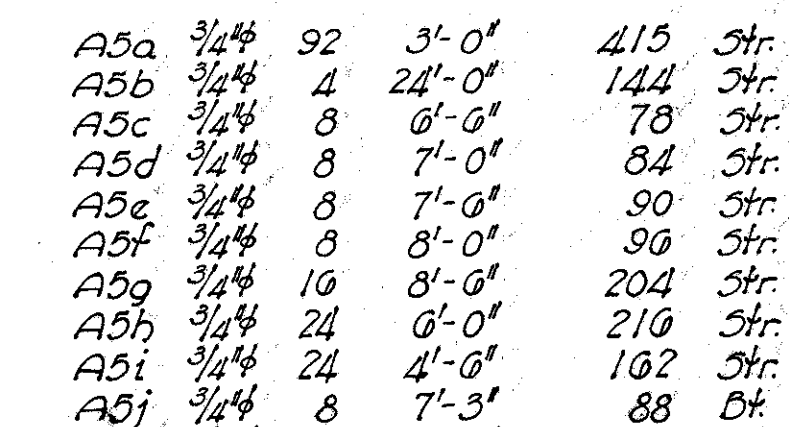
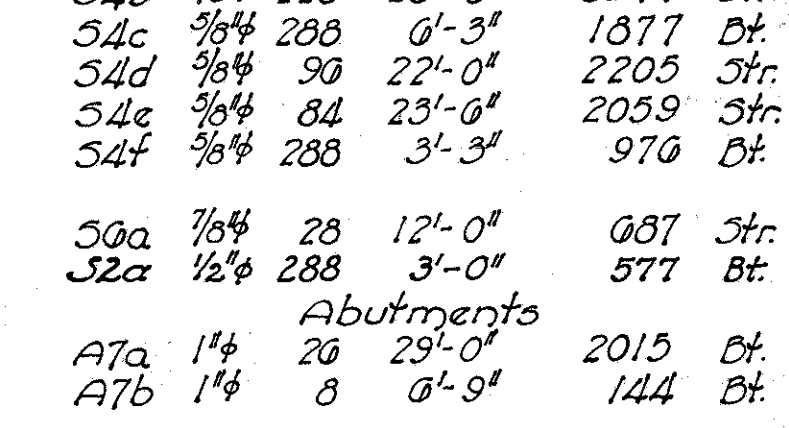
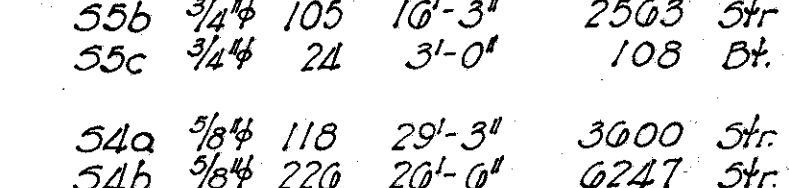
Pier No. 2 El. 857.00  
Pier No. 3 El. 850.80



SECTION ON 4



Layer of 1/2" Premolded Expansion Joint Filler.



STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

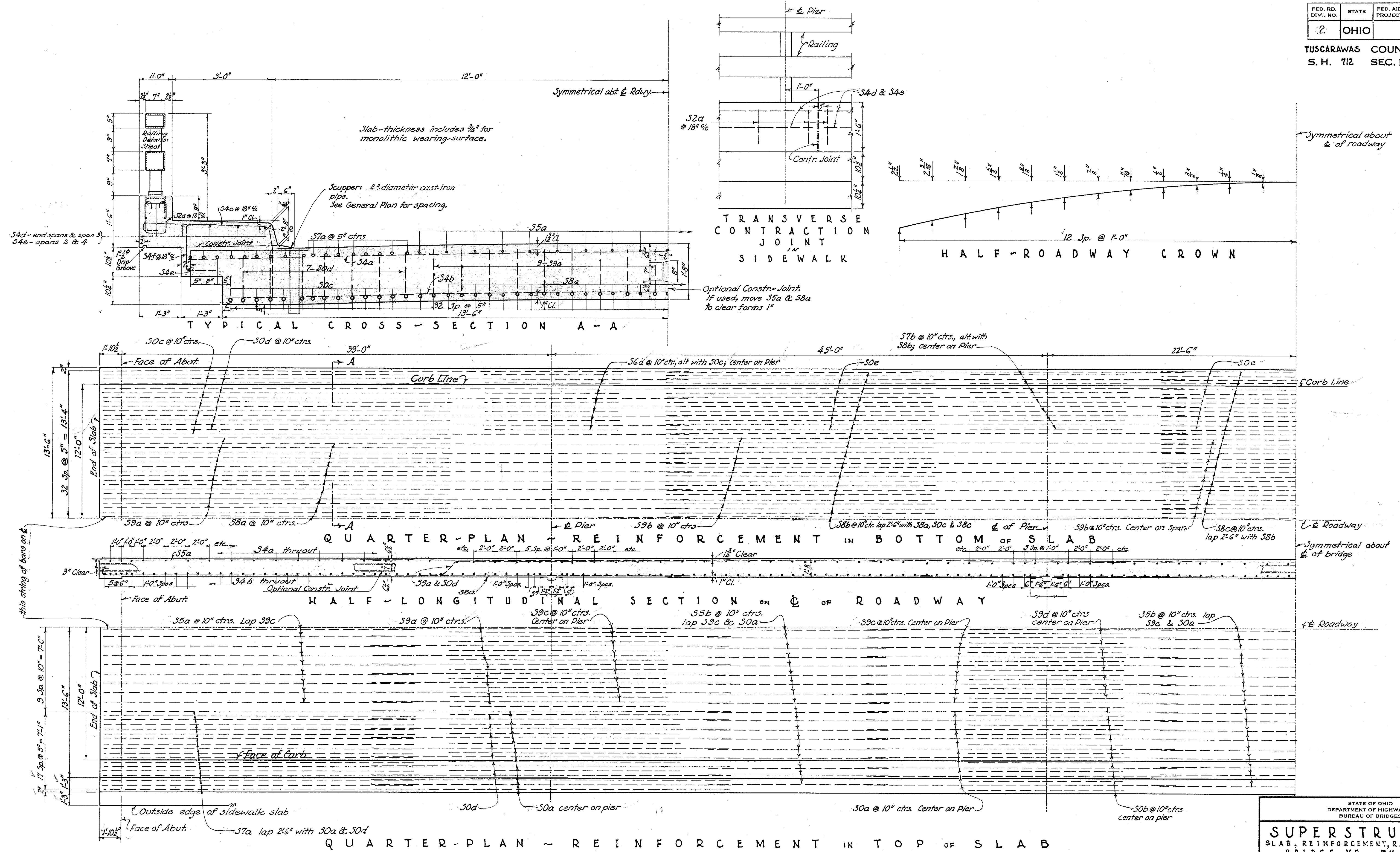
DETAILS OF PIERS NO. 2 & 3  
AND REINFORCING STEEL LIST

Bridge No. TU-212-78  
Over Conotton Creek

Tuscarawas County S.H. 712  
Section 0 Sta. 203+14

| DESIGNED | DRAWN  | TRACED | CHECKED | REVIEWED | DATE    | REVISED |
|----------|--------|--------|---------|----------|---------|---------|
| P.E.S.   | P.E.S. | E      | H.H.    | H.H.     | 1-15-45 | 9-5-47  |





STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

**SUPERSTRUCTURE**  
SLAB, REINFORCEMENT, RAILING, CROWN  
BRIDGE NO. TU-212-78  
OVER CONNOTTON CREEK

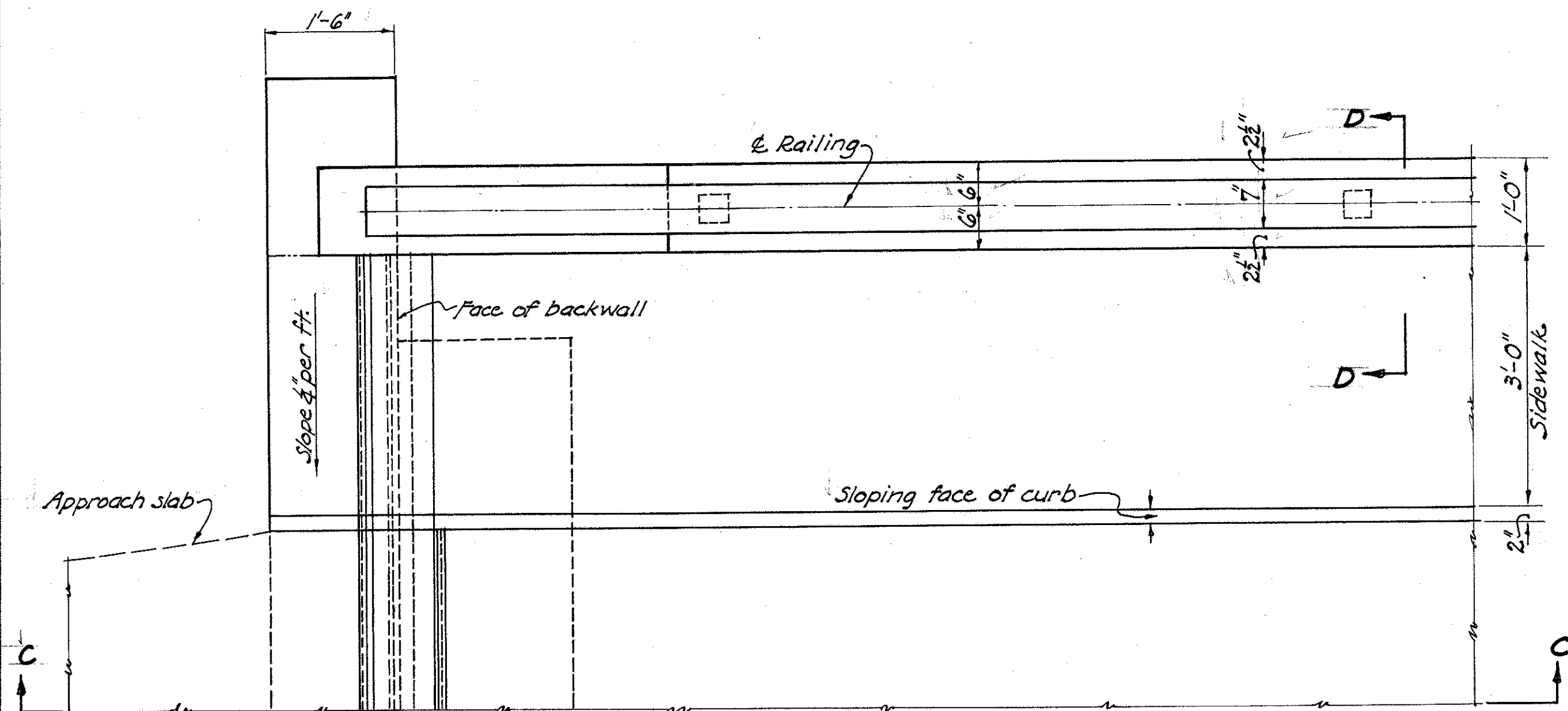
TUSCARAWAS CO. S.H. 712  
SEC. 0 STA. 203+14

|                    |                 |                   |                    |                 |
|--------------------|-----------------|-------------------|--------------------|-----------------|
| DESIGNED<br>R.E.S. | DRAWN<br>R.E.S. | CHECKED<br>R.E.S. | REVIEWED<br>R.E.S. | DATE<br>1-15-45 |
|--------------------|-----------------|-------------------|--------------------|-----------------|

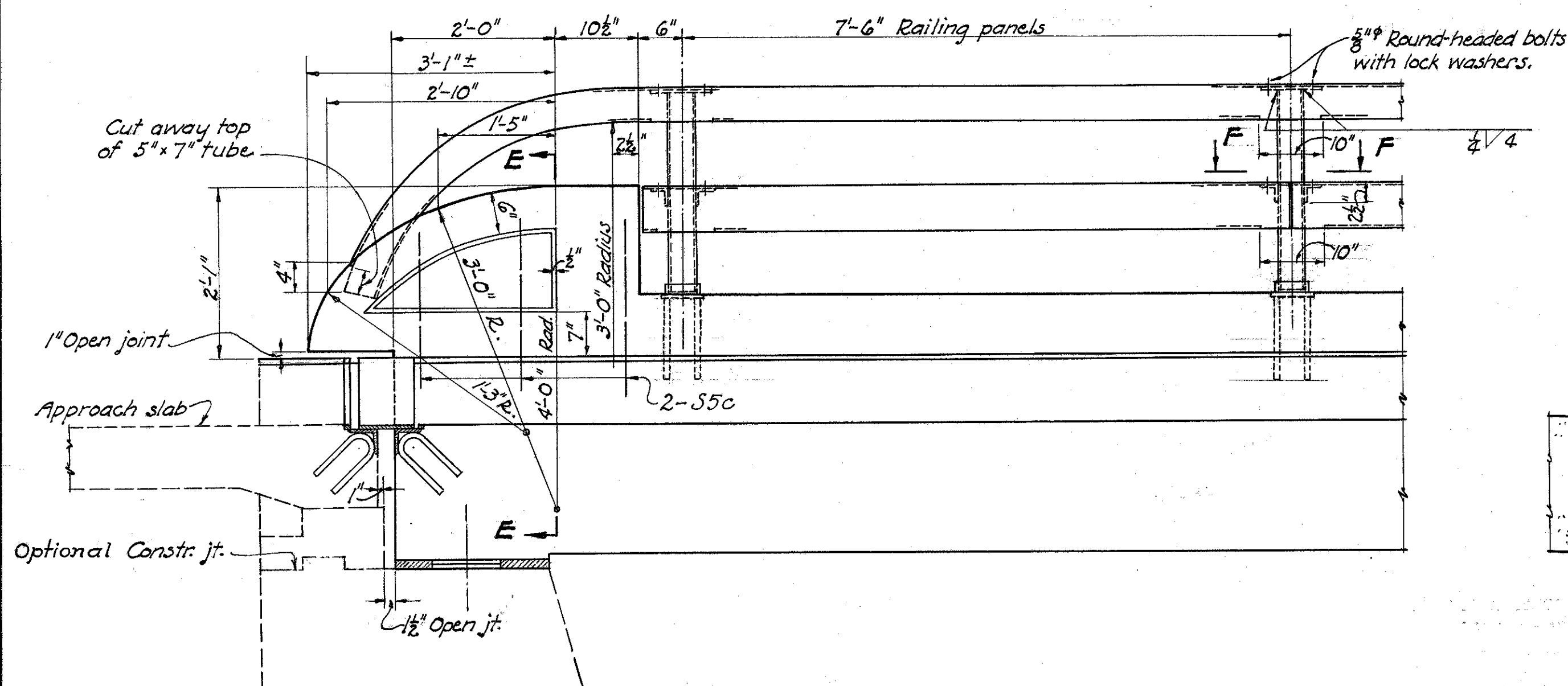


| FED. RD. DIV. NO. | STATE | FED. AID PROJECT | Y. |
|-------------------|-------|------------------|----|
| 2                 | OHIO  |                  |    |

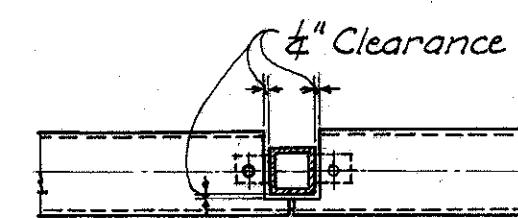
TUSCARAWAS COUNTY  
S. H. 712 SEC. N (PT) & OL



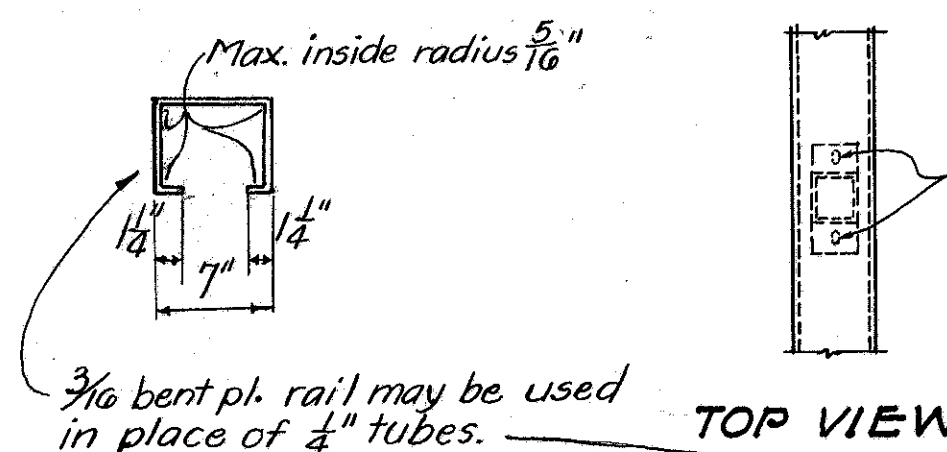
PART PLAN OF SUPERSTRUCTURE



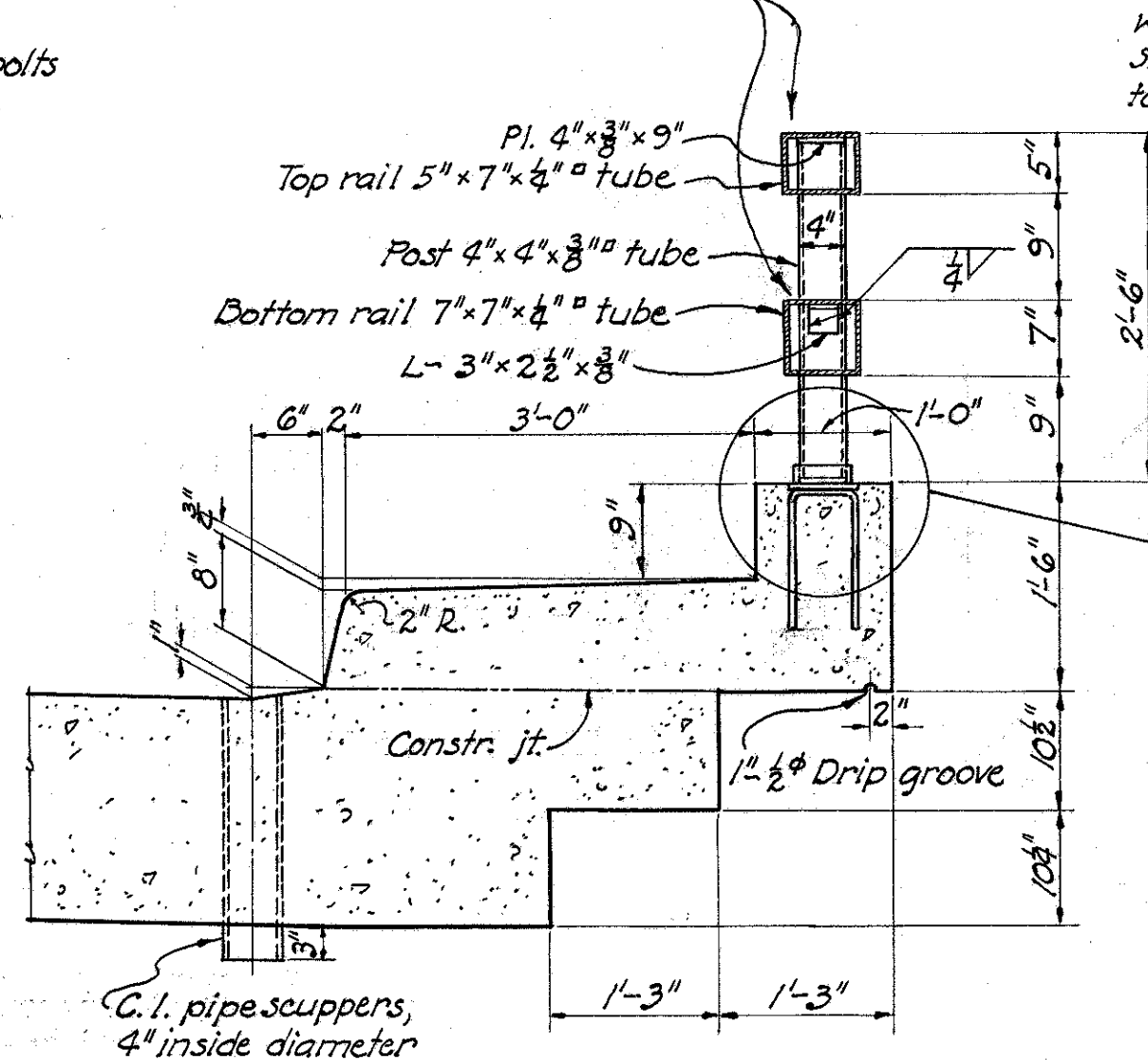
SECTION C-C  
RAILING DETAILS



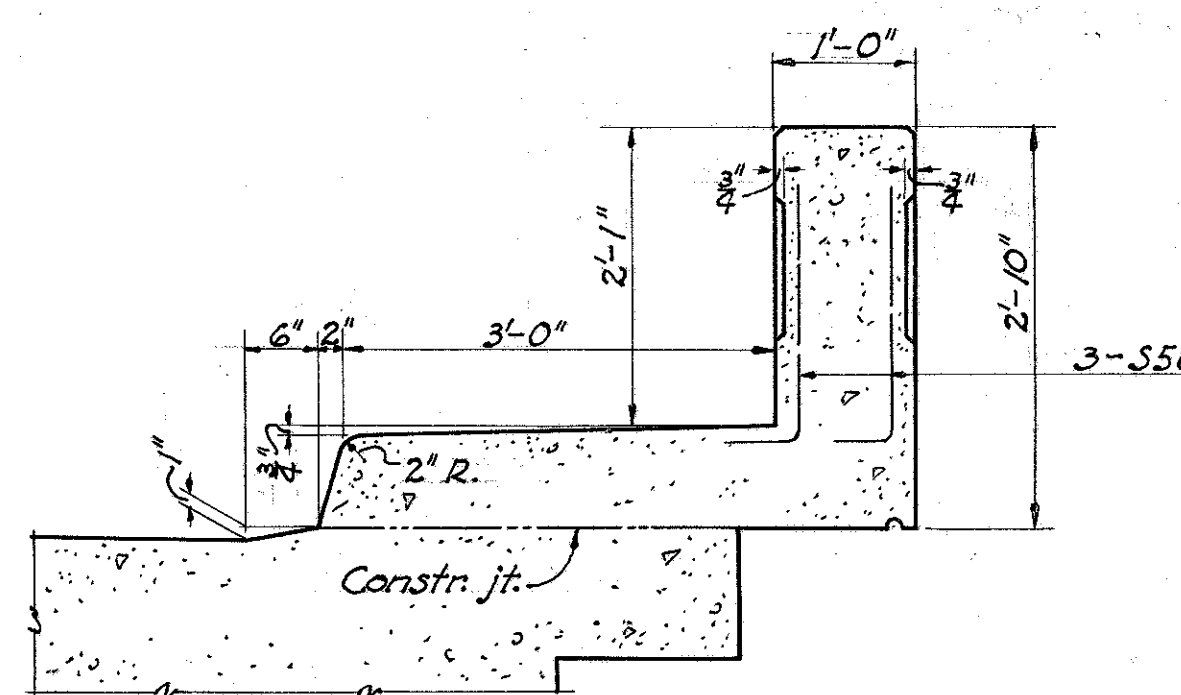
SECTION F-F



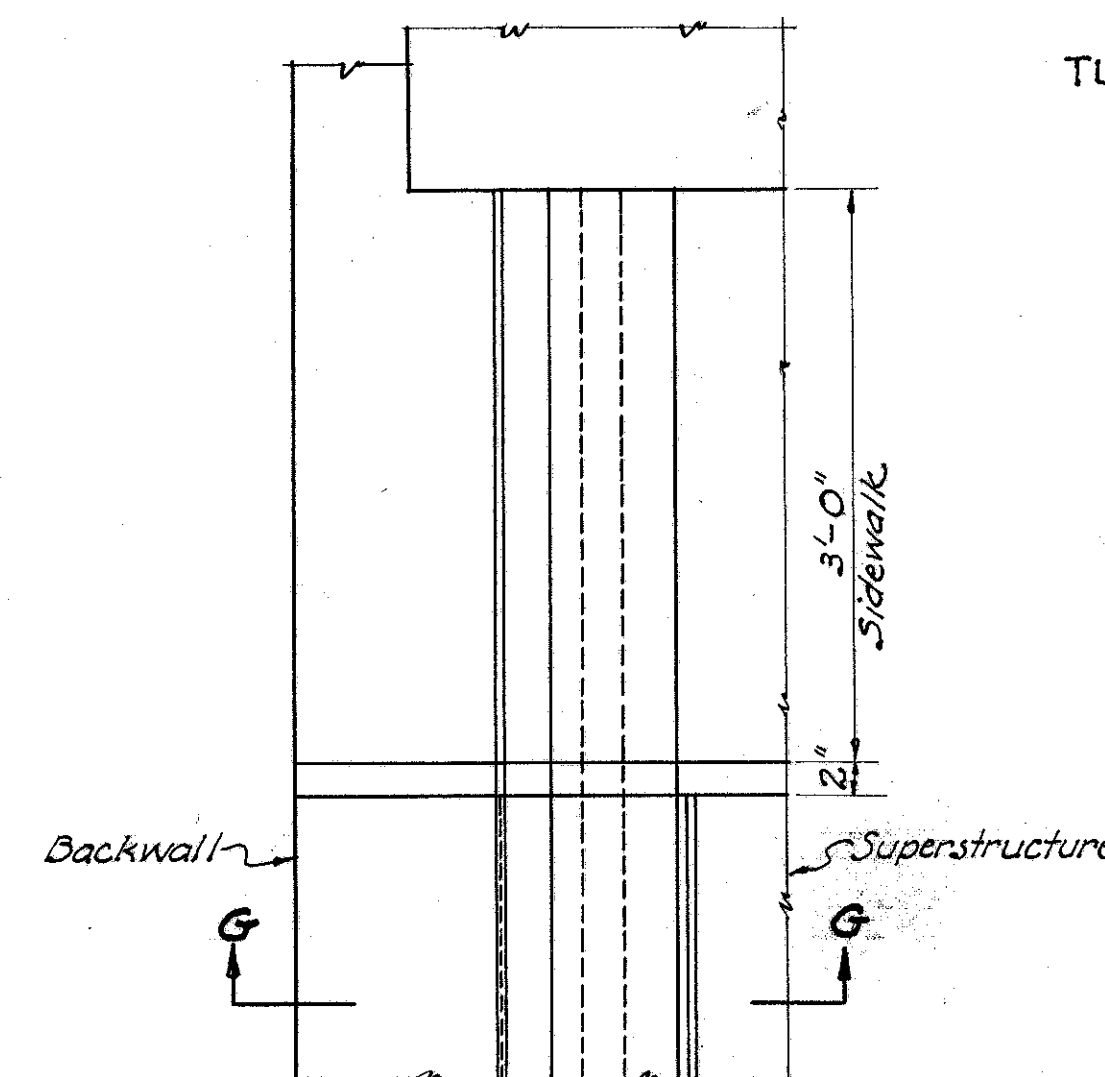
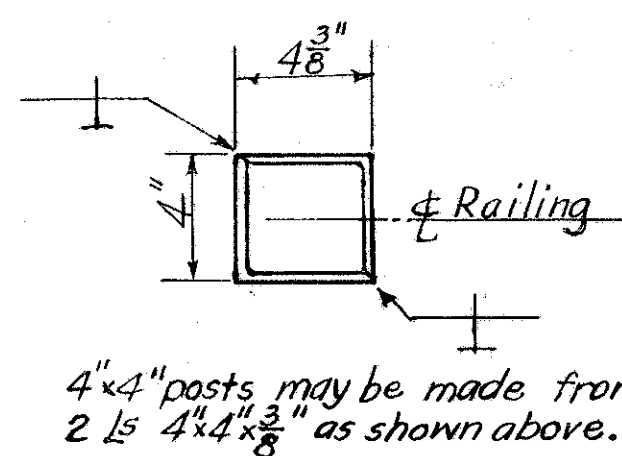
TOP VIEW



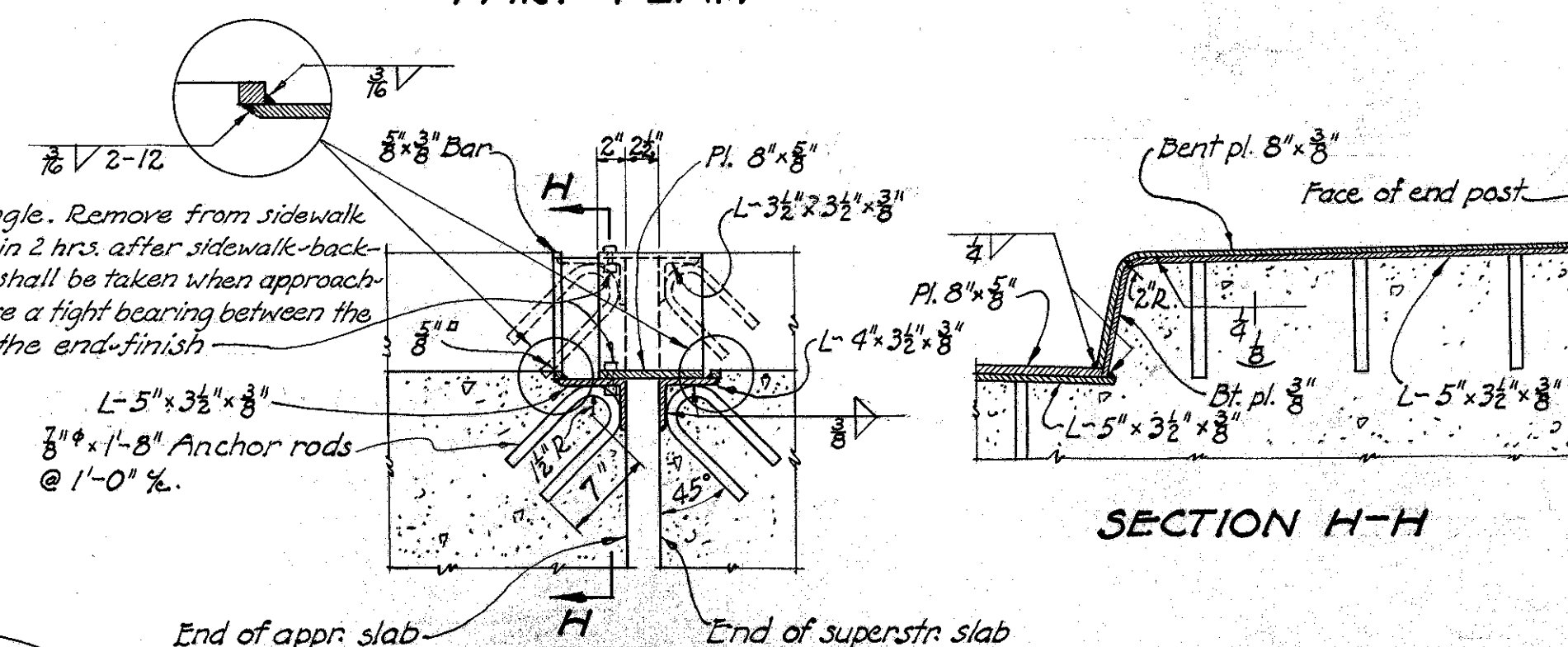
SECTION D-D



SECTION E-E



PART PLAN



SECTION H-H

3/8" bolt with nut welded to angle. Remove from sidewalk and roadway end-finish, within 2 hrs. after sidewalk-back-wall concrete is placed. Care shall be taken when approach slab concrete is placed, to insure a tight bearing between the top and bottom elements of the end-finish.

3/8" x 1'-8" Anchor rods @ 1'-0" x 1/2".

3/8" Thick collar  
Top of concrete  
Pl. 6" x 1/2" x 0'-6"  
2-3/4" x 1/2" Bars

3/8" Csk. screws @ 4 1/2" x 1/2"

8" x 8" Plate  
Nut, welded to angle  
1/2" Bolt with nut welded to angle. Remove with form.

Washer 1/8" thick. Remove after approach slab has been placed.

Form board

METHOD OF SUPPORTING 8" x 8" PLATE

END FINISH DETAILS

| DESIGNED | DRAWN  | TRACED | CHECKED | REVIEWED | DATE    | REVISED |
|----------|--------|--------|---------|----------|---------|---------|
| R.E.S.   | R.E.S. | Jep    | HLP     | WB       | 1-15-45 | 9-5     |



# SUMMARY OF QUANTITIES

| FED. RD. DIV. NO. | STATE | PROJECT | FISCAL YEAR |
|-------------------|-------|---------|-------------|
| 2                 | OHIO  |         | 1947        |

TUSCARAWAS COUN.  
S.H. 712 SEC N(P7) & O(P7).  
DOVER BASIN-UNIT N<sup>o</sup> 1 & UNIT N<sup>o</sup> 2.

| STRUCTURES 20' SPAN & UNDER |          |                                         |                               |                                 |                                 |          |                        |     |                      |       |                           |       |                          |                                          |                            |     |    |                   |    |    |                                           |                     |    |
|-----------------------------|----------|-----------------------------------------|-------------------------------|---------------------------------|---------------------------------|----------|------------------------|-----|----------------------|-------|---------------------------|-------|--------------------------|------------------------------------------|----------------------------|-----|----|-------------------|----|----|-------------------------------------------|---------------------|----|
| REF<br>N <sup>o</sup>       | STATION  | DETAIL<br>ON<br>SHEET<br>N <sup>o</sup> | REMOVALS                      |                                 |                                 |          | EXCAVATION<br>CU. YDS. |     | CONCRETE<br>CU. YDS. |       | WATERPROOFING<br>SQ. YDS. |       | REINF.<br>STEEL<br>LB'S. | PIPE FOR ROADWAY-<br>CULVERTS - LIN. FT. |                            |     |    | CATCH BASINS-EACH |    |    | GROUTED<br>RIPRAP<br>TYPE "A"<br>LIN. FT. | SODDING<br>SQ. YDS. |    |
|                             |          |                                         | STORE<br>PIPE 18"<br>LIN. FT. | DISPOSE<br>PIPE 18"<br>LIN. FT. | EXISTING<br>MASONRY<br>CU. YDS. | STD      |                        |     |                      |       |                           |       |                          | 2-2-B<br>1-2-B (MOD)                     | DOWEL<br>HOLES<br>LIN. FT. |     |    |                   |    |    |                                           |                     |    |
|                             |          |                                         | STRUCTURE CHANNEL             | CLASS "C"                       | CLASS "E"                       | TYPE "B" | 15"                    | 18" | 24"                  | 1-2-B | 2-2-B (MOD)               | 1-2-B |                          |                                          |                            |     |    |                   |    |    |                                           |                     |    |
| UNIT N <sup>o</sup> 1       |          |                                         |                               |                                 |                                 |          |                        |     |                      |       |                           |       |                          |                                          |                            |     |    |                   |    |    |                                           |                     |    |
| 1-S                         | 27+69    | 35                                      |                               | 60                              |                                 |          | 35                     |     | 0.6                  |       |                           |       | 46                       |                                          |                            |     | 1  |                   |    | 5  |                                           |                     |    |
| 2-S                         | 39+839   | 36                                      |                               |                                 | 15                              |          | 20                     |     | 22.0                 | 5.5   | 21                        |       | 1935                     |                                          |                            |     |    | 61                |    |    |                                           |                     |    |
| 3-S                         | 60+79    | 6                                       | 75                            |                                 |                                 |          |                        |     |                      |       |                           |       |                          |                                          |                            |     |    |                   |    |    |                                           |                     |    |
| 4-S                         | 71+737   | 37                                      |                               |                                 |                                 |          | 12                     |     | 2.5                  |       | 12                        |       | 378                      |                                          |                            |     |    | 24                |    |    |                                           |                     |    |
| 5-S                         | 77+15    | 38                                      |                               |                                 | 5                               |          | 24                     | 15  |                      | 0.6   |                           |       |                          | 48                                       |                            |     | 1  |                   | 20 |    |                                           |                     |    |
| 6-S                         | 80+10    | 7                                       | 28                            |                                 |                                 |          |                        |     |                      |       |                           |       |                          |                                          |                            |     |    |                   |    |    |                                           |                     |    |
| 7-S                         | 83+28    | 38                                      |                               |                                 |                                 |          | 50                     | 15  |                      | 0.7   |                           |       |                          | 48                                       |                            |     | 1  |                   | 4  | 5  |                                           |                     |    |
| 8-S                         | 91+19    | 39                                      |                               |                                 | 9                               |          | 2                      |     |                      | 0.6   |                           |       |                          |                                          | 20                         |     | 1  |                   | 5  | 5  |                                           |                     |    |
| 9-S                         | 95+10    | 39                                      |                               |                                 |                                 |          | 15                     | 13  |                      | 1.4   |                           |       |                          | 54                                       |                            |     |    |                   | 14 |    |                                           |                     |    |
| 10-S                        | 98+44    | 8                                       | 44                            |                                 |                                 |          |                        |     |                      |       |                           |       |                          |                                          |                            |     |    |                   |    |    |                                           |                     |    |
| 11-S                        | 100+62   | 40                                      |                               |                                 |                                 |          | 90                     | 55  |                      | 2.2   |                           |       |                          |                                          |                            | 72  |    |                   | 25 |    |                                           |                     |    |
| 12-S                        | 108+05   | 8                                       | 24                            |                                 |                                 |          |                        |     |                      |       |                           |       |                          |                                          |                            |     |    |                   |    |    |                                           |                     |    |
| 13-S                        | 109+37   | 40                                      | 24                            |                                 |                                 |          | 31                     | 47  |                      | 0.9   |                           |       |                          |                                          | 51                         |     | 1  |                   |    | 21 |                                           |                     |    |
| 14-S                        | 115+84   | 41                                      | 24                            |                                 |                                 |          | 45                     | 50  |                      | 0.9   |                           |       |                          |                                          | 46                         |     | 1  |                   | 5  | 5  |                                           |                     |    |
| 15-S                        | 123+82   | 41                                      |                               |                                 |                                 |          | 25                     | 75  |                      | 0.7   |                           |       |                          | 45                                       |                            |     | 1  |                   |    | 17 |                                           |                     |    |
| 16-S                        | 131+36   | 35                                      |                               |                                 |                                 |          | 10                     | 5   |                      | 2.3   |                           |       |                          |                                          | 43                         |     |    |                   |    |    |                                           |                     |    |
| SUB-TOTAL                   |          |                                         |                               | 219                             | 60                              | 29       |                        | 359 | 275                  | 24.5  | 16.4                      | 33    |                          | 2313                                     | 241                        | 160 | 72 |                   | 7  | 85 | 73                                        | 58                  |    |
| UNIT N <sup>o</sup> 2       |          |                                         |                               |                                 |                                 |          |                        |     |                      |       |                           |       |                          |                                          |                            |     |    |                   |    |    |                                           |                     |    |
| 1-S                         | 220+71.8 | 42                                      |                               |                                 |                                 |          | 5                      |     | 1.2                  |       |                           |       | 35                       |                                          | 55                         |     |    |                   | 3  |    |                                           |                     |    |
| 2-S                         | 222+70   | 43                                      |                               |                                 |                                 |          | 20                     |     |                      |       |                           |       |                          | 52                                       |                            |     | 2  |                   |    | 10 |                                           |                     |    |
| 3-S                         | 231+17   | 44                                      |                               |                                 |                                 |          | 35                     |     |                      | 0.9   |                           |       |                          |                                          | 70                         |     | 1  |                   | 10 | 5  |                                           |                     |    |
| 4-S                         | 234+205  | 45                                      |                               |                                 |                                 |          | 25                     |     |                      | 0.9   |                           |       |                          |                                          | 75                         |     | 1  |                   | 3  | 10 |                                           |                     |    |
| 5-S                         | 242+61.4 | 46                                      |                               |                                 |                                 |          | 50                     |     |                      | 0.9   |                           |       |                          |                                          | 63                         |     | 1  |                   | 20 | 5  |                                           |                     |    |
| 6-S                         | 245+58   | 47                                      | 42                            |                                 | 1                               |          | 30                     |     |                      | 0.9   |                           |       |                          |                                          | 51                         |     | 1  |                   | 14 | 5  |                                           |                     |    |
| SUB-TOTAL                   |          |                                         |                               | 42                              |                                 | 1        |                        | 165 |                      | 1.2   | 3.6                       |       | 35                       | 52                                       | 314                        |     | 3  | 3                 |    | 3  | 47                                        | 35                  |    |
| GRAND-TOTAL                 |          |                                         |                               | 261                             | 60                              | 30       |                        | 524 | 275                  | 25.7  | 20.0                      | 33    |                          | 2348                                     | 293                        | 474 | 72 |                   | 10 | 3  | 88                                        | 120                 | 93 |

★

| APPROACHES                          |                                   |     |     |                          |                   |                       |                     |  |  |
|-------------------------------------|-----------------------------------|-----|-----|--------------------------|-------------------|-----------------------|---------------------|--|--|
| TOTAL<br>OF<br>SHEET N <sup>o</sup> | PIPE FOR<br>DRIVEWAYS<br>LIN. FT. |     |     | I-17<br>AGGR.<br>CU.YDS. | 12"PIPE<br>REMOVE | 12"PIPE<br>FOR RE-USE | 12"PIPE<br>RE-LAYED |  |  |
|                                     | 12"                               | 15" | 18" |                          | LIN. FT.          | LIN. FT.              | LIN. FT.            |  |  |
| UNIT N <sup>o</sup> 1               |                                   |     |     |                          |                   |                       |                     |  |  |
| 5                                   | 26                                | 44  |     |                          | 19                |                       |                     |  |  |
| 6                                   |                                   | 52  |     |                          | 173               |                       |                     |  |  |
| 7                                   | 22                                |     |     |                          | 6                 |                       |                     |  |  |
| 8                                   | 30                                |     |     |                          | 54                |                       |                     |  |  |
| 9                                   |                                   |     | 16  |                          |                   |                       |                     |  |  |
| SUB-TOTAL                           | 78                                | 96  | 16  |                          | 252               |                       |                     |  |  |
| UNIT N <sup>o</sup> 2               |                                   |     |     |                          |                   |                       |                     |  |  |
| 10                                  | 100                               |     | 114 |                          | 41                |                       |                     |  |  |
| 11                                  |                                   |     |     |                          | 28                | 22                    | 22                  |  |  |
| SUB-TOTAL                           | 100                               |     | 114 |                          | 69                | 22                    | 22                  |  |  |
| GRAND-TOTAL                         | 178                               | 96  | 130 |                          | 321               | 22                    | 22                  |  |  |

| ROADSIDE IMPROVEMENT             |                    |                    |  |
|----------------------------------|--------------------|--------------------|--|
| TOTAL OF<br>SHEET N <sup>o</sup> | SEEDING<br>SQ.YDS. | FERTILIZER<br>LBS. |  |
| UNIT N <sup>o</sup> 1            |                    |                    |  |
| 5                                | 6500               | 1170               |  |
| 6                                | 8000               | 1440               |  |
| 7                                | 11400              | 2052               |  |
| 8                                | 8300               | 1494               |  |
| 9                                | 6700               | 1206               |  |
| SUB-TOTAL                        | 40900              | 7362               |  |
| UNIT N <sup>o</sup> 2            |                    |                    |  |
| 10                               | 9400               | 1692               |  |
| 11                               | 13800              | 2484               |  |
| SUB-TOTAL                        | 23200              | 4176               |  |
| GRAND-TOTAL                      | 64100              | 11538              |  |

★ Lumped in General Summary.

| EXCAVATION & EMBANKMENT |          |                       |                       |                               |                                |  |
|-------------------------|----------|-----------------------|-----------------------|-------------------------------|--------------------------------|--|
| STATION                 |          | EXCAVATION<br>CU.YDS. | EMBANKMENT<br>CU.YDS. | EMBANKMENT<br>+15%<br>CU.YDS. | DUMPED<br>ROCK FILL<br>CU.YDS. |  |
| FROM                    | TO       |                       |                       |                               |                                |  |
| UNIT N <sup>o</sup> 1   |          |                       |                       |                               |                                |  |
| 26+81                   | 37+28    | 937                   | 815                   | 937                           | 16                             |  |
| 37+28                   | 85+24    | 18379                 | 15982                 | 18379                         | 155                            |  |
| 85+24                   | 98+43    | 4462                  | 3880                  | 4462                          | 116                            |  |
| 98+43                   | 123+75   | 8901                  | 7740                  | 8901                          | 97                             |  |
| 123+75                  | 135+04.6 | 1556                  | 18667                 | 21467                         | 2019                           |  |
| SUB-TOTAL               |          | 34235                 | 47084                 | 54146                         | 2403                           |  |
| UNIT N <sup>o</sup> 2   |          |                       |                       |                               |                                |  |
| 200+46.2                | 246+50   | 60369                 | 50918                 | 58556                         | 4625                           |  |
| * 223+30                | 230+50   | 271                   | 271                   | 312                           |                                |  |
| SUB-TOTAL               |          | 60640                 | 51189                 | 58868                         | 4625                           |  |
| GRAND-TOTAL             |          | 94875                 | 98273                 | 113014                        | 7028                           |  |

\* Estimated shale cut under subgrade.

\* Excess excavation to be used in last balance on unit 1=1772 cu. yds.

Net Borrow, Unit N<sup>o</sup> 1 = 54146 - (34235 + 1772) = 18,139 cu. yds.

| GUARD RAIL                          |                 |                                 |                               |  |
|-------------------------------------|-----------------|---------------------------------|-------------------------------|--|
| TOTAL<br>OF<br>SHEET N <sup>o</sup> | NEW<br>LIN. FT. | REMOVE<br>& REBUILD<br>LIN. FT. | REMOVE<br>& STORE<br>LIN. FT. |  |
| UNIT N <sup>o</sup> 1               |                 |                                 |                               |  |
| 5                                   | 3328            |                                 | 280                           |  |
| 6                                   | 4992            |                                 |                               |  |
| 7                                   | 2402            |                                 | 870                           |  |
| 8                                   | 2586            |                                 | 2020                          |  |
| 9                                   | 2212            | 144                             | 380                           |  |
| SUB-TOTAL                           |                 | 15520                           | 144 3550                      |  |
| UNIT N <sup>o</sup> 2               |                 |                                 |                               |  |
| 10                                  | 2640            |                                 |                               |  |
| 11                                  | 1552            |                                 | 340                           |  |
| SUB-TOTAL                           |                 | 4192                            | 340                           |  |
| GRAND-TOTAL                         |                 | 19712                           | 144 3890                      |  |

| ROADWAY DRAINAGE                    |                                          |          |                      |  |
|-------------------------------------|------------------------------------------|----------|----------------------|--|
| TOTAL<br>OF<br>SHEET N <sup>o</sup> | PIPE INCL. POROUS<br>BACKFILL - LIN. FT. |          | CATCH BASINS<br>EACH |  |
|                                     | 6"                                       | 12"      | 1-2-B                |  |
| UNIT N <sup>o</sup> 1               |                                          |          |                      |  |
| 7                                   | 748                                      |          |                      |  |
| SUB-TOTAL                           |                                          | 748      |                      |  |
| UNIT N <sup>o</sup> 2               |                                          |          |                      |  |
| 10                                  | 526                                      |          | 1                    |  |
| 11                                  | 1352                                     | 176      | 1                    |  |
| SUB-TOTAL                           |                                          | 1878 176 | 2                    |  |
| GRAND-TOTAL                         |                                          | 2626 176 | 2                    |  |

★

| REMOVAL OF TREES & STUMPS           |                    |
|-------------------------------------|--------------------|
| TOTAL<br>OF<br>SHEET N <sup>o</sup> | NUMBER<br><br>EACH |
| UNIT N <sup>o</sup> 1               |                    |
| 7                                   | 10                 |
| 9                                   | 2                  |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |
|                                     |                    |



# SUMMARY OF QUANTITIES

| FED. RD. DIV. NO. | STATE | PROJECT | FISCAL YEAR |
|-------------------|-------|---------|-------------|
| 2                 | OHIO  |         | 1947        |

TUSCARAWAS COUNTY  
S.H. 712 SEC. N (Pt) & O (Pt)  
DOVER BASIN  
UNIT N<sup>o</sup> 1 & UNIT N<sup>o</sup> 2

## PAVEMENT CALCULATIONS

**UNIT N<sup>o</sup> 1**  
Begin Pavement: Sta. 26+81  
End Pavement: Sta. 135+14.7  
Net Length of Pavement: 10833.70 Lin. Ft.  
Total volume of pavement =  $10,833.70 \times 18 \times 0.5 \div 27 = 3611$  Cu. Yds.  
Salvaged Traffic Bound Surface Course (Est. from X-Sec's): 2000 Cu. Yds.  
Traffic Bound Surface Course (3611-2000): 1611 Cu. Yds.

**UNIT N<sup>o</sup> 2**  
Begin Pavement: Sta. 200+46.2  
End Pavement: Sta. 246+50  
Gross Length of Pavement: 4603.80 Lin. Ft.  
Deduct for R.R. Crossing: 18.0 Lin. Ft.  
Deduct for bridge & Appr. Slabs: 247.0 Lin. Ft.  
Total deductions: 265.00 Lin. Ft.  
Net Length of Pavement: 4338.80 Lin. Ft.  
Area of pavement:  $4338.8 \times 18 \div 9 = 8677.6$  Sq. Yds.  
Add for curve widening (See Sheet N<sup>o</sup> 14): 329 Sq. Yds.  
Total area of pavement: 9006.6 Sq. Yds.  
Volume of pavement:  $9006.6 \times 6 \div 36 = 1501$  Cu. Yds.

## WATER CALCULATIONS

**UNIT N<sup>o</sup> 1**  
Total Embankment,  $47084 \times 5 \div 1000 = 235$  M. Gals.

**UNIT N<sup>o</sup> 2**  
Total Embankment,  $51189 \times 5 \div 1000 = 256$  M. Gals.

## GENERAL SUMMARY

| ITEM                                     | DESCRIPTION                                                | UNIT N <sup>o</sup> 1 | UNIT N <sup>o</sup> 2 | GRAND TOTAL | UNIT    |
|------------------------------------------|------------------------------------------------------------|-----------------------|-----------------------|-------------|---------|
| <b>•ROADWAY•</b>                         |                                                            |                       |                       |             |         |
| E-1                                      | ROADWAY EXCAVATION                                         | 34235                 | 60640                 | 94875       | CU.YDS. |
| E-401                                    | DUMPED ROCK OR SLAG FILL                                   | 2403                  | 4625                  | 7028        | CU.YDS. |
| E-41                                     | BORROW.                                                    | 18139                 |                       | 18139       | CU.YDS. |
| E-3                                      | CHANNEL EXCAVATION.                                        | 275                   |                       | 275         | CU.YDS. |
| E-9                                      | REMOVAL OF TREES AND STUMPS.                               | LUMP.                 | LUMP.                 | LUMP        | LUMP.   |
| E-11                                     | WATER.                                                     | 235                   | 256                   | 491         | M.GALS. |
| E-12                                     | PIPE REMOVED AND STORED, 18" AND UNDER.                    | 219                   | 42                    | 261         | LIN.FT. |
| E-12                                     | PIPE REMOVED AND DISPOSED OF, 18" AND UNDER.               | 60                    |                       | 60          | LIN.FT. |
| E-12                                     | 12" PIPE REMOVED FOR RE-USE.                               |                       | 22                    | 22          | LIN.FT. |
| I-1                                      | 12" PIPE FOR DRIVEWAYS.                                    | 78                    | 100                   | 178         | LIN.FT. |
| I-1                                      | 15" PIPE FOR DRIVEWAYS.                                    | 96                    |                       | 96          | LIN.FT. |
| I-1                                      | 18" PIPE FOR DRIVEWAYS.                                    | 16                    | 114                   | 130         | LIN.FT. |
| I-3                                      | 6" PIPE FOR ROADWAY DRAINAGE INCLUDING POROUS BACKFILL.    | 748                   | 1878                  | 2626        | LIN.FT. |
| I-3                                      | 12" PIPE FOR ROADWAY DRAINAGE INCLUDING POROUS BACKFILL.   |                       | 176                   | 176         | LIN.FT. |
| I-6                                      | RELAYING 12" PIPE FOR DRIVEWAYS                            |                       | 22                    | 22          | LIN.FT. |
| I-8                                      | STANDARD N <sup>o</sup> 1-2-B CATCH BASINS.                | 7                     | 5                     | 12          | EACH.   |
| I-8                                      | STD. N <sup>o</sup> 2-28 CATCH BASINS MODIFIED AS PER PLAN |                       | 3                     | 3           | EACH.   |
| I-9                                      | STONE UNDERDRAIN N <sup>o</sup> 2                          | 1250                  | 1250                  | 2500        | LIN.FT. |
| I-10                                     | TYPE "A" RIPRAP, GROUT FILLED.                             | 73                    | 47                    | 120         | SQ.YDS. |
| I-15                                     | GUARD RAIL, WOVEN WIRE TYPE 3 TAPES, STANDARD STRENGTH     | 15520                 | 4192                  | 19712       | LIN.FT. |
| I-15                                     | GUARD RAIL REMOVED AND STORED.                             | 3550                  | 340                   | 3890        | LIN.FT. |
| I-15                                     | GUARD RAIL REMOVED AND REBUILT.                            | 144                   |                       | 144         | LIN.FT. |
| I-17                                     | SIDE APPROACHES, MAIL BOX TURNOUTS AND BERM MATERIAL       | 252                   | 69                    | 321         | CU.YDS. |
| L-9                                      | SEEDING AND PROTECTING, TYPE "A"                           | 40900                 | 23200                 | 64100       | SQ.YDS. |
| L-9                                      | COMMERCIAL FERTILIZER 10-6-4                               | 3.68                  | 2.09                  | 5.77        | TONS    |
| <b>•ROADWAY CONTINUED•</b>               |                                                            |                       |                       |             |         |
| L-10                                     | SODDING.                                                   | 58                    | 35                    | 93          | SQ.YDS. |
| M-10                                     | CALCIUM CHLORIDE FOR MAINTAINING TRAFFIC                   | 27                    | 3                     | 30          | TONS.   |
| T-110                                    | TRAFFIC COMPACTED SURFACE COURSE FOR MAINTAINING TRAFFIC   | 1350                  | 150                   | 1500        | CU.YDS. |
| <b>•PAVEMENT•</b>                        |                                                            |                       |                       |             |         |
| T-10                                     | TRAFFIC BOUND SURFACE COURSE, N <sup>o</sup> 46 AGGREGATE. | 1611                  | 1501                  | 3112        | CU.YDS. |
| T-10                                     | SALVAGED TRAFFIC BOUND SURFACE COURSE, AS PER PLAN         | 2000                  |                       | 2000        | CU.YDS. |
| I-7                                      | 9" REINFORCED CONCRETE APPROACH SLABS.                     |                       | 72                    | 72          | SQ.YDS. |
| <b>•STRUCTURES 20' SPAN &amp; UNDER•</b> |                                                            |                       |                       |             |         |
| E-2                                      | EXCAVATION FOR STRUCTURES                                  | 359                   | 165                   | 524         | CU.YDS. |
| S-1                                      | CONCRETE, CLASS "C" FOR STRUCTURES                         | 24.5                  | 1.2                   | 25.7        | CU.YDS. |
| S-1                                      | CONCRETE, CLASS "E" FOR STRUCTURES                         | 16.4                  | 3.6                   | 20          | CU.YDS. |
| S-3                                      | TYPE "B" WATERPROOFING.                                    | 33                    |                       | 33          | SQ.YDS. |
| S-4                                      | REINFORCING STEEL.                                         | 2313                  | 35                    | 2348        | LB'S.   |
| S-22                                     | REMOVAL OF PORTIONS OF EXISTING STRUCTURE.                 | 29                    | 1                     | 30          | CU.YDS. |
| S-23                                     | DOWEL HOLES.                                               | 85                    | 3                     | 88          | LIN.FT. |
| S-27                                     | 15" PIPE FOR ROADWAY CULVERTS.                             | 241                   | 52                    | 293         | LIN.FT. |
| S-27                                     | 18" PIPE FOR ROADWAY CULVERTS.                             | 160                   | 314                   | 474         | LIN.FT. |
| S-27                                     | 24" PIPE FOR ROADWAY CULVERTS.                             | 72                    |                       | 72          | LIN.FT. |
| <b>•STRUCTURES OVER 20' SPAN•</b>        |                                                            |                       |                       |             |         |
| See Sheet N <sup>o</sup> 49              |                                                            |                       |                       |             |         |