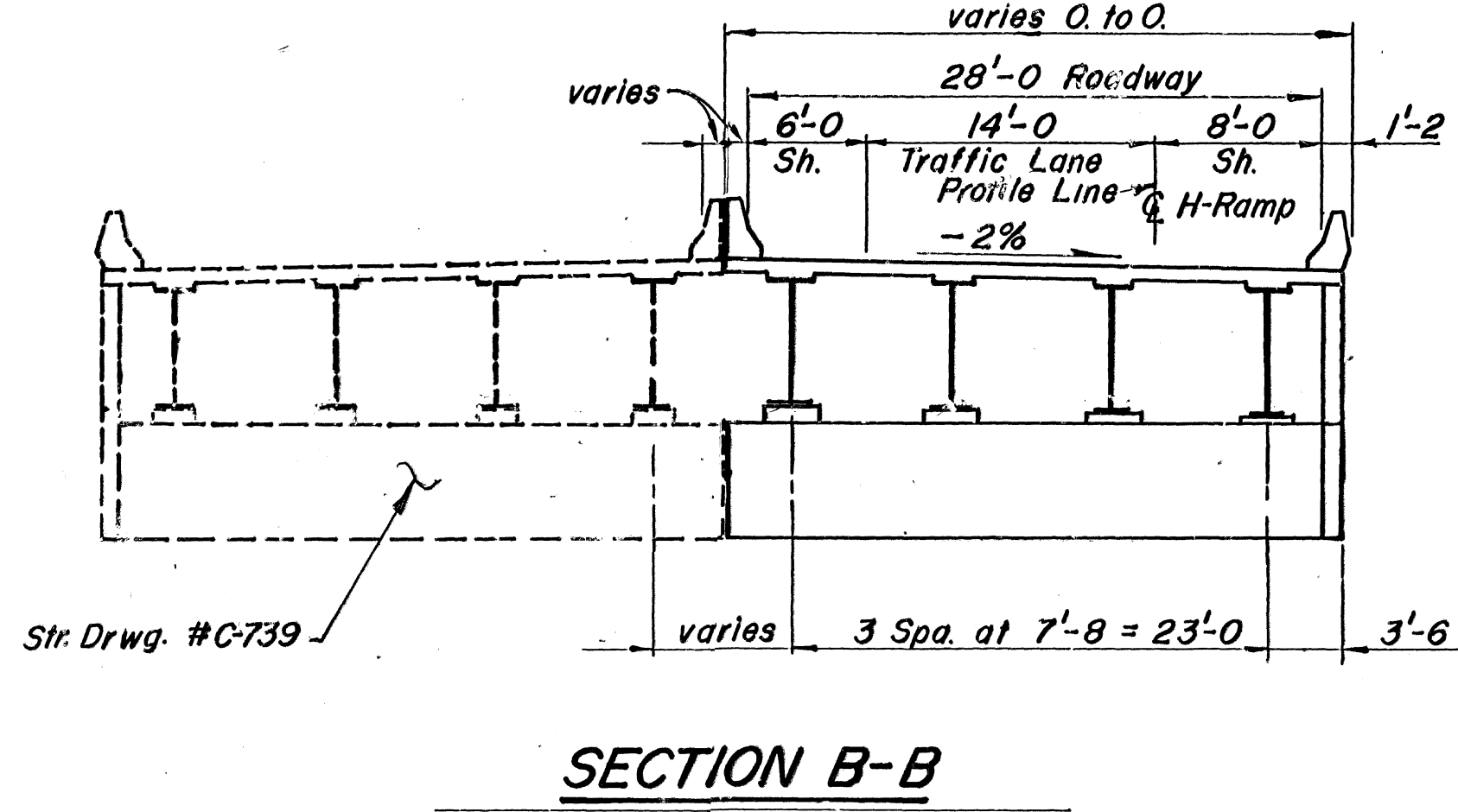
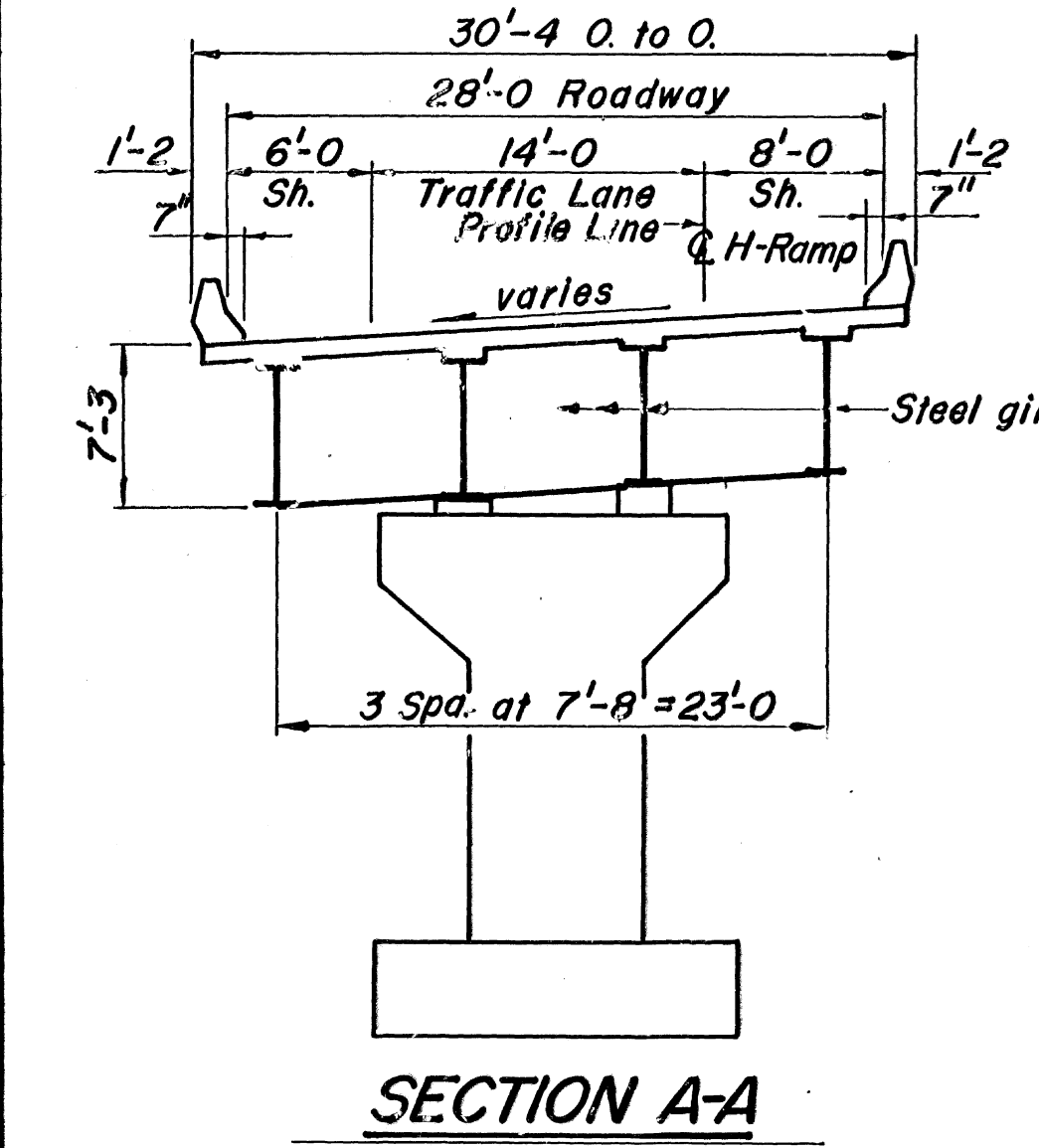
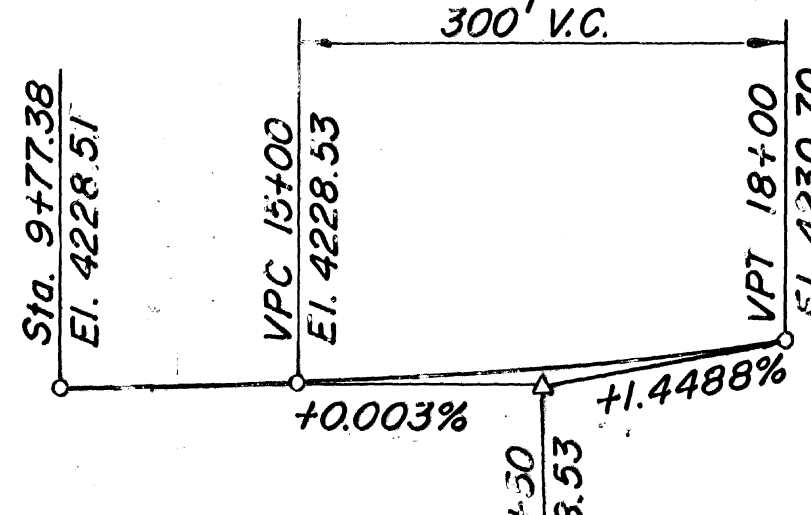
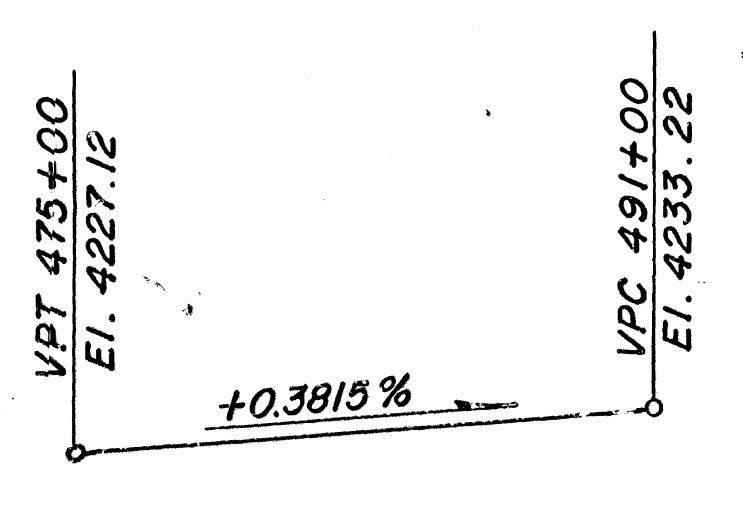
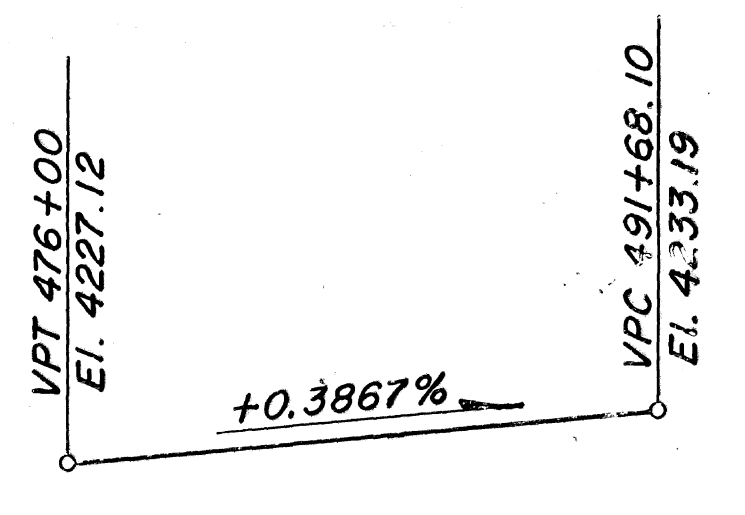
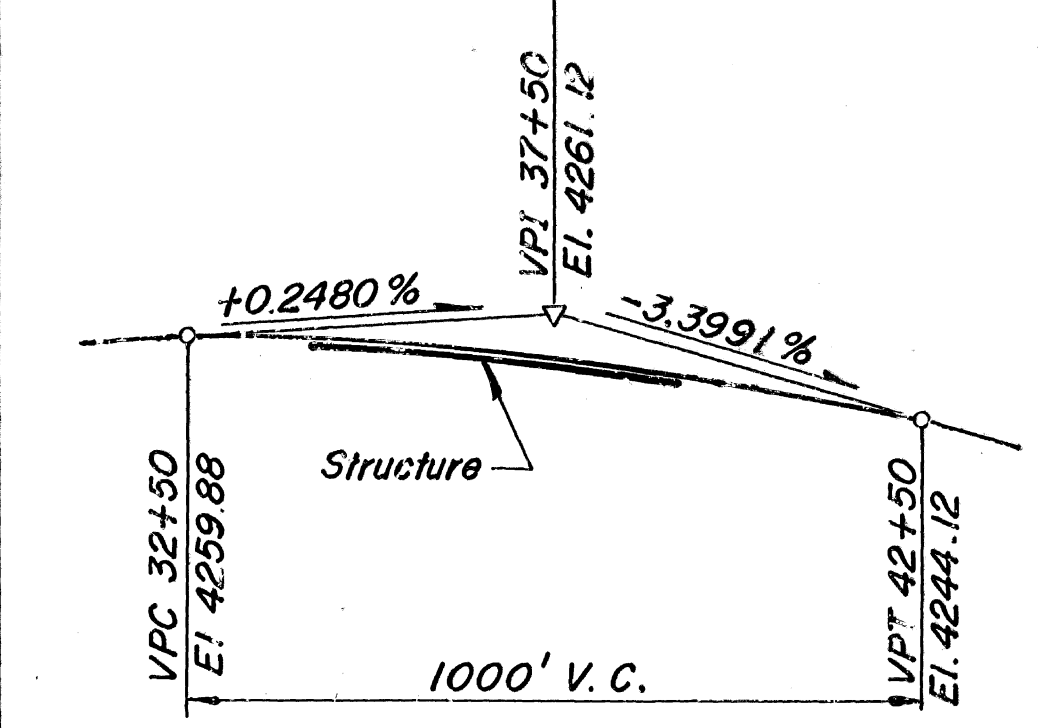
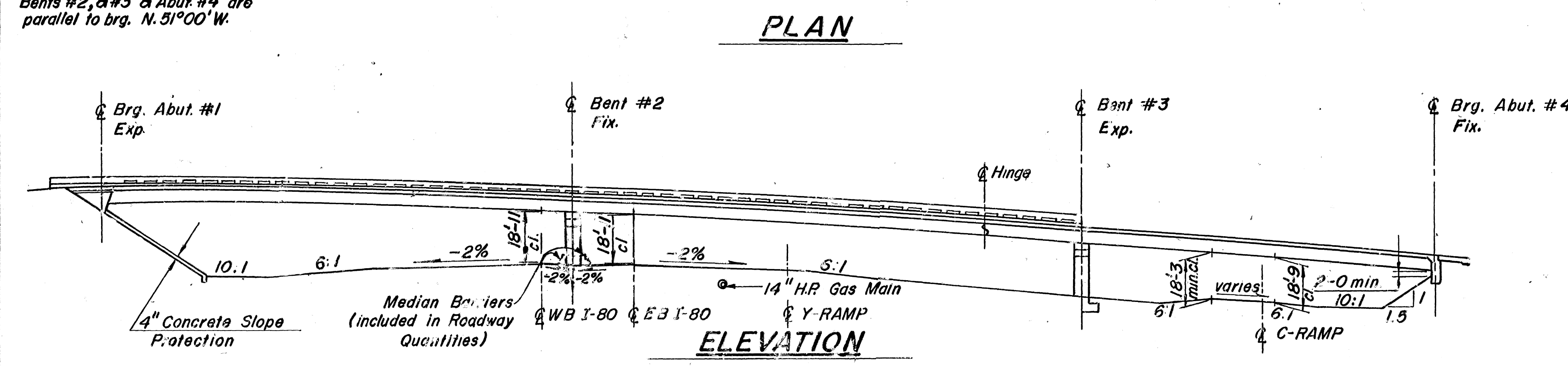
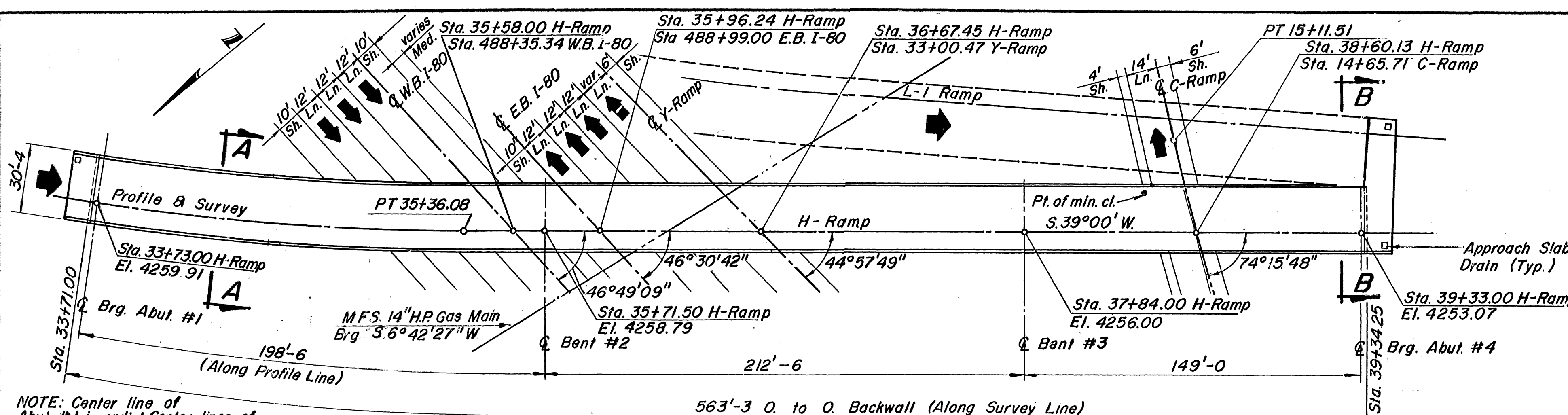


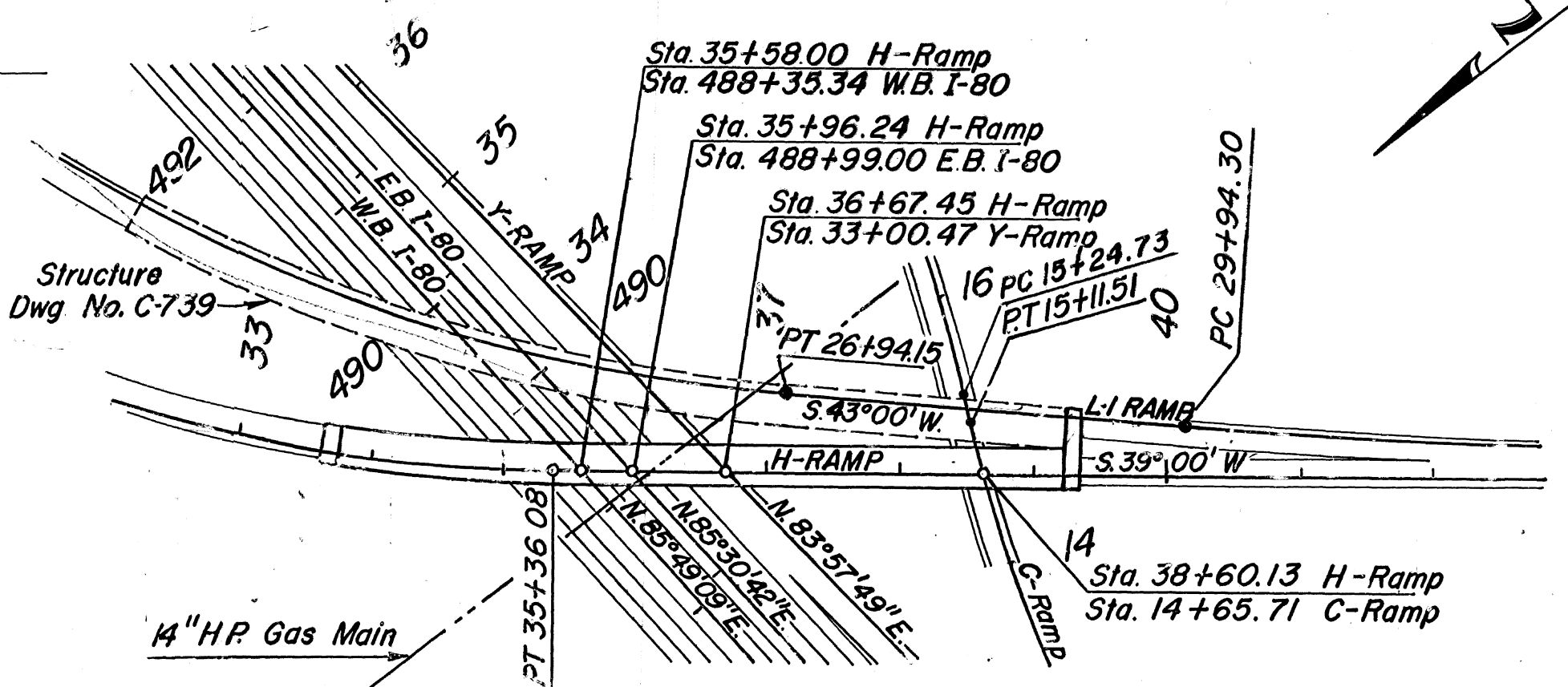


# CURVE DATA

| H-RAMP |              |  |  |
|--------|--------------|--|--|
| A      | 56°00'00" LI |  |  |
| D      | 5°00'        |  |  |
| R      | 1145.916'    |  |  |
| T      | 609.29'      |  |  |
| L      | 1120.00'     |  |  |
| P.I.   | 30+25.38     |  |  |

| C-RAMP |              |  |  |
|--------|--------------|--|--|
| A      | 32°02'52" RI |  |  |
| D      | 6°00'        |  |  |
| R      | 954.930'     |  |  |
| T      | 274.253'     |  |  |
| L      | 534.130'     |  |  |
| P.I.   | 12+51.63     |  |  |



# GENERAL NOTES

1. Materials, construction, and workmanship shall be in accordance with the Utah Department of Transportation Standard Specifications for Road and Bridge Construction, Edition of 1979, and Supplements thereto which are in effect at the date of request for bids.
2. All reinforcing steel shall be deformed billet steel bars conforming to ASTM designation A 615 Grade 60.
3. All structural steel shall be structural carbon steel conforming to AASHTO designation M-183 except where noted otherwise.
4. Exposed concrete corners shall be chamfered 3/4" except where noted otherwise.
5. Cover to reinforcing steel shall be 2" except where noted otherwise.
6. All cast-in-place concrete shall be Class AA (AE) except where specified otherwise.

# SUPERELEVATION DATA

| H-RAMP  |       |       |  |
|---------|-------|-------|--|
| Station | Lt.   | Rt.   |  |
| 34+75   | -5.6% | +5.6% |  |
| 36+25   | 0.0%  | 0.0%  |  |
| 36+85   | +2.0% | -2.0% |  |

| C-RAMP  |       |       |  |
|---------|-------|-------|--|
| Station | Lt.   | Rt.   |  |
| 14+48   | +5.9% | -5.9% |  |
| 15+85   | -5.9% | +5.9% |  |

# INDEX OF SHEETS

1. Situation & Layout
2. Soil Data
3. Concrete Pile Details
4. Foundation Plan & Pile Layout
5. Abutment No. 1 Details
6. Abutment No. 4 Details
7. Bent No. 2 Details
8. Bent No. 3 Details
9. Framing Plan
10. Girder G1
11. Girder G2
12. Girder G3
13. Girder G4
14. Camber Diagrams
15. Steel Details
16. Steel Details
17. Splice & Hinge Details
18. Internal Bent Cap
19. Deck Joint Details at Abutment
20. Deck Joint Details at Hinge
21. Deck Details
22. Deck Details
23. Screed Elevations
24. Approach Slab Drain Details
25. Parapet Details
26. Parapet Details
27. Concrete Slope Protection
28. Reinforcing Steel Details
29. Reinforcing Steel Details

# DESIGN DATA

HS 20-44 or Interstate Alternate Loading in accordance with AASHTO Specifications of 1983 and Interim Specifications.

Cast-In-place Concrete:  $f_c = 1400$  psi,  $f_s$  (Reinf.) = 24,000 psi,  $n = 8$ .

Prestressed Concrete:  $f'_c = 5000$  psi  $f_s$  (Nonprestressed) = 24,000 psi,  $n = 6$ .

Structural Steel:  $f_s = 20,000$  psi (M-183),  $f_s = 27,000$  psi (M-222)

Wearing Surface:  $V_2$ " Concrete, 35 lbs/sq.ft. Future Wearing Surface.

Design Speed: 50 m.p.h. H-Ramp; 70 m.p.h. I-80  
50 m.p.h. Y-Ramp; 50 m.p.h. C-Ramp

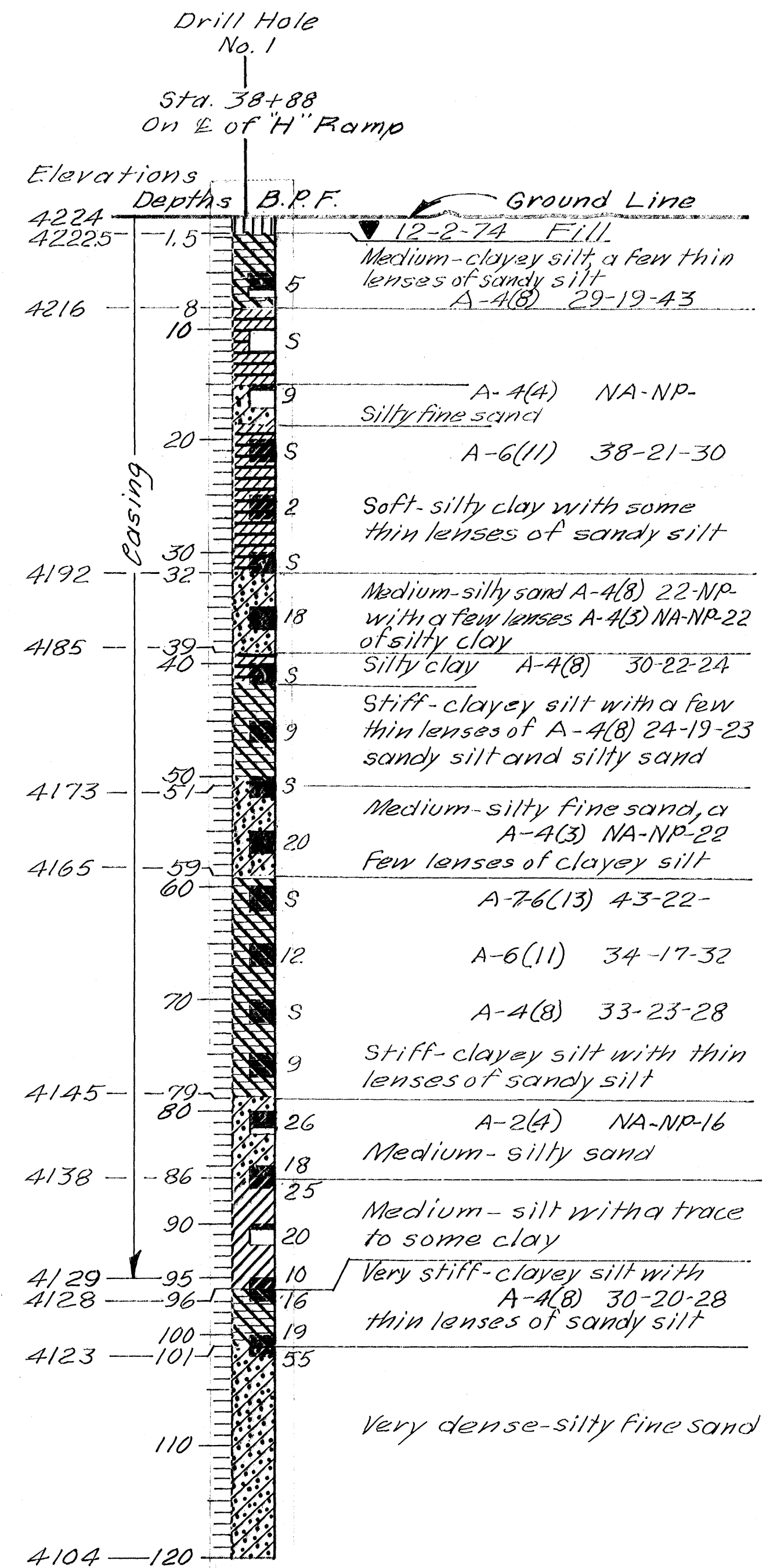
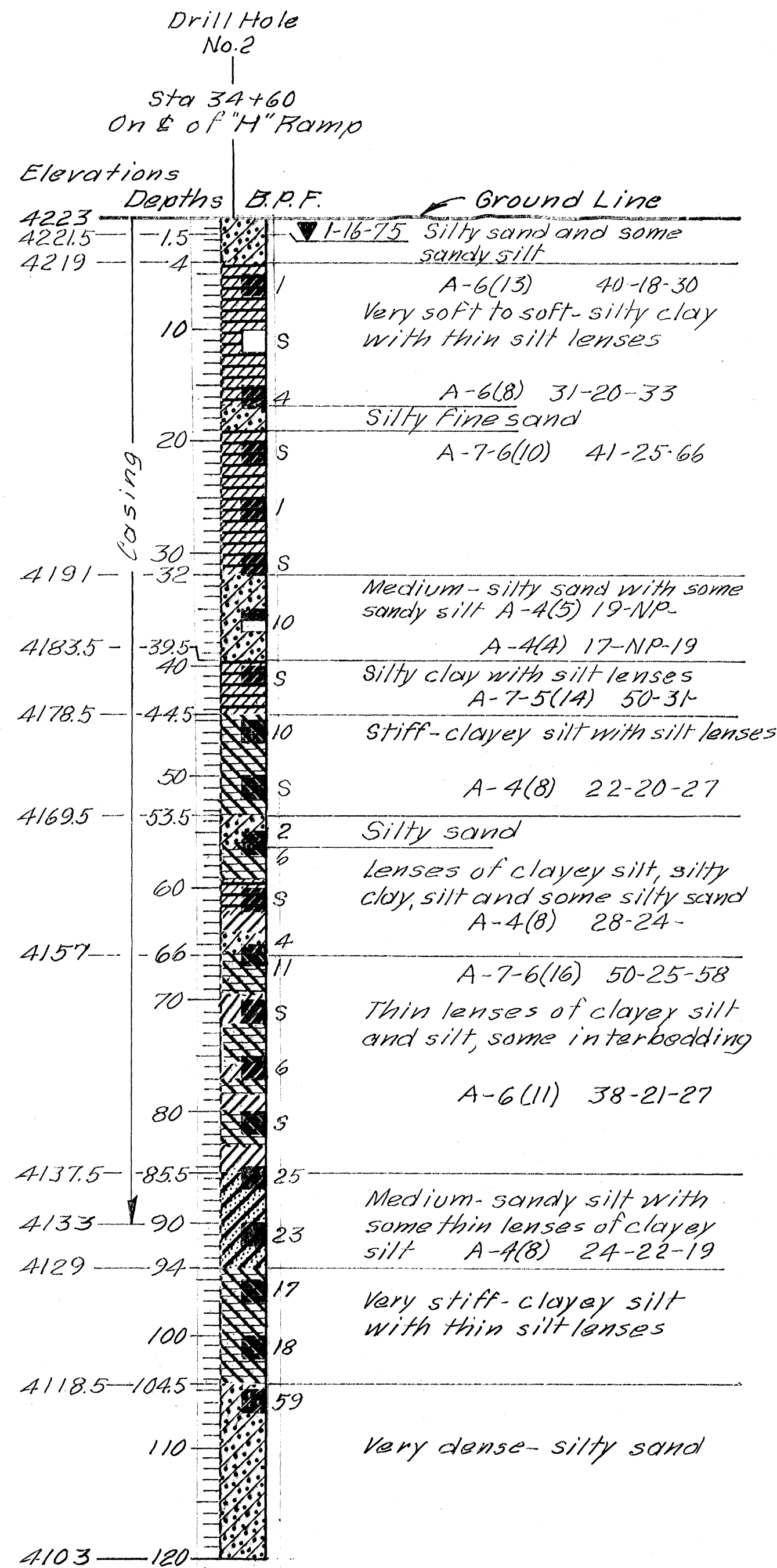
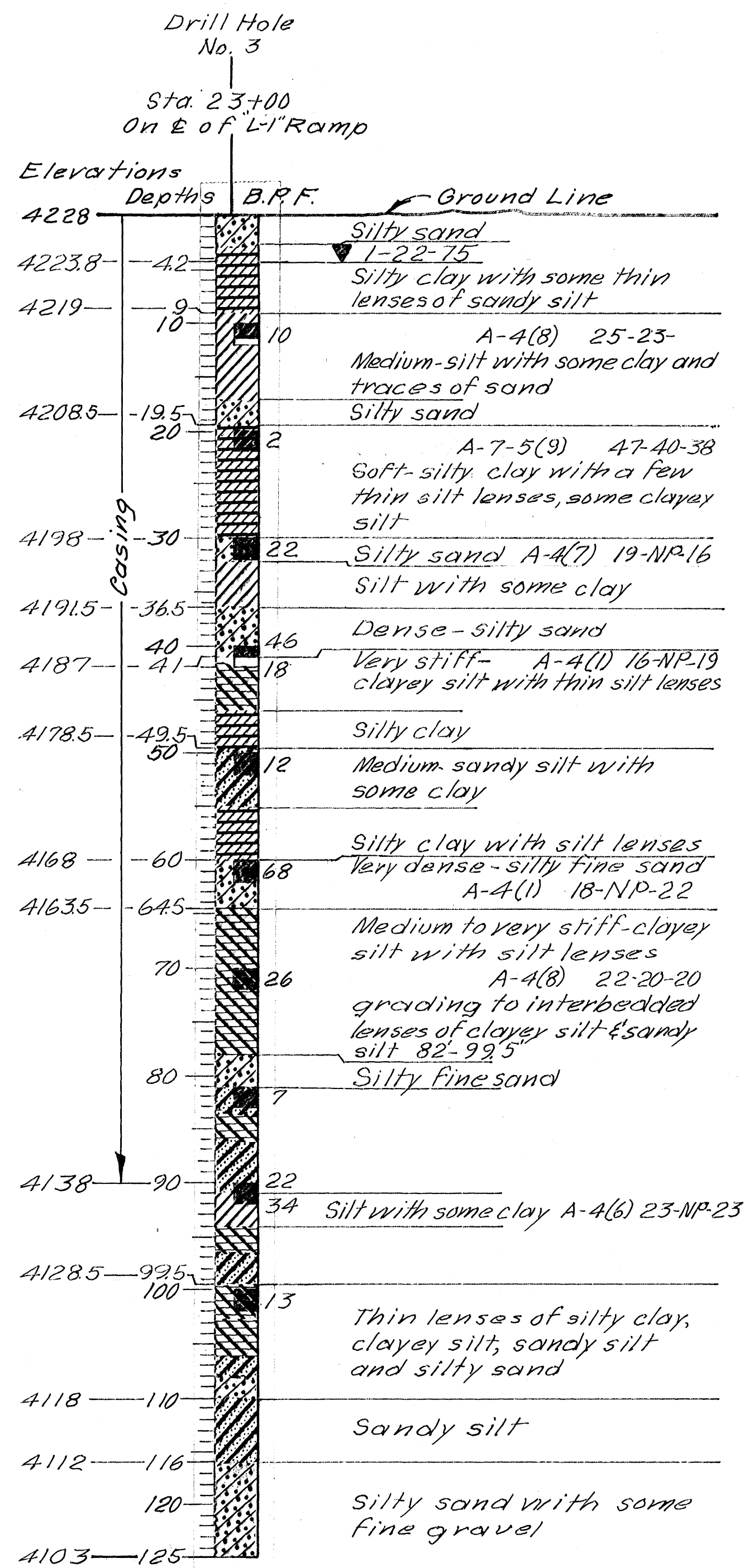
# QUANTITIES

| ITEM                                           | ESTIMATED | UNIT    | AS CONST. |
|------------------------------------------------|-----------|---------|-----------|
| Concrete Class AA (AE) (Est. Qty. 964 Cu Yds.) | 1         | Lump    |           |
| Reinforcing Steel                              | 36,464    | Lbs.    |           |
| Reinforcing Steel (Epoxy Coated)               | 135,085   | Lbs.    |           |
| Granular Backfill Borrow                       | 82        | Cu Yd.  |           |
| Structural Steel (Est. Qty. 1,121,992 Lbs.)    | 1         | Lump    |           |
| Expansion Joints                               | 1         | Lump    |           |
| Driven Piles (11" O Dia.)                      | 4092      | Lin Ft. |           |
| Pile Sleeves                                   | 320       | Lin Ft. |           |
| Furnishing Pile Driving Equipment              | 1         | Lump    |           |
| Concrete Slope Protection                      | 974       | Sq Yd.  |           |

|                                                                                  |                  |                 |                     |
|----------------------------------------------------------------------------------|------------------|-----------------|---------------------|
| UTAH DEPARTMENT OF TRANSPORTATION<br>SALT LAKE CITY, UTAH<br>STRUCTURES DIVISION |                  |                 |                     |
| 4800 WEST TO REDWOOD ROAD<br>H-RAMP OVER I-80 & C-RAMPS<br>SITUATION & LAYOUT    |                  |                 |                     |
| DESIGN                                                                           | Ray Cook         | 10/30/85        | CHECK Cy T. 1/29/86 |
| DRAWN                                                                            | Shirley H. H. H. | 4/20/84         | CHECK (P) 4/20/84   |
| QUANT.                                                                           | T.M.             | 10/29/85        | CHECK (P) 10/30/85  |
| APPROVAL                                                                         | 10/30/85         | Raymond J. Cook | DATE                |
| RECOMM.                                                                          | 10/30/85         | DATE            |                     |
| SALT LAKE COUNTY                                                                 |                  |                 | DRG. NO.            |
| I-80-3(98)116                                                                    |                  |                 | C-696               |
| PROJECT NUMBER                                                                   |                  |                 | SHT. 1 OF 29        |

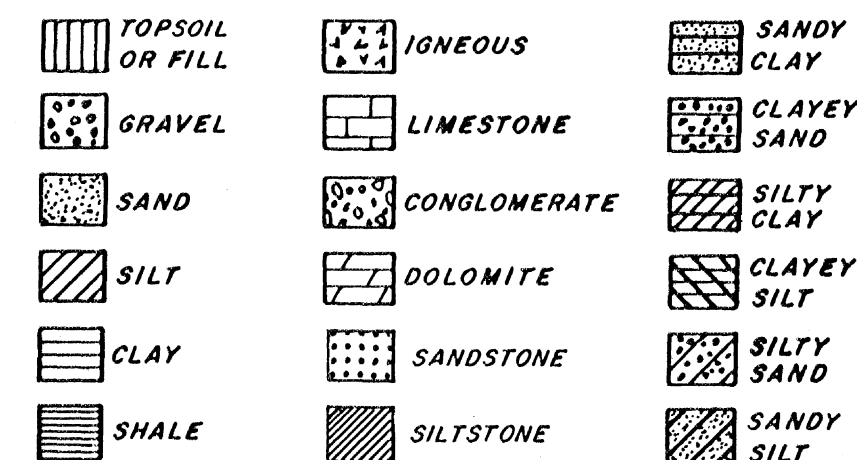
| NO. | BY   | DATE   | REVISIONS                                                            |
|-----|------|--------|----------------------------------------------------------------------|
| 3   | J.B. | 7-3-86 | Changes to due to Abut. #1 revision.                                 |
| 4   | J.B. | 4-9-86 | Changes in quantities due to raising the footing of Bent. #3, 3'-0". |



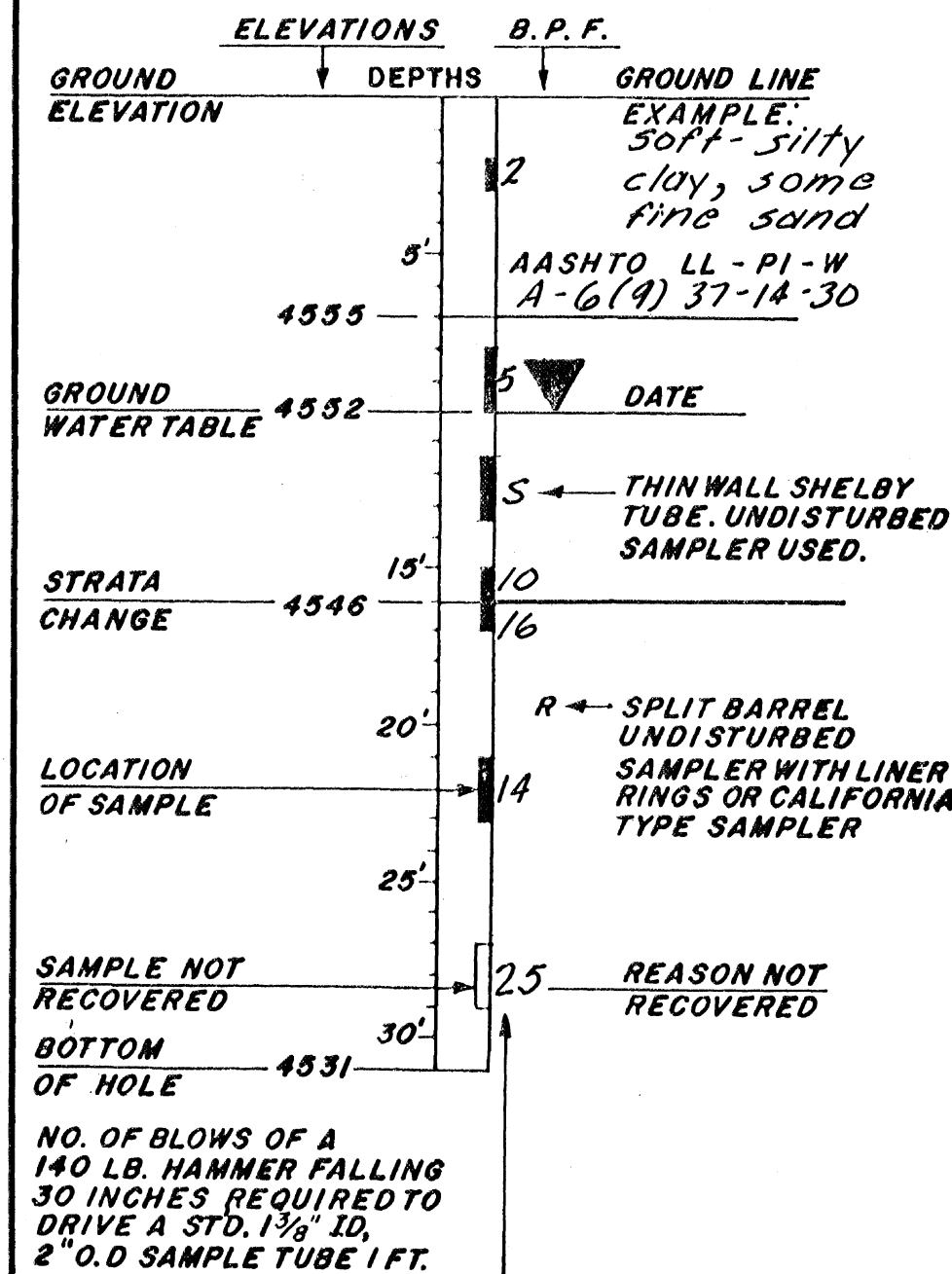


**KEY TO DRILLING LOG**  
**RELATIVE DENSITY (NON-PLASTIC SAND & SILT)**  
VERY LOOSE - LESS THAN 4 BLOWS PER FOOT.  
LOOSE - 4 TO 10 BLOWS PER FOOT.  
MEDIUM - 10 TO 30 BLOWS PER FOOT.  
DENSE - 30 TO 50 BLOWS PER FOOT.  
VERY DENSE - MORE THAN 50 BLOWS PER FOOT.

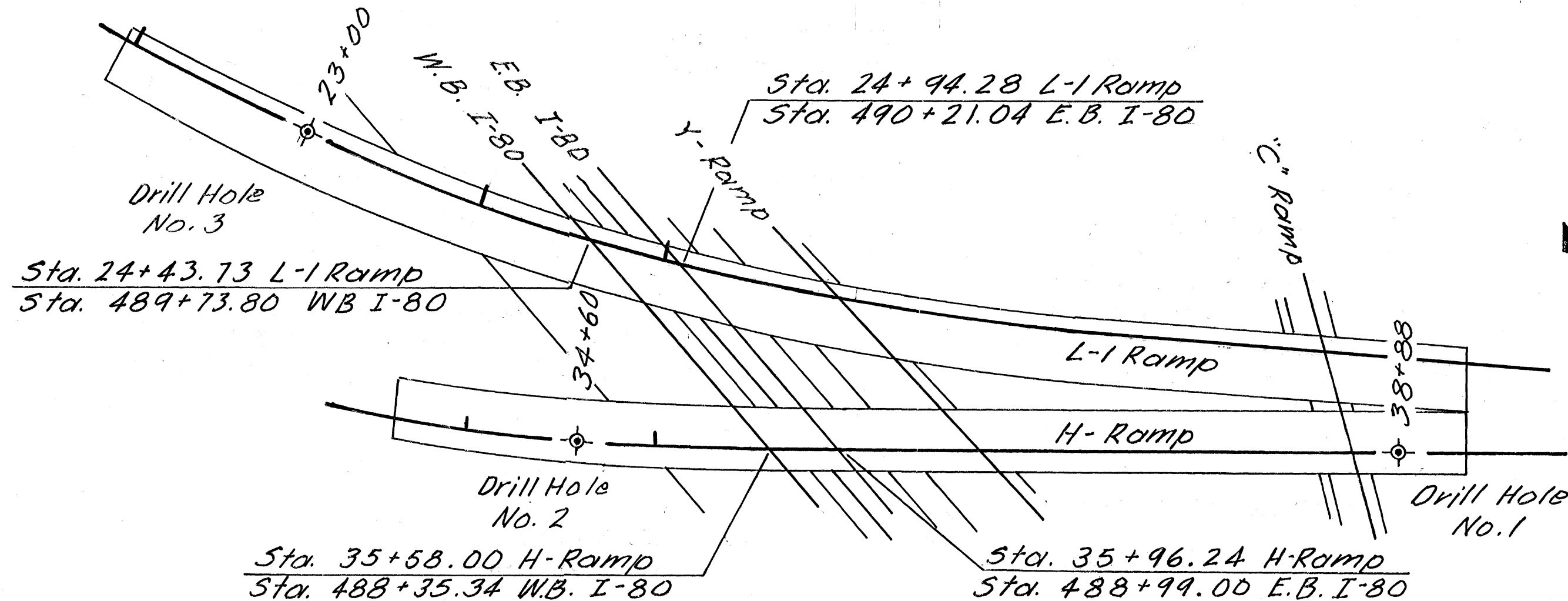
**CONSISTENCY (PLASTIC SILT & CLAY)**  
VERY SOFT - LESS THAN 2 BLOWS PER FOOT.  
SOFT - 2 TO 4 BLOWS PER FOOT.  
MEDIUM - 4 TO 8 BLOWS PER FOOT.  
STIFF - 8 TO 15 BLOWS PER FOOT.  
VERY STIFF - 15 TO 30 BLOWS PER FOOT.  
HARD - MORE THAN 30 BLOWS PER FOOT.



**DRILL HOLE NO. STATION** 0+00 E OR LT OR RT IN FT. OFFSET.



**ABBREVIATIONS**  
L.L. - LIQUID LIMIT IN %  
P.I. - PLASTIC INDEX  
w. - NATURAL MOISTURE CONTENT IN %  
Ref. - REFUSAL ≥ 50 BLOWS PER 6"  
PEN. - PENETRATION  
G.W.T. - GROUND WATER TABLE  
B.P.F. - BLOWS PER FOOT.  
N.P. - NON PLASTIC  
AASHTO - SOIL CLASSIFICATION SYSTEM



Note: Hole No. 1 Drilled Dec. 1974  
Holes 2 & 3 Drilled Jan. 1975

| NO. | BY | DATE |
|-----|----|------|
|     |    |      |
|     |    |      |
|     |    |      |

REVISIONS

UTAH STATE DEPARTMENT OF TRANSPORTATION  
SALT LAKE CITY, UTAH  
**MATERIALS and RESEARCH SECTION**

4800 WEST TO REDWOOD ROAD  
"L-1" RAMP & "H" RAMP OVER-I-80

**SOIL DATA**

|                         |                        |                   |
|-------------------------|------------------------|-------------------|
| Drawn By BCS 1/25/83    | Checked By K. Powell   | T-80-3(98)116     |
| Checked By C.C.P.       | Checked By Si. Sakha   | Project Number    |
| Checked By P. Sizemore  | Checked By             | 488+99.00 EB I-80 |
| Approval Recommended By | Chief Structural Engr. | 490+21.04 EB I-80 |
| Received 1-20-83        | Date                   | SALT LAKE         |
|                         |                        | County            |
|                         |                        | C-696             |
|                         |                        | C-739             |
|                         |                        | 2 of 29           |

Foundations File No. 74-7-FS-46



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                        |                                 |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------|--|----------------------------------------------------------------------------------|--|--|--|-----------------------------------------------------------------------------------|--|--|--|---------------------------------|----------------------------|----------------------------|--|------------------------------|--------------------------|--------------------------|--|-----------------------------|---------------------------|---------|--|---------------------------|-------------------------------------|---------------------|--|------------------|--------------------------------------------------------|-------------------|--|-------------------------------------------------------------------------------------------------------------------|--|---------------------------------|--|-----------|--|--------------|--|
| Expansion Joints                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                      | Lump                            |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
| Open Piles (1'-0" Dia.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 4092                                                   | Lin. Ft.                        |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
| Steel Sleeves                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 320                                                    | Lin. Ft.                        |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
| Furnishing Pile Driving Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1                                                      | Lump                            |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
| Concrete Slope Protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 974                                                    | Sq. Yd.                         |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
| <table border="1"> <tr> <td colspan="4">UTAH DEPARTMENT OF TRANSPORTATION<br/>SALT LAKE CITY, UTAH<br/>STRUCTURES DIVISION</td></tr> <tr> <td colspan="4">4800 WEST TO REDWOOD ROAD<br/>H-RAMP OVER I-80 &amp; Y &amp; C-RAMPS<br/>SITUATION &amp; LAYOUT</td></tr> <tr> <td>DESIGN <i>Ray Cook</i> 10/30/85</td><td>CHECK <i>Cy F.</i> 1/20/86</td><td colspan="2">W.B. I-80 =<br/>488 + 35.34</td></tr> <tr> <td>DRAWN <i>Stanley</i> 4/16/84</td><td>CHECK <i>(R)</i> 4/20/84</td><td colspan="2">E.B. I-80<br/>488 + 99.00</td></tr> <tr> <td>QUANT. <i>T.M.</i> 10/29/85</td><td>CHECK <i>(R)</i> 10/30/85</td><td colspan="2">STATION</td></tr> <tr> <td>APPROVAL RECOMM. 10/30/85</td><td><i>Raymond Cook</i><br/>GROUP LEADER</td><td colspan="2">SALT LAKE<br/>COUNTY</td></tr> <tr> <td>APPROVED 1/20/86</td><td><i>John C. Kristensen</i><br/>CHIEF STRUCTURAL ENGINEER</td><td colspan="2">DRG. NO.<br/>C-696</td></tr> <tr> <td colspan="2">REMARKS<br/>Changes due to Abut. #1 revision.<br/>Changes in quantities due to raising the footing<br/>at #3, 3'-0".</td><td colspan="2">PROJECT NUMBER<br/>I-80-3(98)116</td></tr> <tr> <td colspan="2">REVISIONS</td><td colspan="2">SHT. 1 OF 29</td></tr> </table> |                                                        |                                 |  | UTAH DEPARTMENT OF TRANSPORTATION<br>SALT LAKE CITY, UTAH<br>STRUCTURES DIVISION |  |  |  | 4800 WEST TO REDWOOD ROAD<br>H-RAMP OVER I-80 & Y & C-RAMPS<br>SITUATION & LAYOUT |  |  |  | DESIGN <i>Ray Cook</i> 10/30/85 | CHECK <i>Cy F.</i> 1/20/86 | W.B. I-80 =<br>488 + 35.34 |  | DRAWN <i>Stanley</i> 4/16/84 | CHECK <i>(R)</i> 4/20/84 | E.B. I-80<br>488 + 99.00 |  | QUANT. <i>T.M.</i> 10/29/85 | CHECK <i>(R)</i> 10/30/85 | STATION |  | APPROVAL RECOMM. 10/30/85 | <i>Raymond Cook</i><br>GROUP LEADER | SALT LAKE<br>COUNTY |  | APPROVED 1/20/86 | <i>John C. Kristensen</i><br>CHIEF STRUCTURAL ENGINEER | DRG. NO.<br>C-696 |  | REMARKS<br>Changes due to Abut. #1 revision.<br>Changes in quantities due to raising the footing<br>at #3, 3'-0". |  | PROJECT NUMBER<br>I-80-3(98)116 |  | REVISIONS |  | SHT. 1 OF 29 |  |
| UTAH DEPARTMENT OF TRANSPORTATION<br>SALT LAKE CITY, UTAH<br>STRUCTURES DIVISION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                        |                                 |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
| 4800 WEST TO REDWOOD ROAD<br>H-RAMP OVER I-80 & Y & C-RAMPS<br>SITUATION & LAYOUT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                        |                                 |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
| DESIGN <i>Ray Cook</i> 10/30/85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CHECK <i>Cy F.</i> 1/20/86                             | W.B. I-80 =<br>488 + 35.34      |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
| DRAWN <i>Stanley</i> 4/16/84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CHECK <i>(R)</i> 4/20/84                               | E.B. I-80<br>488 + 99.00        |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
| QUANT. <i>T.M.</i> 10/29/85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CHECK <i>(R)</i> 10/30/85                              | STATION                         |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
| APPROVAL RECOMM. 10/30/85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <i>Raymond Cook</i><br>GROUP LEADER                    | SALT LAKE<br>COUNTY             |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
| APPROVED 1/20/86                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <i>John C. Kristensen</i><br>CHIEF STRUCTURAL ENGINEER | DRG. NO.<br>C-696               |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
| REMARKS<br>Changes due to Abut. #1 revision.<br>Changes in quantities due to raising the footing<br>at #3, 3'-0".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                        | PROJECT NUMBER<br>I-80-3(98)116 |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |
| REVISIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                        | SHT. 1 OF 29                    |  |                                                                                  |  |  |  |                                                                                   |  |  |  |                                 |                            |                            |  |                              |                          |                          |  |                             |                           |         |  |                           |                                     |                     |  |                  |                                                        |                   |  |                                                                                                                   |  |                                 |  |           |  |              |  |

