

ROUTE #100

- 1-Br.\*4~Plan, Profile, Sections, & Abut. Details
- 2     "Std. Drg. No. STB-20~25' to 40'
- 3     "     "     "     "SB-5C Standard Cable Guard Rail for T&I Beam Bridges
- 4     "     "     "     "SB-30 Standard Structures
- 5     "     "     "     "SB-11 Lights, Signs, & Barricades
- 6     "     "     "     "SB-20 Construction Details. Detail "J".
- 7-Br.\*5~Plan, Profile, Sections, & Abut. Details.
- 8     "Std. Drg. No. STB-22 Standard "T" Beam Bridge 34'-59'
- 9-Br.\*6~Plan, Profile, Sections, & Abut. Details.
- 10    "Std. Drg. No. STB-20 Standard "T" Beam Bridge 25'-40'
- 11-Br.\*7~Plan, Profile, Sections, & Abut. Details.
- 12    "Std. Drg. No. SSB-1 Standard Concrete Slab Bridge 10'-25'
- 13-Br.\*8~Plan, Profile, Sections & Abut. Details.

ROUTE-# 100-A

| 14 | Br. #1 | Plan, Elevations, Sections, Profile, & Abut. Details |
|----|--------|------------------------------------------------------|
| 15 | " #2   | " " " " " "                                          |
| 16 | " #3   | " " " " " "                                          |
| 17 | " #3-A | " " " " " "                                          |
| 18 | " #5   | " " " " " "                                          |
| 19 | " #6   | " " " " " "                                          |
| 20 | " #7   | " " " " " "                                          |

For Standard Sheets applicable to individual bridges,  
see listings on individual Plan & Profile Sheets.

|            |                                              |                      |    |
|------------|----------------------------------------------|----------------------|----|
| PROJECT    | Pymouth Bridges                              |                      |    |
| NUMBER     | ST 91-1                                      | LENGTH               | M. |
| TYPE       | Case I B4                                    | each bridge separate |    |
| CONTRACTOR | J. Olsen                                     |                      |    |
| LOCATION   | on road leading to the township of Plymouth. |                      |    |
| DATE       | YEAR 1941-42                                 |                      |    |

G. D. Bishop  
Bridge Engineer

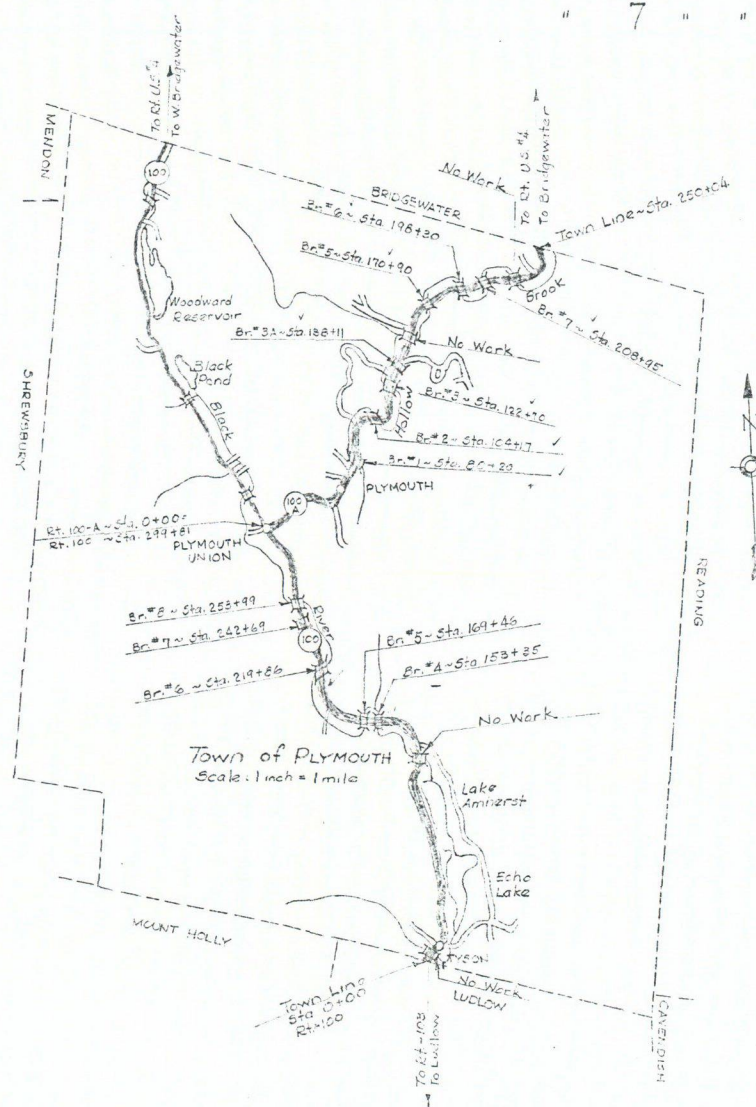
Approved: July 26, 1946

H. E. Sargent,  
Commissioner of Highways

REPAIRS TO PLYMOUTH BRIDGES  
ST. 41-L

Bridges located on Routes 100 & 100-A

| Route 100            |          |                |  | Route 100-A          |        |    |  |
|----------------------|----------|----------------|--|----------------------|--------|----|--|
| Bridge #4 ~ Log Sta. | 153+35   | Estimated 1964 |  | Bridge #1 ~ Log Sta. | 80+20  | BL |  |
| " 5 ~ "              | " 169+46 | E106           |  | " 2 ~ "              | 104+17 | B3 |  |
| " 6 ~ "              | " 219+66 | E109           |  | " 3 ~ "              | 122+70 | E4 |  |
| " 7 ~ "              | " 242+69 | E108           |  | " 3-A ~ "            | 138+11 | E5 |  |
| " 8 ~ "              | " 253+99 | E109           |  | " 5 ~ "              | 170+99 | E7 |  |
|                      |          |                |  | " 6 ~ "              | 198+30 | E8 |  |
|                      |          |                |  | " 7 ~ "              | 208+95 | E9 |  |



### SUMMARY OF ESTIMATED QUANTITIES

| ITEM NO. | DESCRIPTION                               | RT-100 | RT-100-A | TOT. QUAN. |      |
|----------|-------------------------------------------|--------|----------|------------|------|
| 10-11    | Common Excavation Incl. Borrow            | 530    | 260      | 790        | CY   |
| 16       | Structure Excavation                      | 240    | 126      | 366        | CY   |
| 18-B     | Temp. Eridge & Maint. of Traffic - Br. #4 | 1      |          | 1          | L.S. |
| "        | " " " " " " " " #5                        | 1      |          | 1          | L.S. |
| "        | " " " " " " " " #6                        | 1      |          | 1          | L.S. |
| "        | " " " " " " " " #7                        | 1      |          | 1          | L.S. |
| "        | " " " " " " " " #8                        | 1      |          | 1          | L.S. |
| "        | " " " " " " " " #1                        |        | 1        | 1          | L.S. |
| "        | " " " " " " " " #2                        |        | 1        | 1          | L.S. |
| "        | " " " " " " " " #3                        |        | 1        | 1          | L.S. |
| "        | " " " " " " " " #3A                       |        | 1        | 1          | L.S. |
| "        | " " " " " " " " #5                        |        | 1        | 1          | L.S. |
| "        | " " " " " " " " #6                        |        | 1        | 1          | L.S. |
| "        | " " " " " " " " #7                        |        | 1        | 1          | L.S. |
| 22       | Gravel Surface Course                     | 355    | 180      | 535        | CY   |
| 41-A     | Concrete Class #1                         | 277    | 236      | 513        | CY   |
| 41-B     | " " " "B"                                 | 20     | -        | 20         | CY   |
| 42       | Reinforcing Steel                         | 60040  | 52314    | 112354     | Lbs. |
| 47-B     | Grouted Rubble Paving                     | -      | 45       | 45         | CY   |
| 57       | Removal & Present Super. - Br. #4         | 1      |          | 1          | L.S. |
| "        | " " " " " " " " #5                        | 1      |          | 1          | L.S. |
| "        | " " " " " " " " #6                        | 1      |          | 1          | L.S. |
| "        | " " " " " " " " #7                        | 1      |          | 1          | L.S. |
| "        | " " " " " " " " #8                        | 1      |          | 1          | L.S. |
| "        | " " " " " " " " #2                        |        | 1        | 1          | L.S. |
| "        | " " " " " " " " #3                        |        | 1        | 1          | L.S. |
| "        | " " " " " " " " #3A                       |        | 1        | 1          | L.S. |
| "        | " " " " " " " " #5                        |        | 1        | 1          | L.S. |
| "        | " " " " " " " " #6                        |        | 1        | 1          | L.S. |
| "        | " " " " " " " " #7                        |        | 1        | 1          | L.S. |
| 80-A     | Cable Guard Rail                          | 700    | 790      | 1490       | L.F. |
| 80-B     | Anchors for Cable Guard Rail              | 16     | 20       | 36         | Ea.  |
| 81       | Removal & Resetting of C.G.R.             | 116    | 184      | 300        | L.F. |

UT100ABR 7

SHEET NO.

1. TITLE SHEET
2. PLAN & PROFILE
3. PLAN & ELEVATION
4. QUANTITY
5. TYPICAL SECTION & SUPERSTRUCTURE DETAILS
6. ABUTMENT #1 DETAILS
7. ABUTMENT #2 DETAILS
8. REINFORCING STEEL SCHEDULE
- 9-10. VT 100-A SECTIONS
- 11-13. CHANNEL SECTIONS
14. STANDARD SHEET SCB-DI-71 JAN 28, 1974 R
15. STANDARD SHEET G-1a DEC 19, 1972 R
16. STANDARD SHEET E-3 NOV 7, 1973 R

# STATE OF VERMONT DEPARTMENT OF HIGHWAYS

## PROPOSED IMPROVEMENT

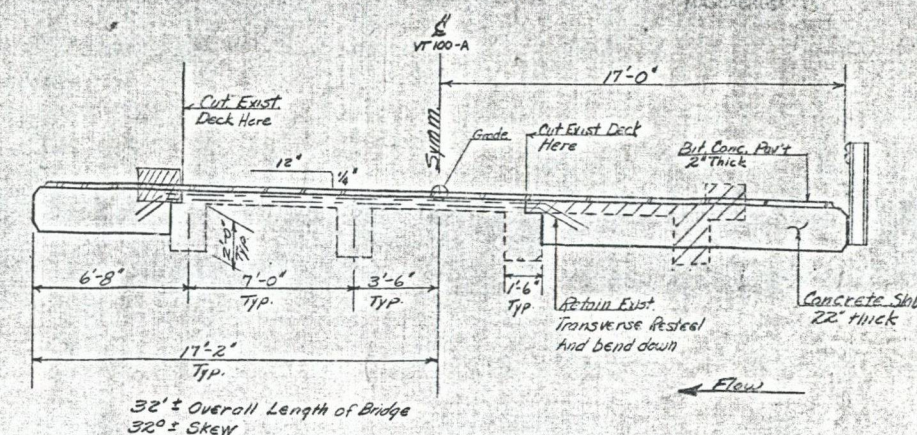
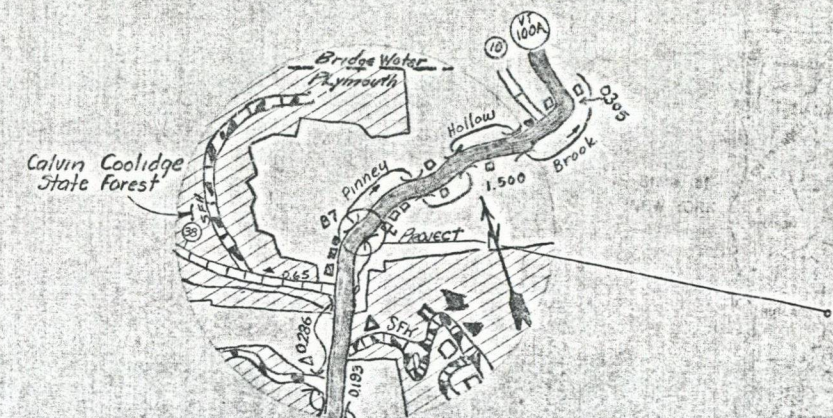
BRIDGE PROJECT  
TOWN OF PLYMOUTH  
COUNTY OF WINDSOR  
ROUTE NO. 100-A BRIDGE NO. 7

GENERAL NOTES:  
1. DESIGN LOADING AASHTO HS20-44

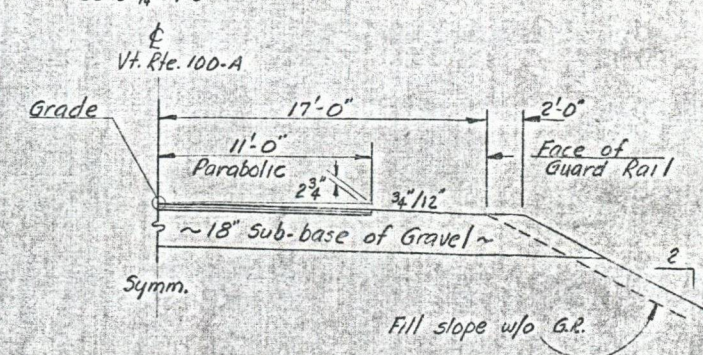
PROJECT LOCATION: Said location being Bridge #7 on Vt. Rte 100-A approximately 1.50 miles south of the Bridgewater-Plymouth Town Line

PROJECT DESCRIPTION: This Project shall consist of extending the existing abutments, constructing new wingwalls, widening the existing superstructure and building new roadway approaches as required (approach construction by others)

|                                      |      |      |
|--------------------------------------|------|------|
| LENGTH OF BRIDGE                     | 32.0 | FEET |
| LENGTH OF PARTICIPATION ROADWAY      | 0.0  | FEET |
| LENGTH OF HIGH PARTICIPATION ROADWAY | 0.0  | FEET |
| LENGTH OF PROJECT                    | 32.0 | FEET |



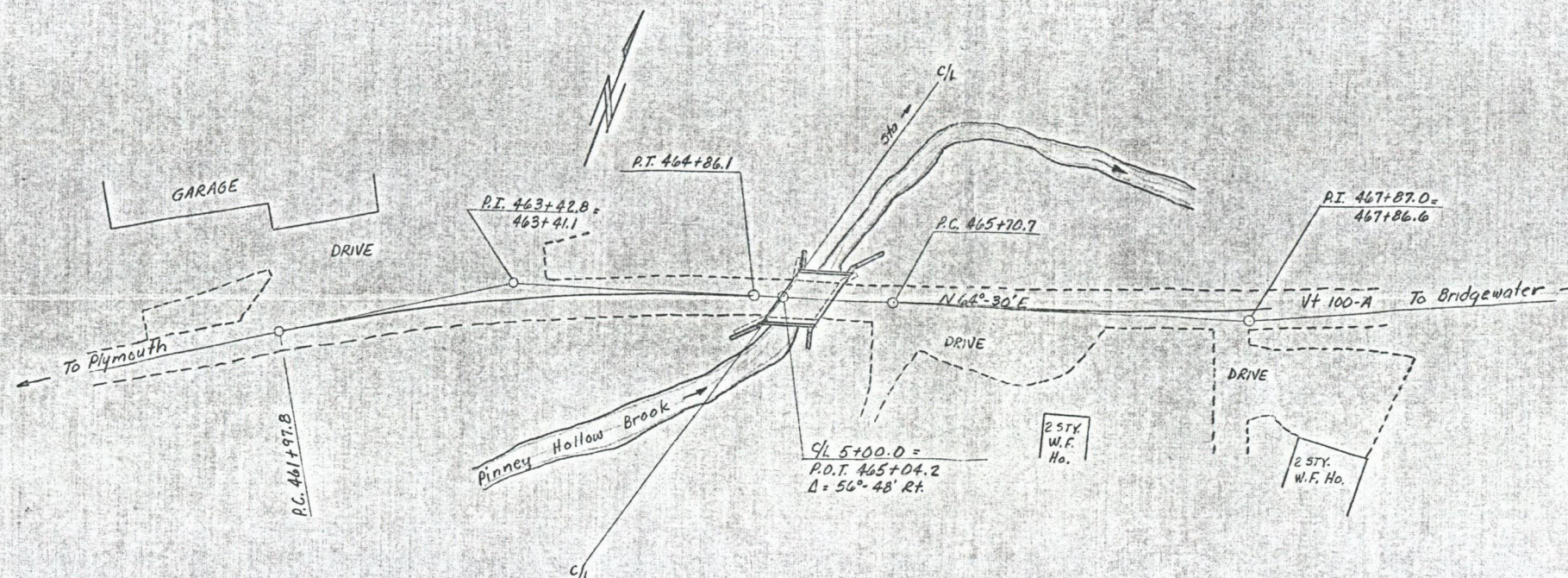
### TYPICAL BRIDGE SECTION



~ Approaches to be built by District ~

### TYPICAL ROADWAY SECTION

N.T.S.



PLAN  
1"=50'-0"

APPROVED: E. H. Stiney 5/1/74

PLYMOUTH  
BMA 6327  
1 16  
D.R. #16

# CURVE #1 (SURV)

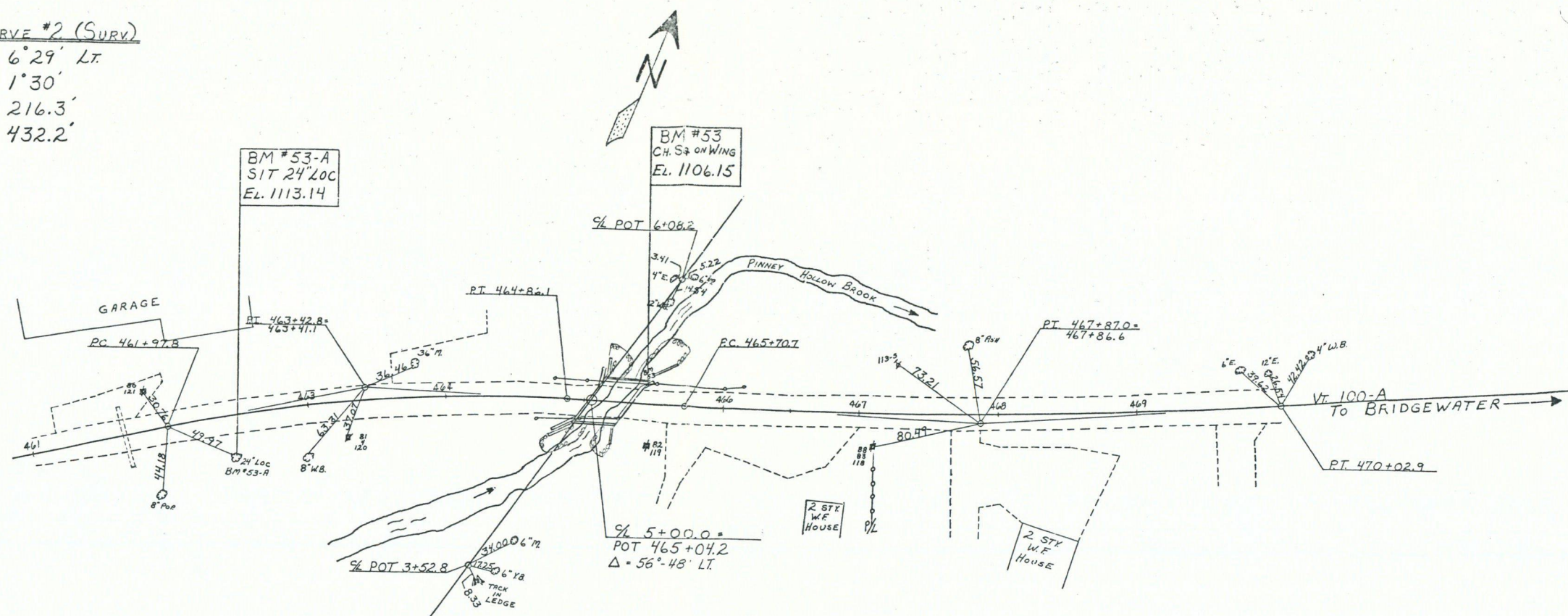
$\Delta = 14^{\circ}25'$  RT.  
 $D = 5^{\circ}00'$   
 $T = 145.00'$   
 $L = 288.3'$

# CURVE #2 (SURV)

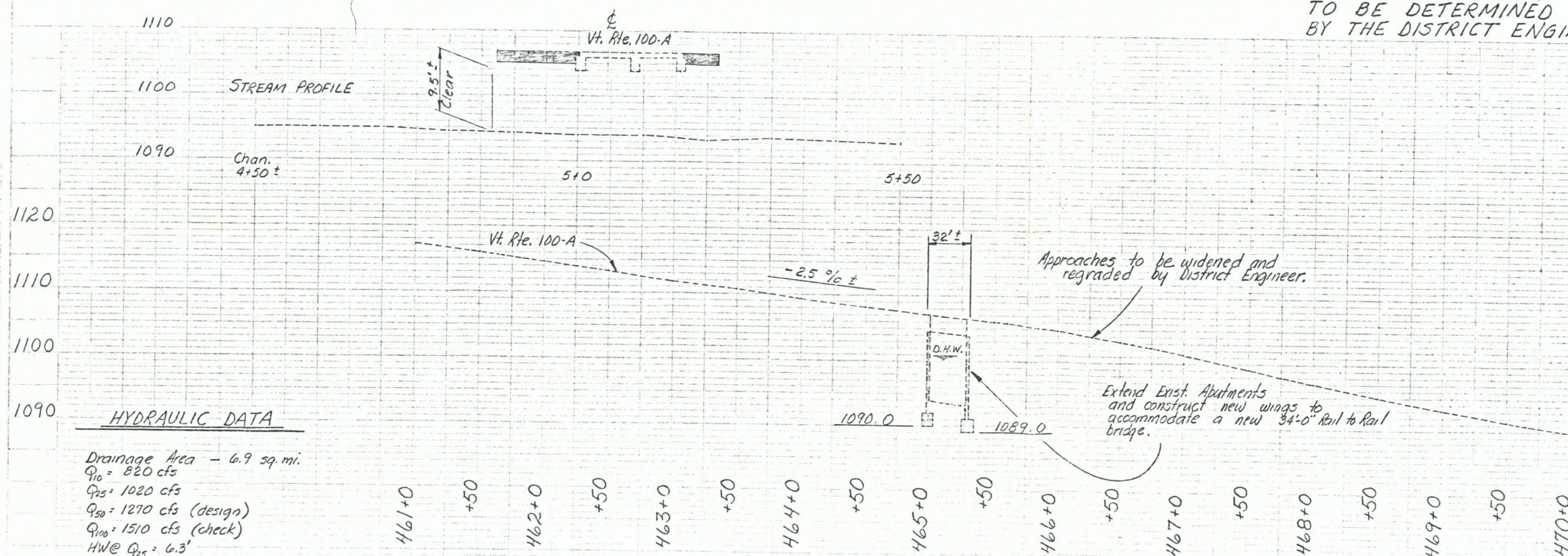
$\Delta = 6^{\circ}29'$  LT.  
 $D = 1^{\circ}30'$   
 $T = 216.3'$   
 $L = 432.2'$

## EXISTING BRIDGE INFORMATION (87)

SINGLE SPAN CONCRETE T-BEAM  
 WITH CONCRETE SLAB FLOOR.  
 CLEAR SPAN = 22.5'  
 OVERALL SPAN = 32.0'  
 CLEAR HEIGHT = 10.0' ABOVE WATER  
 ROADWAY WIDTH = 22.0'  
 WINGS = 1.0' WIDE  
 CURB & RAILS DETEIORATED  
 WING ON RT. UPSTREAM ABUT. GONE  
 ABUT. ON C/L & CRACKED



EXTENT OF ROADWAY IMPROVEMENT  
 TO BE DETERMINED  
 BY THE DISTRICT ENGINEER



## HYDRAULIC DATA

Drainage Area - 6.9 sq. mi.  
 $Q_{10} = 820$  cfs  
 $Q_{25} = 1020$  cfs  
 $Q_{50} = 1270$  cfs (design)  
 $Q_{100} = 1510$  cfs (check)  
 $HW @ Q_{25} = 6.3'$   
 $HW @ Q_{50} = 7.2'$   
 $HW @ Q_{100} = 8.0'$   
 Velocity @  $Q_{25} = 13.4$  fps  
 Depth of flow thru bridge @  $Q_{50} = 4.2'$

PLYMOUTH

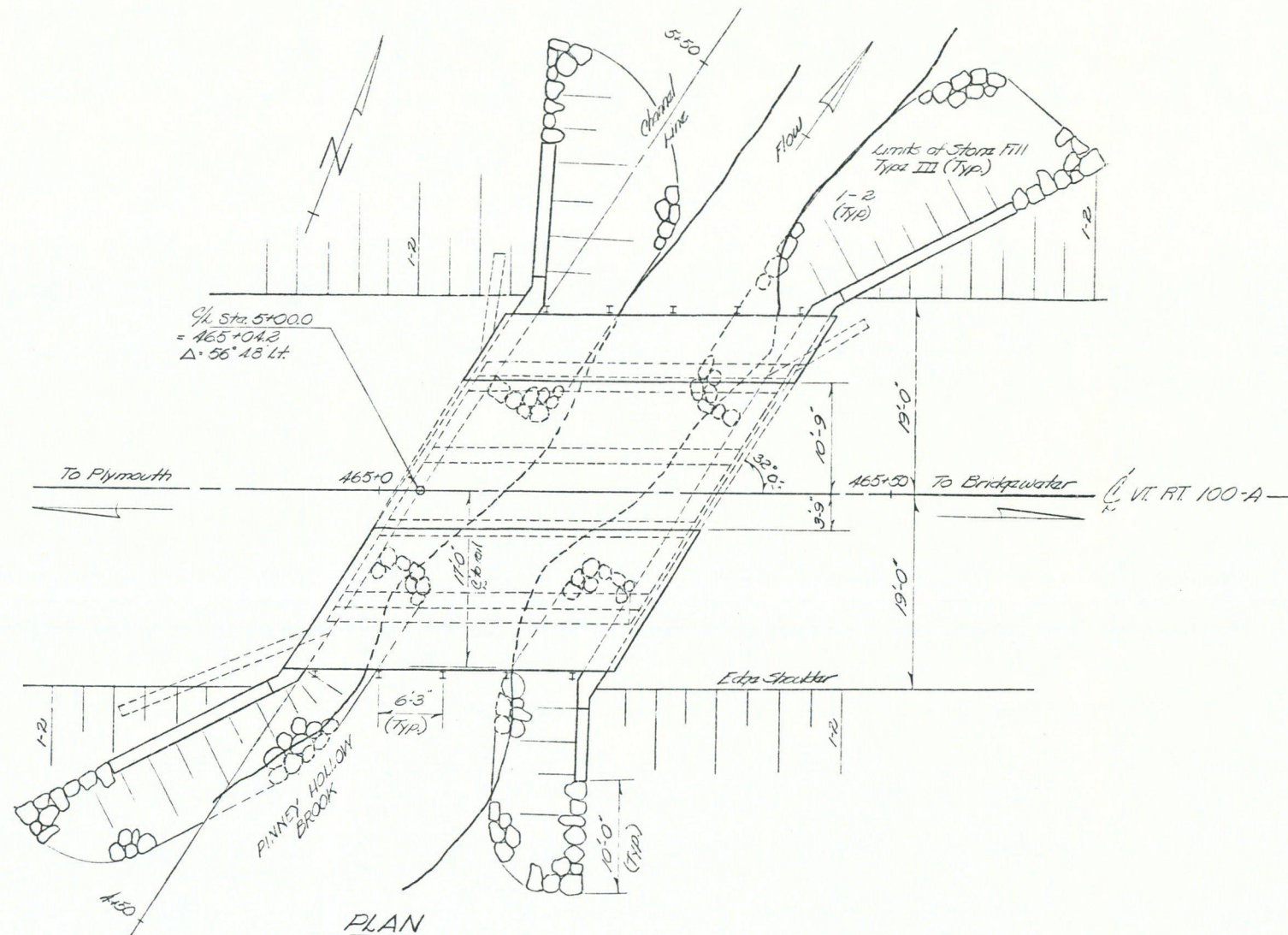
BMA 6327

VT. 100-A BR. #7 DR. #16

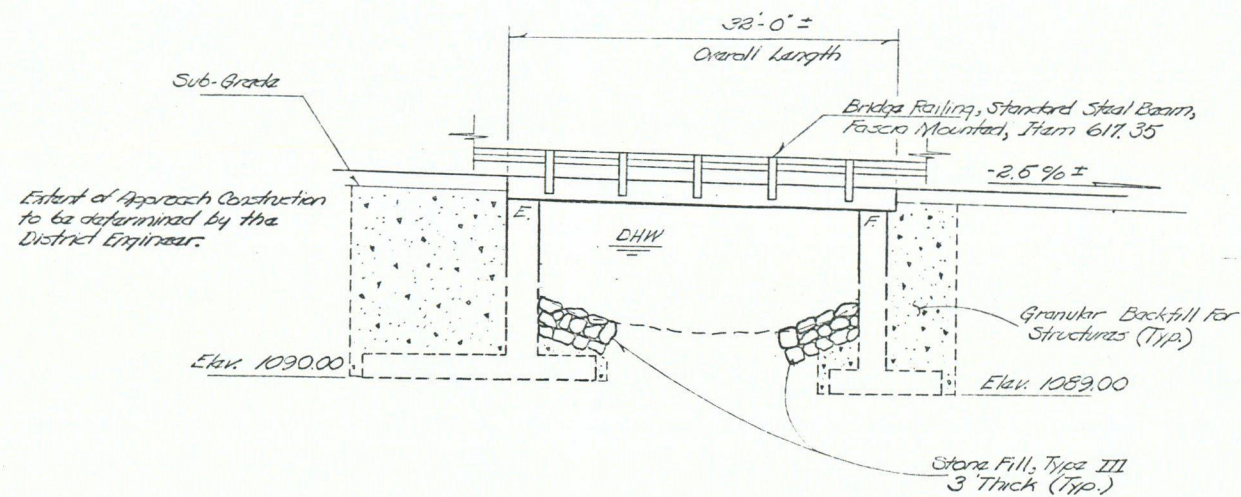
OVER PINNEY HOLLOW BROOK

DRAWN BY L. MASON 11-73

CHECKED BY J. Richardson 4/74



PLAN  
SCALE 1/8" = 1'-0"



ELEVATION ALONG RIGHT FASCIA  
SCALE 1/8" = 1'-0"

|                                            |                                        |
|--------------------------------------------|----------------------------------------|
| STATE OF VERMONT<br>DEPARTMENT OF HIGHWAYS |                                        |
| TOWN OF PLYMOUTH                           | Bridge No. 7                           |
| HIGHWAY NO. VT. 100-A                      | Loc. Sta. 172+04                       |
| PLAN & ELEVATION SHEET                     |                                        |
| VT. 100-A OVER PINNEY HOLLOW BRK.          |                                        |
| Designed by RICHARDSON                     | Drawn by C. WITHAM                     |
| Checked by J. Richardson                   | Bridge Design Supervisor J. Richardson |
| PROJECT PLYMOUTH                           | PROJECT NO. BMA 6327                   |
| Sheet 9                                    | of 16                                  |

[illegible]

| BRIDGE QUANTITY SHEET |                                     |       |                    |           |           |            |  |  |  | STATE OF VERMONT<br>DEPARTMENT OF HIGHWAYS<br>BRIDGE DIVISION |        |       |
|-----------------------|-------------------------------------|-------|--------------------|-----------|-----------|------------|--|--|--|---------------------------------------------------------------|--------|-------|
| NO.                   | ITEM                                | UNIT  | QUANTITY BREAKDOWN |           |           |            |  |  |  |                                                               | TOTAL  | FINAL |
|                       |                                     |       | SUPER<br>STRUCTURE | ABUT. #1  | ABUT. #2  | APPROACHES |  |  |  |                                                               |        |       |
| 202.35                | REMOVAL OF ENST. CONC. OR MASONRY   | C.Y.  | 16                 |           |           |            |  |  |  |                                                               | 16     |       |
| 203.27                | UNCLASSIFIED CHANNEL EXCAVATION     | C.Y.  |                    | 100 (EST) | 100 (EST) |            |  |  |  |                                                               | 200    |       |
| 204.25                | STRUCTURE EXCAVATION                | C.Y.  |                    | 140 (EST) | 115 (EST) |            |  |  |  |                                                               | 255    |       |
| 204.30                | GRANULAR BACKFILL FOR STRUCTURES    | C.Y.  |                    | 200 (EST) | 200 (EST) |            |  |  |  |                                                               | 400    |       |
| 306.10                | OVERHAUL (ESTIMATE 5.0 MILES)       | CY/mi |                    | 1000      | 1000      |            |  |  |  |                                                               | 2000   |       |
| 406.25                | BITUMINOUS CONC. PAVEMENT           | TDN   | 14                 |           |           |            |  |  |  |                                                               | 14     |       |
| 501.25                | CONCRETE CLASS B                    | C.Y.  | 45                 | 68        | 70        |            |  |  |  |                                                               | 183    |       |
| 502.10                | SHORING SUPERSTRUCTURE              | L.S.  | 1                  |           |           |            |  |  |  |                                                               | 1      |       |
| 507.15                | REINFORCING STEEL                   | LBS.  | 7740               | 8500      | 8265      |            |  |  |  |                                                               | 24,505 |       |
| 514.10                | WATER REPELLENT                     | GAL.  | 10                 | 2         | 2         |            |  |  |  |                                                               | 14     |       |
| 613.12                | STONE FILL, TYPE III                | C.Y.  |                    | 100 (EST) | 100 (EST) |            |  |  |  |                                                               | 200    |       |
| 613.30                | EPOXY Bonding Compound              | Gal.  | 3                  |           |           |            |  |  |  |                                                               | 3      |       |
| 617.35                | BRIDGE RAILING, Standard STEEL BEAM | L.F.  | 64                 |           |           |            |  |  |  |                                                               | 64     |       |
| 637.10                | MAINTENANCE OF TRAFFIC              | L.S.  | 1                  |           |           |            |  |  |  |                                                               | 1      |       |

BRIDGE (S) AT STATION (S) BRIDGE #7 ON VERMONT RT. 100-A

LOCATION IS VERMONT RT 100-A OVER PINNEY BROOK

Prepared by DAVID ROSS 4/74 F.J. Hall/D. Lyons 4/74

SUPERVISOR: J.A. RICHARDSON 4/74

PLYMOUTH

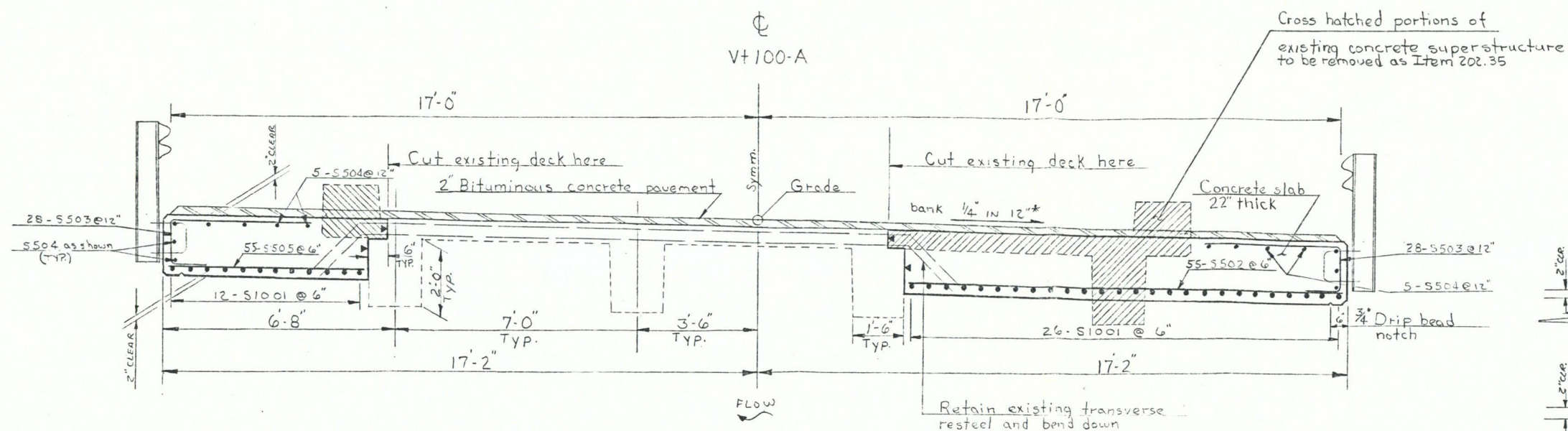
BR 02

PROJECT NO. BMA 6327

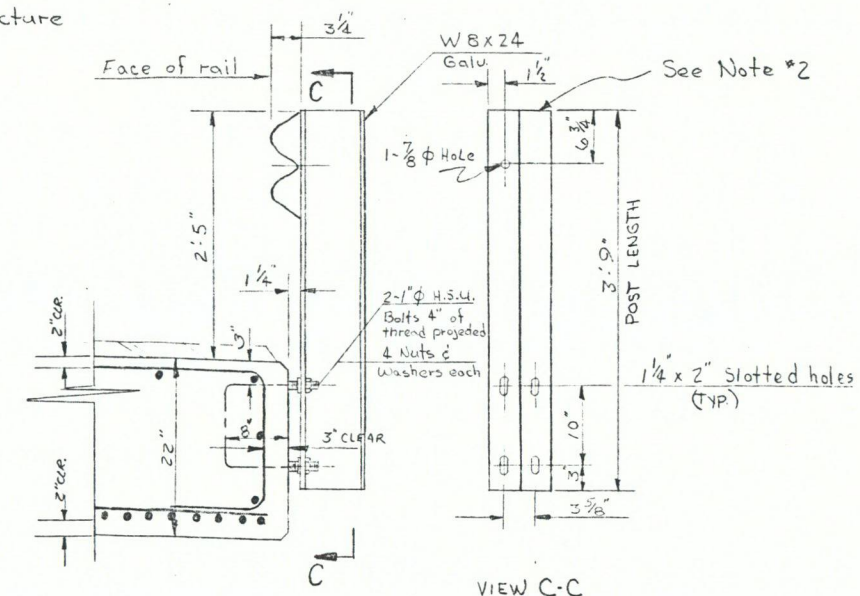
SHEET NO. 4 OF 16

DR #16

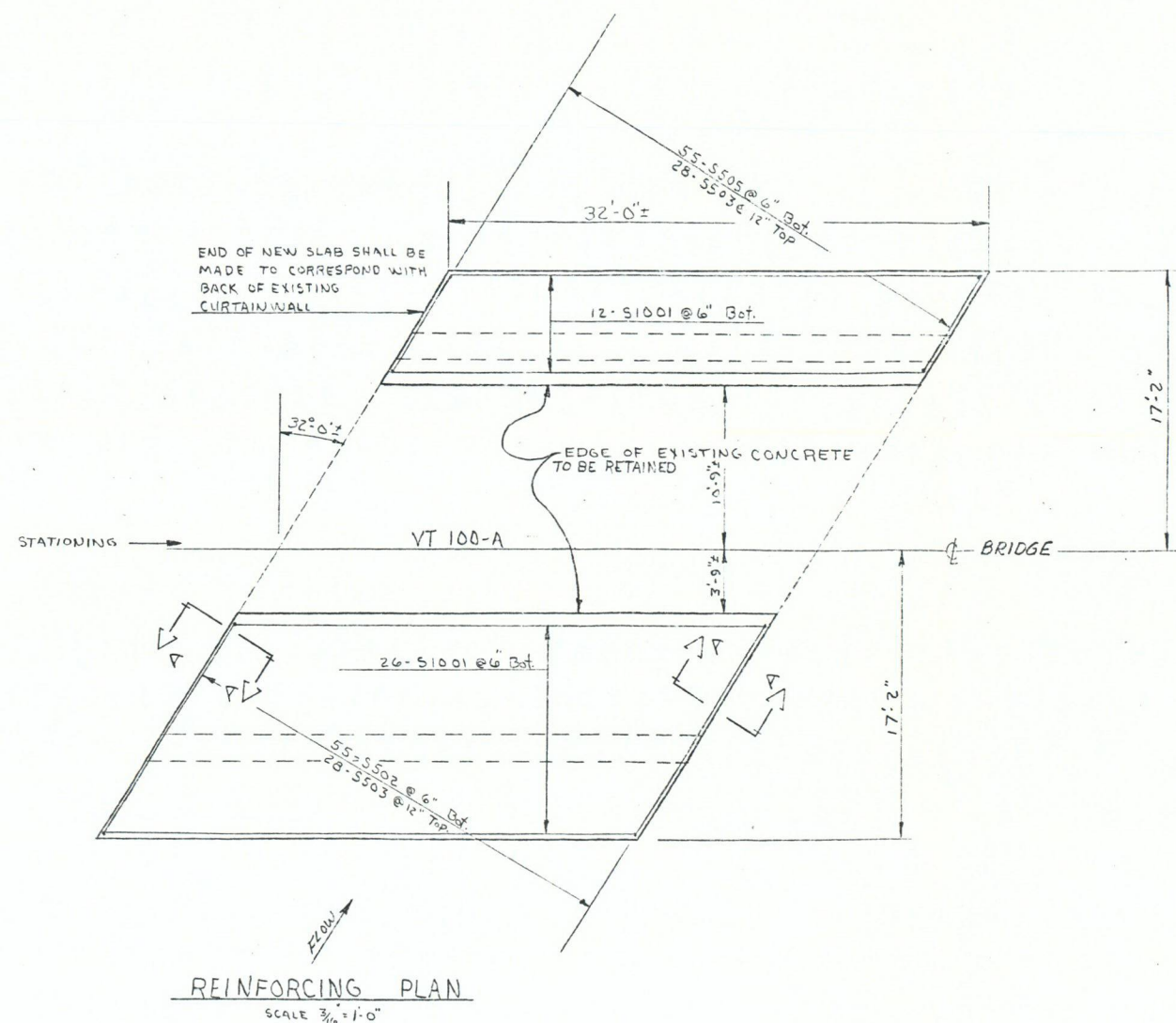
PROJECT NO. BMA 6327 DR # 16  
SHEET NO. 4 OF 16



TYPICAL SECTION  
SCALE 1/2" = 1'-0"



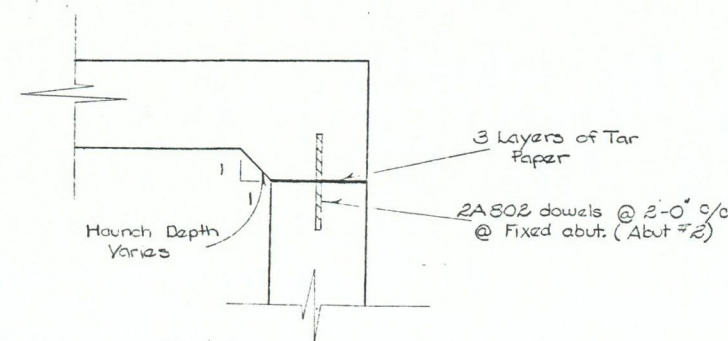
FASCIA MOUNTED STEEL POSTS  
SCALE 1" = 1'-0"



REINFORCING PLAN  
SCALE 3/16" = 1'-0"

# NOTES

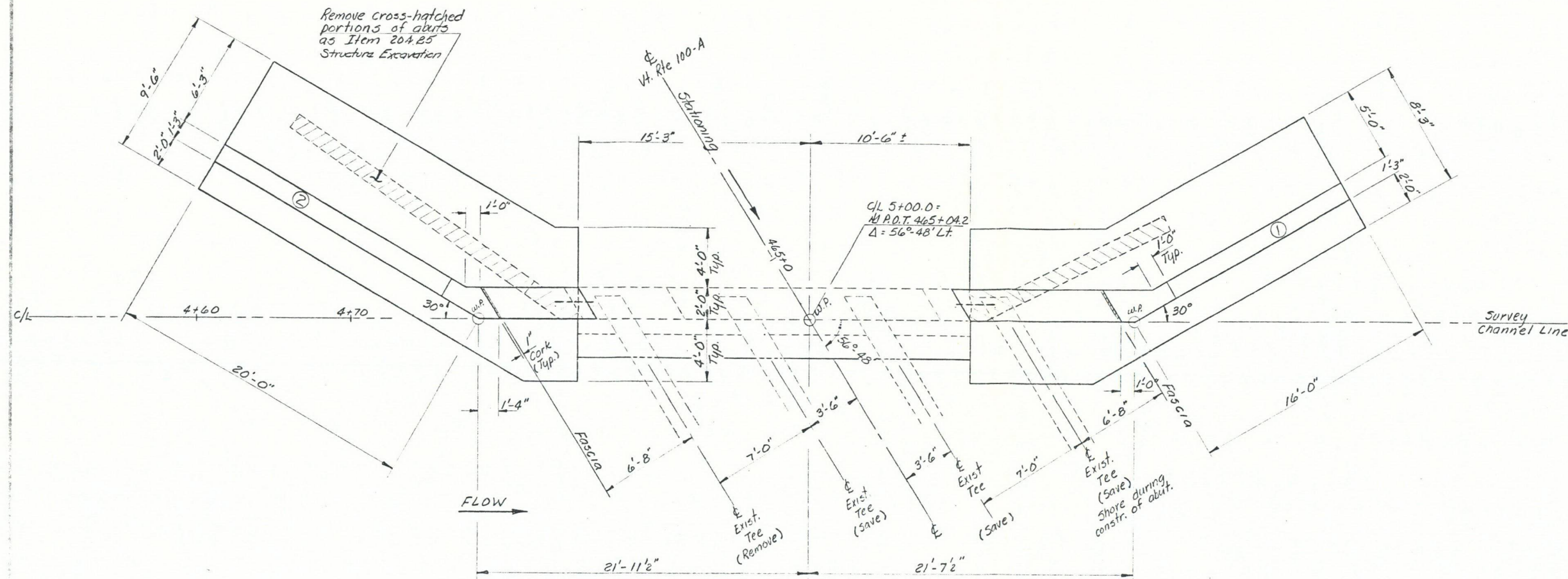
- Indicates surfaces to be treated with an approved Epoxy Bonding Compound, Item 615.30, just prior to the placement of adjacent new concrete.
- Bridge Railing, Hvy Duty Steel Beam, Item 617.35-Richmond Preset Anchors (see Richmond Drawing #13-45C, dated 3-23-72) may be substituted for the 1" Galvanized U-Bolts detailed here. Preset Anchors shall have 1 7/8" closed end ferrules and 4-1/2" long threaded rods w/ 2 nuts & washers each. All fixtures to be galvanized after fabrication per ASTM A-123. Posts to be A36 Steel or equivalent. Anchor Bolts to be A325 High Strength Steel or equivalent.
- All concrete shall be Concrete Class B, Item 501.25, exposed edges to be chamfered 1"x1".



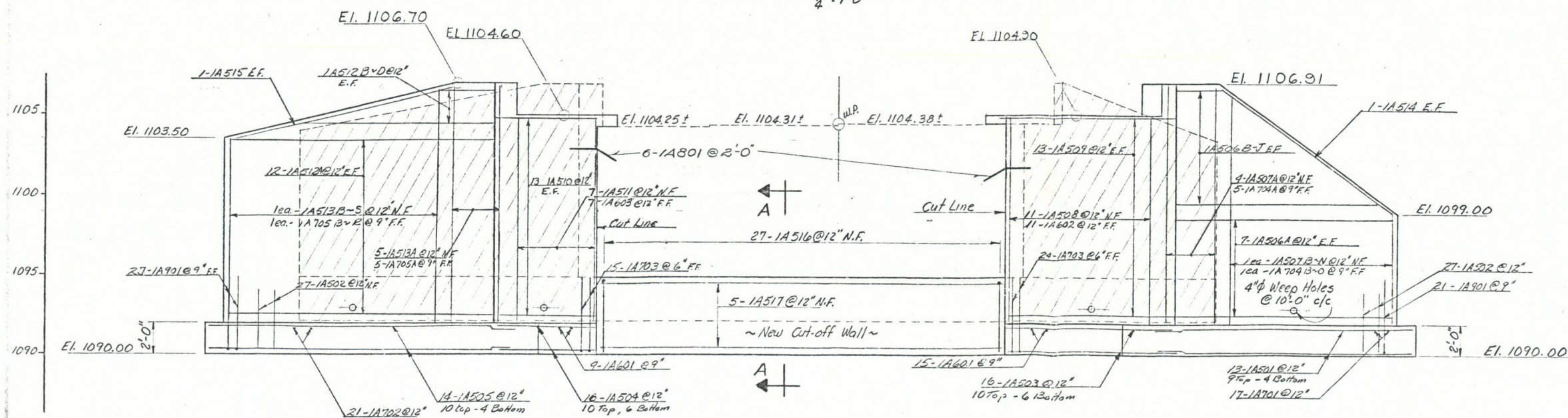
SECTION - AA  
SCALE 1/2" = 1'-0"

|                                            |                                     |
|--------------------------------------------|-------------------------------------|
| STATE OF VERMONT<br>DEPARTMENT OF HIGHWAYS |                                     |
| TOWN OF PLYMOUTH                           | Bridge No. 7                        |
| Highway No. VT100-A                        | Log Sta. 172+04                     |
| VERMONT 100-A over PINNEY HOLLOW BROOK     |                                     |
| TYPICAL SECTION and SUPERSTRUCTURE DETAILS |                                     |
| Designed by J. RICHARDSON                  | Drawn by D. ROSS 4/74               |
| Checked by J. RICHARDSON date 4/74         | Reviewed by J. RICHARDSON date 4/74 |
| PROJECT PLYMOUTH                           |                                     |
| Sheet No. 5                                | of 16                               |

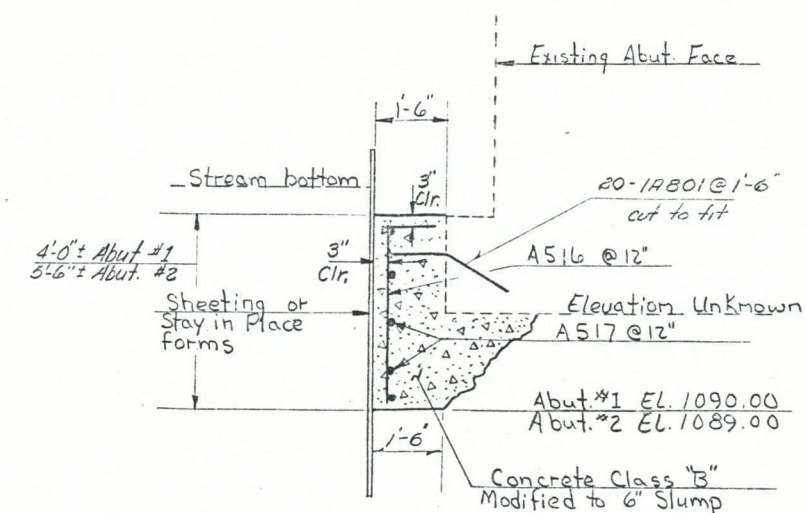
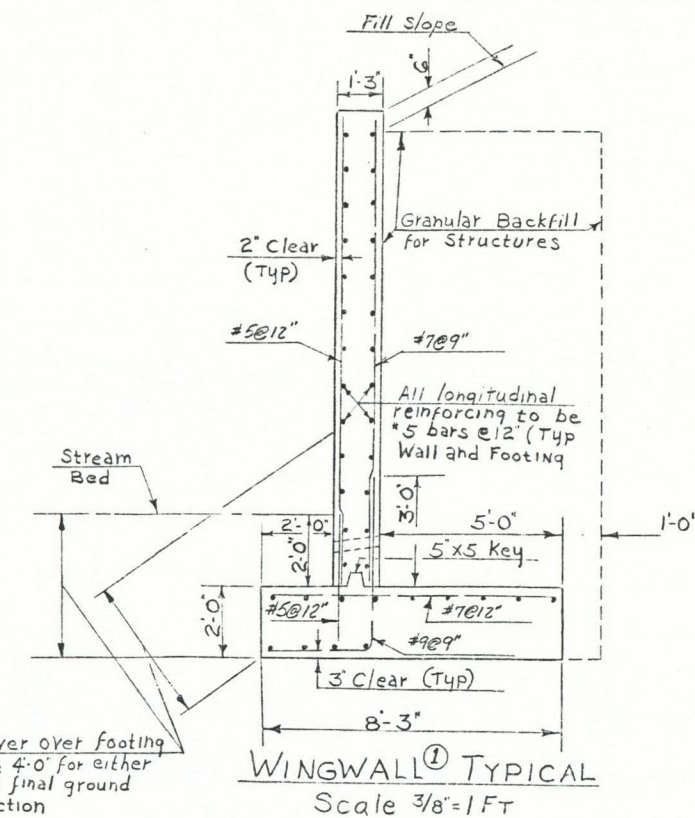
For Abutment Stem Section see  
Sheet 7 of 16.



PLAN  
1/4" = 1'-0"

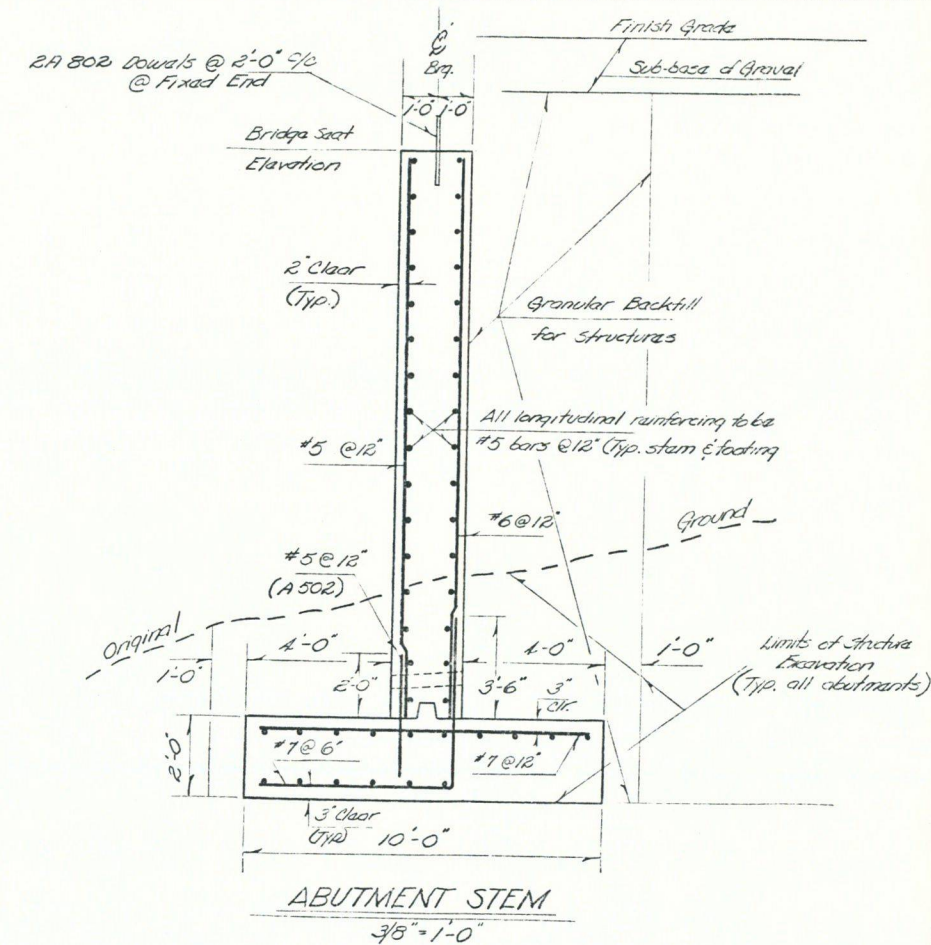
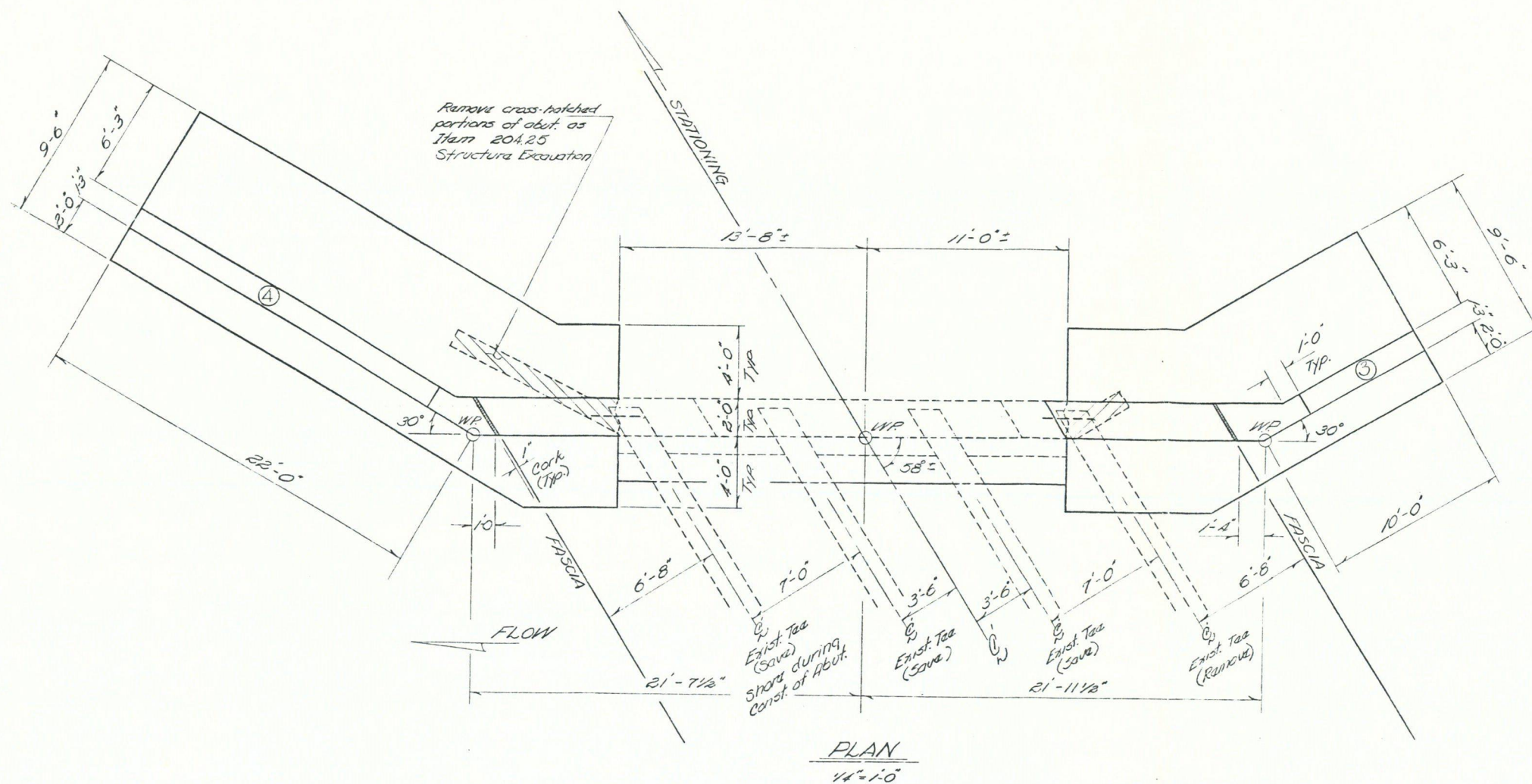


ELEVATION  
 $\frac{1}{4}'' = 1'-0''$

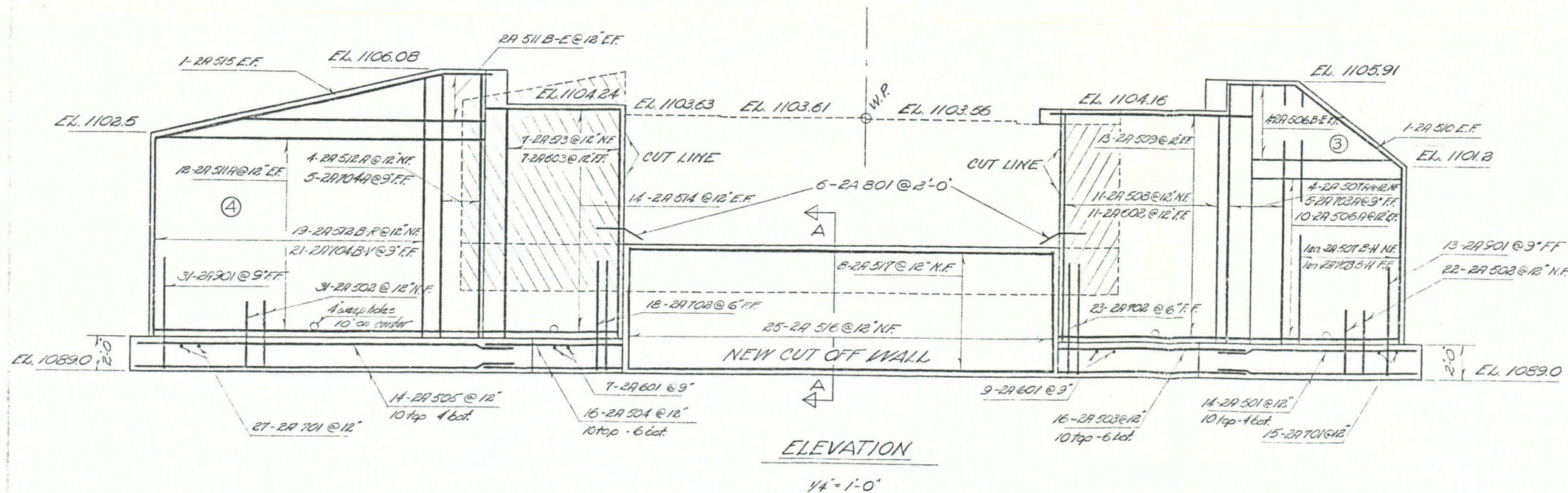


SECTION A-A  
1/2" = 1'-0"

|                              |                          |
|------------------------------|--------------------------|
| STATE OF VERMONT             |                          |
| DEPARTMENT OF HIGHWAYS       |                          |
| TOWN OF PLYMOUTH             | Route No. 7              |
| HIGHWAY NO. VT. 100A         | Loc. Sta. 172+04         |
|                              | Surf. Sta.               |
| VT. 100A/PINNEY HOLLOW BROOK |                          |
| ABUT. #1 DETAILS             |                          |
| Designed by J. RICHARDSON    | Drawn by J. RICHARDSON   |
| Checked by D. ROSS           | Bridge Design Supervisor |
| Date 4-74                    | J. RICHARDSON Date       |
| PROJECT                      | PROJECT NO. DR #16       |
| PLYMOUTH                     | BMA 6327                 |
| Bridge Sheet No.             | Sheet 16                 |

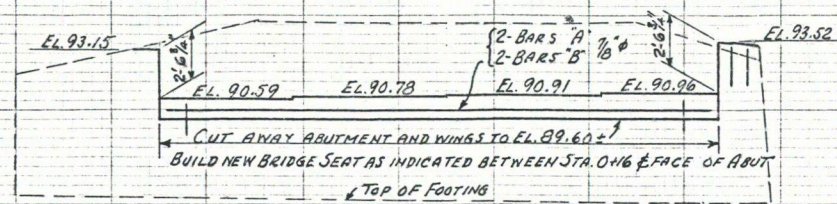


NOTE: 1. For Wingwall Typical See Sheet 6 of 16  
2. For Section A-A See Sheet 6 of 16

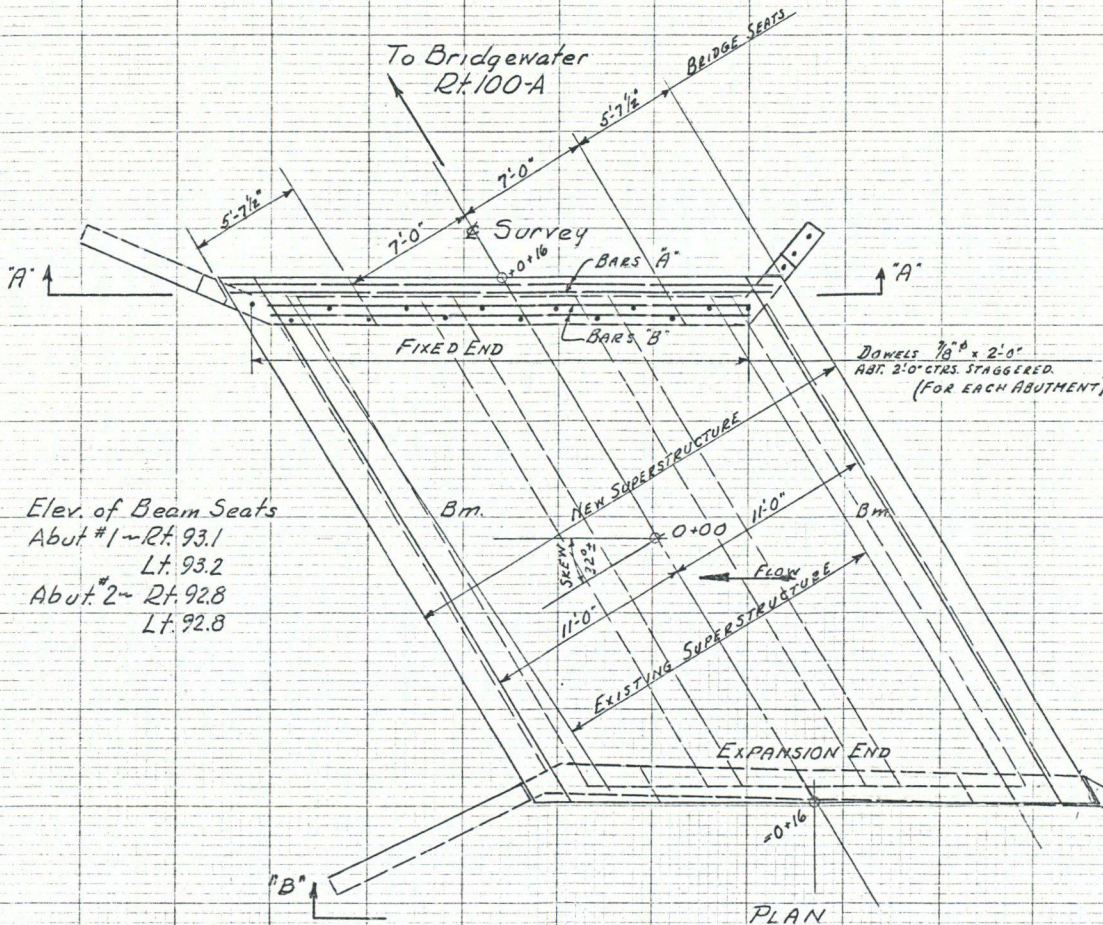


|                                            |                                                  |
|--------------------------------------------|--------------------------------------------------|
| STATE OF VERMONT<br>DEPARTMENT OF HIGHWAYS |                                                  |
| TOWN OF PLYMOUTH                           | Bridge No. 7                                     |
| HIGHWAY NO. VT. 100A                       | Log. No. 172-04                                  |
| ABUT. # 2 DETAILS                          |                                                  |
| VT. 100A OVER PINNEY HOLLOW BROOK          |                                                  |
| Designed by J. RICHARDSON                  | Drawn by C. WITHAM                               |
| Checked by J. Richardson date 4/74         | Bridge Design Supervisor J. RICHARDSON date 4/74 |
| PROJECT PLYMOUTH                           | PROJECT NO. BMA 6327                             |
| Bridge Sheet No.                           | Sheet 7 of 16                                    |

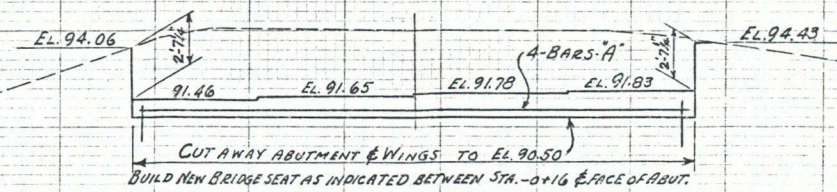




SECTION A-A



PLAN

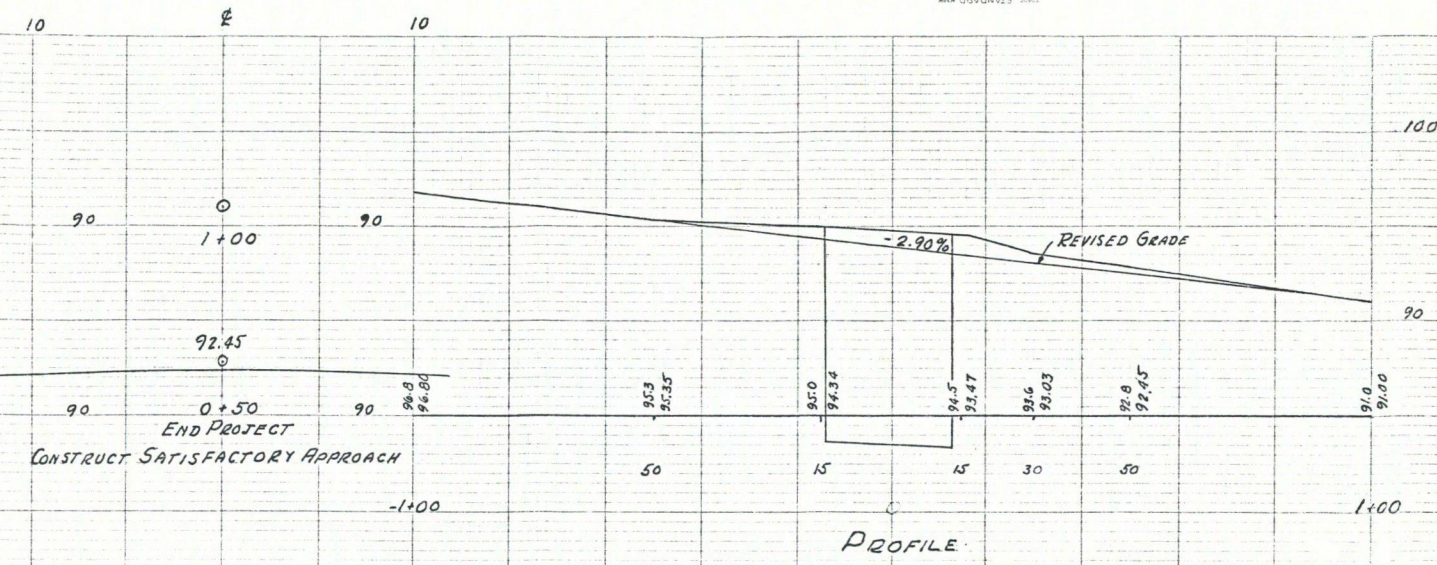


SECTION B-B

B.M. - Spike in root 30" Maple.  
18' Left ~ Sta. 0+90 ~ El. 100.0

PRESSENT SUPERSTRUCTURE  
LAMINATED WOOD FLOOR  
ON 9-15" I-BEAMS.

NEW SUPERSTRUCTURE  
REINFORCED CONCRETE TEE BEAM  
32' OVERALL SPAN - 22' ROADWAY  
32° ± SKEW  
CABLE GUARD RAIL



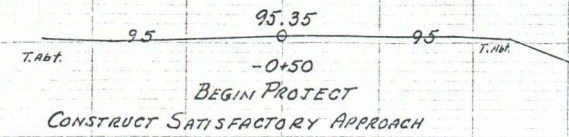
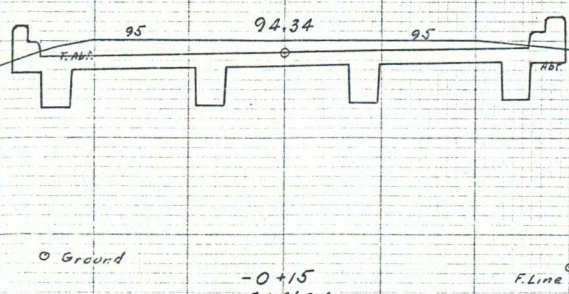
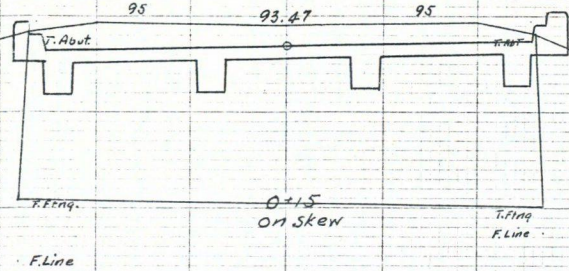
Reinforcing Steel for Abutments  
6 Bars-A - 3/8" x 28'-6" ~ Straight  
2 Bars-B - 3/8" x 25'-6" ~ "  
32 Dowels 3/8" x 2'-0" ~ "

LIST OF SHEETS

No. 18-Plan, Elevations, Cross Sections, Profile & Abut. Detail  
8-SB-22-34 Span-30° Skew (mod. to 32° overall, 32° ± skew.  
Bars B3, S4, & S5 to be shortened 2'-0")  
3-SB-5C - Cable Guard Rail  
4-S-30 - Anchors for C.G.R.  
5-SB-11 - Barricades, Lights, & Signs.  
6-SB-20 - Construction Details. Detail B & J

Estimated Quantities

|                                      |           |
|--------------------------------------|-----------|
| Common Excavation Incl. Borrow       | 160 C.Y.  |
| Structure Excavation                 | 25 C.Y.   |
| Gravel Surface Course                | 90 C.Y.   |
| Concrete Class "A"                   | 45 C.Y.   |
| Reinforcing Steel                    | 12585 Lbs |
| Temporary Bridge & Maint. of Traffic | 1-1.5     |
| Removal of Present Superstructure    | 1-1.5     |
| Cable Guard Rail                     | 160 L.F.  |
| Anchors for C.G.R.                   | 4 Ea      |



Rt-100-A  
Plymouth  
Bridge #5 #7  
Log Sta. 170+90 172+04  
Sht. 18 of 20

Drawn H.E.S. 7/11/46  
Chkd. L.M.B. 7/10/46  
Traced D.W.P. 4/13/47