

# INDEX OF SHEETS

1. TITLE SHEET
2. PRELIMINARY INFORMATION SHEET
3. QUANTITY SHEET 1
4. QUANTITY SHEET 2
5. TIE SHEET
6. LAYOUT SHEET 1
7. PROFILE SHEET
8. MISC. DETAILS
9. PLAN AND ELEVATION
10. RESOURCE SHEET
11. GENERAL NOTES
12. TYPICAL BRIDGE SECTION
13. FLOOR FRAMING PLAN AND TRUSS ELEVATION
14. TRUSS DETAILS
15. DECK AND CURB SHEET
16. SIDING DETAILS
17. END BRIDGE DETAILS
18. ABUT. 1 DETAILS
19. ABUT. 2 DETAILS
20. WINGWALL DETAILS
21. BRIDGE SEAT AND CORNER DETAILS
22. DOWNSPOUT DETAILS
23. RAILING DETAIL SHEET
24. TRAFFIC SIGN SUMMARY
25. REINFORCING STEEL SCHEDULE
- 26-29. ROADWAY CROSS SECTIONS
- 30-31. CHANNEL CROSS SECTIONS
32. EROSION PREVENTION AND SEDIMENT CONTROL NARRATIVE
33. EXISTING CONDITIONS
34. EROSION PREVENTION AND SEDIMENT CONTROL PLAN
35. FINAL CONDITIONS
36. EROSION PREVENTION AND SEDIMENT CONTROL NOTES
- 37-40. EROSION PREVENTION AND SEDIMENT CONTROL DETAILS

## LIST OF STANDARDS

|        |            |
|--------|------------|
| B-5    | 06-01-1994 |
| E-107  | 06-30-2003 |
| E-107A | 08-08-1995 |
| E-121  | 08-08-1995 |
| E-141  | 09-20-1995 |
| E-155  | 05-01-2004 |
| E-160  | 05-20-1999 |
| G-1    | 01-03-2000 |
| G-1d   | 01-03-2000 |

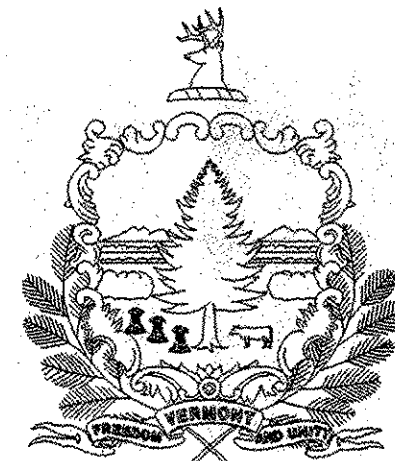
## CONVENTIONAL SYMBOLS

|                    |  |
|--------------------|--|
| COUNTY LINE        |  |
| TOWN LINE          |  |
| LIMITS OF ACCESS   |  |
| POINT OF ACCESS    |  |
| FENCE LINE         |  |
| STONE WALL         |  |
| TRAVELED WAY       |  |
| GUARD RAIL         |  |
| RAILROAD           |  |
| SURVEY LINE        |  |
| CULVERT            |  |
| POWER POLE         |  |
| TELEPHONE POLE     |  |
| TREES              |  |
| CONTROL OF ACCESS  |  |
| PROPERTY LINE      |  |
| R.O.W. TAKING LINE |  |
| SLOPE RIGHTS       |  |
| TOP OF CUT         |  |
| TOE OF SLOPE       |  |

SURVEYED BY : R. GILMAN  
SURVEYED DATE : JUNE 08 2003

DATUM  
VERTICAL NAVD88  
HORIZONTAL NAD83 (96)

# STATE OF VERMONT AGENCY OF TRANSPORTATION



## PROPOSED IMPROVEMENT BRIDGE PROJECT TOWN OF TUNBRIDGE COUNTY OF ORANGE

ROUTE NO. : TH 45

BRIDGE NO. : 33 "CILLEY BRIDGE"

PROJECT LOCATION : LOCATED IN THE COUNTY OF ORANGE, TOWN OF TUNBRIDGE, ON TOWN HIGHWAY 45,  
BRIDGE 33 AT THE INTERSECTION OF TOWN HIGHWAY 45 AND TOWN HIGHWAY 48.

PROJECT DESCRIPTION : THE PROJECT SHALL CONSIST OF THE REHABILITATION OF THE CILLEY COVERED  
BRIDGE AND RELATED APPROACH WORK.

LENGTH OF STRUCTURE : 68.50 FEET  
LENGTH OF PARTICIPATION ROADWAY : 81.50 FEET  
LENGTH OF PROJECT : 150.00 FEET

## RECORD PLANS

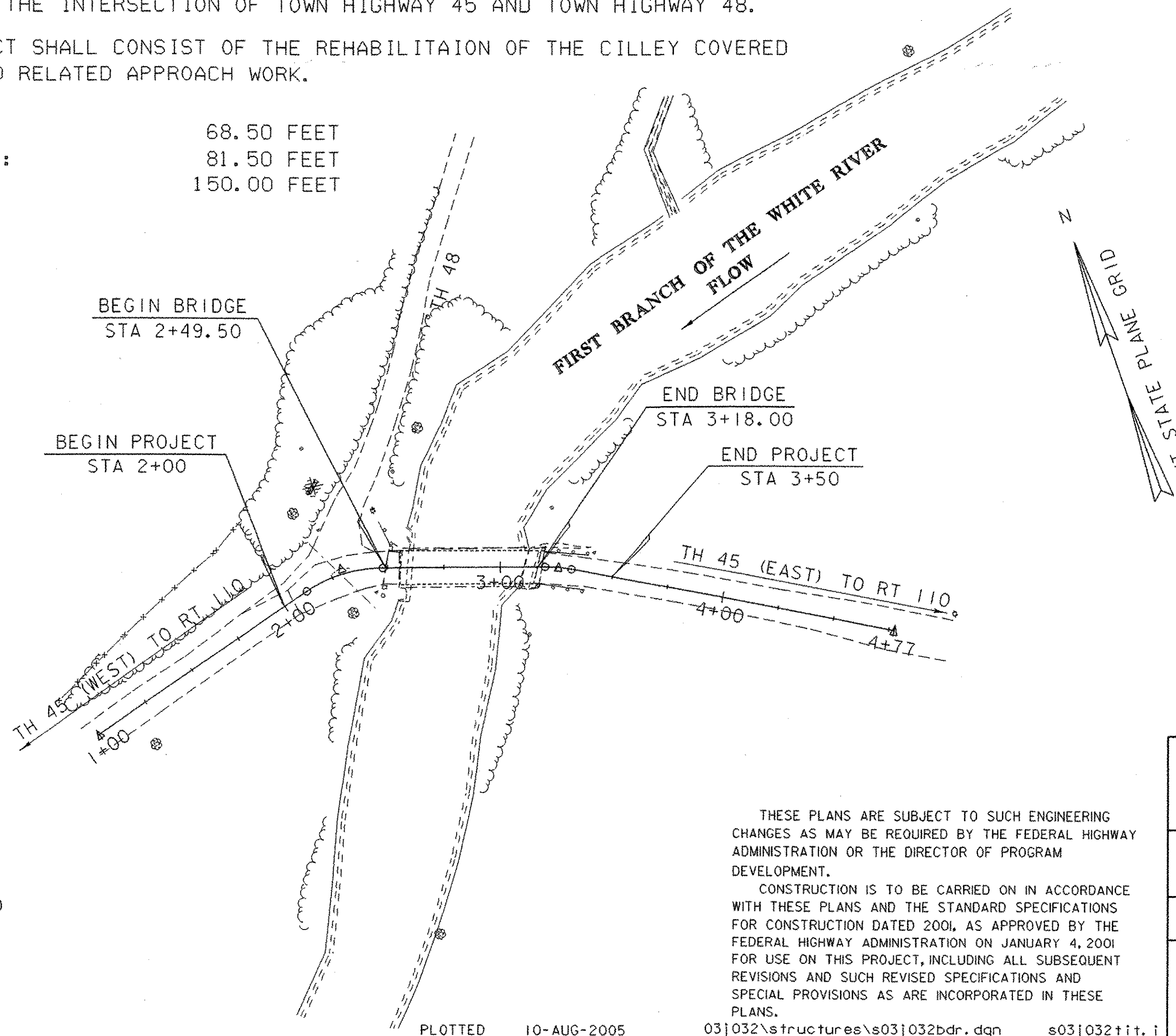
CONTRACTOR: WRITE CONSTRUCTION CO., INC. - MT. HOLLY, VT  
RESIDENT ENGINEER: TOM CHASE  
CONSTRUCTION BEGAN: APRIL 17, 2006  
CONSTRUCTION COMPLETE: AUGUST 15, 2006  
RECORD PLANS BY: TOM CHASE & C. PIERCE

I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY  
THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY Thomas A. Chase RESIDENT ENGINEER  
DATE 03/12/07

NOTE: Any further information concerning final quantities, amounts or other details  
relative to this project may be found at Central Files in the electronic archives.

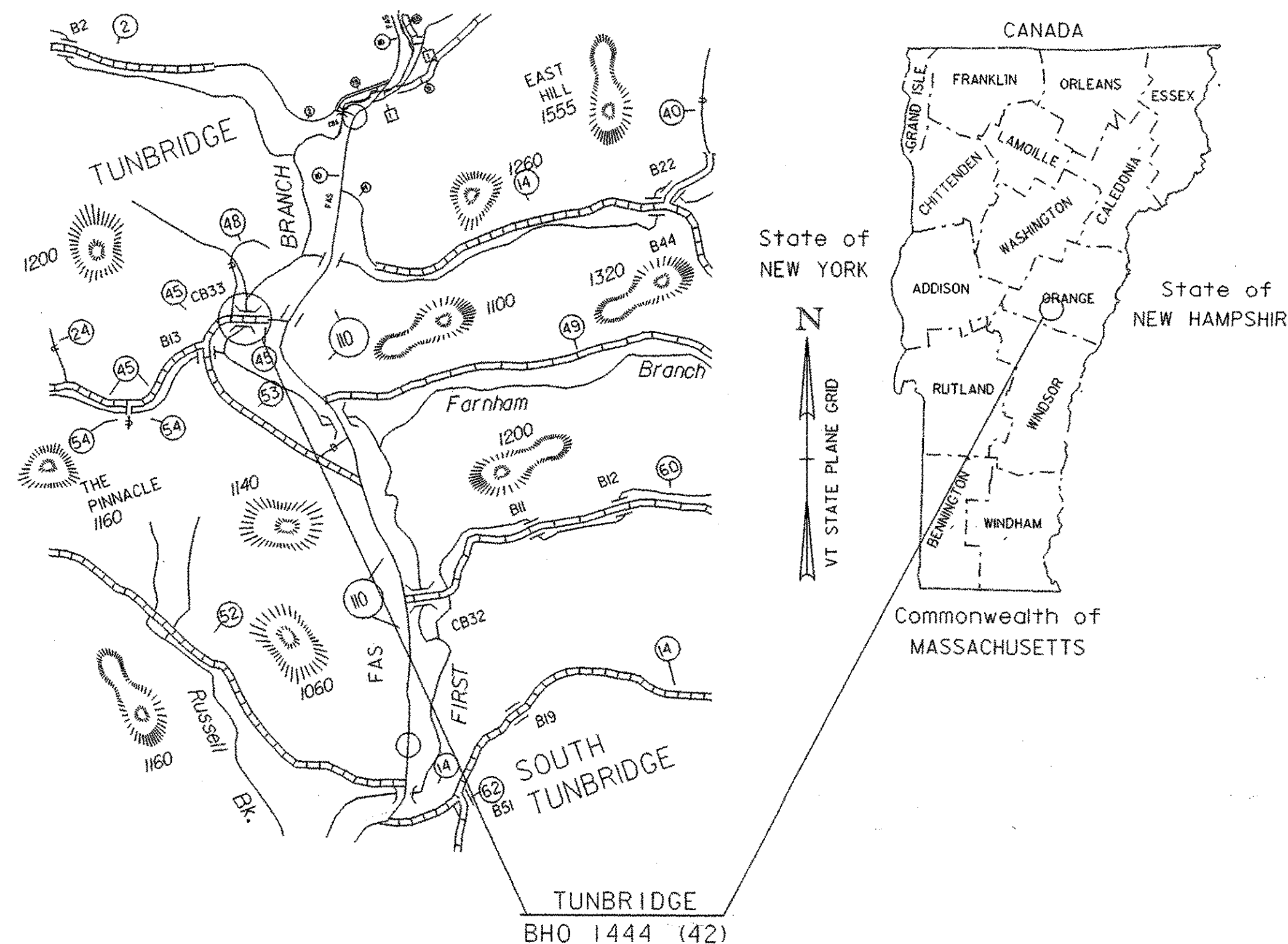
SCALE 1" = 40'-0"  
40 0 40

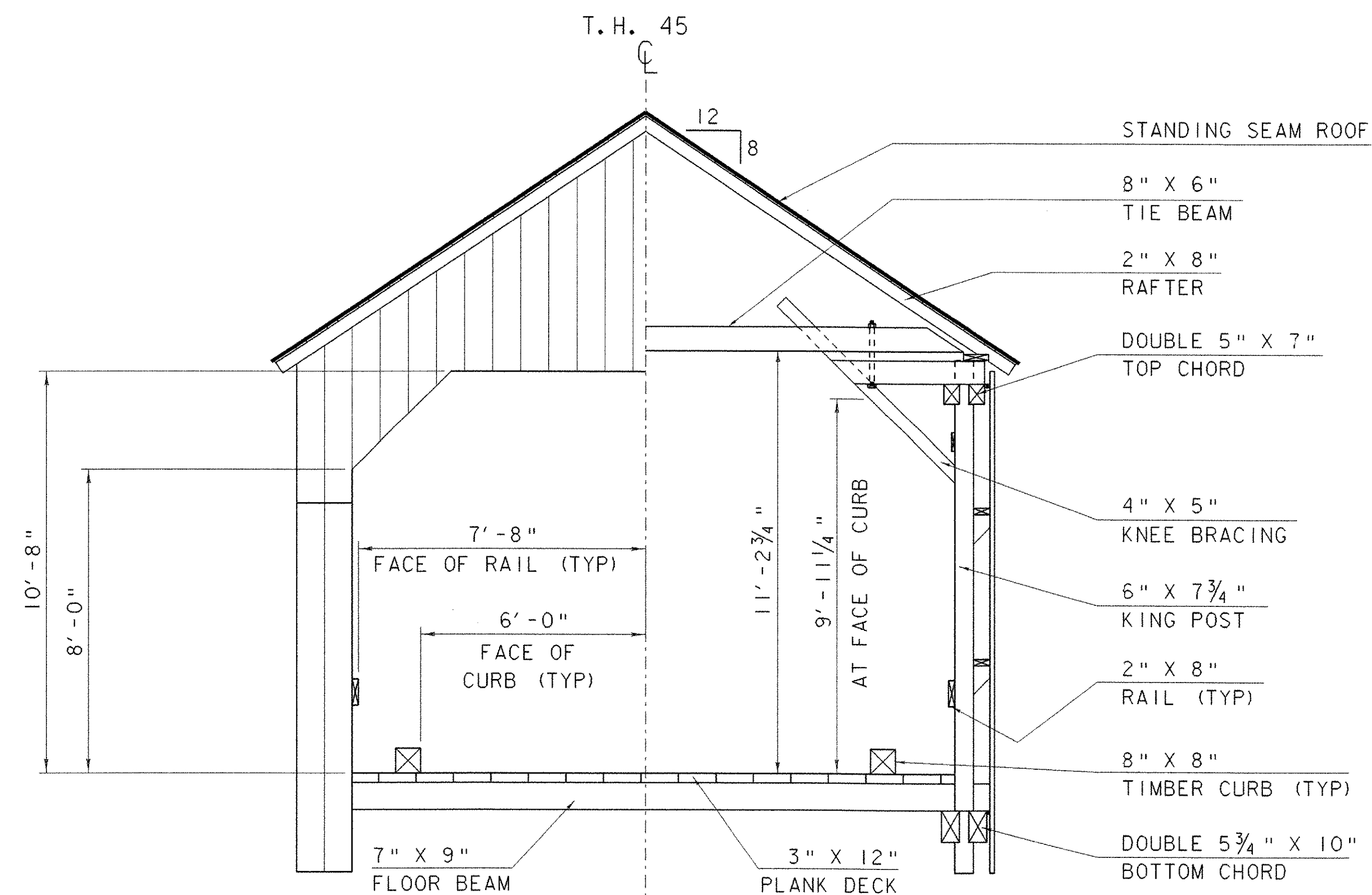


THESE PLANS ARE SUBJECT TO SUCH ENGINEERING  
CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY  
ADMINISTRATION OR THE DIRECTOR OF PROGRAM  
DEVELOPMENT.  
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE  
WITH THESE PLANS AND THE STANDARD SPECIFICATIONS  
FOR CONSTRUCTION DATED 2001, AS APPROVED BY THE  
FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2001  
FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT  
REVISIONS AND SUCH REVISED SPECIFICATIONS AND  
SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE  
PLANS.

PLOTTED 10-AUG-2005 03j032\structures\03j032bdr.dgn s03j032+it.i

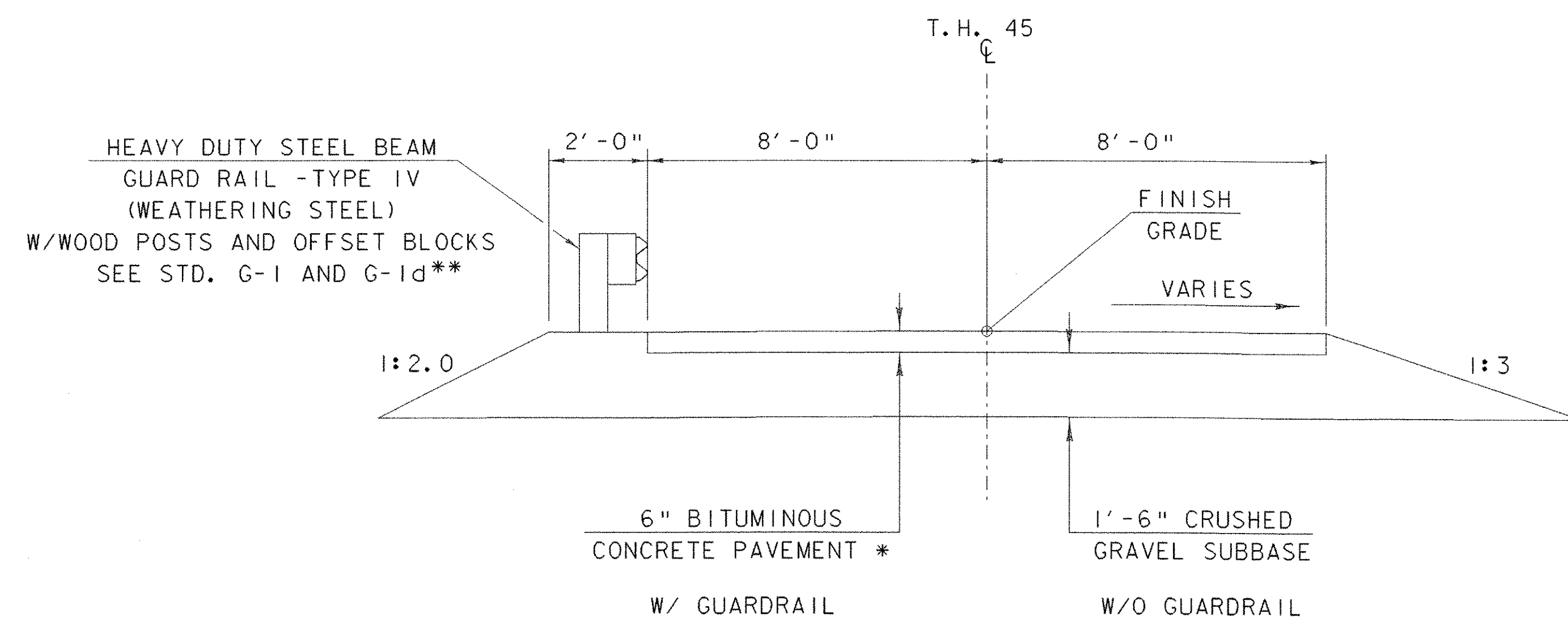
DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATOR  
APPROVED Michael DATE 9-8-2005  
DIRECTOR OF PROGRAM DEVELOPMENT  
APPROVED Richard P. Felt DATE 8-10-05  
PROJECT MANAGER : C.P. WILLIAMS  
PROJECT NAME : TUNBRIDGE  
PROJECT NUMBER : BHO 1444 (42)  
SHEET 1 OF 40 SHEETS





TYPICAL SECTION

SCALE: 3/8" = 1' - 0"



TYPICAL ROADWAY SECTION

SCALE 3/8" = 1' - 0"



\*\*IF TYPE V (ALKALINE COPPER QUAT) PRESERVATIVE IS USED THEN AN ALTERNATIVE APPROVED MATERIAL SHALL BE USED FOR THE OFFSET BLOCKS.

\* 1 1/2" TYPE III OR IV OVER  
1 1/2" TYPE III OR IV OVER  
3" TYPE I OR II

## PRELIMINARY HYDRAULICS REPORT:

Drainage Area: 86.7 sq.mi.

Peak Flow Data:

Q2.33 - 2550 cfs  
Q10 - 4900 cfs  
Q25 - 6425 cfs  
Q50 - 7900 cfs  
Q100 - 9100 cfs

Existing Structure:

Clear Span (Normal To Stream): 50 ft

Vertical Clearance Above Water Level, on Date of Survey: 7' - 2"

Permit Information:

Ordinary High Water: 519 ft

Required Channel Protection Type III Stone Fill

### DESIGN CRITERIA:

- DESIGN LIVE LOAD AASHTO H6
- DESIGN SPAN 67'
- ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE N/A
- ALLOWABLE LOAD FOR PILING N/A TYPE N/A ESTIMATED LENGTH N/A
- STRUCTURAL STEEL AASHTO GRADE N/A
- REINFORCING STEEL GRADE 60
- CONCRETE, HIGH PERFORMANCE CLASS B  $f'_c = 3500$  PSI

### TRAFFIC MAINTENANCE:

- IS TRAFFIC TO BE MAINTAINED? NO IF YES, ON EXISTING STRUCTURE N/A OR ON TEMPORARY BRIDGE N/A
- TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY N/A TRAFFIC CONTROL SIGNALS REQUIRED N/A

ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE? N/A

### LOAD RATING (TONS)

| STRESS LEVELS<br>(WORKING STRESS) | TRUCK |    |     |        |          |          |          |
|-----------------------------------|-------|----|-----|--------|----------|----------|----------|
|                                   | H     | HS | SS2 | 6 AXLE | 3A. STR. | 4A. STR. | 5A. SEMI |
| INVENTORY                         | 6     |    |     |        |          |          |          |
| POSTED                            | 7     |    |     |        |          |          |          |
| OPERATING                         | 8     |    |     |        |          |          |          |

### TRAFFIC DATA

| YEAR | ADT | DHV | % D | % T | ADTT |
|------|-----|-----|-----|-----|------|
| 1994 | 50  |     |     |     |      |
| 2012 | 70  |     |     |     |      |

Design speed: 35 mph

## STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of TUNBRIDGE Bridge No. 33  
Highway No. TH 45 Log Sta.   
Surv. Sta.

TH 45 OVER FIRST BRANCH OF THE WHITE RIVER

### PRELIMINARY INFORMATION

Designed By R.S. YOUNG Drawn By E.L. RUSTAY  
Checked By Date Bridge Design Supervisor  
R.S. YOUNG 10/03 C.P. WILLIAMS Date 10/03

PROJECT TUNBRIDGE PROJECT NO. BHO 1444 (42)

I.G.C. Info. s03j032/Structures/s03j032p.i.dgn s03j032p.i.i

Bridge Sheet No. Sheet 2 of 40

| STATE OF VERMONT<br>AGENCY OF TRANSPORTATION |  |  |                  |   |          |  |          |  |         |  |                |  |                    |  |                    | QUANTITY SHEET |                |       |              |                                                               |             |                                        |      |       |  |
|----------------------------------------------|--|--|------------------|---|----------|--|----------|--|---------|--|----------------|--|--------------------|--|--------------------|----------------|----------------|-------|--------------|---------------------------------------------------------------|-------------|----------------------------------------|------|-------|--|
| SUMMARY OF ESTIMATED QUANTITIES              |  |  |                  |   |          |  |          |  |         |  |                |  |                    |  |                    | TOTALS         |                |       | DESCRIPTIONS |                                                               |             | DETAILED SUMMARY OF QUANTITIES         |      |       |  |
|                                              |  |  | SUPER<br>STRUCT. |   | ABUT. #1 |  | ABUT. #2 |  | ROADWAY |  | E & C<br>ITEMS |  | EROSION<br>CONTROL |  | BRIDGE<br>QUANTITY | ROUND          | GRAND<br>TOTAL | FINAL | UNIT         | ITEMS                                                         | ITEM NUMBER | QUANTITIES                             | UNIT | ITEMS |  |
|                                              |  |  |                  |   |          |  |          |  | 1       |  |                |  |                    |  |                    |                | 1              |       | LS           | CLEARING AND GRUBBING (Including Individual Trees and Stumps) | 201.10      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  | 330     |  |                |  |                    |  |                    |                | 330            |       | CY           | COMMON EXCAVATION                                             | 203.15      |                                        |      |       |  |
|                                              |  |  |                  | 5 |          |  | 25       |  |         |  |                |  |                    |  |                    |                | 30             |       | CY           | UNCLASSIFIED CHANNEL EXCAVATION                               | 203.27      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  | 10                 |  |                    |                | 10             |       | CY           | TRENCH EXCAVATION OF EARTH                                    | 204.20      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  | 310     |  |                |  | 10                 |  |                    |                | 320            |       | CY           | SUBBASE OF GRAVEL                                             | 301.15      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  | 2       |  |                |  |                    |  |                    |                | 2              |       | CWT          | EMULSIFIED ASPHALT                                            | 404.65      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  | 135     |  |                |  |                    |  |                    |                | 135            |       | TON          | MEDIUM DUTY BIT. CONC. PAVEMENT (PG 58-28)                    | 406.27      |                                        |      |       |  |
|                                              |  |  |                  |   | 18       |  | 14       |  |         |  |                |  |                    |  |                    |                | 32             |       | CY           | CONCRETE, HIGH PERFORMANCE CLASS B                            | 501.34      |                                        |      |       |  |
|                                              |  |  | 1                |   |          |  |          |  |         |  |                |  |                    |  |                    |                | 1              |       | LS           | SHORING SUPERSTRUCTURE (MOD.)                                 | 502.10      |                                        |      |       |  |
|                                              |  |  |                  |   | 300      |  |          |  |         |  |                |  |                    |  |                    |                | 300            |       | LB           | STRUCTURAL STEEL                                              | 506.60      |                                        |      |       |  |
|                                              |  |  |                  |   | 16       |  |          |  |         |  |                |  |                    |  |                    |                | 16             |       | LF           | DRAIN TROUGH (MOD.)                                           | 506.80      |                                        |      |       |  |
|                                              |  |  |                  |   | 1906     |  | 1812     |  |         |  |                |  |                    |  |                    |                | 3718           |       | LB           | REINFORCING STEEL                                             | 507.15      |                                        |      |       |  |
|                                              |  |  |                  |   | 24       |  | 24       |  |         |  |                |  |                    |  |                    |                | 48             |       | LF           | DRILLING AND GROUTING DOWELS                                  | 507.16      |                                        |      |       |  |
|                                              |  |  | 1                |   |          |  |          |  |         |  |                |  |                    |  |                    |                | 1              |       | LS           | STRUCTURAL PAINTING, FIELD APPLIED (MOD.)                     | 513.30      |                                        |      |       |  |
|                                              |  |  | 1                |   |          |  |          |  |         |  |                |  |                    |  |                    |                | 1              |       | LS           | CONTAINMENT & ENVIRON. PROTECTION, FIELD (MOD.)               | 513.36      |                                        |      |       |  |
|                                              |  |  |                  |   | 3        |  | 2        |  |         |  |                |  |                    |  |                    |                | 5              |       | GAL          | WATER REPELLENT (MOD. - SILANE)                               | 514.10      |                                        |      |       |  |
|                                              |  |  | 0.60             |   |          |  |          |  |         |  |                |  |                    |  |                    |                | 0.60           |       | MFBM         | STRUCTURAL LUMBER AND TIMBER - UNTREATED                      | 522.20      |                                        |      |       |  |
|                                              |  |  | 5.10             |   |          |  |          |  |         |  |                |  |                    |  |                    |                | 5.10           |       | MFBM         | STRUCTURAL LUMBER AND TIMBER - TREATED (FLOOR BEAMS)          | 522.25      |                                        |      |       |  |
|                                              |  |  | 3.25             |   |          |  |          |  |         |  |                |  |                    |  |                    |                | 3.25           |       | MFBM         | STRUCTURAL LUMBER AND TIMBER - TREATED (DECKING)              | 522.25      |                                        |      |       |  |
|                                              |  |  | 6.00             |   |          |  |          |  |         |  |                |  |                    |  |                    |                | 6.00           |       | MFBM         | NON - STRUCTURAL LUMBER-UNTREATED                             | 522.30      |                                        |      |       |  |
|                                              |  |  | 1                |   |          |  |          |  |         |  |                |  |                    |  |                    |                | 1              |       | EACH         | PARTIAL REMOVAL OF STRUCTURE                                  | 529.20      |                                        |      |       |  |
|                                              |  |  | 4                |   |          |  |          |  |         |  |                |  |                    |  |                    |                | 4              |       | EACH         | BEARING DEVICE ASSEMBLY (MOD.)                                | 531.10      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  | 16       |  |         |  |                |  |                    |  |                    |                | 16             |       | SY           | REPORTING MASONRY (MOD.)                                      | 602.30      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  | 10                 |  |                    |                | 10             |       | HR           | ALL PURPOSE EXCAVATOR RENTAL, TYPE I                          | 608.25      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  | 1                  |  |                    |                | 1              |       | TON          | DUST & ICE CONTROL WITH CALCIUM CHLORIDE                      | 609.15      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  | 10                 |  |                    |                | 10             |       | CY           | STONE FILL, TYPE I                                            | 613.10      |                                        |      |       |  |
|                                              |  |  |                  |   | 13       |  | 35       |  |         |  |                |  |                    |  |                    |                | 48             |       | CY           | STONE FILL, TYPE III                                          | 613.12      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  | 425     |  |                |  |                    |  |                    |                | 425            |       | LF           | SNOW FENCE (MOD-PDF)                                          | 620.70      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  | 168     |  |                |  |                    |  |                    |                | 168            |       | LF           | HVY DUTY STEEL BEAM GUARD RAIL (w/Wood Posts)                 | 621.21      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  | 4       |  |                |  |                    |  |                    |                | 4              |       | EACH         | ANCHOR FOR STEEL BEAM RAIL                                    | 621.60      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  | 56      |  |                |  |                    |  |                    |                | 56             |       | LF           | REMOVL AND DISP OF GUARD RAIL                                 | 621.80      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  | 1              |  |                    |  |                    |                | 1              |       | LS           | FIELD OFFICE-ENGINEERS                                        | 631.10      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  | 1              |  |                    |  |                    |                | 1              |       | LS           | TESTING EQUIPMENT - CONCRETE                                  | 631.16      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  | 1              |  |                    |  |                    |                | 1              |       | LS           | TESTING EQUIPMENT - BITUMINOUS                                | 631.17      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  | 1              |  |                    |  |                    |                | 1              |       | LU           | FIELD OFFICE - TELEPHONE (NABI)                               | 631.25      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  | 1       |  |                |  |                    |  |                    |                | 1              |       | LS           | MOBILIZATION/DEMOBILIZATION                                   | 635.11      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  | 1       |  |                |  |                    |  |                    |                | 1              |       | LS           | TRAFFIC CONTROL                                               | 641.10      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  | 61                 |  |                    |                | 61             |       | SY           | GEOTEXTILE UNDER STONE FILL                                   | 649.31      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  | 151                |  |                    |                | 151            |       | SY           | GEOTEXTILE FOR SILT FENCE                                     | 649.51      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  | 105                |  |                    |                | 105            |       | SY           | GEOTEXTILE FOR FILTER CURTAIN                                 | 649.61      |                                        |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  |                    |  |                    |                |                |       |              |                                                               |             | PROJECT NAME: Tunbridge                |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  |                    |  |                    |                |                |       |              |                                                               |             | PROJECT NUMBER: BHO 1444 (42)          |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  |                    |  |                    |                |                |       |              |                                                               |             | FILE NAME: 03j032/str/s03j032excel.dgn |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  |                    |  |                    |                |                |       |              |                                                               |             | PLOT DATE: 08/30/2005                  |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  |                    |  |                    |                |                |       |              |                                                               |             | PROJECT MANAGER: C.P. Williams         |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  |                    |  |                    |                |                |       |              |                                                               |             | DRAWN BY: R.S. Young                   |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  |                    |  |                    |                |                |       |              |                                                               |             | DESIGNED BY: R.S. Young                |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  |                    |  |                    |                |                |       |              |                                                               |             | CHECKED BY: M.LONGSTREET               |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  |                    |  |                    |                |                |       |              |                                                               |             | QUANTITY SHEET #1                      |      |       |  |
|                                              |  |  |                  |   |          |  |          |  |         |  |                |  |                    |  |                    |                |                |       |              |                                                               |             | SHEET 3 OF 40                          |      |       |  |

[illegible]

|                                               |                                 |
|-----------------------------------------------|---------------------------------|
| PROJECT NAME: <b>Tunbridge</b>                |                                 |
| PROJECT NUMBER: <b>BHO 1444 (42)</b>          |                                 |
| FILE NAME: <b>03j032/str/s03j032excel.dgn</b> | PLOT DATE: <b>4/19/2004</b>     |
| PROJECT MANAGER: <b>C.P. Williams</b>         | DRAWN BY: <b>R.S. Young</b>     |
| DESIGNED BY: <b>R.S. Young</b>                | CHECKED BY: <b>M.LONGSTREET</b> |
| <b>QUANTITY SHEET #2</b>                      | SHEET <b>4</b> OF <b>40</b>     |

GPS CONTROL POINTS

HVCTRL # 1

STANDARD DISK STAMPED

J. Tucker

N = 504695.26  
E = 1641423.66  
ELEV. =

TO REACH FROM THE JUNCTION OF VT ROUTE 110 AND VT ROUTE 14 IN SOUTH ROYALTON GO NORTHERLY ALONG VT ROUTE 110 FOR 4.8 MI (7.7 KM) TO A FIELD DRIVE AND THE MARK ON THE LEFT. THE STATION IS LOCATED 41 FT (12.5 M) N 20 W FROM THE CENTER LINE OF VT ROUTE 110, 32 FT (9.8 M) N 80 W OF POLE 40/39, AND 15 FT (4.6 M) N 80 W FROM THE CENTER OF A FIELD DRIVE.

HVCTRL # 2

STANDARD DISK STAMPED

USGS M44

N = 503771.84  
E = 1639978.28  
ELEV. = 543.83

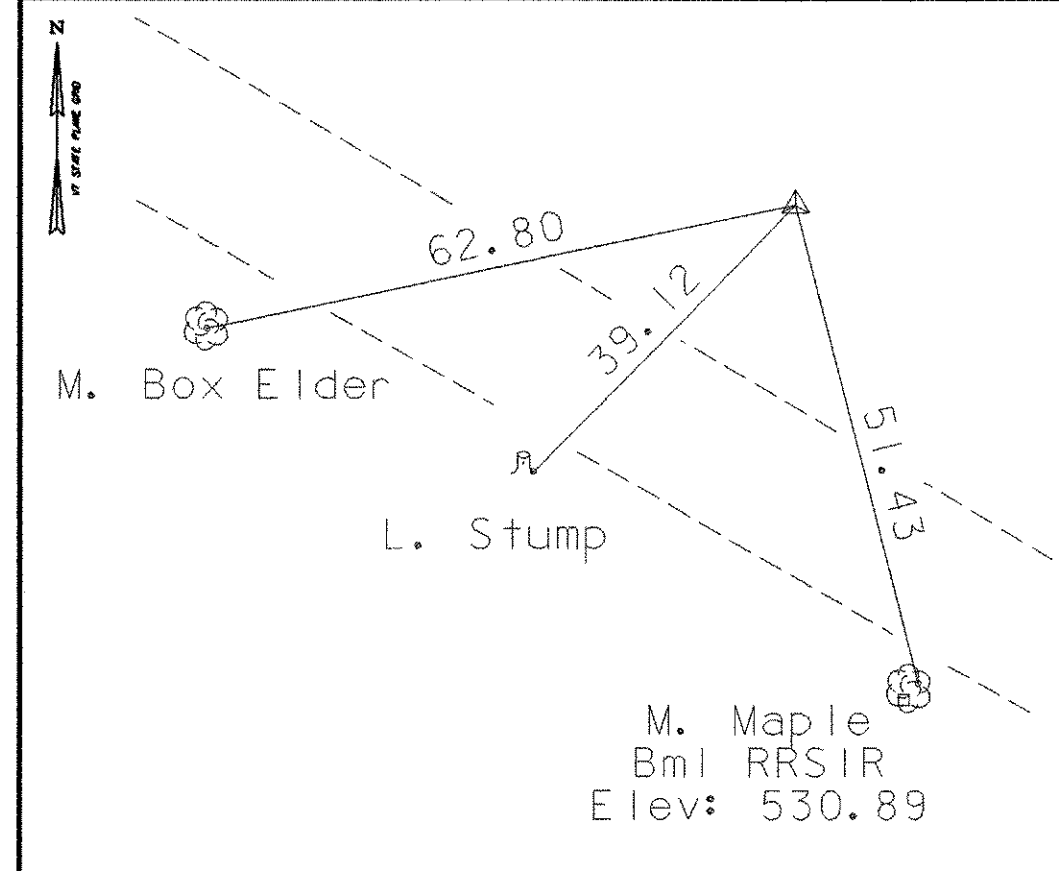
GENERAL LOCATION, TUNBRIDGE, VT. 0.5 MI (0.8 KM) SOUTHWEST OF, 30 FT (9.1 M) SOUTH OF JUNCTION OF ROAD WEST AND TURN IN MAIN ROAD SOUTHWEST, ACROSS ROAD FROM CEMETERY, IN LEDGE.

- DESCRIPTION PROVIDED BY VERMONT AGENCY OF TRANSPORTATION GEODETIC SURVEY UNIT
- TO ALLOW THE STATE PLANE COORDINATES TO FIT THE AGENCY DESIGN PLANE, SUBTRACT 500,000 FROM THE NORTING AND SUBTRACT 1,600,000 FROM THE EASTING

TRAVERSE TIES

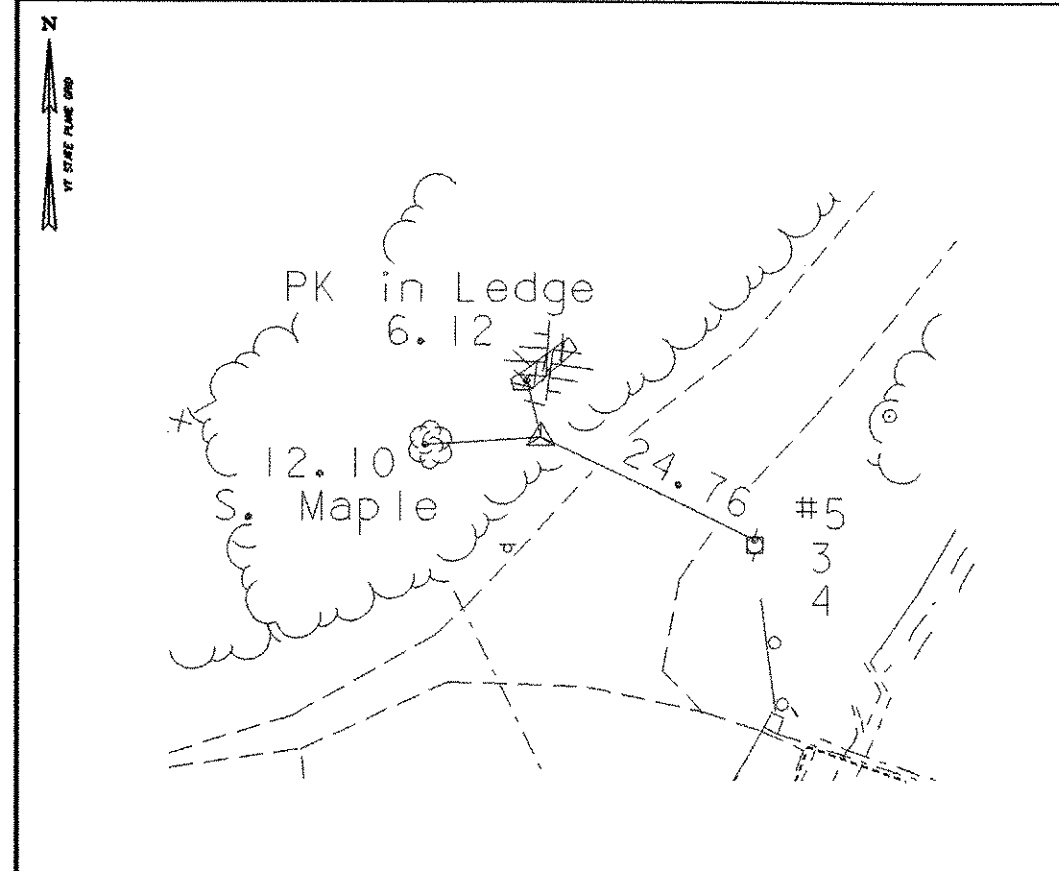
HVCTRL # 3

NORTH = 3881.78  
EAST = 39762.87  
ELEV. = 526.54



HVCTRL # 4

NORTH = 4105.05  
EAST = 39340.56  
ELEV. = 532.62



• MAIN TRAVERSE COMPLETED 06/08/03 by R. Gilman P.C. & P. Winters

ALIGNMENT TIES

POB

NORTH = 4039.7696  
EAST = 39215.3380

PI #1

NORTH = 4074.2846  
EAST = 39341.1533

PI #2

NORTH = 4043.1383  
EAST = 39432.3720

POE

NORTH = 3967.1246  
EAST = 39563.6243

• ALIGNMENT STAKED

DATUM

VERTICAL NAVD 88

HORIZONTAL NAD 83/96

ADJUSTMENT Compass

|                                                    |                            |
|----------------------------------------------------|----------------------------|
| PROJECT: TUNBRIDGE                                 | PROJECT NO.: BHO 1444 (42) |
| DESIGN FILE NAME: s03j032/structures/s03j032+1.dgn | PLOT DATE: 25-AUG-2005     |
| IPARM FILE NAME: s03j032+1.i                       | SURVEY DATE: 06/03         |
| SURVEYED BY: R. GILMAN                             | DRAWN BY: R. BULLOCK       |
| SQUAD LEADER: C.P. WILLIAMS                        | SHEET: 5 OF 40             |
| TRAVERSE & GEODETIC CONTROL INFORMATION            |                            |

25-AUG-2005

STA 2+07 ~ 2+49 RT  
STA 2+41 ~ 2+52 LT  
STA 3+16 ~ 3+54 RT  
STA 3+19 ~ 3+54 LT

STA 2+14 RT  
STA 2+42 LT  
STA 3+47 RT  
STA 3+47 LT

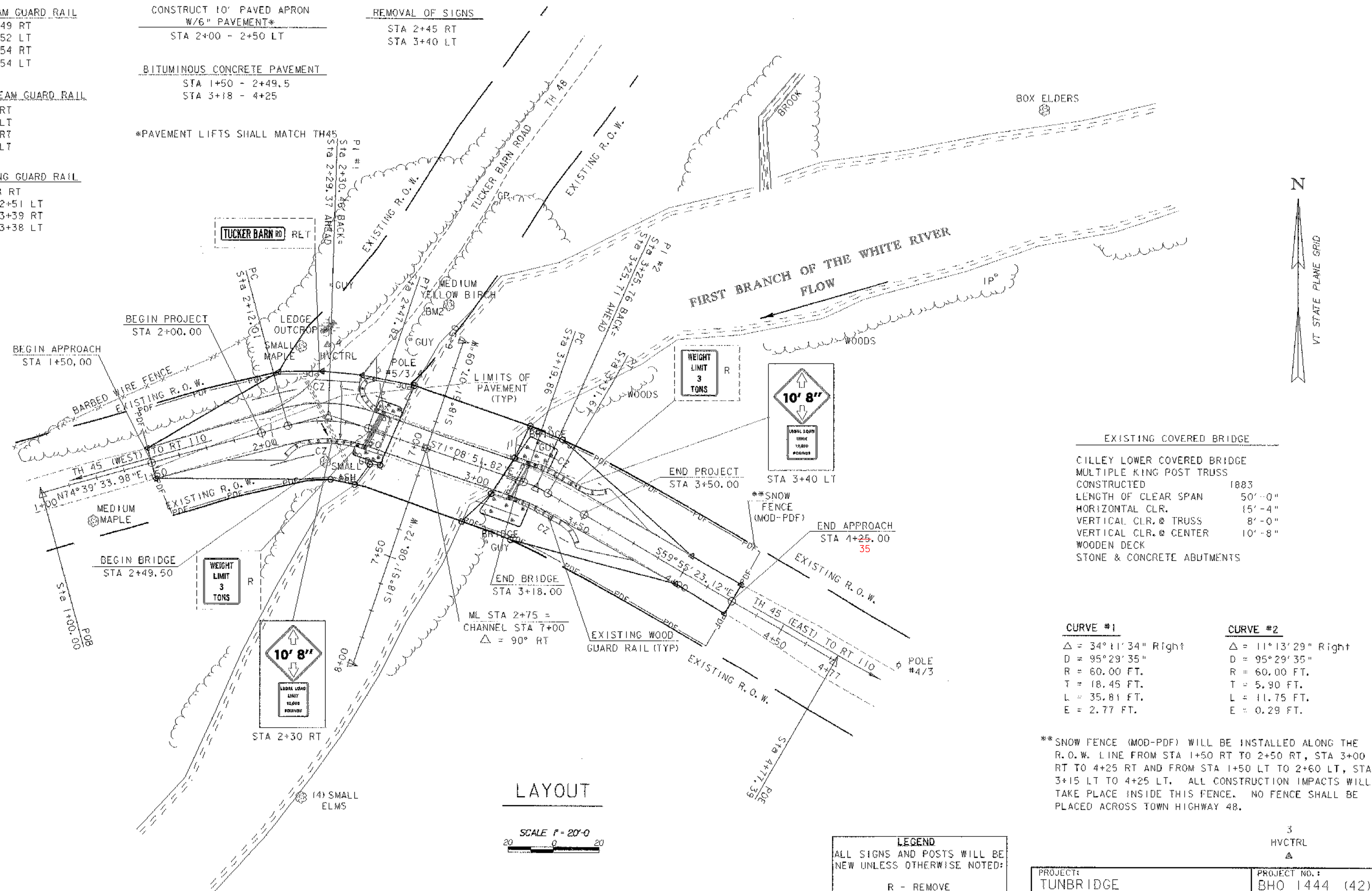
STA 2+48 RT  
STA 2+47 ~ 2+51 LT  
STA 3+17 ~ 3+39 RT  
STA 3+19 ~ 3+38 LT

STA 2+00 - 2+50 LT

STA 1+50 - 2+49.5  
STA 3+18 - 4+25

\*PAVEMENT LIFTS SHALL MATCH TH45

STA 2+45 RT  
STA 3+40 LT



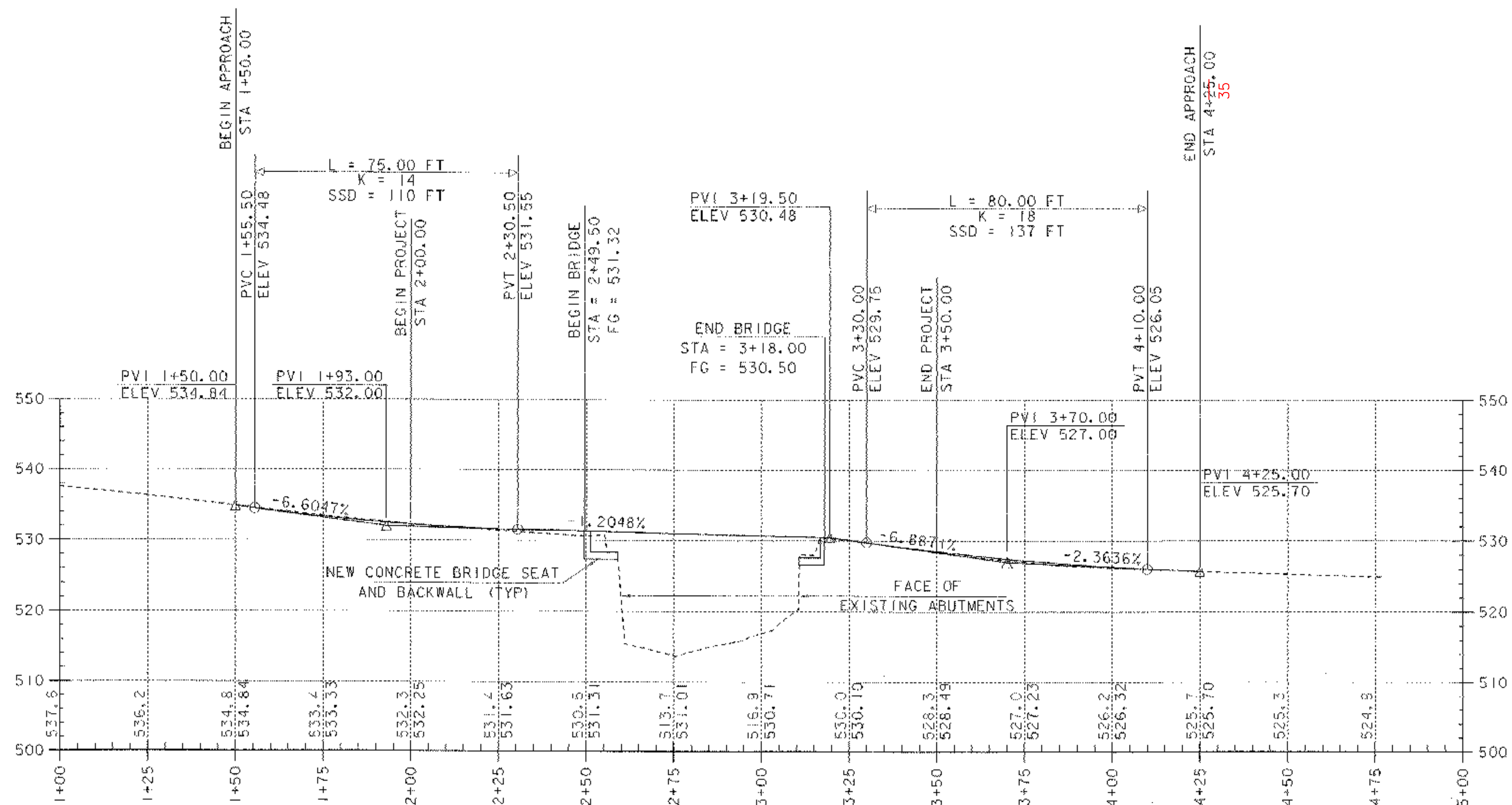
|            |             |
|------------|-------------|
| DATUM      | NAVD 88     |
| VERTICAL   |             |
| HORIZONTAL | NAD 83 / 96 |

**LEGEND**

ALL SIGNS AND POSTS WILL BE  
NEW UNLESS OTHERWISE NOTED:

R - REMOVE  
R&S - REMOVE & SALVAGE  
S - SALVAGE  
RET - RETAIN

|                                                     |                               |
|-----------------------------------------------------|-------------------------------|
| PROJECT:<br>TUNBRIDGE                               | PROJECT NO.:<br>BHO 1444 (42) |
| DESIGN FILE NAME: s03j032/Structures/s03j032bdr.dgn |                               |
| PARAM FILE NAME: s03j032la.i                        | PLOT DATE: 25-AUG-2005        |
| SURVEYED BY: R. GILMAN                              | SURVEY DATE: 06/08/03         |
| SQUAD LEADER: C. P. WILLIAMS                        | DRAWN BY: T. ANDERSON         |
| LAUNCH                                              | SHEET: 6 OF 40                |

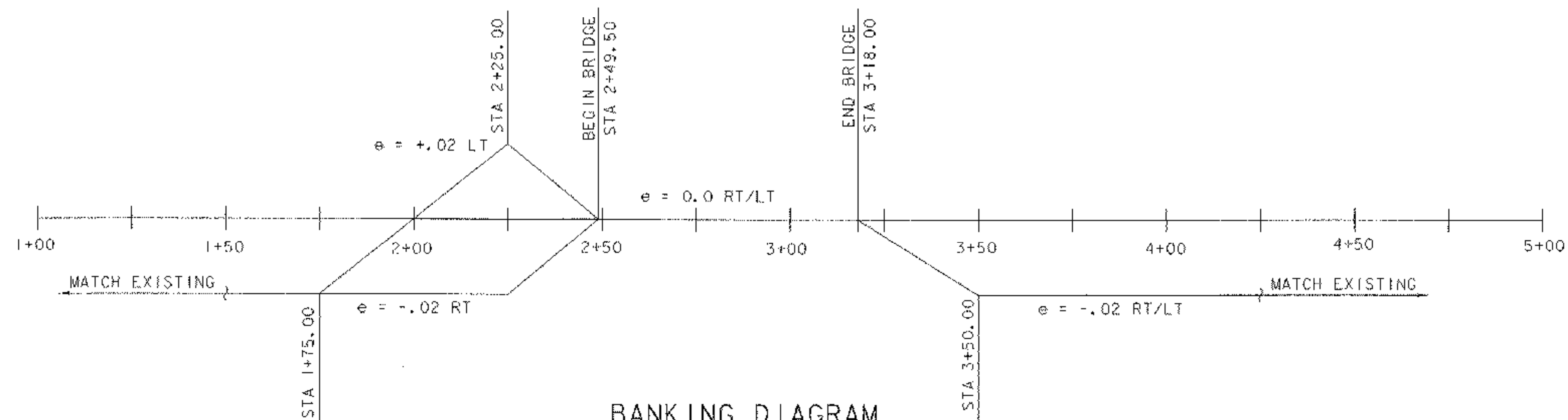
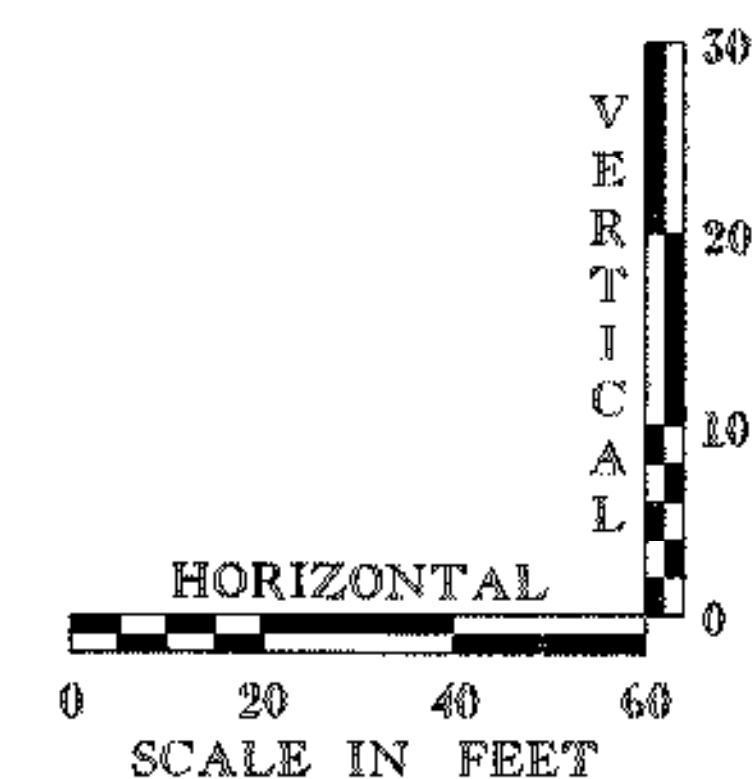


### PROFILE

HORIZONTAL SCALE : 1" = 20'  
VERTICAL SCALE: 1" = 10'

EXISTING ELEVATIONS -----  
ELEVATIONS SHOWN TO THE NEAREST TENTH

PROPOSED ELEVATIONS -----  
ELEVATIONS SHOWN TO THE NEAREST HUNDRETH

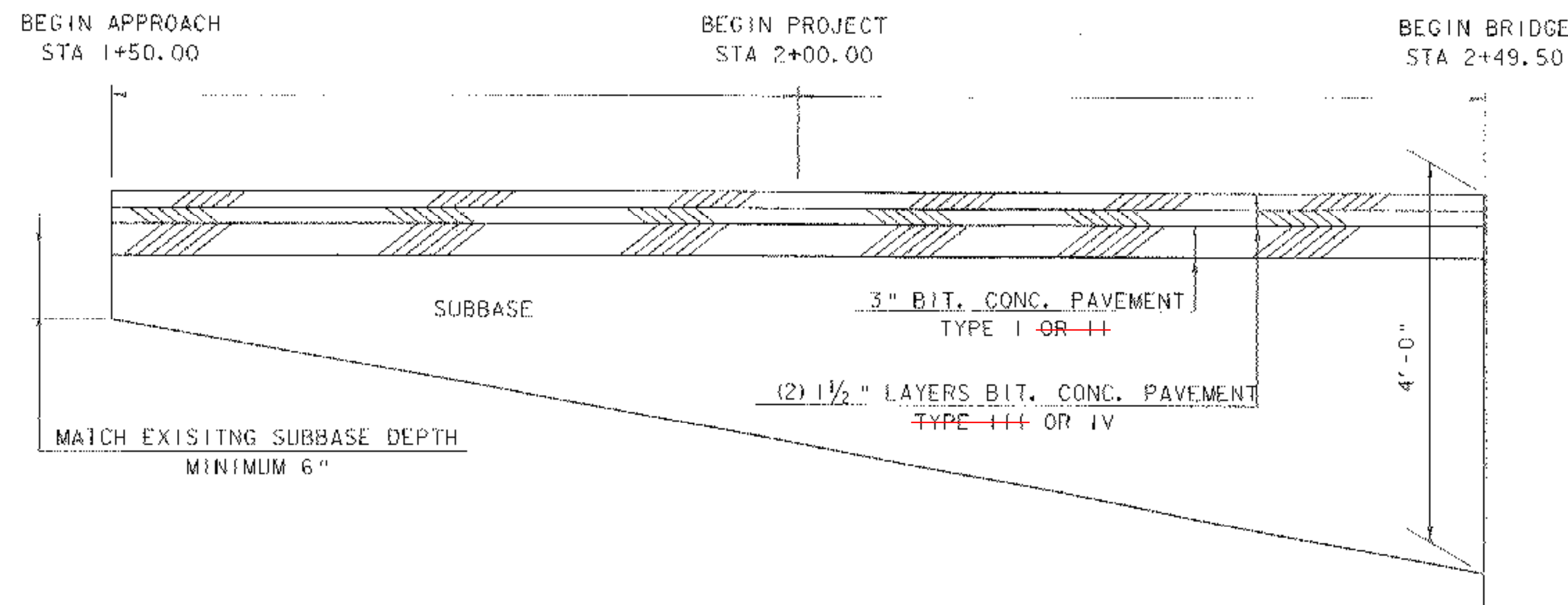


### BANKING DIAGRAM

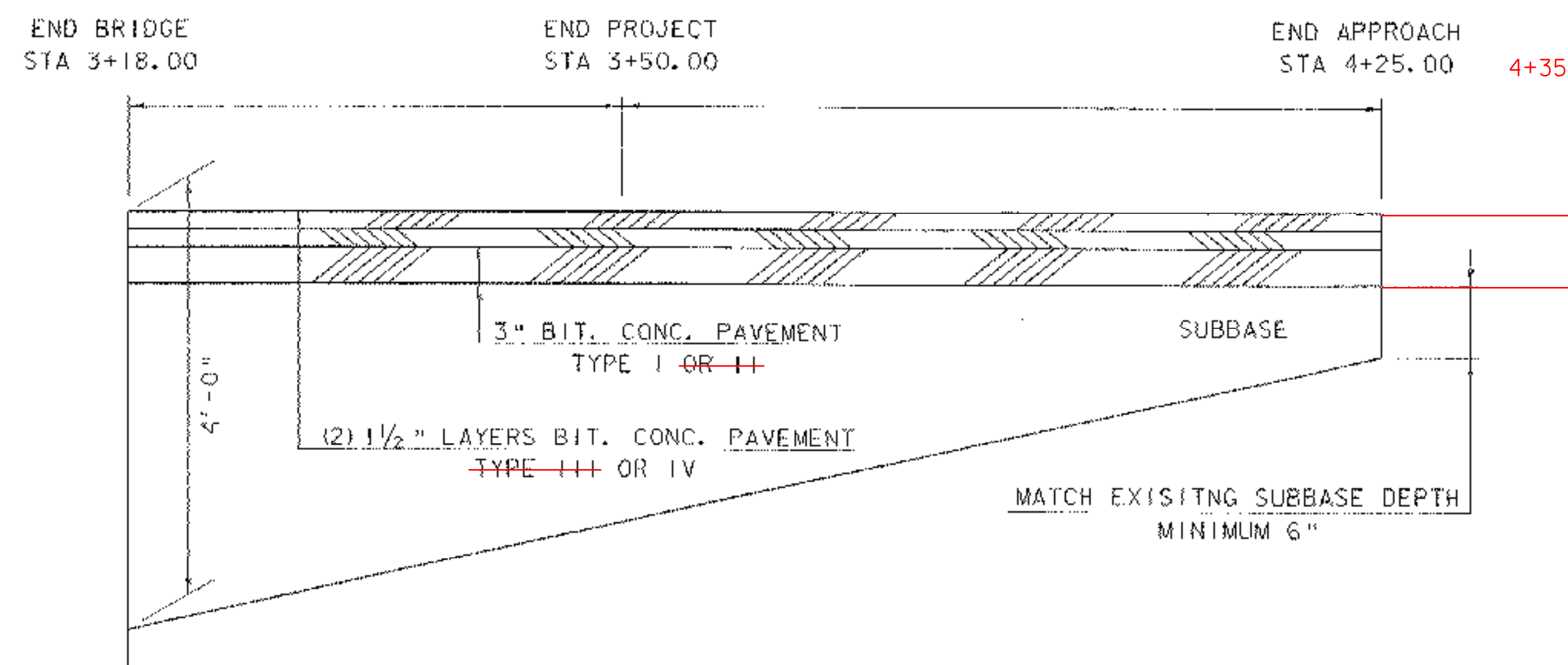
HORIZONTAL SCALE : 1" = 20'  
VERTICAL SCALE: 1" = .02 FT/FT

DATUM  
VERTICAL NAVD 88  
HORIZONTAL NAD 83-96

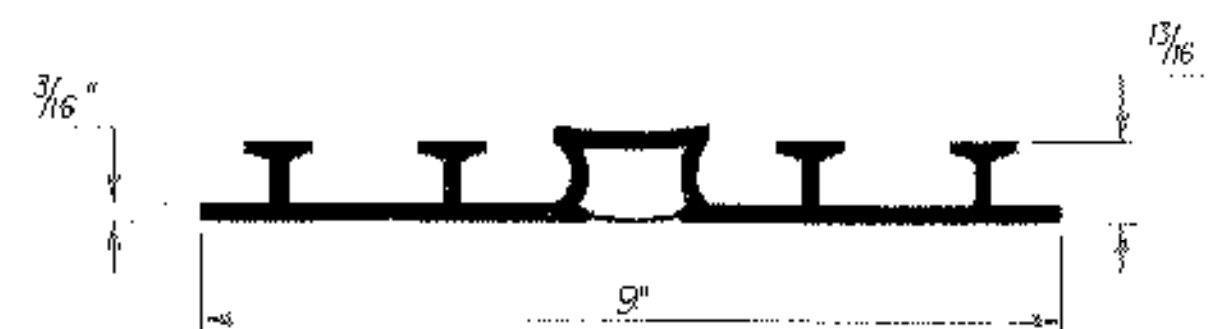
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|-----------------------------------------------------|-------------------------------|
| PROJECT:<br>TUNBRIDGE                               | PROJECT NO.:<br>BHO 1444 (42) |
| DESIGN FILE NAME: s03j032\Structures\s03j032pro.dgn | PLT DATE: 25-AUG-2005         |
| IPARM FILE NAME: s03j032pro.i                       | SURVEY DATE: 06/03            |
| SURVEYED BY: R. GILMAN                              | DRAWN BY: T. ANDERSON         |
| SQUAD LEADER: C. P. WILLIAMS                        | SHEET: 7 OF 40                |
| PROFILE SHEET                                       |                               |



**SUBBASE TRANSITION @ BEGIN PROJECT**  
NTS

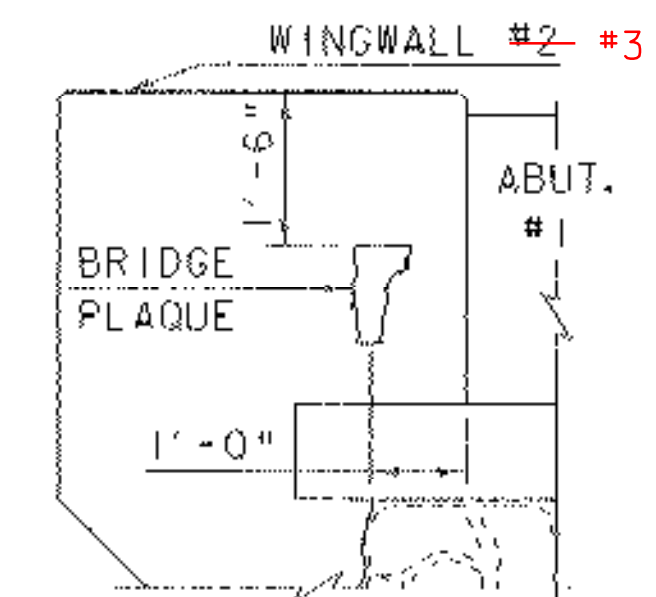


**SUBBASE TRANSITION @ END PROJECT**  
NTS



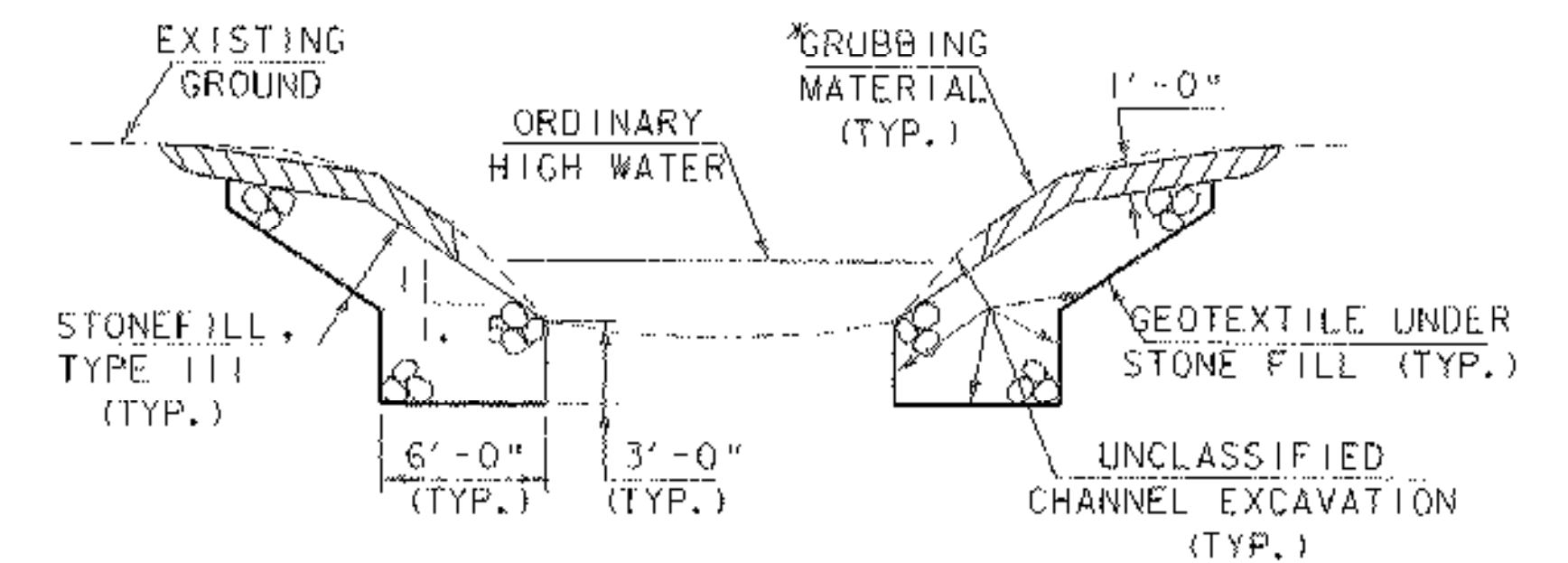
**P.V.C. WATERSTOP FOR EXPANSION JOINTS**

THE COSTS FOR P.V.C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.



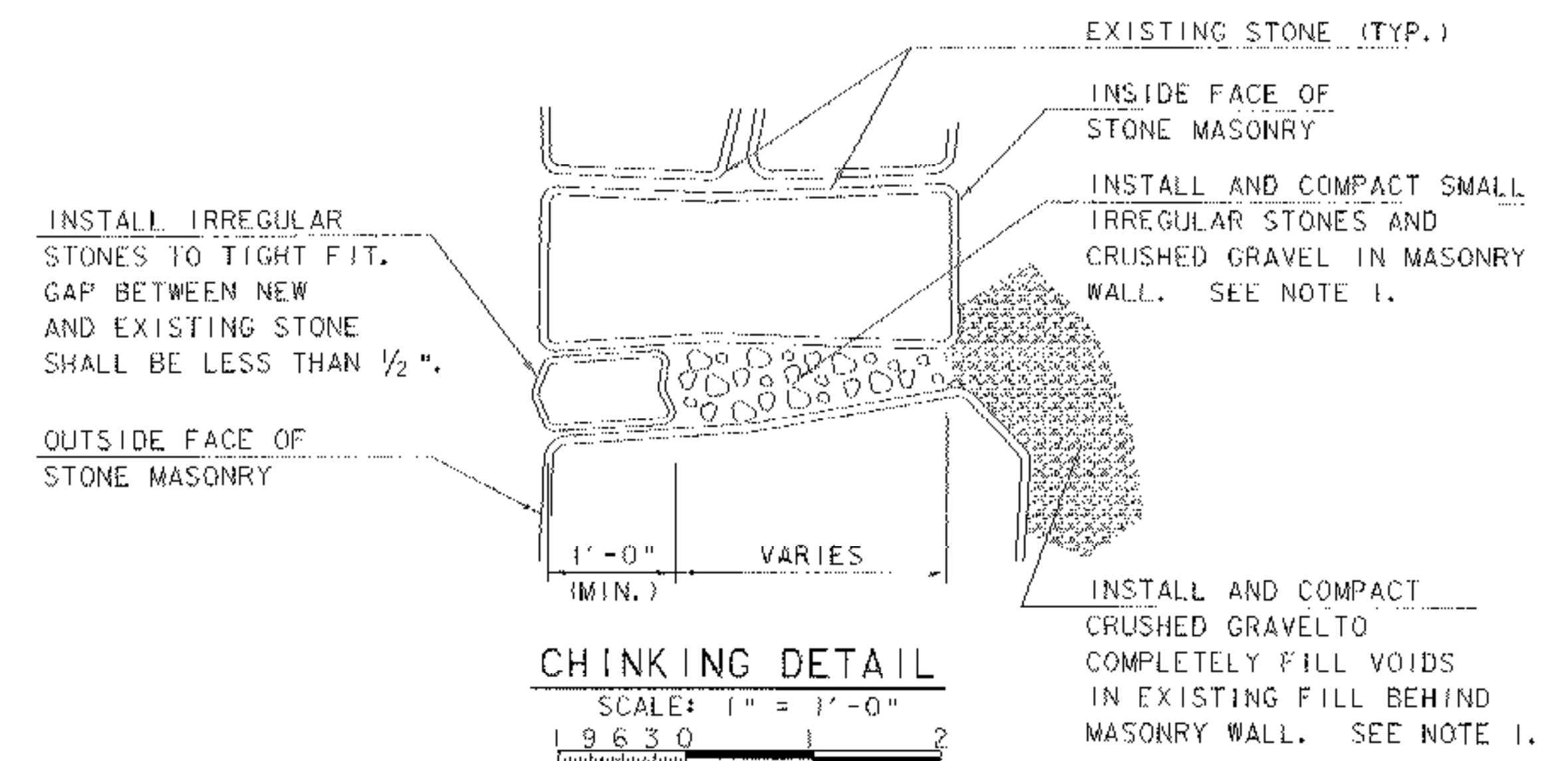
**LOCATE BRIDGE PLAQUE**

THE BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AT ABUTMENT #1 ON THE RIGHT SIDE AS SHOWN OR AS DIRECTED BY THE ENGINEER.



**TYPICAL CHANNEL SECTION**  
(NOT TO SCALE)

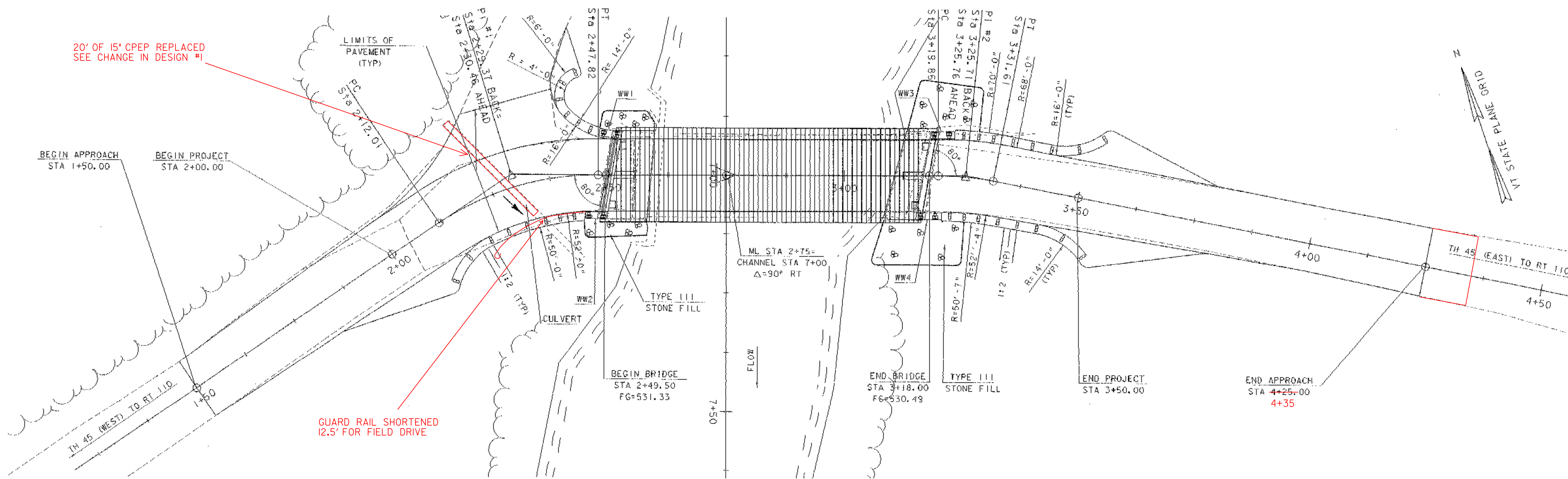
\*GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.



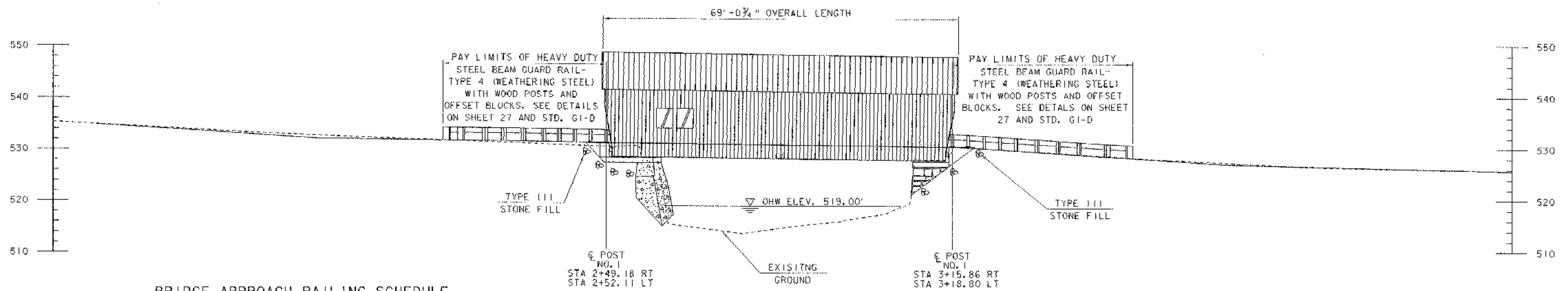
**CHINKING DETAIL**  
SCALE: 1" = 1'-0"  
1 9 6 3 0 1 2

1. COMPACT MATERIAL BEHIND AND INTO MASONRY WALL BY USING TAMPING RODS OR OTHER METHODS ACCEPTABLE TO THE RESIDENT ENGINEER.
2. REPAIR OF ABUTMENT NO. 2 SHALL BE PAID FOR UNDER THE ITEM 602.30 "REPOINTING MASONRY (MOD.)"

|                                                      |                                      |
|------------------------------------------------------|--------------------------------------|
| PROJECT:<br><b>TUNBRIDGE</b>                         | PROJECT NO.:<br><b>BHO 1444 (42)</b> |
| DESIGN FILE NAME: s03j032/structures/s03j032misc.dgn | PLOT DATE: 25-AUG-2005               |
| IPARM FILE NAME: s03j032misc.i                       | DRAWN BY: E.L. RUSTAY                |
| DESIGNED BY: R.S. YOUNG                              | CHECKED BY: R.S. YOUNG               |
| SQUAD LEADER: C. P. WILLIAMS                         | SHEET: 8 OF 40                       |
| MISC. DETAILS                                        |                                      |



PLAN VIEW  
SCALE 1" = 10'-0"



BRIDGE APPROACH RAILING SCHEDULE

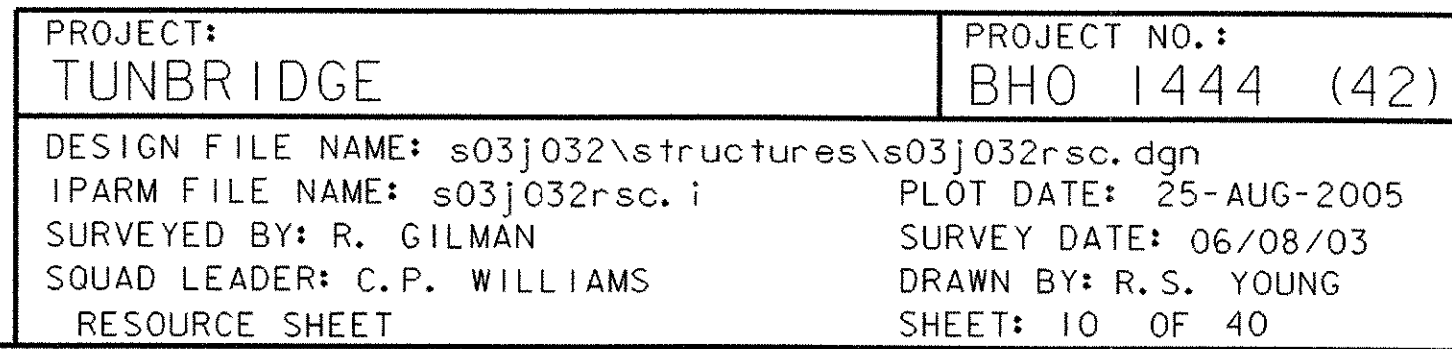
| POST NO. | SPACING   | PAYMENT FACTOR |
|----------|-----------|----------------|
| 1        | 3'-1 1/2" | 1.4 X 12'-6"   |
| 2        | 3'-1 1/2" |                |
| 3        | 3'-1 1/2" |                |
| 4        | 3'-1 1/2" |                |
| 5        | 4'-2"     | 1.2 X 12'-6"   |
| 6        | 4'-2"     |                |
| 7        | 4'-2"     |                |
| 8        | 4'-2"     |                |
| 9        | 6'-3"     | 1.0 (TYP.)     |
| 10       | 6'-3"     |                |

DOWNSTREAM ELEVATION  
SCALE 1" = 10'-0"

DATUM  
VERTICAL ... NAVD83  
HORIZONTAL ... NAD83 (96)

SCALE 1" = 10'-0"

|                                                    |  |                                      |
|----------------------------------------------------|--|--------------------------------------|
| PROJECT:<br><b>TUNBRIDGE</b>                       |  | PROJECT NO.:<br><b>BHO 1444 (42)</b> |
| DESIGN FILE NAME: s03j032/Structures/s03j032pe.dgn |  | PLOT DATE: 25-AUG-2005               |
| IPARM FILE NAME: s03j032pe.i                       |  | SURVEY DATE: 06/08/03                |
| SURVEYED BY: R. GILMAN                             |  | DRAWN BY: E.L. RUSTAY                |
| SQUAD LEADER: C.P. WILLIAMS                        |  | SHEET: 9 OF 40                       |



GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION DATED 2002.
2. DESIGN OF THE REHABILITATED STRUCTURE IS FOR H6 TRUCK LOAD. SEE SHEET 2 FOR MORE INFORMATION.
3. BRIDGE 33 WILL BE CLOSED TO ALL PEDESTRIAN AND VEHICULAR TRAFFIC DURING CONSTRUCTION. ACCESS TO TH 48 SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE TOWN OF TUNBRIDGE IN WRITING TWO WEEKS PRIOR TO CLOSING THE CILLEY COVERED BRIDGE.
4. THE INTENT OF THE PROJECT IS TO RESTORE THE ORIGINAL DIMENSIONAL GEOMETRY OF THE BRIDGE AND TO MAINTAIN CONNECTION TYPES AND DETAILS. ALL EXISTING DIMENSIONS SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD PRIOR TO COMMENCING THE WORK. ACTUAL WORK SHALL MATCH FIELD CONDITIONS.
5. ALL ON-PROJECT CONSTRUCTION SIGNS AND BARRICADES AS REQUIRED BY THE RESIDENT ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE INCLUDED IN THE ITEM641.10 "TRAFFIC CONTROL". ALL OFF-PROJECT SIGNING SHALL BE THE RESPONSIBILITY OF THE TOWN.
6. THE "CILLEY BRIDGE" AND "1883" SIGNS ON THE COVERED BRIDGE SHALL BE REMOVED, SALVAGED, AND REPLACED BACK IN THE SAME LOCATION. PAYMENT SHALL BE INCIDENTAL TO ITEM 675.20 "TRAFFIC SIGNS, TYPE A".
7. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES F OR AS NOTED OTHERWISE.
8. ALL CONSTRUCTION SHALL TAKE PLACE INSIDE EXISTING RIGHT OF WAY. THE COST OF ACQUIRING RIGHTS AND/OR PERMITS TO PERFORM WORK OUTSIDE THE RIGHT OF WAY SHALL BE AT THE CONTRACTORS EXPENSE.

SUBSTRUCTURE

9. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT. UPWARD KEYS SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.
10. JOINTS IN THE CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
11. ALL EXPOSED EDGES OF PLAIN CONCRETE SHALL BE CHAMFERED 1" X 1".
12. THE MINIMUM COVER FOR REINFORCING STEEL IN THE SUBSTRUCTURES SHALL BE TWO INCHES ALONG WALL FACES AGAINST EARTH, AND THREE INCHES ELSEWHERE UNLESS DETAILED OTHERWISE.
13. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:
- SPACING +/- 1"

CLEARANCE

+/- 1/4"
14. SURFACES OF BRIDGE SEATS UNDER THE BEARING DEVICES SHALL BE LEVEL. OTHER AREAS OF THE BRIDGE SEAT SHALL BE SLOPED 1/4" PER FOOT. THE ABUTMENT SEATS SHALL BE SLOPED FULL WIDTH TOWARD MIDSPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE GIVEN A STEEL TROWEL OR MAGNESIUM FLOAT FINISH.

SUPERSTRUCTURE

15. ITEM 502.10 "SHORING SUPERSTRUCTURE (MOD.)" SHALL BE USED TO PAY FOR ANY JACKING OR SHORING REQUIRED TO REHABILITATE THE SUBSTRUCTURES, FOR SUPPORTING THE TRUSS OR REMOVING THE TRUSS TO A STAGING AREA WHILE MEMBERS ARE REPLACED, AND FOR PLUMBING UP THE PORTAL END AT ABUTMENT NO. 2. THE CONTRACTOR SHALL SUBMIT SHORING DETAILS TO BE APPROVED BY THE PROJECT MANAGER. THE CONTRACTOR SHALL ALSO SUBMIT DETAILS ON HOW HE/SHE INTENDS TO PLUMB UP THE PORTAL END AT ABUTMENT NO. 2.
16. ITEM 502.10 SHALL ALSO INCLUDE THE FOLLOWING:
- PAYMENT FOR SETTING THE BRIDGE BACK ONTO THE REHABILITATED ABUTMENTS AT THE NEW ELEVATIONS.

- THIS BRIDGE HAS A NEW ROOF. ANY DAMAGE TO THIS ROOF CAUSED BY THE CONTRACTOR DURING SHORING OR PLUMBING OPERATIONS MUST BE REPAIRED AT THE CONTRACTORS EXPENSE.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RELOCATION OF UTILITIES IF HE/SHE CHOOSES TO MOVE THE TRUSS TO A STAGING AREA FOR REPAIR.
17. ITEM 529.20 "PARTIAL REMOVAL OF STRUCTURE" SHALL INCLUDE BUT NOT BE LIMITED TO:
- DISPOSAL OF ALL MATERIAL NOT REUSED OR RETAINED BY THE TOWN OF TUNBRIDGE.

- REMOVAL OF GUY WIRES AT ABUTMENT NO. 2.

- REMOVAL OF THE TIE BEAM AND KNEE BRACING DETAILED ON SHEETS 12-14.

- REMOVAL OF EXISTING DECKING AND FLOOR BEAMS.

- REMOVAL OF A SECTION OF THE BOTTOM CHORD & TWO VERTICAL TRUSS MEMBERS DETAILED ON SHEETS 12-14.

- REMOVAL OF PORTIONS OF THE EXISTING SUBSTRUCTURE AS DETAILED ON SHEETS 18 AND 19.

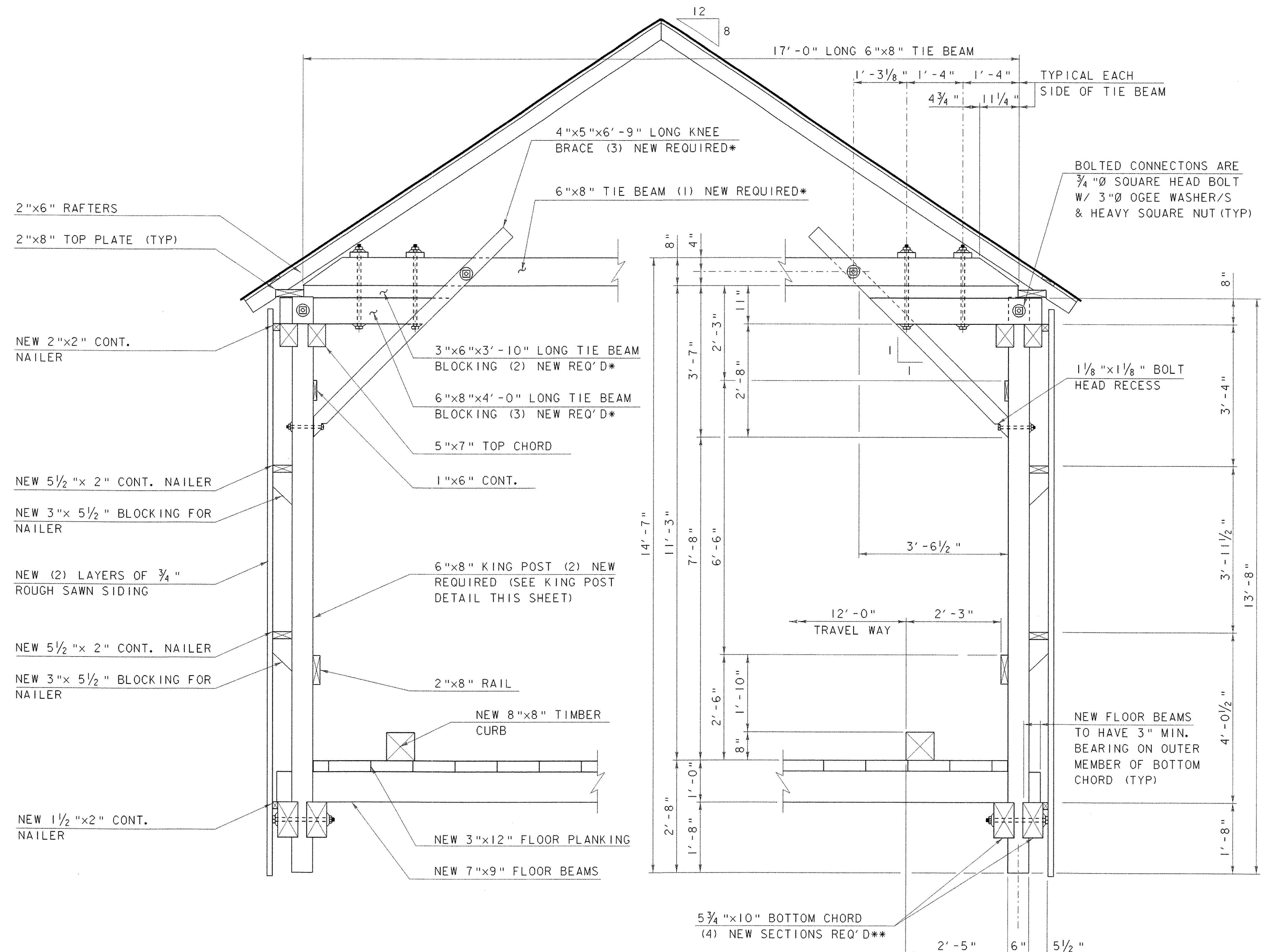
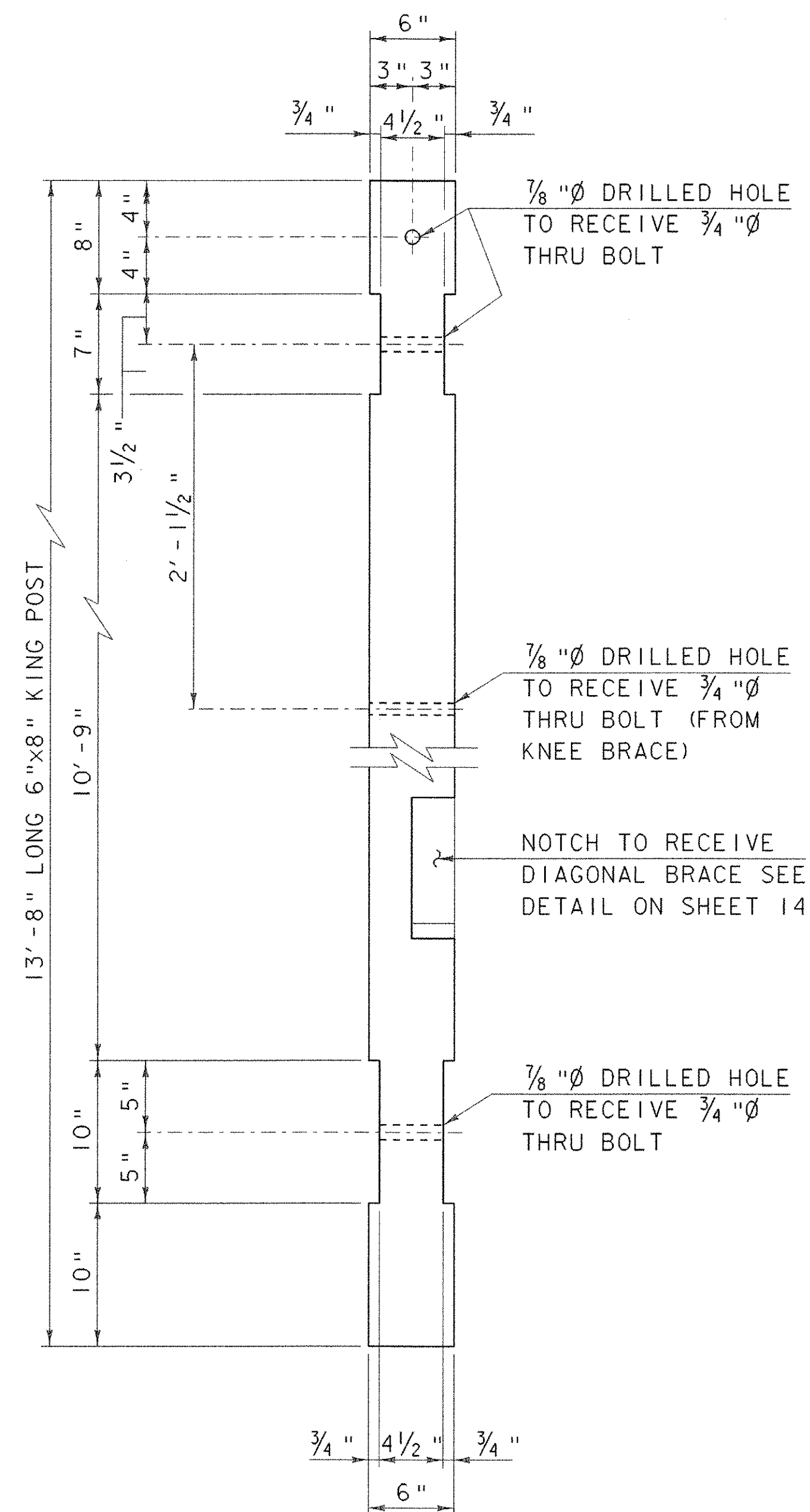
- REMOVAL OF ANY MATERIAL REQUIRED TO MAKE ADDITIONAL REPAIRS AS ORDERED BY THE ENGINEER.

- REMOVAL OF EXISTING BEARING ASSEMBLIES.

- SALVAGE AND REUSE OF ALL BRIDGE COMPONENTS THAT WILL BE REINSTALLED.

- STOCKPILING ON THE PROJECT ANY MATERIAL RETAINED BY THE TOWN OF TUNBRIDGE.
18. THE EXISTING FLOOR BEAMS, DECKING, SECTIONS OF THE BOTTOM CHORD, KING POSTS, TIE BEAM, AND KNEE BRACING REMOVED SHALL REMAIN THE PROPERTY OF THE TOWN OF TUNBRIDGE. THEY SHALL BE CAREFULLY REMOVED AND STOCKPILED ON THE PROJECT FOR REMOVAL BY THE TOWN. ANY MATERIAL NOT RETAINED BY THE TOWN OR REUSED SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THIS MATERIAL SHALL BE DISPOSED OF PROPERLY OR RETAINED FOR FUTURE USE.
19. THE CONTRACTOR SHALL AVOID UNNECESSARY DISASSEMBLY OF THE MULTIPLE KING POST TRUSS. ONLY THE JOINTS THAT HAVE TO BE DISASSEMBLED TO EFFECT REPAIRS TO THE TRUSS SHALL BE DISASSEMBLED.
20. ALL HOLES THAT ARE DRILLED IN STRUCTURAL LUMBER OR TIMBER SHALL BE TREATED WITH A COPPER NAPTHINATE SOLUTION PER SUPPLEMENTAL SPECIFICATION 522.
21. UNLESS NOTED OTHERWISE, ALL NEW BOLTS, SCREWS, NUTS, AND WASHERS SHALL BE ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO SPECIFICATION M232. THE BOLTS FOR THE BOTTOM CHORD SPLICE SHALL BE ASTM A325. THE BARS USED IN THE BOTTOM CHORD SPLICE SHALL BE A36 STEEL AND SHALL BE GALVANIZED IN ACCORDANCE WITH AAHSTO SPECIFICATION M111. MATERIAL AND INSTALLATION COSTS OF BOLTS, LAG SCREWS, AND BARS SHALL BE INCIDENTAL TO THE ITEMS 522.20 "STRUCTURAL LUMBER AND TIMBER - UNTREATED", AND 522.25 "STRUCTURAL LUMBER AND TIMBER - TREATED".
22. ALL NAILS AND SPIKES SHALL CONFORM TO ASTM F 1667 AND BE GALVANIZED IN ACCORDANCE WITH AASHTO SPECIFICATION M232, UNLESS NOTED OTHERWISE.
23. AFTER THE BRIDGE IS COMPLETE AND ALL TIMBER HAS BEEN INSTALLED THE BRIDGE SHALL BE COATED WITH INSECTICIDE AND FIRE RETARDANT SPRAYS. PAYMENT SHALL BE UNDER THE ITEM 513.30 "STRUCTURAL PAINTING, FIELD APPLIED (MOD.)" AND ITEM 513.36 "CONTAINMENT AND ENVIRONMENTAL PROTECTION, FIELD (MOD.)". SEE SPECIAL PROVISIONS FOR MORE DETAILS.

|                                                                                                                                                                  |                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| PROJECT:<br>TUNBRIDGE                                                                                                                                            | PROJECT NO.:<br>BHO 1444 (42) |
| DESIGN FILE NAME: 03j032/Structures/s03j032note.dgn<br>IPARM FILE NAME: s03j032note.i<br>DESIGNED BY: R.S. Young<br>SQUAD LEADER: C.P. Williams<br>GENERAL NOTES |                               |
| PLOT DATE: 25-AUG-2005<br>DRAWN BY: R.S. Young<br>CHECKED BY:<br>SHEET: 11 OF 40                                                                                 |                               |



\* SEE TRUSS ELEVATION FOR LOCATIONS

\*\* SEE FLOOR FRAMING PLAN FOR LOCATIONS

ALL LUMBER AND TIMBER IS EXISTING UNLESS NOTED OTHERWISE

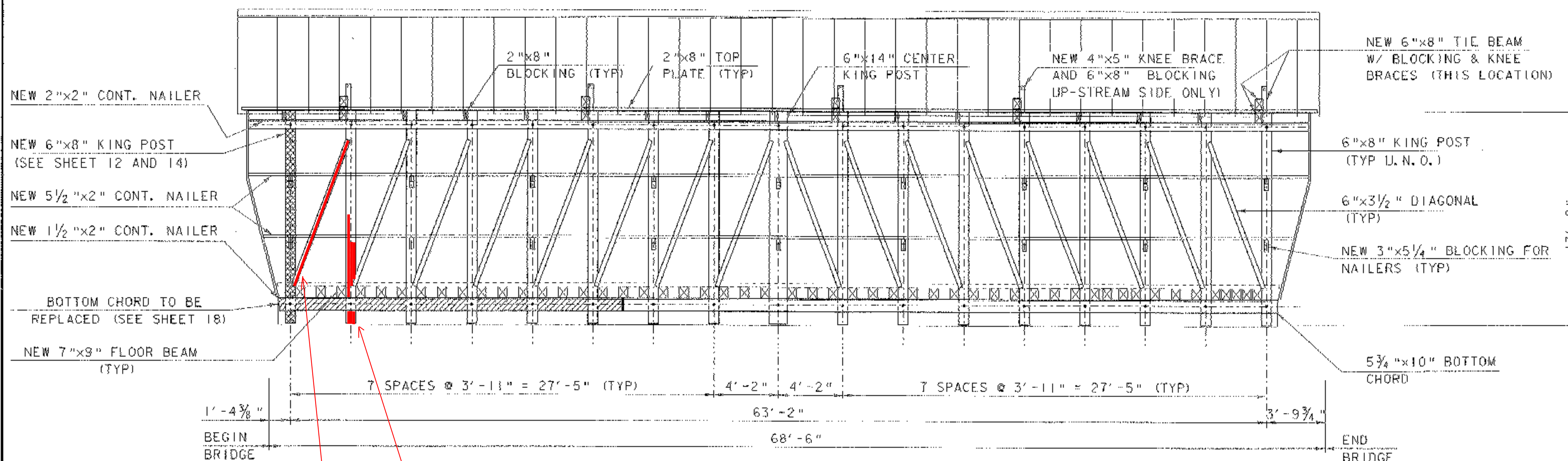
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| PROJECT:<br>TUNBRIDGE                                 | PROJECT NO.:<br>BH0 1444 (42) |
| DESIGN FILE NAME: s03j032\Structures\s03j032ssdt1.dgn | PLOT DATE: 25-AUG-2005        |
| IPARM FILE NAME: s03j032ssdt11.i                      | DESIGNED BY: R. S. YOUNG      |
| SQUAD LEADER: C. P. WILLIAMS                          | DRAWN BY: M. LONGSTREET       |
| TYPICAL BRIDGE SECTION                                | CHECKED BY: R. S. YOUNG       |
|                                                       | SHEET: 12 OF 40               |

# NOTES

1. THE TIE BEAM, KNEE BRACING, AND BLOCKING ON THE EAST END OF THE BRIDGE SHALL BE REPLACED IN KIND. ONE ADDITIONAL KNEE BRACE AND BLOCKING SHALL ALSO BE REPLACED ON THE UPSTREAM SIDE ONLY AS SHOWN IN THE TRUSS ELEVATION.
2. THE TIE BEAM, BLOCKING, AND KNEE BRACING SHALL BE FULL SAWN EASTERN HEMLOCK NO. 1 (OR BETTER) GRADE STRUCTURAL LUMBER. THESE MEMBERS SHALL NOT BE PRESSURE TREATED AND SHALL BE PAID FOR UNDER THE ITEM 522.20 "STRUCTURAL LUMBER AND TIMBER - UNTREATED".
3. THE TWO KING POST VERTICAL MEMBERS ON THE WEST SIDE OF THE BRIDGE SHALL BE REPLACED WITH A 6" X 8" TIMBER DETAILED ON SHEET 12. FOUR SECTIONS OF THE BOTTOM CHORD SHALL BE REPLACED UP TO THE FIRST SPLICE ON THE WEST SIDE OF THE BRIDGE WITH A 5 3/4" X 10" TIMBER DETAILED ON SHEET 14. ALL EXISTING FLOOR BEAMS WILL BE REPLACED WITH 7" X 9" TIMBERS.
4. THE KING POSTS AND SECTIONS OF THE BOTTOM CHORD SHALL BE FULL SAWN EASTERN HEMLOCK NO. 1 (OR BETTER) GRADE STRUCTURAL LUMBER. THESE MEMBERS SHALL NOT BE PRESSURE TREATED AND SHALL BE PAID FOR UNDER THE ITEM 522.20 "STRUCTURAL LUMBER AND TIMBER - UNTREATED".
5. ALL FLOOR BEAMS SHALL BE FULL SAWN SOUTHERN YELLOW PINE NO. 1 (OR BETTER) GRADE STRUCTURAL LUMBER. THE FLOOR BEAMS SHALL BE PRESSURE TREATED WITH A TYPE III (PENTACHLOROPHENOL W/LIGHT OIL) PRESERVATIVE PER SUPPLEMENTAL SPECIFICATION SECTION 726. FLOOR BEAMS SHALL BE PAID FOR UNDER THE ITEM 522.25 "STRUCTURAL LUMBER AND TIMBER - TREATED".
6. THREE FLOOR BEAMS WILL BE ADDED TO THE WEST SIDE OF THE BRIDGE TO RESTORE THE ORIGINAL GEOMETRY AND SYMMETRY WITH THE EAST SIDE OF THE BRIDGE. IN ADDITION A NEW EXTERIOR 9" X 9" FLOOR BEAM SHALL BE ADDED TO EACH END. THIS FLOOR BEAM SHALL BEAR ON CONCRETE PEDESTALS, NOT THE BOTTOM CHORD. SEE END BRIDGE DETAILS ON SHEET 17 FOR DETAILS.
7. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS GIVEN IN THESE PLANS WITH ACTUAL FIELD MEASUREMENTS. EXISTING MEMBERS SHALL BE REPLACED ACCORDING TO ACTUAL FIELD CONDITIONS. ANY TIMBER LENGTHS FOR NEW MEMBERS OR REPAIRS NOT DETAILED IN THE PLANS SHALL BE DETERMINED BY THE CONTRACTOR.
8. PAYMENT FOR THE DISCONNECTION AND RECONNECTION OF ADDITIONAL JOINTS BETWEEN TRUSS MEMBERS THAT WILL HAVE TO BE DISSCONNECTED IN ORDER TO INSTALL NEW MEMBERS SHALL BE INCIDENTAL TO ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE." ALL DISCONNECTED JOINTS SHALL HAVE NEW HARDWARE.

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

|                                                       |                         |
|-------------------------------------------------------|-------------------------|
| PROJECT:                                              | PROJECT NO.:            |
| TUNBRIDGE                                             | BHO 1444 (42)           |
| DESIGN FILE NAME: s03j032\structures\603j032ssdt1.dgn | PLOT DATE: 25-AUG-2005  |
| IFARM FILE NAME: s03j032sspl1.i                       | DRAWN BY: M. LONGSTREET |
| DESIGNED BY: R. S. YOUNG                              | CHECKED BY: R. S. YOUNG |
| SQUAD LEADER: C. P. WILLIAMS                          |                         |
| FLOOR FRAMING PLAN & TRUSS ELEVATION SHEET: 13 OF 40  |                         |

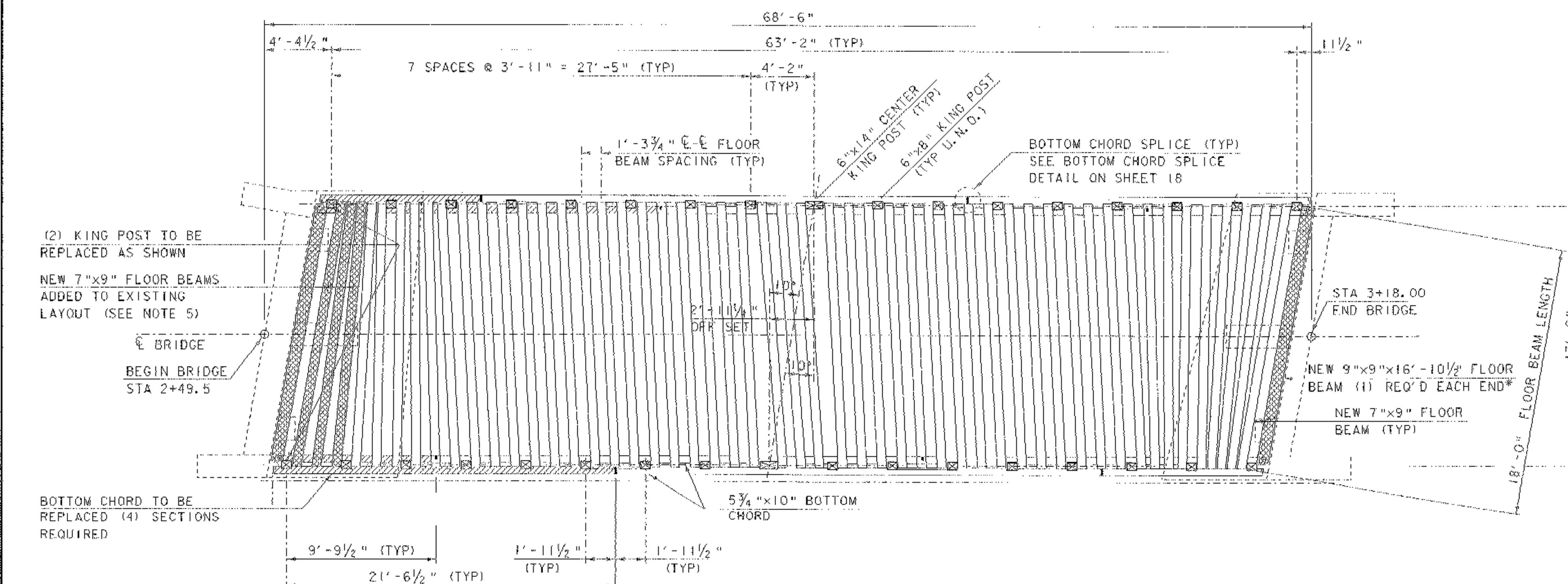


## TRUSS FRAMING ELEVATION

SCALE 1/4" = 1'-0"

SOUTH TRUSS SHOWN  
NORTH TRUSS SIMILAR

ALL LUMBER AND TIMBER IS EXISTING UNLESS NOTED OTHERWISE.

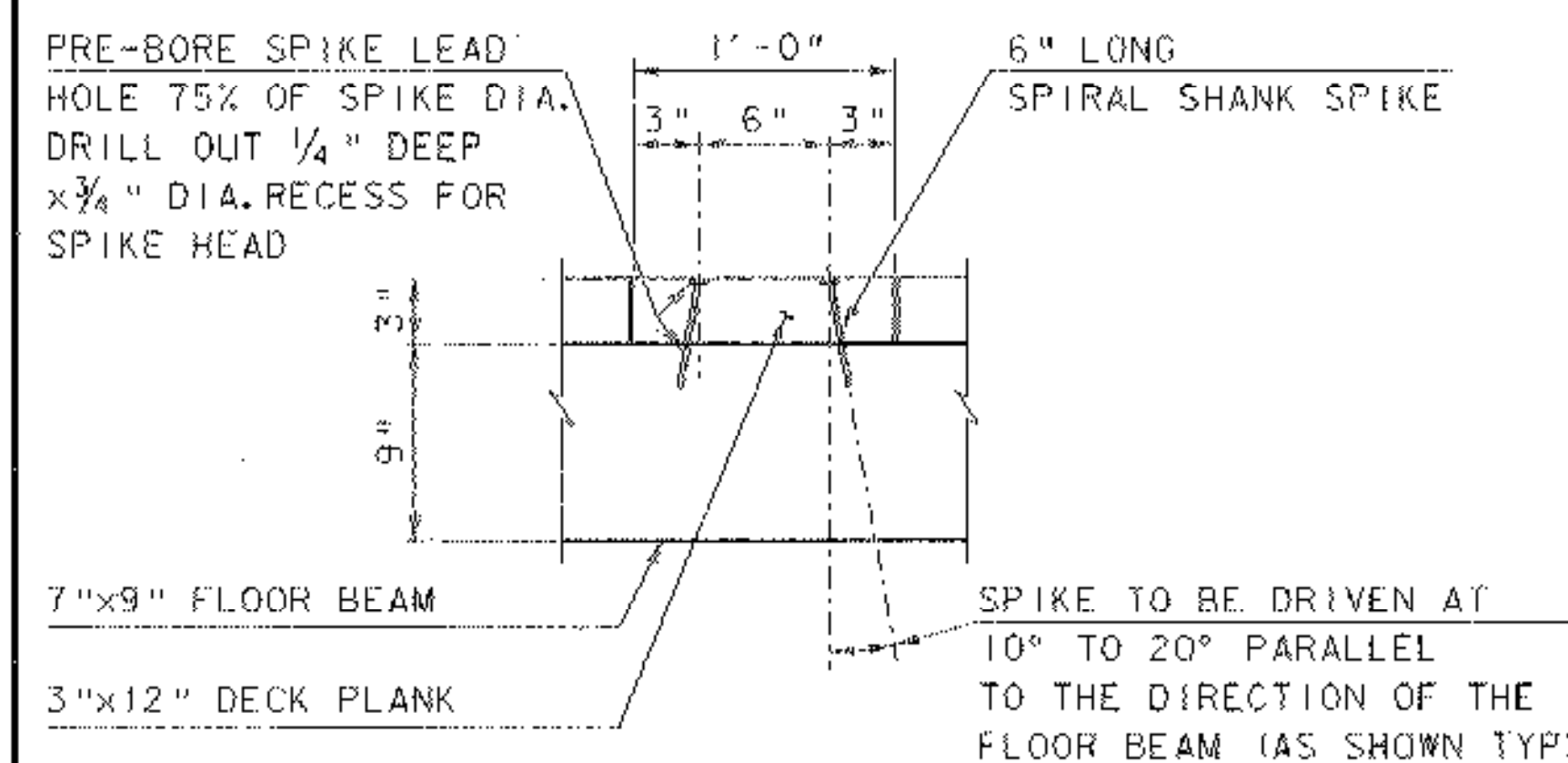


## FLOOR FRAMING PLAN

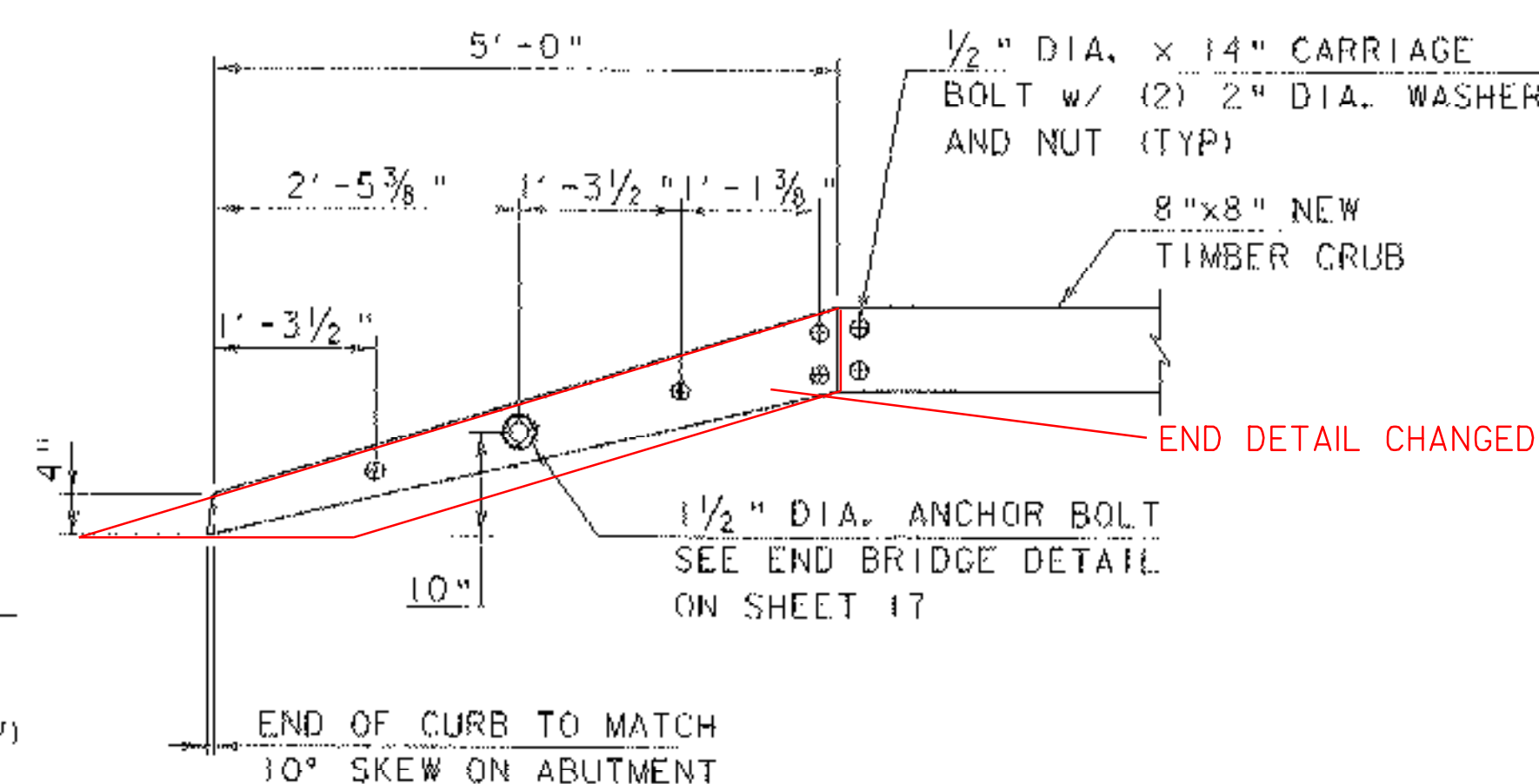
SCALE 1/4" = 1'-0"

\* NOTCH END OF FLOOR BEAM 1" X 6" TO AVOID CONTACT WITH INNER BOTTOM CHORD. SEE END DETAIL ON SHEET 17.

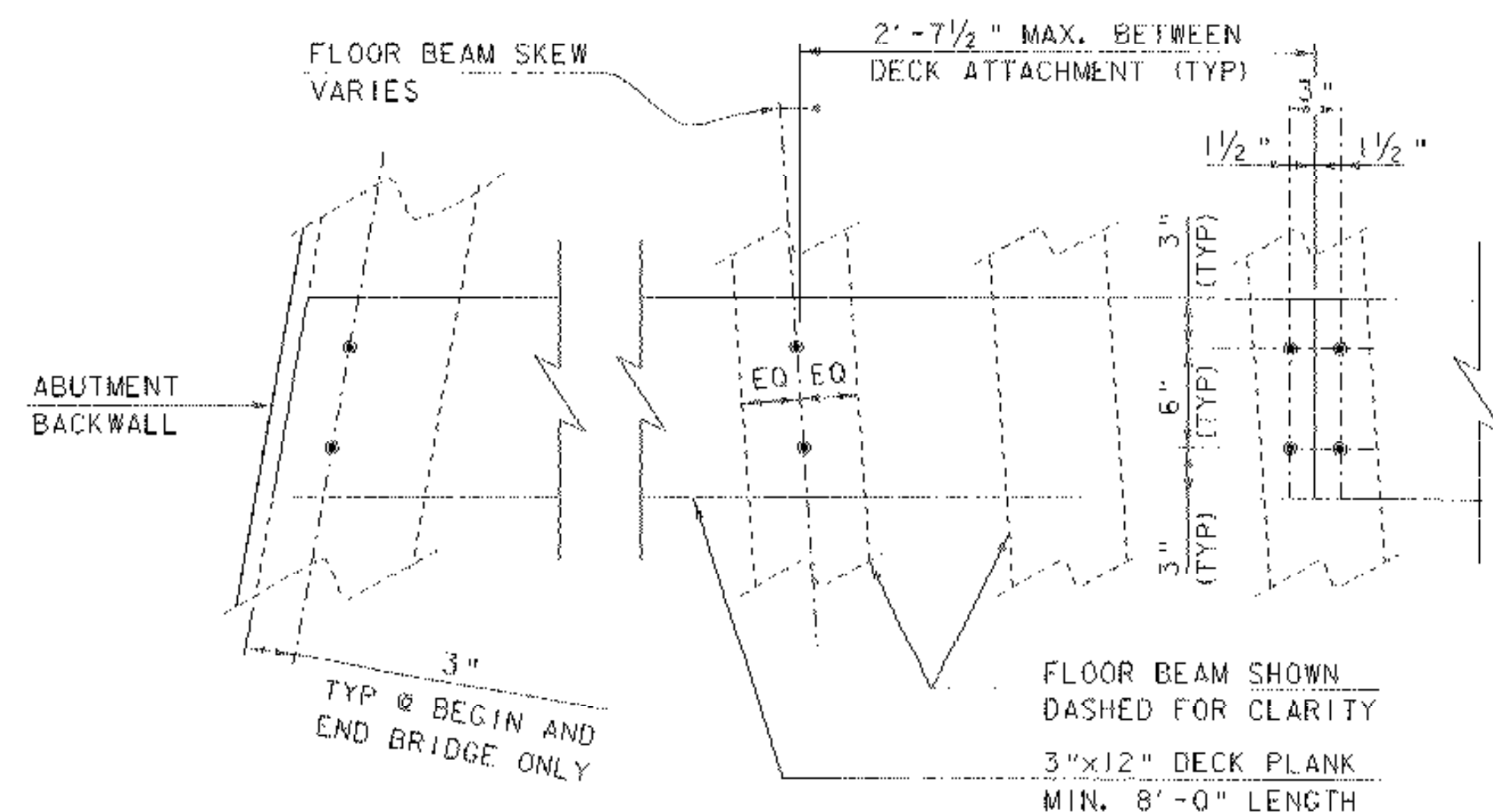
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| PROJECT:<br>TUNBRIDGE                                                                    | PROJECT NO.:<br>BHO 1444 (42) |
| DESIGN FILE NAME: s03j032\Structures\s03j032ssdt1.dgn<br>IPARM FILE NAME: s03j032ssdt1.i | PLOT DATE: 25-AUG-2005        |
| DESIGNED BY: R. S. YOUNG                                                                 | DRAWN BY: M. LONGSTREET       |
| SQUAD LEADER: C. P. WILLIAMS                                                             | CHECKED BY: R. S. YOUNG       |
| TRUSS DETAILS                                                                            | SHEET: 14 OF 40               |



SCALE  $1\frac{1}{2}" = 1' - 0$

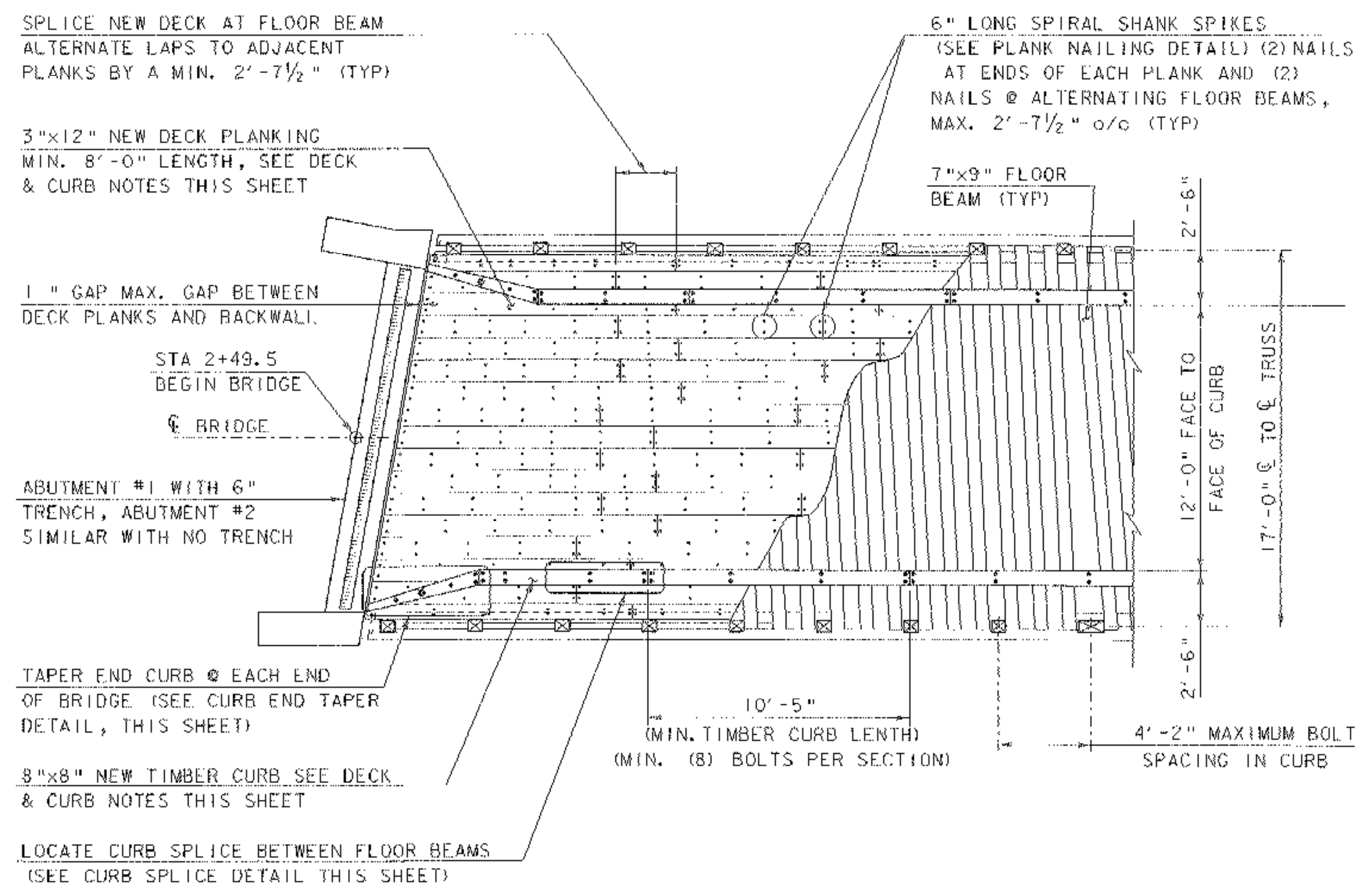


SCALE  $\frac{3}{4}$ " = 1' - 0"

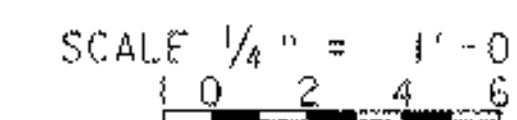
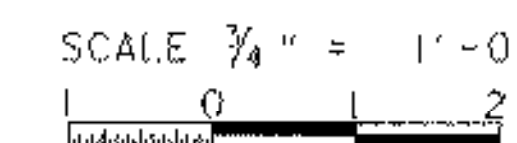
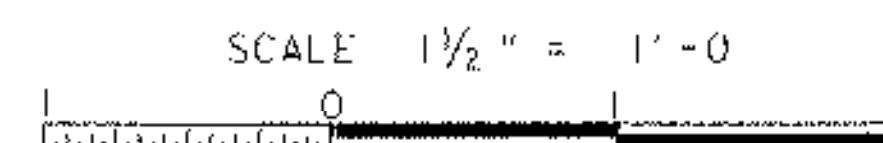


SCALE  $1\frac{1}{2}" = 1' = 0$

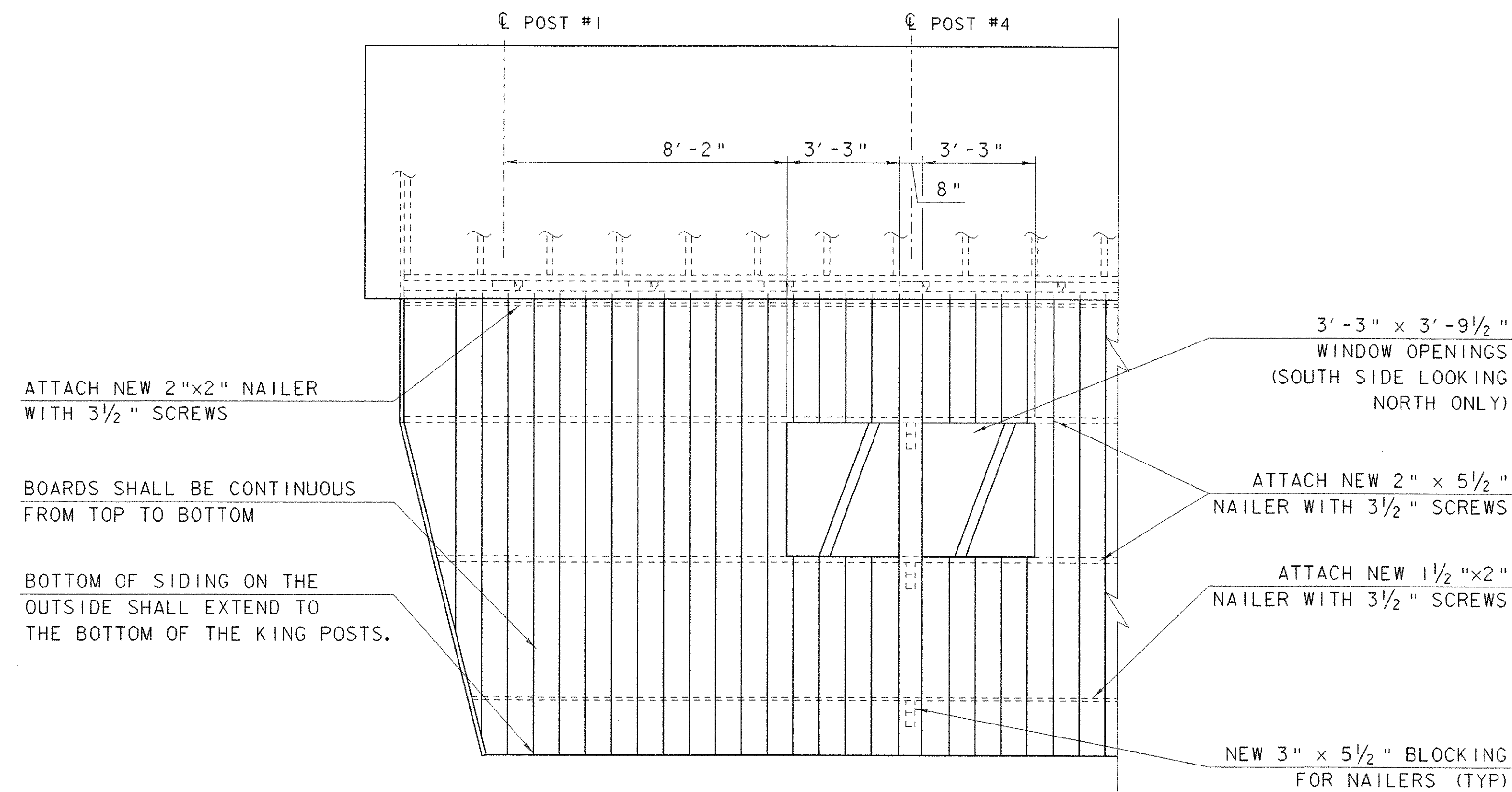
1. THE TIMBER FOR THE DECK SHALL BE 3" X 12" PLANKS AND THE CURB SHALL BE 8" X 8" TIMBERS. THE DECK AND CURB SHALL BE ROUGH LUMBER, FULL SAWN EASTERN HEMLOCK NO. 1 (OR BETTER) GRADE STRUCTURAL LUMBER. THE TIMBER SHALL BE PRESSURE TREATED WITH A TYPE IV (CHROMATED COPPER ARSENATE) OR TYPE V (ALKALINE COPPER QUAT) PRESERVATIVE PER SUPPLEMENTAL SPECIFICATION SECTION 726. IF TYPE V PRESERVATIVE IS USED, ALL MEMBER CONNECTORS SHALL BE STAINLESS STEEL FASTENERS.
2. LUMBER, SPIKES, BOLTS, NUTS, AND WASHERS FOR THE DECK AND CURB SHALL BE PAID FOR UNDER THE ITEM 522.25 "STRUCTURAL LUMBER AND TIMBER - TREATED".
3. THE DECK AND CURB SHALL BE LAID OUT TO MINIMIZE THE END CUTS TO PRESERVE THE PRESSURE TREATMENT ENVELOPE. ANY END CUTS OF THE DECK PLANKS OR CURB SHALL BE TREATED WITH TWO APPLICATIONS OF A COPPER NAPHTHINATE SOLUTION.



SCALE  $1/4" = 1' - 0"$

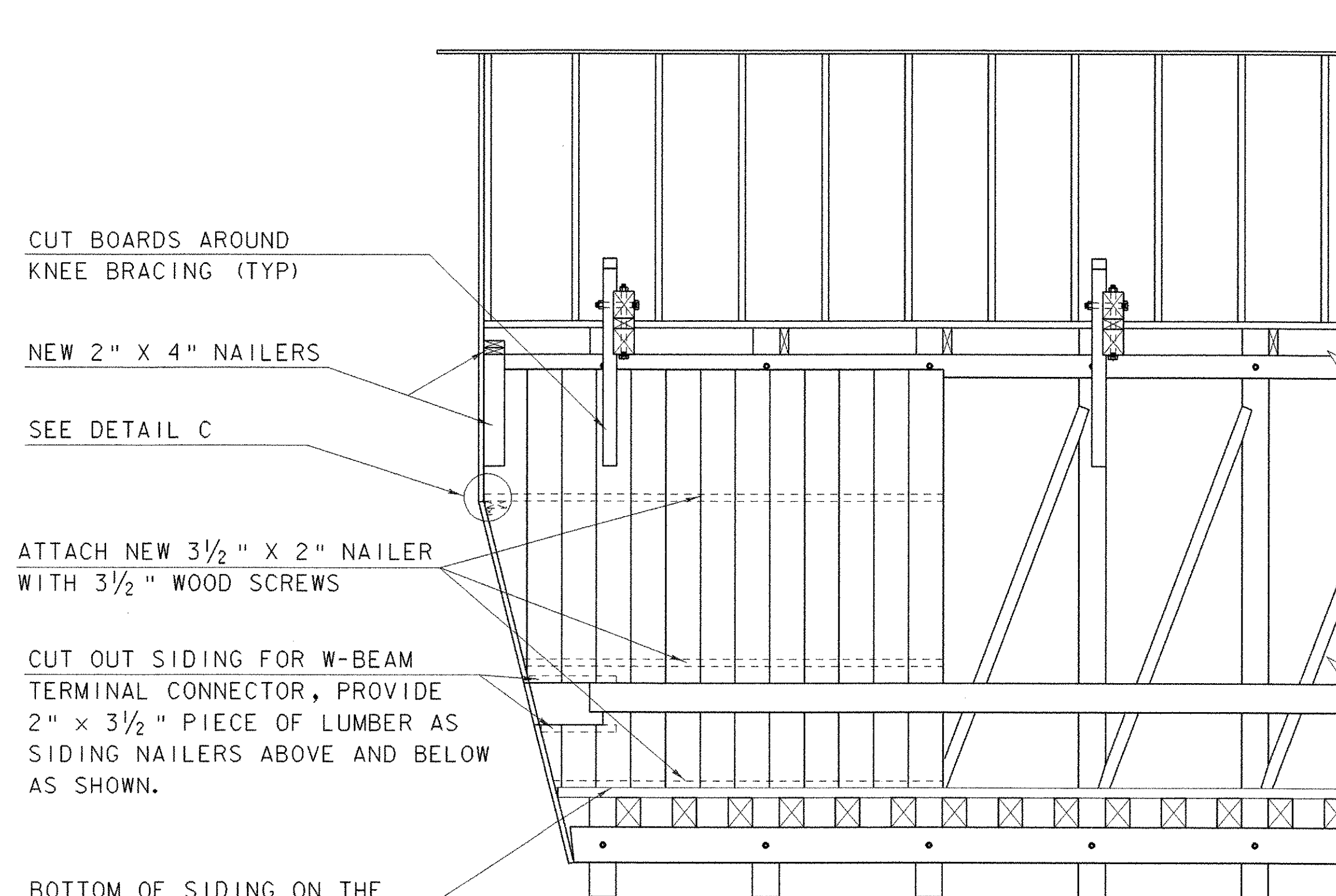


|                                                                                                                                                                                |               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| PROJECT:                                                                                                                                                                       | PROJECT NO.:  |
| TUNBRIDGE                                                                                                                                                                      | BHO 1444 (42) |
| DESIGN FILE NAME: s03j032\structures\s03j032curb.dgn<br>IPARM FILE NAME: s03j032curb.i<br>DESIGNED BY: R. S. YOUNG<br>SQUAD LEADER: C. P. WILLIAMS<br>DECKING AND CURB DETAILS |               |
| PLOT DATE: 25-AUG-2005<br>DRAWN BY: M. LONGSTREET<br>CHECKED BY: R. S. YOUNG<br>SHEET: 15 OF 40                                                                                |               |



OUTSIDE ELEVATION VIEW

SCALE:  $\frac{3}{8}$ " = 1'-0"

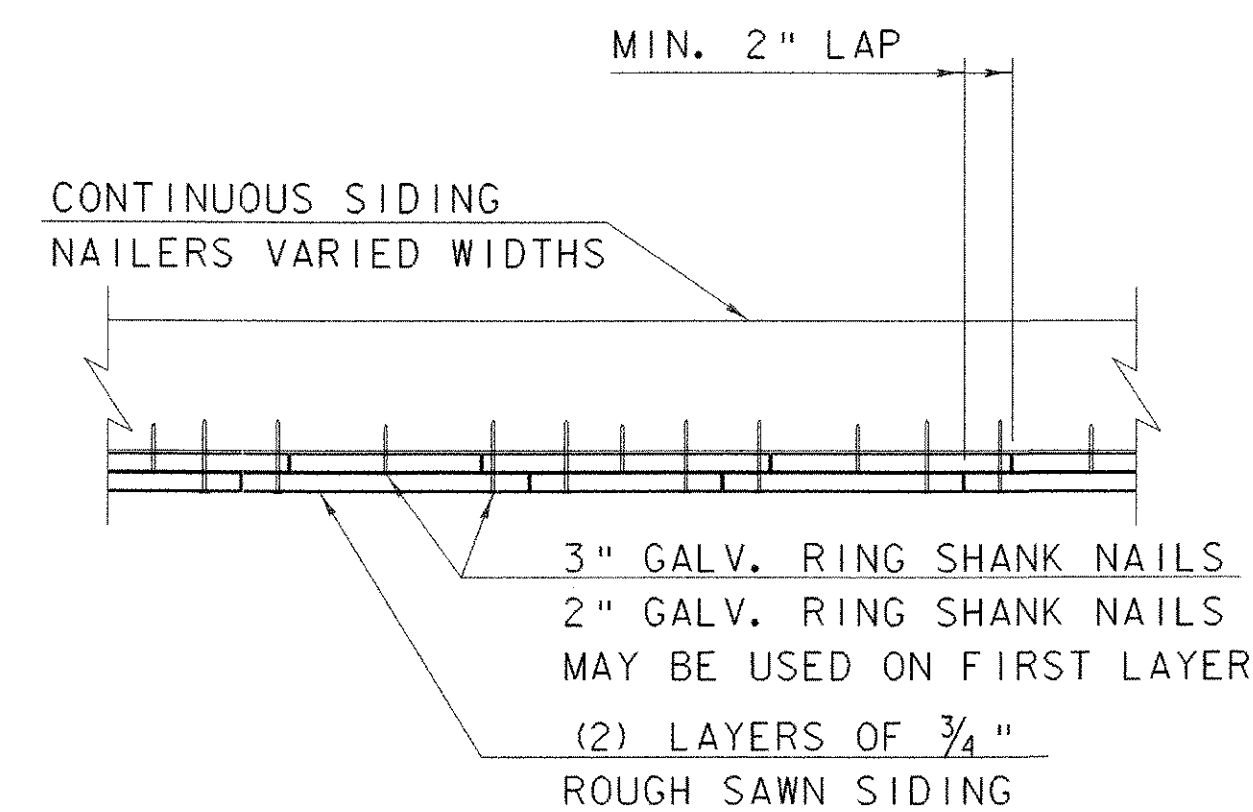


TYPICAL INSIDE ELEVATION VIEW

SCALE:  $\frac{3}{8}$ " = 1'-0"

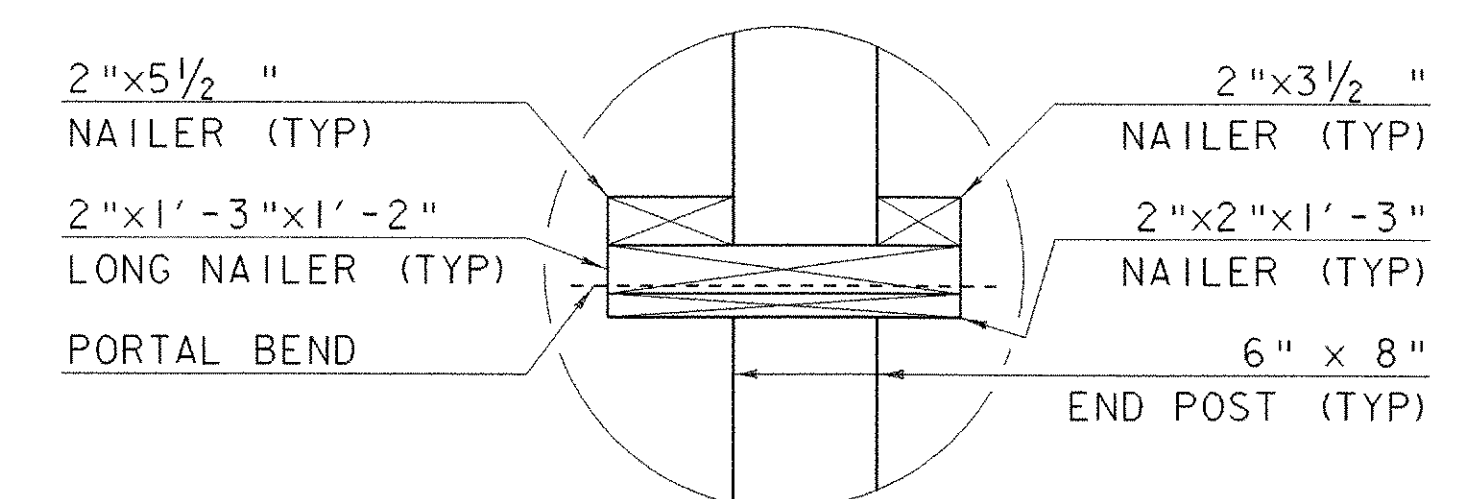
# NOTES:

1. SIDING SHALL BE  $\frac{3}{4}$ " THICK ROUGH, FULL-SAWN HEMLOCK NO.1 COMMON GRADE RANGING FROM 8" TO 12" WIDE, CUT TO FULL LENGTH WITH NO HORIZONTAL BUTT JOINTS, AND FASTENED WITH 3" GALV. RING SHANK NAILS. THE SIDING SHALL NOT BE PRESSURE TREATED. PAYMENT FOR THE SIDING AND NAILS SHALL BE UNDER THE ITEM 522.30 "NON-STRUCTURAL LUMBER-UNTREATED". PAYMENT FOR THE  $\frac{3}{4}$ " THICK SIDING WILL BE BASED ON 1" NOMINAL PER NIST PS20-94.
2. THE NAILERS AND BLOCKING SHALL BE ROUGH, FULL SAWN EASTERN HEMLOCK NO.1 GRADE AND FASTENED WITH GALVANIZED SCREWS. THE NAILERS AND BLOCKING SHALL NOT BE PRESSURE TREATED. PAYMENT FOR THE NAILERS, BLOCKING AND SCREWS SHALL BE MADE UNDER THE ITEM 522.30 "NON-STRUCTURAL LUMBER-UNTREATED".
3. THE EXISTING 2"x8" RAILING SHALL BE REMOVED ENOUGH TO ALLOW FOR REPLACEMENT OF THE INTERIOR SIDING. THE RAILING SHALL BE PLACED BACK TO ITS ORIGINAL POSITION WITH THE NEW END DETAIL SHOWN ON SHEET 27. PAYMENT FOR CUTTING AND PLACING EXISTING RAILING SHALL BE INCIDENTAL TO THE ITEM 522.30 "NON-STRUCTURAL LUMBER-UNTREATED".



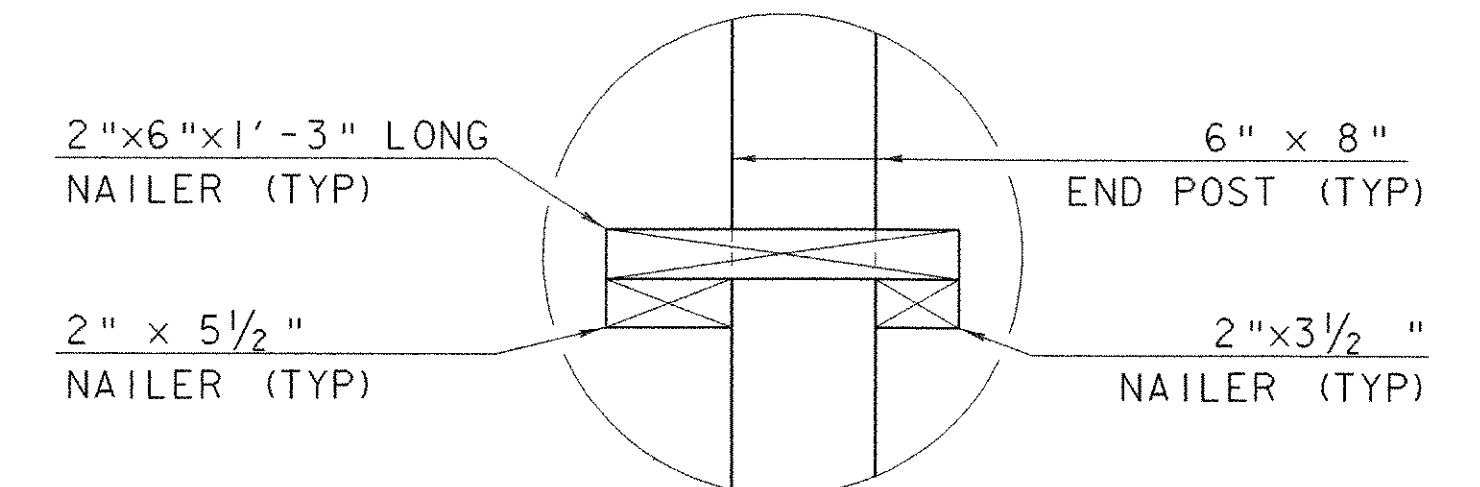
NAIL PATTERN DETAIL

SCALE:  $\frac{1}{2}$ " = 1'-0"



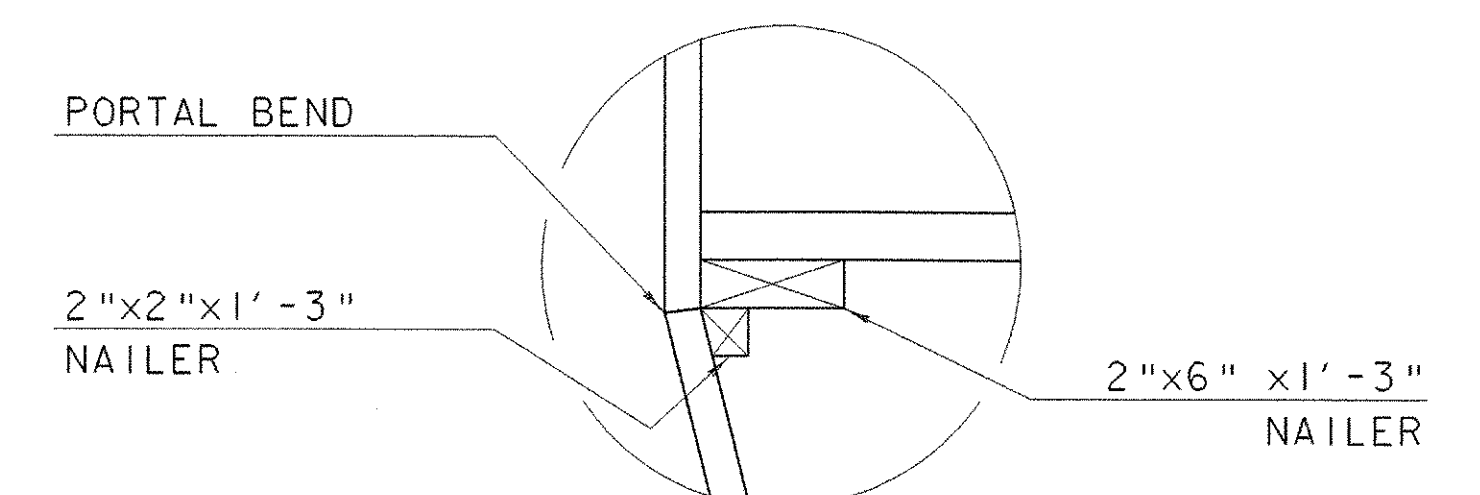
NAILER DETAIL "A"

SCALE:  $\frac{1}{2}$ " = 1'-0"



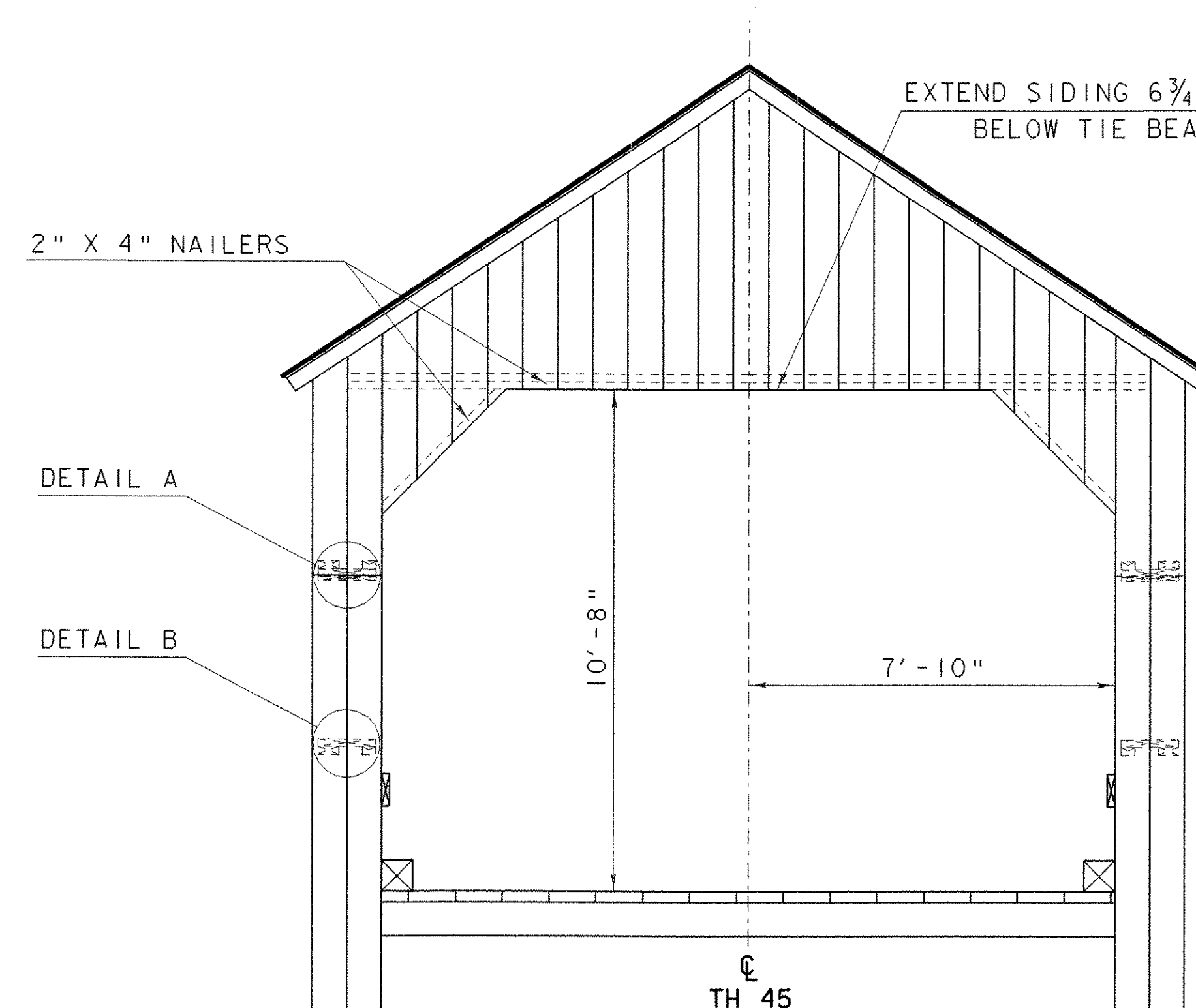
NAILER DETAIL "B"

SCALE:  $\frac{1}{2}$ " = 1'-0"



NAILER DETAIL "C"

SCALE:  $\frac{1}{2}$ " = 1'-0"



END ELEVATION VIEW OF SIDING

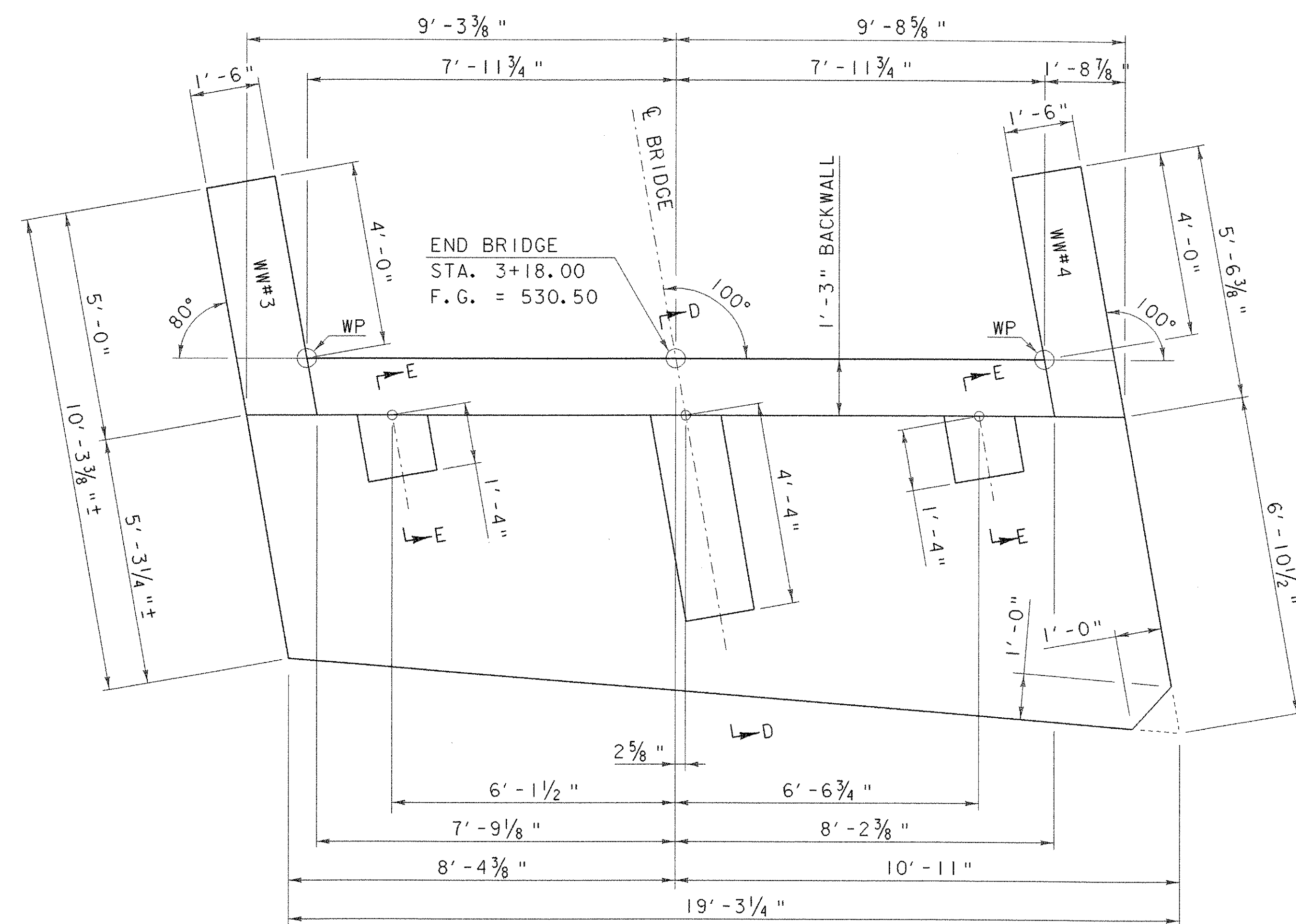
SCALE:  $\frac{3}{8}$ " = 1'-0"

SCALE  $\frac{3}{8}$ " = 1'-0"  
1 0 1 2 3 4

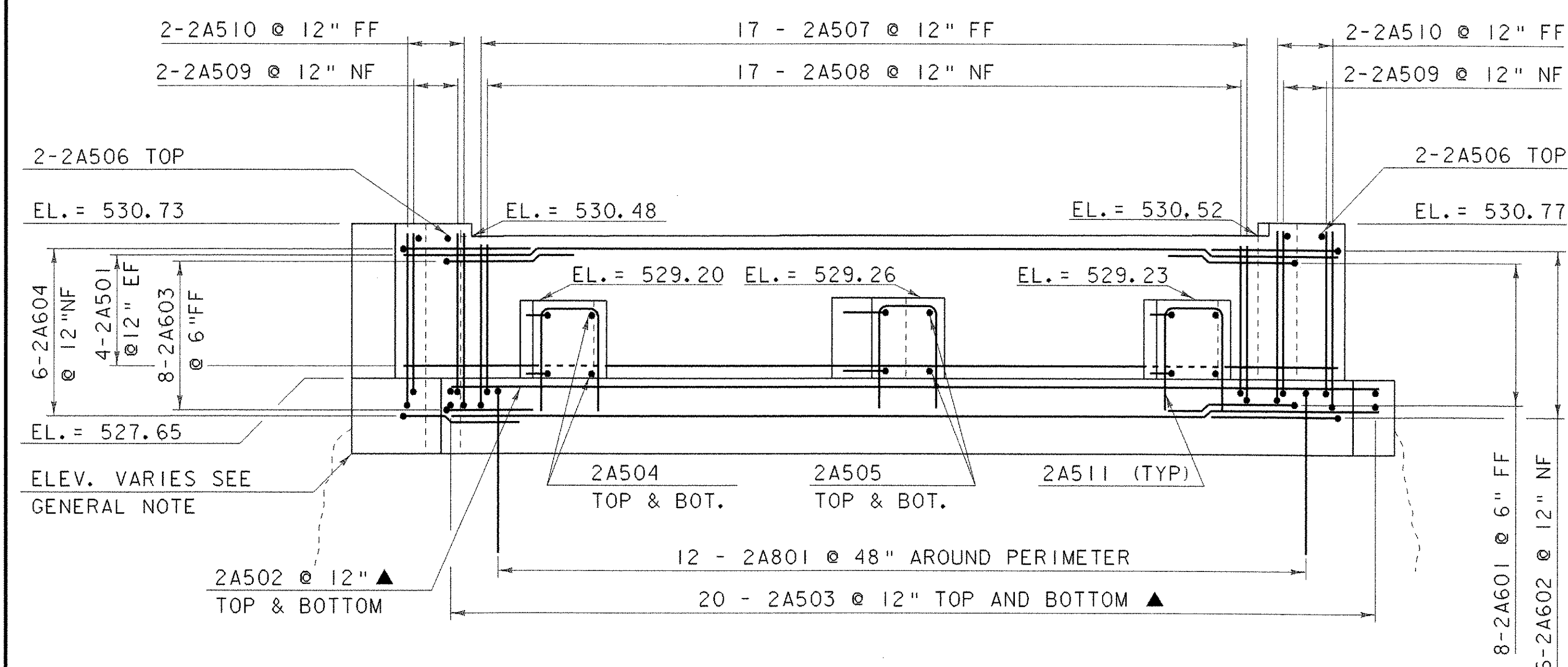
|                                                                                                                                                                          |                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| PROJECT:<br>TUNBRIDGE                                                                                                                                                    | PROJECT NO.:<br>BHO 1444 (42)                                                                  |
| DESIGN FILE NAME: s03j032\Structures\s03j032siding.dgn<br>IPARM FILE NAME: s03j032siding.i<br>DESIGNED BY: R. S. YOUNG<br>SQUAD LEADER: C. P. WILLIAMS<br>SIDING DETAILS | PLOT DATE: 25-AUG-2005<br>DRAWN BY: E. L. RUSTAY<br>CHECKED BY: R. S. YOUNG<br>SHEET: 16 OF 40 |



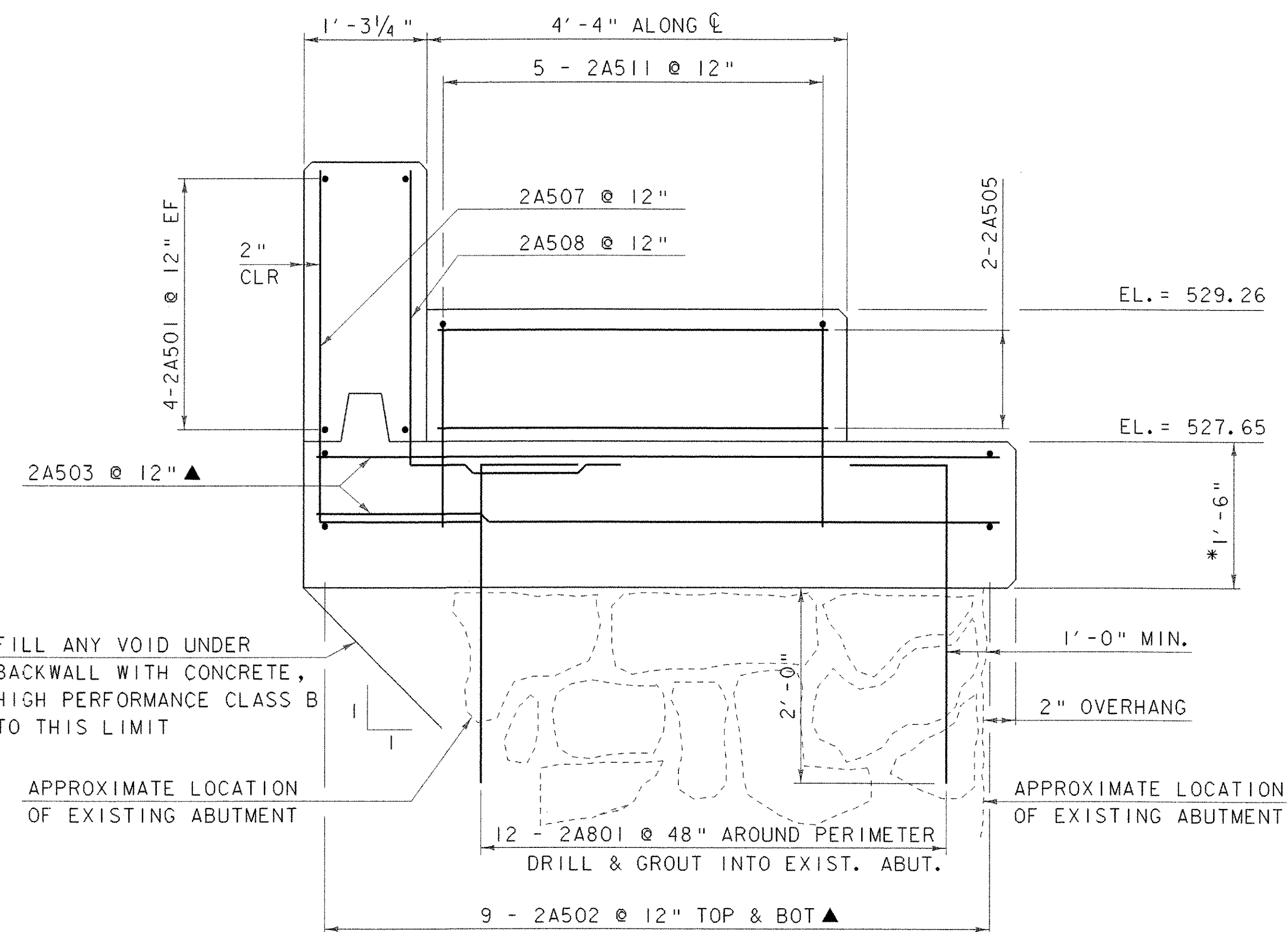




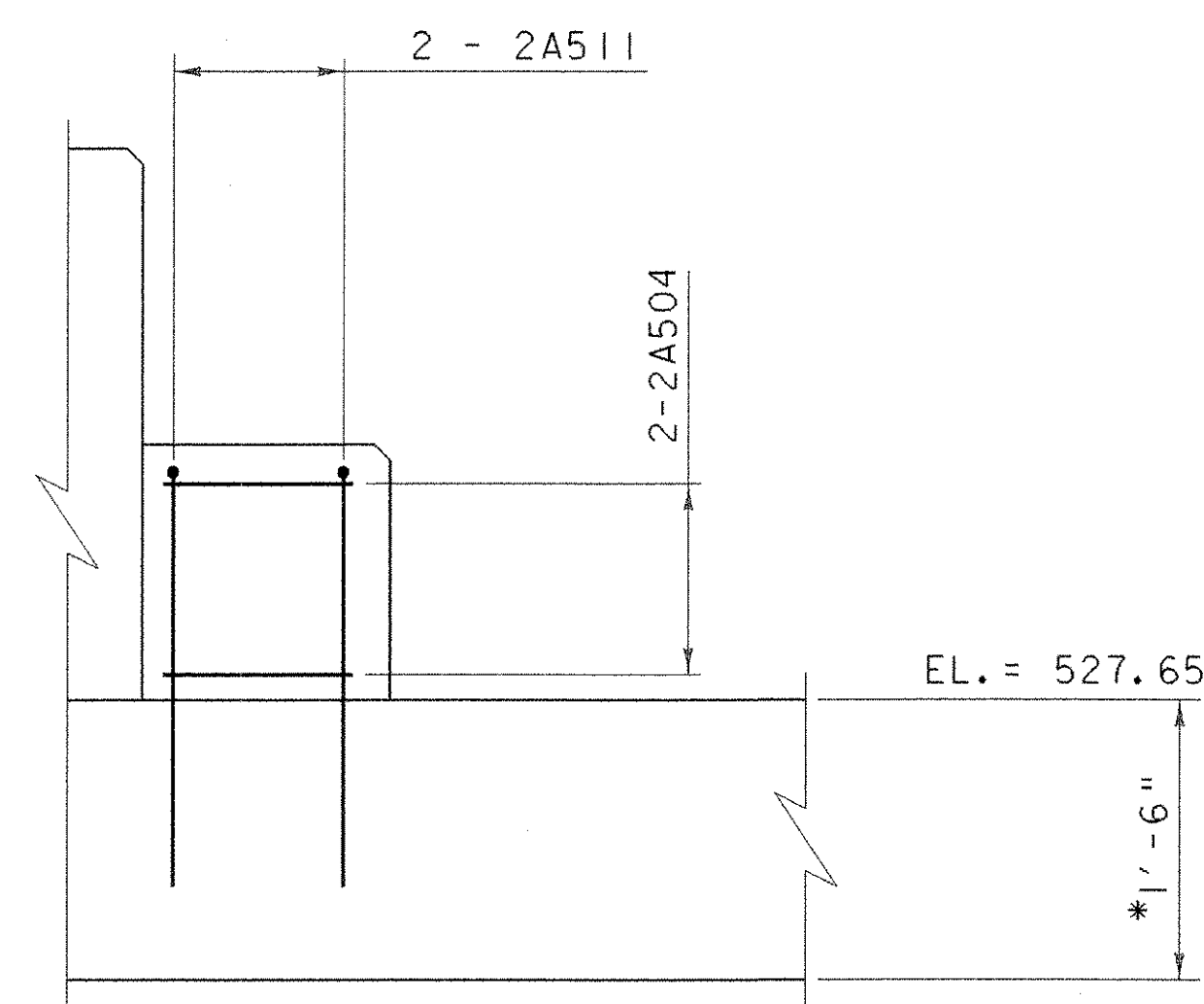
**ABUTMENT #2 PLAN**  
SCALE 1/2" = 1'-0"



**ABUTMENT #2 ELEVATION**  
SCALE 1/2" = 1'-0"



**SECTION D-D**  
SCALE: 1" = 1'-0"



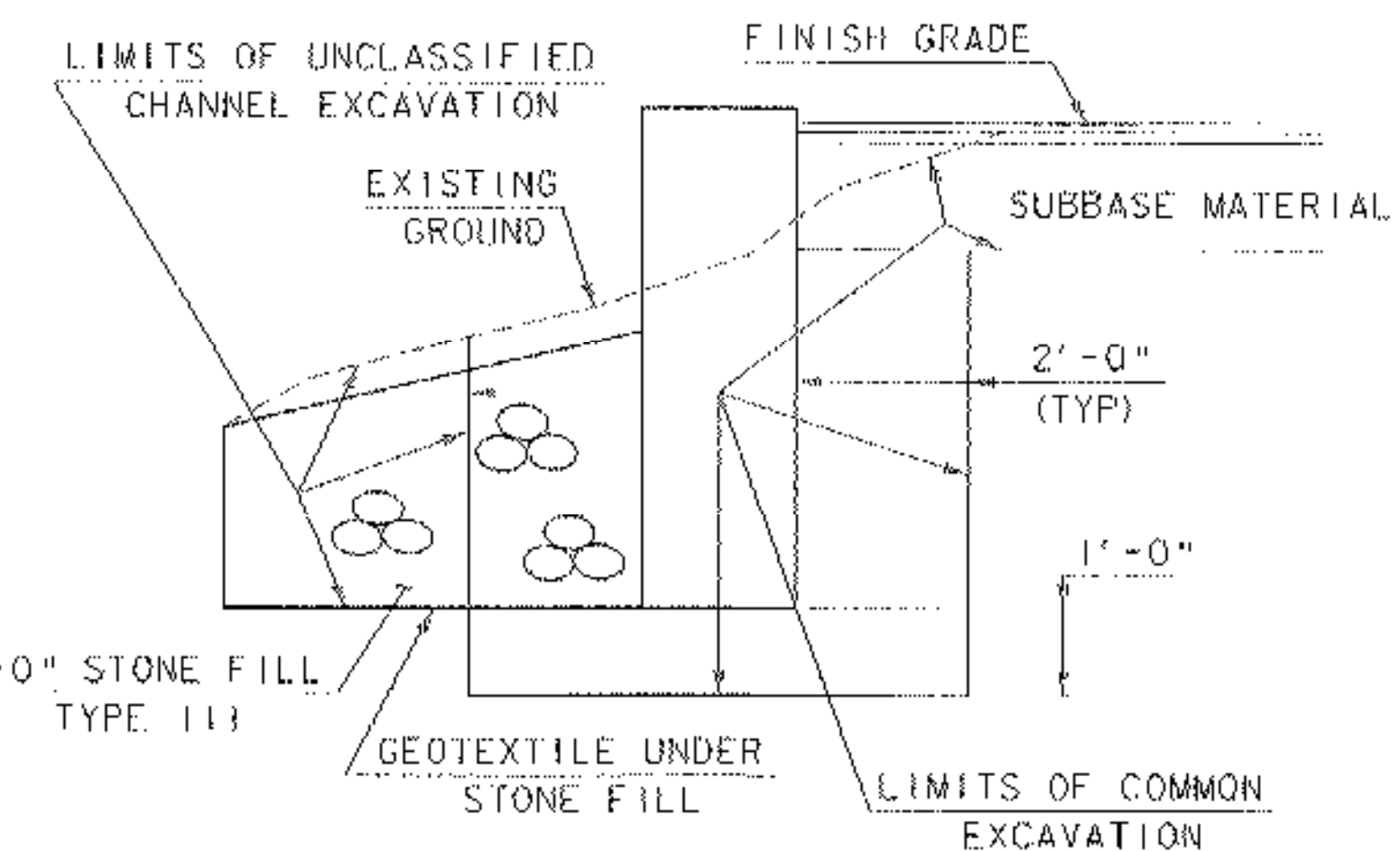
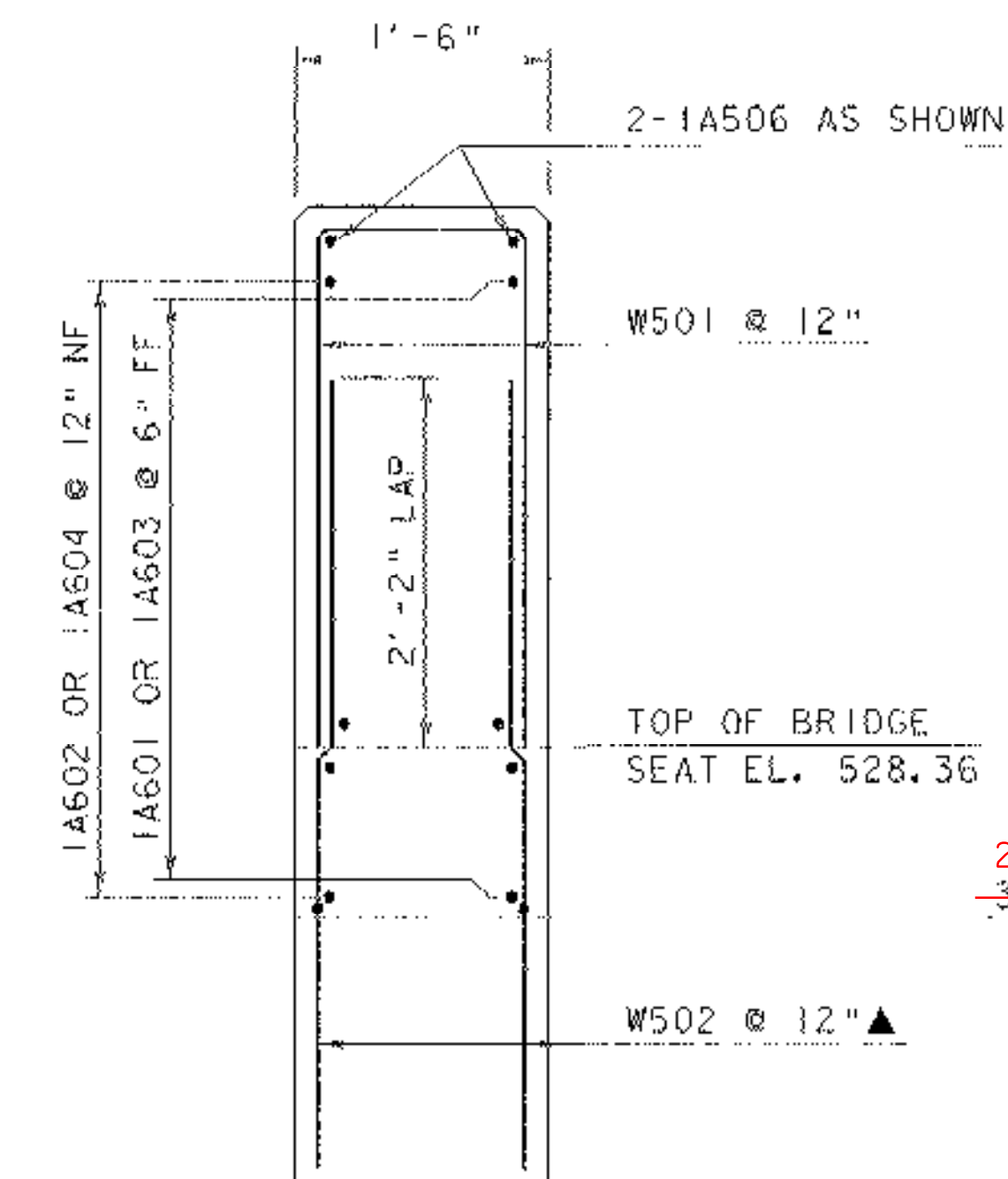
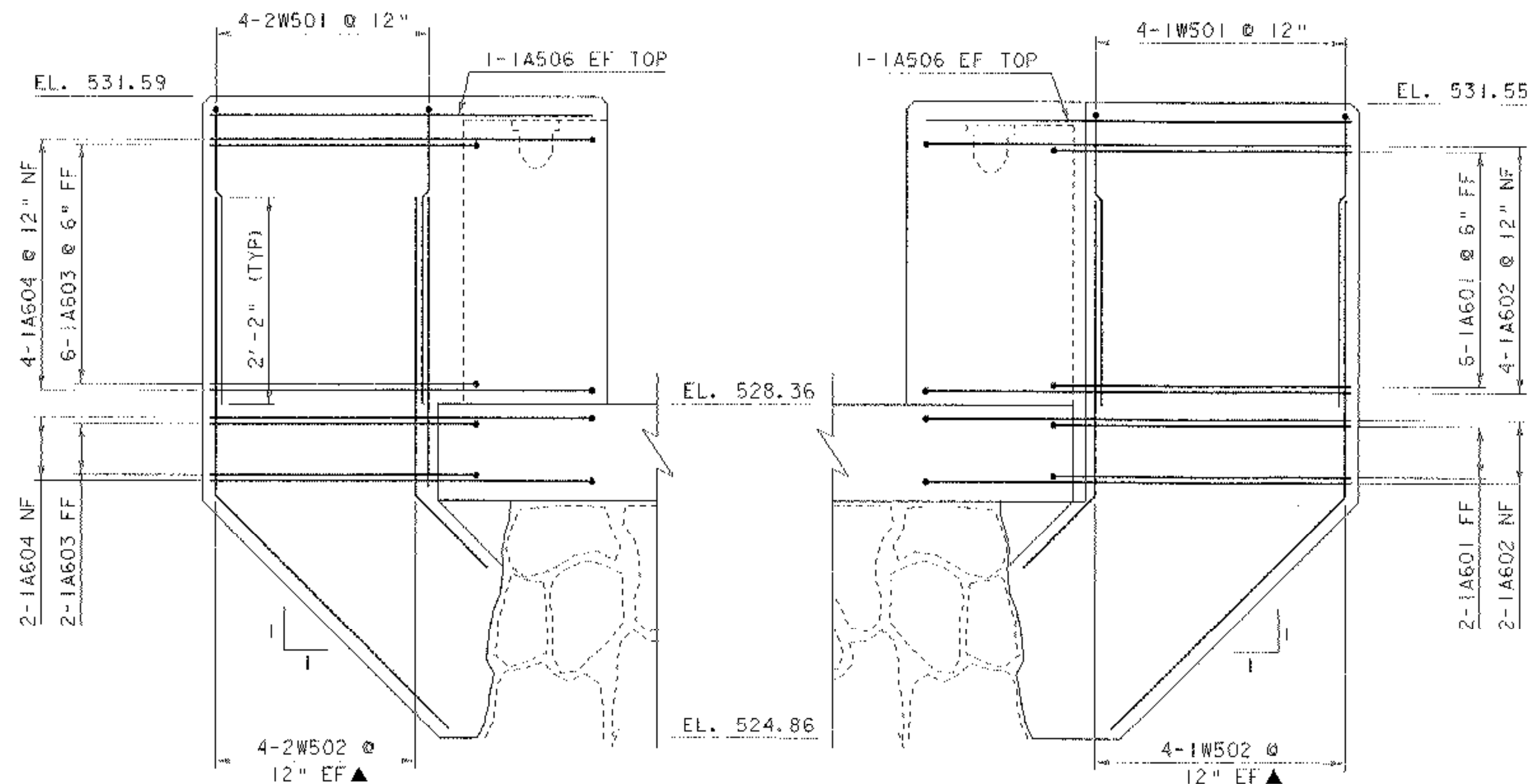
**SECTION E-E**  
SCALE: 1" = 1'-0"

\* CONCRETE OR STONE SHALL BE REMOVED A MINIMUM 1'-6" BELOW THE BRIDGE SEAT ELEVATION ANY CONCRETE OR STONE REMOVED BELOW 1'-6" SHALL BE REPLACED WITH CONCRETE, HIGH PERFORMANCE CLASS B, AND SHALL BE FLUSH WITH THE EXISTING ABUTMENT PERIMETER. ALL NEW CONCRETE ABOVE 1'-6" SHALL HAVE MINIMUM 2" OVERHANG.

**NOTE:**

NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

|                                                     |                                  |
|-----------------------------------------------------|----------------------------------|
| PROJECT:<br><b>TUNBRIDGE</b>                        | PROJECT NO.:<br><b>1444 (42)</b> |
| DESIGN FILE NAME: s03j032/structures/s03j032sub.dgn | PLOT DATE: 25-AUG-2005           |
| IPARM FILE NAME: s03j032abt_2.i                     | DRAWN BY: M. GAGULIC             |
| DESIGNED BY: M. GAGULIC                             | CHECKED BY: R. S. YOUNG          |
| SQUAD LEADER:                                       | SHEET: 19 OF 40                  |
| ABUTMENT #2                                         |                                  |

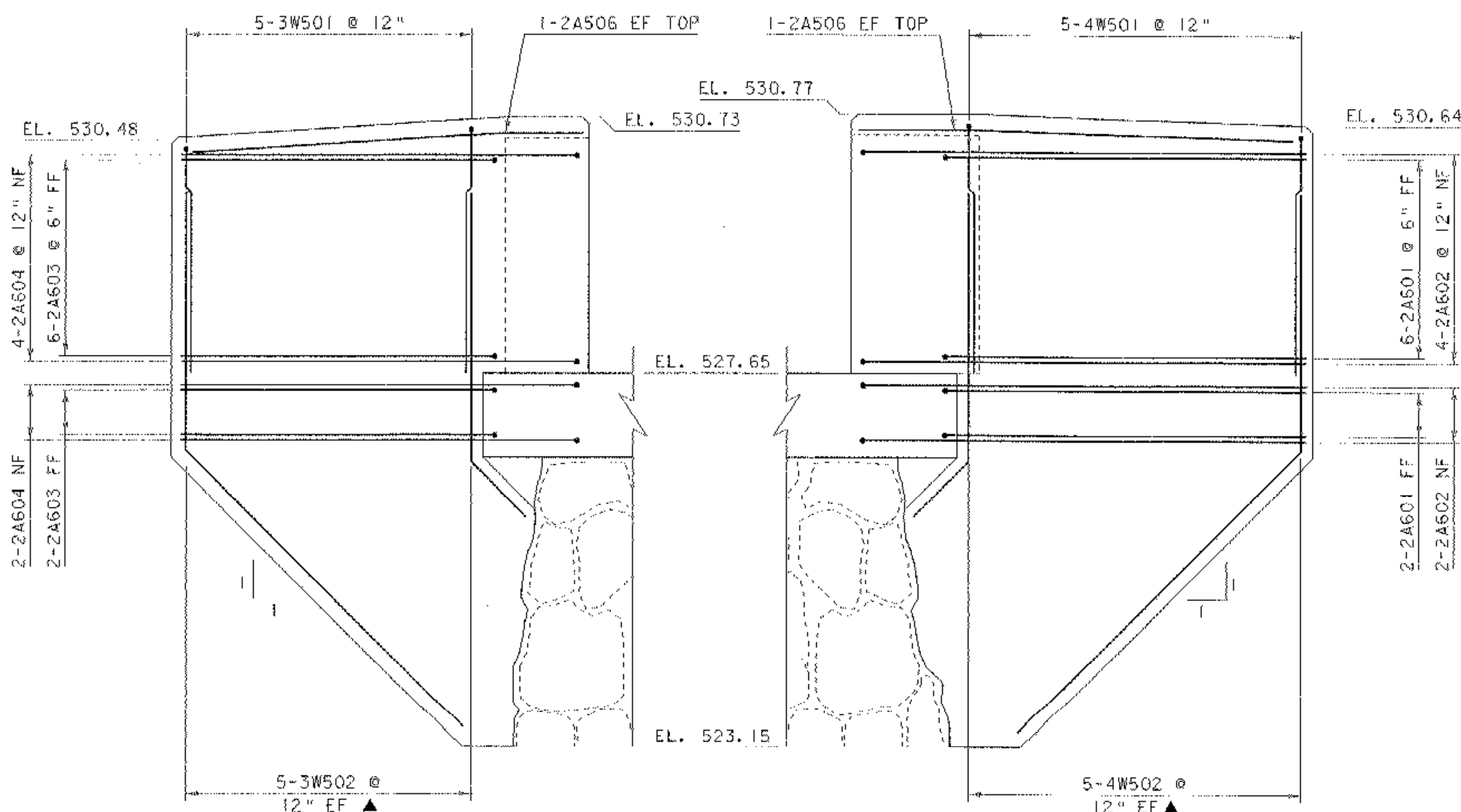
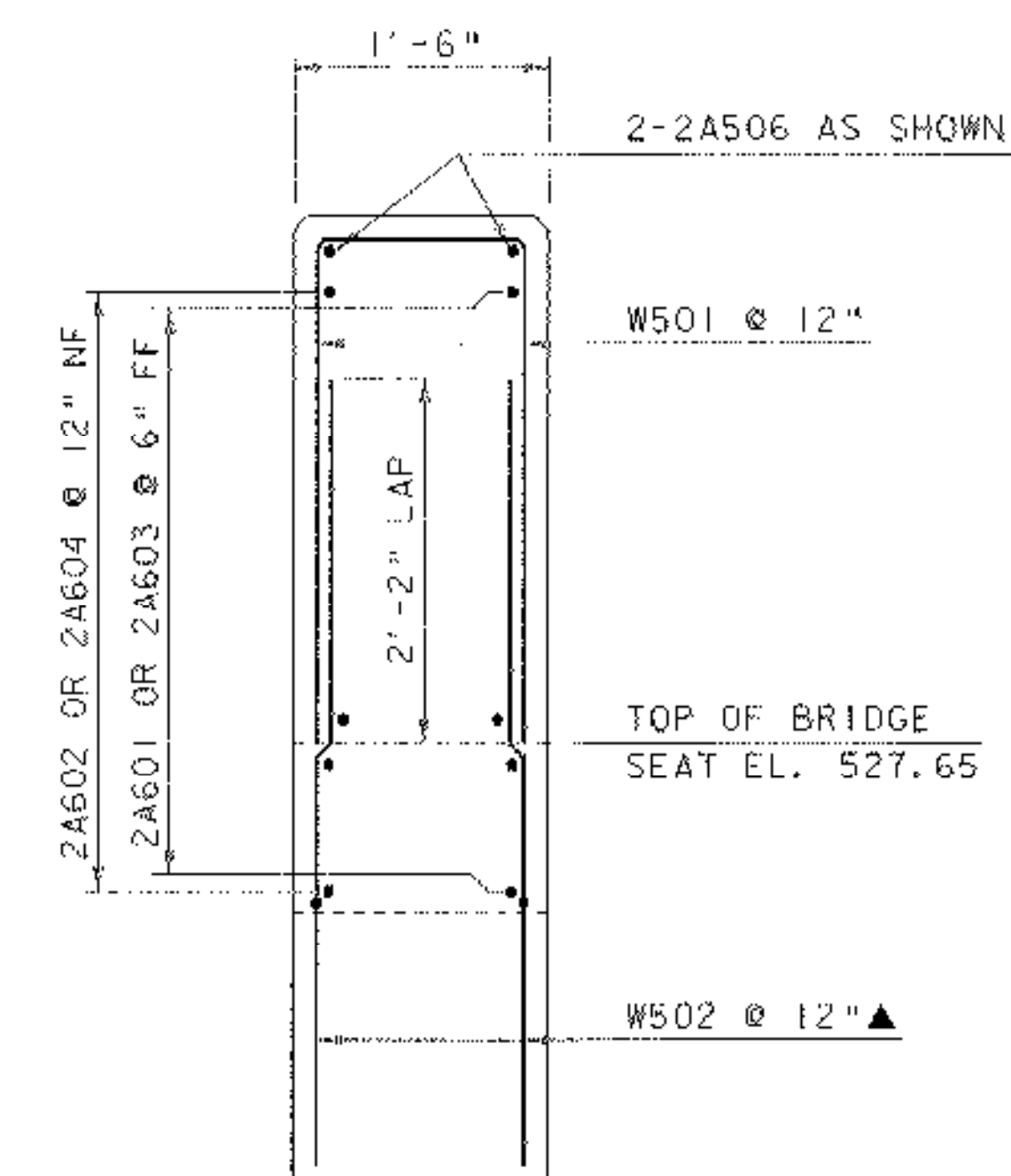


### NOTES

ACTUAL EXCAVATION LIMITS TO BE DETERMINED BY THE CONTRACTOR.

THE PAY LIMITS OF COMMON EXCAVATION SHALL INCLUDE 2'-0" OUTSIDE THE PERIMETER OF THE WINGWALL AS SHOWN.

ONE FOOT UNDERCUT AS DETERMINED NECESSARY BY THE RESIDENT ENGINEER.

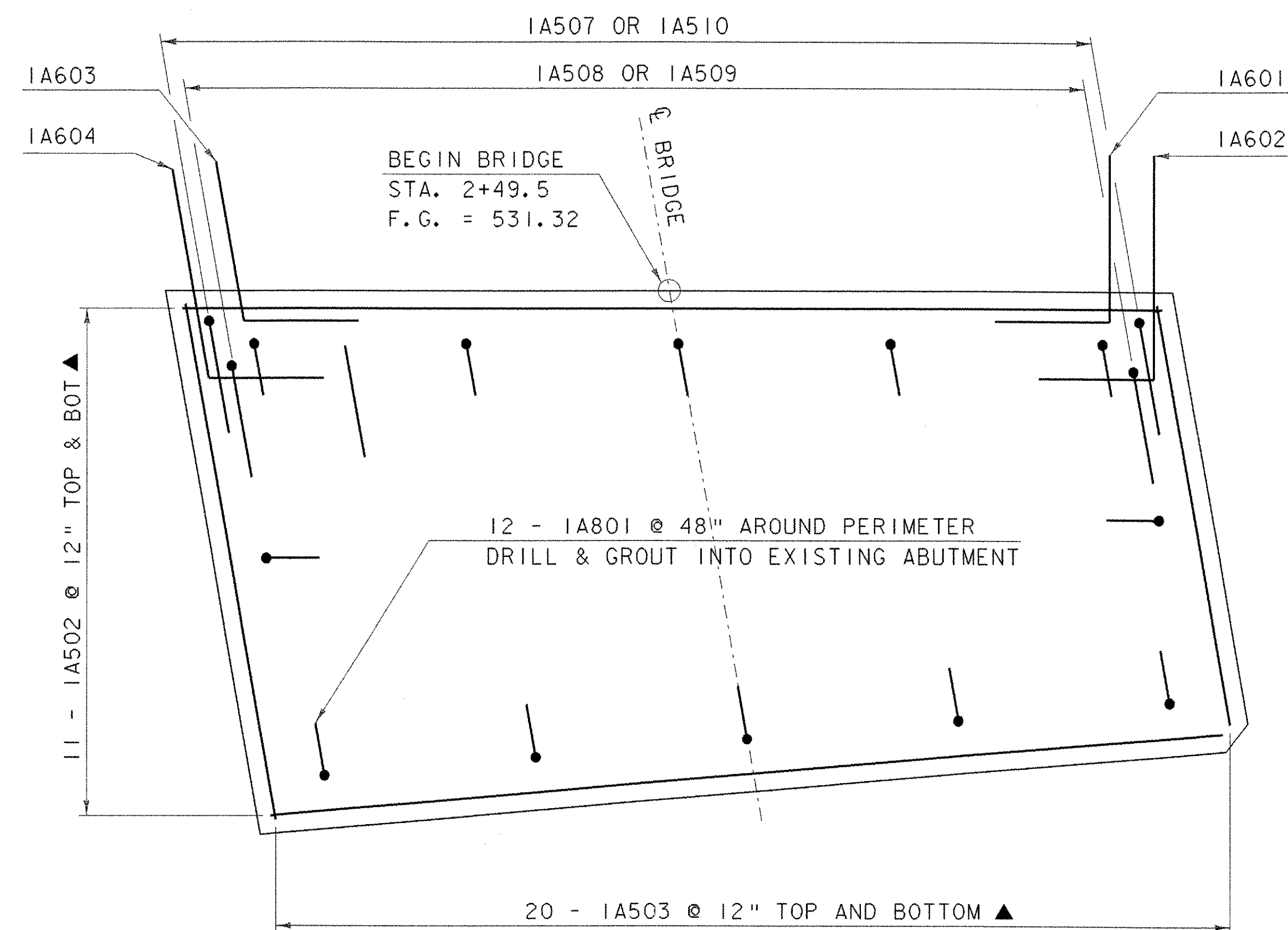


### NOTE:

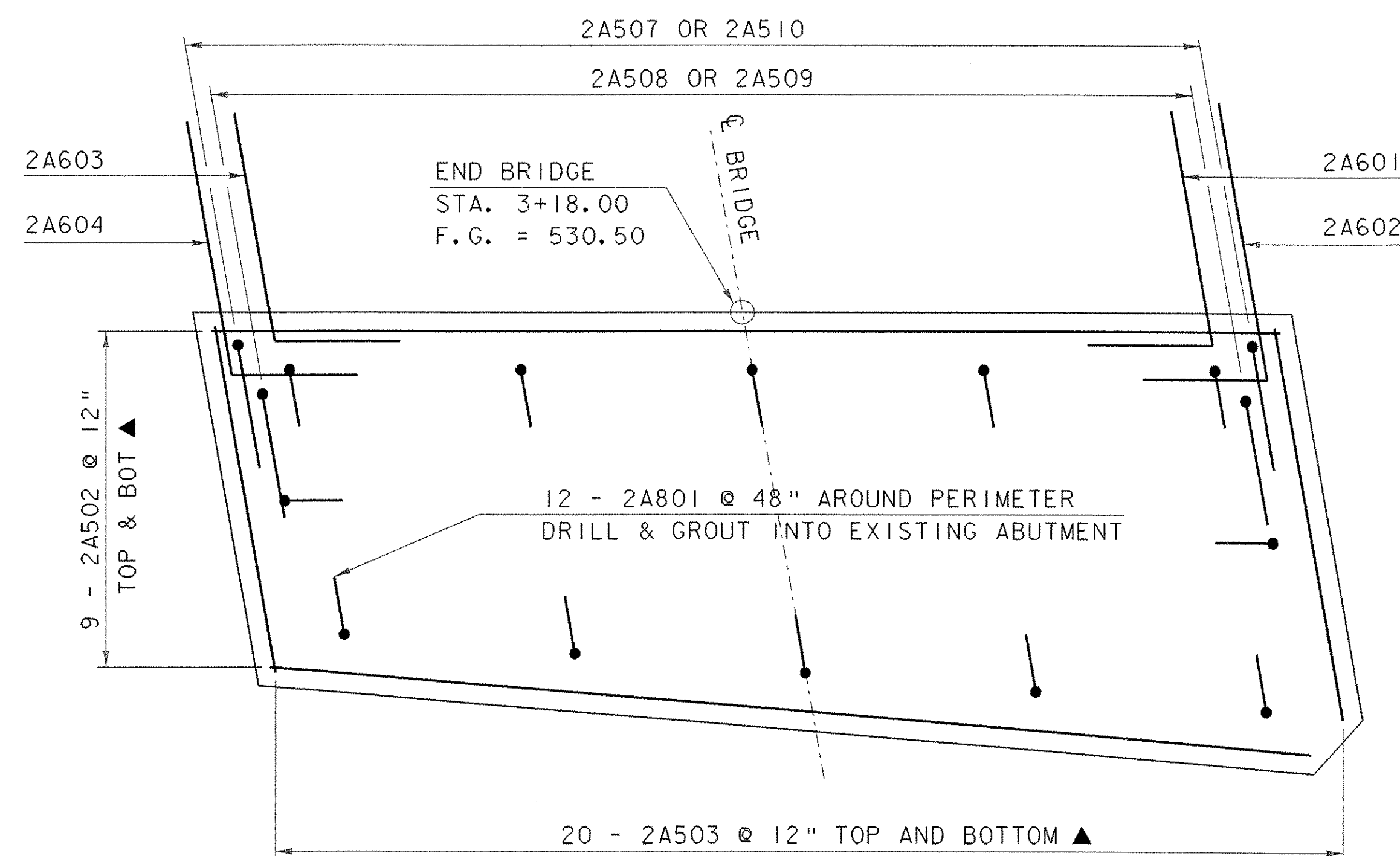
NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

SCALE 1" = 1'-0"  
1 9 6 3 0 1 2

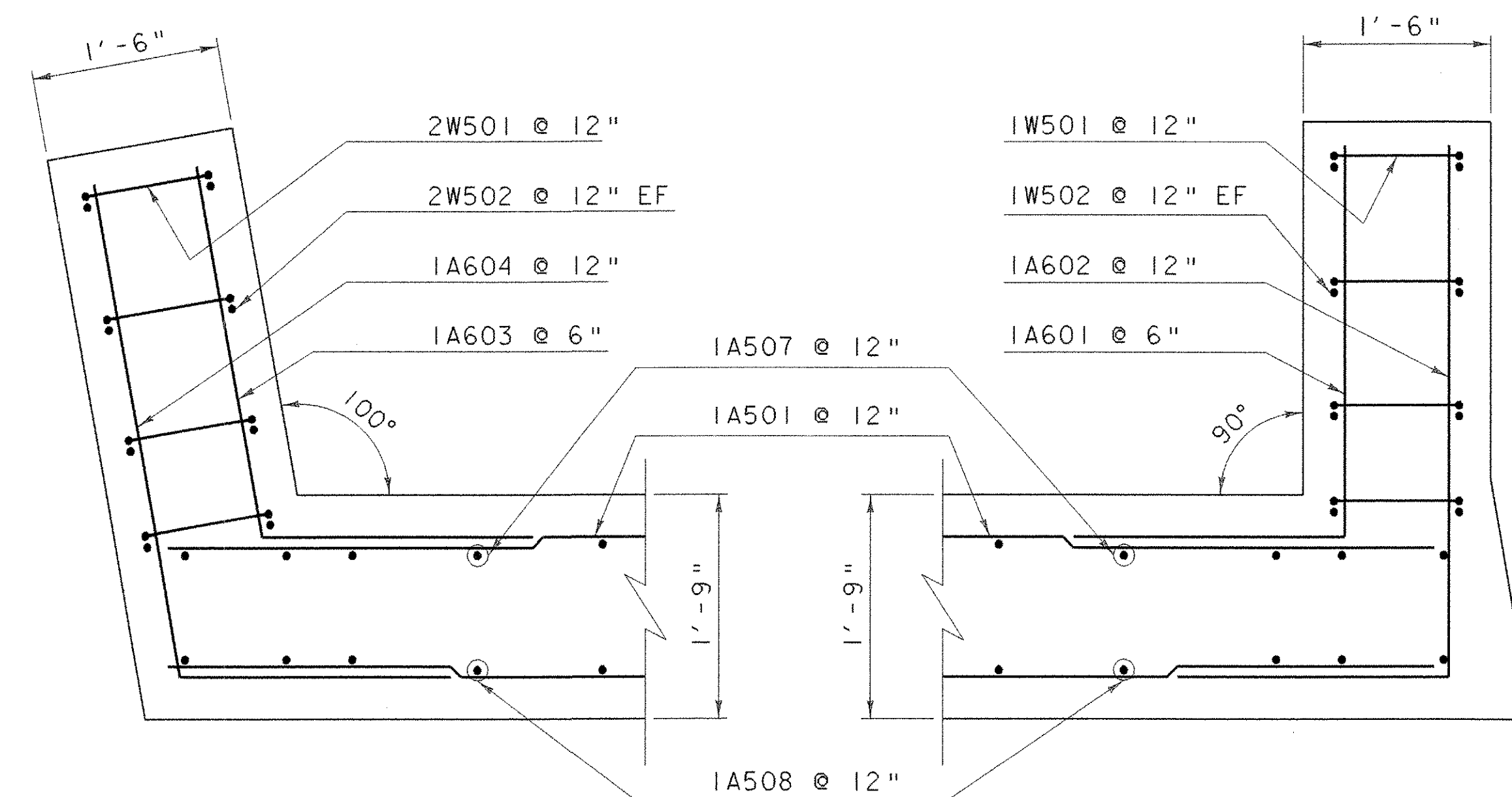
|                                                     |                               |
|-----------------------------------------------------|-------------------------------|
| PROJECT:<br>TUNBRIDGE                               | PROJECT NO.:<br>BHO 1444 (42) |
| DESIGN FILE NAME: s03j032/structures/s03j032sub.dgn | PLOT DATE: 25-AUG-2005        |
| IPARM FILE NAME: s03j032ww1234.1                    | DRAWN BY: M. GAGULIC          |
| DESIGNED BY: M. GAGULIC                             | CHECKED BY: R. S. YOUNG       |
| SQUAD LEADER: C. P. WILLIAMS                        | SHEET: 20 OF 40               |
| WINGWALL #1, #2, #3 & #4                            |                               |



BRIDGE SEAT #1 PLAN  
SCALE 1/2" = 1'-0"

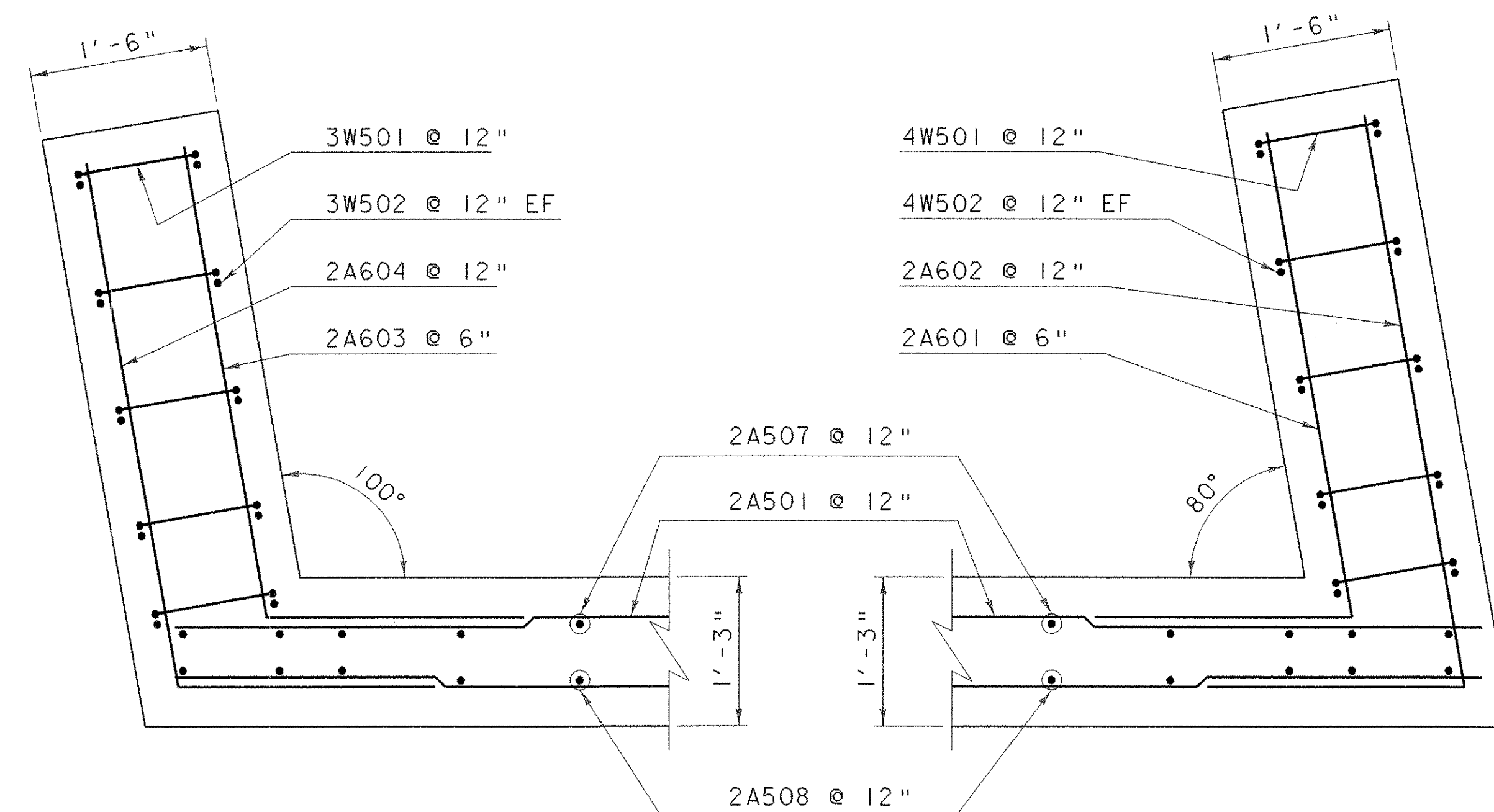


BRIDGE SEAT #2 PLAN  
SCALE 1/2" = 1'-0"



CORNER DETAIL WW#2\*  
SCALE: 1" = 1'-0"

CORNER DETAIL WW#1\*  
SCALE: 1" = 1'-0"



CORNER DETAIL WW#3\*  
SCALE: 1" = 1'-0"

CORNER DETAIL WW#4\*  
SCALE: 1" = 1'-0"

\* DETAIL ABOVE BRIDGE SEAT

SCALE 1" = 1'-0"  
1 9 6 3 0 2

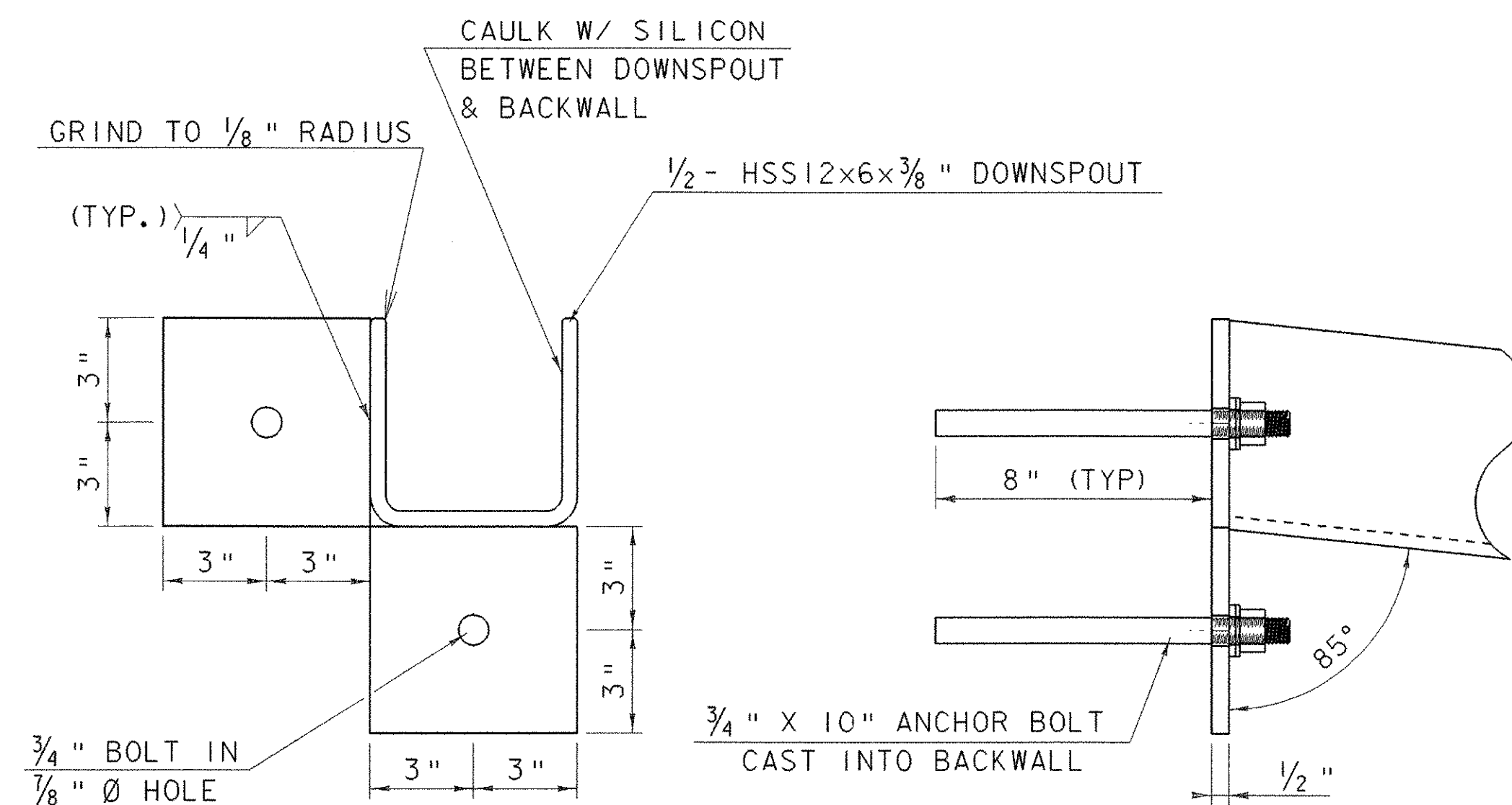
SCALE 1/2" = 1'-0"  
1 0 1 2

NOTE:

NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLR. UNLESS OTHERWISE  
SPECIFIED ON THE PLANS.

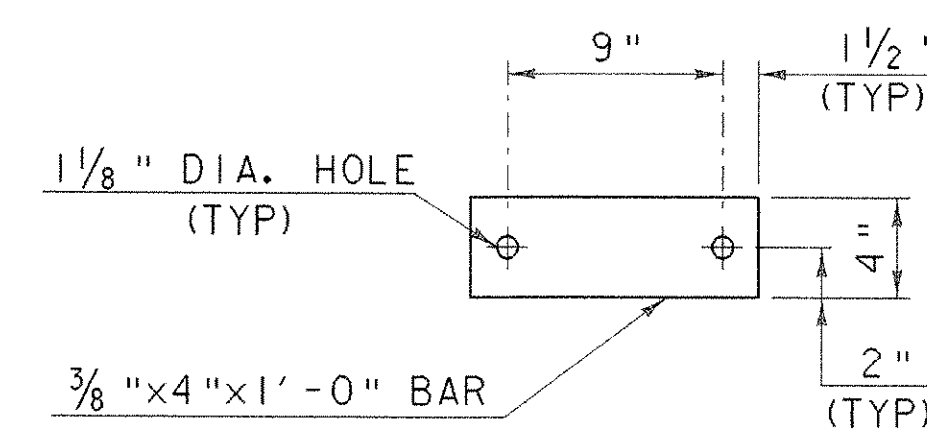
|                                                                                                                                     |                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| PROJECT:<br>TUNBRIDGE                                                                                                               | PROJECT NO.:<br>1444 (42)                                                                       |
| DESIGN FILE NAME: s03j032/structures/s03j032sub.dgn<br>IPARM FILE NAME: s03j032seatp1.i<br>DESIGNED BY: M. GAGULIC<br>SQUAD LEADER: | PLOT DATE: 25-AUG-2005<br>DRAWN BY: M. LONGSTREET<br>CHECKED BY: R. S. YOUNG<br>SHEET: 21 OF 40 |

BRIDGE SEAT PLANS & MISC.



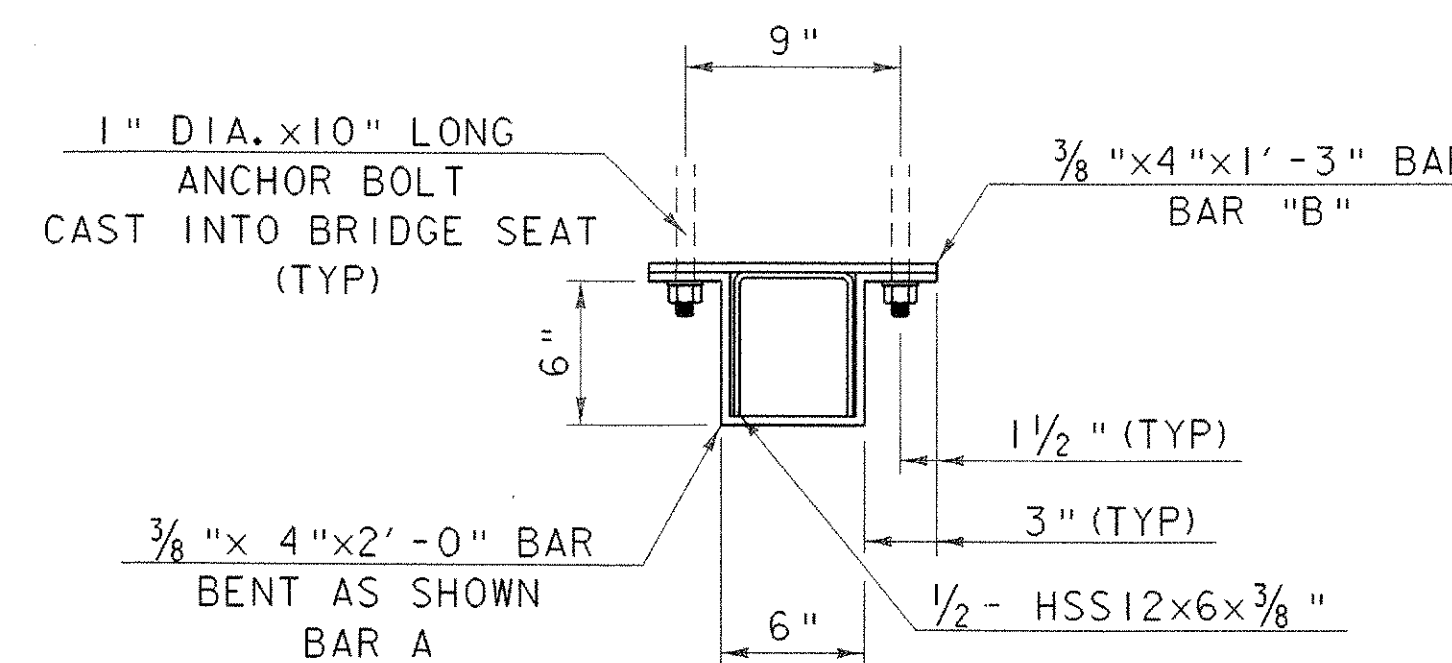
**DOWN SPOUT CONNECTION DETAIL**

SCALE 3" = 1'-0"



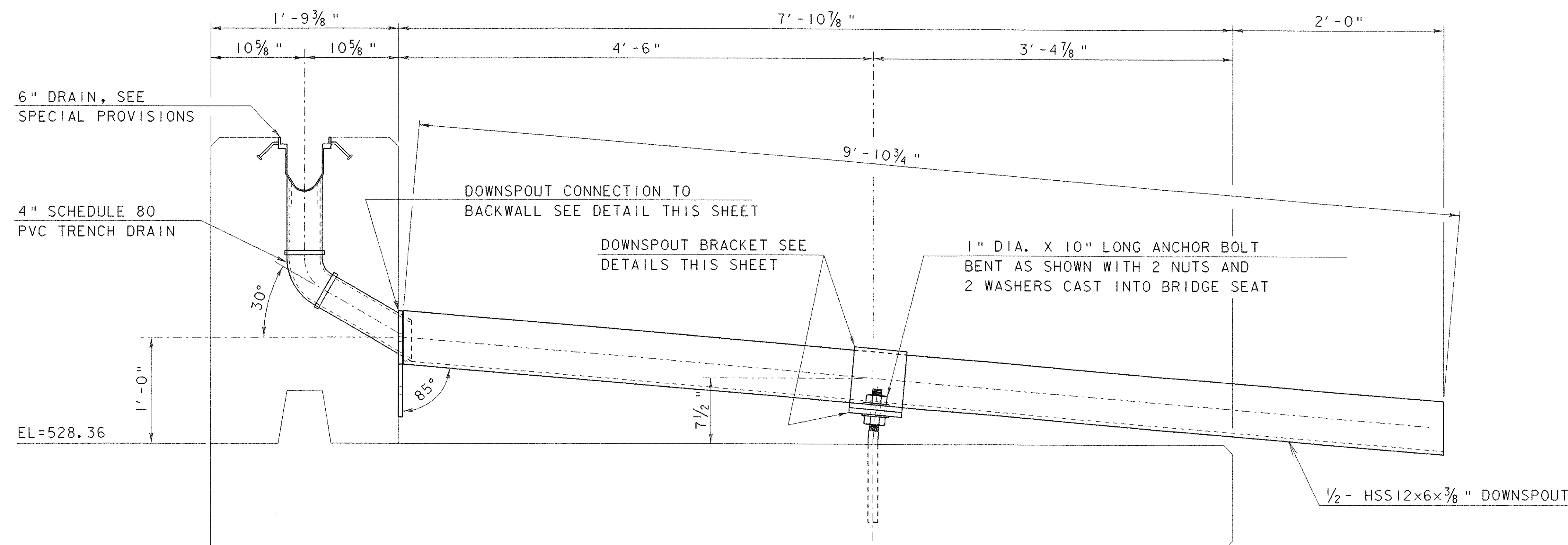
**BAR "B"**

SCALE:  $1\frac{1}{2}$ " = 1'-0"



**SECTION OF DOWNSPOUT AT BAR LOCATION**

SCALE:  $1\frac{1}{2}$ " = 1'-0"



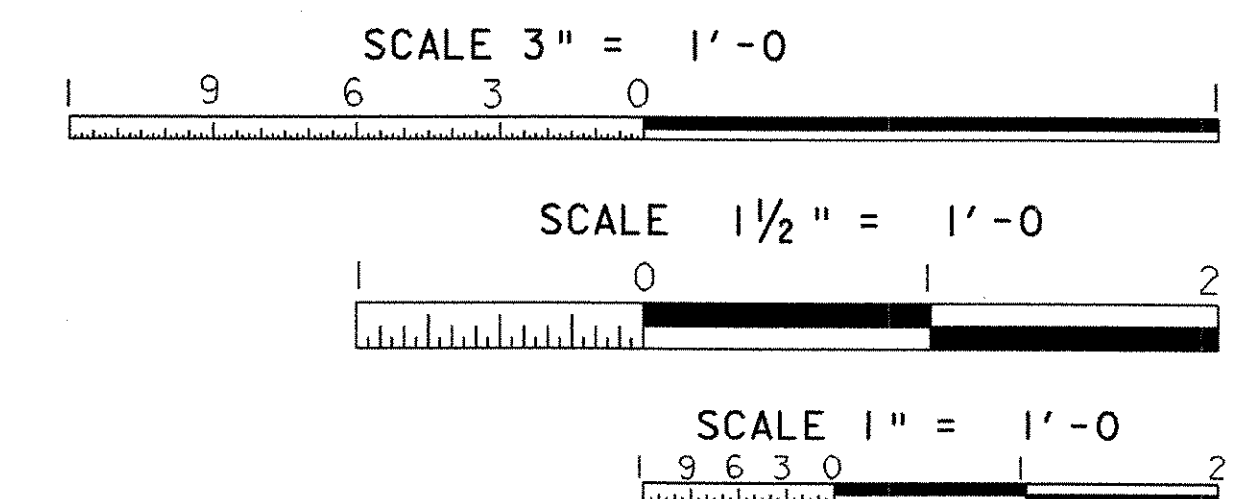
**DOWNSPOUT DETAILS**

SCALE:  $1\frac{1}{2}$ " = 1'-0"

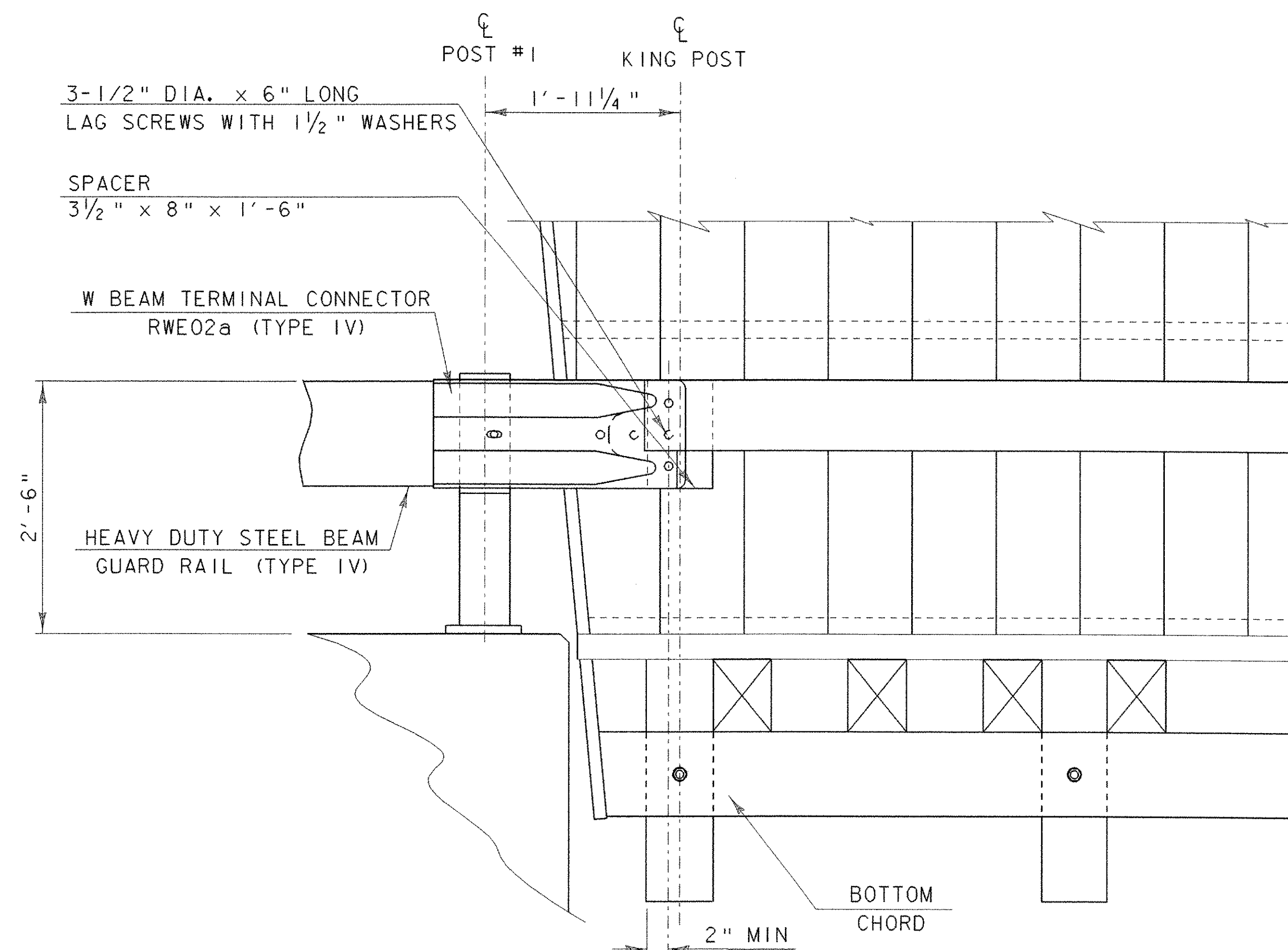
DOWNSPOUT DETAIL DRAWN PARALLEL TO CENTERLINE OF BRIDGE

**DOWNSPOUT NOTES:**

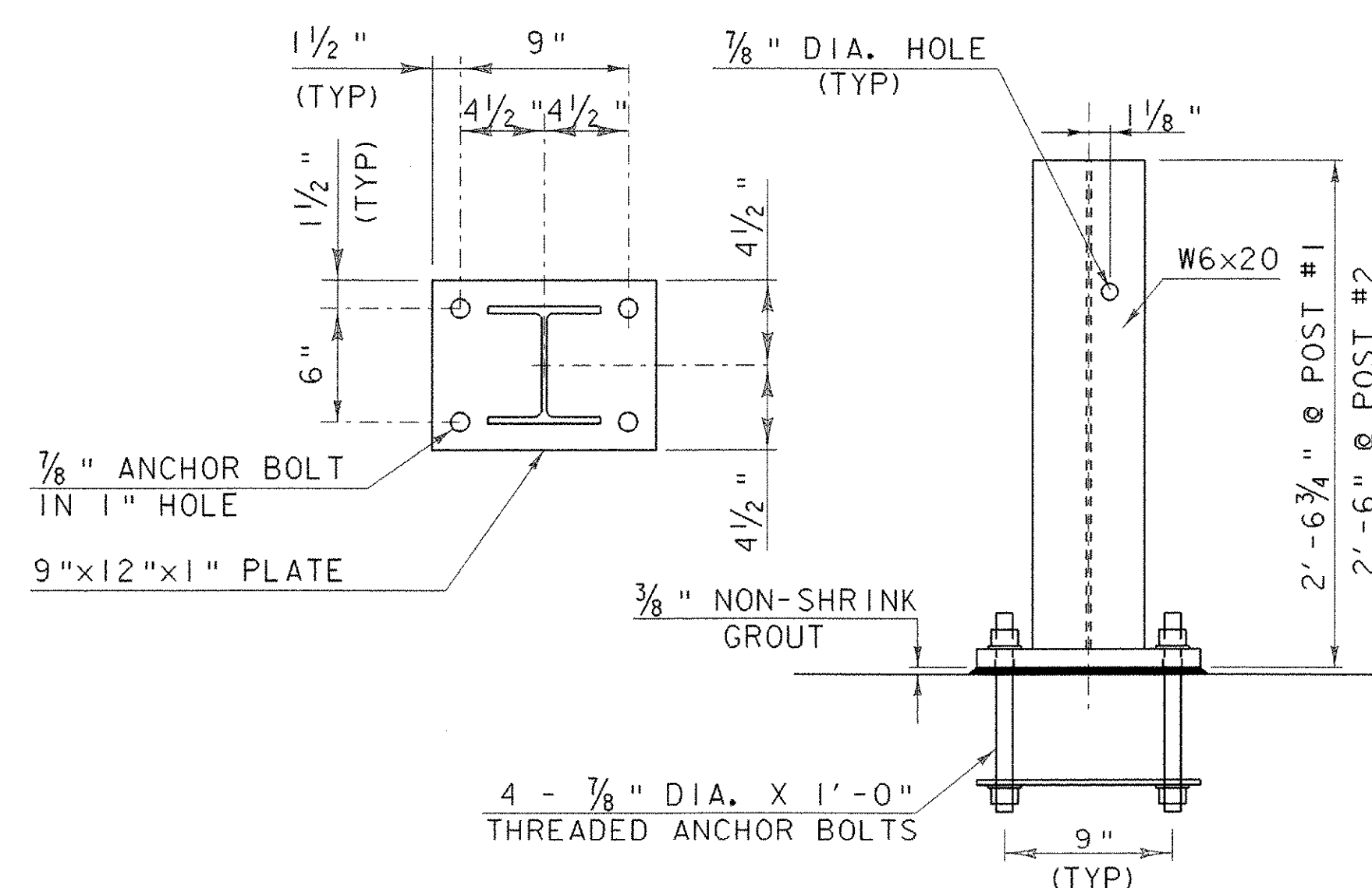
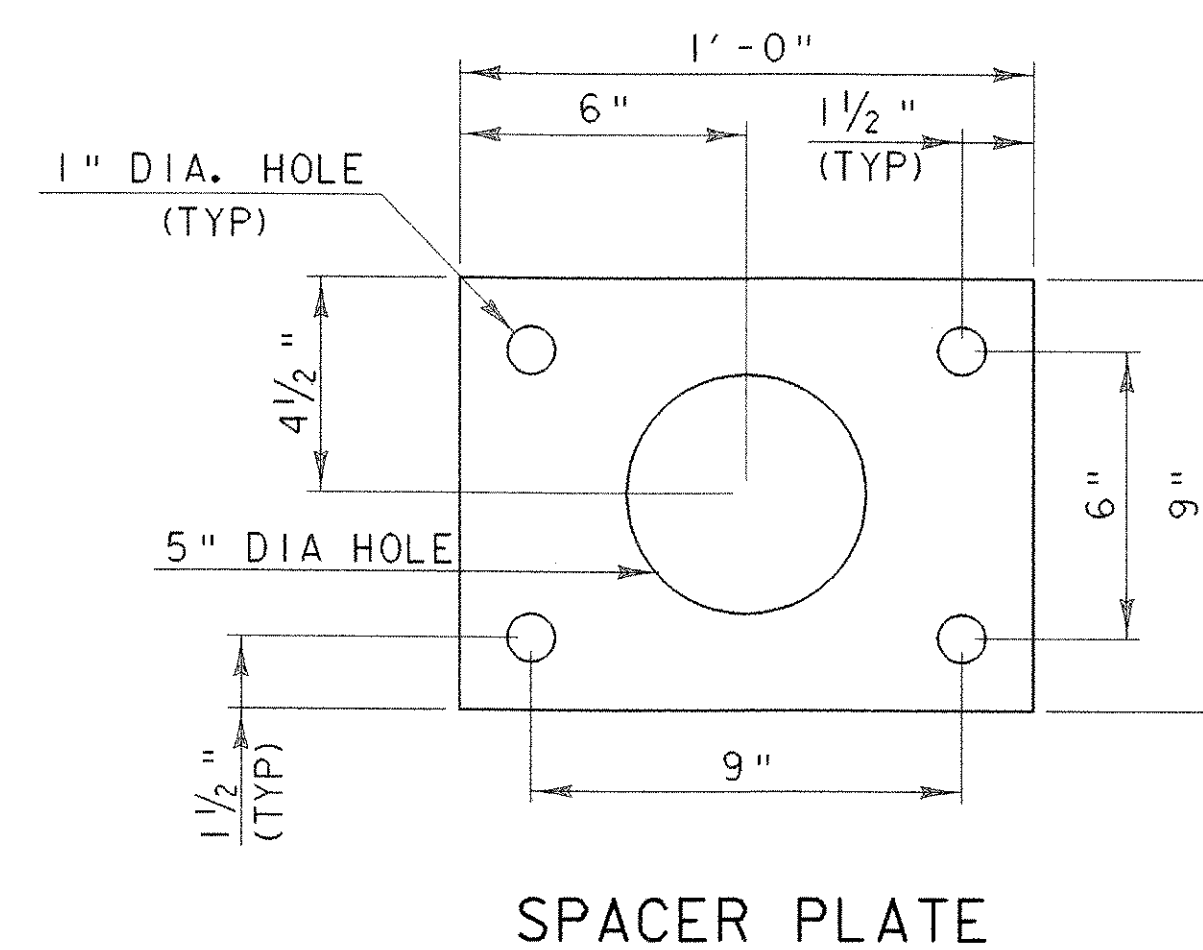
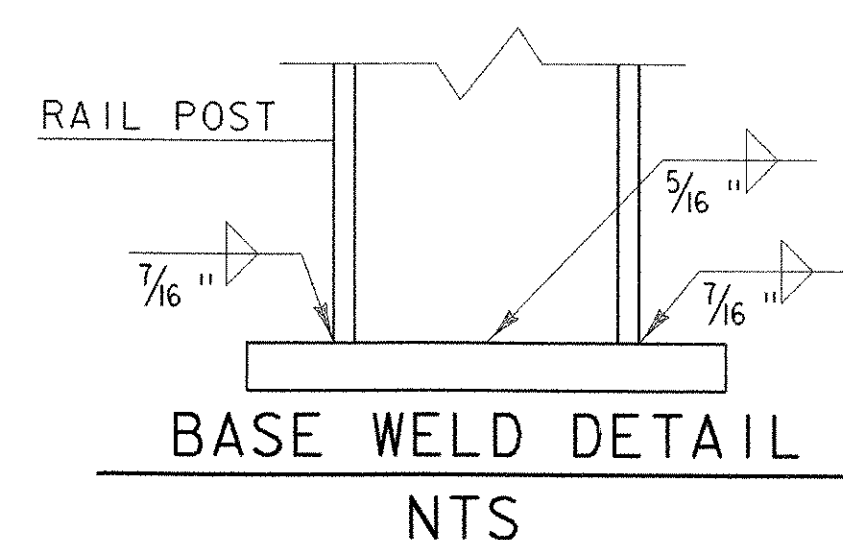
1. ALL REQUIRED WELDS FOR THE DOWNSPOUTS SHALL BE DETAILED ON SHOP DRAWINGS WHICH SHALL INCLUDE ALL OF THE APPLICABLE PROCEDURES.
2. THE FABRICATOR SHALL GALVANIZE THE DOWNSPOUT IN ACCORDANCE WITH AASHTO M-111 AFTER FABRICATION. THE COST OF GALVANIZING WILL BE CONSIDERED INCIDENTAL TO THE ITEM 506.60 "STRUCTURAL STEEL".
3. ALL COMPONENTS OF THE DOWNSPOUT SHALL CONFORM TO AASHTO M270M/M270 GRADE 36, EXCEPT DOWNSPOUT SHALL CONFORM TO ASTM A500 GR. B. DOWNSPOUT SHALL BE PAID FOR UNDER THE ITEM 506.60 "STRUCTURAL STEEL".
4. AFTER ALL OPERATIONS ARE FINISHED, THE TRENCH, TRENCH DRAIN, AND DOWNSPOUT SHALL BE CLEANED OF ANY CONTAMINATION FROM CONSTRUCTION.
5. ANCHOR BOLTS SHALL CONFORM TO ASTM A307, GRADE C, AND SHALL BE GALVANIZED PER AASHTO M232M/232. THE COST OF BOLTS SHALL BE INCIDENTAL TO THE ITEM 506.60 "STRUCTURAL STEEL".
7. DOWNSPOUTS SHALL BE INSTALLED AFTER COVERED BRIDGE HAS BEEN PLACED ON BRIDGE SEAT.



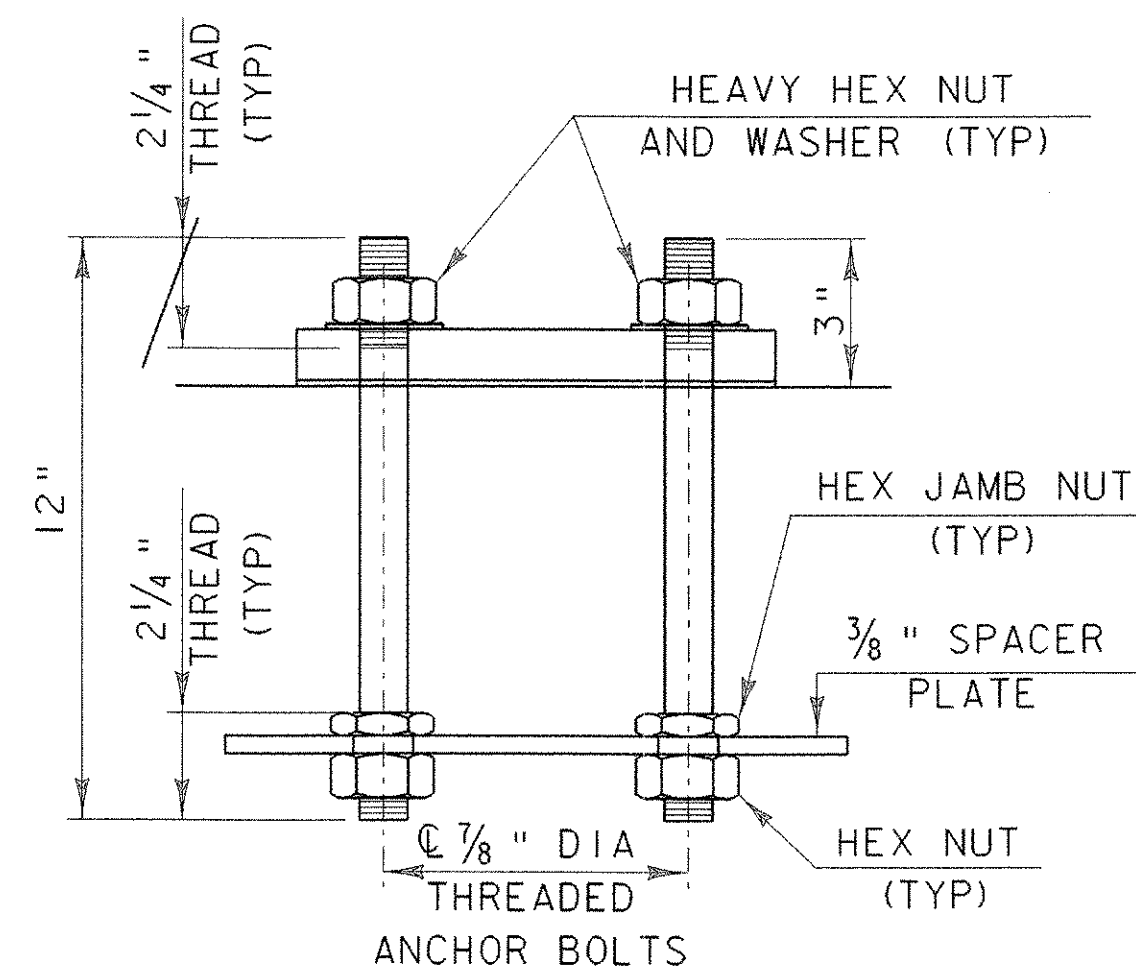
|                                                     |                               |
|-----------------------------------------------------|-------------------------------|
| PROJECT:<br>TUNBRIDGE                               | PROJECT NO.:<br>BHO 1444 (42) |
| DESIGN FILE NAME: s03j032/structures/s03j032sub.dgn | PLOT DATE: 25-AUG-2005        |
| IPARM FILE NAME: s03j032dnsp.l                      | DRAWN BY: M. GAGULIC          |
| DESIGNED BY: M. GAGULIC                             | CHECKED BY: R. S. YOUNG       |
| SQUAD LEADER:                                       | SHEET: 22 OF 40               |
| DOWNSPOUT DETAILS                                   |                               |



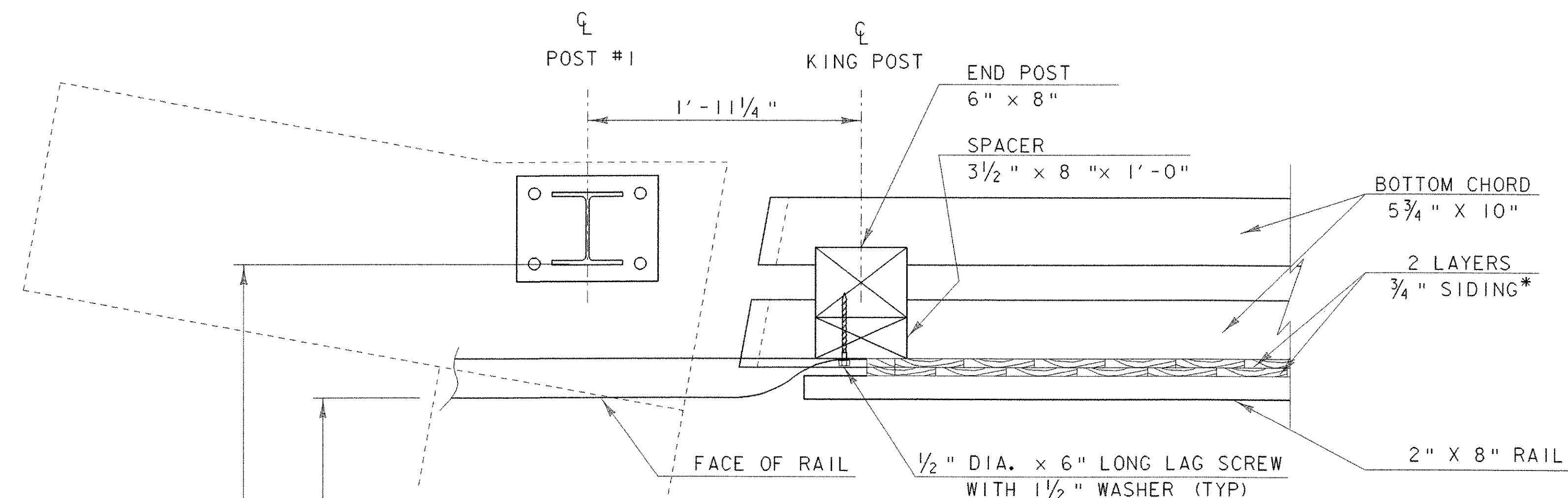
RAILING CONNECTION DETAIL  
ELEVATION VIEW (TYP)  
SCALE 1" = 1'-0"



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



RAIL POST ANCHORAGE  
NTS



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

\* COPE SIDING AROUND TERMINAL CONNECTOR AT END OF BRIDGE

## RAILING NOTES

1. POSTS #1, #2, AND BASE PLATES SHALL BE ASTM A 588, STEEL GRADE 50W (WEATHERING STEEL). BOLTS SHALL BE AASHTO M164 TYPE 3.
2. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS, INCLUDING WELDING PROCEDURES, TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISIONS OF SECTION 506.04-SHOP DRAWINGS. ALL WELDING SHALL CONFORM WITH SECTION 506.10.
3. ALL POSTS SHALL BE SET NORMAL TO GRADE. NUTS PLACED IN CONCRETE ARE TO BE ROTATED WITHIN 24 HOURS AFTER CONCRETE IS PLACED TO BREAK BOND BETWEEN NUT AND CONCRETE. NUTS SHALL THEN BE USED TO ALIGN THE POSTS BOTH HORIZONTALLY AND VERTICALLY. AFTER FINAL POSITION HAS BEEN APPROVED ALL VOIDS BETWEEN THE BASE PLATE AND CONCRETE SURFACE SHALL BE GROUTED WITH NON-SHRINK GROUT CONFORMING WITH SECTION 707.03, MORTAR, TYPE IV.
4. OFFSET BLOCK SHALL BE WOOD 6"x8"x1'-2". SEE STANDARD G-1.
5. TRANSITION RAILING FROM 2'-6" TO 2'-3" WITHIN 25 FEET.
6. PAYMENT FOR POST #1, POST #2, ANCHOR BOLT ASSEMBLIES, AND THE TERMINAL CONNECTOR SHALL BE INCLUDED IN THE PER FOOT UNIT BID PRICE FOR 621.21 "HEAVY DUTY STEEL BEAM GUARD RAIL"

SCALE 1" = 1'-0"

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

|                      |                                   |              |               |
|----------------------|-----------------------------------|--------------|---------------|
| PROJECT:             | TUNBRIDGE                         | PROJECT NO.: | BHO 1444 (42) |
| DESIGN FILE NAME:    | 03j032\structures\s03j032rail.dgn | PLOT DATE:   | 25-AUG-2005   |
| IPARM FILE NAME:     | s03j032rail.i                     | DRAWN BY:    | E.L. RUSTAY   |
| DESIGNED BY:         | R.S. YOUNG                        | CHECKED BY:  | R.S. YOUNG    |
| SQUAD LEADER:        | C.P. WILLIAMS                     | SHEET:       | 23 OF 40      |
| RAILING DETAIL SHEET |                                   |              |               |

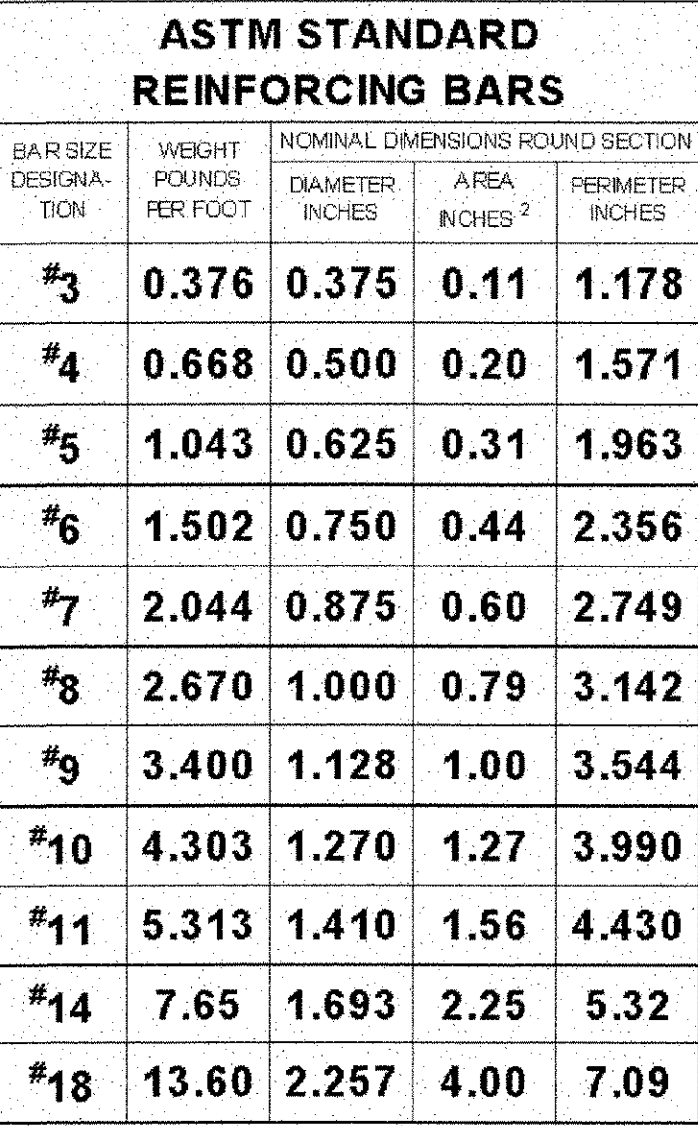
# TRAFFIC SIGN SUMMARY SHEET

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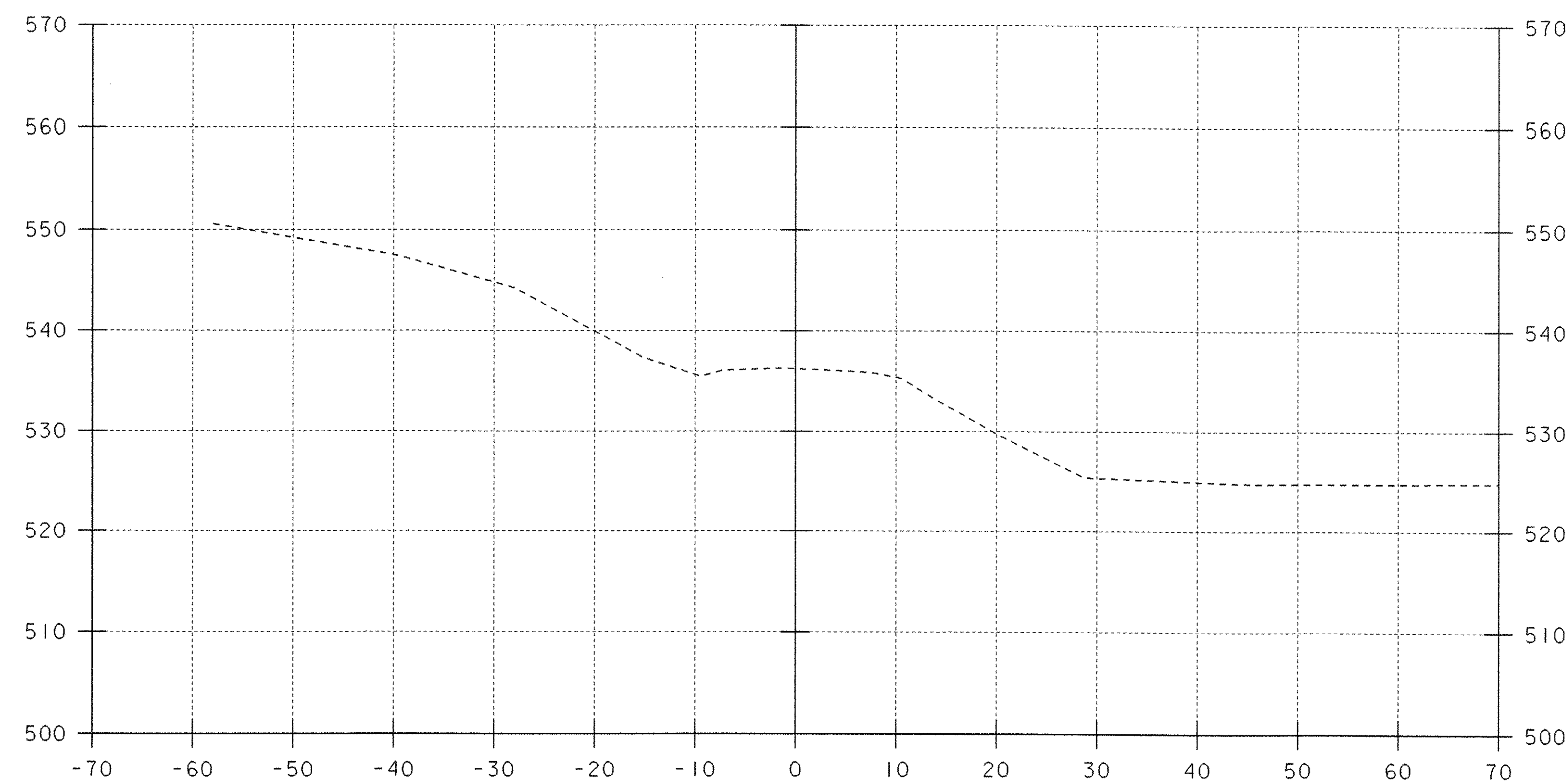
# REINFORCING STEEL SCHEDULE

## ~ NOTES ~

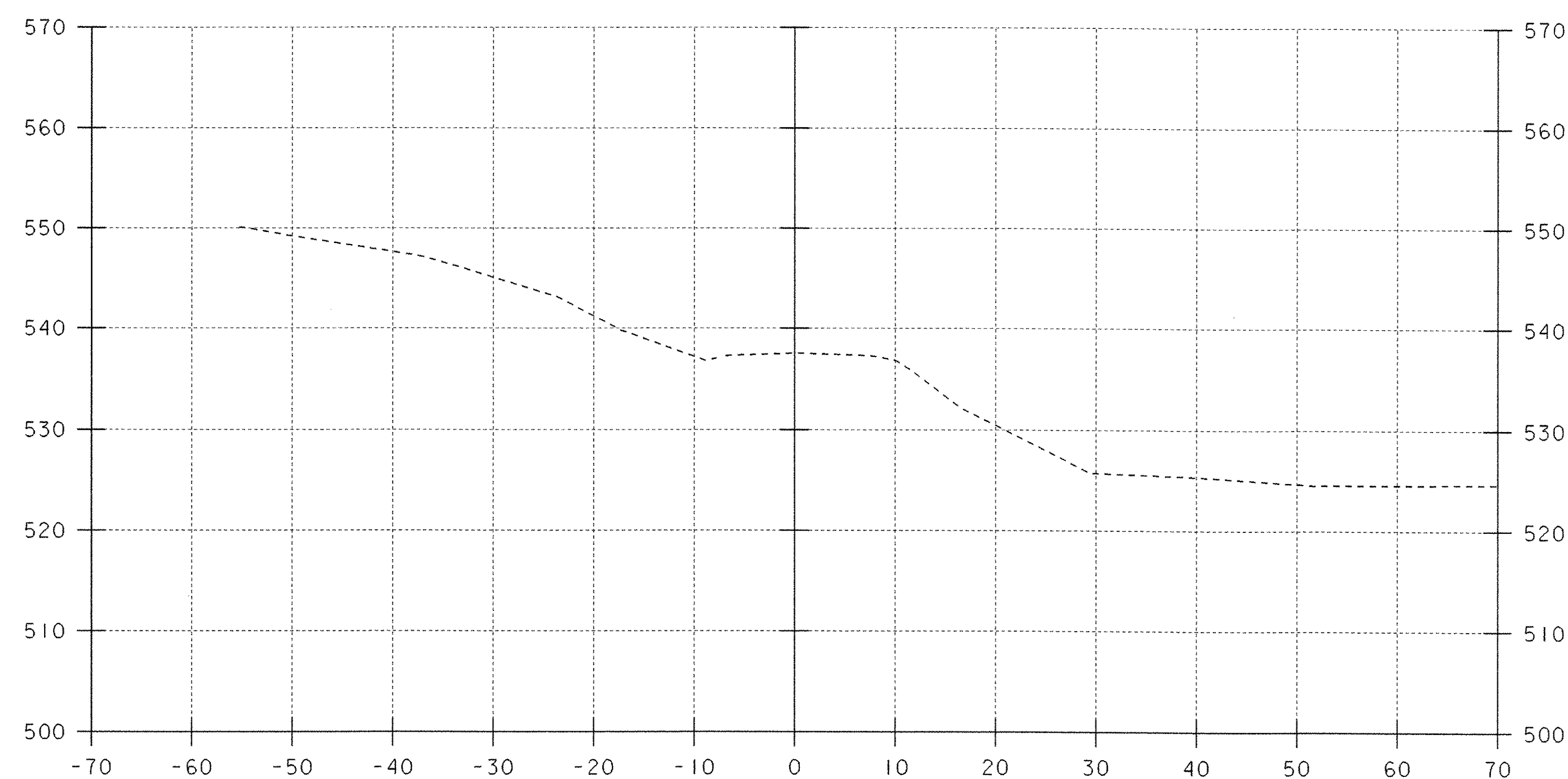
1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-S1). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. \* DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
0. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
1. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



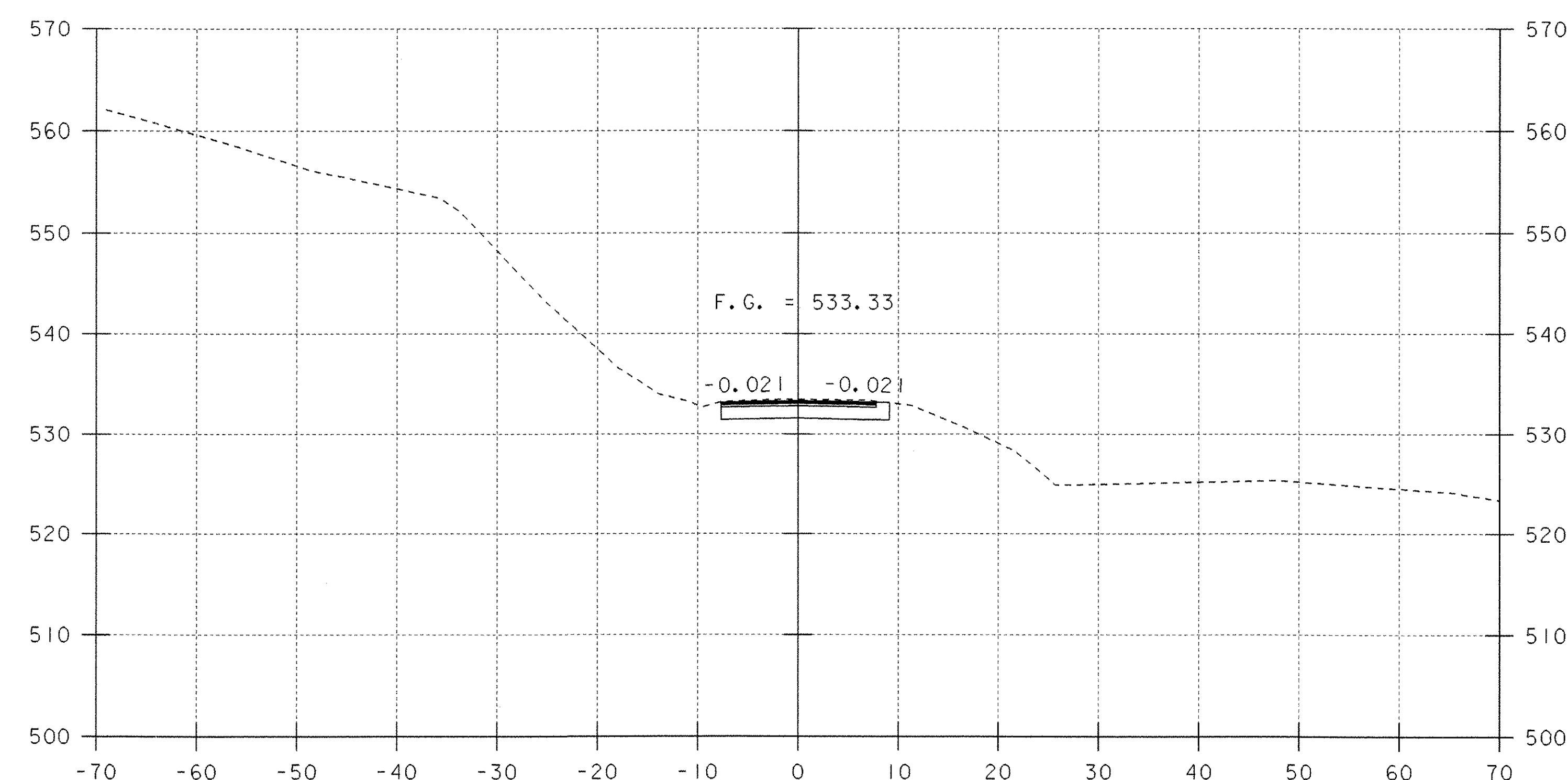
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| PROJECT NUMBER: <b>BHO 1444 (42)</b>       |                                  |
| FILE NAME: <b>s03j032rein.xls</b>          | PLOT DATE: <b>3/16/2004</b>      |
| PROJECT MANAGER: <b>C. P. Williams</b>     | DRAWN BY: <b>M.L. Longstreet</b> |
| DESIGNED BY: <b>R. S. Young</b>            | CHECKED BY: <b>R. S. Young</b>   |
| <b>REINFORCING STEEL SCHEDULE SHEET #1</b> | <b>SHEET 25 OF 40</b>            |



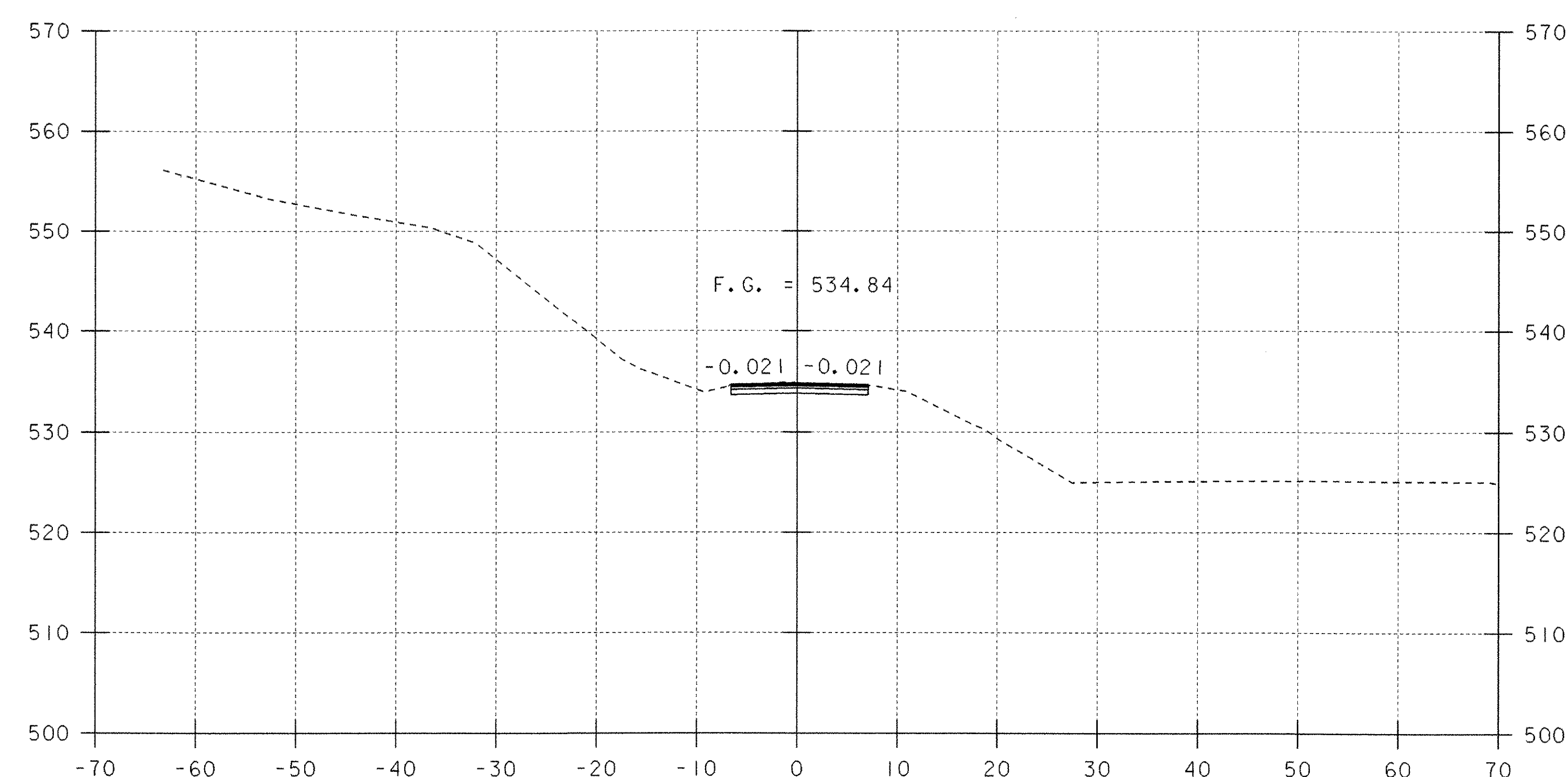
I+25



I+00



I+75

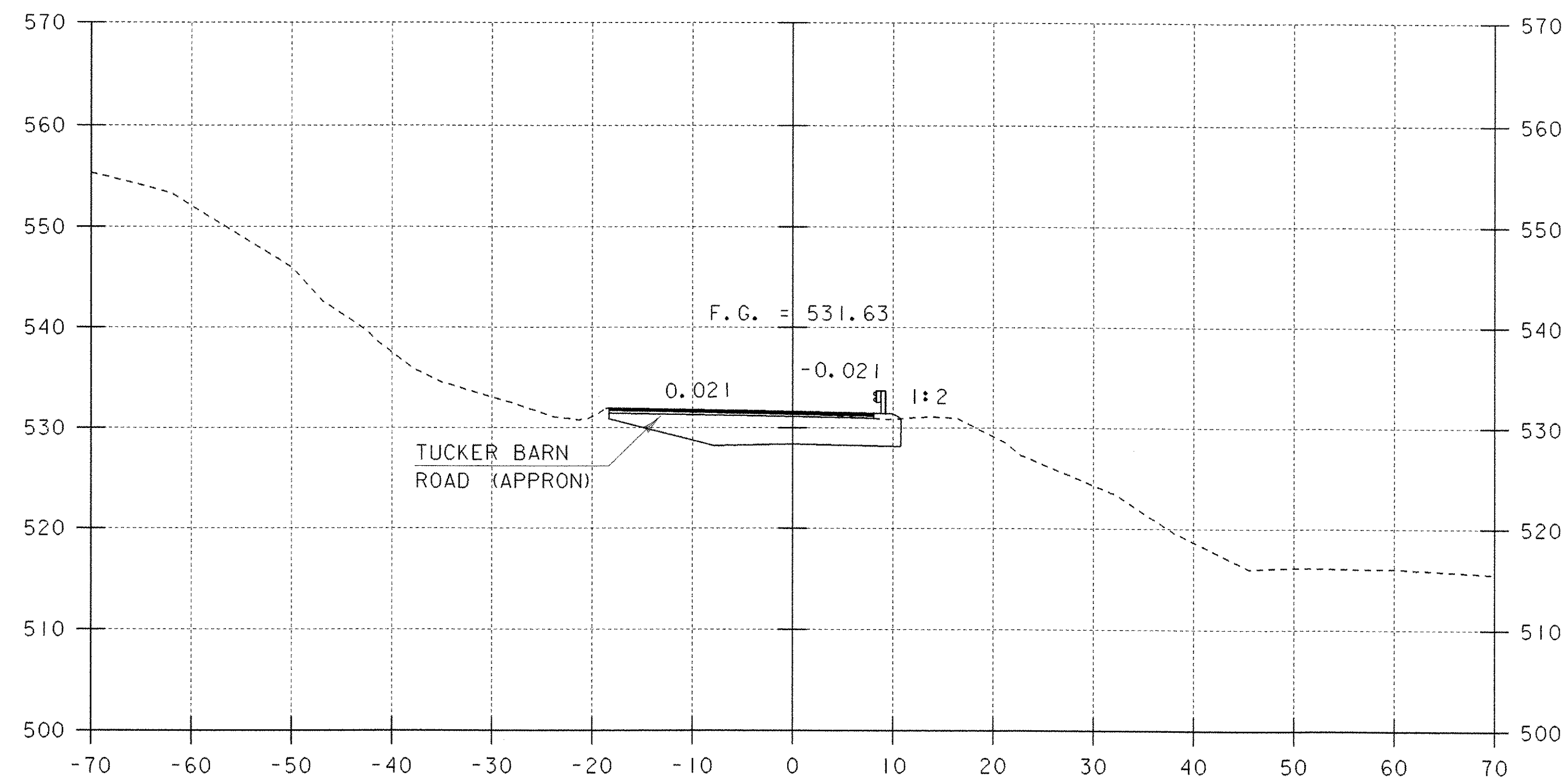


I+50

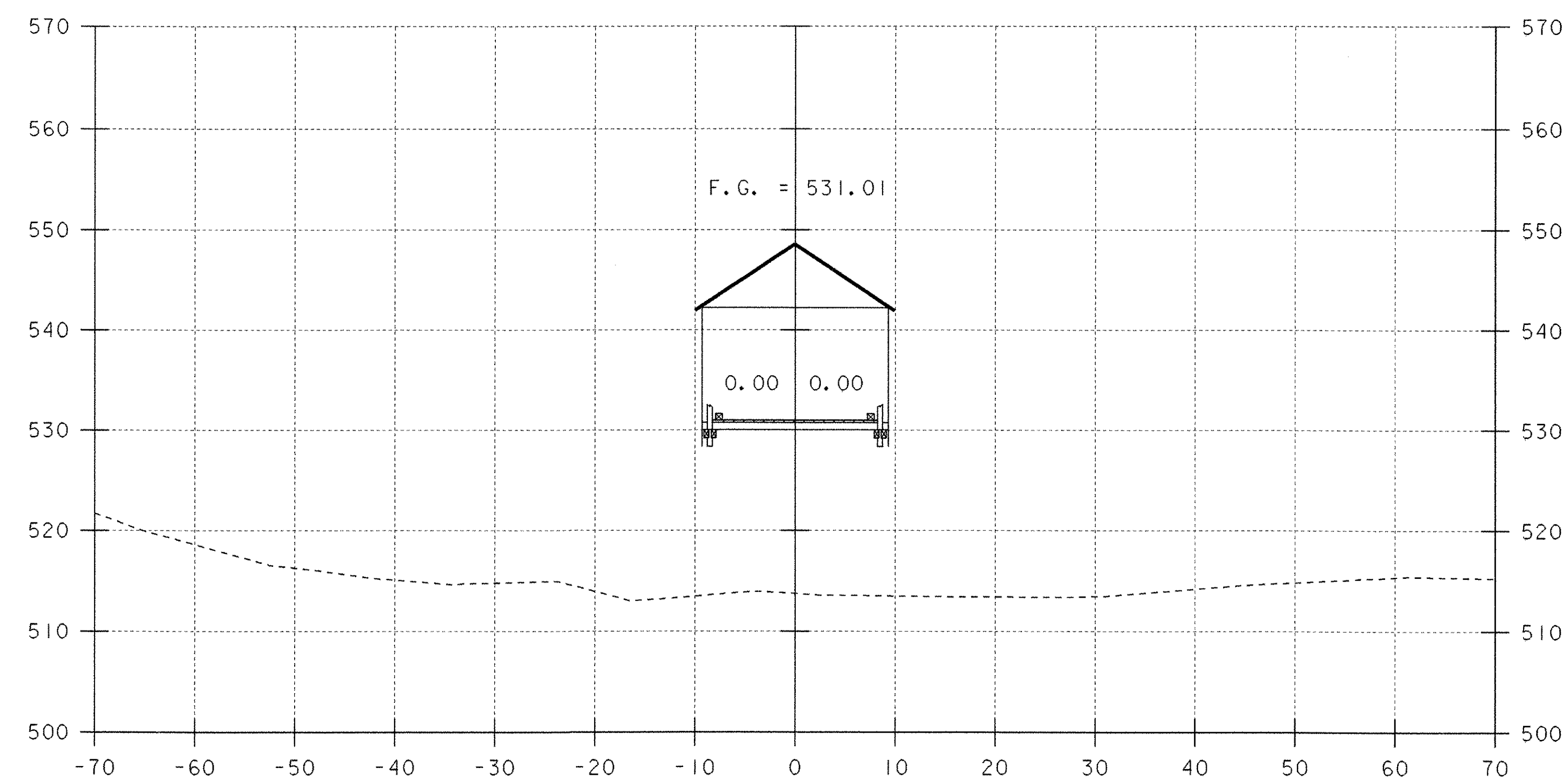
BEGIN APPROACH AT  
STATION I+50.00

SCALE 1" = 10'-0"  
10 0 10

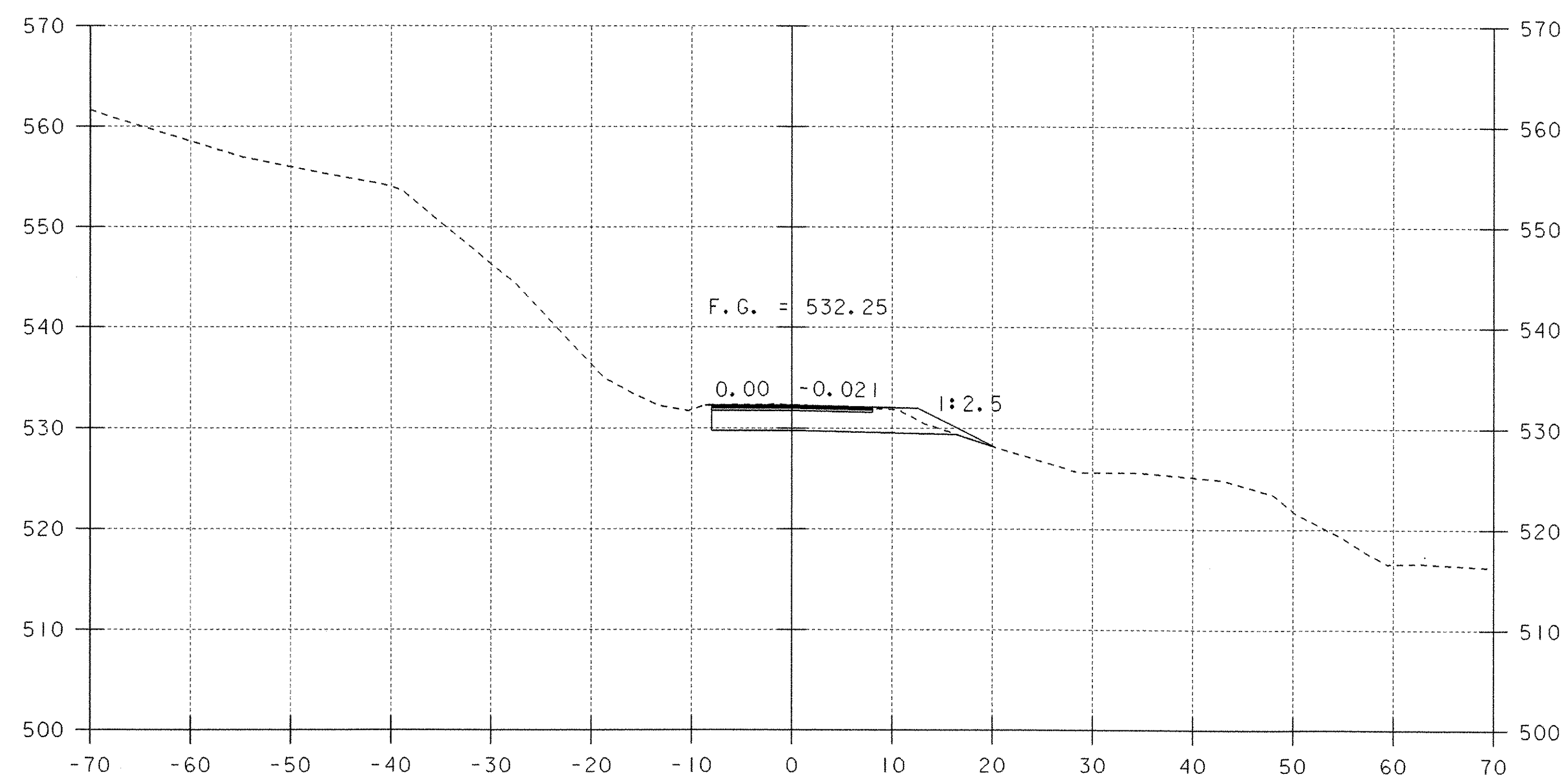
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| DESIGN FILE NAME: 03j032/Structures/s03j032mx.dgn | PLOT DATE: 25-AUG-2005        |
| IPARM FILE NAME: s03j032m1x1.i                    |                               |
| MAINLINE CROSS SECTIONS                           |                               |
| STA I+00 TO STA I+75                              | SHEET: 26 OF 40               |



2+25

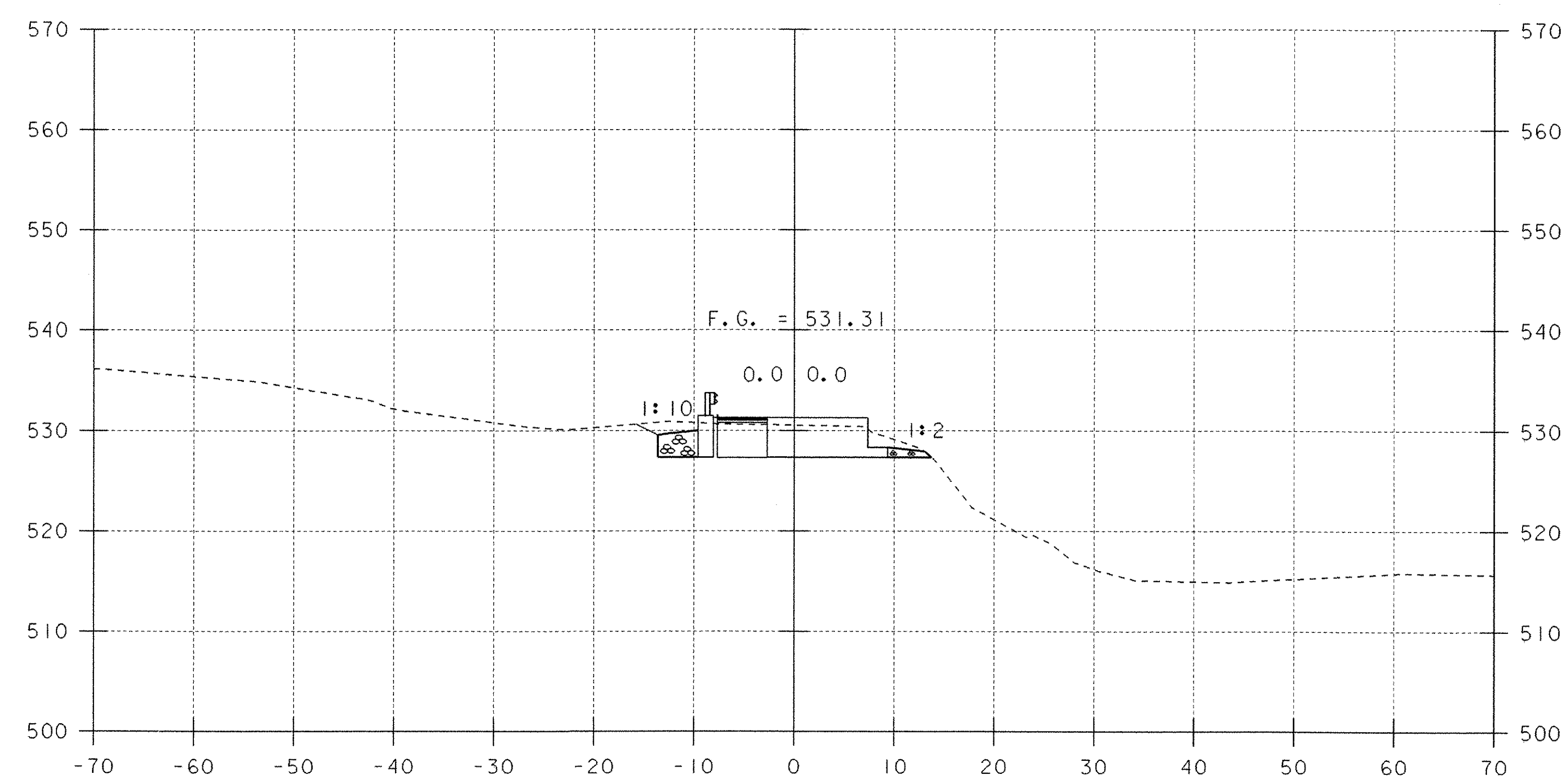


2+75



2+00

BEGIN PROJECT AT  
STATION 2+00.00

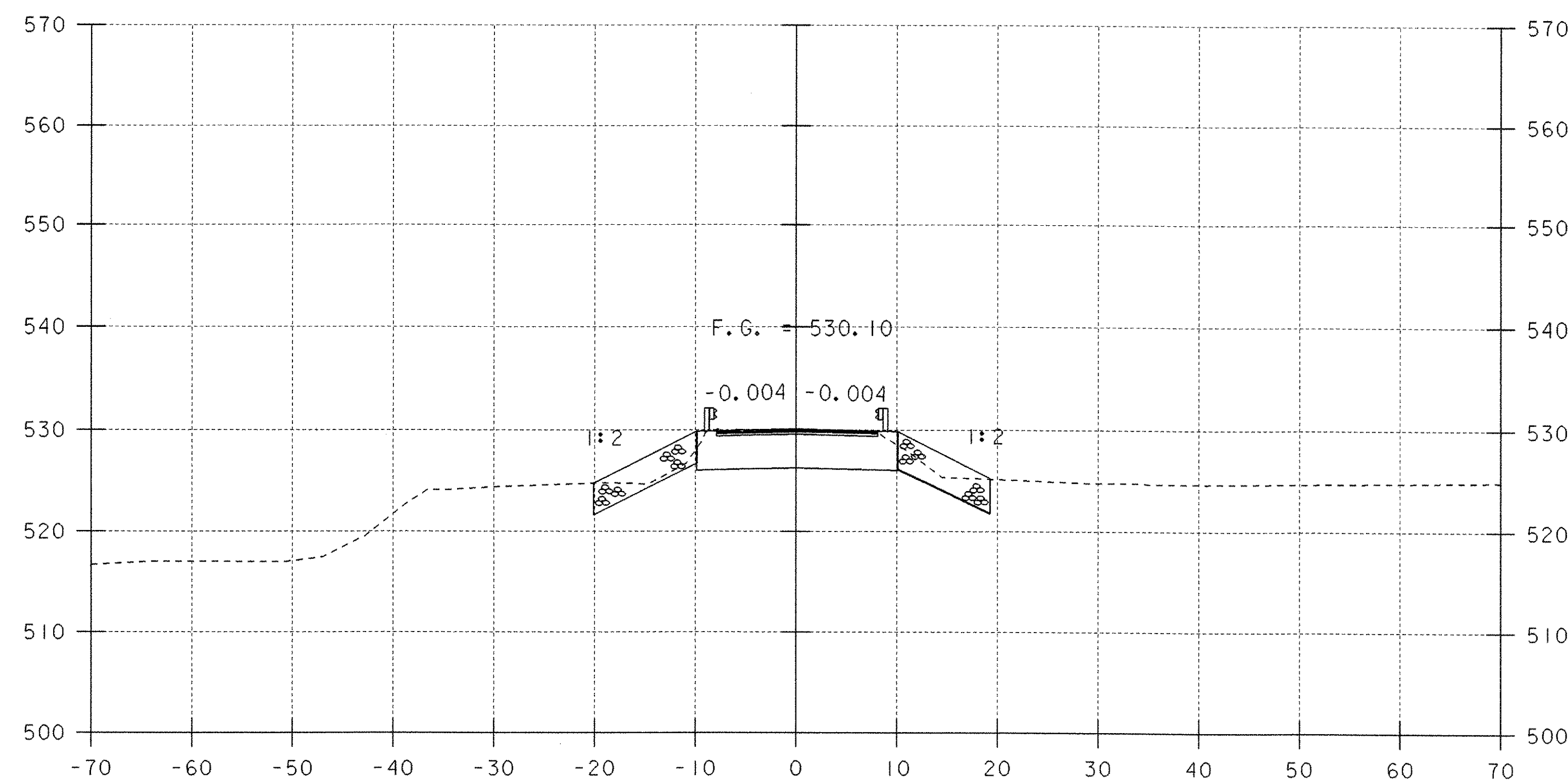


2+50

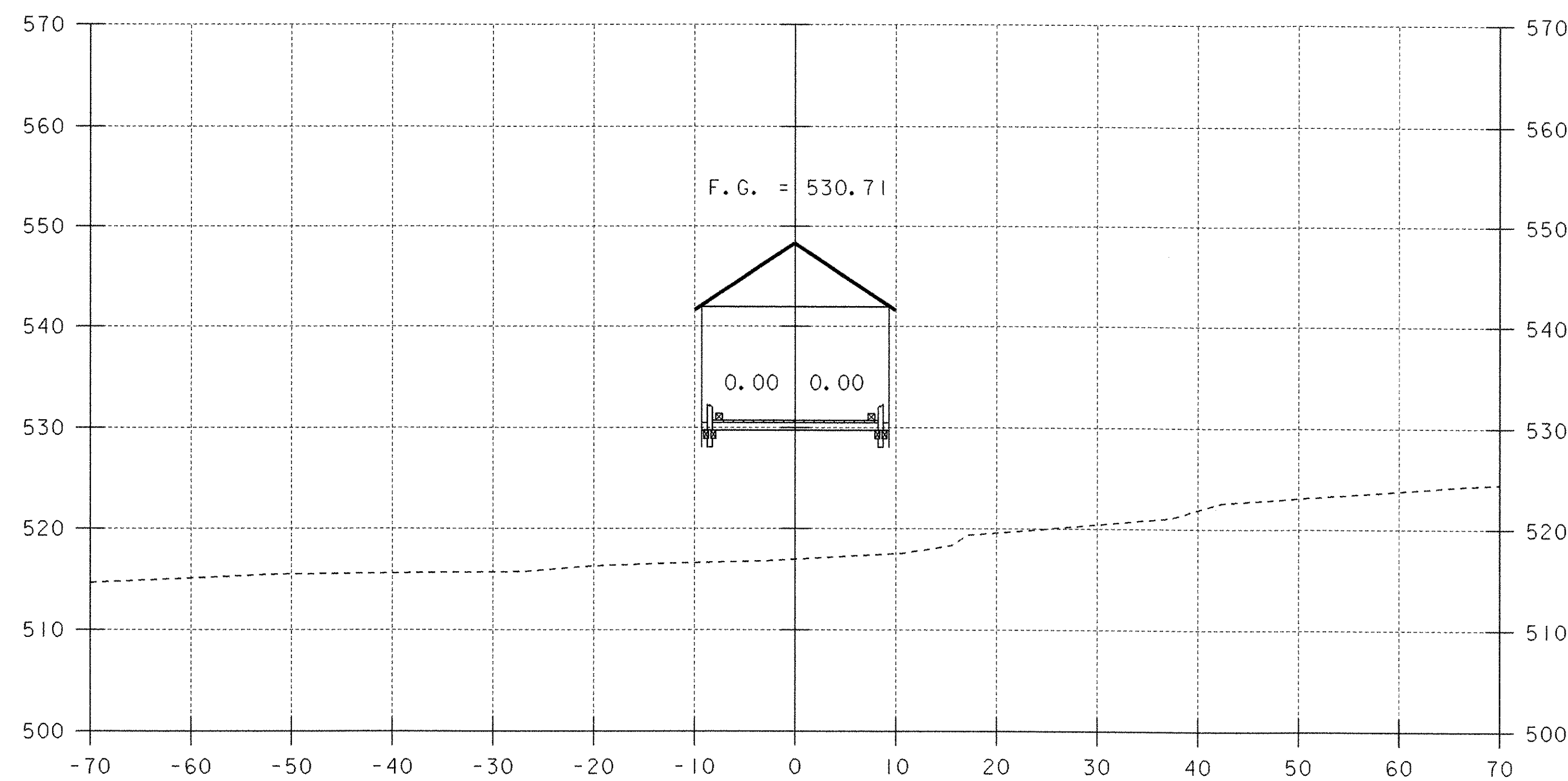
BEGIN BRIDGE AT  
STATION 2+49.00

SCALE 1" = 10' -0  
10 0 10

|                                                   |                               |
|---------------------------------------------------|-------------------------------|
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| DESIGN FILE NAME: 03\032\Structures\s03\032mx.dgn | PLOT DATE: 25-AUG-2005        |
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| MAINLINE CROSS SECTIONS                           |                               |
| STA 2+00 TO STA 2+75                              | SHEET: 27 OF 40               |

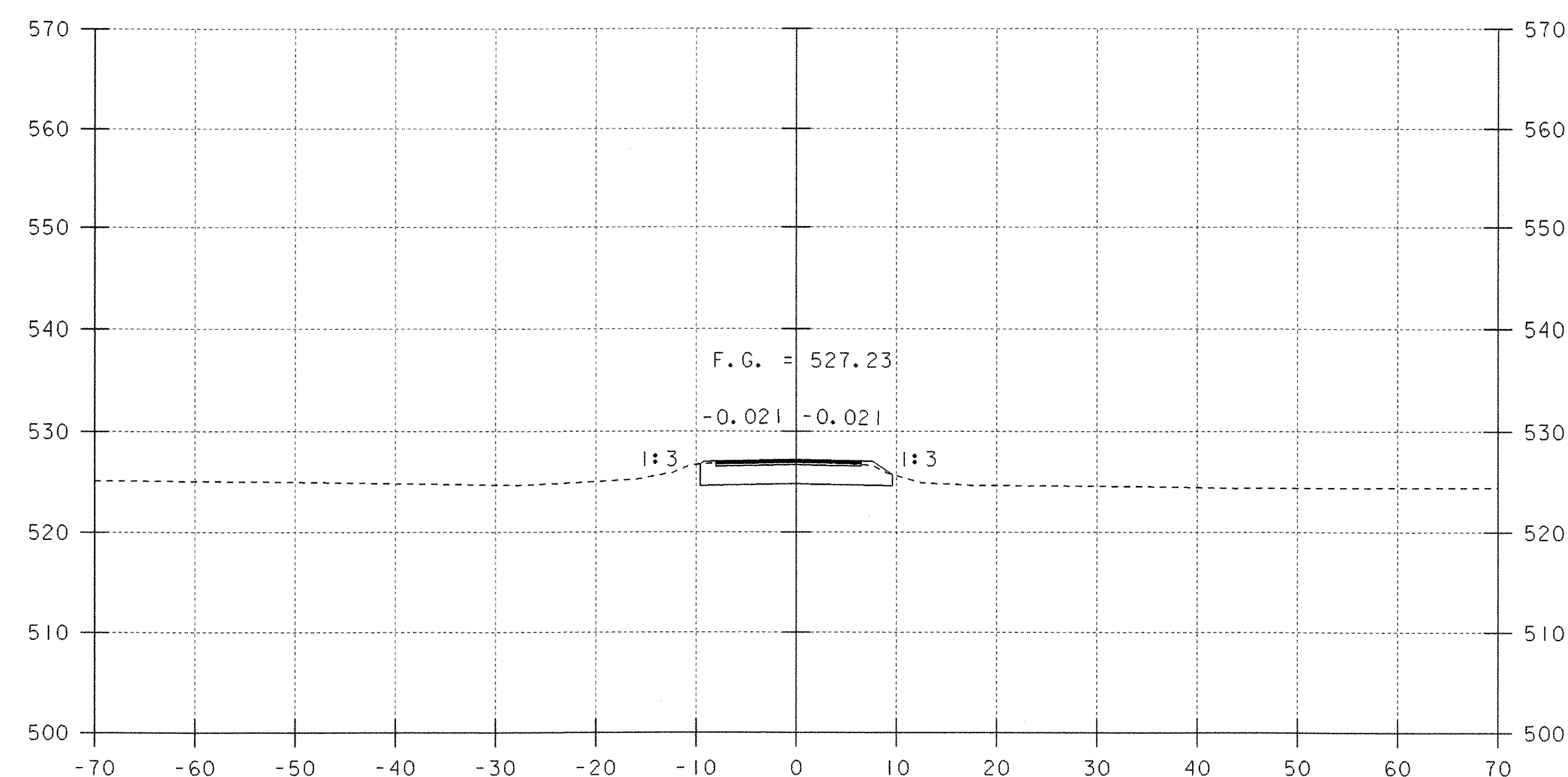


3+25

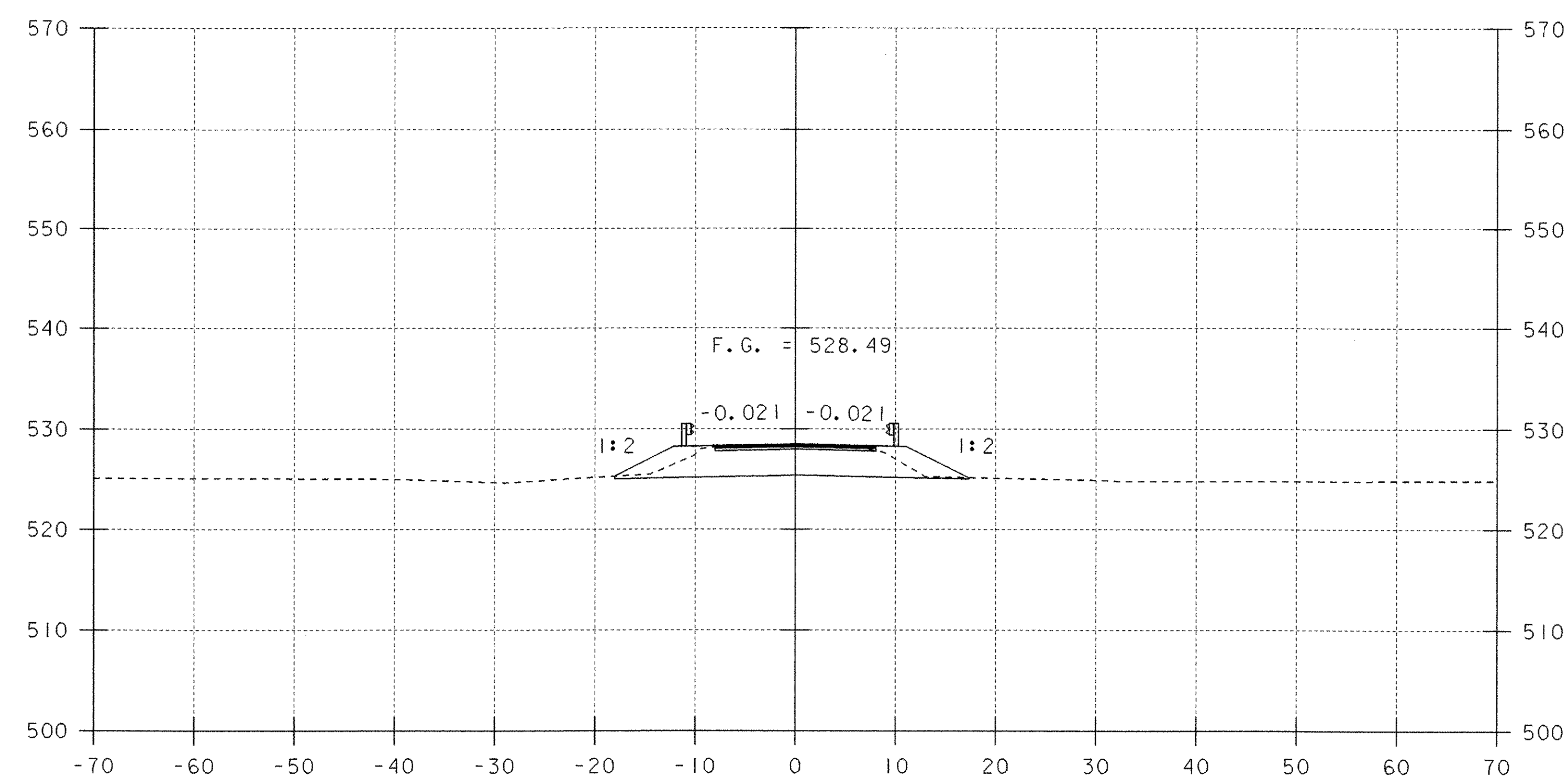


END BRIDGE AT  
STATION 3+17.50

3+00



3+75



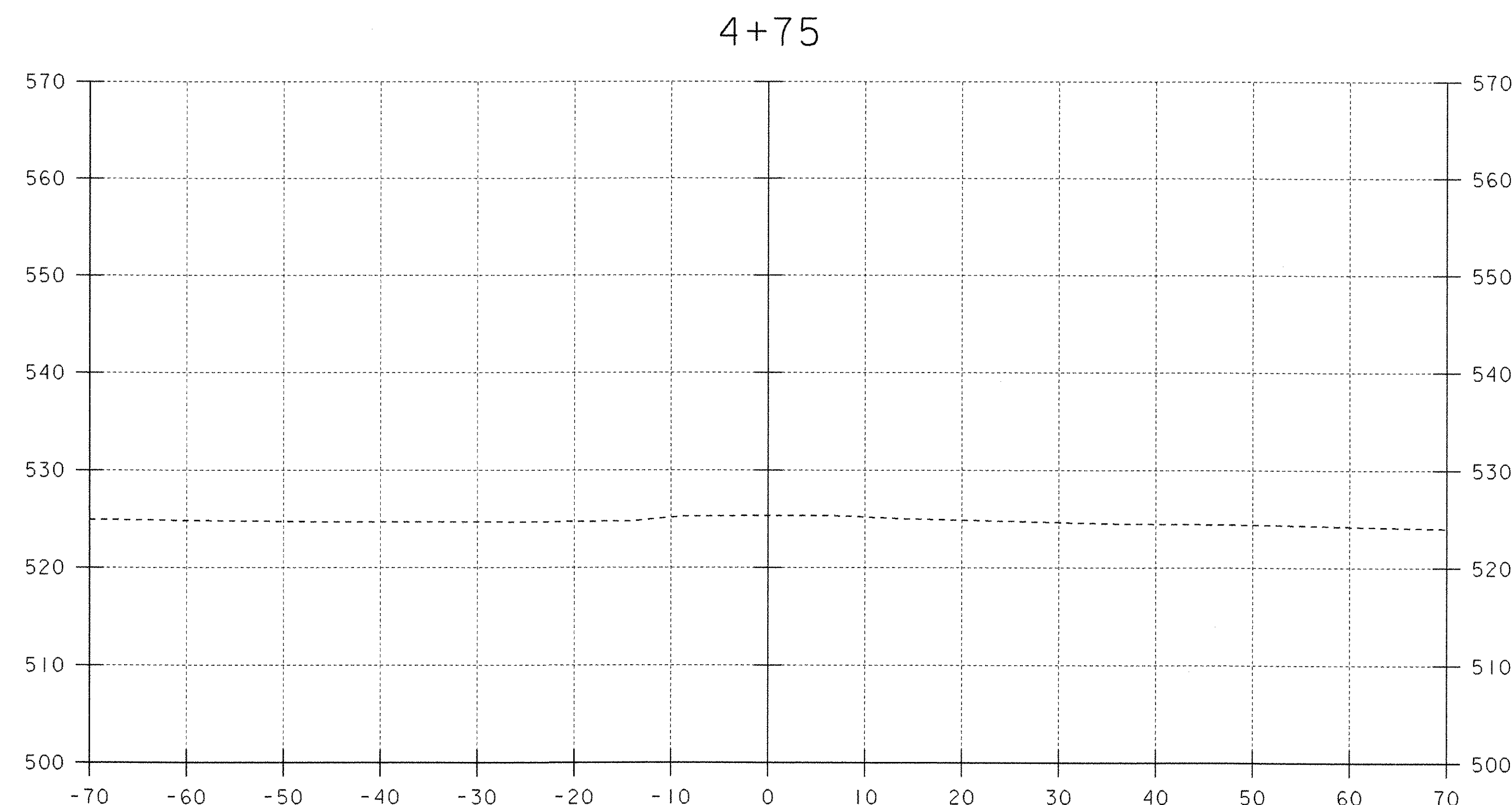
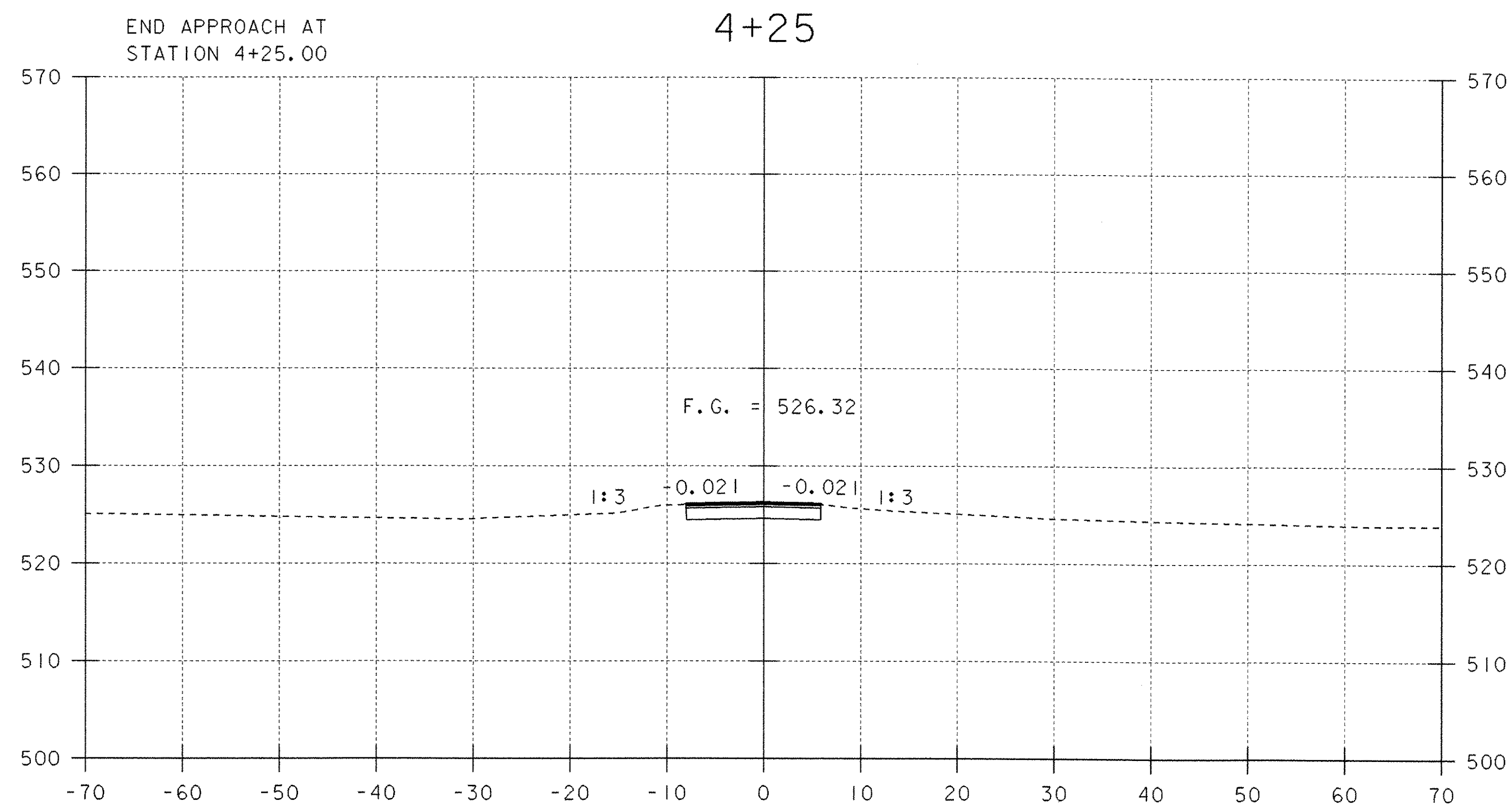
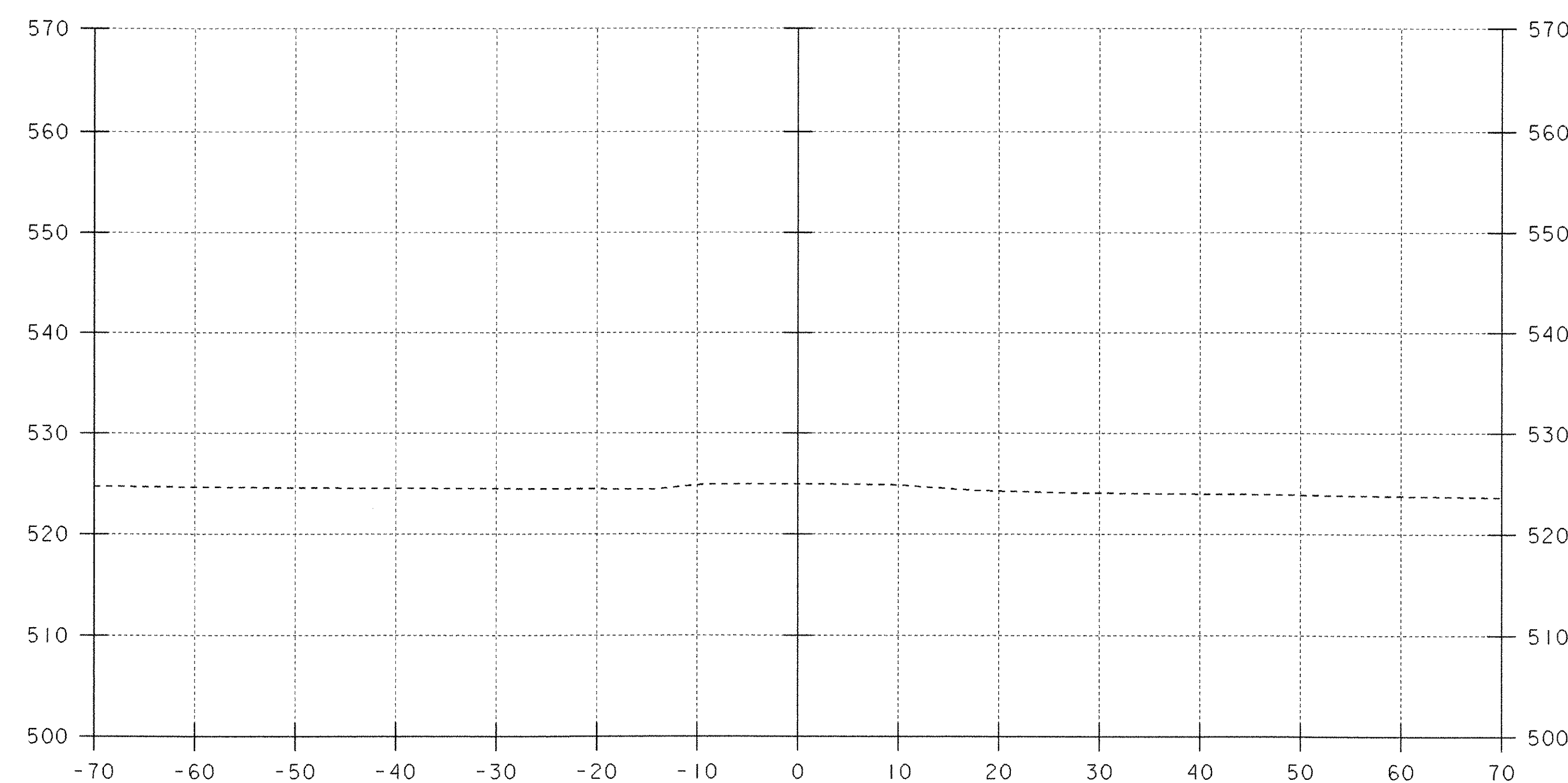
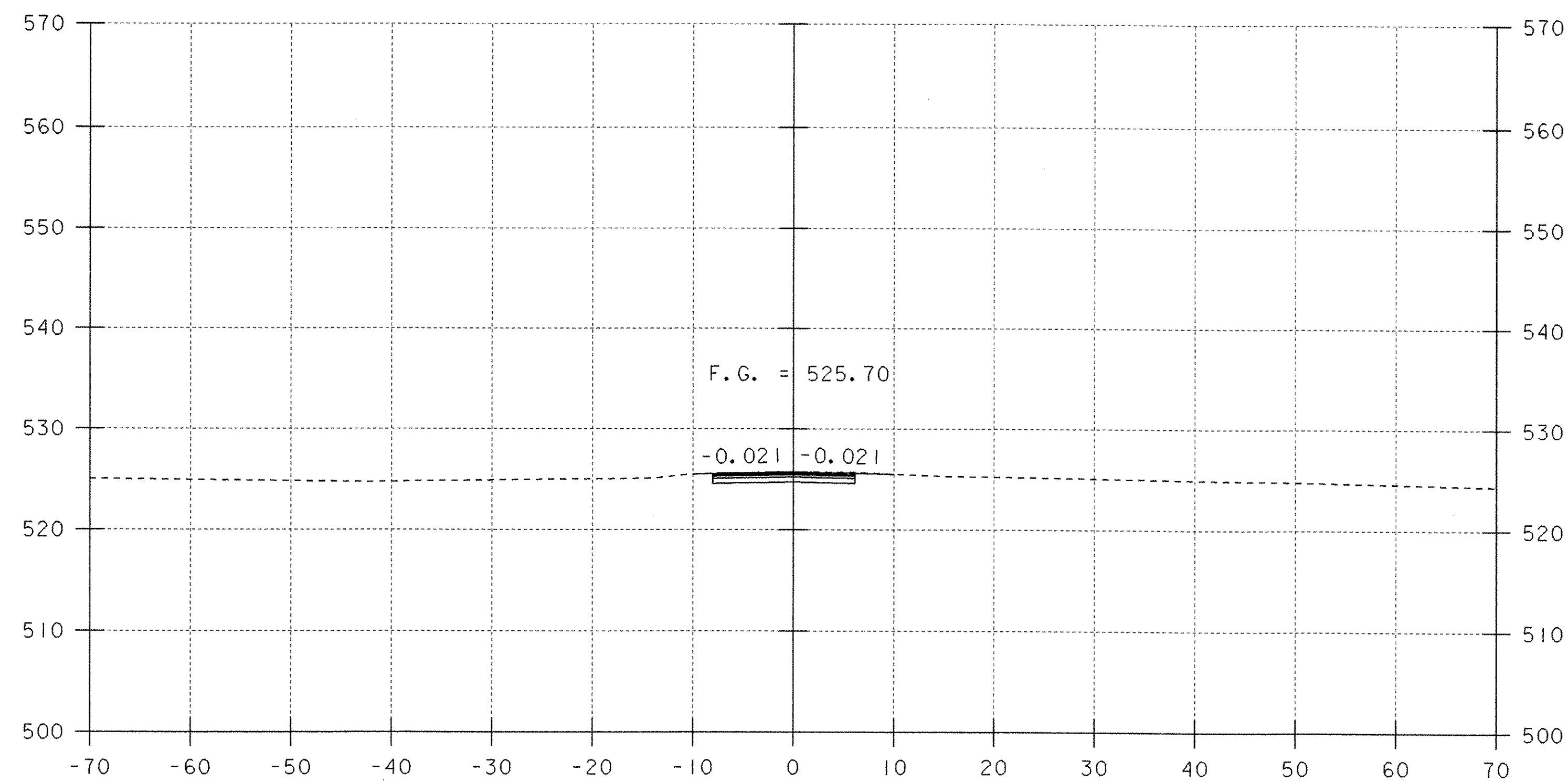
END PROJECT AT  
STATION 3+50.00

3+50

SCALE 1" = 10'-0"

10 0 10

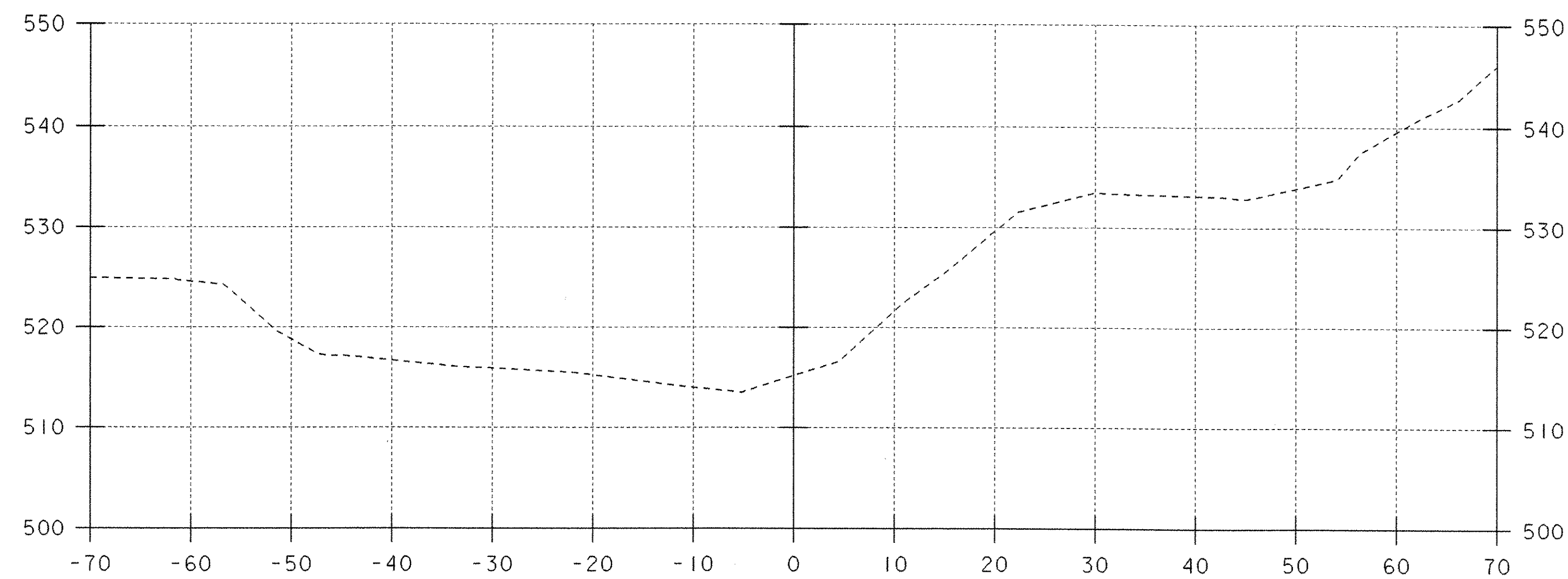
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| DESIGN FILE NAME: 03j032/Structures/s03j032mx.dgn | PLOT DATE: 25-AUG-2005        |
| IPARM FILE NAME: s03j032m1x3.i                    |                               |
| MAINLINE CROSS SECTIONS                           |                               |
| STA 3+00 TO STA 3+75                              |                               |
| SHEET: 28 OF 40                                   |                               |



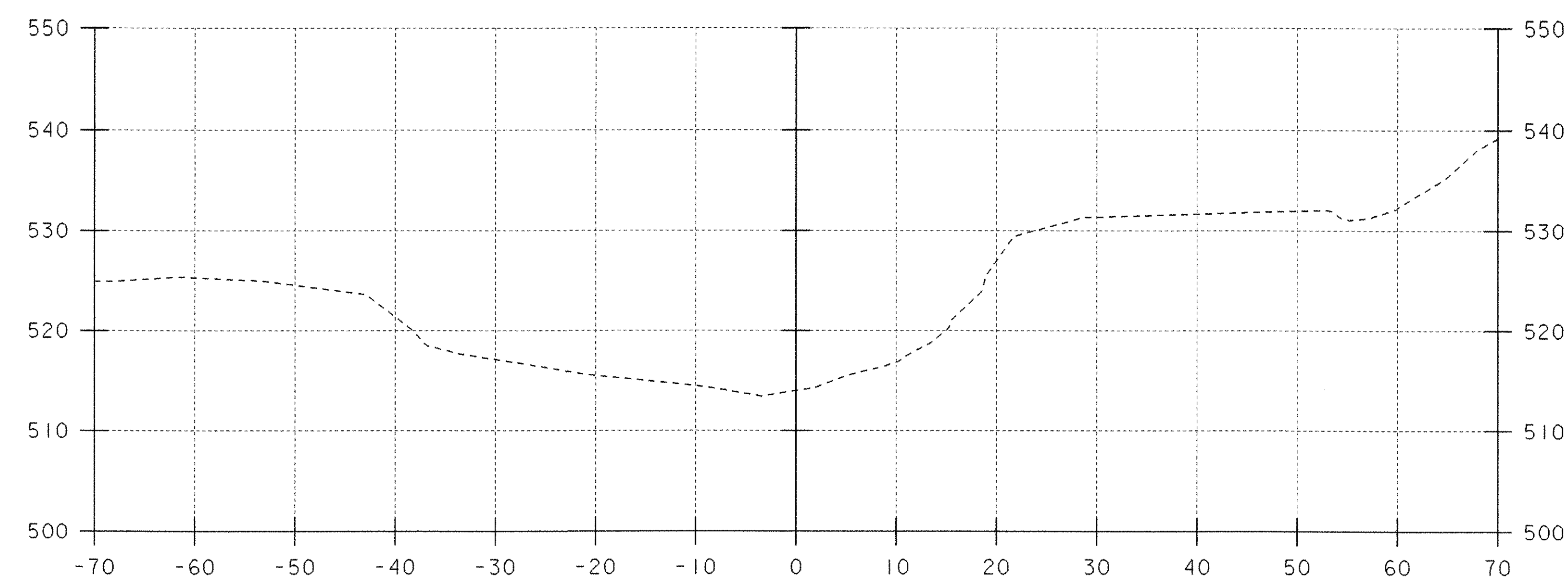
SCALE 1" = 10'-0"



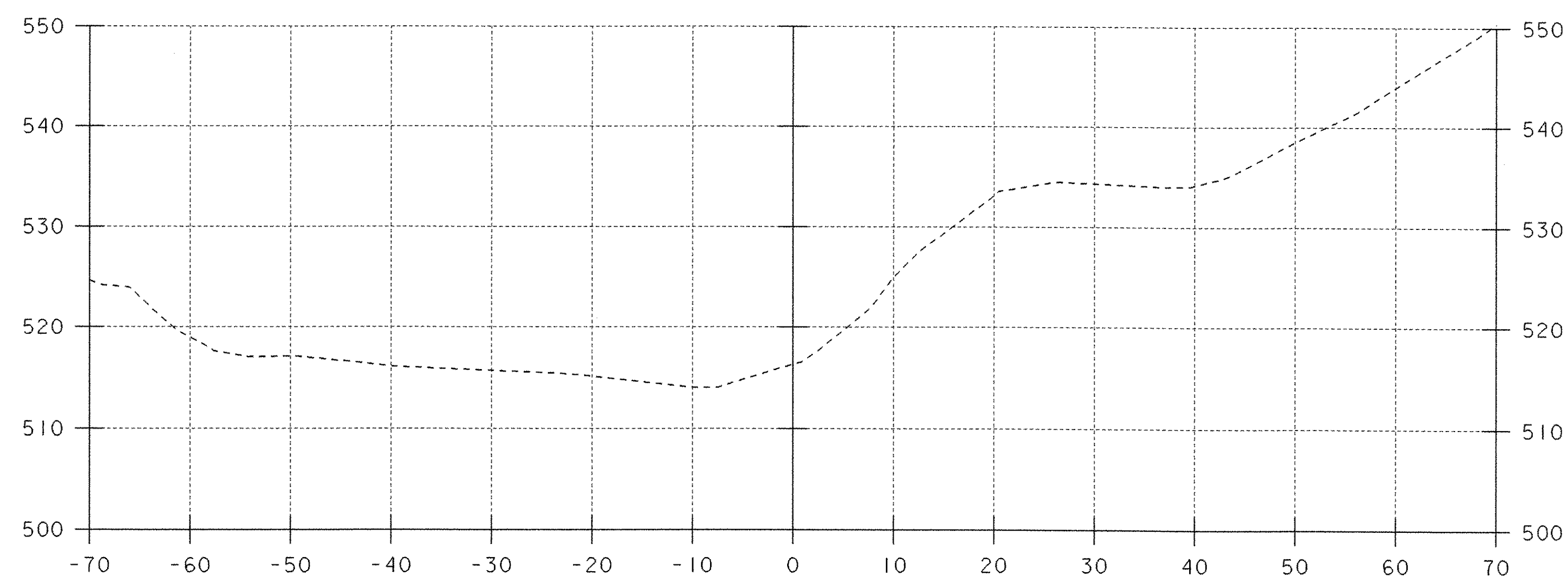
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| PROJECT:<br>TUNBRIDGE                             | PROJECT NO.:<br>BHO 1444 (42)  |
| DESIGN FILE NAME: 03j032/Structures/s03j032mx.dgn | IPARM FILE NAME: s03j032mix4.i |
| MAINLINE CROSS SECTIONS                           | STA 4+00 TO STA 4+75           |
|                                                   | SHEET: 29 OF 40                |



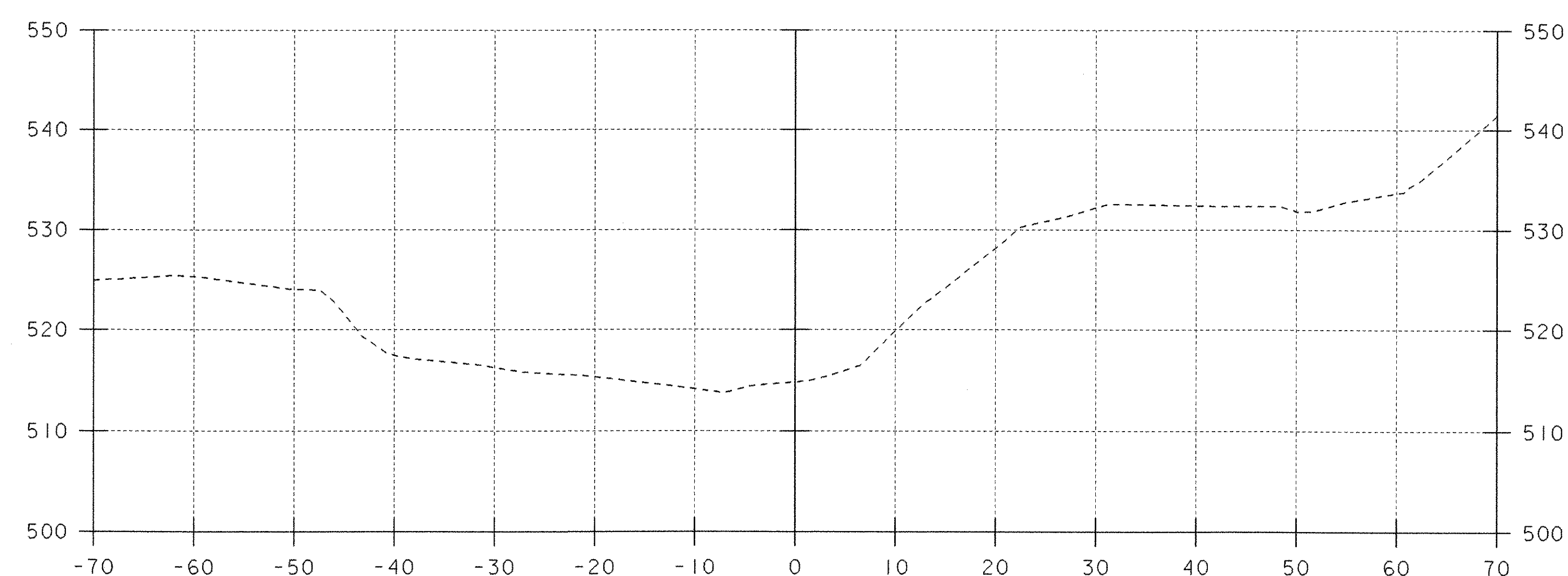
6+60



6+80



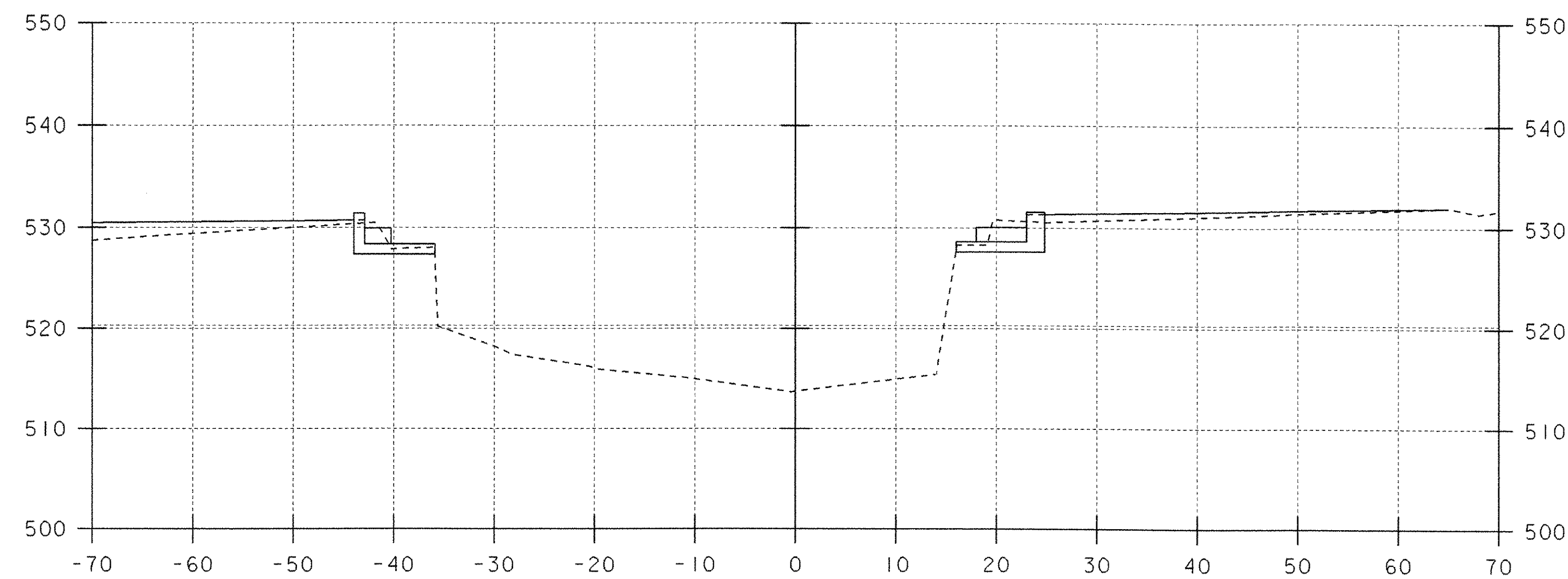
6+50



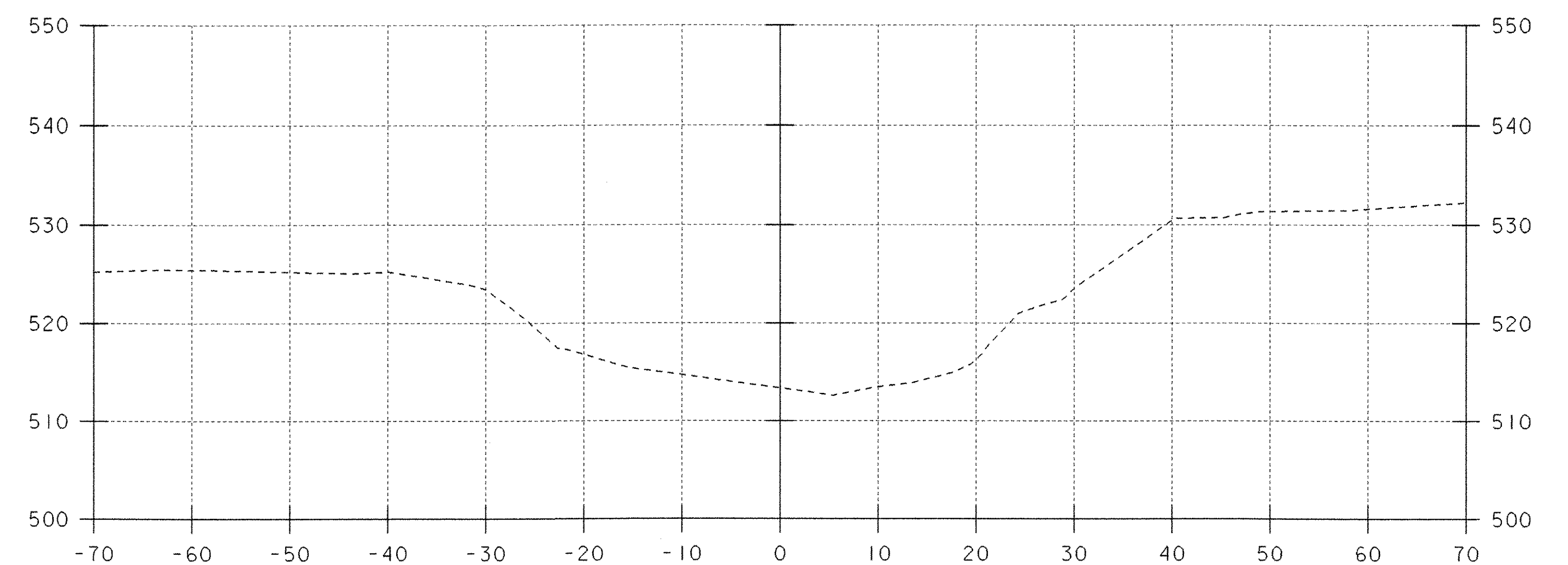
6+70

SCALE 1" = 10'-0"  
10 0 10

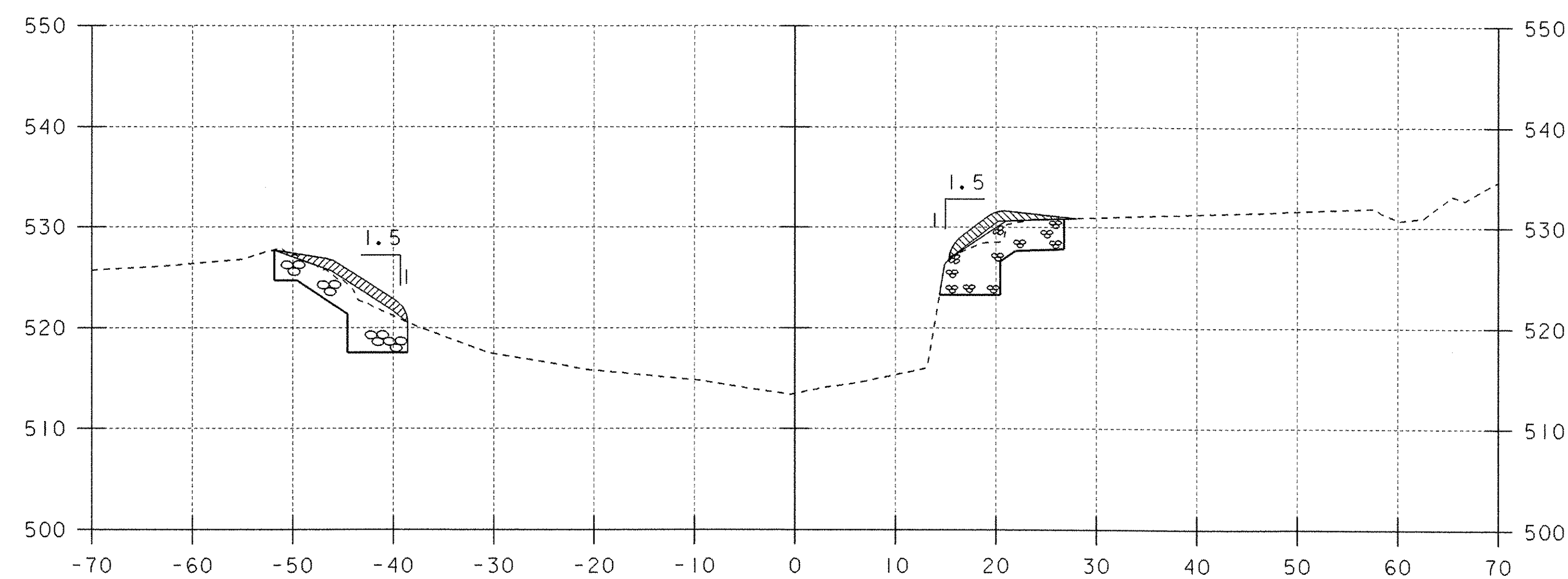
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|----------------------------------------------------|----------------------------------|
| PROJECT:<br>TUNBRIDGE                              | PROJECT NO.:<br>BHO 1444 (42)    |
| DESIGN FILE NAME: 03j032/Structures/s03j032chx.dgn | IPARM FILE NAME: s03j032ch2xsl.i |
| CHANNEL CROSS SECTIONS                             | PLOT DATE: 25-AUG-2005           |
| STA. 6+50 TO STA. 6+80                             | SHEET: 30 OF 40                  |



7+00



7+20



6+90

STA. 6+82 LT

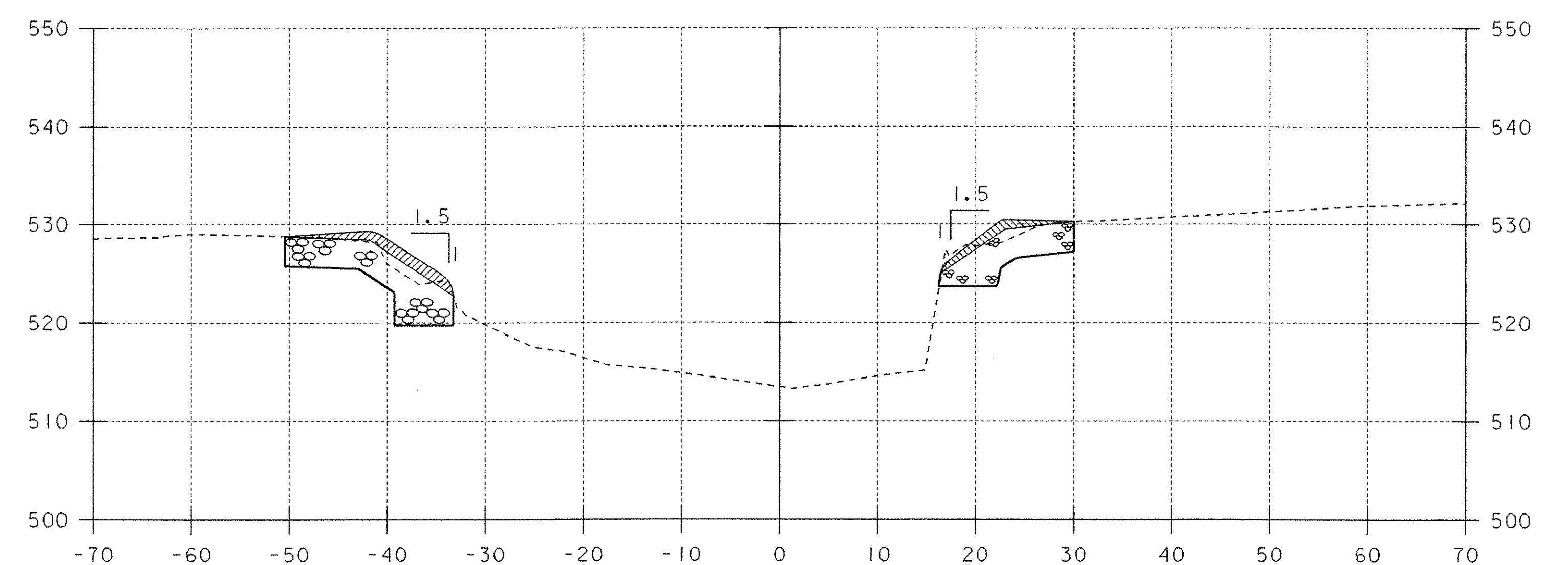
BEGIN STONE FILL TYPE III  
BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
BEGIN GEOTEXTILE UNDERSTONE FILL  
BEGIN GRUBBING MATERIAL

STA. 6+87 RT

BEGIN STONE FILL TYPE III  
BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
BEGIN GEOTEXTILE UNDERSTONE FILL  
BEGIN GRUBBING MATERIAL

NOTE:

NO STONE FILL SHALL BE PLACED UNDER THE BRIDGE.



7+10

STA. 7+16 LT

END STONE FILL TYPE III  
END UNCLASSIFIED CHANNEL EXCAVATION  
END GEOTEXTILE UNDERSTONE FILL  
END GRUBBING MATERIAL

STA. 7+13 RT

END STONE FILL TYPE III  
END UNCLASSIFIED CHANNEL EXCAVATION  
END GEOTEXTILE UNDERSTONE FILL  
END GRUBBING MATERIAL

SCALE 1" = 10'-0  
10 0 10

|                                                    |                               |
|----------------------------------------------------|-------------------------------|
| PROJECT:<br>TUNBRIDGE                              | PROJECT NO.:<br>BHO 1444 (42) |
| DESIGN FILE NAME: 03j032/Structures/s03j032chx.dgn | PLOT DATE: 25-AUG-2005        |
| IPARM FILE NAME: s03j032ch2xs2.1                   |                               |
| CHANNEL CROSS SECTIONS                             |                               |
| STA. 6+90 TO STA. 7+20                             | SHEET: 31 OF 40               |

EROSION PREVENTION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

This project is located on Town Highway (TH) 45, Bridge No. 33 in the County of Orange, Town of Tunbridge, Vermont. Construction will consist of the rehabilitation of the Cilley Covered Bridge over the 1st Branch of the White River, including replacing a damaged tie-beam and knee bracing; installing new siding; replacing approximately ¼ of both bottom chords; and replacing the floor beams and decking in kind with eastern hemlock. The end of the bridge at abutment No. 2 will be plumbed straight. The work on abutments will include installing a new bridge seat and back wall at abutment No. 1, and rethinking the laid up stone at abutment No. 2 along with pouring a new concrete bridge seat. The bridge will be closed during construction and traffic will be detoured approximately 1 mile to VT 110 on Falls Hill Road.

It is anticipated that this project will last one construction season.

Area of disturbance is 0.17 acres

SITE INVENTORY AND ANALYSIS

OFF SITE DRAINAGE CHARACTERISTICS

The property surrounding the project site consists primarily of well established level agricultural fields. Any runoff water entering the project site will be primarily limited to that conveyed along roadway ditches.

DRAINAGE, WATERWAYS, BODIES OF WATER:

The 1<sup>st</sup> Branch of the White River is located in the project area. There are no other waterways or wetlands within the project area.

TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:

The approach to the east side of the bridge consists of agricultural fields on both sides of the road. The approach to the west side of the bridge has agricultural fields on the right side of the road and a steeply sloped wooded hillside on the left. There are no buildings in the immediate vicinity of the project. Overhead utility service follows along TH 45, and is expected that the contractor will protect the existing utilities while working on the bridge.

VEGETATION:

The vegetation on the east approach to the bridge is grass, shrubs and agricultural fields. The west approach to the bridge has agricultural fields on the right, with a steeply sloped hardwood covered ridge on the left.

SOILS:

All soil data came from the U.S. Department of Agriculture Soil Conservation Service for the county of Orange, Vermont. Soils on the West side of the bridge are Belgrade Silt Loam, 8-15% slopes, "k - factor" = 0.49, considered highly erodible. Soils on the East side of the bridge are Hadley Very Fine Sand Loam, 0% slopes, "k - factor" = 0.49 , considered not highly erodible due to level ground.

Note: Generally, K-values indicate the following: 0.0 – 0.23 = low erodibility; 0.24 – 0.36 = moderate erodibility; 0.37 and higher = high erodibility.

SENSITIVE RESOURCE AREAS:

No 'Threatened & Endangered Species' have been identified within the project limits and there will be no adverse effect to Historic or Archeological features. The current project ROW exists partially within the limits of a designated Archeologically sensitive are. Duncan Wilkie, the state archeologist was consulted regarding how to proceed. He agreed to clear the project NO EFFECT as long as construction stays within the current ROW limits, with the condition that temporary protective fencing is placed along the ROW to keep construction activity out of the sensitive area.

PROXIMITY TO NATURAL OR MAN-MADE FEATURES:

Disturbance of soils near natural or man-made waters consists of that which is necessary to rehabilitate the two bridge abutments and applicable roadway approaches as well as the rehabilitation of the existing bridge. Stabilization of disturbances to the stream banks will be accomplished with Stone Fill.

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL

TEMPORARY EROSION PREVENTION MEASURES TO BE UTILIZED INCLUDE:

"Project Demarcation Fencing," denoted -PDF- on the plans, to delineate the limits the contractor can access with construction equipment. This measure limits the area that can be disturbed and exposed to erosion.

Seeding, mulching, and biodegradable erosion control matting or equivalent product is needed on slopes greater than 3:1. In areas with large slopes, stone fill under laid with erosion control matting is required. All slopes shall be stabilized within 48 hours of reaching final grade or during intermittent phases of construction activity.

Tracking of all exposed slopes, combined with temporary mulching, will also be utilized on a regular basis. Any slopes to be exposed for several days prior to final grading shall be tracked and mulched. The forecast of rainfall events shall also trigger protection of exposed slopes.

Temporary stone check dams will be placed in ditches to reduce flow velocities and thus reduce the potential for erosion. Check dams will be placed along the ditches such that the elevation of the top of each check dam corresponds with the elevation of the toe of the preceding upslope check dam. See "Erosion Control Details" sheet. The check dams may be removed once the stone lining of the ditch is complete and the surrounding area stabilized.

TEMPORARY MEASURES TO CONTROL SEDIMENT TRANSPORT INCLUDE:

Silt fence will be installed at a distance of 5' to 10' (1500-3000) from the toe of slopes to prevent sediment transport to down gradient areas. Each line of silt fence will be placed along the contour with ends turned slightly uphill to create a ponding effect should water try to run along the fencing and around the ends. The maximum slope length between separate runs of silt fence is 100' (30,000). Silt fence shall be installed prior to any upslope earthwork.

Measures such as temporary stone check dams, silt fence, and turbidity curtains shall be checked regularly for accumulation of sediment. Sediment build-up shall be removed when the level of sediment reaches one-half the height of the control measure. Sediments shall be disposed of in an area such that they will not be subject to erosion.

Temporary sediment settling basins may or may not be utilized on this project. If a sediment settling basin is to be used for dewatering a cofferdam. It should be sized based upon the following criteria: (See Sediment Settling Basin Sizing Criteria.)

PERMANENT EROSION CONTROL MEASURES

SEVERAL PERMANENT EROSION CONTROL MEASURES WILL BE UTILIZED:

Stone lining of the stream banks with Stone Fill, Type III as specified by VTrans Hydraulics personnel. This stone will protect from stream bank erosion during design storm events. Stone Fill, Type I will be utilized at culvert outlets to dissipate water velocities and reduce erosion potential. Grass or other suitable ground cover will be established outside of the roadway limits where stone lining has not been specified. 3:1 slopes shall be seeded and mulched promptly upon achieving final grade.

GENERAL EROSION & SEDIMENT CONTROL GUIDELINES

The Erosion Control Plans are meant as a guideline for preventing erosion and controlling sediment transportation. The work outlined in this narrative consists of applying measures throughout the life of the project to control erosion and minimize the sediment to receiving waters. The measures include stabilization and structural practices, storm water controls and other pollution prevention controls.

Coordinate the installation, use, and removal of erosion and sediment control measures with construction activities to ensure economical, effective and continuous erosion and sediment control. Employ temporary stabilization practices in incremental stages as construction proceeds. The contractor will use additional erosion control measures as necessitated by the sequence of construction and as directed be the engineer. See section 105.23 of the Vermont AOT Standard Specifications for Construction, dated 2001.

Install erosion and sediment control measures as shown in the Erosion Control Plan as needed or as directed by the engineer. Do not modify the type, size or location of any control or practice without approval of the engineer. Any changes shall be noted on the plans, in the weekly inspection report, and reported to the appropriate authority in a timely manner. Inspect all control measures weekly and after each rainfall event. Repair measures shall be taken as needed.

Preventing initial soil erosion is much more effective than treating eroded sediment. Therefore, stabilize all disturbed areas promptly after construction activity has temporarily or permanently ceased. Temporary vegetation shall be established if the area is to be without construction activity for a period of 14 days. Perimeter control measures shall be installed following clearing, but prior to the start of any grubbing or grading activity, install other temporary controls in incremental stages as construction proceeds.

Maintaining vegetated buffers along stream banks, wetlands or other sensitive areas is a crucial erosion and sediment control measure that should be established wherever possible.

Control only sediment-laden runoff generated by the project site using diversion berms, diversion channels, culverts and/or temporary pipes.

Do not allow construction equipment to operate on the down slope side of perimeter control measures.

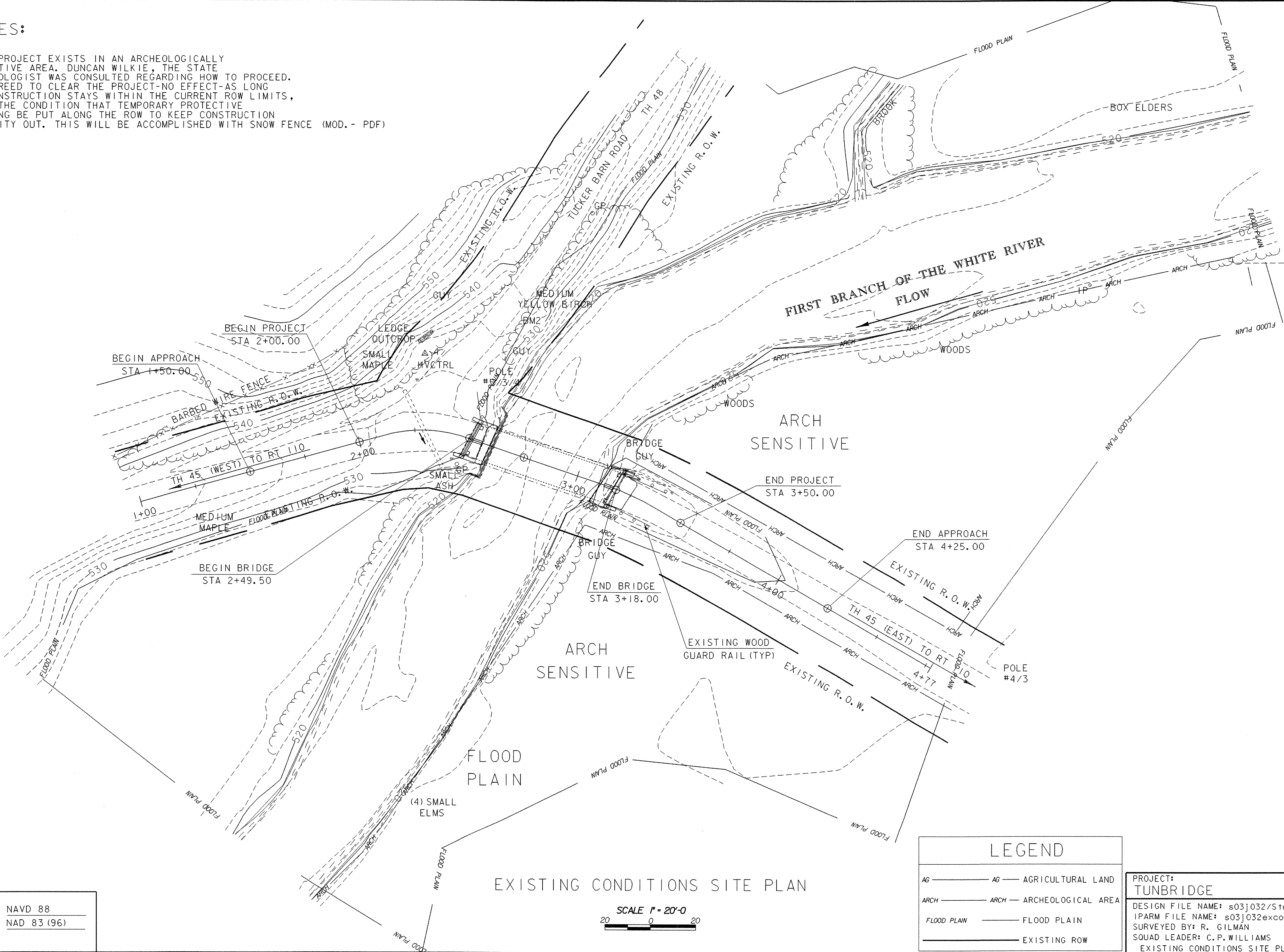
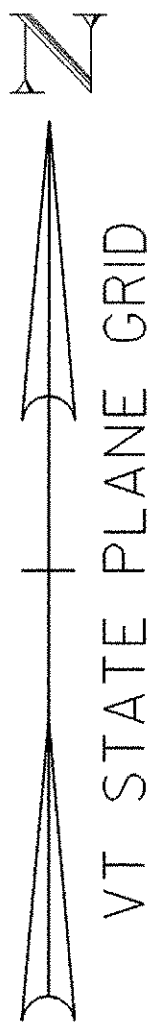
SEDIMENT SETTLING BASIN SIZING CRITERIA

| PUMP FLOW RATE |           | REQUIRED SURFACE AREA |       | LENGTH WIDTH = 2:1 |        |       |       |
|----------------|-----------|-----------------------|-------|--------------------|--------|-------|-------|
| Q (gpm)        | Q (m^3/s) | (ft^2)                | (m^2) | L (ft)             | W (ft) | L (m) | W (m) |
| 50             | 0.0032    | 595                   | 55    | 35.0               | 17.0   | 10.6  | 5.3   |
| 100            | 0.0063    | 1200                  | 111   | 49.0               | 24.5   | 15.0  | 7.5   |
| 150            | 0.0095    | 1776                  | 165   | 59.6               | 29.8   | 18.2  | 9.1   |
| 200            | 0.0126    | 2368                  | 220   | 68.8               | 34.4   | 21.0  | 10.5  |
| 250            | 0.0158    | 2970                  | 276   | 77.0               | 38.5   | 23.4  | 11.7  |
| 300            | 0.0189    | 3560                  | 330   | 84.4               | 42.2   | 25.8  | 12.9  |
| 350            | 0.0221    | 4155                  | 386   | 91.2               | 45.6   | 27.8  | 13.9  |

|                                                                                                                                                                                      |                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| PROJECT:<br>TUNBRIDGE                                                                                                                                                                | PROJECT NO.:<br>BHO 1444 (42)                                                               |
| DESIGN FILE NAME: 03j032/structures/s03j032ecnotes.dgn<br>IPARM FILE NAME: s03j032ecnarr. i<br>DESIGNED BY: R. S. YOUNG<br>SQUAD LEADER: C. P. WILLIAMS<br>EROSION CONTROL NARRATIVE | PLOT DATE: 25-AUG-2005<br>DRAWN BY: M. FESSEL<br>CHECKED BY: R. S. YOUNG<br>SHEET: 32 OF 40 |

NOTES:

THIS PROJECT EXISTS IN AN ARCHEOLOGICALLY SENSITIVE AREA. DUNCAN WILKIE, THE STATE ARCHEOLOGIST WAS CONSULTED REGARDING HOW TO PROCEED. HE AGREED TO CLEAR THE PROJECT-NO EFFECT-AS LONG AS CONSTRUCTION STAYS WITHIN THE CURRENT ROW LIMITS, WITH THE CONDITION THAT TEMPORARY PROTECTIVE FENCING BE PUT ALONG THE ROW TO KEEP CONSTRUCTION ACTIVITY OUT. THIS WILL BE ACCOMPLISHED WITH SNOW FENCE (MOD. - PDF)



|            |             |
|------------|-------------|
| DATUM      | NAVD 88     |
| VERTICAL   | NAD 83 (96) |
| HORIZONTAL | NAD 83 (96) |

| LEGEND       |                    |
|--------------|--------------------|
| AG           | AGRICULTURAL LAND  |
| ARCH         | ARCHEOLOGICAL AREA |
| FLOOD PLAIN  | FLOOD PLAIN        |
| EXISTING ROW | EXISTING ROW       |

|                                                     |                               |
|-----------------------------------------------------|-------------------------------|
| PROJECT:<br>TUNBRIDGE                               | PROJECT NO.:<br>BHO 1444 (42) |
| DESIGN FILE NAME: s03j032/Structures/s03j032bdr.dgn | PLOT DATE: 25-AUG-2005        |
| IPARM FILE NAME: s03j032excon.i                     | SURVEY DATE: 06/08/03         |
| SURVEYED BY: R. GILMAN                              | SQUAD LEADER: C.P. WILLIAMS   |
| EXISTING CONDITIONS SITE PLAN                       | SHEET: 33 OF 40               |

| EROSION AND SEDIMENT CONTROL INDEX |                                                                    |
|------------------------------------|--------------------------------------------------------------------|
| NO.                                | DESCRIPTION                                                        |
| ①                                  | INSTALL SILT FENCE TO CONTAIN EROSION AS INDICATED                 |
| ②                                  | PROJECT LIMITS DEMARCATION FENCE (SNOW FENCE (MOD.-PDF))           |
| ③                                  | TURBIDITY CURTAIN                                                  |
| ④                                  | EROSION MATTING. See cross sections for slope and stationing info. |

NOTE: ALL DISTURBED AREAS WITH SLOPES GREATER THAN 1:3 WILL REQUIRE TEMPORARY EROSION MATTING (SEE EROSION CONTROL DETAILS SHEET)

SNOW FENCE (MOD-PDF) WILL BE INSTALLED ALONG THE R.O.W. LINE FROM STA 1+50 RT TO 2+50 RT, STA 3+00 RT TO 4+25 RT AND FROM STA 1+50 LT TO 2+60 LT, STA 3+15 LT TO 4+25 LT. ALL CONSTRUCTION IMPACTS WILL TAKE PLACE INSIDE THIS FENCE. NO FENCE SHALL BE PLACED ACROSS TOWN HIGHWAY 48.

SOIL CLASSIFICATION  
 TYPE-BELGRADE SILT LOAM  
 SLOPES: 8-15%  
 "K FACTOR" : 0.49  
 CLASSIFIED: HIGHLY ERODIBLE

SOIL CLASSIFICATION  
 SOIL TYPE: HADLEY VFSL  
 SLOPES: 0%  
 "K FACTOR" : 0.49  
 NOT HIGHLY ERODIBLE

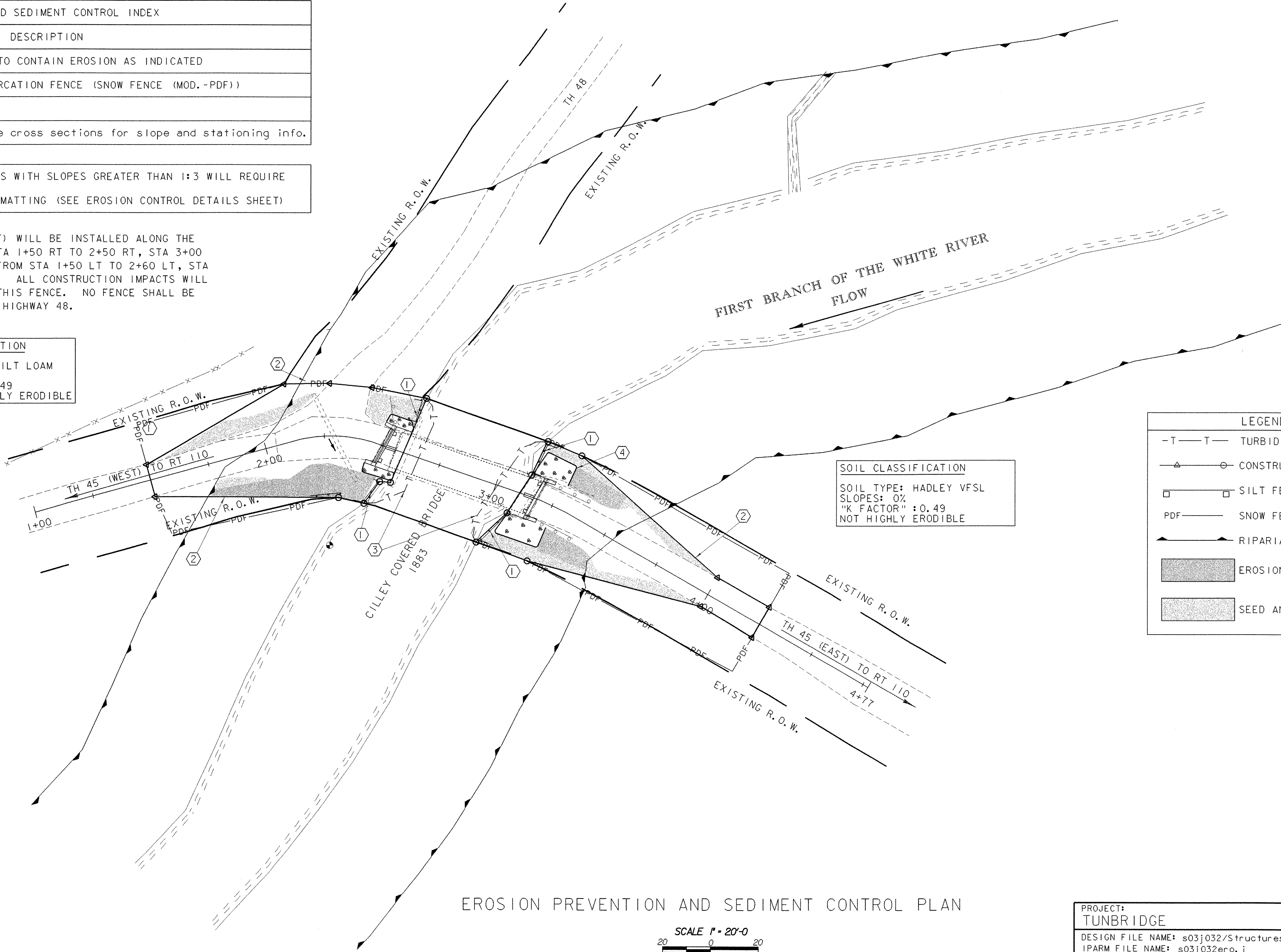
| LEGEND        |                         |
|---------------|-------------------------|
| -T-T-         | TURBIDITY CURTAIN       |
| —△—○—         | CONSTRUCTION LIMITS     |
| □             | SILT FENCE              |
| PDF           | SNOW FENCE (MOD.-PDF)   |
| ▲             | RIPARIAN BUFFER ZONE    |
| [Hatched Box] | EROSION CONTROL MATTING |
| [Dotted Box]  | SEED AND MULCH          |

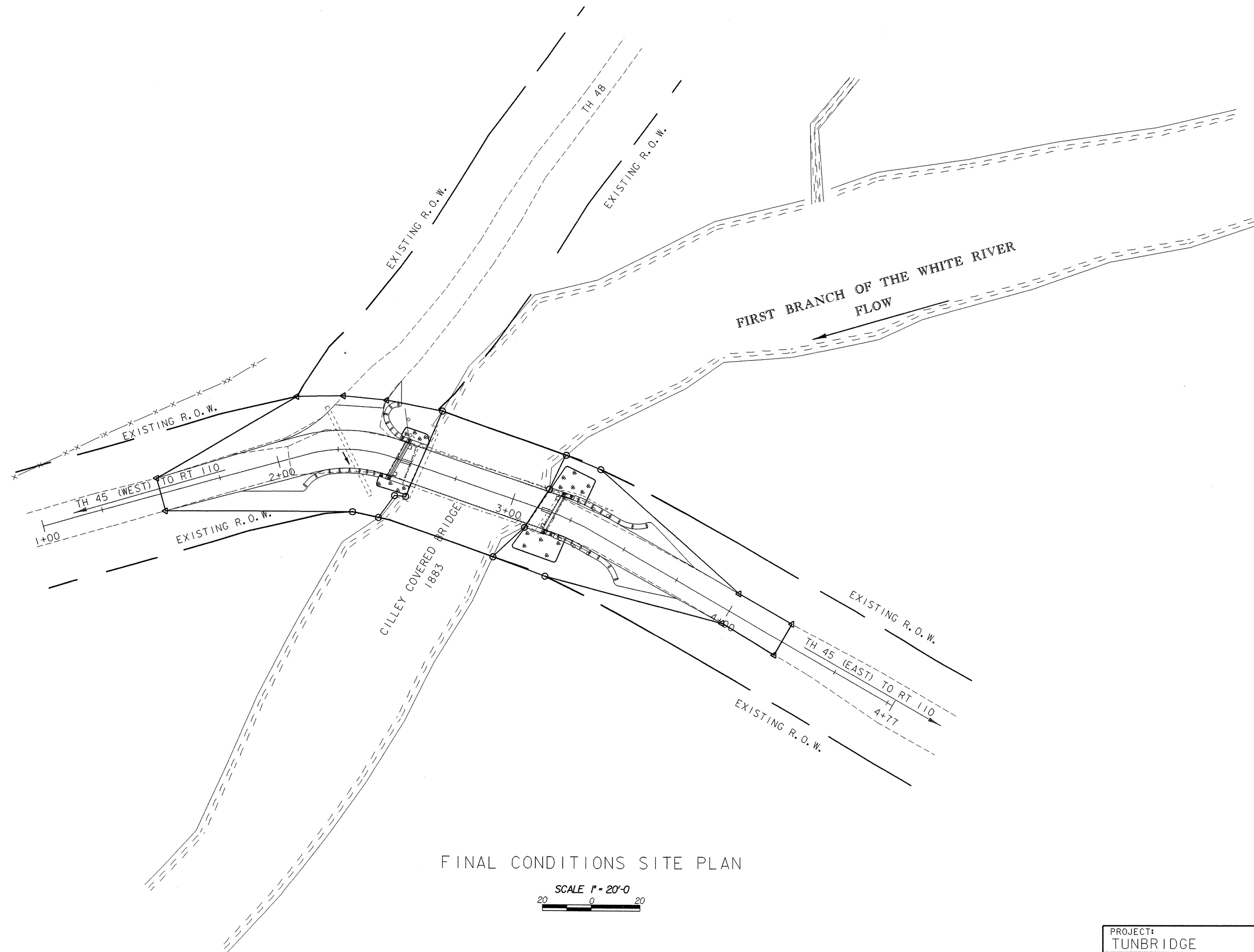
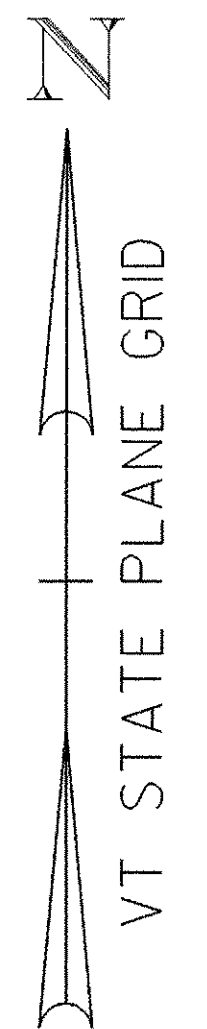
DATUM  
 VERTICAL NAVD 88  
 HORIZONTAL NAD 83 (96)

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

SCALE 1" = 20'-0"  
 20 0 20

|                                                     |                                   |
|-----------------------------------------------------|-----------------------------------|
| PROJECT:<br>TUNBRIDGE                               | PROJECT NO.:<br>BHO 1444 (42)     |
| DESIGN FILE NAME: s03j032/Structures/s03j032bdr.dgn | PLOT DATE: 25-AUG-2005            |
| IPARM FILE NAME: s03j032ero.i                       | SURVEY DATE: 06/08/03             |
| SURVEYED BY: R. GILMAN                              | DRAWN BY: M.FESSEL                |
| SQUAD LEADER: C.P.WILLIAMS                          | EROSION AND SEDIMENT CONTROL PLAN |
|                                                     | SHEET: 34 OF 40                   |





FINAL CONDITIONS SITE PLAN

SCALE 1" = 20'-0"  
20 0 20

DATUM  
VERTICAL NAVD 88  
HORIZONTAL NAD 83 (96)

|                                                     |                               |
|-----------------------------------------------------|-------------------------------|
| PROJECT:<br>TUNBRIDGE                               | PROJECT NO.:<br>BHO 1444 (42) |
| DESIGN FILE NAME: s03j032/Structures/s03j032bdr.dgn | PLT DATE: 25-AUG-2005         |
| IPARM FILE NAME: s03j032fincon.i                    | SURVEY DATE: 06/08/03         |
| SURVEYED BY: R. GILMAN                              | DRAWN BY: M. FESSEL           |
| SQUAD LEADER: C. P. WILLIAMS                        | SHEET: 35 OF 40               |
| FINAL CONDITIONS SITE PLAN                          |                               |

EROSION AND SEDIMENT CONTROL NOTES:

1. THE AREA OF DISTURBANCE IS 0.17 ACRES.
2. AN UPGRADED TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL PLAN SHALL BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE AGENCY OF TRANSPORTATION.
3. TIME ALL GRADING TO MINIMIZE SOIL EXPOSURE.
4. AT THE END OF EACH DAY'S GRADING OPERATIONS, SHAPE EARTHWORK TO MINIMIZE THE EROSION FROM STORM RUNOFF.
5. THE AREA DISTURBED FOR CONSTRUCTION OF THE PEDESTRIAN DETOUR SHALL BE RETURNED TO ITS ORIGINAL CONDITION INCLUDING SEEDING AND MULCHING.
6. PREPARE TEMPORARY DRAINAGE WAYS TO HANDLE CONCENTRATED FLOW UNTIL PERMANENT DRAINAGE IS CONSTRUCTED AND STABILIZED.
7. SPECIAL CONSIDERATION MUST BE GIVEN TO THE FIRST PUMP-DOWN OF THE COFFERDAMS. THIS WILL CONTAIN THE GREATEST VOLUME OF WATER WITH A HIGH SEDIMENT LOAD. THE CONTRACTOR MAY PROVIDE ADDITIONAL SEDIMENT TRAPS WITHIN THE RIGHT-OF-WAY IF REQUIRED OR CONTROL THE RATE OF DRAW-DOWN. ADDITIONAL SEDIMENT TRAPS MUST BE APPROVED BY THE RESIDENT ENGINEER.
8. AFTER COMPLETION OF THE SUBSTRUCTURE, THE SEDIMENT IN THE TRAPS SHALL BE REMOVED AND THE GROUND RESTORED TO ITS ORIGINAL SLOPES OR GRADED AS SHOWN THE CONSTRUCTION DRAWINGS.
9. SEE SHEETS 37-40 FOR EROSION PREVENTION AND SEDIMENT CONTROL DETAILS
10. ASK FOR ASSISTANCE AND RECOMMENDATIONS AS NEEDED.

PERIMETER CONTROL NOTES:

1. IDENTIFY SENSITIVE AREAS AND AREAS PRONE TO EROSION BASED ON SITE EVALUATION.
2. CLEARLY DEMARCAT E SENSITIVE AREA TO AVOID DISTURBANCE USING BRIGHTLY COLORED SNOW FENCE, MIN 8" WIDE FLAGGING OR SIMILAR.
3. PROTECT ALL SENSITIVE AREAS AND WATER FEATURES FROM SEDIMENT.
4. DIVERT OR OTHERWISE KEEP ALL CONCENTRATED OFF-SITE "RUN-ON" FROM AREAS TO BE DISTURBED.
5. PERIMETER CONTROLS (SILT FENCE, TURBIDITY CURTAIN, ETC.) TO BE INSTALLED PRIOR TO SOIL DISTURBANCE AND MAINTAINED UNTIL SITE IS PERMANENTLY STABILIZED TO THE SATISFACTION OF THE ENGINEER AND ON-SITE COORDINATOR.
6. SODDING SHALL BE APPLIED IMMEDIATELY TO ALL LAWNS DISTURBED BEYOND THE WORK AREA DELINEATED ON THESE PLANS.
7. PREVENT SEDIMENT FROM LEAVING THE SITE BY MAINTAINING AND MODIFYING PERIMETER CONTROLS AS NEEDED.

GENERAL NOTES

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING ADDITIONAL INFORMATION FOR APPROVAL AND INCLUSION IN THE COMPLETE EROSION AND SEDIMENT CONTROL PLANS:
  - LOCATION OF WASTE, BORROW AND STAGING AREAS, MATERIAL STOCKPILES, REFUELING AND MAINTENANCE AREAS AND CONCRETE TRUCK WASHOUT LOCATION (ATTACH MAP IF NECESSARY). A DISCUSSION AND ADDITIONAL DETAILS NEEDED FOR PROTECTION AND STABILIZATION OF THESE AREAS SHALL BE INCLUDED AS WELL.
  - MODIFICATIONS REQUIRED TO THESE EROSION PREVENTION AND SEDIMENT CONTROL PLANS.
  - GRADING PLAN / CONSTRUCTION SEQUENCE (INCLUDING PROPOSED DATES ASSOCIATED WITH JOB MILESTONES AS INDICATED ON THE SEQUENCE CONSISTENT WITH PROJECT CRITICAL PATH METHOD SCHEDULE.)
  - REVISED NARRATIVE MATCHING THE GRADING PLAN AND CONSTRUCTION SEQUENCE (RE: TEMPORARY SEEDING AND MULCHING / STABILIZATION).
  - NAME, ADDRESS, PHONE NUMBER AND BASIC QUALIFICATIONS OF "ON-SITE COORDINATOR".
2. WORK SHALL BE GENERALLY CONSISTENT WITH GUIDANCE PROVIDED IN THE LATEST REVISION OF THE VERMONT HANDBOOK FOR SOIL EROSION AND SEDIMENT CONTROL ON CONSTRUCTION SITES AND THE ASSOCIATED GENERAL CONTRACTORS OF VERMONT FIELD HANDBOOK.

SEEDING FORMULA  
RURAL AREAS

| % WT. | LBS. /A. | NAME                | PUR % | GERM % |
|-------|----------|---------------------|-------|--------|
| 37.5  | 22.5     | CREEPING RED FESCUE | 98    | 85     |
| 37.5  | 22.5     | TALL FESCUE         | 95    | 90     |
| 5.0   | 3.0      | RED TOP             | 95    | 90     |
| 15.0  | 9.0      | BIRDSFOOT TREFOIL   | 98    | 85     |
| 5.0   | 3.0      | ANNUAL RYE GRASS    | 95    | 85     |
| 100.0 | 60.0     |                     |       |        |

SEEDING GENERAL NOTES

SEED MIXTURE: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.

SEED: TO BE APPLIED PER SEEDING FORMULAS OR AS DIRECTED BY THE ENGINEER.

FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED, APPLIED AT THE RATE OF 500 LBS/ACRE. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

|                                                                                                                                                                              |                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| PROJECT:<br>TUNBRIDGE                                                                                                                                                        | PROJECT NO.:<br>BHO 1444 (42)                                                            |
| DESIGN FILE NAME: 03j032/structures/s03j032ecnotes.dgn<br>IPARM FILE NAME: s03j032ecnotes.i<br>DESIGNED BY: R.S.YOUNG<br>SQUAD LEADER: C.P.WILLIAMS<br>EROSION CONTROL NOTES | PLOT DATE: 25-AUG-2005<br>DRAWN BY: M.FESSEL<br>CHECKED BY: R.S.YOUNG<br>SHEET: 36 OF 40 |

SILT FENCE

APPLICATION NOTES:

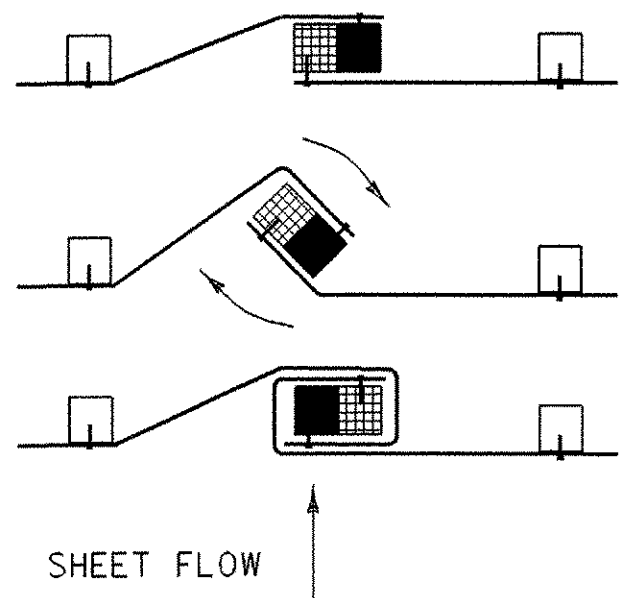
- A. THE PRIMARY PURPOSE OF SILT FENCE IS TO REDUCE RUNOFF VELOCITY AND TRAP SEDIMENT. VELOCITY IS REDUCED, WATER IS IMPOUNDED BEHIND THE MEASURE, AND SEDIMENT FALLS OUT OF SUSPENSION.
- B. SILT FENCE SHALL BE INSTALLED ON A LINE OF EQUAL ELEVATION (CONTOUR). IT MAY BE INSTALLED AT INTERMEDIATE POINTS UP SLOPES AS WELL AS AT THE BOTTOM, AS SHOWN IN THE DETAIL.
- C. SILT FENCE SHALL NOT BE USED ACROSS CONCENTRATED FLOW.

GENERAL NOTES:

- 1. SILT FENCE SHALL GENERALLY BE PLACED A MINIMUM OF 5 FEET BEYOND TOE OF SLOPE, 10 FEET PREFERRED, TO PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF SEDIMENT CONTAINMENT AREA.
- 2. ALL ENDS SHALL BE "J" HOOKED TO TRAP SEDIMENT.
- 3. IN AREAS WITH TWO SLOPES, SILT FENCE SHALL BE USED TO ERECT A DAM AND TRAP SEDIMENT AT THE BASE OF THE STEEPER SLOPE.
- 4. THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 6 INCHES BELOW GROUND, AND KEYED IN 4 INCHES. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
- 5. MAXIMUM DRAINAGE AREA TRIBUTARY TO 100 FEET OF SILT FENCE SHALL BE 0.25 ACRES.
- 6. THE FOLLOWING ARE MAXIMUM SLOPE LENGTHS FOR THESE MEASURES:

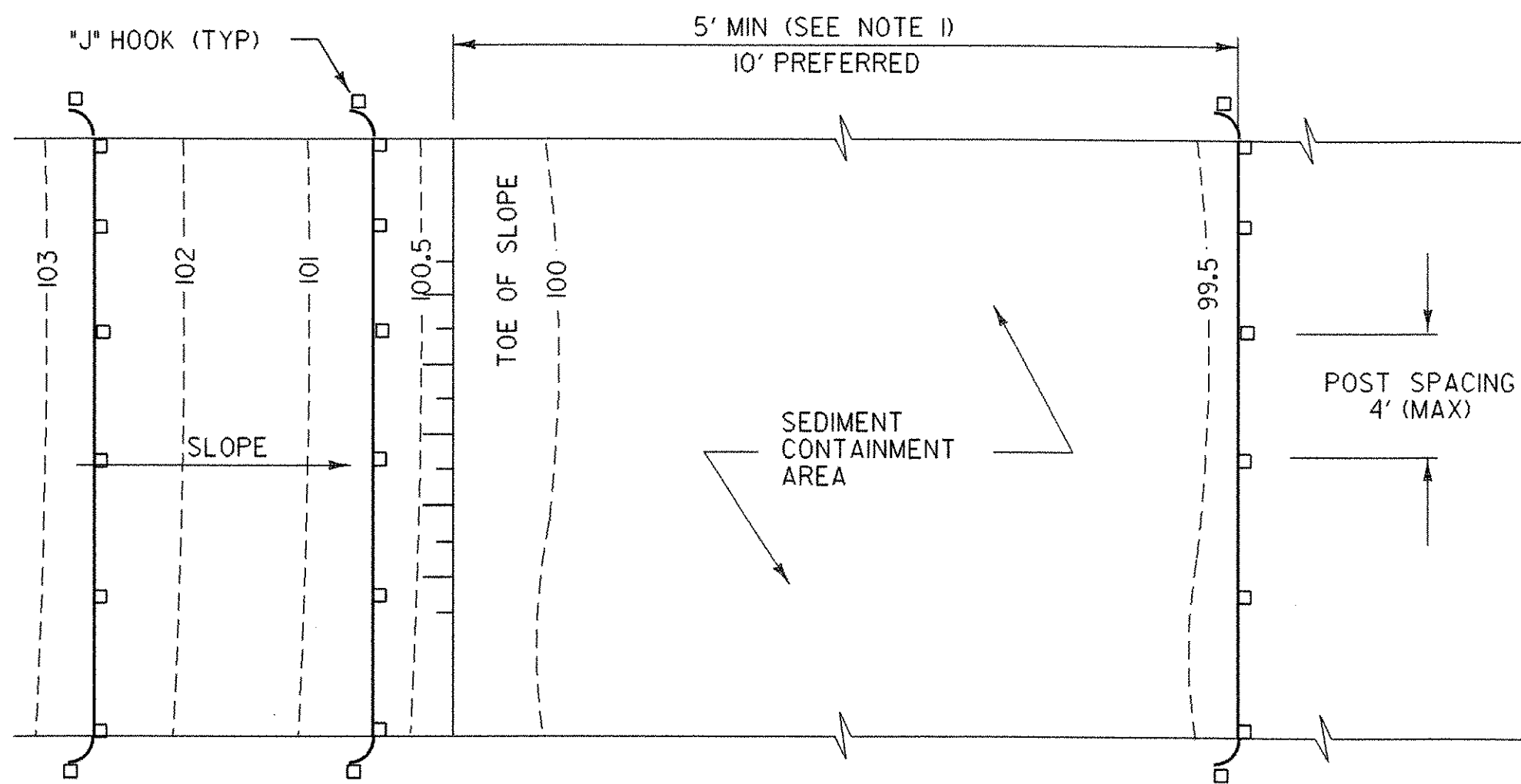
| CONSTRUCTED SLOPE | SLOPE LENGTH (LS) FT | HORIZONTAL LENGTH (LH) FT |
|-------------------|----------------------|---------------------------|
| 3 : 1             | 80                   | 75                        |
| 4 : 1             | 130                  | 125                       |
| 5 : 1             | 200                  | 200                       |
| > 5 : 1           | 250                  | 250                       |

- 7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
- 8. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
- 9. SILT FENCE SHALL BE REMOVED WHEN THE AREA HAS BEEN STABILIZED. AT TIME OF REMOVAL OF THE SILT FENCE, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
- 10. PAYMENT FOR INSTALLATION AND REMOVAL OF SILT FENCE SHALL BE MADE UNDER THE GEOTEXTILE FOR SILT FENCE ITEM.
- 11. PAYMENT FOR MONITORING SILT FENCE SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
- 12. PAYMENT FOR MAINTAINING SILT FENCE SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

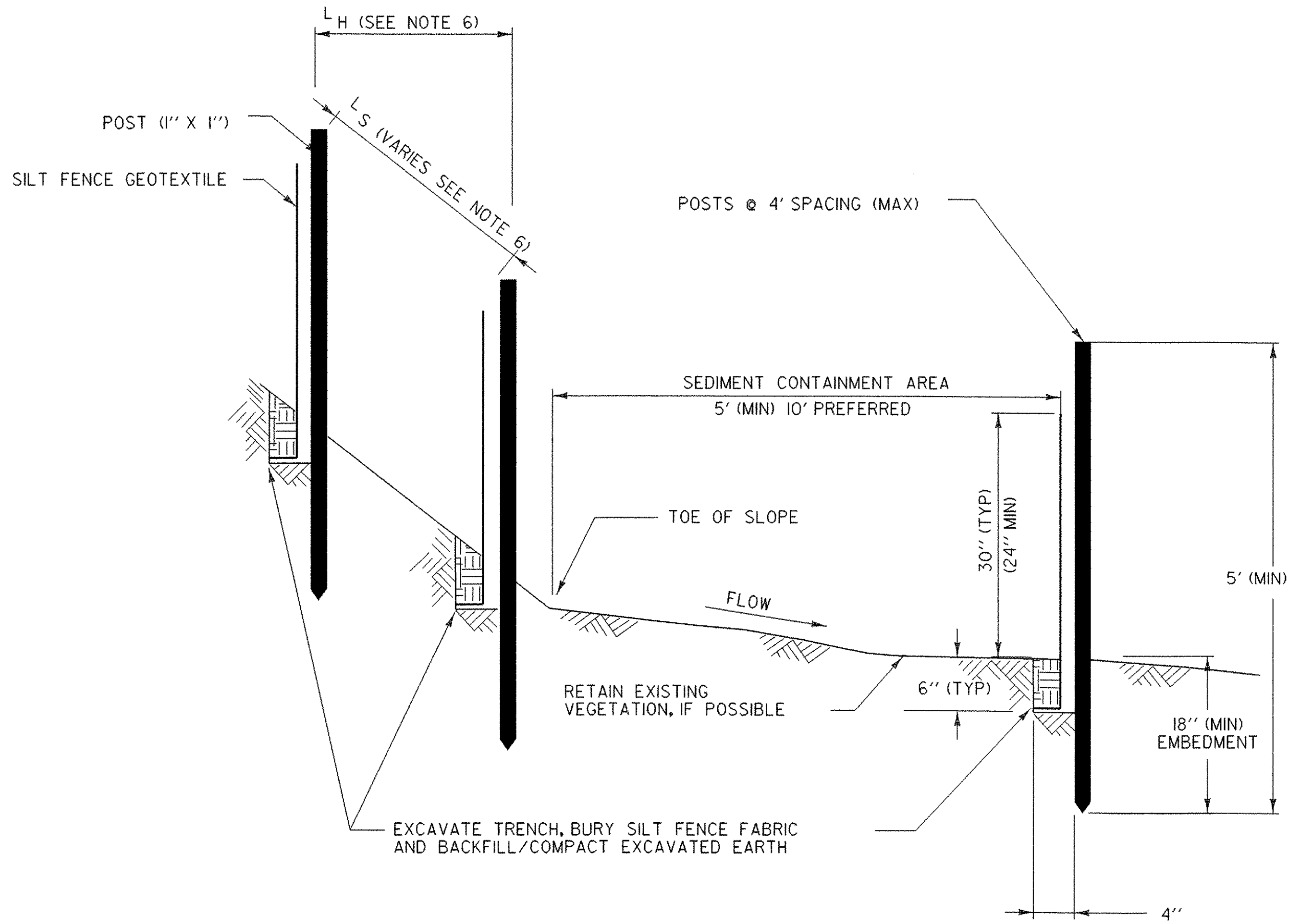


- 1. PLACE THE END POST OF ONE FENCE INSIDE THE END POST OF THE OTHER FENCE.
- 2. ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.
- 3. DRIVE BOTH POSTS 18 INCHES INTO THE GROUND AND BURY THE FLAP IN THE TRENCH.

SPLICING DETAIL



PLAN

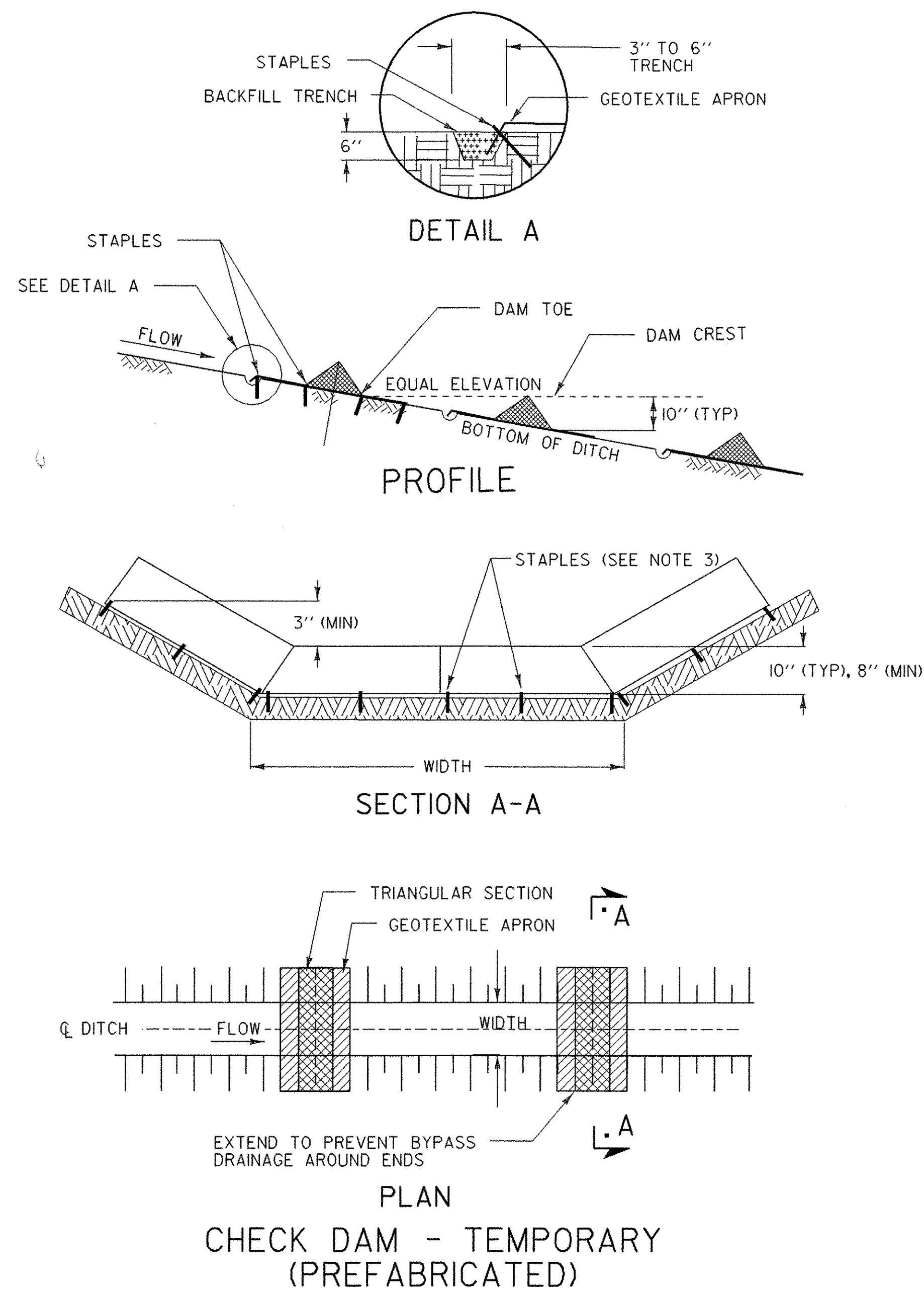


SECTION  
SILT FENCE - TEMPORARY

EROSION PREVENTION &  
SEDIMENT CONTROL DETAILS  
SILT FENCE

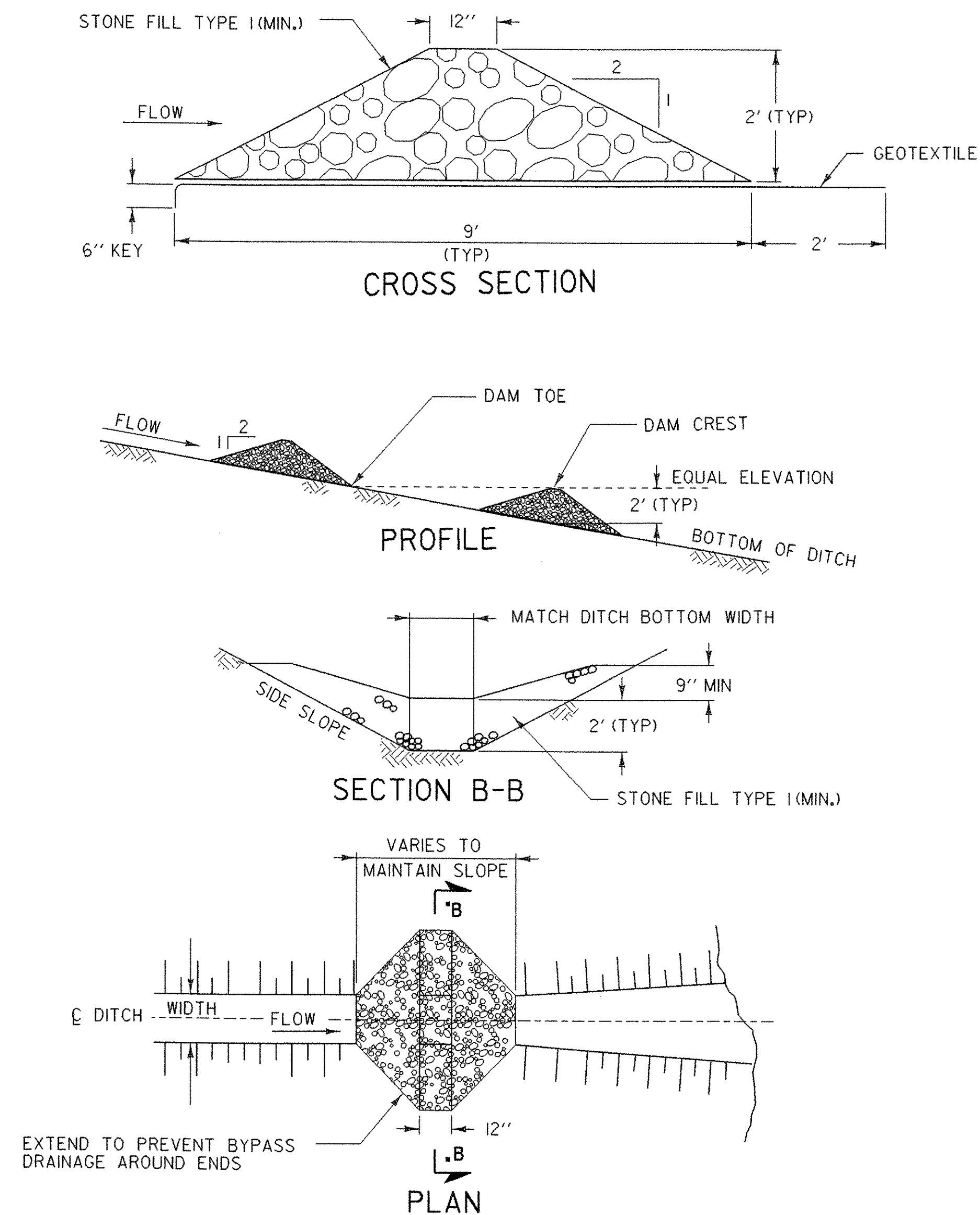
EPSC1

|                                                         |                               |
|---------------------------------------------------------|-------------------------------|
| PROJECT:<br>TUNBRIDGE                                   | PROJECT NO.:<br>BHO 1444 (42) |
| DESIGN FILE NAME: s03j032/structures/s03j032ecnotes.dgn |                               |
| IPARM FILE NAME: s03j032epsc1.i                         | PLOT DATE: 25-AUG-2005        |
| DESIGNED BY:                                            | DRAWN BY:                     |
| SQUAD LEADER: C.P. WILLIAMS                             | CHECKED BY:                   |
| SILT FENCE                                              | SHEET: 37 OF 40               |



| PREFABRICATED CHECK DAM PLACEMENT INTERVAL |                       |
|--------------------------------------------|-----------------------|
| DITCH SLOPE                                | PLACEMENT INTERVAL ** |
| 1 %                                        | 50 FT                 |
| 2 %                                        | 40 FT                 |
| 3 %                                        | 25 FT                 |
| 4 %                                        | 20 FT                 |
| 5 %                                        | 15 FT                 |

\*\* BASED ON 10" TYPICAL HEIGHT



| STONE CHECK DAM PLACEMENT INTERVAL |                       |
|------------------------------------|-----------------------|
| DITCH SLOPE                        | PLACEMENT INTERVAL ** |
| 1 %                                | 200 FT                |
| 2 %                                | 100 FT                |
| 3 %                                | 65 FT                 |
| 4 %                                | 50 FT                 |
| 5 %                                | 40 FT                 |
| 6 %                                | 30 FT                 |
| 8 %                                | 25 FT                 |
| 10 %                               | 20 FT                 |

\*\* BASED ON 2' TYPICAL HEIGHT

## CHECK DAMS

### APPLICATION NOTES:

- THE PRIMARY PURPOSE OF A CHECK DAM IS TO REDUCE EROSION IN A CHANNEL BY REDUCING FLOW VELOCITY.
- CHECK DAMS WILL CAPTURE SEDIMENT THAT FALLS OUT OF SUSPENSION BEHIND THE CHECK DAM DUE TO DECREASED VELOCITY.
- CHECK DAMS ARE NOT INTENDED TO FILTER SEDIMENT FROM TURBID WATER.
- DETAILS SHOWN SHALL BE USED FOR TEMPORARY INSTALLATION ONLY.
- PREFABRICATED DAMS ARE NOT TO BE USED ON SLOPES GREATER THAN 5% OR PER MANUFACTURER'S SPECIFICATIONS.
- PREFABRICATED DAM SPECIFICATIONS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

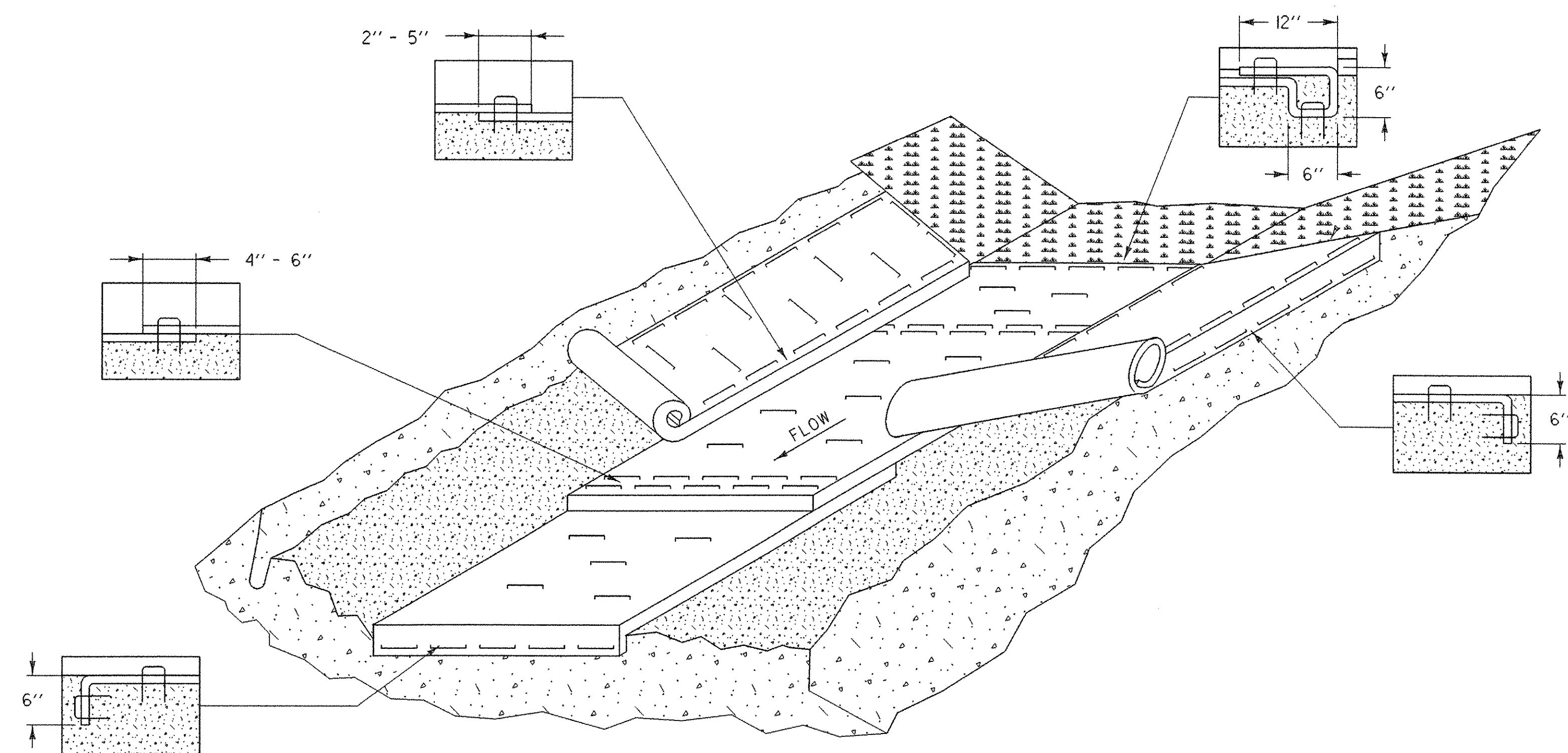
### GENERAL NOTES:

- GEOTEXTILE SHALL BE INSTALLED UNDER STONE FILL. IT SHALL BE KEYED IN ON THE UP HILL END AND SHALL EXTEND 2 FEET BEYOND THE STONE ON THE DOWN HILL END.
- CORE MATERIAL FOR THE STONE CHECK DAM SHALL MEET THE GRADATION REQUIREMENTS OF STONE FILL TYPE I (MIN.). STONE SIZE SHOULD BE INCREASED WITH INCREASED SLOPE AND VELOCITY.
- THE UPHILL END OF THE APRON FOR THE PREFABRICATED CHECK DAM SHALL BE STAPLED AND BURIED AS SHOWN IN DETAIL "A" OR AS RECOMMENDED BY THE MANUFACTURER'S LITERATURE.
- MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
- MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
- AT TIME OF REMOVAL OF THE CHECK DAMS, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
- PAYMENT FOR INSTALLATION AND REMOVAL OF CHECK DAMS SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
- PAYMENT FOR MONITORING CHECK DAMS SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
- PAYMENT FOR MAINTAINING CHECK DAMS SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

## EROSION PREVENTION & SEDIMENT CONTROL DETAILS CHECK DAMS

**EPSC2**

|                                                        |                               |
|--------------------------------------------------------|-------------------------------|
| PROJECT:<br>TUNBRIDGE                                  | PROJECT NO.:<br>BHO 1444 (42) |
| DESIGN FILE NAME: 03j032/structures/s03j032ecnotes.dgn |                               |
| IPARM FILE NAME: s03j032epsc2.i                        | PLOT DATE: 25-AUG-2005        |
| DESIGNED BY:                                           | DRAWN BY:                     |
| SQUAD LEADER: C.P. WILLIAMS                            | CHECKED BY:                   |
| CHECK DAMS                                             | SHEET: 38 OF 40               |



## EROSION PROTECTION FOR DITCHES

### APPLICATION NOTES:

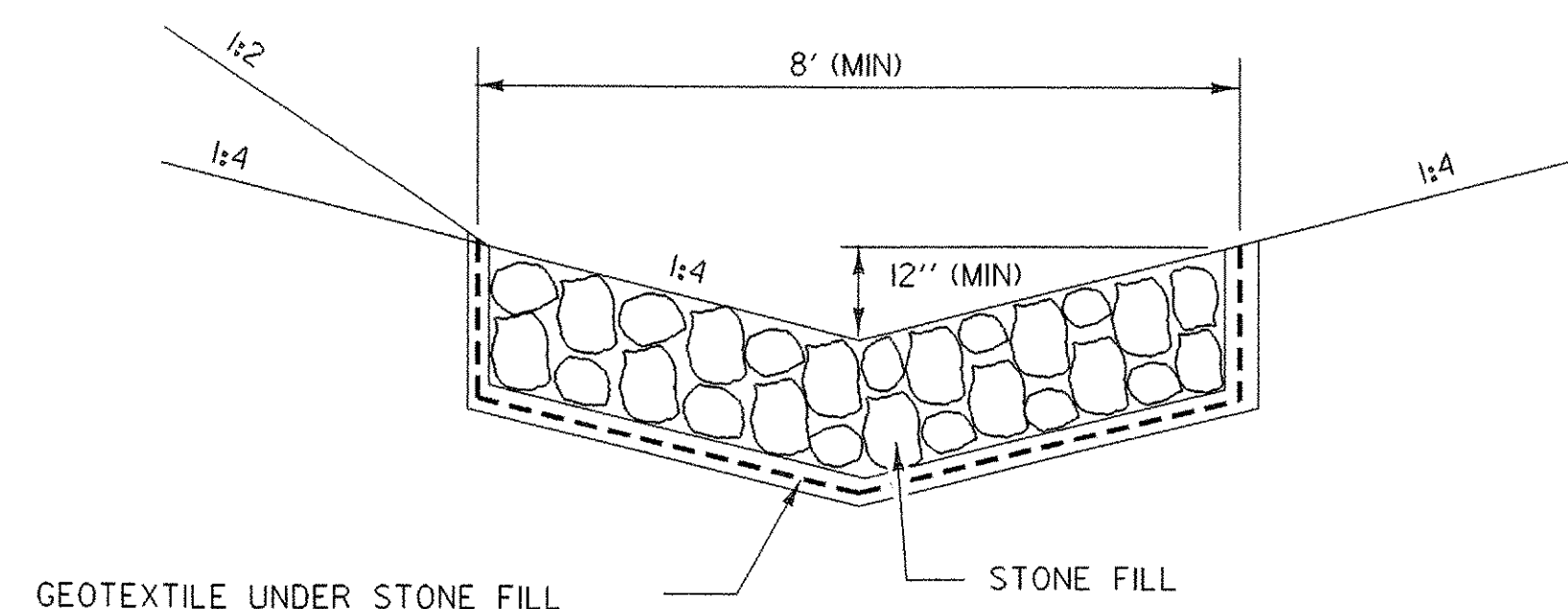
- THE PURPOSE OF LINING THE DITCH WITH EROSION MATTING IS TO REDUCE EROSION AND AID THE ESTABLISHMENT OF VEGETATION AT LOW VELOCITIES.
- THE FOLLOWING CHARTS SHALL BE USED TO DETERMINE THE APPROPRIATE EROSION CONTROL MEASURE:

| DITCH AND CHANNEL PROTECTION |                     |
|------------------------------|---------------------|
| SLOPE                        | LINING              |
| < 1%                         | GRASS               |
| 1% TO 4 %                    | EROSION MATTING     |
| 4 % TO 10 %                  | STONE FILL, TYPE I  |
| > 10 %                       | STONE FILL, TYPE II |

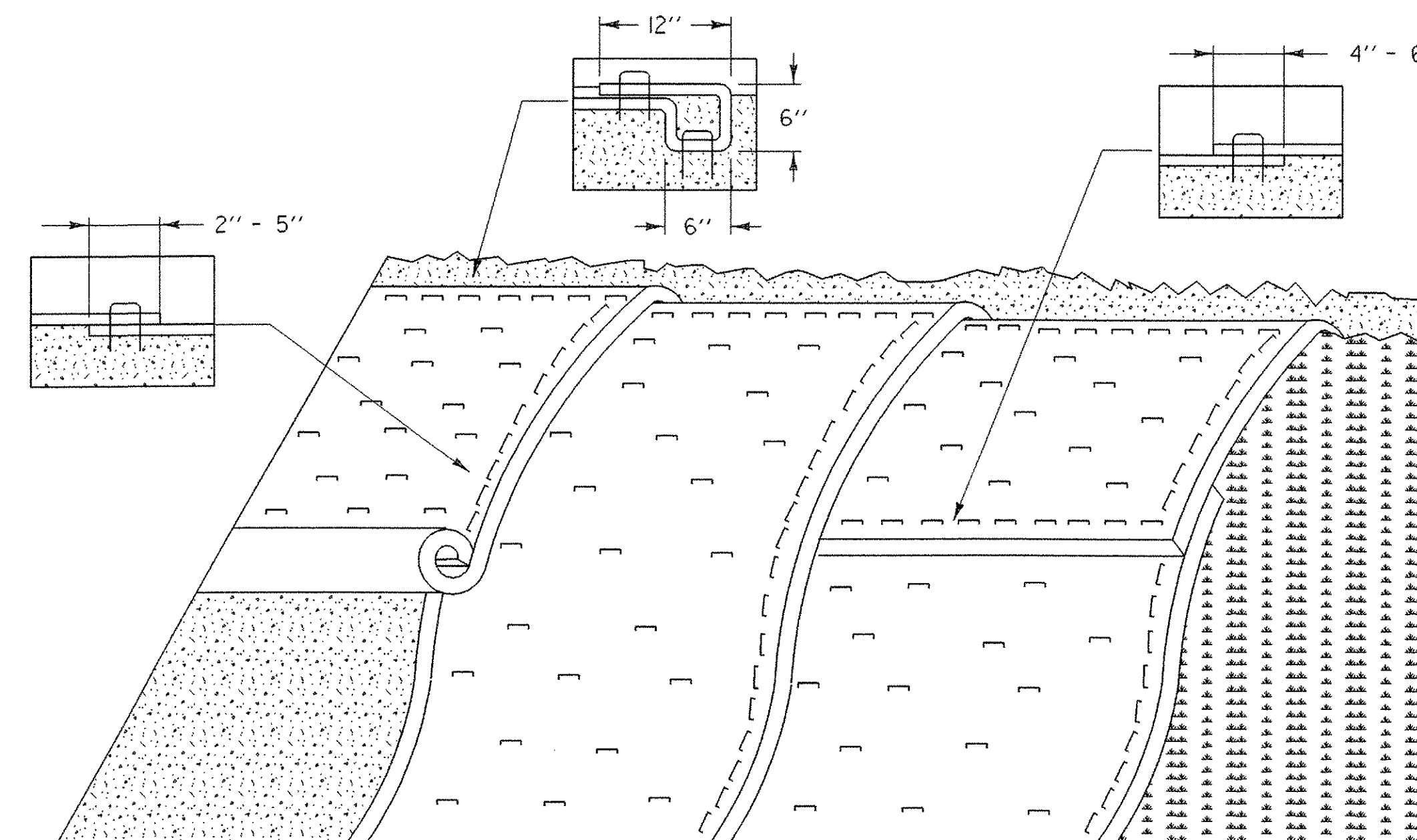
| STONE FILL THICKNESS |           |
|----------------------|-----------|
| STONE FILL TYPE      | THICKNESS |
| TYPE I               | 1 FT      |
| TYPE II              | 2 FT      |

### GENERAL NOTES:

- WATER MAY NEED TO BE DIVERTED TO ALLOW PROPER MATTING INSTALLATION.
- GRADE AND SMOOTH CHANNEL TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
- APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
- INSTALL MATTING IN THE CENTER OF THE CHANNEL, IN THE DIRECTION OF THE WATER FLOW.
- INSTALL MATTING ON THE SIDE SLOPES OF THE CHANNEL, OVERLAPPING THE CENTER MAT.
- ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
- MEASURES SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
- PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
- PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
- PAYMENT FOR MAINTAINING DITCH PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



TEMPORARY  
STONE LINED  
DITCH



## EROSION PREVENTION FOR SIDE SLOPES

### APPLICATION NOTES:

- THE PURPOSE OF MATTING ON SIDE SLOPES IS TO REDUCE EROSION AND AID THE ESTABLISHMENT OF VEGETATION
- EROSION CONTROL MATTING SHALL BE USED FOR THE FOLLOWING REASONS:
  - SIDE SLOPES > 3:1 (H:V)
  - AREAS WHERE SEED AND MULCH WILL NOT STAY IN PLACE ALONE
  - WHERE SEEDING IS OUTSIDE THE GROWING SEASON.

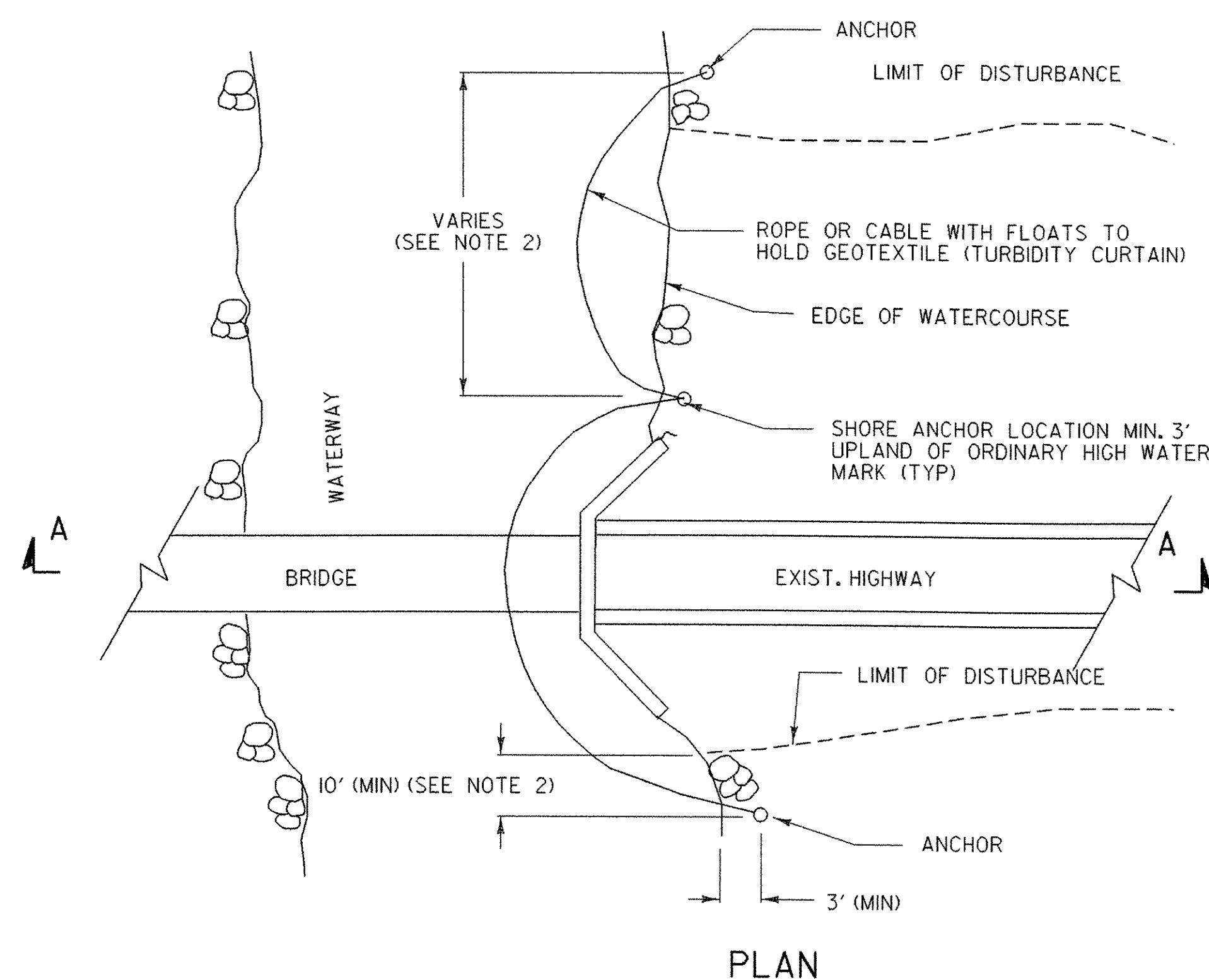
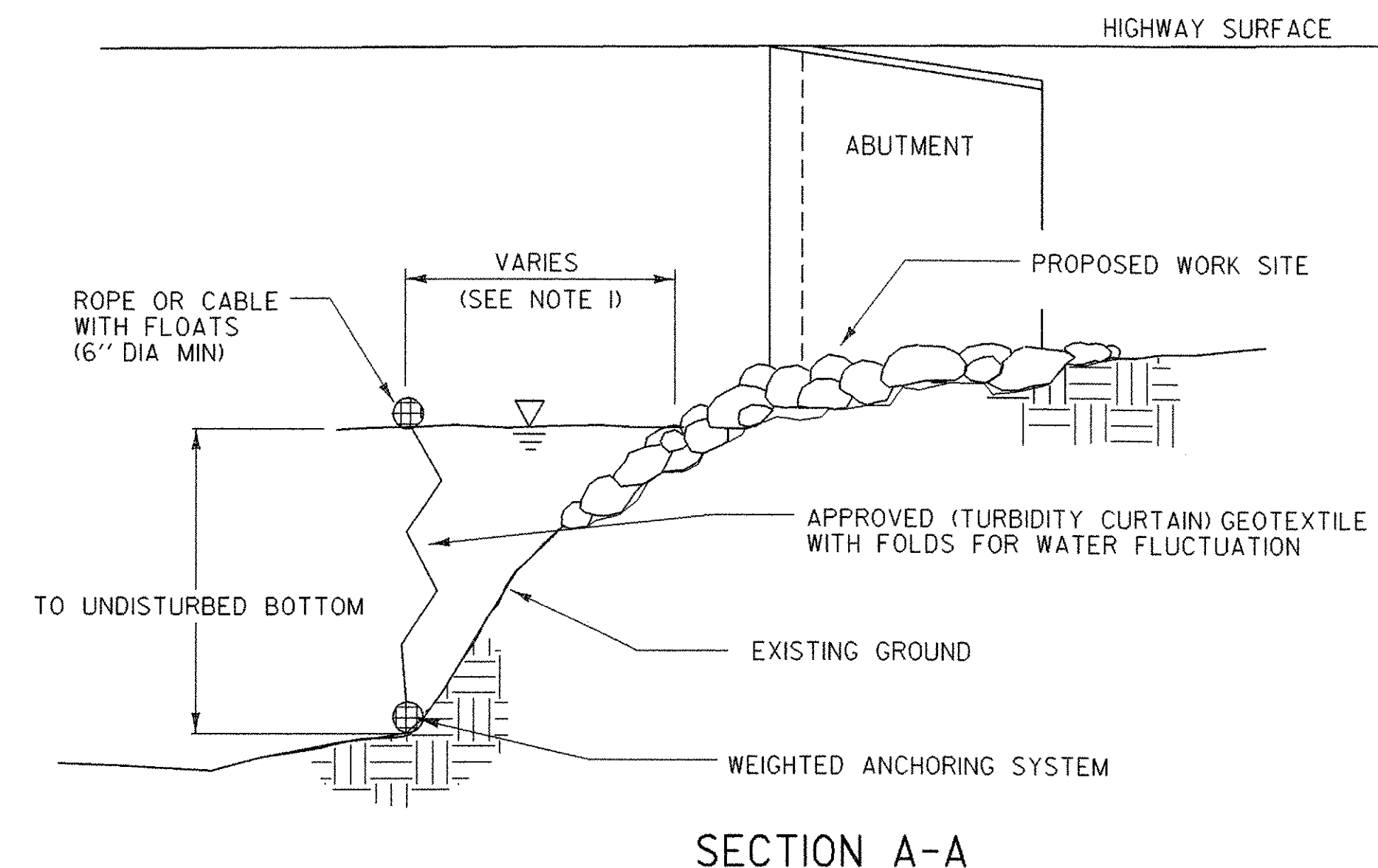
### GENERAL NOTES:

- GRADE AND SMOOTH THE SLOPE TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
- APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
- ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- UNROLL MATTING VERTICALLY DOWN SLOPE IN THE DIRECTION OF WATER FLOW.
- OVERLAP UPPER MATTING OVER LOWER MATTING AS SHOWN.
- OVERLAP ADJACENT MATTING AS SHOWN.
- CUT EXCESS MATTING AT END OF SLOPE AND ANCHOR THE END.
- MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
- MATting SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
- PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
- PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
- PAYMENT FOR MAINTAINING SLOPE PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

## EROSION PREVENTION & SEDIMENT CONTROL DETAILS DITCH & SLOPE PROTECTION

EPSC5

|                                                        |                               |
|--------------------------------------------------------|-------------------------------|
| PROJECT:<br>TUNBRIDGE                                  | PROJECT NO.:<br>BHO 1444 (42) |
| DESIGN FILE NAME: 03j032/structures/s03j032ecnotes.dgn | PLOT DATE: 25-AUG-2005        |
| IPARM FILE NAME: s03j032epsc5.i                        | DRAWN BY:                     |
| DESIGNED BY:                                           | CHECKED BY:                   |
| SQUAD LEADER: C. P. WILLIAMS                           | SHEET: 39 OF 40               |
| DITCH & SIDE SLOPE PROTECTION                          |                               |



## TURBIDITY CURTAIN

APPLICATION NOTES:

- A. THE PURPOSE OF A TURBIDITY CURTAIN IS TO SEPARATE WORK AREAS IN OR ADJACENT TO WATERS, TO PREVENT SEDIMENT FROM ENTERING THE WATERS.
- B. TURBIDITY CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 1.5 FT/SEC.
- C. TURBIDITY CURTAIN SHALL NOT BE PLACED AT THE OUTLET OF A CULVERT OR DITCH UNLESS THE VELOCITY DOES NOT EXCEED 1.5 FT/SEC.
- D. THE DETAIL DEPICTS WORK AT A BRIDGE LOCATION, BUT TURBIDITY CURTAIN MAY BE APPLIED AT OTHER LOCATIONS.

GENERAL NOTES:

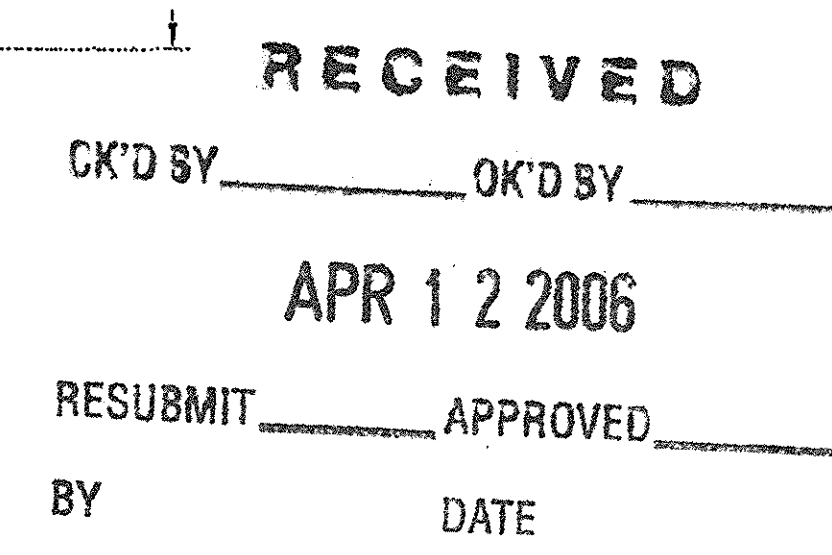
1. THE TURBIDITY CURTAIN SHALL BE PLACED AS CLOSE TO THE WORK AS POSSIBLE WITHOUT INTERFERING WITH CONSTRUCTION OPERATIONS.
2. THE TURBIDITY CURTAIN SHALL BE A MAXIMUM OF 100 FEET LONG BETWEEN ANCHORS. LAST SECTION SHALL TERMINATE A MINIMUM OF 10 FEET BEYOND THE LIMIT OF DISTURBANCE.
3. THE CONTRACTOR SHALL MONITOR THE TURBIDITY CURTAIN, TAKING INTO ACCOUNT WEATHER PATTERNS AND PREVAILING WIND DIRECTIONS THAT MAY AFFECT WATER LEVELS, VELOCITY AND MOVEMENT OF THE TURBIDITY CURTAIN.
4. THE TURBIDITY CURTAIN SHALL BE REMOVED BY SLOWLY PULLING TOWARD THE SHORE TO MINIMIZE ESCAPE OF SEDIMENTS INTO THE WATERWAY.
5. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE THAT ALLOWS THE CURTAIN TO CONFORM TO THE CONTOUR ON THE BOTTOM OF THE WATERWAY.
6. PAYMENT FOR INSTALLATION AND REMOVAL OF THE TURBIDITY CURTAIN SHALL BE MADE UNDER THE GEOTEXTILE FOR FILTER CURTAIN ITEM.
7. PAYMENT FOR MONITORING TURBIDITY CURTAIN SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
8. PAYMENT FOR MAINTAINING TURBIDITY CURTAIN SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

EROSION PREVENTION &  
SEDIMENT CONTROL DETAILS  
TURBIDITY CURTAIN

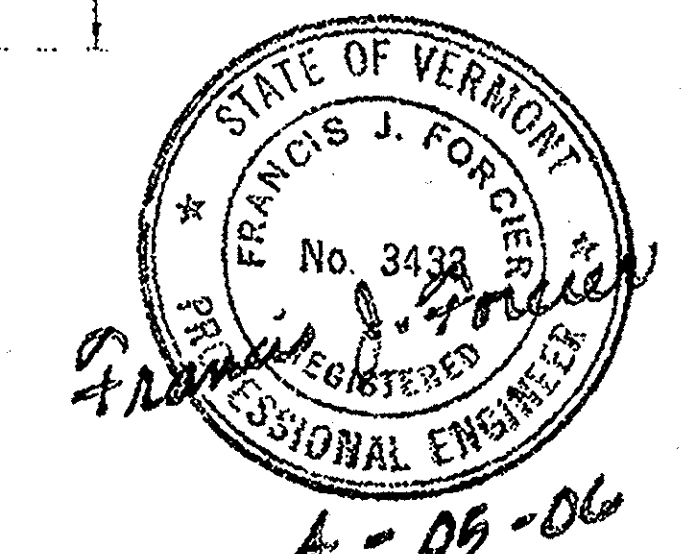
EPSC6

|                                                                                            |                               |
|--------------------------------------------------------------------------------------------|-------------------------------|
| PROJECT:<br>TUNBRIDGE                                                                      | PROJECT NO.:<br>BHO 1444 (42) |
| DESIGN FILE NAME: s03j032/structures/s03j032ecnotes.dgn<br>IPARM FILE NAME: s03j032epsc6.i | PLOT DATE: 25-AUG-2005        |
| DESIGNED BY:<br>SQUAD LEADER: C.P. WILLIAMS                                                | DRAWN BY:<br>CHECKED BY:      |
| TURBIDITY CURTAIN                                                                          | SHEET: 40 OF 40               |

|                                                                                                                                                                                                            |                |                                                                                                                                                                                               |                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| <div><div>WRIGHT</div><div>CONSTRUCTION COMPANY, INC.</div></div>                                                                                                                                          |                | <div>TRANSMITTAL</div> <div>DATE: April 10, 2006</div>                                                                                                                                        |                                                                   |
| <div>TO</div> <div>Vermont Agency of Transportation<br/>Attn: Jeff Clark, Structure's Engineer<br/>National Life Building, Drawer 33<br/>Montpelier, VT 05633<br/>Telephone: (802) 828-0044<br/>Fax:</div> |                | <div>FROM</div> <div>Wright Construction Company, Inc.<br/>P.O. Box 189<br/>31 Station Road - Route 103<br/>Mount Holly, VT 05758<br/>Telephone: (802) 259-2094<br/>Fax: (802) 259-2689</div> |                                                                   |
| PROJECT # :                                                                                                                                                                                                |                | 2005-078                                                                                                                                                                                      |                                                                   |
| PROJECT TITLE:                                                                                                                                                                                             |                | TUNBRIDGE BHO 1444 (42)                                                                                                                                                                       |                                                                   |
| WE ARE SENDING YOU                                                                                                                                                                                         |                | ATTACHED Under Separate cover the following items:                                                                                                                                            |                                                                   |
| Shop Drawings                                                                                                                                                                                              | SPECIFICATIONS | Information                                                                                                                                                                                   | Contract Samples                                                  |
| Product Data                                                                                                                                                                                               | PLANS / PRINTS | Copy of Letter                                                                                                                                                                                | Change Order                                                      |
| Copies                                                                                                                                                                                                     | Date           | No.                                                                                                                                                                                           | Description                                                       |
| 1                                                                                                                                                                                                          | March '06      |                                                                                                                                                                                               | Shoring drawings S1, S2, & S3                                     |
| 1                                                                                                                                                                                                          | Misc.          |                                                                                                                                                                                               | Shoring calculations (dated 3/16/06, 3/17/06, 3/22/06, & 3/27/06) |
| 1                                                                                                                                                                                                          | 3/28/06        |                                                                                                                                                                                               | Sequence of Shoring and Jacking Work                              |
| 1                                                                                                                                                                                                          | 4/6/06         |                                                                                                                                                                                               | Connection Details                                                |
|                                                                                                                                                                                                            |                |                                                                                                                                                                                               |                                                                   |
|                                                                                                                                                                                                            |                |                                                                                                                                                                                               |                                                                   |
| THESE ARE TRANSMITTED as checked below:                                                                                                                                                                    |                |                                                                                                                                                                                               |                                                                   |
| For Approval                                                                                                                                                                                               |                | FOR PRICING                                                                                                                                                                                   | As Requested                                                      |
| Return One With Signatures                                                                                                                                                                                 |                | For Review and Comment                                                                                                                                                                        |                                                                   |
|                                                                                                                                                                                                            |                | Approved as Noted                                                                                                                                                                             |                                                                   |
| REMARKS:                                                                                                                                                                                                   |                |                                                                                                                                                                                               |                                                                   |
| Contact Joe Poston w/ questions.                                                                                                                                                                           |                |                                                                                                                                                                                               |                                                                   |
| RECEIVED                                                                                                                                                                                                   |                |                                                                                                                                                                                               |                                                                   |
| OK'D BY OK'D BY                                                                                                                                                                                            |                |                                                                                                                                                                                               |                                                                   |
| APR 12 2006                                                                                                                                                                                                |                |                                                                                                                                                                                               |                                                                   |
| RESUBMIT APPROVED                                                                                                                                                                                          |                |                                                                                                                                                                                               |                                                                   |
| cc: File                                                                                                                                                                                                   |                |                                                                                                                                                                                               |                                                                   |



ALL LUMBER AND TIMBER IS EXISTING UNLESS NOTED OTHERWISE.

[illegible]

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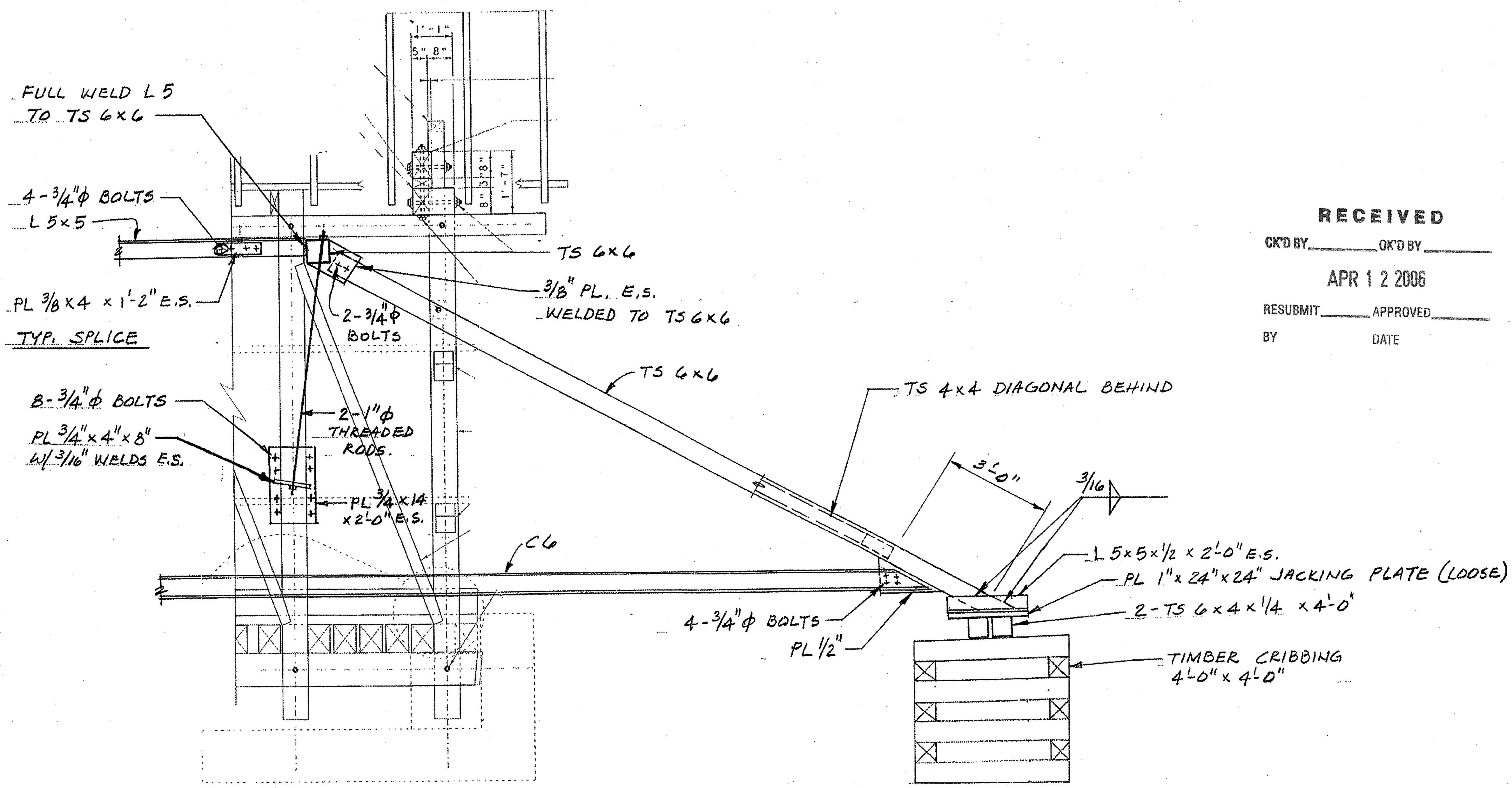
CILLEY COVERED BRIDGE

4

|                |               |
|----------------|---------------|
| Project No.    | 2005038       |
| Proj. Manager  | F. J. FORCIER |
| Proj. Designer | F. J. FORCER  |
| Drawn By       | FJF           |
| Checked By     |               |
| Scale          | AS SHOWN      |
| Approved       |               |

S1

Sheet of



**RECEIVED**

CK'D BY \_\_\_\_\_ OK'D BY \_\_\_\_\_

APR 12 2006

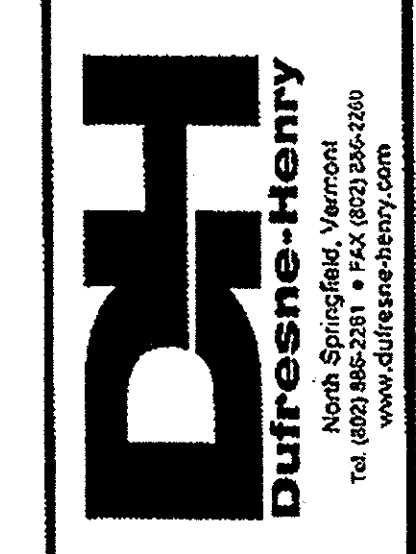
RESUBMIT \_\_\_\_\_ APPROVED \_\_\_\_\_

BY \_\_\_\_\_ DATE \_\_\_\_\_

TYPICAL CORNER ELEVATION  
SCALE 3/4" = 1'-0"

SCALE 3/4" = 1'-0"

STATE OF VERMONT  
FRANCIS J. FORCER  
No 3433  
PROFESSIONAL ENGINEER  
A-05-06



| Rev. | Description | By | Date |
|------|-------------|----|------|
|      |             |    |      |
|      |             |    |      |
|      |             |    |      |
|      |             |    |      |

CILLEY COVERED BRIDGE

TEMPORARY SUPPORT SYSTEMS

VERMONT

TUNBRIDGE

|                |             |
|----------------|-------------|
| Project No.    | 2106038     |
| Proj. Manager  | F.J. FORCER |
| Proj. Designer | F.J. FORCER |
| Drawn By       | F.J.F.      |
| Checked By     | AS SHOWN    |
| Scale          | AS SHOWN    |
| Approved       |             |
| Date           | MARCH 2006  |

S2



North Springfield, Vermont  
Tel. (802) 866-2261 • FAX (802) 866-2260  
www.dufresnoy-denny.com

1

1

**Figure 1**

\_\_\_\_\_

VERMONT

## VALLEY COVERED BRIDGE

## TEMPORARY SUPPORT SYSTEMS

|                |              |
|----------------|--------------|
| Project No.    | 2098038      |
| Proj. Manager  | F. J. FORCER |
| Proj. Designer | F. J. FORCER |
| Drawn By       | F. JF        |
| Checked By     |              |
| Scale          | AS SHOWN     |
| Approved       |              |

S3

Sheet of