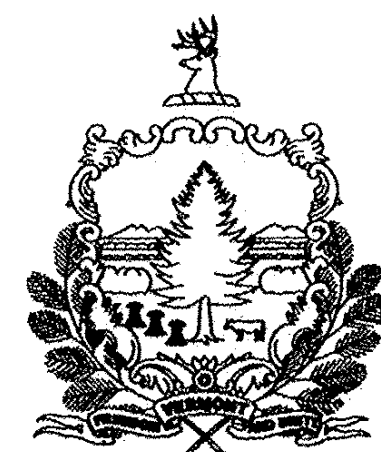
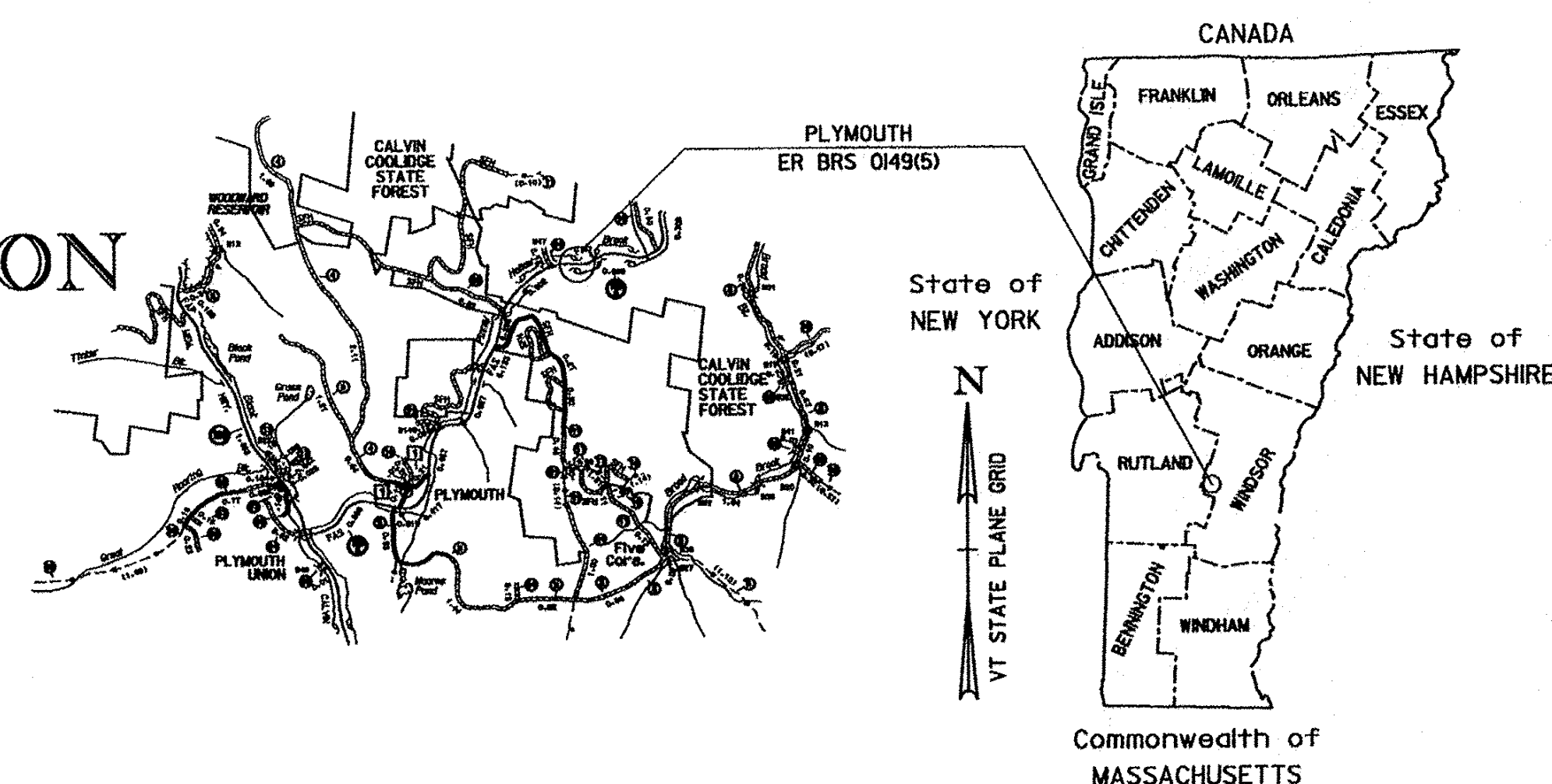


SEE SHEET 2 FOR INDEX OF SHEETS AND LIST OF STANDARDS

# STATE OF VERMONT AGENCY OF TRANSPORTATION



## PROPOSED IMPROVEMENT BRIDGE PROJECT TOWN OF PLYMOUTH COUNTY OF WINDSOR VT 100A (MAJOR COLLECTOR) BRIDGE NO.8

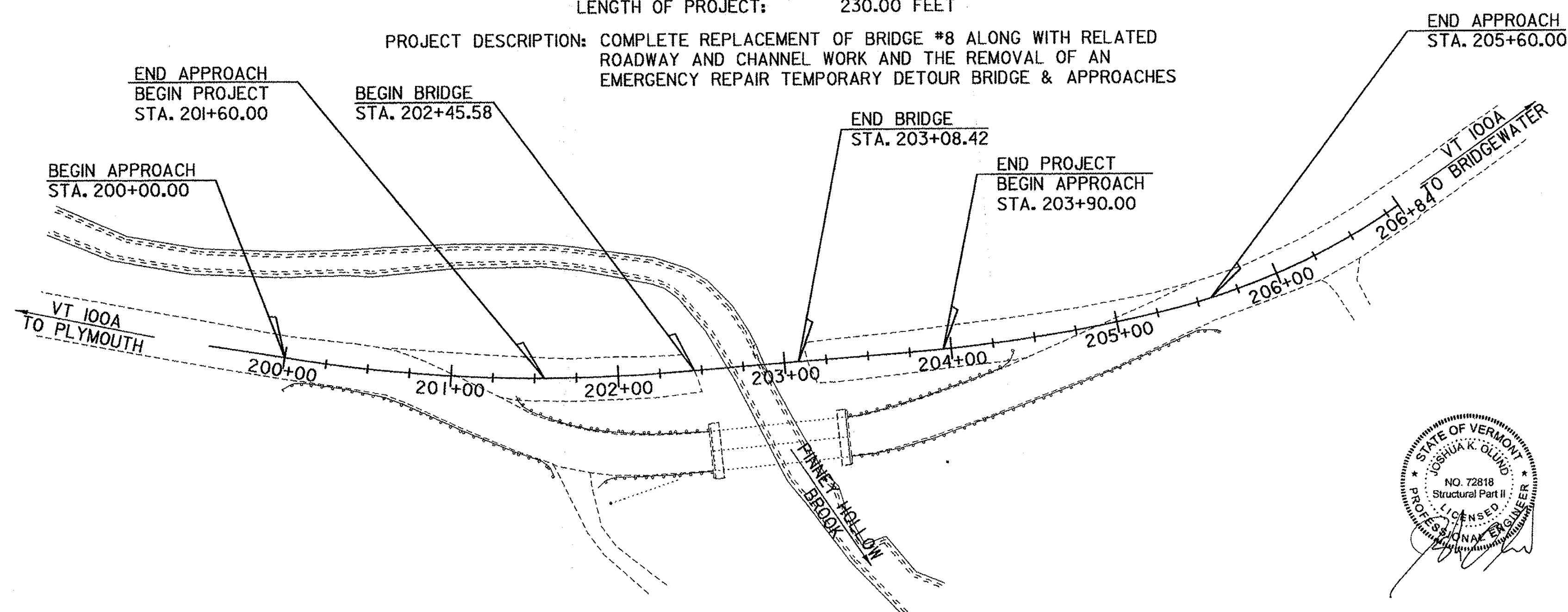


| RECORD PLANS                                                                                                                                                           |                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| CONTRACTOR:                                                                                                                                                            | COLD RIVER BRIDGES, LLC- KEENE, NH       |
| RESIDENT ENGINEER:                                                                                                                                                     | TOM CHASE                                |
| CONSTRUCTION BEGAN:                                                                                                                                                    | APRIL 30, 2013                           |
| CONSTRUCTION COMPLETE:                                                                                                                                                 | OCTOBER 3, 2013                          |
| RECORD PLANS BY:                                                                                                                                                       | TOM CHASE & CRAIG PIERCE                 |
| I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.                                                 |                                          |
| BY                                                                                                                                                                     | <u>Thomas A. Chase</u> RESIDENT ENGINEER |
| DATE                                                                                                                                                                   | <u>8/4/15</u>                            |
| 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. |                                          |

PROJECT LOCATION: ON VT 100A APPROXIMATELY ONE MILE SOUTH OF THE BRIDGEWATER TOWN LINE IN THE TOWN OF PLYMOUTH

LENGTH OF STRUCTURE: 62.84 FEET  
LENGTH OF ROADWAY: 167.16 FEET  
LENGTH OF PROJECT: 230.00 FEET

PROJECT DESCRIPTION: COMPLETE REPLACEMENT OF BRIDGE #8 ALONG WITH RELATED ROADWAY AND CHANNEL WORK AND THE REMOVAL OF AN EMERGENCY REPAIR TEMPORARY DETOUR BRIDGE & APPROACHES



QUALITY ASSURANCE PROGRAM: LEVEL 2

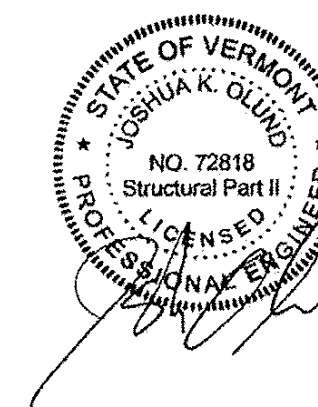
### CONVENTIONAL SYMBOLS

|                    |  |
|--------------------|--|
| 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 : Vermont Survey & Engineering, Inc.  
SURVEYED DATE : 12/2011

DATUM  
VERTICAL NAVD 88  
HORIZONTAL NAD 83

SCALE 1" = 50' - 0"  
50 0 50



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 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

TYLINT INTERNATIONAL

DIRECTOR OF PROGRAM DEVELOPMENT  
APPROVED Richard J. Fournier DATE 7/20/12  
PROJECT MANAGER : ROB YOUNG  
PROJECT NAME : PLYMOUTH  
PROJECT NUMBER : ER BRS 0149 (5)  
SHEET 1 OF 46 SHEETS

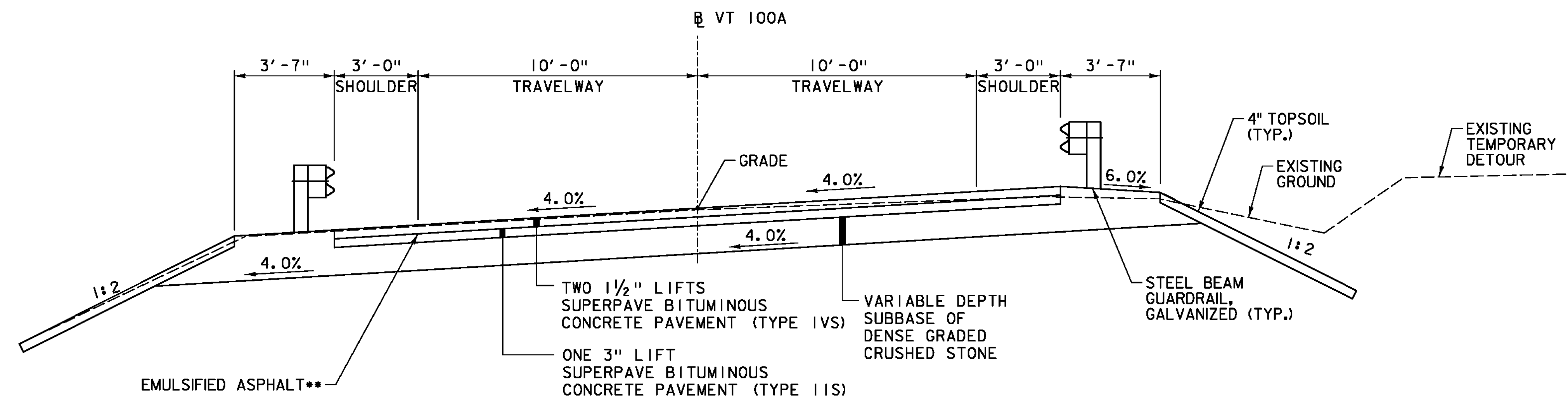


| AS BUILT "REBAR" DETAILS |          |           |
|--------------------------|----------|-----------|
| LEVEL I                  | LEVEL II | LEVEL III |
| TYPE:                    | TYPE:    | TYPE:     |
| GRADE:                   | GRADE:   | GRADE:    |

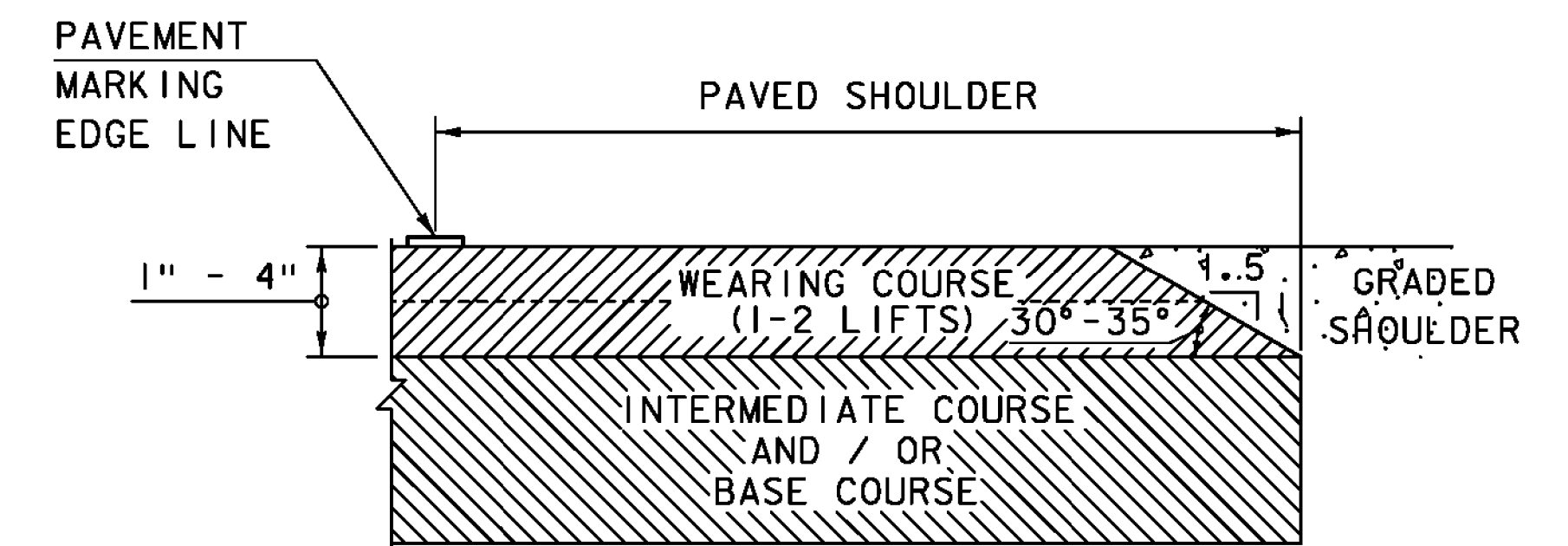
  

| TEMPORARY BRIDGE PROFILE ALONG TEMP CL                                                                                                                          |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| BOTTOM OF BEAMS ELEV = 1044.80 FT                                                                                                                               |  |
|  <p>73.50 FT (MIN)</p> <p>6.00 FT (MIN)</p> <p>OPENING 441.00 FT (MIN)</p> |  |





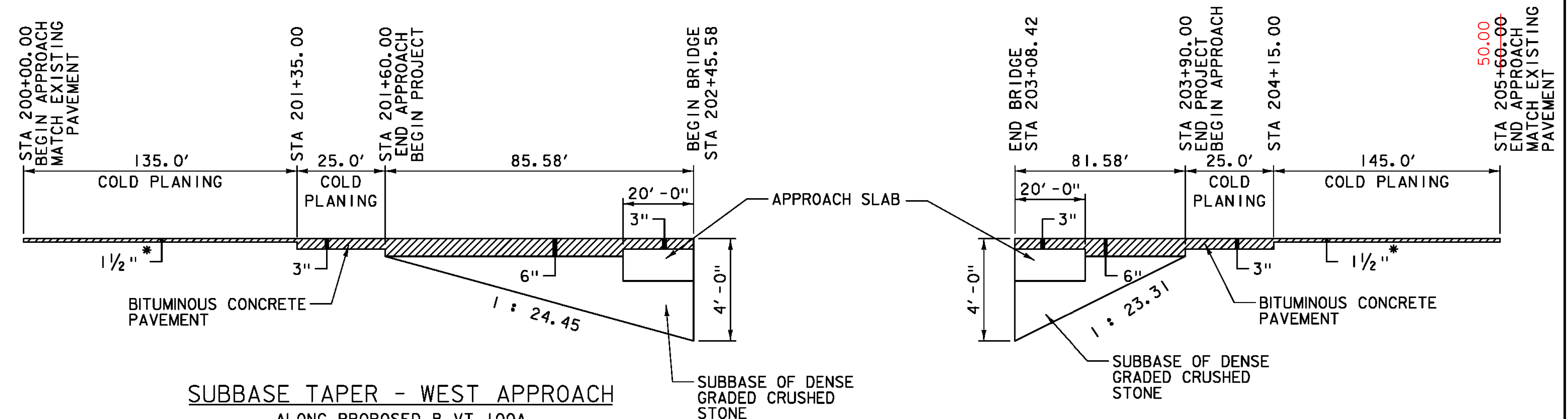
**FULL DEPTH WITH GUARDRAIL  
TYPICAL ROADWAY SECTION - VT 100A**  
NOT TO SCALE



**SAFETY EDGE DETAIL**  
NOT TO SCALE

NOTE: LEVELING COURSE MAY INCLUDE THE "SAFETY  
EDGE" AT THE CONTRACTORS CHOICE.

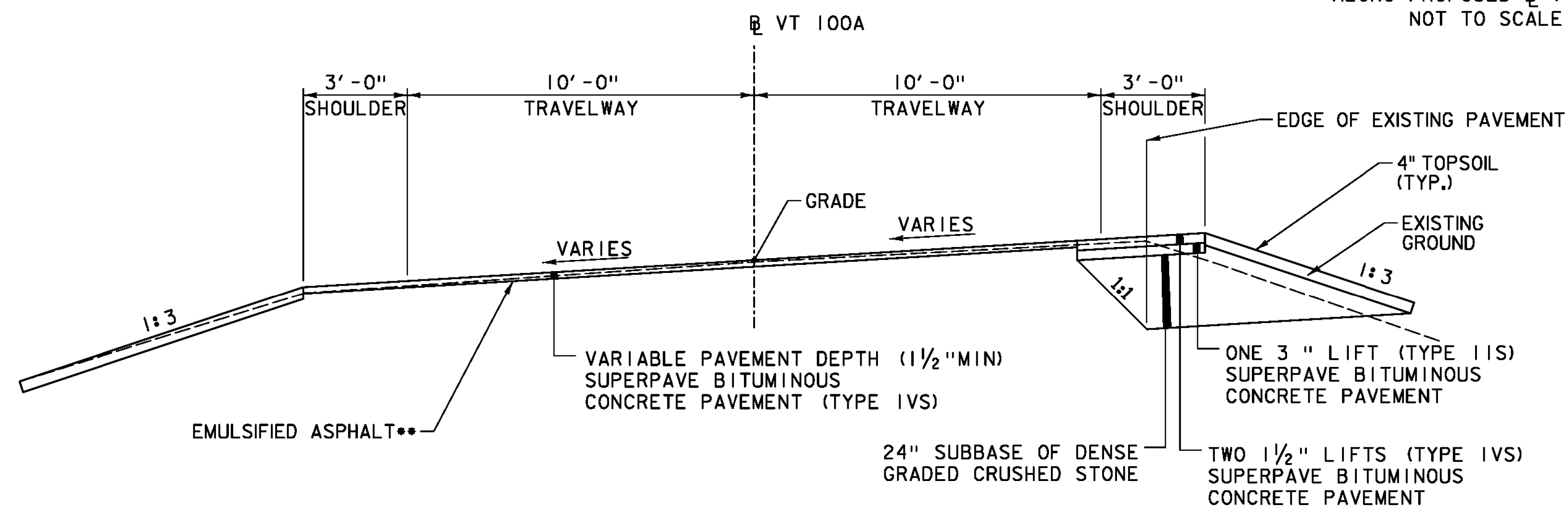
\*\* EMULSIFIED ASPHALT SHALL BE APPLIED TO THE COLD PLANED BITUMINOUS CONCRETE PAVEMENT SURFACE AT THE RATE OF 0.025 GAL/S.Y. OR AS DIRECTED BY THE ENGINEER. EMULSIFIED ASPHALT SHALL ALSO BE APPLIED BETWEEN ALL LIFTS OF PAVEMENT. THE COST SHALL BE PAID UNDER ITEM 404.65, "EMULSIFIED ASPHALT".



**SUBBASE TAPER - WEST APPROACH**  
ALONG PROPOSED VT 100A  
NOT TO SCALE

**SUBBASE TAPER - EAST APPROACH**  
ALONG PROPOSED VT 100A  
NOT TO SCALE

\* ALL EXISTING TEMPORARY DETOUR PAVEMENT SHALL BE REMOVED AND ORIGINAL PAVEMENT COLD PLANED TO A MINIMUM OF 1 1/2" BELOW PROPOSED ELEVATIONS. SHIM AS NEEDED TO RESTORE PAVEMENT TO PROPOSED ELEVATIONS.



**MILL AND OVERLAY  
TYPICAL ROADWAY SECTION - VT 100A**  
NOT TO SCALE

**SHOULDER WIDENING STATION RANGE**  
STA 203+57 RT TO STA 205+26.85 RT  
STA 204+74.80 LT TO STA. 205+60 LT

**MATERIAL TOLERANCES**  
(IF USED ON PROJECT)

|                              |          |
|------------------------------|----------|
| SURFACE                      |          |
| - PAVEMENT (TOTAL THICKNESS) | +/- 1/4" |
| - AGGREGATE SURFACE COURSE   | +/- 1/2" |
| SUBBASE                      | +/- 1"   |
| SAND BORROW                  | +/- 1"   |

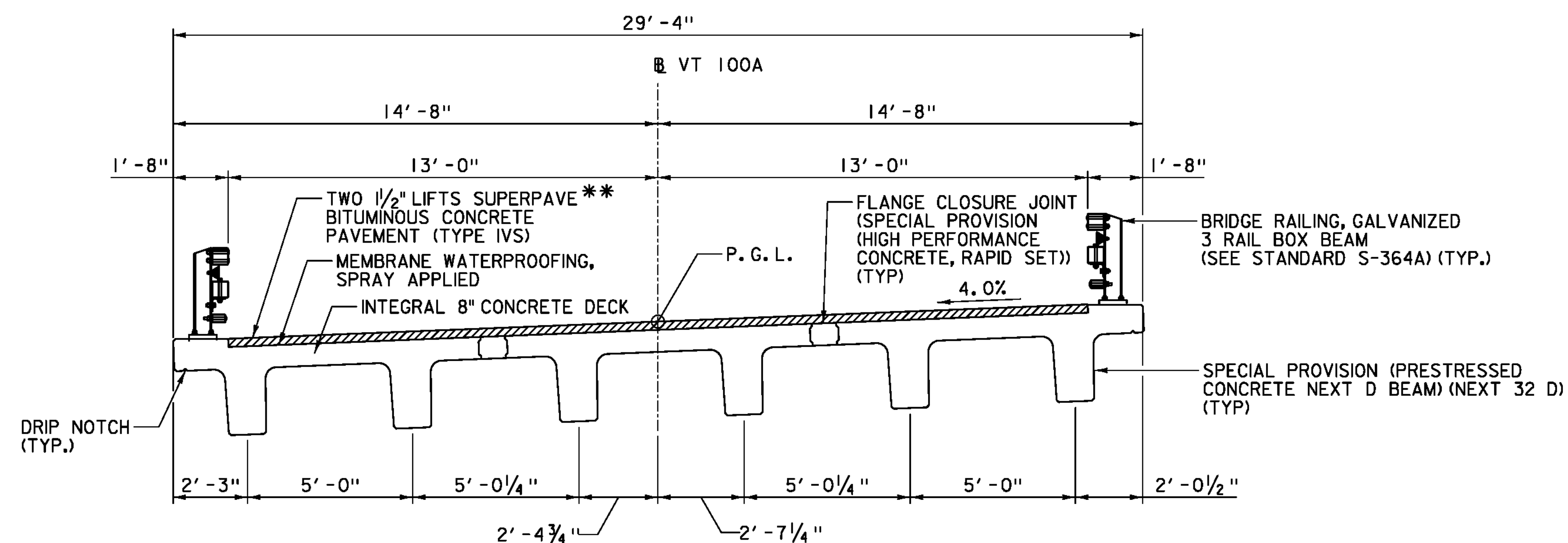
PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

TYLIN INTERNATIONAL

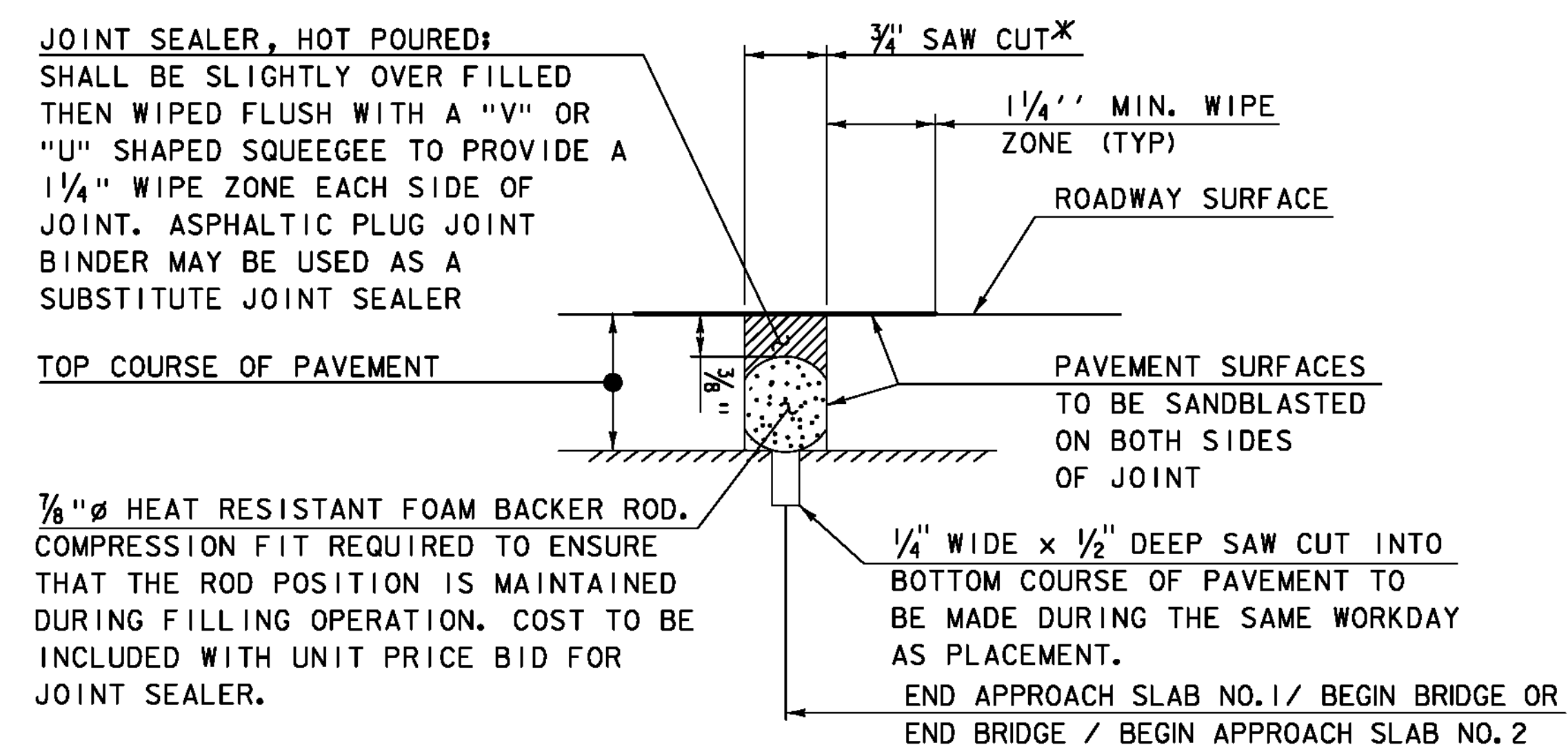
FILE NAME: zlic330typ\_road\_01.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: A. GREENLAW  
TYPICAL ROADWAY SECTIONS

PLOT DATE: 9/20/2012  
DRAWN BY: S. MORGAN  
CHECKED BY: J. HOWE  
SHEET 3 OF 46



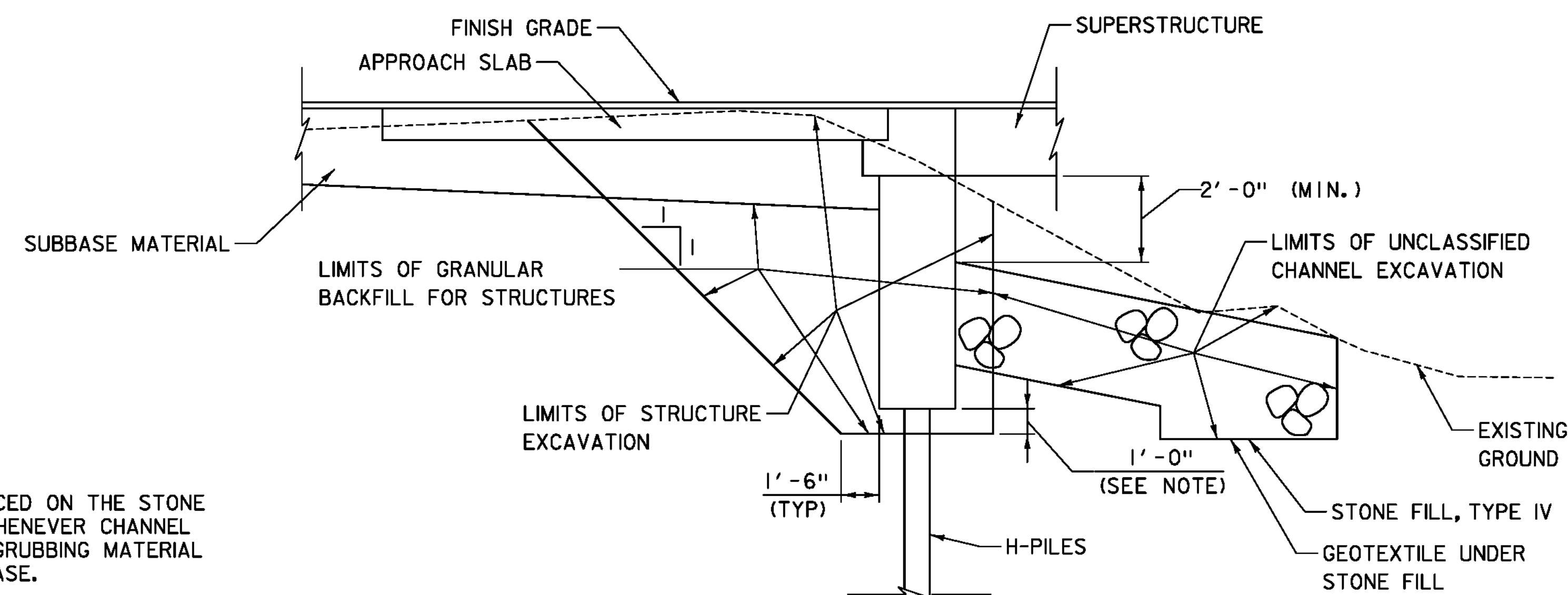


\*\* COMPACTED PAVEMENT SHALL BE 1/8" HIGHER THAN ADJACENT CONCRETE CURB ON EXTERIOR BEAMS



### ITEM 524.11, "JOINT SEALER, HOT POURED" SAWED PAVEMENT JOINT DETAIL (NOT TO SCALE)

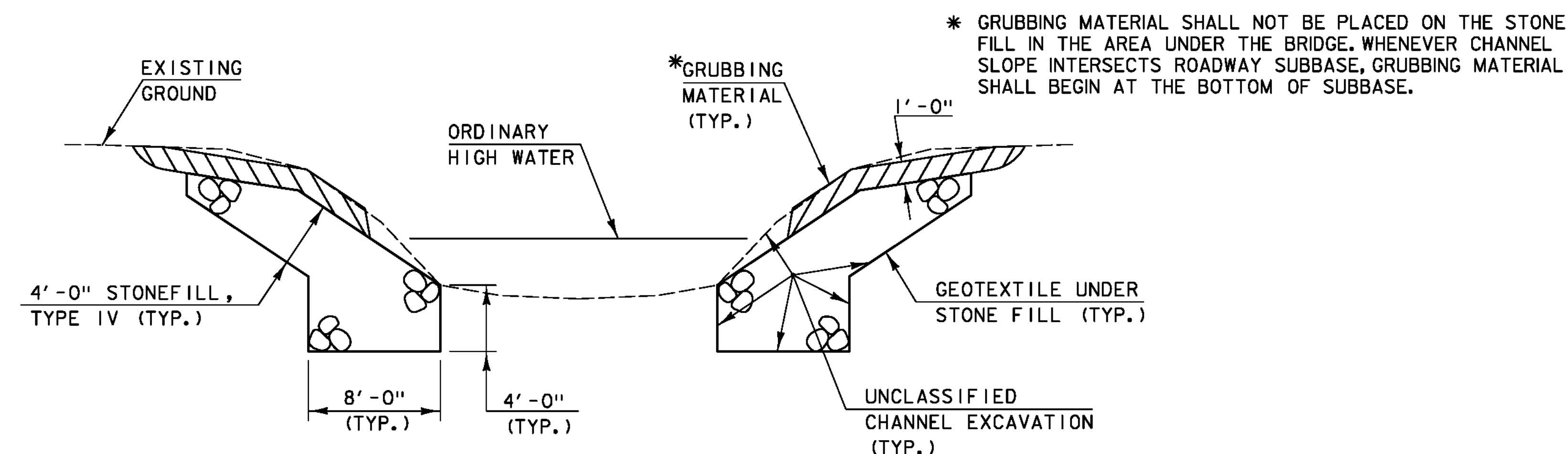
\* JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER.



### EARTHWORK TYPICAL SECTION (NOT TO SCALE)

#### NOTES:

1. 1 FT UNDERCUT AS DETERMINED NECESSARY BY RESIDENT ENGINEER.
2. ACTUAL LIMITS OF STRUCTURE EXCAVATION TO BE DETERMINED BY THE CONTRACTOR. HOWEVER, ONLY THE EXCAVATION BETWEEN THE LIMITS SHOWN WILL BE PAID FOR UNDER ITEM 204.25, "STRUCTURE EXCAVATION." EXCAVATION BY THE CONTRACTOR OUTSIDE THESE LIMITS WILL BE AT THE EXPENSE OF THE CONTRACTOR.



### TYPICAL CHANNEL SECTION (NOT TO SCALE)

TYLIN INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330bdr-typical\_01.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: D. MYERS  
BRIDGE, EARTHWORK, & CHANNEL SECTIONS

PLOT DATE: 9/20/2012  
DRAWN BY: S. MORGAN  
CHECKED BY: S. KELLER  
SHEET 4 OF 46



| STATE OF VERMONT<br>AGENCY OF TRANSPORTATION |  |  |  |  |  |  |         |          |                 |  |        |                 |             | QUANTITY SHEET 1 |             |                                                              |                                     |       |                                              |                                |                     |  |  |
|----------------------------------------------|--|--|--|--|--|--|---------|----------|-----------------|--|--------|-----------------|-------------|------------------|-------------|--------------------------------------------------------------|-------------------------------------|-------|----------------------------------------------|--------------------------------|---------------------|--|--|
| SUMMARY OF ESTIMATED QUANTITIES              |  |  |  |  |  |  |         |          |                 |  |        | TOTALS          |             | DESCRIPTIONS     |             |                                                              |                                     |       |                                              | DETAILED SUMMARY OF QUANTITIES |                     |  |  |
|                                              |  |  |  |  |  |  | ROADWAY | TRAINING | EROSION CONTROL |  | BRIDGE | FULL C.E. ITEMS | GRAND TOTAL | FINAL            | UNIT        | ITEMS                                                        | ITEM NUMBER                         | ROUND | QUANTITIES                                   | UNIT                           | ITEMS               |  |  |
|                                              |  |  |  |  |  |  | 1       |          |                 |  |        |                 | 1           |                  | LS          | CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS | 201.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 424     |          |                 |  |        |                 | 424         |                  | CY          | COMMON EXCAVATION                                            | 203.15                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 550    |                 | 550         |                  | CY          | UNCLASSIFIED CHANNEL EXCAVATION                              | 203.27                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 1       |          |                 |  |        |                 | 1           |                  | CY          | TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)           | 204.22                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 580    |                 | 580         |                  | CY          | STRUCTURE EXCAVATION                                         | 204.25                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 210    |                 | 210         |                  | CY          | GRANULAR BACKFILL FOR STRUCTURES                             | 204.30                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 960     |          |                 |  |        |                 | 960         |                  | SY          | COLD PLANING, BITUMINOUS PAVEMENT                            | 210.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 375     |          |                 |  |        |                 | 375         |                  | CY          | SUBBASE OF DENSE GRADED CRUSHED STONE                        | 301.35                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 4.5     |          |                 |  | 0.7    |                 | 5.2         |                  | CWT         | EMULSIFIED ASPHALT                                           | 404.65                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 1       |          |                 |  |        |                 | 1           |                  | LU          | PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)                  | 406.50                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 1      |                 | 1           |                  | LS          | FURNISHING EQUIPMENT FOR DRIVING PILING                      | 504.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 390    |                 | 390         |                  | LF          | STEEL PILING, HP 12 X 74                                     | 505.16                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 2      |                 | 2           |                  | EACH        | DYNAMIC PILE LOADING TEST                                    | 505.45                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 2700    |          |                 |  |        |                 | 2700        |                  | LB          | REINFORCING STEEL, LEVEL I                                   | 507.11                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 15      |          |                 |  |        |                 | 15          |                  | GAL         | WATER REPELLENT, SILANE                                      | 514.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 56     |                 | 56          |                  | LF          | BRIDGE EXPANSION JOINT, ASPHALTIC PLUG                       | 516.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 185    |                 | 185         |                  | SY          | SHEET MEMBRANE WATERPROOFING, SPRAY APPLIED                  | 520.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 56     |                 | 56          |                  | LF          | JOINT SEALER, HOT POURED                                     | 524.11                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 108    |                 | 108         |                  | LF          | BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM                   | 525.335                             |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 1      |                 | 1           |                  | LS          | MAINTENANCE OF STRUCTURES AND APPROACHES                     | 527.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 12     |                 | 12          |                  | EACH        | BEARING DEVICE ASSEMBLY, PLAIN ELASTOMERIC PAD               | 531.16                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 1      |                 | 1           |                  | LS          | PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1)                  | 540.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 1      |                 | 1           |                  | LS          | PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)                  | 540.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 1      |                 | 1           |                  | LS          | PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 1)             | 540.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 1      |                 | 1           |                  | LS          | PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 2)             | 540.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          | 20              |  |        |                 | 20          |                  | HR          | POWER GRADER RENTAL                                          | 608.15                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          | 20              |  |        |                 | 20          |                  | HR          | ALL PURPOSE EXCAVATOR RENTAL, TYPE I                         | 608.25                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          | 20              |  |        |                 | 20          |                  | HR          | TRUCK RENTAL                                                 | 608.37                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          | 20              |  |        |                 | 20          |                  | HR          | LOADER RENTAL, TYPE I                                        | 608.40                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 70      |          |                 |  |        |                 | 70          |                  | MGAL        | DUST CONTROL WITH WATER                                      | 609.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  | 530    |                 | 530         |                  | CY          | STONE FILL, TYPE IV                                          | 613.13                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 48      |          |                 |  |        |                 | 48          |                  | LF          | PRECAST REINFORCED CONCRETE CURB, TYPE B                     | 616.26                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 625     |          |                 |  |        |                 | 625         |                  | LF          | STEEL BEAM GUARDRAIL, GALVANIZED                             | 621.20                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 1       |          |                 |  |        |                 | 1           |                  | EACH        | MANUFACTURED TERMINAL SECTION, TANGENT                       | 621.51                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 5       |          |                 |  |        |                 | 5           |                  | EACH        | ANCHOR FOR STEEL BEAM RAIL                                   | 621.60                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 4       |          |                 |  |        |                 | 4           |                  | EACH        | GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAILING, TL-3  | 621.747                             |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 80      |          |                 |  |        |                 | 80          |                  | HR          | UNIFORMED TRAFFIC OFFICERS                                   | 630.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  | 500     |          |                 |  |        |                 | 500         |                  | HR          | FLAGGERS                                                     | 630.15                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  |        | 1               | 1           |                  | LS          | FIELD OFFICE, ENGINEERS                                      | 631.10                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  |        | 1               | 1           |                  | LS          | TESTING EQUIPMENT, CONCRETE                                  | 631.16                              |       |                                              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  |        |                 |             |                  |             |                                                              |                                     |       | PROJECT NAME: PLYMOUTH                       |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  |        |                 |             |                  |             |                                                              |                                     |       | PROJECT NUMBER: ER BRS 0149(5)               |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  |        |                 |             |                  |             |                                                              |                                     |       | FILE NAME: z11c330.xls PLOT DATE: 11/06/2012 |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  |        |                 |             |                  |             |                                                              |                                     |       | PROJECT LEADER: J. OLUND DRAWN BY: S. MORGAN |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  |        |                 |             |                  |             |                                                              |                                     |       | DESIGNED BY: D. MYERS CHECKED BY: J. OLUND   |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  |        |                 |             |                  |             |                                                              |                                     |       | QUANTITY SHEET #1 SHEET 5 OF 46              |                                |                     |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  |        |                 |             |                  | REVISION    |                                                              | DESCRIPTION                         |       | DATE                                         |                                | TYLIN INTERNATIONAL |  |  |
|                                              |  |  |  |  |  |  |         |          |                 |  |        |                 |             |                  | ADDENDUM #1 |                                                              | CHANGE REINFORCING STEEL TO LEVEL I |       | 11/05/2012                                   |                                |                     |  |  |



# QUANTITY SHEET 2

**TYLIN**INTERNATIONAL



| REVISION    | DESCRIPTION                         | DATE       |
|-------------|-------------------------------------|------------|
| ADDENDUM #1 | CHANGE REINFORCING STEEL TO LEVEL 1 | 11/05/2012 |







STATE OF VERMONT  
AGENCY OF TRANSPORTATION

EARTHWORKS

# EARTHWORKS

[illegible]



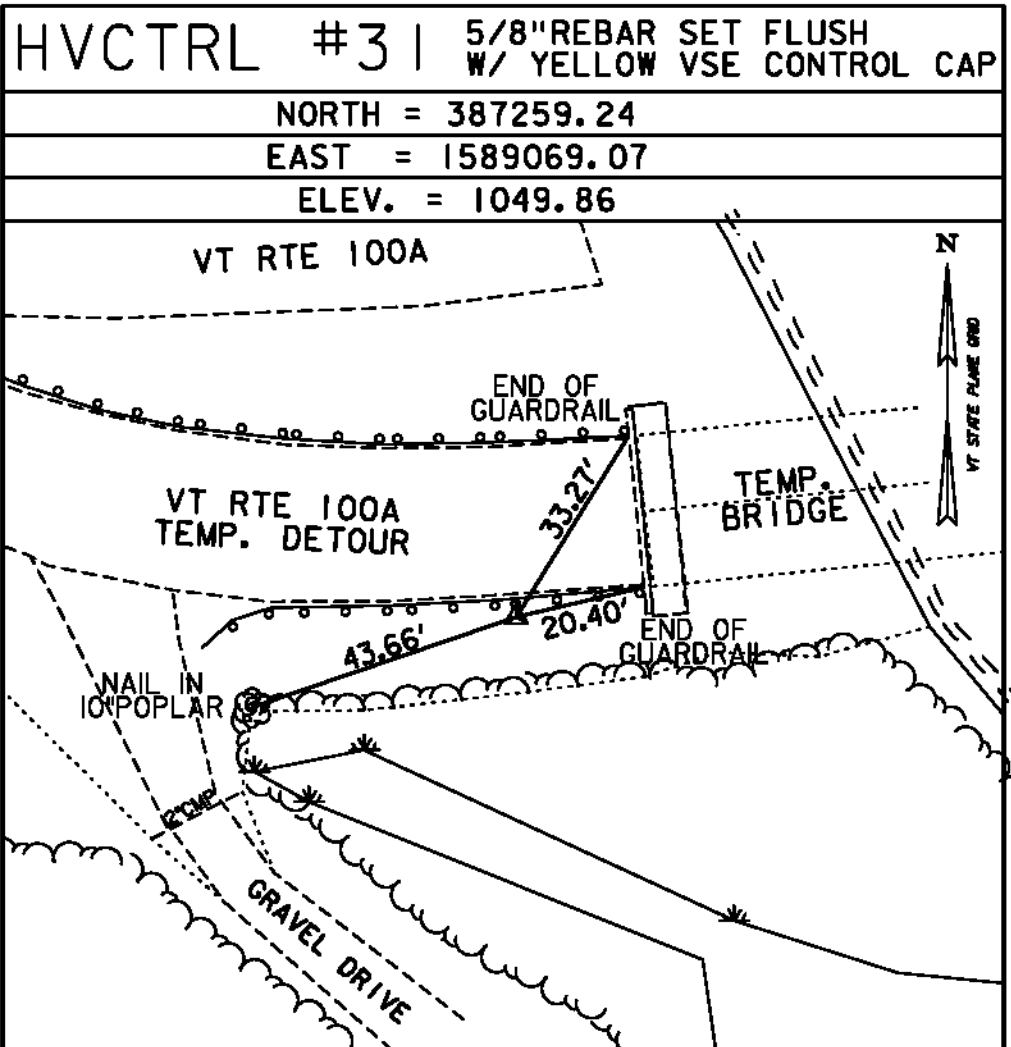
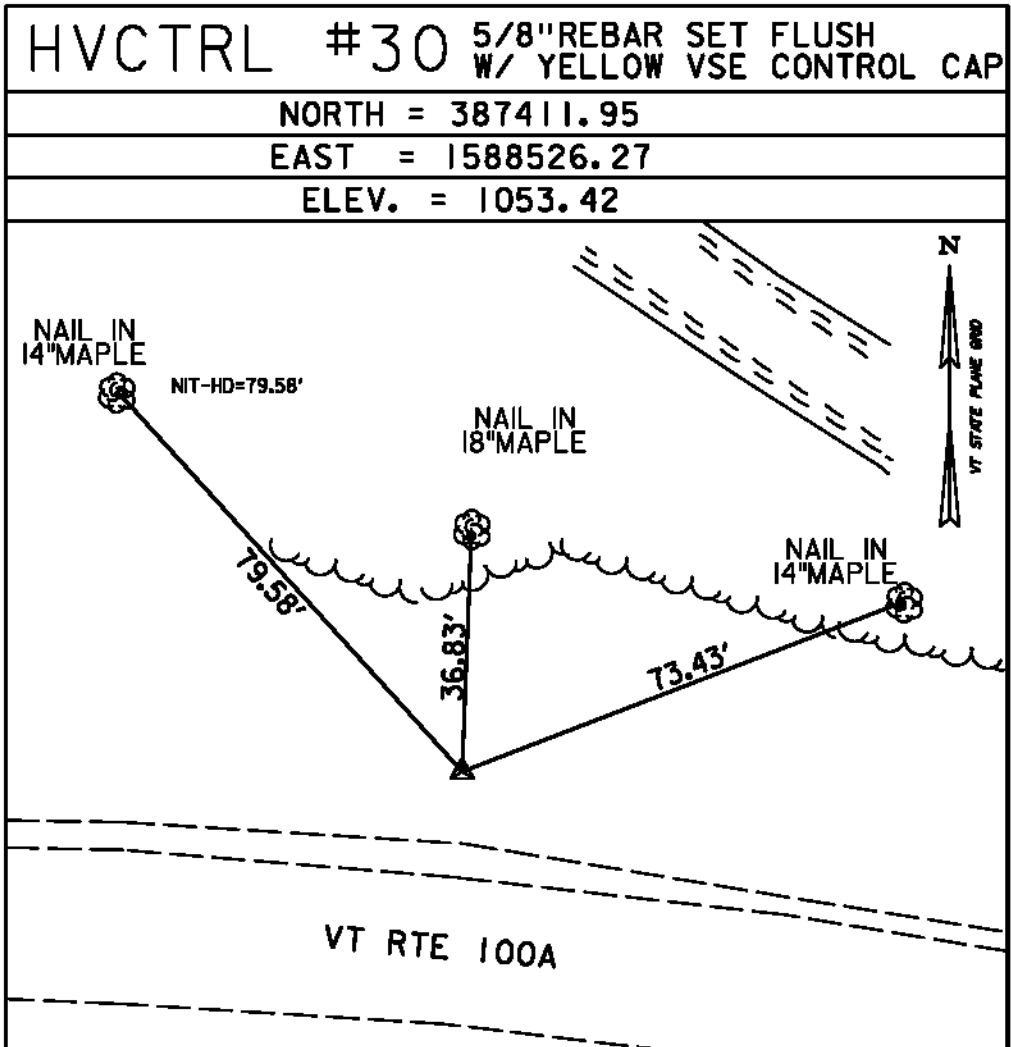
GPS CONTROL POINTS

DANBY CORS ARP

PID DL2318  
N = 310162.27  
E = 1508688.75  
ELLIP HEIGHT = 636.40

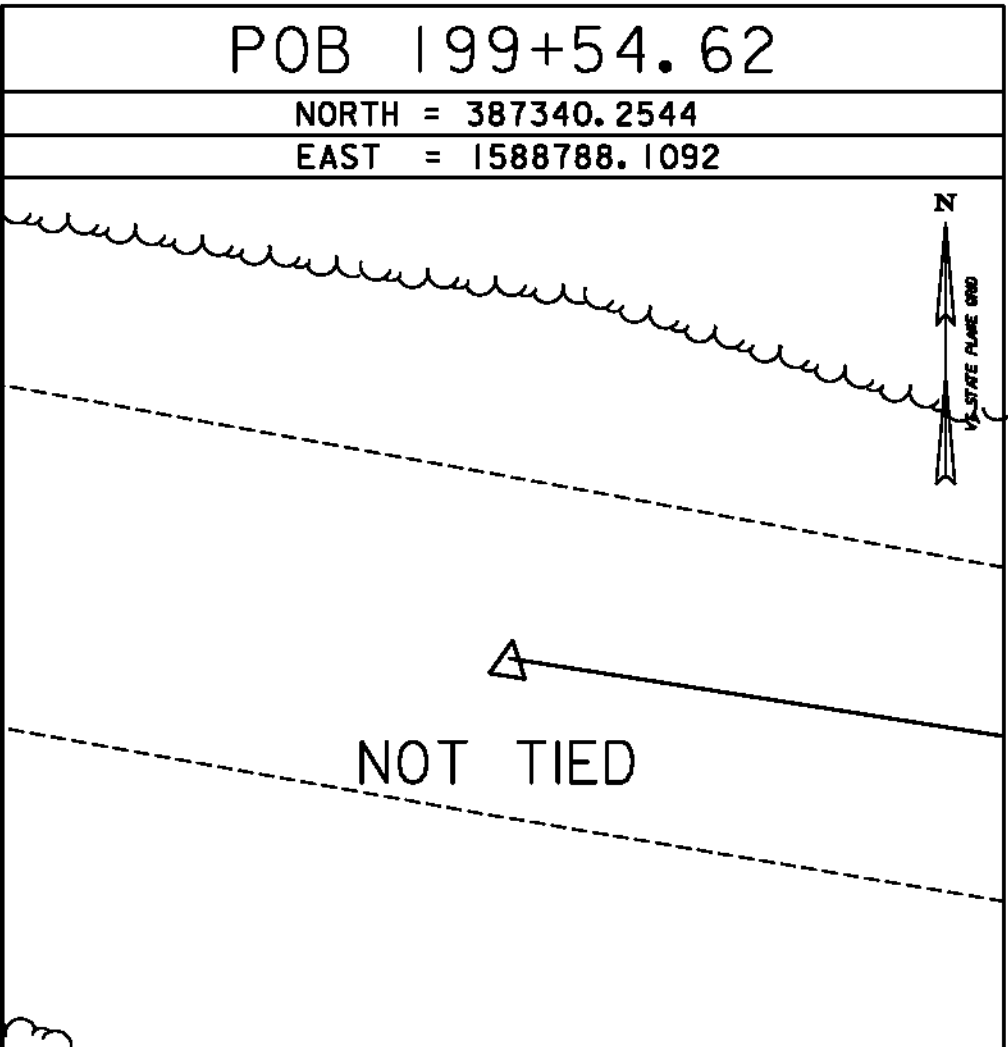
STATION IS A GPS CONTINUOUSLY OPERATING REFERENCE STATION. STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA. LOCATED AT THE DANBY, VERMONT CURRIER MEMORIAL SCHOOL, THE MONUMENT IS ATTACHED TO A TWO STORY CONCRETE & BRICK BUILDING WITH AN 8 FT CONCRETE FOUNDATION BUILT IN 1966. THE MAST IS A 1.75 INCH DIA. GALV PIPE THAT IS 108 INCHES LONG. THE MAST IS ATTACHED TO A STEEL MOUNTING FRAME WITH THREE ATTACHMENTS CONSISTING OF 3/8 INCH SS THROUGH BOLTS. THE MOUNTING FRAME IS ATTACHED TO THE BUILDING USING 8 ATTACHMENT POINTS. ALL 8 ATTACHMENTS ARE THROUGH BOLTED AND CONSIST OF 1/2 INCH SS THREADED ROD AND NUTS.

TRAVERSE TIES

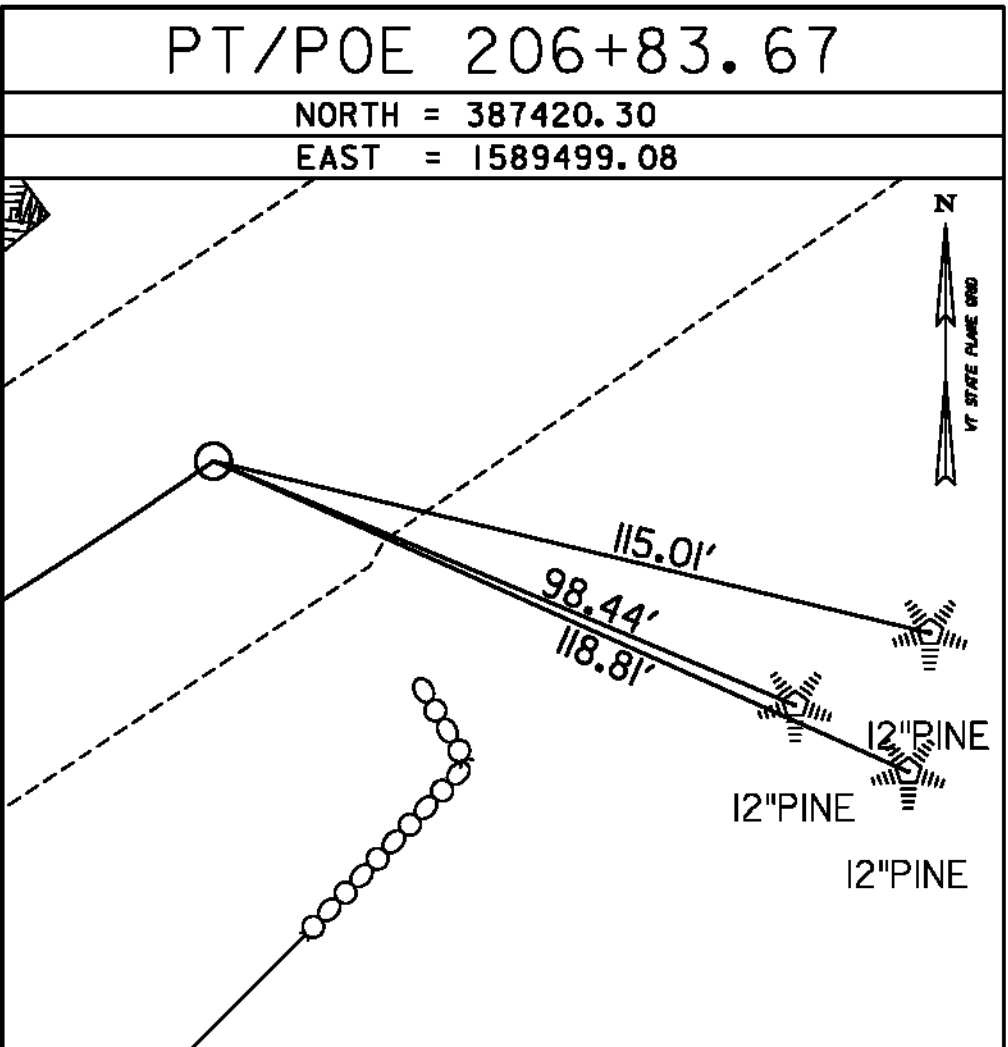
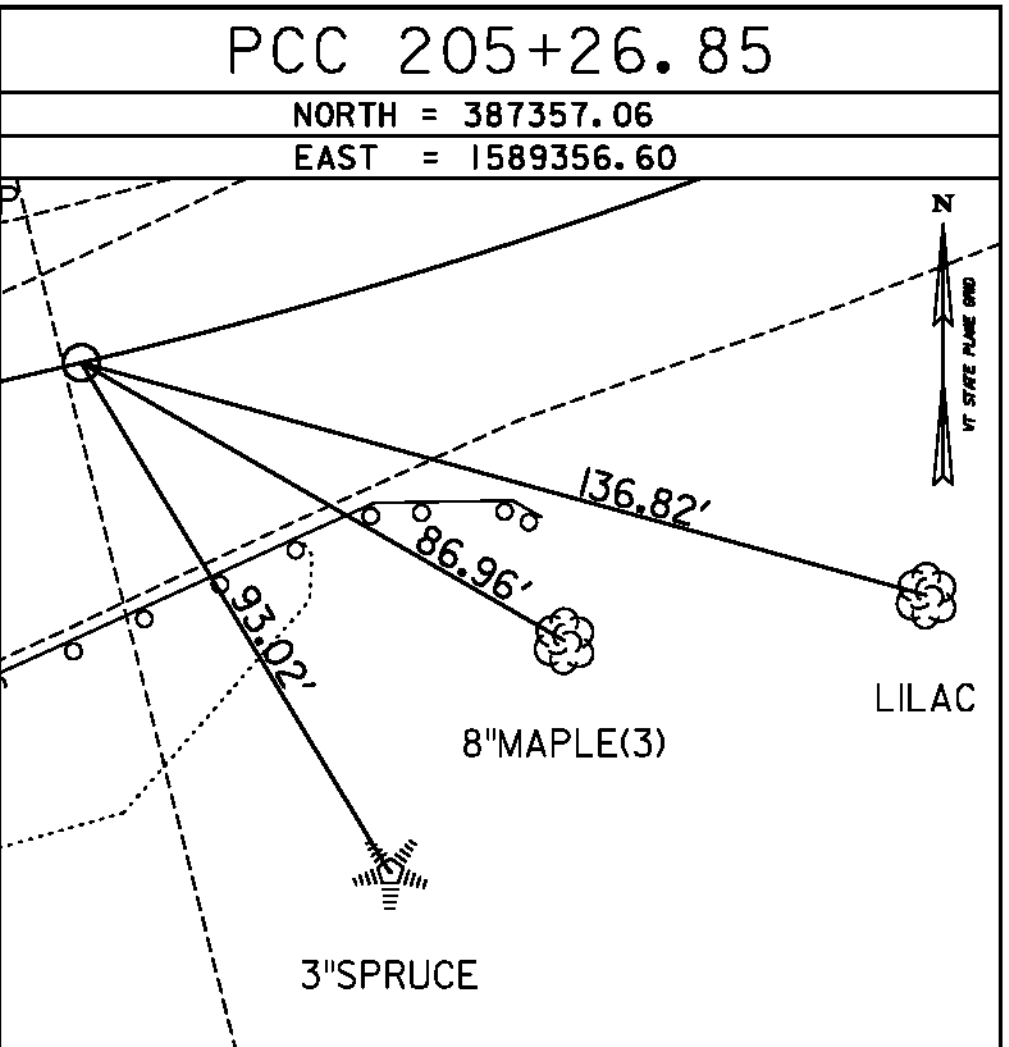
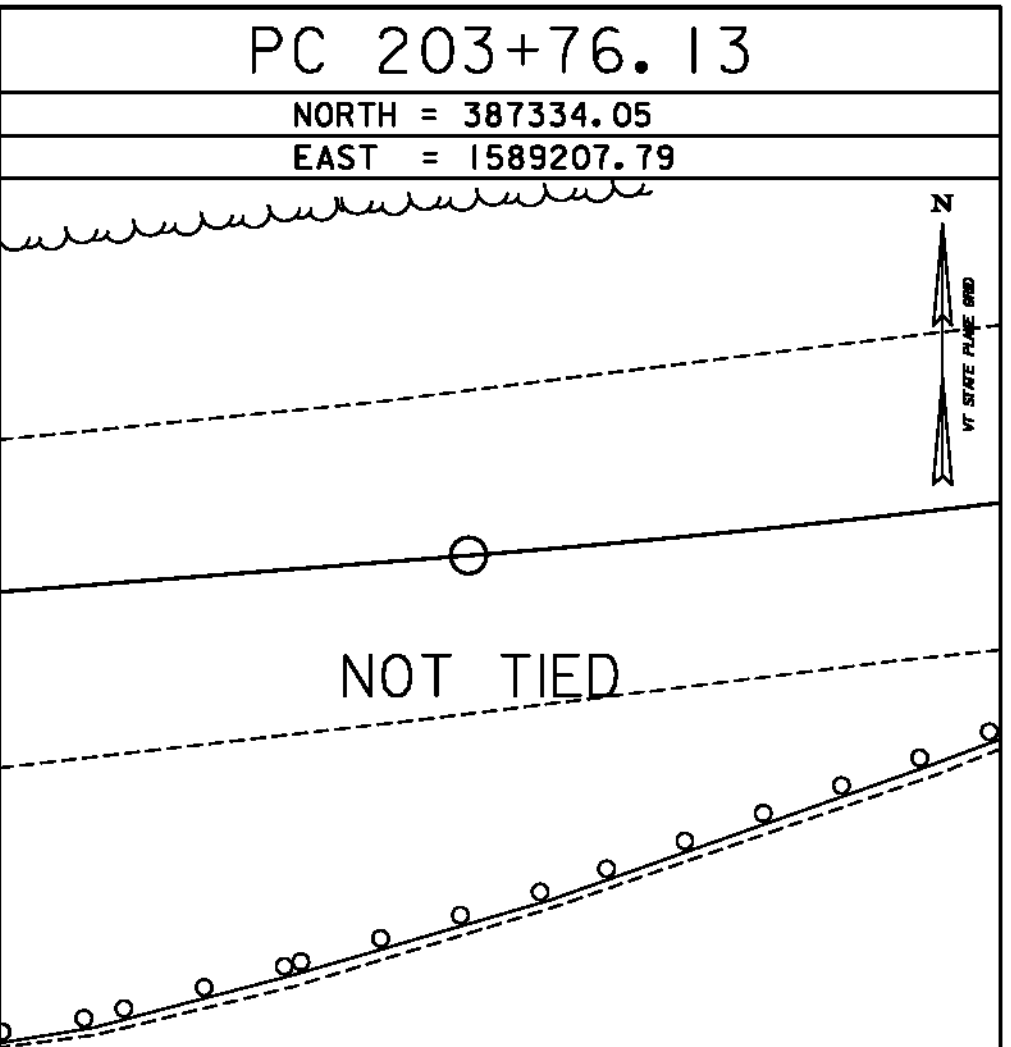
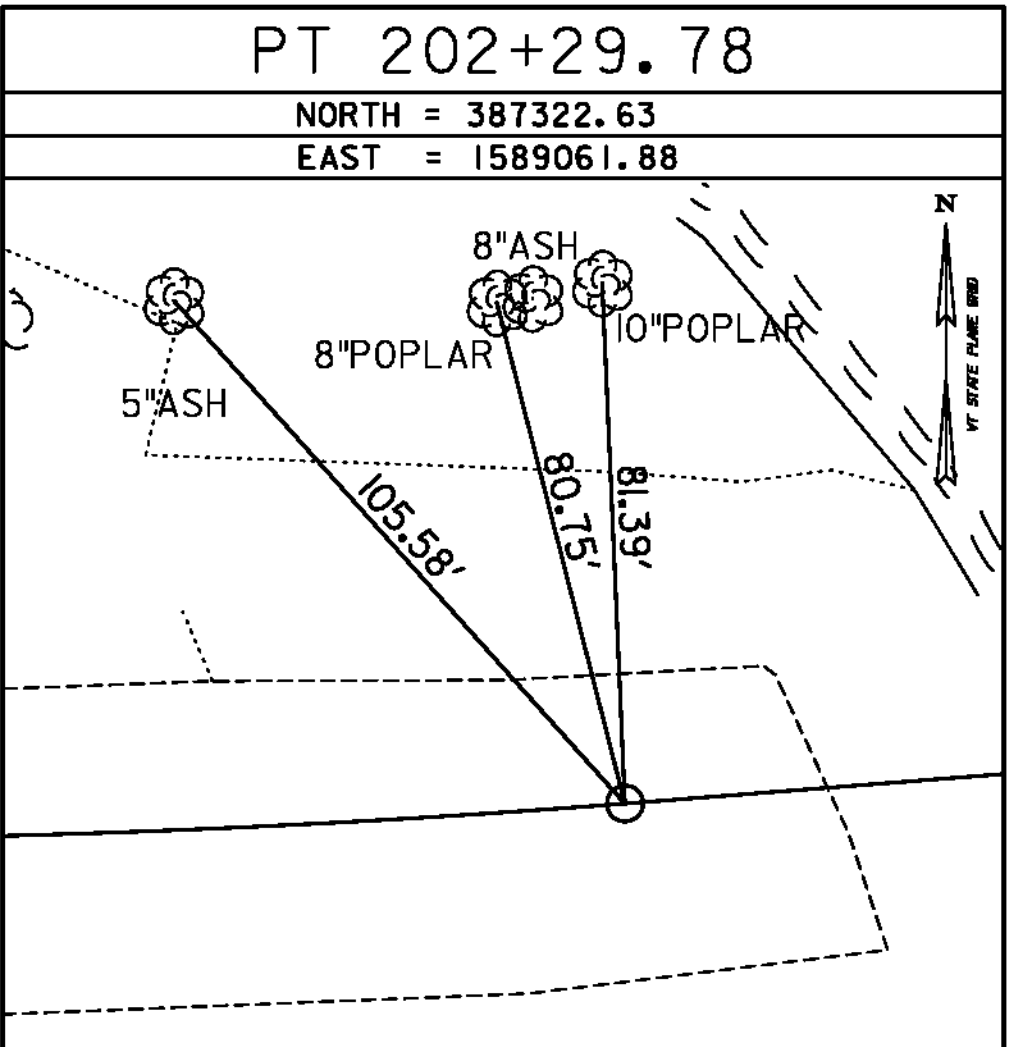
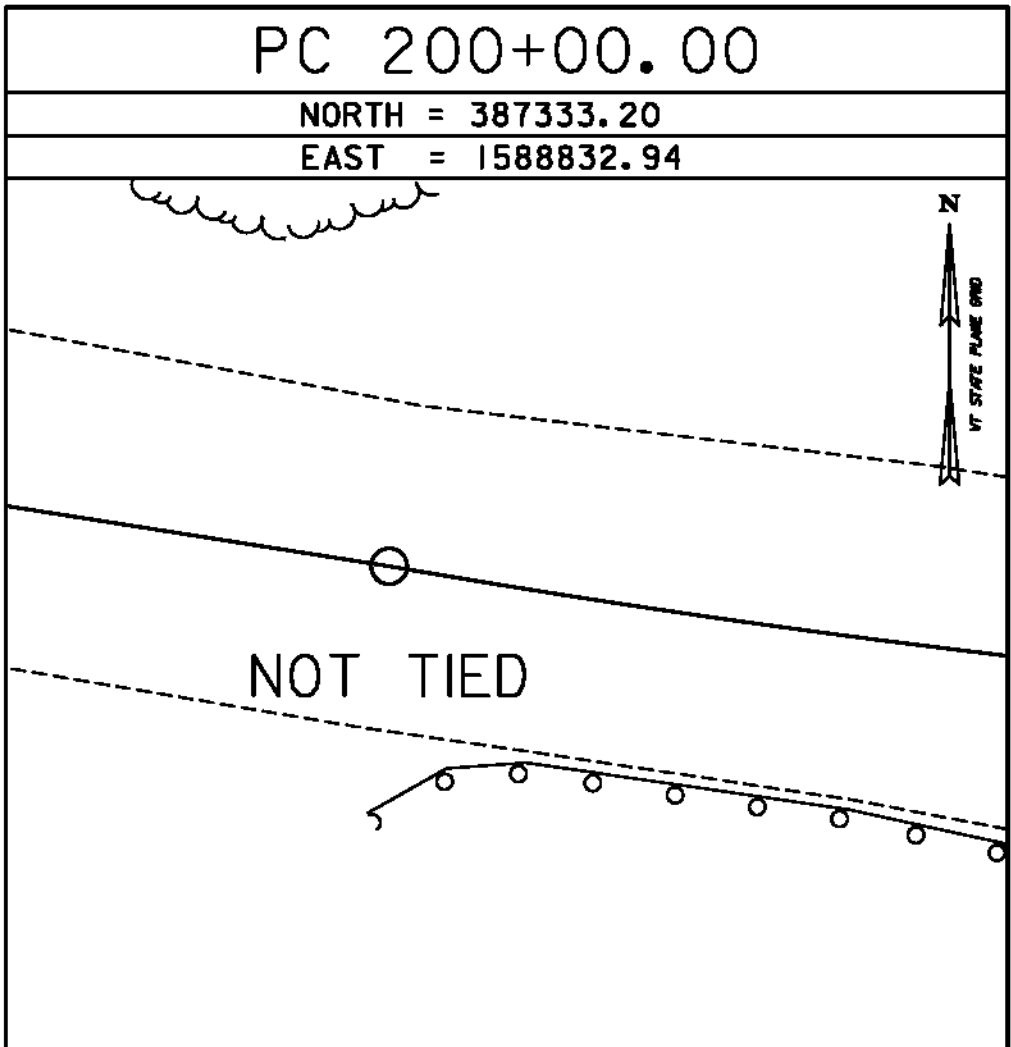


\* MAIN TRAVERSE COMPLETED: DECEMBER 13, 2011 BY VSE, T. CATTANEO-PC, T. COMSTOCK

ALIGNMENT TIES



ALIGNMENT TIES



|            |                     |
|------------|---------------------|
| DATUM      |                     |
| VERTICAL   | NAVD 88(GEIOD09) FT |
| HORIZONTAL | NAD 83(CORS) 6FT    |
| ADJUSTMENT | LSQ                 |

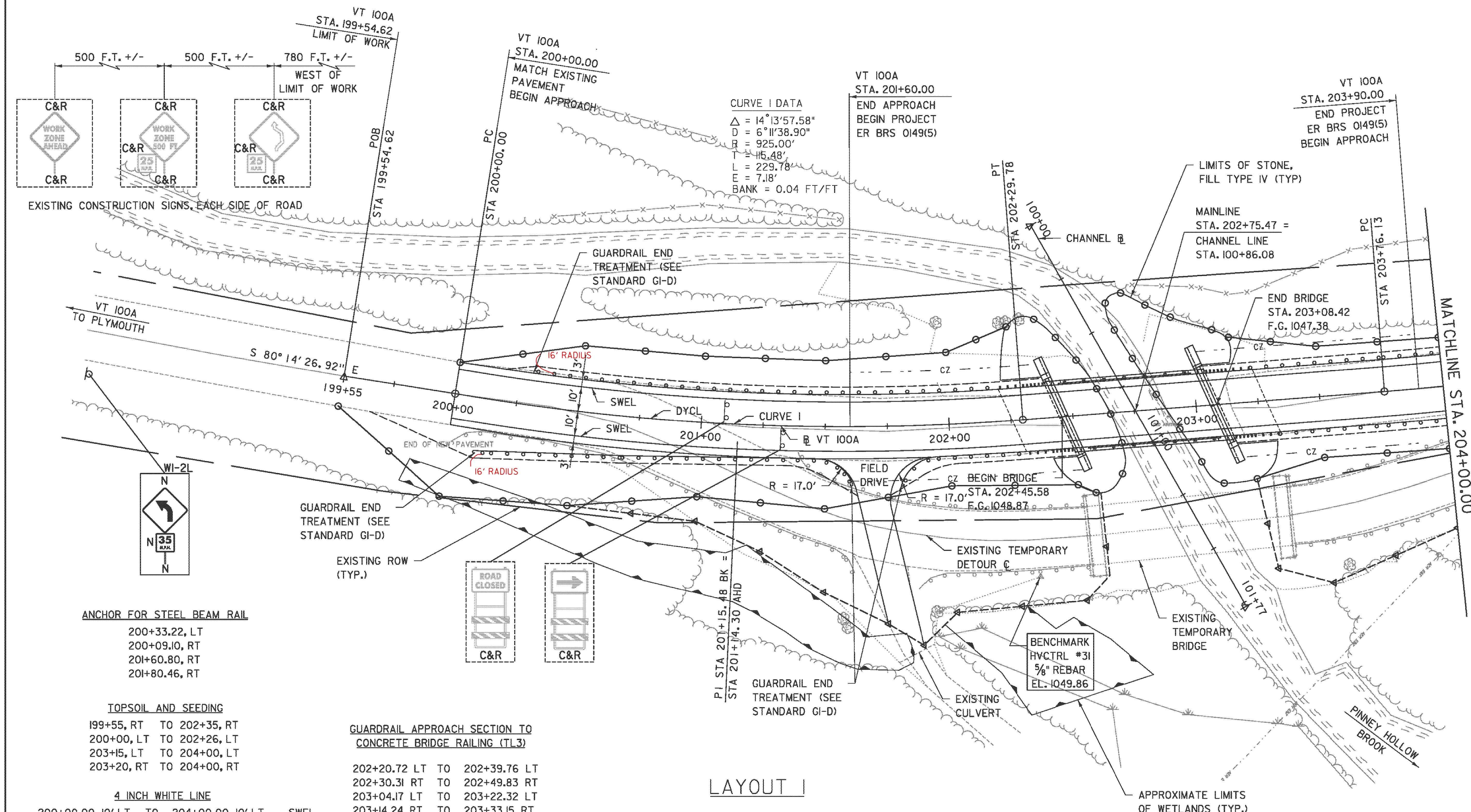
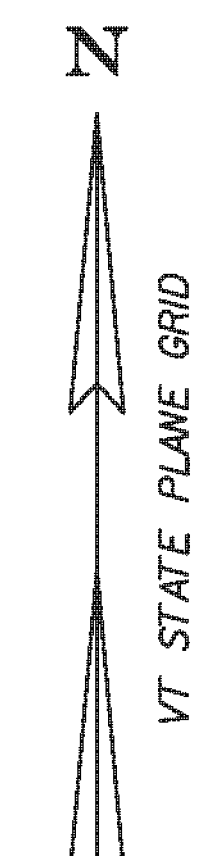


TYLIN INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

|                          |                       |
|--------------------------|-----------------------|
| FILE NAME: zllc330+1.dgn | PLOT DATE: 9/20/2012  |
| PROJECT LEADER: J. OLUND | DRAWN BY: T. KELLEY   |
| DESIGNED BY: A. GREENLAW | CHECKED BY: D. BRYANT |
| TIE SHEET                | SHEET 10 OF 46        |





**ANCHOR FOR STEEL BEAM RAIL**

- 200+33.22, LT
- 200+09.10, RT
- 201+60.80, RT
- 201+80.46, RT

**TOPSOIL AND SEEDING**

- 199+55, RT TO 202+35, RT
- 200+00, LT TO 202+26, LT
- 203+15, LT TO 204+00, LT
- 203+20, RT TO 204+00, RT

**4 INCH WHITE LINE**

- 200+00.00, 10' LT TO 204+00.00, 10' LT - SWEL
- 200+00.00, 10' RT TO 204+00.00, 10' RT - SWEL

**4 INCH YELLOW LINE**

- 200+00.00, CL TO 204+00.00, CL - DYCL

**CONSTRUCT DRIVE**

- 201+62.60, RT - 12' FIELD DRIVE

**GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAILING (TL3)**

- 202+20.72 LT TO 202+39.76 LT
- 202+30.31 RT TO 202+49.83 RT
- 203+04.17 LT TO 203+22.32 LT
- 203+14.24 RT TO 203+33.15 RT

**STEEL BEAM GUARDRAIL, GALVANIZED**

- 200+33.22 LT TO 202+20.72 LT
- 200+09.10 RT TO 201+60.80 RT
- 201+80.46 RT TO 202+30.31 RT
- 203+22.32 LT TO 204+00.00 LT
- 203+33.15 RT TO 204+00.00 RT

**PRECAST REINFORCED CONCRETE CURB, TYPE B**

- 202+27.76 LT TO 202+39.76 LT
- 202+37.83 RT TO 202+49.83 RT
- 203+04.17 LT TO 203+16.17 LT
- 203+14.24 RT TO 203+26.24 RT

203+84 LT

**LAYOUT I**

**SIGN LEGEND:**

- C&R: CONSTRUCTION, RETURN
- R: REMOVE
- RET: RETAIN
- N: NEW

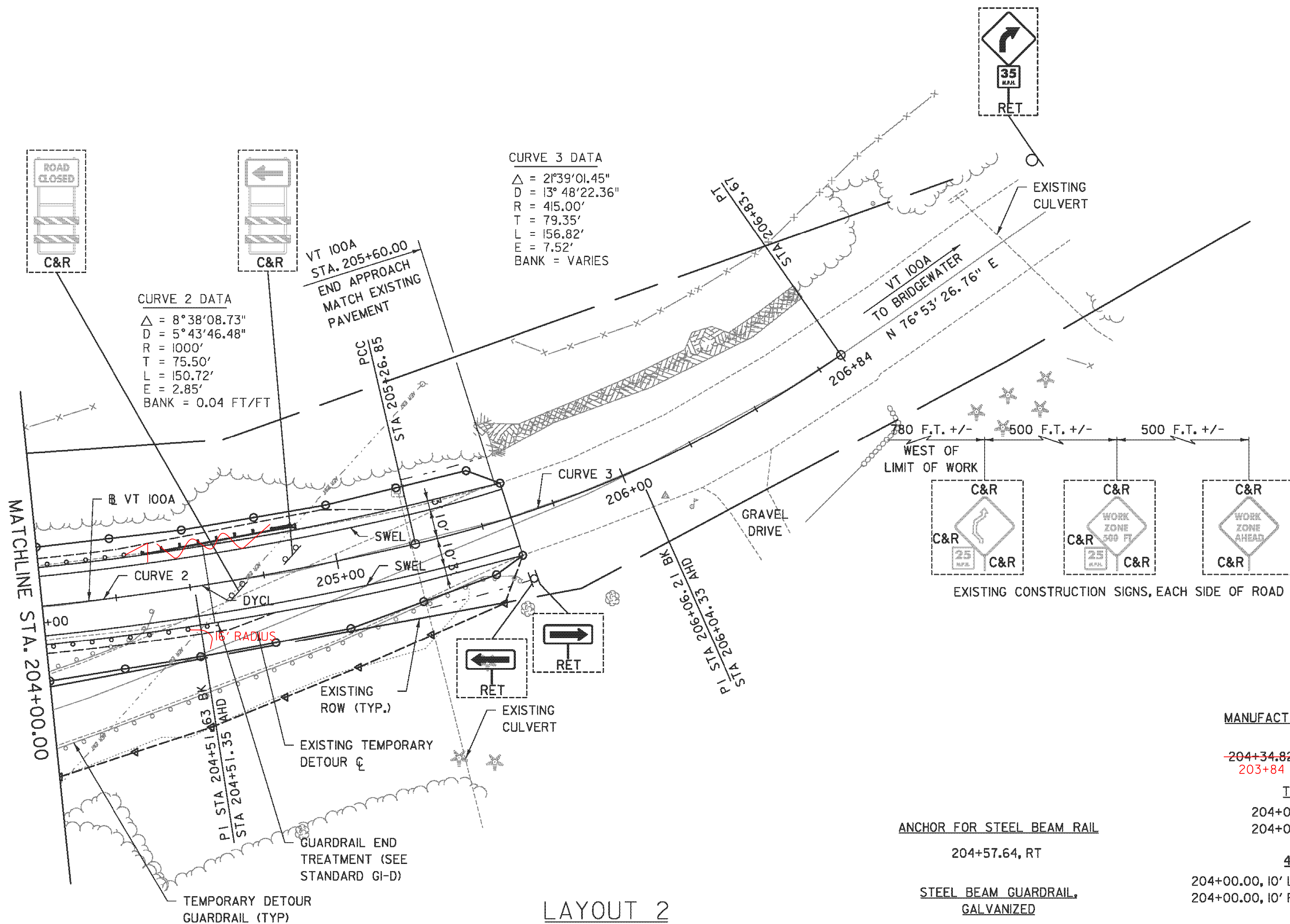
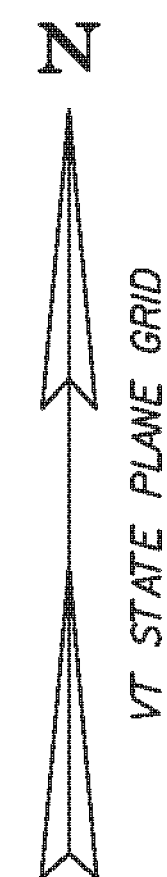
SCALE 1" = 20' - 0"

TYLIN INTERNATIONAL

EXISTING TEMPORARY ACROW BRIDGE  
80' SINGLE SPAN STEEL TRUSS  
ON SPREAD FOOTING, STUB ABUTMENTS  
24' BETWEEN RAILS  
STEEL TRUSS OWNED BY STATE

|                 |                |                 |                     |             |           |
|-----------------|----------------|-----------------|---------------------|-------------|-----------|
| PROJECT NAME:   | PLYMOUTH       | FILE NAME:      | zllc330bdr_pl01.dgn | PLOT DATE:  | 9/20/2012 |
| PROJECT NUMBER: | ER BRS 0149(5) | PROJECT LEADER: | J. OLUND            | DRAWN BY:   | S. MORGAN |
|                 |                | DESIGNED BY:    | A. GREENLAW         | CHECKED BY: | J. HOWE   |
|                 |                | LAYOUT I        |                     | SHEET II    | OF 46     |





CURVE 3 DATA  
 $\Delta = 21^{\circ}39'01.45''$   
 $D = 13^{\circ}48'22.36''$   
 $R = 415.00'$   
 $T = 79.35'$   
 $L = 156.82'$   
 $E = 7.52'$   
BANK = VARIES

CURVE 2 DATA  
 $\Delta = 8^{\circ}38'08.73''$   
 $D = 5^{\circ}43'46.48''$   
 $R = 1000'$   
 $T = 75.50'$   
 $L = 150.72'$   
 $E = 2.85'$   
BANK = 0.04 FT/FT

EXISTING CONSTRUCTION SIGNS, EACH SIDE OF ROAD

WEST OF LIMIT OF WORK

500 F.T. +/-

500 F.T. +/-

500 F.T. +/-

MANUFACTURED TERMINAL SECTION,  
TANGENT

~~204+34.82, LT TO 204+88.82, LT~~  
~~203+84 LT TO 204+39 LT~~

TOPSOIL AND SEED

204+00, LT TO 205+60, LT  
204+00, RT TO 205+60, RT

4 INCH WHITE LINE

204+00.00, 10' LT TO 205+60.00, 10' LT - SWEL  
204+00.00, 10' RT TO 205+60.00, 10' RT - SWEL

4 INCH YELLOW LINE

204+00.00, CL TO 205+60.00, CL - DYCL

ANCHOR FOR STEEL BEAM RAIL

204+57.64, RT

STEEL BEAM GUARDRAIL,  
GALVANIZED

~~204+00.00 LT TO 204+34.82 LT~~  
204+00.00 RT TO 204+57.64 RT

SIGN LEGEND:

C&R: CONSTRUCTION, RETURN  
R: REMOVE  
RET: RETAIN  
N: NEW

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

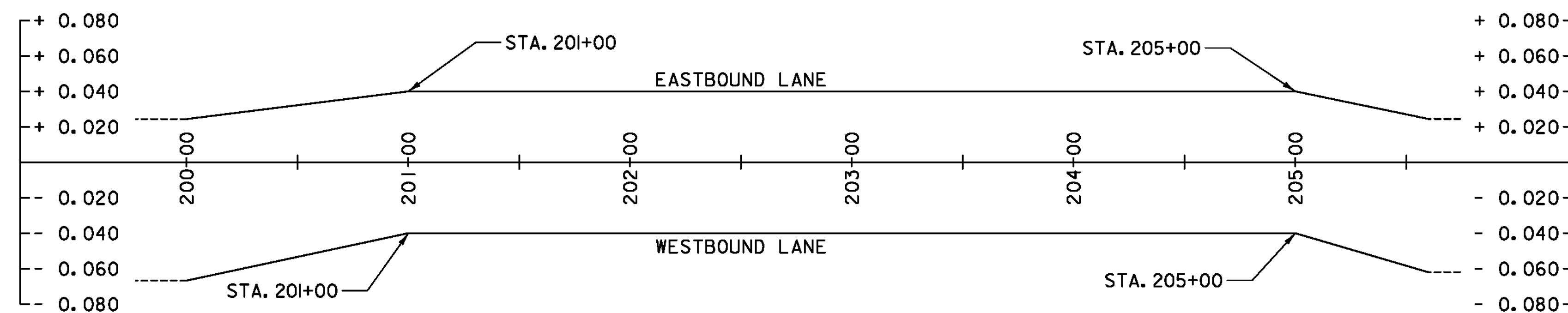
TYLIN INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

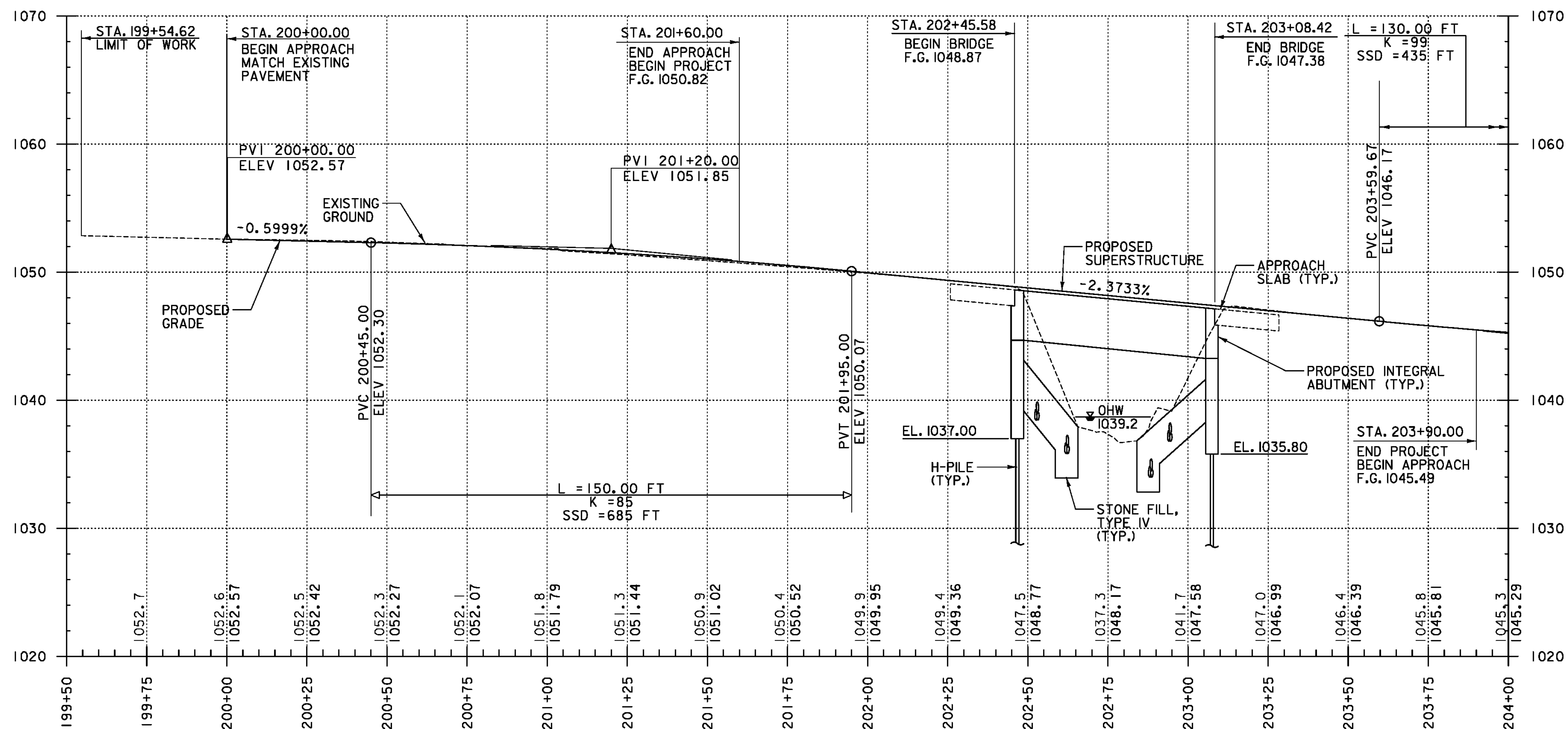
FILE NAME: zllc330bdr\_pl.02.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: A. GREENLAW  
LAYOUT 2

PLOT DATE: 9/20/2012  
DRAWN BY: S. MORGAN  
CHECKED BY: J. HOWE  
SHEET 12 OF 46

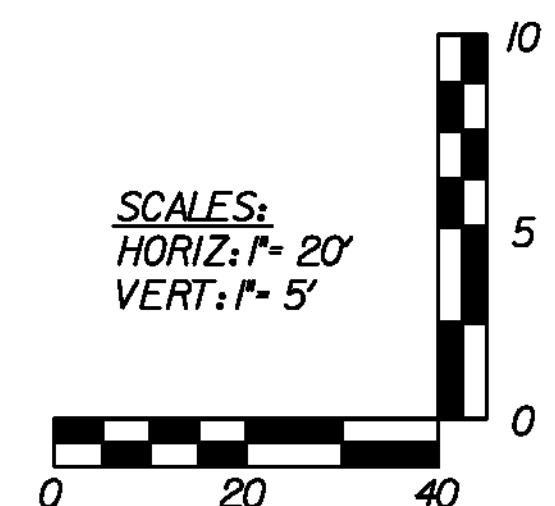




BANKING DIAGRAM



PROFILE - VT 100A



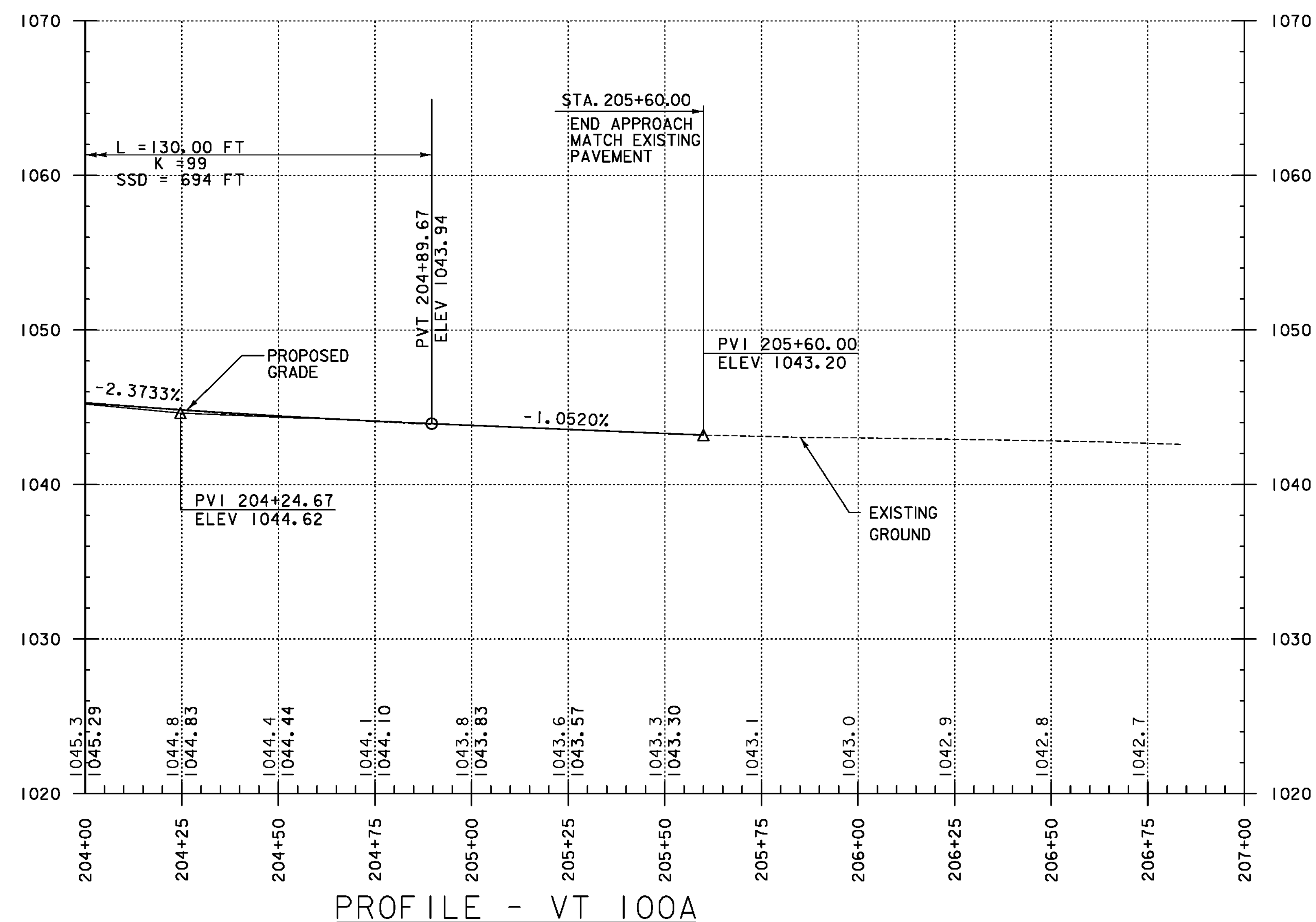
THE GRADES SHOWN TO THE NEAREST TENTH ARE THE EXISTING GROUND ELEVATIONS ALONG THE PROPOSED ALIGNMENT

THE GRADES SHOWN TO THE NEAREST HUNDRETH ARE THE PROPOSED GRADES FOR THE NEW ALIGNMENT

TYLINTERNATIONAL

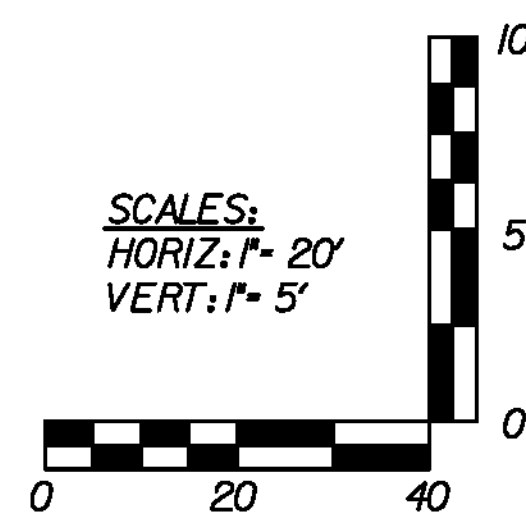
|                 |                       |
|-----------------|-----------------------|
| PROJECT NAME:   | PLYMOUTH              |
| PROJECT NUMBER: | ER BRS 0149(5)        |
| FILE NAME:      | zllc330bdr_pro_01.dgn |
| PROJECT LEADER: | J. OLUND              |
| DESIGNED BY:    | A. GREENLAW           |
| PROFILE         | 1                     |
| PLOT DATE:      | 9/20/2012             |
| DRAWN BY:       | S. MORGAN             |
| CHECKED BY:     | J. HOWE               |
| SHEET           | 13 OF 46              |





THE GRADES SHOWN TO THE NEAREST TENTH ARE THE EXISTING  
GROUND ELEVATIONS ALONG THE PROPOSED ALIGNMENT

THE GRADES SHOWN TO THE NEAREST HUNDRETH ARE THE PROPOSED  
GRADES FOR THE NEW ALIGNMENT



**TYLIN** INTERNATIONAL

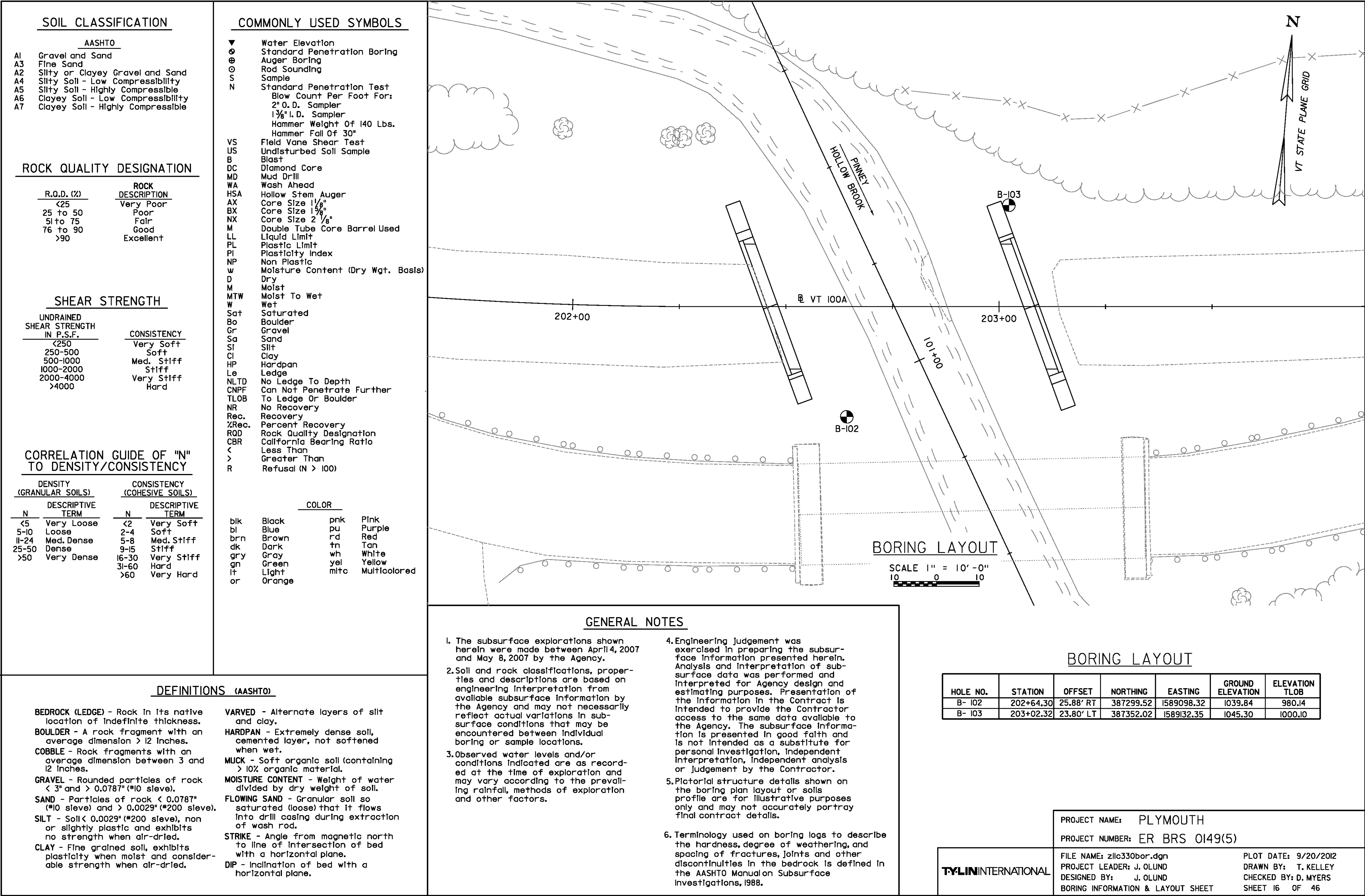
PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

|                                  |                      |
|----------------------------------|----------------------|
| FILE NAME: zllc330bdr_pro_02.dgn | PLOT DATE: 9/20/2012 |
| PROJECT LEADER: J. OLUND         | DRAWN BY: S. MORGAN  |
| DESIGNED BY: A. GREENLAW         | CHECKED BY: J. HOWE  |
| PROFILE 2                        | SHEET 14 OF 46       |



| STATE OF VERMONT<br>AGENCY OF TRANSPORTATION                                                                                                                                                 |                                                                                   |                    | TRAFFIC SIGN SUMMARY SHEET |                |                      |     |              |             |               |                    |                 |         |       |              |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------|----------------------------|----------------|----------------------|-----|--------------|-------------|---------------|--------------------|-----------------|---------|-------|--------------|--------------------------------|------|------------------|-----|--------|---------------|--------|-----|-----|-----------------|------------------------|-----|-----|-----------|---------|-------------|--------------|--------------|-------|------------------------------|-------------------------|-------|
| MILEMARKER,<br>STATION,<br>OR<br>SIGN NUMBER                                                                                                                                                 | SIGN<br>LEGEND                                                                    | SIGN<br>DIMENSIONS |                            |                | NEW & SALVAGED SIGNS |     |              |             | EXIST<br>POST | NO.<br>OF<br>POSTS | NEW SIGN POSTS  |         |       |              |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           | REMARKS | SIGN DETAIL |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    | FLANGED CHANNEL |         |       | SQUARE STEEL |                                |      | TUBULAR ALUMINUM |     |        | TUBULAR STEEL |        |     |     | W-SHAPE STEEL   |                        |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   | E<br>A             | WIDTH<br>(In)              | HEIGHT<br>(In) | "A"                  | "B" | SALV<br>SIGN | SALV<br>TIS |               |                    | RETAIN          | SALVAGE | lb/ft |              |                                | In   |                  |     | ANCHOR | STEEL         | Ø (In) |     |     | Ø (In)          |                        |     |     | FTG. SIZE |         | WEIGHT      | POST<br>SIZE | SIGN<br>NAME | ROUTE | DETAIL<br>ON SHEET<br>NUMBER | STD.<br>SHEET<br>NUMBER |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         | 1.12  | 2.0          | 3.0                            | 1.75 | 2.0              | 2.5 |        |               | 3.0    | 4.0 | MOD | FOUND-<br>ATION | 3.0                    | 3.5 | 4.0 | 5.0       |         |             |              |              |       |                              |                         | 24"   |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               | OPTION ITEMS       |                 |         |       |              |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
| APPROX.<br>770 FT WEST<br>OF LIMIT OF<br>WORK, RT.                                                                                                                                           |  | 1                  | 30                         | 30             | 6.25                 |     |              |             |               | 1                  |                 |         |       |              | "X"                            |      | 1                |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       | W1-2L                        |                         | E-151 |
| APPROX.<br>770 FT WEST<br>OF LIMIT OF<br>WORK, RT.                                                                                                                                           |  | 1                  | 18                         | 18             | 2.25                 |     |              |             |               |                    |                 |         |       |              |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       | W13-1P (MOUNT WITH W1-2L)    |                         | E-155 |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
| FINAL POST LENGTHS ARE TO BE DETERMINED<br>IN THE FIELD. POST SIZES ARE COMPUTED<br>BASED ON INFORMATION FURNISHED ON THE<br>STANDARD SHEETS AND THE VTRANS "SIGN<br>POST DESIGN GUIDELINE." |                                                                                   |                    |                            |                | 8.5                  |     |              |             |               |                    | FT              | FT      | FT    | FT           | FT                             | FT   |                  | EA  | LB     | LB            | LB     |     | LB  | LB              | LB                     | LB  |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    | FT              |         |       | FT           |                                |      |                  | LB  |        |               |        | EA. |     |                 | LB                     |     |     |           | EA.     | EA.         | LB           |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                | TOTALS               | SF  | SF           | EA.         | SF            |                    | FT              |         |       | FT           |                                |      |                  | LB  |        |               |        | EA. |     |                 | LB                     |     |     |           | EA.     | EA.         | LB           |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      | 8.5 |              |             |               |                    |                 |         |       | 19           |                                |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              | PROJECT NAME: PLYMOUTH         |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              | PROJECT NUMBER: ER BRS 0149(5) |      |                  |     |        |               |        |     |     |                 |                        |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              | FILE NAME: zllc330ss.dgn       |      |                  |     |        |               |        |     |     |                 | PLOT DATE: 9/20/2012   |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              | PROJECT LEADER: J. OLUND       |      |                  |     |        |               |        |     |     |                 | DRAWN BY: J. BLANCHARD |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              | DESIGNED BY: A. GREENLAW       |      |                  |     |        |               |        |     |     |                 | CHECKED BY: D. BRYANT  |     |     |           |         |             |              |              |       |                              |                         |       |
|                                                                                                                                                                                              |                                                                                   |                    |                            |                |                      |     |              |             |               |                    |                 |         |       |              | TRAFFIC SIGN SUMMARY SHEET     |      |                  |     |        |               |        |     |     |                 | SHEET 15 OF 46         |     |     |           |         |             |              |              |       |                              |                         |       |









STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
MATERIALS & RESEARCH SECTION  
SUBSURFACE INFORMATION

BORING NUMBER: B-102  
SHEET 1 of 1  
DATE STARTED: 4/20/07  
DATE COMPLETED: 5/08/07

PROJECT NAME: PLYMOUTH  
SITE NAME: VT 100A  
STATION: 202+64.30  
OFFSET: 25.88' RT  
VTSPG: N 387299.52 ft E 1589098.32 ft

PROJECT NUMBER: BRS 0149(3)S  
SITE NUMBER: BR-8  
GROUND ELEVATION: 1039.84 ft  
GROUNDWATER DEPTH: 5.3 ft 5/09/07  
PROJECT PIN NUMBER: 84E057

BORING CREW  
CREW CHIEF: GARROW  
DRILLER: GARROW  
LOGGER: CARRIERE

BORING RIG: LARGE SKID RIG w/AUTO HAMMER  
BORING TYPE: WASH BORE  
SAMPLE TYPE: SPLIT BARREL  
CHECKED BY: CAA

Bottom of Abut. #1  
Elev. = 1037.00

Approx. Pile Tip @ Abut. #1  
Elev. 979.8

| DEPTH<br>(ft) | SYMBOL | CLASSIFICATION OF MATERIALS<br>(Description)                                                                                                                                                                                                                        | BLOWS<br>PER<br>FOOT | M.C.<br>(%) | GRAVEL<br>(%) | SAND<br>(%)  | FINES<br>(%)           |
|---------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------|---------------|--------------|------------------------|
|               |        |                                                                                                                                                                                                                                                                     | RUN                  | REC<br>(%)  | RQD<br>(%)    | Dip<br>(deg) | Drill Rate<br>(min/ft) |
|               |        | A-1-b, GrSa with root and wood material., brn, Moist, Rec. = 1.4 ft                                                                                                                                                                                                 | 4                    | 38.6        | 30.3          | 56.1         | 13.6                   |
|               |        | NXDC, Boulders, Cleaned out casing., 3.5 ft - 4.5 ft                                                                                                                                                                                                                |                      |             |               |              |                        |
|               |        | NXDC, Boulders, Cleaned out casing., 4.5 ft - 6.0 ft                                                                                                                                                                                                                |                      |             |               |              |                        |
| 10            |        | No Sample, 10.0 ft - 12.0 ft                                                                                                                                                                                                                                        | 12                   |             |               |              |                        |
|               |        | A-1-b, SaGr, brn-gry, Moist, Rec. = 1.0 ft                                                                                                                                                                                                                          | 44                   | 12.1        | 51.1          | 38.3         | 10.6                   |
| 20            |        | A-2-4, SiGrSa, brn, Moist, Rec. = 1.8 ft                                                                                                                                                                                                                            | 11                   | 15.8        | 22.2          | 57.0         | 20.8                   |
|               |        | NXDC, Boulders, Cleaned out casing., 24.3 ft - 25.0 ft                                                                                                                                                                                                              |                      |             |               |              |                        |
|               |        | A-1-b, GrSa, gry-brn, Moist, Rec. = 1.7 ft                                                                                                                                                                                                                          | 43                   | 13.0        | 38.1          | 43.3         | 18.6                   |
| 30            |        | NXDC, Boulders, Cleaned out casing., 29.1 ft - 30.0 ft                                                                                                                                                                                                              |                      |             |               |              |                        |
|               |        | No Sample, 30.0 ft - 32.0 ft, Used drilling mud to advance casing, Flowing sand.                                                                                                                                                                                    | 24                   |             |               |              |                        |
| 17.4          |        | A-4, SaSi, brn, Moist, Rec. = 0.4 ft                                                                                                                                                                                                                                | R                    | 23.9        | 1.0           | 45.8         | 53.2                   |
|               |        | A-1-b, SiSaGr, brn, Moist, Rec. = 1.0 ft                                                                                                                                                                                                                            |                      | 11.2        | 42.8          | 36.7         | 20.5                   |
| 40            |        | NXDC, Boulders, Cleaned out casing., 37.5 ft - 50.0 ft, Sleeved 4.5" casing to 3.5" casing.                                                                                                                                                                         |                      |             |               |              |                        |
| 50            |        | A-1-b, GrSa, gry-brn, Moist, Rec. = 1.2 ft                                                                                                                                                                                                                          | 80                   | 13.5        | 32.4          | 50.2         | 17.4                   |
|               |        | BXDC, Boulders, Cleaned out casing., 52.5 ft - 59.51 ft                                                                                                                                                                                                             |                      |             |               |              |                        |
|               |        | Top of Bedrock @ 59.7 ft                                                                                                                                                                                                                                            |                      |             |               |              |                        |
| 60            |        | Gray, Dolomite, with numerous highly weathered calcite veins along jointing. Dolomite is unweathered while the calcite joint infilling is severely weathered. Poor competency. Massively bedded. No discernable dip., Hard, BXMDC, 59.7 ft - 60.7 ft, Rec. = 0.3 ft | 1                    | 30          | 0             |              | 15                     |
|               |        |                                                                                                                                                                                                                                                                     | 2                    | 100         | 0             |              | 10                     |
|               |        |                                                                                                                                                                                                                                                                     | 3                    | 100         | 16            |              | 12                     |
|               |        |                                                                                                                                                                                                                                                                     |                      |             |               |              | 16                     |
|               |        | Gray, Dolomite, with numerous highly weathered calcite veins along jointing. Dolomite is unweathered while the calcite joint infilling is severely weathered. Poor competency. Massively bedded. No discernable dip., Hard, BXMDC, 60.7 ft - 63.4 ft, Rec. = 2.7 ft |                      |             |               |              | 8                      |
| 70            |        |                                                                                                                                                                                                                                                                     |                      |             |               |              | 10                     |
|               |        |                                                                                                                                                                                                                                                                     |                      |             |               |              | 10                     |
|               |        |                                                                                                                                                                                                                                                                     |                      |             |               |              | 14                     |
|               |        |                                                                                                                                                                                                                                                                     |                      |             |               |              | 14                     |
|               |        | Gray, Dolomite, with numerous highly weathered calcite veins along jointing. Dolomite is unweathered while the calcite joint infilling is severely weathered. Poor competency. Massively bedded. No discernable dip., Hard, BXMDC, 63.4 ft - 68.4 ft, Rec. = 5.0 ft |                      |             |               |              |                        |
| 80            |        | Hole stopped @ 68.4 ft                                                                                                                                                                                                                                              |                      |             |               |              |                        |



STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
MATERIALS & RESEARCH SECTION  
SUBSURFACE INFORMATION

BORING NUMBER: B-103  
SHEET 1 of 1  
DATE STARTED: 4/04/07  
DATE COMPLETED: 4/11/07

PROJECT NAME: PLYMOUTH  
SITE NAME: VT 100A  
STATION: 203+02.32  
OFFSET: 23.80' LT  
VTSPG: N 387352.02 ft E 1589132.35 ft

PROJECT NUMBER: BRS 0149(3)S  
SITE NUMBER: BR-8  
GROUND ELEVATION: 1045.3 ft  
GROUNDWATER DEPTH: 10.2 ft 4/12/07  
PROJECT PIN NUMBER: 84E057

BORING CREW  
CREW CHIEF: GARROW  
DRILLER: GARROW  
LOGGER: CARRIERE

BORING RIG: LARGE SKID RIG w/AUTO HAMMER  
BORING TYPE: WASH BORE  
SAMPLE TYPE: SPLIT BARREL  
CHECKED BY: CAA

Bottom of Abut. #2  
Elev. = 1035.80

Approx. Pile Tip @ Abut. #2  
Elev. 999.8

| DEPTH<br>(ft) | SYMBOL | CLASSIFICATION OF MATERIALS<br>(Description)                                                                                                                   | BLOWS<br>PER<br>FOOT | M.C.<br>(%) | GRAVEL<br>(%) | SAND<br>(%)  | FINES<br>(%)           |
|---------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------|---------------|--------------|------------------------|
|               |        |                                                                                                                                                                | RUN                  | REC<br>(%)  | RQD<br>(%)    | Dip<br>(deg) | Drill Rate<br>(min/ft) |
|               |        | A-1-b, GrSa, brn, Moist, Rec. = 1.5 ft                                                                                                                         | 36                   | 15.1        | 37.4          | 46.2         | 16.4                   |
|               |        | NXDC, Cleaned out casing., 4.0 ft - 5.0 ft                                                                                                                     |                      |             |               |              |                        |
|               |        | Visual Class., A-1-b, Sa Gr, brn, Moist, Rec. = 0.6 ft, Insufficient sample for testing.                                                                       | 4                    | 14.4        |               |              |                        |
| 10            |        | NXDC, Cleaned out casing., 9.8 ft - 10.0 ft                                                                                                                    | 19                   | 14.2        | 33.7          | 51.6         | 14.7                   |
|               |        | A-1-b, GrSa, brn, Moist, Rec. = 1.3 ft                                                                                                                         |                      |             |               |              |                        |
|               |        | A-1-b, SaGr, brn, Moist, Rec. = 1.5 ft                                                                                                                         | 22                   | 12.6        | 46.1          | 36.5         |                        |
| 20            |        | NXDC, Cleaned out casing., 18.2 ft - 19.2 ft                                                                                                                   |                      |             |               |              |                        |
|               |        | Visual Class., A-1-b, Sa Gr, Rec. = 0.4 ft, Rock in sampler. Insufficient sample for testing.                                                                  | 26                   |             |               |              |                        |
|               |        | No Sample., 25.0 ft - 27.0 ft                                                                                                                                  | 26                   |             |               |              |                        |
| 30            |        | A-1-b, Sa, brn, Moist, Rec. = 1.5 ft                                                                                                                           | 18                   | 16.7        | 18.5          | 68.0         | 13.5                   |
|               |        | A-1-b, SiGrSa, brn, Moist, Rec. = 0.9 ft                                                                                                                       | 19                   | 10.7        | 38.6          | 40.2         | 21.2                   |
| 40            |        | NXDC, Cleaned out casing., 39.5 ft - 40.0 ft                                                                                                                   | 30                   | 11.1        | 44.2          | 40.5         | 15.3                   |
|               |        | A-1-b, SaGr, brn, Moist, Rec. = 1.3 ft                                                                                                                         |                      |             |               |              |                        |
|               |        | Top of Bedrock @ 45.2 ft                                                                                                                                       | R                    |             |               |              |                        |
|               |        | Visual Class., Broken Rock, Rec. = 0.2 ft                                                                                                                      | 1                    | 100         | 53            | 40           | 18                     |
|               |        | Gray, Biotite-Quartz Schist, Low RQD may be due to mechanical breakage along foliation., Moderately hard, Unweathered, NXMDC, 45.2 ft - 49.9 ft, Rec. = 4.7 ft |                      |             |               |              | 18                     |
| 50            |        |                                                                                                                                                                | 2                    | 100         | 50            | 40           | 14                     |
|               |        | Gray, Biotite-Quartz Schist, Low RQD may be due to mechanical breakage along foliation., Moderately hard, Unweathered, NXMDC, 49.9 ft - 54.9 ft, Rec. = 5.0 ft |                      |             |               |              | 15                     |
|               |        |                                                                                                                                                                |                      |             |               |              | 13                     |
|               |        |                                                                                                                                                                |                      |             |               |              | 8                      |
|               |        |                                                                                                                                                                |                      |             |               |              | 9                      |
|               |        |                                                                                                                                                                |                      |             |               |              | 8                      |
|               |        |                                                                                                                                                                |                      |             |               |              | 8                      |
|               |        |                                                                                                                                                                |                      |             |               |              | 8                      |
| 60            |        | Hole stopped @ 54.9 ft                                                                                                                                         |                      |             |               |              |                        |
| 70            |        |                                                                                                                                                                |                      |             |               |              |                        |

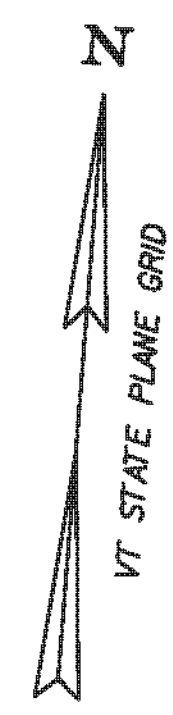
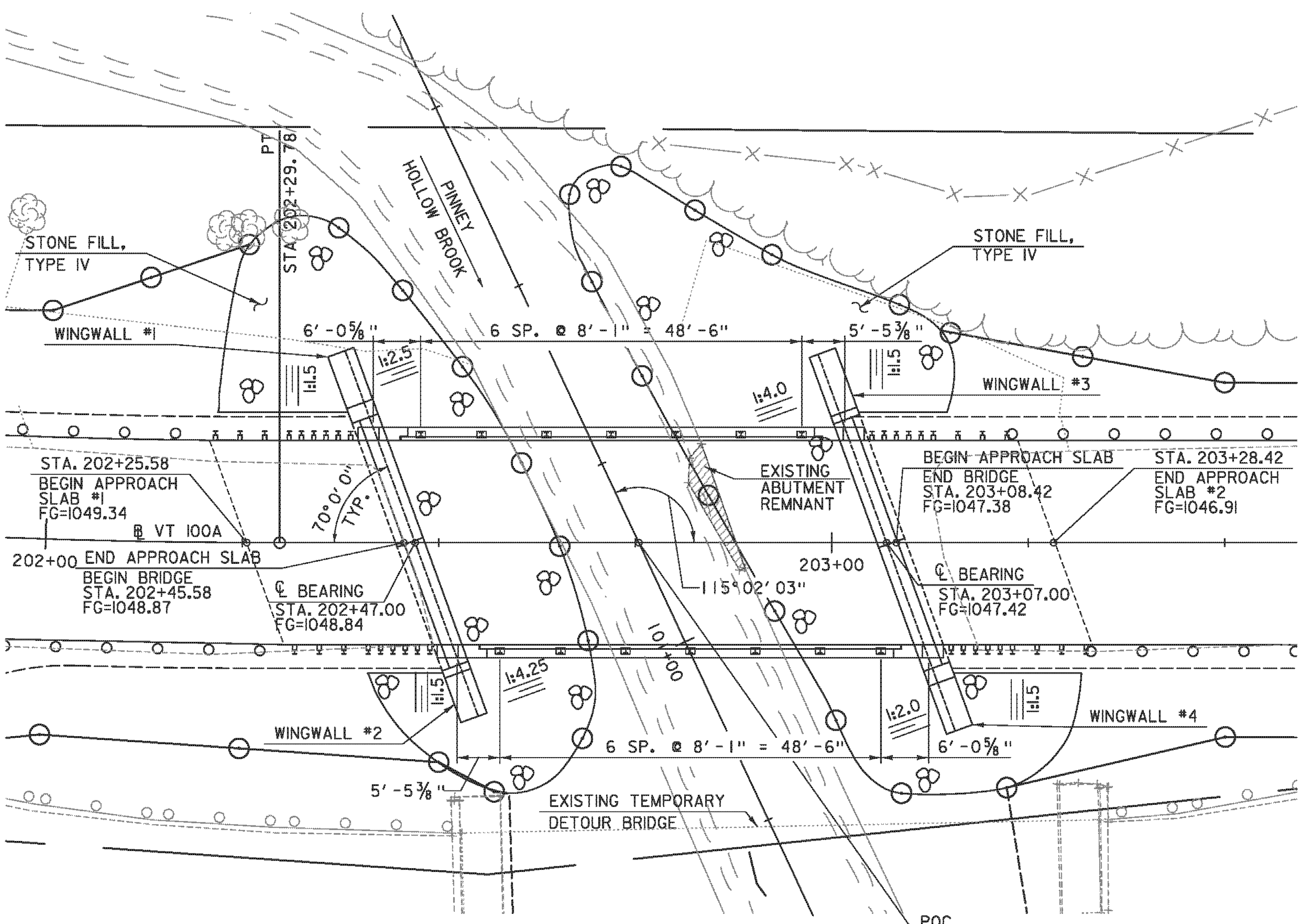
NOTE: BORING LOGS SHOWN WERE PREPARED UNDER A PREVIOUS PROJECT NUMBER AND ARE PROVIDED HERE FOR INFORMATIONAL PURPOSES.

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

TYLIN INTERNATIONAL

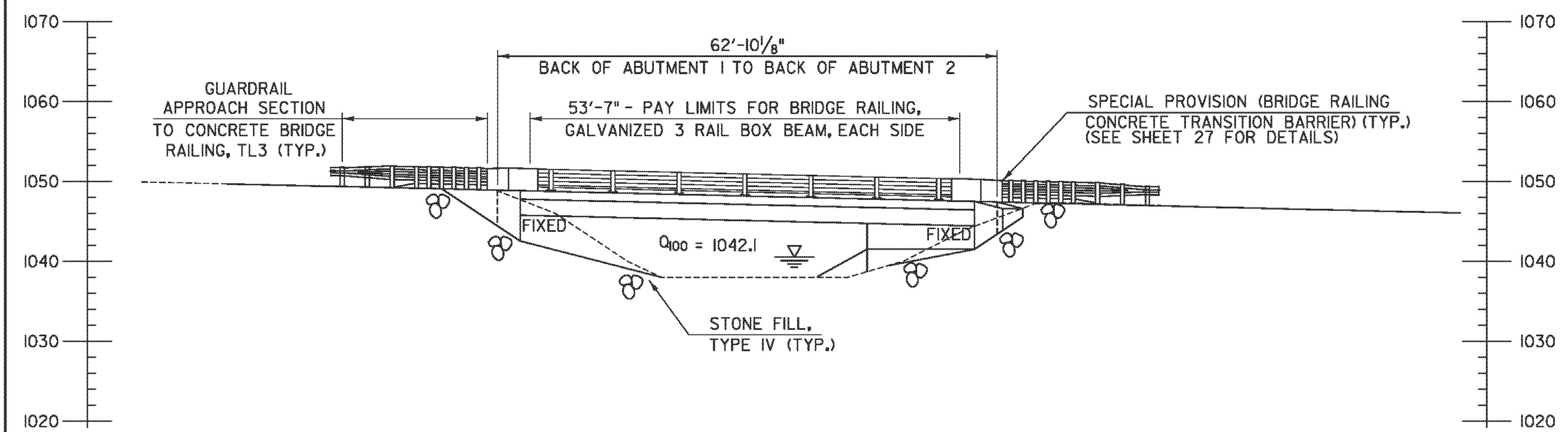
FILE NAME: zllc330bor.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: J. OLUND  
BORING LOGS  
PLOT DATE: 9/20/2012  
DRAWN BY: T. KELLEY  
CHECKED BY: D. MYERS  
SHEET 17 OF 46





PLAN

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



ELEVATION @ DOWNSTREAM FASCIA

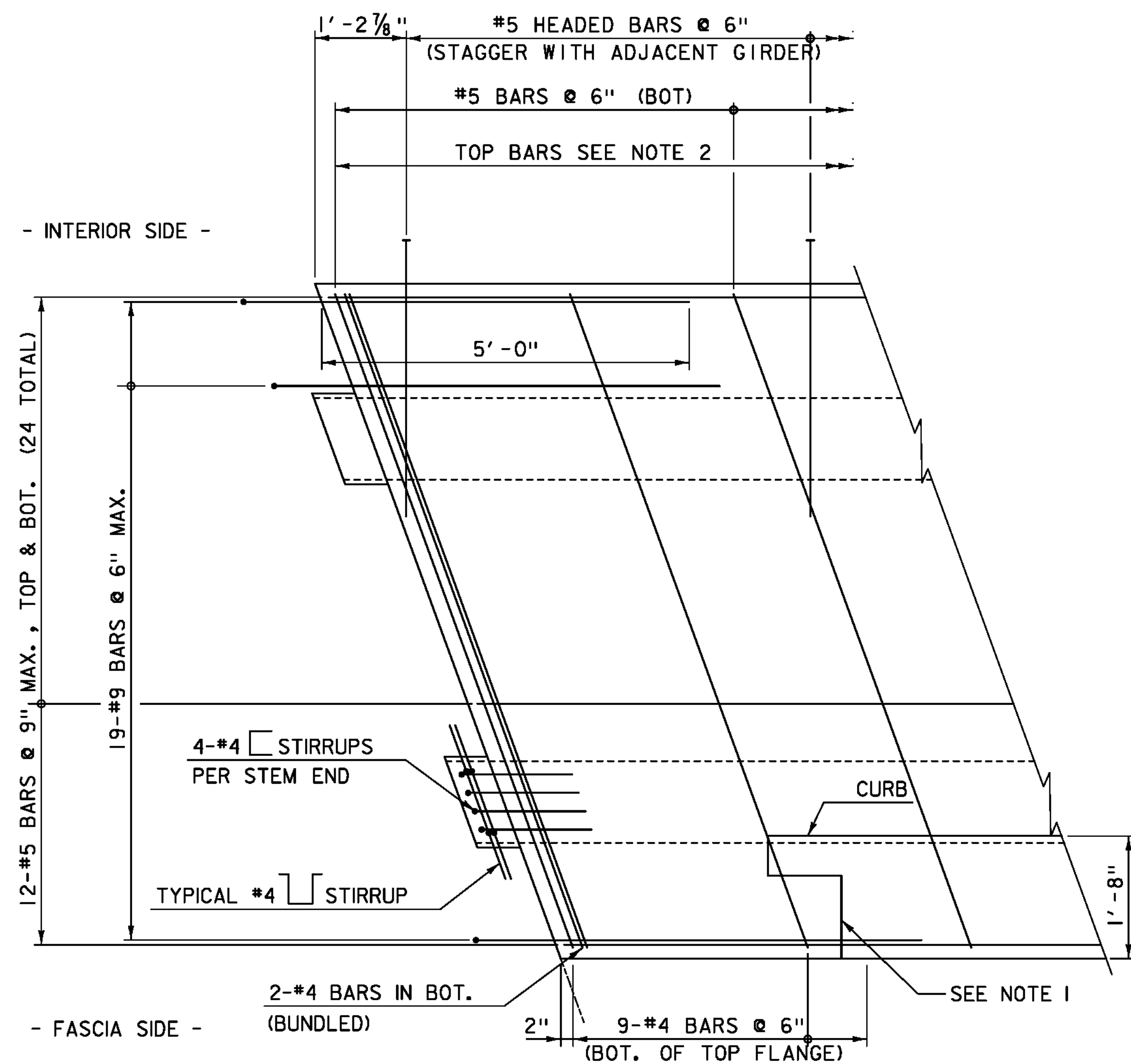
SCALE 1" = 10'-0"  
10 0 10

|                     |                                 |                      |
|---------------------|---------------------------------|----------------------|
| TYLIN INTERNATIONAL | PROJECT NAME: PLYMOUTH          |                      |
|                     | PROJECT NUMBER: ER BRS 0149(5)  |                      |
|                     | FILE NAME: zllc330bdr_pe_01.dgn | PLOT DATE: 9/20/2012 |
|                     | PROJECT LEADER: J. OLUND        | DRAWN BY: S. MORGAN  |
|                     | DESIGNED BY: D. MYERS           | CHECKED BY: J. OLUND |
|                     | BRIDGE PLAN & ELEVATION         | SHEET 18 OF 46       |



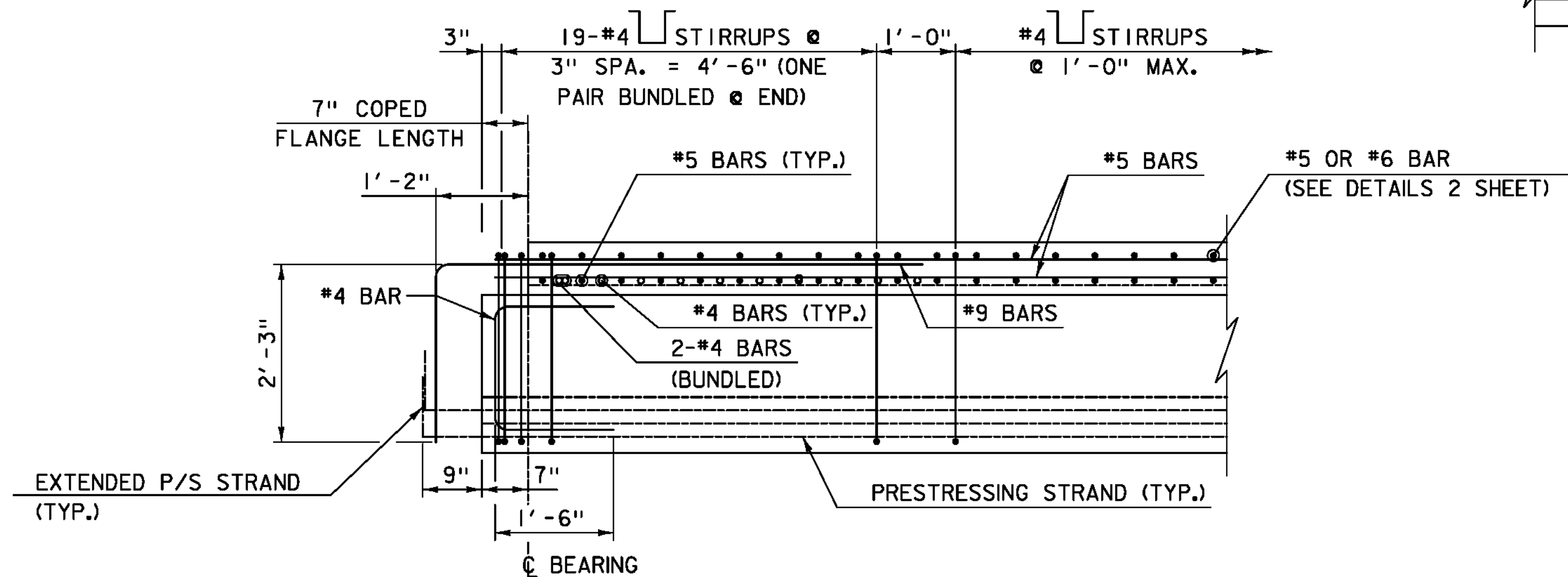






**NEXT BEAM REINFORCEMENT PLAN**

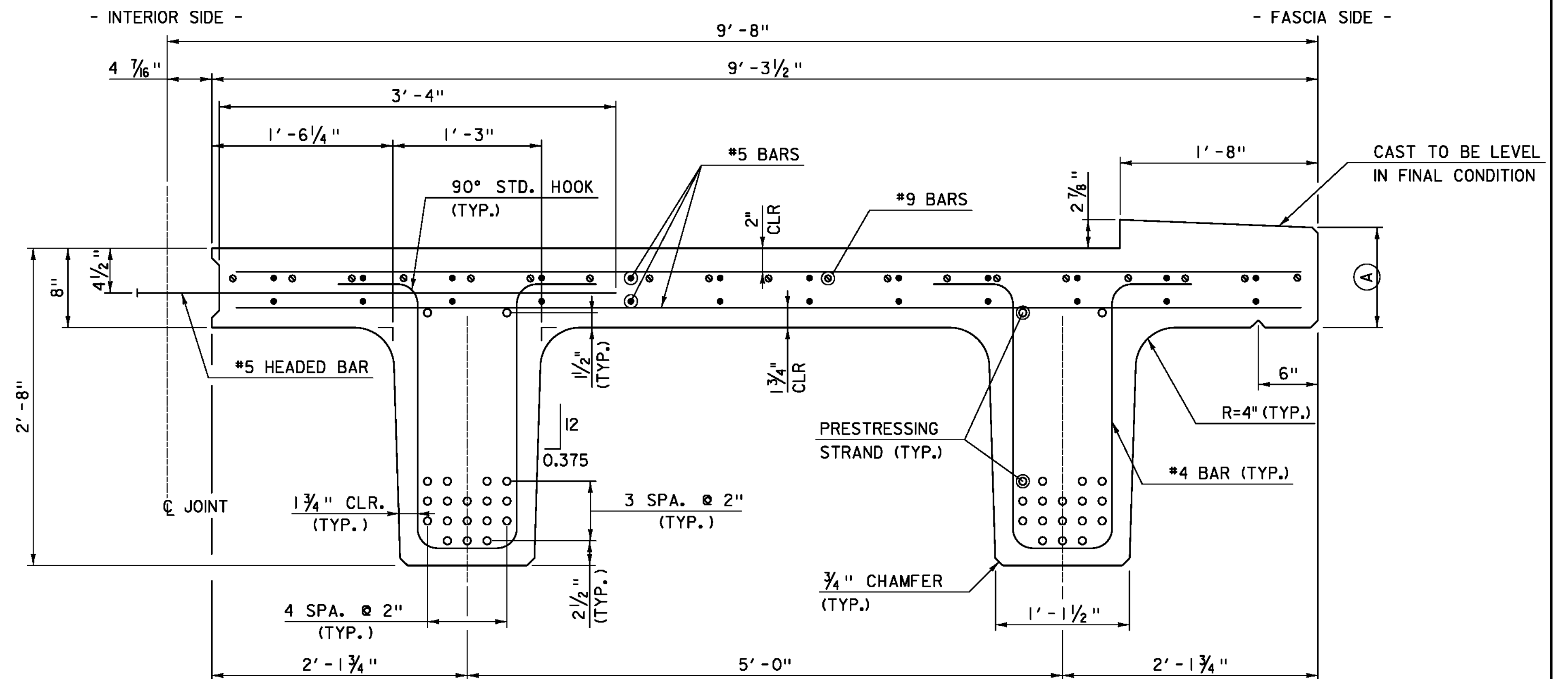
SCALE: 3/4" = 1'-0"



**NEXT BEAM REINFORCEMENT ELEVATION**

SCALE: 3/4" = 1'-0"

NOTE: #5 HEADED BARS NOT SHOWN FOR CLARITY

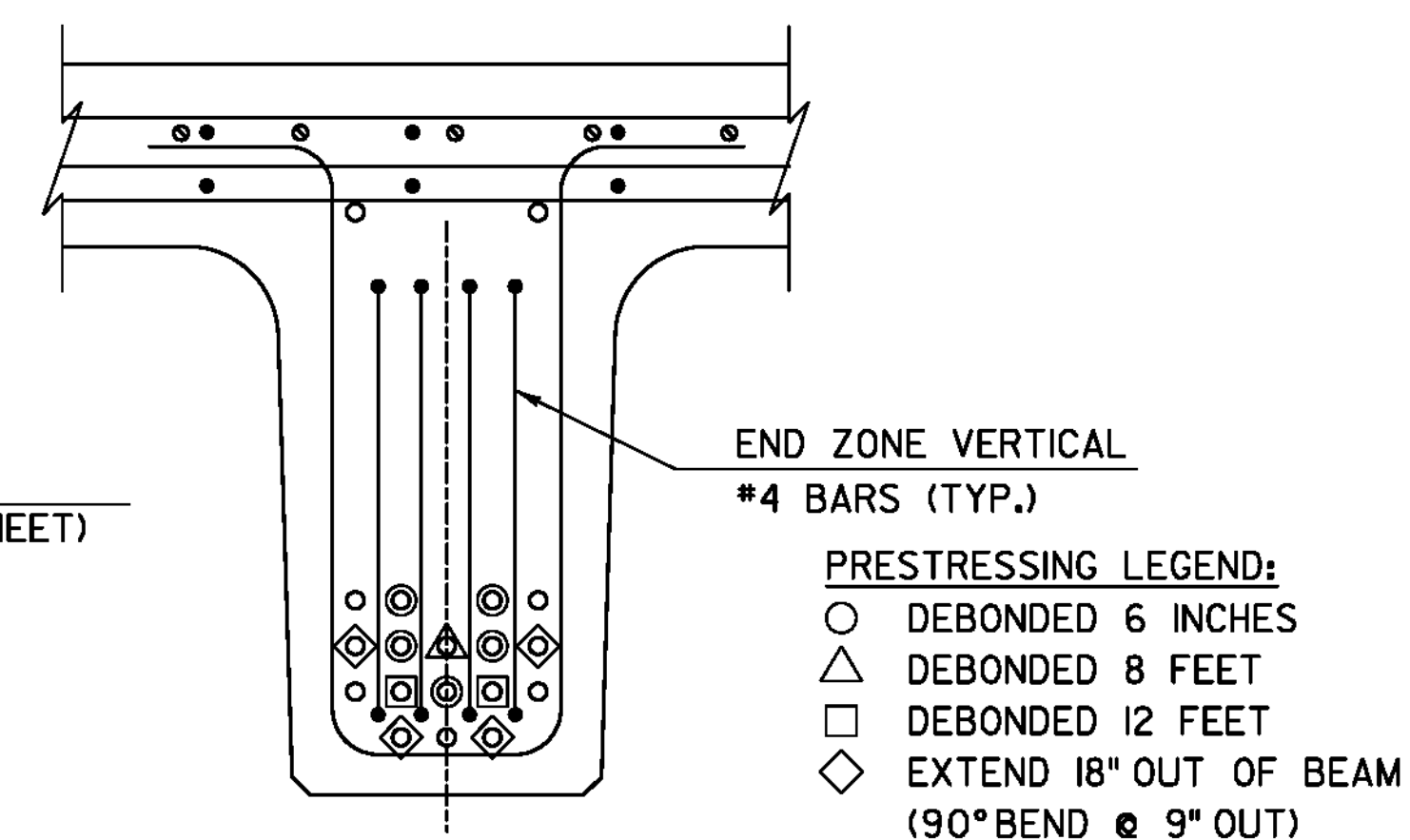


**TYPICAL NEXT BEAM SECTION**

(BETWEEN RAILING POSTS)  
SCALE: 1 1/2" = 1'-0"

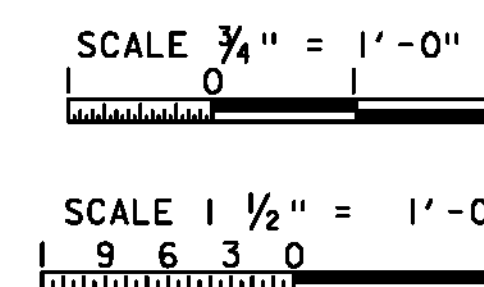
**BEAM FLANGE DIMENSIONS**

|     | BEAM 1<br>(UPSTREAM) | BEAM 3<br>(DOWNSTREAM) |
|-----|----------------------|------------------------|
| (A) | 11 5/8"              | 10 1/8"                |



**TYPICAL END SECTION**

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



**NOTES:**

- FOR DETAILS OF CURB BLOCKOUT & REINFORCING AT CONCRETE END POSTS, SEE SHEET "NEXT BEAM DETAILS 2".
- FOR DETAILS OF NEXT BEAM TOP FLANGE TRANSVERSE CURB REINFORCING, SEE SHEET "NEXT BEAM DETAILS 2".
- BEAM REINFORCEMENT SHOWN IN PLAN AND ELEVATION IS TYPICAL ABOUT MIDSPAN OF THE BEAM.

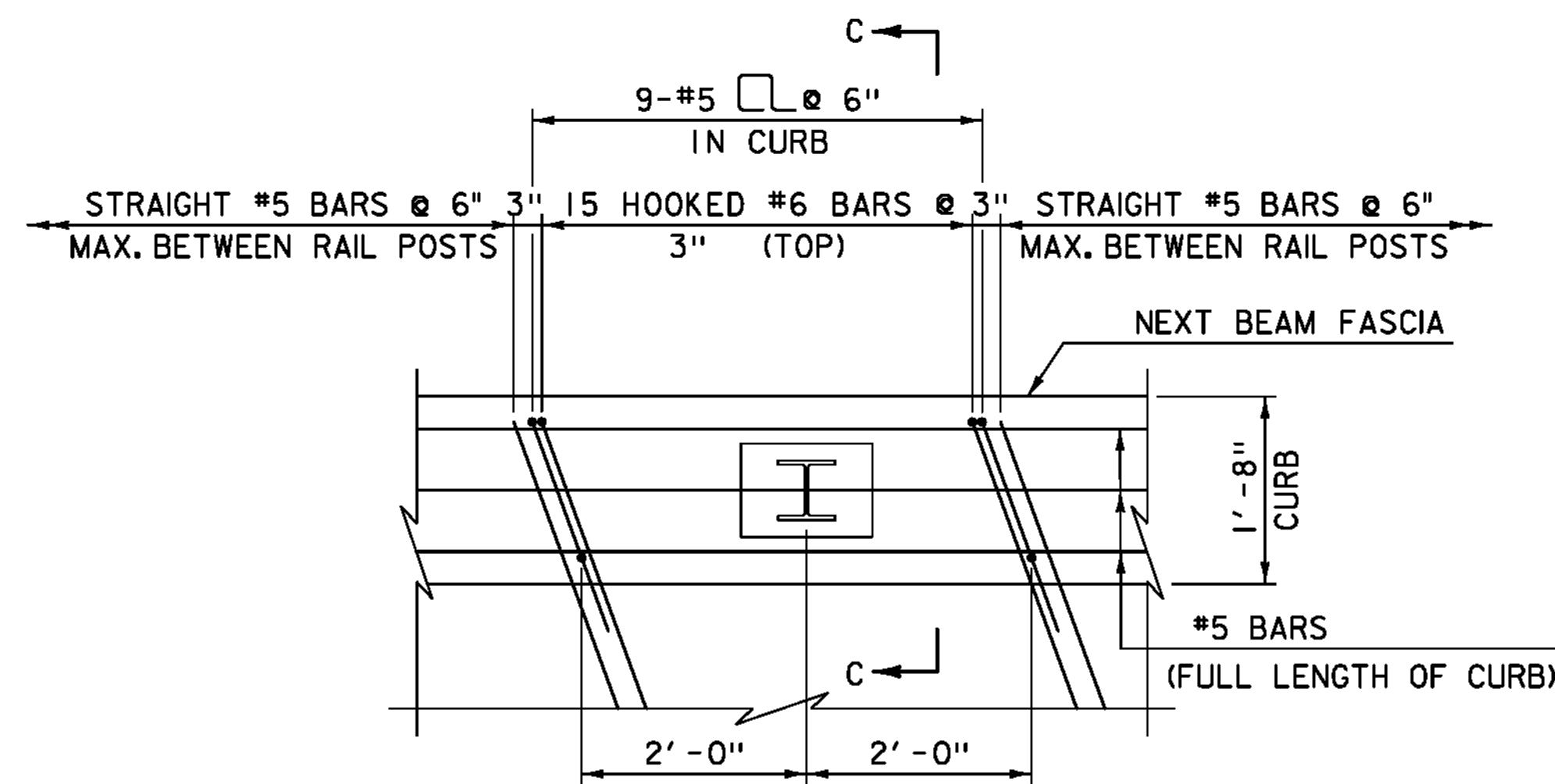
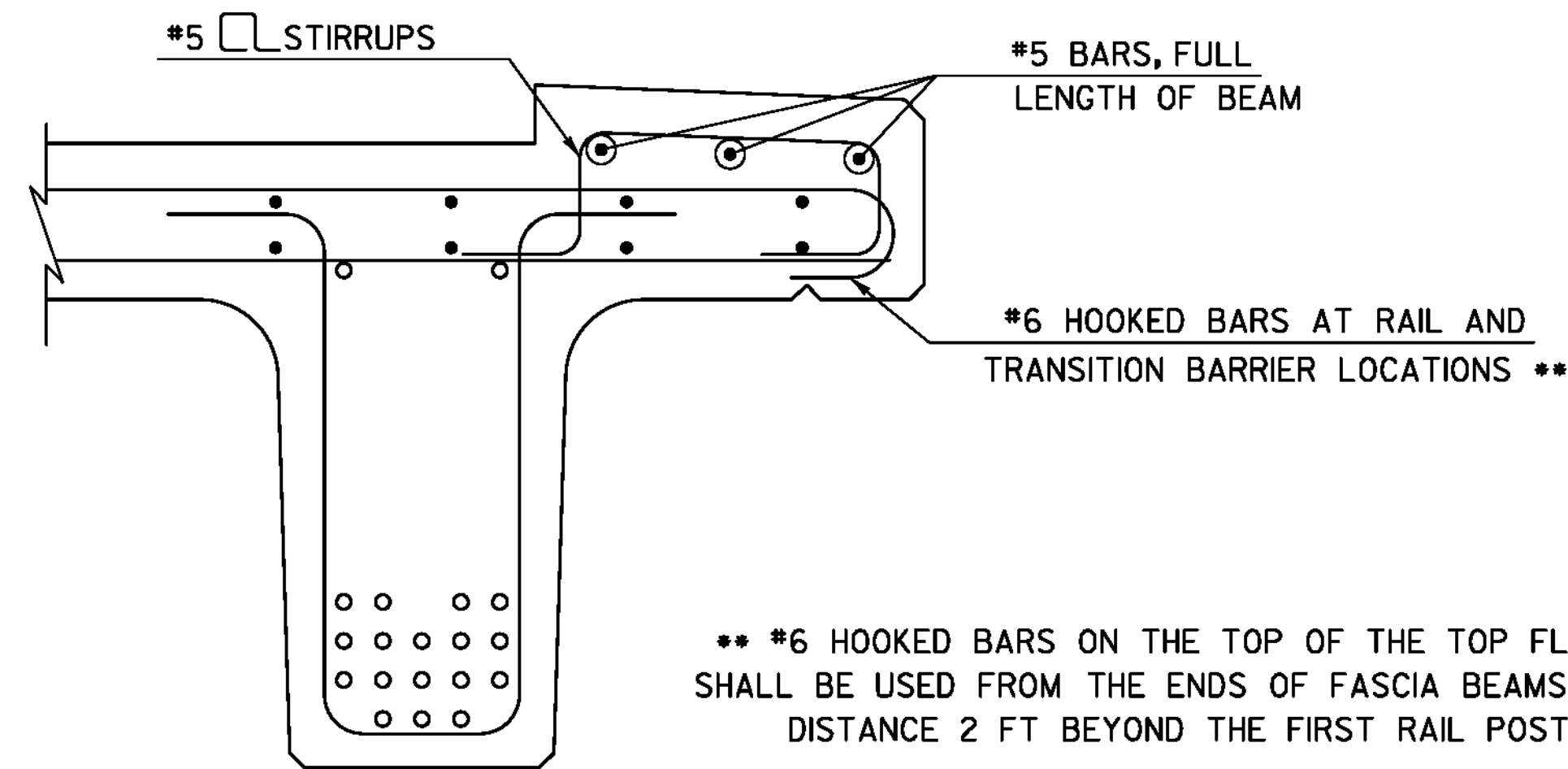
PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330d+100l.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: D. MYERS  
NEXT D BEAM DETAILS 1

PLOT DATE: 9/20/2012  
DRAWN BY: T. KELLEY  
CHECKED BY: S. KELLER  
SHEET 20 OF 46

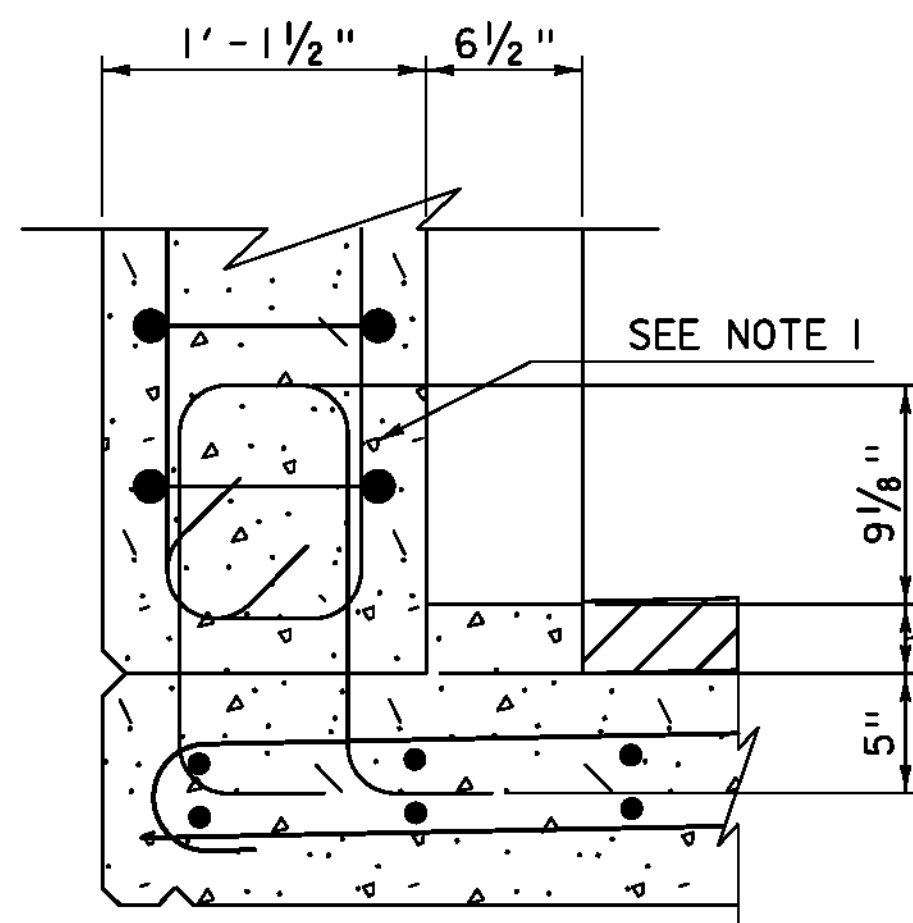
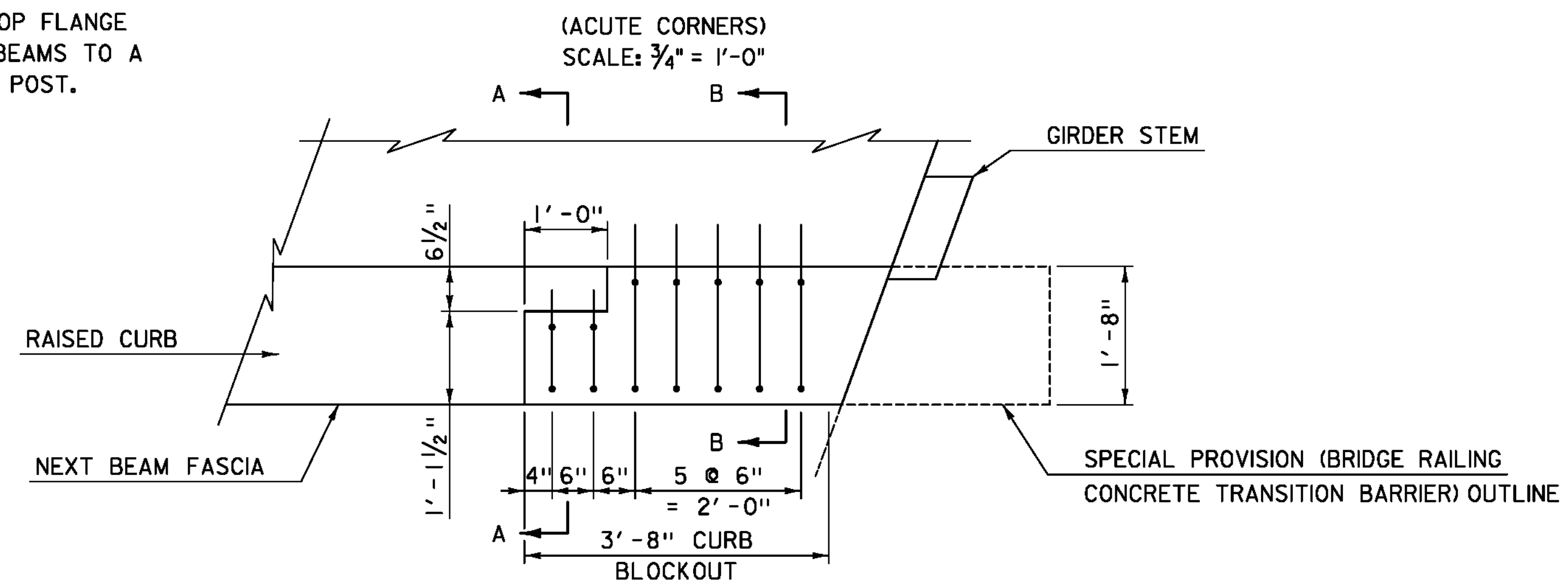
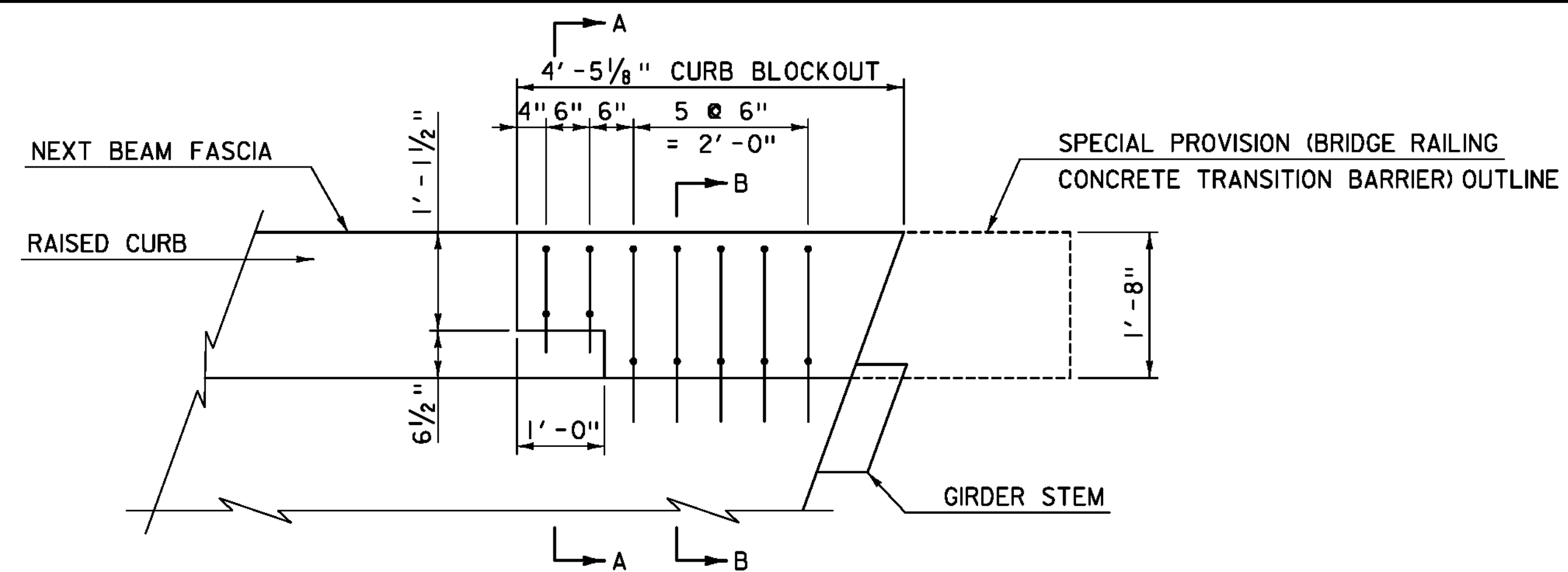
TYLIN INTERNATIONAL





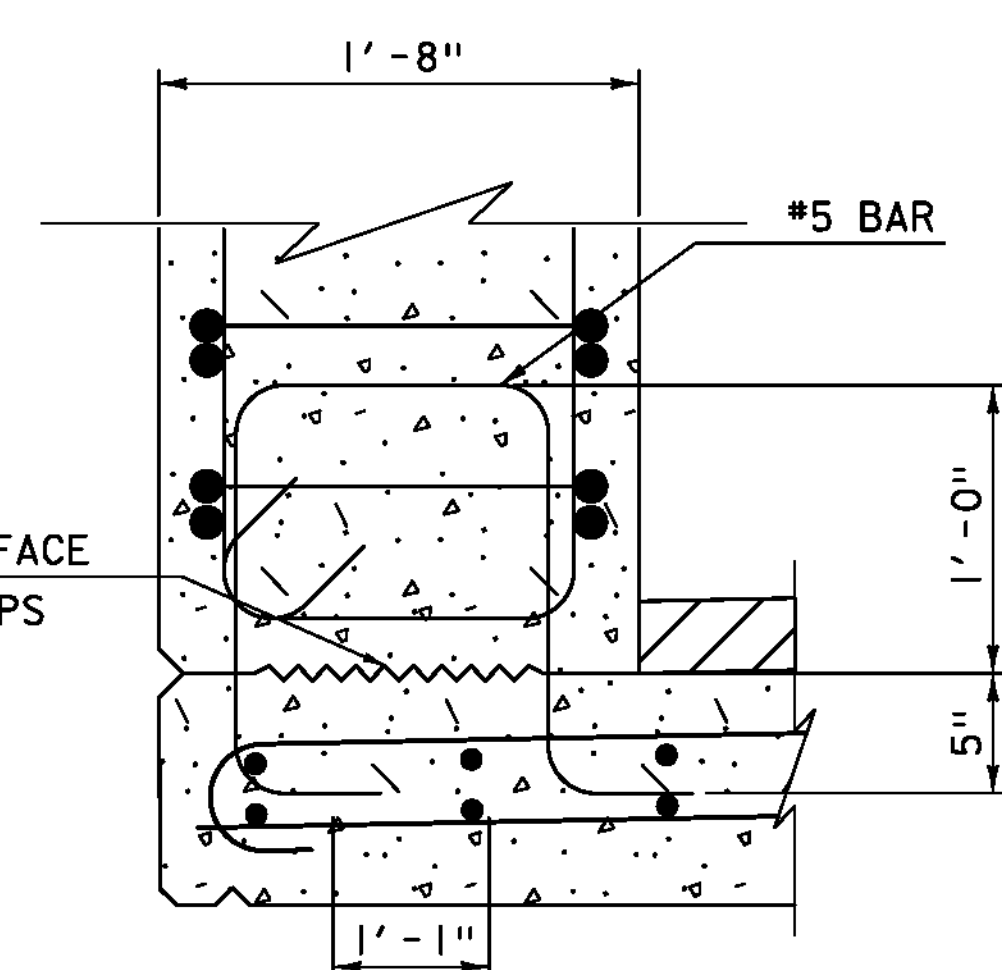
**NOTES:**

1. FOR DETAILS OF CONCRETE TRANSITION BARRIER, SEE SHEET "TRANSITION BARRIER DETAILS".
2. FOR DETAILS OF NEXT BEAM, SEE SHEET "NEXT D BEAM DETAILS I".
3. CURB BLOCKOUT AND SURFACE ROUGHENING BETWEEN TRANSITION BARRIER STIRRUPS SHALL BE MADE BY THE PRECAST NEXT D BEAM FABRICATOR.



SCALE 3/4" = 1'-0"

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

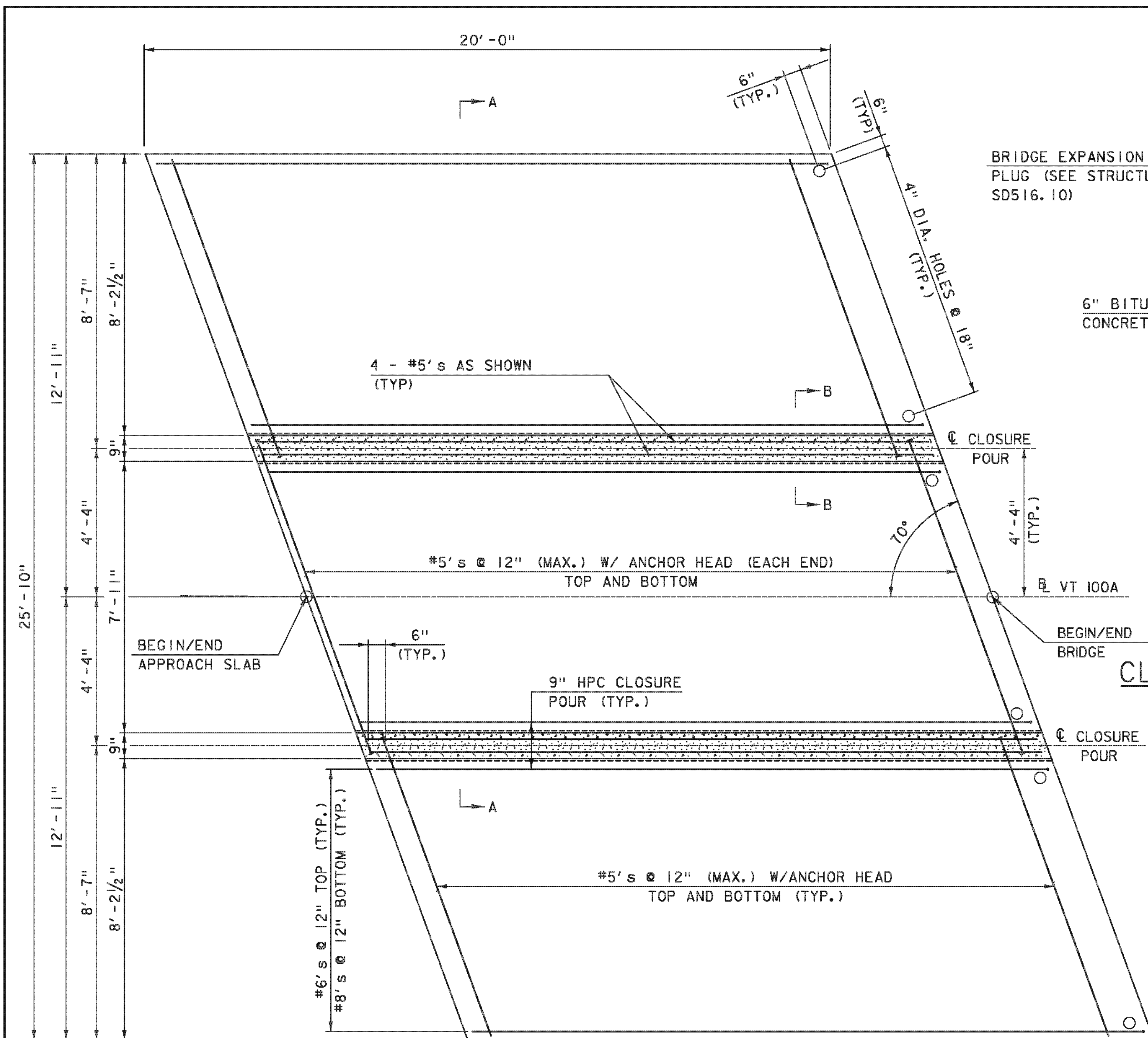


TYLIN INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)  
FILE NAME: zllc330d+1002.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: D. MYERS  
NEXT D BEAM DETAILS 2

PLOT DATE: 9/20/2012  
DRAWN BY: S. MORGAN  
CHECKED BY: D. MYERS  
SHEET 21 OF 46



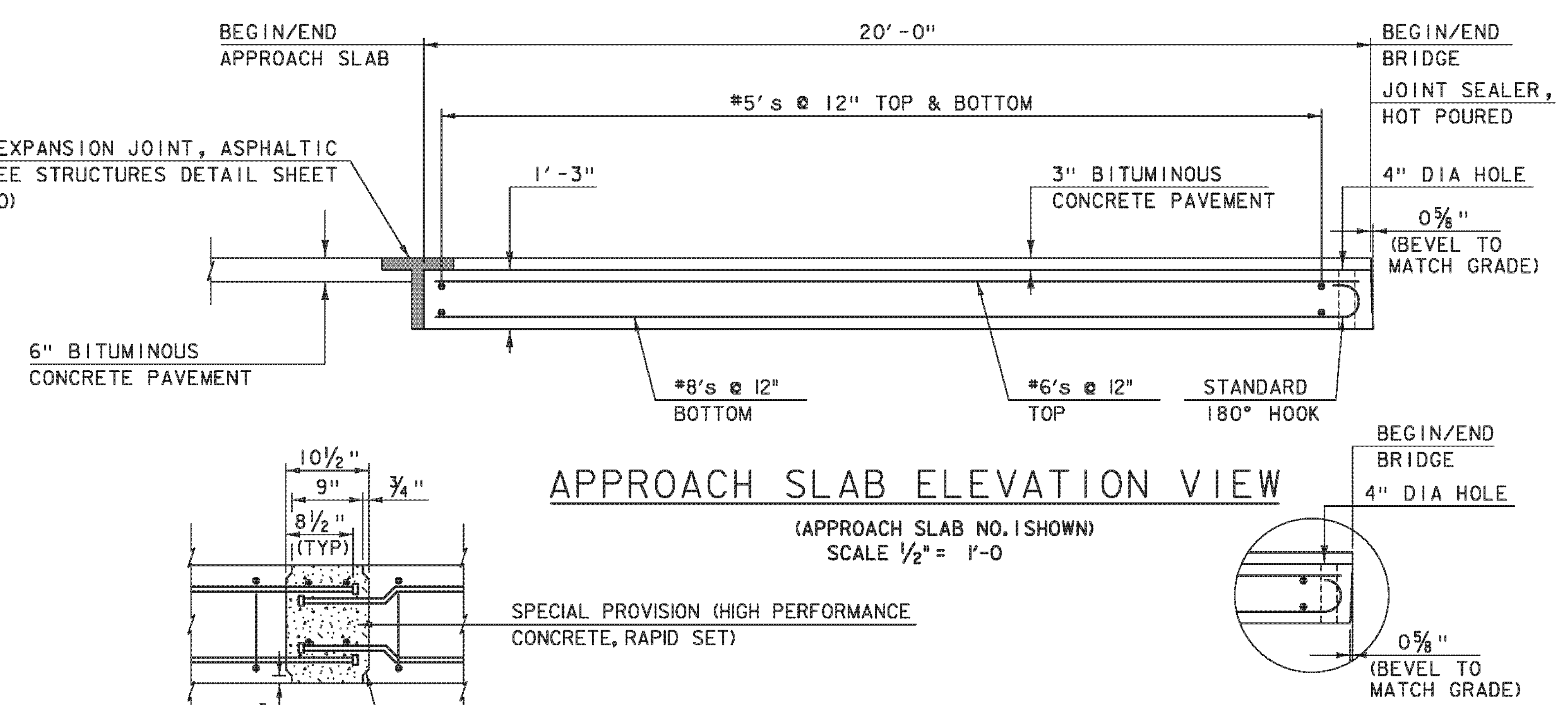


APPROACH SLAB PLAN VIEW  
SCALE 1/2" = 1'-0"

NOTES:

1. LIFTING DEVICES AND ANY ASSOCIATED REINFORCEMENT SHALL BE DETERMINED BY THE FABRICATOR AND SHOWN IN THE FABRICATION DRAWINGS. LIFTING DEVICES SHALL BE LIMITED TO FOUR (4) PER PANEL AND BE RECESSED AND GROUTED AFTER INSTALLATION OF THE SLABS.
2. THE LOCATION OF THE FOUR INCH DIAMETER HOLES CAST THROUGH THE BRIDGE-END OF THE APPROACH SLABS SHALL BE COORDINATED WITH REINFORCING STEEL EXTENDING FROM THE ABUTMENTS. SEE SHEET 25 FOR ABUTMENT REINFORCING STEEL LAYOUT.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING UNIFORM CONTACT BETWEEN THE APPROACH SLAB AND THE SUBBASE MATERIAL TO THE SATISFACTION OF THE ENGINEER. THE FABRICATION DRAWINGS SHALL INDICATE THE MEANS AND METHODS NECESSARY TO INSTALL THE APPROACH SLABS TO THE ELEVATIONS SPECIFIED.
4. PAYMENT FOR APPROACH SLABS, THE #5 REINFORCING BARS WITHIN THE CLOSURE POURS, AND ALL LABOR AND TOOLS NECESSARY TO INSTALL THE SLABS SHALL BE MADE UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 1)" AND/OR ITEM 540.10, "PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 2)".
5. PAYMENT FOR HPC CONCRETE CLOSURE POURS SHALL BE MADE UNDER ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".

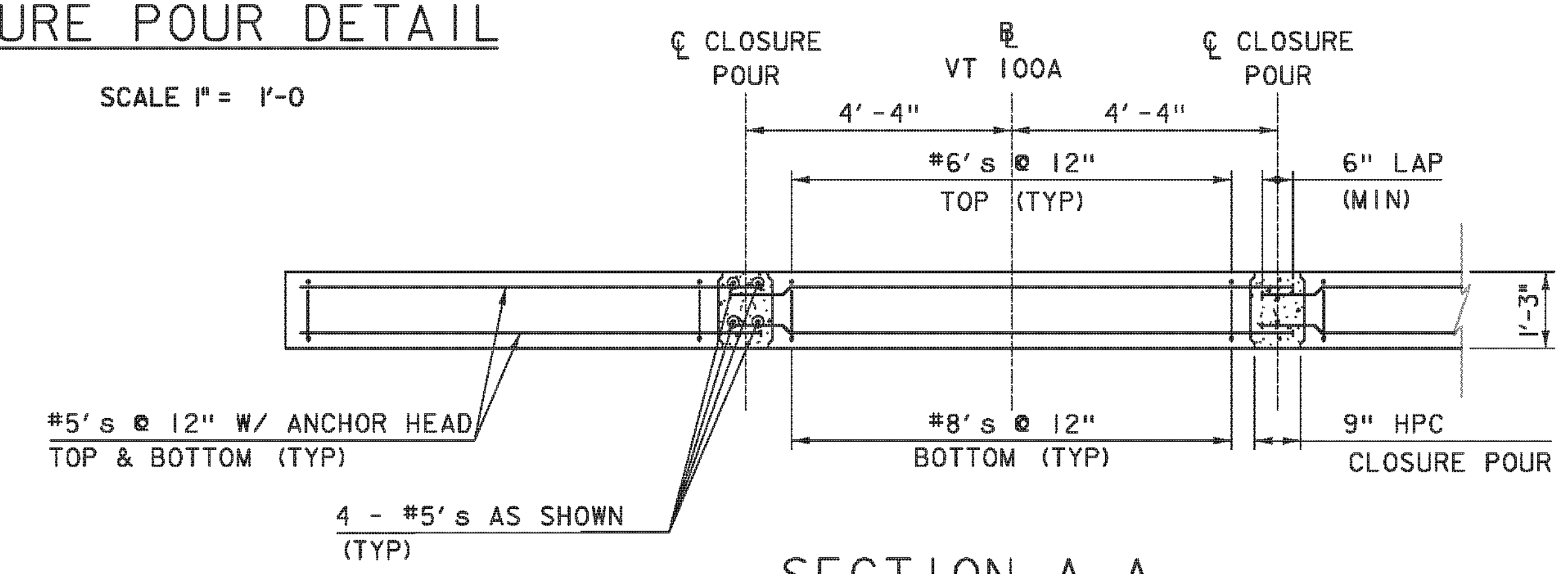
BRIDGE EXPANSION JOINT, ASPHALTIC PLUG (SEE STRUCTURES DETAIL SHEET SD516.10)



APPROACH SLAB ELEVATION VIEW  
(APPROACH SLAB NO. 1 SHOWN)  
SCALE 1/2" = 1'-0"

SECTION B-B  
CLOSURE POUR DETAIL  
SCALE 1" = 1'-0"

APPROACH SLAB NO. 2 END DETAIL



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

APPROACH SLAB ELEVATIONS  
(ALL ELEVATIONS ARE TOP OF SLAB)

|                | LT EDGE | @ VT 100A | RT EDGE |
|----------------|---------|-----------|---------|
| BEGIN A. S. #1 | 1048.69 | 1049.10   | 1049.51 |
| END A. S. #1   | 1048.22 | 1048.65   | 1049.03 |
| BEGIN A. S. #2 | 1046.72 | 1047.13   | 1047.54 |
| END A. S. #2   | 1046.25 | 1046.66   | 1047.06 |

NOTE:  
NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

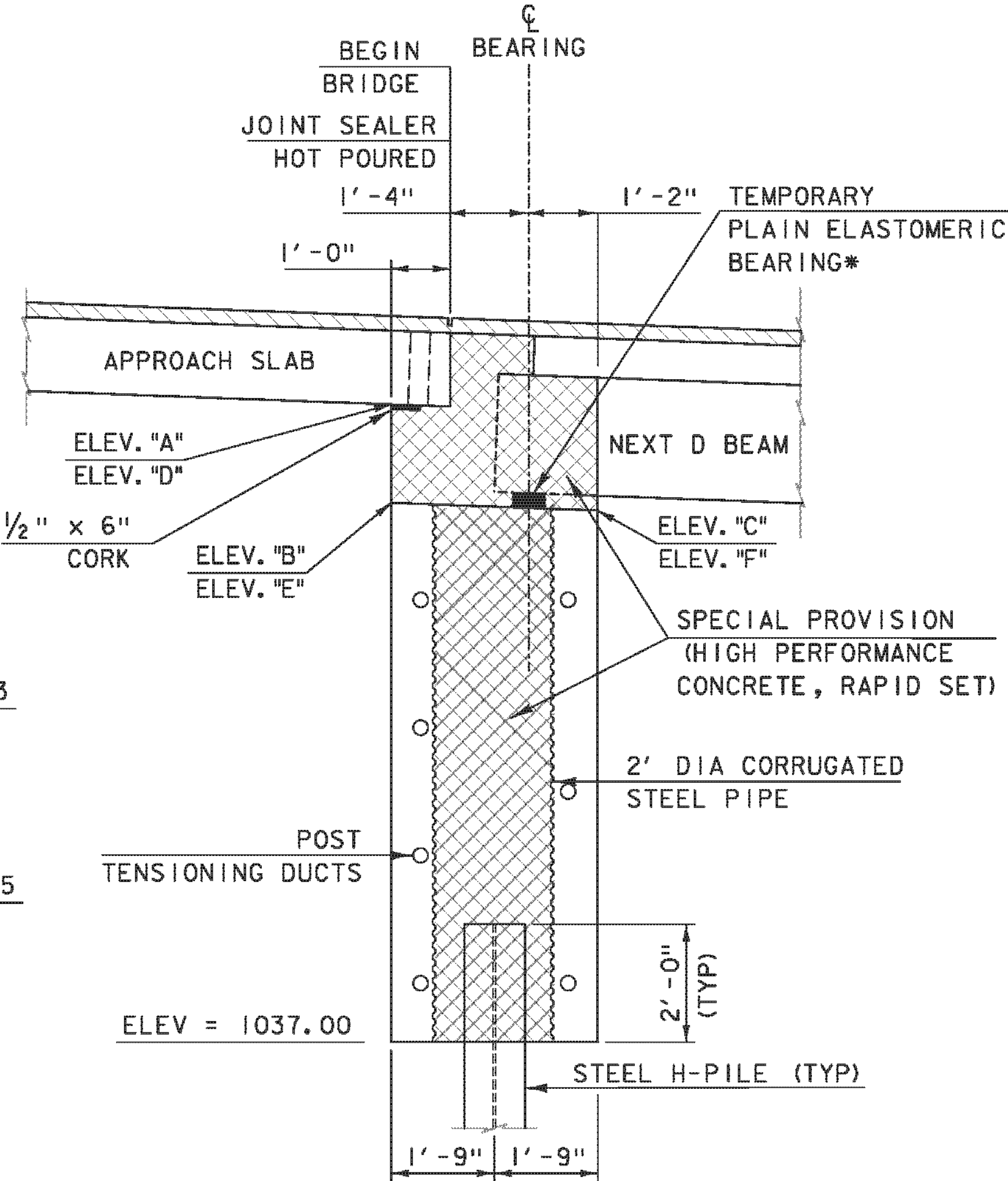
|                     |                                                                                                          |                                                                                       |
|---------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| TYLIN INTERNATIONAL | PROJECT NAME: PLYMOUTH                                                                                   |                                                                                       |
|                     | PROJECT NUMBER: ER BRS 0149(5)                                                                           |                                                                                       |
|                     | FILE NAME: zllc330slab.dgn<br>PROJECT LEADER: J. OLUND<br>DESIGNED BY: D. MYERS<br>APPROACH SLAB DETAILS | PLOT DATE: 9/20/2012<br>DRAWN BY: T. KELLEY<br>CHECKED BY: D. MYERS<br>SHEET 22 OF 46 |



ABUTMENT I - ELEVATIONS

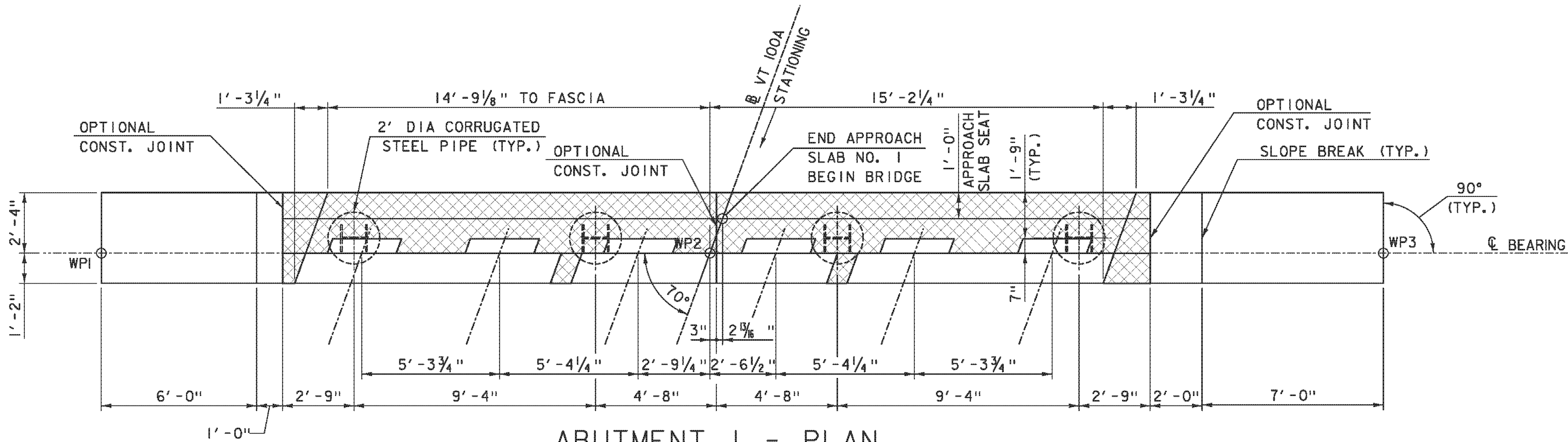
|          |         |
|----------|---------|
| ELEV "A" | 1047.91 |
| ELEV "B" | 1046.24 |
| ELEV "C" | 1046.12 |
| ELEV "D" | 1046.92 |
| ELEV "E" | 1045.26 |
| ELEV "F" | 1045.13 |

\*TEMPORARY BEARING SHALL BE 9"X9"X3" THICK AND BE CENTERED AT THE INTERSECTION OF  $\phi$  BEARING AND STEM CENTER. ORIENT BEARINGS ALONG STEMS.



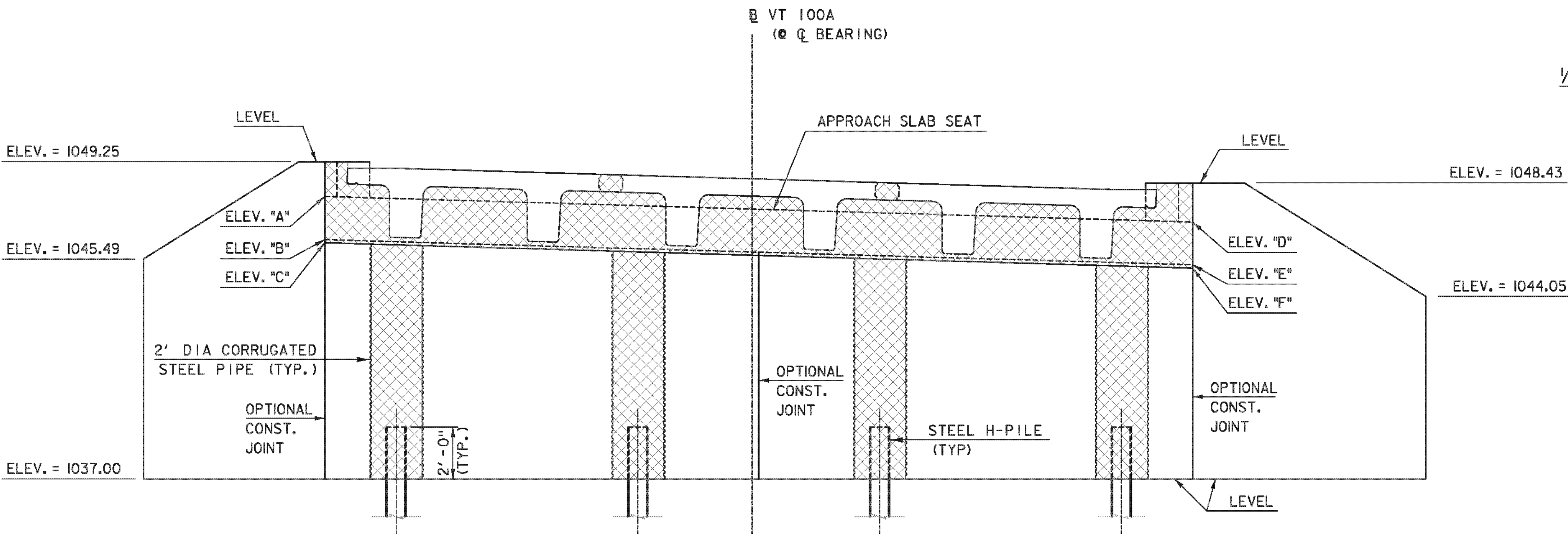
ABUTMENT I - TYPICAL SECTION

SCALE: 1/2" = 1'-0



ABUTMENT I - PLAN

SCALE: 3/8" = 1'-0



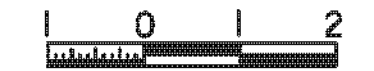
ABUTMENT I - ELEVATION

SCALE: 3/8" = 1'-0

SCALE 3/8" = 1'-0"



SCALE 1/2" = 1'-0"



TYLIN INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330sub\_01.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: D. MYERS  
ABUTMENT I PLAN, ELEVATION & SECTION

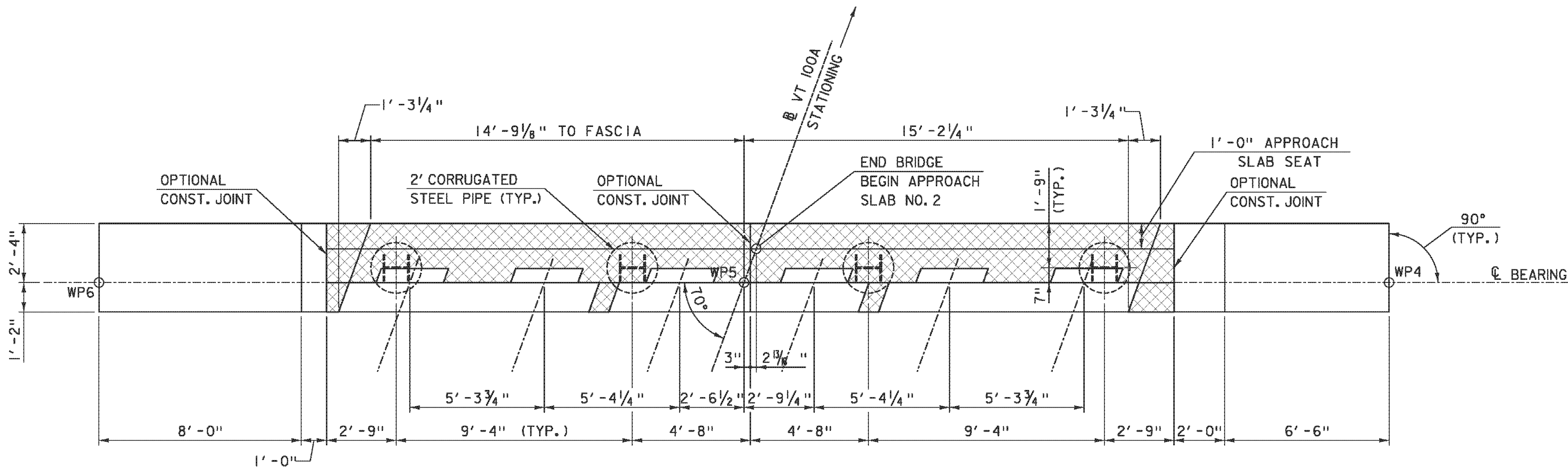
PLOT DATE: 9/20/2012  
DRAWN BY: T. KELLEY  
CHECKED BY: D. MYERS  
SHEET 23 OF 46



ABUTMENT 2 - ELEVATIONS

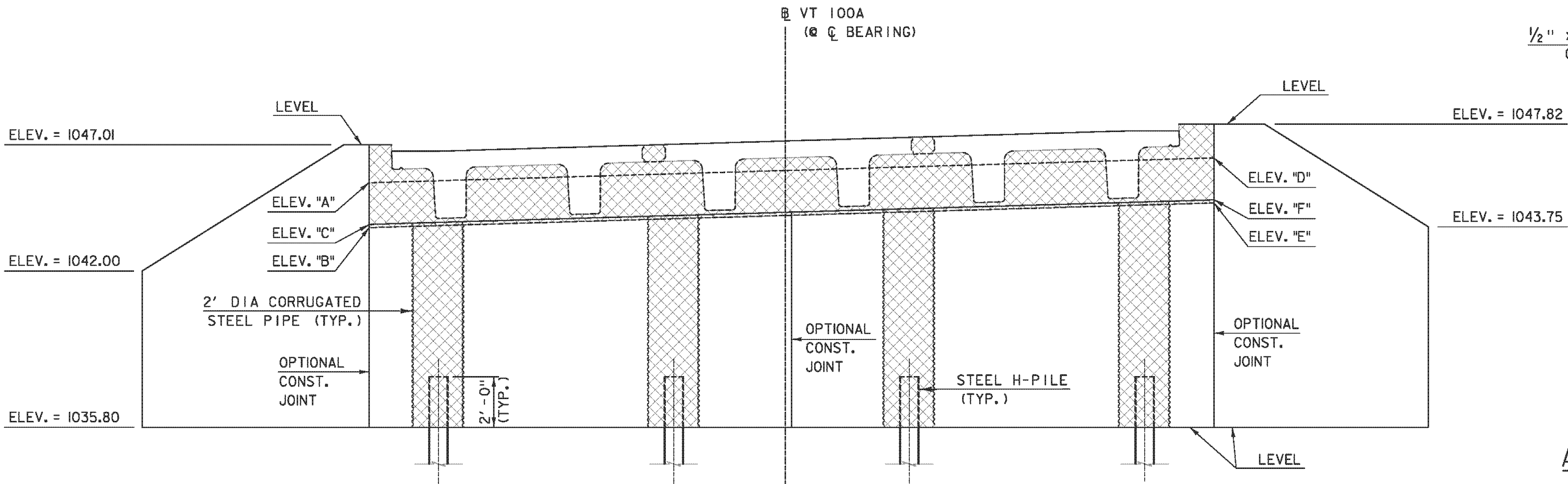
|          |         |
|----------|---------|
| ELEV "A" | 1045.34 |
| ELEV "B" | 1043.68 |
| ELEV "C" | 1043.80 |
| ELEV "D" | 1046.33 |
| ELEV "E" | 1044.67 |
| ELEV "F" | 1044.79 |

\*TEMPORARY BEARING SHALL BE 9"x9"x3" THICK AND BE CENTERED AT THE INTERSECTION OF  $\phi$  BEARING AND STEM CENTER. ORIENT BARRIERS ALONG STEMS.



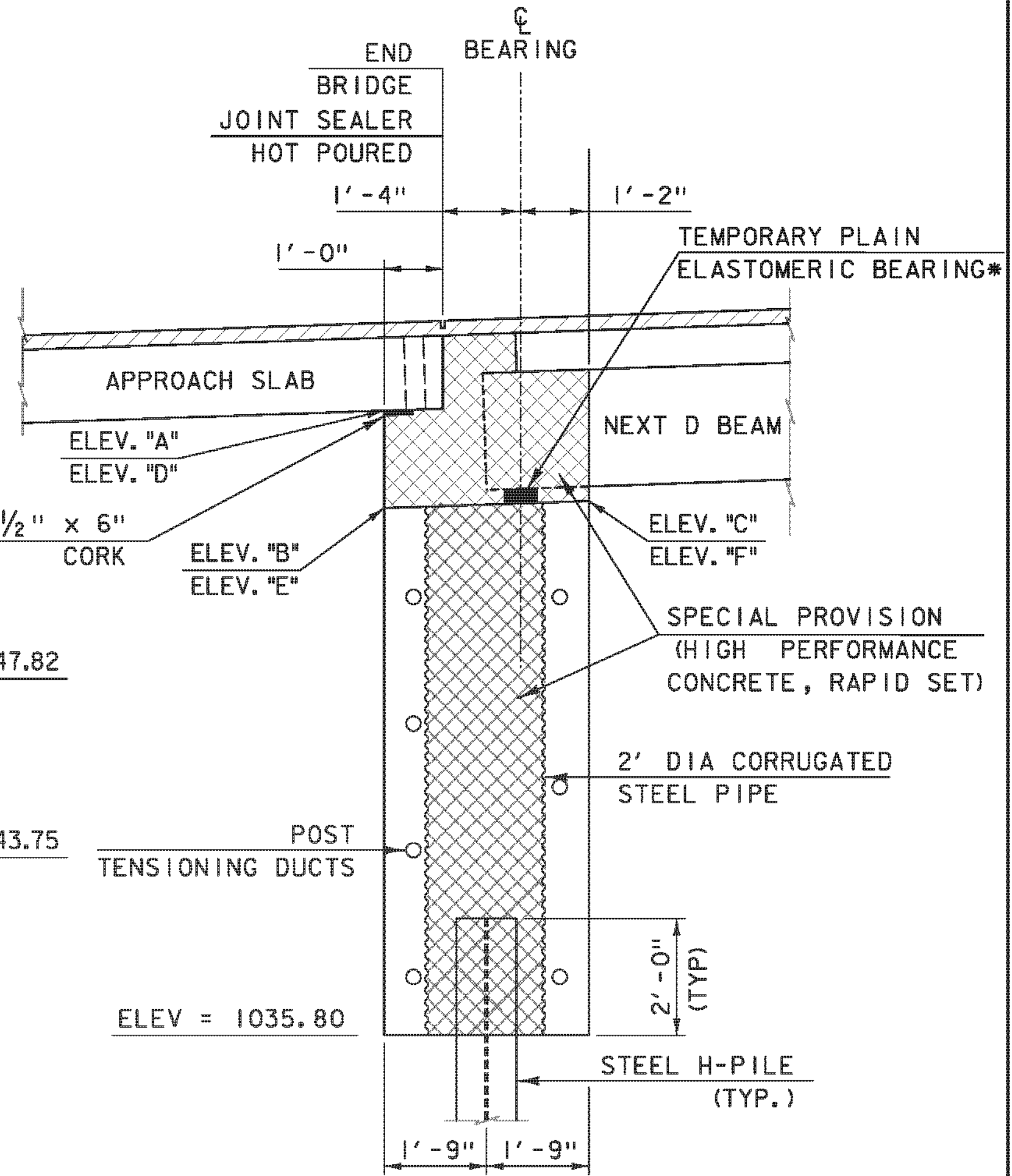
ABUTMENT 2 - PLAN

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



ABUTMENT 2 - ELEVATION

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



ABUTMENT 2 - TYPICAL SECTION

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

SCALE 3/8" = 1'-0"



SCALE 1/2" = 1'-0"



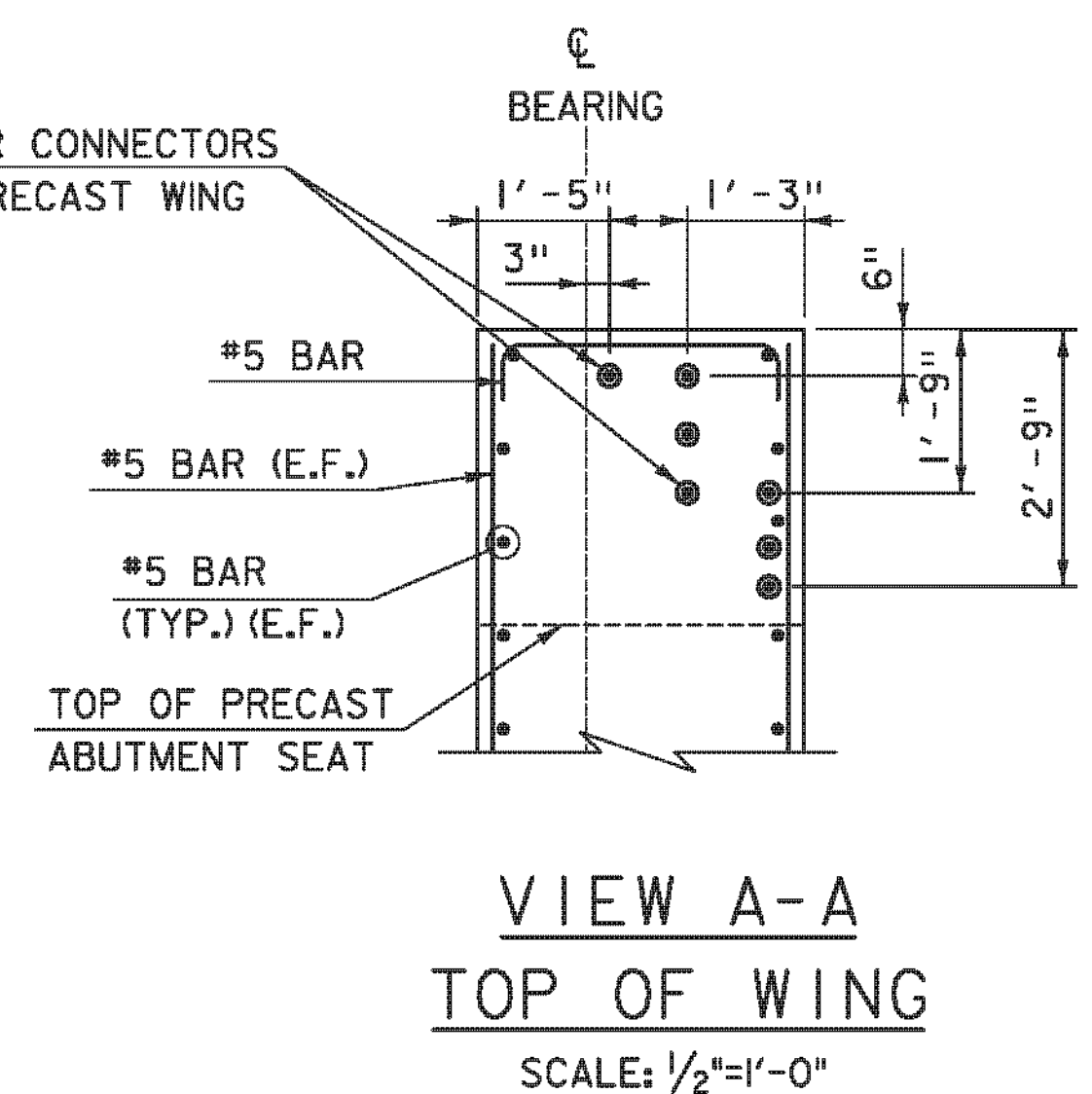
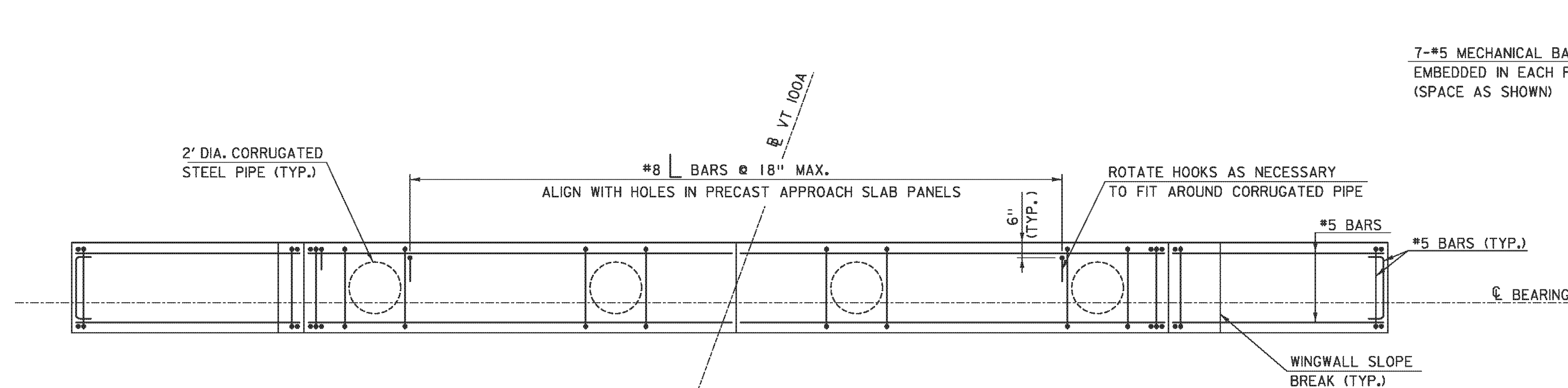
TYLIN INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330sub\_02.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: D. MYERS  
ABUTMENT 2 PLAN, ELEVATION & SECTION

PLOT DATE: 9/20/2012  
DRAWN BY: T. KELLEY  
CHECKED BY: D. MYERS  
SHEET 24 OF 46

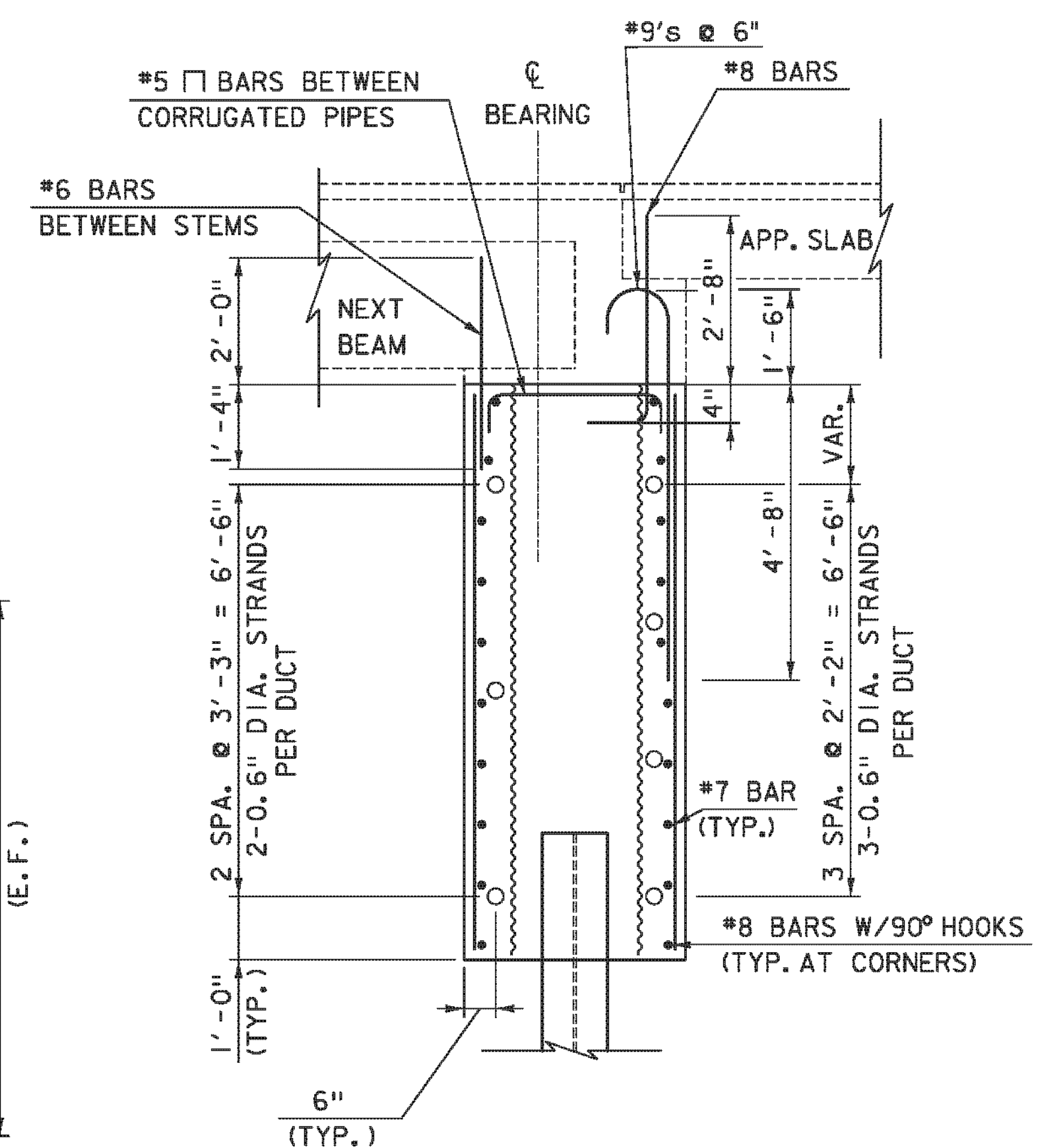
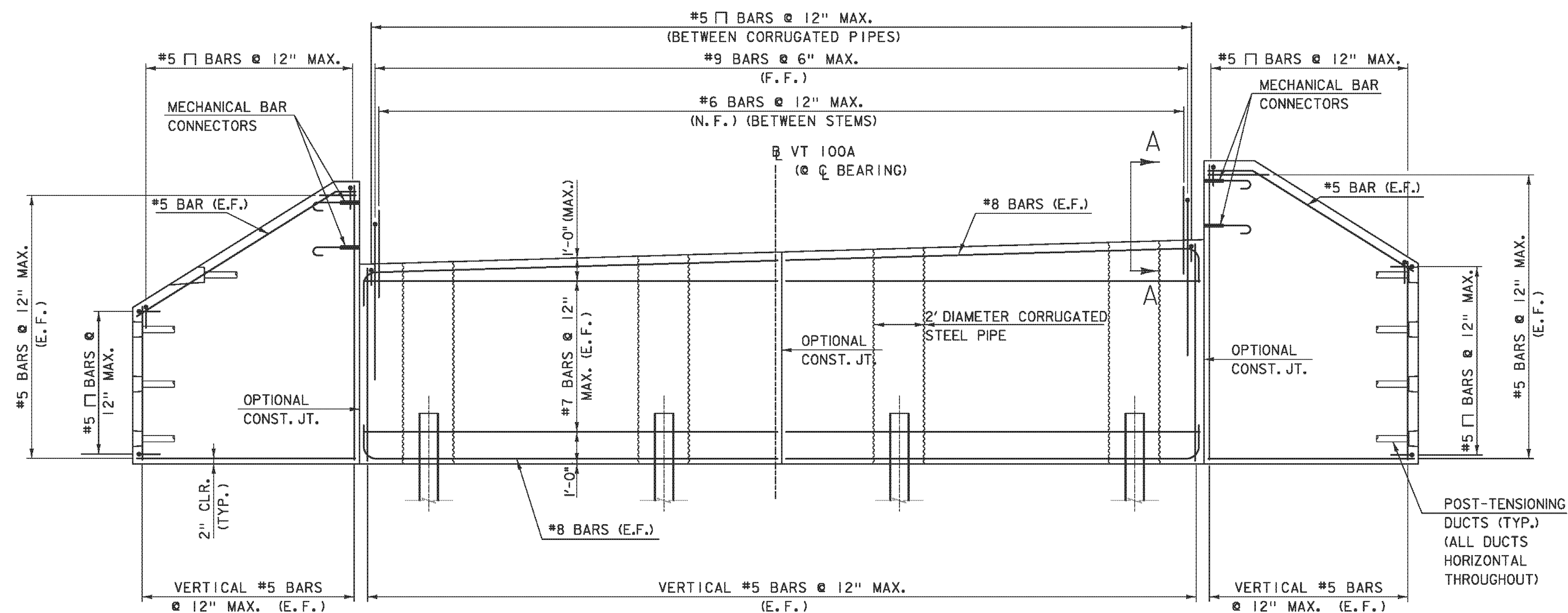




TYPICAL ABUTMENT REINFORCEMENT PLAN

POST TENSIONING DUCTS NOT SHOWN FOR CLARITY

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



TYPICAL ABUTMENT  
REINFORCEMENT SECTION

TYPICAL ABUTMENT REINFORCEMENT ELEVATION

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

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

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

**TYLIN**INTERNATIONAL

PROJECT NAME: PLYMOUTH

PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330d+1003.dgn

PROJECT LEADER: J. OLUND

DESIGNED BY: D. MYERS

ABUTMENT REINFORCEMENT

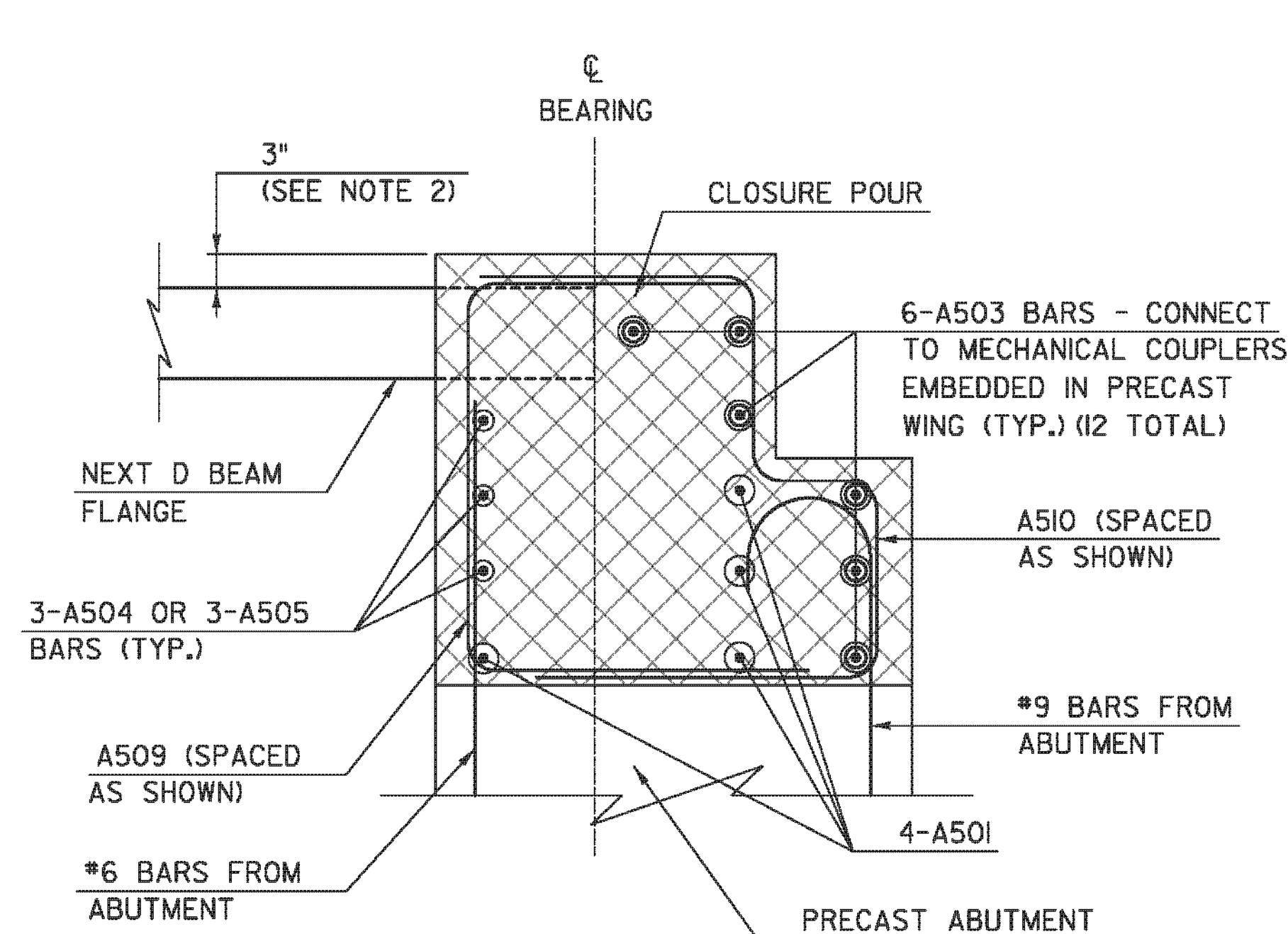
PLOT DATE: 9/20/2012

DRAWN BY: T. KELLEY

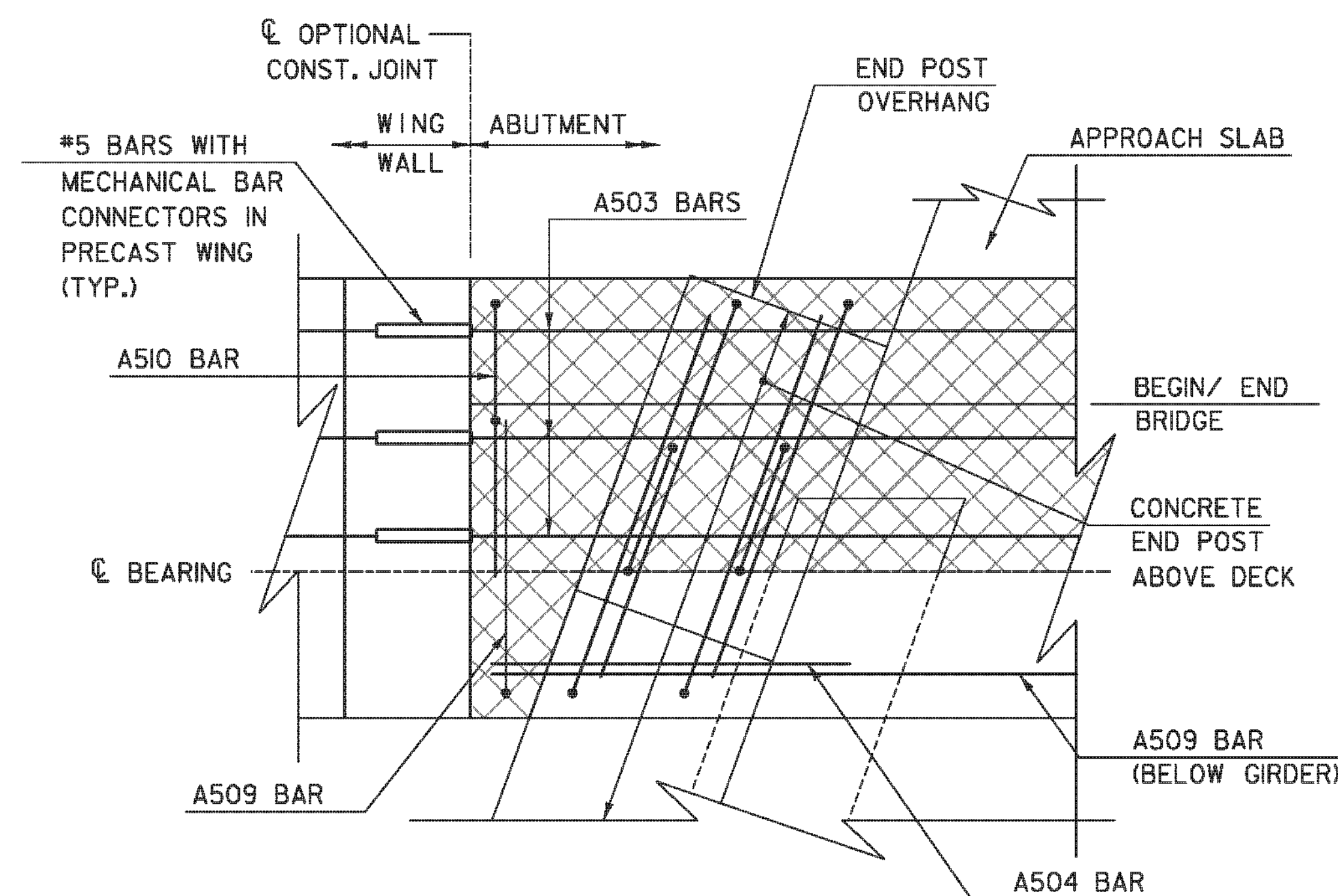
CHECKED BY: J. OLUND

SHEET 25 OF 46

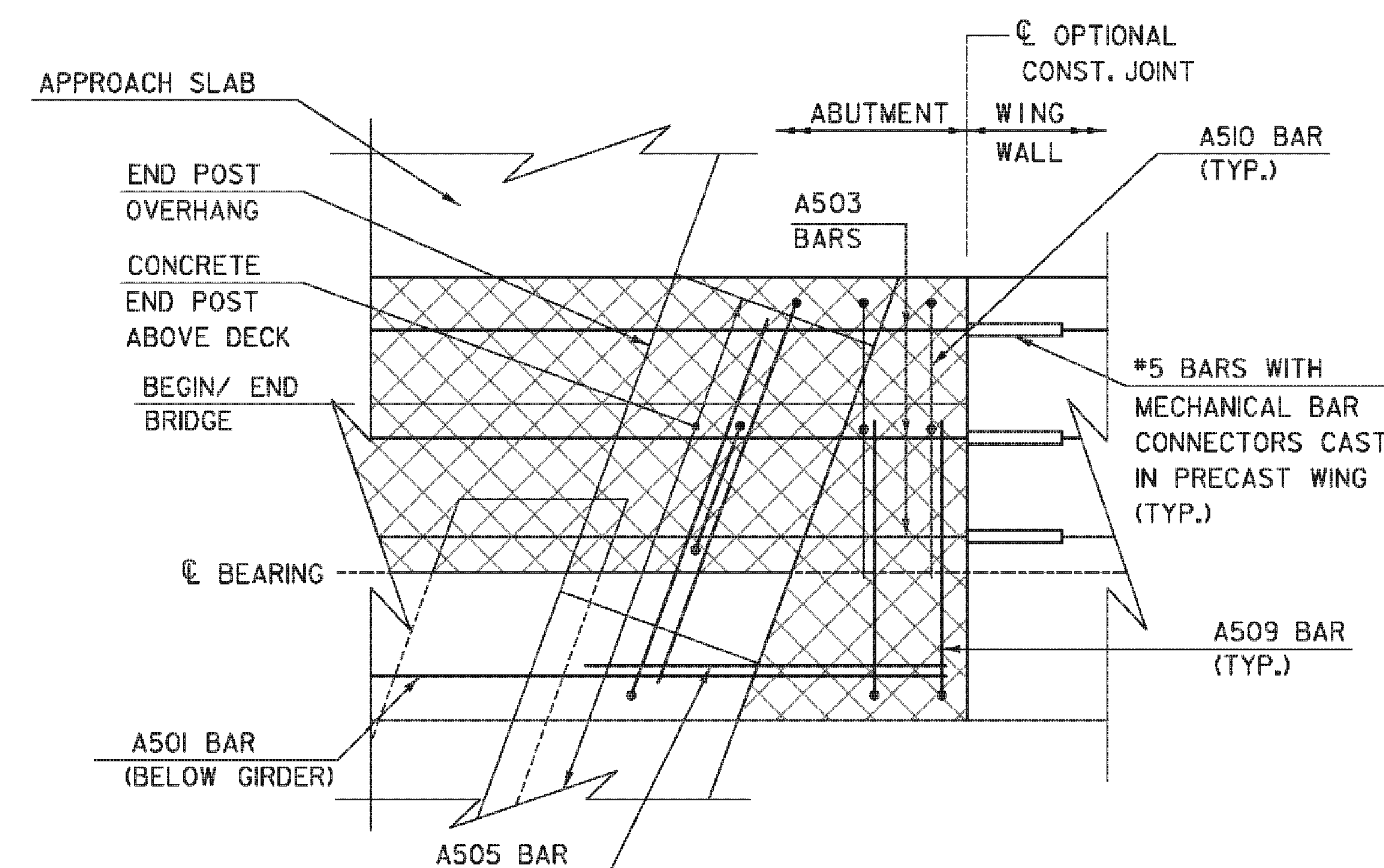




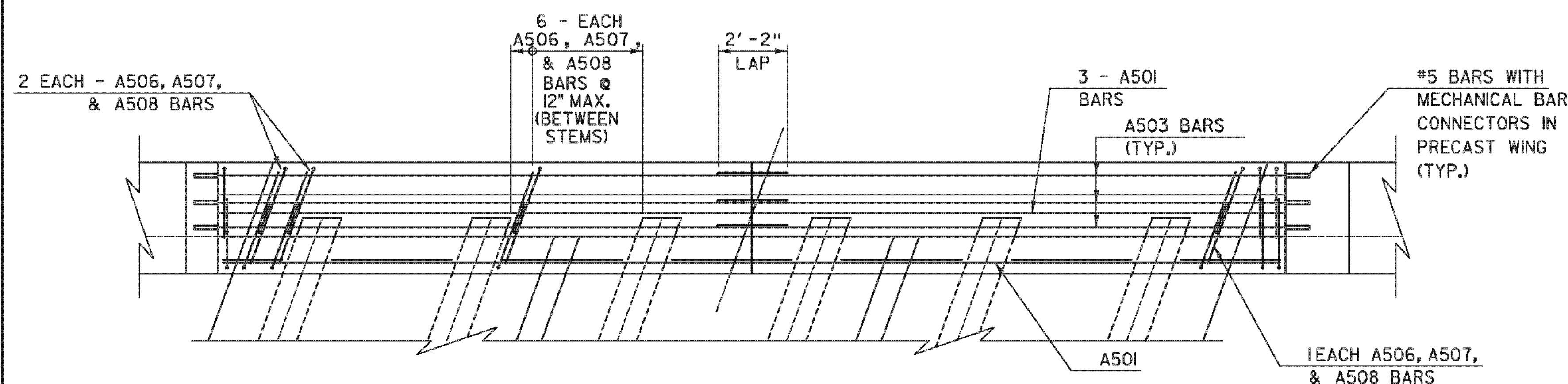
**SECTION A-A**  
SCALE: 1" = 1'-0"



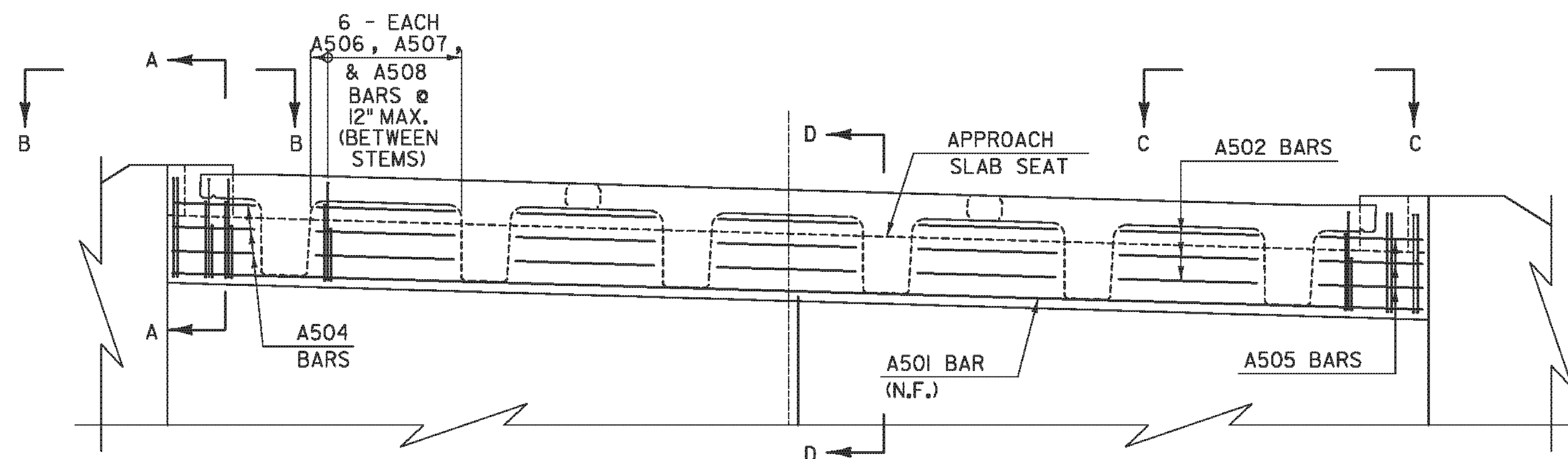
**VIEW B-B**  
SCALE: 1" = 1'-0"



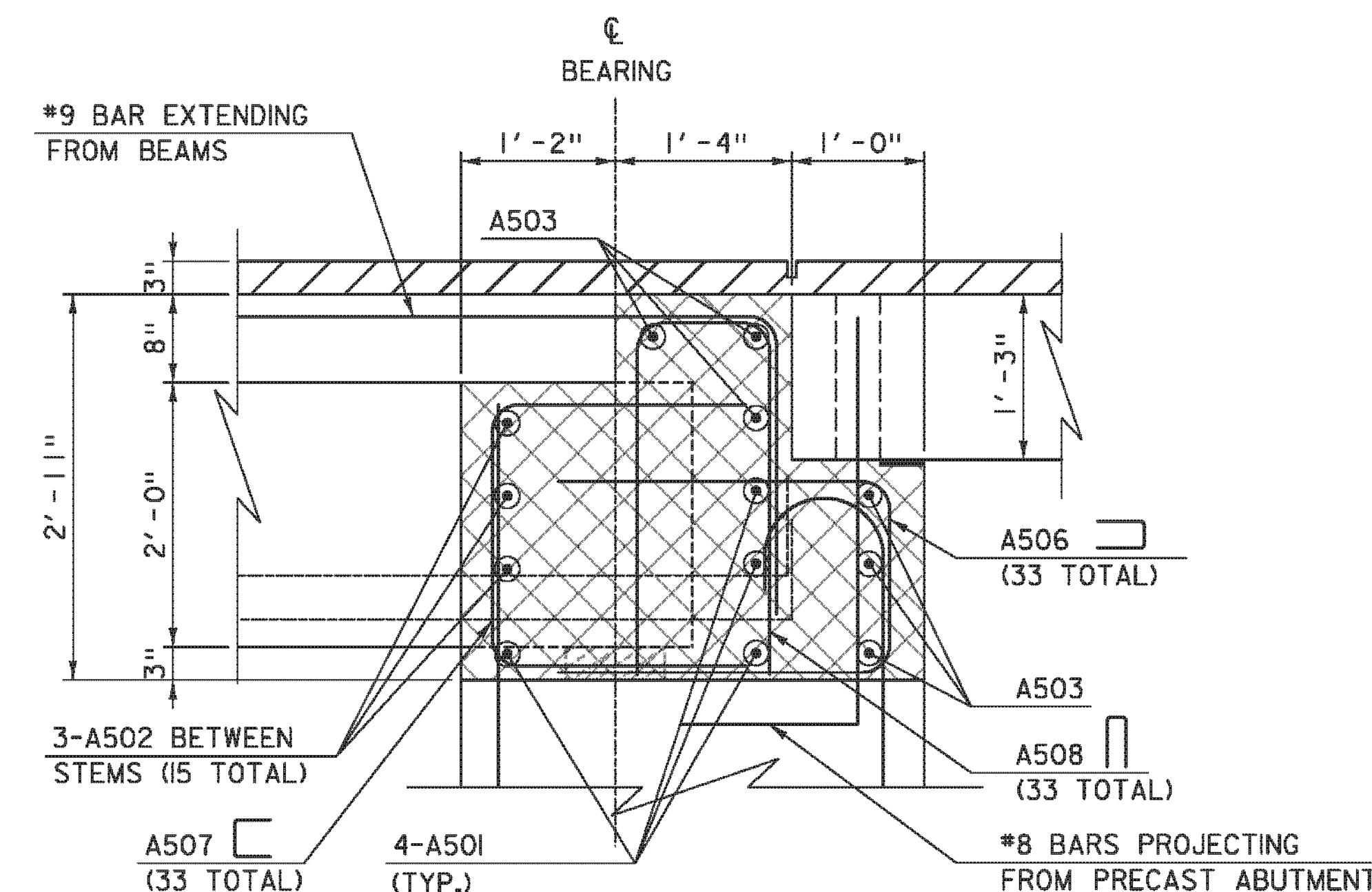
**VIEW C-C**  
SCALE: 1" = 1'-0"



**CLOSURE POUR - PLAN**  
SCALE: 3/8" = 1'-0"



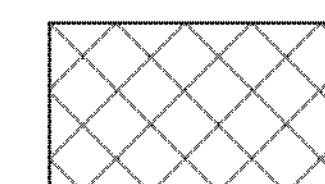
**CLOSURE POUR - ELEVATION**  
SCALE: 3/8" = 1'-0"  
(A501 & A503 BARS NOT SHOWN FOR CLARITY)



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

**NOTES:**

1. ABUTMENT NO. 1 SHOWN, ABUTMENT NO. 2 IS SIMILAR.
2. TOP OF CLOSURE POUR SHALL BE STRUCK FLUSH WITH NEXT D BEAM FLANGES WITHIN THE HORIZONTAL LIMITS OF THE NEXT D BEAM FLANGES. TOP OF CLOSURE POUR OUTSIDE OF NEXT D BEAM FLANGE LIMITS SHALL BE STRUCK LEVEL WITH TOP OF WINGWALLS.



SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)

SCALE 3/8" = 1'-0"

1 0 1 2 3 4

SCALE 1" = 1'-0"

1 9 6 3 0 1 2

**TYL** INTERNATIONAL

PROJECT NAME: PLYMOUTH

PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330d+1004.dgn

PROJECT LEADER: J. OLUND

DESIGNED BY: D. MYERS

ABUTMENT CLOSURE POUR DETAILS

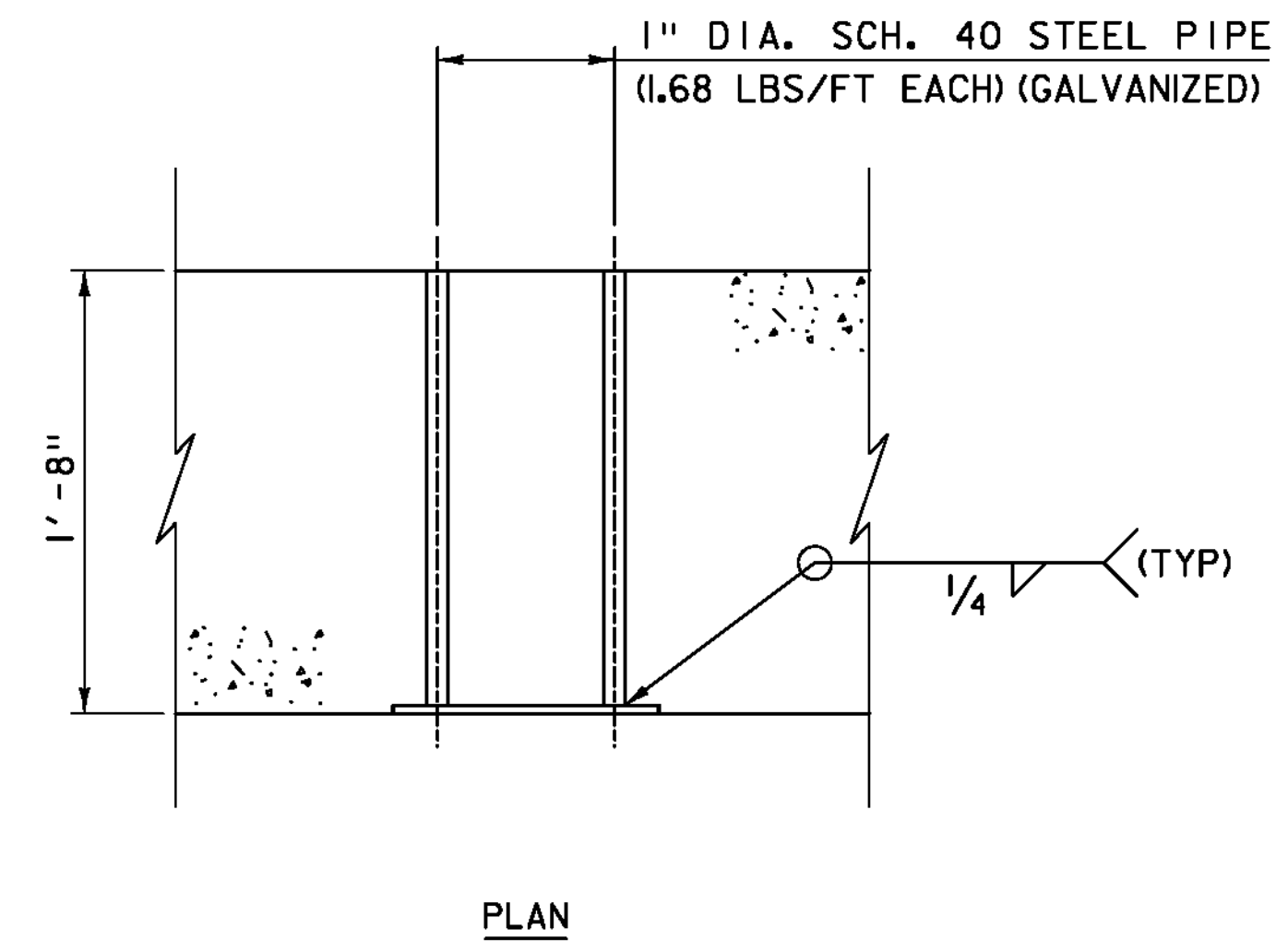
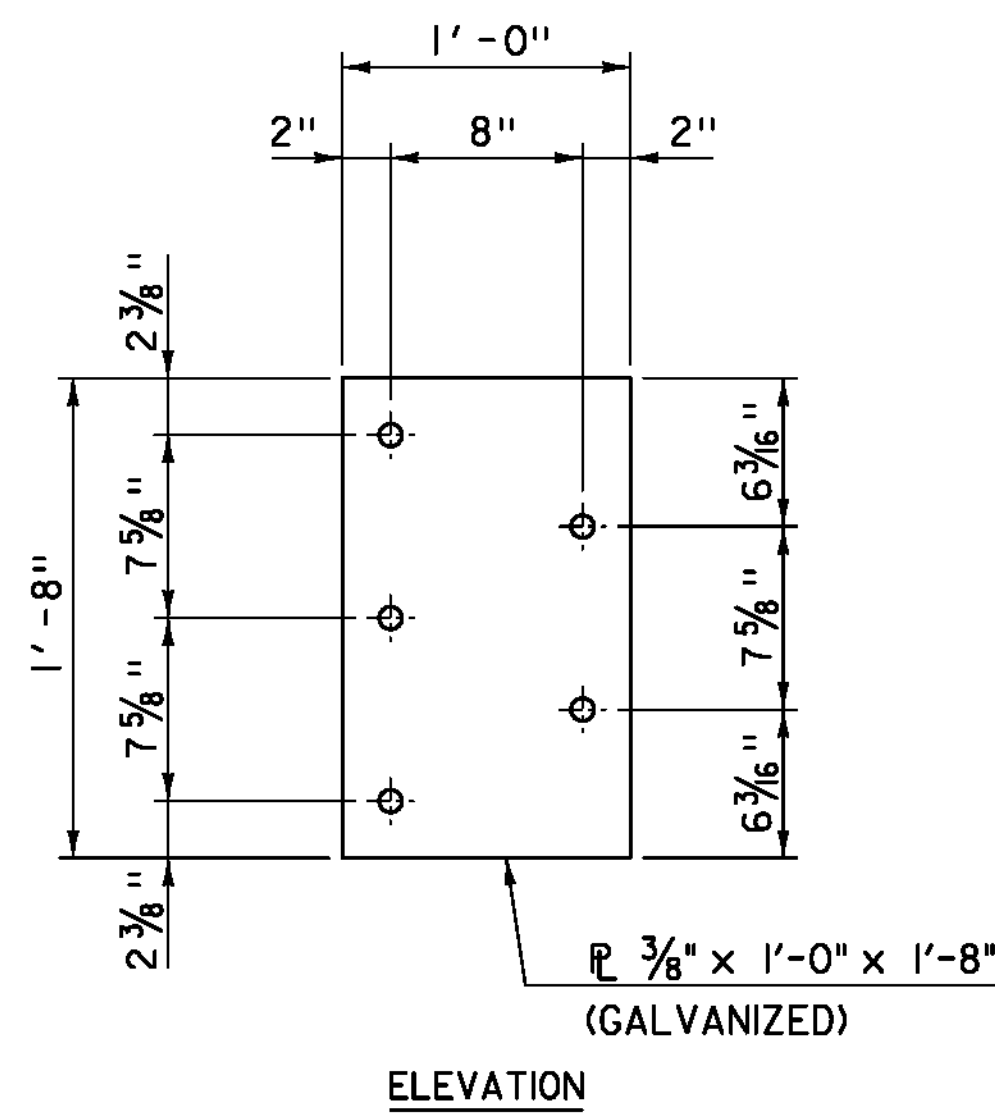
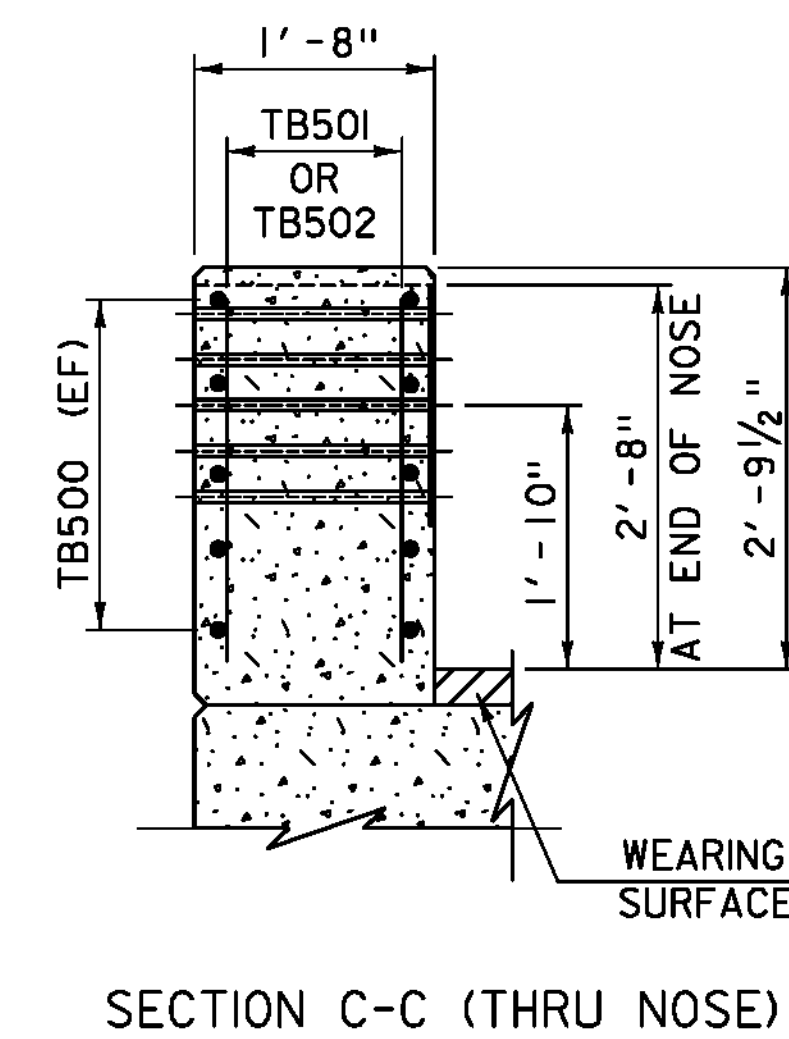
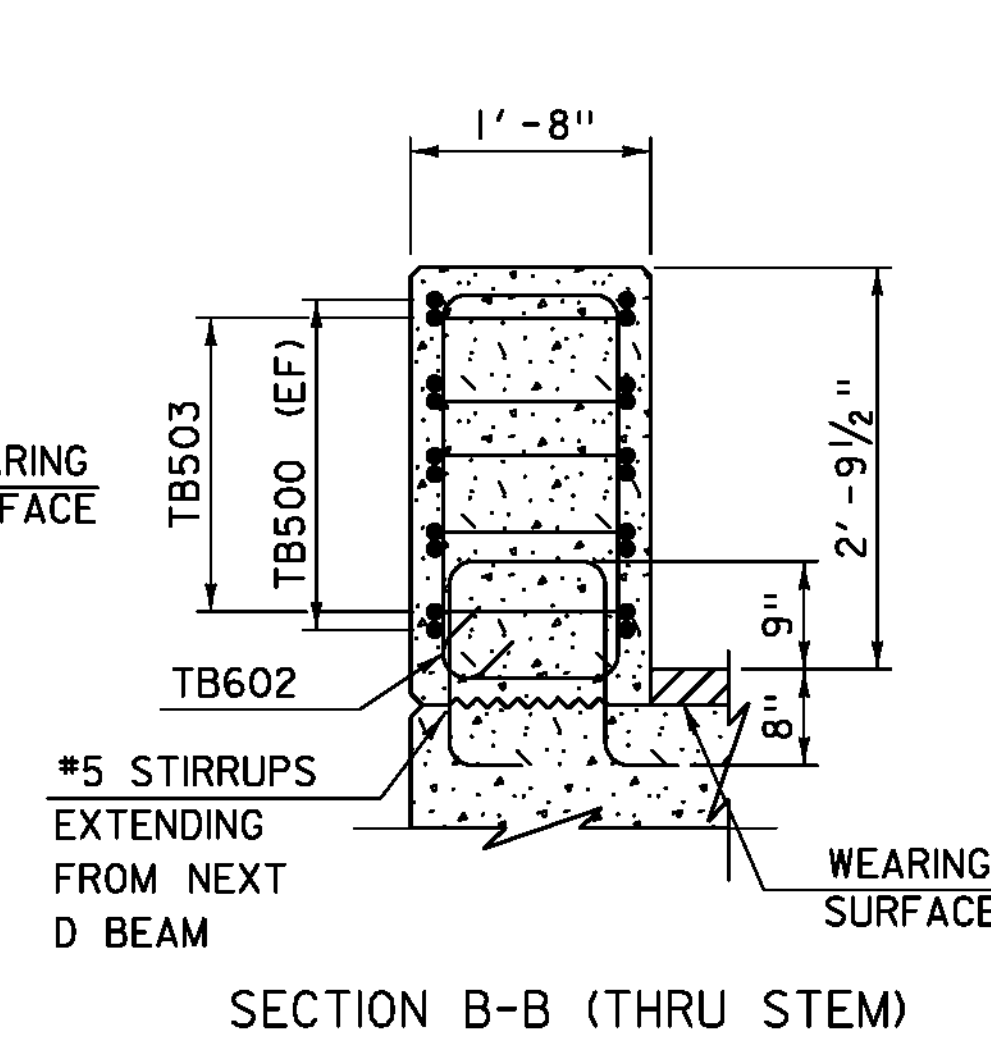
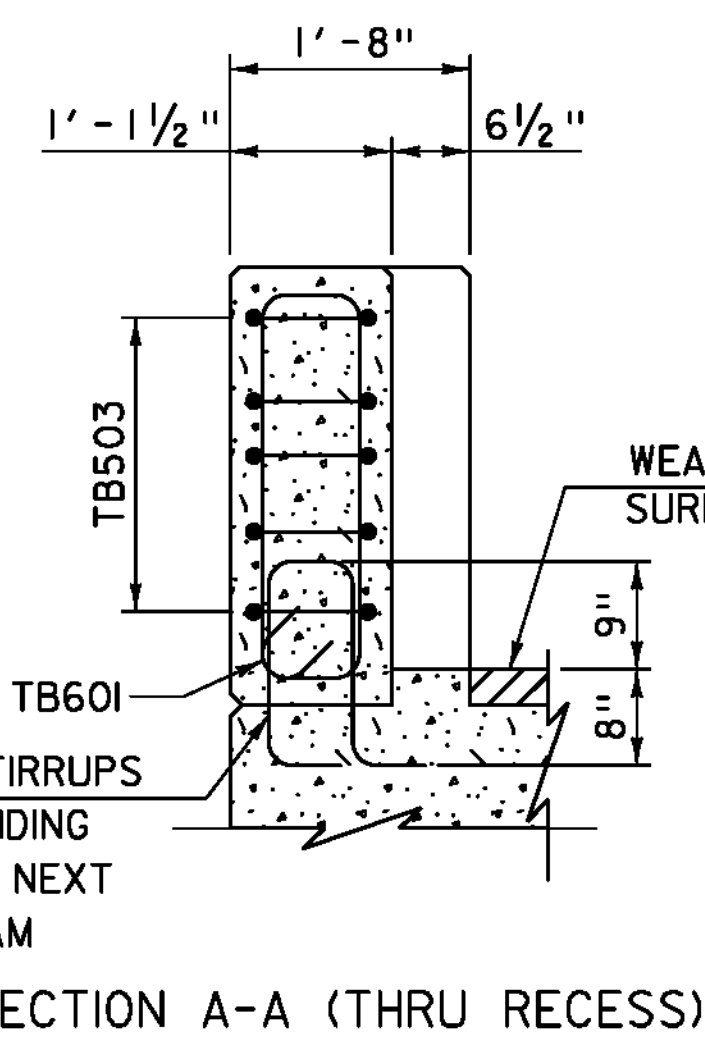
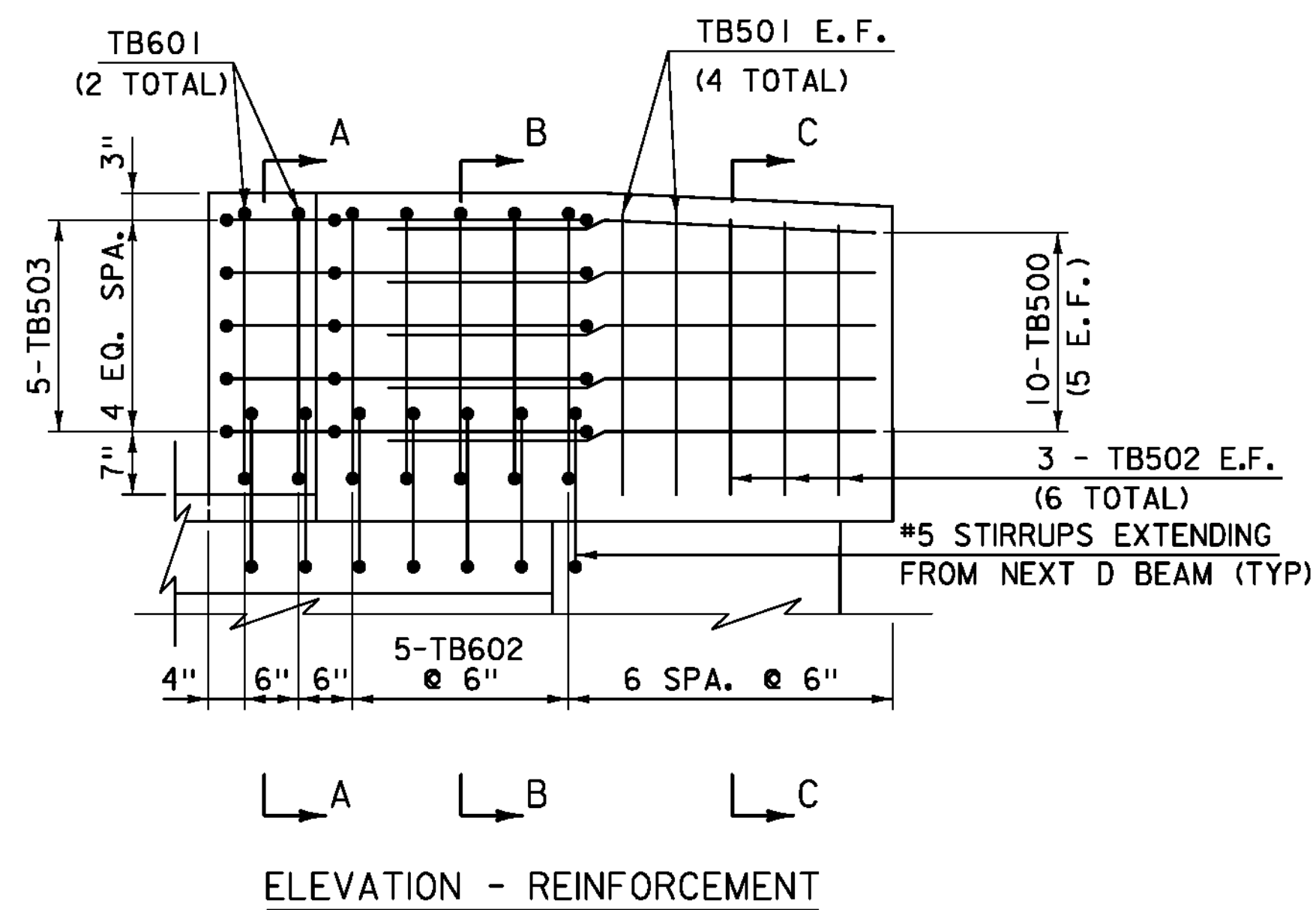
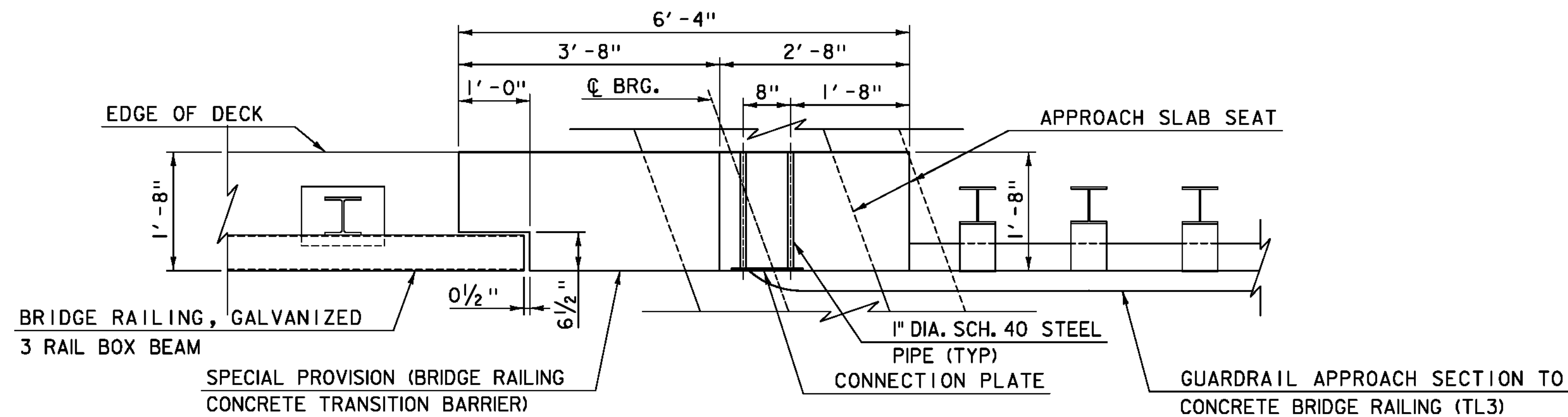
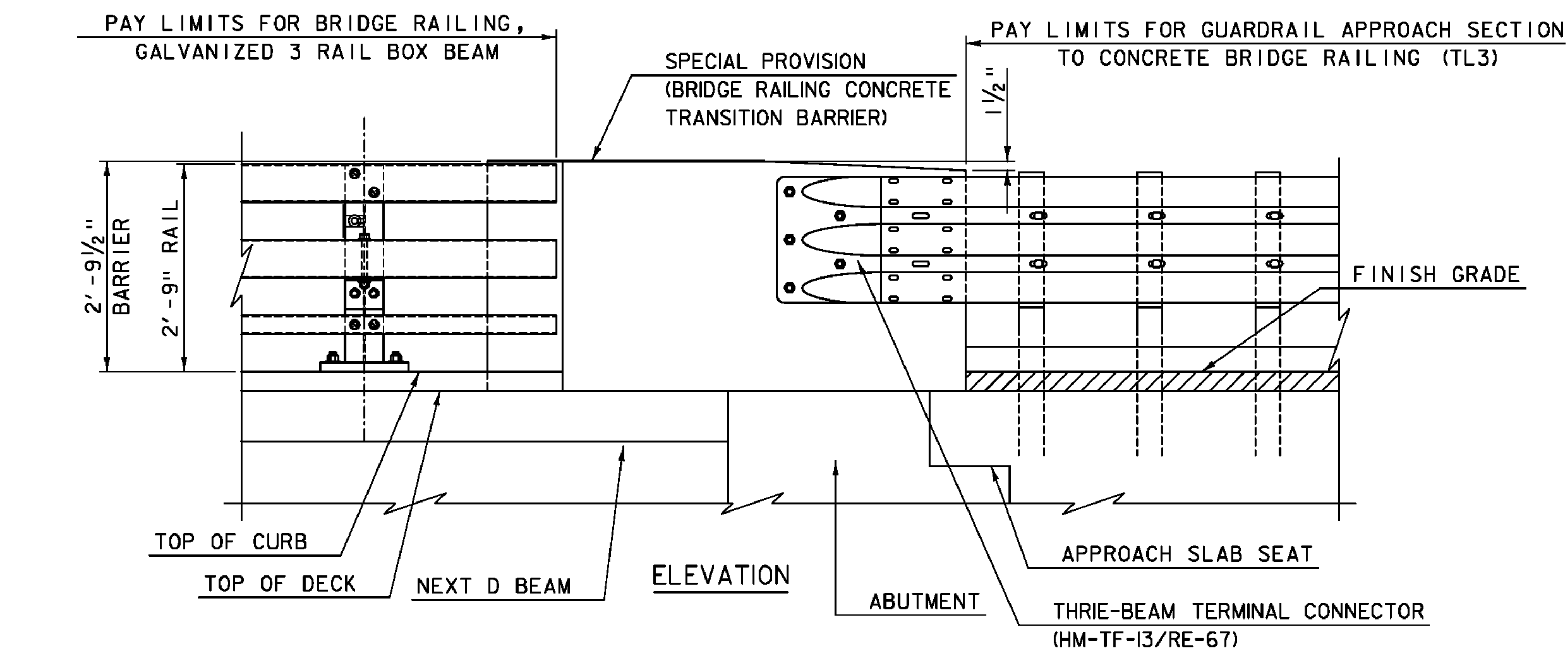
PLOT DATE: 9/20/2012

DRAWN BY: T. KELLEY

CHECKED BY: J. OLUND

SHEET 26 OF 46





CONNECTION PLATE DETAIL  
SCALE: 1 1/2" = 1'-0"

NOTE: CONNECTION PLATES, PIPES, AND REINFORCEMENT NOTED WITH PREFIX 'TB' SHALL BE INCIDENTAL TO ITEM 900.620, "SPECIAL PROVISION (BRIDGE RAILING CONCRETE TRANSITION BARRIER)". BAR DETAILS, INCLUDING QUANTITY AND BEND DIMENSIONS, ARE SHOWN IN THE REINFORCEMENT SCHEDULE.

# BRIDGE RAILING, CONCRETE TRANSITION BARRIER SCALE: 3/4" = 1'-0"

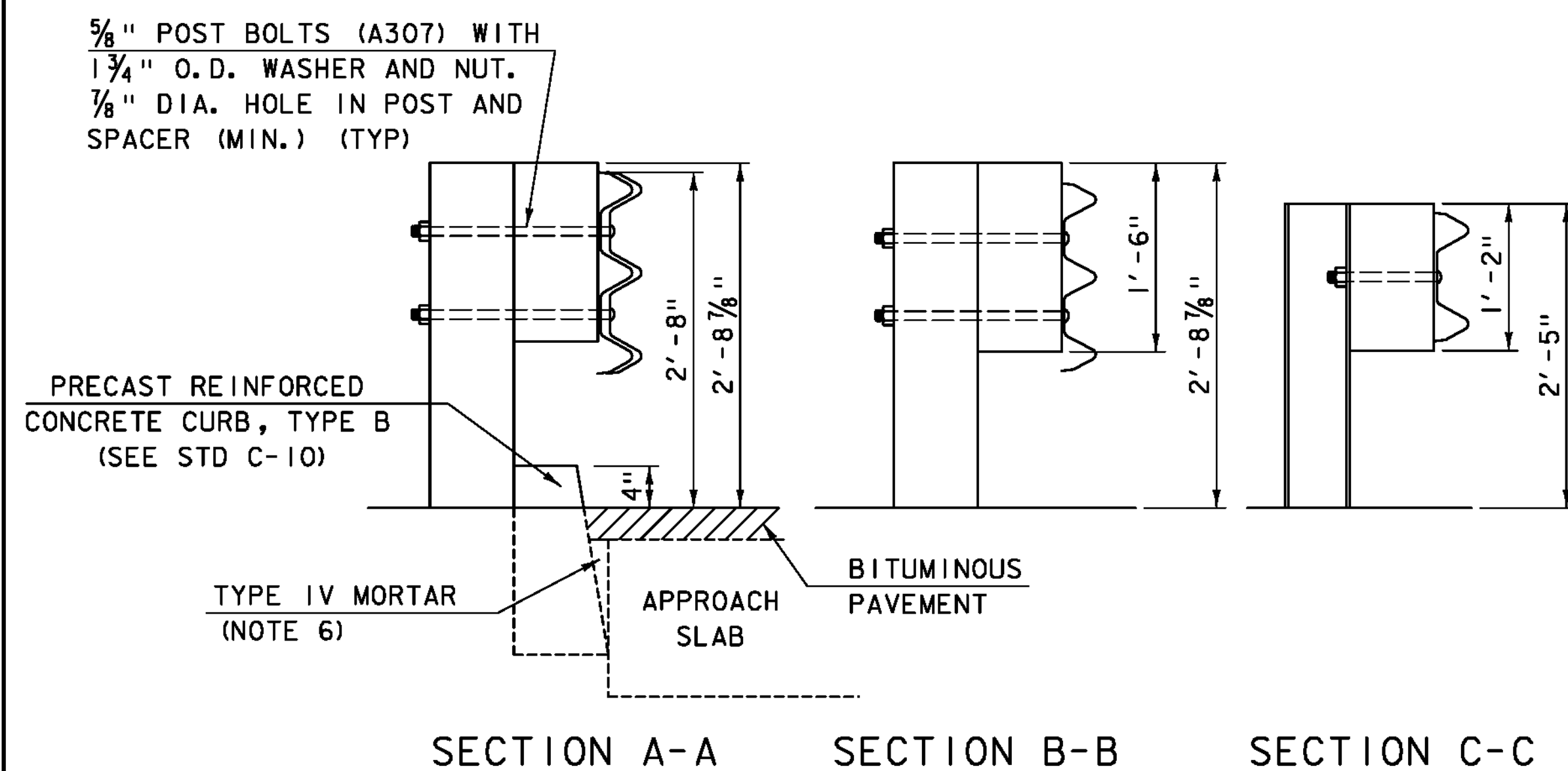
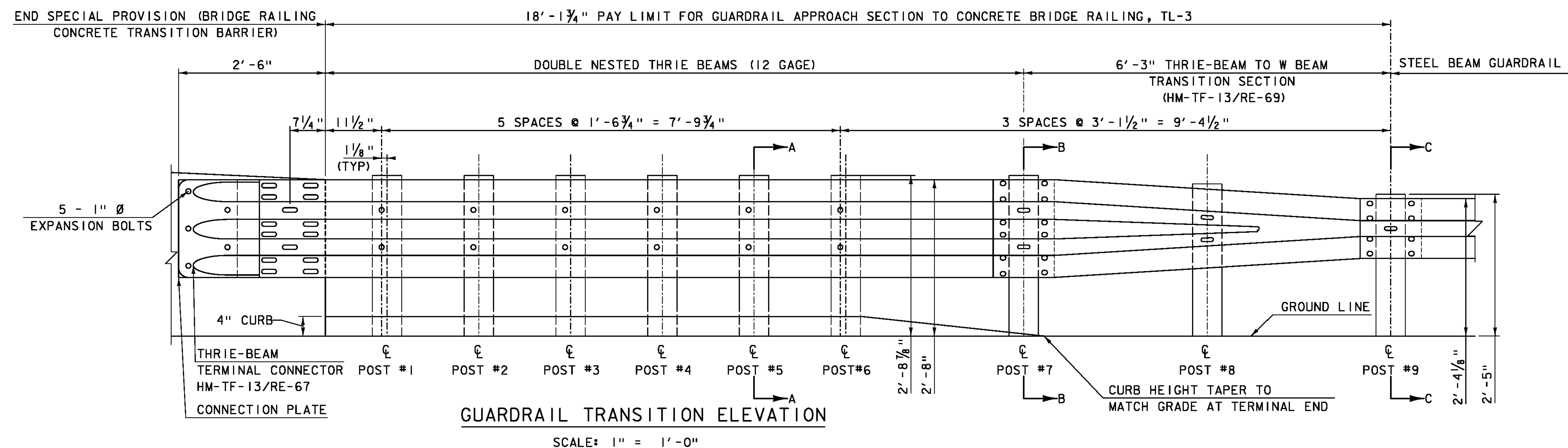
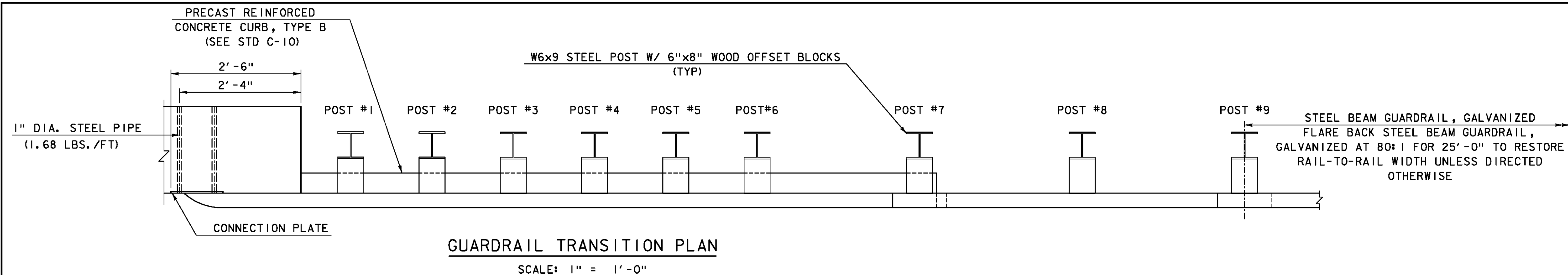
TYL INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330trans\_barrier.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: J. OLUND  
TRANSITION BARRIER DETAILS

PLOT DATE: 9/20/2012  
DRAWN BY: T. KELLEY  
CHECKED BY: D. MYERS  
SHEET 27 OF 46





**NOTES:**

1. THRIE-BEAM TERMINAL CONNECTOR SHALL BE INCLUDED IN THE UNIT BID PRICE OF ITEM 621.747, "GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAILING, TL3."
2. THE CONNECTION PLATE AND PIPE SHALL BE INCLUDED IN THE UNIT BID PRICE OF ITEM 900.620, "SPECIAL PROVISION (BRIDGE RAILING CONCRETE TRANSITION BARRIER)."
3. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, A COMPOSITE MATERIAL POST AND/OR BLOCKOUT FROM THE APPROVED PRODUCTS LIST MAY BE SUBSTITUTED FOR A POST AND/OR BLOCKOUT OF SIMILAR DIMENSIONS.
4. REFER TO STANDARD DRAWINGS G-1 AND G-1D FOR ADDITIONAL DETAILS.
5. ALL APPROACH RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW.
6. THE TRIANGULAR SPACE BETWEEN THE APPROACH SLAB AND PRECAST CURB SHALL BE FILLED WITH TYPE IV MORTAR. PAYMENT SHALL BE INCIDENTAL TO ITEM 616.26, "PRECAST REINFORCED CONCRETE CURB, TYPE B."

**TYL** INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330rall.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: J. OLUND  
TL-3 TRANSITION RAIL DETAILS

PLOT DATE: 9/20/2012  
DRAWN BY: T. KELLEY  
CHECKED BY: D. MYERS  
SHEET 28 OF 46

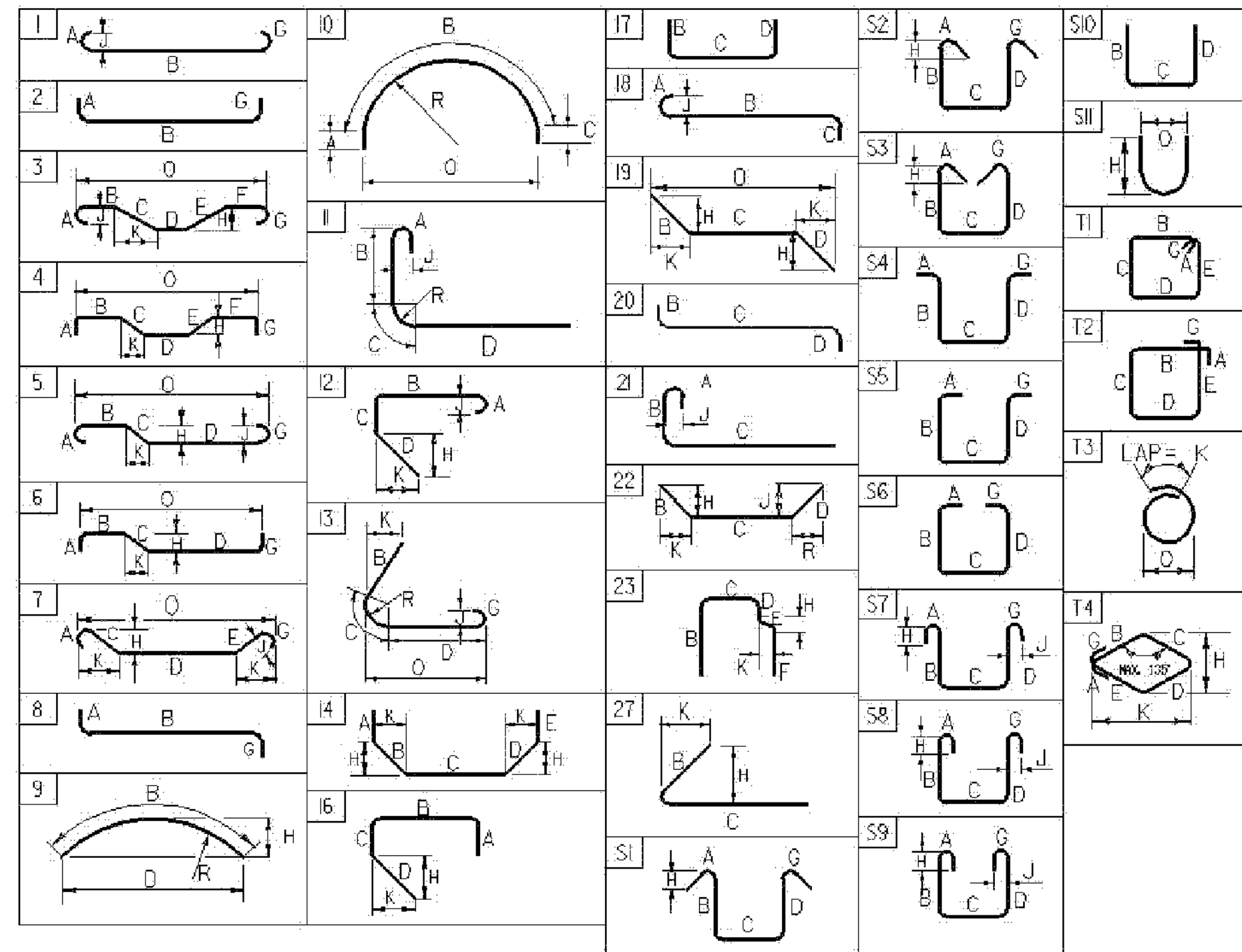


## REINFORCING STEEL SCHEDULE

## ~ 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-SI). 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.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.

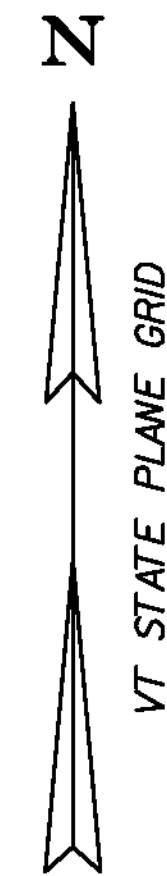
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11. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



| ASTM STANDARD<br>REINFORCING BARS |                              |                                  |                             |                    |
|-----------------------------------|------------------------------|----------------------------------|-----------------------------|--------------------|
| BAR SIZE<br>DESIGNA-<br>TION      | WEIGHT<br>POUNDS<br>PER FOOT | NOMINAL DIMENSIONS ROUND SECTION |                             |                    |
|                                   |                              | DIAMETER<br>INCHES               | AREA<br>INCHES <sup>2</sup> | PERMETER<br>INCHES |
| #3                                | 0.376                        | 0.375                            | 0.11                        | 1.178              |
| #4                                | 0.668                        | 0.500                            | 0.20                        | 1.571              |
| #5                                | 1.043                        | 0.625                            | 0.31                        | 1.963              |
| #6                                | 1.502                        | 0.750                            | 0.44                        | 2.356              |
| #7                                | 2.044                        | 0.875                            | 0.60                        | 2.749              |
| #8                                | 2.670                        | 1.000                            | 0.79                        | 3.142              |
| #9                                | 3.400                        | 1.128                            | 1.00                        | 3.544              |
| #10                               | 4.303                        | 1.270                            | 1.27                        | 3.990              |
| #11                               | 5.313                        | 1.410                            | 1.56                        | 4.430              |
| #14                               | 7.65                         | 1.693                            | 2.25                        | 5.32               |
| #18                               | 13.60                        | 2.257                            | 4.00                        | 7.09               |

|                                       |                              |
|---------------------------------------|------------------------------|
| PROJECT NAME: <b>PLYMOUTH</b>         |                              |
| PROJECT NUMBER: <b>ER BRS 0149(5)</b> |                              |
| FILE NAME: <b>zllc330rss.xls</b>      | PLOT DATE: <b>8/24/2012</b>  |
| PROJECT MANAGER: <b>J. OLUND</b>      | DRAWN BY: <b>D. MYERS</b>    |
| DESIGNED BY: <b>D. MYERS</b>          | CHECKED BY: <b>J. OLUND</b>  |
| <b>REINFORCING STEEL SCHEDULE</b>     | SHEET <b>29</b> OF <b>46</b> |





## LEGEND



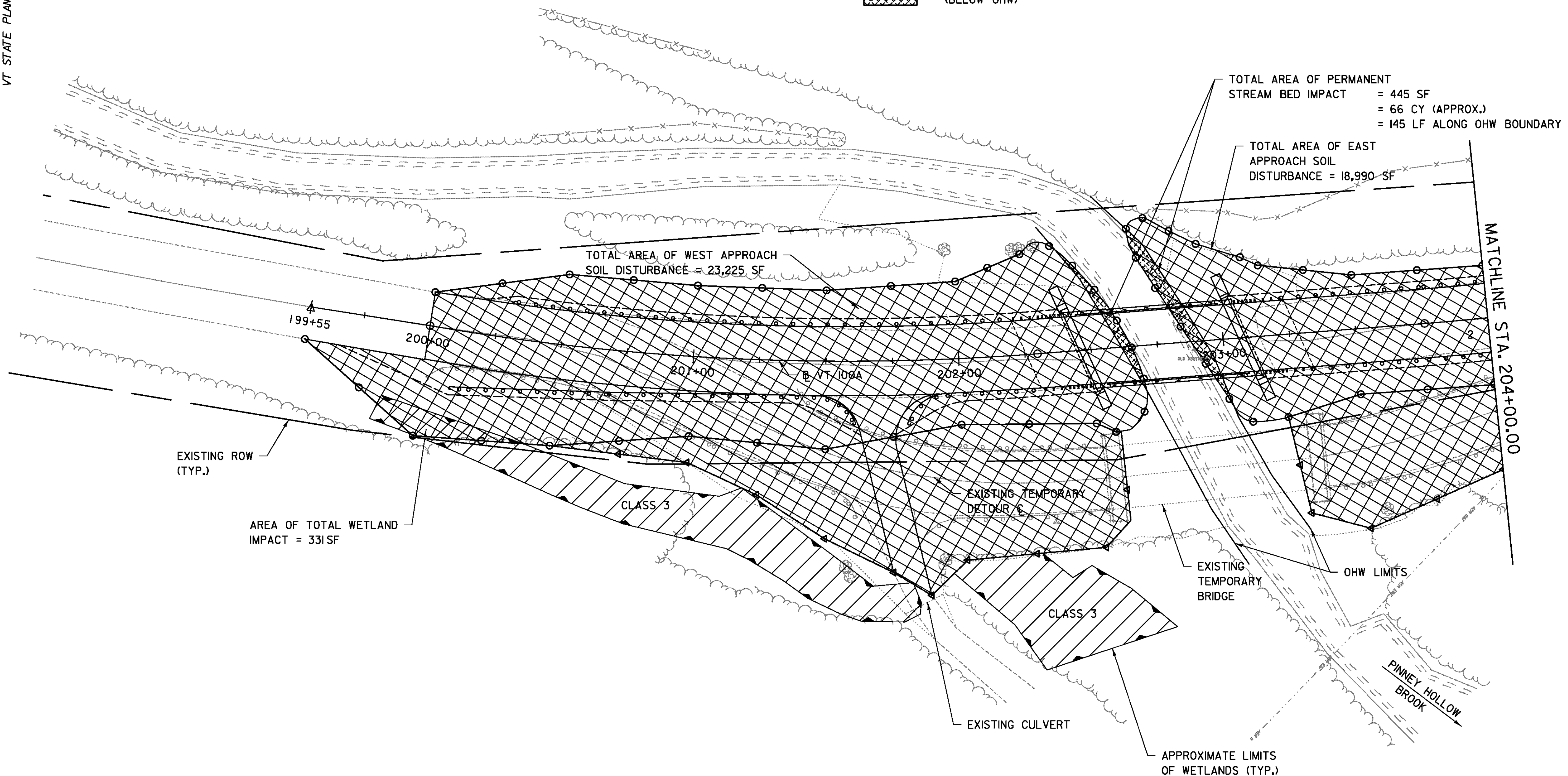
AREA OF SOIL DISTURBANCE



AREA OF PERMANENT STREAM IMPACT  
(BELOW OHW)



AREA OF APPROXIMATE WETLAND LIMITS



## RESOURCE LAYOUT I

NOTE: APPROXIMATELY 650 SF OF WETLANDS WERE IMPACTED AS A RESULT OF THE CONSTRUCTION OF THE TEMPORARY DETOUR, PER J. LEPORE OF VTRANS, OCT. 25, 2011.

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

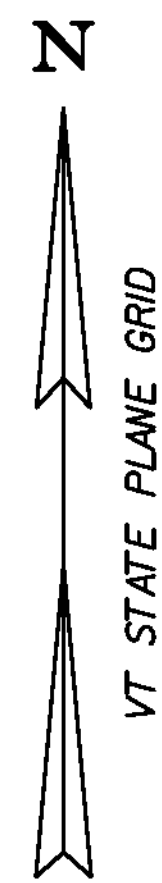
TYLIN INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330bdr\_RL01.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: J. OLUND  
RESOURCE LAYOUT I

PLOT DATE: 9/20/2012  
DRAWN BY: S. MORGAN  
CHECKED BY: D. BRYANT  
SHEET 30 OF 46





# LEGEND



AREA OF SOIL DISTURBANCE

TOTAL AREA OF EAST APPROACH  
SOIL DISTURBANCE = 18,990 SF

MATCHLINE STA. 204+00.00

EXISTING  
ROW (TYP.)

EXISTING TEMPORARY  
DETOUR C

206+00

206+84

## RESOURCE LAYOUT 2

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

TYLIN INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330bdr\_RL02.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: J. OLUND  
RESOURCE LAYOUT 2

PLOT DATE: 9/20/2012  
DRAWN BY: S. MORGAN  
CHECKED BY: D. BRYANT  
SHEET 31 OF 46



EROSION CONTROL NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE #8 ON VT 100A SPANNING 63 FEET OVER THE BODY OF WATER KNOWN AS PINNEY HOLLOW BROOK IN THE TOWN OF PLYMOUTH. THE PROJECT BEGINS AT A POINT APPROXIMATELY 1.00 MILES SOUTH OF THE BRIDGEWATER TOWN LINE AND EXTENDS EASTERLY FOR 0.04 MILES. WORK WILL INVOLVE CONSTRUCTION OF NEW ABUTMENTS, CONSTRUCTION OF THE BRIDGE SUPERSTRUCTURE ALONG WITH RELATED ROADWAY, CHANNEL WORK, AND THE MAINTENANCE AND REMOVAL OF AN EMERGENCY REPAIR TEMPORARY DETOUR BRIDGE AND APPROACHES.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA AS SHOWN ON THE ATTACHED EPSC PLAN. THE AREA OF DISTURBANCE DOES NOT INCLUDE WASTE, BORROW AND STAGING AREAS. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE LOCATION OF THE WASTE, BORROW AND STAGING AREAS, AS WELL AS THE MATERIAL STOCKPILE, REFUELING AND MAINTENANCE AREAS. A MAP SHALL BE ATTACHED IF NECESSARY.

TOTAL AREA OF DISTURBANCE IS APPROXIMATELY 42,215 SQUARE FEET (0.97 ACRES).

IT IS ANTICIPATED THAT THE PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY, EXISTING ROADS, UTILITIES

THE TOPOGRAPHY SURROUNDING THE PROJECT SITE CONSISTS OF MODERATELY STEEP SLOPES ON THE NORTH SIDE OF THE PROJECT AND GENTLY SLOPING SLOPES ON THE SOUTH SIDE OF THE PROJECT. THERE IS ONE RESIDENTIAL PROPERTY ON THE SOUTHEAST CORNER OF THE PROJECT. THE GENERAL TOPOGRAPHY OF THE AREA SLOPES FROM THE NORTH TO THE SOUTH. ALL ROAD SURFACES IN THE PROJECT AREA ARE BITUMINOUS CONCRETE PAVEMENT.

THERE ARE OVERHEAD ELECTRICAL AND TELEPHONE LINES ON THE EAST END OF THE PROJECT THAT CROSS VT 100A AND PINNEY HOLLOW BROOK.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE BRIDGE SPANS THE BODY OF WATER KNOWN AS PINNEY HOLLOW BROOK. IN GENERAL THE BROOK IS CLASSIFIED AS MEANDERING. WITHIN THE REACH INFLUENCED BY THE BRIDGE THE BROOK IS CHANNELIZED WITH A BEND UPRIVER. THE BROOK BOUNDARIES ARE ALLUVIAL AND STREAM BANKS ARE GENERALLY SHALLOW. THE STREAM BED CONSISTS OF GRAVEL AND COBBLE. THE TRIBUTARY AREA AT THE BRIDGE IS 8.6 SQUARE MILES. CONSTRUCTION OF THE NEW BRIDGE WILL REQUIRE SOME TEMPORARY AND PERMANENT IMPACTS TO PINNEY HOLLOW BROOK. THERE ARE ALSO EXISTING WETLANDS ON THE SOUTHWEST END OF THE PROJECT THAT WILL BE IMPACTED.

THE FOLLOWING DESCRIPTIONS ARE FOR THE EXISTING SITE PLANS: SURFACE DRAINAGE FROM VT 100A FLOWS DOWN WOODED SIDESLOPES INTO EXISTING DITCHES AND DRAINAGE STRUCTURES WHICH OUTLET TOWARDS PINNEY BROOK.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF A SMALL AREA OF A WELL ESTABLISHED LAWN AND MEDIUM TO HEAVILY WOODED AREAS. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS REQUIRED FOR REPLACEMENT OF THE EXISTING BRIDGE AND REMOVAL OF THE EMERGENCY REPAIR TEMPORARY DETOUR BRIDGE AND APPROACHES. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE FOR THE COUNTY OF WINDSOR, VERMONT. SOILS ON THE PROJECT SITE ARE:

TUNBRIDGE-LYMAN COMPLEX;  
BERKSHIRE AND MONADNOCK;  
AND CROGHAN AND SHEEPSCOT.

SEE EPSC EXISTING CONDITIONS LAYOUT SHEETS FOR SOIL LOCATIONS AND ADDITIONAL INFORMATION.

1.2.4 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO  
HISTORICAL OR ARCHAEOLOGICAL AREAS: NO  
PRIME AGRICULTURE LAND: NO  
THREATENED AND ENDANGERED SPECIES: NO  
WATER RESOURCE: PINNEY HOLLOW BROOK  
WETLANDS: CLASS III WETLANDS ON SOUTHWEST CORNER OF PROJECT.  
TOTAL IMPACTED AREA IS 331 SF.

1.3 RISK EVALUATION

THE PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT THE LIFE OF THE PROJECT TO AVOID SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT BASED UPON ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS, SHALL BE DELINEATED.

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

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.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTOR'S PROGRESS SCHEDULE. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

ENTRANCE/EXIT STABILIZATION MEASURES ARE NOT ANTICIPATED ON THIS PROJECT.

1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHOULD BE INSTALLED PRIOR TO ANY UPSLOPE WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND DETAIL SHEETS.

DROP INLET PROTECTION WILL BE UTILIZED AS SHOWN ON THE EPSC PLAN AND DETAIL SHEETS.

1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

DIVERSION OF UPLAND RUNOFF IS NOT ANTICIPATED.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSION POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS. STONE CHECK DAMS SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND OTHER AREAS AS DIRECTED BY THE RESIDENT ENGINEER.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS.

SEED AND MULCH WILL BE USED AS PERMANENT CONTROLS TO STABILIZE EXPOSED SOIL. RIPRAP AND STONE FILL WILL BE USED TO STABILIZE THE STREAMBED AROUND THE ABUTMENTS.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE. THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 3:1.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

SHOULD EARTH DISTURBANCE BE PERFORMED OUTSIDE THE CONSTRUCTION SEASON, A WINTER EROSION AND SEDIMENT CONTROL PLAN DESCRIBING ALTERNATIVE STABILIZATION METHODS SHALL BE SUBMITTED TO THE RESIDENT ENGINEER PRIOR TO AUGUST 15<sup>TH</sup> FOR APPROVAL.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER, AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

1.4.11 DE-WATERING ACTIVITIES

THE USE OF COFFERDAMS ARE NOT ANTICIPATED.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS.

1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

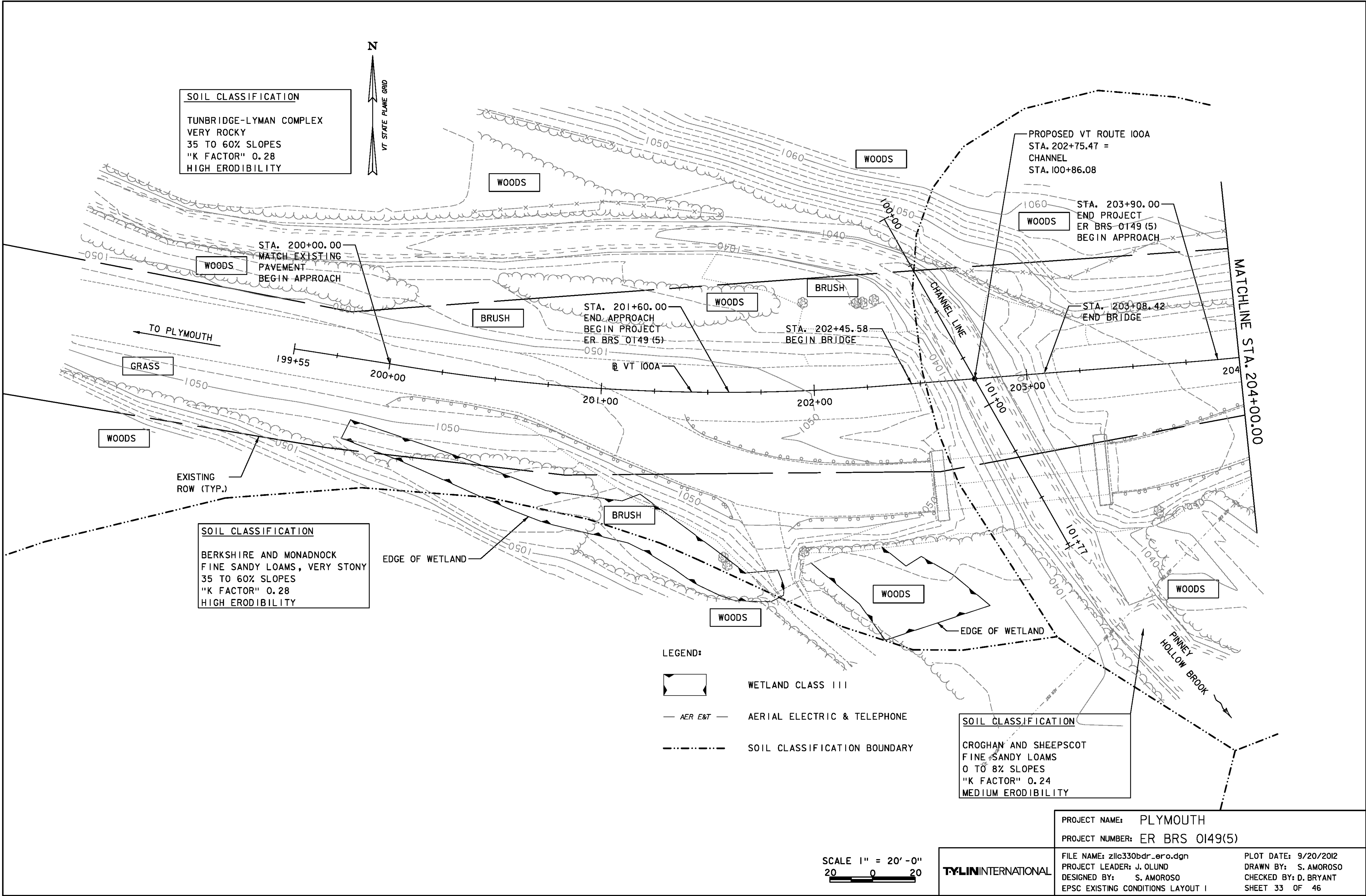
1.5.1 CONSTRUCTION SEQUENCE

1.5.2 OFF-SITE ACTIVITIES

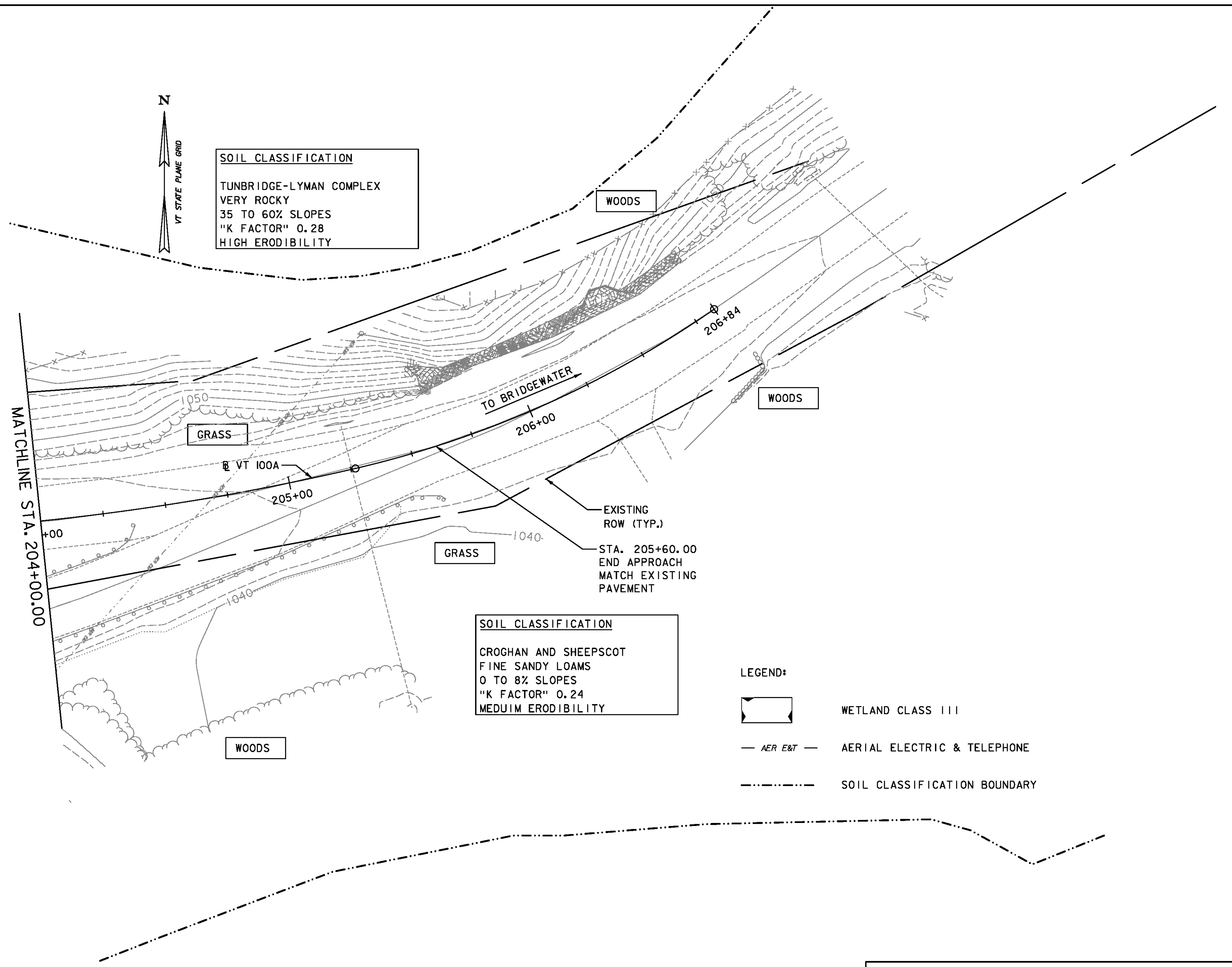
IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. WASTE, BORROW AND STAGING SITES MUST BE APPROVED BY VTRANS ENVIRONMENTAL SECTION.

|                    |                                |                       |
|--------------------|--------------------------------|-----------------------|
| TYLININTERNATIONAL | PROJECT NAME: PLYMOUTH         |                       |
|                    | PROJECT NUMBER: ER BRS 0149(5) |                       |
|                    | FILE NAME: zllc330bdr_ero.dgn  | PLOT DATE: 9/20/2012  |
|                    | PROJECT LEADER: J. OLUND       | DRAWN BY: S. AMOROSO  |
|                    | DESIGNED BY: S. AMOROSO        | CHECKED BY: D. BRYANT |
|                    | EPSC NARRATIVE                 | SHEET 32 OF 46        |







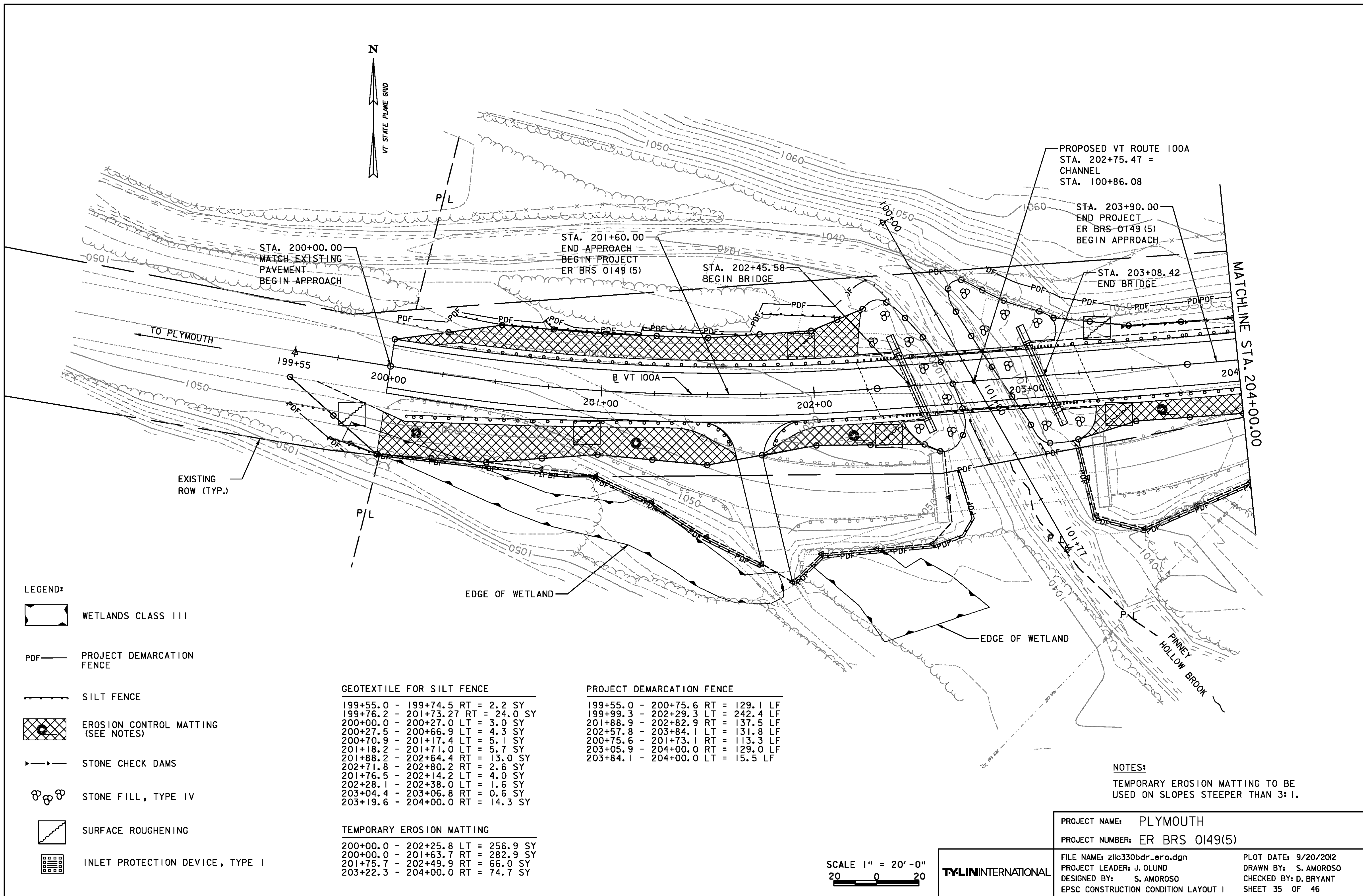


SCALE 1" = 20' - 0"  
20 0 20

**TYLIN**INTERNATIONAL

|                                  |                       |
|----------------------------------|-----------------------|
| PROJECT NAME: PLYMOUTH           |                       |
| PROJECT NUMBER: ER BRS 0149(5)   |                       |
| FILE NAME: zllc330bdr_ero.dgn    | PLOT DATE: 9/20/2012  |
| PROJECT LEADER: J. OLUND         | DRAWN BY: S. AMOROSO  |
| DESIGNED BY: S. AMOROSO          | CHECKED BY: D. BRYANT |
| EPSC EXISTING CONDITION LAYOUT 2 | SHEET 34 OF 46        |





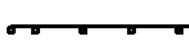
LEGEND:



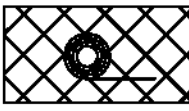
WETLANDS CLASS III

PDF

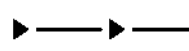
PROJECT DEMARCATION FENCE



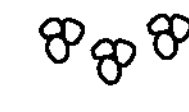
SILT FENCE



EROSION CONTROL MATTING (SEE NOTES)



STONE CHECK DAMS



STONE FILL, TYPE IV



SURFACE ROUGHENING



INLET PROTECTION DEVICE, TYPE I

GEOTEXTILE FOR SILT FENCE

|          |   |           |           |    |
|----------|---|-----------|-----------|----|
| 199+55.0 | - | 199+74.5  | RT = 2.2  | SY |
| 199+76.2 | - | 201+73.27 | RT = 24.0 | SY |
| 200+00.0 | - | 200+27.0  | LT = 3.0  | SY |
| 200+27.5 | - | 200+66.9  | LT = 4.3  | SY |
| 200+70.9 | - | 201+17.4  | LT = 5.1  | SY |
| 201+18.2 | - | 201+71.0  | LT = 5.7  | SY |
| 201+88.2 | - | 202+64.4  | RT = 13.0 | SY |
| 202+71.8 | - | 202+80.2  | RT = 2.6  | SY |
| 201+76.5 | - | 202+14.2  | LT = 4.0  | SY |
| 202+28.1 | - | 202+38.0  | LT = 1.6  | SY |
| 203+04.4 | - | 203+06.8  | RT = 0.6  | SY |
| 203+19.6 | - | 204+00.0  | RT = 14.3 | SY |

TEMPORARY EROSION MATTING

|          |   |          |            |    |
|----------|---|----------|------------|----|
| 200+00.0 | - | 202+25.8 | LT = 256.9 | SY |
| 200+00.0 | - | 201+63.7 | RT = 282.9 | SY |
| 201+75.7 | - | 202+49.9 | RT = 66.0  | SY |
| 203+22.3 | - | 204+00.0 | RT = 74.7  | SY |

PROJECT DEMARCATION FENCE

|          |   |          |            |    |
|----------|---|----------|------------|----|
| 199+55.0 | - | 200+75.6 | RT = 129.1 | LF |
| 199+99.3 | - | 202+29.3 | LT = 242.4 | LF |
| 201+88.9 | - | 202+82.9 | RT = 137.5 | LF |
| 202+57.8 | - | 203+84.1 | LT = 131.8 | LF |
| 200+75.6 | - | 201+73.1 | RT = 113.3 | LF |
| 203+05.9 | - | 204+00.0 | RT = 129.0 | LF |
| 203+84.1 | - | 204+00.0 | LT = 15.5  | LF |

NOTES:

TEMPORARY EROSION MATTING TO BE USED ON SLOPES STEEPER THAN 3:1.

PROJECT NAME: PLYMOUTH

PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330bdr\_ero.dgn

PROJECT LEADER: J. OLUND

DESIGNED BY: S. AMOROSO

EPSC CONSTRUCTION CONDITION LAYOUT I

PLOT DATE: 9/20/2012

DRAWN BY: S. AMOROSO

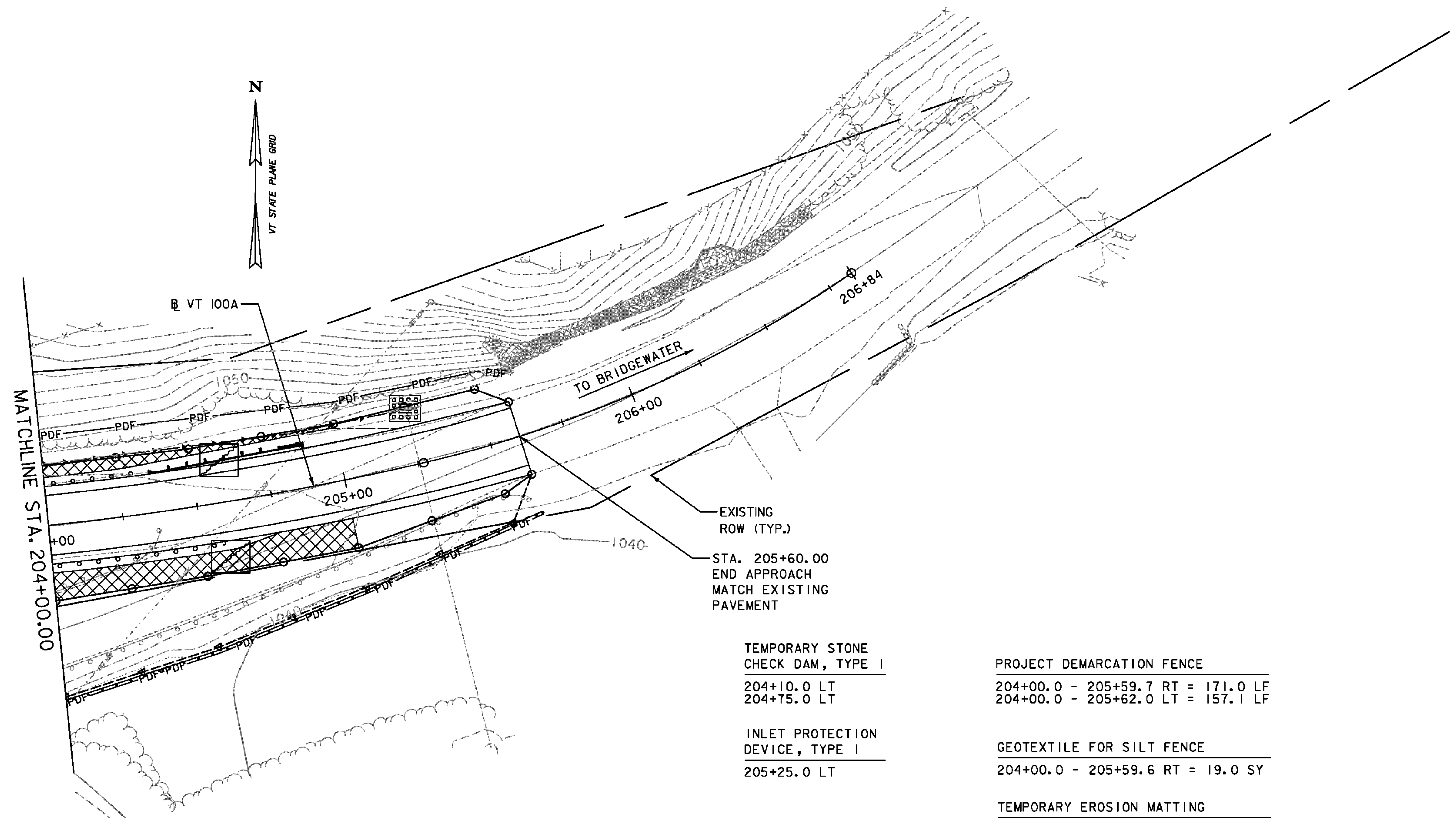
CHECKED BY: D. BRYANT

SHEET 35 OF 46

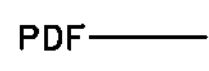
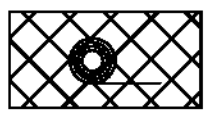
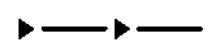
SCALE 1" = 20'-0"  
20 0 20

TYLIN INTERNATIONAL





LEGEND:

-  WETLANDS CLASS III
-  PDF — PROJECT DEMARCATION FENCE
-  SILT FENCE
-  EROSION CONTROL MATTING (SEE NOTES)
-  STONE CHECK DAMS
-  STONE FILL, TYPE IV
-  SURFACE ROUGHENING
-  INLET PROTECTION DEVICE, TYPE I

TEMPORARY STONE  
CHECK DAM, TYPE I

204+10.0 LT  
204+75.0 LT

INLET PROTECTION  
DEVICE, TYPE I

205+25.0 LT

PROJECT DEMARCATION FENCE

204+00.0 - 205+59.7 RT = 171.0 LF  
204+00.0 - 205+62.0 LT = 157.1 LF

GEOTEXTILE FOR SILT FENCE

204+00.0 - 205+59.6 RT = 19.0 SY

TEMPORARY EROSION MATTING

204+00.0 - 205+00.0 RT = 97.6 SY  
204+00.0 - 205+00.0 LT = 28.8 SY

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

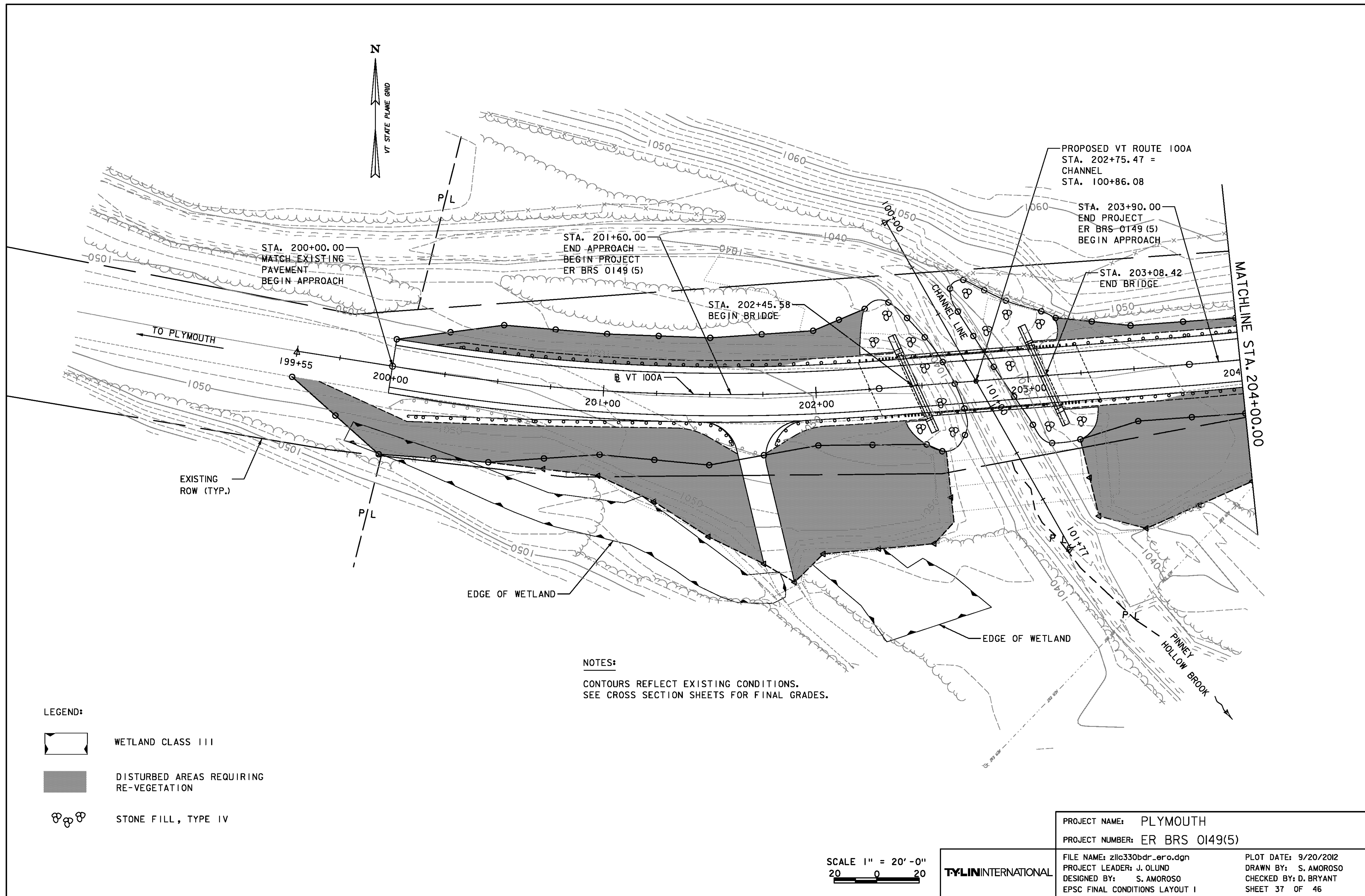
TYLIN INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

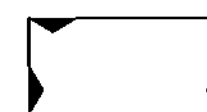
FILE NAME: zllc330bdr\_ero.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: S. AMOROSO  
EPSC CONSTRUCTION CONDITION LAYOUT 2

PLOT DATE: 9/20/2012  
DRAWN BY: S. AMOROSO  
CHECKED BY: D. BRYANT  
SHEET 36 OF 46

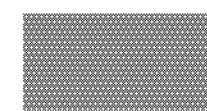




LEGEND:



WETLAND CLASS III



DISTURBED AREAS REQUIRING RE-VEGETATION



STONE FILL, TYPE IV

NOTES:

CONTOURS REFLECT EXISTING CONDITIONS.  
SEE CROSS SECTION SHEETS FOR FINAL GRADES.

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

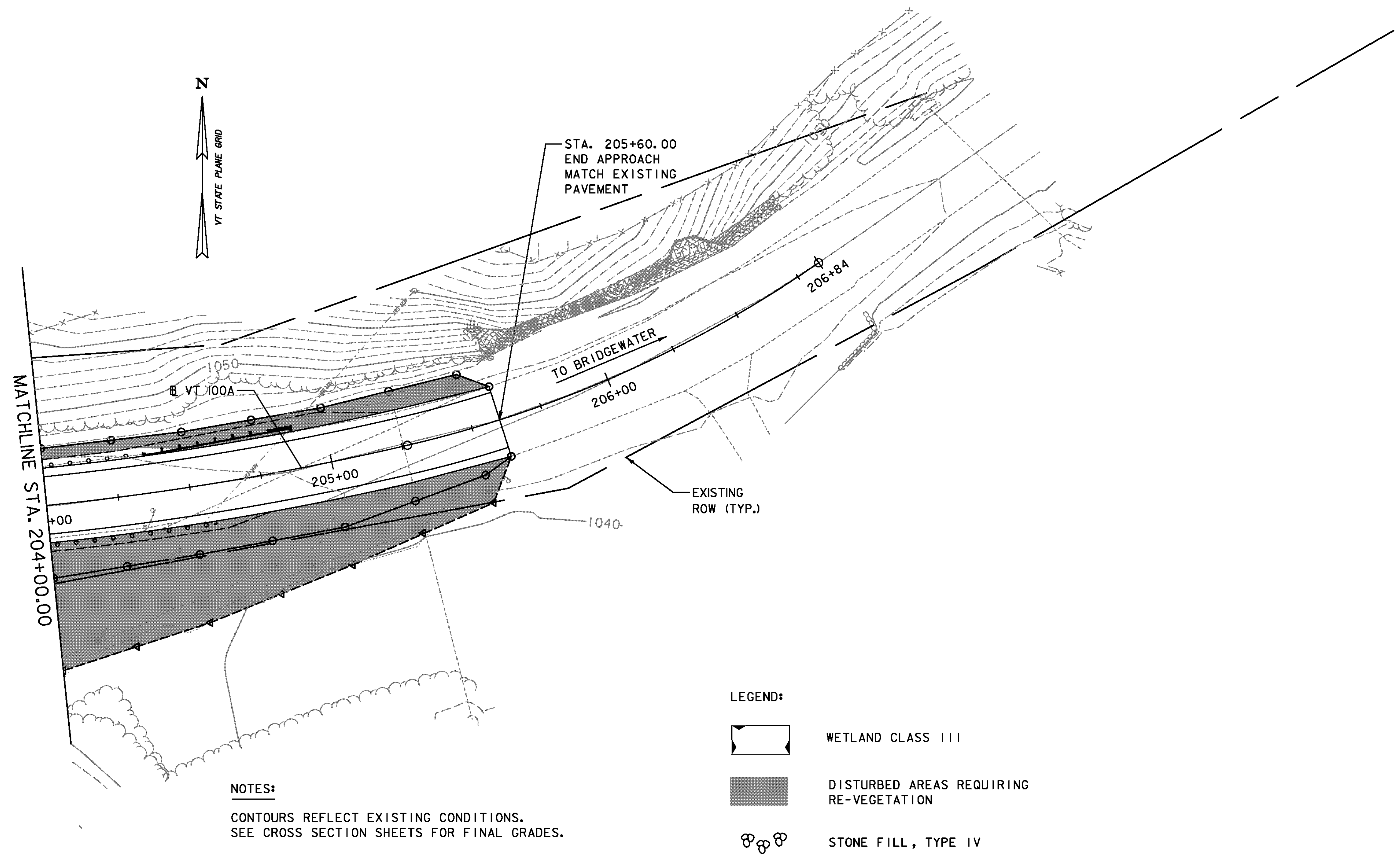
TYLIN INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330bdr\_ero.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: S. AMOROSO  
EPSC FINAL CONDITIONS LAYOUT I

PLOT DATE: 9/20/2012  
DRAWN BY: S. AMOROSO  
CHECKED BY: D. BRYANT  
SHEET 37 OF 46





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

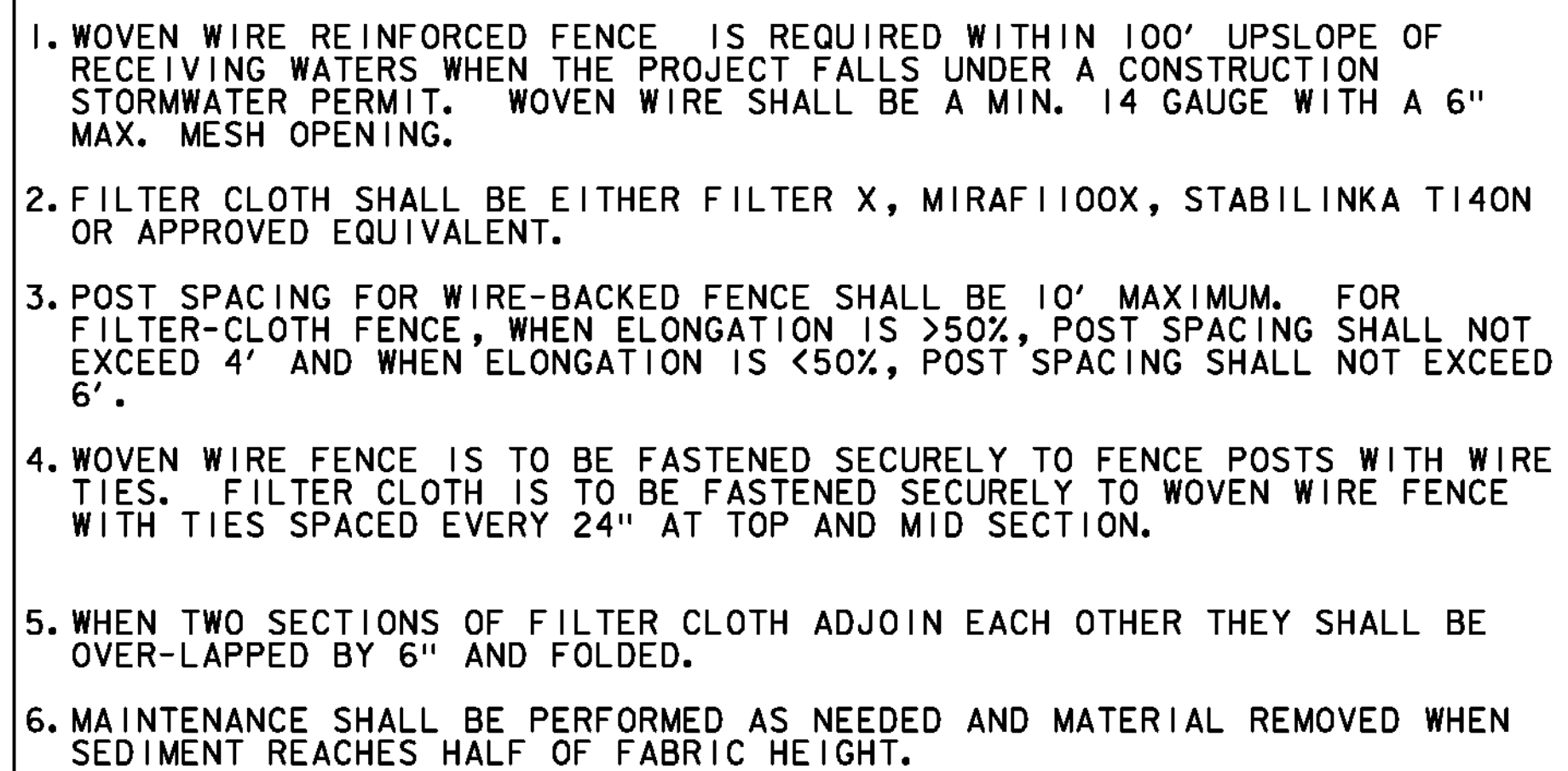
TYLIN INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330bdr\_ero.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: S. AMOROSO  
EPSC FINAL CONDITIONS LAYOUT 2

PLOT DATE: 9/20/2012  
DRAWN BY: S. AMOROSO  
CHECKED BY: D. BRYANT  
SHEET 38 OF 46





SILT FENCE

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

|                   |     |
|-------------------|-----|
| REVISIONS         |     |
| MARCH 21, 2008    | WHF |
| DECEMBER 11, 2008 | WHF |
| JANUARY 13, 2009  | WHF |

| VAOT URBAN AREA MIX |           |           |                     |        |          |
|---------------------|-----------|-----------|---------------------|--------|----------|
|                     | LBS/AC    |           |                     |        |          |
| % WEIGHT            | BROADCAST | HYDROSEED | NAME                | GERM % | PURITY % |
| 42.5%               | 34        | 68        | CREEPING RED FESCUE | 85%    | 98%      |
| 10.0%               | 8         | 16        | PERENNIAL RYE GRASS | 90%    | 95%      |
| 42.5%               | 34        | 68        | KENTUCKY BLUE GRASS | 85%    | 85%      |
| 5.0%                | 4         | 8         | ANNUAL RYE GRASS    | 85%    | 95%      |
| 100%                | 80        | 160       |                     |        |          |

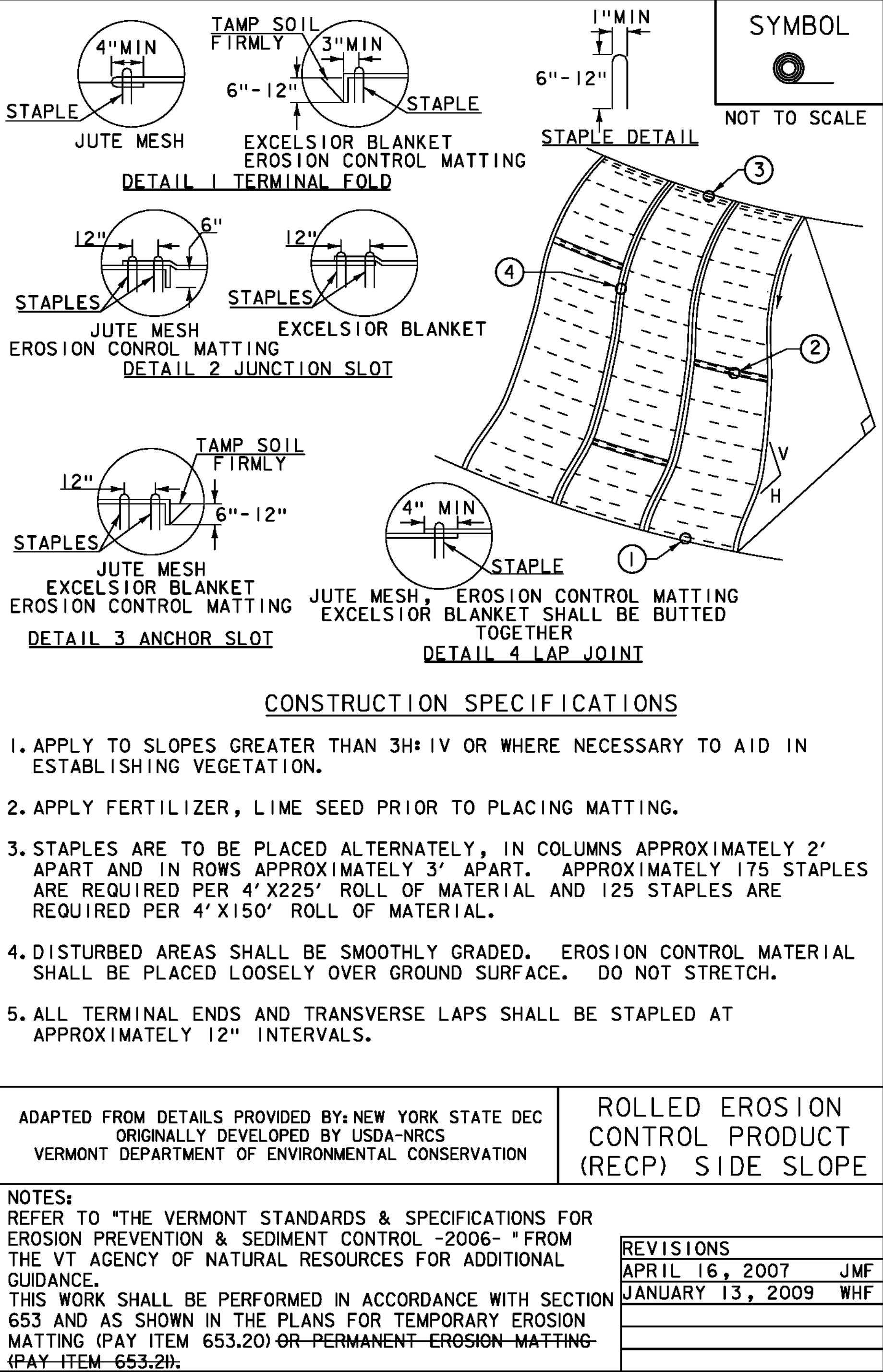
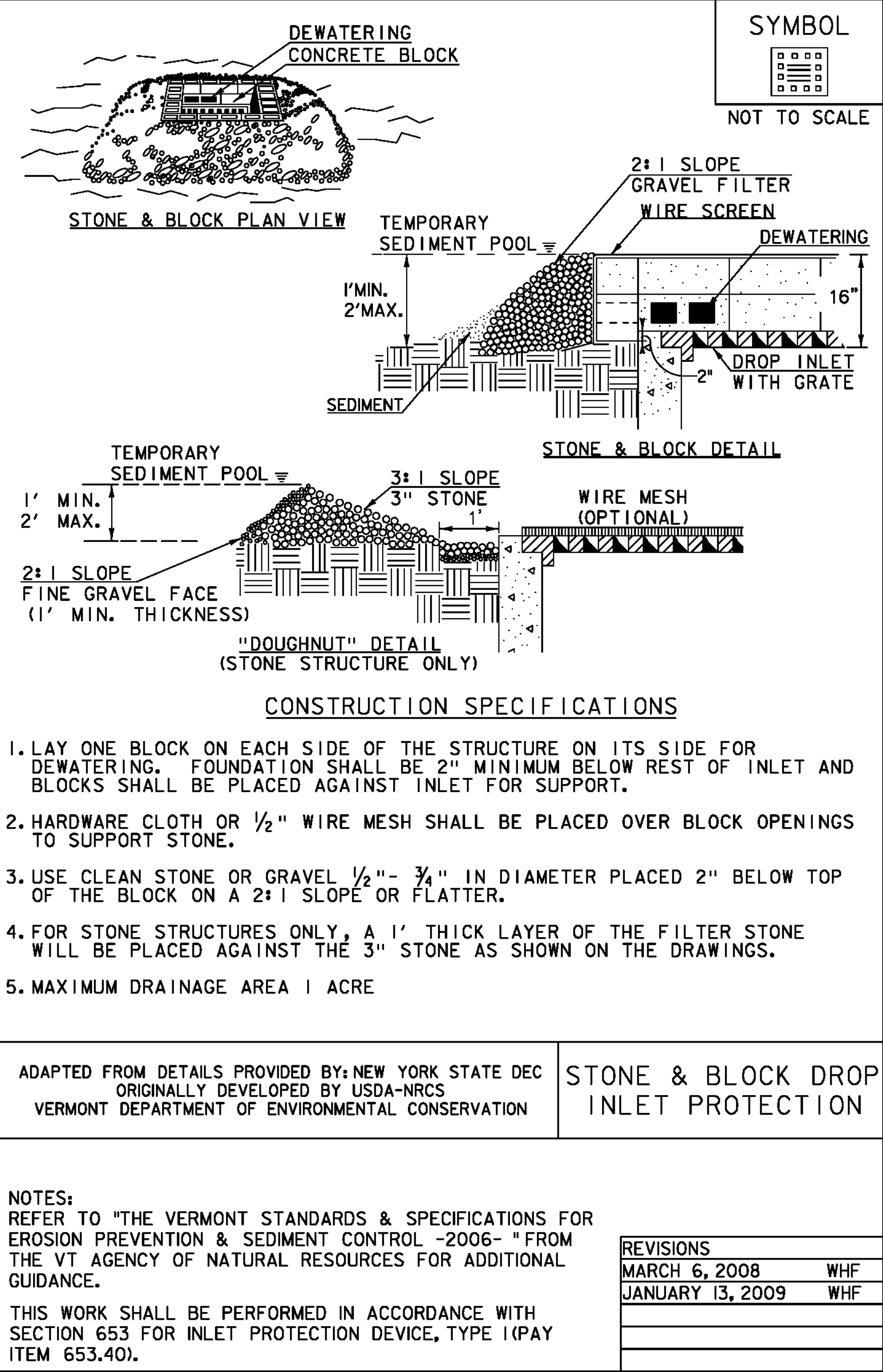
## CONSTRUCTION GUIDANCE

1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
7. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
8. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

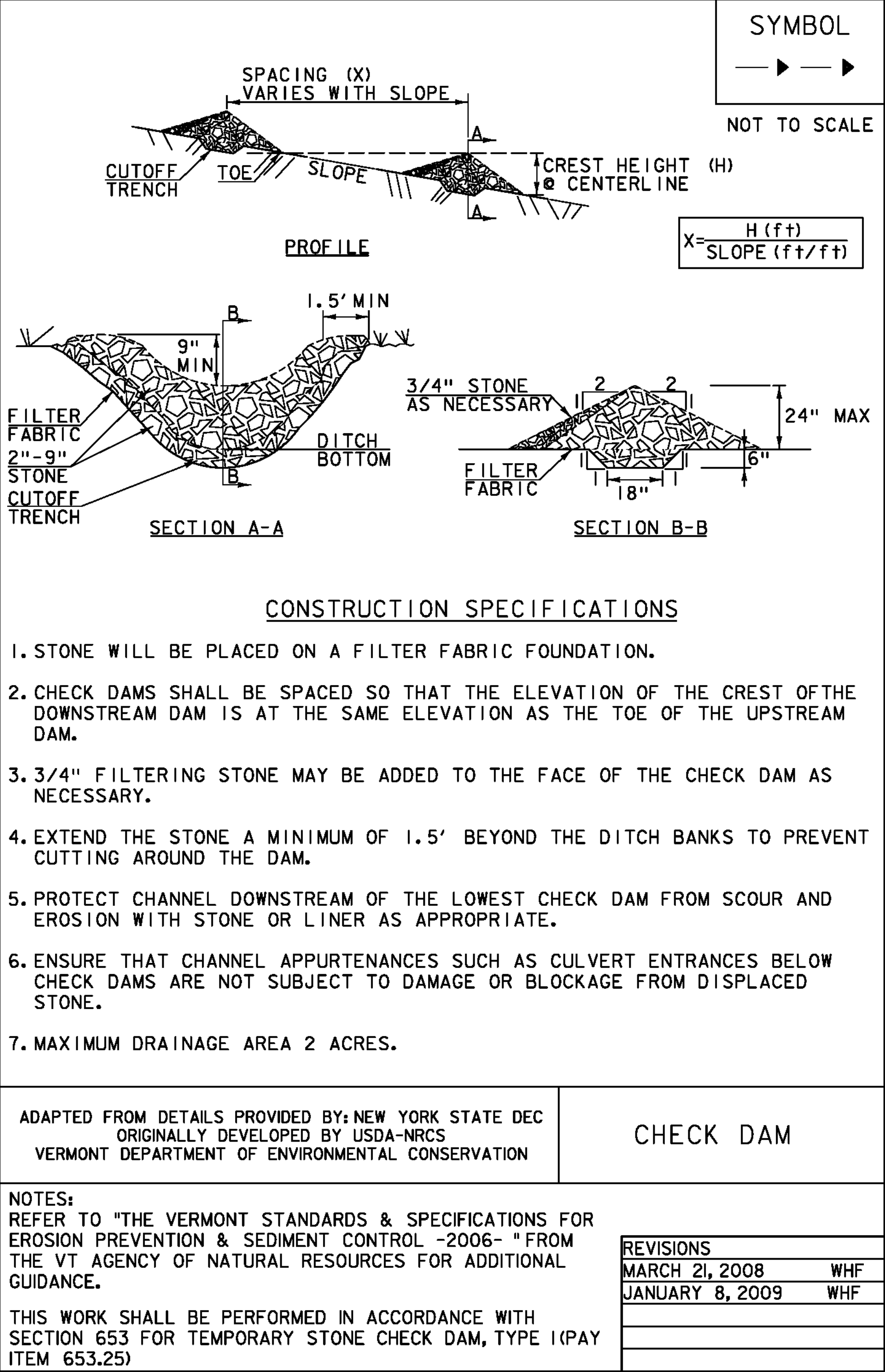
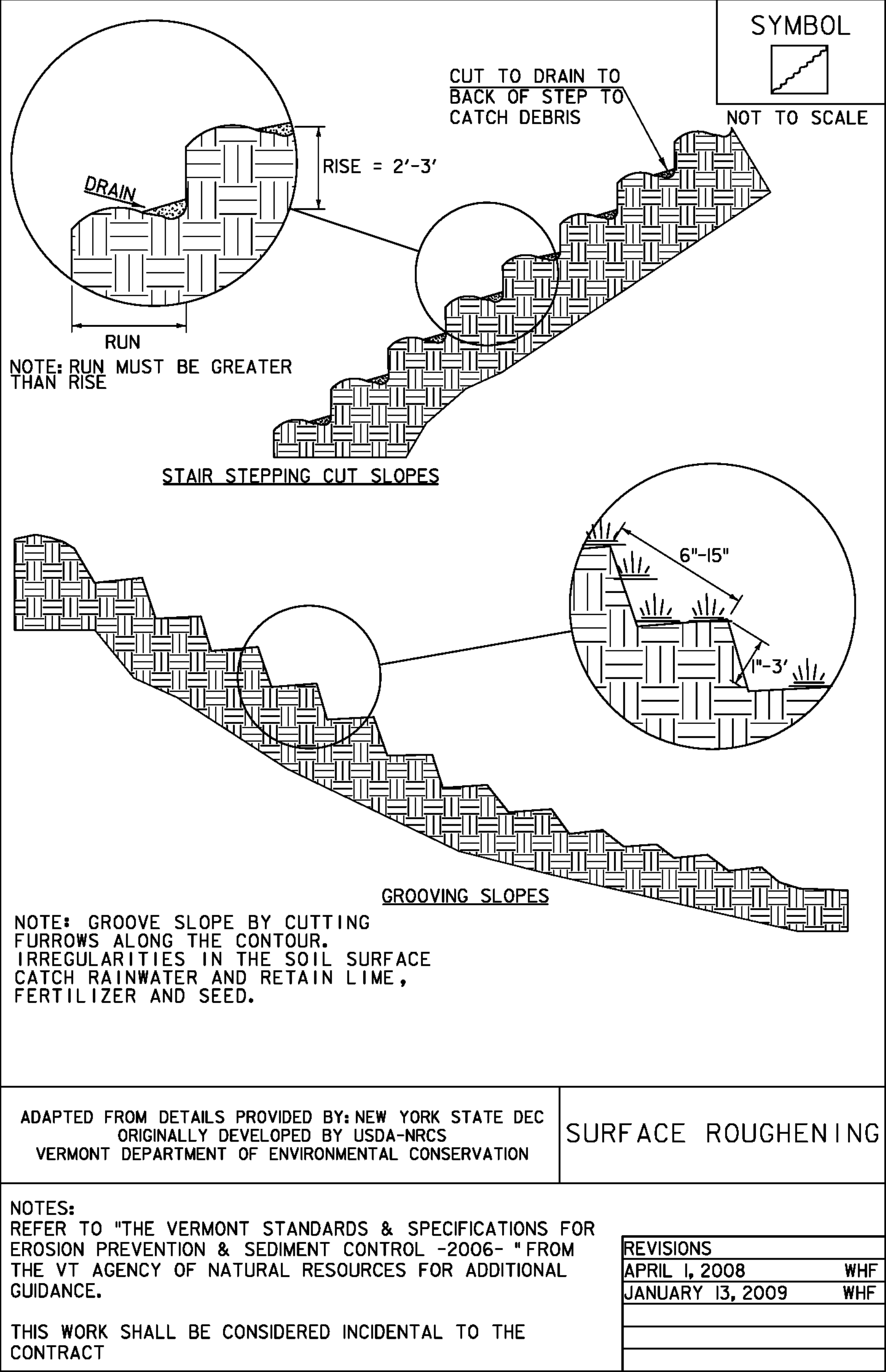
## TURF ESTABLISHMENT

|                   |     |
|-------------------|-----|
| REVISIONS         |     |
| JUNE 23, 2009     | WHF |
| JANUARY 15, 2010  | WHF |
| FEBRUARY 16, 2011 | WHF |

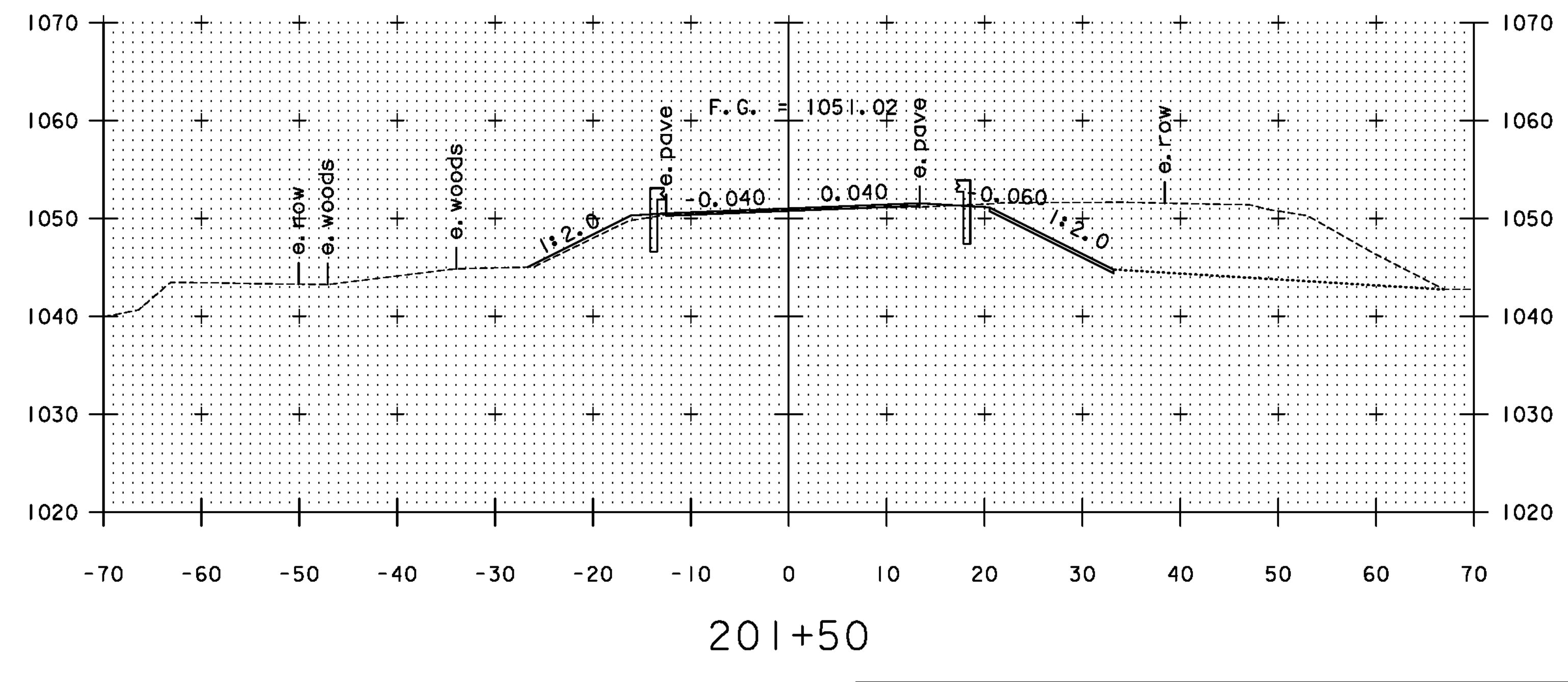
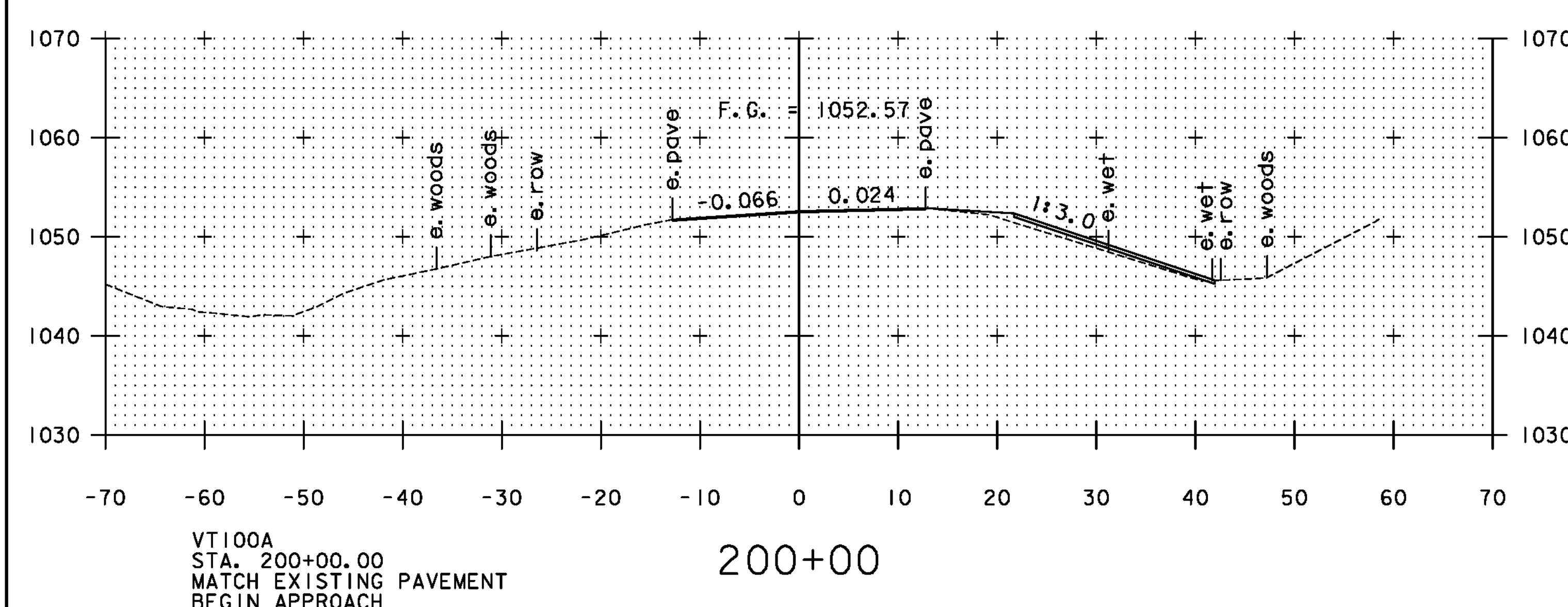
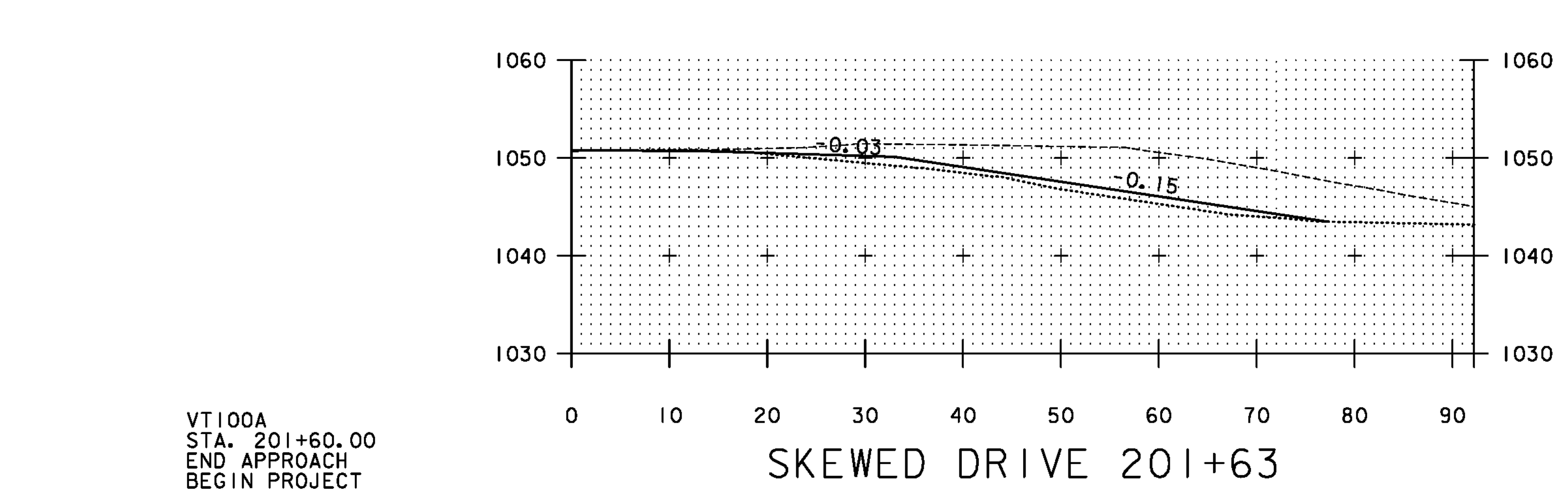
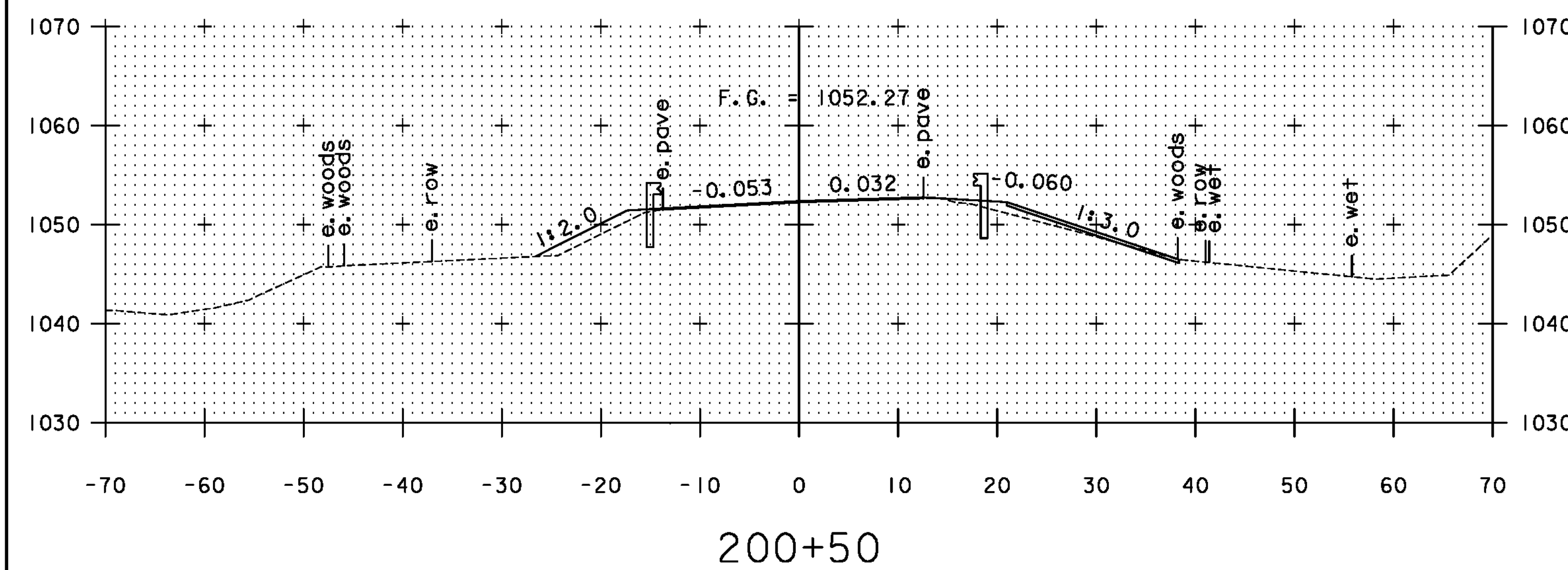
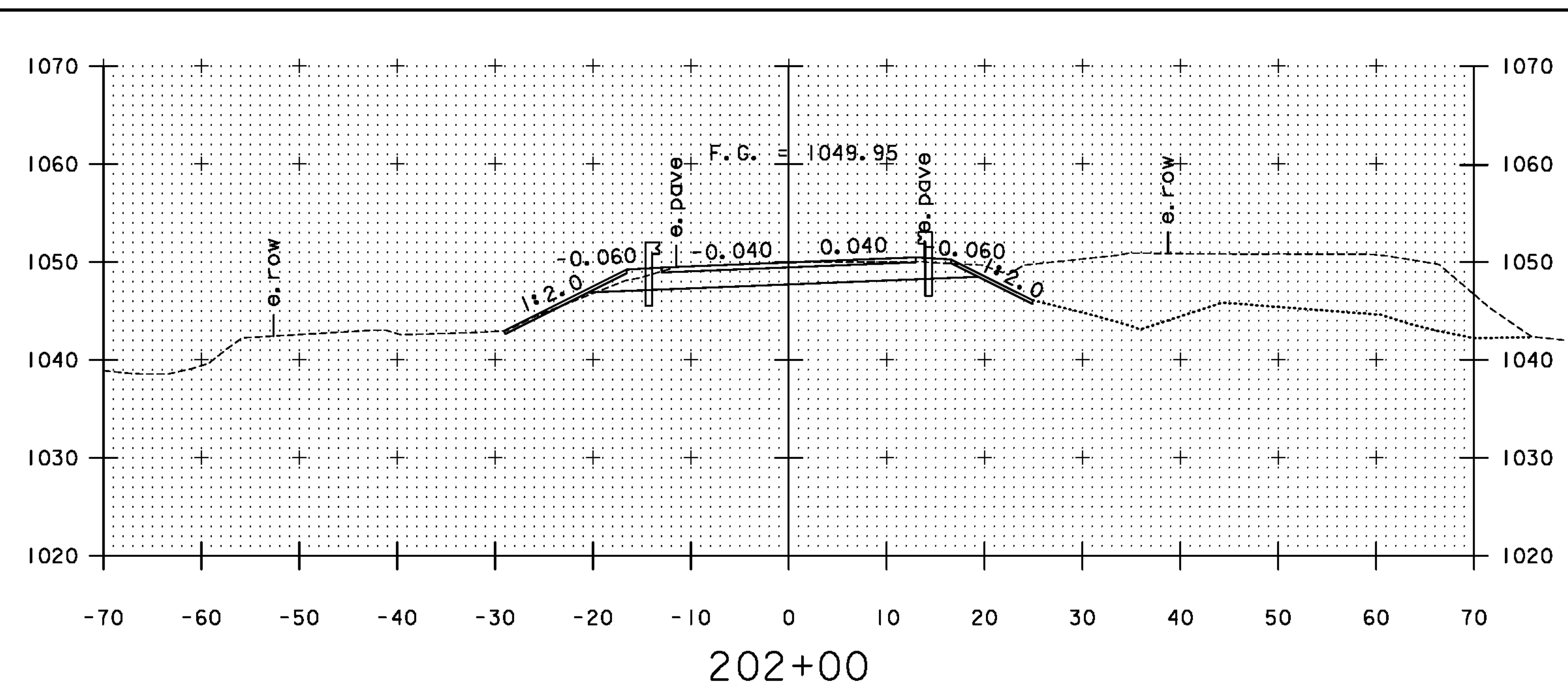
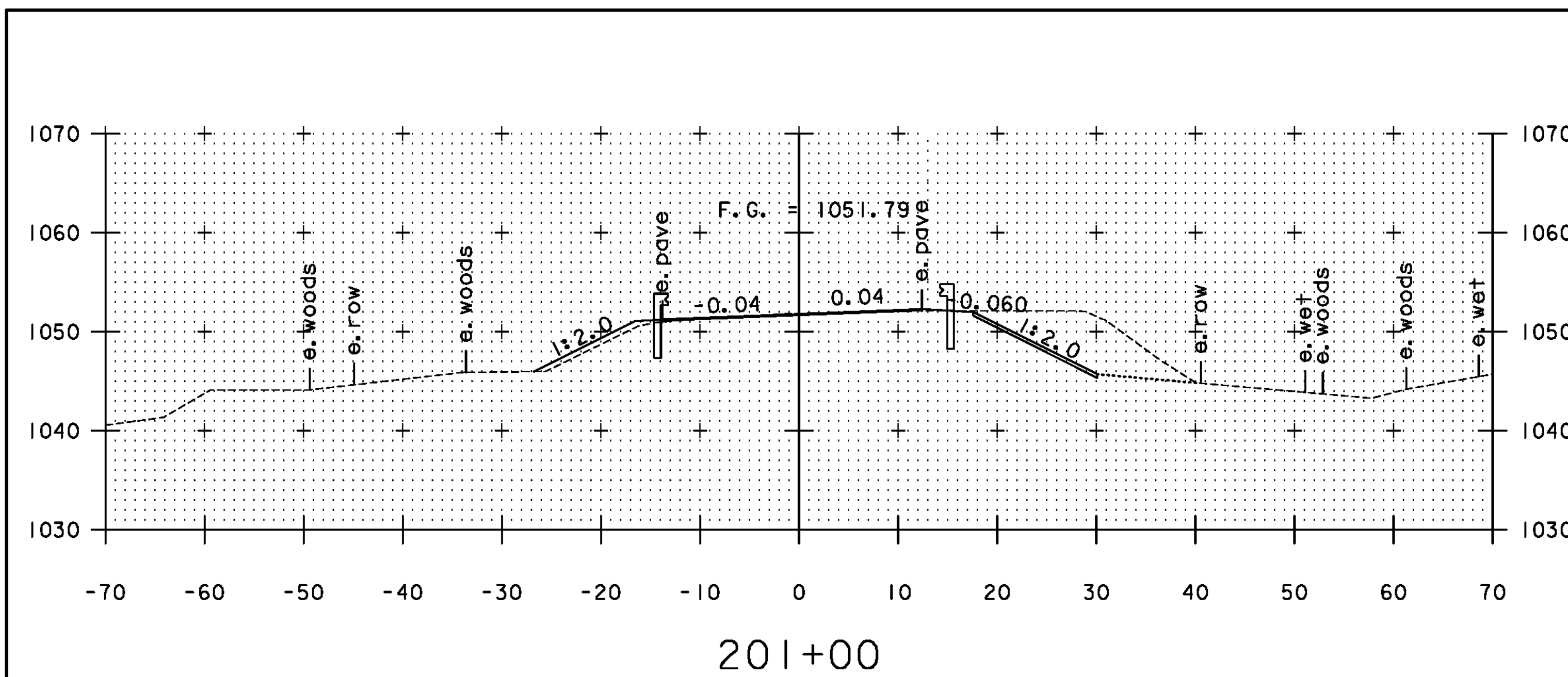












PROPOSED GROUND ELEVATIONS SHOWN WITH A SHORT DASH (-----) APPROXIMATE THE GROUND SURFACE PRIOR TO THE CONSTRUCTION OF THE TEMPORARY DETOUR. FINAL GRADING WITHIN THESE AREAS SHALL BE DETERMINED BY THE RESIDENT ENGINEER.

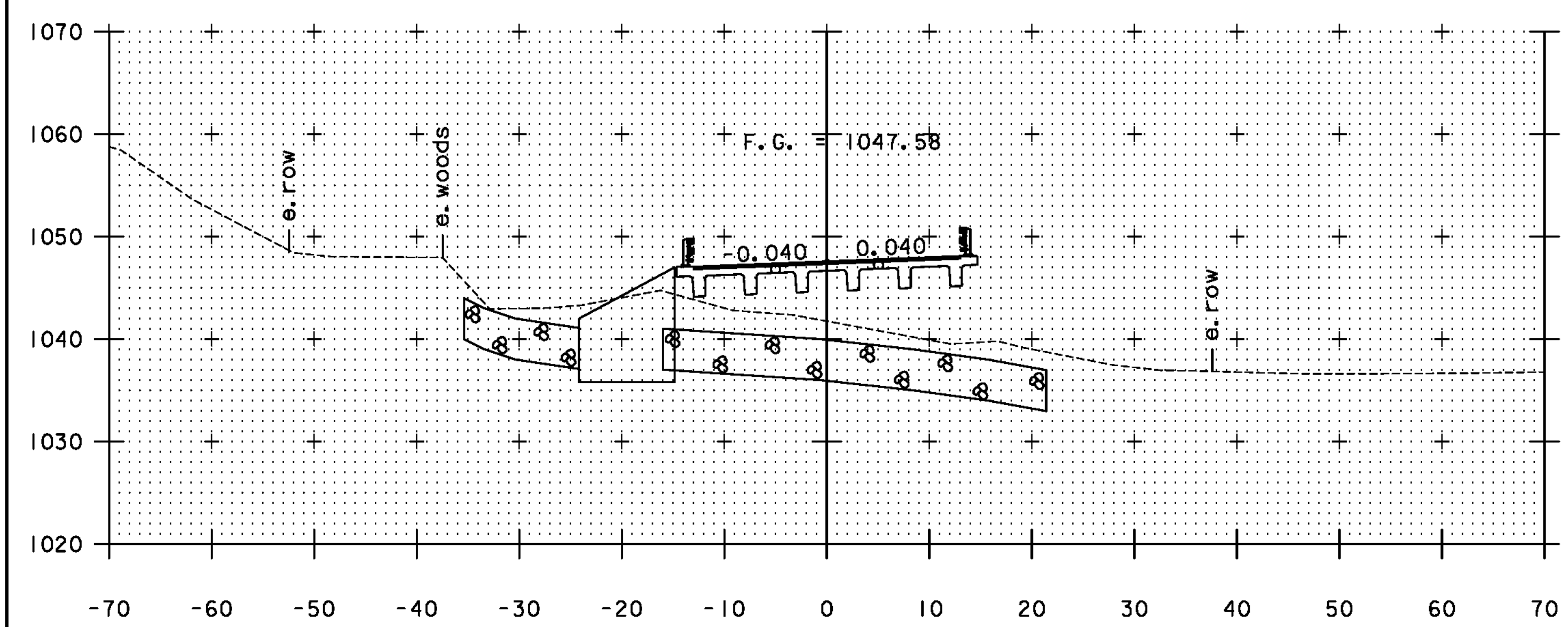
SCALE 1" = 10'-0"  
10 0 10  
STA. 200+00 TO STA. 202+00

TYLIN INTERNATIONAL

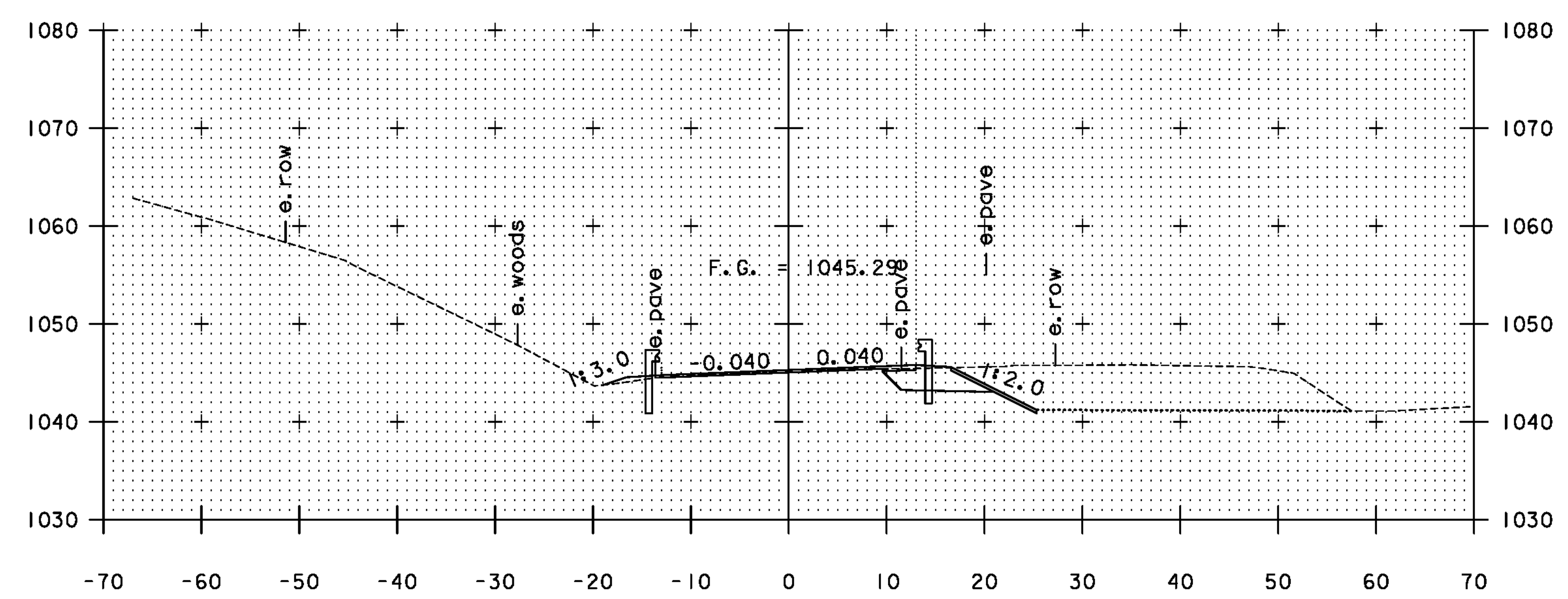
|                                |                       |
|--------------------------------|-----------------------|
| PROJECT NAME: PLYMOUTH         |                       |
| PROJECT NUMBER: ER BRS 0149(5) |                       |
| FILE NAME: zllc330xs.dgn       | PLOT DATE: 9/20/2012  |
| PROJECT LEADER: J. OLUND       | DRAWN BY: A. GREENLAW |
| DESIGNED BY: A. GREENLAW       | CHECKED BY: J. HOWE   |
| VT100A CROSS SECTION 1         | SHEET 42 OF 46        |



VT100A  
STA. 203+08.42  
END BRIDGE

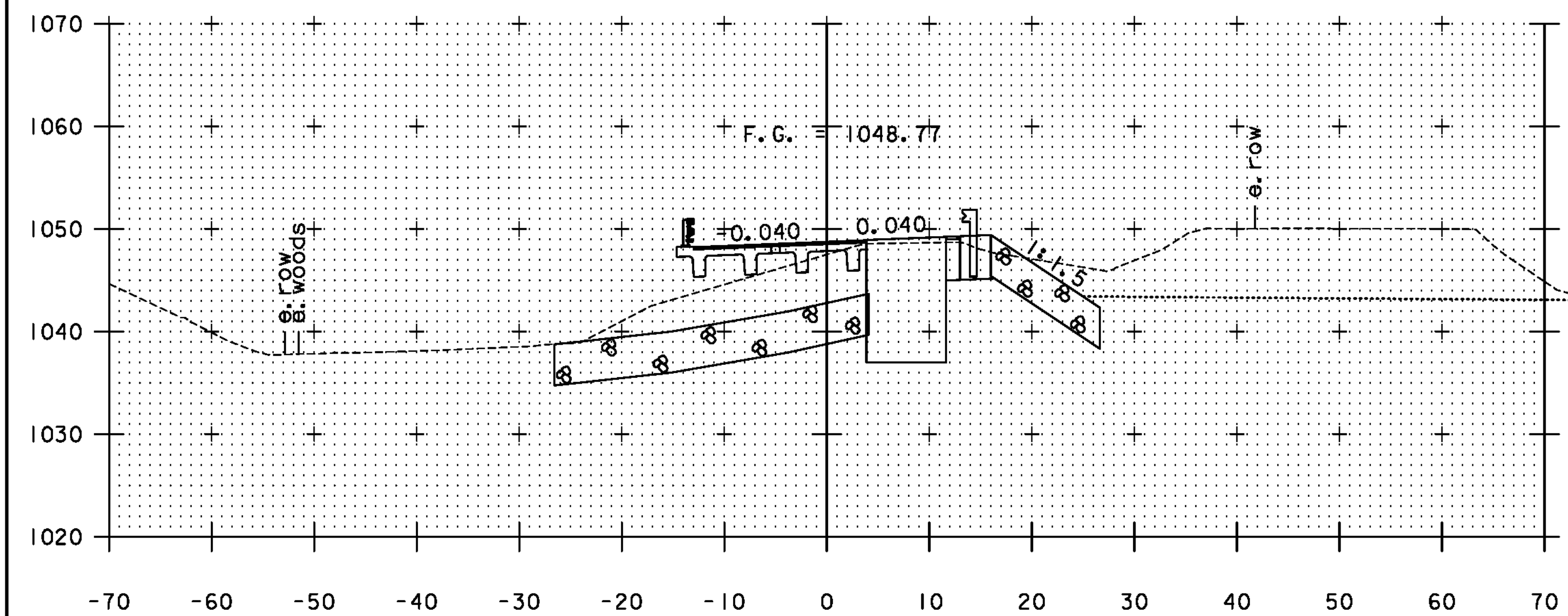


203+00



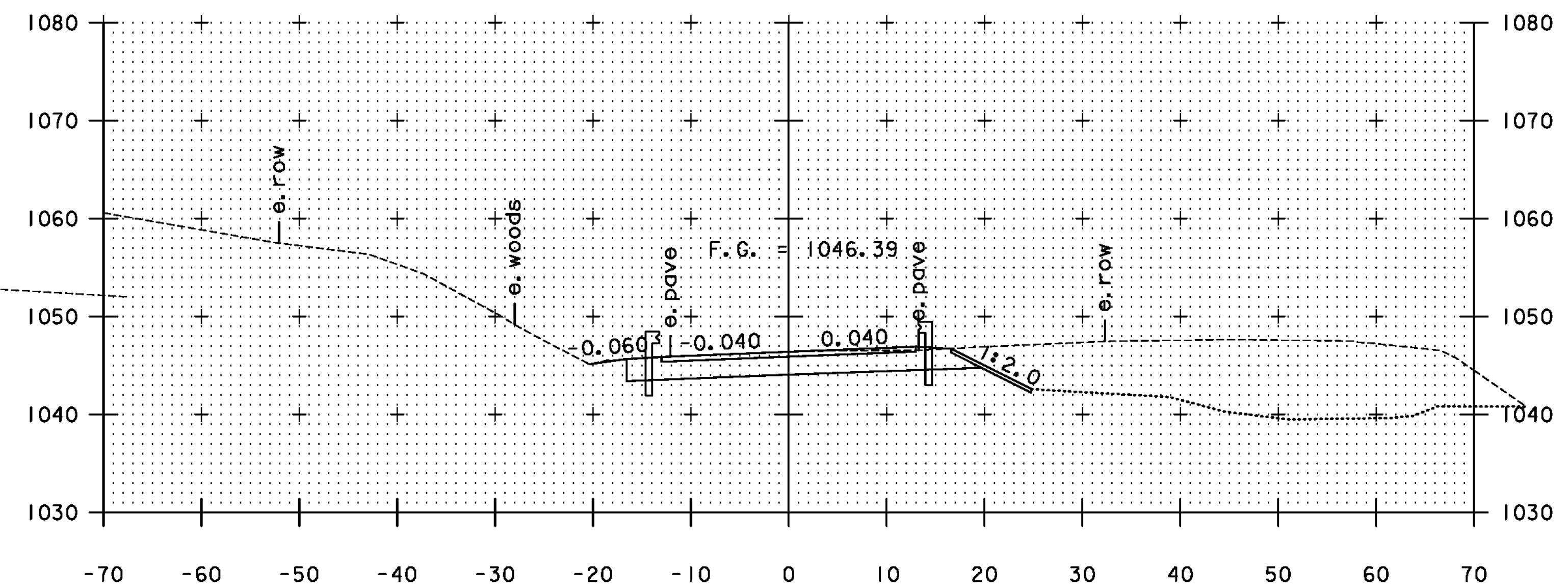
204+00

VT100A  
STA. 203+90.00  
END PROJECT  
BEGIN APPROACH



202+50

VT100A  
STA. 202+45.58  
BEGIN BRIDGE



203+50

PROPOSED GROUND ELEVATIONS SHOWN WITH A SHORT DASH (-----) APPROXIMATE THE GROUND SURFACE PRIOR TO THE CONSTRUCTION OF THE TEMPORARY DETOUR. FINAL GRADING WITHIN THESE AREAS SHALL BE DETERMINED BY THE RESIDENT ENGINEER.

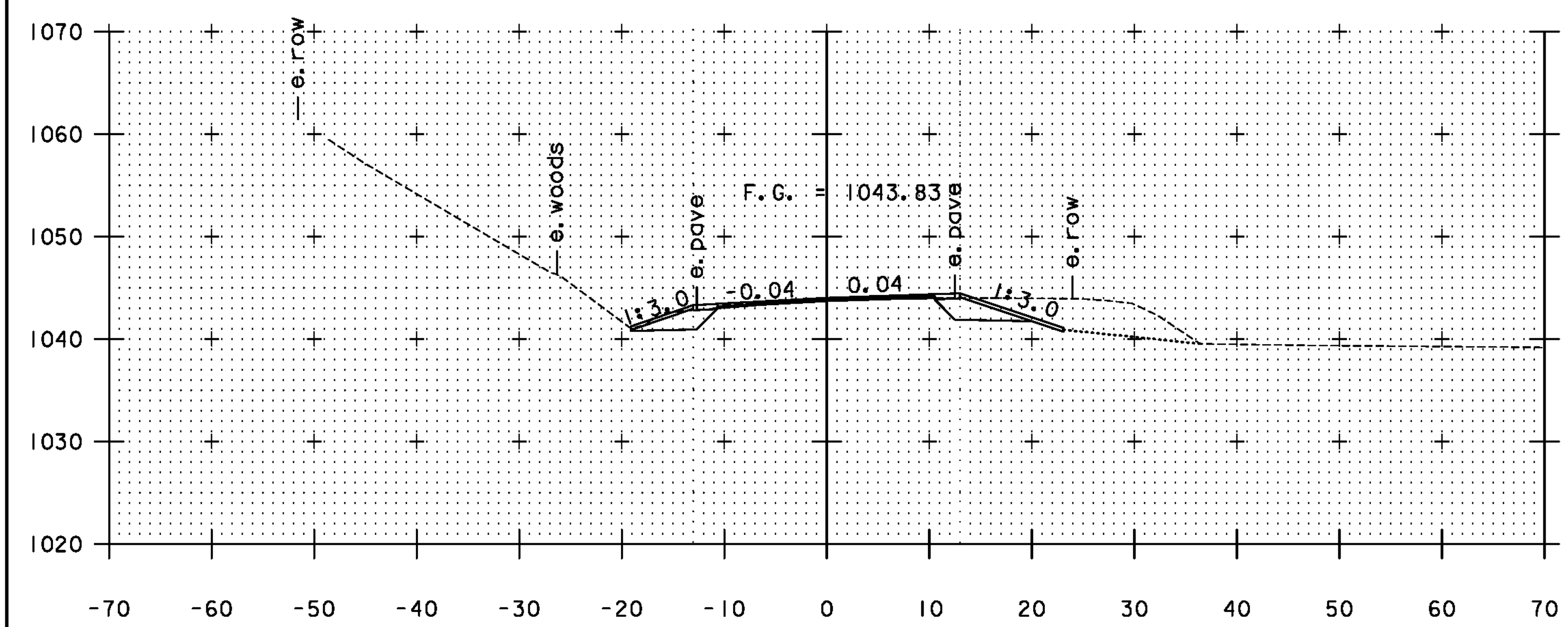
SCALE 1" = 10'-0"  
10 0 10

STA. 202+50 TO STA. 204+00

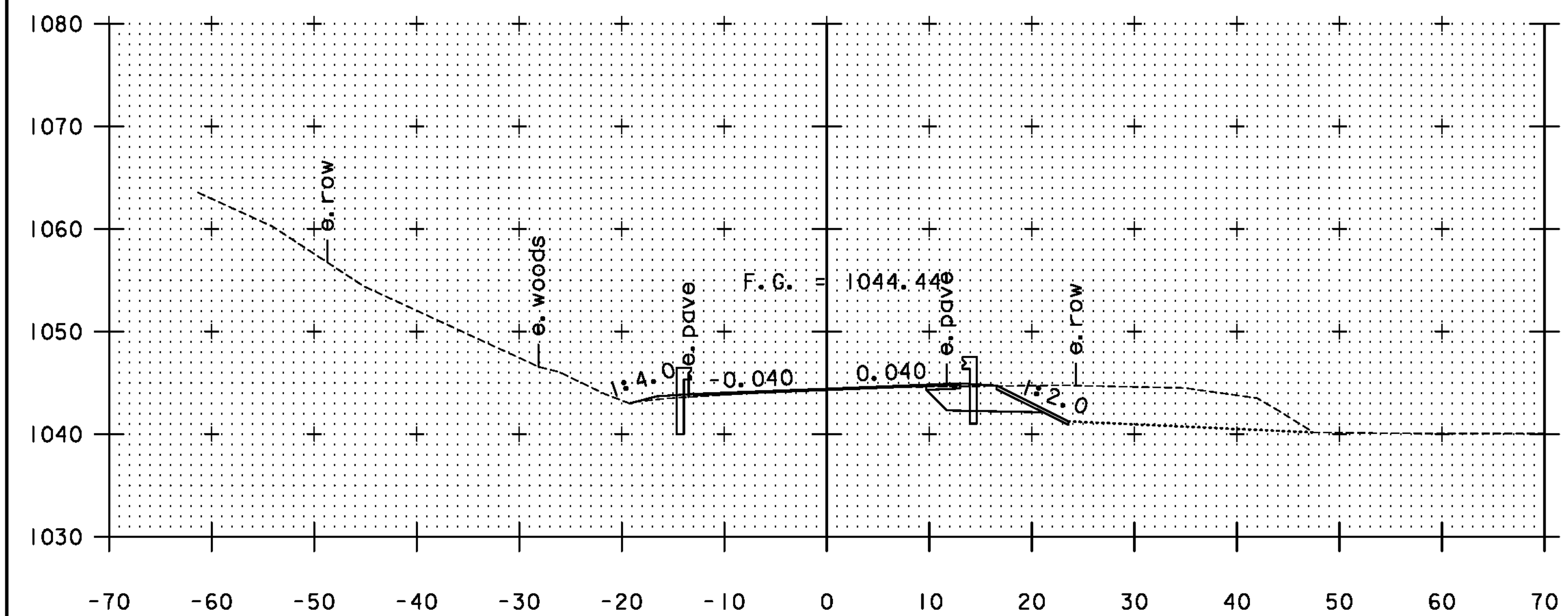
TYLINTERNATIONAL

|                                |                       |
|--------------------------------|-----------------------|
| PROJECT NAME: PLYMOUTH         |                       |
| PROJECT NUMBER: ER BRS 0149(5) |                       |
| FILE NAME: zllc330xs.dgn       | PLOT DATE: 9/20/2012  |
| PROJECT LEADER: J. OLUND       | DRAWN BY: A. GREENLAW |
| DESIGNED BY: A. GREENLAW       | CHECKED BY: J. HOWE   |
| VT100A CROSS SECTION 2         | SHEET 43 OF 46        |

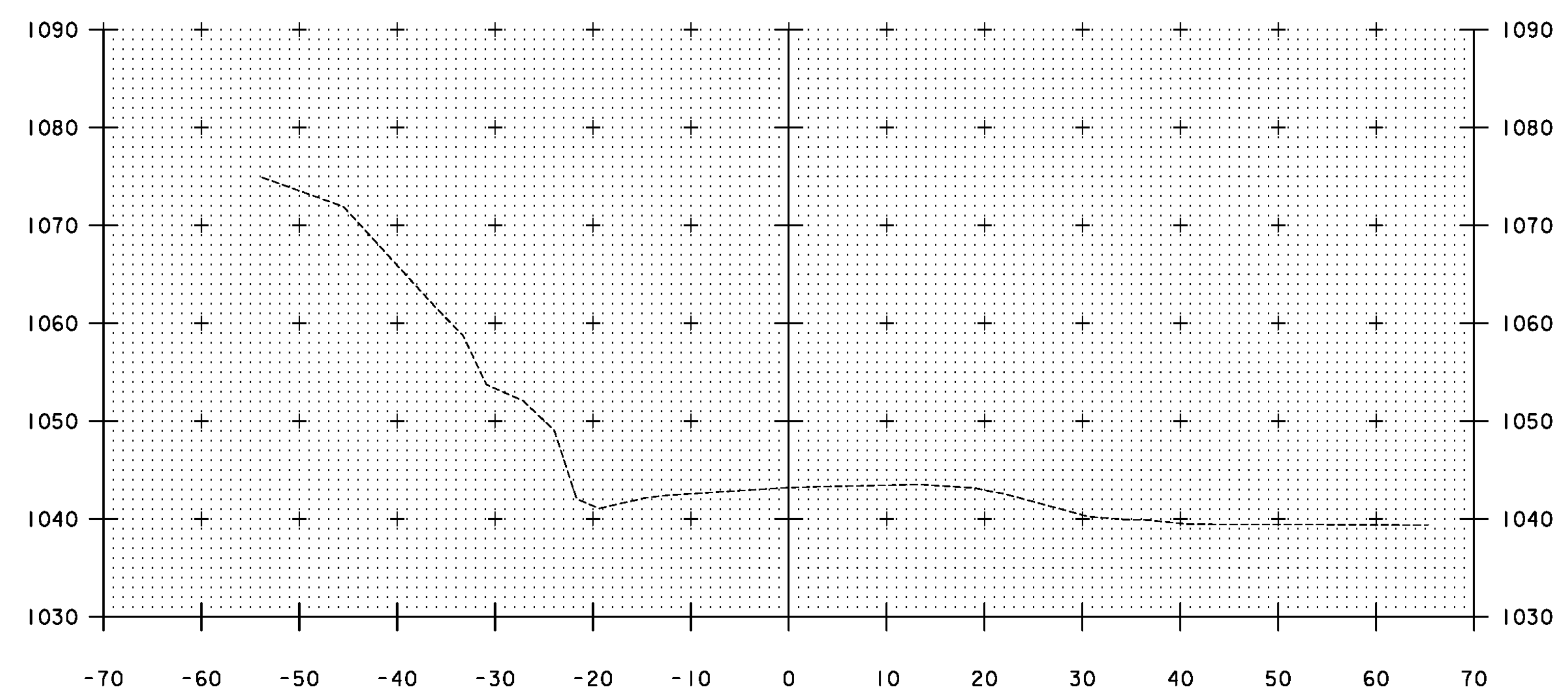




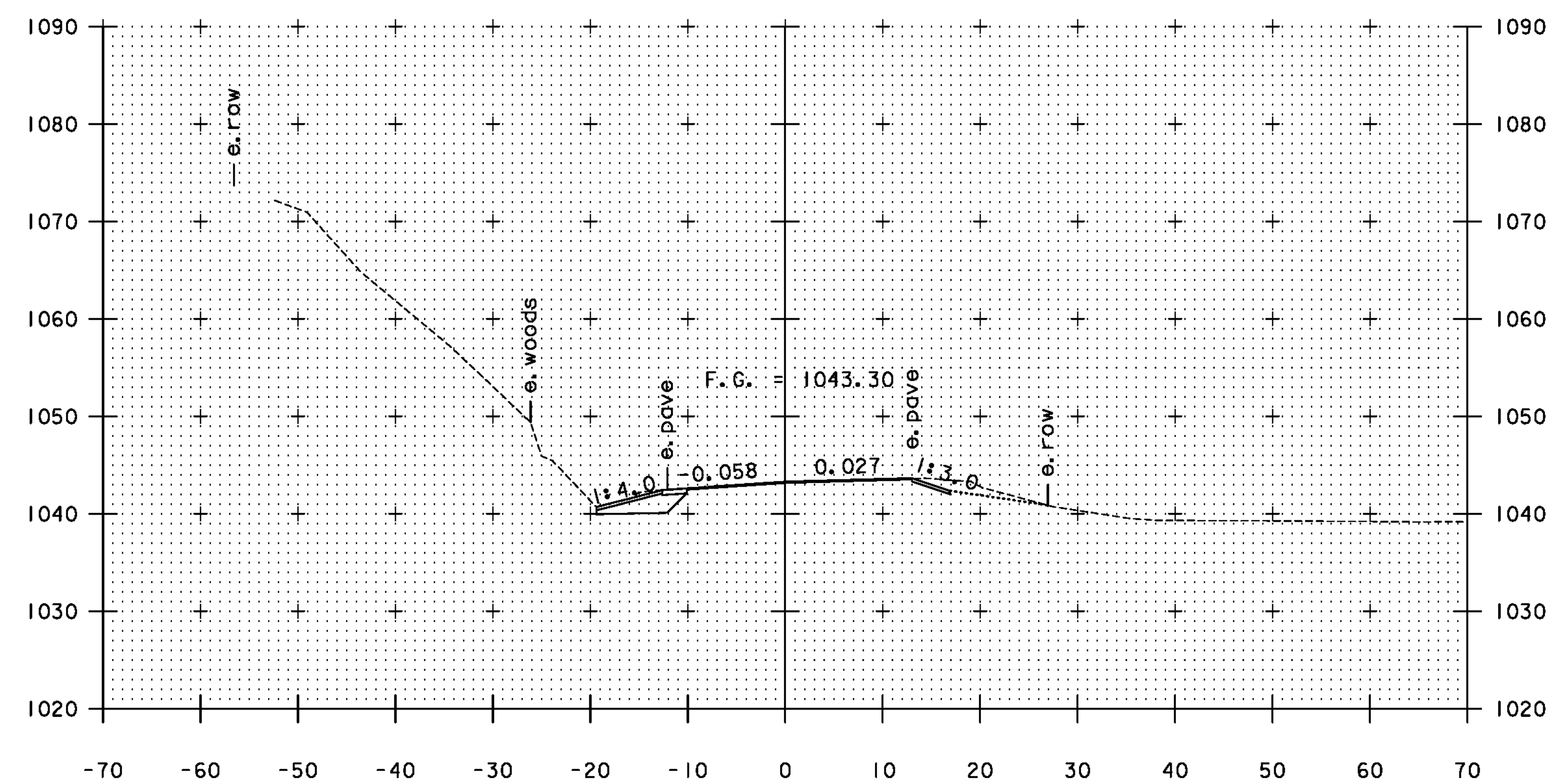
205+00



204+50



205+60



205+50

PROPOSED GROUND ELEVATIONS SHOWN WITH A SHORT DASH (-----) APPROXIMATE THE GROUND SURFACE PRIOR TO THE CONSTRUCTION OF THE TEMPORARY DETOUR. FINAL GRADING WITHIN THESE AREAS SHALL BE DETERMINED BY THE RESIDENT ENGINEER.

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

STA. 204+50 TO STA. 205+60

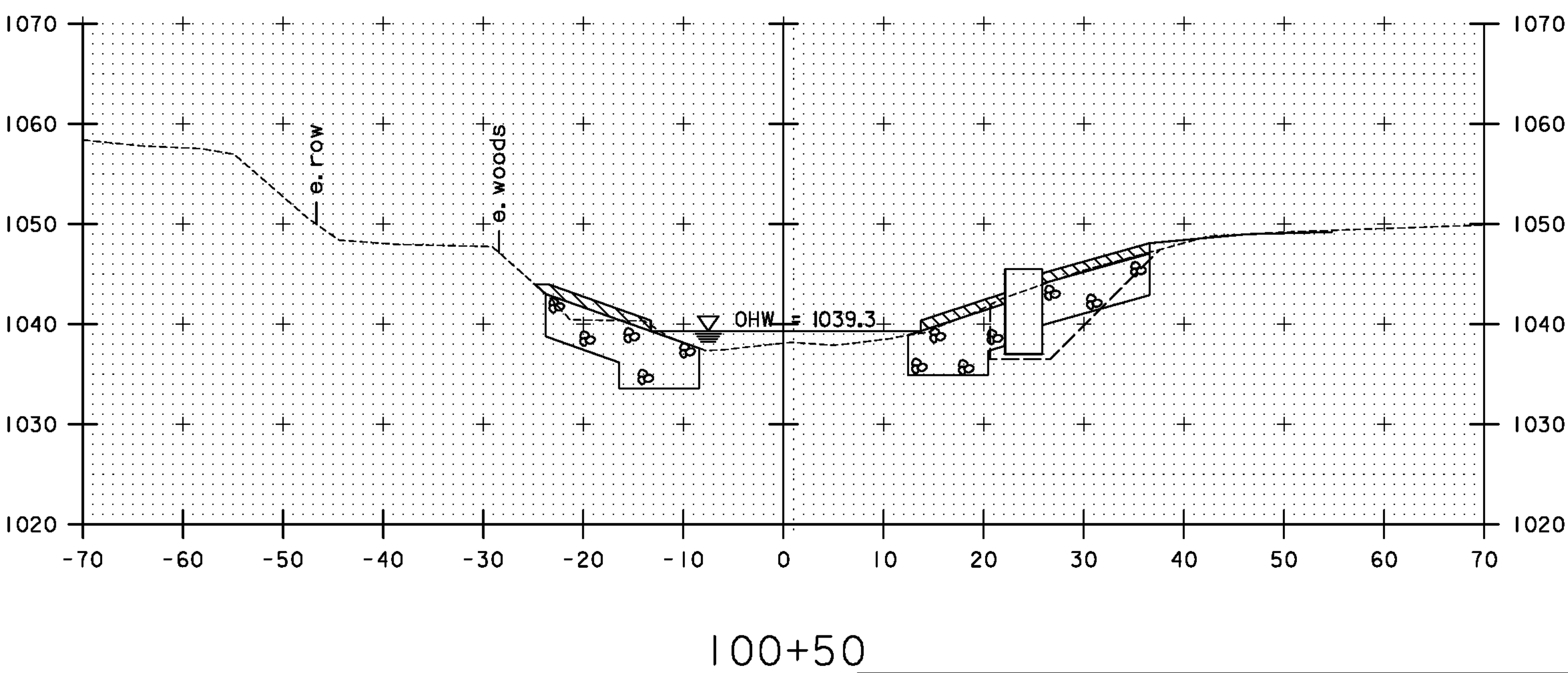
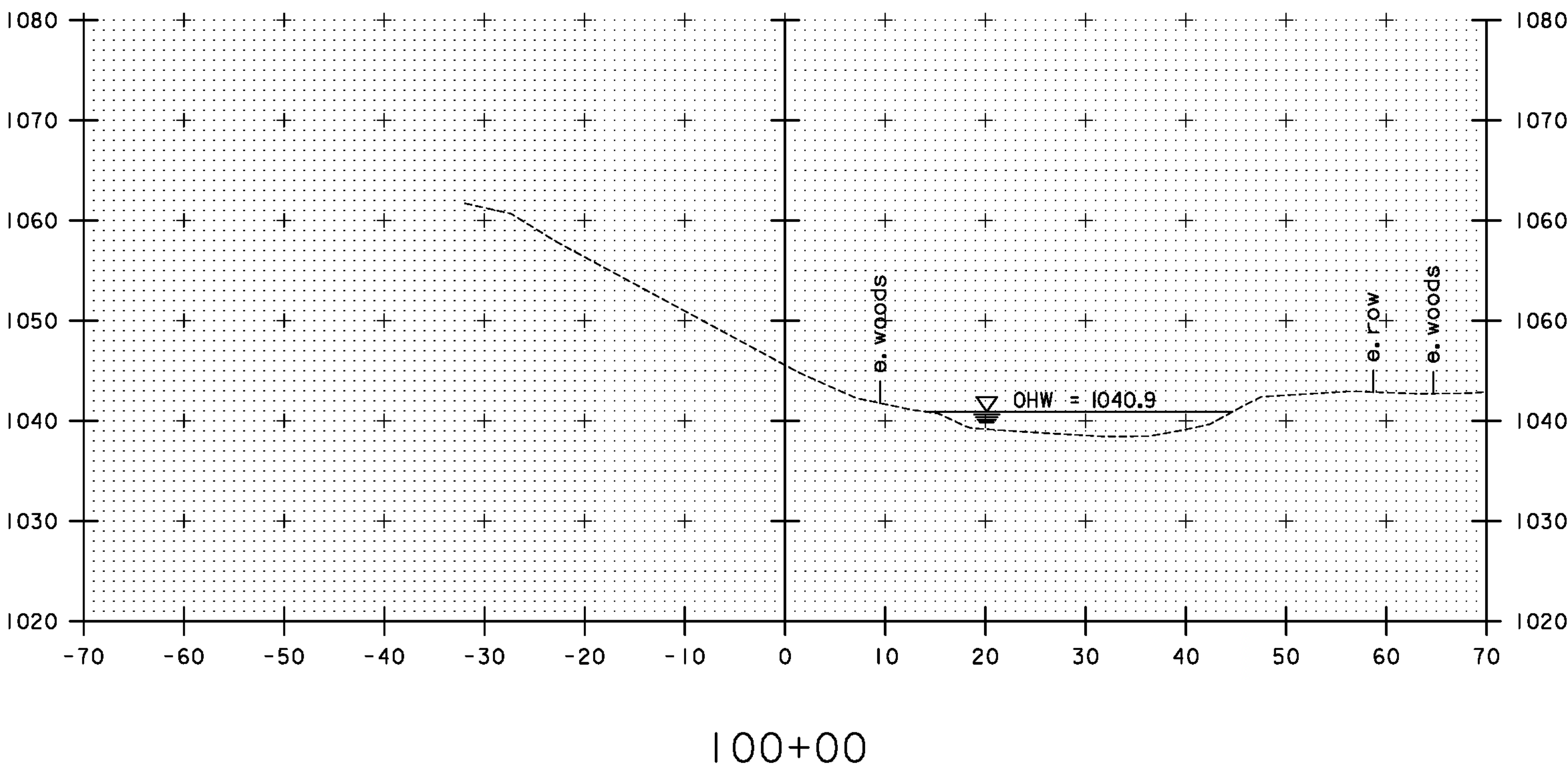
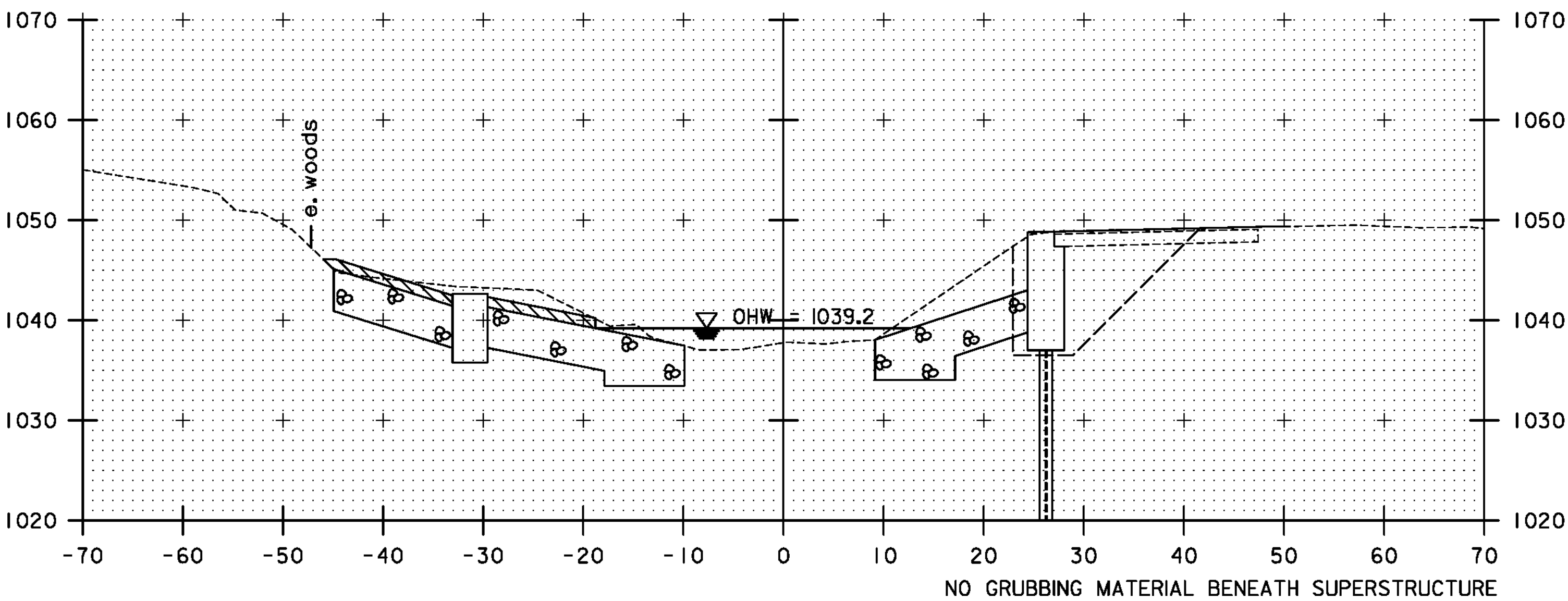
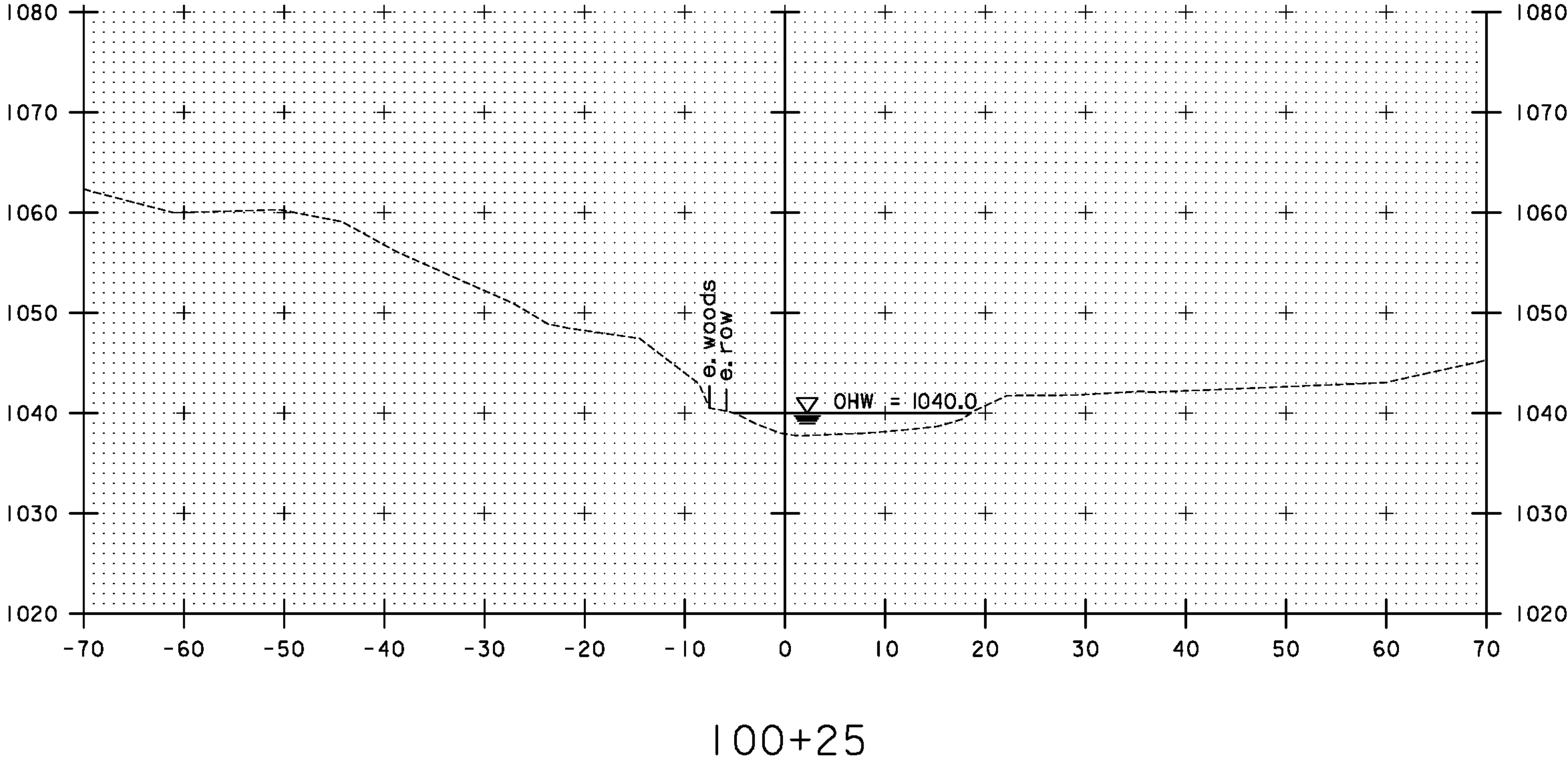
TYLIN INTERNATIONAL

|                                |                       |
|--------------------------------|-----------------------|
| PROJECT NAME: PLYMOUTH         |                       |
| PROJECT NUMBER: ER BRS 0149(5) |                       |
| FILE NAME: zllc330xs.dgn       | PLOT DATE: 9/20/2012  |
| PROJECT LEADER: J. OLUND       | DRAWN BY: A. GREENLAW |
| DESIGNED BY: A. GREENLAW       | CHECKED BY: J. HOWE   |
| VT100A CROSS SECTION 3         | SHEET 44 OF 46        |



STATION 100+40.50 LT.  
BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
BEGIN STONE FILL, TYPE IV  
BEGIN GEOTEXTILE UNDER STONE FILL  
BEGIN GRUBBING MATERIAL

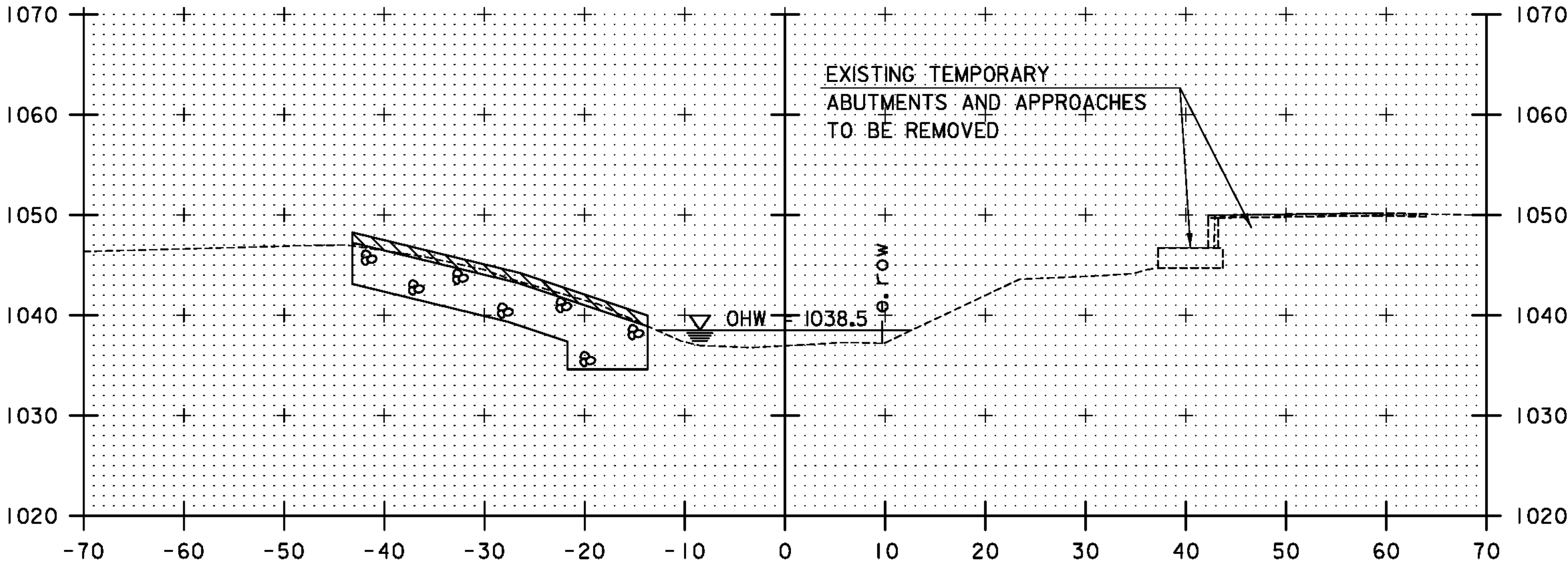
STATION 100+29.50 RT.  
BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
BEGIN STONE FILL, TYPE IV  
BEGIN GEOTEXTILE UNDER STONE FILL  
BEGIN GRUBBING MATERIAL



|                                |                      |
|--------------------------------|----------------------|
| PROJECT NAME: PLYMOUTH         |                      |
| PROJECT NUMBER: ER BRS 0149(5) |                      |
| FILE NAME: zllc330xs.ch.dgn    | PLOT DATE: 9/20/2012 |
| PROJECT LEADER: J. OLUND       | DRAWN BY: S. MORGAN  |
| DESIGNED BY: A. GREENLAW       | CHECKED BY: J. OLUND |
| CHANNEL SECTIONS 1             | SHEET 45 OF 46       |

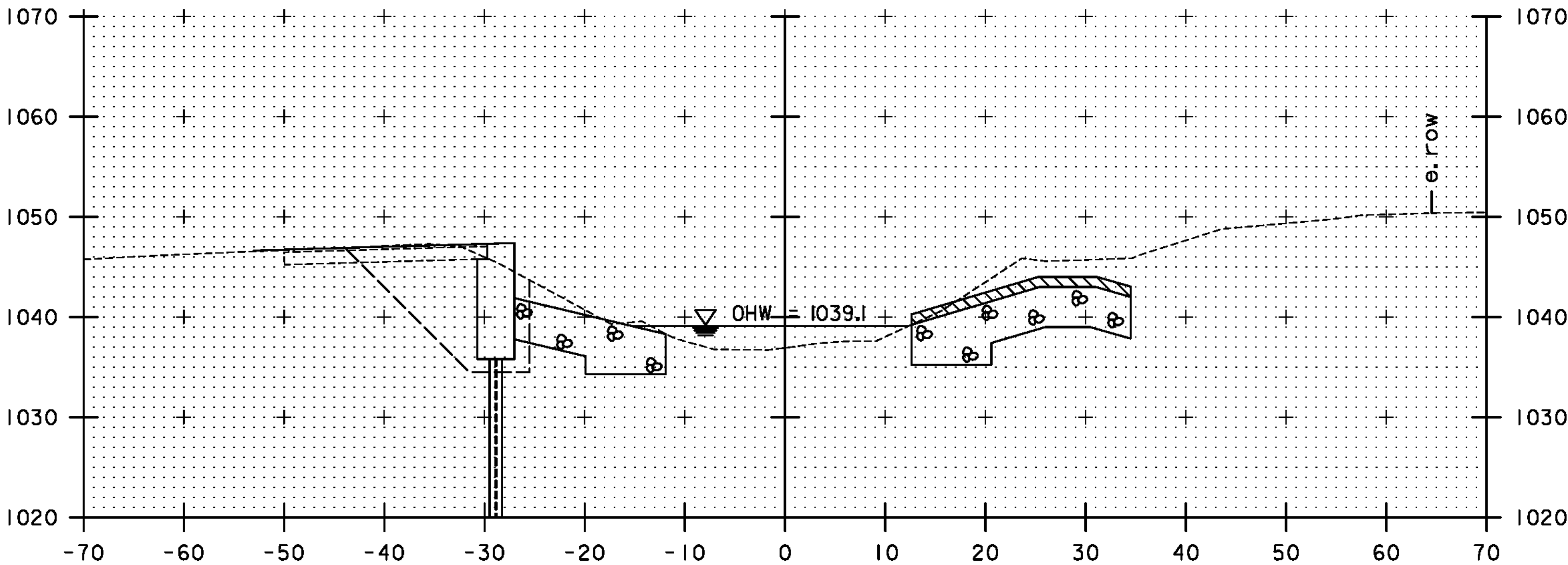


STATION 101+34.50 LT.  
END UNCLASSIFIED CHANNEL EXCAVATION  
END STONE FILL, TYPE IV  
END GEOTEXTILE UNDER STONE FILL  
END GRUBBING MATERIAL



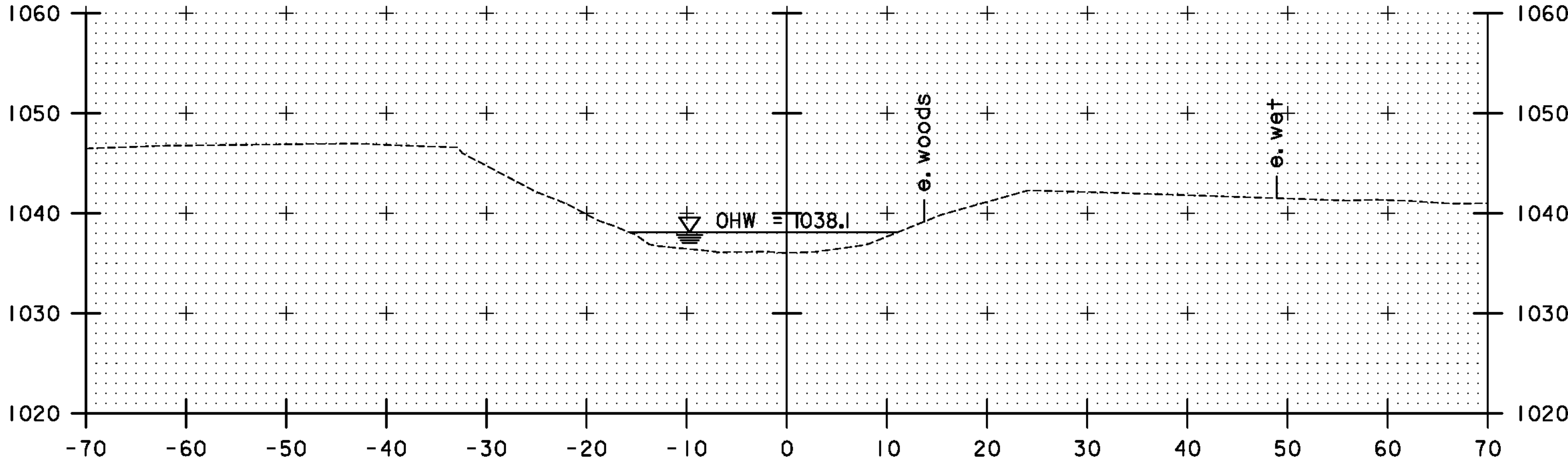
101+25

STATION 101+08.50 RT.  
END UNCLASSIFIED CHANNEL EXCAVATION  
END STONE FILL, TYPE IV  
END GEOTEXTILE UNDER STONE FILL  
END GRUBBING MATERIAL

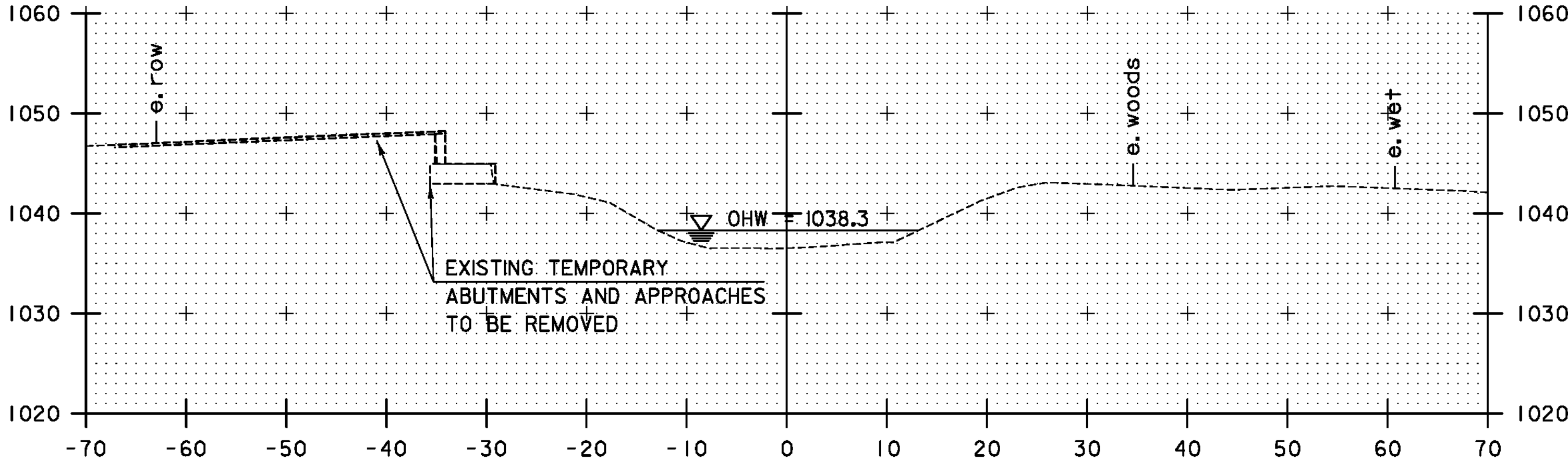


NO GRUBBING MATERIAL BENEATH SUPERSTRUCTURE

101+00



101+75



101+50

TYLIN INTERNATIONAL

PROJECT NAME: PLYMOUTH  
PROJECT NUMBER: ER BRS 0149(5)

FILE NAME: zllc330xs.ch.dgn  
PROJECT LEADER: J. OLUND  
DESIGNED BY: A. GREENLAW  
CHANNEL SECTIONS 2

PLOT DATE: 9/20/2012  
DRAWN BY: S. MORGAN  
CHECKED BY: J. OLUND  
SHEET 46 OF 46



|               |              |           |       |        |           |                          |
|---------------|--------------|-----------|-------|--------|-----------|--------------------------|
| NON STR. THK. | STRUCT. THK. | WEIGHT    | WIDTH | HEIGHT | NO. REQ'D | PANEL NUMBER OR TYPE     |
|               | 42"          | 38.0 kips | 7'-0" | 12'-3" | 1         | ABUTMENT 1 LEFT WINGWALL |

REVISED 5/7/13

P-52, 20-TON X 10" SWIFT-LIFT ANCHORS (2 REQUIRED)

14" WIDE x 6" DEEP SHEAR KEY

Vermont Agency of Transportation  
**RECEIVED**  
ON: **May 9, 2013**  
and Checked for  
**CONFORMANCE**  
BY: Rob Young DATE: 05/13/13

W B  
F

VERIFY ALL DIMENSIONS PRIOR TO POURING PANEL

MINIMUM COMPRESSIVE STRENGTH REQ'D.= 4,000 PSI

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |        |                    |             |              |             |                 |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------|--------------------|-------------|--------------|-------------|-----------------|------------------------|
| Continuation Period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Design Wind Speed | 72 mph | TOTAL BRACE LOAD = | B=          | W=           | F=          | BRACE REQ'D.:   |                        |
| <b>GROUND RELEASE II TILT-UP SYSTEM</b><br>This drawing is furnished solely for the purpose of clarifying the proper use, installation and application of products supplied by Dayton Superior. Dayton Superior does not assume any responsibility for the correctness of structural designs or dimensions furnished by others. These drawings are intended merely to supplement the architectural and structural drawings and are to be used only in conjunction with them. In no way are these drawings to be interpreted as shop drawings for panel fabrication. |                   |        | X                  | 3'-7 11/16" | ΔX           | .14 >       | CY= 9.4         | SCALE: RIGGING DETAILS |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |        | Y                  | 5'-4 3/8"   | 2 ΔX         | .28         | GROSS AREA 85.8 | 1/4" R02               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |        | PANEL VIEWED FROM: |             | ORDERED BY   | DATE        | NET AREA 74.5   | JOB NO. SHEET          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |        | INSIDE             |             | LEADER BY BP | DATE 5/7/13 | 13200           | / OF / 8               |

NOTE: INSERT AND BRACING DESIGN SHOWN IS BASED ON THE USE OF DAYTON SUPERIOR PRODUCTS ONLY!



| NON STR. THK. | STRUCT. THK. | WEIGHT    | WIDTH | HEIGHT     | NO. REQ'D | PANEL NUMBER OR TYPE      |
|---------------|--------------|-----------|-------|------------|-----------|---------------------------|
|               | 42"          | 44.9 kips | 9'-0" | 11'-5 1/8" | 1         | ABUTMENT 1 RIGHT WINGWALL |

REVISED 5/7/13

14" WIDE x 6" DEEP SHEAR KEY

P-52, 20-TON X 10" SWIFT-LIFT ANCHORS (2 REQUIRED)

5/8/13

NO. 8012  
STRUCTURAL  
LICENSED PROFESSIONAL ENGINEER

W

B

F

VERIFY ALL DIMENSIONS PRIOR TO POURING PANEL

MINIMUM COMPRESSIVE STRENGTH REQ'D = 4,000 PSI

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |               |                    |            |                  |                        |               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------|--------------------|------------|------------------|------------------------|---------------|
| Construction Period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Design Wind Speed | 72 mph        | TOTAL BRACE LOAD = | B=         | W=               | F=                     | BRACE REQ'D.: |
| <b>GROUND RELEASE II TILT-UP SYSTEM</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   | X 4'-2 1/2"   |                    | ΔX -29 <   | CY= 11.1         | SCALE: RIGGING DETAILS |               |
| This drawing is furnished solely for the purpose of clarifying the proper use, installation and application of products supplied by Dayton Superior. Dayton Superior does not assume any responsibility for the correctness of structural designs or dimensions furnished by others. These drawings are intended merely to supplement the architectural and structural drawings and are to be used only in conjunction with them. In no way are these drawings to be interpreted as shop drawings for panel fabrication. |                   | Y 4'-11 7/16" |                    | 2ΔX -59    | GROSS AREA 102.8 | 1/4" R02               |               |
| PANEL VIEWED FROM:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   | INSIDE        |                    | CHECKED BY | DATE             | JOB NO.                | SHEET         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |               |                    | BP         | 5/7/13           | 13200                  | 2 of 3        |

NOTE: INSERT AND BRACING DESIGN SHOWN IS BASED ON THE USE OF DAYTON SUPERIOR PRODUCTS ONLY!



| NON STR. THK. | STRUCT. THK. | WEIGHT    | WIDTH | HEIGHT     | NO. REQ'D. | PANEL NUMBER OR TYPE     |
|---------------|--------------|-----------|-------|------------|------------|--------------------------|
|               | 42"          | 41.5 kips | 9'-0" | 11'-2 1/2" | 1          | ABUTMENT 2 LEFT WINGWALL |

REVISED 5/7/13

5/3/13

NO. 8012  
STRUCTURAL  
LICENSED PROFESSIONAL ENGINEER

W B  
F

VERIFY ALL DIMENSIONS PRIOR TO POURING PANEL

MINIMUM COMPRESSIVE STRENGTH REQ'D. = 4,000 PSI

|                                          |        |                    |    |    |    |               |
|------------------------------------------|--------|--------------------|----|----|----|---------------|
| Construction Period<br>Design Wind Speed | 72 mph | TOTAL BRACE LOAD = | B= | W= | F= | BRACE REQ'D.: |
|------------------------------------------|--------|--------------------|----|----|----|---------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |            |             |          |            |       |        |                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|-------------|----------|------------|-------|--------|-----------------|
| <b>GROUND RELEASE II TILT-UP SYSTEM</b><br>This drawing is furnished solely for the purpose of clarifying the proper use, installation and application of products supplied by Dayton Superior. Dayton Superior does not assume any responsibility for the correctness of structural designs or dimensions furnished by others. These drawings are intended merely to supplement the architectural and structural drawings and are to be used only in conjunction with them. In no way are these drawings to be interpreted as shop drawings for panel fabrication. | X                  | 4'-10 3/8" | Δ X         | .36 >    | CY=        | 10.2  | SCALE: | RIGGING DETAILS |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Y                  | 4'-7 1/4"  | 2 Δ X       | .73      | GROSS AREA | 100.9 | 1/4"   | R02             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | PANEL VIEWED FROM: |            | DESIGNED BY | NET AREA | JOB NO.    | SHEET |        |                 |
| INSIDE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    | 80.8       | 13200       | 3 OF 18  |            |       |        |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    | LENDER BY  | DATE        |          |            |       |        |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    | BP         | 5/7/13      |          |            |       |        |                 |

NOTE: INSERT AND BRACING DESIGN SHOWN IS BASED ON THE USE OF DAYTON SUPERIOR PRODUCTS ONLY!



| NON STR. THK. | STRUCT. THK. | WEIGHT    | WIDTH | HEIGHT     | NO. REQ'D | PANEL NUMBER OR TYPE      |
|---------------|--------------|-----------|-------|------------|-----------|---------------------------|
|               | 42"          | 45.6 kips | 8'-6" | 12'-0 1/4" | 1         | ABUTMENT 2 RIGHT WINGWALL |

REVISED 5/7/13

14" WIDE x 6" DEEP SHEAR KEY

P-52, 20-TON X 10" SWIFT-LIFT ANCHORS (2 REQUIRED)

5/8/13

W

B

F

VERIFY ALL DIMENSIONS PRIOR TO POURING PANEL

MINIMUM COMPRESSIVE STRENGTH REQ'D. = 4,000 PSI

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |                    |                    |              |             |                  |                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------|--------------------|--------------|-------------|------------------|------------------------|
| Construction Period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Design Wind Speed | 72 mph             | TOTAL BRACE LOAD = | B=           | W=          | F=               | BRACE REQ'D.:          |
| <b>GROUND RELEASE II TILT-UP SYSTEM</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   | X                  | 4'-0 5/16"         | ΔX           | -23 <       | CY= 11.3         | SCALE: RIGGING DETAILS |
| This drawing is furnished solely for the purpose of clarifying the proper use, installation and application of products supplied by Dayton Superior. Dayton Superior does not assume any responsibility for the correctness of structural designs or dimensions furnished by others. These drawings are intended merely to supplement the architectural and structural drawings and are to be used only in conjunction with them. In no way are these drawings to be interpreted as shop drawings for panel fabrication. |                   | Y                  | 5'-3 5/8"          | 2 ΔX         | -45         | GROSS AREA 102.2 | 1/4" R02               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   | PANEL VIEWED FROM: |                    | CHECKED BY   | NO. DAYS    | 88.9             | JOB NO. SHEET          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   | INSIDE             |                    | LAYOUT BY BP | DATE 5/7/13 | 13200            | 4 of 18                |

NOTE: INSERT AND BRACING DESIGN SHOWN IS BASED ON THE USE OF DAYTON SUPERIOR PRODUCTS ONLY!



| NON STR. THK. | STRUCT. THK. | WEIGHT    | WIDTH       | HEIGHT    | NO. REQ'D. | PANEL NUMBER OR TYPE      |
|---------------|--------------|-----------|-------------|-----------|------------|---------------------------|
|               | 15"          | 30.8 kips | 22'-11 7/8" | 8'-2 1/2" | 4          | APPROACH SLAB 1, 3, 4 & 5 |

30,800 LBS. CONCRETE WEIGHT  
+ 4,100 LBS. (20' X 8' 2-1/2" X 26PSF ADHESION)  
=34,900 LBS. CONCRETE & ADHESION  
x 1.16 (INCREASE FACTOR FOR 90 DEG. CABLE ANGLE)  
=40,500 LBS. TOTAL EFFECTIVE WEIGHT  
/ 2 ANCHORS  
=20,250 LBS. PER ANCHOR

*Rigging Detail*  
*APPROACH SLABS*

W  
F

B

VERIFY ALL DIMENSIONS PRIOR TO POURING PANEL

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |        |                    |            |          |         |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------|--------------------|------------|----------|---------|-----------------|
| Construction Period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Design Wind Speed | 72 mph | TOTAL BRACE LOAD = | B=         | W=       | F=      | BRACE REQ'D.:   |
| <b>GROUND RELEASE II TILT-UP SYSTEM</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |        |                    |            |          |         |                 |
| This drawing is furnished solely for the purpose of clarifying the proper use, installation and application of products supplied by Dayton Superior. Dayton Superior does not assume any responsibility for the correctness of structural designs or dimensions furnished by others. These drawings are intended merely to supplement the architectural and structural drawings and are to be used only in conjunction with them. In no way are these drawings to be interpreted as shop drawings for panel fabrication. |                   |        |                    |            |          |         |                 |
| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 11'-5 15/16"      | Δ X    | .0 <               | CY=        | 7.6      | SCALE:  | RIGGING DETAILS |
| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 4'-1 1/4"         | 2 Δ X  | .0                 | GROSS AREA | 188.7    | 1/8"    | F22             |
| PANEL VIEWED FROM:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |        |                    | CHECKED BY | NET AREA | JOB NO. | SHEET           |
| INSIDE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |        |                    | DATE       | 184.2    | 13200   | 5 of 18         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |        |                    | LAYOUT BY  | 4/26/13  |         |                 |

MINIMUM COMPRESSIVE STRENGTH REQ'D.= 3,500 PSI

NOTE: INSERT AND BRACING DESIGN SHOWN IS BASED ON THE USE OF DAYTON SUPERIOR PRODUCTS ONLY!



|                  |                |           |              |        |            |                          |  |
|------------------|----------------|-----------|--------------|--------|------------|--------------------------|--|
| NON STR.<br>THK. | STRUT.<br>THK. | WEIGHT    | WIDTH        | HEIGHT | NO. REQ'D. | PANEL NUMBER OR TYPE     |  |
|                  | 15"            | 29.7 kips | 22'-10 9/16" | 7'-11" | 2          | APPROACH SLAB 2 <i>4</i> |  |

29,700 LBS. CONCRETE WEIGHT  
 + 3,960 LBS. (20' X 7' 11" X 25PSF ADHESION)  
 =33,660 LBS. CONCRETE & ADHESION  
 x 1.16 (INCREASE FACTOR FOR 60 DEG. CABLE ANGLE)  
 =39,050 LBS. TOTAL EFFECTIVE WEIGHT  
 / 2 ANCHORS  
 =19,525 LBS. PER ANCHOR

P-52, 20-TON X 10" SWIFT-LIFT  
ANCHORS (4 REQUIRED)

**GROUND RELEASE II TILT-UP SYSTEM**

This drawing is furnished solely for the purpose of clarifying the proper use, installation and application of products supplied by Dayton Superior. Dayton Superior does not assume any responsibility for the correctness of structural designs or dimensions furnished by others. These drawings are intended merely to supplement the architectural and structural drawings and are to be used only in conjunction with them. In no way are these drawings to be interpreted as shop drawings for panel fabrication.

|                                          |        |                           |    |    |    |               |
|------------------------------------------|--------|---------------------------|----|----|----|---------------|
| Construction Period<br>Design Wind Speed | 72 mph | TOTAL BRACE LOAD $\Sigma$ | B= | W= | F= | BRACE REQ'D.: |
|                                          |        |                           |    |    |    |               |

|                               |                                            |                                |
|-------------------------------|--------------------------------------------|--------------------------------|
| X 11'-5 5/16" $\Delta$ X .0 < | CY= 7.3                                    | SCALE: RIGGING DETAILS         |
| Y 3'-11 1/2" $2 \Delta$ X .0  | GROSS AREA 181.1<br>NET AREA 158.3         | F22                            |
| PANEL VIEWED FROM:<br>INSIDE  | CHECKED BY<br>LAYOUT BY BP<br>DATE 4/26/13 | JOB NO. 13200<br>SHEET 6 OF 13 |



Summary - P-52 Swift Lift Anchor Safe Working Load Calculations

Precaster:

DAYTON SUPERIOR CORPORATION  
Cold River Bridges

Project:

Plymouth Wing Walls - P52, 20-Ton X 10" SL Anchors

Location:

New Hampshire

Dealer:

Harris Rebar

\*\*\*\*\*

Recommended P-52 Swift Lift ( SL) Anchor

=

20.00 tons

Recommended length of SL Anchor

=

10.000 in. long

SL Anchor set back from face of concrete

=

1.063 inches

SL Anchor embedment depth ( Le)

=

10.438 inches

SL Anchor foot diameter ( Dh)

=

2.813 inches

Concrete compressive strength

=

4,000 psi at initial lift

Concrete unit weight

=

150.00 lbs. per cubic foot

SL Anchor front edge distance ( T1)

=

21.000 inches

SL Anchor back edge distance ( T2)

=

21.000 inches

SL Anchor left edge distance ( T3)

=

21.000 inches

SL Anchor right edge distance ( T4)

=

21.000 inches

Concrete ultimate pull out capacity

=

108,650 lbs. per anchor

SL Anchor ultimate mechanical capacity

=

160,000 lbs. per anchor

Recommended factor of safety

=

4.00 to 1 ( Ult. to SWL)

SL Anchor tension safe working load

=

27,150 lbs. per anchor

By: Brad Phillips

Date: 04/26/2013



\*\*\*\*\* GROUND RELEASE II Tilt-up Analysis \*\*\*\*\*

Operator : BP  
Job no.: 13200  
Panel no.: APPROACH SLAB 1 & 3  
Date : 4/26/2013

Insert type: Other  
Safe working load = 25000 lbs.  
Concrete compressive strength = 3500 psi.  
Allowable bending strength = 354.9648 psi.  
Steel grade = 60  
Concrete unit Weight = 150 pcf.

Panel geometry

Feature number - 0 (Panel perimeter)  
X( 0) =00.00 Y( 0) = 00.00 Width( 0) =22.9896 Height( 0) = 08.2083  
X( 1) =00.00 Y( 1) = 08.2083  
X( 2) =22.9896 Y( 2) = 08.2083  
X( 3) =22.9896 Y( 3) = 00.00

Feature number - 1 (Opening)  
X( 0) =00.00 Y( 0) = 00.00 NON RECTANGULAR FEATURE  
X( 1) =00.00 Y( 1) = 08.2083  
X( 2) =00.00 Y( 2) = 08.2083  
X( 3) =02.9896 Y( 3) = 00.00

Feature number - 2 (Opening)  
X( 0) =20.00 Y( 0) = 08.2083 NON RECTANGULAR FEATURE  
X( 1) =20.00 Y( 1) = 08.2083  
X( 2) =22.9896 Y( 2) = 08.2083  
X( 3) =22.9896 Y( 3) = 00.00

Weight and C. G.

Structural thickness = 15.00 in.  
Overall thickness = 15.00 in.  
Projected area = 164 sq. ft.  
Effective area = 164 sq. ft.  
X-bar = 11.49 ft.  
Y-bar = 4.10 ft.  
Z-bar = 7.50 inches  
Bottom Concrete Cover for reinforcing = .75 in.  
Top Concrete Cover for reinforcing = .75 in.  
Weight = 30781.30 lbs.  
Minimum number of inserts required by Weight = 2







\*\*\*\*\* GROUND RELEASE II Tilt-up Analysis \*\*\*\*\*

Operator : BP  
Job no.: 13200  
Panel no.: APPROACH SLAB 1  
Date : 4/26/2013

VERTICAL ANALYSIS

Uniform loads

| Segment Number | Length (Feet) | Load (PPF) |
|----------------|---------------|------------|
| 01             | 000.26        | 03750.00   |
| 02             | 000.26        | 03750.00   |
| 03             | 000.26        | 03750.00   |
| 04             | 000.26        | 03750.00   |
| 05             | 000.26        | 03750.00   |
| 06             | 000.26        | 03750.00   |
| 07             | 000.18        | 03750.00   |
| 08             | 000.07        | 03750.00   |
| 09             | 000.26        | 03750.00   |
| 10             | 000.26        | 03750.00   |
| 11             | 000.26        | 03750.00   |
| 12             | 000.26        | 03750.00   |
| 13             | 000.26        | 03750.00   |
| 14             | 000.26        | 03750.00   |
| 15             | 000.26        | 03750.00   |
| 16             | 000.26        | 03750.00   |
| 17             | 000.26        | 03750.00   |
| 18             | 000.26        | 03750.00   |
| 19             | 000.26        | 03750.00   |
| 20             | 000.26        | 03750.00   |
| 21             | 000.26        | 03750.00   |
| 22             | 000.26        | 03750.00   |
| 23             | 000.26        | 03750.00   |
| 24             | 000.26        | 03750.00   |
| 25             | 000.26        | 03750.00   |
| 26             | 000.26        | 03750.00   |
| 27             | 000.07        | 03750.00   |
| 28             | 000.18        | 03750.00   |
| 29             | 000.26        | 03750.00   |
| 30             | 000.26        | 03750.00   |
| 31             | 000.26        | 03750.00   |
| 32             | 000.26        | 03750.00   |
| 33             | 000.26        | 03750.00   |
| 34             | 000.26        | 03750.00   |

| Section Properties |        |          |             |            |            |            |
|--------------------|--------|----------|-------------|------------|------------|------------|
| N                  | D(N)   | Area     | Mom. of In. | Neut. Axis | +Sec. Mod. | -Sec. Mod. |
|                    | (Ft.)  | (In.^2)  | (In.^4)     | (In.)      | (In.^3)    | (In.^3)    |
| 01                 | 000.26 | 03600.00 | 000067500   | 007.50     | 00009000   | 00009000   |
| 02                 | 000.26 | 03600.00 | 000067500   | 007.50     | 00009000   | 00009000   |
| 03                 | 000.26 | 03600.00 | 000067500   | 007.50     | 00009000   | 00009000   |
| 04                 | 000.26 | 03600.00 | 000067500   | 007.50     | 00009000   | 00009000   |
| 05                 | 000.26 | 03600.00 | 000067500   | 007.50     | 00009000   | 00009000   |



\*\*\*\*\* GROUND RELEASE II Tilt-up Analysis \*\*\*\*\*

|                            |        |          |           |        |          |          |        |
|----------------------------|--------|----------|-----------|--------|----------|----------|--------|
| Operator : BP              |        |          |           |        |          |          |        |
| Job no.: 13200             |        |          |           |        |          |          |        |
| Panel no.: APPROACH SLAB 1 |        |          |           |        |          |          |        |
| Date : 4/26/2013           |        |          |           |        |          |          |        |
| 06                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 07                         | 000.18 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 08                         | 000.07 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 09                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 10                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 11                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 12                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 13                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 14                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 15                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 16                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 17                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 18                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 19                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 20                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 21                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 22                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 23                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 24                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 25                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 26                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 27                         | 000.07 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 28                         | 000.18 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 29                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 30                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 31                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 32                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 33                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |
| 34                         | 000.26 | 03600.00 | 000067500 | 007.50 | 00009000 | 00009000 | 015.00 |

|                        |      |         |         |        |         |         |                     |
|------------------------|------|---------|---------|--------|---------|---------|---------------------|
| Additional reinforcing |      |         |         |        |         |         |                     |
| Strongbacks            |      |         |         |        |         |         |                     |
| Angle                  | Loc. | Flexure | Bending | Allow. | Tens.   | Comp.   | Sec. Mod. Sec. Mod. |
|                        |      | Stress  | Moment  |        | Steel   | Steel   | Wood Steel          |
| Deg.                   | Feet | PSI     | Ft-Lbs  | Ft-Lbs | Sq. In. | Sq. In. | In^3 In^3           |

Insert loads

Maximum tension load = 7695.33 lbs per insert.

Maximum shear load = .00 lbs per insert.

Maximum ground reaction = .00 lbs

Maximum positive stress (Bottom)= 7 psi @ 4.1 ft. and 0°

Maximum negative stress (Top)= 7 psi @ 1.72 ft. and 0°

Strongback req'ments (Applicable only if printout shows add'l steel req'd.)

Wood: 0 single 2X12's or equivalent.  
0 single 4X12's or equivalent.

Steel: 0 double C6X8.2 or equivalent.  
0 double C8X11.5 or equivalent.



\*\*\*\*\* GROUND RELEASE II Tilt-up Analysis \*\*\*\*\*

Operator : BP  
Job no.: 13200  
Panel no.: APPROACH SLAB 1  
Date : 4/26/2013

HORIZONTAL ANALYSIS

| Uniform loads |        |          |  |
|---------------|--------|----------|--|
| Segment       | Length | Load     |  |
| Number        | (Feet) | (PPF)    |  |
| 01            | 00.37  | 00096.19 |  |
| 02            | 00.37  | 00288.58 |  |
| 03            | 00.37  | 00480.96 |  |
| 04            | 00.37  | 00673.34 |  |
| 05            | 00.37  | 00865.72 |  |
| 06            | 00.37  | 01058.11 |  |
| 07            | 00.37  | 01250.49 |  |
| 08            | 00.37  | 01442.87 |  |
| 09            | 02.00  | 01539.06 |  |
| 10            | 13.00  | 01539.06 |  |
| 11            | 02.00  | 01339.06 |  |
| 12            | 00.37  | 01442.87 |  |
| 13            | 00.37  | 01250.49 |  |
| 14            | 00.37  | 01058.11 |  |
| 15            | 00.37  | 00865.72 |  |
| 16            | 00.37  | 00673.34 |  |
| 17            | 00.37  | 00480.96 |  |
| 18            | 00.37  | 00288.58 |  |
| 19            | 00.37  | 00096.19 |  |

| Section Properties |        |          |             |            |            |            |           |
|--------------------|--------|----------|-------------|------------|------------|------------|-----------|
| N                  | D(N)   | Area     | Mom. of In. | Neut. Axis | +Sec. Mod. | -Sec. Mod. | Eff. Thk. |
|                    | (Ft.)  | (In.^2)  | (In.^4)     | (In.)      | (In.^3)    | (In.^3)    | (In.)     |
| 01                 | 000.37 | 00092.35 | 000001731   | 007.50     | 00000231   | 00000231   | 015.00    |
| 02                 | 000.37 | 00277.03 | 000005194   | 007.50     | 00000693   | 00000693   | 015.00    |
| 03                 | 000.37 | 00461.72 | 000008657   | 007.50     | 00001154   | 00001154   | 015.00    |
| 04                 | 000.37 | 00646.41 | 000012120   | 007.50     | 00001616   | 00001616   | 015.00    |
| 05                 | 000.37 | 00831.10 | 000015583   | 007.50     | 00002078   | 00002078   | 015.00    |
| 06                 | 000.37 | 01015.78 | 000019046   | 007.50     | 00002539   | 00002539   | 015.00    |
| 07                 | 000.37 | 01200.47 | 000022509   | 007.50     | 00003001   | 00003001   | 015.00    |
| 08                 | 000.37 | 01385.16 | 000025972   | 007.50     | 00003463   | 00003463   | 015.00    |
| 09                 | 002.00 | 01477.50 | 000027703   | 007.50     | 00003694   | 00003694   | 015.00    |
| 10                 | 013.00 | 01477.50 | 000027703   | 007.50     | 00003694   | 00003694   | 015.00    |
| 11                 | 002.00 | 01477.50 | 000027703   | 007.50     | 00003694   | 00003694   | 015.00    |
| 12                 | 000.37 | 01385.16 | 000025972   | 007.50     | 00003463   | 00003463   | 015.00    |
| 13                 | 000.37 | 01200.47 | 000022509   | 007.50     | 00003001   | 00003001   | 015.00    |
| 14                 | 000.37 | 01015.78 | 000019046   | 007.50     | 00002539   | 00002539   | 015.00    |
| 15                 | 000.37 | 00831.10 | 000015583   | 007.50     | 00002078   | 00002078   | 015.00    |
| 16                 | 000.37 | 00646.41 | 000012120   | 007.50     | 00001616   | 00001616   | 015.00    |
| 17                 | 000.37 | 00461.72 | 000008657   | 007.50     | 00001154   | 00001154   | 015.00    |
| 18                 | 000.37 | 00277.03 | 000005194   | 007.50     | 00000693   | 00000693   | 015.00    |
| 19                 | 000.37 | 00092.35 | 000001731   | 007.50     | 00000231   | 00000231   | 015.00    |

First point of zero shear = 00.00 ft.

Additional reinforcing



\*\*\*\*\* GROUND RELEASE II Tilt-up Analysis \*\*\*\*\*

Operator : BP  
Job no.: 13200  
Panel no.: APPROACH SLAB 1  
Date : 4/26/2013

| Angle<br>Deg. | Loc.<br>Feet | Flexure       | Bending          | Allow.           | Tens.            | Comp.            | Strongbacks       |                            |
|---------------|--------------|---------------|------------------|------------------|------------------|------------------|-------------------|----------------------------|
|               |              | Stress<br>PSI | Moment<br>Ft-Lbs | Moment<br>Ft-Lbs | Steel<br>Sq. In. | Steel<br>Sq. In. | Sec. Mod.<br>In^3 | Sec. Mod.<br>Steel<br>In^3 |

Maximum positive stress (Bottom)= 74 psi @ 11.39 ft. and 0°  
Maximum negative stress (Top)= 32 psi @ 18.0 ft. and 0°

Balancing moment = 0.00 ft.-lbs./ft. over 0.00 ft.W-Shift 0.00  
Strongback req'ments (Applicable only if printout shows add'l steel req'd.)  
Wood: 0 single 2X12's or equivalent.  
0 single 4X12's or equivalent.  
Steel: 0 double C6X8.2 or equivalent.  
0 double C8x11.5 or equivalent.



P52 Swift Lift® Anchor

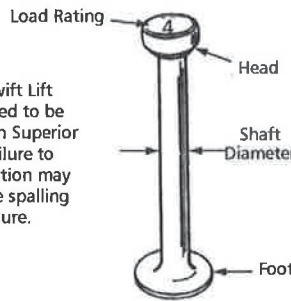
The P52 Swift Lift Anchor is hot forged from carbon steel. The formed head provides spherical seating that the Lifting Eye engages, while a disc-shaped foot is embedded in the concrete.

Due to its being a forged part, the Swift Lift Anchor does not depend on welds or thread engagement to develop its safe working load. Forging provides maximum safety with its advantageous material structure. This allows the anchor to easily meet the OSHA requirement of a 4 to 1 factor of safety.

In addition to the carbon steel anchors, Type 304 or 316 Stainless Steel Swift Lift Anchors are available on special order. Use stainless steel anchors when maximum protection against corrosion is required.

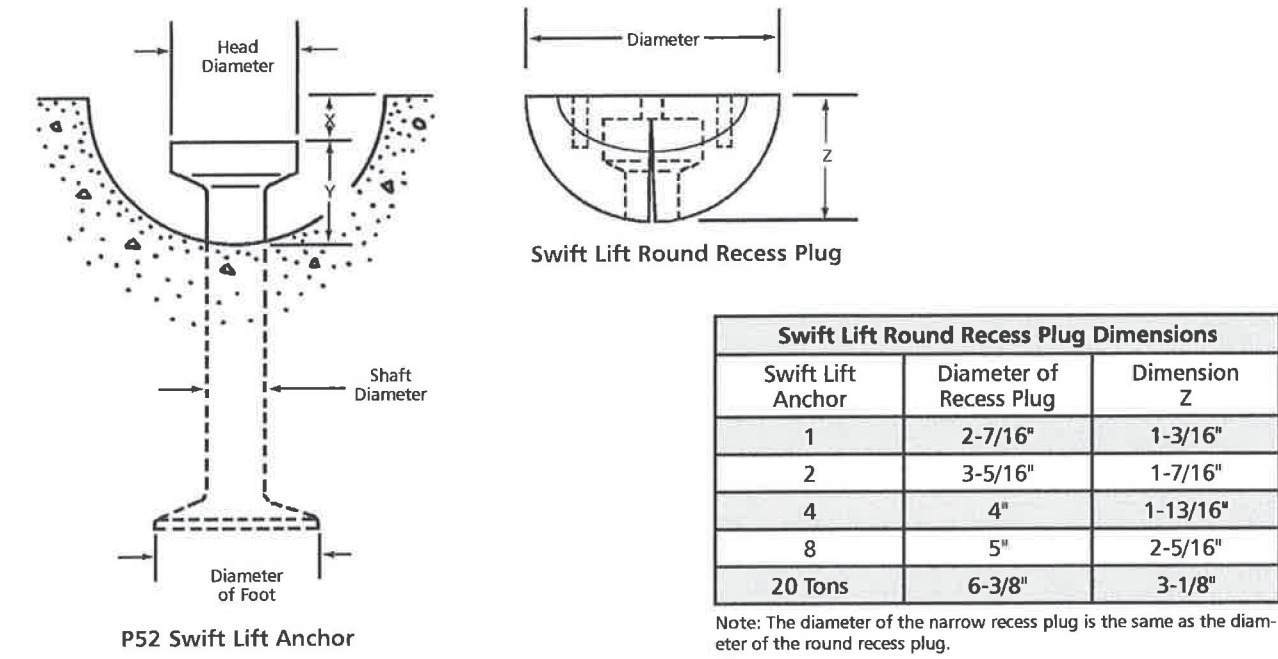
For safety, refer to the P52 Swift Lift Anchor Selection Chart to determine the actual safe working load of an individual anchor. The MAXIMUM safe working load is clearly visible on the head of the anchor for easy recognition of the appropriate hardware and accessories for-use with each Swift Lift Anchor.

Caution: The Swift Lift Anchor is designed to be used with Dayton Superior components. Failure to use this combination may result in concrete spalling or premature failure.



**To Order:**  
Specify: (1) quantity, (2) name, (3) system size, (4) length  
**Example:**  
200, P52 Swift Lift Anchors, 4 ton, 9-1/2" long

P52 Swift Lift Anchor and Recess Plug Dimensions

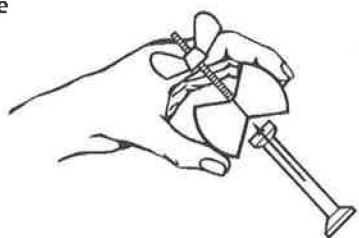


| P52 Swift Lift Anchor Dimensions |             |             |                |               |
|----------------------------------|-------------|-------------|----------------|---------------|
| Swift Lift Anchor                | Dimension X | Dimension Y | Shaft Diameter | Foot Diameter |
| 1                                | 5/16"       | 7/8"        | 3/8"           | 1"            |
| 2                                | 7/16"       | 1-1/16"     | 9/16"          | 1-3/8"        |
| 4                                | 9/16"       | 1-5/16"     | 3/4"           | 1-7/8"        |
| 8                                | 9/16"       | 1-5/8"      | 1-3/32"        | 2-5/8"        |
| 20 Tons                          | 9/16"       | 2-5/8"      | 1-1/2"         | 3-3/4"        |



How to Install P56 and P56PL Recess Plugs on P52 Anchors

Grasp the recess plug firmly across the top diameter of the plug. Application of pressure by the thumb and fingers on the outer edge of the plug will cause the plug to open up to allow insertion of the anchor.



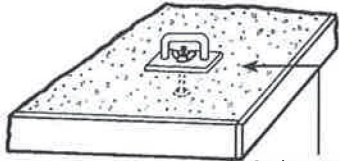
Swift Lift System

“Wet Setting” P52 Swift Lift Face Lift Anchors

When a Swift Lift anchor is to be positioned in the top surface of a flat precast section, wet setting the anchor is best done immediately after the concrete has been placed.

The anchor/recess plug assembly is attached to a small template board and pressed into the fresh concrete until the template board lies flush on the surface of the concrete.

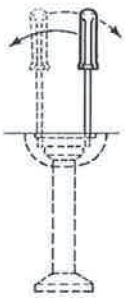
Light vibration of the fresh concrete will assure proper embedment and anchorage.



Anchor assembly attached to template board

Recess Plug Removal

Swift Lift recess plugs provide two holes in the top surface that are used in the removal process. Insert two screw drivers or steel rods into the holes and simply lever the two across the plug for easy removal.



Selecting the Proper Swift Lift Anchor

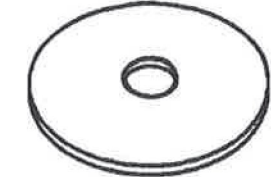
Determination of the required rated load and length of a P52 Swift Lift Anchor is based on the actual maximum load that is transferred to the anchor. In most cases, a flat slab can be handled with the anchors properly located in the face of the flat slab. The anchors should normally be the maximum length that can be accommodated in the slab's structural thickness, allowing at least 1/2" clearance between the anchor and the casting bed. Dimension tables and safe working load charts, contained herein, will aid in the selection of the proper anchor. Keep in mind that the safe working load of an anchor is a function of several factors:

1. The effective concrete thickness
2. Actual edge distance
3. Concrete compressive strength at time of lift
4. Anchor length
5. In some applications, the use of a shear bar



P61 Swift Lift® Setting Plate, P62 Countersunk Screw

The Dayton Superior P61 Swift Lift Setting Plate and P62 Countersunk Screw combination provide an easy method of placing a Swift Lift Anchor into the surface of a flat panel without obstructing the screeding process. The P61 setting plate is available in two sizes, a 4" unit for use with 4-ton anchors and a 5" unit for use with 8-ton anchors. The P62 screw is available in two sizes to match the setting plates. The 4-ton setup uses a 3/4" long, 5/16" – 18 NC thread screw and the 8-ton setup uses a 3/4" long, 7/16" – 14 NC thread screw.



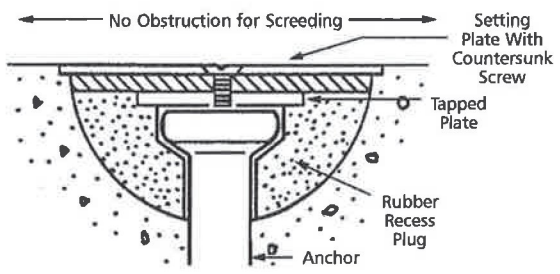
P61 Swift Lift Setting Plate



P62 Swift Lift Countersunk Screw

**To Order:**  
Specify: (1) quantity, (2) name, (3) anchor size.

**Example:**  
200, P61 Swift Lift Setting Plates and 200, P62 Countersunk Screws for 4-ton anchors.



Swift Lift System

P63 Swift Lift® Stud, P64 Swift Lift Wing Nut

The Dayton Superior P63 Swift Lift Stud and P64 Wing Nut combination is used to set P56 Narrow Recess Plugs. Available in two sizes, 5/16" – 18 NC threads for use with the 1-ton anchor and 7/16" – 14 NC threads for use with 2, 4, 8 and 20-ton P56 anchors.



P63 Swift Lift Stud

Note: The P63 Stud and P64 Wing Nut are not interchangeable with the P56PL Recess Plug accessories.



P64 Swift Lift Wing Nut

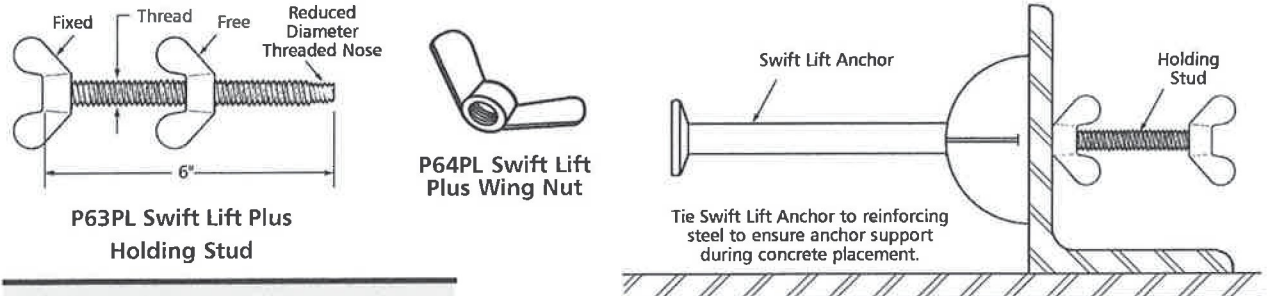
**To Order:**  
Specify: (1) quantity, (2) name, (3) size.

**Example:**  
200, P63 Swift Lift Studs and 200 P64 Swift Lift Wing Nuts, 7/16" dia.

P63PL Swift Lift® Plus Holding Stud, P64PL Swift Lift Plus Wing Nut

The Dayton Superior P63PL Swift Lift Plus Holding Stud is a 3/8" diameter, coil threaded stud with a fixed wing nut and a free-running wing nut used with the P66PL threaded plate to quickly attach the P56PL recess plug to the formwork. The holding stud is inserted through the form and threaded into the threaded plate. Complete the anchor installation by screwing the free-running wing nut tightly against the form.

The P64PL Wing Nut has 3/8" diameter coil thread and is available as a replacement nut for the P63PL Holding Stud.



**To Order:**  
Specify: (1) quantity, (2) name.

**Example:**  
200, P63PL Swift Lift Plus Holding Studs.



**Swift Lift® System**

The Swift Lift System is a quick connect-disconnect system that allows precast concrete elements to be handled repeatedly, with speed, safety and economy. It is a non-welded system and void of threaded connections. The quality, reusable Swift Lift Lifting Eye's heavy duty construction will provide years of good service.

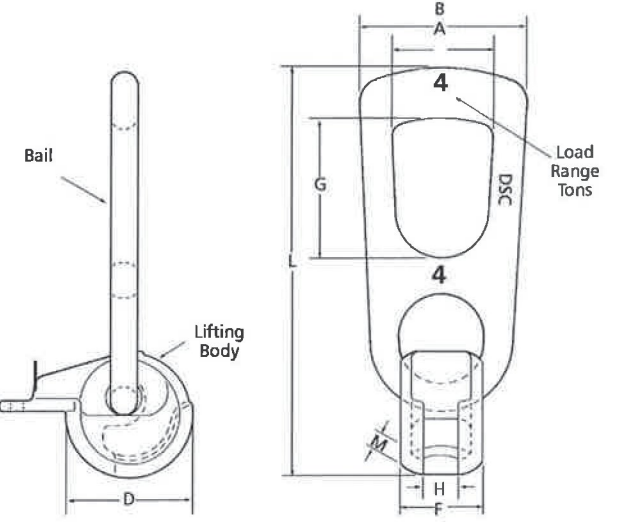
The Swift Lift System is available with safe load ratings of 1, 2, 4, 8 and 20 tons. Each component is clearly marked with its maximum safe working load. The System is extremely versatile and can be utilized for vertical and diagonal pulls. It can be used to lift concrete elements from a horizontal to a vertical position without the aid of a tilting table.

**P50 Swift Lift® Universal Lifting Eye**

The Swift Lift Universal Lifting Eye (P50) consists of a flat-sided, spherical lifting body and a high strength bail. The lifting body has a T-shaped slot that permits rapid attachment and release of the head on Swift Lift Anchors.

The design of the P50 Universal Lifting Eye permits the bail to freely rotate 180°, while the complete lifting eye may rotate through a 360° arc. This design feature allows precast concrete elements to be turned, tilted and/or rotated under load.

Dayton Superior does not recommend the use of this lifting eye for edge lifting of thin precast concrete panels.



| P50 Swift Lift Universal Lifting Eye Dimensions |       |       |       |       |       |        |
|-------------------------------------------------|-------|-------|-------|-------|-------|--------|
| Rated Load Tons                                 | A     | B     | D     | F     | G     | L      |
| 1                                               | 1.87" | 2.95" | 2.20" | 1.26" | 2.90" | 7.40"  |
| 2                                               | 2.34" | 3.58" | 2.68" | 1.61" | 3.41" | 9.06"  |
| 4                                               | 2.76" | 4.65" | 3.46" | 2.22" | 3.46" | 11.14" |
| 8                                               | 3.47" | 6.30" | 4.41" | 2.83" | 4.52" | 15.79" |
| 20                                              | 4.18" | 7.09" | 6.00" | 4.29" | 5.31" | 20.00" |

The rated load provides a factor of safety of approximately 5 to 1 (ultimate to rated load).

**P50 Inspection and Maintenance**

The P50 Universal Lifting Eye may be subjected to wear, misuse, overloading and other factors that can affect the lifting eye's rated load. Therefore, it is imperative that the lifting eye be user-inspected at least once a month to determine its general condition and degree of wear.

During the user's monthly inspection, the lifting eye should be checked for evidence of heat application. If evidence of heat application is found, the unit must be scrapped. Check for a bent or twisted bail and discard all units found to have these flaws. Also, check to make certain that the bail rotates freely in all directions.

At least once every three months, dimensions "H" and "M" on each unit should be checked. The upper limits are shown in the chart. If either of these limits is exceeded, the P50 Universal Lifting Eye must be removed from service and destroyed.

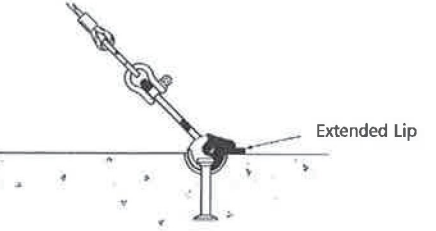
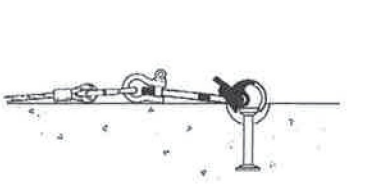
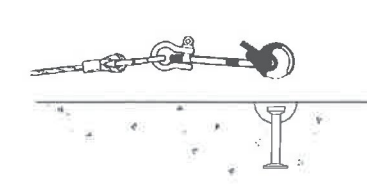
The proper method for scrapping a lifting eye is to cut through the bail with a cutting torch to render the unit useless as a lifting device.

No repairs or welding to the P50 Swift Lift Universal Lifting Eye are permitted.

| Limiting Dimenelons on P-50 Swift Lift Universal Lifting Eye |                 |                     |
|--------------------------------------------------------------|-----------------|---------------------|
| Rated Load (tons)                                            | H Maximum Width | M Minimum Thickness |
| 1                                                            | 0.612"          | 0.217"              |
| 2                                                            | 0.709"          | 0.230"              |
| 4                                                            | 0.984"          | 0.319"              |
| 8                                                            | 1.200"          | 0.472"              |
| 20                                                           | 1.811"          | 0.709"              |



How to Use the P50 Swift Lift Universal Lifting Eye

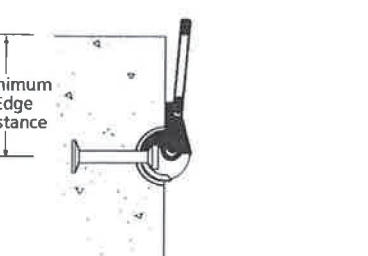
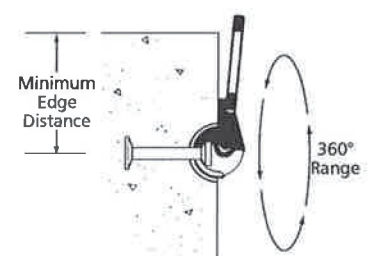
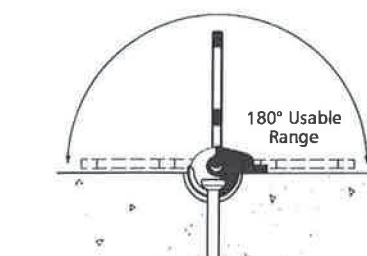


1. To install the P50 lifting eye, hold the unit upside down with the T-shaped slot directly over the head of the Swift Lift anchor.

2. Lower the lifting eye down onto the anchor until the slot engages the head of the anchor.

3. Rotate the lifting eye until the extended lip of the body touches the horizontal surface of the concrete.

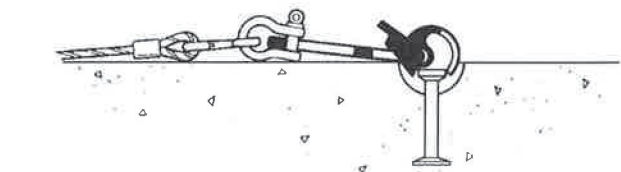
Note: Prior to lifting a precast element, apply an initial cable tension to make sure that the bail and body of the lifting eye are aligned in the direction of the cable pull.



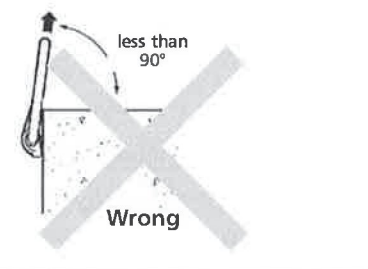
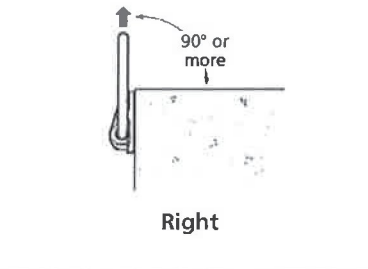
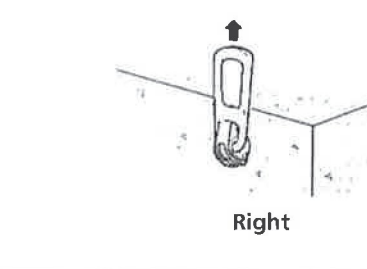
The bail of the P50 lifting eye can move through a 180° usable range.

The main body of the lifting eye has a 360° rotational range.

The P50 lifting is used with the T-shaped slot facing toward the direction of the applied load.



To disengage the lifting eye, the crane hook is lowered and the body removed by rotating the extended lip upward.



Right

Right

Wrong

Dos and Don'ts of the P50 Swift Lift Universal Lifting Eye

Prior to lifting a precast element, apply an initial cable tension to make certain that the bail and body of the lifting eye are aligned in the direction of the cable pull.

Warning: The crane line and bail of the lifting hardware must be turned in the direction of the cable forces before the lifting operation begins. The crane line must not be allowed to apply a sideward force on the bail. This condition is dangerous and could lead to premature failure of the hardware or insert.

Warning: Do not modify, weld or alter in any way the Swift Lift Universal Lifting Eye.

When applying the initial cable tension on edge lift applications, make sure that the cables are at a 90° angle (or larger) to the surface of the precast element.

Warning: Do not allow the crane lines to form an angle less than 90° during an edge lift application. This condition can bend the lifting eye bail and could lead to a premature failure.



PLYMOUTH ER BRS 0149 (5)  
CONTRACTOR FABRICATED PRE-CAST

- SHEET1:ABUTMENT #1 PLAN
- SHEET2:ABUTMENT #2 PLAN
- SHEET3:WING WALL FORMING PLAN
- SHEET4:CLOSURE POUR FORMING PLAN
- SHEET5:APPROACH SLAB PLAN
- SHEET6:APPROACH SLAB FORMING PLAN
- SHEET7:APPROACH SLAB INSTALLATION /GROUTING PLAN
- SHEET8:GENERAL NOTES
- SHEET9:QUALITY CONTROL PLAN & PROCEDURES
- SHEET10:NPCA TOLERANCES
- SHEET11:INSPECTION FORMS
- SHEET12:REINFORCING STEEL DRAWINGS

No Exception Taken

☒ Make Correction as Noted

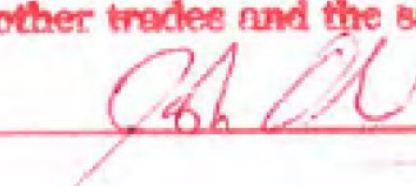
☐ Submit Specified Item

☐ Revise and Resubmit as Noted

☐ Rejected

T-Y-LININTERNATIONAL

Checking is for general compliance with the design concept of the project and general compliance with the information given in the contract documents only. Any action shown is not an approval and is subject to the requirements of the plans and specifications. Any action shown on a specific item shall not indicate the checking of an assembly of which the item is a component. Contractor is solely responsible for dimensions which shall be confirmed and controlled at the job site, fabrication processes, techniques of construction, safety precautions, and coordination of its work with that of all other trades and the satisfactory performance of its work.

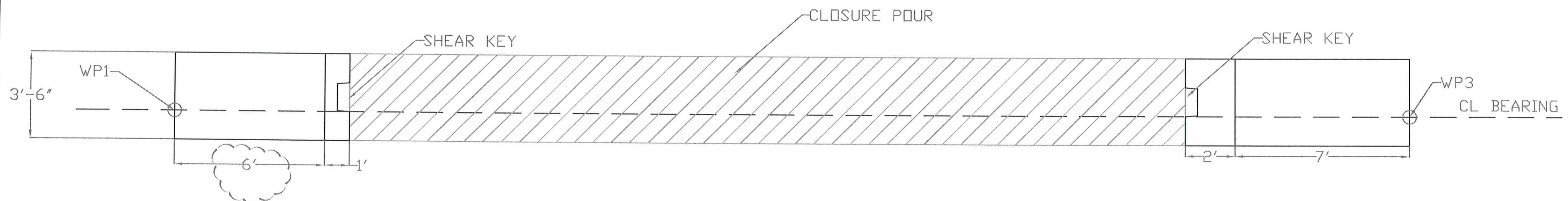
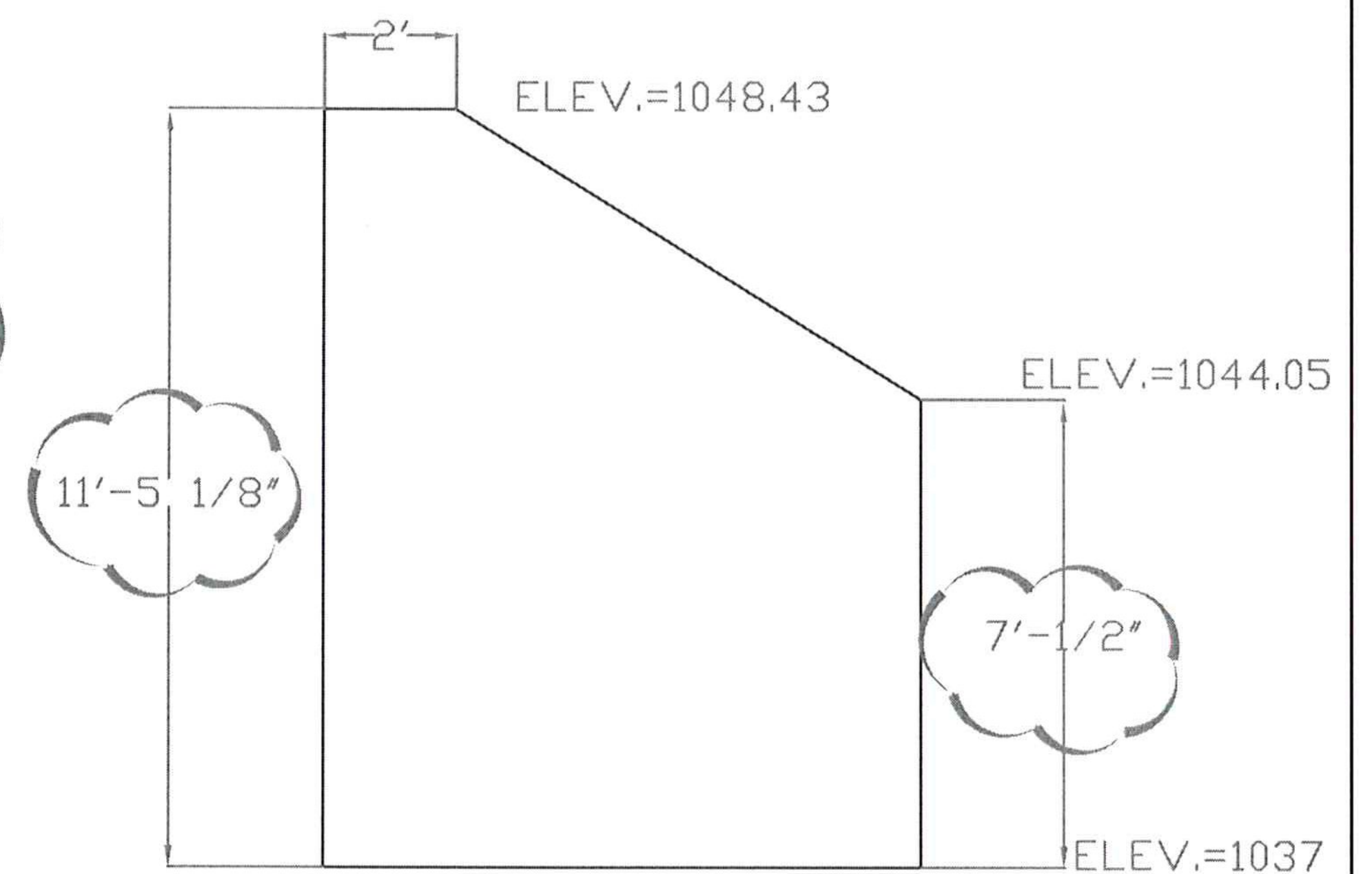
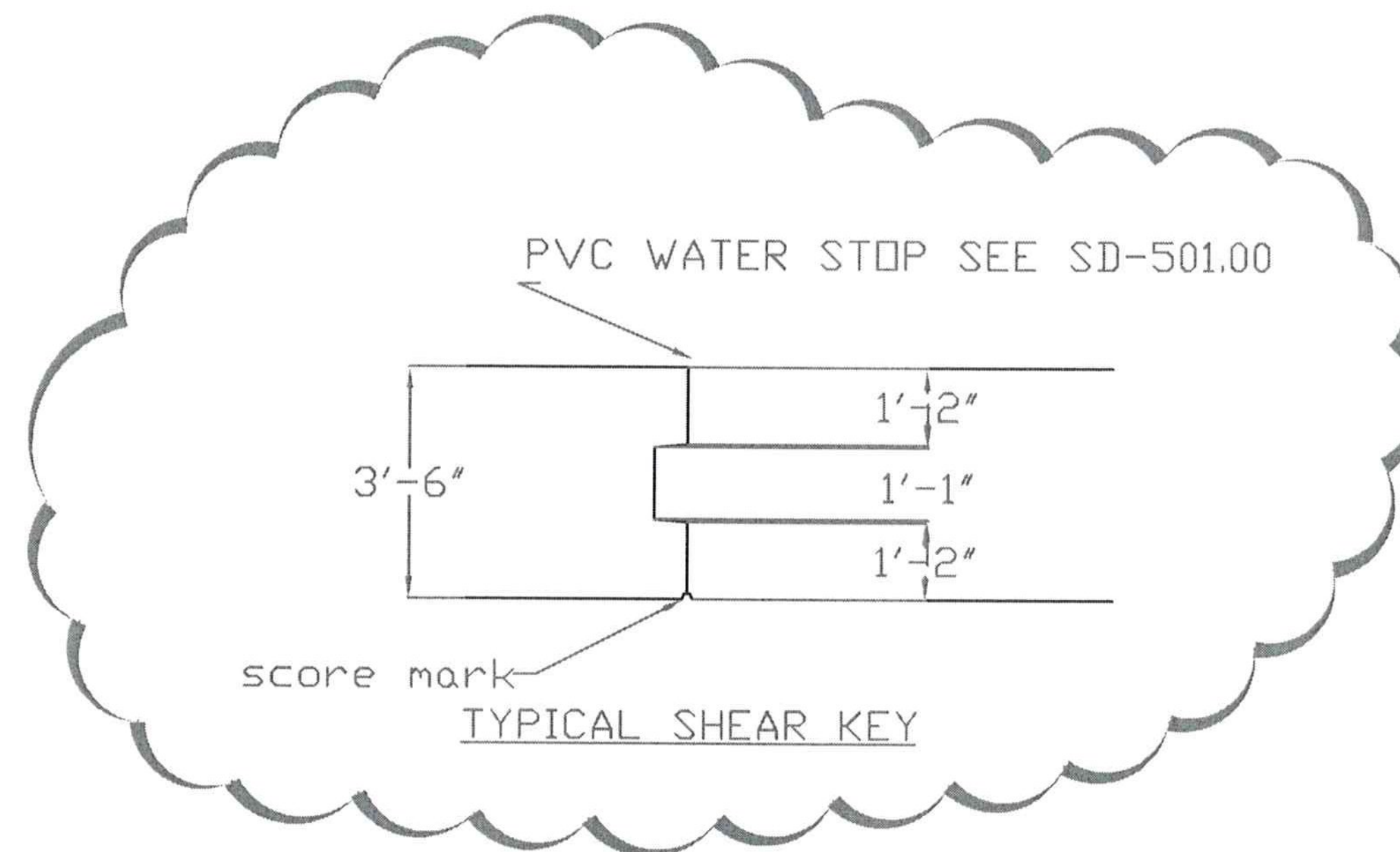
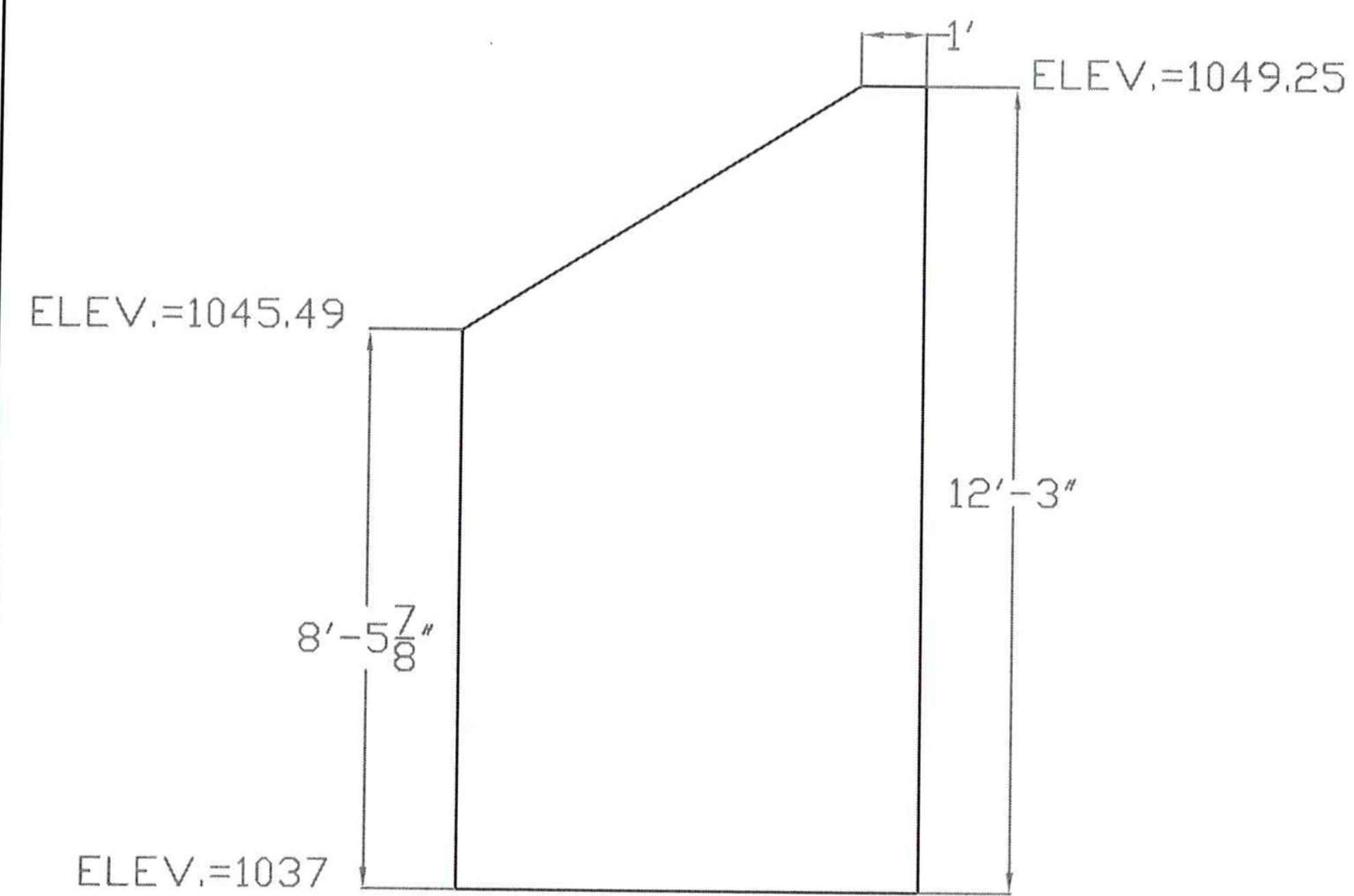
Reviewed By:  Date: May 13, 2013

Please incorporate comments; no need to return corrected versions for further review.

Vermont Agency of Transportation  
**RECEIVED**  
ON: May 9, 2013  
and Checked for  
**CONFORMANCE**  
BY: Rob Young DATE: 05/13/13

|                               |                       |
|-------------------------------|-----------------------|
| COLD RIVER BRIDGES, LLC       |                       |
| 10 LANBRO LANE<br>WALPOLE, NH |                       |
| TEL 603-756-9300              | FAX 603-756-9303      |
| PLYMOUTH ER BRS 0149 (5)      |                       |
| COVER SHEET/INDEX             | SHEET NUMBER          |
| DATE: 4-16-13                 | COVER<br>REV 1 5-7-13 |
| scale:                        |                       |





ABUTMENT 1 PLAN&ELEV VIEW

Vermont Agency of Transportation

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TEL 603-756-9300 FAX 603-756-9303

PLYMOUTH ER BRS 0149 (5)

ABUTMENT 1 PLAN

SHEET NUMBER

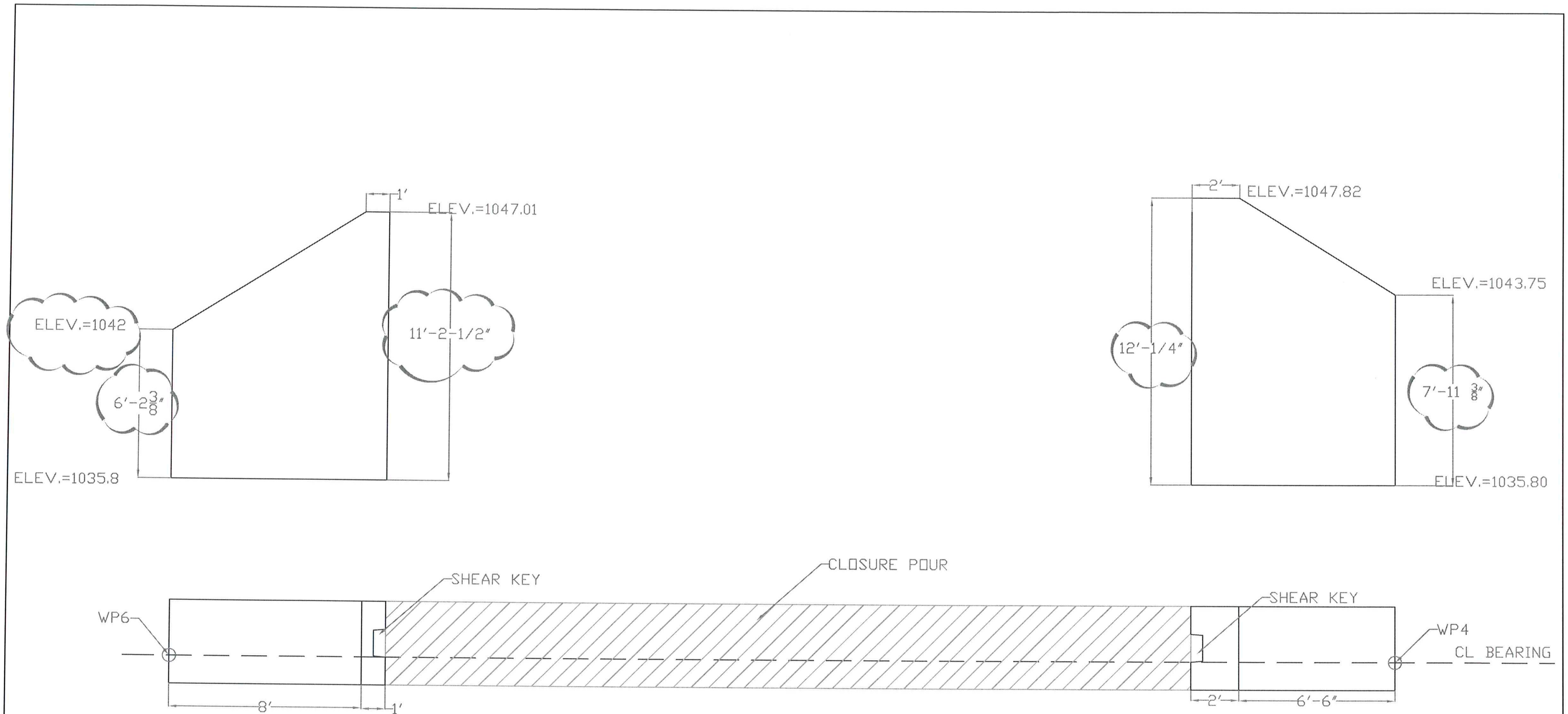
1

REV 1 5-7-13

DATE: 4-16-13

Scale: 1/4"=1'





ABUTMENT 2 PLAN&ELEV VIEW

Vermont Agency of Transportation

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TEL 603-756-9300 WALPOLE, NH FAX 603-756-9303

PLYMOUTH BR 0149 (5)

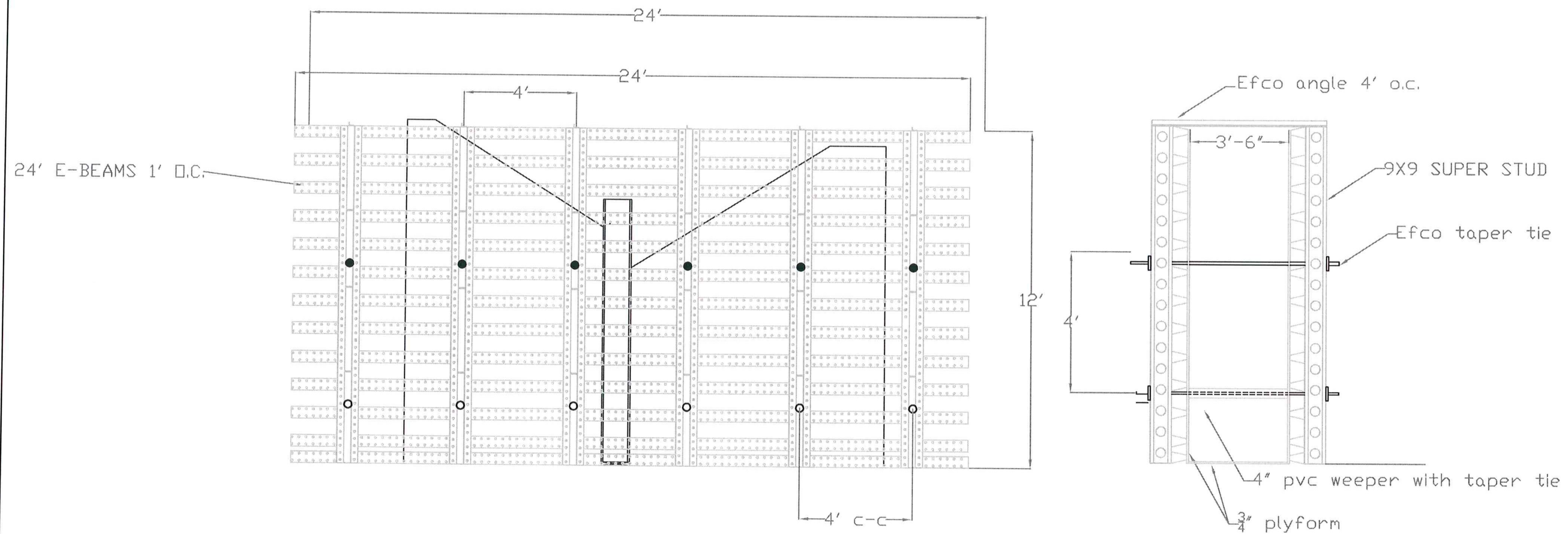
ABUTMENT 2 PLAN

SHEET NUMBER

DATE: 4-16-13 Scale: 1/4"=1'

2  
REV 1 5-7-13





Vermont Agency of Transportation  
CONTRACT FILE NO. 05-0000000000000000

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**CONFORMANCE**

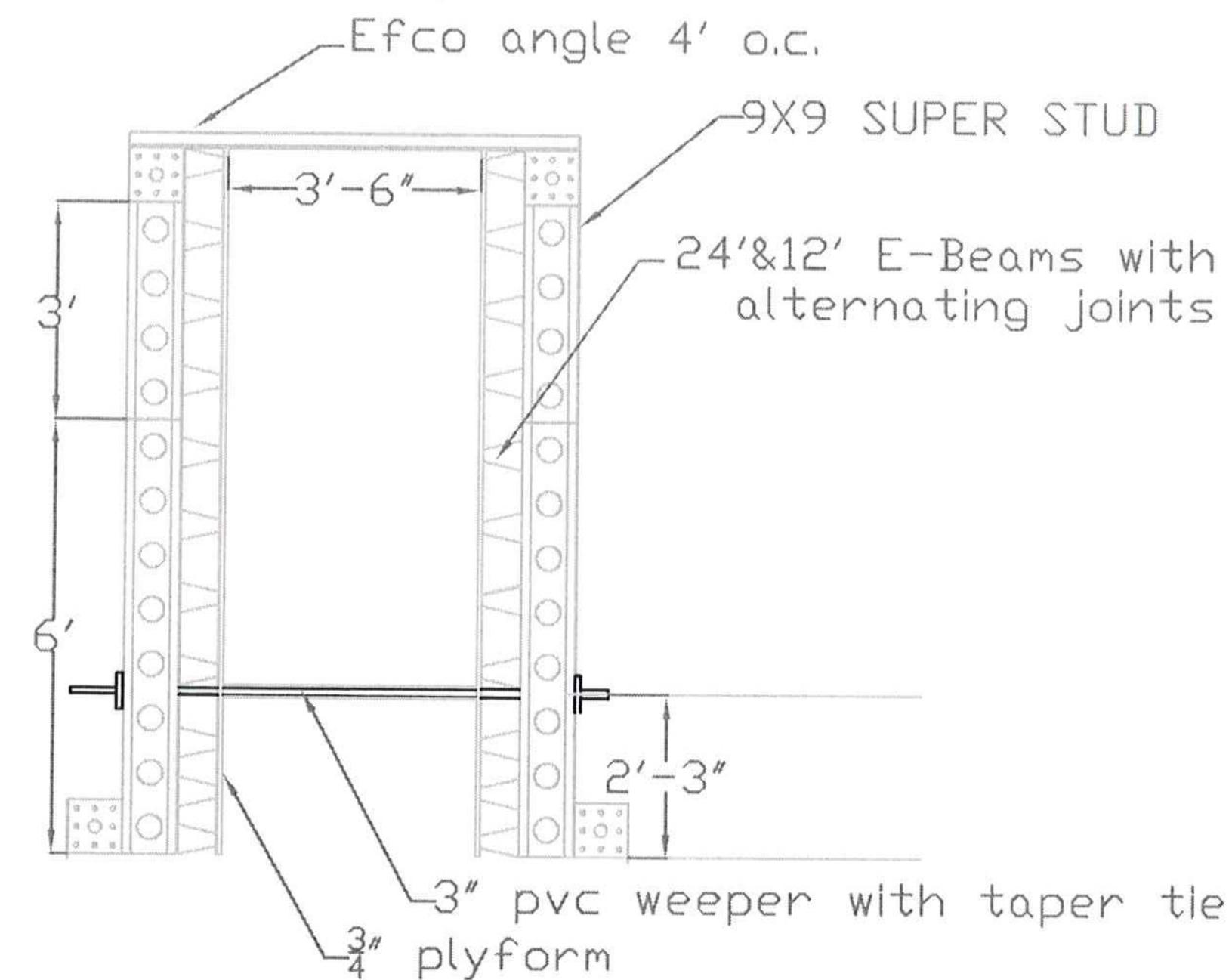
BY: Rob Young DATE: 05/13/13

|                          |                              |
|--------------------------|------------------------------|
| COLD RIVER BRIDGES, LLC  |                              |
| 10 LANBRO LANE           |                              |
| TEL 603-756-9300         | WALPOLE, NH FAX 603-756-9303 |
| PLYMOUTH ER BRS 0149 (5) |                              |
| W.W. FORMING PLAN        | SHEET NUMBER                 |
| DATE: 4-16-13            | 3                            |
| Scale: 1/4"=1'           |                              |

REV 1 5-7-13



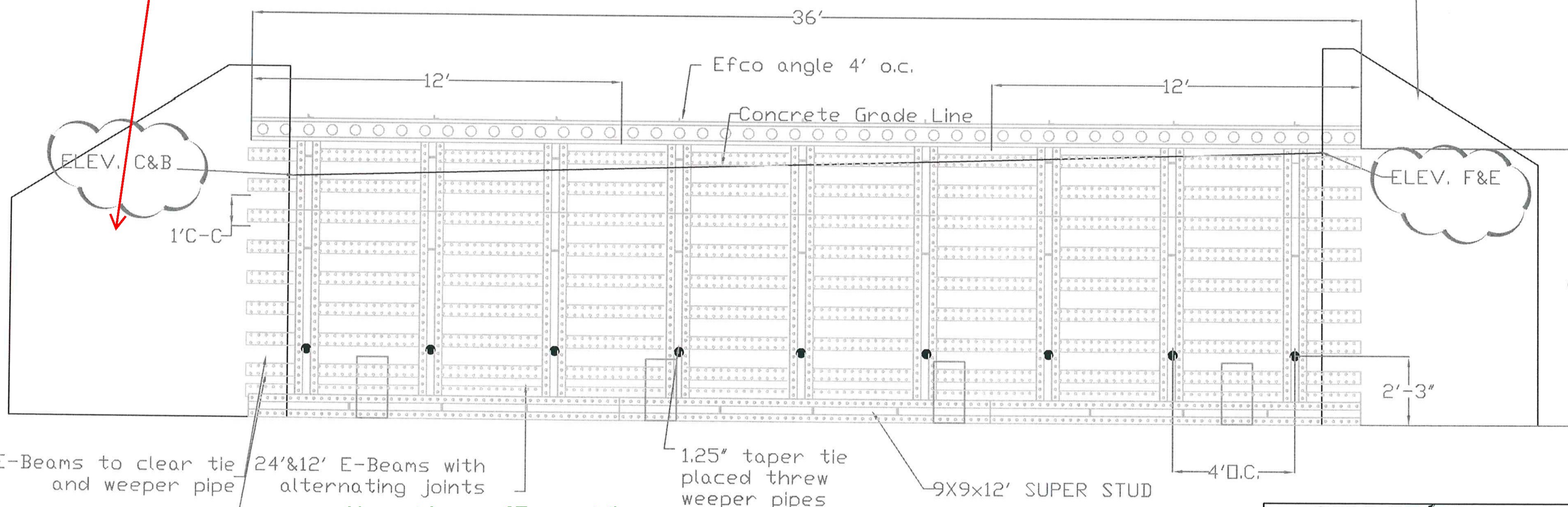
WING WALLS WILL BE SET ON A CRUSHED STONE BASE LOCATION AND ELEVATION PER CONTRACT PLANS. WW'S WILL BE SELF STANDING, CLOSURE POUR FORMS LAP ONTO WINGALLS AND ARE DRAWN TIGHT WITH TAPER TIES



ABUTMENT #1  
 ELEVATION "C" ~~1046.92~~ 1046.12 (NF), 1046.24 (FF)  
 ELEVATION "F" ~~1045.26~~ 1045.13 (NF), 1045.26 (FF)  
 ABUTMENT #2  
 ELEVATION "B" ~~1043.68~~ 1043.80 (NF), 1043.68 (FF)  
 ELEVATION "E" ~~1044.67~~ 1044.79 (NF), 1044.67 (FF)

Need to laterally brace wings to prevent 'tipping' during abutment closure cure period

Pre-cast Wing walls  
 See Forming sheet 1



Space E-Beams to clear tie and weeper pipe

Draw foms tight against pre-cast wings

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CLOSURE POUR

**COLD RIVER BRIDGES, LLC**

10 LANBRO LANE  
 WALPOLE, NH  
 TEL 603-756-9300 FAX 603-756-9303

PLYMOUTH ER BRS 0149 (5)

CLOSURE POUR FORM  
 PLAN

SHEET NUMBER

4

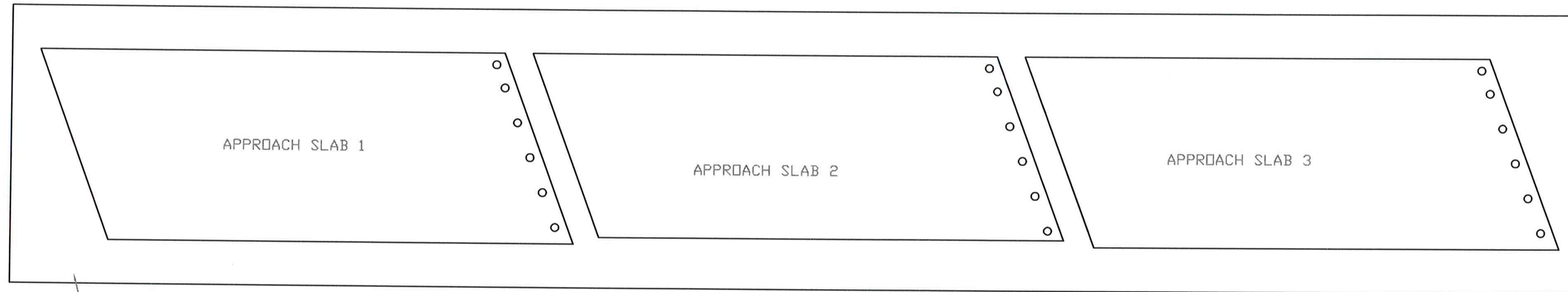
REV 1 5-7-13

DATE: 4-16-13 Scale: 1/4"=1'

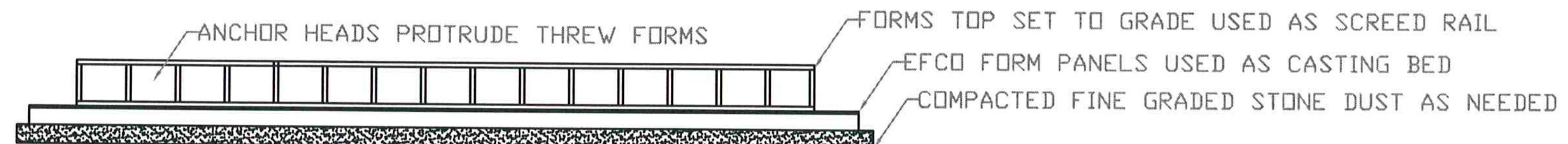








CASTING BED



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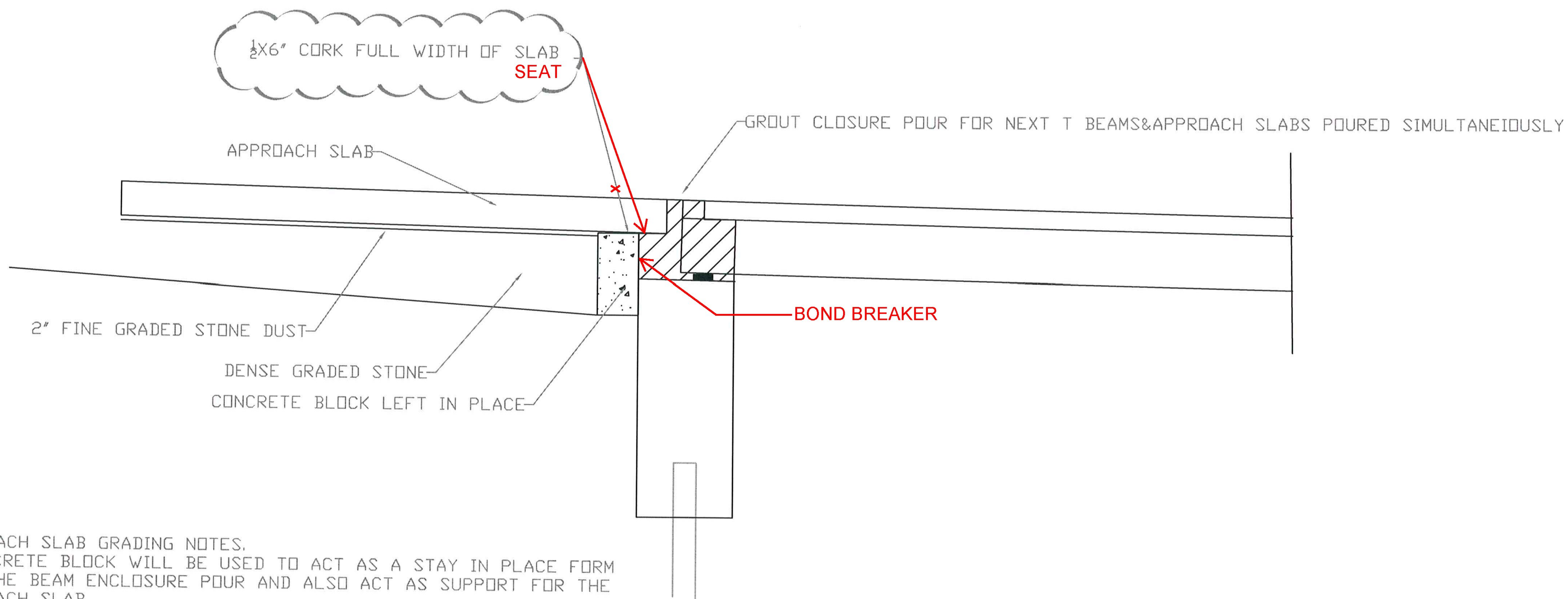
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|                                                                                                                                     |                   |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <b>COLD RIVER BRIDGES, LLC</b><br><small>10 LANBRO LANE<br/>WALPOLE, NH</small><br><small>TEL 603-756-9300 FAX 603-756-9303</small> |                   |
| PLYMOUTH ER BRS 0149 (5)                                                                                                            |                   |
| APPROACH SLAB<br>FORMING PLAN                                                                                                       | SHEET NUMBER      |
| DATE: 4-16-13                                                                                                                       | 6<br>REV 1 5-7-13 |
| Scale: 3/16"=1'                                                                                                                     |                   |





APPROACH SLAB GRADING NOTES.  
 1. CONCRETE BLOCK WILL BE USED TO ACT AS A STAY IN PLACE FORM FOR THE BEAM ENCLOSURE POUR AND ALSO ACT AS SUPPORT FOR THE APPROACH SLAB.  
 2. 2" +/- OF STONE DUST WILL BE USED TO GRADE THE SUB BASE SO THE APPROACH SLABS HAS ADEQUATE BEARING ON THE GROUND SURFACE.

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|-------------------------------------------------|------------------|
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| TEL 603-756-9300                                | FAX 603-756-9303 |
| PLYMOUTH ER BRS 0149 (5)                        |                  |
| APP SLAB INSTALLATION PLAN<br>AND GROUTING PLAN | SHEET NUMBER     |
| DATE: 4-16-13                                   | 7                |
| Scale: 1/4"=1'                                  | REV 1 5-7-13     |



CONCRETE NOTES:  
CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURES.

- 1.APROACH SLABS- CONCRETE CLASS HPC B
- 2.WINGWALLS-CONCRETE CLASS HPC A
- 3.ABUTMENT CLOSURE POUR CONCRETE CLASS HPC B
- 4.CLOSURE POUR-940LBS/CY NON SHRINK GROUT MIX
- 5.ALL CONCRETE ABOVE WILL BE SUPPLIED BY CARROLL CONCRETE INC.
- 6.ALL CONCRETE MIX DESIGNS HAVE OR WILL BE SUBMITTED BY CARROLL CONCRETE INC.
- 7. APPROACH SLABS SHALL HAVE A TEXTURED BROOM FINISH.
- 8. WINGWALLS AND CLOSURE POUR TOP WILL HAVE A HAND FLOATED FINISHED PRODUCED BY THE USE OF A MAGNESIUM FLOAT.
- 8. WINGWALLS AND APPROACH SLABS FORM CAN BE REMOVED WHEN THE SPECIFIED CONCRETE HAS REACHED 85% OF ITS DESIGN STRENGTH. WATER CURE WILL CONTINUE BASED ON TABLE 501.17A "CURING CONCRETE COMPONENTS" 7 DAYS OF WATER CURING.
- 9. ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 3./4"
- 10. Precast elements will not be lifted or handled until full concrete design strength has been achieved, and the cure period has ended.

- CONSTRUCTION SEQUENCE:
- 1. CAST WINGWALLS FOR ABUTMENT # 1
  - 3.CAST WINGWALLS FOR ABUTMENT #2
  - 4.CAST APPROACH SLABS 1-3 AND 4-6
  - 5.SET ABUTMENT #2 WINGWALLS
  - 6. SET PRE-TIED R-BAR CAGE AND GANGED FORMS AND POUR ABUTMENT 1 CLOSURE
  - 7.SET ABUTMENT #1 WINGWALLS
  - 8.SET PRE-TIED R-BAR CAGE AND GANGED FORMS AND POUR ABUTMENT 2 CLOSURE .
  - 9SET NEXT T-BEAMS,SET PRECAST APPROACH SLABS AND GOUT CLOSURE POURS.

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|                               |                          |
|-------------------------------|--------------------------|
| COLD RIVER BRIDGES, LLC       |                          |
| 10 LANBRO LANE<br>WALPOLE, NH |                          |
| TEL 603-756-9300              | FAX 603-756-9303         |
| PLYMOUTH ER BRS 0149 (5)      |                          |
| GENERAL NOTES                 | SHEET NUMBER             |
| DATE: 4-16-13                 | Scale: 8<br>REV 1 5-7-13 |



QUALITY CONTROL PROCEDURES.

- 1.CARROLL CONCRETE WILL BE RESPONSIBLE FOR THE CONTRACTOR./SUPPLIER QC TESTING DURING CONCRETE POURS.
- 2.A PRE-PRODUCTION MEETING SHALL BE HELD BETWEEN THE CONTRACTOR AND RESIDENT ENGINEER BEFORE CONCRETE PLACEMENT.
- 3. VTRANS WILL RETAIN THEIR RESPONSIBILITIES FOR QUALITY ACCEPTANCE TESTING.
- 4. A MINIMUM OF TWO EXTRA CYLINDERS PER CONCRETE PLACEMENT SHALL BE TAKEN FOR EARLY STRENGTH BREAKS.
- 5. ALL INSIDE FORM DIMENSION AND R-BAR SPACING AND CLEARANCES SHALL BE REVIEWED AND DOCUMENTED ON THE PRE-POUR INSPECTION SHEET BY THE CONTRACTOR AND THE RESIDENT ENGINEER BEFORE CASTING IS COMMENCED..
- 6. BEFORE FORMS ARE ERECTED THE CONTRACTOR WILL INSPECT ALL FORM-WORK FOR DAMAGE OR RESIDUAL CONCRETE. ANY DEFICIENCY IN THE FORM WORK SHALL BE CORRECTED BEFORE FORM WORK CONTINUES.
- 7. FORMS SHALL HAVE A GENEROUS COATING OF FORM OIL APPLIED. , CAUTION WILL BE TAKEN NOT TO HAVE PONDING OF FORM OIL IN THE BASE OF THE FORM OR ON ANY R-BAR.
- 8. ANY COATING DAMAGED ON THE R-BAR SHALL BE REPAIRED WITH A 2 PART EPOXY TOUCH UP KIT.
- 9. ALL PRE-CAST WILL BE INSPECTED BY BOTH THE CONTRACTOR AND THE RESIDENT ENGINEER AND DOCUMENTED ON THE POST POUR INSPECTION SHEET. ANY MINOR REPAIRS AND HONEY COMBING OR RUBBING NECESSARY WILL BE COMPLETED USING A SAND AND PORTLAND SLURRY FROM THE SAME SOURCE AS THE CONCRETE. ANY MAJOR REPAIRS WILL BE REPAIRED WITH A VERTICAL OVERHEAD PATCH FROM THE APPROVED PRODUCTS LIST.
- 10.. CONCRETE TOLERANCES SHALL BE IN ACCORDANCE WITH THE NPCA CONCRETE TOLERANCES.
- 11. EACH PIECE OF PRE-CAST SHALL BE MARKED WITH ITS UNIT NUMBER AND DATE OF CASTING.

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| 10 LANBRO LANE<br>WALPOLE, NH |                  |
| TEL 603-756-9300              | FAX 603-756-9303 |
| PLYMOUTH ER BRS 0149 (5)      |                  |
| QC PROCEDURES/PLAN            | SHEET NUMBER     |
| DATE: 4-16-13                 | Scale:           |
| REV 1 5-7-13                  |                  |



PRESTRESSED CONCRETE TOLERANCES

I. Fabrication tolerances in linear elements except piles (Beams, girders, columns, joists and similar members)

A. Length of member  
Per 10 foot of length ..... 1/8 in  
Total not more than ..... 3/4 in

B. Cross-sectional dimensions  
6 in. or less ..... 1/8 in  
Over 6 in. but not over 18 in ..... 3/16 in  
Over 18 in. but not over 36 in ..... 1/4 in  
Over 36 in ..... 3/8 in

C. Lateral alignment (Sweep) of noncambered member of surfaces as measured relative to the centerline of member  
Member length  
40 ft and less ..... 1/4 in  
Over 40 ft but not over 60 ft ..... 3/8 in  
Over 60 ft ..... 1/2 in

D. Camber variation from design chamber, at time of erection  
1/4 in. per 10 foot of length but not more than ..... 1 in

E. Surface irregularities, deviation from a 10 ft straightedge...  
For elements which will not receive topping ..... 1/4 in  
For elements to receive topping ..... 1/2 in  
For elements to be used as concrete guideways support and steering surfaces ..... 1/8 in

II. Fabrication tolerances for piles

A. Length ..... 1/8 in  
..... 1/2 in

B. Cross-sectional dimensions  
Overall ..... 3/8 in  
Wall thickness of hollow sections ..... 1/2 in  
..... 0 in

C. Lateral alignment of pile surfaces relative to pile centerline  
in length of pile, per 10 foot ..... 1/8 in

D. Location of internal void ..... 3/8 in

E. Pile head  
From the plane perpendicular to the longitudinal axis of pile, 1/4 in. in 12 in. but not more than ..... 1/2 in

F. Surface irregularities  
Pile head ..... 1/8 in  
Other surfaces, deviation from a 10 foot straightedge ..... 1/4 in

III. Fabrication tolerances in planar elements (Wall and floor panels, tees and similar members)

A. Length and width  
10 foot or less ..... 1/8 in  
Over 10 ft but no over 20 foot ..... 1/8 in  
..... 3/16 in  
Over 20 ft but not over 40 foot ..... 1/4 in  
Each additional 10 foot increment in excess of 40 foot, 1/16 in  
Difference in length of the two diagonals, of a rectangular member the greater of 1/8 in. per 6 foot or diagonal or ..... 1/2 in

B. Cross-sectional dimensions  
Thickness ..... 1/4 in  
..... 1/8 in

C. Openings in panels  
Size of opening ..... 1/4 in  
Location referenced to centerline of opening ..... 1/4 in

D. Lateral alignment of embedded items  
Reglets for glazing gaskets ..... 1/8 in  
Bolts ..... 1/4 in  
Flashing reglets ..... 1/4 in  
Flashing reglets at panel edge ..... 1/8 in  
Electrical penetrations and pipe sleeves ..... 1/2 in  
Weld plates ..... 1 in  
Inserts ..... 1/2 in

E. Bowing and warping at time of erection  
Bowing  
1/500 times the panel diagonal dimension (in inches) but not more than ..... 1 in.  
Warping  
1/16 in. per foot of distance from the nearest adjacent corner but not more than ..... 1 in.

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COLD RIVER BRIDGES, LLC

10 LANBRO LANE

WALPOLE, NH

TEL 603-756-9300

FAX 603-756-9303

PLYMOUTH ER BRS 0149 (5)

NPCA TOLLERANCES

SHEET NUMBER

10

REV 1 5-7-13

DATE: 4-16-13

scale:



QMF-005, Rev. 1, 02-07-12 (9.0)

**POST-POUR INSPECTION REPORT**  
QUALITY CONTROL DEPARTMENT

|                          |     |     |      |     |       |     |     |
|--------------------------|-----|-----|------|-----|-------|-----|-----|
| PRODUCT:                 |     |     |      |     |       |     |     |
| Job #                    | Sun | Mon | Tues | Wed | Thurs | Fri | Sat |
| Casting Date             |     |     |      |     |       |     |     |
| Inspection Date          |     |     |      |     |       |     |     |
| Mark Number              |     |     |      |     |       |     |     |
| Stripping Strength       |     |     |      |     |       |     |     |
| Top Finish               |     |     |      |     |       |     |     |
| Bottom Finish            |     |     |      |     |       |     |     |
| Surface Texture          |     |     |      |     |       |     |     |
| As Cast Length (ft/in)   |     |     |      |     |       |     |     |
| As Cast Width (ft/in)    |     |     |      |     |       |     |     |
| As Cast Depth (ft/in)    |     |     |      |     |       |     |     |
| Cracks                   |     |     |      |     |       |     |     |
| Spalls                   |     |     |      |     |       |     |     |
| Squareness               |     |     |      |     |       |     |     |
| Chamfers                 |     |     |      |     |       |     |     |
| Honeycomb / Grout Leak   |     |     |      |     |       |     |     |
| Bowing                   |     |     |      |     |       |     |     |
| Exposed Reinforcement    |     |     |      |     |       |     |     |
| Exposed Chairs           |     |     |      |     |       |     |     |
| Plates and Inserts       |     |     |      |     |       |     |     |
| Chamfer & Radius Quality |     |     |      |     |       |     |     |
| Openings / Blockouts     |     |     |      |     |       |     |     |
| Lifting Devices          |     |     |      |     |       |     |     |

REMARKS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Inspector \_\_\_\_\_ Date \_\_\_\_\_ QC Supervisor \_\_\_\_\_

QMF-003, Rev. 1, 02-07-12 (9.0)

**PRE-POUR INSPECTION REPORT**  
QUALITY CONTROL DEPARTMENT

|                        |     |     |      |     |       |     |     |
|------------------------|-----|-----|------|-----|-------|-----|-----|
| PRODUCT:               |     |     |      |     |       |     |     |
| Job #                  | Sun | Mon | Tues | Wed | Thurs | Fri | Sat |
| Casting Date           |     |     |      |     |       |     |     |
| Form Condition         |     |     |      |     |       |     |     |
| Form Cleanliness       |     |     |      |     |       |     |     |
| Form Joints            |     |     |      |     |       |     |     |
| Release Agent/Retarder |     |     |      |     |       |     |     |
| Design Length (ft/in)  |     |     |      |     |       |     |     |
| Set-Up Length (ft/in)  |     |     |      |     |       |     |     |
| Design Width (ft/in)   |     |     |      |     |       |     |     |
| Set-Up Width (ft/in)   |     |     |      |     |       |     |     |
| Design Depth (ft/in)   |     |     |      |     |       |     |     |
| Set-Up Depth (ft/in)   |     |     |      |     |       |     |     |
| Blockouts              |     |     |      |     |       |     |     |
| Squareness             |     |     |      |     |       |     |     |
| End and Edge Details   |     |     |      |     |       |     |     |
| Reinforcing Steel      |     |     |      |     |       |     |     |
| Size of Reinforcing    |     |     |      |     |       |     |     |
| Spacing of Reinforcing |     |     |      |     |       |     |     |
| Corrosion              |     |     |      |     |       |     |     |
| Reinf. Cleanliness     |     |     |      |     |       |     |     |
| Plates and Inserts     |     |     |      |     |       |     |     |
| Lifting Devices        |     |     |      |     |       |     |     |
| Top Finish (wet)       |     |     |      |     |       |     |     |

\* All applicable boxes should have a S=Satisfactory or D=Deficiency

REMARKS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

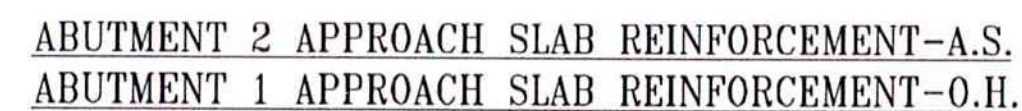
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QC Supervisor \_\_\_\_\_ Date \_\_\_\_\_ Inspector \_\_\_\_\_

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| PLYMOUTH ER BRS 0149 (5)                                                                             |                    |
| INSPECTION FORMS                                                                                     | SHEET NUMBER       |
| DATE: 4-16-13 Scale:                                                                                 | 11<br>REV 1 5-7-13 |





|                        |           |                                   |                          |                          |
|------------------------|-----------|-----------------------------------|--------------------------|--------------------------|
| <p>Length</p> <p>0</p> | <p>17</p> | <p>3 Hooks A &amp; C optional</p> | <p>2 Hook C optional</p> | <p>1 Hook C optional</p> |
|------------------------|-----------|-----------------------------------|--------------------------|--------------------------|

**BY:** Rob Young    **DATE:** 05/13/13

|                                                                                                                                                                                                                         |                |                                           |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------|-----------------|
| 2                                                                                                                                                                                                                       | APPROVAL PRINT | 05/01/13                                  | CH              |
| No.                                                                                                                                                                                                                     | Description    | Date                                      | By              |
| <b>Revisions and Issue Record</b>                                                                                                                                                                                       |                |                                           |                 |
| <p>The full intent and purpose of this drawing is the placing of reinforcing steel bars ONLY. It is NOT to be used as a means of communication between the Architect, Engineer, Contractor or any other Sub-trades.</p> |                |                                           |                 |
| <b>THIS DRAWING IS NOT TO BE SCALE.</b>                                                                                                                                                                                 |                |                                           |                 |
|  <b>Harris Brothers</b><br>Walsdorf Services, Local Service                                                                        |                | DETAILED AT:<br>11000000<br>NEW HAMPSHIRE |                 |
| Project: PLYMOUTH ER BRS 0149(5)<br>PLYMOUTH VT                                                                                                                                                                         |                |                                           |                 |
| Drawing: BRIDGE ABUTMENT<br>REINFORCEMENT                                                                                                                                                                               |                |                                           |                 |
| Customer: COLD RIVER BRIDGES<br>Engineer: T-Y-LIN INTERNATIONAL                                                                                                                                                         |                |                                           |                 |
| Refer to Release:                                                                                                                                                                                                       |                |                                           |                 |
| Date                                                                                                                                                                                                                    | Drawn<br>(CDS) | Chkd.<br>JOB NO.<br>0408702               | Dwg. No.<br>P01 |
| 04/23/13                                                                                                                                                                                                                |                |                                           |                 |

W:\sample\Projects\10049702\Placing Drawings\DWGs\R01.dwg



WELDING PROCEDURE SPECIFICATION

Material Specification

A709 TO A500 GR B

Welding Process

FCAW

Manual or Machine

SEMAUTOMATIC

Position of Welding

FLAT

Filler Metal Specification

A5.20 - 95

Filler Metal Classification

E71T-1H8 E71T-9H8 LINCOLN ULTRACORE

Flux

N/A

Shielding Gas

CO 2

Dew Point

-40DEG F

Flow Rate

50CFH

Single or Multiple Pass

SINGLE

Single or Multiple Arc

SINGLE

Welding Current

DC

Polarity

REVERSE ELECTRODE POSITIVE

Welding Progression

STRINGER

Root Treatment

CLEAN AS PER SECTION 603 OF THE NYSSCM

Preheat and Interpass Temperature

PREHEAT AS PER TABLE 708 OF THE NYSSCM

Postheat Temperature

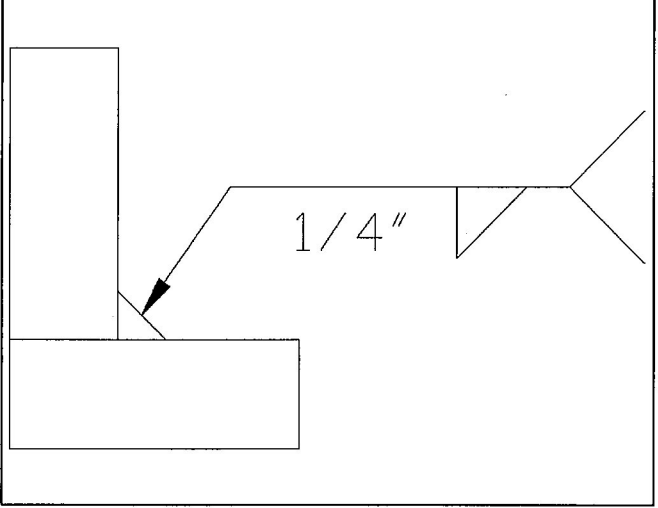
NONE

Heat Input

Min

Max

WELDING PROCEDURE.

| Pass no. | Electrode size | Welding Current |       | Travel speed | Joint detail                                                                        |
|----------|----------------|-----------------|-------|--------------|-------------------------------------------------------------------------------------|
|          |                | Amperes         | Volts |              |                                                                                     |
| 1        | 1/16           | 300             | 26    | 14           |  |
| Variable | LIMITS         | 270             | 24    | 12.6         |                                                                                     |
|          |                | TO              | TO    | TO           |                                                                                     |
|          |                | 330             | 28    | 15.4         |                                                                                     |

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This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in Section 5.

Procedure No. 3009

Revision No.

Contractor Elderlee, Inc.

Authorized By RANDY SCOTT

Date 10/18/2011



WELDING PROCEDURE SPECIFICATION

Material Specification

A572 GRD. 50 /A992-06a

Welding Process

FCAW

Manual or Machine

SEMAUTOMATIC

Position of Welding

FLAT

Filler Metal Specification

A5.20

Filler Metal Classification

E70 LINCOLN OUTERSHEILD

Flux

N/A

Shielding Gas

CO 2

Dew Point

-40DEG F

Flow Rate

50 CFM

Single or Multiple Pass

SINGLE

(45 TO 63 CFM)

Single or Multiple Arc

N/A

Welding Current

DC

Polarity

DCEP

Welding Progression

STRINGER

Root Treatment

CLEAN AS PER SECTION 603 OF THE NYSSCM

Preheat and Interpass Temperature

PREHEAT AS PER TABLEL 708 OF THE NYSSCM

Postheat Temperature

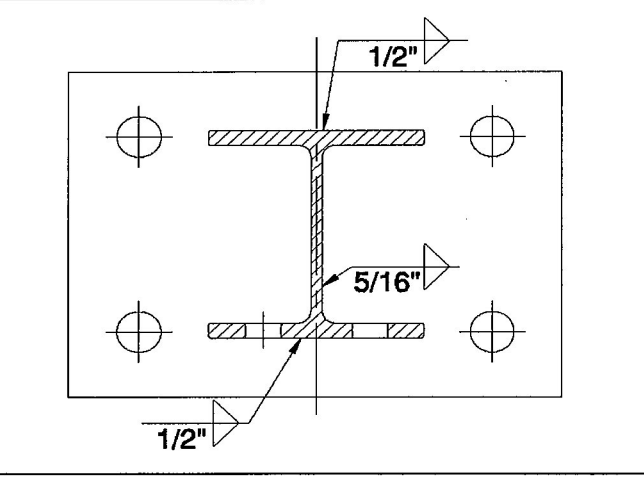
NONE

Heat Input

Min

Max

WELDING PROCEDURE.

| Pass no. | Electrode size | Welding Current |       | Travel speed | Joint detail                                                                        |
|----------|----------------|-----------------|-------|--------------|-------------------------------------------------------------------------------------|
|          |                | Amperes         | Volts |              |                                                                                     |
| 1        | 3/32           | 390             | 27    | 12           |  |
| Variable | LIMITS         | 351             | 25    | 11           |                                                                                     |
|          |                | TO 429          | TO 29 | TO 13        |                                                                                     |

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This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in Section 5.

Procedure No.

3008

Contractor

Elderlee, Inc.

Revision No.

Authorized By

RANDY SCOTT

Date

10/18/2011



Vermont Agency of Transportation

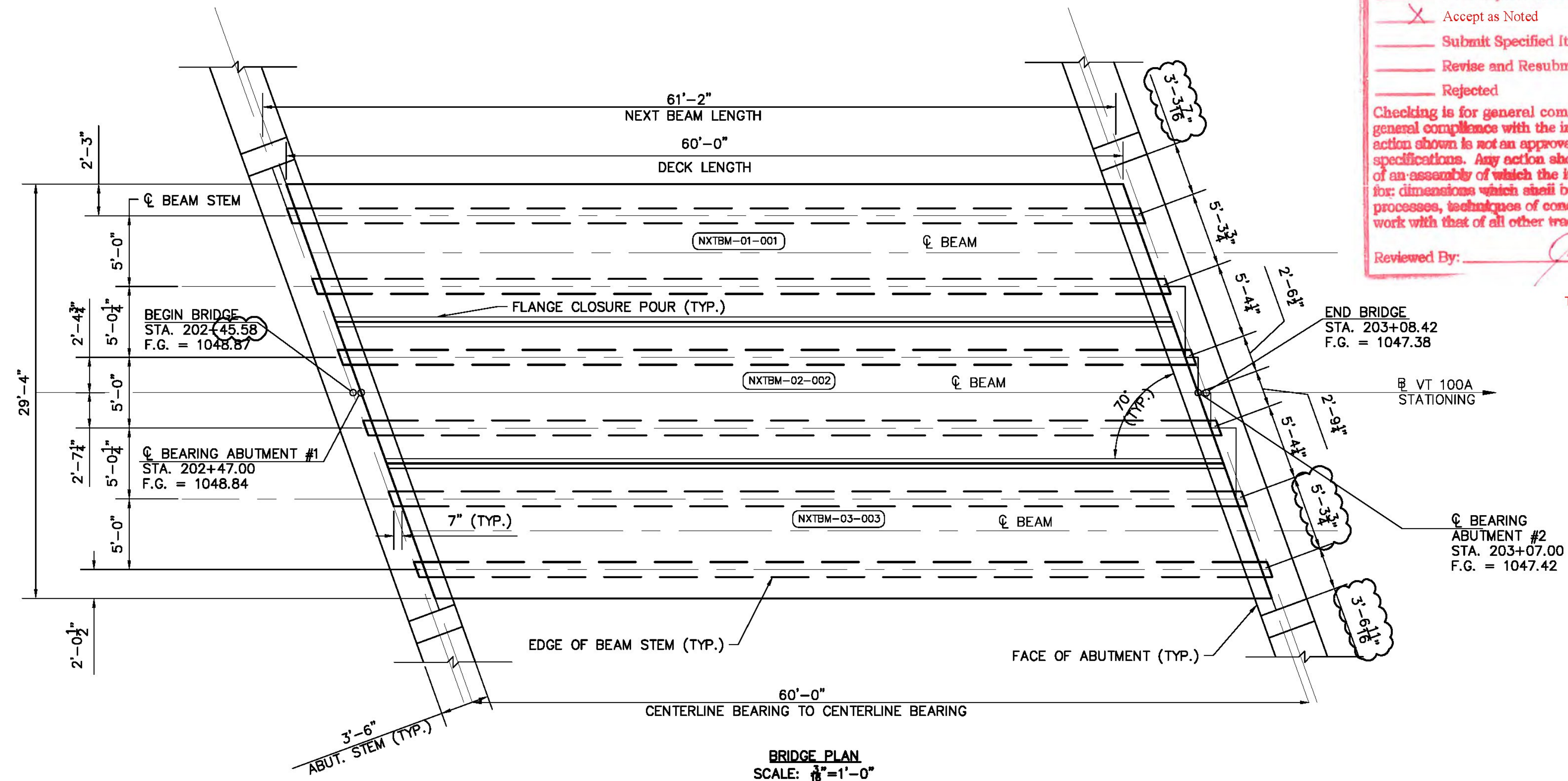
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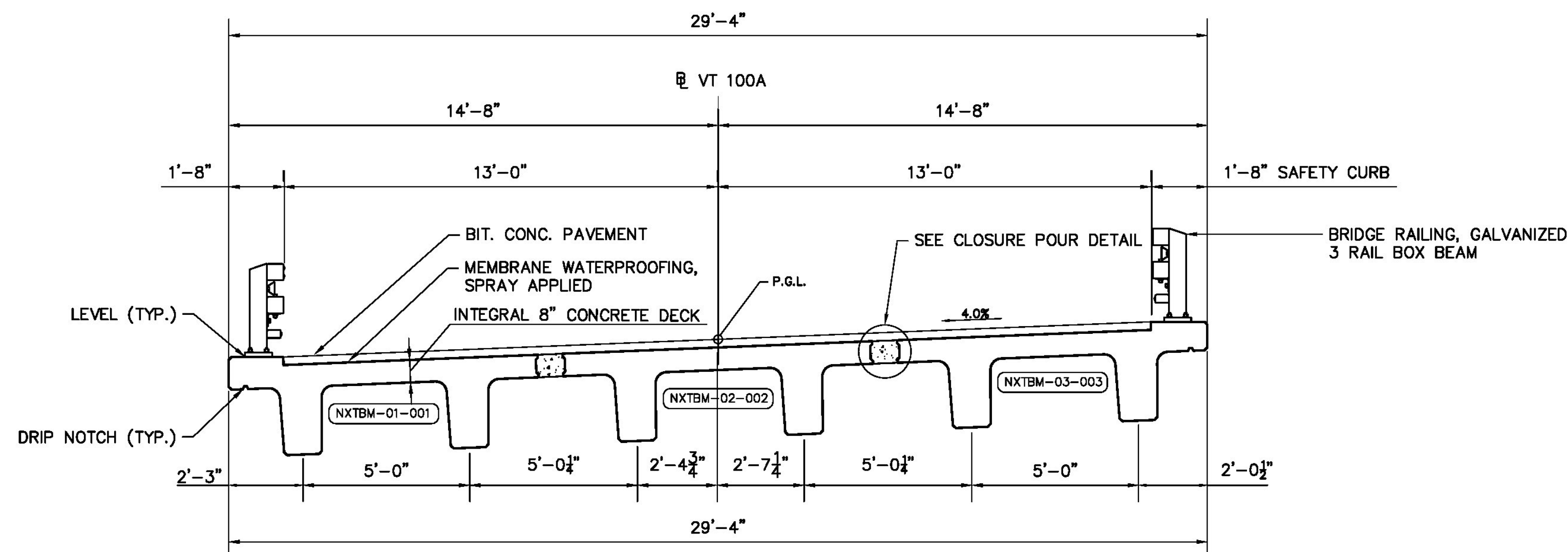
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BY: Rob Young DATE: 07/08/13



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| No Exception Taken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>T-Y-LIN INTERNATIONAL</b> |
| <input checked="" type="checkbox"/> Accept as Noted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |
| Submit Specified Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |
| Revise and Resubmit as Noted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |
| Rejected                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                              |
| Checking is for general compliance with the design concept of the project and general compliance with the information given in the contract documents only. Any action shown is not an approval and is subject to the requirements of the plans and specifications. Any action shown on a specific item shall not indicate the checking of an assembly of which the item is a component. Contractor is solely responsible for dimensions which shall be confirmed and corrected at the job site, fabrication processes, techniques of construction, safety precautions and coordination of its work with that of all other trades and the satisfactory performance of its work. |                              |
| Reviewed By: <u>JA</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Date: July 8, 2013           |

There is no need to resubmit these fabrication drawings.



#### NOTES:

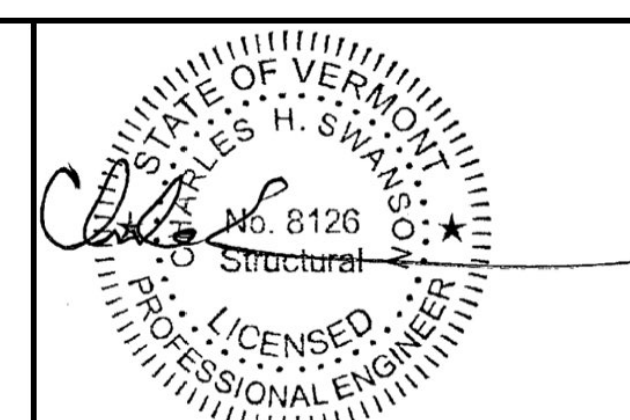
- SHOP DRAWINGS WERE DEVELOPED USING THE FOLLOWING RESOURCES FOR THE CONTRACT:  
VT100A REPLACEMENT OF BRIDGE OVER PINNEY HOLLOW BROOK, PLYMOUTH, VT. BRIDGE NO. 47  
PREPARED BY TYLIN. PROJECT NO ER BRS 0149(5)
- IF THERE IS ADDITIONAL INFORMATION PERTINENT TO THE FABRICATION AND INSTALLATION OF THESE UNITS THAT IS NOT CONTAINED WITHIN THE RESOURCES LISTED ABOVE, IT SHALL BE BROUGHT TO THE ATTENTION OF DAILEY PRECAST LLC. AND EIV TECHNICAL SERVICES OF ALL LIABILITIES ARISING FROM ERRORS OR OMISSIONS RELATED TO THE OMITTED INFORMATION.
- VOIDS AT LIFTER POCKETS SHALL BE FILLED WITH APPROVED NON-SHRINK GROUT ONCE BEAMS ARE IN PLACE. (NOT BY DP)
- TOLERANCES SHALL BE IN ACCORDANCE WITH PCI TOLERANCE MANUALS (MNL-135 & MNL-116)

BRIDGE TYPICAL SECTION  
SCALE: 3/8" = 1'-0"

|                                   |               |
|-----------------------------------|---------------|
| CONSTRUCTION SET DATE: 06/28/2013 |               |
| SHEET NAME: ERECTION PLAN         |               |
| REVISION NO.                      | REVISION DATE |
|                                   |               |
|                                   |               |
|                                   |               |

**Dailey**  
PRECAST

WILLIAM E. DAILEY PRECAST, LLC  
295 AIRPORT ROAD  
SHAFTSBURY, VT 05262  
TEL: 802.442.4418 FAX: 802.442.0738



|                                                    |
|----------------------------------------------------|
| STATE OF VERMONT AGENCY OF<br>TRANSPORTATION       |
| PLYMOUTH,<br>VERMONT<br>PROJECT NO: ER BRS 0149(5) |
| <b>SHEET 1 OF 9</b>                                |



NOTES:

(1) NXTBM-01 REQUIRED

FINISHES  
TOP: BROOM (1/8" AMP MAX.)  
SIDES: STEEL FORM  
BOTTOM: STEEL FORM  
ENDS: FORM

DIMENSION REVISED  
TO PROVIDE C.C.  
TO FIRST R9 BAR

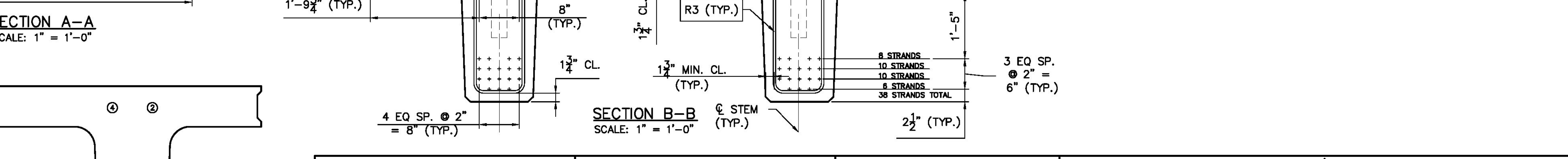
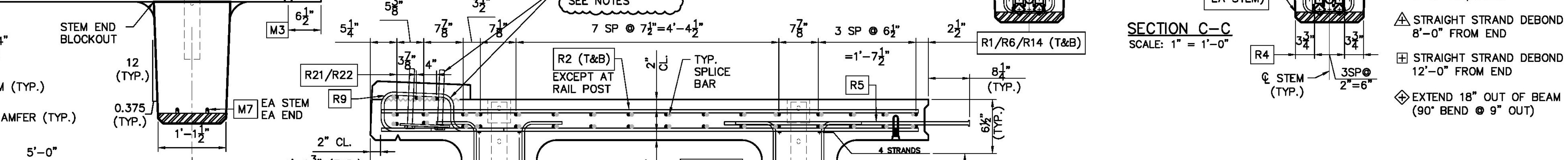
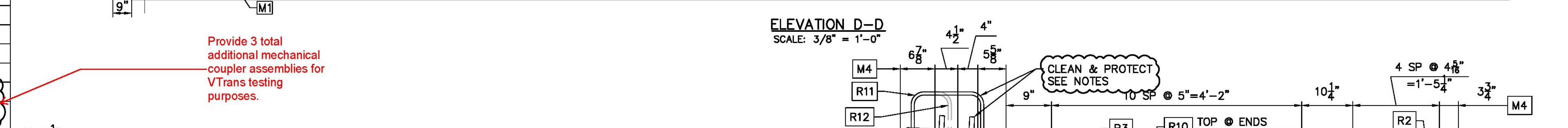
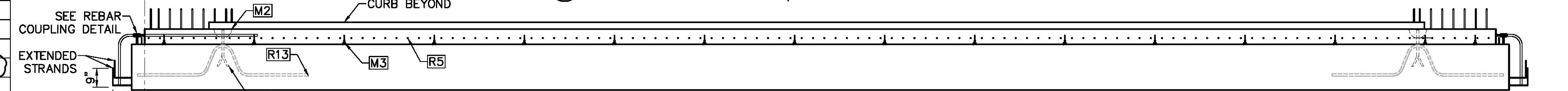
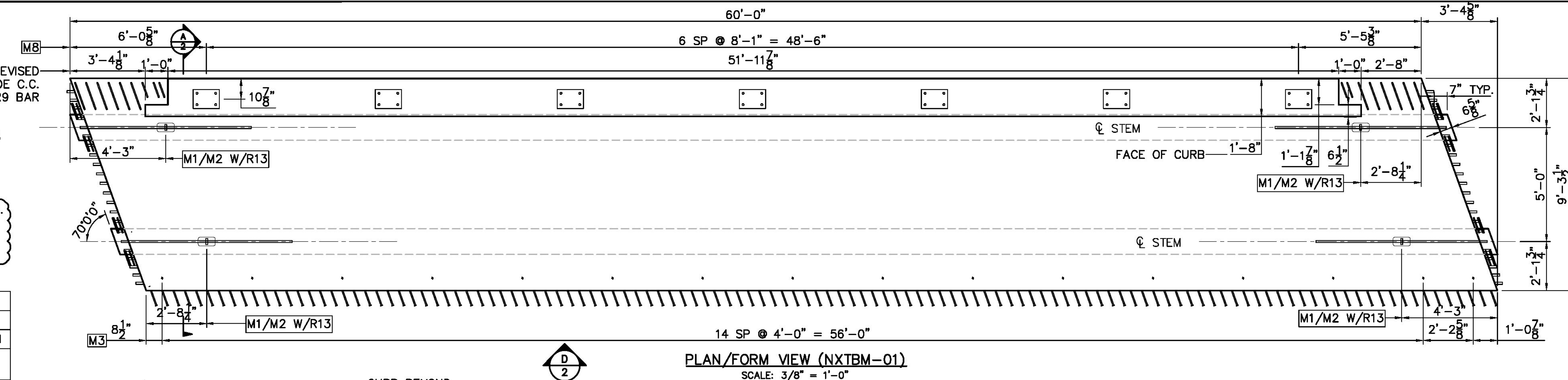
BEAMS SHALL BE HANDLED AND ERECTED USING LIFTERS ONLY. THE MINIMUM SLING ANGLE FOR SHOP PICKING SHALL BE 90° FROM THE HORIZONTAL. BEAMS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS LOCATED BELOW THE LIFTERS U.O.N.

WIPE CLEAN CURB REINF. PRIOR TO FINISHING BEAM TOP.

RAIL POST ANCHOR SHALL BE PROTECTED FROM CONCRETE ABOVE FINISHED CURB.

BEAM WEIGHT: 104,866 LBS

| BILL OF MATERIALS               |                                   |           |           |           |
|---------------------------------|-----------------------------------|-----------|-----------|-----------|
| MARK                            | NXTBM-01                          |           | QTY =     | 1         |
|                                 | fc' = 8,000 PSI                   | @ 28 DAYS | fc' =     | 6,000 PSI |
| PART MARK                       | DESCRIPTION                       | QTY       | TOTAL QTY |           |
| M1                              | MB RL-23 (79172) GALV.            | 4         | 4         |           |
| M2                              | MB RL-45 (79166)                  | 4         | 4         |           |
| M3                              | DS F-64 FERRULE LOOP GALV.        | 16        | 16        |           |
| M4                              | DS D-112 #9 A=5'-4" EPOXY         | 40        | 40        |           |
| M7                              | P900 NXTBM END ASSEMBLY           | 4         | 4         |           |
| M8                              | RAIL ASSEMBLY                     | 7         | 7         |           |
|                                 | 25.89 CY VT MIX ID # 53           | 1         | 1         |           |
|                                 | 0.6" 7WS LR = 2348'-4"            | 1         | 1         |           |
| INSTALL AFTER REMOVED FROM FORM |                                   |           |           |           |
| M5                              | DS D-110 #9 (111520) EPOXY        | 40        | 40        |           |
| M6                              | DS D-102 #9 EPOXY<br>A=8" B=2'-3" | 40        | 40        |           |



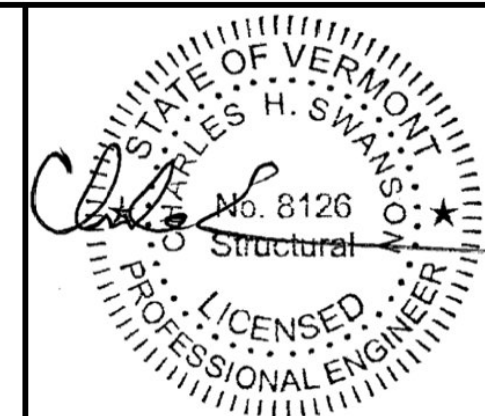
CONSTRUCTION SET DATE: 06/28/2013

SHEET NAME: NXTBM-01 PLAN

REVISION NO. REVISION DATE

**Dailey**  
PRECAST

WILLIAM E. DAILEY PRECAST, LLC  
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**EIV TECHNICAL SERVICES**  
55 LEROY ROAD, WILLISTON, VT 05495  
TEL: (802) 497-3653 FAX: (802) 497-3656

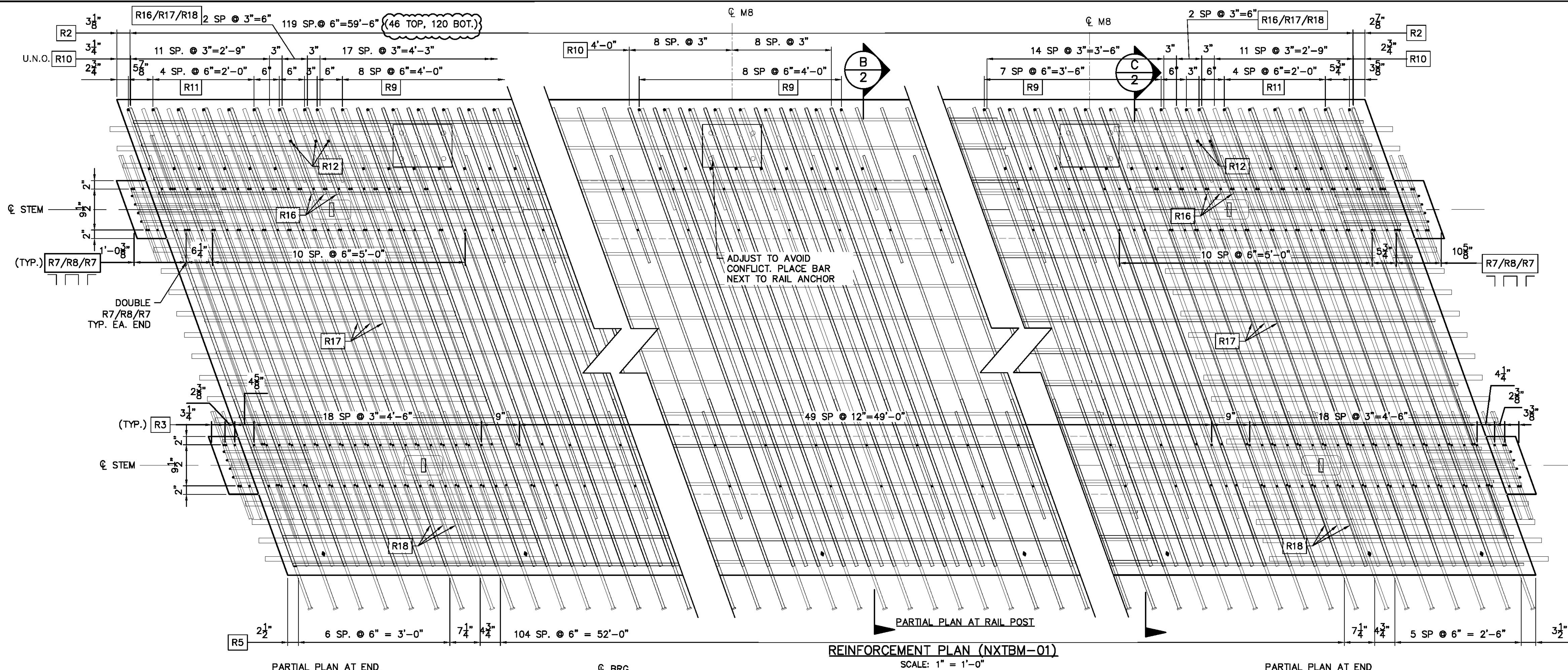
DATE: JUNE 2013 PROJECT # E1729  
DRAWN BY: LKW/CN CHECKED BY: CHS

STATE OF VERMONT AGENCY OF  
TRANSPORTATION

PLYMOUTH,  
VERMONT  
PROJECT NO: ER BRS 0149(5)

**SHEET 2 OF 9**





| REINFORCEMENT CHART |          |         |               |           |     |
|---------------------|----------|---------|---------------|-----------|-----|
| DESCRIPTION         |          |         |               |           |     |
| BAR MARK            | BAR SIZE | COATING | BENT/STRAIGHT | LENGTH    | QTY |
| R1                  | 5        | E       | STRAIGHT      | 20'-0.00" | 32  |
| R2                  | 5        | E       | STRAIGHT      | 9'-6.38"  | 166 |
| R3                  | 4        | E       | BENT          | 6'-6.63"  | 188 |
| R4                  | 4        | E       | BENT          | 4'-7.50"  | 16  |
| R5                  | 5        | E       | HEADED        | 4'-4.375" | 120 |
| R6                  | 5        | E       | STRAIGHT      | 35'-2.00" | 32  |
| R7                  | 4        | E       | BENT          | 2'-6.38"  | 52  |
| R8                  | 4        | E       | BENT          | 7'-4.50"  | 26  |
| R9                  | 5        | E       | BENT          | 3'-10.25" | 62  |
| R10                 | 6        | E       | BENT          | 9'-11.75" | 142 |
| R11                 | 5        | E       | BENT          | 5'-4.63"  | 12  |
| R12                 | 5        | E       | BENT          | 4'-11.63" | 5   |
| R13                 | 9        | E       | BENT          | 9'-0.00"  | 4   |
| R14                 | 5        | E       | STRAIGHT      | 10'-0.00" | 32  |
| R16                 | 6        | E       | BENT          | 2'-7.38"  | 6   |
| R17                 | 6        | E       | STRAIGHT      | 4'-8.25"  | 6   |
| R18                 | 6        | E       | STRAIGHT      | 1'-9.25"  | 6   |
| R21                 | 5        | E       | STRAIGHT      | 40'-0.00" | 3   |
| R22                 | 5        | E       | STRAIGHT      | 15'-0.00" | 3   |

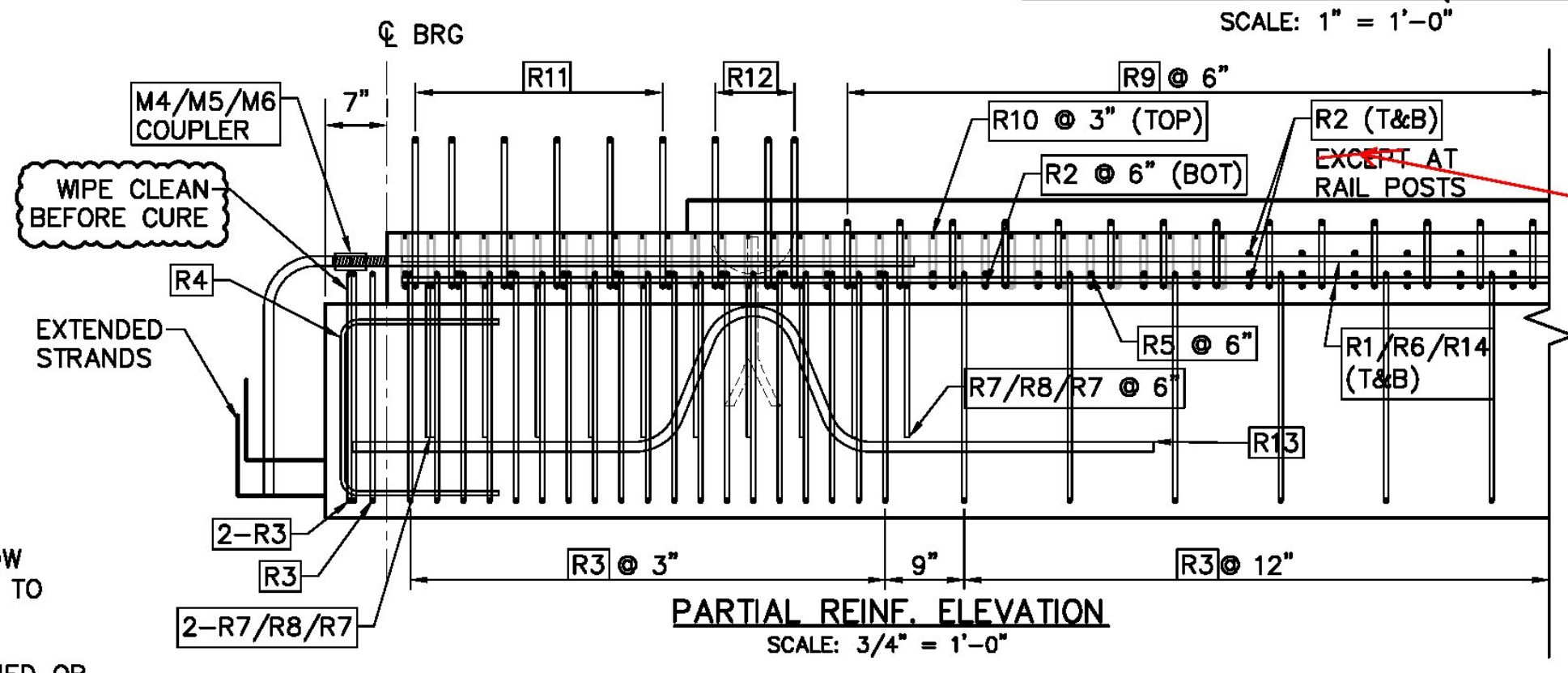
NOTES:

STRANDS SHALL BE 270 KSI 0.6" Ø LOW RELAXATION STRAIGHT STRAND PULLED TO 44 KIPS.

EACH STRAND SHALL BE FINALLY BURNED OR CUT OFF AT A DEPTH OF 1" INTO THE END OF THE BEAM AND THE RECESSED AREA AROUND THE STRAND SHALL BE FILLED WITH NON-SHRINK GROUT, EXCEPT AS NOTED.

STAGGER SPLICES OF R1\R6\R14 OR R21\R22 BARS BY 5'-0" MIN.

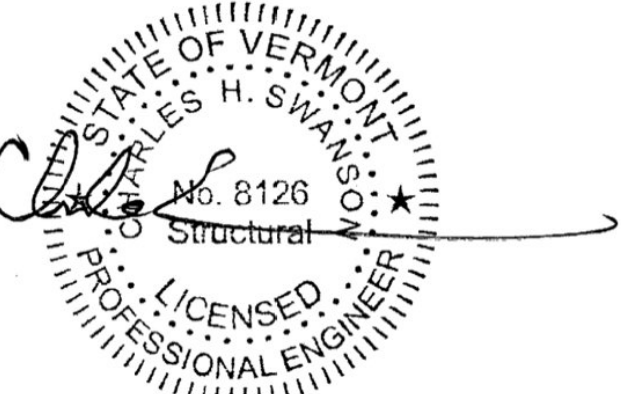
MIN LAP LENGTH OF R1\R6\R14 OR R21\R22 BARS IS 2'-9" MIN.



| CONSTRUCTION SET DATE: 06/28/2013       |               |
|-----------------------------------------|---------------|
| SHEET NAME: NXTBM-01 REINFORCEMENT PLAN |               |
| REVISION NO.                            | REVISION DATE |
|                                         |               |
|                                         |               |
|                                         |               |

**Dailey PRECAST**

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**EIV TECHNICAL SERVICES**

55 LEROY ROAD, WILLISTON, VT 05495  
TEL: (802) 497-3653 FAX: (802) 497-3656

DATE: JUNE 2013 PROJECT # E1729  
DRAWN BY: LKW/CN CHECKED BY: CHS

STATE OF VERMONT AGENCY OF TRANSPORTATION

PLYMOUTH, VERMONT  
PROJECT NO: ER BRS 0149(5)

**SHEET 3 OF 9**



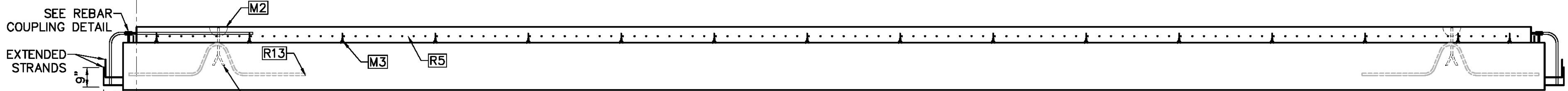
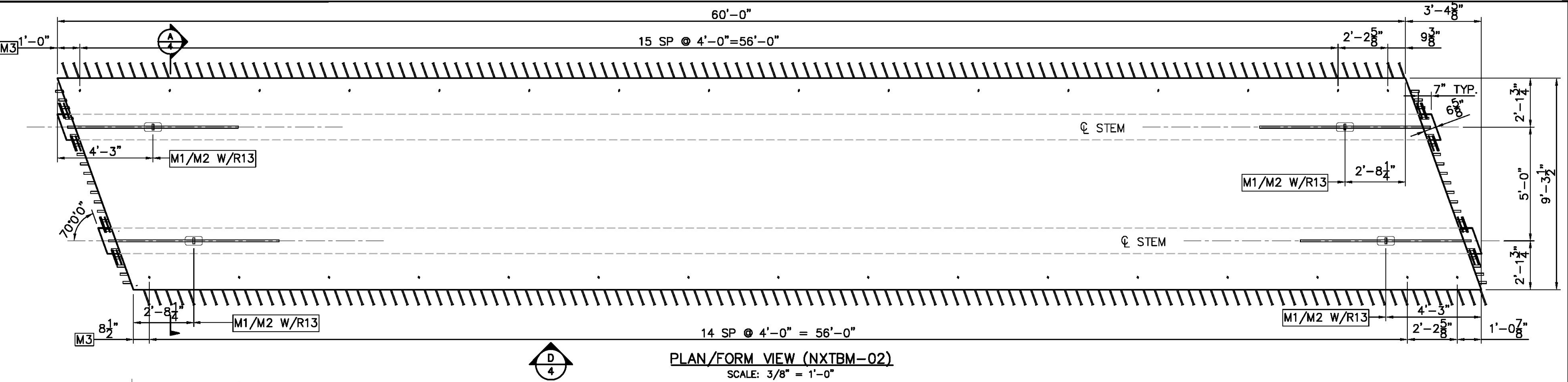
NOTES:  
(1) NXTBM-02 REQUIRED

FINISHES  
TOP: BROOM (1/8" AMP MAX.)  
SIDES: STEEL FORM  
BOTTOM: STEEL FORM  
ENDS: FORM

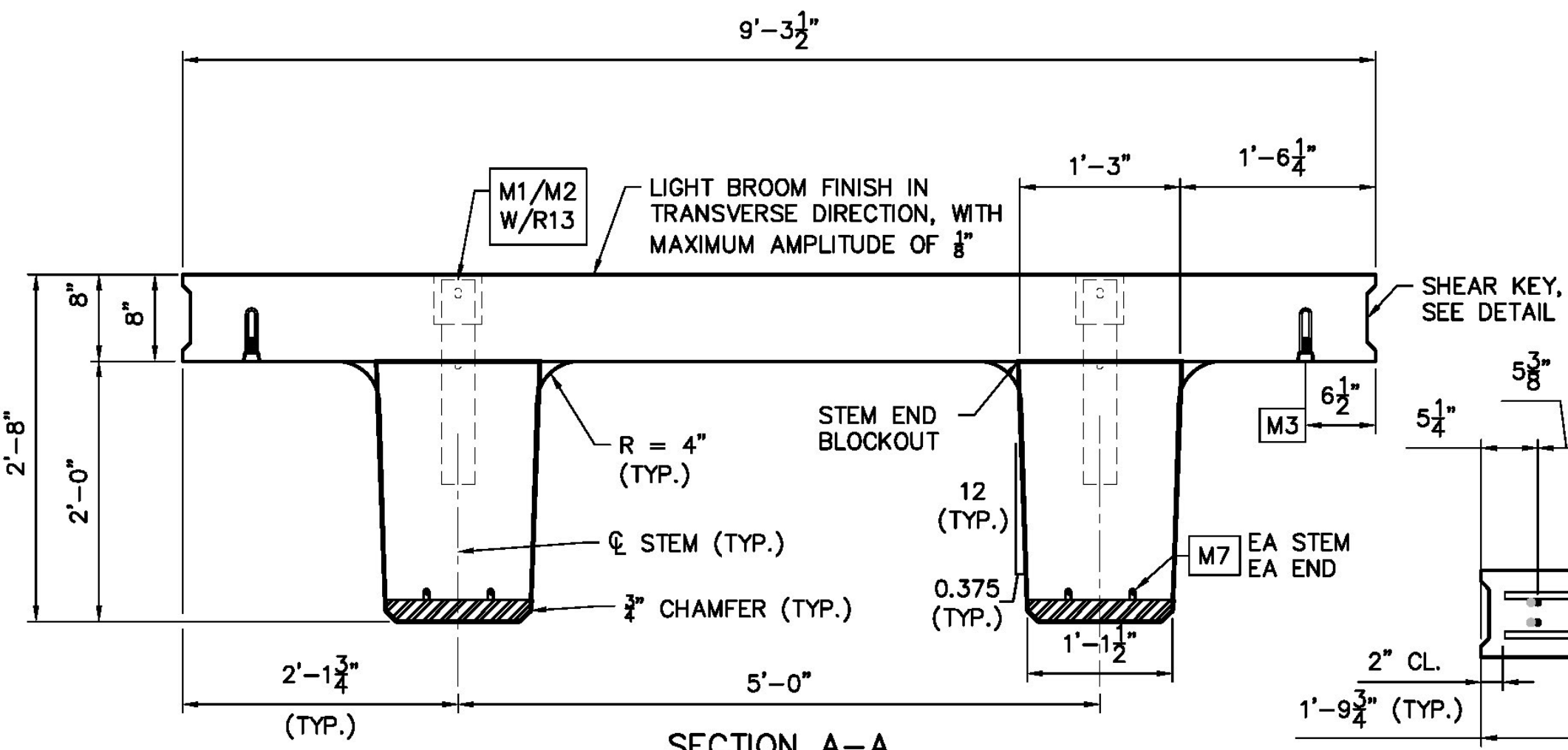
BEAMS SHALL BE HANDLED AND ERECTED USING LIFTERS ONLY. THE MINIMUM SLING ANGLE FOR SHOP PICKING SHALL BE 90° FROM THE HORIZONTAL. BEAMS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS LOCATED BELOW THE LIFTERS U.O.N.

BEAM WEIGHT: 100,645 LBS

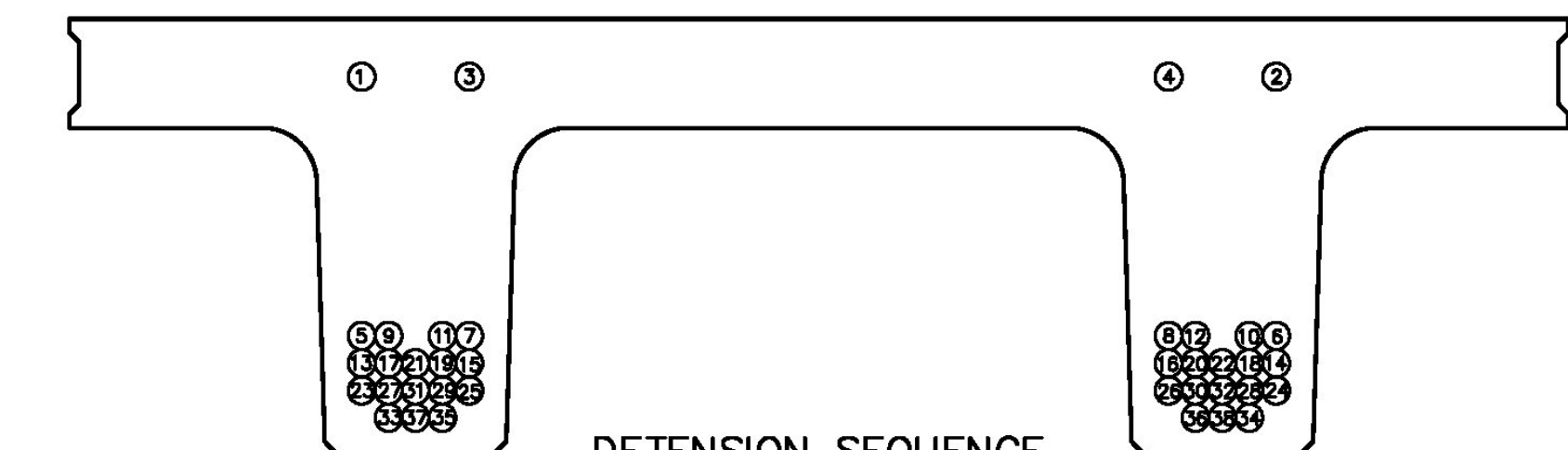
| BILL OF MATERIALS               |                                   |           |           |           |
|---------------------------------|-----------------------------------|-----------|-----------|-----------|
| MARK                            | NXTBM-02                          |           | QTY =     | 1         |
| fc'=                            | 8,000 PSI                         | @ 28 DAYS | fcI' =    | 6,000 PSI |
| PART MARK                       | DESCRIPTION                       | QTY       | TOTAL QTY |           |
| M1                              | MB RL-23 (79172) GALV.            | 4         | 4         |           |
| M2                              | MB RL-45 (79166)                  | 4         | 4         |           |
| M3                              | DS F-64 FERRULE LOOP GALV.        | 32        | 32        |           |
| M4                              | DS D-112 #9 A=5'-4" EPOXY         | 40        | 40        |           |
| M7                              | P900 NXTBM END ASSEMBLY           | 4         | 4         |           |
|                                 | 24.85 CY VT MIX ID # 53           | 1         | 1         |           |
|                                 | 0.6" 7WS LR = 2348'-4"            | 1         | 1         |           |
| INSTALL AFTER REMOVED FROM FORM |                                   |           |           |           |
| M5                              | DS D-110 #9 (111520) EPOXY        | 40        | 40        |           |
| M6                              | DS D-102 #9 EPOXY<br>A=8" B=2'-3" | 40        | 40        |           |



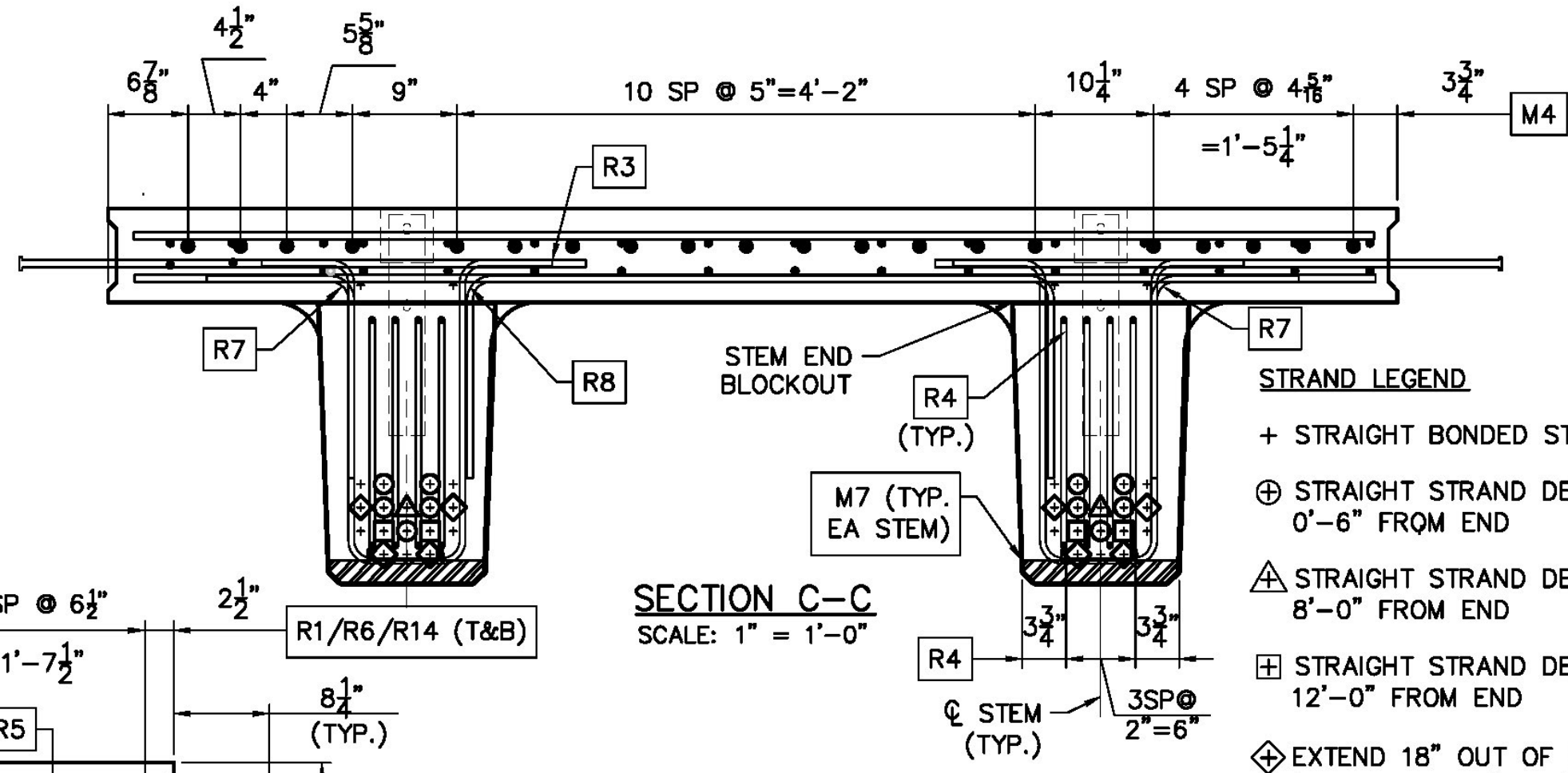
ELEVATION D-D  
SCALE: 3/8" = 1'-0"



SECTION A-A  
SCALE: 1" = 1'-0"

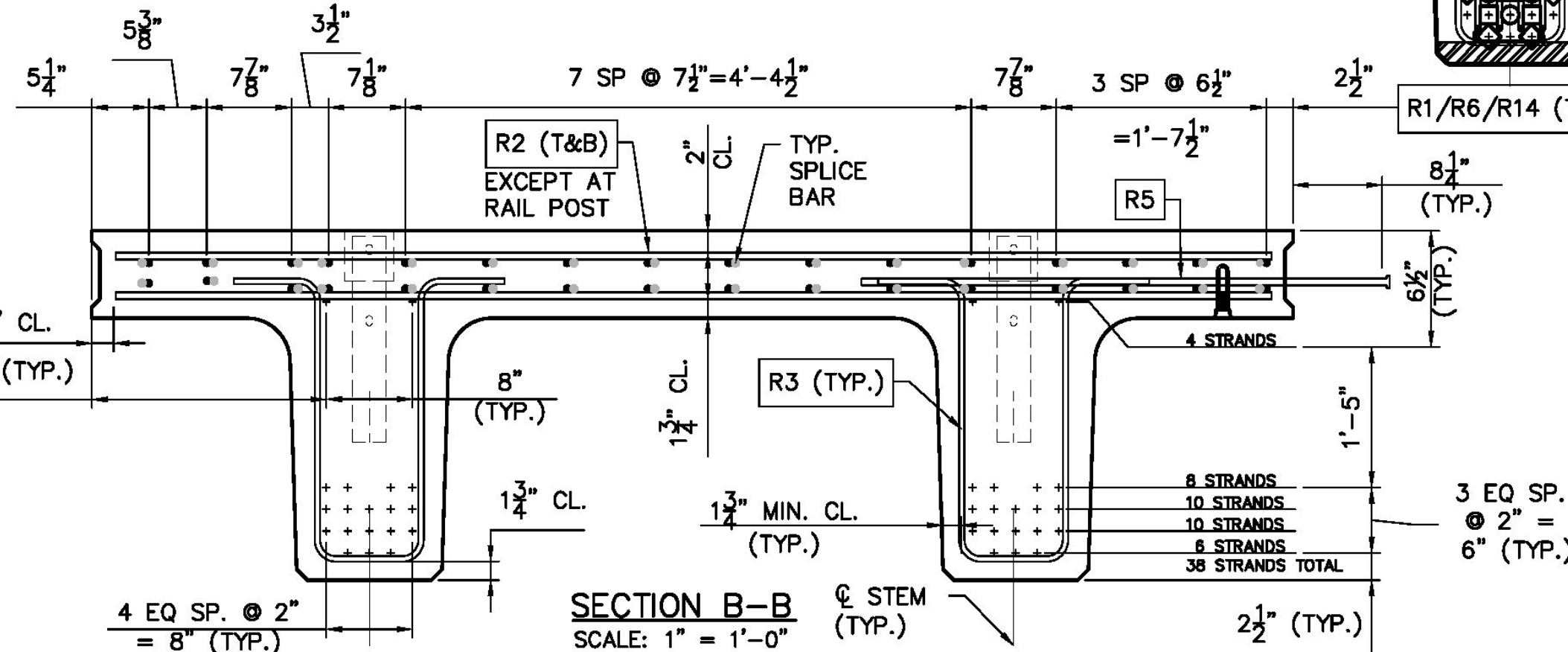


DETENSION SEQUENCE  
NOTE: EXTEND STRANDS #15-#18 & #39-#42 BY 1'-6"



SECTION C-C  
SCALE: 1" = 1'-0"

- STRAND LEGEND
- + STRAIGHT BONDED STRAND
  - ⊕ STRAIGHT STRAND DEBOND 0'-6" FROM END
  - △ STRAIGHT STRAND DEBOND 8'-0" FROM END
  - ⊞ STRAIGHT STRAND DEBOND 12'-0" FROM END
  - ◇ EXTEND 18" OUT OF BEAM (90° BEND @ 9" OUT)

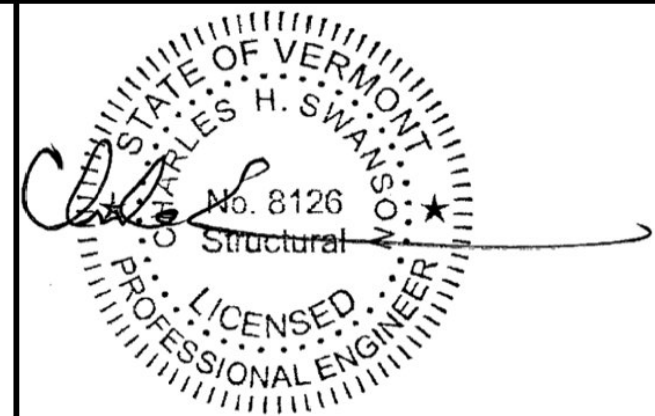


SECTION B-B  
SCALE: 1" = 1'-0"

| CONSTRUCTION SET DATE: 06/28/2013 |               |
|-----------------------------------|---------------|
| SHEET NAME: NXTBM-02 PLAN         |               |
| REVISION NO.                      | REVISION DATE |
|                                   |               |
|                                   |               |
|                                   |               |

**Dailey**  
PRECAST

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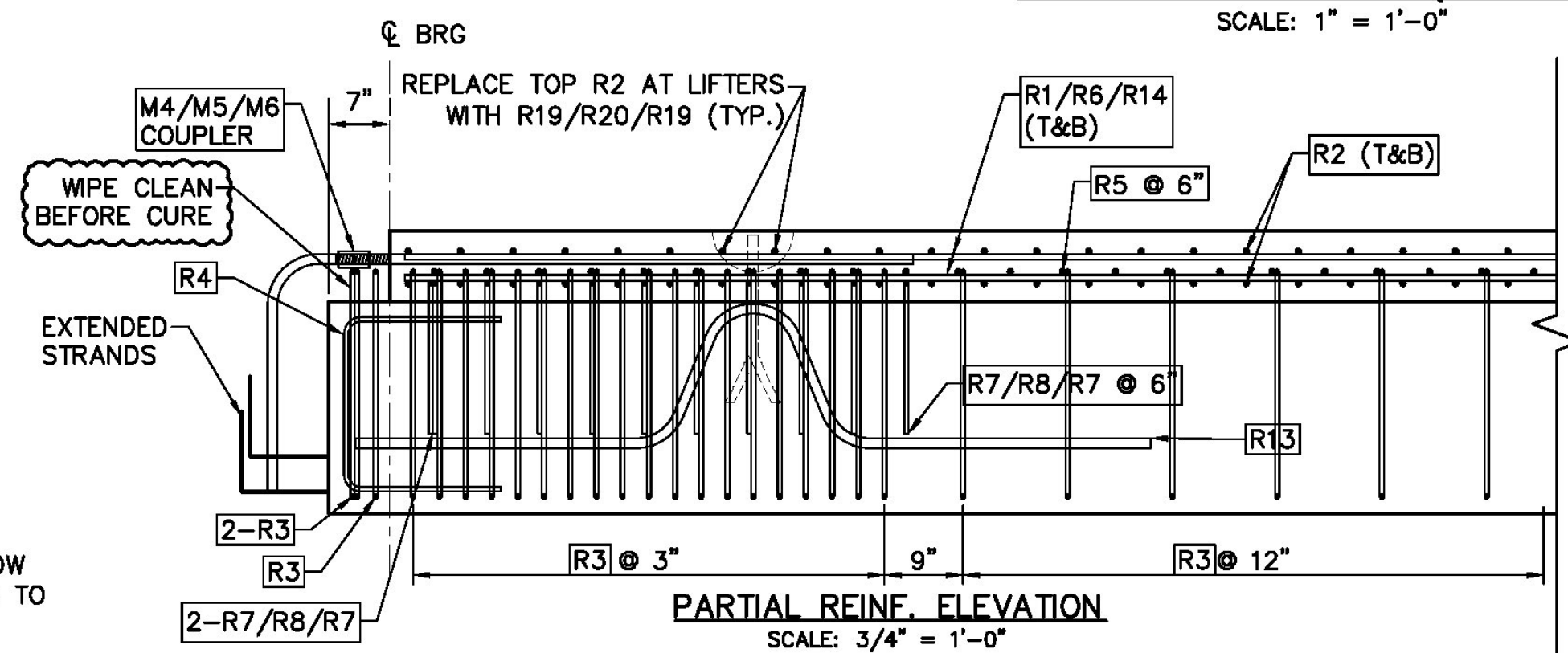


**EIV TECHNICAL SERVICES**  
55 LEROY ROAD, WILLISTON, VT 05495  
TEL: (802) 497-3653 FAX: (802) 497-3656

DATE: JUNE 2013 PROJECT # E1729  
DRAWN BY: LKW/CN CHECKED BY: CHS

STATE OF VERMONT AGENCY OF TRANSPORTATION  
PLYMOUTH, VERMONT  
PROJECT NO: ER BRS 0149(5)





| REINFORCEMENT CHART |          |         |                   |            |     |
|---------------------|----------|---------|-------------------|------------|-----|
| DESCRIPTION         |          |         |                   |            | QTY |
| BAR MARK            | BAR SIZE | COATING | BENT/<br>STRAIGHT | LENGTH     |     |
| R1                  | 5        | E       | STRAIGHT          | 20'- 0.00" | 32  |
| R2                  | 5        | E       | STRAIGHT          | 9'- 6.38"  | 240 |
| R3                  | 4        | E       | BENT              | 6'- 6.63"  | 188 |
| R4                  | 4        | E       | BENT              | 4'- 7.50"  | 16  |
| R5                  | 5        | E       | HEADED            | 4'- 4.375" | 238 |
| R6                  | 5        | E       | STRAIGHT          | 35'- 2.00" | 32  |
| R7                  | 4        | E       | BENT              | 2'- 6.38"  | 52  |
| R8                  | 4        | E       | BENT              | 7'- 4.50"  | 26  |
| R13                 | 9        | E       | BENT              | 9'- 0.00"  | 4   |
| R14                 | 5        | E       | STRAIGHT          | 10'- 0.00" | 32  |
| R19                 | 5        | E       | STRAIGHT          | 1'- 9.25"  | 6   |
| R20                 | 5        | E       | STRAIGHT          | 4'- 8.25"  | 6   |

STRANDS SHALL BE 270 KSI 0.6" Ø LOW  
RELAXATION STRAIGHT STRAND PULLED TO  
44 KIPS.

EACH STRAND SHALL BE FINALLY BURNED OR CUT OFF AT A DEPTH OF  $\frac{1}{2}$ " INTO THE END OF THE BEAM AND THE RECESSED AREA AROUND THE STRAND SHALL BE FILLED WITH NON-SHRINK GROUT, EXCEPT AS NOTED.

STAGGER SPLICES OF R1\R6\R14 OR R21/R22  
BARS BY 5'-0" MIN.

MIN LAP LENGTH OF R1\R6\R14 OR R21/R22  
BARS IS 2'-9" MIN.

SHEET NAME: NXTBM-02 REINFORCEMENT PLAN

|              |               |
|--------------|---------------|
| REVISION NO. | REVISION DATE |
|--------------|---------------|

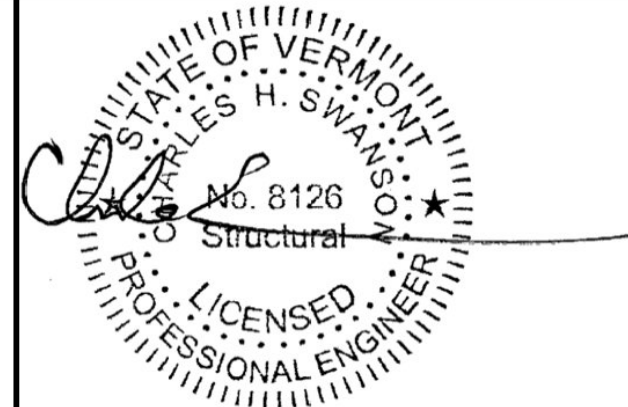
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**Dailey**  
PRECAST

WILLIAM E. DAILEY PRECAST, LLC  
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SHAFTSBURY, VT 05262  
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**EIV** TECHNICAL  
SERVICES

55 LEROY ROAD, WILLISTON, VT 05495  
TEL: (802) 497-3653 FAX: (802) 497-3656

|                  |                 |
|------------------|-----------------|
| DATE: JUNE 2013  | PROJECT # E1729 |
| DRAWN BY: LKW/CN | CHECKED BY: CHS |

STATE OF VERMONT AGENCY OF  
TRANSPORTATION

PLYMOUTH,  
VERMONT  
PROJECT NO: ER BRS 0149(5)

**SHEET 5 OF 9**



NOTES:

(1) NXTBM-03 REQUIRED

FINISHES

TOP: BROOM ( $\frac{1}{8}$ " AMP MAX.)  
SIDES: STEEL FORM  
BOTTOM: STEEL FORM  
ENDS: FORM

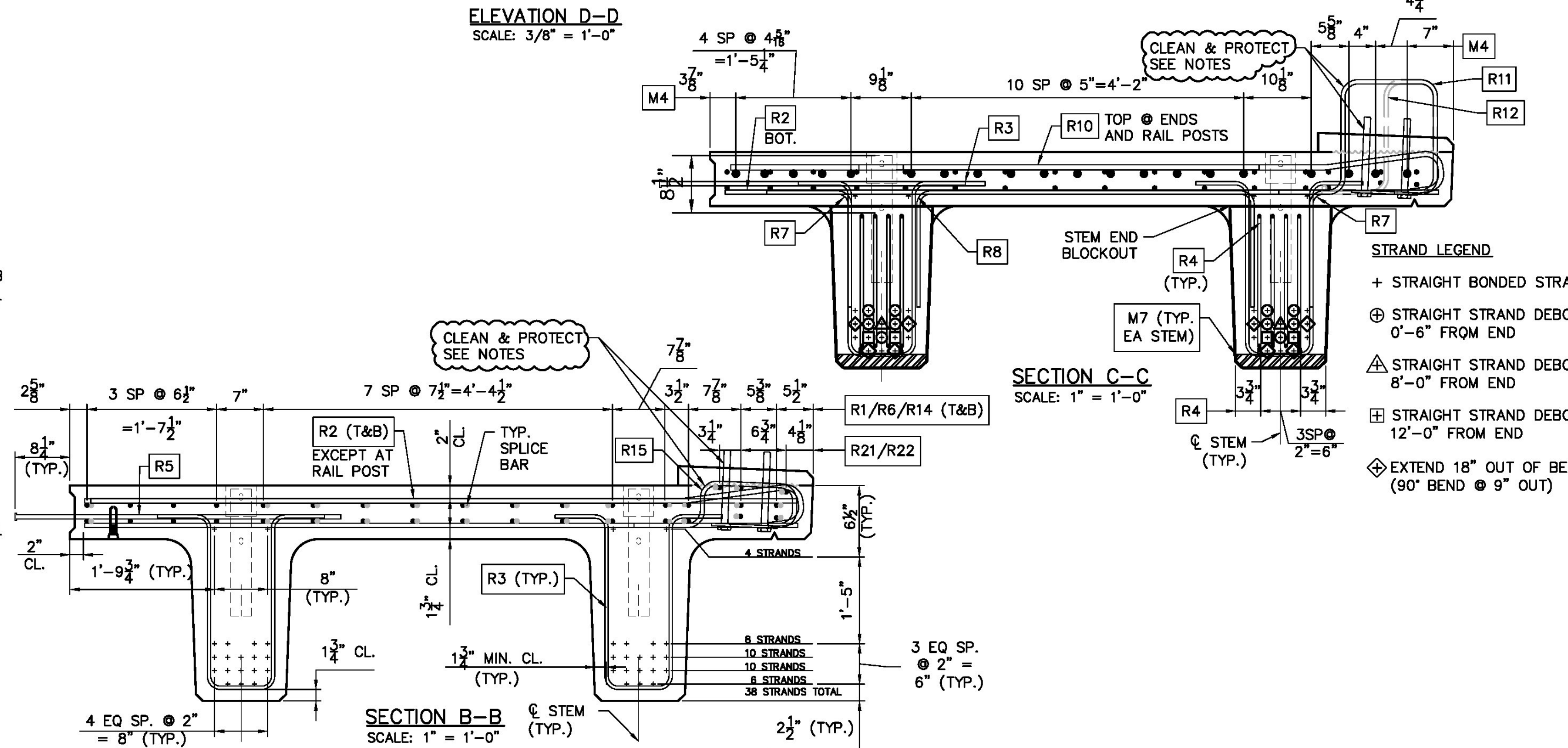
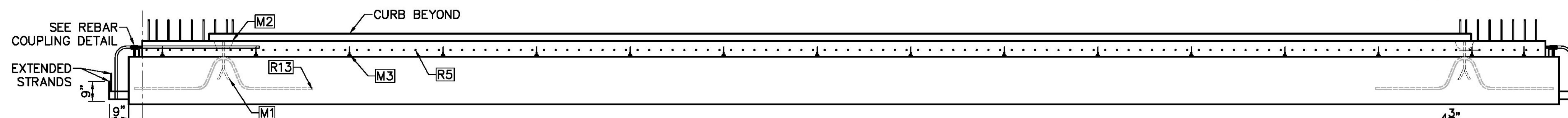
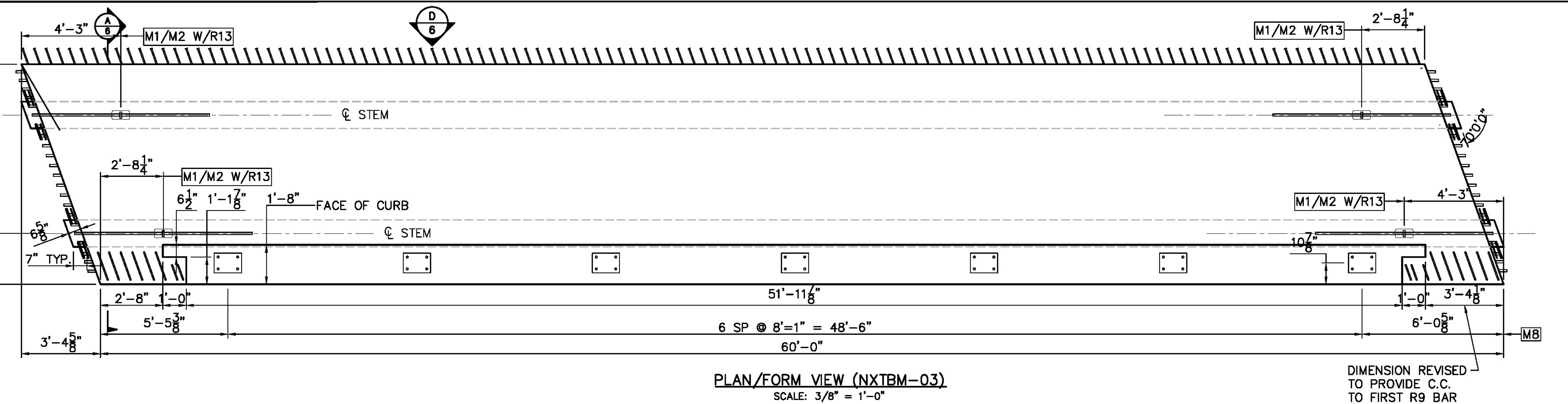
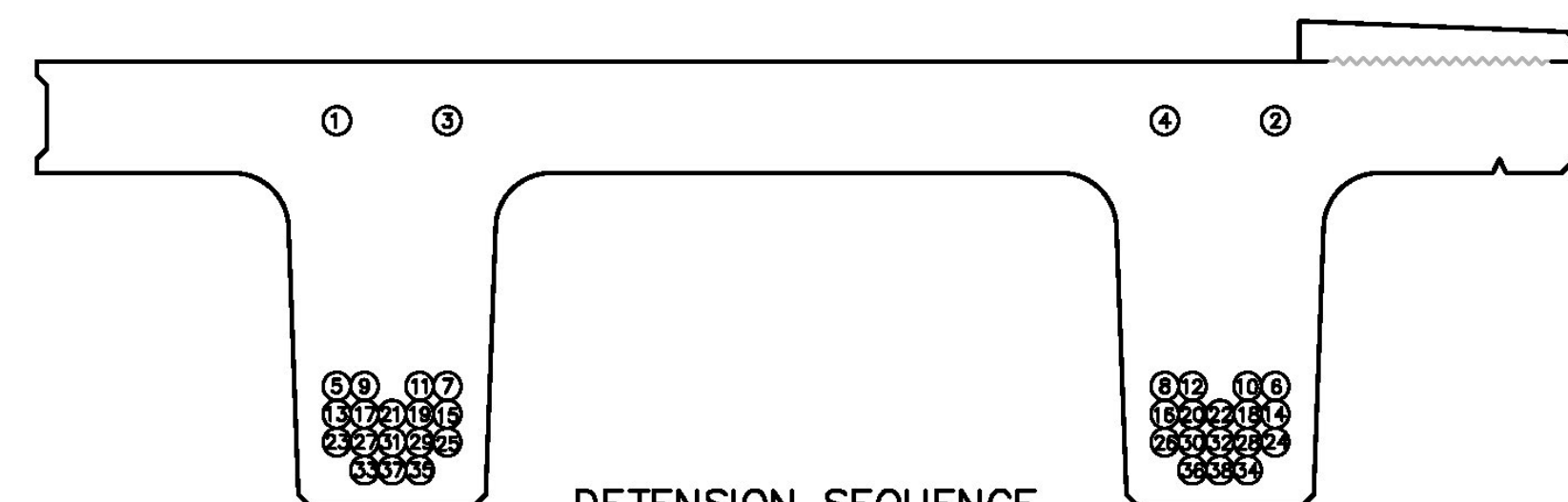
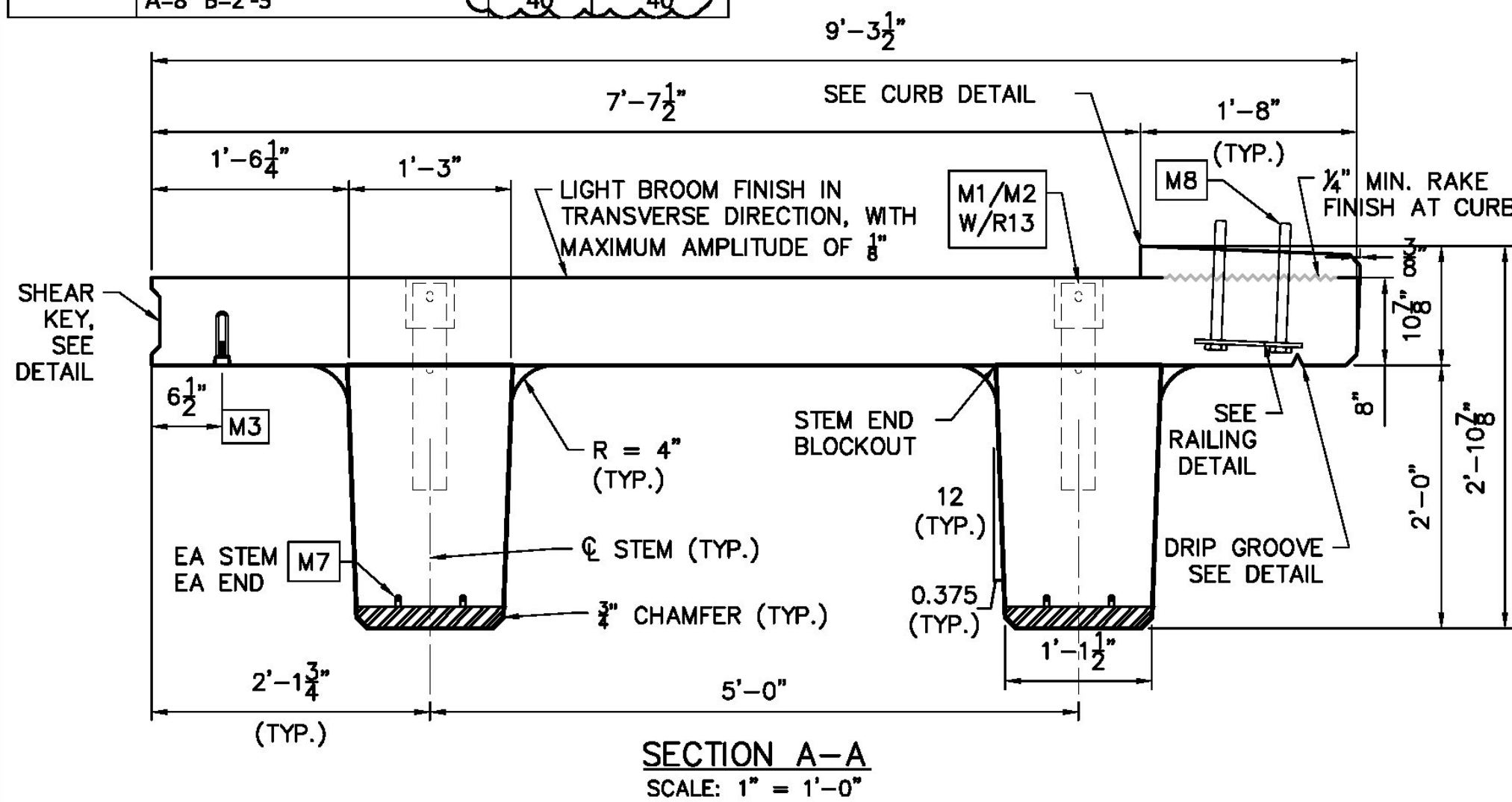
BEAMS SHALL BE HANDLED AND ERECTED USING LIFTERS ONLY. THE MINIMUM SLING ANGLE FOR SHOP PICKING SHALL BE 90° FROM THE HORIZONTAL. BEAMS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS LOCATED BELOW THE LIFTERS U.O.N.

WIPE CLEAN CURB REINF. PRIOR TO FINISHING BEAM TOP.

RAIL POST ANCHOR SHALL BE PROTECTED FROM CONCRETE ABOVE FINISHED CURB.

BEAM WEIGHT: 104,866 LBS

| BILL OF MATERIALS               |                                   |           |                  |   |
|---------------------------------|-----------------------------------|-----------|------------------|---|
| MARK                            | NXTBM-03                          |           | QTY =            | 1 |
| fc'= 8,000 PSI                  |                                   | @ 28 DAYS | fci' = 6,000 PSI |   |
| PART MARK                       | DESCRIPTION                       | QTY       | TOTAL QTY        |   |
| M1                              | MB RL-23 (79172) GALV.            | 4         | 4                |   |
| M2                              | MB RL-45 (79166)                  | 4         | 4                |   |
| M3                              | DS F-64 FERRULE LOOP GALV.        | 16        | 16               |   |
| M4                              | DS D-112 #9 A=5'-4" EPOXY         | 40        | 40               |   |
| M7                              | P900 NXTBM END ASSEMBLY           | 4         | 4                |   |
| M8                              | RAIL ASSEMBLY                     | 7         | 7                |   |
|                                 | 25.89 CY VT MIX ID # 53           | 1         | 1                |   |
|                                 | 0.6" 7WS LR = 2348'-4"            | 1         | 1                |   |
| INSTALL AFTER REMOVED FROM FORM |                                   |           |                  |   |
| M5                              | DS D-110 #9 (111520) EPOXY        | 40        | 40               |   |
| M6                              | DS D-102 #9 EPOXY<br>A=8" B=2'-3" | 40        | 40               |   |

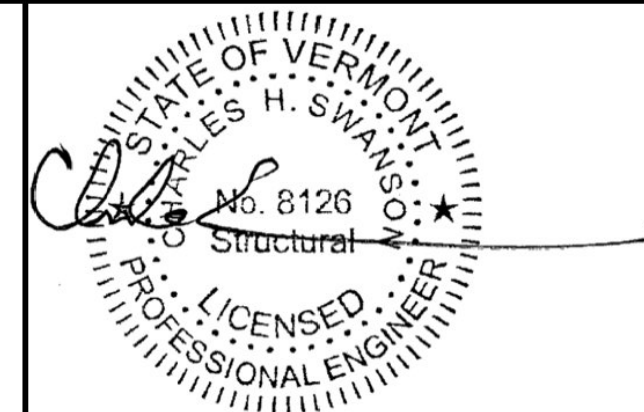


- STRAND LEGEND
- + STRAIGHT BONDED STRAND
  - ⊕ STRAIGHT STRAND DEBOND 0'-6" FROM END
  - △ STRAIGHT STRAND DEBOND 8'-0" FROM END
  - ⊞ STRAIGHT STRAND DEBOND 12'-0" FROM END
  - ◇ EXTEND 18" OUT OF BEAM (90° BEND @ 9" OUT)

| CONSTRUCTION SET DATE: 06/28/2013 |               |
|-----------------------------------|---------------|
| SHEET NAME: NXTBM-03 PLAN         |               |
| REVISION NO.                      | REVISION DATE |
|                                   |               |
|                                   |               |
|                                   |               |

**Dailey**  
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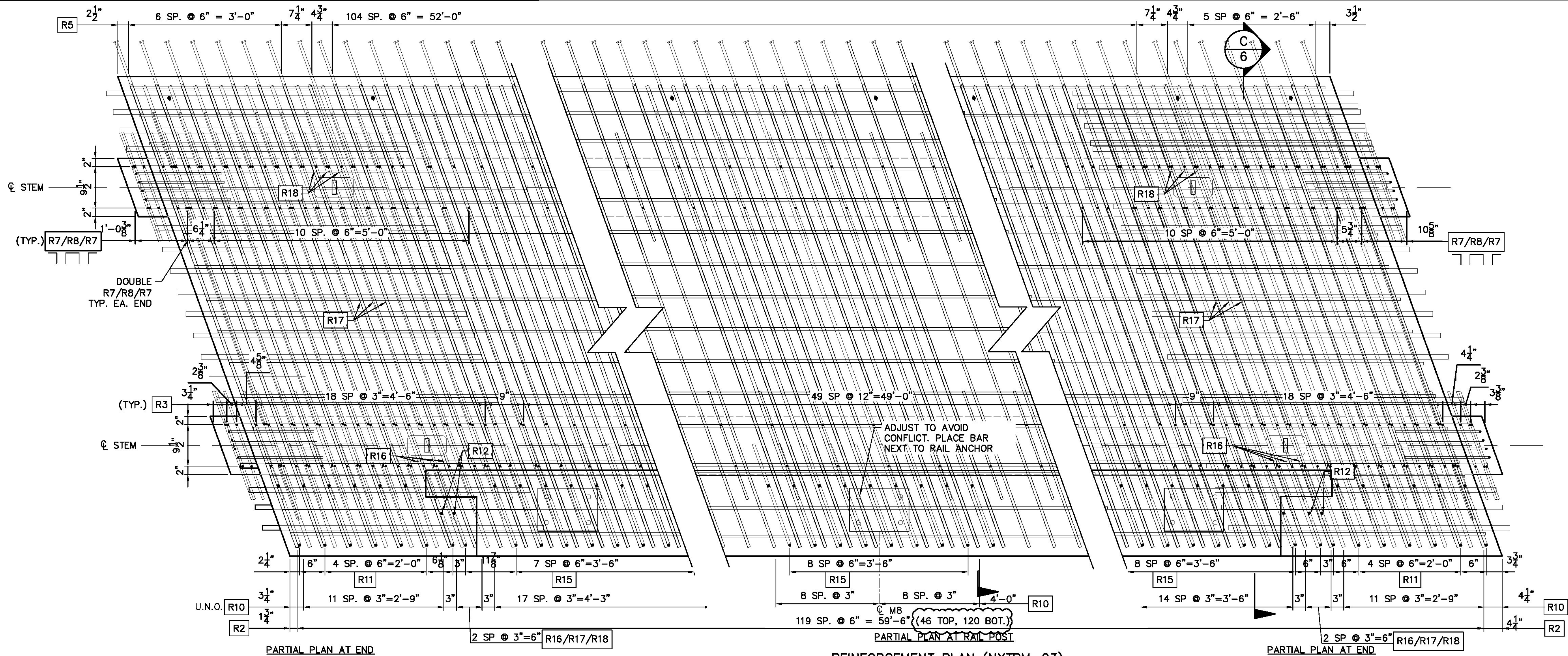
DATE: JUNE 2013 PROJECT # E1729  
DRAWN BY: LKW/CN CHECKED BY: CHS

STATE OF VERMONT AGENCY OF TRANSPORTATION

PLYMOUTH, VERMONT  
PROJECT NO: ER BRS 0149(5)

**SHEET 6 OF 9**





| REINFORCEMENT CHART |          |         |               |           |     |
|---------------------|----------|---------|---------------|-----------|-----|
| BAR MARK            | BAR SIZE | COATING | BENT/STRAIGHT | LENGTH    | QTY |
| R1                  | 5        | E       | STRAIGHT      | 20'-0.00" | 32  |
| R2                  | 5        | E       | STRAIGHT      | 9'-6.38"  | 166 |
| R3                  | 4        | E       | BENT          | 6'-6.63"  | 188 |
| R4                  | 4        | E       | BENT          | 4'-7.50"  | 16  |
| R5                  | 5        | E       | HEADED        | 4'-4.375" | 120 |
| R6                  | 5        | E       | STRAIGHT      | 35'-2.00" | 32  |
| R7                  | 4        | E       | BENT          | 2'-6.38"  | 52  |
| R8                  | 4        | E       | BENT          | 7'-4.50"  | 26  |
| R10                 | 6        | E       | BENT          | 9'-11.75" | 142 |
| R11                 | 5        | E       | BENT          | 5'-4.63"  | 12  |
| R12                 | 5        | E       | BENT          | 4'-6.00"  | 5   |
| R13                 | 9        | E       | BENT          | 9'-0.00"  | 4   |
| R14                 | 5        | E       | STRAIGHT      | 10'-0.00" | 32  |
| R15                 | 5        | E       | BENT          | 4'-2.88"  | 62  |
| R16                 | 6        | E       | BENT          | 2'-5.70"  | 6   |
| R17                 | 6        | E       | STRAIGHT      | 4'-8.25"  | 6   |
| R18                 | 6        | E       | STRAIGHT      | 1'-9.25"  | 6   |
| R21                 | 5        | E       | STRAIGHT      | 40'-0.00" | 3   |
| R22                 | 5        | E       | STRAIGHT      | 15'-0.00" | 3   |

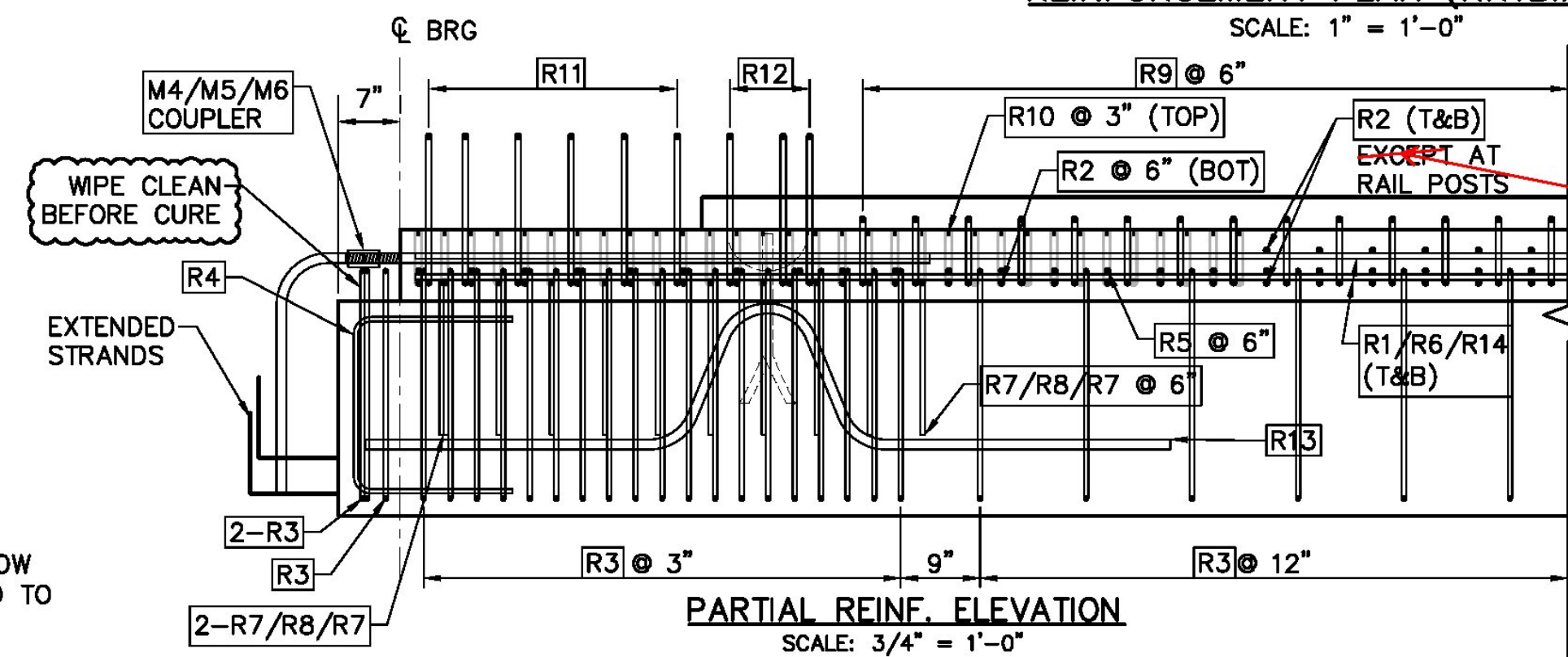
NOTES:

STRANDS SHALL BE (270 KSI) 0.6"  $\phi$  LOW RELAXATION STRAIGHT STRAND PULLED TO 44 KIPS.

EACH STRAND SHALL BE FINALLY BURNED OR CUT OFF AT A DEPTH OF 3" INTO THE END OF THE BEAM AND THE RECESSED AREA AROUND THE STRAND SHALL BE FILLED WITH NON-SHRINK GROUT, EXCEPT AS NOTED.

STAGGER SPLICES OF R1\R6\R14 OR R21\R22 BARS BY 5'-0" MIN.

MIN LAP LENGTH OF R1\R6\R14 OR R21\R22 BARS IS 2'-9" MIN.



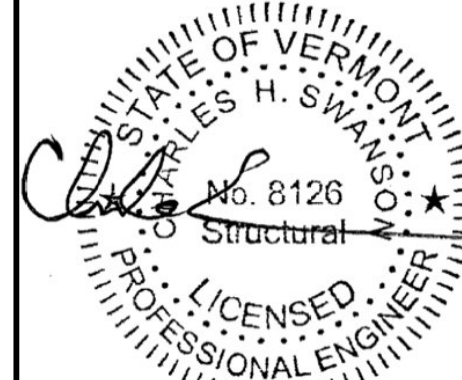
CONSTRUCTION SET DATE: 06/28/2013

SHEET NAME: NXTBM-03 REINFORCEMENT PLAN

REVISION NO. REVISION DATE

**Dailey**  
PRECAST

WILLIAM E. DAILEY PRECAST, LLC  
295 AIRPORT ROAD  
SHAFTSBURY, VT 05262  
TEL: 802.442.4418 FAX: 802.442.0738



**EIV TECHNICAL SERVICES**  
55 LEROY ROAD, WILLISTON, VT 05495  
TEL: (802) 497-3653 FAX: (802) 497-3656

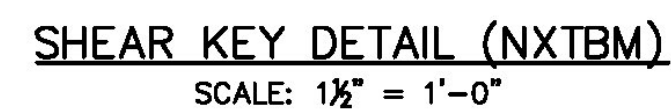
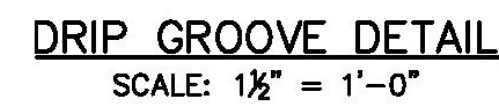
DATE: JUNE 2013 PROJECT # E1729  
DRAWN BY: LKW/CN CHECKED BY: CHS

STATE OF VERMONT AGENCY OF TRANSPORTATION

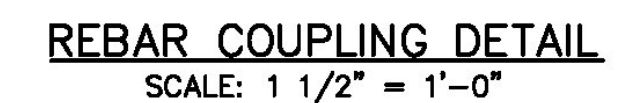
PLYMOUTH, VERMONT  
PROJECT NO: ER BRS 0149(5)

**SHEET 7 OF 9**





— #5 BARS TIED  
TO HEADS OF  
ADJACENT BARS  
(NOT BY DAILEY PRECAST)



COIL LOOP DETAIL NXTBM  
(APP. SLAB SIM.)  
SCALE: 1 1/2" = 1'-0"

STATE OF VERMONT AGENCY OF  
TRANSPORTATION

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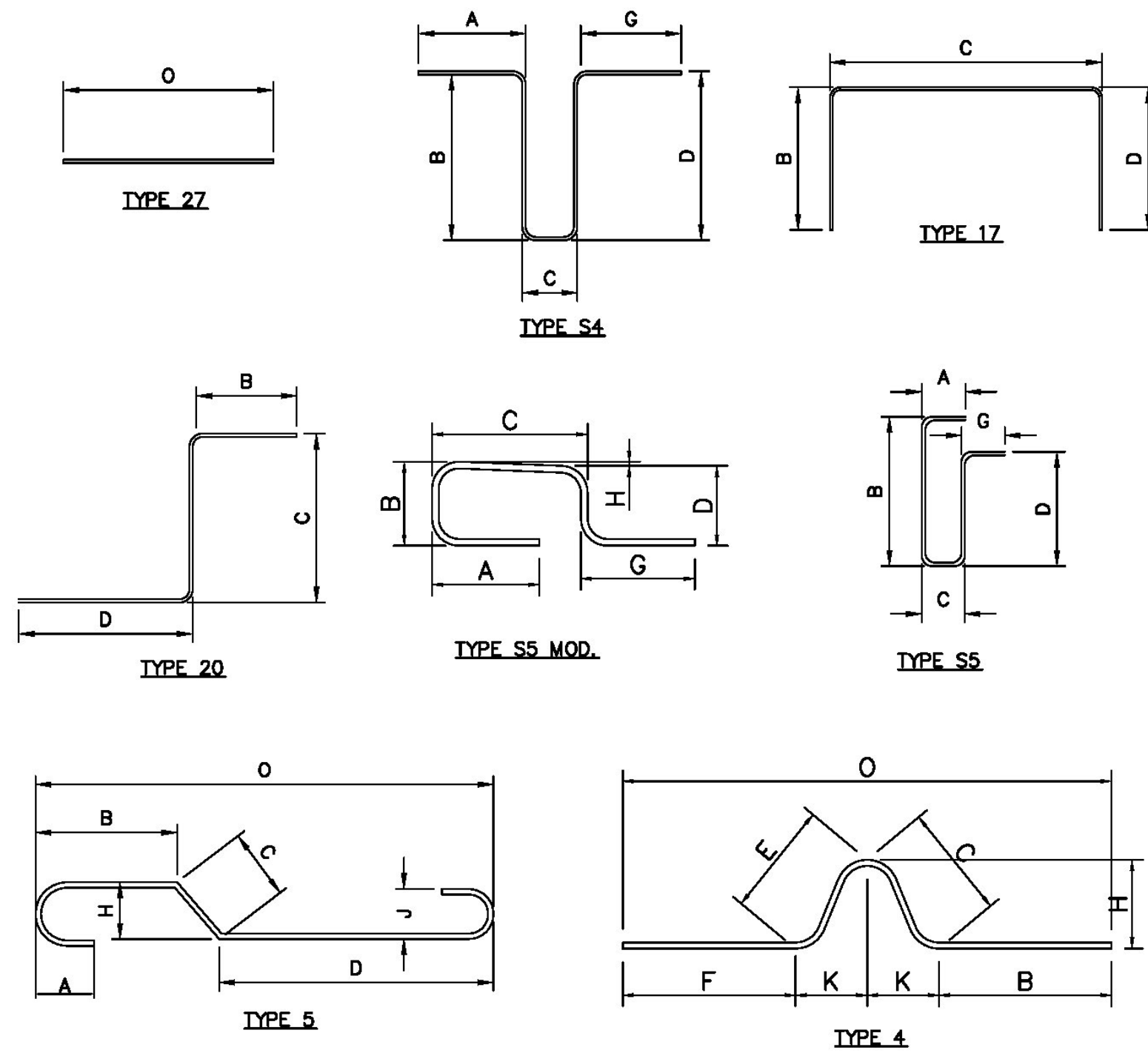
PLYMOUTH,  
VERMONT

PROJECT NO: ER BRS 0149(5)

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**SHEET 8 OF 9**





| REINFORCEMENT CHART |             |         |                   |            |                      |         |            |           |            |            |           |           |            |           |           |           |   |            |   |
|---------------------|-------------|---------|-------------------|------------|----------------------|---------|------------|-----------|------------|------------|-----------|-----------|------------|-----------|-----------|-----------|---|------------|---|
| BAR MARK            | DESCRIPTION |         |                   |            | TOTAL QTY IN PROJECT | TYPE    | A          | B         | C          | D          | E         | F         | G          | H         | J         | K         | L | O          | P |
|                     | BAR SIZE    | COATING | BENT/<br>STRAIGHT | LENGTH     |                      |         |            |           |            |            |           |           |            |           |           |           |   |            |   |
| R1                  | 5           | E       | STRAIGHT          | 20'- 0.00" | 96                   | 27      |            |           |            |            |           |           |            |           |           |           |   | 20'- 0.00" |   |
| R2                  | 5           | E       | STRAIGHT          | 9'- 6.38"  | 572                  | 27      |            |           |            |            |           |           |            |           |           |           |   | 9'- 6.38"  |   |
| R3                  | 4           | E       | BENT              | 6'- 6.63"  | 564                  | S4      | 0'- 8.50"  | 2'- 1.88" | 0'- 10.63" | 2'- 1.88"  |           |           | 0'- 8.50"  |           |           |           |   |            |   |
| R4                  | 4           | E       | BENT              | 4'- 7.50"  | 48                   | 17      |            | 1'- 6.00" | 1'- 7.75"  | 1'- 6.00"  |           |           |            |           |           |           |   |            |   |
| R5                  | 5           | E       | HEADED            | 4'- 4.375" | 478                  | 27      |            |           |            |            |           |           |            |           |           |           |   | 4'- 4.375" |   |
| R6                  | 5           | E       | STRAIGHT          | 35'- 2.00" | 100                  | 27      |            |           |            |            |           |           |            |           |           |           |   | 35'- 2.00" |   |
| R7                  | 4           | E       | BENT              | 2'- 6.38"  | 156                  | 20      |            | 1'- 1.57" | 1'- 5.25"  | 0'- 0.00"  |           |           |            |           |           |           |   |            |   |
| R8                  | 4           | E       | BENT              | 7'- 4.50"  | 78                   | 17      |            | 1'- 5.25" | 4'- 6.00"  | 1'- 5.25"  |           |           |            |           |           |           |   |            |   |
| R9                  | 5           | E       | BENT              | 3'- 10.75" | 62                   | S5 MOD. | 0'- 10.64" | 0'- 7.75" | 1'- 3.43"  | 0'- 7.38"  |           |           | 0'- 11.31" | 0'- 0.38" |           |           |   |            |   |
| R10                 | 6           | E       | BENT              | 9'- 11.75" | 284                  | 5       | 0'- 6.00"  | 0'- 0.00" | 1'- 6.50"  | 7'- 11.25" |           |           |            | 0'- 6.00" | 0'- 0.00" |           |   | 9'- 11.75" |   |
| R11                 | 5           | E       | BENT              | 5'- 4.63"  | 24                   | S5      | 0'- 10.75" | 1'- 5.00" | 1'- 3.38"  | 1'- 5.00"  |           |           | 0'- 10.75" |           |           |           |   |            |   |
| R12                 | 5           | E       | BENT              | 4'- 11.63" | 10                   | S5      | 0'- 6.38"  | 1'- 5.00" | 0'- 8.50"  | 1'- 5.00"  |           |           | 0'- 10.75" |           |           |           |   |            |   |
| R13                 | 9           | E       | BENT              | 9'- 0.00"  | 12                   | 4       | 0'- 0.00"  | 2'- 8.13" | 1'- 9.13"  | 0'- 0.00"  | 1'- 9.13" | 2'- 8.13" | 0'- 0.00"  | 1'- 4.38" |           | 1'- 1.38" |   | 7'- 7.13"  |   |
| R14                 | 5           | E       | STRAIGHT          | 10'- 0.00" | 96                   | 27      |            |           |            |            |           |           |            |           |           |           |   | 10'- 0.00" |   |
| R15                 | 5           | E       | BENT              | 4'- 2.88"  | 62                   | S5 MOD. | 0'- 10.75" | 0'- 6.50" | 1'- 3.38"  | 0'- 6.88"  |           |           | 0'- 11.38" | 0'- 0.38" |           |           |   |            |   |
| R16                 | 6           | E       | BENT              | 2'- 7.38"  | 12                   | 5       | 0'- 6.00"  | 0'- 0.00" | 1'- 4.13"  | 0'- 3.25"  |           |           | 0'- 0.00"  | 0'- 6.00" |           |           |   | 1'- 9.25"  |   |
| R17                 | 6           | E       | STRAIGHT          | 4'- 8.25"  | 12                   | 27      |            |           |            |            |           |           |            |           |           |           |   | 4'- 8.25"  |   |
| R18                 | 6           | E       | STRAIGHT          | 1'- 9.25"  | 12                   | 27      |            |           |            |            |           |           |            |           |           |           |   | 1'- 9.25"  |   |
| R19                 | 5           | E       | STRAIGHT          | 1'- 9.25"  | 6                    | 27      |            |           |            |            |           |           |            |           |           |           |   | 1'- 9.25"  |   |
| R20                 | 5           | E       | STRAIGHT          | 4'- 8.25"  | 6                    | 27      |            |           |            |            |           |           |            |           |           |           |   | 4'- 8.25"  |   |
| R21                 | 5           | E       | STRAIGHT          | 40'- 0.00" | 3                    | 27      |            |           |            |            |           |           |            |           |           |           |   | 40'- 0.00" |   |
| R22                 | 5           | E       | STRAIGHT          | 15'- 0.00" | 3                    | 27      |            |           |            |            |           |           |            |           |           |           |   | 15'- 0.00" |   |
| R23                 | 5           | E       | BENT              | 22'- 0.00" | 4                    | 17      |            | 2'- 0.00" | 20'- 0.00" | 0'- 0.00"  |           |           |            |           |           |           |   |            |   |
| R24                 | 5           | E       | BENT              | 12'- 0.00" | 4                    | 17      |            | 2'- 0.00" | 10'- 0.00" | 0'- 0.00"  |           |           |            |           |           |           |   |            |   |

NOTES:  
COATINGS  
S = STAINLESS STEEL  
E = EPOXY COATED  
B = PLAIN/BLACK  
  
QTY = TOTAL QUANTITY IN PROJECT  
ALL MILD REBAR TO BE AASHTO M31, GRADE 60  
ANY EPOXY DAMAGED EPOXY COATING SHALL BE REPAIRED WITH AN APPROVED TWO PART EPOXY.

|                                   |               |
|-----------------------------------|---------------|
| CONSTRUCTION SET DATE: 06/28/2013 |               |
| SHEET NAME: REINFORCEMENT DETAILS |               |
| REVISION NO.                      | REVISION DATE |
|                                   |               |
|                                   |               |
|                                   |               |

Dailey

PRECAST

WILLIAM E. DAILEY PRECAST, LLC

295 AIRPORT ROAD

SHAFTSBURY, VT 05262

TEL: 802.442.4418 FAX: 802.442.0738

STATE OF VERMONT

CHAS. H. SWANSON

No. 8126

Structural

LICENSED PROFESSIONAL ENGINEER

EIV

TECHNICAL SERVICES

55 LEROY ROAD, WILLISTON, VT 05495

TEL: (802) 497-3653 FAX: (802) 497-3656

DATE: JUNE 2013

PROJECT # E1729

DRAWN BY: LKW/CN

CHECKED BY: CHS

STATE OF VERMONT AGENCY OF TRANSPORTAION

PLYMOUTH, VERMONT

PROJECT NO: ER BRS 0149(5)

SHEET 9

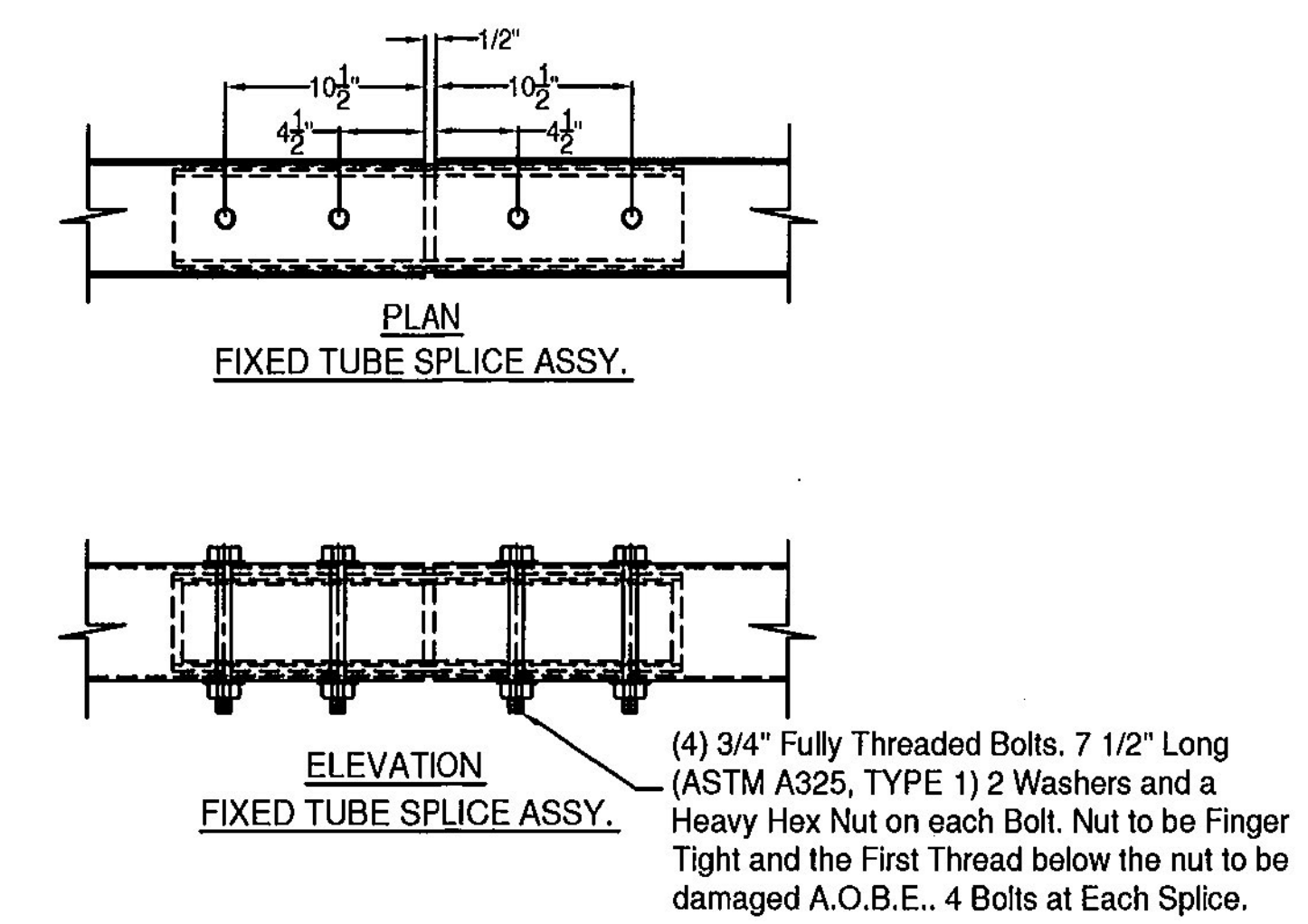
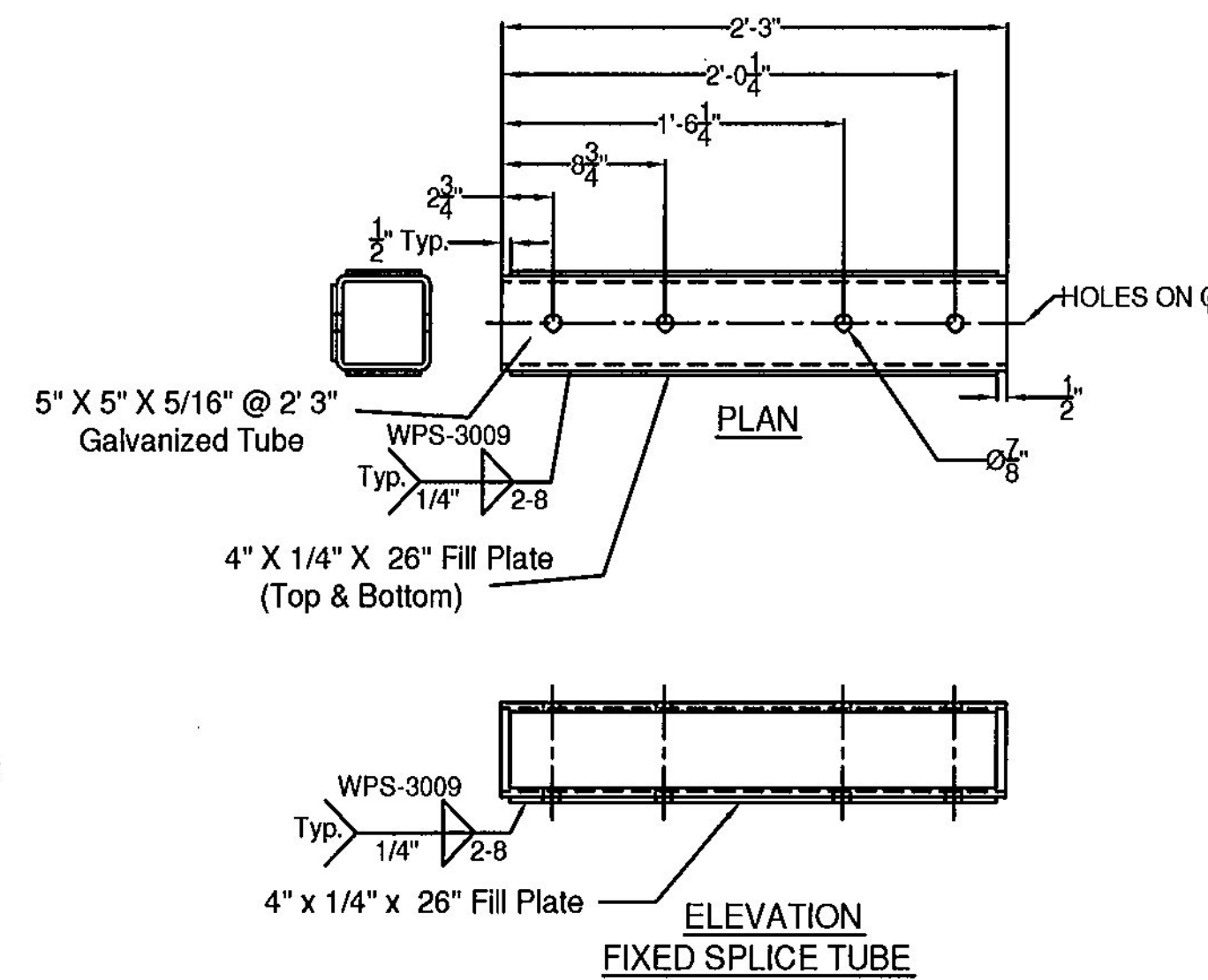
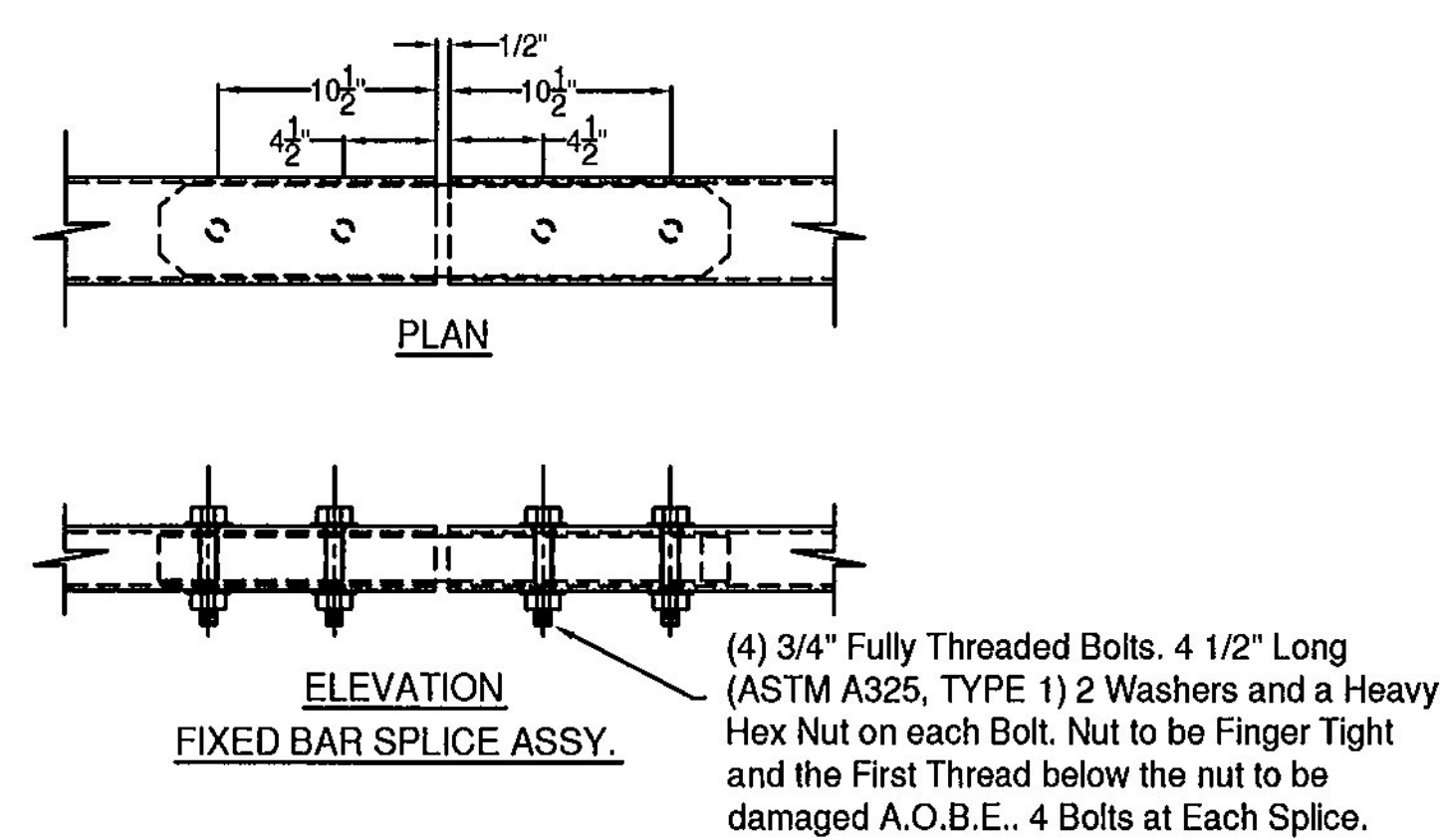
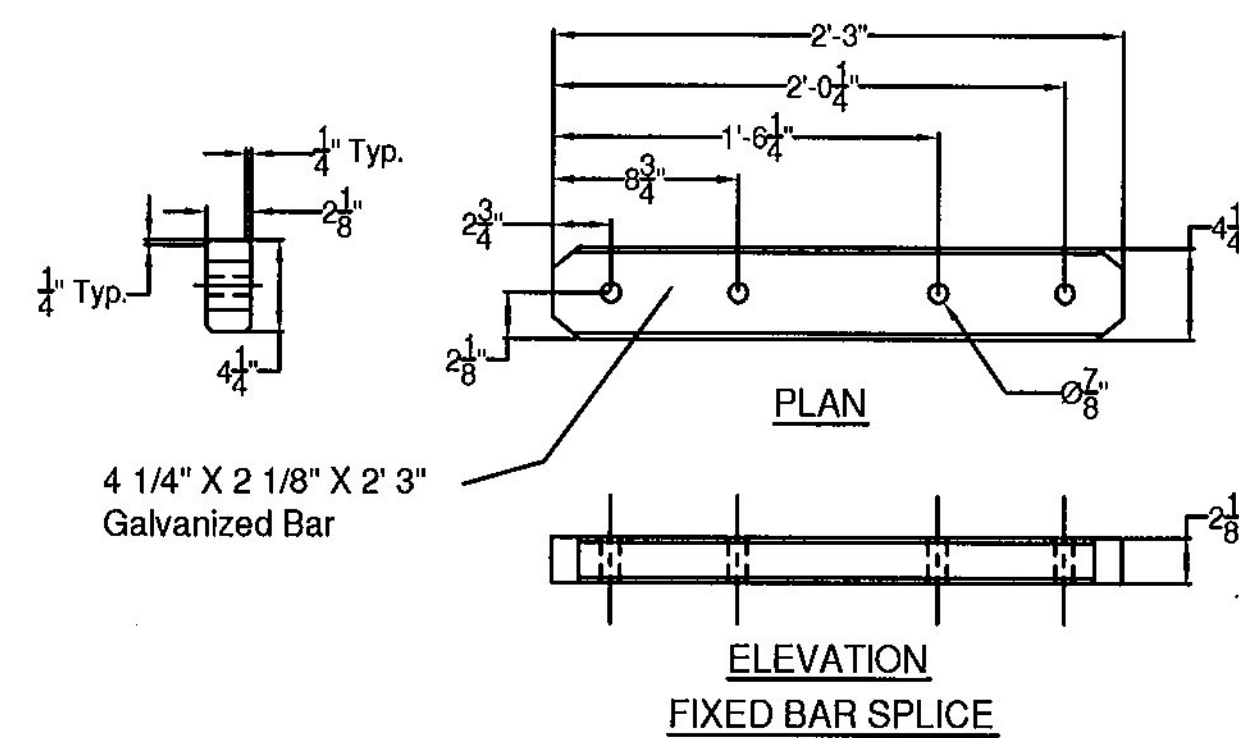
OF 9



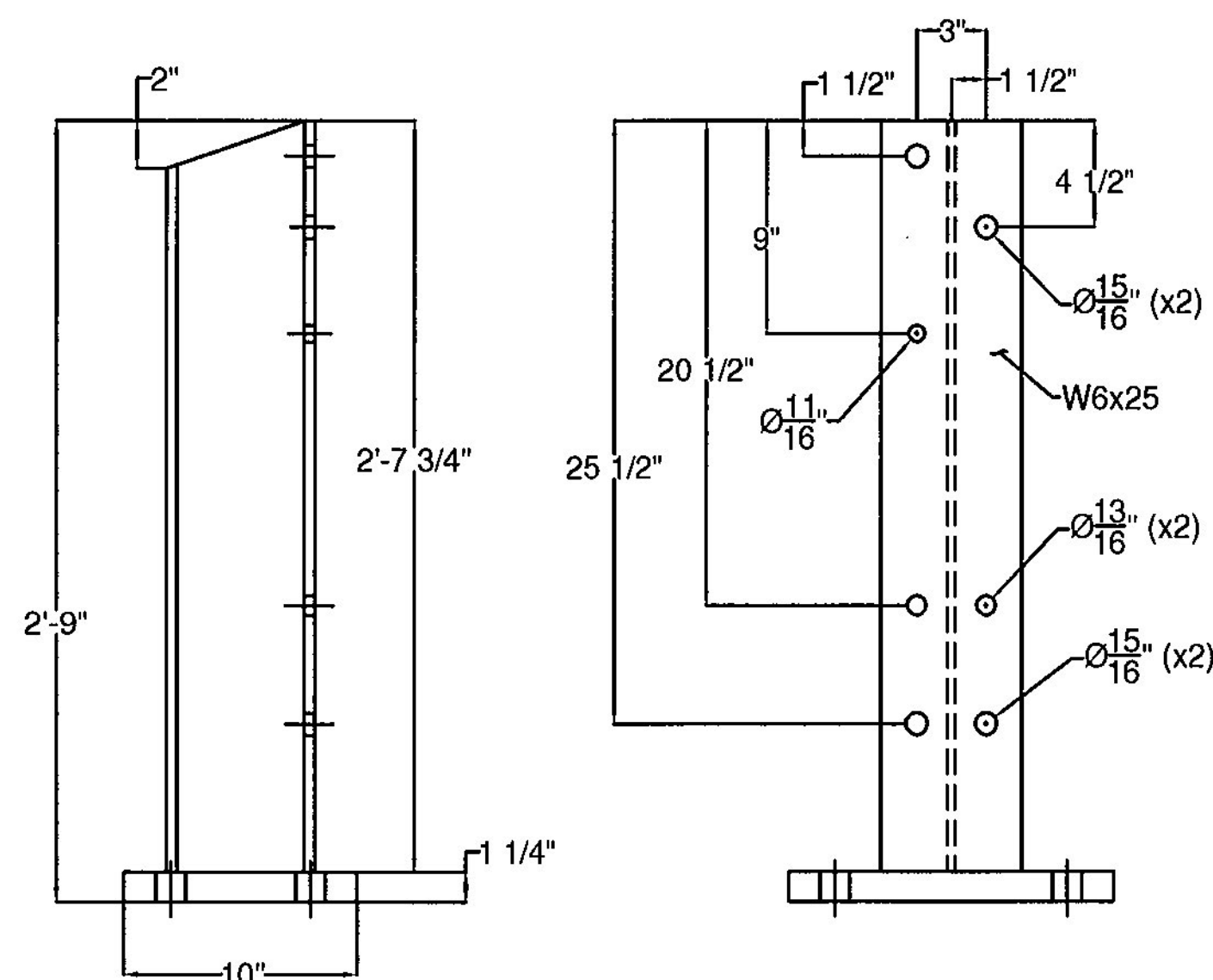
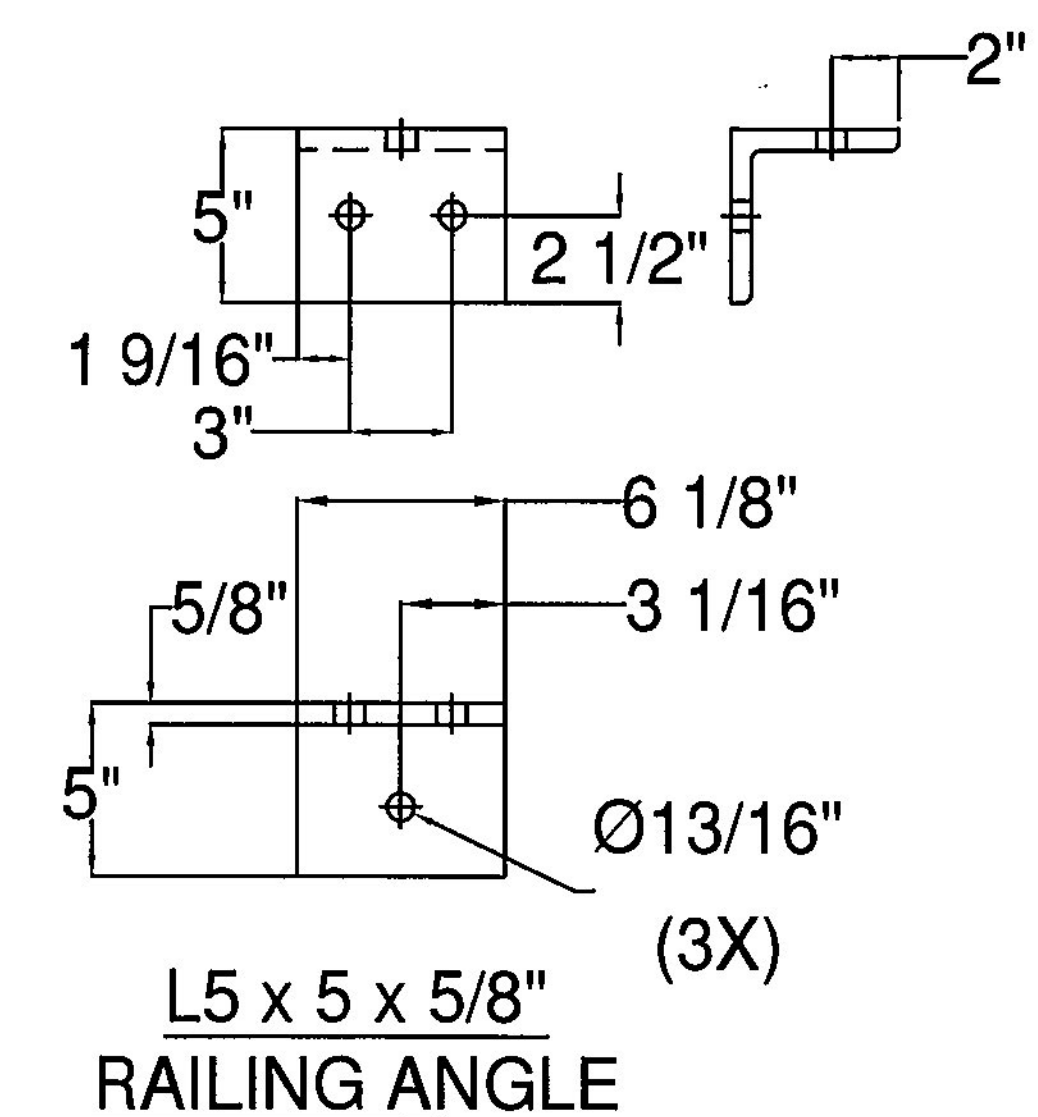
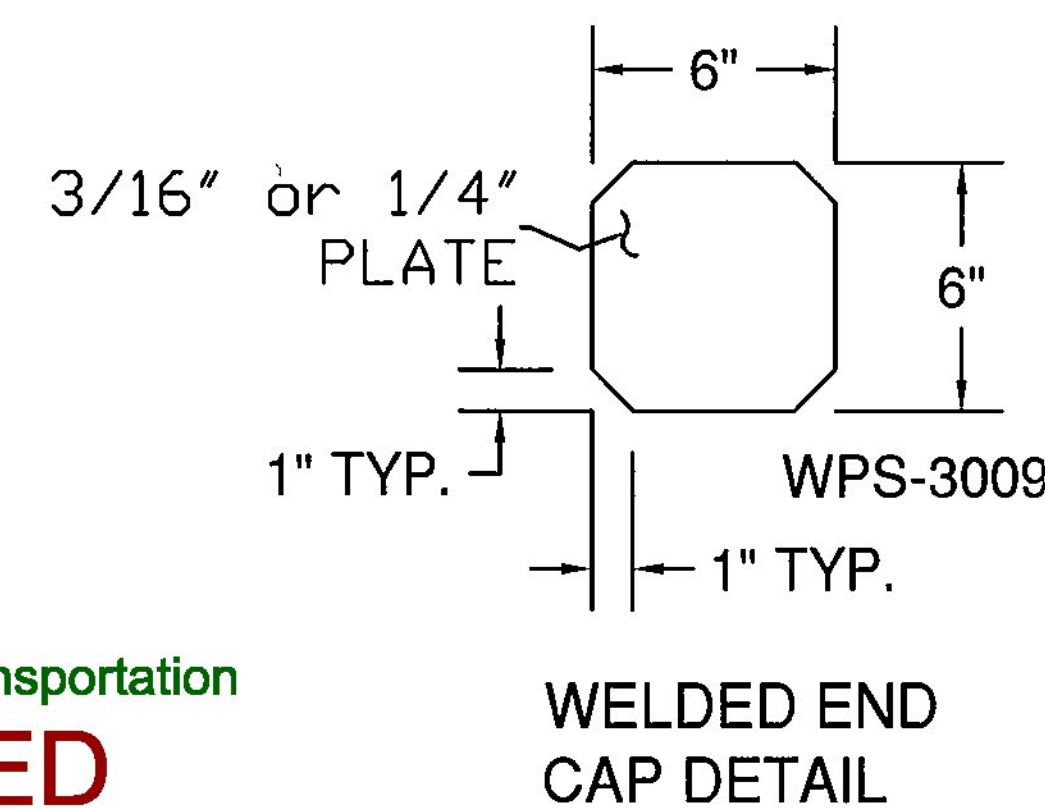
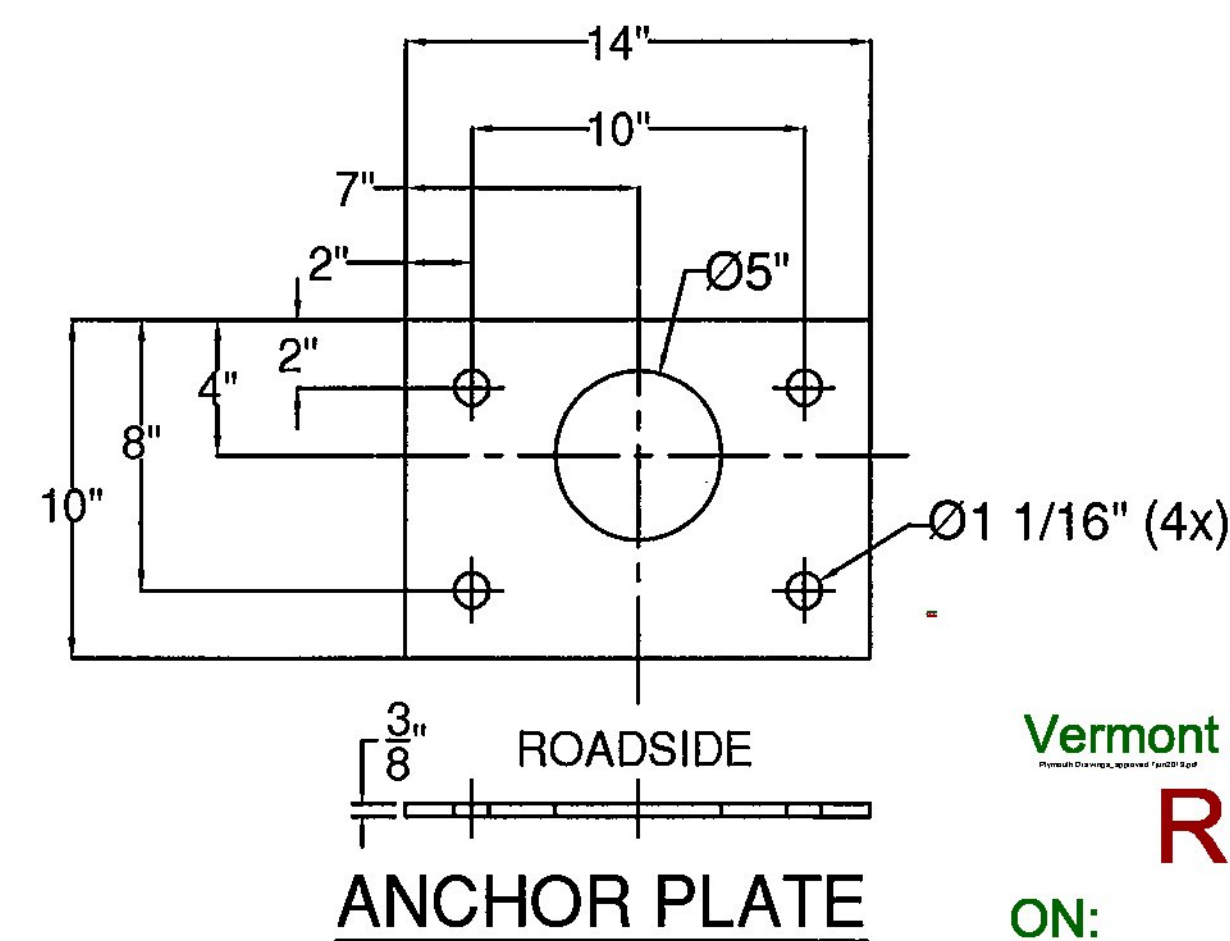
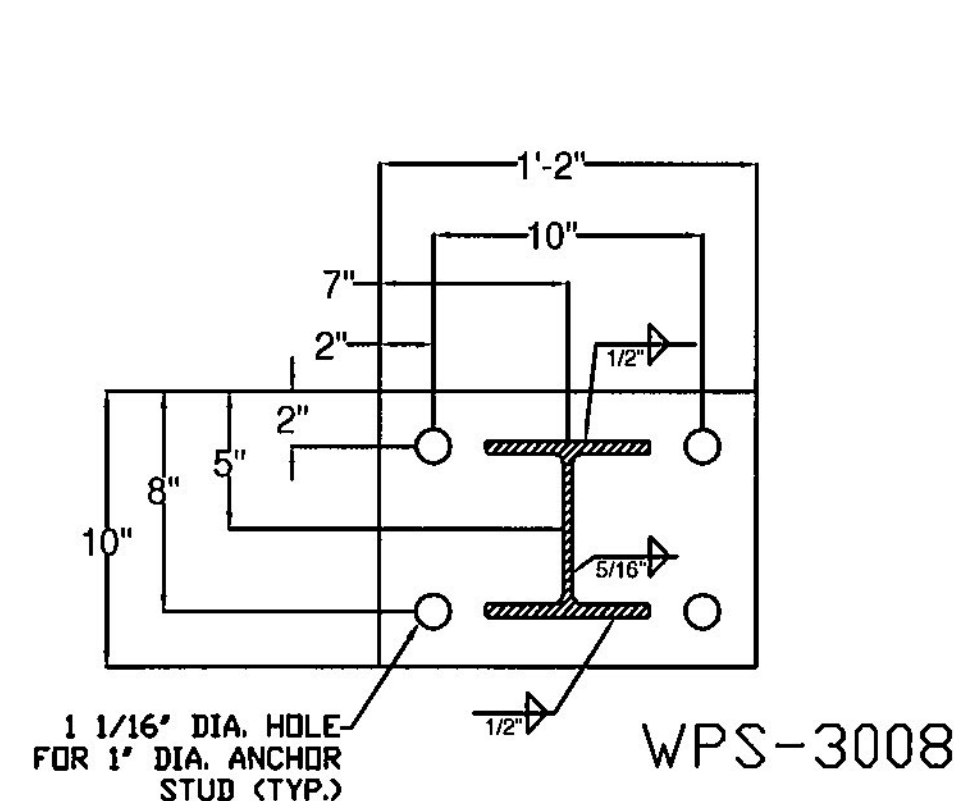




# SPLICE BAR - FIXED



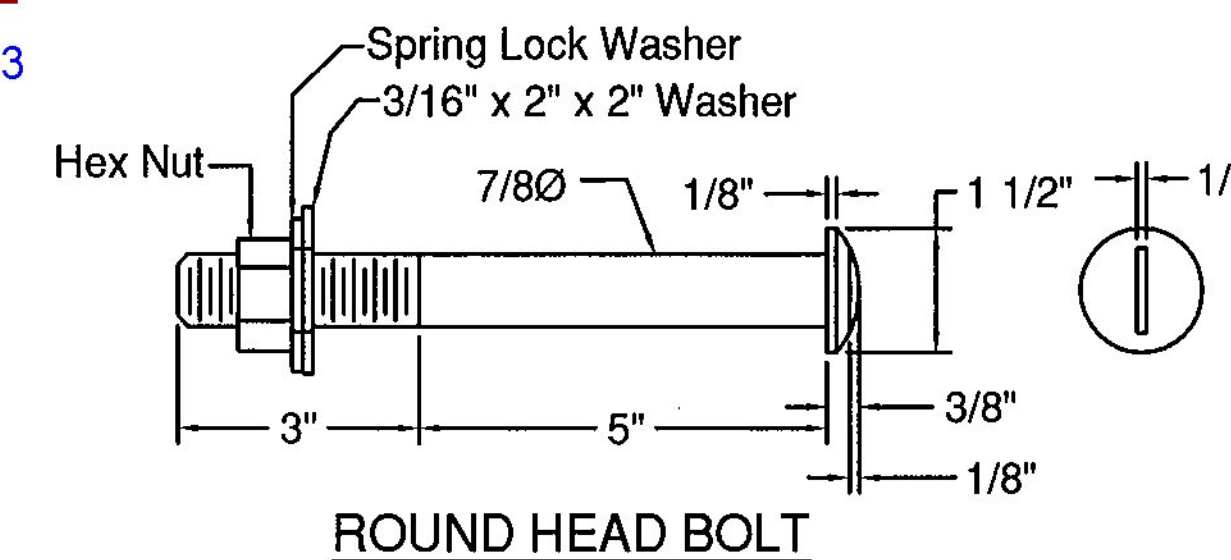
# SPLICE TUBE - FIXED



## GENERAL NOTES:

- 1) ALL RAILING IS TO BE FABRICATED AND ERECTED ACCORDING TO SECTION 525 OF THE STANDARD SPECIFICATIONS.
- 2) PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16\".
- 3) BOLTS SHALL BE TORQUED SNUG TIGHT (APPROXIMATELY 100 FT-LB).
- 4) RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPER STRUCTURE EXPANSION JOINTS. EXPANSION JOINT WIDTH SHALL BE 4\"@ 68°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
- 5) RETROREFLECTIVE MATERIAL SHALL MEET THE REQUIREMENTS OF SUBSECTION 750.08 AND SHALL BE A .063\" ALUMINUM BACKING WHITE OR YELLOW REFLECTOR. WHITE IS TO BE INSTALLED ON THE DRIVERS RIGHT. FOR ONE WAY BRIDGES, YELLOW IS TO BE INSTALLED ON THE DRIVERS LEFT.
- 6) PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE BOX BEAM RAILS, SPLICE TUBES AND FILL PLATES.
- 7) THE MINIMUM DISTANCE FROM THE POST TO AN EXPANSION JOINT SHALL BE DETERMINED BY THE MINIMUM EDGE DISTANCE OF 5' FROM ANY ANCHOR STUD TO THE END OF THE SLAB, OR THE EXPANSION JOINT RECESS POUR, IF ONE IS USED.
- 8) ALL POST SHALL BE SET NORMAL TO GRADE. THE MAXIMUM CENTER TO CENTER SPACING OF BRIDGE RAIL POST IS 8' 3\".
- 9) ANY BENDING OF RAIL SHALL BE DONE AT THE FABRICATION PLANT.
- 10) STD. SPLICE HOLES ONLY IN BRIDGE RAIL TUBES. REST TO BE DRILLED BY CUSTOMER. FIELD DRILLED HOLES TO BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
- 11) THIS RAILING MEETS THE REQUIREMENTS FOR A TL-4 SERVICE LEVEL.

Vermont Agency of Transportation  
**RECEIVED**  
 ON: May 7, 2013  
 and Checked for  
**CONFORMANCE**  
 BY: Rob Young DATE: 06/07/2013



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <input checked="" type="checkbox"/> No Exception Taken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | T-Y-LININTERNATIONAL |
| <input type="checkbox"/> Make Correction as Noted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |
| <input type="checkbox"/> Submit Specified Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |
| <input type="checkbox"/> Revise and Resubmit as Noted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      |
| <input type="checkbox"/> Rejected                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |
| Checking is for general compliance with the design concept of the project and general compliance with the information given in the contract documents only. Any action shown is not an approval and is subject to the requirements of the plans and specifications. Any action shown on a specific item shall not indicate the checking of an assembly of which the item is a component. Contractor is solely responsible for dimensions which shall be confirmed and correlated at the job site, fabrication processes, techniques of construction, safety precautions, and coordination of its work with that of all other trades and the satisfactory performance of its work. |                      |
| Reviewed By: <i>[Signature]</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Date: 06-03-2013     |

ITEM #: 525.335 GEN CONTR: F.R. LAFAYETTE, P.O. 27767

SHEET 2 OF 2

APPROVED BY:

**BRIDGE RAIL DETAILS SHEET**  
 PROJECT: PLYMOUTH BR BR 0149 (5) VT 100A (MAJOR COLLECTOR) BRIDGE NO. 8  
 TOWN OF PLYMOUTH, WINDSOR COUNTY, VERMONT



**ELDERLEE, INC.**  
 OAKS CORNERS, NEW YORK 14518  
 E-Mail: dlong@elderlee.com  
 Tel: 315-789-6670 Fax: 315-789-6615



| NO. | DATE | DESCRIPTION | BY | NO. | DATE | DESCRIPTION | BY |
|-----|------|-------------|----|-----|------|-------------|----|
| 1   |      |             |    | 1   |      |             |    |
| 2   |      |             |    | 2   |      |             |    |
| 3   |      |             |    | 3   |      |             |    |
| 4   |      |             |    | 4   |      |             |    |
| 5   |      |             |    | 5   |      |             |    |
| 6   |      |             |    | 6   |      |             |    |
| 7   |      |             |    | 7   |      |             |    |
| 8   |      |             |    | 8   |      |             |    |
| 9   |      |             |    | 9   |      |             |    |
| 10  |      |             |    | 10  |      |             |    |
| 11  |      |             |    | 11  |      |             |    |
| 12  |      |             |    | 12  |      |             |    |
| 13  |      |             |    | 13  |      |             |    |
| 14  |      |             |    | 14  |      |             |    |
| 15  |      |             |    | 15  |      |             |    |
| 16  |      |             |    | 16  |      |             |    |
| 17  |      |             |    | 17  |      |             |    |
| 18  |      |             |    | 18  |      |             |    |
| 19  |      |             |    | 19  |      |             |    |
| 20  |      |             |    | 20  |      |             |    |

|             |                       |          |
|-------------|-----------------------|----------|
| DRAWN       | D.L.                  | 12/13/12 |
| CHECKED     | E.P.                  | 12/13/12 |
| APPROVED    |                       |          |
| SCALE       | SCHMATIC              |          |
| DRAWING NO. | F.R.L. PLYMOUTH 27767 |          |