

STATE OF VERMONT AGENCY OF TRANSPORTATION



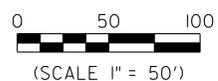
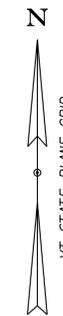
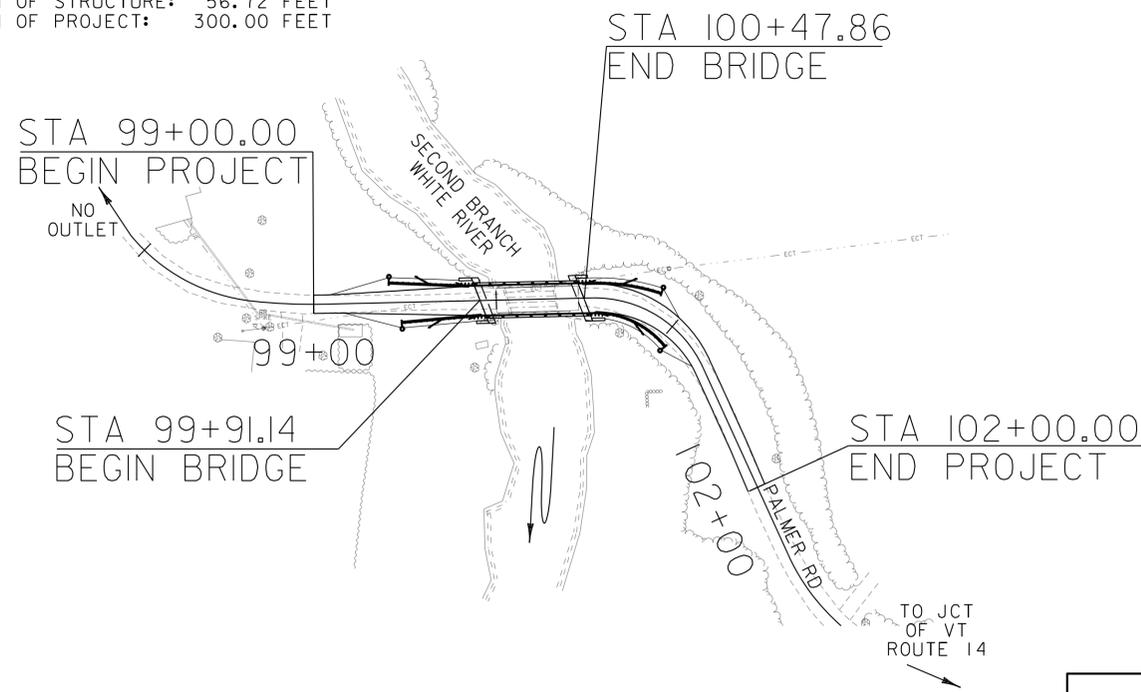
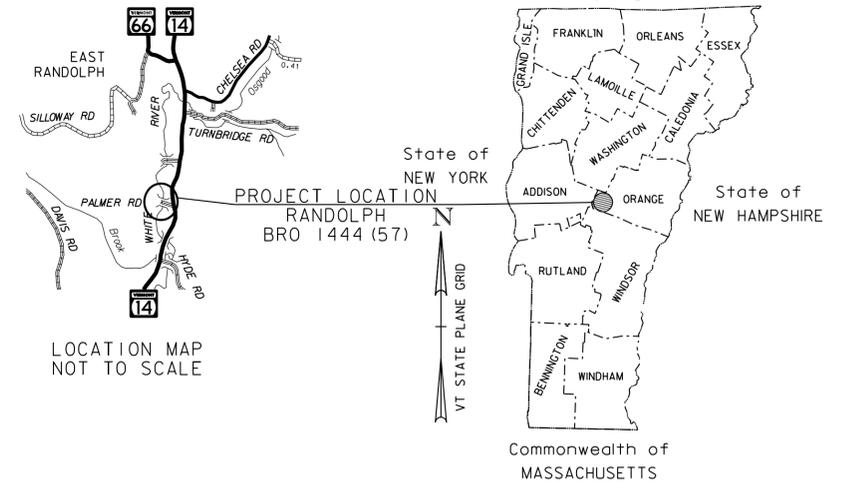
PROPOSED IMPROVEMENT BRIDGE PROJECT TOWN OF RANDOLPH COUNTY OF ORANGE

TOWN HIGHWAY 65 (PALMER ROAD) CLASS 3 LOCAL ROAD - BRIDGE NO. 35

PROJECT LOCATION: LOCATED IN THE TOWN OF RANDOLPH, ON TOWN HIGHWAY 65, BEGINNING FROM A POINT APPROXIMATELY 700 FEET WEST OF THE INTERSECTION WITH VT ROUTE 14 AND EXTENDING EASTERLY 300 FT TO A POINT APPROXIMATELY 400 FEET WEST OF THE INTERSECTION WITH VT ROUTE 14.

PROJECT DESCRIPTION: WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES REPLACEMENT OF THE EXISTING STRUCTURE WITH A NEW STRUCTURE INCLUDING RELATED ROADWAY AND CHANNEL WORK.

LENGTH OF ROADWAY: 243.28 FEET
LENGTH OF STRUCTURE: 56.72 FEET
LENGTH OF PROJECT: 300.00 FEET



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.

QUALITY ASSURANCE PROGRAM : LEVEL 2
SURVEYED BY : VTRANS
SURVEYED DATE : 12/11/2012
DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)



540 Commercial Street
Manchester, NH 03101
(603) 668-8223
www.cldengineers.com

DIRECTOR OF PROJECT DELIVERY
APPROVED _____ DATE _____
PROJECT MANAGER : TODD SUMNER, P.E.
PROJECT NAME : RANDOLPH
PROJECT NUMBER : BRO 1444(57)
SHEET 1 OF 39 SHEETS

CLD 12-0175 MODEL: T1116

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STRUCTURES DETAILS

SD-501.00	CONCRETE DETAILS AND NOTES	02-09-2012
SD-502.00	CONCRETE DETAILS AND NOTES	10-10-2012

STANDARDS LIST

B-5	SLOPE GRADING, EMBANKMENTS, MUCK	06-01-1994
G-1b	BOX BEAM GUARDRAIL	06-01-1994
S-364A	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	04-23-2012
S-364B	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	04-23-2012
S-364C	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	04-23-2012
S-364D	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	04-23-2012
T-1	TRAFFIC CONTROL GENERAL NOTES	08-06-2012
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-28	CONSTRUCTION SIGN DETAILS	08-06-2012
T-40	DELINEATORS AND MILEPOSTS	01-02-2013
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: September 27, 2013

DRAINAGE AREA : 47.3 SQ. MI
 CHARACTER OF TERRAIN : HILLY TO MOUNTAINOUS
 STREAM CHARACTERISTICS : STRAIGHT, NON-ALLUVIAL, AND PERENNIAL CHANNEL
 NATURE OF STREAMBED : GRAVEL AND COBBLES WITH SILT

PEAK FLOW DATA

Q 2.33 =	1510 CFS	Q 50 =	7060 CFS
Q 10 =	3730 CFS	Q 100 =	8570 CFS
Q 25 =	5390 CFS	Q 500 =	13810 CFS

DATE OF FLOOD OF RECORD : UNKNOWN
 ESTIMATED DISCHARGE : N/A
 WATER SURFACE ELEV. : N/A
 NATURAL STREAM VELOCITY : @ Q25 = 8.2 FPS
 ICE CONDITIONS : MODERATE
 DEBRIS : MODERATE
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? NO
 IS ORDINARY RISE RAPID? NO
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO
 IF YES, DESCRIBE :

WATERSHED STORAGE : 1% HEADWATERS :
 UNIFORM : X
 IMMEDIATELY ABOVE SITE :

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE : CONCRETE JACK ARCH WITH STONE ABUTMENTS
 YEAR BUILT : 1919
 CLEAR SPAN(NORMAL TO STREAM) : 26 FT
 VERTICAL CLEARANCE ABOVE STREAMBED : 9.5 FT (EL. 571.7 FT)
 WATERWAY OF FULL OPENING : 240 SQ. FT.
 DISPOSITION OF STRUCTURE : REPLACEMENT
 TYPE OF MATERIAL UNDER SUBSTRUCTURE : SEE BORINGS

WATER SURFACE ELEVATIONS AT:

Q2.33 =	571.3 FT	VELOCITY =	9.1 FPS
Q10 =	576.2 FT	"	8.0 FPS
Q25 =	577.3 FT	"	8.2 FPS
Q50 =	578.0 FT	"	8.8 FPS
Q100 =	578.5 FT	"	9.3 FPS

LONG TERM STREAMBED CHANGES : MINIMAL DUE TO LARGE SIZE OF
 STREAMBED MATERIAL

IS THE ROADWAY OVERTOPPED BELOW Q100 : YES
 FREQUENCY : Q10
 RELIEF ELEVATION : 573.6 FT
 DISCHARGE OVER ROAD @Q100 : 1438 CFS

UPSTREAM STRUCTURE

TOWN : RANDOLPH DISTANCE : 0.5 MI
 HIGHWAY# : TH NO. 64 STRUCTURE # : 38
 CLEAR SPAN : 33 FT CLEAR HEIGHT : UNKNOWN
 YEAR BUILT : 1904 (REBUILT 2008) FULL WATERWAY : UNKNOWN
 STRUCTURE TYPE : ROLLED BEAM / SEMI KG POST - COVERED BRIDGE

DOWNSTREAM STRUCTURE

TOWN : RANDOLPH DISTANCE : 0.4 MI
 HIGHWAY# : VT 14 STRUCTURE # : 34
 CLEAR SPAN : 55 FT CLEAR HEIGHT : UNKNOWN
 YEAR BUILT : 1995 FULL WATERWAY : UNKNOWN
 STRUCTURE TYPE : ROLLED BEAM

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR.	4A STR.	5A SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	1.50	1.02					
POSTING							
OPERATING	1.88	1.33	1.86	1.04	1.35	1.23	1.47
COMMENTS:							

AS BUILT "REBAR" DETAIL		
LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	
2014	15	2	64	7.3	1	20 year ESAL for flexible pavement from 2014 to 2034 : 4000
2034	20	2	64	9	2	40 year ESAL for flexible pavement from 2014 to 2054 : 9000
						Design Speed : 25 mph

PROPOSED STRUCTURE

STRUCTURE TYPE : CONCRETE NEXT BEAMS ON INTEGRAL ABUTMENTS
 CLEAR SPAN(NORMAL TO STREAM) : 47 FT
 VERTICAL CLEARANCE ABOVE STREAMBED : 9.7 FT (EL. 571.9 FT)
 WATERWAY OF FULL OPENING : 354 SQ. FT.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	570.7 FT	VELOCITY =	6.0 FPS
Q10 =	575.8 FT	"	8.4 FPS
Q25 =	577.1 FT	"	8.2 FPS
Q50 =	577.9 FT	"	8.9 FPS
Q100 =	578.4 FT	"	9.3 FPS

IS THE ROADWAY OVERTOPPED BELOW Q100 : YES
 FREQUENCY : Q10
 RELIEF ELEVATION : 574.0 FT
 DISCHARGE OVER ROAD @Q100 : 642 CFS

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE : 572.4 FT
 VERTICAL CLEARANCE : @Q25 = -4.7 FT (SUBMERGED)

SCOUR : CONTRACTION SCOUR - 0 FT

REQUIRED CHANNEL PROTECTION : TYPE IV STONE FILL

PERMIT INFORMATION

AVERAGE DAILY FLOW : 400 CFS DEPTH OR ELEVATION :
 ORDINARY LOW WATER : 250 CFS 565.9 FT
 ORDINARY HIGH WATER : 648 CFS 567.9 FT

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE : NO TEMPORARY STRUCTURE
 CLEAR SPAN (NORMAL TO STREAM) : N/A
 VERTICAL CLEARANCE ABOVE STREAMBED : N/A
 WATERWAY AREA OF FULL OPENING : N/A

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	d _p : 2.5 INCH
3. DESIGN SPAN	L : 53.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ : 0.81 INCH
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f _y : 270 KSI
6. PRESTRESSED CONCRETE STRENGTH	f' _c : 6.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f' _{cr} : 4.8 KSI
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f' _c : ---
9. CONCRETE, HIGH PERFORMANCE CLASS A	f' _c : ---
10. CONCRETE, HIGH PERFORMANCE CLASS B	f' _c : ---
11. CONCRETE, CLASS C	f' _c : ---
12. REINFORCING STEEL	f _y : 60 KSI
13. STRUCTURAL STEEL AASHTO M270	f _y : ---
14. SOIL UNIT WEIGHT	γ : 0.125 KCF
15. NOMINAL BEARING RESISTANCE OF SOIL	q _n : ---
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ : ---
17. NOMINAL BEARING RESISTANCE OF ROCK	q _n : ---
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ : 0.45
19. NOMINAL AXIAL PILE RESISTANCE	q _p : 270.3 KIPS
20. PILE YIELD STRENGTH ASTM A572	f _y : 50 KSI
21. PILE SIZE	HP 12X63
22. EST. PILE LENGTHS (TWO SUBSTRUCTURES) (ABUTMENT 1 = 40 AND ABUTMENT 2 = 50) FT	L _p :
23. PILE RESISTANCE FACTOR	φ : 0.50
24. LATERAL PILE DEFLECTION	Δ : 0.18 INCH
25. BASIC WIND SPEED	V _{3s} : ---
26. MINIMUM GROUND SNOW LOAD	p _g : ---
27. SEISMIC DATA	PGA : 8 %g S _s : 18 %g S ₁ : 5 %g

PROJECT NAME : RANDOLPH

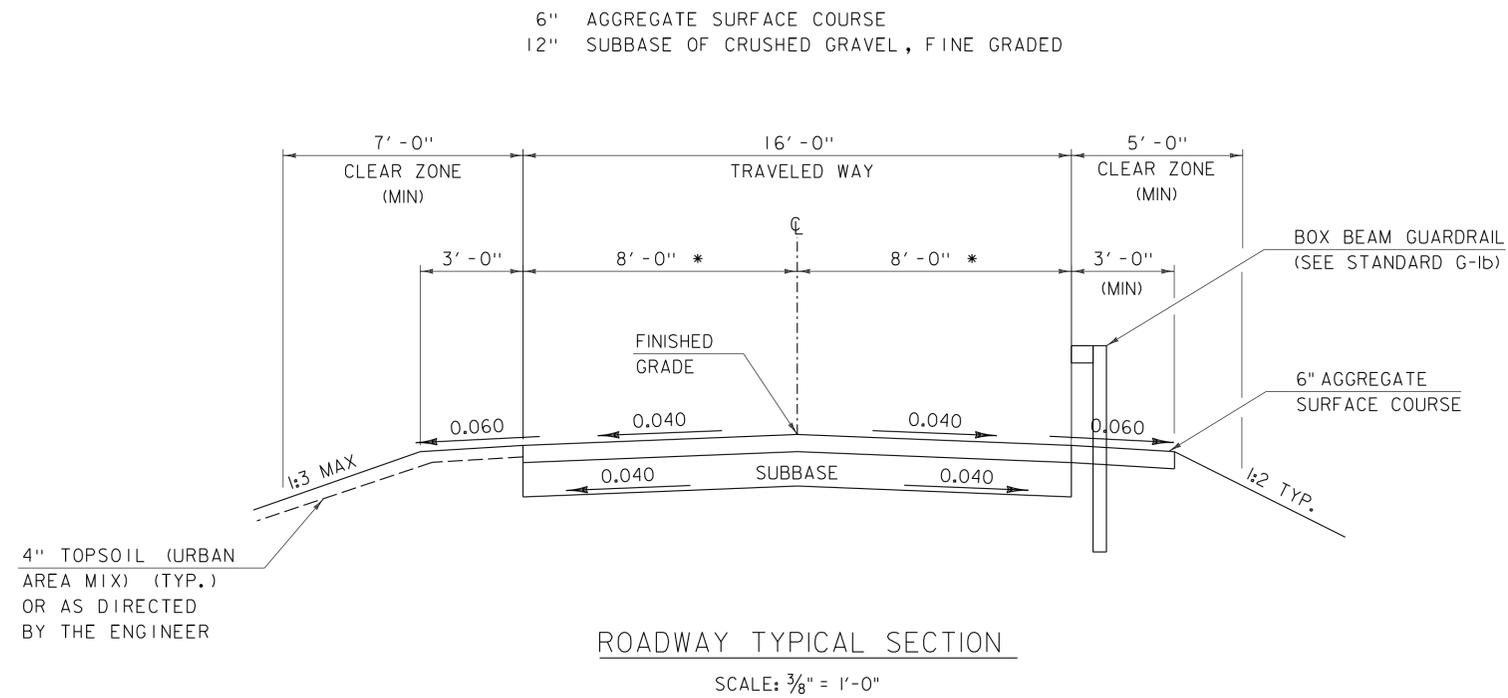
PROJECT NUMBER : BRO 1444(57)

FILE NAME : z11j078pi.xls PLOT DATE : 3/12/2014
 PROJECT LEADER : J. BYATT DRAWN BY : S. GOODWIN
 DESIGNED BY : N. CARON CHECKED BY : J. BYATT
 PRELIMINARY INFORMATION SHEET SHEET 2 OF 39

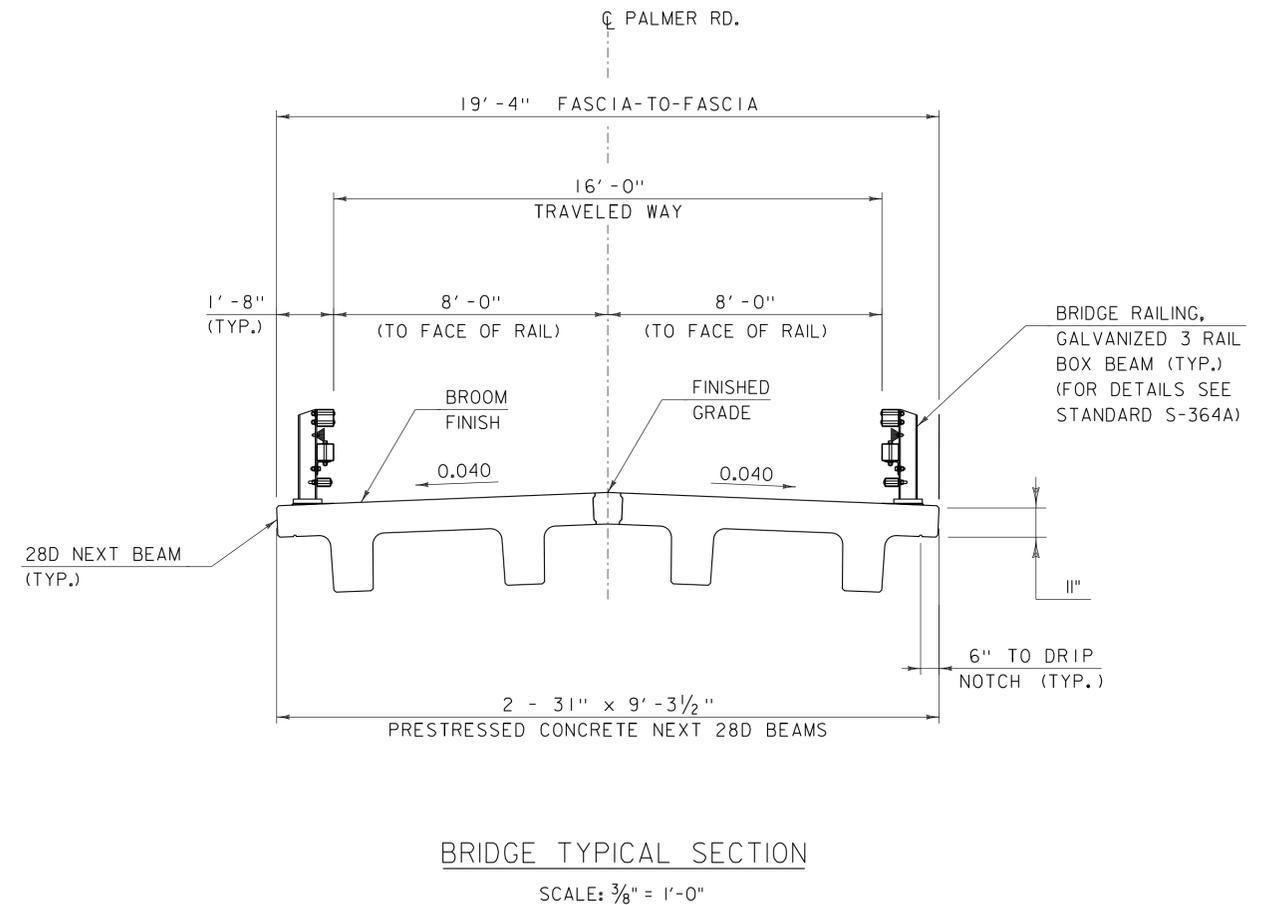
MATERIAL TOLERANCES

(IF USED ON PROJECT)

SURFACE	
- AGGREGATE SURFACE COURSE	+/- 1/2"
- SUBBASE	+/- 1"



*WIDTH OF GRAVEL ROAD APPROACH TO BRIDGE VARIES FROM 16' AT BRIDGE TO 10' TO MATCH EXISTING ROAD WIDTH. SEE LAYOUT SHEET.



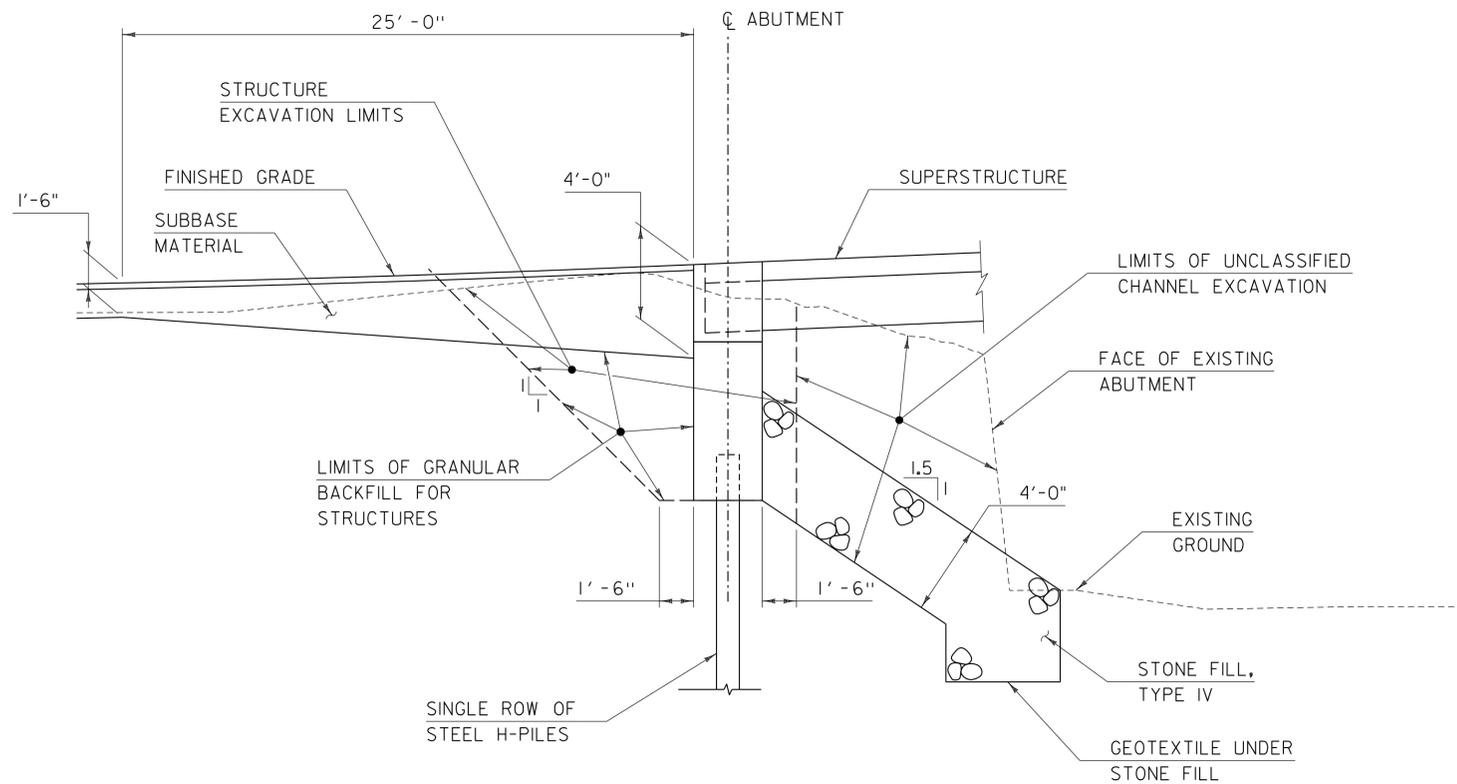
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PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078+yp.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: J. SMITH
TYPICAL SECTIONS

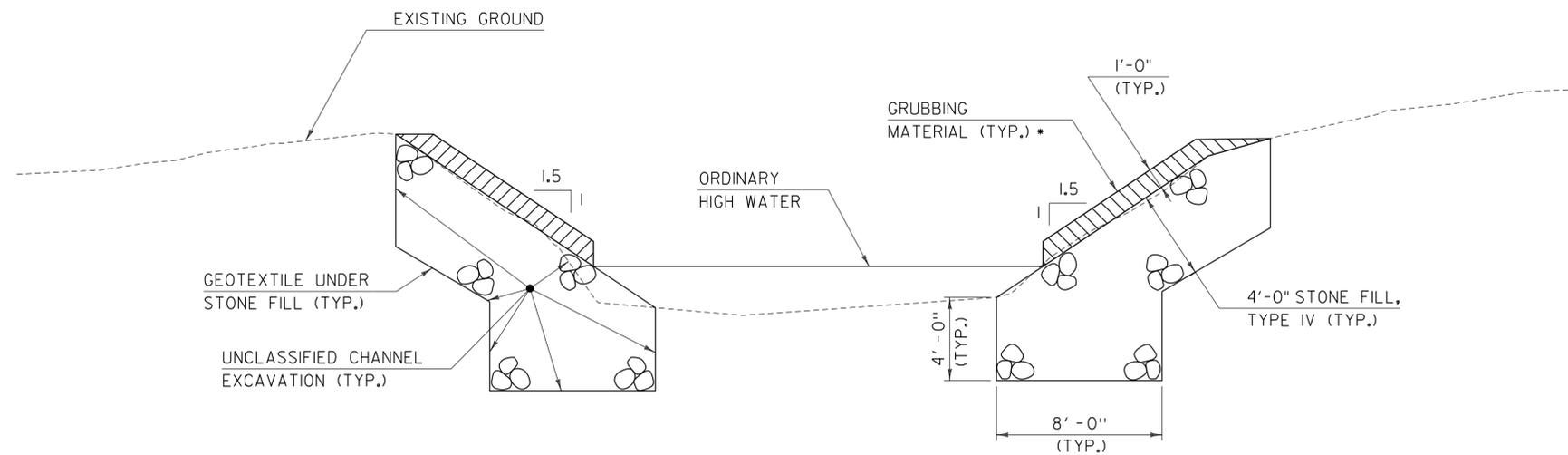
PLOT DATE: 9/9/2014
DRAWN BY: J. SMITH
CHECKED BY: D. MUNRO
SHEET 3 OF 39



ABUTMENT EARTHWORKS TYPICAL SECTION

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

NOTE: ACTUAL EXCAVATION LIMITS SHALL BE DETERMINED BY THE CONTRACTOR. HOWEVER ONLY THE EXCAVATION BETWEEN THE LIMITS SHOWN WILL BE PAID FOR UNDER ITEM 204.25, "STRUCTURE EXCAVATION". ALL NECESSARY EXCAVATION OUTSIDE OF THESE LIMITS SHALL BE PAID FOR UNDER ITEM 203.27, "UNCLASSIFIED CHANNEL EXCAVATION".



CHANNEL TYPICAL SECTION

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

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

PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078sub.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: N. CARON
TYPICAL EARTHWORK SECTIONS

PLOT DATE: 9/9/2014
DRAWN BY: M. SMITH
CHECKED BY: J. BYATT
SHEET 4 OF 39



GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2012, AND ITS LATEST REVISIONS.
2. THE BRIDGE WAS DESIGNED FOR THE HL-93 LIVE LOAD WITH AN ALLOWANCE FOR 2½" OF FUTURE PAVEMENT.
3. ALL PRECAST CONCRETE ELEMENTS TO BE FABRICATED TO THE SPECIFIED DIMENSIONS WITHIN THE TOLERANCES DICTATED IN THE PRECAST/PRESTRESSED CONCRETE INSTITUTE TOLERANCE MANUAL FOR PRECAST AND PRESTRESSED CONCRETE CONSTRUCTION, MNL 135-00, AND ITS LATEST REVISIONS.
4. DUE TO STABILITY CONCERNS AT THE ABUTMENTS DURING THE ERECTION OF THE SUPERSTRUCTURE THE CONTRACTOR SHALL SUBMIT THE ERECTION PLAN A MINIMUM OF 30 WORKING DAYS PRIOR TO THE BRIDGE CLOSURE PERIOD. UNDER NO CIRCUMSTANCES SHALL A BRIDGE CLOSURE PERIOD BEGIN PRIOR TO HAVING AN ACCEPTED ERECTION PLAN.
5. THE METHOD OF FORMING FOR SUBSEQUENT POURS AFTER PLACING PRECAST/PRESTRESSED SUPERSTRUCTURE UNITS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR IS ENCOURAGED TO WORK WITH THE FABRICATOR IF ADDITIONAL SUPPORTS MAY BE REQUIRED. IN NO CASE SHALL THE CONTRACTOR ATTACH ADDITIONAL FORM OR SCREED SUPPORTS BY DRILLING OR SIMILAR MEANS INTO ANY PRECAST/PRESTRESSED SUPERSTRUCTURE UNIT.
6. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL AND VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
7. THE CONTRACTOR SHALL BE MADE AWARE THAT EXISTING UTILITIES ARE WITHIN THE CONSTRUCTION LIMITS OF BRIDGE 35. THE UTILITIES WILL BE RELOCATED BY OTHERS PRIOR TO THE START OF CONSTRUCTION. THE LOCATION OF ANY UTILITY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE. NO CLAIMS ARE MADE AS TO THE ACCURACY OR COMPLETENESS OF THE UTILITIES SHOWN. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR LOCATING AND PROTECTING FROM DAMAGE ALL UTILITIES ON SITE DURING ALL STAGES OF CONSTRUCTION. SEE LAYOUT PLAN AND SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
8. NO SUBSTITUTION FOR PRECAST CONCRETE WILL BE PERMITTED.
9. A TEMPORARY DETOUR ACCESS ROAD ON THE WEST SIDE OF THE RIVER WILL BE USED BY THE HOMEOWNER AT THE END OF PALMER ROAD DURING THE BRIDGE CLOSURE PERIOD. THE TOWN OF RANDOLPH IS RESPONSIBLE FOR THE TEMPORARY ACCESS ROAD AND IT IS ONLY INTENDED TO BE USED BY THE HOMEOWNER AND TOWN EMERGENCY VEHICLES. NO CONSTRUCTION VEHICLES OR EQUIPMENT SHALL USE THIS ACCESS FOR ANY PURPOSE, AS INDICATED IN THE ENVIRONMENTAL STIPULATIONS FOR THE PROJECT.
10. THE CONTRACTOR SHALL REVIEW AND UNDERSTAND ALL APPLICABLE ENVIRONMENTAL PERMITS AND ENSURE THAT ALL CONSTRUCTION CONDITIONS ARE MET.
11. SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD SHEET B-5.

EARTHWORK

12. REMOVAL OF THE EXISTING STRUCTURE SHALL BE UNDER ITEM 529.15, "REMOVAL OF STRUCTURE (EXISTING ORIGINAL STRUCTURE)". THIS WORK SHALL INCLUDE REMOVAL OF ANY PORTIONS OF THE EXISTING STRUCTURE, INCLUDING EXISTING GUARDRAIL, THE SUPERSTRUCTURE, ABUTMENTS, AND WINGWALLS, THAT FALL OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION. REMOVAL OF THE TEMPORARY BRIDGE SHALL BE PAID UNDER ITEM 529.15, "REMOVAL OF STRUCTURE (EXISTING TEMPORARY STRUCTURE)". SEE NOTE 47 FOR MORE DETAILS.
13. THE "STONE FILL, TYPE IV" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW BEAMS ARE SET.

CONCRETE AND REINFORCING STEEL

14. "WATER REPELLENT, SILANE" SHALL BE APPLIED IN ACCORDANCE WITH SECTION 514 TO ALL EXPOSED CONCRETE ON THE BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE, WITH THE EXCEPTION OF THE BOTTOM OF THE PRECAST NEXT BEAMS BETWEEN DRIP NOTCHES. THIS WORK SHALL BE PAID FOR UNDER THE CONTRACT OPTIONAL PRECAST ABUTMENT BID ITEM, OR CONTRACT ITEM 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAMS) (NEXT 28 D)" AS APPROPRIATE.
15. ALL CONCRETE PLACED INTEGRALLY WITH THE SUPERSTRUCTURE SHALL BE ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
16. ALL PRECAST SUBSTRUCTURE CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 540 - PRECAST CONCRETE.
17. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".
18. PAYMENT FOR REINFORCING STEEL IN PRECAST OR PRESTRESSED COMPONENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE PRECAST OR PRESTRESSED CONCRETE CONTRACT ITEM. ALL REINFORCING STEEL PLACED WITHIN THE BEAM-END CLOSURE POURS SHALL BE PAID FOR UNDER CONTRACT OPTIONAL PRECAST ABUTMENT BID ITEM. ALL REINFORCING STEEL PLACED WITHIN THE NEXT BEAM FLANGE CLOSURE POUR SHALL BE PAID FOR UNDER CONTRACT ITEM 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAMS) (28D)".
19. ALL REINFORCING STEEL IN THE PRECAST ABUTMENTS SHALL MEET THE REQUIREMENTS FOR REINFORCING STEEL, LEVEL 1, UNLESS NOTED OTHERWISE. ALL REINFORCING STEEL IN THE NEXT BEAMS, NEXT BEAM FLANGE CLOSURE POUR, BEAM-END CLOSURE POUR, AND PRECAST WINGWALLS SHALL MEET THE REQUIREMENTS FOR REINFORCING STEEL, LEVEL 1, EPOXY COATED.
20. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

ALONG BACK FACES OF WALLS AGAINST EARTH:	2.00 INCHES
ALONG TOP SURFACE OF DECK SLAB:	3.50 INCHES
ALONG BOTTOM SURFACE OF DECK SLAB:	1.75 INCHES
BEAM-END CLOSURE POUR:	2.00 INCHES
ELSEWHERE UNLESS OTHERWISE INDICATED:	3.00 INCHES
21. TEST BARS SHALL BE PROVIDED IN ACCORDANCE WITH THE "VERMONT AGENCY OF TRANSPORTATION MATERIALS SAMPLING MANUAL".

H-PILES

22. TO PREVENT DAMAGE TO THE PILES, PILE SHOES ARE REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04 (f).
23. THE TOPS OF THE PILES AFTER DRIVING SHALL NOT VARY FROM THE POSITION SHOWN ON THE PLANS BY MORE THAN THREE INCHES. THE PILE ORIENTATION SHALL NOT VARY BY MORE THAN FIVE DEGREES. THE CONTRACTOR SHALL DEMONSTRATE TO THE SATISFACTION OF THE ENGINEER HOW THE TOLERANCES WILL BE MET. THESE MEASURES SHALL BE DEMONSTRATED IN A SUBMITTAL TO BE ACCEPTED BEFORE PILE DRIVING COMMENCES.
24. THE PILES SHALL BE DRIVEN TO A NOMINAL PILE DRIVING RESISTANCE (RNDR) OF 207.9 KIPS, AS DETERMINED BY THE RESULTS OF DYNAMIC TESTING, AND AS INTERPRETED BY THE ENGINEER. HOWEVER, THE PILES SHALL BE DRIVEN TO A MINIMUM DEPTH OF 20 FEET BELOW THE BOTTOM OF THE PRECAST ABUTMENT.
25. TO ENSURE THAT THE NOMINAL CAPACITY HAS BEEN ATTAINED AND TO PREVENT THE OVERSTRESSING OF THE PILES DURING DRIVING OPERATIONS, DYNAMIC TESTING SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 505. A MINIMUM OF ONE DYNAMIC PILE TEST SHALL BE CONDUCTED ON THE FIRST PILE DRIVEN FOR EACH SUBSTRUCTURE UNIT, FOR A TOTAL OF TWO TESTS. MORE TESTS MAY BE ORDERED BY THE ENGINEER. ADDITIONAL TEST(S) ORDERED BY THE ENGINEER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR CONTRACT ITEM 505.45.
26. STRESSES IN THE PILE DURING DRIVING SHALL NOT EXCEED THE MAXIMUM DRIVING STRESS. THE MAXIMUM DRIVING STRESS SHALL BE DETERMINED AS 90 PERCENT OF THE PILE STEEL STRENGTH MULTIPLIED BY A RESISTANCE FACTOR OF 1.00.
27. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED TO BE AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTH MAY VARY.

PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11J078gennotes.dgn	PLOT DATE: 9/9/2014
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: N. CARON	CHECKED BY: J. BYATT
PROJECT NOTES (1 OF 2)	SHEET 5 OF 39

PRECAST ABUTMENTS AND POST-TENSIONING

28. THE UNIT PRICE FOR EACH PRECAST ABUTMENT SHALL INCLUDE THE ASSOCIATED WINGWALLS AND ALL LABOR AND MATERIALS TO CONNECT THE WINGWALLS TO THE ABUTMENT. THIS WORK SHALL BE PAID FOR UNDER THE CONTRACT OPTIONAL PRECAST ABUTMENT BID ITEM.
29. WATERSTOPS SHALL BE PLACED AT THE JOINT BETWEEN THE PRECAST ABUTMENTS AND CAST-IN-PLACE END DIAPHRAGMS. THIS WORK SHALL BE PAID FOR UNDER THE CONTRACT OPTIONAL PRECAST ABUTMENT BID ITEM.
30. IF VERTICAL CONSTRUCTION JOINTS ARE REQUIRED BY THE CONTRACTOR FOR SHIPPING OF THE ABUTMENTS THEN THE SECTIONS SHALL BE KEYED AND MATCH CAST. A JOINT DETAIL SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
31. POST-TENSIONING AND ASSOCIATED ITEMS ARE ONLY REQUIRED IF THE PRECAST ABUTMENT IS CONSTRUCTED OF MORE THAN ONE UNIT. ANY POST-TENSIONING STRANDS AND CONDUIT SHALL ADHERE TO THE REQUIREMENTS OF SECTION 510 - PRESTRESSED CONCRETE. GALVANIZED ANCHOR ASSEMBLIES, CONDUIT, AND POST-TENSIONING STRANDS SHALL BE INCLUDED UNDER THE CONTRACT OPTIONAL PRECAST ABUTMENT BID ITEM. POST-TENSIONING STRANDS SHALL BE COVERED WITH SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF THE STRAND, EXCEPT AT ANCHORAGE LOCATIONS.
32. GALVANIZE ANCHOR ASSEMBLIES AFTER FABRICATION ACCORDING TO AASHTO M232M/M232.
33. DESIGN VALUES:
- A. CONCRETE COMPRESSIVE STRENGTH: $f'_c = 5,000$ PSI.
 - B. POST-TENSIONING STRANDS: 0.5 INCH DIAMETER, 270 KSI, LOW RELAXATION 7-WIRE STRANDS.
 - C. ASSUMED MODULUS OF ELASTICITY IS 28,500 KSI.
 - D. THERE SHALL BE TWO STRANDS PER CONDUIT.
 - E. JACKING FORCE PER STRAND: 32 KIPS
34. THE CONCRETE FOR THE ABUTMENT #1 AND ABUTMENT #2 PILE CAVITIES SHALL MEET THE REQUIREMENTS OF ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
35. THE CORRUGATED STEEL PIPE SHALL BE TYPE 1 AND SHALL MEET THE REQUIREMENTS OF SUBSECTION 711.01 AND AASHTO M289. ALL COST ASSOCIATED WITH PLACING THE CORRUGATED STEEL PIPE SHALL BE INCLUDED IN THE CONTRACT OPTIONAL PRECAST ABUTMENT BID ITEM.
36. PROPOSED SEQUENCE OF CONSTRUCTION:
- A. PREPARE AND GRADE FOUNDATION TO REQUIRED ELEVATION.
 - B. DRIVE PILES.
 - C. PLACE PRECAST ABUTMENTS AND INSTALL TRANSVERSE STRANDS (IF MORE THAN ONE UNIT IS USED).
 - D. APPLY EPOXY BONDING COMPOUND TO MATCH CAST FACES OF VERTICAL CONSTRUCTION JOINT (IF MORE THAN ONE UNIT IS USED).
 - E. USE A CALIBRATED JACK TO TENSION TO 3 KIPS TO REMOVE SAG IN STRANDS.
 - F. CHECK ALIGNMENT OF PRECAST ABUTMENT ELEMENTS.
 - G. STRESS POST-TENSIONING STRANDS USING A CALIBRATED JACK.
 - H. FILL PILE CAVITIES WITH ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
 - I. PLACE PRECAST WINGWALLS AND GROUT SPLICE CONNECTORS.
 - J. BACKFILL MAY BE COMPLETED AFTER SPLICE CONNECTOR GROUT HAS REACHED 85% OF 5,000 PSI.
37. ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED TO THE VTRANS PROJECT MANAGER FOR APPROVAL.

NEXT D BEAMS

38. NEXT D BEAMS ARE A NON-PROPRIETARY SHAPE DEVELOPED BY PCI NORTHEAST (PCINE). STANDARDIZED SECTION PROPERTIES AND DETAILS MAY BE FOUND AT <http://www.pcine.org>.
39. DESIGN VALUES:
- A. CONCRETE DESIGN COMPRESSIVE STRENGTH: $f'_c = 6,000$ PSI.
 - B. CONCRETE COMPRESSIVE STRENGTH AT RELEASE: $f'_{ci} = 4,800$ PSI.
 - C. PRESTRESSING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW-RELAXATION 7-WIRE STRANDS.
 - D. ASSUMED MODULUS OF ELASTICITY: 28,500 KSI.
 - E. JACKING FORCE PER STRAND: 44 KIPS.
 - F. SERVICE LOADS:
- | | |
|-------------------------------|----------------------|
| MEMBER MOMENT | 634.6 K-FT |
| SUPERIMPOSED DEAD LOAD MOMENT | 173.7 K-FT |
| LIVE LOAD AND IMPACT MOMENT | 797.1 K-FT |
| DEAD LOAD REACTION | 74.1 KIPS |
| LIVE LOAD AND IMPACT REACTION | 50.7 KIPS |
| TOTAL REACTION | 124.8 KIPS |
| CAMBER AT RELEASE | $\frac{1}{8}$ INCHES |
| FINAL CAMBER | $\frac{1}{8}$ INCHES |
40. ENDS OF FLANGES IN CONTACT WITH GROUT SHALL BE SANDBLASTED PRIOR TO DELIVERY AND POWER WASHED WITH WATER PRIOR TO ERECTION OF THE BEAMS.
41. FILL THE FLANGE TO FLANGE CONNECTION WITH ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
42. THE TOP FLANGE OF THE NEXT BEAMS, TOP OF THE FLANGE CONNECTION POUR, AND TOP OF THE BEAM-END CLOSURE POUR SHALL RECEIVE A BROOM FINISH. THE COST OF APPLYING THE BROOM FINISH SHALL BE INCLUDED IN CONTRACT ITEM 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAMS) (NEXT 28 D)" OR CONTRACT ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)", AS APPROPRIATE.
43. METHOD OF FORMING FLANGE CONNECTION SHALL BE DETERMINED BY THE CONTRACTOR. THE FORMS SHALL BE REMOVABLE AND ABLE TO ACCOMMODATE DIFFERENTIAL CAMBER. FORM SUPPORTS SHALL NOT PENETRATE THROUGH THE TOP OF POUR UNLESS APPROVED BY THE ENGINEER.
44. THE FABRICATOR MAY ALTER THE DESIGN AS DETAILED IN THESE PLANS TO ACCOMMODATE THE FABRICATOR'S SPECIFIC OPERATION. THIS ALTERATION MUST BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT, MEET THE ABOVE CRITERIA, AND SHALL BE APPROVED BY THE PROJECT MANAGER.
45. PROPOSED SEQUENCE OF CONSTRUCTION:
- A. LAY OUT WORKING LINES THE ENTIRE WIDTH OF THE BRIDGE ALONG CENTERLINE OF BEARING, MEASURED FROM A SINGLE WORKING POINT. THE WORKING LINES SHALL BE BASED ON THE NOMINAL BEAM WIDTHS.
 - B. VERIFY THE BEAM SEAT ELEVATIONS AND TAKE CORRECTIVE ACTION IF NECESSARY.
 - C. INSTALL BEARINGS.
 - D. ERECT THE BEAMS TO FIT WITHIN THE WORKING LINES.
 - E. ADJUST BEAMS TO FIT SNUG AGAINST $\frac{1}{2}$ " CORK ON INTERIOR OF CHEEK WALLS.
 - F. CONSTRUCT FORMS FOR THE FLANGE CONNECTION POUR AND BEAM-END CLOSURE POUR.
 - G. GROUT CONNECTIONS BETWEEN BEAM FLANGES, APPLY LONGITUDINAL GROOVES IN ACCORDANCE WITH SECTION 509, AND CURE.
 - H. COMPLETE BEAM-END CLOSURE POUR TO TOP OF DECK, APPLY LONGITUDINAL GROOVES IN ACCORDANCE WITH SECTION 509, AND CURE.
46. ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED TO THE VTRANS PROJECT MANAGER FOR APPROVAL.

MISCELLANEOUS

47. A TEMPORARY BRIDGE IS IN PLACE OVER THE EXISTING STRUCTURE. REMOVAL OF THE TEMPORARY BRIDGE SHALL BE PAID FOR UNDER ITEM 529.15, "REMOVAL OF STRUCTURE (EXISTING TEMPORARY STRUCTURE)". THIS WORK SHALL INCLUDE THE REMOVAL OF ANY PORTIONS OF THE SUPERSTRUCTURE AND SUBSTRUCTURE OVERLAYING THE EXISTING STRUCTURE.
48. THE EXISTING STRUCTURAL STEEL ON THIS PROJECT WAS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE STRUCTURAL STEEL.

PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11J078gennotes.dgn	PLOT DATE: 9/9/2014
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: N. CARON	CHECKED BY: J. BYATT
PROJECT NOTES (2 OF 2)	SHEET 6 OF 39

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE 35	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	-			
							240				240		CY	COMMON EXCAVATION	203.15	5.2	235	CY	COMMON EXCAVATION
									306		306		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27		306	CY	UNCLASSIFIED CHANNEL EXCAVATION
							20				20		CY	EARTH BORROW	203.30	-	285	CY	STRUCTURE EXCAVATION
							1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I)	204.22	-	826	CY	SUBTOTAL
									266		266		CY	STRUCTURE EXCAVATION	204.25	0.7	5	CY	ROUNDING
									39		39		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	0.6	831	CY	TOTAL FILL AVAILABLE
							150				150		CY	SUBBASE OF CRUSHED GRAVEL, FINE GRADED	301.26	6.9	59	CY	TOTAL FILL REQUIRED (1.15 FACTOR)
							80				80		CY	AGGREGATE SURFACE COURSE	401.10	2.3	772	CY	TOTAL WASTE
									1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10	-			
									360		360		LF	STEEL PILING, HP 12 X 63	505.155	-			
									2		2		EACH	DYNAMIC PILE LOADING TEST	505.45	-			
									117		117		LF	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	525.335	0.5			
									1		1		EACH	REMOVAL OF STRUCTURE (400 SF. - EST.) (EXISTING ORIGINAL STRUCTURE)	529.15	-			
									1		1		EACH	REMOVAL OF STRUCTURE (629 SF. - EST.) (EXISTING TEMPORARY STRUCTURE)	529.15	-			
									8		8		EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17	-			
														BEGIN OPTION AA					
									1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #1)	540.10	-			
									1		1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT #1)	900.645				
														END OPTION AA					
														BEGIN OPTION BB					
									1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #2)	540.10	-			
									1		1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT #2)	900.645				
														END OPTION BB					
								40			40		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25	EST.			
									296		296		CY	STONE FILL, TYPE IV	613.13	0.1			
							60				60		LF	BOX BEAM GUARDRAIL	621.30	4.8			
									4		4		EACH	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	621.725	-			
										1	1		LS	FIELD OFFICE, ENGINEERS	631.10	-			
										1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16	-			
										3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I)	631.26	-			
							1				1		LS	MOBILIZATION/DEMobilIZATION	635.11	-			
							1				1		LS	TRAFFIC CONTROL	641.10	-			
									373		373		SY	GEOTEXTILE UNDER STONE FILL	649.31				
								80			80		SY	GEOTEXTILE FOR SILT FENCE	649.51	5			
								20			20		LB	SEED	651.15	6.5			
								50			50		LB	FERTILIZER	651.18	3			
								0.5			0.5		TON	AGRICULTURAL LIMESTONE	651.20	0.33			
								0.5			0.5		TON	HAY MULCH	651.25	0.33			

CLD-12-0175 MODEL-01



PROJECT NAME: RANDOLPH
 PROJECT NUMBER: BRO 1444(57)
 FILE NAME: z11j078qss.dgn
 PROJECT LEADER: J. BYATT
 DESIGNED BY: J. SMITH
 QUANTITY SHEET 1

PLOT DATE: 9/9/2014
 DRAWN BY: K. RUTTER
 CHECKED BY: D. MUNRO
 SHEET 7 OF 39

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE 35	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							50				50		CY	TOPSOIL	651.35	5			
									121		121		SY	GRUBBING MATERIAL	651.40	0.1			
								1			1		LS	EPSC PLAN	652.10	-			
							50				50		HR	MONITORING EPSC PLAN	652.20	8			
								1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I)	652.30	-			
							150				150		SY	TEMPORARY EROSION MATTING	653.20	8			
							6				6		CY	TEMPORARY STONE CHECK DAM, TYPE I	653.25	-			
							15				15		CY	VEHICLE TRACKING PAD	653.35	EST.			
								2			2		EACH	FILTER BAG	653.45	-			
							130				130		LF	BARRIER FENCE	653.50	5.8			
							350				350		LF	PROJECT DEMARCATION FENCE	653.55	0.9			
							1				1		EACH	REMOVING SIGNS	675.50	-			
							4				4		EACH	DELINEATOR WITH STEEL POST	676.10	-			
									18		18		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)	900.608	1			
									109		109		LF	SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAMS) (NEXT 28 D)	900.640	-			

CLD 12-0175 MODEL-02



PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078qss.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: J. SMITH
QUANTITY SHEET 2

PLOT DATE: 9/9/2014
DRAWN BY: K. RUTTER
CHECKED BY: D. MUNRO
SHEET 8 OF 39

GENERAL INFORMATION

SYMBOLGY LEGEND NOTE

THE SYMBOLGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLGY. THE SYMBOLGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R. O. W. ABBREVIATIONS (CODES) & SYMBOLS

POINT CODE	DESCRIPTION
CH	CHANNEL EASEMENT
CONST	CONSTRUCTION EASEMENT
CUL	CULVERT EASEMENT
D&C	DISCONNECT & CONNECT
DIT	DITCH EASEMENT
DR	DRAINAGE EASEMENT
DRIVE	DRIVEWAY EASEMENT
EC	EROSION CONTROL
HWY	HIGHWAY EASEMENT
I&M	INSTALL & MAINTAIN EASEMENT
LAND	LANDSCAPE EASEMENT
R&RES	REMOVE & RESET
R&REP	REMOVE & REPLACE
SR	SLOPE RIGHT
UE	UTILITY EASEMENT
(P)	PERMANENT EASEMENT
(T)	TEMPORARY EASEMENT
■	BNDNS BOUND SET
▣	BNDNS BOUND TO BE SET
●	IPNS IRON PIN SET
⊙	IPNS IRON PIN TO BE SET
⊠	CALC EXISTING ROW POINT
○	PROW PROPOSED ROW POINT
[LENGTH]	LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT CODE	DESCRIPTION
⊕	APL BOUND APPARENT LOCATION
□	BM BENCHMARK
▣	BND BOUND
⊠	CB CATCH BASIN
⊕	COMB COMBINATION POLE
⊕	DITHR DROP INLET THROATED DNC
⊕	EL ELECTRIC POWER POLE
○	FPOLE FLAGPOLE
○	GASFIL GAS FILLER
○	GP GUIDE POST
×	GSO GAS SHUT OFF
○	GUY GUY POLE
○	GUYW GUY WIRE
×	GV GATE VALUE
⊕	H TREE HARDWOOD
△	HCTRL CONTROL HORIZONTAL
△	HVCTRL CONTROL HORIZ. & VERTICAL
◇	HYD HYDRANT
●	IP IRON PIN
●	IPIPE IRON PIPE
⊠	LI LIGHT - STREET OR YARD
⊠	MB MAILBOX
○	MH MANHOLE (MH)
▣	MM MILE MARKER
●	PM PARKING METER
▣	PMK PROJECT MARKER
POST	POST POST STONE/WOOD
RRSIG	RAILROAD SIGNAL
RRSL	RAILROAD SWITCH LEVER
S	TREE SOFTWOOD
SAT	SATELLITE DISH
⊕	SHRUB SHRUB
⊠	SIGN SIGN
⊠	STUMP STUMP
⊠	TEL TELEPHONE POLE
○	TIE TIE
⊠	TSIGN SIGN W/DOUBLE POST
∧	VCTRL CONTROL VERTICAL
○	WELL WELL
×	WSO WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADIUS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UTILITY SYMBOLGY

UNDERGROUND UTILITIES

— UT —	UTILITY (GENERIC-UNKNOWN)
— UE —	TELEPHONE
— UC —	ELECTRIC
— UEC —	CABLE (TV)
— UET —	ELECTRIC+CABLE
— UCT —	ELECTRIC+TELEPHONE
— UECT —	CABLE+TELEPHONE
— G —	ELECTRIC+CABLE+TELEP.
— W —	GAS LINE
— S —	WATER LINE
— S —	SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

— T —	UTILITY (GENERIC-UNKNOWN)
— E —	TELEPHONE
— C —	ELECTRIC
— EC —	CABLE (TV)
— ET —	ELECTRIC+CABLE
— ET —	ELECTRIC+TELEPHONE
— AER E&T —	ELECTRIC+TELEPHONE
— CT —	CABLE+TELEPHONE
— ECT —	ELECTRIC+CABLE+TELEP.
—	UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLGY

PROJECT DESIGN & LAYOUT SYMBOLGY

— CZ —	CLEAR ZONE
—	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

—	TOP OF CUT SLOPE
—	TOE OF FILL SLOPE
—	STONE FILL
—	BOTTOM OF DITCH
—	CULVERT PROPOSED
—	STRUCTURE SUBSURFACE
PDF	PROJECT DEMARCATION FENCE
BF	BARRIER FENCE
—	TREE PROTECTION ZONE (TPZ)
—	STRIPING LINE REMOVAL
—	SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLGY

BOUNDARY LINES

— TOWN LINE —	TOWN BOUNDARY LINE
— COUNTY LINE —	COUNTY BOUNDARY LINE
— STATE LINE —	STATE BOUNDARY LINE
—	PROPOSED STATE R.O.W. (LIMITED ACCESS)
—	PROPOSED STATE R.O.W.
—	STATE ROW (LIMITED ACCESS)
—	STATE ROW
—	TOWN ROW
—	PERMANENT EASEMENT LINE (P)
—	TEMPORARY EASEMENT LINE (T)
—	SURVEY LINE
P L P L	PROPERTY LINE (P/L)
SR SR SR	SLOPE RIGHTS
6f	6F PROPERTY BOUNDARY
4f	4F PROPERTY BOUNDARY
HAZ	HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLGY

EPSC MEASURES

—	FILTER CURTAIN
—	SILT FENCE
—	SILT FENCE WOVEN WIRE
—	CHECK DAM
—	DISTURBED AREAS REQUIRING RE-VEGETATION
—	EROSION MATTING

ENVIRONMENTAL RESOURCES

—	WETLAND BOUNDARY
—	RIPARIAN BUFFER ZONE
—	WETLAND BUFFER ZONE
—	SOIL TYPE BOUNDARY
T&E	THREATENED & ENDANGERED SPECIES
HAZ	HAZARDOUS WASTE AREA
AG	AGRICULTURAL LAND
HABITAT	FISH & WILDLIFE HABITAT
FLOOD PLAIN	FLOOD PLAIN
OHW	ORDINARY HIGH WATER (OHW)
—	STORM WATER
—	USDA FOREST SERVICE LANDS
—	WILDLIFE HABITAT SUIT/CONN

ARCHEOLOGICAL & HISTORIC

— ARCH —	ARCHEOLOGICAL BOUNDARY
— HISTORIC DIST —	HISTORIC DISTRICT BOUNDARY
— HISTORIC —	HISTORIC AREA
Ⓜ	HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLGY

EXISTING FEATURES

—	ROAD EDGE PAVEMENT
—	ROAD EDGE GRAVEL
—	DRIVEWAY EDGE
—	DITCH
—	FOUNDATION
—	FENCE (EXISTING)
—	FENCE WOOD POST
—	FENCE STEEL POST
—	GARDEN
—	ROAD GUARDRAIL
—	RAILROAD TRACKS
—	CULVERT (EXISTING)
—	STONE WALL
—	WALL
—	WOOD LINE
—	BRUSH LINE
—	HEDGE
—	BODY OF WATER EDGE
—	LEDGE EXPOSED

PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078legend.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: VTRANS
CONVENTIONAL SYMBOLGY LEGEND SHEET

PLOT DATE: 9/9/2014
DRAWN BY: J. SMITH
CHECKED BY: D. MUNRO
SHEET 9 OF 39



GPS CONTROL POINTS

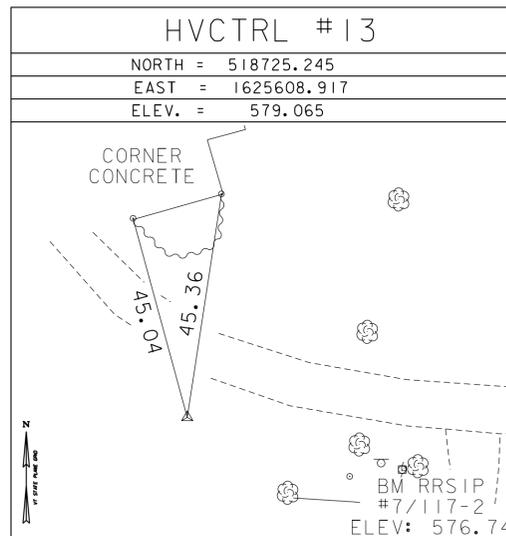
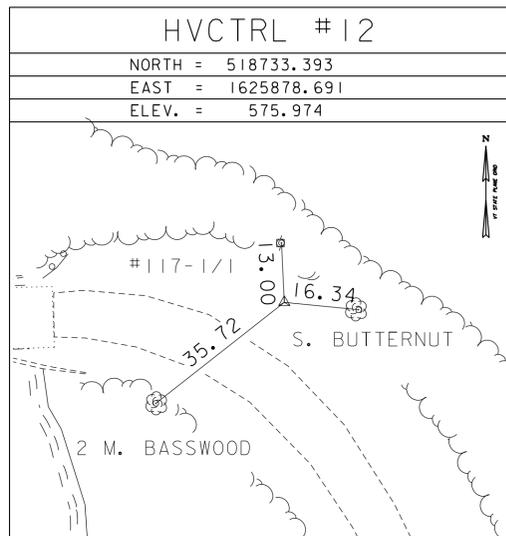
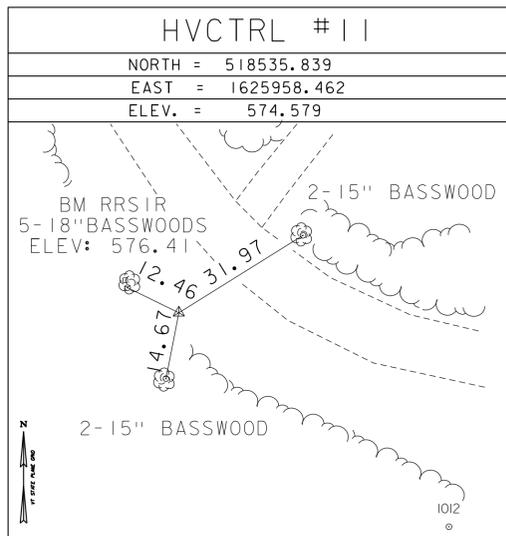
HVCTRL #1
 EAST RANDOLPH
 NORTH = 521893.79
 EAST = 1626547.81
 ELEV. = 657.60

GENERAL LOCATION, RANDOLPH, VT., JUST SOUTH OF EAST RANDOLPH. TO REACH FROM THE INTERSECTION OF VT ROUTE 14 AND VT ROUTE 66 IN EAST RANDOLPH GO SOUTH ALONG VT ROUTE 14 FOR 0.6 MI (1.0 KM) TO THE EAST RANDOLPH SCHOOL ON THE LEFT AND THE SITE OF THE MARK ON THE LEFT IN A LAWN IN FRONT OF THE SCHOOL. THE MARK IS SET 10 CM BELOW GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT POURED 1.3 M (4.3 FT) DEEP. IT IS 6.7 M (22.0 FT) EAST OF AND ABOUT 0.1 M (0.3 FT) LOWER THAN THE CENTERLINE OF VT ROUTE 14, 13.0 M (42.7 FT) NORTH OF THE CENTERLINE OF THE MOST SOUTHERLY ENTRANCE DRIVE TO THE SCHOOL, 27.1 M (88.9 FT) WEST NORTHWEST OF THE SOUTHWEST CORNER OF THE SCHOOL BUILDING, AND 18.1 M (59.4 FT) SOUTHEAST OF POLE NO 61/20 AND A FIBERGLASS WITNESS POST.

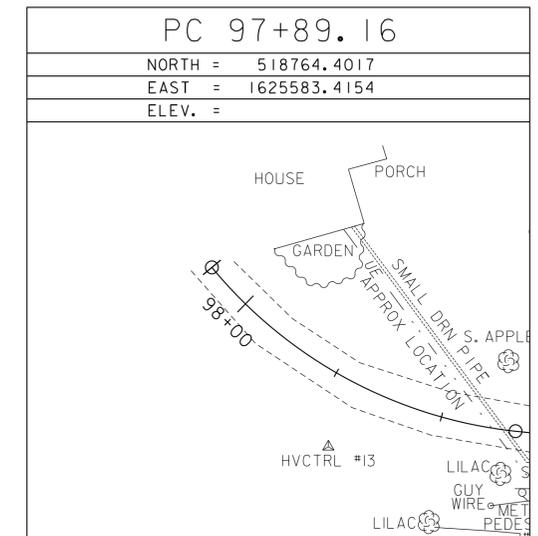
HVCTRL #2
 EAST RANDOLPH AZ MK
 NORTH = 520093.26
 EAST = 1626438.54
 ELEV. = 647.11

GENERAL LOCATION, RANDOLPH, VT., JUST SOUTH OF EAST RANDOLPH. TO REACH FROM THE INTERSECTION OF VT ROUTE 14 AND VT ROUTE 66 IN EAST RANDOLPH GO SOUTH ALONG VT ROUTE 14 FOR 0.9 MI (1.4 KM) TO THE INTERSECTION OF A GRAVEL DRIVE LEFT, AT THE SOUTH EDGE OF A CEMETERY, AND THE SITE OF THE MARK ON THE LEFT, SOUTH OF THE GRAVEL DRIVE. THE MARK IS SET 3 CM BELOW GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT POURED 1.3 M (4.3 FT) DEEP. IT IS 6.6 M (21.7 FT) EAST OF AND ABOUT 0.5 M (1.6 FT) HIGHER THAN THE CENTERLINE OF VT ROUTE 14, 5.1 M (16.7 FT) SOUTH OF THE CENTERLINE OF THE GRAVEL DRIVE, 13.1 M (43.0 FT) EAST OF POLE NO 30T/7/122/61/30, 14.8 M (48.6 FT) SOUTHWEST OF THE SOUTHWEST CORNER OF THE GRAVESTONE OF BLODGETT, AND 0.3 M (1.0 FT) WEST OF A FIBERGLASS WITNESS POST.

TRAVERSE TIES

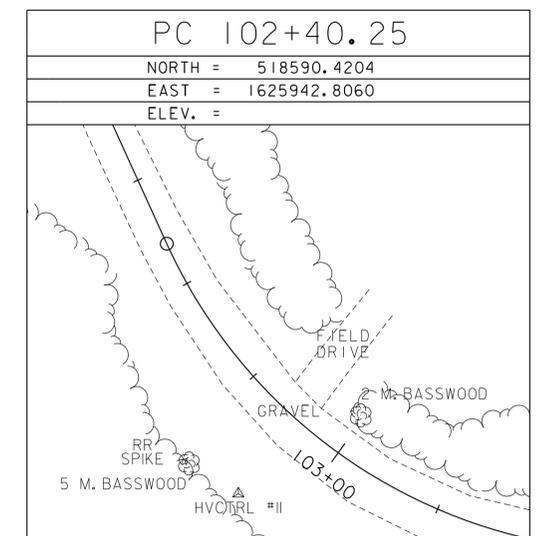
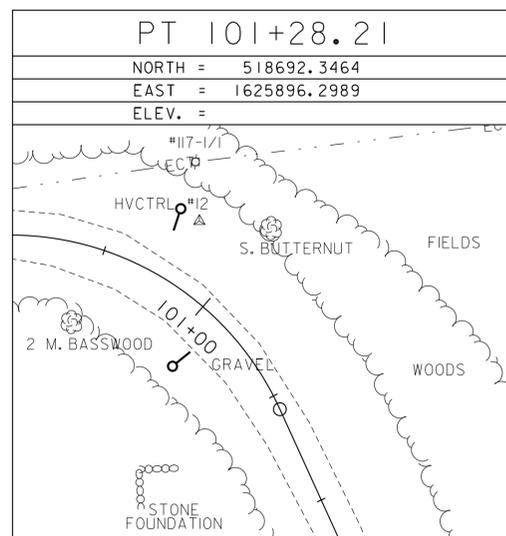
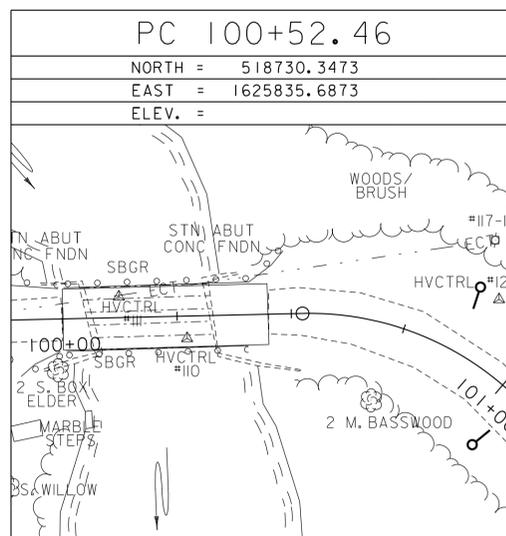
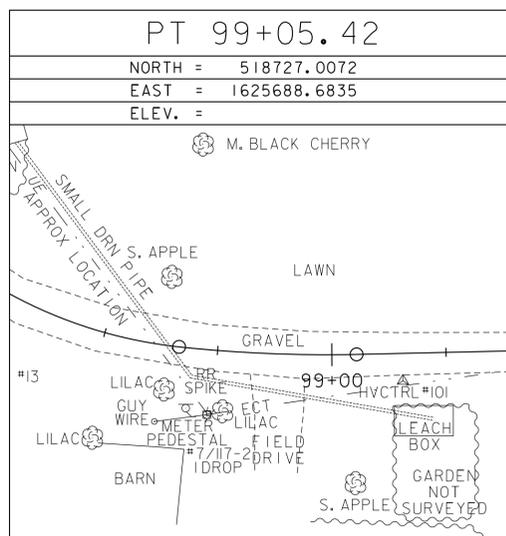
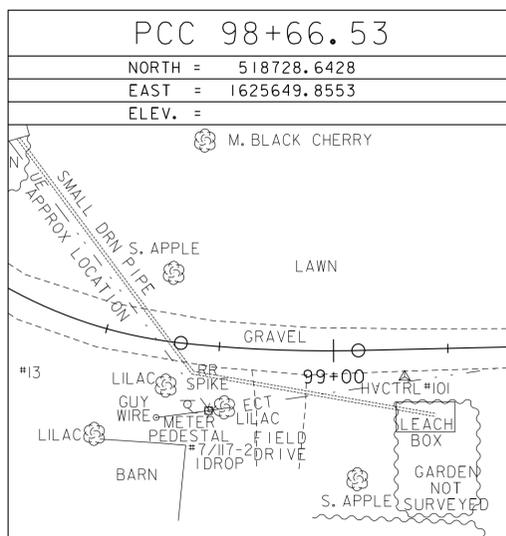


ALIGNMENT TIES



* Main Traverse Completed 8/11/2011 by R. GILMAN P.C & P. WINTERS

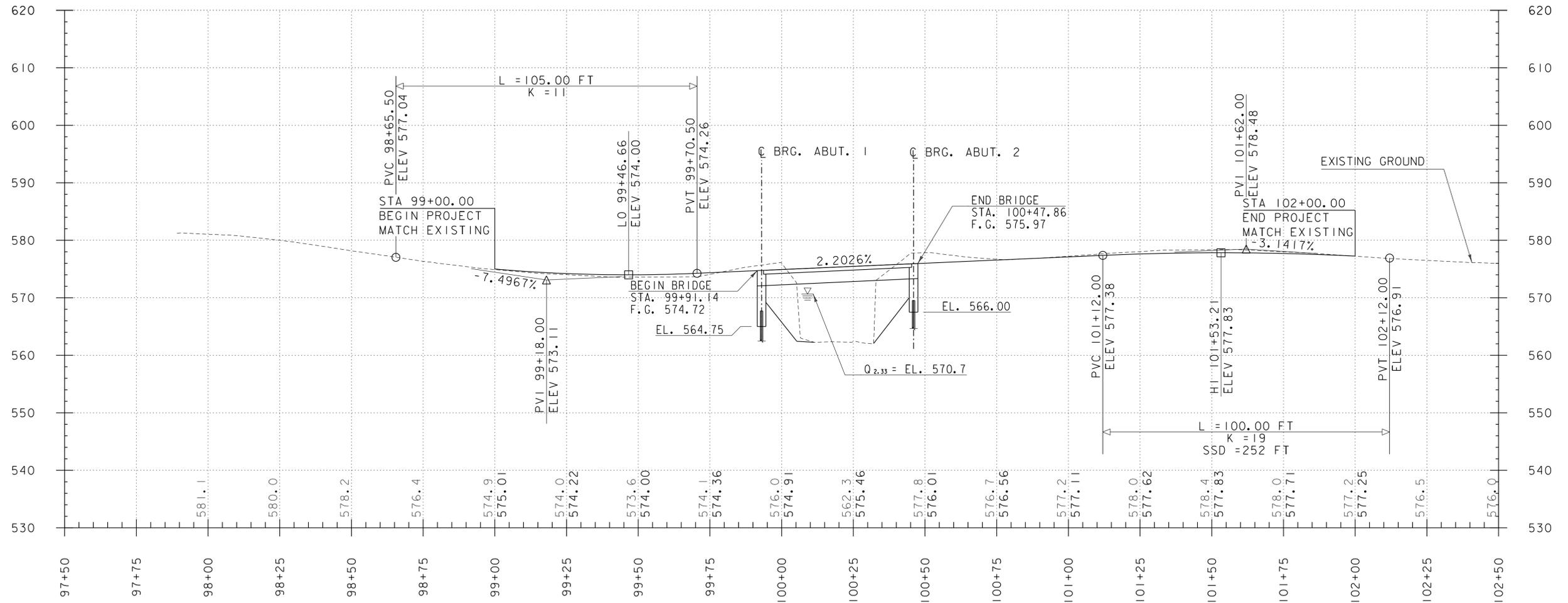
ALIGNMENT TIES



CLD.12-0175 MODEL: TIE.01

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (96)
ADJUSTMENT	COMPASS

PROJECT NAME:	RANDOLPH
PROJECT NUMBER:	BR0 1444 (57)
FILE NAME:	survey\xlj078t1.dgn
PROJECT LEADER:	R. Bullock
DESIGNED BY:	
TIE SHEET	
PLOT DATE:	9/9/2014
DRAWN BY:	R. Bullock
CHECKED BY:	
SHEET 10	OF 39



PALMER RD PROFILE
 HOR. SCALE 1" = 20'-0"
 VER. SCALE 1" = 10'-0"

THE ELEVATIONS SHOWN TO THE NEAREST TENTH ARE FOR EXISTING GROUND ALONG THE CENTERLINE.

THE ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE FOR PROPOSED FINISHED GRADE ALONG THE CENTERLINE.

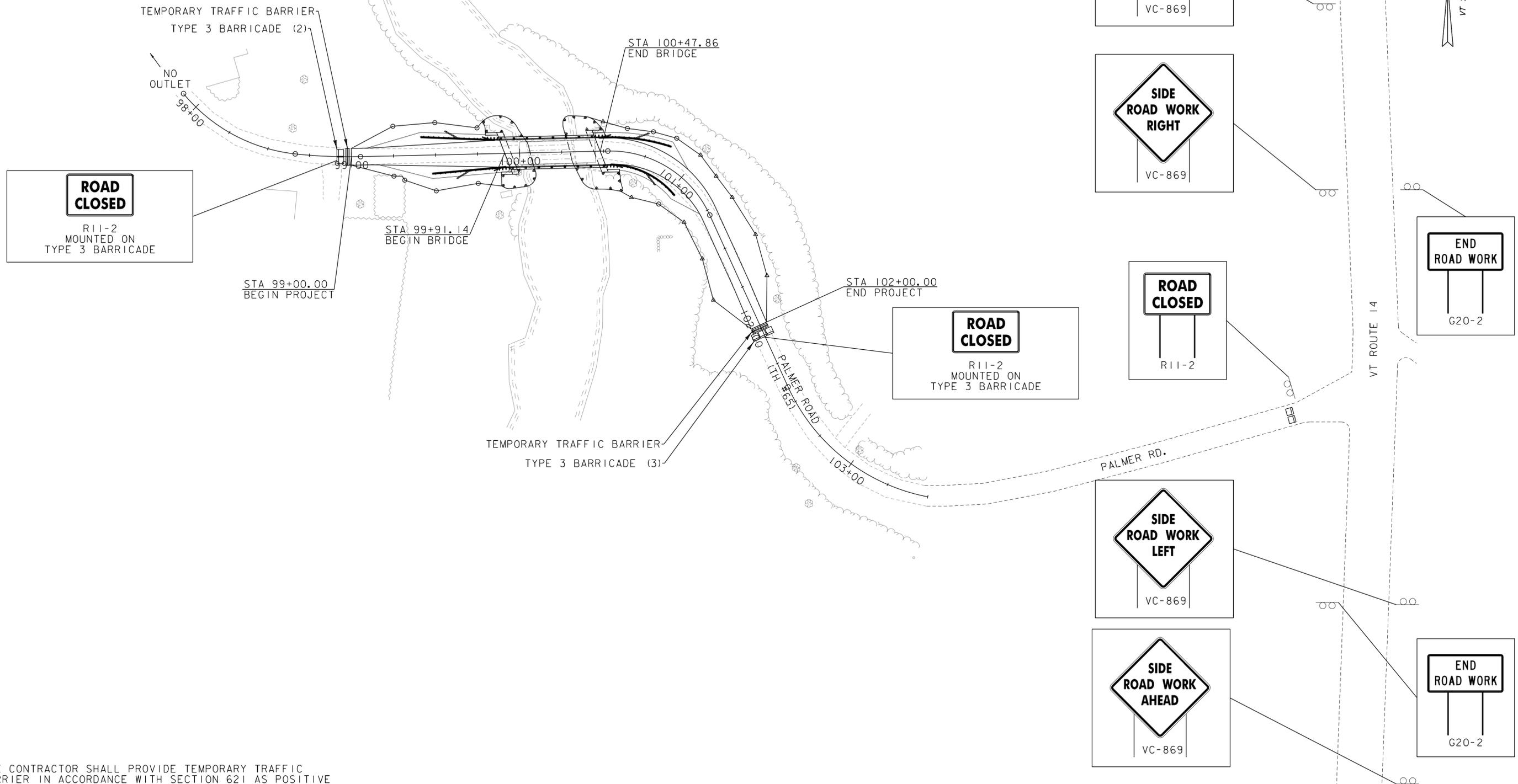


PROJECT NAME: RANDOLPH
 PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078pro.dgn
 PROJECT LEADER: J. BYATT
 DESIGNED BY: J. SMITH
 PROFILE SHEET

PLOT DATE: 9/9/2014
 DRAWN BY: J. SMITH
 CHECKED BY: D. MUNRO
 SHEET 12 OF 39

CLD-12-0175 MODEL:01



- NOTES:**
1. THE CONTRACTOR SHALL PROVIDE TEMPORARY TRAFFIC BARRIER IN ACCORDANCE WITH SECTION 621 AS POSITIVE PROTECTION DURING THE BRIDGE CLOSURE.
 2. ALL TEMPORARY SIGNING, TEMPORARY TRAFFIC BARRIER, AND BARRICADES SHALL BE PAID FOR UNDER ITEM 641.10 TRAFFIC CONTROL.
 3. REFER TO STANDARD SHEET T-10 FOR APPLICABLE SIGN PLACEMENT AND SPACING CRITERIA ON VT ROUTE 14.



PROJECT NAME: RANDOLPH	
PROJECT NUMBER: BRO 1444(57)	
FILE NAME: z11j078bdr+cp.dgn	PLOT DATE: 9/9/2014
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: K. RUTTER	CHECKED BY: D. MUNRO
TRAFFIC CONTROL SHEET	SHEET 13 OF 39

SOIL CLASSIFICATION

AASHTO

A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible

ROCK QUALITY DESIGNATION

R.Q.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

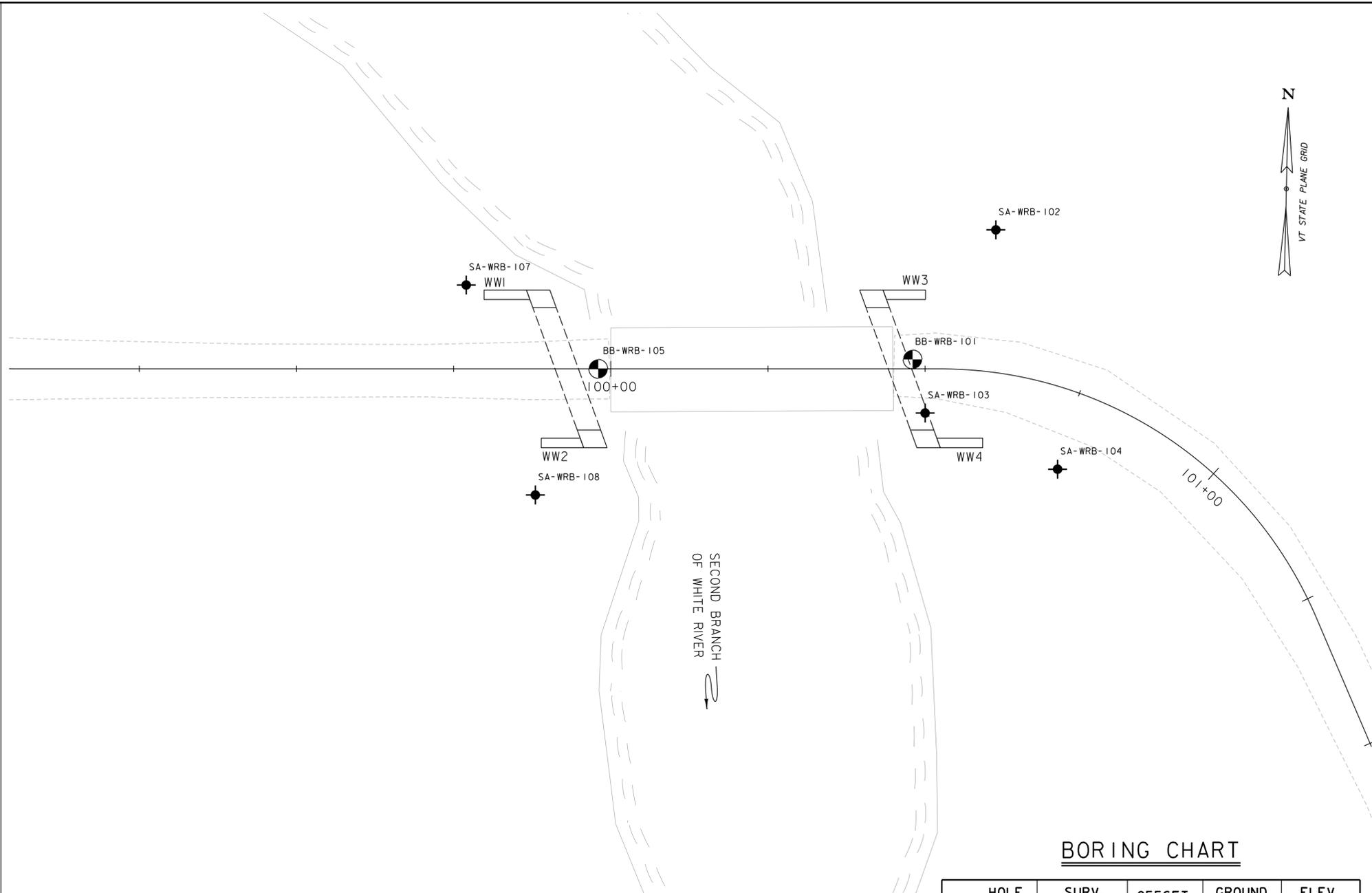
DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

COMMONLY USED SYMBOLS

- ▼ Water Elevation
- ⊕ Standard Penetration Boring
- ⊕ Auger Boring
- ⊙ Rod Sounding
- S Sample
- N Standard Penetration Test
- Blow Count Per Foot For:
- 2" O. D. Sampler
- 1 3/8" I. D. Sampler
- Hammer Weight Of 140 Lbs.
- Hammer Fall Of 30"
- VS Field Vane Shear Test
- US Undisturbed Soil Sample
- B Blast
- DC Diamond Core
- MD Mud Drill
- WA Wash Ahead
- HSA Hollow Stem Auger
- AX Core Size 1 1/8"
- BX Core Size 1 7/8"
- NX Core Size 2 1/8"
- M Double Tube Core Barrel Used
- LL Liquid Limit
- PL Plastic Limit
- PI Plasticity Index
- NP Non Plastic
- w Moisture Content (Dry Wgt. Basis)
- D Dry
- M Moist
- MTW Moist To Wet
- W Wet
- Sat Saturated
- Bo Boulder
- Gr Gravel
- Sa Sand
- Si Silt
- Cl Clay
- HP Hardpan
- Le Ledge
- NLTD No Ledge To Depth
- CNPF Can Not Penetrate Further
- TLOB Top of Ledge Or Boulder
- NR No Recovery
- Rec. Recovery
- %Rec. Percent Recovery
- ROD Rock Quality Designation
- CBR California Bearing Ratio
- < Less Than
- > Greater Than
- R Refusal (N > 100)
- VTSPG NAD83 - See Note 7

COLOR

blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gr-y	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		



BORING PLAN

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

BORING CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.	ELEV. TLOB
BB-WRB-101	100+48	1.5 LT	577.00	N/A
BB-WRB-105	99+98	0	575.95	529.7

AUGER CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.	ELEV. TLOB
SA-WRB-102	100+59	22.5 LT	572.34	N/A
SA-WRB-103	100+50	7.0 RT	576.06	N/A
SA-WRB-104	100+76	12.5 RT	576.97	N/A
SA-WRB-107	99+77	12.0 LT	572.09	N/A
SA-WRB-108	99+88	20.0 RT	570.97	N/A

DEFINITIONS (AASHTO)

- BEDROCK (LEDGE)** - Rock in its native location of indefinite thickness.
- BOULDER** - A rock fragment with an average dimension > 12 inches.
- COBBLE** - Rock fragments with an average dimension between 3 and 12 inches.
- GRAVEL** - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).
- SAND** - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).
- SLT** - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.
- CLAY** - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.
- VARVED** - Alternate layers of silt and clay.
- HARDPAN** - Extremely dense soil, cemented layer, not softened when wet.
- MUCK** - Soft organic soil (containing > 10% organic material).
- MOISTURE CONTENT** - Weight of water divided by dry weight of soil.
- FLOWING SAND** - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
- STRIKE** - Angle from magnetic north to line of intersection of bed with a horizontal plane.
- DIP** - Inclination of bed with a horizontal plane.

GENERAL NOTES

- The subsurface explorations shown herein were made between 6/24/13 and 6/25/13 by Golder Associates, Inc.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
- Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.



PROJECT NAME: RANDOLPH
 PROJECT NUMBER: BRO 1444(57)
 FILE NAME: z11j078bor.dgn
 PROJECT LEADER: J. BYATT
 DESIGNED BY: N. CARON
 BORING INFORMATION SHEET

PLOT DATE: 9/9/2014
 DRAWN BY: M. SMITH
 CHECKED BY: J. BYATT
 SHEET 14 OF 39

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: BB-WRB-101 SHEET 1 of 3 DATE STARTED: 6/24/13 DATE COMPLETED: 6/24/13			
PROJECT NAME: Randolph Bro 1444(57) TH 65 BR35		PROJECT NUMBER: 123-87463		SITE NUMBER: TH 65 BR 35			
SITE NAME: Randolph, VT		STATION: 100+48		GROUND ELEVATION: 577.0 ft			
OFFSET: 1.5 LT		VTSPG:		GROUNDWATER DEPTH: 12.6 ft 6/24/13			
PROJECT PIN NUMBER:		BORING CREW: New Hampshire Boring		BORING RIG: Diedrich D-50 Track			
CREW CHIEF: W. Hoeckle		DRILLER: W. Hoeckle		BORING TYPE: Wash Bore			
LOGGER: C. Stuart		CHECKED BY: JDL		SAMPLE TYPE: Split Barrel			
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
2.5		A-1-a, GrSa, Rec. = 1.0 ft, brown, moist, medium dense, gravelly fine to coarse SAND, subrounded, (GW), [Sample 1D].	16				
5.0		A-4, SaSi, Rec. = 0.92 ft, brown, moist, medium dense, silty fine SAND, (SM), [Sample 2D - Top 8"].	28				
7.5		A-4, SaSi, gray-brown, moist, medium dense, silty fine SAND, (SM), [Sample 2D - Bottom 3"].					
10.0		A-4, SaSi, Rec. = 1.25 ft, gray-brown, wet, medium dense, silty fine SAND, (SM), [Sample 3D]. 10.0 ft, End of fill layer.	14	29.8	0.0	58.0	42.0
12.5		13.5 ft, Driller reported possible cobble.					
15.0		A-1-b, SaGr, Rec. = 0.42 ft, dark gray-brown, wet, very dense, gravelly fine to coarse SAND, (SW), [Sample 4D].	53				
17.5		18.0 ft, Driller reported high casing blows (approx. 350 blows / 5 ft).					
20.0		A-1-b, SaGr, Rec. = 0.42 ft, gray, wet, very dense, gravelly fine to coarse SAND, some silt, (SM), [Sample 5D].	69				
22.5		A-1-b, SaGrSi, Rec. = 0.75 ft, dark gray, wet, fine to coarse SAND, some gravel, little silt, (SM), [Sample 6D]. Note: some weathered	40	12.9	46.0	38.0	16.0

BOTTOM OF ABUT. 2
EL. 566.00'

LOG OF BORING & WELL: 123-87463 RANDOLPH.GPJ VT_AOT_GDT_7/23/13

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: BB-WRB-101 SHEET 2 of 3 DATE STARTED: 6/24/13 DATE COMPLETED: 6/24/13			
PROJECT NAME: Randolph Bro 1444(57) TH 65 BR35		PROJECT NUMBER: 123-87463		SITE NUMBER: TH 65 BR 35			
SITE NAME: Randolph, VT		STATION: 100+48		GROUND ELEVATION: 577.0 ft			
OFFSET: 1.5 LT		VTSPG:		GROUNDWATER DEPTH: 12.6 ft 6/24/13			
PROJECT PIN NUMBER:		BORING CREW: New Hampshire Boring		BORING RIG: Diedrich D-50 Track			
CREW CHIEF: W. Hoeckle		DRILLER: W. Hoeckle		BORING TYPE: Wash Bore			
LOGGER: C. Stuart		CHECKED BY: JDL		SAMPLE TYPE: Split Barrel			
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
27.5		oxidized rock fragments observed (platy). Casing hammer broke; open hole from 24 ft to 51 ft.					
30.0		A-4, SaSiGr, Rec. = 1.0 ft, dark gray with some brown, dense, silty fine to coarse SAND, little gravel, (SM), [Sample 7D]. Note: 2" gravel and fractured cobble in spoon.	41				
35.0		A-1-b, SaGr, Rec. = 1.42 ft, gray, wet, very dense, medium to fine SAND, trace fine gravel, (SP), [Sample 8D].	57				
40.0		A-1-b, SaSiGr, Rec. = 1.33 ft, gray with some oxidized spotting, wet, very dense, fine to coarse SAND, some silt, little coarse gravel, (SM), [Sample 9D]. Note: fractured cobble in sampler.	86				
45.0		A-1-b, SaSiGr, Rec. = 1.67 ft, gray brown, wet, very dense, fine SAND, some silt, little gravel, (SM), [Sample 10D - Top 10"]. A-2-4, Sa, gray, wet, fine SAND, (SP), [Sample 10D - Bottom 10"].	46				
47.5		A-1-b, SaGrSi, Rec. = 1.67 ft, dark gray and brown, wet, very dense, medium SAND, little gravel, little silt (SM), [Sample 11D - Top 14"].	67	14.2	25.0	59.0	16.0

LOG OF BORING & WELL: 123-87463 RANDOLPH.GPJ VT_AOT_GDT_7/23/13

ESTIMATED
PILE TIP
EL. 520.00'

LOG OF BORING & WELL: 123-87463 RANDOLPH.GPJ VT_AOT_GDT_7/23/13

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: BB-WRB-101 SHEET 3 of 3 DATE STARTED: 6/24/13 DATE COMPLETED: 6/24/13			
PROJECT NAME: Randolph Bro 1444(57) TH 65 BR35		PROJECT NUMBER: 123-87463		SITE NUMBER: TH 65 BR 35			
SITE NAME: Randolph, VT		STATION: 100+48		GROUND ELEVATION: 577.0 ft			
OFFSET: 1.5 LT		VTSPG:		GROUNDWATER DEPTH: 12.6 ft 6/24/13			
PROJECT PIN NUMBER:		BORING CREW: New Hampshire Boring		BORING RIG: Diedrich D-50 Track			
CREW CHIEF: W. Hoeckle		DRILLER: W. Hoeckle		BORING TYPE: Wash Bore			
LOGGER: C. Stuart		CHECKED BY: JDL		SAMPLE TYPE: Split Barrel			
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
52.5		A-4, SaSiGr, dark gray and brown, wet, very dense, silty medium to coarse SAND, some gravel, (SM), [Sample 11D - Bottom 6"]. 51.0 ft, Drill bit plugging up, possible caving. End of exploration. Hole stopped @ 51.0 ft. Safe-T hydraulic winch 140 lb hammer used.					

LOG OF BORING & WELL: 123-87463 RANDOLPH.GPJ VT_AOT_GDT_7/23/13

PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078bor.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: N. CARON
BORING LOGS (1 OF 4)

PLOT DATE: 9/9/2014
DRAWN BY: M. SMITH
CHECKED BY: J. BYATT
SHEET 15 OF 39



VT		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: BB-WRB-105 SHEET 1 of 3 DATE STARTED: 6/25/13 DATE COMPLETED: 6/25/13			
PROJECT NAME: Randolph Bro 1444(57) TH 65 BR35		PROJECT NUMBER: 123-87463		SITE NUMBER: TH 65 BR 35			
SITE NAME: Randolph, VT		GROUND ELEVATION: 575.95 ft		GROUNDWATER DEPTH: 11.25 ft 6/25/13			
STATION: 99+98		OFFSET: 0.00		VTSPG:			
BORING CREW: New Hampshire Boring		BORING RIG: Diedrich D-50 Track		CREW CHIEF: W. Hoeckle			
DRILLER: W. Hoeckle		BORING TYPE: Wash Bore		SAMPLE TYPE: Split Barrel			
LOGGER: C. Stuart		CHECKED BY: JDL					
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
2.5		A-1-b, SaGr, Rec. = 1.42 ft, brown, dry, medium dense, subrounded gravelly fine to coarse SAND, (SW), [Sample 1D].	26				
5.0		A-4, SaSiGr, Rec. = 1.0 ft, brown to gray, wet, medium dense, silty fine SAND, trace gravel, (SM), [Sample 2D].	23				
10.0		A-4, SaSi, Rec. = 1.5 ft, gray, wet, loose, silty fine SAND, (SM), [Sample 3D]. Note: Some oxidized coloring @ 10.5ft, wood encountered in bottom 3'. 10.75 ft, End of fill layer.	6	34.5	0.0	53.0	47.0
12.5		12.5 ft - 13.0 ft, Driller notes harder material. Casing driven from this point on.					
15.0		A-1-b, SaGrSi, Rec. = 0.58 ft, gray, wet, dense, gravelly fine to coarse SAND, some silt, (SW), [Sample 4D].	41				
20.0		A-4, SiSa, Rec. = 1.25 ft, gray, wet, medium dense, SILT, trace fine sand, (ML), [Sample 5D].	17	28.3	0.0	4.0	96.0
22.5		A-4, SiSa, Rec. = 1.25 ft, gray, wet, medium dense, SILT, trace fine sand, (ML), [Sample 6D].	17				

BOTTOM OF ABUT. 1
EL. 564.75'

ESTIMATED
PILE TIP
EL. 529.75'

VT		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: BB-WRB-105 SHEET 2 of 3 DATE STARTED: 6/25/13 DATE COMPLETED: 6/25/13			
PROJECT NAME: Randolph Bro 1444(57) TH 65 BR35		PROJECT NUMBER: 123-87463		SITE NUMBER: TH 65 BR 35			
SITE NAME: Randolph, VT		GROUND ELEVATION: 575.95 ft		GROUNDWATER DEPTH: 11.25 ft 6/25/13			
STATION: 99+98		OFFSET: 0.00		VTSPG:			
BORING CREW: New Hampshire Boring		BORING RIG: Diedrich D-50 Track		CREW CHIEF: W. Hoeckle			
DRILLER: W. Hoeckle		BORING TYPE: Wash Bore		SAMPLE TYPE: Split Barrel			
LOGGER: C. Stuart		CHECKED BY: JDL					
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
27.5							
30.0		A-2-4, SaSi, Rec. = 1.33 ft, gray, wet, medium dense, fine to medium SAND, little silt, (SM), [Sample 7D].	24	16.7	5.0	78.0	17.0
32.5		32.5 ft, Driller reported possible cobble.					
35.0		A-1-b, SaSi, Rec. = 0.92 ft, gray, wet, medium dense, medium SAND, trace silt, (SP), [Sample 8D].	15				
40.0		A-3, SaGrSi, Rec. = 0.83 ft, brown, wet, dense, fine SAND, little coarse sand, trace gravel, trace silt, gap graded, (SP), [Sample 9D]. End of casing. Open hole from 39 ft to 52.3 ft.	44				
42.5		Rec. = 0.0 ft, 44.0 ft - 46.0 ft, No recovery [Sample 10D].	42				
45.0							
47.5		Run 1: 47.3-52.3 ft Dark grey (N3) to medium light grey (N6), fine to medium grained, strongly foliated, slightly weathered to fresh, strong (R4), muscovite-biotite-quartz SCHIST. Foliation dips 50-60 degrees. Discontinuities very closely to closely spaced, dipping 25-30 degrees, planar, very rough. Trace dark red garnets to 0.25 inch diameter. [Gile Mountain Formation]	1	100	99.6	60	0.3

Top of Bedrock @ 46.3 ft

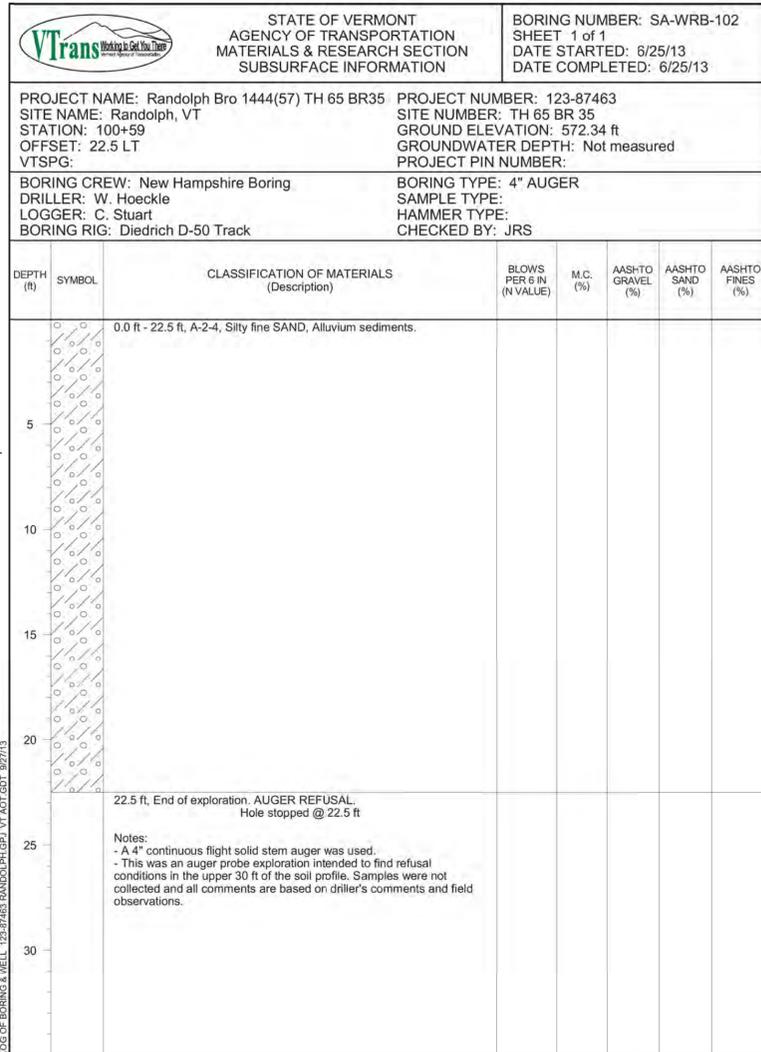
VT		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: BB-WRB-105 SHEET 3 of 3 DATE STARTED: 6/25/13 DATE COMPLETED: 6/25/13			
PROJECT NAME: Randolph Bro 1444(57) TH 65 BR35		PROJECT NUMBER: 123-87463		SITE NUMBER: TH 65 BR 35			
SITE NAME: Randolph, VT		GROUND ELEVATION: 575.95 ft		GROUNDWATER DEPTH: 11.25 ft 6/25/13			
STATION: 99+98		OFFSET: 0.00		VTSPG:			
BORING CREW: New Hampshire Boring		BORING RIG: Diedrich D-50 Track		CREW CHIEF: W. Hoeckle			
DRILLER: W. Hoeckle		BORING TYPE: Wash Bore		SAMPLE TYPE: Split Barrel			
LOGGER: C. Stuart		CHECKED BY: JDL					
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	RUN	REC (%)	RQD (%)	Dip (deg)	Drill Rate (min/ft)
52.5		R1: Core limes (min:sec) 47.3-48.3' (4:00) 48.3-49.3' (5:05) 49.3-50.3' (4:00) 50.3-51.3' (2:45) 51.3-52.3' (3:20), 46.3 ft NX, Rec. = 5.0 ft Hole stopped @ 52.3 ft Safe-T hydraulic 140 lb winch hammer used.					

PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078bor.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: N. CARON
BORING LOGS (2 OF 4)

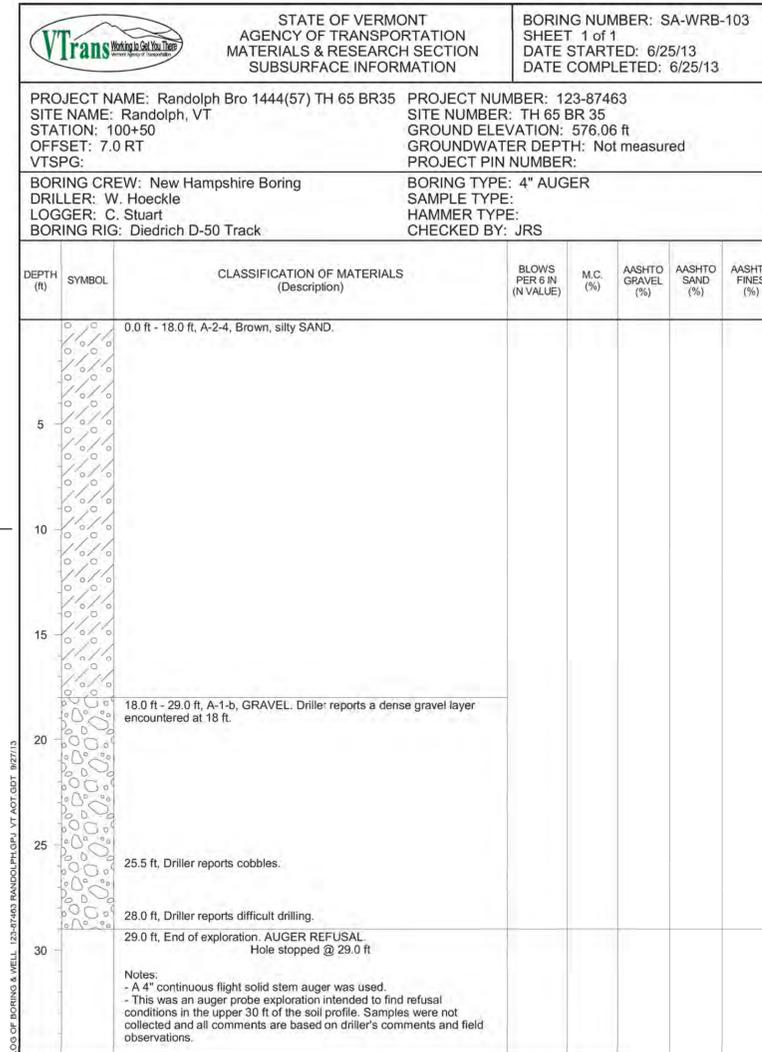
PLOT DATE: 9/9/2014
DRAWN BY: M. SMITH
CHECKED BY: J. BYATT
SHEET 16 OF 39





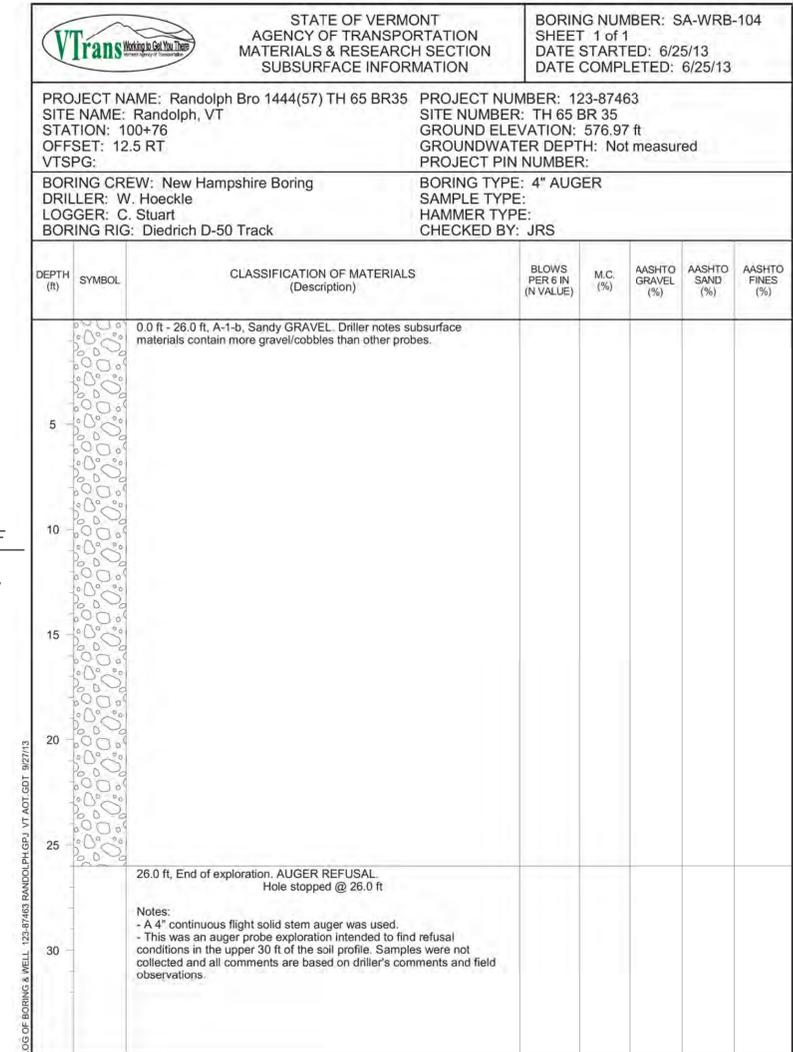
BOTTOM OF ABUT. 2
EL. 566.00'

LOG OF BORING & WELL 123-87463 RANDOLPH.GPJ VT_AOT_GDT_9/27/13



BOTTOM OF ABUT. 2
EL. 566.00'

LOG OF BORING & WELL 123-87463 RANDOLPH.GPJ VT_AOT_GDT_9/27/13



BOTTOM OF ABUT. 2
EL. 566.00'

LOG OF BORING & WELL 123-87463 RANDOLPH.GPJ VT_AOT_GDT_9/27/13

PROJECT NAME: RANDOLPH	
PROJECT NUMBER: BRO 1444(57)	
FILE NAME: z11j078bor.dgn	PLOT DATE: 9/9/2014
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: N. CARON	CHECKED BY: J. BYATT
BORING LOGS (3 OF 4)	SHEET 17 OF 39



CLD 12-0175 \$FILEABBREV\$ MODEL: BOR05

VTTrans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: SA-WRB-107 SHEET 1 of 1 DATE STARTED: 6/26/13 DATE COMPLETED: 6/26/13			
PROJECT NAME: Randolph Bro 1444(57) TH 65 BR35		PROJECT NUMBER: 123-87463					
SITE NAME: Randolph, VT		SITE NUMBER: TH 65 BR 35					
STATION: 99+77		GROUND ELEVATION: 572.09 ft					
OFFSET: 12.0 LT		GROUNDWATER DEPTH: Not measured					
VTSPG:		PROJECT PIN NUMBER:					
BORING CREW: New Hampshire Boring		BORING TYPE: 4" AUGER					
DRILLER: W. Hoeckle		SAMPLE TYPE:					
LOGGER: C. Stuart		HAMMER TYPE:					
BORING RIG: Diedrich D-50 Track		CHECKED BY: JRS					
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 6 IN (N VALUE)	M.C. (%)	AASHTO GRAVEL (%)	AASHTO SAND (%)	AASHTO FINES (%)
0.0 - 10.0		0.0 ft - 10.0 ft, A-1-b, Likely silty SAND, some to little gravel. Based on BB-WRB-105. Auger was starting to kickout in a northeasterly direction.					
10.0 - 29.0		10.0 ft - 29.0 ft, A-6, Silty CLAY material encountered approximately 10-15 ft bgs. Rolled thread of clay which broke at a 1-3 mm diameter. No dilatancy. Appears to be very sensitive; clay did not retain its spherical shape during the dilatancy test. Very sticky to the touch.					
29.0		29.0 ft, End of exploration. NO REFUSAL. Hole stopped @ 29.0 ft					
Notes: - A 4" continuous flight solid stem auger was used. - This was an auger probe exploration intended to find refusal conditions in the upper 30 ft of the soil profile. Samples were not collected and all comments are based on driller's comments and field observations. - Little return above silty clay layer.							

BOTTOM OF ABUT. 1
EL. 564.75'

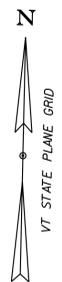
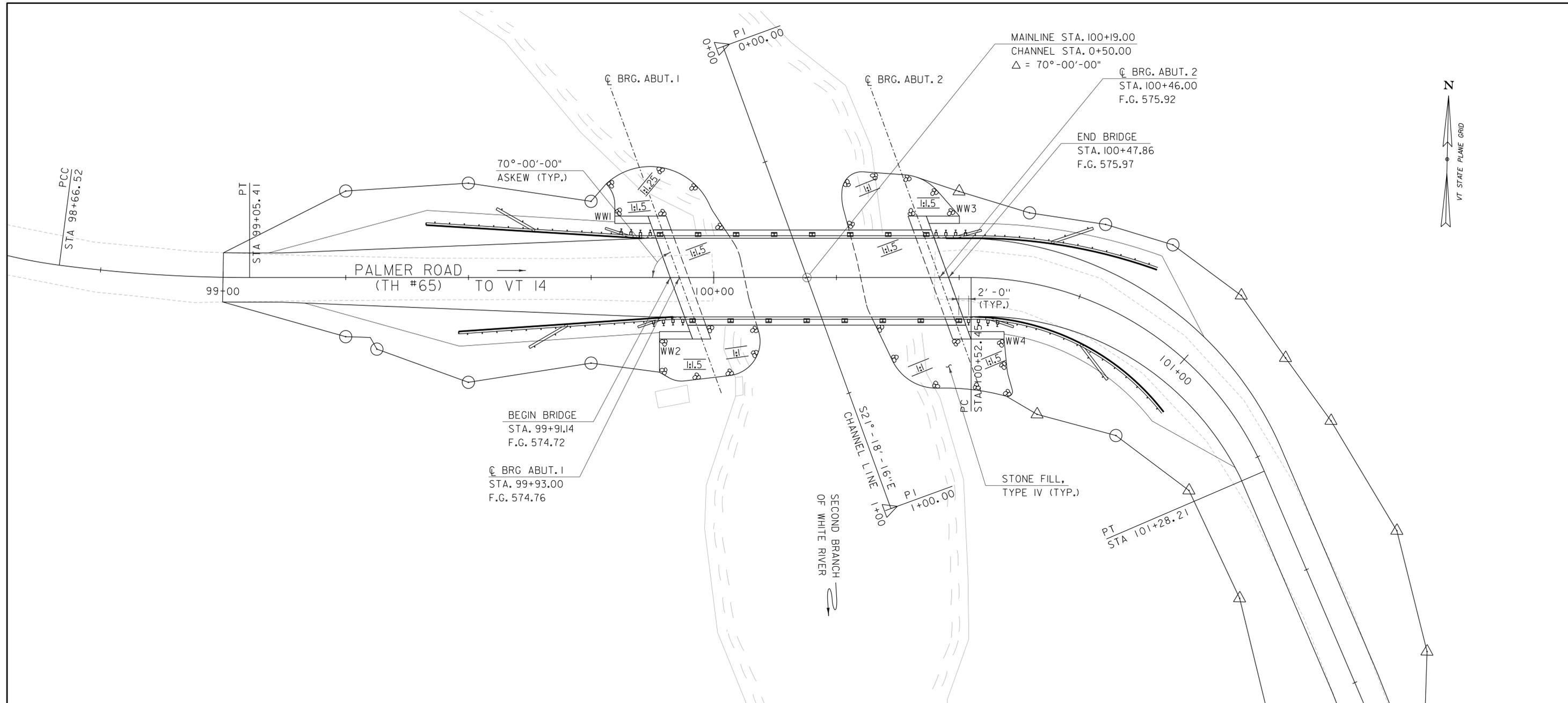
VTTrans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: SA-WRB-108 SHEET 1 of 1 DATE STARTED: 6/26/13 DATE COMPLETED: 6/26/13			
PROJECT NAME: Randolph Bro 1444(57) TH 65 BR35		PROJECT NUMBER: 123-87463					
SITE NAME: Randolph, VT		SITE NUMBER: TH 65 BR 35					
STATION: 99+88		GROUND ELEVATION: 570.97 ft					
OFFSET: 20.0 RT		GROUNDWATER DEPTH: Not measured					
VTSPG:		PROJECT PIN NUMBER:					
BORING CREW: New Hampshire Boring		BORING TYPE: 4" AUGER					
DRILLER: W. Hoeckle		SAMPLE TYPE:					
LOGGER: C. Stuart		HAMMER TYPE:					
BORING RIG: Diedrich D-50 Track		CHECKED BY: JRS					
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 6 IN (N VALUE)	M.C. (%)	AASHTO GRAVEL (%)	AASHTO SAND (%)	AASHTO FINES (%)
0.0 - 12.0		0.0 ft - 12.0 ft, A-1-B, Gravelly SAND. Very easy to easy drilling.					
12.0 - 20.0		12.0 ft - 20.0 ft, A-1-B, Gravelly SAND. Easier drilling beyond the dense gravel/cobble layer at 13 ft.					
20.0 - 30.0		20.0 ft - 30.0 ft, A-6, Very soft, silty CLAY. Augers pulled rig into ground, including hydraulic jacks.					
30.0		30.0 ft, End of exploration. NO REFUSAL. Hole stopped @ 30.0 ft					
Notes: - A 4" continuous flight solid stem auger was used. - This was an auger probe exploration intended to find refusal conditions in the upper 30 ft of the soil profile. Samples were not collected and all comments are based on driller's comments and field observations. - Little return above silty clay layer.							

BOTTOM OF ABUT. 1
EL. 564.75'

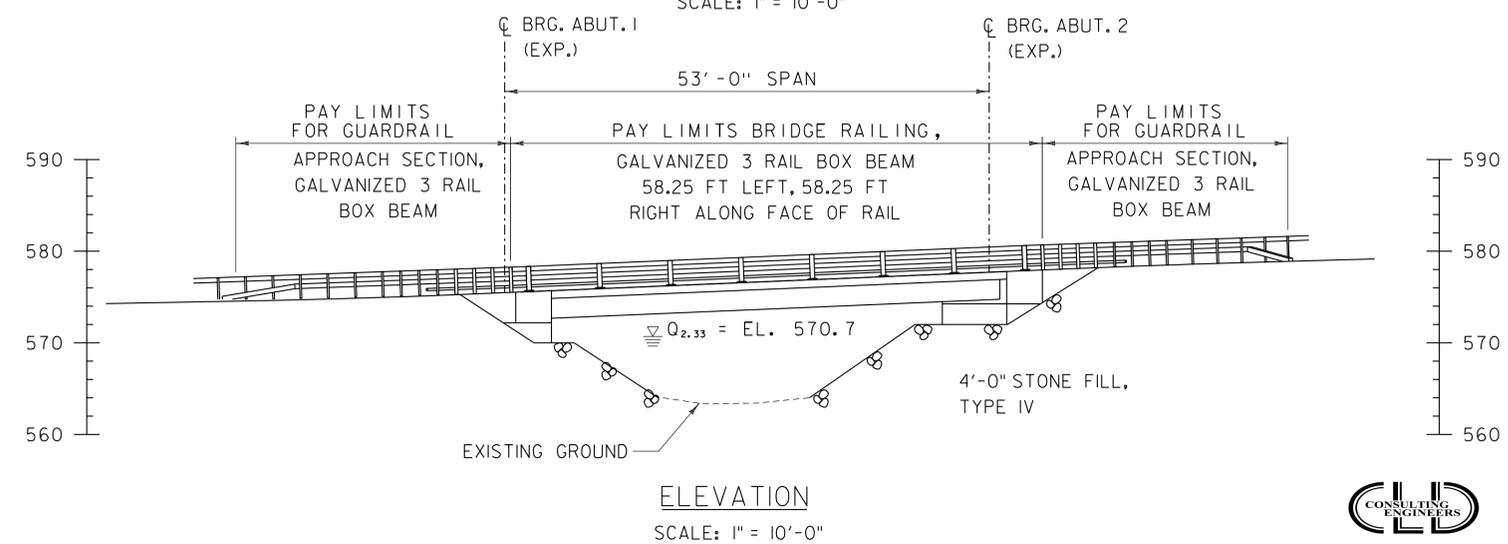
PROJECT NAME: RANDOLPH	PLOT DATE: 9/9/2014
PROJECT NUMBER: BRO 1444(57)	DRAWN BY: M. SMITH
FILE NAME: z11j078bor.dgn	CHECKED BY: J. BYATT
PROJECT LEADER: J. BYATT	SHEET 18 OF 39
DESIGNED BY: N. CARON	
BORING LOGS (4 OF 4)	



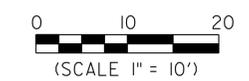
CLD.12-0175 MODEL:PE01



PLAN VIEW
SCALE: 1" = 10'-0"

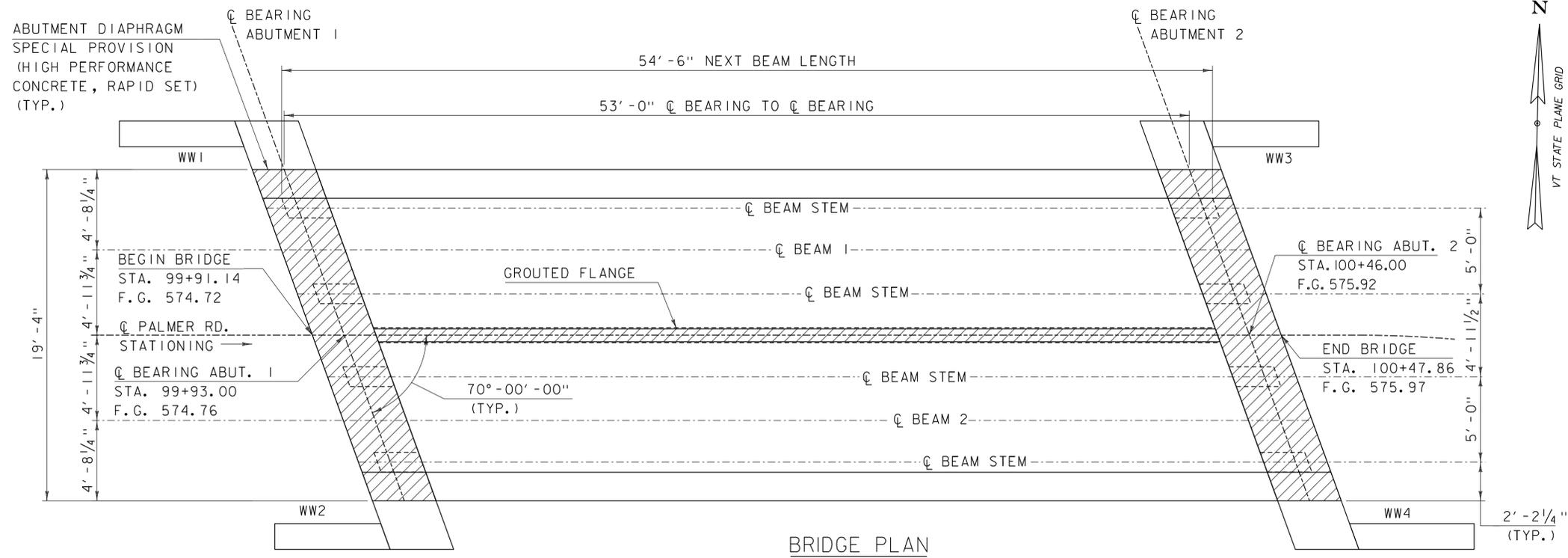


ELEVATION
SCALE: 1" = 10'-0"

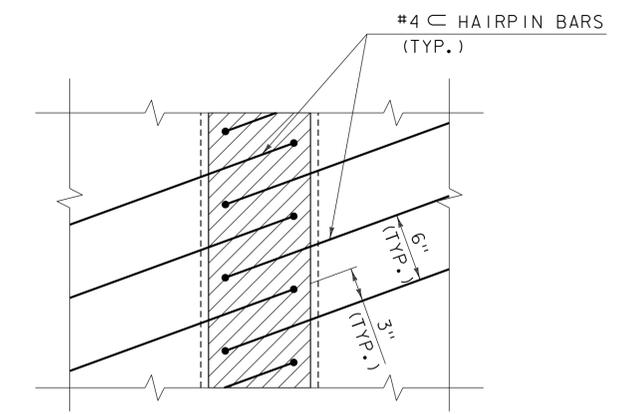
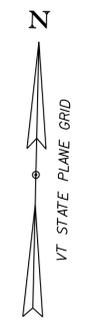


PROJECT NAME:	RANDOLPH	PLOT DATE:	9/9/2014
PROJECT NUMBER:	BRO 1444(57)	DRAWN BY:	M. SMITH
FILE NAME:	z11j078pe.dgn	DESIGNED BY:	N. CARON
PROJECT LEADER:	J. BYATT	CHECKED BY:	J. BYATT
PLAN AND ELEVATION		SHEET	19 OF 39

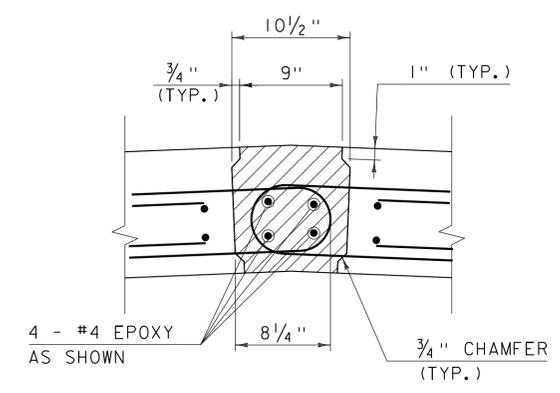




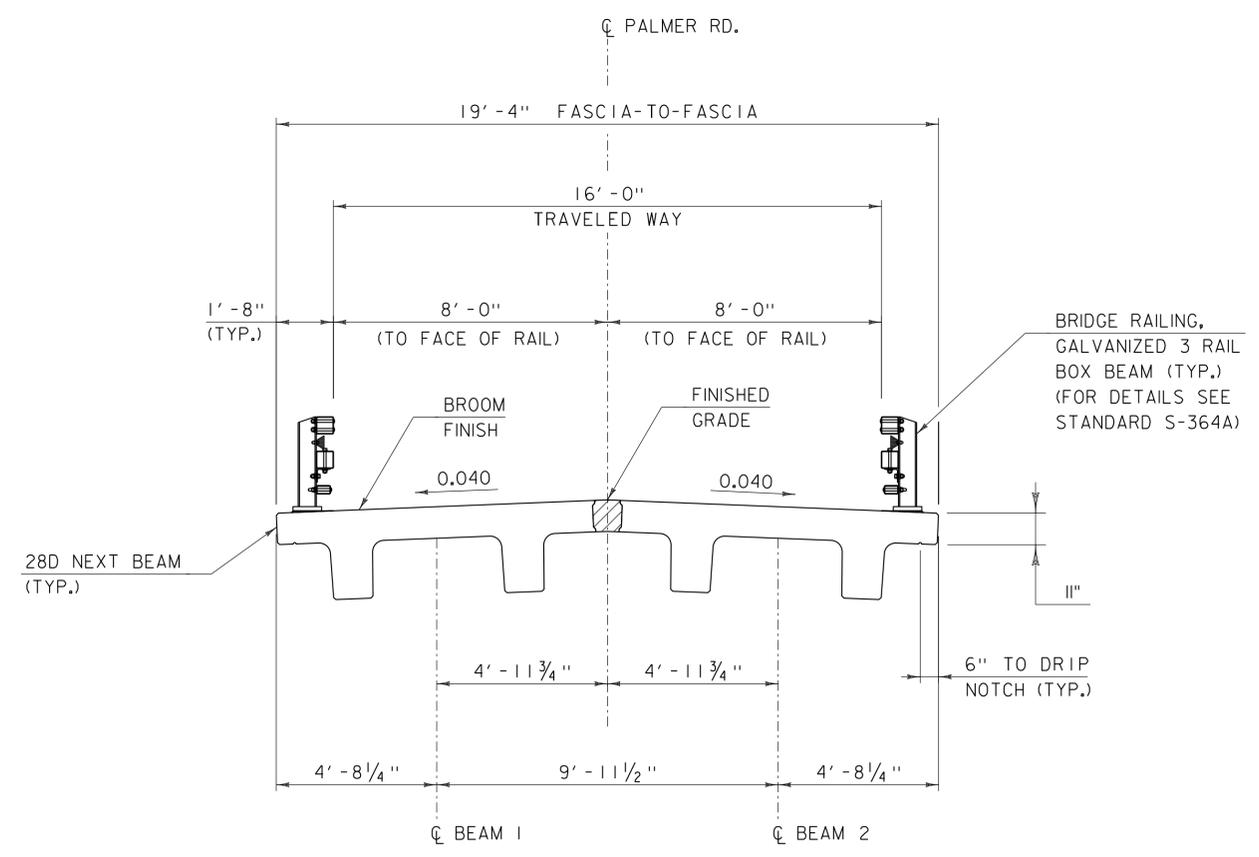
BRIDGE PLAN
SCALE: 1/4" = 1'-0"



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



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



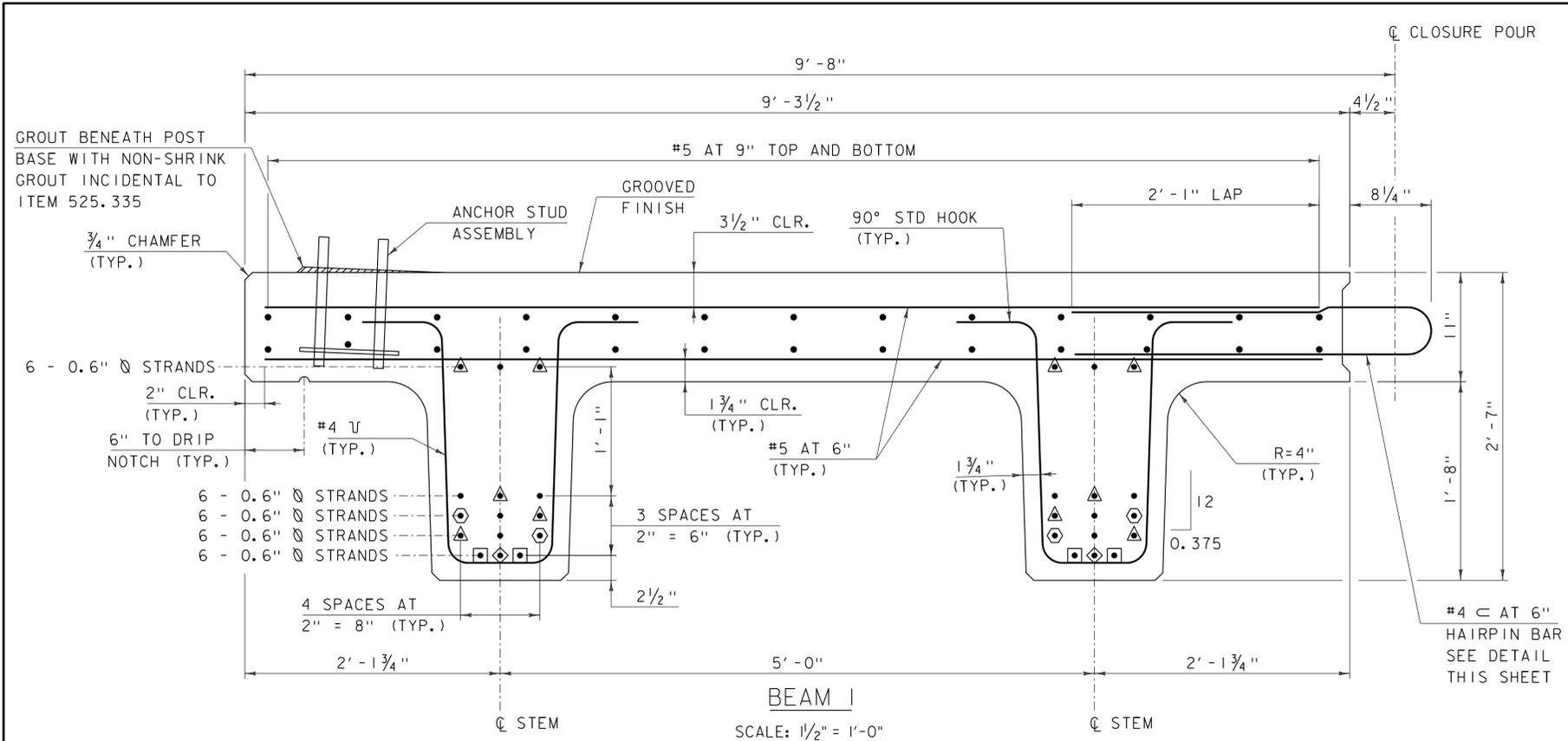
TYPICAL BRIDGE SECTION
SCALE: 3/8" = 1'-0"

SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (TYP.)

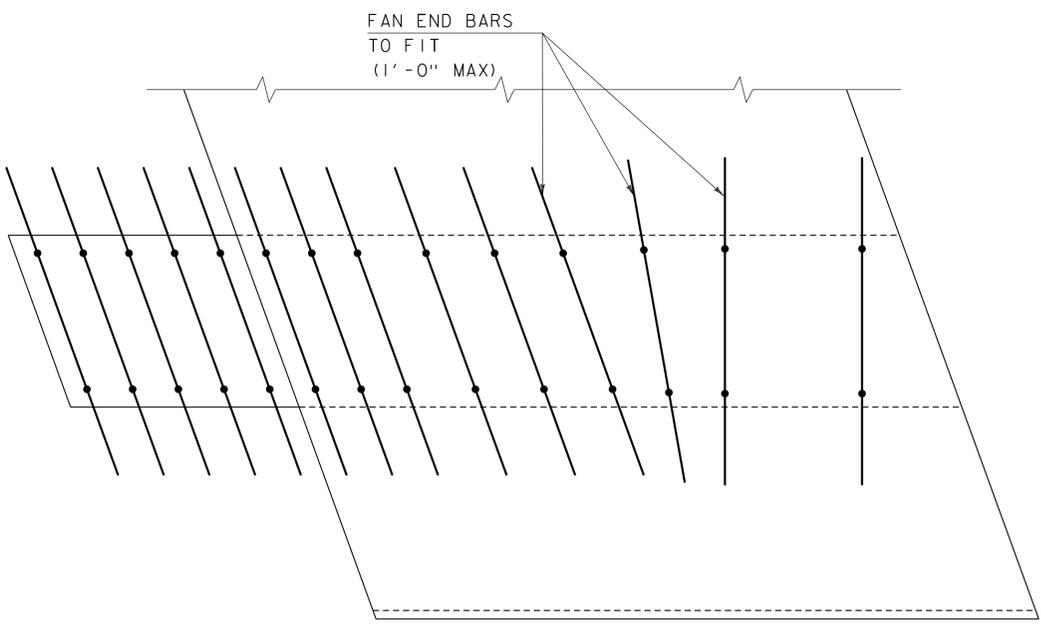
PROJECT NAME:	RANDOLPH	FILE NAME:	z11j078sup.dgn	PLOT DATE:	9/9/2014
PROJECT NUMBER:	BRO 1444(57)	PROJECT LEADER:	J. BYATT	DRAWN BY:	M. SMITH
		DESIGNED BY:	N. CARON	CHECKED BY:	J. BYATT
		BRIDGE PLAN AND TYPICAL SECTIONS			SHEET 20 OF 39



CLD 12-0175 MODEL:01

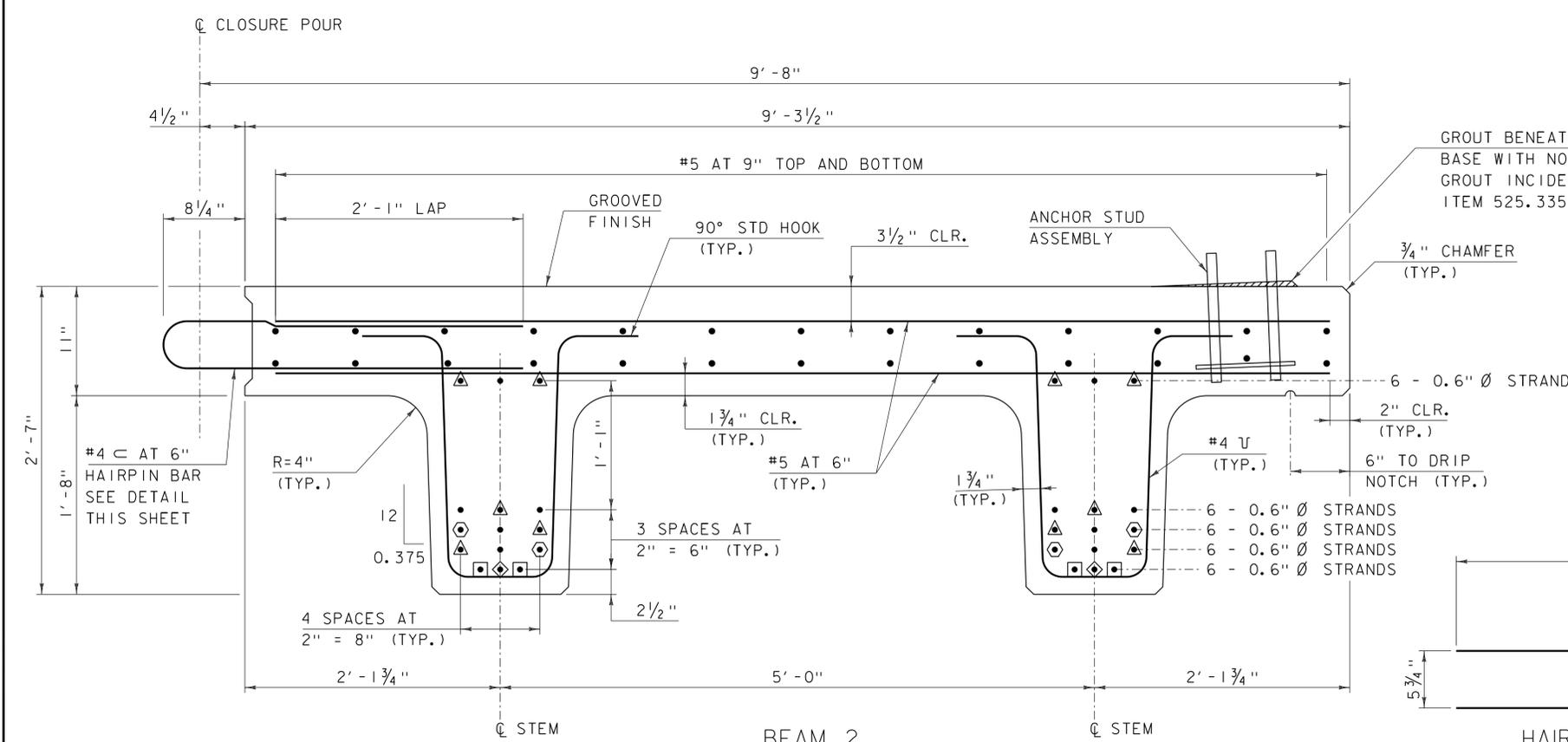


BEAM 1
SCALE: 1/2" = 1'-0"

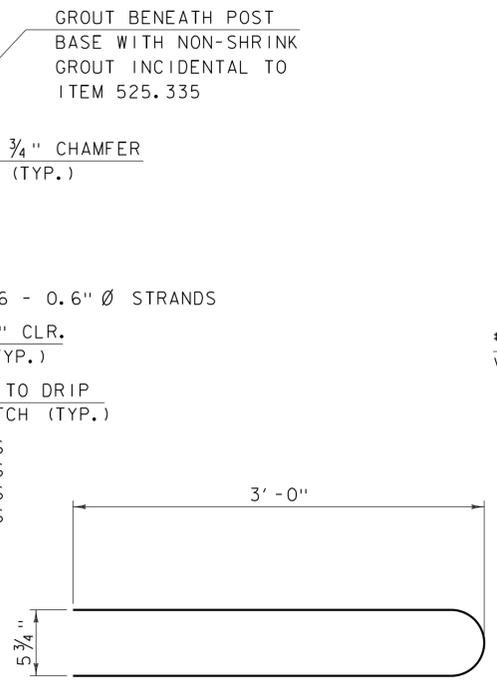


SKewed END DETAIL
SCALE: 1/2" = 1'-0"

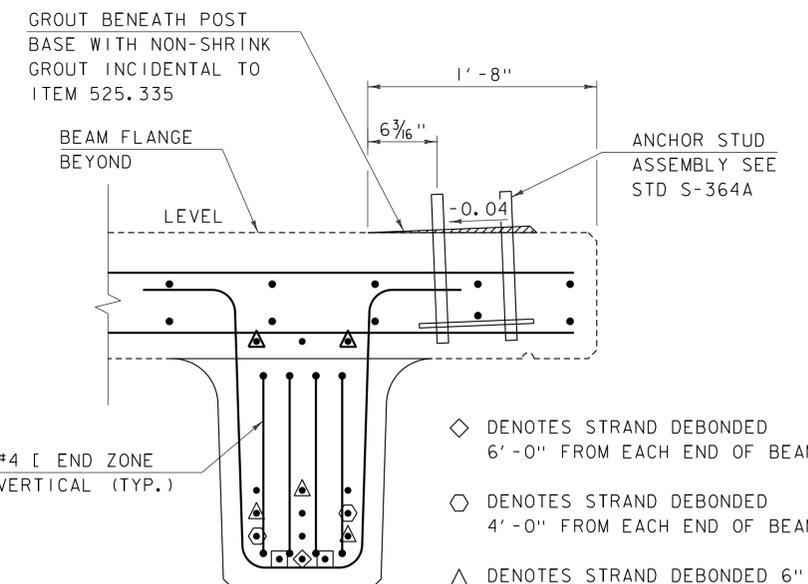
- NOTE:
1. BARS IN DECK OMITTED FOR CLARITY.
 2. TRANSVERSE REINFORCING IN THE DECK SHALL BE PLACED PARALLEL TO THE SKEW.



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



HAIRPIN BAR DETAIL
SCALE: 1/2" = 1'-0"



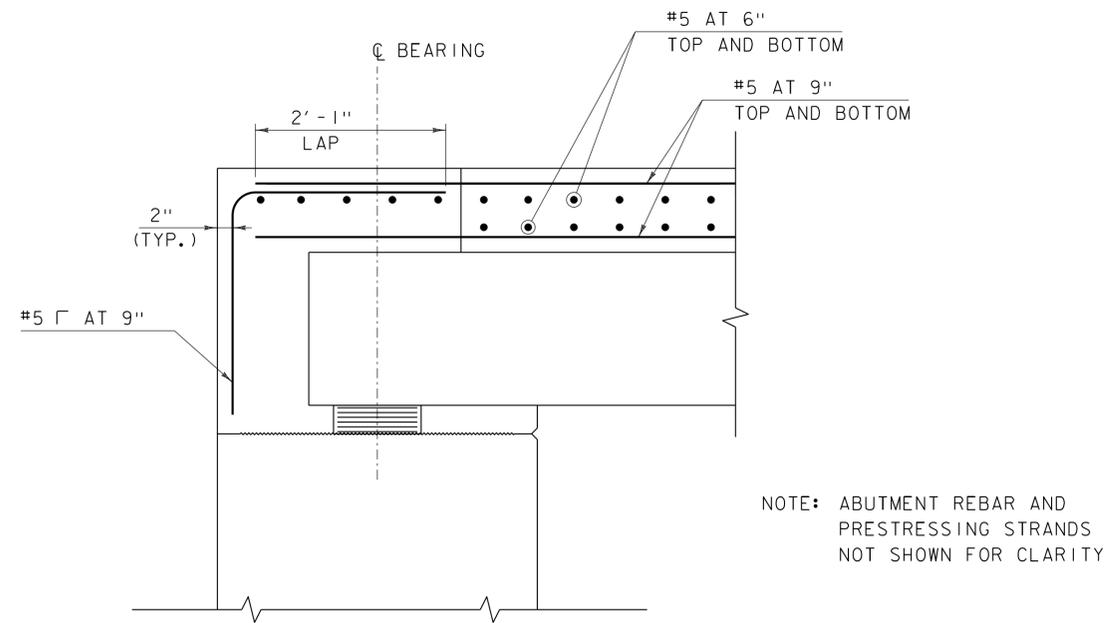
END SECTION DETAIL
SCALE: 1/2" = 1'-0"

- ◇ DENOTES STRAND DEBONDED 6'-0" FROM EACH END OF BEAM
- DENOTES STRAND DEBONDED 4'-0" FROM EACH END OF BEAM
- △ DENOTES STRAND DEBONDED 6" FROM EACH END OF BEAM
- DENOTES FULLY BONDED STRAND EXTENDED 3'-0" FROM BEAM END

PROJECT NAME:	RANDOLPH	FILE NAME:	z11j078sup.dgn	PLOT DATE:	9/9/2014
PROJECT NUMBER:	BRO 1444(57)	PROJECT LEADER:	J. BYATT	DRAWN BY:	M. SMITH
		DESIGNED BY:	N. CARON	CHECKED BY:	J. BYATT
		NEXT BEAM DETAILS (1 OF 2)		SHEET	21 OF 39

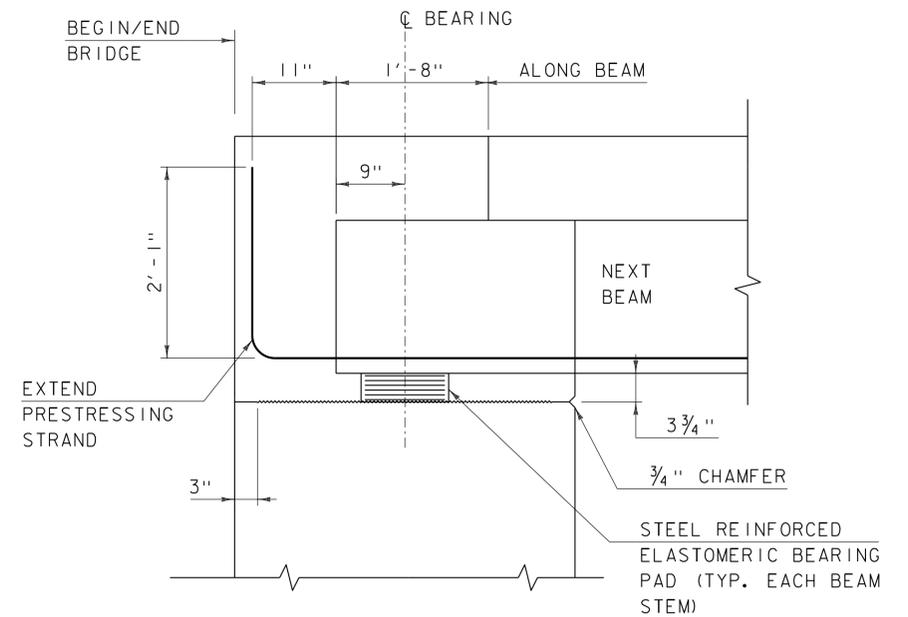
MODEL: 02
CLD_12-0175





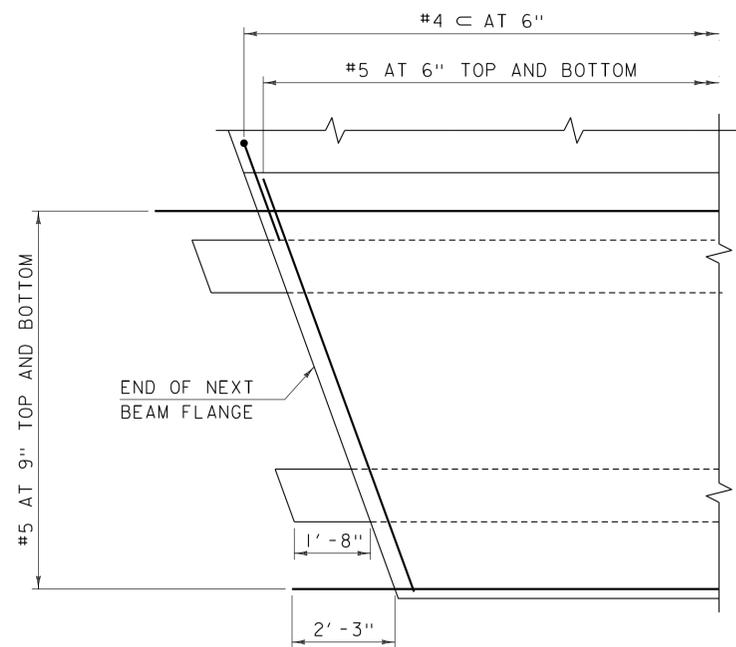
TYPICAL DECK REINFORCING AT BEAM END

SCALE: 1" = 1'-0"



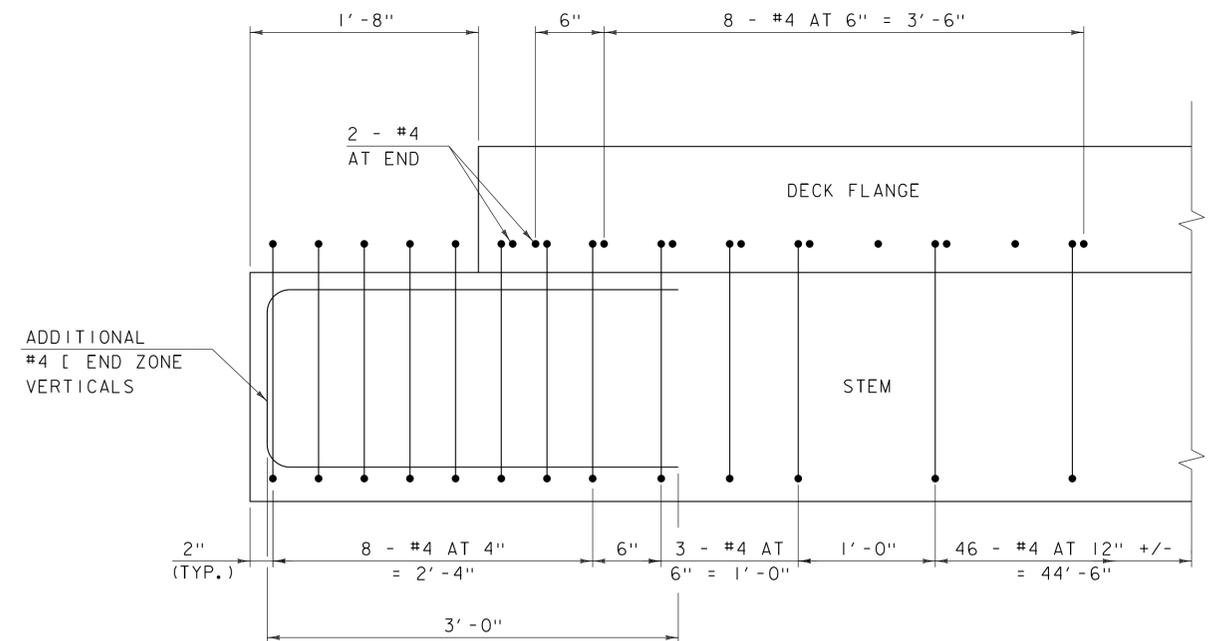
TYPICAL BEAM END DETAIL

SCALE: 1" = 1'-0"



PARTIAL BEAM FLANGE PLAN

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



ADDITIONAL BEAM END REINFORCING

LONGITUDINAL SECTION

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

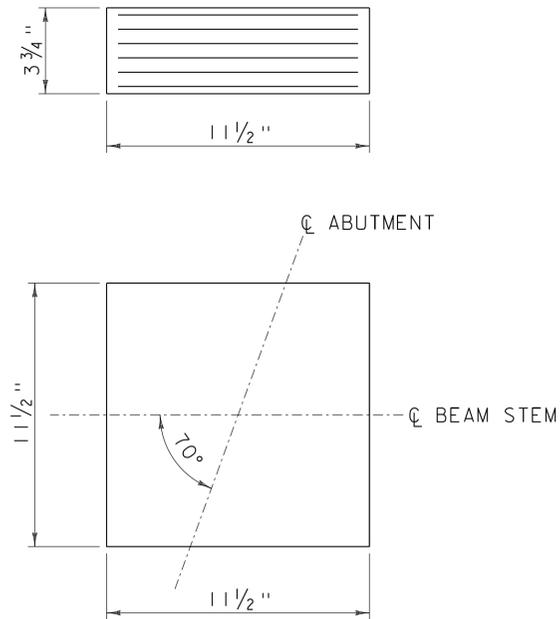
CLD 12-0175 MODEL: 03



PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078sup.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: N. CARON
NEXT BEAM DETAILS (2 OF 2)

PLOT DATE: 9/9/2014
DRAWN BY: M. SMITH
CHECKED BY: J. BYATT
SHEET 22 OF 39



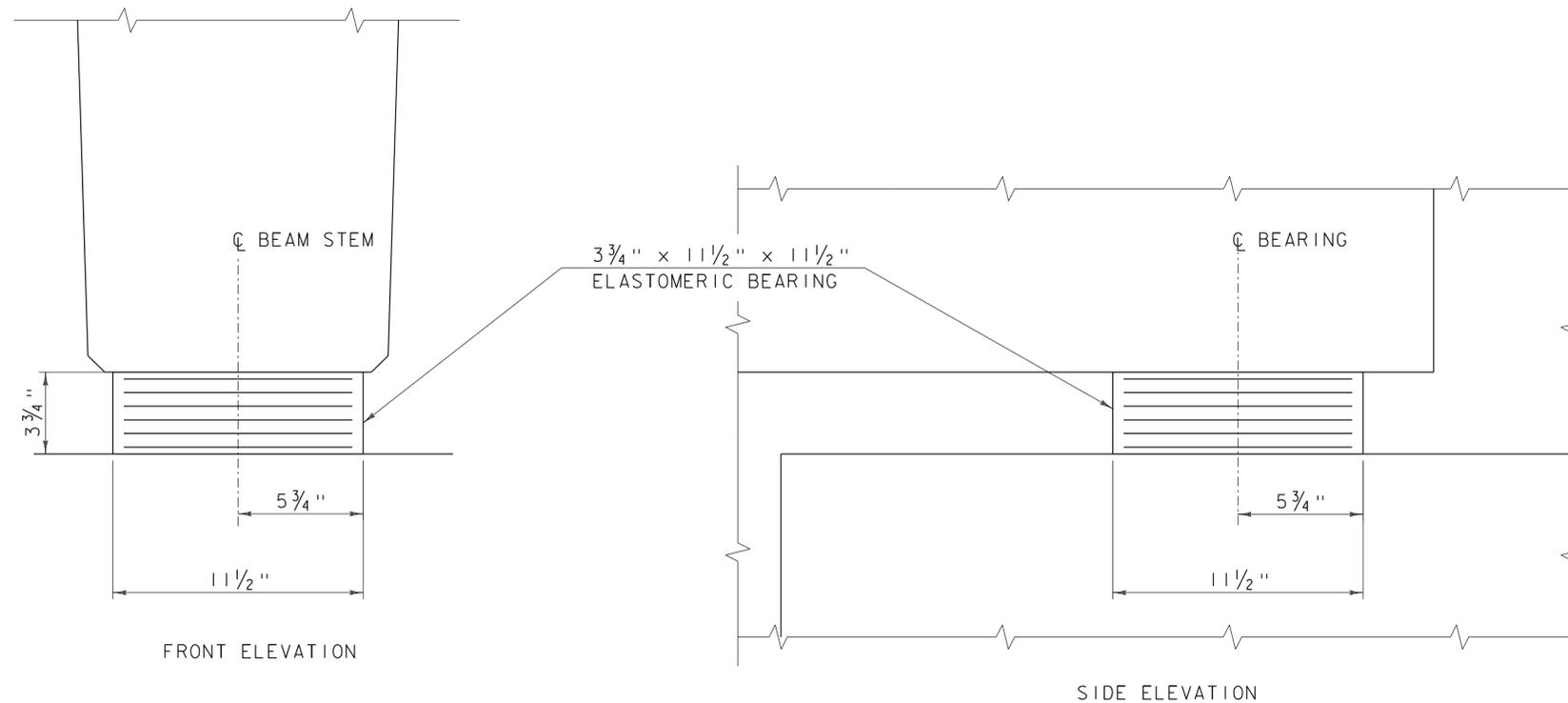
ELASTOMERIC BEARING DETAIL

SCALE: 3" = 1'-0"

- 2 - 1/4" EXTERIOR LAYERS OF ELASTOMER
- 5 - 1/2" INTERIOR LAYERS OF ELASTOMER
- 6 - 1/8" STEEL REINFORCING PLATES

BEARING NOTES

1. BEARINGS SHALL CONFORM TO THE APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731 AND SHALL BE PAID UNDER CONTRACT ITEM 531.17.
2. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMER SHALL BE STEEL MEETING THE REQUIREMENTS OF SUBSECTION 714.02. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.
3. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM 1/4" EDGE SEAL OF ELASTOMER INTEGRAL WITH BEARING OVER ALL INTERNAL PLATES.
4. THE ELASTOMER WAS DESIGNED WITH A SHEAR MODULUS RANGE OF 130 PSI - 200 PSI.
5. THE ELASTOMER SHALL MEET THE REQUIREMENTS OF LOW TEMPERATURE ZONE D, GRADE 4.
6. THE CONTRACTOR IS ADVISED TO HAVE A MINIMUM OF 8 - 1/4" x 12 1/2" x 12 1/2" GALVANIZED STEEL SHIMS AVAILABLE FOR ELEVATION ADJUSTMENTS UPON THE SETTING OF THE SUPERSTRUCTURE UNITS. THE SHIMS SHALL BE FABRICATED ACCORDING TO SECTION 531 AND SHALL BE INCLUDED IN THE UNIT BID PRICE FOR CONTRACT ITEM 531.17.
7. DESIGN SERVICE LOADS PER BEARING: (DESIGN METHOD A)
 MAX DEAD LOAD: 30.5 K
 MAX LIVE LOAD: 30.4 K



ELASTOMERIC BEARING DETAIL

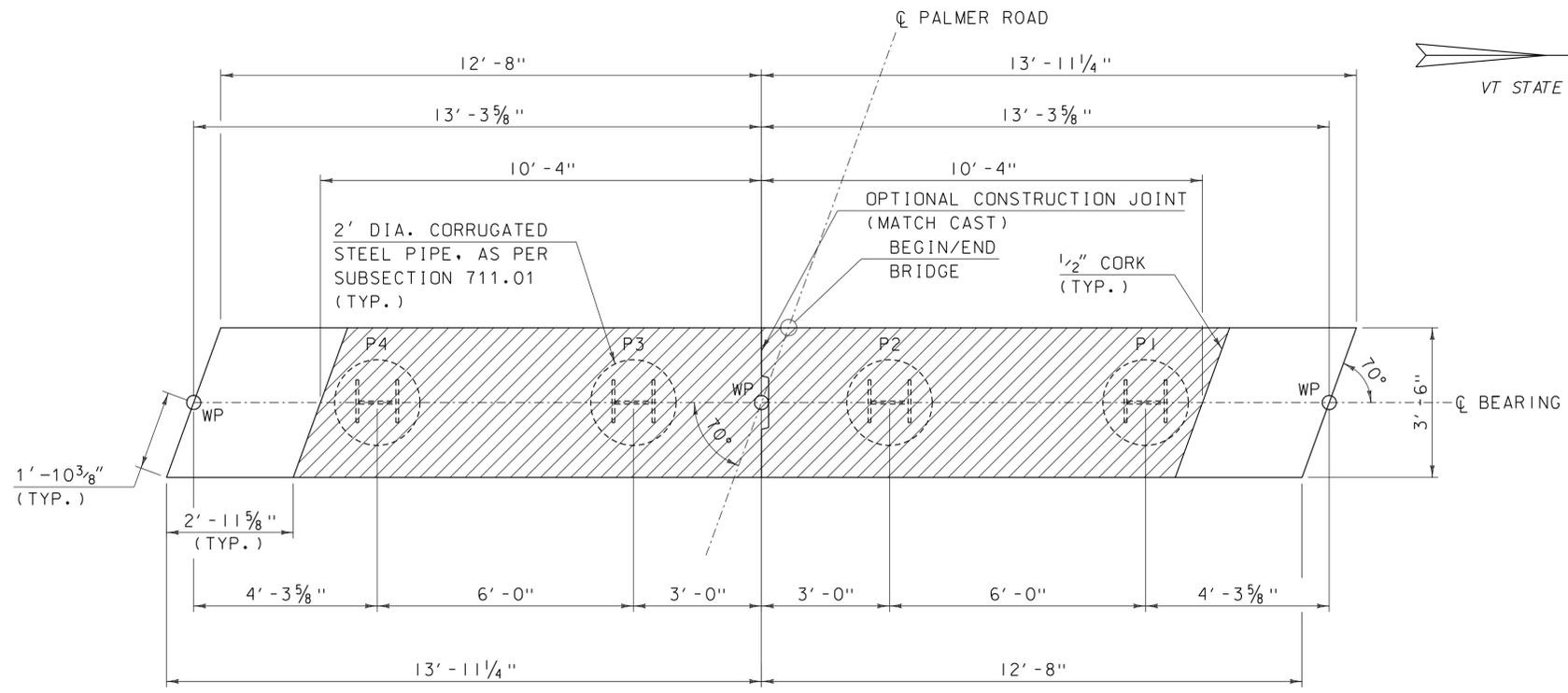
SCALE: 3" = 1'-0"

PROJECT NAME: RANDOLPH
 PROJECT NUMBER: BRO 1444(57)

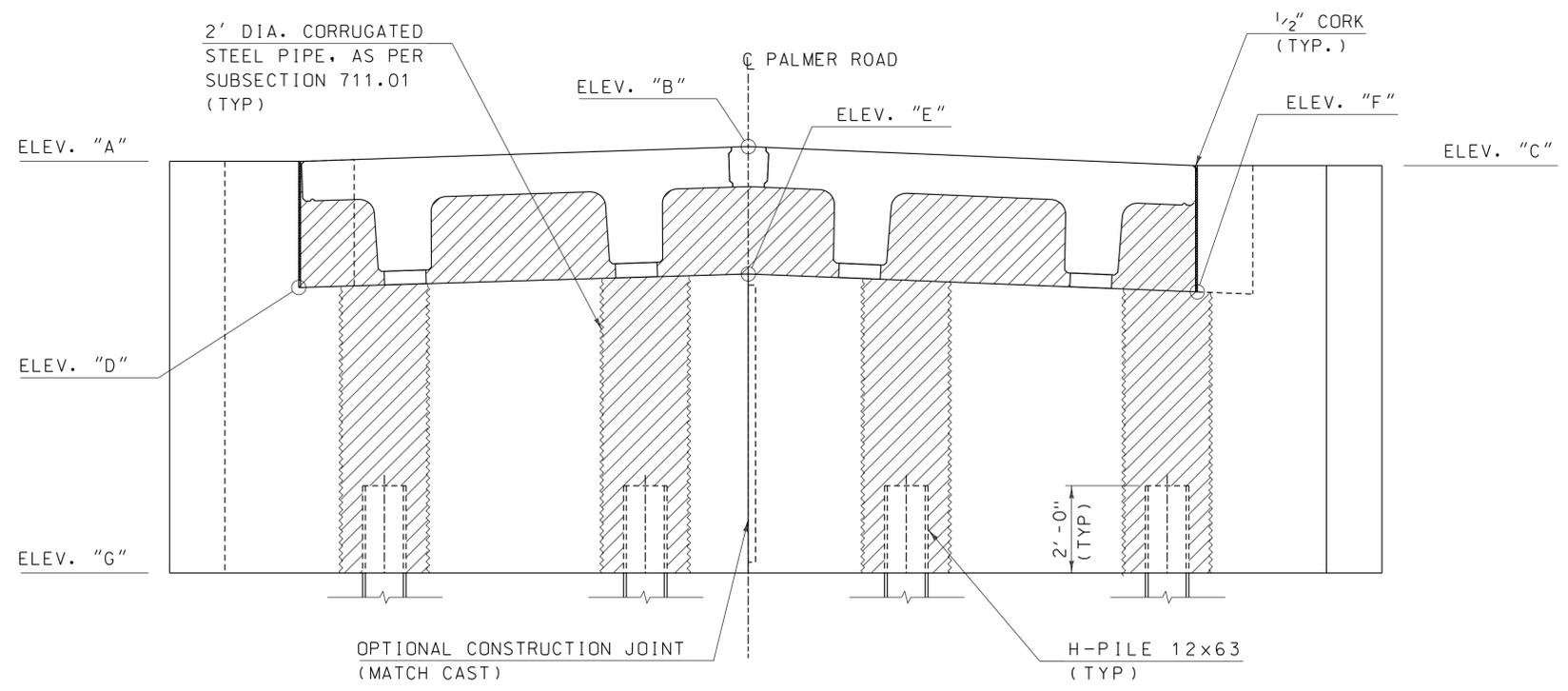
FILE NAME: z11j078sup.dgn
 PROJECT LEADER: J. BYATT
 DESIGNED BY: N. CARON
 BEARING DETAILS

PLOT DATE: 9/9/2014
 DRAWN BY: M. SMITH
 CHECKED BY: J. BYATT
 SHEET 23 OF 39

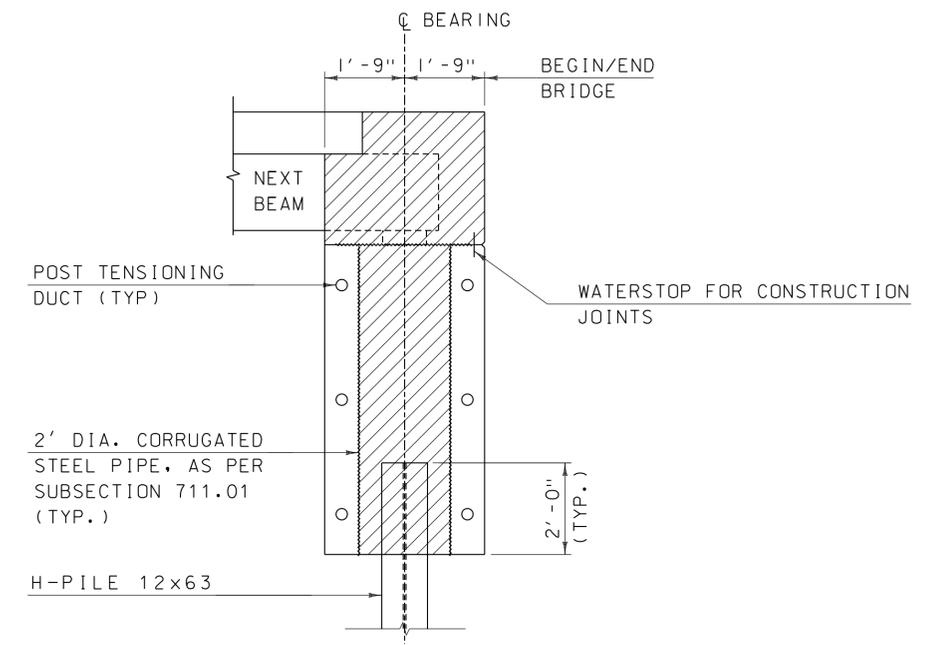




ABUTMENT I PLAN (PCU I)
SCALE: 1/2" = 1'-0"



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



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

PCU ELEVATIONS

	AB1	AB2
ELEV "A"	574.45	575.46
ELEV "B"	574.76	575.92
ELEV "C"	574.29	575.62
ELEV "D"	571.55	572.56
ELEV "E"	571.86	573.03
ELEV "F"	571.40	572.72
ELEV "G"	564.75	566.00

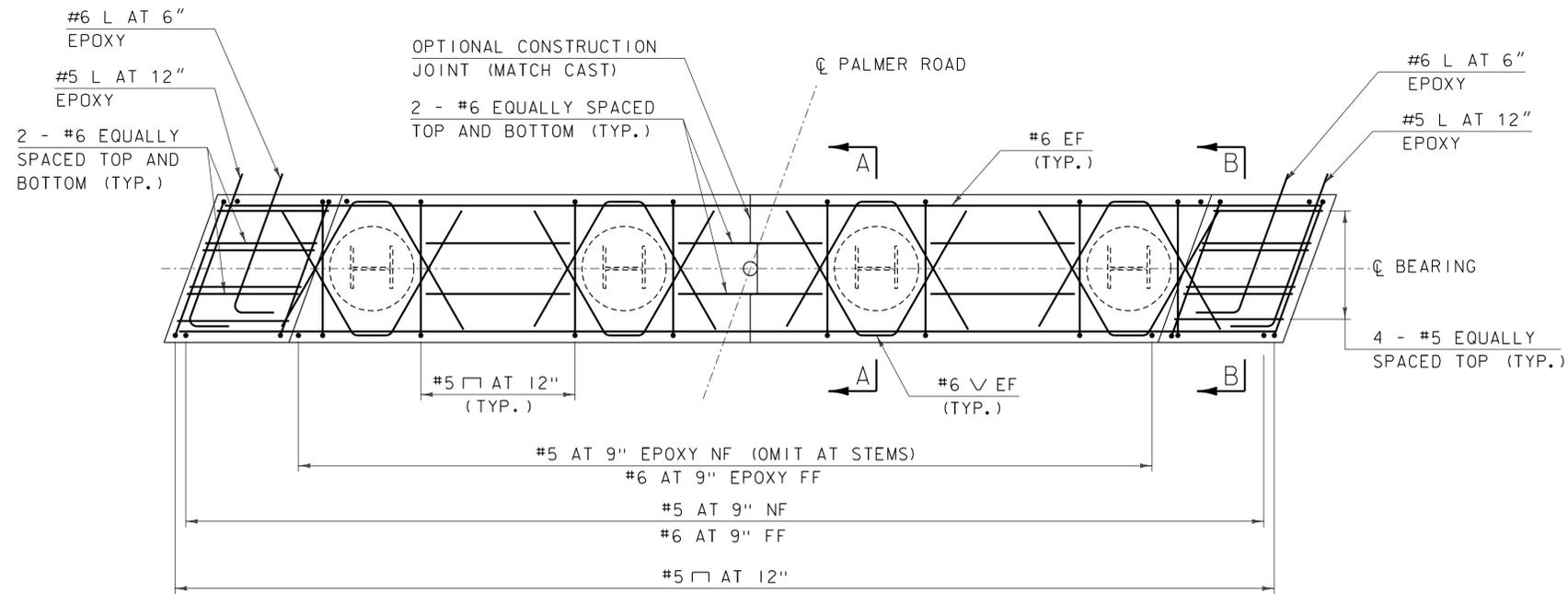
NOTE: ELEVATIONS ARE AT CENTERLINE BEARING

NOTE: ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR



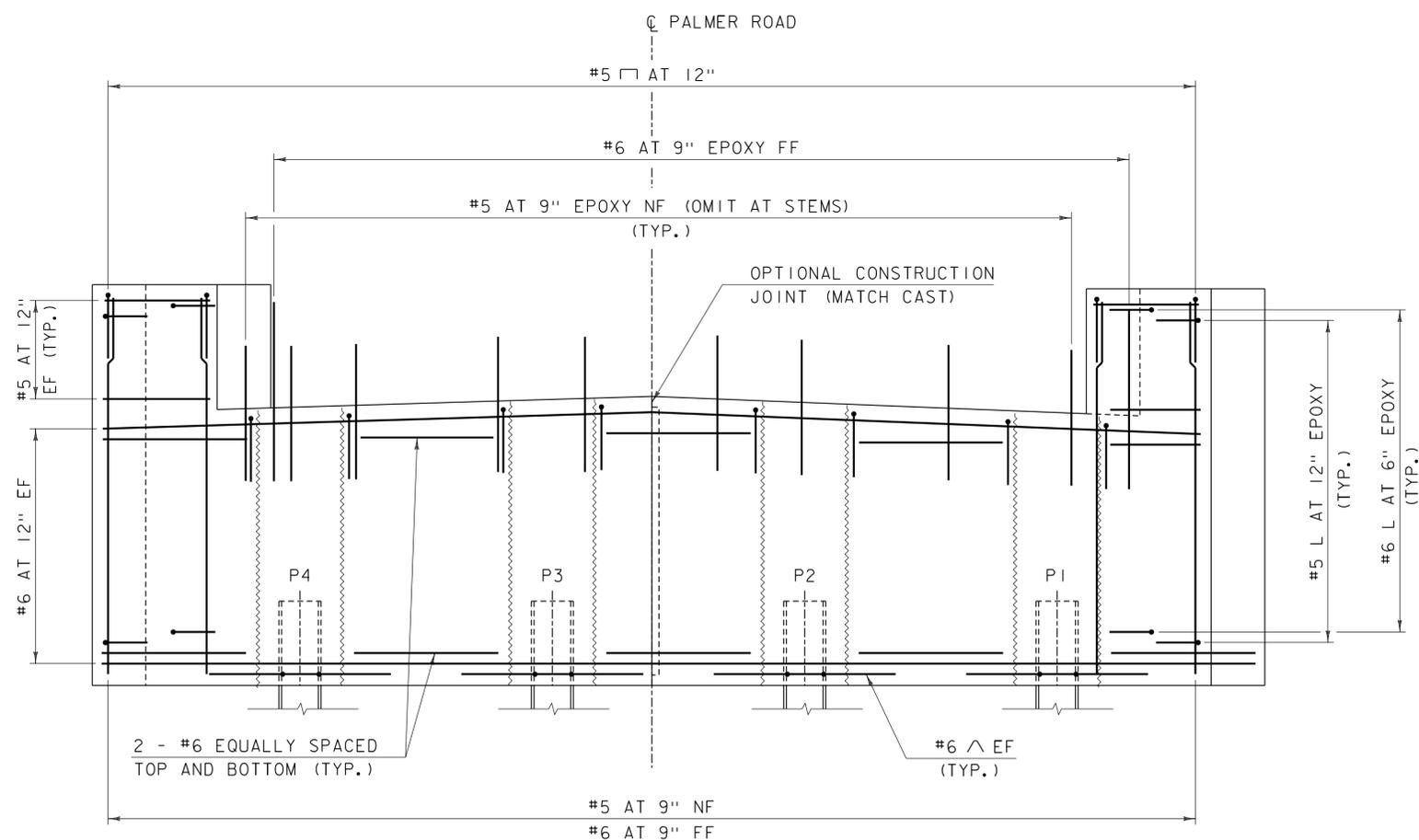
PROJECT NAME: RANDOLPH	PLOT DATE: 9/9/2014
PROJECT NUMBER: BRO 1444(57)	DRAWN BY: M. SMITH
FILE NAME: zllj078sub.dgn	DESIGNED BY: N. CARON
PROJECT LEADER: J. BYATT	CHECKED BY: J. BYATT
ABUTMENT PLAN	SHEET 24 OF 39

CLD 12-0175 MODEL: 02



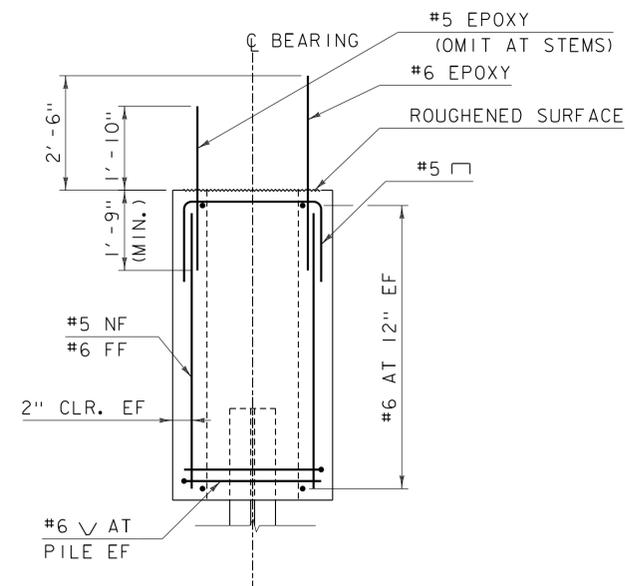
ABUTMENT I REINFORCING PLAN (PCU I)

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



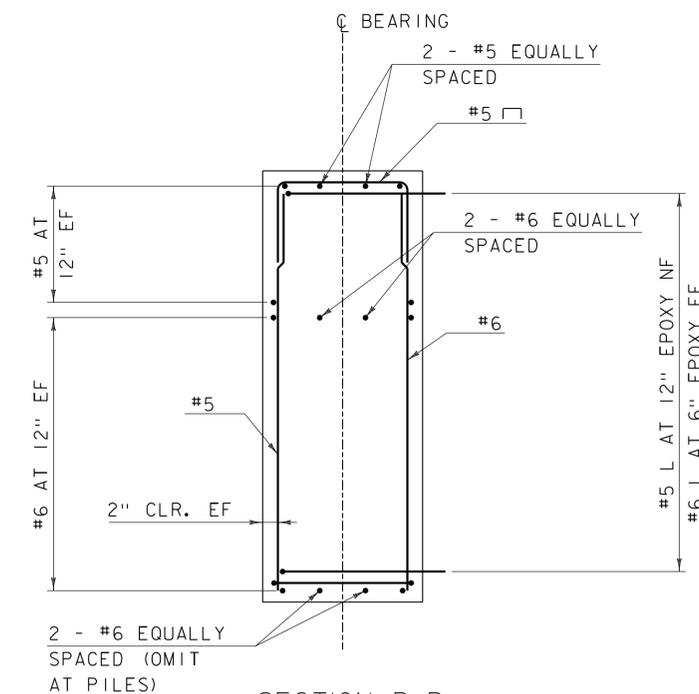
ABUTMENT I REINFORCING ELEVATION (PCU I)

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



SECTION A-A

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



SECTION B-B

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

NOTE:

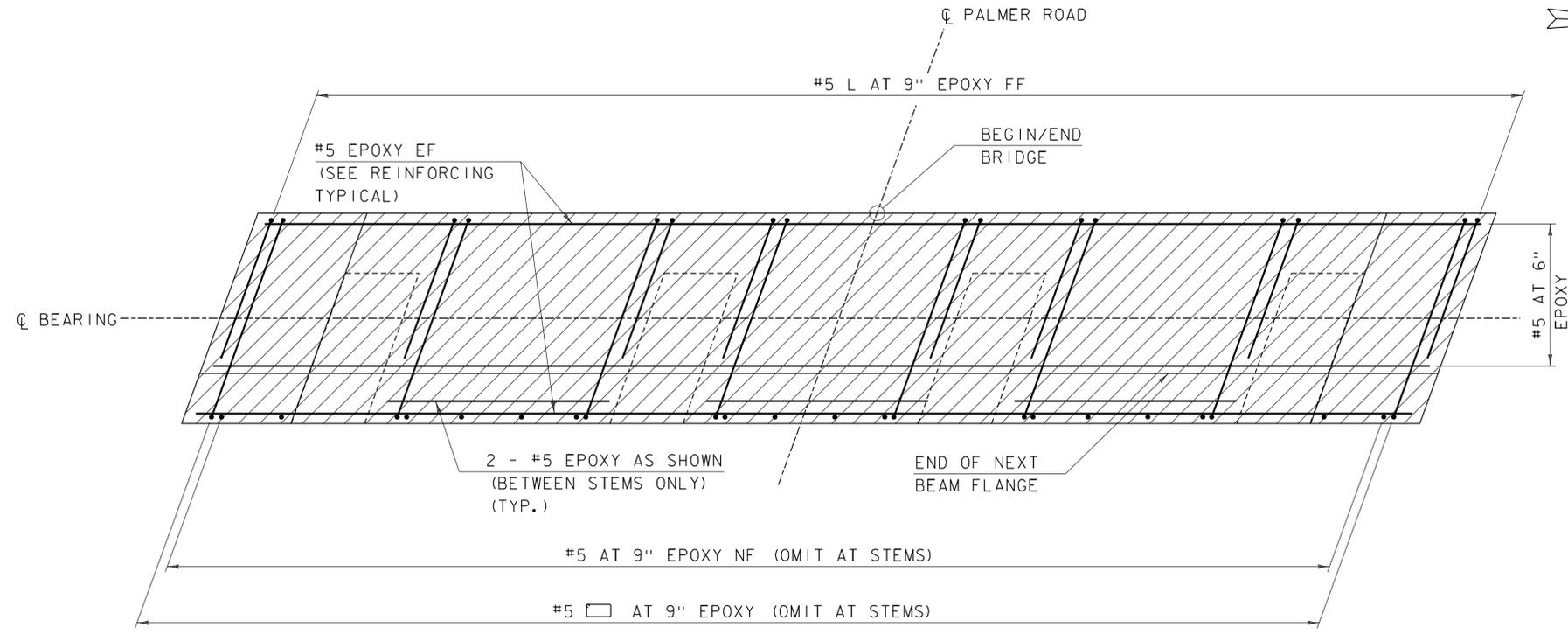
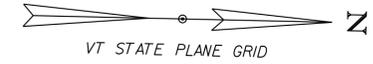
NF = NEAR FACE
 FF = FAR FACE
 EF = EACH FACE
 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE THE PLANS.
 2'-6" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS

NOTE: REINFORCING STEEL FOR ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

PROJECT NAME: RANDOLPH
 PROJECT NUMBER: BRO 1444(57)
 FILE NAME: z11j078sub.dgn
 PROJECT LEADER: J. BYATT
 DESIGNED BY: N. CARON
 ABUTMENT REINFORCING

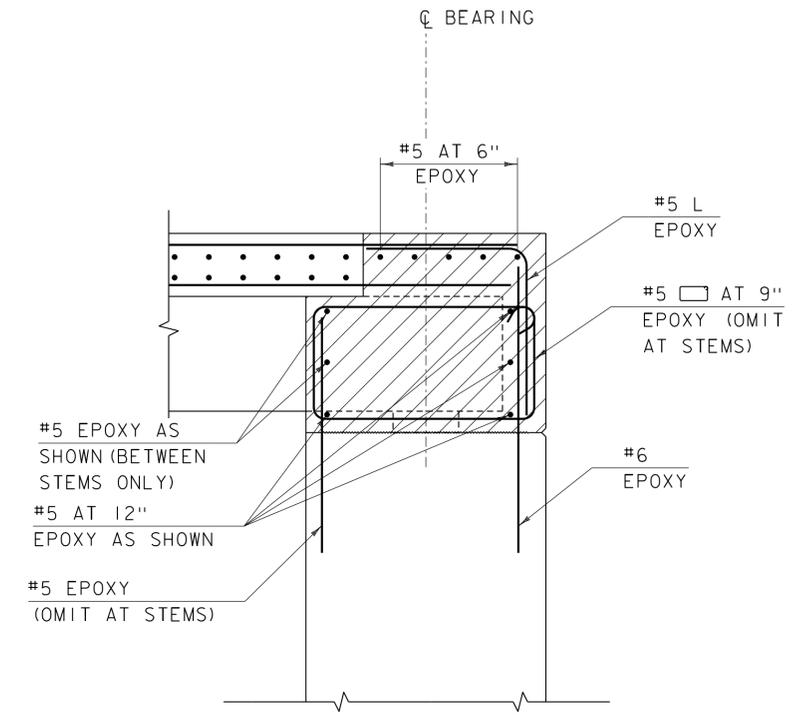


PLOT DATE: 9/9/2014
 DRAWN BY: M. SMITH
 CHECKED BY: J. BYATT
 SHEET 25 OF 39



BEAM-END CLOSURE POUR
REINFORCING PLAN

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

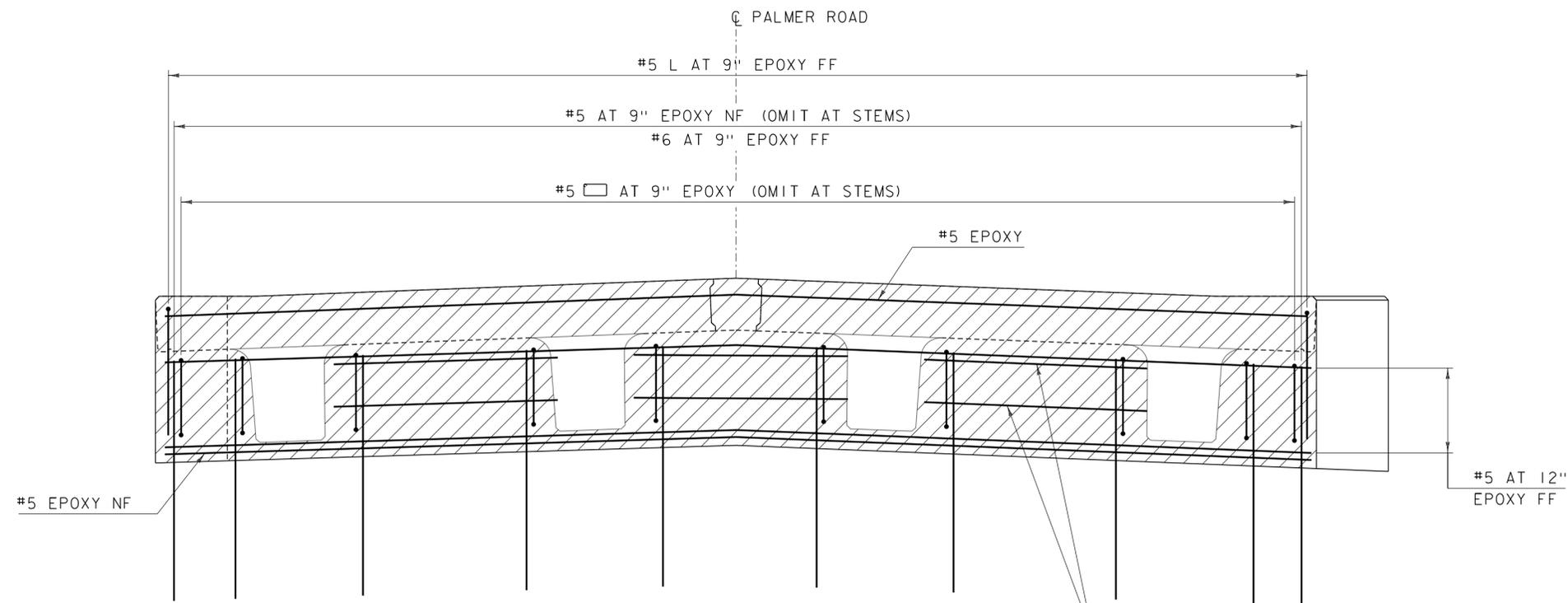


REINFORCING TYPICAL

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

NOTE:

- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- 2" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE THE PLANS.
- 2'-1" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS



BEAM-END CLOSURE POUR
REINFORCING ELEVATION

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

2 - #5 EPOXY NF
AS SHOWN (BETWEEN
STEMS ONLY) (TYP.)

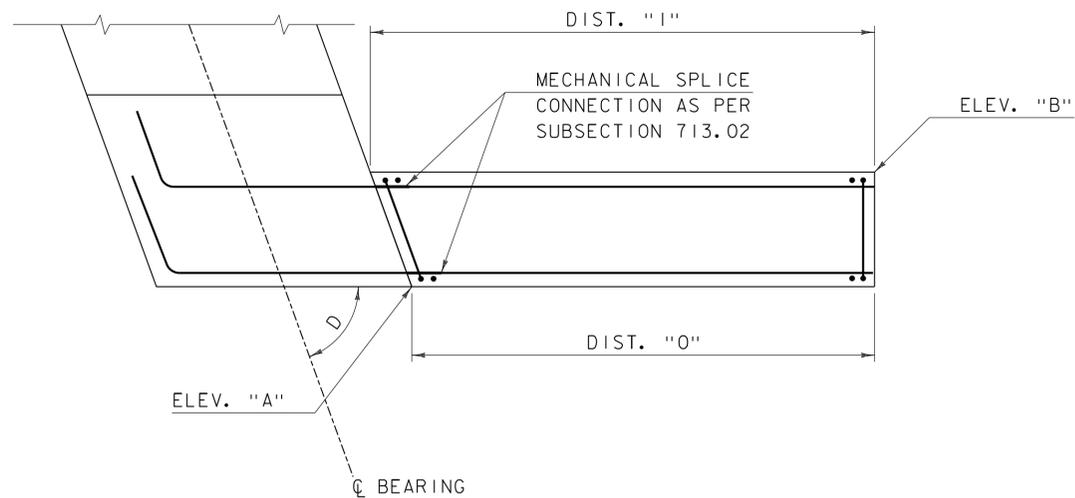
NOTE: REINFORCING STEEL FOR ABUTMENT 1
SHOWN, ABUTMENT 2 SIMILAR



PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: zllj078sup.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: N. CARON
BEAM-END CLOSURE POUR DETAILS

PLOT DATE: 9/9/2014
DRAWN BY: M. SMITH
CHECKED BY: J. BYATT
SHEET 26 OF 39



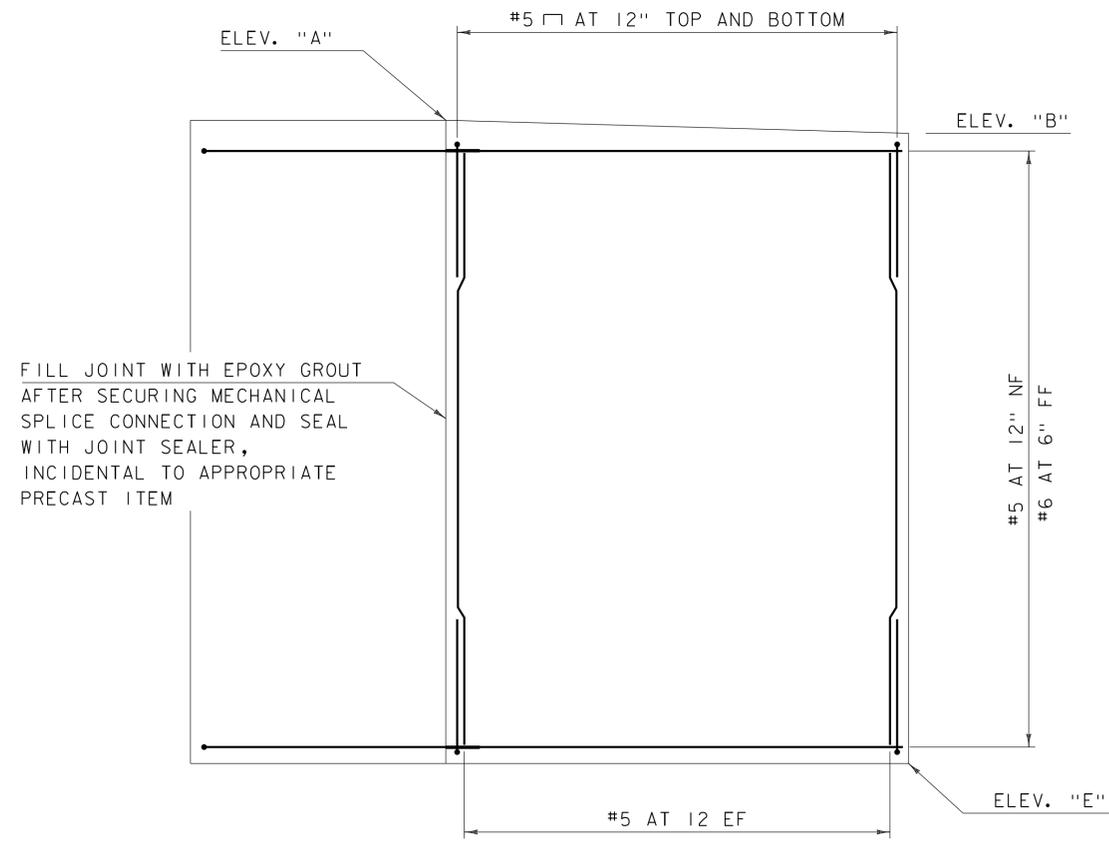
WVI PLAN (PCU3)
SCALE: 3/4" = 1'-0"

PCU ELEVATIONS

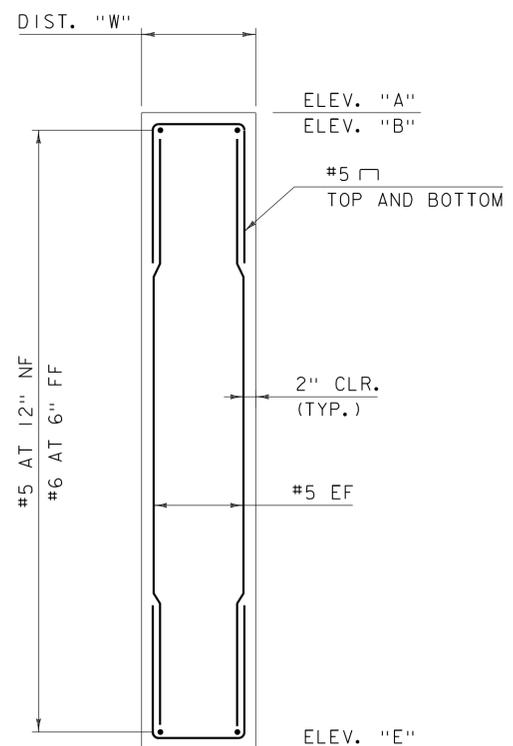
	WW1	WW2	WW3	WW4
ELEV. "A"	574.25	574.41	575.50	575.66
ELEV. "B"	574.08	574.28	576.63	575.86
ELEV. "E"	564.75	564.75	566.00	566.00
DIST. "W"	1'-6"	1'-6"	1'-6"	1'-6"
DIST. "I"	7'-3 1/2"	6'-2 1/2"	6'-2 1/2"	7'-3 1/2"
DIST. "O"	6'-9"	6'-9"	6'-9"	6'-9"
ANGLE "D"	70°	110°	110°	70°

NOTES:

1. EPOXY GROUT SHALL BE INCIDENTAL TO ITEM 540.10, "PRECAST CONCRETE STRUCTURE".
2. ALL REBAR AND MECHANICAL CONNECTORS IN WINGWALLS SHALL BE LEVEL 1 EPOXY COATED.
3. THE BRIDGE PLAQUE FURNISHED BY THE AGENCY SHALL BE CAST INTO WINGWALL 2. ALL WORK TO INSTALL THE PLAQUE SHALL BE INCIDENTAL TO THE PRECAST CONCRETE STRUCTURE ITEM. SEE SD-502.00 FOR FURTHER DETAILS.
4. WW1 SHOWN, OTHERS SHALL BE SIMILAR.



WVI ELEVATION (PCU3)
SCALE: 3/4" = 1'-0"



WVI TYPICAL (PCU3)
SCALE: 3/4" = 1'-0"

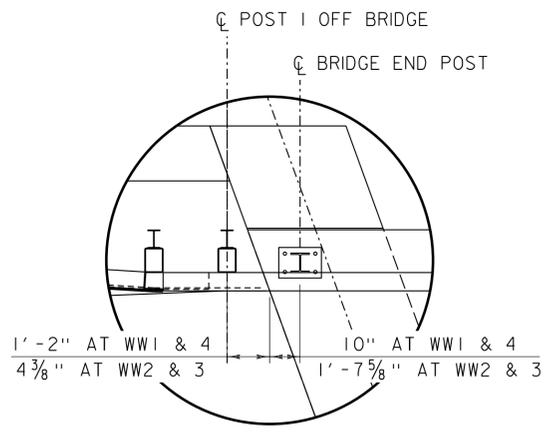
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE THE PLANS.
2'-6" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS

PROJECT NAME: RANDOLPH	PLOT DATE: 9/9/2014
PROJECT NUMBER: BRO 1444(57)	DRAWN BY: M. SMITH
FILE NAME: z11j078sub.dgn	CHECKED BY: J. BYATT
PROJECT LEADER: J. BYATT	DESIGNED BY: N. CARON
WINGWALL DETAILS	SHEET 27 OF 39

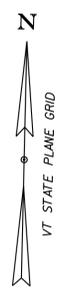
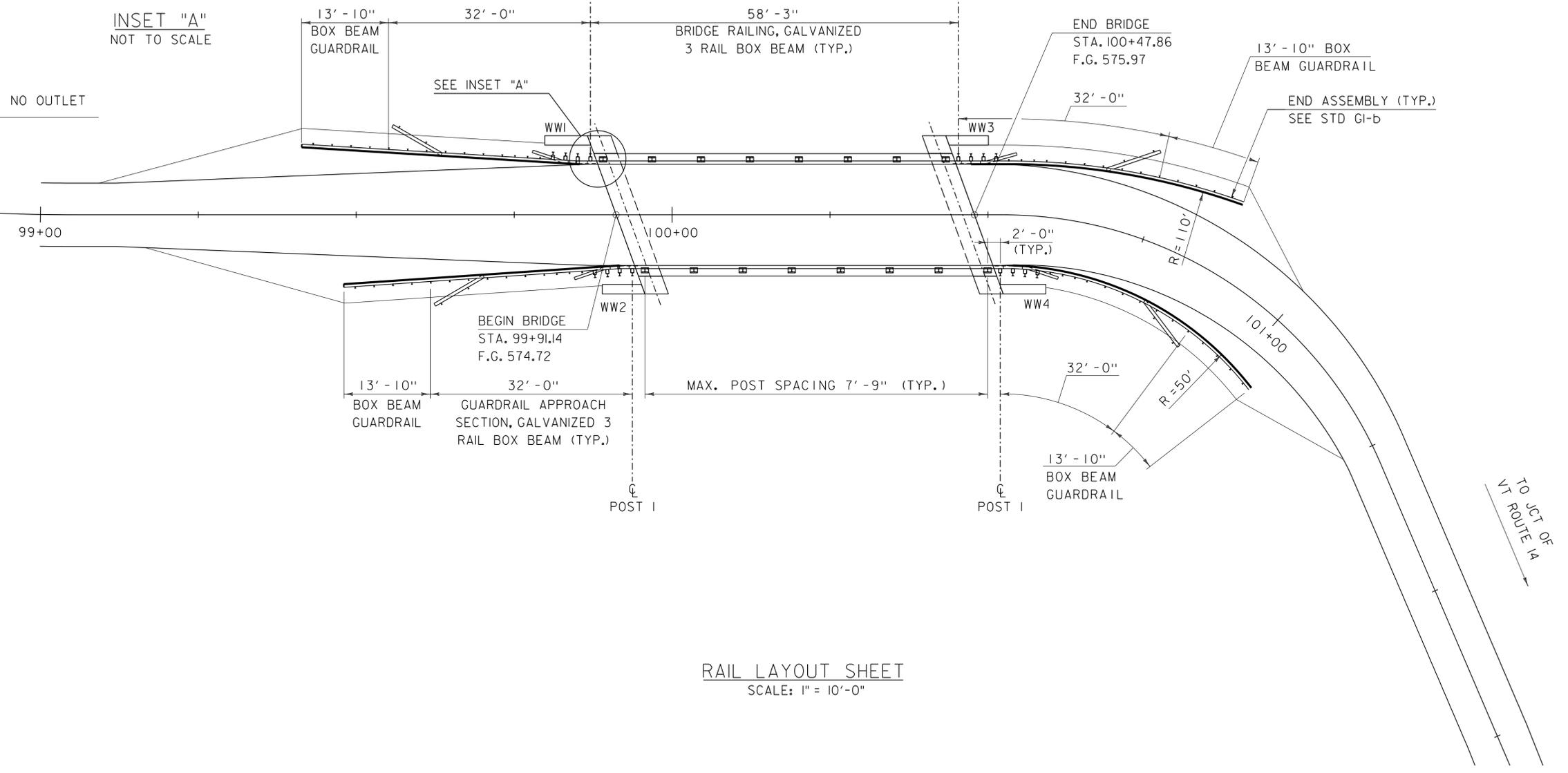


CLD 12-0175 MODEL: 04



INSET "A"
NOT TO SCALE

NO OUTLET



RAIL LAYOUT SHEET
SCALE: 1" = 10'-0"

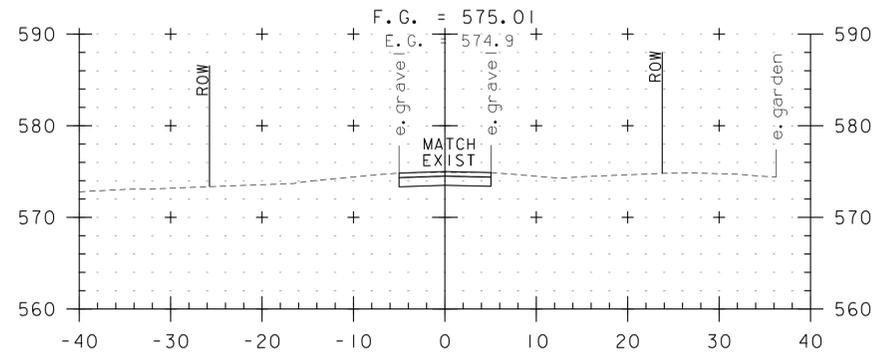
NOTES:

- SEE STANDARDS G-1b, S-364A, S-364B, S364C AND S-364D FOR FURTHER DETAILS.

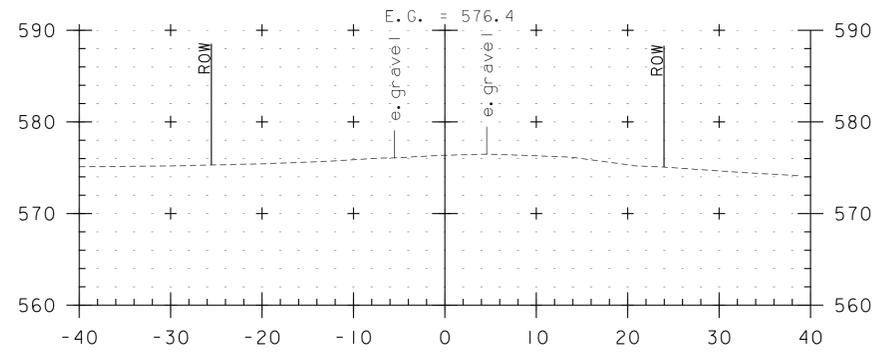


PROJECT NAME: RANDOLPH	
PROJECT NUMBER: BRO 1444(57)	
FILE NAME: z11j078rail.dgn	PLOT DATE: 9/9/2014
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: N. CARON	CHECKED BY: J. BYATT
RAIL LAYOUT SHEET	SHEET 28 OF 39

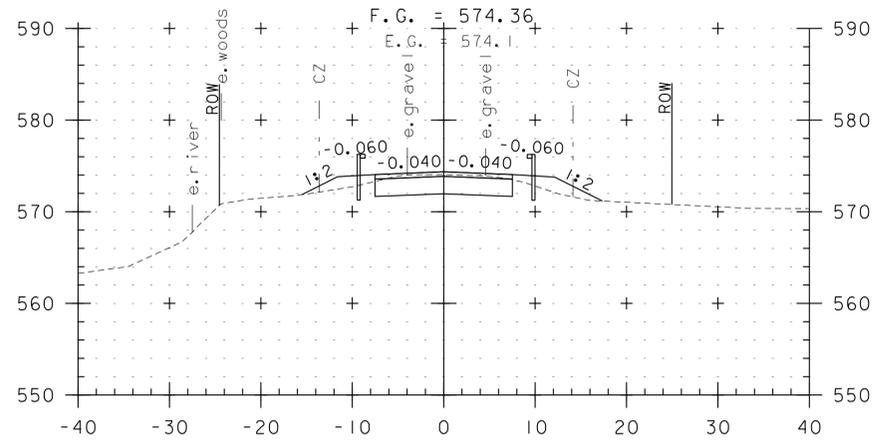
C.L.D. 12-0175 MODEL: 01



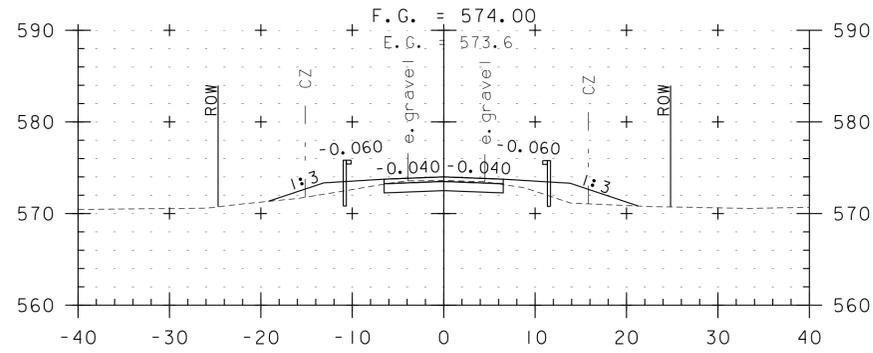
99+00
BEGIN PROJECT



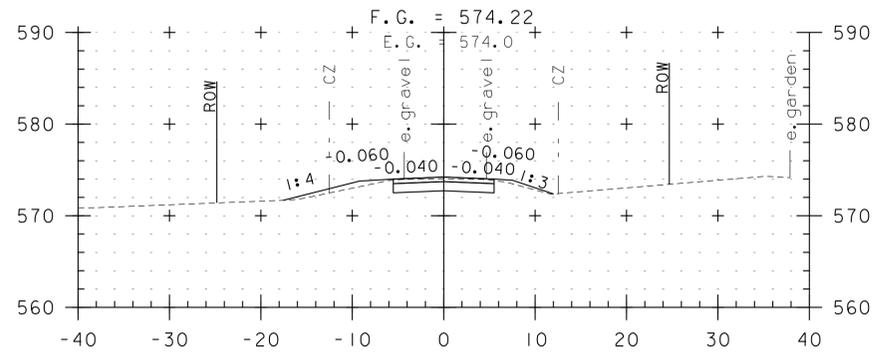
98+75



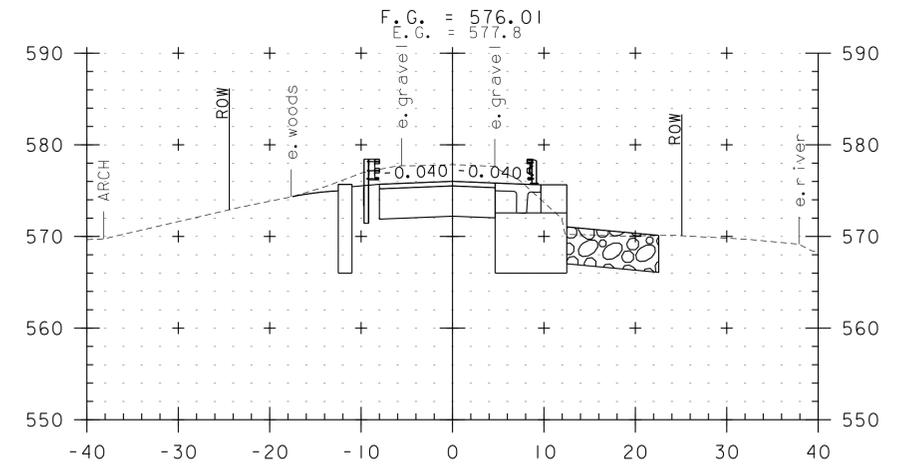
99+75



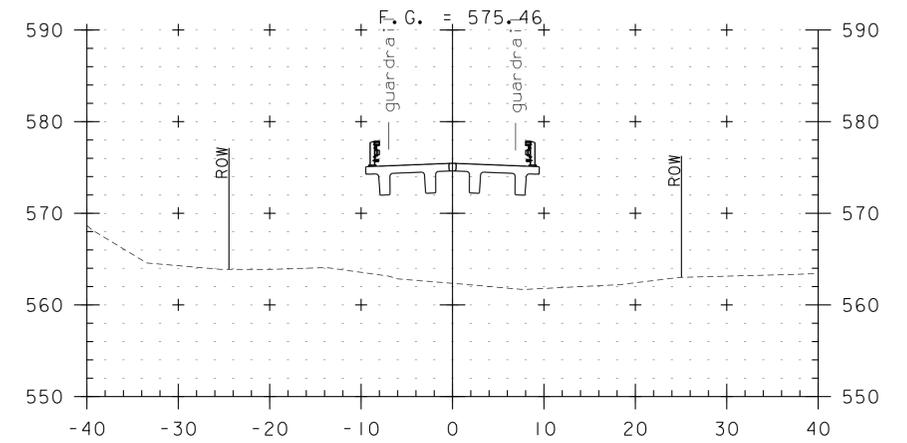
99+50



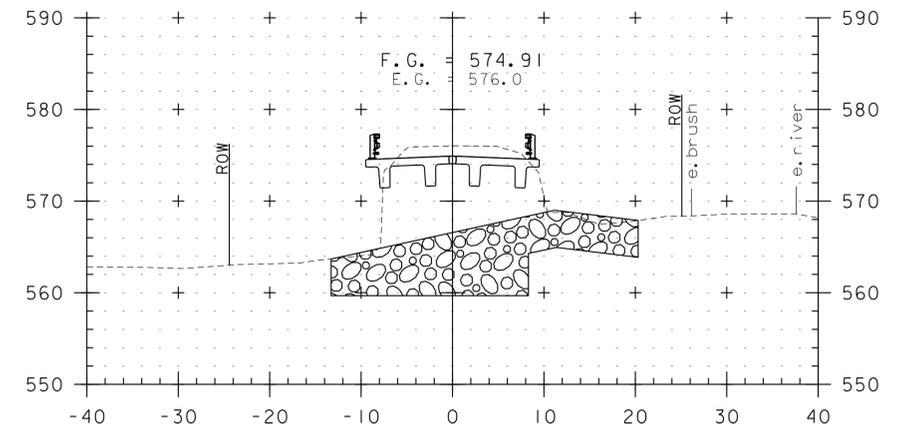
99+25



100+50
END BRIDGE STA. 100+47.86



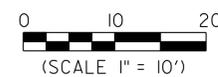
100+25

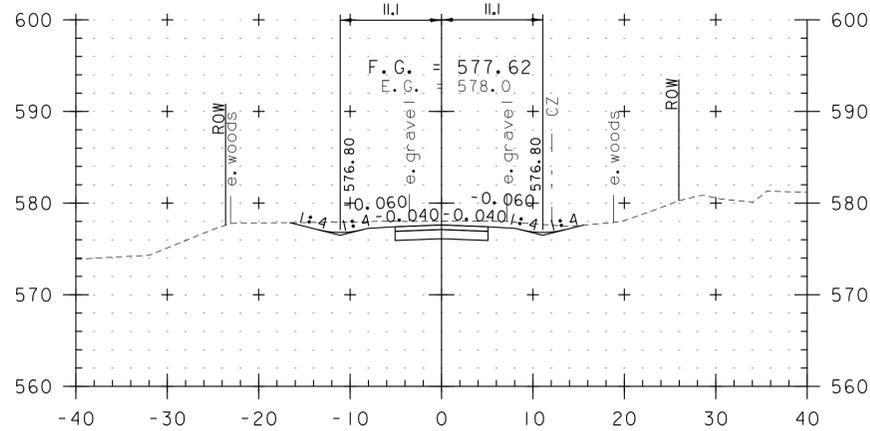


100+00
BEGIN BRIDGE STA. 99+91.14

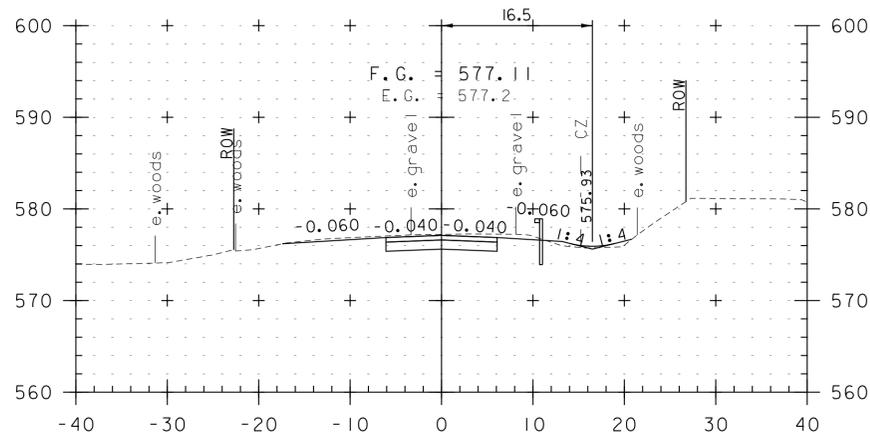
STA. 98+75 TO STA. 100+50

PROJECT NAME:	RANDOLPH	FILE NAME:	z11j078xsl.dgn	PLOT DATE:	9/9/2014
PROJECT NUMBER:	BRO 1444(57)	PROJECT LEADER:	J. BYATT	DRAWN BY:	J. SMITH
		DESIGNED BY:	J. SMITH	CHECKED BY:	D. MUNRO
		ROADWAY CROSS SECTIONS I		SHEET	29 OF 39

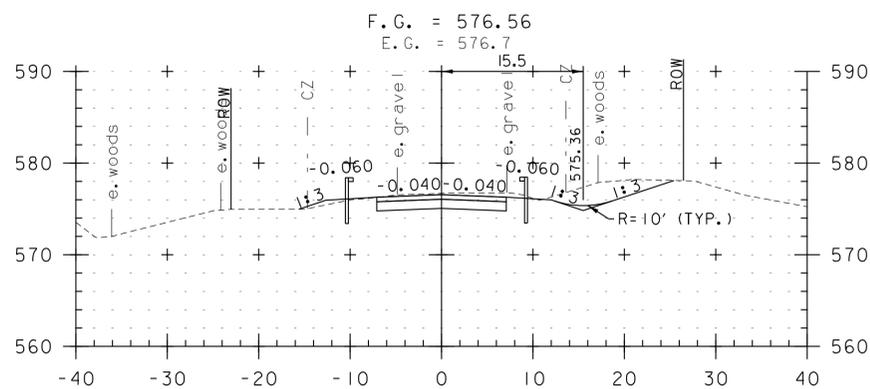




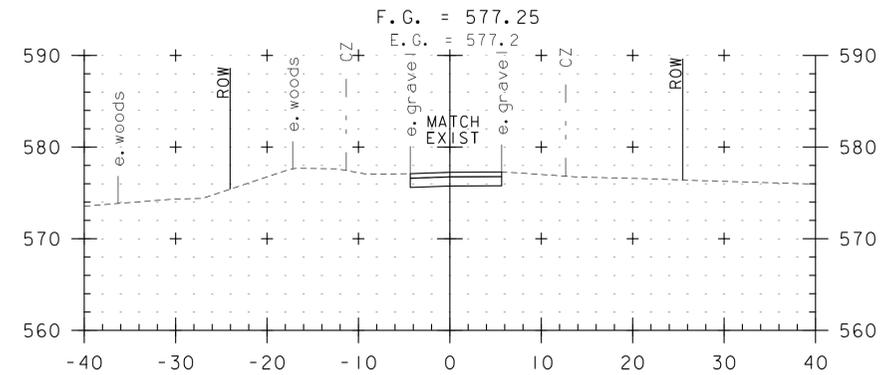
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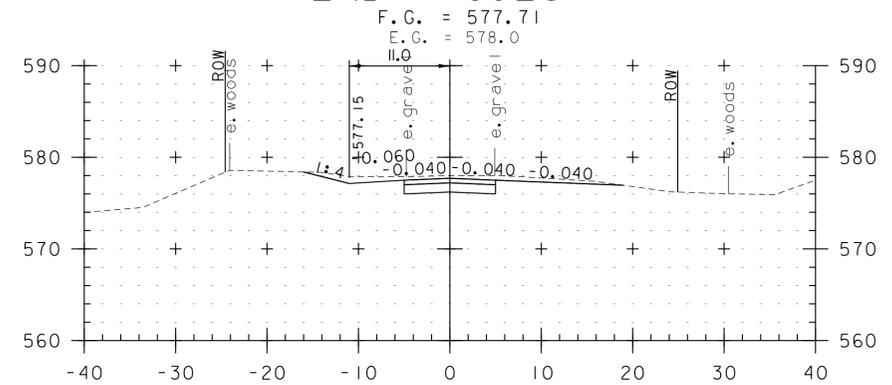
101+00



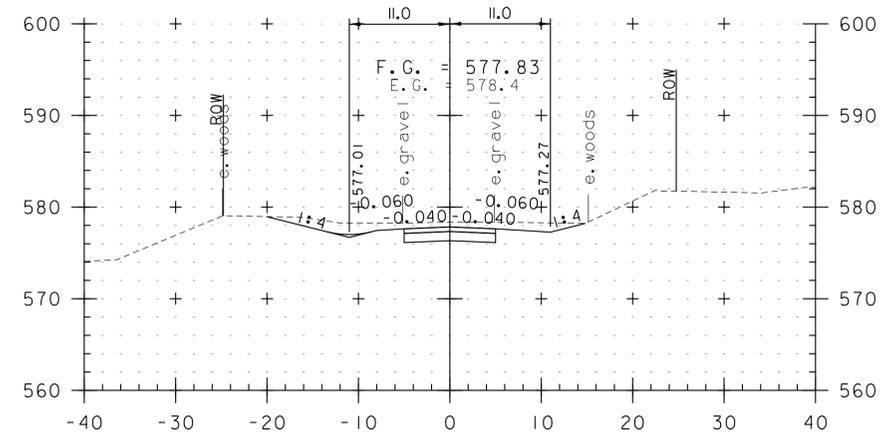
100+75



102+00
END PROJECT



101+75



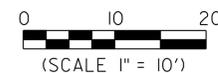
101+50

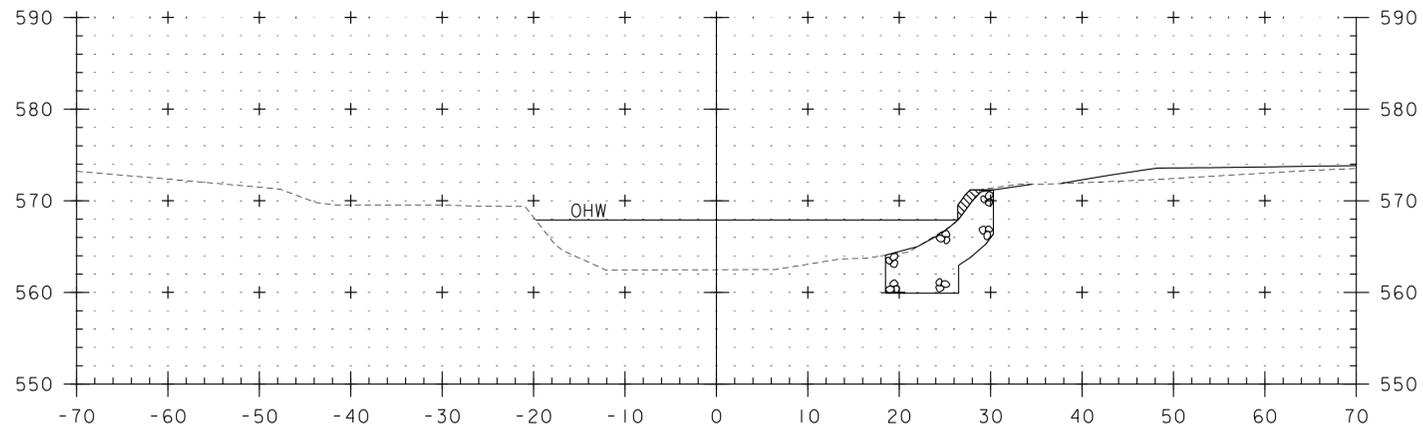
STA. 100+75 TO STA. 102+00

PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078xsl.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: J. SMITH
ROADWAY CROSS SECTIONS 2

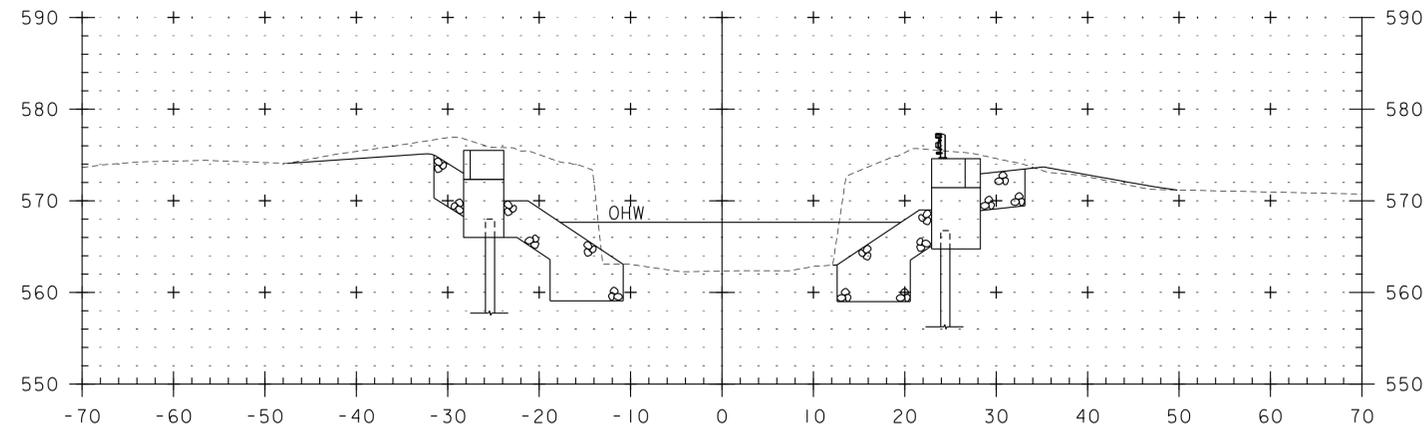
PLOT DATE: 9/9/2014
DRAWN BY: J. SMITH
CHECKED BY: D. MUNRO
SHEET 30 OF 39





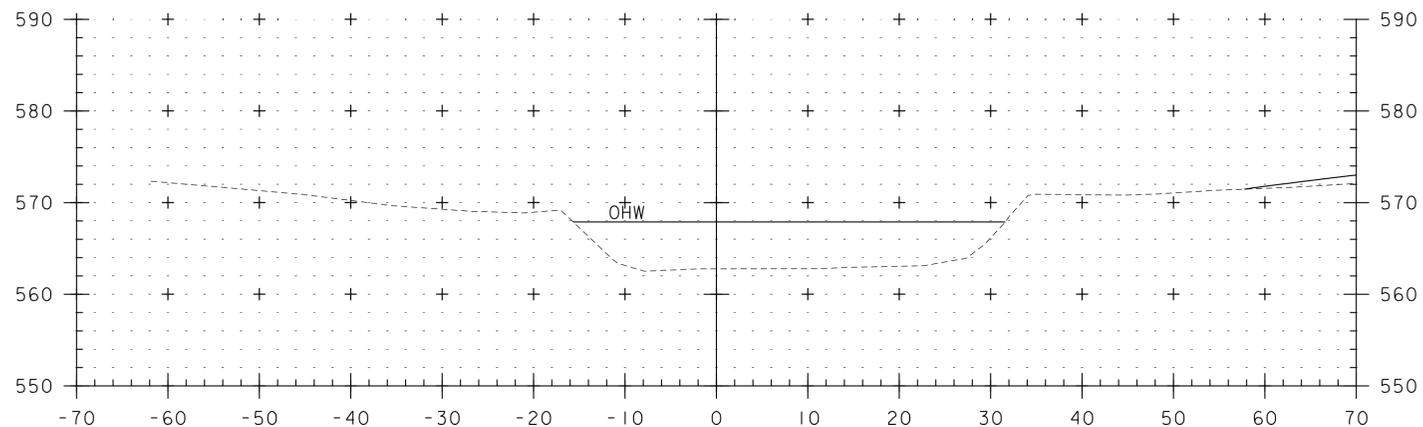
0+20

STA. 0+17 RT
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION
 STONE FILL, TYPE IV
 GEOTEXTILE UNDER STONE FILL, TYPE IV
 GRUBBING MATERIAL

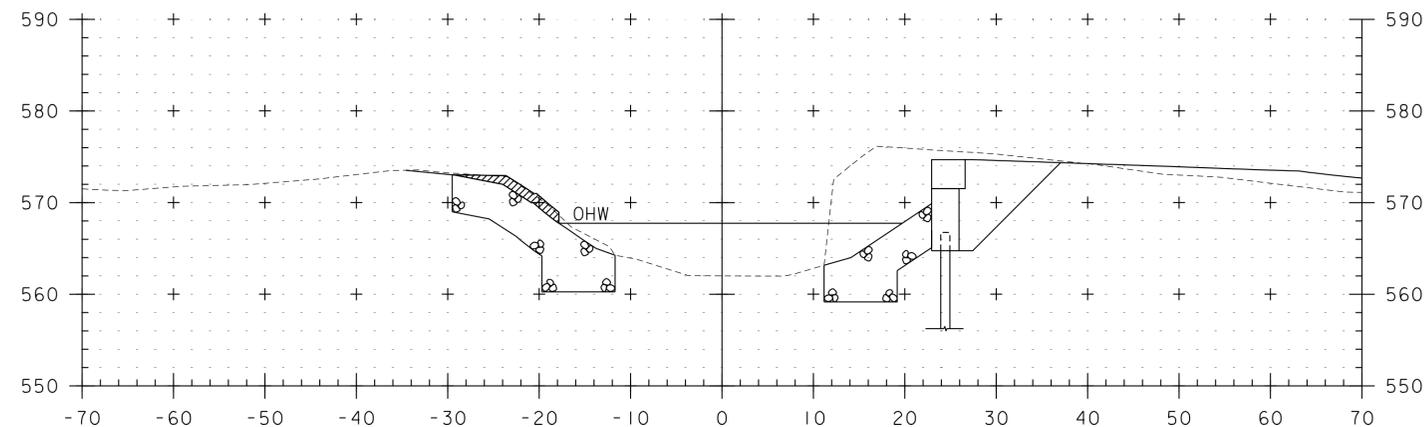


0+50

STA. 0+49 LT
 END GRUBBING MATERIAL



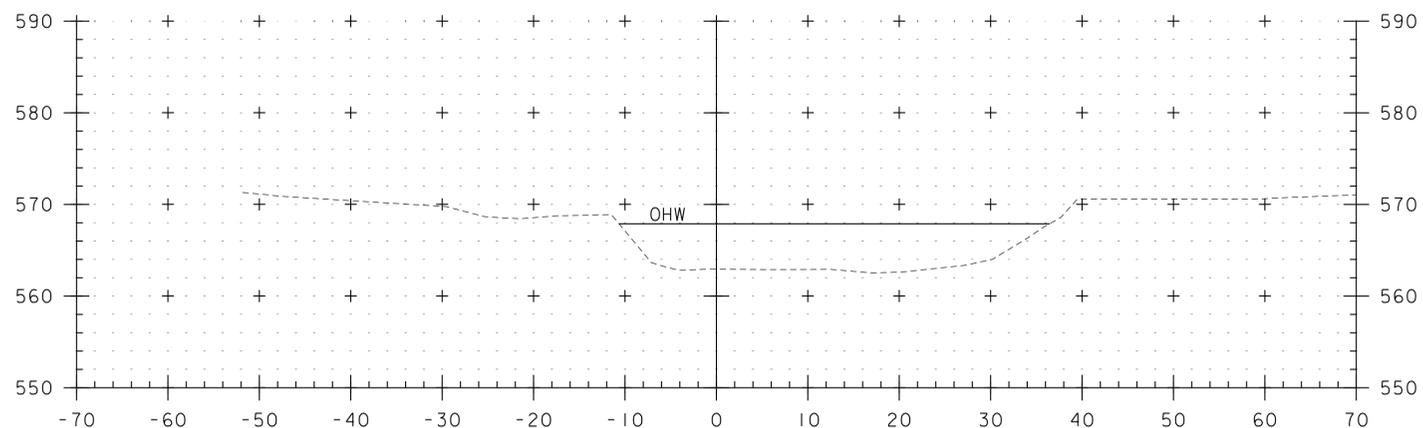
0+10



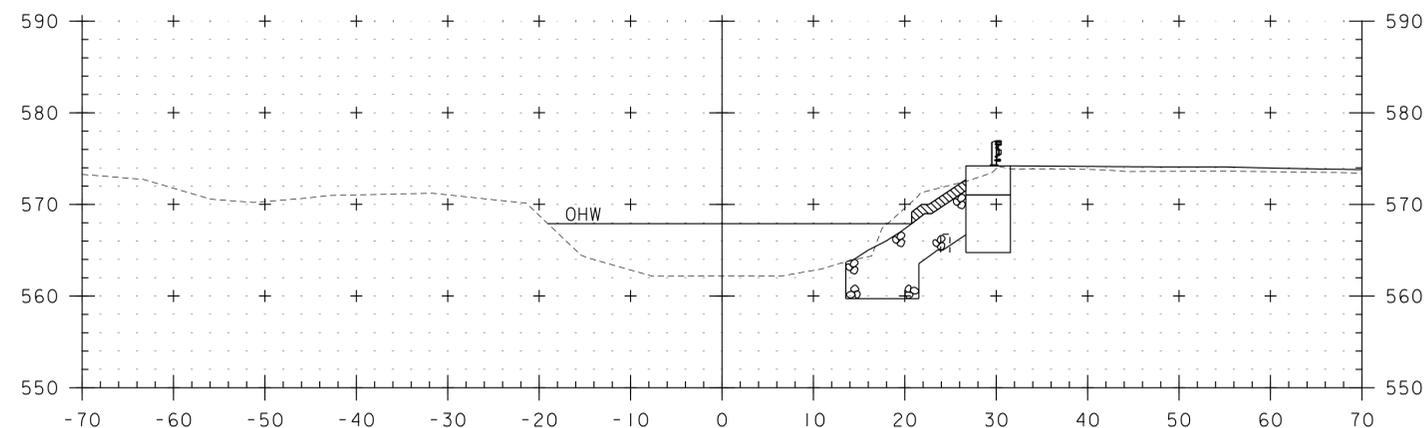
0+40

STA. 0+33 LT
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION
 STONE FILL, TYPE IV
 GEOTEXTILE UNDER STONE FILL, TYPE IV
 GRUBBING MATERIAL

STA. 0+36 RT
 END GRUBBING MATERIAL



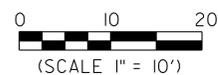
0+00



0+30

STA. 0+00 TO STA. 0+50

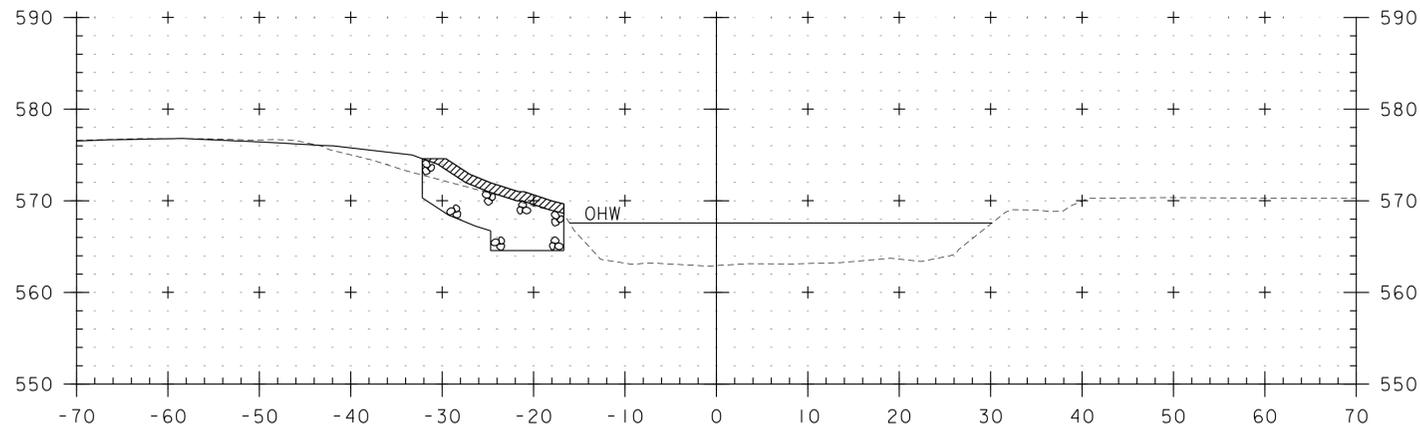
CLD 12-0175 MODEL: XSCHL01



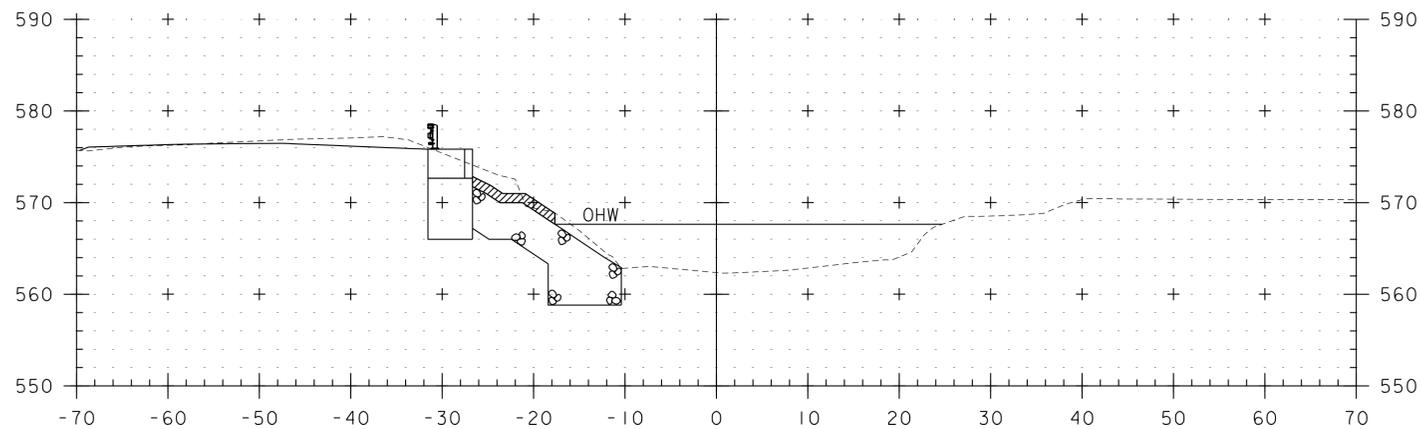
PROJECT NAME: RANDOLPH
 PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078xschl.dgn
 PROJECT LEADER: J. BYATT
 DESIGNED BY: N. CARON
 CHANNEL CROSS SECTIONS (1 OF 2)

PLOT DATE: 9/9/2014
 DRAWN BY: M. SMITH
 CHECKED BY: J. BYATT
 SHEET 31 OF 39



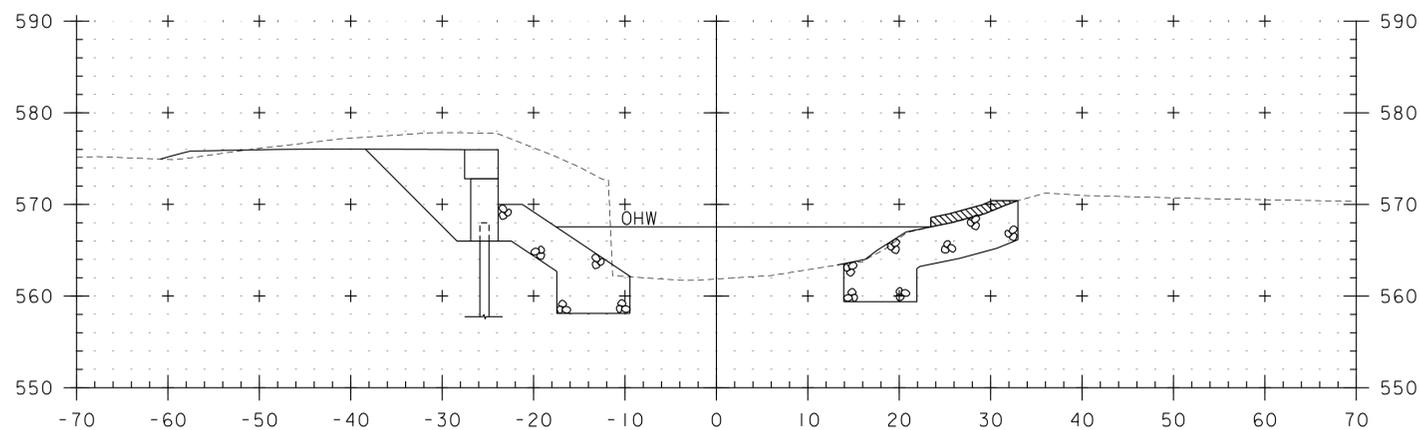
0+80



0+70

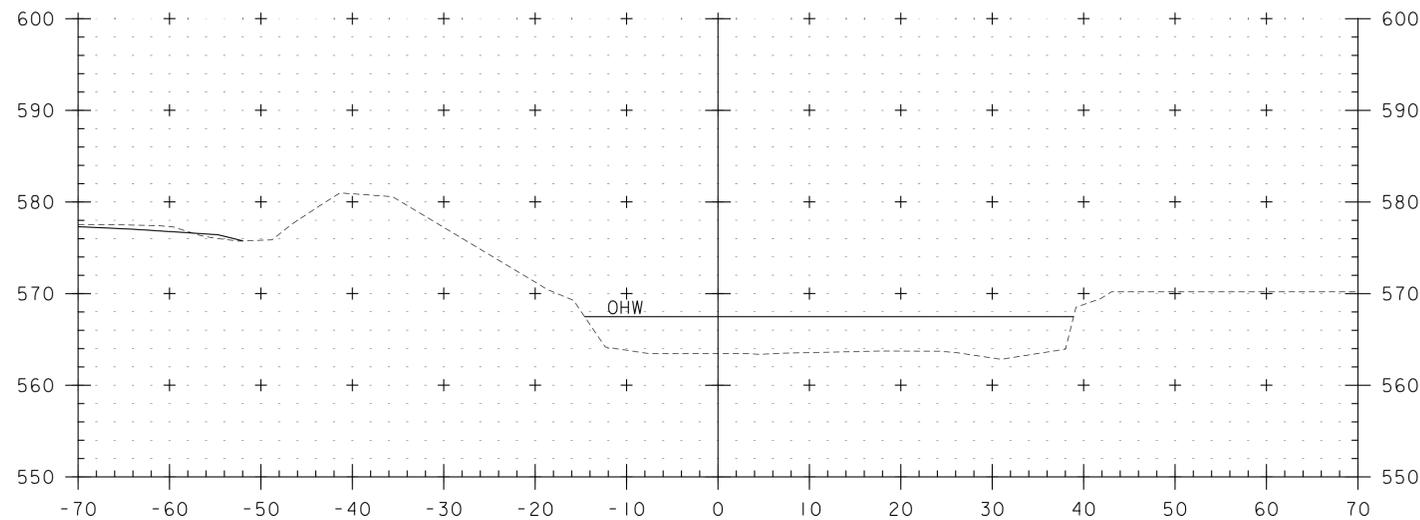
STA. 0+63 LT
BEGIN GRUBBING MATERIAL

STA. 0+64 RT
END UNCLASSIFIED CHANNEL EXCAVATION
STONE FILL, TYPE IV
GEOTEXTILE UNDER STONE FILL, TYPE IV
GRUBBING MATERIAL

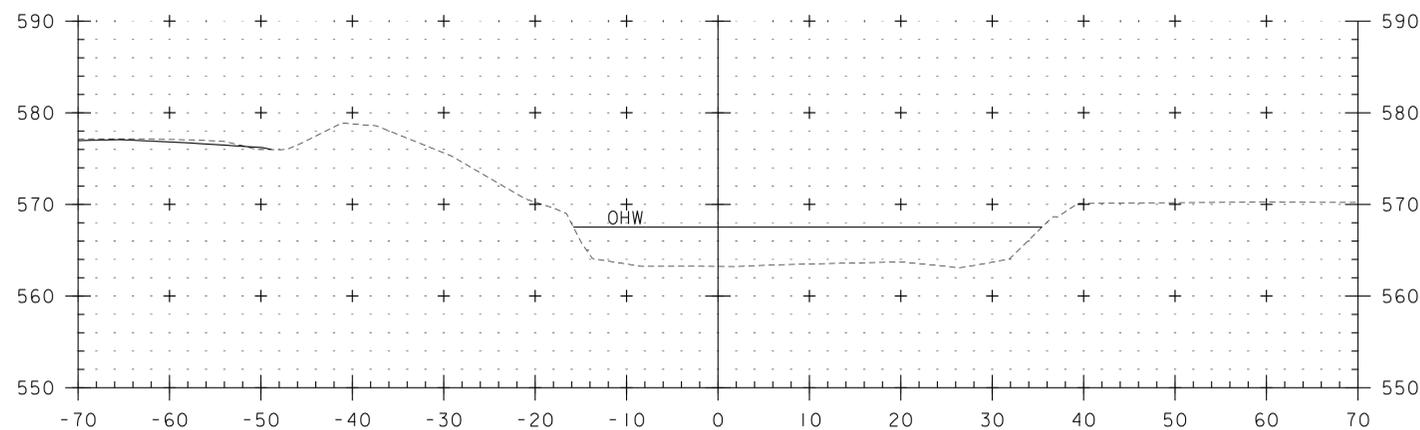


0+60

STA. 0+52 RT
BEGIN GRUBBING MATERIAL



1+00

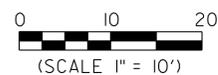


0+90

STA. 0+87 LT
END UNCLASSIFIED CHANNEL EXCAVATION
STONE FILL, TYPE IV
GEOTEXTILE UNDER STONE FILL, TYPE IV
GRUBBING MATERIAL

STA. 0+60 TO STA. 1+00

CLD 12-0175 MODEL: XSCHL02



PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078xschl.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: N. CARON
CHANNEL CROSS SECTIONS (2 OF 2)

PLOT DATE: 9/9/2014
DRAWN BY: M. SMITH
CHECKED BY: J. BYATT
SHEET 32 OF 39

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL OF BRIDGE 35 WHICH IS A 28-FOOT-SPAN JACK ARCH BRIDGE WITH A CONCRETE DECK SUPPORTED ON DRY LAID STONE ABUTMENTS WITH CONCRETE FOOTINGS. BRIDGE 35 WILL BE REPLACED WITH A PRECAST STRUCTURE, SPANNING 57 FEET OVER THE SECOND BRANCH OF THE WHITE RIVER, ON NEW FOOTINGS ALONG THE SAME ALIGNMENT. THE WIDTH OF THE BRIDGE WILL BE INCREASED TO 16 FEET. BRIDGE 35 IS LOCATED IN THE TOWN OF RANDOLPH ON TOWN HIGHWAY 65, APPROXIMATELY 585 FEET WEST OF THE INTERSECTION OF TOWN HIGHWAY 65 AND VERMONT ROUTE 14.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.29 ACRES.

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

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS A VALLEY THAT IS WOODED WITH FARM FIELDS. THERE IS ONE RESIDENCE AND A BARN ON THE WEST SIDE OF THE PROJECT. THERE IS ALSO A SMALL GARDEN AREA ON THE SOUTHWEST SIDE OF THE PROJECT.

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

THE SECOND BRANCH OF THE WHITE RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THERE ARE NO WETLANDS OR SIGNIFICANT NATURAL COMMUNITIES IDENTIFIED WITHIN THE PROJECT AREA. THE STREAM BED CONSISTS OF PRIMARILY GRAVEL AND COBBLES. THE TRIBUTARY AREA AT THE BRIDGE CROSSING IS 47.3 SQUARE MILES. DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF WATER FROM A FEW NEARBY SLOPES.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF PINE AND HARDWOOD TREES, UNDERGROWTH, AND BRUSH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING BRIDGE. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE IV AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF ORANGE, VERMONT. SOILS ON THE PROJECT SITE ARE WINOOSKI VERY FINE SANDY LOAM, 0 TO 3% SLOPES, "K FACTOR" = 0.49. THE SOIL IS CONSIDERED HIGHLY ERODIBLE.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:

0.0-0.23 = LOW EROSION POTENTIAL
0.24-0.36 = MODERATE EROSION POTENTIAL
0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: YES, ONE ARCHEOLOGICAL AREA IN THE SOUTHEAST QUADRANT CONSISTING OF A SMALL STONE CELLAR HOLE APPROXIMATELY 75 FEET SOUTHEAST OF THE BRIDGE.
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: SECOND BRANCH OF WHITE RIVER
WETLANDS: NO

1.3 RISK EVALUATION

THIS 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, 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 CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE 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 UPON BASED 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 OF 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 CONTRACTORS PROGRESS SCHEDULE.

A TRACKING PAD WILL BE UTILIZED AT THE INTERSECTION OF VT ROUTE 14. THE EXISTING GRAVEL ROADWAY WILL BE CLOSED DURING CONSTRUCTION AND WILL BE UTILIZED TO ACCESS THE BRIDGE.

1.4.4 INSTALL SEDIMENT BARRIERS

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

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

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.

MOST OF THE PROJECT AREA SITS HIGHER THAN THE SURROUNDING TERRAIN. CONSTRUCTION VEHICLES WILL BE ABLE TO UTILIZE THE EXISTING ROADWAY. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

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 WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN, AT A MINIMUM.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

PERMANENT STORMWATER TREATMENT DEVICES ARE NOT ANTICIPATED ON THIS PROJECT.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

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 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS. TEMPORARY EROSION CONTROL MATTING WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN, AT A MINIMUM.

1.4.9 WINTER STABILIZATION

IT IS NOT ANTICIPATED THAT WINTER STABILIZATION WILL BE REQUIRED ON THIS PROJECT. 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.

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. STONE FILL SHALL BE USED TO STABILIZE ROADWAY SLOPES AND THE CHANNEL AS SHOWN ON THE PLANS.

1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

TREATMENT OF DISCHARGE FROM DEWATERING ACTIVITIES IS ANTICIPATED. A LOCATION FOR TREATMENT HAS BEEN PROPOSED AND SHOWN ON THE PLANS. HOWEVER, THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR. ALL COSTS FOR TREATMENT OF DISCHARGE WILL BE PAID UNDER CONTRACT ITEM 653.45.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

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.

1.5.3 UPDATES

PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078erode.t.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: J. SMITH
EROSION CONTROL NARRATIVE



PLOT DATE: 9/9/2014
DRAWN BY: S. GOODWIN
CHECKED BY: D. MUNRO
SHEET 33 OF 39



SOIL INFORMATION: WINOOSKI VERY FINE SANDY LOAM
 K = 0.49, HIGHLY ERODIBLE
 HYDROLOGIC SOIL GROUP: B

SOIL INFORMATION: MERRIMAC FINE SANDY LOAM, 25 TO 50 PERCENT SLOPES
 K = 0.24, NOT HIGHLY ERODIBLE
 HYDROLOGIC SOIL GROUP: A



PROJECT NAME: RANDOLPH
 PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078bdrer.oex.dgn
 PROJECT LEADER: J. BYATT
 DESIGNED BY: J. SMITH
 EPSC EXISTING PLAN SHEET

PLOT DATE: 9/9/2014
 DRAWN BY: S. GOODWIN
 CHECKED BY: D. MUNRO
 SHEET 34 OF 39

GEOTEXTILE FOR SILT FENCE
 99+00 TO 99+06 LT
 99+09 TO 99+12 RT
 99+19 TO 99+23 LT
 99+28 TO 99+77 LT
 99+32 TO 99+90 RT
 100+43 TO 100+65 LT
 100+64 TO 101+10 LT

TEMPORARY EROSION MATTING
 99+34 TO 99+81 LT
 99+41 TO 99+88 RT
 100+41 TO 100+92 LT
 100+59 TO 101+13 RT

TEMPORARY STONE
 CHECK DAM, TYPE I
 100+62 TO 101+50 RT
 101+00 TO 101+75 LT

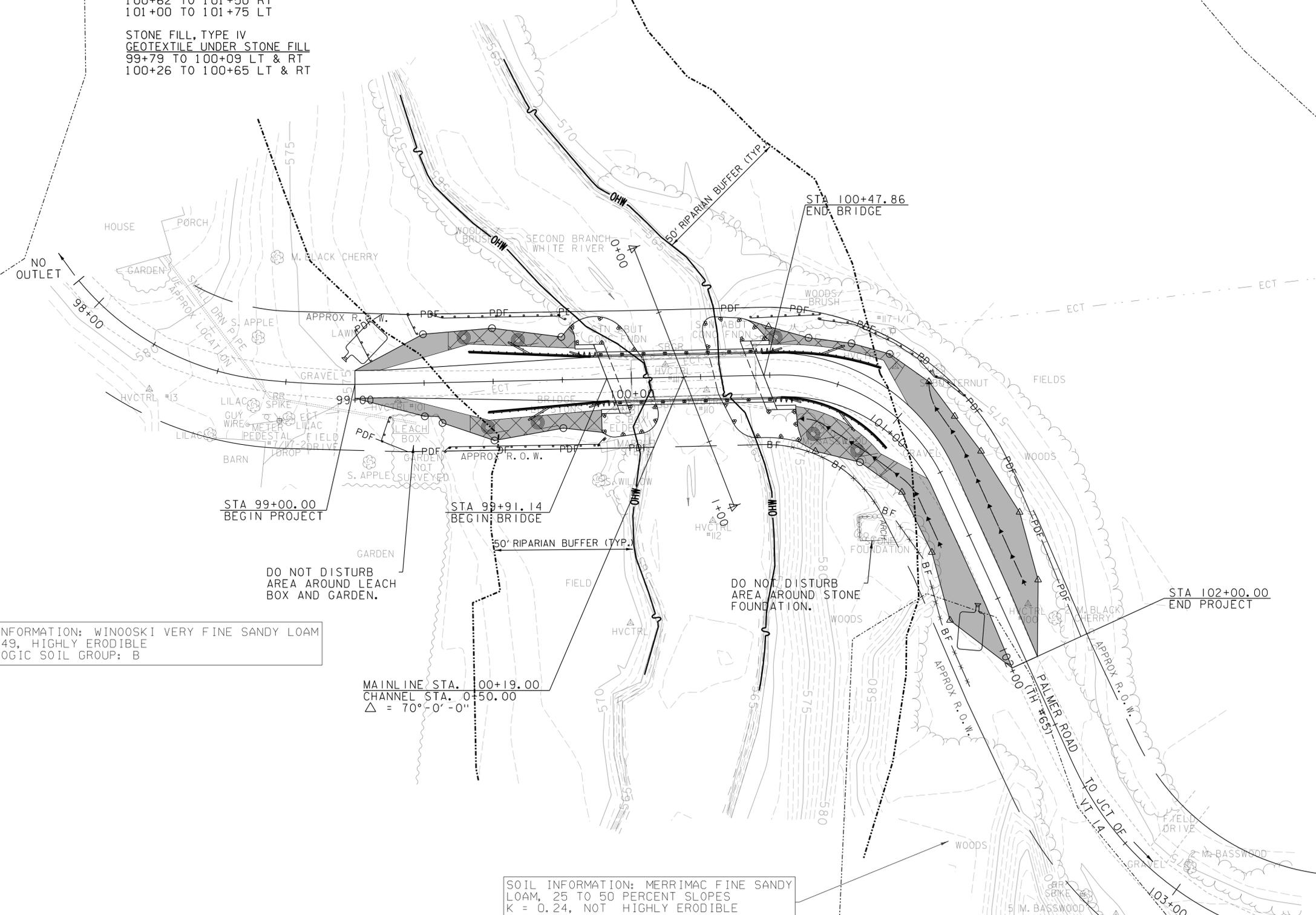
STONE FILL, TYPE IV
 GEOTEXTILE UNDER STONE FILL
 99+79 TO 100+09 LT & RT
 100+26 TO 100+65 LT & RT

PROJECT DEMARCATION FENCE
 99+00 TO 99+78 LT
 99+00 TO 100+04 RT
 100+32 TO 102+00 LT

BARRIER FENCE
 100+47 TO 102+00 RT

VEHICLE TRACKING PAD
 PLACED ON PALMER RD AT INTERSECTION WITH VT 14

FILTER BAG
 99+04 LT
 101+82 RT



SOIL INFORMATION: WINOOKSI VERY FINE SANDY LOAM
 K = 0.49, HIGHLY ERODIBLE
 HYDROLOGIC SOIL GROUP: B

MAINLINE STA. 100+19.00
 CHANNEL STA. 0+50.00
 $\Delta = 70^{\circ}-0'-0''$

SOIL INFORMATION: MERRIMAC FINE SANDY LOAM, 25 TO 50 PERCENT SLOPES
 K = 0.24, NOT HIGHLY ERODIBLE
 HYDROLOGIC SOIL GROUP: A

CLD_12-0175 MODEL:01



PROJECT NAME: RANDOLPH	
PROJECT NUMBER: BRO 1444(57)	
FILE NAME: z11j078bdrerocn.dgn	PLOT DATE: 9/9/2014
PROJECT LEADER: J. BYATT	DRAWN BY: S. GOODWIN
DESIGNED BY: J. SMITH	CHECKED BY: D. MUNRO
EPSC CONSTRUCTION PLAN SHEET	SHEET 35 OF 39

VAOT RURAL AREA MIX					
% WEIGHT	LBS/AC		NAME	GERM %	PURITY %
	BROADCAST	HYDROSEED			
37.5%	22.5	45	CREeping RED FESCUE	85%	98%
37.5%	22.5	45	TALL FESCUE	90%	95%
5.0%	3	6	RED TOP	90%	95%
15.0%	9	18	BIRDSFOOT TREFOIL	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	85%	95%
100%	60	120			

VAOT URBAN AREA MIX					
% WEIGHT	LBS/AC		NAME	GERM %	PURITY %
	BROADCAST	HYDROSEED			
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			

SOIL AMENDMENT GUIDANCE			
FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	FOLLOW	PELLETIZED	FOLLOW
500 LBS/AC	MANUFACTURER	2 TONS/AC	MANUFACTURER

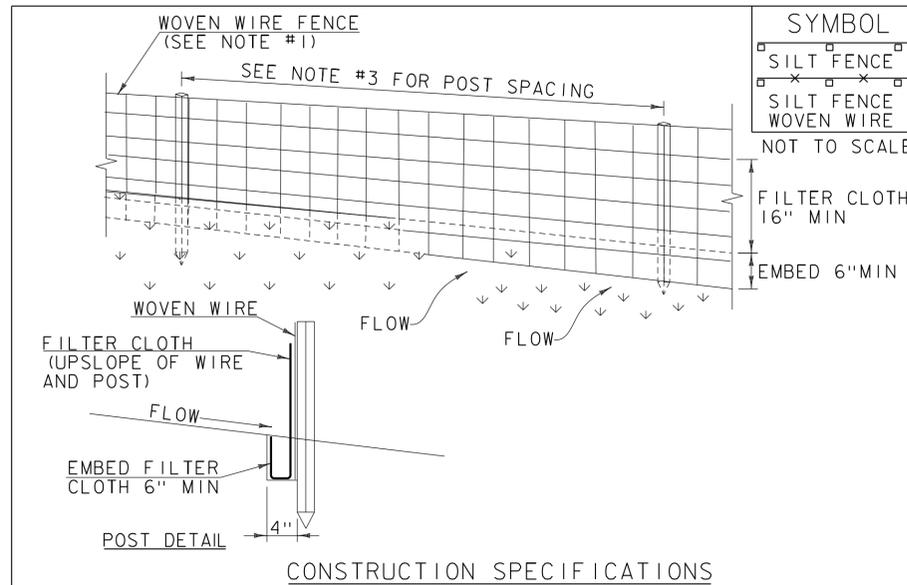
CONSTRUCTION GUIDANCE

- RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
- URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
- ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
- FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
- 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.
- TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
- 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
- TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

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



- WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
- FILTER CLOTH SHALL BE EITHER FILTER X, MIRAF1100X, STABILINKA T140N OR APPROVED EQUIVALENT.
- POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
- WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

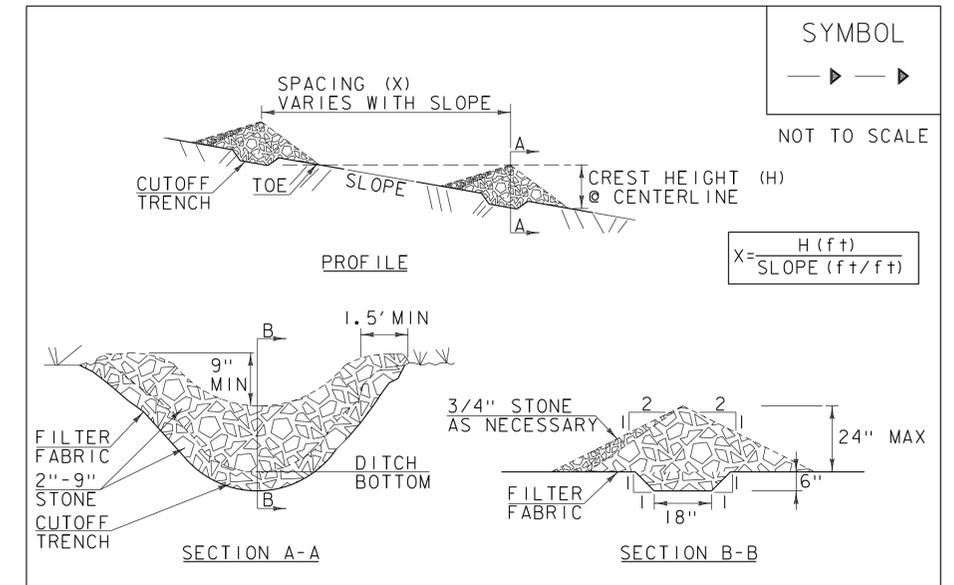
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006-" FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

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	



- STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION.
- CHECK DAMS SHALL BE SPACED SO THAT THE ELEVATION OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.
- 3/4" FILTERING STONE MAY BE ADDED TO THE FACE OF THE CHECK DAM AS NECESSARY.
- EXTEND THE STONE A MINIMUM OF 1.5' BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
- PROTECT CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
- ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
- MAXIMUM DRAINAGE AREA 2 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CHECK DAM

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006-" FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR TEMPORARY STONE CHECK DAM, TYPE I (PAY ITEM 653.25)

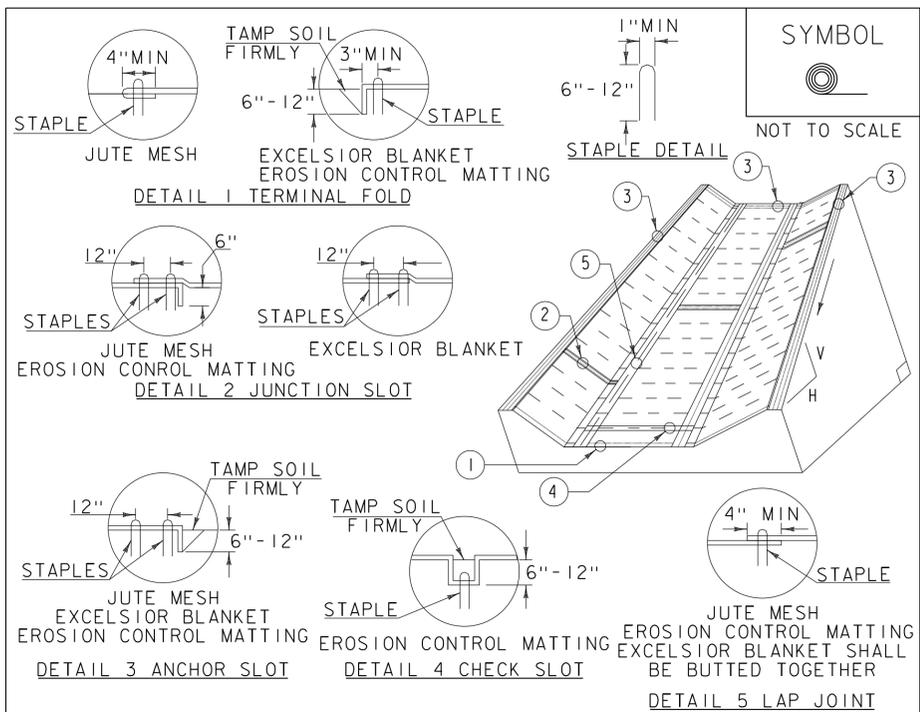
REVISIONS		
MARCH 21, 2008	WHF	
JANUARY 8, 2009	WHF	

PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078erode.t.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: J. SMITH
EPSC DETAILS I

PLOT DATE: 9/9/2014
DRAWN BY: S. GOODWIN
CHECKED BY: D. MUNRO
SHEET 37 OF 39





CONSTRUCTION SPECIFICATIONS

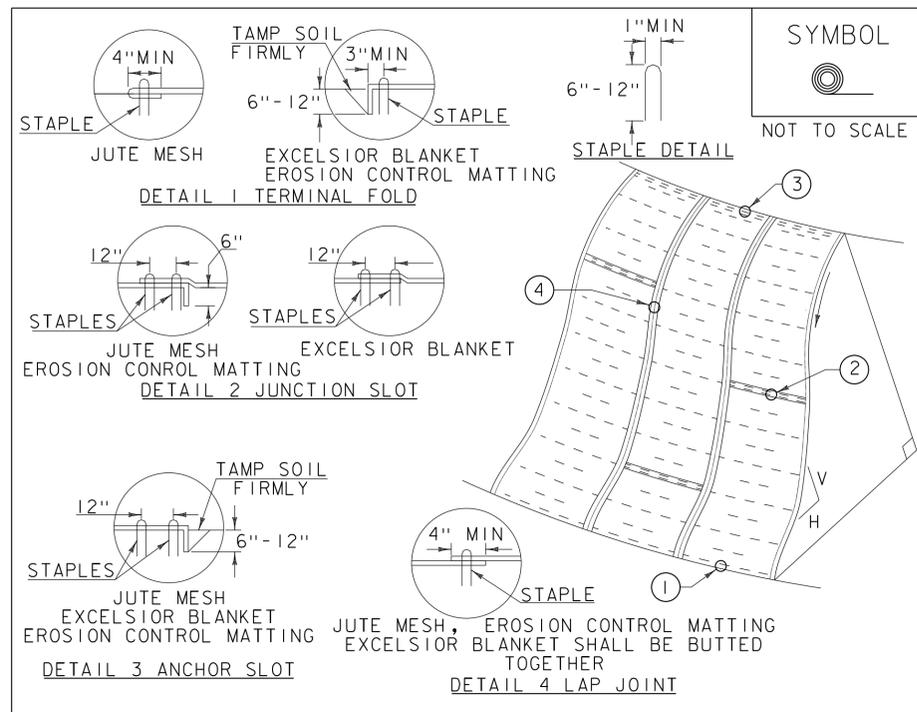
1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) DITCH

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

REVISIONS		
MARCH 8, 2007	JMF	
APRIL 16, 2007	WHF	
JANUARY 13, 2009	WHF	



CONSTRUCTION SPECIFICATIONS

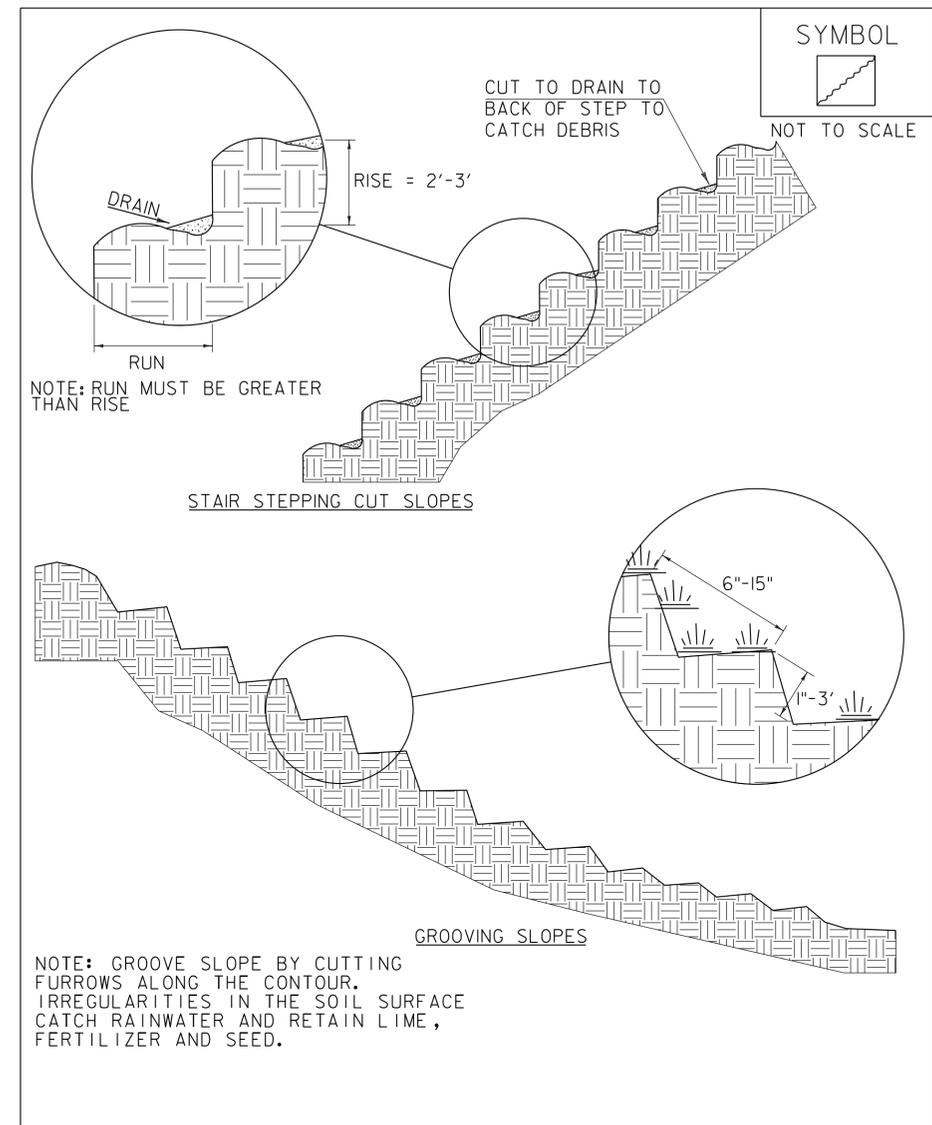
1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

REVISIONS		
APRIL 16, 2007	JMF	
JANUARY 13, 2009	WHF	



ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SURFACE ROUGHENING

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT

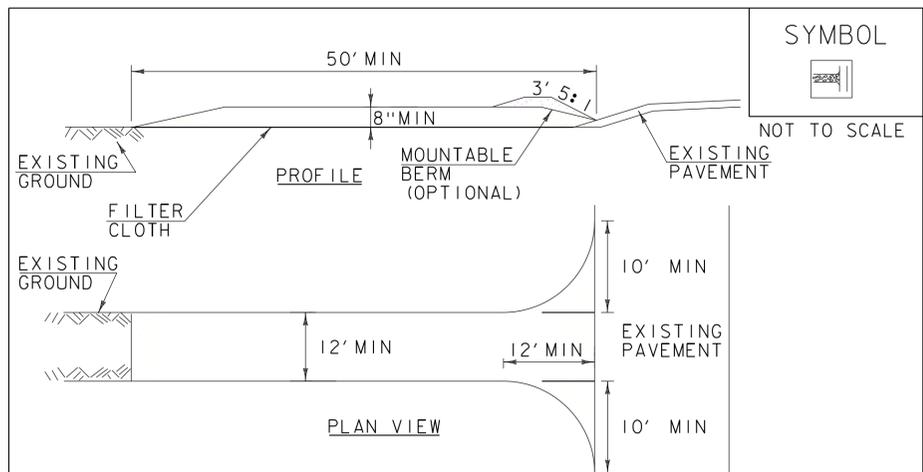
REVISIONS		
APRIL 1, 2008	WHF	
JANUARY 13, 2009	WHF	

PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078erode.t.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: J. SMITH
EPSC DETAILS 2

PLOT DATE: 9/9/2014
DRAWN BY: S. GOODWIN
CHECKED BY: D. MUNRO
SHEET 38 OF 39





CONSTRUCTION SPECIFICATIONS

1. STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
3. THICKNESS- NOT LESS THAN 8".
4. WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

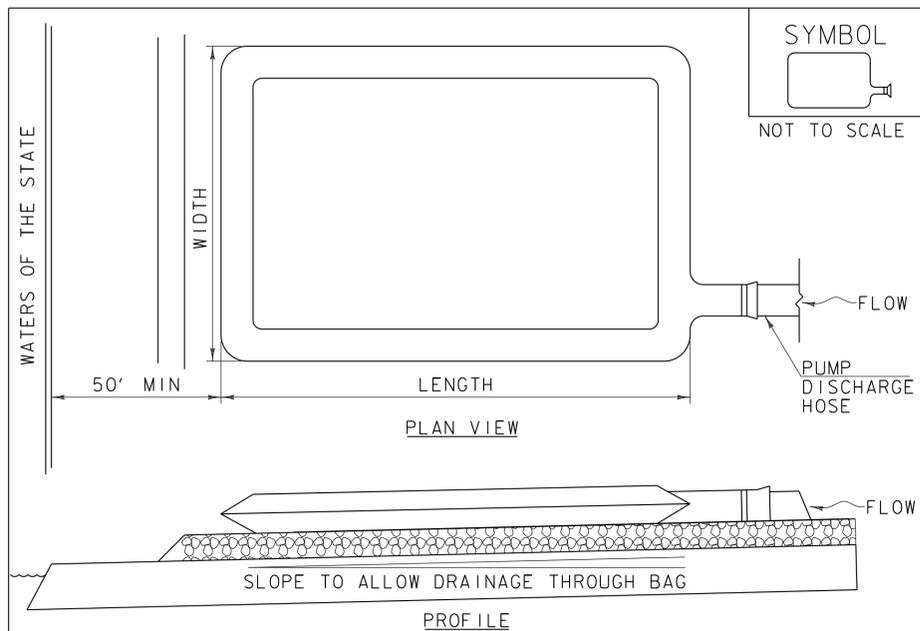
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STABILIZED
CONSTRUCTION
ENTRANCE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR
EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM
THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL
GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH
SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35)
OR AS SPECIFIED IN THE CONTRACT.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF



CONSTRUCTION SPECIFICATIONS

1. THE PRIMARY PURPOSE OF FILTER BAG IS TO RETAIN SILT, SAND, AND FINES DURING DEWATERING OPERATIONS.
2. FILTER BAGS SHALL BE INSTALLED ON A VEGETATED SLOPE GRADED TO ALLOW INCOMING WATER TO FLOW THROUGH THE BAG.
3. FILTER BAGS MAY ALSO BE PLACED ON COARSE AGGREGATE, STONE, OR HAYBALES TO INCREASE FILTRATION EFFICIENCY.
4. FILTER BAGS SHALL BE LOCATED A MINIMUM OF 50' FROM WATERS OF THE STATE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. THE NECK OF THE FILTER BAG SHALL BE STRAPPED TIGHTLY TO THE DISCHARGE HOSE.
6. A FILTER BAG IS FULL WHEN IT NO LONGER CAN EFFICIENTLY FILTER SEDIMENT OR ALLOW WATER TO PASS AT A REASONABLE RATE.
7. FILTER BAG SHALL BE DISPOSED OF AS APPROVED IN THE EPSC PLAN OR AS DIRECTED BY THE ENGINEER.

FILTER BAG

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR
EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM
THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL
GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH
SECTION 653 FOR FILTER BAG (PAY ITEM 653.45) AND AS
SPECIFIED IN THE CONTRACT.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

CLD-12-0175 MODEL-ECO4



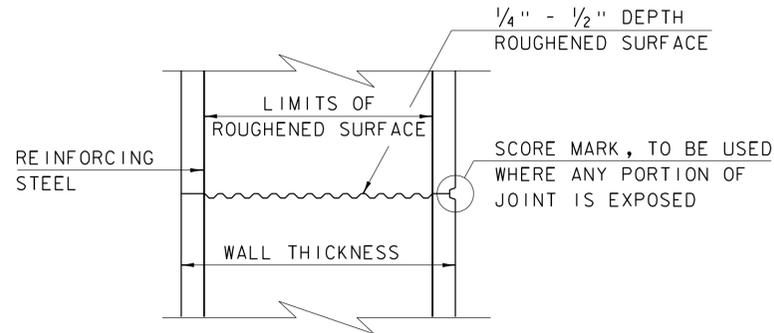
PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: z11j078erode.t.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: J. SMITH
EPSC DETAILS 3

PLOT DATE: 9/9/2014
DRAWN BY: S. GOODWIN
CHECKED BY: D. MUNRO
SHEET 39 OF 39

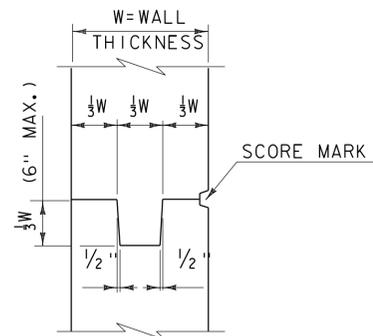
CONCRETE GENERAL NOTES

1. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1"
2. REINFORCING STEEL SIZE AND SPACING SHOWN IN THE PLANS IS BASED ON 60 KSI STEEL, UNLESS NOTED OTHERWISE. WITH THE ENGINEER'S PERMISSION, BAR SIZE AND SPACING MAY BE MODIFIED ACCORDING TO THE LATEST AASHTO LRFD BRIDGE DESIGN SPECIFICATION AND STRUCTURES DESIGN MANUAL WHEN USING HIGHER STRENGTH STEEL.

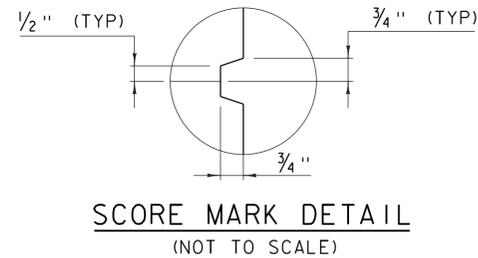


TYPICAL HORIZONTAL CONSTRUCTION JOINT
(NOT TO SCALE)

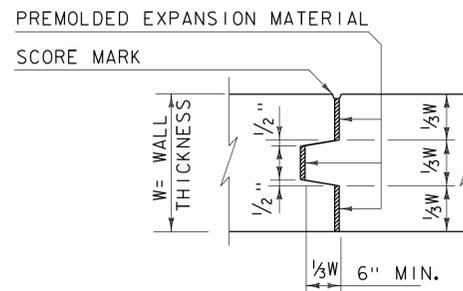
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



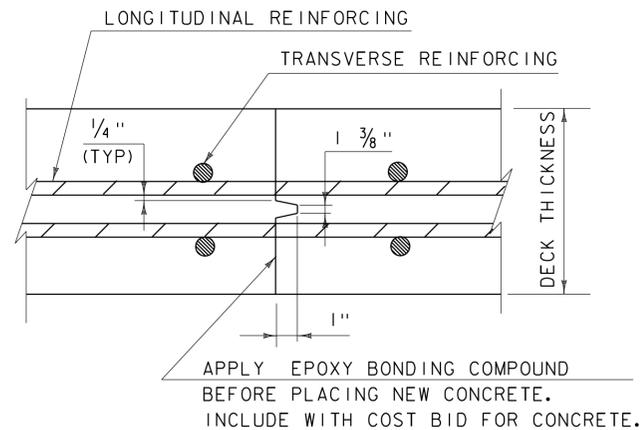
TYPICAL CONCRETE CONSTRUCTION JOINT
(NOT TO SCALE)



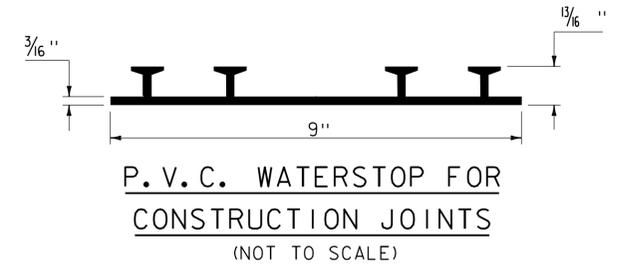
SCORE MARK DETAIL
(NOT TO SCALE)



TYPICAL CONCRETE EXPANSION JOINT
(NOT TO SCALE)

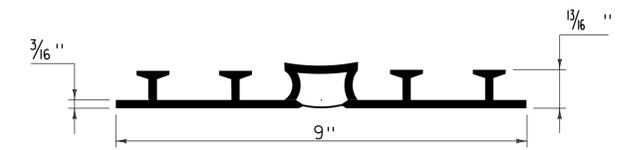


TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS
(NOT TO SCALE)



PAYMENT FOR THE P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE UNIT BID PRICE FOR THE ADJACENT CONCRETE.

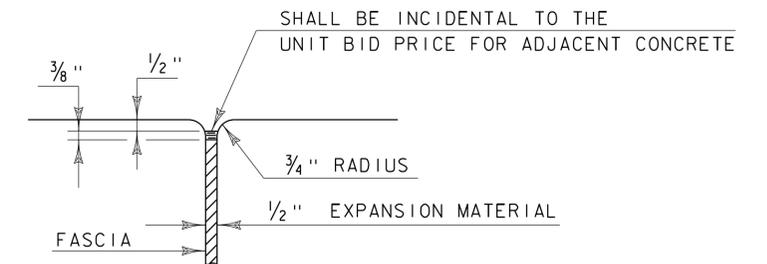
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



P.V.C. WATERSTOP FOR EXPANSION JOINTS
(NOT TO SCALE)

PAYMENT FOR THE P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE UNIT BID PRICE FOR THE ADJACENT CONCRETE.

OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



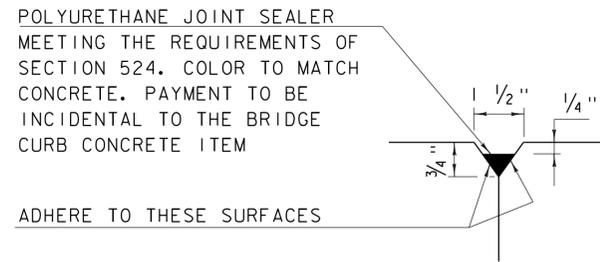
JOINT BETWEEN FASCIA AND WINGWALL
(NOT TO SCALE)

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
FEBRUARY 9, 2012	REBAR SUBSTITUTION ALLOWANCE ADDED TO CONCRETE GENERAL NOTES.

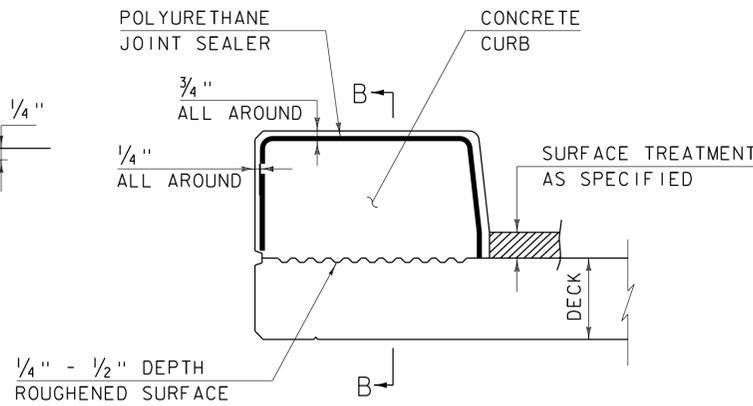
**CONCRETE
DETAILS AND NOTES**



**STRUCTURES
DETAIL
SD-501.00**

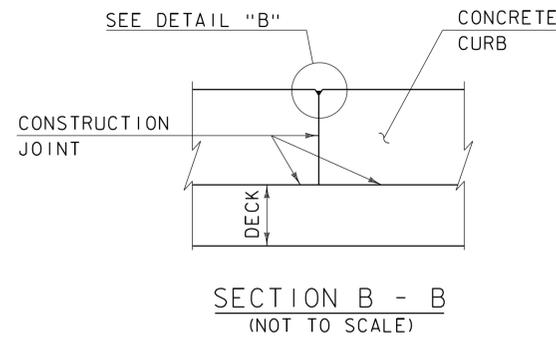


DETAIL "B"
(NOT TO SCALE)

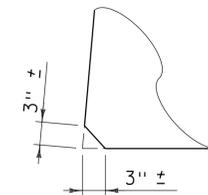


CONCRETE CURB JOINT SECTION
(NOT TO SCALE)

1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION



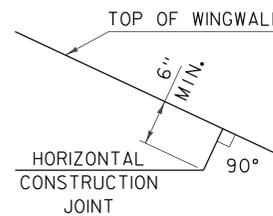
SECTION B - B
(NOT TO SCALE)



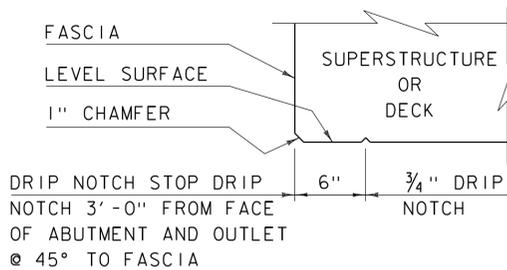
ACUTE ANGLE
CLIP DETAIL
(NOT TO SCALE)

CONCRETE CURB JOINT NOTES

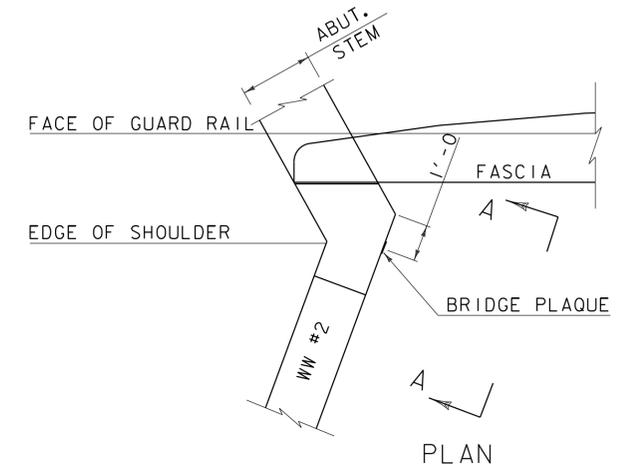
1. CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION IF AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN. PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.
2. IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 15'-0" CENTER TO CENTER AND 2'-0" MINIMUM FROM THE CENTER OF NEAREST BRIDGE RAILING POST.
3. ON MULTI-SPAN CONTINUOUS SUPERSTRUCTURES, REGARDLESS OF WHETHER APPROVED SHRINKAGE REDUCING ADMIXTURE IS USED, CURB JOINTS SHALL BE LOCATED OVER THE CENTERLINE OF PIERS AND 7'-0" EACH SIDE OF THE CENTERLINE OF EACH PIER.
4. WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN ADJACENT PLACEMENTS.
5. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THROUGH CURB CONSTRUCTION JOINTS. CURB STIRRUP BARS SHALL BE TURNED AS NECESSARY TO MAINTAIN COVER IN THE FLARED CURB ENDS.
6. THE JOINT SPACING AND DETAILS SHOWN SHALL APPLY TO SIDEWALKS WHEN SHOWN IN THE PLANS.



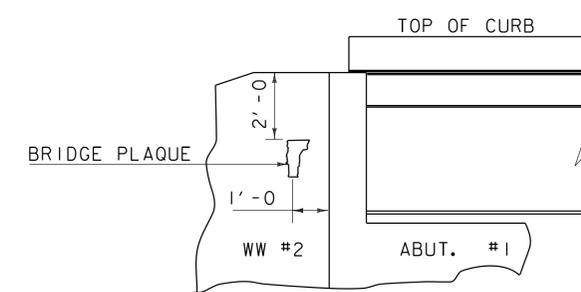
HORIZONTAL WINGWALL
CONSTRUCTION JOINT
(NOT TO SCALE)



DRIP NOTCH DETAIL
(NOT TO SCALE)



PLAN



VIEW "A - A"

BRIDGE PLAQUE
(NOT TO SCALE)

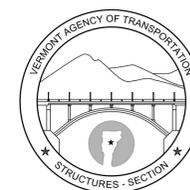
THE BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AT ABUTMENT #1 ON THE RIGHT SIDE AS SHOWN OR AS DIRECTED BY THE ENGINEER.

PAYMENT FOR INSTALLATION OF THE BRIDGE PLAQUE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

REVISIONS

MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
JUNE 4, 2010	MODIFIED AND ADDED TWO DETAILS
OCTOBER 10, 2012	MODIFIED HORZ. JOINT WINGWALL ADD 6" MIN. DIMENSION

CONCRETE
DETAILS AND NOTES



STRUCTURES
DETAIL
SD-502.00