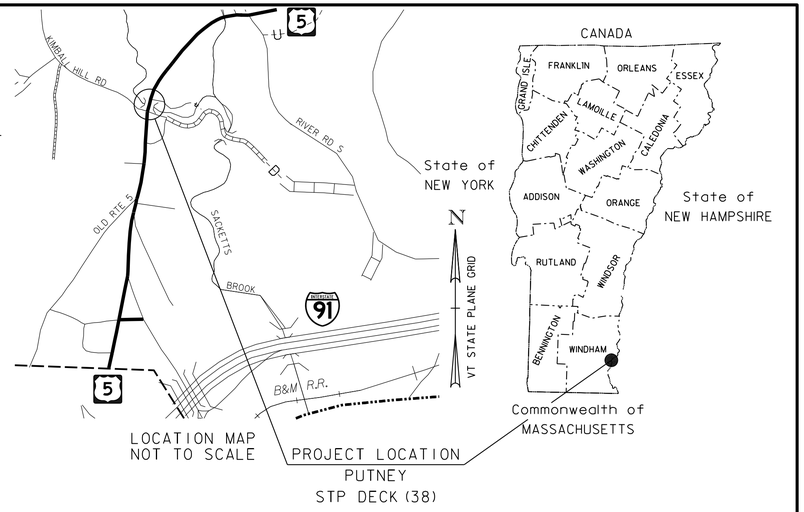
STATE OF VERMONT
AGENCY OF TRANSPORTATION

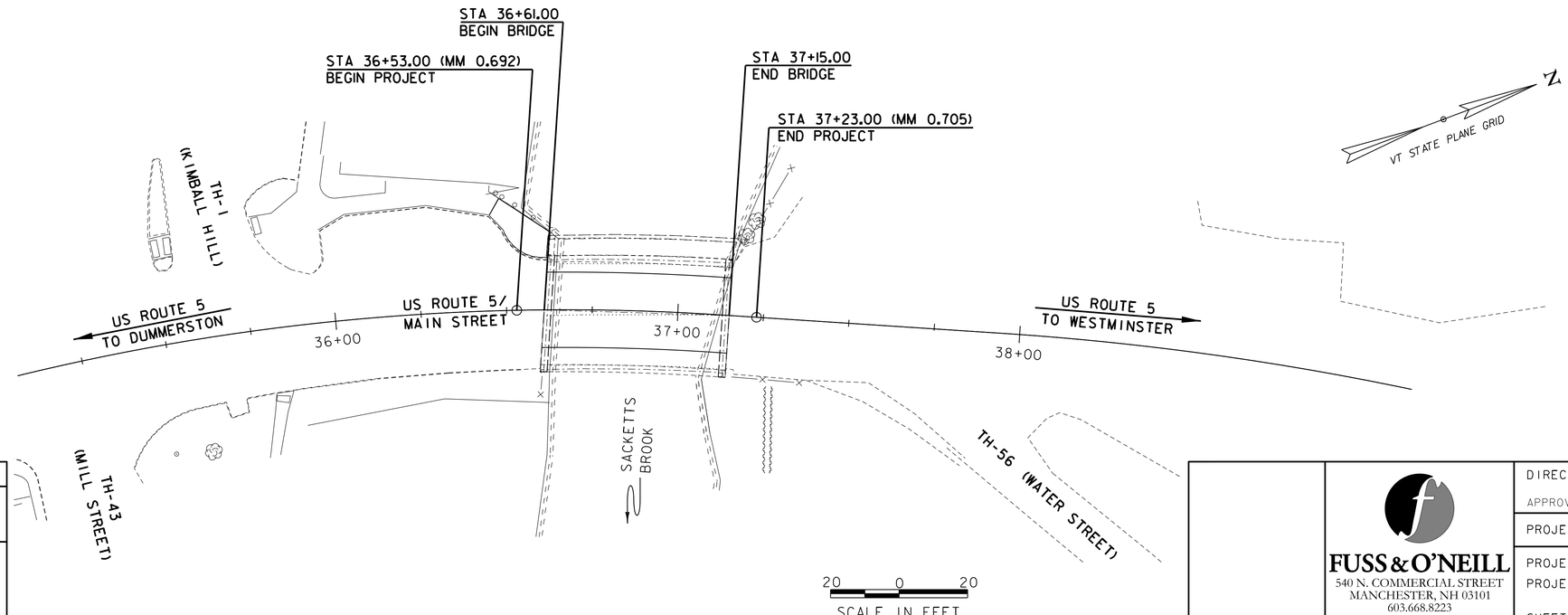


PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF PUTNEY
COUNTY OF WINDHAM
US ROUTE 5 (MAJOR COLLECTOR) BRIDGE NO. 15

PROJECT LOCATION: LOCATED IN THE TOWN OF PUTNEY, ON US ROUTE 5, APPROXIMATELY 0.698 MILES NORTHERLY OF THE DUMMERSTON/PUTNEY TOWN LINE.

PROJECT DESCRIPTION: WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES THE REPLACEMENT OF THE EXISTING CONCRETE BRIDGE DECK INCLUDING RELATED APPROACH WORK, SIDEWALK AT NORTHWEST CORNER AND DRAINAGE IMPROVEMENTS.

LENGTH OF STRUCTURE: 54.00 FEET
LENGTH OF ROADWAY: 16.00 FEET
LENGTH OF PROJECT: 70.00 FEET



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON APRIL 13, 2018 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

FINAL PLANS
October 31, 2018

QUALITY ASSURANCE PROGRAM : LEVEL 2

SURVEYED BY : FUSS & O'NEILL
SURVEYED DATE : 09/21/2015

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83

FUSS & O'NEILL
540 N. COMMERCIAL STREET
MANCHESTER, NH 03101
603.668.8223
www.fando.com

DIRECTOR OF PROJECT DELIVERY
APPROVED _____ DATE _____

PROJECT MANAGER : MAHENDRA THILLIYAR, P.E.

PROJECT NAME : PUTNEY
PROJECT NUMBER : STP DECK (38)

SHEET 1 OF 58 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version
LRFD

INDEX OF SHEETS

PLAN SHEETS

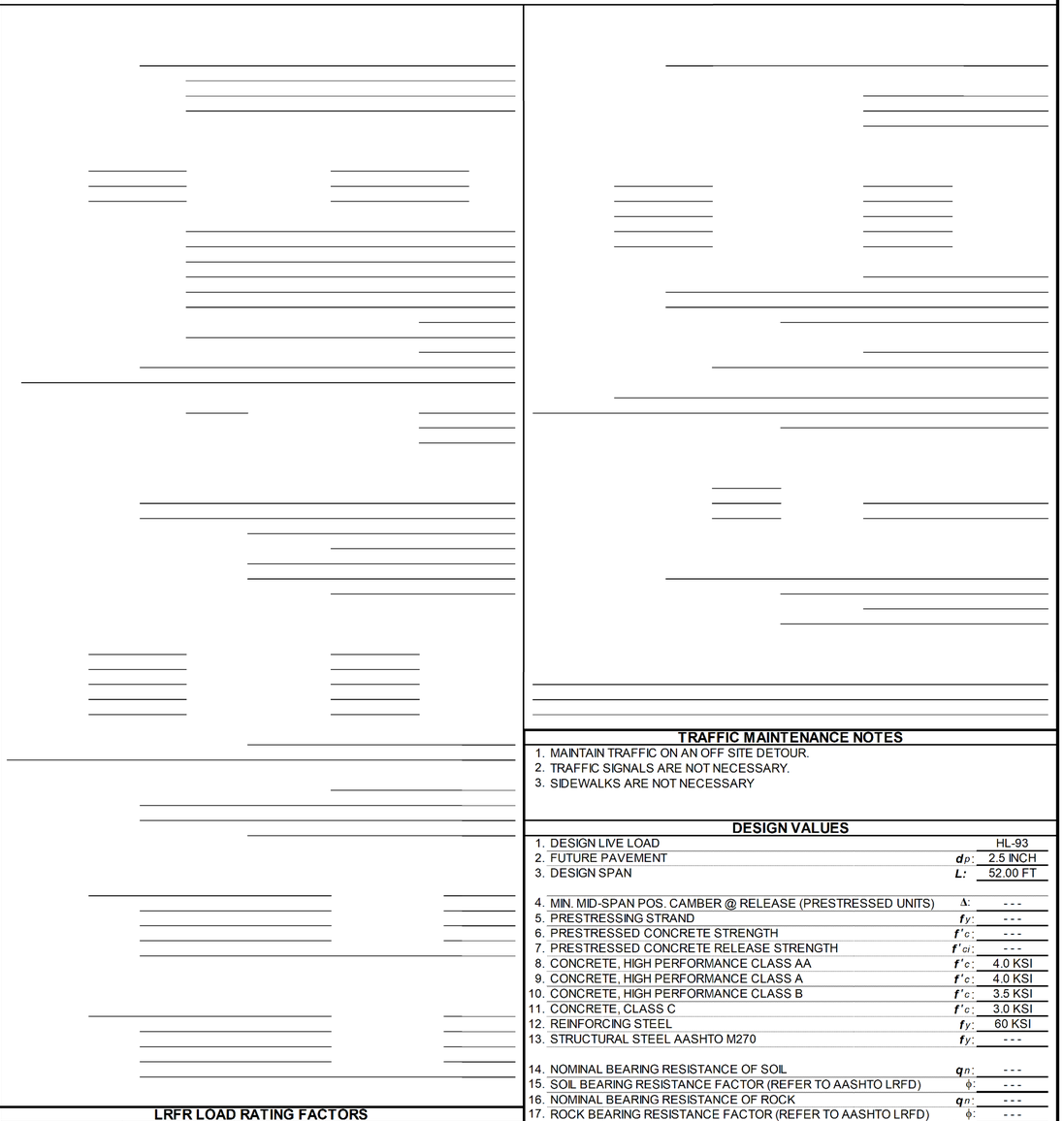
STANDARDS LIST

B-71	STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES	07-08-2005
E-127	ROUTE MARKINGS AT RURAL INTERSECTIONS	08-08-1995
C-2A	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK A	10-14-2005
C-2B	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK A	10-14-2005
C-3A	SIDEWALK RAMPS	03-10-2008
C-3B	SIDEWALK RAMPS AND MEDIAN ISLANDS	03-10-2008
C-10	CURBING	02-11-2008
D-16	DRAINAGE DETAILS INCLUDING DROP INLETS, IRON GRATE TYPE B&C, CONC END	06-01-1994
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-1bM	BOX BEAM GUARD RAIL	06-13-1997
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	03-10-2017
T-1	TRAFFIC CONTROL GENERAL NOTES	04-25-2016
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-17	TRAFFIC CONTROL MISCELLANEOUS DETAILS	08-06-2012
T-28	CONSTRUCTION SIGN DETAILS	08-06-2012

STRUCTURES DETAIL SHEETS

SD-501.00	CONCRETE DETAILS AND NOTES	5/7/2010
SD-502.00	CONCRETE DETAILS AND NOTES	5/7/2010
SD-516.10	BRIDGE JOINT ASHPALTIC PLUG	8/29/2011
SD-601.00	STRUCTURAL STEEL DETAILS AND NOTES	5/7/2010

FINAL HYDRAULIC REPORT



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:	52.00 FT
4.	MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	---
5.	PRESTRESSING STRAND	f_y:	---
6.	PRESTRESSED CONCRETE STRENGTH	f'_c:	---
7.	PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	---
8.	CONCRETE, HIGH PERFORMANCE CLASS AA	f'_c:	4.0 KSI
9.	CONCRETE, HIGH PERFORMANCE CLASS A	f'_c:	4.0 KSI
10.	CONCRETE, HIGH PERFORMANCE CLASS B	f'_c:	3.5 KSI
11.	CONCRETE, CLASS C	f'_c:	3.0 KSI
12.	REINFORCING STEEL	f_y:	60 KSI
13.	STRUCTURAL STEEL AASHTO M270	f_y:	---
14.	NOMINAL BEARING RESISTANCE OF SOIL	q_n:	---
15.	SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
16.	NOMINAL BEARING RESISTANCE OF ROCK	q_n:	---
17.	ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
18.	PILE RESISTANCE FACTOR	ϕ:	---
19.	LATERAL PILE DEFLECTION	Δ:	---
20.	BASIC WIND SPEED	V_{3s}:	---
21.	MINIMUM GROUND SNOW LOAD	p_g:	---
22.	SEISMIC DATA — PGA: 0	S_s:	---
		S_1:	---
23.			---
24.			---
25.			---
26.			---

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR.	4A STR.	5A SEM
TONNAGE	**20**	**36**	**36**	**66**	**30**	**34.5**	**38**
INVENTORY	1.45	1.31					
POSTING							
OPERATING	1.88	1.7	3	2.13	2.19	2	2.39
COMMENTS:	H-20 and HL-93 controlled by deck, other trucks controlled by exterior beam service II						

AS BUILT "REBAR" DETAIL

LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2016	3000	440	56	3.6	180
2036	3100	440	56	5.5	290

20 year ESAL for flexible pavement from 2016 to 2036 : 0

40 year ESAL for flexible pavement from 2016 to 2056 : 0

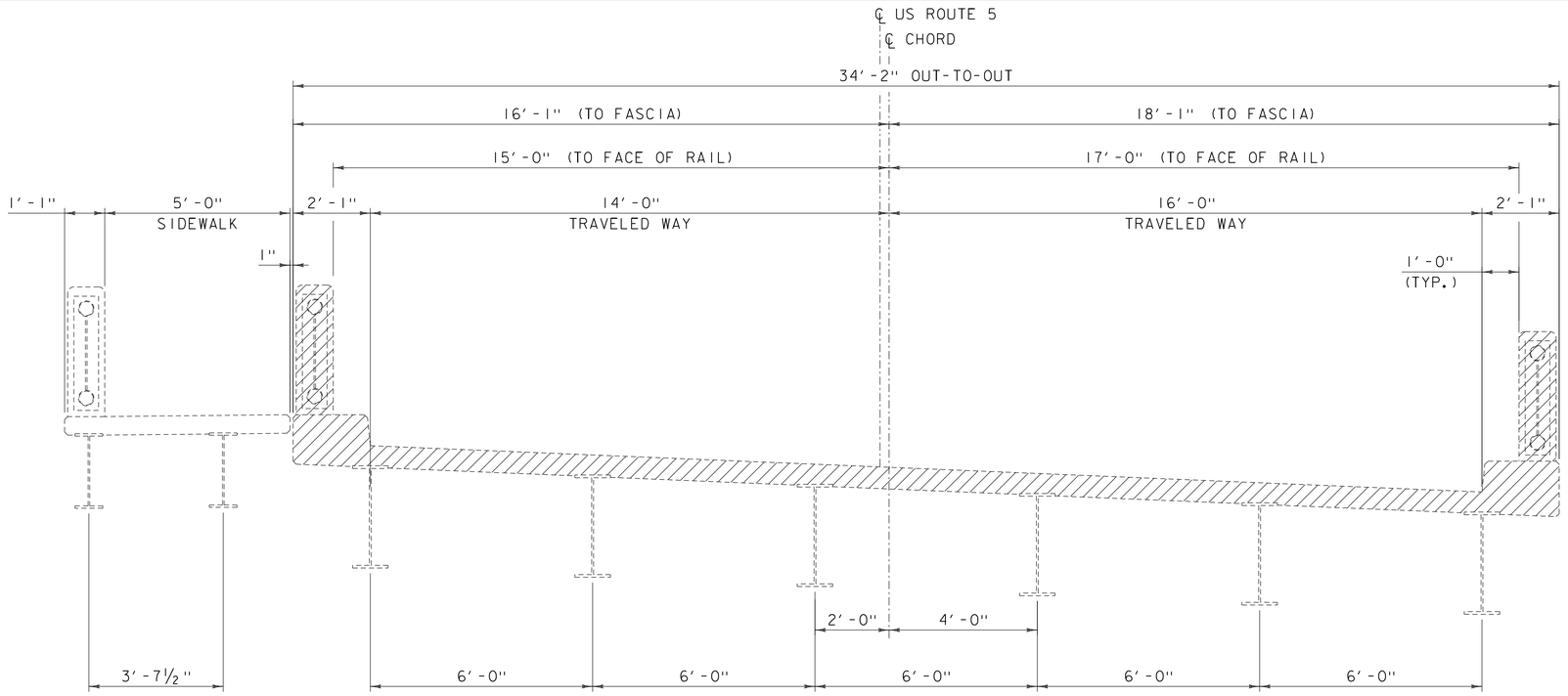
Design Speed : 30 mph

PROJECT NAME: PUTNEY

PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105pi-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: S. FORTIER
PRELIMINARY INFORMATION SHEET

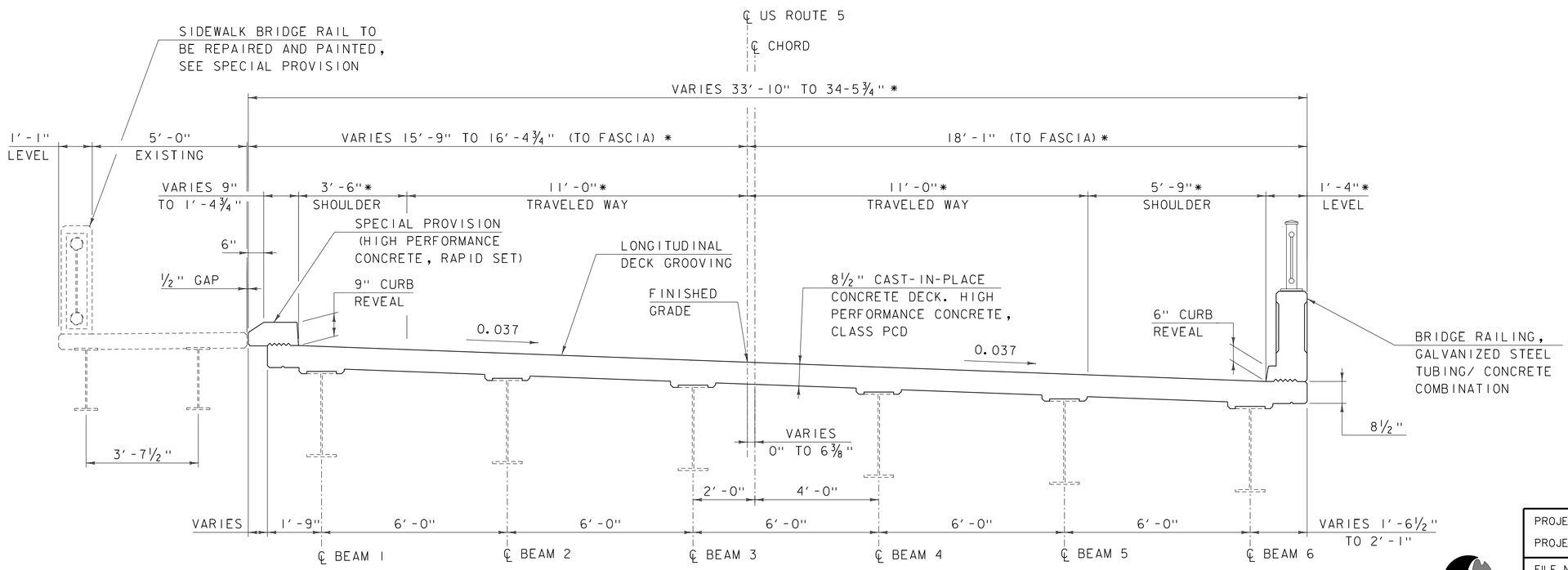
PLOT DATE: 10/31/2018
DRAWN BY: M.G. SMITH
CHECKED BY: L. GREER
SHEET 2 OF 58



EXISTING TYPICAL BRIDGE SECTION

SCALE: ½" = 1′-0"

▨ PARTIAL REMOVAL OF STRUCTURE



TYPICAL BRIDGE SECTION

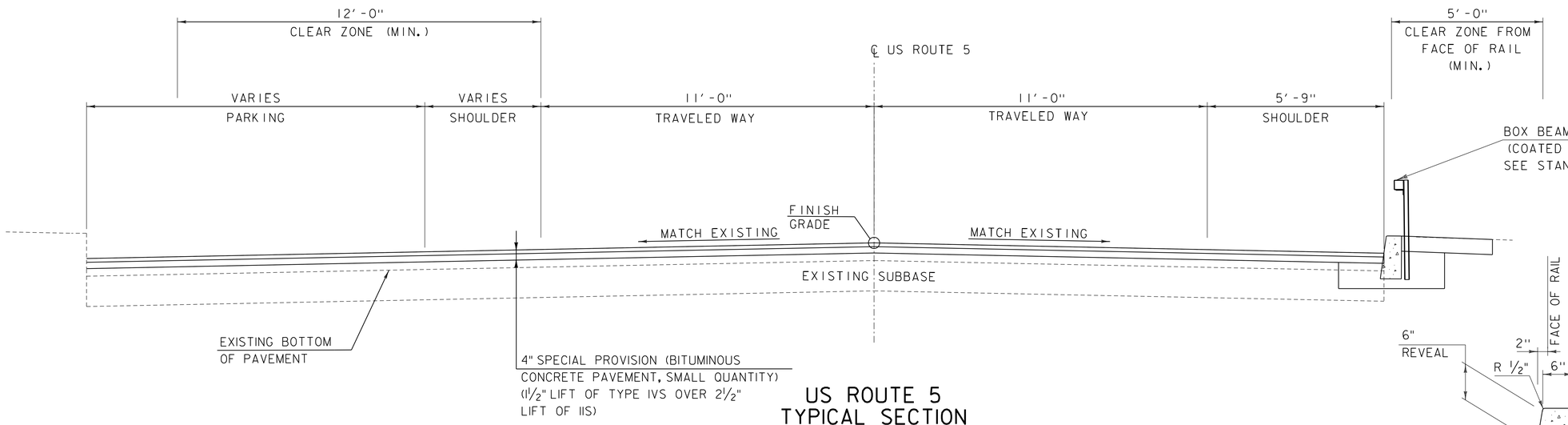
SCALE: ½" = 1′-0"

* RADIAL DIMENSION

FUSS&O'NEILL

PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)
FILE NAME: z15b105sup-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. SMITH
DESIGNED BY: A. GIRALDI	CHECKED BY: A. GIRALDI
TYPICAL BRIDGE SECTIONS SHEET	SHEET 3 OF 58

MATERIAL TOLERANCES	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"



US ROUTE 5
TYPICAL SECTION

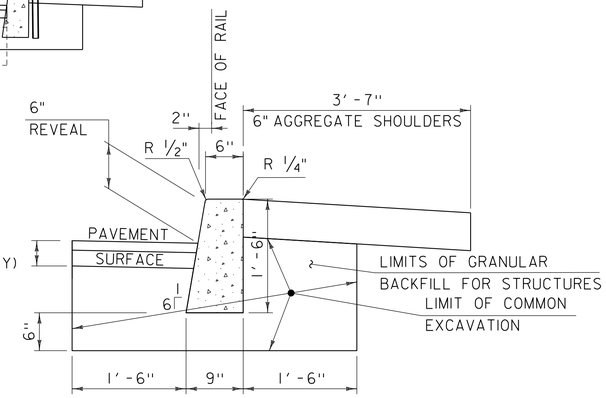
SCALE: 1/2" = 1'-0"

NOTE:

1. EMULSIFIED ASPHALT SHALL BE APPLIED ON ALL EXISTING PAVEMENT SURFACES AND ON ALL COLD PLANED PAVEMENT SURFACES AT A RATE OF 0.080 GAL/SY AND BETWEEN ALL COURSES OF PAVEMENT AT A RATE OF 0.040 GAL/SY OR AS DIRECTED BY THE ENGINEER.

2. ANY REQUIRED SAWCUT OF EXISTING PAVEMENT SHALL BE INCIDENTAL TO COMMON EXCAVATION.

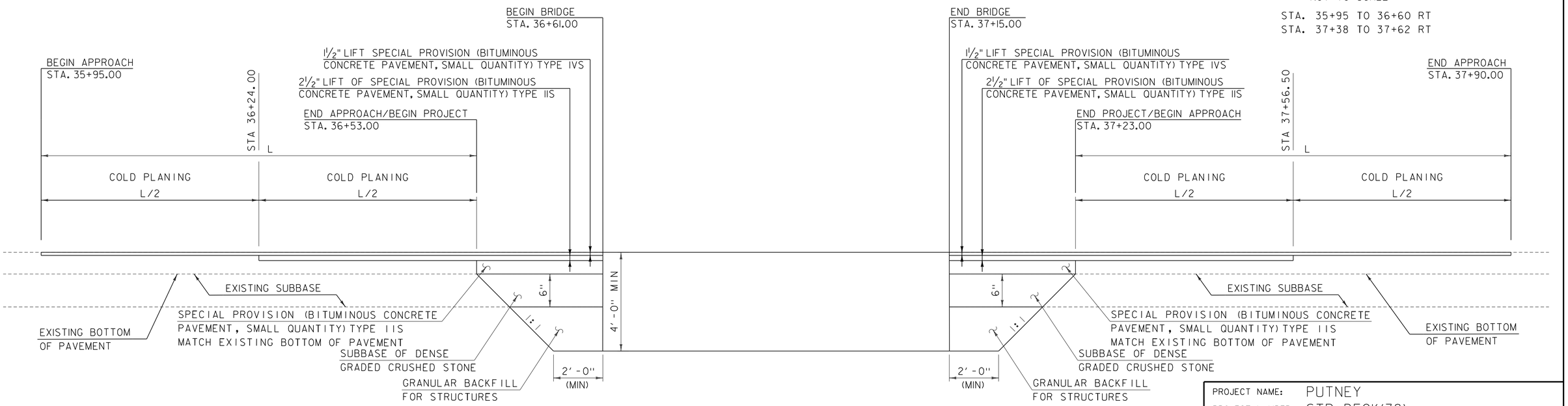
SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)



CAST-IN-PLACE CONCRETE CURB, TYPE B
EARTHWORKS DETAIL

NOT TO SCALE

STA. 35+95 TO 36+60 RT
STA. 37+38 TO 37+62 RT



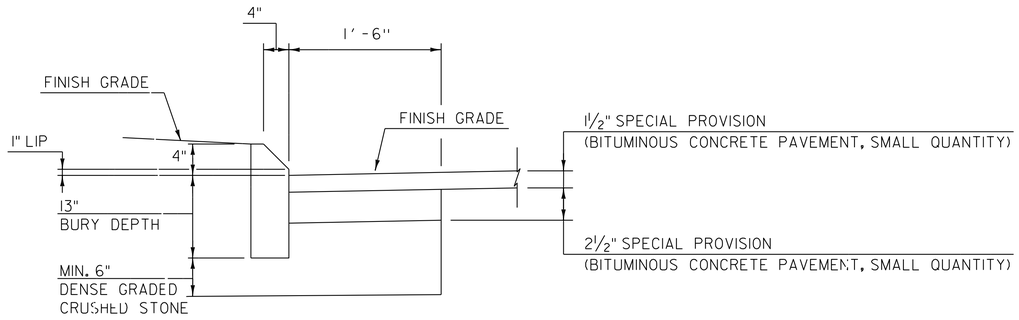
MATERIAL TRANSITION DIAGRAM

NOT TO SCALE

FUSS & O'NEILL

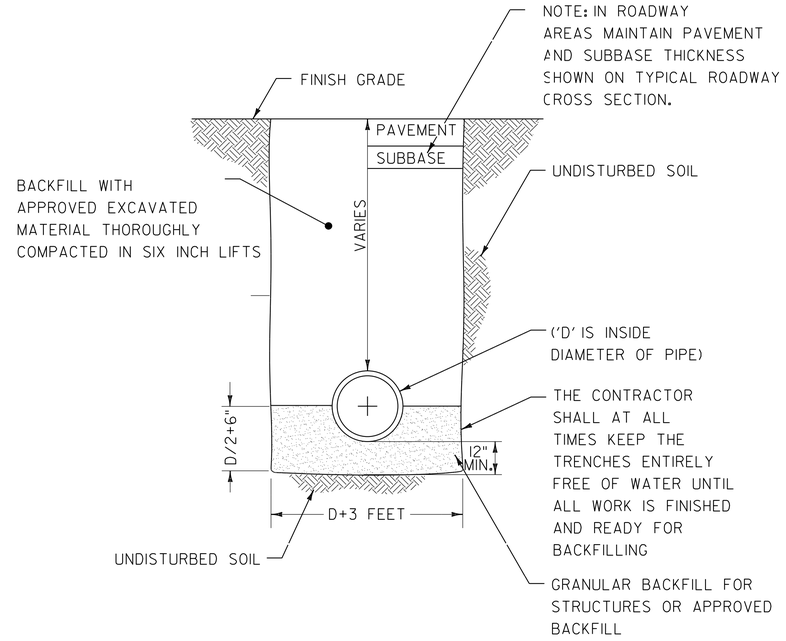
PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)

FILE NAME: z15b105frm-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. SMITH
DESIGNED BY: S. FORTIER	CHECKED BY: L. GREER
TYPICAL ROADWAY SECTIONS SHEET	SHEET 4 OF 58



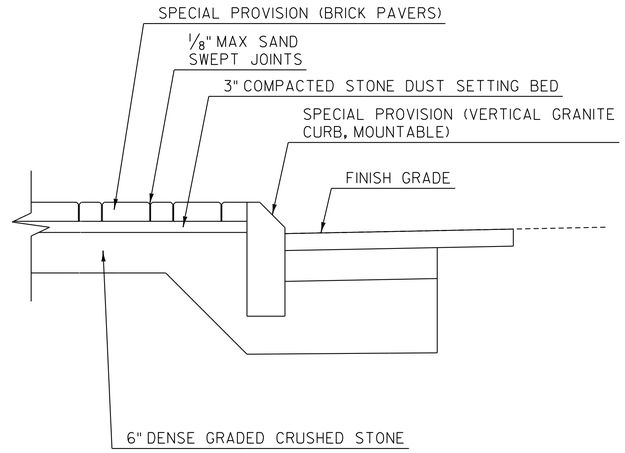
ITEM 616.215 - VERTICAL GRANITE CURB, MOUNTABLE

NOT TO SCALE



TYPICAL STORM DRAIN TRENCH

NOT TO SCALE



ITEM 900.670 - SPECIAL PROVISION (BRICK PAVERS)

NOT TO SCALE

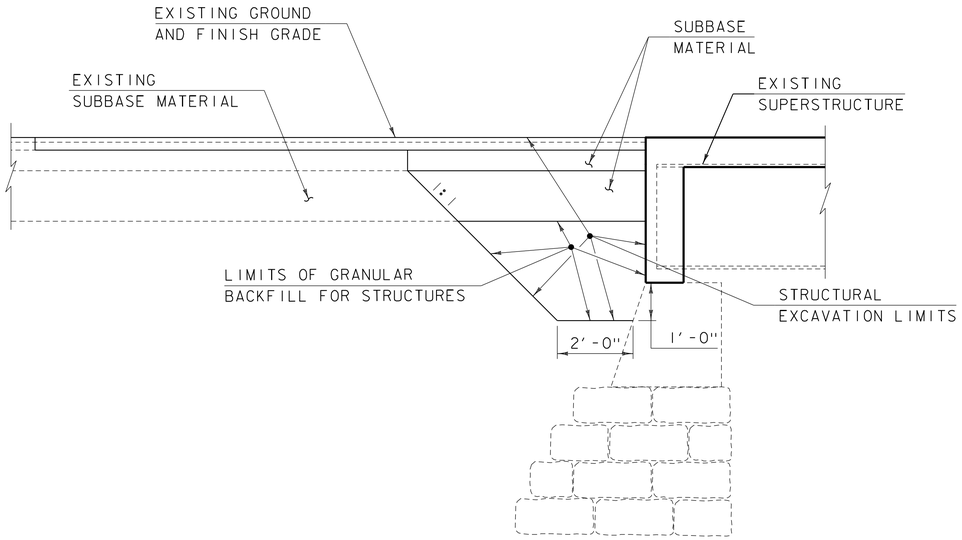
1. ITEM 900.670 - SPECIAL PROVISION (BRICK PAVERS) SHALL BE FULL COMPENSATION FOR ALL BRICK PAVERS, CUTTING TO SIZE, STONE DUST SETTING BED, COMPACTION AND SAND SWEPT JOINTS INCLUDING ALL MATERIALS AND LABOR. DENSE GRADED CRUSHED STONE BASE SHALL BE PAID FOR SEPARATELY.
2. BRICKS SHALL CONSIST OF TWO COMPLEMENTARY COLORS, 70% RED-COLOR AND 30% IRON-COLOR. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE BRICK COLORS FOR APPROVAL. PAVERS SHALL BE PLACED IN A RANDOM PATTERN.
3. BRICK PAVER FIELDS SHALL BE BOUND FLUSH ON ALL SIDES BY CONCRETE SIDEWALK OR GRANITE CURB, TO BE PAID FOR SEPARATELY.

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105frm-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: S. FORTIER
ROADWAY DETAILS SHEET

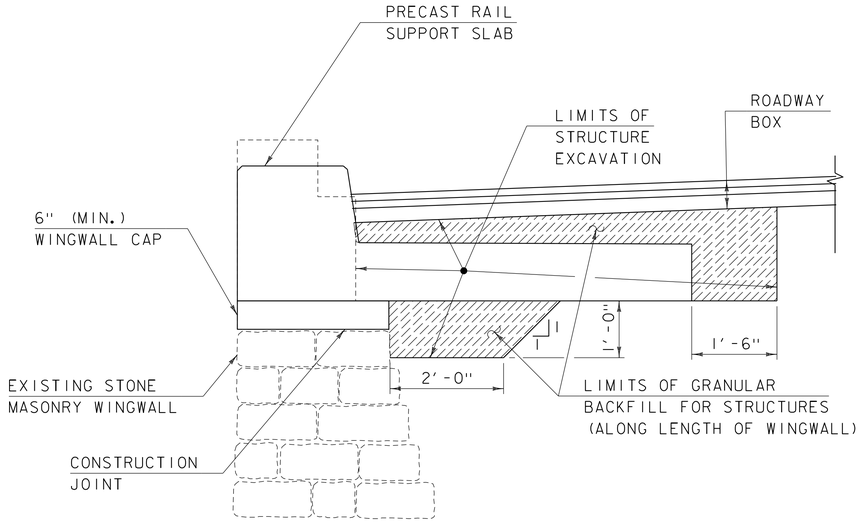
PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: L. GREER
SHEET 5 OF 58



TYPICAL ABUTMENT EARTHWORK SECTION

NOT TO SCALE

NOTE: ACTUAL EXCAVATION LIMITS SHALL BE DETERMINED BY THE CONTRACTOR. HOWEVER, PAYMENT UNDER CONTRACT ITEM 204.25 AND 204.30 WILL ONLY BE MADE TO THE LIMITS SHOWN.



TYPICAL RAIL SUPPORT SLAB EARTHWORKS

NOT TO SCALE

FUSS & O'NEILL

PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)
FILE NAME: z15b105sub-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. SMITH
DESIGNED BY: A. GIRALDI	CHECKED BY: A. GIRALDI
TYPICAL EARTHWORK SECTION SHEET	SHEET 6 OF 58

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2018 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2017, AND ITS LATEST REVISIONS.

2. THE DESIGN LIVE LOAD SHALL BE HL-93.

3. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS.

4. ANY REQUIRED SAWCUT OF EXISTING PAVEMENT WILL BE CONSIDERED INCIDENTAL TO THE WEARING COURSE PAY ITEM.

5. ALL EDGES OF PAVEMENT SHALL BE BACKED UP TO FULL HEIGHT WITH AGGREGATE SHOULDER MATERIAL AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR UNDER ITEM 402.12, "AGGREGATE SHOULDERS".

6. FOLLOWING THE COMPLETION OF ALL OTHER CONSTRUCTION ACTIVITIES, ALL BEAM SEATS SHALL BE CLEANED OFF. THE COST FOR CLEANING BEAM SEATS WILL BE CONSIDERED INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.

TRAFFIC CONTROL

7. AS PART OF ITEM 641.11, "TRAFFIC CONTROL, ALL INCLUSIVE", THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO THE PROJECT MANAGER FOR APPROVAL IN ACCORDANCE WITH SUBSECTION 105.03 AND SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN AN APPROPRIATE DISCIPLINE IN THE STATE OF VERMONT. THE PLAN SHALL INCLUDE A LAYOUT SHOWING ALL ON- AND OFF-PROJECT SIGNS AND BARRICADES AND ANY OTHER DETAILS ASSOCIATED WITH THE TRAFFIC CONTROL.

8. ALL ITEMS REQUIRED TO PREPARE, SUBMIT, AND IMPLEMENT THE CONTRACTOR'S PLAN, INCLUDING ANY NECESSARY REVISIONS TO THE PLAN, WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 641.11, "TRAFFIC CONTROL, ALL-INCLUSIVE". THE PAY ITEM INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

   TRAFFIC CONTROL PLAN
   TEMPORARY TRAFFIC BARRIERS
   BARRICADES
   DRUMS/CONES
   ON PROJECT CONSTRUCTION SIGNING
   TEMPORARY PAVEMENT MARKINGS (IF REQUIRED)
   REMOVE AND RESET TRAFFIC BARRIER

   TRAFFIC CONTROL ITEMS NOT PAID FOR IN THE UNIT PRICE BID FOR ITEM 641.11, "TRAFFIC CONTROL, ALL-INCLUSIVE", AND PAID FOR SEPARATELY INCLUDE THE FOLLOWING:

   ITEM 630.10, "UNIFORMED TRAFFIC OFFICERS"
   ITEM 630.15, " FLAGGERS"
   ITEM 641.15, "PORTABLE CHANGEABLE MESSAGE SIGN"

   THE CONTRACTOR SHALL ALLOW TWO WEEKS FOR APPROVAL OF THE TRAFFIC CONTROL PLAN. NO WORK SHALL COMMENCE UNTIL THE CONTRACTOR HAS AN APPROVED TRAFFIC CONTROL PLAN.

9. DURING CLOSURE PERIOD, TRAFFIC SHALL BE MAINTAINED BY AN OFF-SITE DETOUR TO BE SIGNED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING DETOUR CLOSURE SIGNAGE AS SHOWN ON SHEETS 16-18 IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD AND VTRANS STANDARDS. PAYMENT FOR BRIDGE CLOSURE SIGNAGE WILL BE MADE UNDER ITEM 641.11, "TRAFFIC CONTROL, ALL-INCLUSIVE". ANY COORDINATION REQUIRED BETWEEN THE CONTRACTOR AND THE TOWN OF PUTNEY WILL BE AT NO ADDITIONAL COST TO THE STATE. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS REGARDING THE CLOSURE PERIOD.

10. THE SIDEWALK SHALL BE CLOSED DURING THE BRIDGE CLOSURE PERIOD. THE SIDEWALK MAY REMAINED CLOSED FOR 7 DAYS AFTER THE BRIDGE CLOSURE PERIOD HAS ENDED.

DECK REMOVAL AND RELATED ITEMS

11. ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE" WILL INCLUDE REMOVAL OF ANY PORTIONS OF THE EXISTING STRUCTURE AS SHOWN ON THE PLANS, INCLUDING THE EXISTING BRIDGE DECK AND CURBS, SHEAR STUDS, BARRIER MEMBRANE, PAVEMENT, CONCRETE CURTAIN WALLS, WINGWALL AND BRIDGE RAILING.

12. AFTER REMOVAL OF THE EXISTING BRIDGE DECK, CONCRETE CURTAIN WALL, AND CONCRETE END DIAPHRAGMS, ANY AREAS ON THE CONCRETE BEAM SEATS AND ABUTMENTS FOUND TO BE UNSOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE METHOD FOR DETERMINING AREAS OF UNSOUND CONCRETE SHALL BE APPROVED BY THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO WHAT CLASS OF REPAIR IS REQUIRED TO REPAIR THE DETERIORATED PORTION OF THE CONCRETE BEAM SEAT AND ABUTMENTS AND THE LIMITS OF THE REPAIR. THE REPAIRS WILL BE PAID FOR UNDER ITEM 580.13, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I" ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II, AS APPLICABLE. QUANTITIES FOR ITEMS 580.13, 580.14 AS SHOWN ON THE QUANTITY SUMMARY SHEETS ARE ESTIMATED.

13. THE STONE ABUTMENTS AND WINGWALLS SHALL BE RE-POINTED AS DIRECTED BY THE ENGINEER. ALL WORK WILL BE PAID UNDER ITEM 602.30. "REPOINTING MASONRY". THE ESTIMATED QUANTITIES ASSUME THE ENTIRE MASONRY AREA WILL BE REPOINTED.

14. THE STEEL COMPONENTS OF THE SIDEWALK RAIL SHALL BE REMOVED, REPLACED WITH SALVAGED COMPONENTS AS NEEDED, CLEANED, PAINTED, AND RESET. COMPONENTS REMOVED FROM THE BRIDGE DECK RAILS SHALL BE USED AS REPLACEMENTS AS NEEDED. ALL WORK WILL BE PAID FOR UNDER ITEM 900.645, " SPECIAL PROVISION (REPAIR OF EXISTING BRIDGE RAILING, PIPE AND SPINDLE)".

STEEL

15. AFTER THE EXISTING CONCRETE DECK IS REMOVED, BUT BEFORE THE DECK FORMS ARE BUILT, THE CONTRACTOR SHALL TAKE ELEVATIONS ON THE TOP FLANGES OF THE GIRDERS AT THE POINTS INDICATED IN THE BOTTOM OF SLAB ELEVATIONS TABLES ON SHEET 24. THE DIFFERENCE BETWEEN THE ELEVATIONS OBTAINED AND THOSE SHOWN IN THE TABLE IS THE ACTUAL HAUNCH DEPTH FROM THE TOP OF THE GIRDER TO THE BOTTOM OF THE DECK SLAB AT THE CENTERLINE OF THE GIRDER. SEE VTRANS STRUCTURES DETAIL SHEET SD-601.00 FOR HAUNCH AND SHEAR CONNECTOR DETAIL.

    THE TOP OF BEAM ELEVATIONS SHALL BE SENT TO THE ENGINEER TO CONFIRM THE HAUNCH DEPTHS. THE CONTRACTOR SHALL EXPECT 24 HOURS FOR VTRANS TO CONFIRM THE HAUNCH DEPTHS AND PREPARE REVISED HAUNCH DEPTH CALCULATIONS IF REQUIRED.

16. THE EXISTING STRUCTURAL STEEL AND BRIDGE RAIL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. ANY REMOVED STRUCTURAL STEEL, IF APPLICABLE, IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE AND ITS OFFICERS AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE REMOVED EXISTING STRUCTURAL STEEL.

    THE TOPS OF THE BEAMS IN THE AREA OF THE SHEAR STUDS SHALL BE CLEANED IN ACCORDANCE WITH SECTION 508 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR IS NOT REQUIRED TO APPLY NEW PAINT. THIS WORK SHALL BE PAID AS 900.645, "SPECIAL PROVISION (CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES). ALL REQUIRED SUBMITTALS SHALL BE APPROVED PRIOR TO THE BRIDGE CLOSURE PERIOD.

    IF NO PAINT IS ENCOUNTERED, THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE", AND THE CONTRACTOR WILL BE PAID 30% OF THE LUMP SUM BID PRICE FOR ITEM 900.645 FOR THE PREPARATION OF THE REQUIRED SUBMITTALS.

REINFORCED CONCRETE

17. CAST-IN-PLACE CONCRETE FOR 9" CURB AND 6" WINGWALL CAP SHALL CONFORM TO THE SPECIAL PROVISION FOR ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)". ALL OTHER CONCRETE SHALL CONFORM TO THE SPECIFICATIONS FOR HIGH PERFORMANCE CONCRETE, CLASS PCD.

18. ALL REINFORCING STEEL SHALL BE LEVEL 1 - EPOXY COATED AND MEET THE REQUIREMENTS OF SECTION 507.

19. BACKFILL PLACEMENT SHALL NOT COMMENCE UNTIL THE CONCRETE DECK HAS ATTAINED THE DESIGN STRENGTH AND THE DECK HAS CURED A MINIMUM OF 3 DAYS.

20. TRAFFIC SHALL BE ALLOWED ON THE BRIDGE DECK DURING THE CURE PERIOD AFTER THE CONCRETE DESIGN STRENGTH HAS BEEN ATTAINED. THE DECK MAY BE CURED USING THE "WATER CURING" METHOD AS SPECIFIED IN SECTION 501.17, THE DECK SHALL CURE FOR THE FULL DURATION AS SPECIFIED.

21. SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF THE DECK BETWEEN THE DRIP NOTCHES. THIS WORK WILL BE PAID FOR UNDER ITEM 514.10, "WATER REPELLENT, SILANE".

22. THE CORK JOINT BETWEEN THE EXISTING CHEEKWALLS AND CAST-IN-PLACE CONCRETE CURTAIN WALL WILL BE CONSIDERED INCIDENTAL TO ITEM 501.37 "HIGH PERFORMANCE CONCRETE, CLASS PCD".

23. THE PREFORMED JOINT SEALER, CLOSED CELL FOAM BETWEEN THE CAST-IN-PLACE CONCRETE CURTAIN WALL AND THE EXISTING BRIDGE SEAT SHALL MEET THE REQUIREMENTS OF SUBSECTION 707.09 AND WILL BE CONSIDERED INCIDENTAL TO ITEM 501.37 "HIGH PERFORMANCE CONCRETE, CLASS PCD".

PRECAST CONCRETE RAIL SUPPORT SLAB

24. THE PRECAST CONCRETE RAIL SUPPORT SLAB IS AN OPTION ITEM. THE CONTRACTOR SHALL CHOOSE EITHER CONTRACT ITEM 540.10, "PRECAST CONCRETE STRUCTURE, RAIL SUPPORT SLAB" OR CONTRACT ITEM 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)".

25. THE PRECAST CONCRETE MANUFACTURER SHALL CONSIDER STRENGTH, SERVICEABILITY, STIFFNESS, AND STABILITY OF THE PRECAST CONCRETE RAIL SUPPORT SLAB FOR LOADS GENERATED DURING FABRICATION, TRANSPORTATION, ERECTION, AND CONSTRUCTION OPERATIONS. ALL CALCULATIONS SHALL BE INCLUDED WITH SUBMITTAL.

26. THE COST OF ALL REINFORCING BARS THAT ARE CAST INTO THE PRECAST RAIL SUPPORT SLAB WILL BE INCLUDED IN THE APPROPRIATE PRECAST CONCRETE PAY ITEM.

27. DESIGN VALUES:
    A. DESIGN LOADING: HL-93
    B. WEIGHT OF BACKFILL MATERIAL: 140 PCF
    C. PRECAST CONCRETE COMPRESSIVE STRENGTH: f'c = 5,000 PSI
    D. REINFORCING STEEL, LEVEL I: fy = 60,000 PSI

28. THE DRILLING OF HOLES IN THE PRECAST CONCRETE ELEMENTS SHALL NOT BE PERMITTED, UNLESS APPROVED IN WRITING BY THE VERMONT AGENCY OF TRANSPORTATION STRUCTURES SECTION. ANY LIFTING HOPES SHALL BE FILLED WITH MORTAR, TYPE IV CONFORMING TO THE REQUIREMENTS OF SUBSECTION 707.03. COST FOR MORTAR WILL BE CONSIDERED INCIDENTAL TO ITEM 540.10 "PRECAST CONCRETE STRUCTURE, RAIL SUPPORT SLAB".

29. THE PRECAST CONCRETE MANUFACTURER SHALL CAST ANCHOR PLATES AND ANCHOR STUDS INTO THE CURB FOR BRIDGE RAILING ACCORDING TO BRIDGE RAIL DETAIL SHEET ON SHEET 36 AND RAIL LAYOUT SHEET ON SHEET 32.

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105notes-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: A. GIRALDI
PROJECT NOTES SHEET

PLOT DATE: 10/31/2018
DRAWN BY: M.W. SMITH
CHECKED BY: A. GIRALDI
SHEET 7 OF 58

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES

ROADWAY	EROSION CONTROL	BRIDGE NO. 15	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND
100				100		CY	COMMON EXCAVATION	203.15	17
1				1		CY	EARTH BORROW	203.30	-
40				40		CY	TRENCH EXCAVATION OF EARTH	204.20	4.1
20				20		CY	TRENCH EXCAVATION OF ROCK	204.21	4.9
1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	-
		65		65		CY	STRUCTURE EXCAVATION	204.25	0.8
35		41		76		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	2.5
1500				1500		SY	COARSE-MILLING, BITUMINOUS PAVEMENT	210.10	17
55				55		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35	4.7
20				20		TON	AGGREGATE SHOULDERS	402.12	3
10				10		CWT	EMULSIFIED ASPHALT	404.65	0.2
140				140		SY	HAND-PLACED BITUMINOUS CONCRETE PAVEMENT, DRIVES	406.38	5
		60		60		CY	HIGH PERFORMANCE CONCRETE, CLASS PCD	501.37	0.1
		14958		14958		LB	REINFORCING STEEL, LEVEL I (EPOXY)	507.11	0.4
		1		1		LS	SHEAR CONNECTORS (636 - 6" x 7/8")	508.15	-
		188		188		SY	LONGITUDINAL DECK GROOVING	509.10	0.5
		35		35		GAL	WATER REPELLENT, SILANE	514.10	0.6
		32		32		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10	0.8
		32		32		LF	JOINT SEALER, HOT POURED	524.11	0.8
		54		54		LF	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	525.45	-
		1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20	-
							BEGIN OPTION AA		
		1		1		LS	PRECAST CONCRETE STRUCTURE (RAIL SUPPORT SLAB)	540.10	-
		1		1		LS	SPECIAL PROVISION (CONTRACTOR - FABRICATED PRECAST CONCRETE STRUCTURE	900.645	-
							END OPTION AA		
		10		10		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	580.13	-
		10		10		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14	-
17				17		LF	12" RCP CLASS III	601.0805	-
23				23		LF	8" CPEP(SL)	601.2603	-
		94		94		SY	REPOINTING MASONRY	602.30	0.5
1				1		EACH	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRATE	604.20	-
1				1		EACH	CHANGING ELEVATION OF SEWER MANHOLES	604.42	-
	1			1		CY	STONE FILL, TYPE I	613.10	0.3
35				35		LF	VERTICAL GRANITE CURB	616.21	5
90				90		LF	VERTICAL GRANITE CURB, MOUNTABLE	616.215	
110				110		LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28	2
45				45		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	618.10	3.7
15				15		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	618.11	1.7
20				20		SF	DETECTABLE WARNING SURFACE	618.30	4
36				36		LF	BOX BEAM GUARDRAIL	621.30	1.8

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		COARSE-MILLING, BITUMINOUS PAVEMENT
1484	SY	ROUTE 5
1484	SY	SUBTOTAL
16	SY	ROUNDING
1500	SY	TOTAL
		SUBBASE OF DENSE GRADED CRUSHED STONE
8.5	CY	ROUTE 5
17.1	CY	SIDEWALK
12.6	CY	CURB
2.1	CY	BRICK PAVERS
9.7	CY	DRIVEWAY
50	CY	SUBTOTAL
5	CY	ROUNDING
55	CY	TOTAL

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105qss-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: K. HAYDEN
QUANTITY SHEET 1

PLOT DATE: 10/31/2018
DRAWN BY: M. G. SMITH
CHECKED BY: L. GREER
SHEET 8 OF 58

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES

ROADWAY	EROSION CONTROL	BRIDGE NO. 15	FULL C.E. ITEMS
5			
95			
			1
			1
			3000
3			
1			
1			
5			
550			
400			
	3		
	1		
	5		
	0.1		
	5		
	1		
	55		
	0.1		
	70		
	180		
2			
1			
		4	
			20400
1			
		1	
		1	
		24.25	
		1	
		1	
1			
1			
125			
175			

TOTALS

GRAND TOTAL	FINAL
5	
95	
1	
1	
3000	
3	
1	
1	
5	
550	
400	
3	
1	
5	
0.1	
5	
1	
55	
0.1	
70	
180	
2	
1	
4	
20400	
1	
1	
1	
24.25	
1	
1	
1	
125	
175	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER	ROUND
HR	UNIFORMED TRAFFIC OFFICERS	630.10	-
HR	FLAGGERS	630.15	-
LS	FIELD OFFICE, ENGINEERS	631.10	-
LS	TESTING EQUIPMENT, BITUMINOUS	631.17	-
DL	FIELD OFFICE COMMUNICATIONS (N.A.B.I.)	631.26	-
EACH	CPM SCHEDULE	633.10	-
LS	MOBILIZATION/DEMOBILIZATION	635.11	-
LS	TRAFFIC CONTROL, ALL-INCLUSIVE	641.11	-
EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15	-
LF	DURABLE 4 INCH WHITE LINE, POLYUREA	646.404	16
LF	DURABLE 4 INCH YELLOW LINE, POLYUREA	646.414	10
SY	GEOTEXTILE UNDER STONE FILL	649.31	3
LB	SEED	651.15	0.52
LB	FERTILIZER	651.18	2
TON	AGRICULTURAL LIMESTONE	651.20	0.09
CY	TOPSOIL	651.35	3
LS	EPSC PLAN	653.01	-
HR	MONITORING EPSC PLAN	653.02	4
TON	HAY MULCH	653.10	0.09
LF	SILT FENCE, TYPE II	653.476	3
LF	BARRIER FENCE	653.50	7
EACH	DELINEATOR WITH STEEL POST	676.10	-
LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50	-
CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)	900.608	0.4
DL	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE)	900.615	-
EACH	SPECIAL PROVISION (CAST IRON SUB-BASIN WITH CATCH BASIN ELBOW AND CI GRATE TYPE D)	900.620	-
EACH	SPECIAL PROVISION (GUARDRAIL APPROACH SECTION GALV. 2 RAIL BOX BEAM 32'-0")	900.620	-
EACH	SPECIAL PROVISION (GUARDRAIL APPROACH SECTION GALV. 2 RAIL BOX BEAM 34'-0")	900.620	-
LF	SPECIAL PROVISION (BRIDGE RAILING, GALV. 2 RAIL BOX BEAM/CURB MOUNTED)	900.640	-
LS	SPECIAL PROVISION (CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES)	900.645	
LS	SPECIAL PROVISION (REPAIR OF EXISTING BRIDGE RAILING, PIPE AND SPINDLE)	900.645	
LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	900.650	
LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT)(N.A.B.I.)	900.650	-
SF	SPECIAL PROVISION (BRICK PAVERS)	900.670	1
TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680	13.5

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		SPECICAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)
111.5	TON	ROUTE 5
111.5	TON	SUBTOTAL
13.5	TON	ROUNDING
125	TON	TOTAL

FUSS & O'NEILL

PROJECT NAME: PUTENY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105qss-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: K. HAYDEN
QUANTITY SHEET 2

PLOT DATE: 10/31/2018
DRAWN BY: M. G. SMITH
CHECKED BY: L. GREER
SHEET 9 OF 58

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE QUANTITY SHEET 1

SUMMARY OF BRIDGE QUANTITIES

SUPER STRUCTURE	ABUTMENT 1	ABUTMENT 2	RAIL SUPPORT SLAB	BRIDGE TOTAL	UNIT	ITEMS	ITEM NUMBER
	28	28	9	65	CY	STRUCTURE EXCAVATION	204.25
	18	18	5	41	CY	GRANULAR BACKFILL FOR STRUCTURES	204.30
52	4	4		60	CY	HIGH PERFORMANCE CONCRETE, CLASS PCD	501.37
13270	761	775	152	14958	LB	REINFORCING STEEL, LEVEL I (EPOXY)	507.11
1				1	LS	SHEAR CONNECTORS (636 - 6" x 7/8")	508.15
188				188	SY	LONGITUDINAL DECK GROOVING	509.10
22	7	5	1	35	GAL	WATER REPELLENT, SILANE	514.10
		32		32	LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10
	32			32	LF	JOINT SEALER, HOT POURED	524.11
	54			54	LF	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	525.45
1				1	EACH	PARTIAL REMOVAL OF STRUCTURE	529.20
						BEGIN OPTION AA	
			1	1	LS	PRECAST CONCRETE STRUCTURE (RAIL SUPPORT SLAB)	540.10
			1	1	LS	SPECIAL PROVISION (CONTRACTOR - FABRICATED PRECAST CONCRETE STRUCTURE	900.645
						END OPTION AA	
	5	5		10	SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	580.13
	5	5		10	SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14
	38	56		94	SY	REPOINTING MASONRY	602.30
3			1	4	CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)	900.608
		1		1	EACH	SPECIAL PROVISION (GUARDRAIL APPROACH SECTION GALV. 2 RAIL BOX BEAM 32'-0")	900.620
	1			1	EACH	SPECIAL PROVISION (GUARDRAIL APPROACH SECTION GALV. 2 RAIL BOX BEAM 34'-0")	900.620
			24.25	24.25	LF	SPECIAL PROVISION (BRIDGE RAILING, GALV. 2 RAIL BOX BEAM/CURB MOUNTED)	900.640
1				1	LS	SPECIAL PROVISION (CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES)	900.645
1				1	LS	SPECIAL PROVISION (REPAIR OF EXISTING BRIDGE RAILING, PIPE AND SPINDLE)	900.645

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105qss-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: A. GIRALDI
BRIDGE QUANTITY SHEET

PLOT DATE: 10/31/2018
DRAWN BY: M. W. SMITH
CHECKED BY: A. GIRALDI
SHEET 10 OF 58

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

THE SYMBOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOGY. THE SYMBOLOGY 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. SYMBOLOGY 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 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 SYMBOLOGY

UNDERGROUND UTILITIES

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

ABOVE GROUND UTILITIES (AERIAL)

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

PROJECT CONSTRUCTION SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

- 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 — PDF — PROJECT DEMARCATION FENCE
- BF — BF — BARRIER FENCE
- TREE PROTECTION ZONE (TPZ)
- STRIPING LINE REMOVAL
- SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLOGY

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 — PROPERTY LINE (P/L)
- SR SR SR — SLOPE RIGHTS
- 6f — 6F PROPERTY BOUNDARY
- 4f — 4F PROPERTY BOUNDARY
- HAZ — HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

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

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOGY

ENVIRONMENTAL RESOURCES

- WETLAND BOUNDARY
- RIPARIAN BUFFER ZONE
- WETLAND BUFFER ZONE
- SOIL TYPE BOUNDARY
- T&E — THREATENED & ENDANGERED SPECIES
- HAZ — 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
- (H) — HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

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

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105frm-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: S. FORTIER
CONVENTIONAL SYMBOLOGY LEGEND SHEET

PLOT DATE: 10/31/2018
DRAWN BY: M.G. SMITH
CHECKED BY: L. GREER
SHEET 11 OF 58

GPS CONTROL POINTS

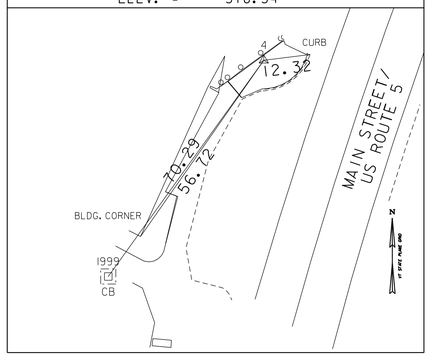
RUS
NORTH = 152472.45
EAST = 1631008.49
ELEV. = 125.94

GENERAL LOCATION, DUMMERSTON TOWN GARAGE, WEST ROAD, EAST DUMMERSTON, VT. 05346., OWNERSHIP, TRANSPORTATION DEPARMENT, DEPARTMENT OF TRANSPORTATION, 870 US ROUTE 5, DUMMERSTON, VT 05301. TO REACH FROM INTERSECTION OF US ROUTE 5 AND WEST ROAD IN EAST DUMMERSTON, PROCEED WEST ON WEST ROAD THROUGH THE INTERSECTION OF MIDDLE ROAD AND BUNKER ROAD. AT 2.0 MILES THE DUMMERSTON TOWN GARAGE IS LOCATED ON LEFT. A GNSS MONUMENT, DESIGNATION "DUMMERSTON CORS ARP", ID "VTD2", IS LOCATED ON THE GARAGE ROOF ATTACHED TO THE TOP FLANGE OF A STEEL 12" X 26' "W" BEAM WHICH IS PART OF THE ROOF STRUCTURE FOR A TWO STORY STEEL FRAMED, WOOD-SIDED BUILDING WITH A 5' CONCRETE FOUNDATION. THE MAST IS A HALF-INCH DIAMETER GALVANIZED PIPE THAT IS 108 INCHES IN LENGTH. THE MAST IS FITTED WITH A 5½" X 5½" X 1" BASE PLATE THAT IS WELDED TO THE BASE OF THE MAST. THE BASE PLATE IS DRILLED AND TAPPED WITH 4⅜" HOLES AND SECURED TO THE FLANGE WITH STAINLESS STEEL BOLTS. THE MAST PROJECTS THROUGH THE ROOF STRUCTURE AND HAS BEEN WEATHER PROOFED.

TRAVERSE TIES

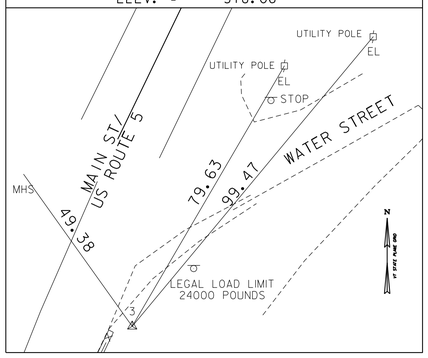
HVCTRL_#4

NORTH = 173284.23
EAST = 1634607.94
ELEV. = 378.54



HVCTRL_#3

NORTH = 173344.83
EAST = 1634685.91
ELEV. = 378.06



NORTH =
EAST =
ELEV. =

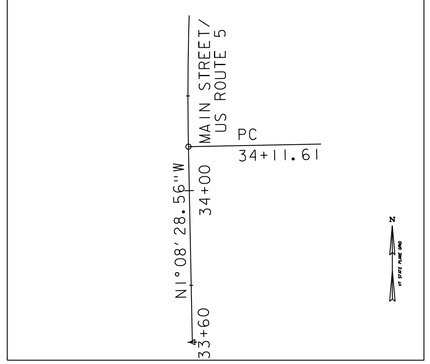
NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

ALIGNMENT TIES

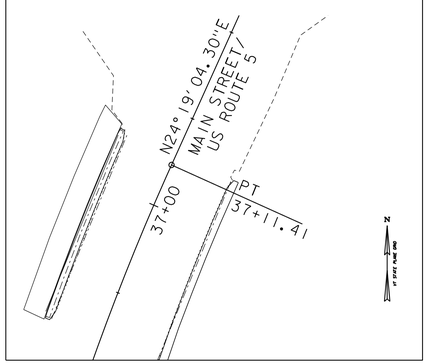
PC 34+11.61

NORTH = 173035.14
EAST = 1634592.86



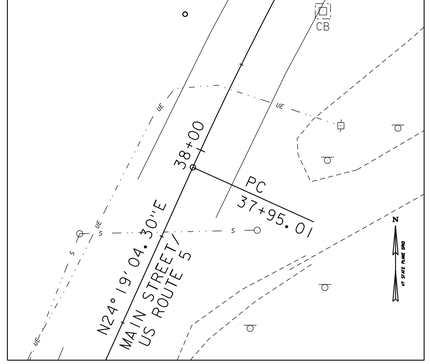
PT 37+11.41

NORTH = 173326.42
EAST = 1634652.59



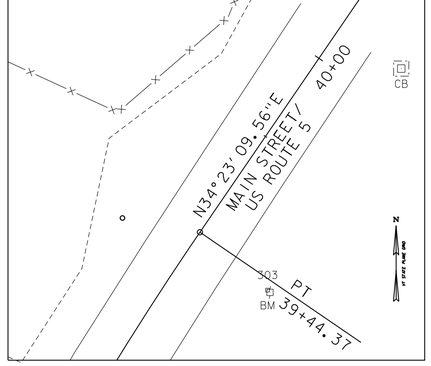
PC 37+95.01

NORTH = 173402.60
EAST = 1634687.02



PT 39+44.37

NORTH = 173532.62
EAST = 1634760.14



NORTH =
EAST =

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83
ADJUSTMENT COMPASS

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105tie-15
PROJECT LEADER: J. FRENCH
DESIGNED BY: S. FORTIER
SURVEY TIE SHEET

PLOT DATE: 10/31/2018
DRAWN BY: M.G. SMITH
CHECKED BY: L. GREER
SHEET 12 OF 58

PROPOSED DRAINAGE

(1) STA 37+18.2 TO STA 37+44.0 RT
NEW 8" X 23' CPEP (SL)
NEW CAST IRON SUB-BASIN W/ CATCH BASIN ELBOW AND W/ CIGRATE TYPE D AT 37+18.0 RT (NEENAH OR APPROVED EQUAL)

(2) STA 37+29.0 RT TO STA 37+44.0 RT
NEW 12" X 17' RCP CLASS III
NEW 4' DIA. PRCCB
W/ CIGRATE TYPE D AT 37+44.0 RT
END SECTION W/STONE FILL, TYPE I
PAD (3'X6') AT OUTLET

CONSTRUCT DRIVE
37+40 LT (24 FT WIDE, PAVED, COMM.)

CHANGING ELEVATION OF SEWER MANHOLES
37+67 LT (PART.)

CAST-IN-PLACE CONCRETE CURB, TYPE B
35+95 TO 36+60 RT
37+38 TO 37+62 RT

CAST-IN-PLACE CONCRETE CURB, TYPE B
37+15 TO 37+28 LT
(REVEAL VARRIES FROM 9" AT THE WESTERN APPROACH AT THE BRIDGE TO 4" AT THE DRIVEWAY)

PORTLAND CEMENT
CONCRETE SIDEWALK, 5 INCH
36+46 TO 36+62 LT
37+16 TO 37+28 LT
37+52 TO 37+87 LT

PORTLAND CEMENT
CONCRETE SIDEWALK, 8 INCH
37+28 TO 37+52 LT

DETECTABLE WARNING SURFACE (DWS)
36+51 TO 36+54 LT
37+80 TO 37+84 LT

VERTICAL GRANITE CURB, MOUNTABLE
37+52 TO 37+82 LT
37+52 TO 37+88 LT
37+60 LT
37+74 LT

VERTICAL GRANITE CURB
36+46 TO 36+62 LT
37+82 TO 37+87 LT

SPECIAL PROVISION (BRICK PAVERS)
37+15 TO 37+28 LT
37+53 TO 37+59 LT
37+74 TO 37+81 LT
37+79 TO 37+87 LT

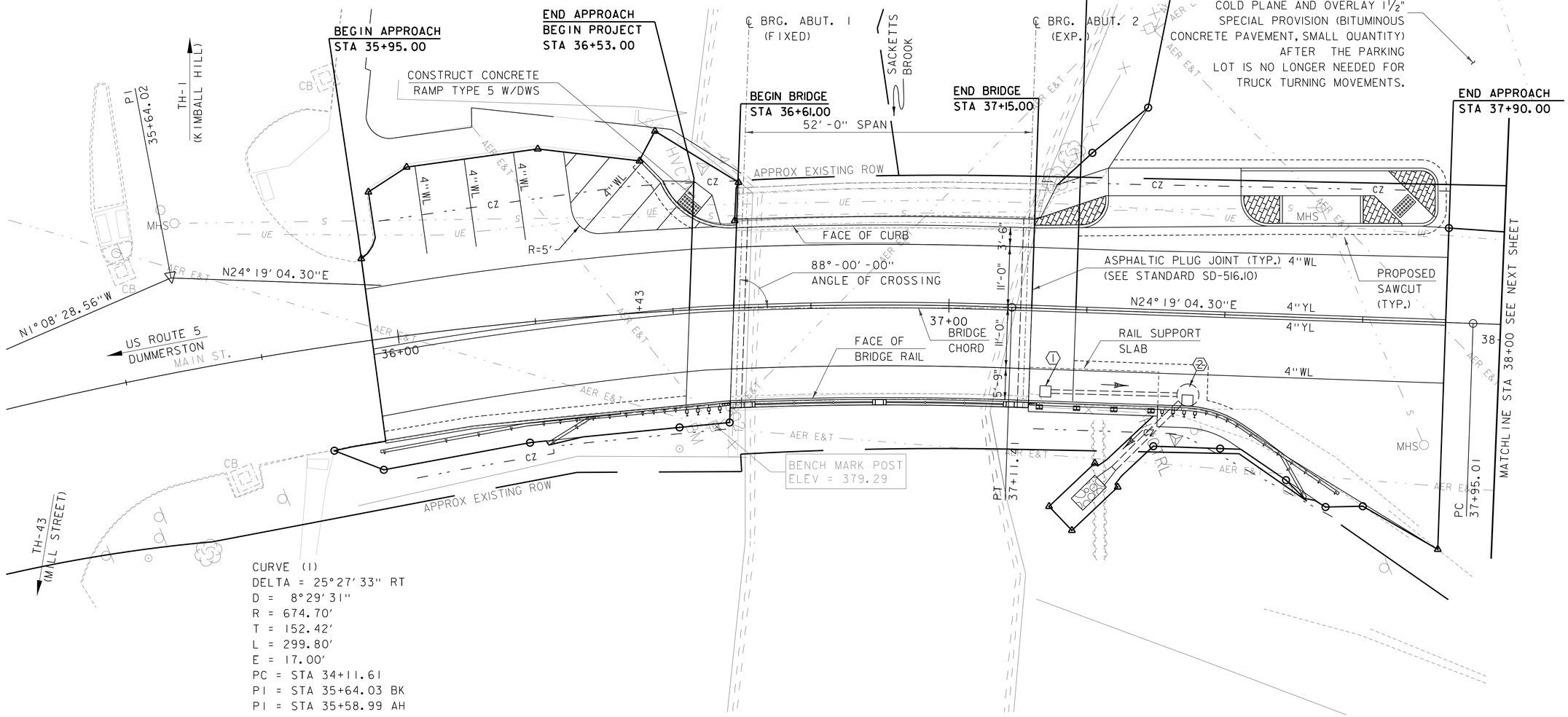
BOX BEAM GUARDRAIL (COATED BLACK)
35+94 TO 36+25 RT
37+68 TO 37+72 RT

GUARDRAIL APPROACH SECTION, GALVANIZED SPECIAL PROVISION (2 RAIL BOX BEAM (COATED BLACK)
36+25 TO 36+59 RT
37+38 TO 37+70 RT

DURABLE 4 INCH WHITE LINE
35+95 TO 37+90 SOLID LT/RT
36+07 TO 36+33 SOLID LT
36+33 TO 36+61 SOLID LT

DURABLE 4 INCH YELLOW LINE
35+95 TO 37+90 SOLID LT/RT

DELINEATOR WITH STEEL POST
35+94 RT
37+72 RT



CURVE (1)
DELTA = 25°27'33" RT
D = 8°29'31"
R = 674.70'
T = 152.42'
L = 299.80'
E = 17.00'
PC = STA 34+11.61
PI = STA 35+64.03 BK
PI = STA 35+58.99 AH

EXISTING BRIDGE DATA:

ROLLED BEAMS, CONCRETE DECK
SPAN = 52'-0"
WIDTH = 40'-4" OUT-TO-OUT
BUILT IN 1954.

NOTE:
EDGE OF BROOK IS APPROXIMATE.

0 10 20
SCALE IN FEET

FUSS&O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105bdr-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: S. FORTIER
LAYOUT SHEET 1

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: L. GREER
SHEET 13 OF 58

N

VT STATE PLANE GRID

COLD PLANE AND OVERLAY 1½" SPECIAL PROVISION
(BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)
AFTER THE PARKING LOT IS NO LONGER NEEDED
FOR TURCK TURNING MOVEMENTS.

WELL

WELL

WELL

WELL

APPROX EXISTING ROW

AER E&T

UE

38+69.88

MATCHLINE STA 38+00 SEE PREVIOUS SHEET

38+00

US ROUTE 5
TO WESTMINSTER

N24° 19' 04.30"E

N34° 23' 09.56"E

CURVE #2

39+00

40+00

40+89

CB

CB

APPROX EXISTING ROW

AER E&T

AER E&T

AER E&T

AER E&T

BM

303

PT
39+44.37

TH-56
(WATER STREET)

APPROX EXISTING ROW

CURVE #2
DELTA = 10° 04' 05" RT
D = 6° 44' 26"
R = 850.00'
T = 74.87'
L = 149.36'
E = 3.29'
PI = STA 38+69.88 (BK)
PI = STA 38+69.50 (AH)
PT = STA 39+44.37

HVCT

89

SMH

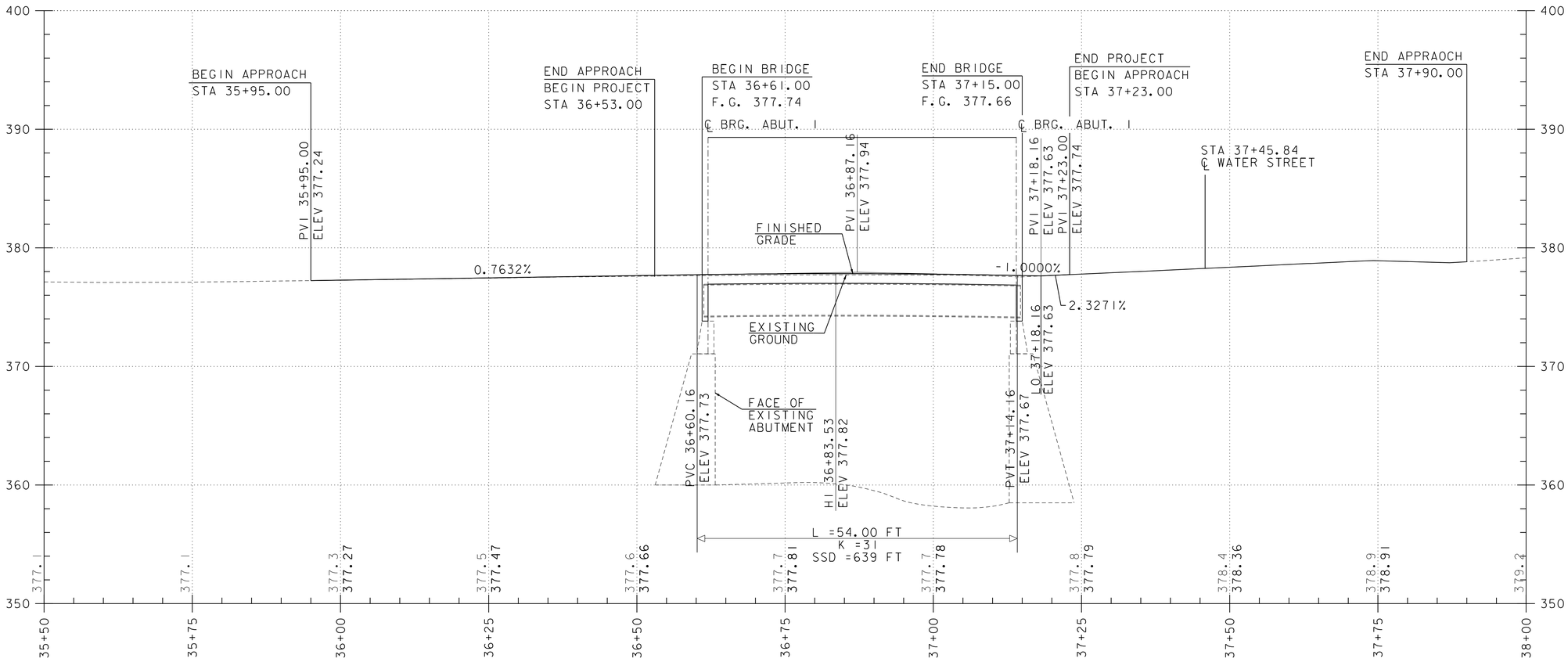
0 10 20
SCALE IN FEET

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105bdr-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: S. FORTIER
LAYOUT SHEET 2

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: L. GREER
SHEET 14 OF 58



US 5 ROUTE PROFILE

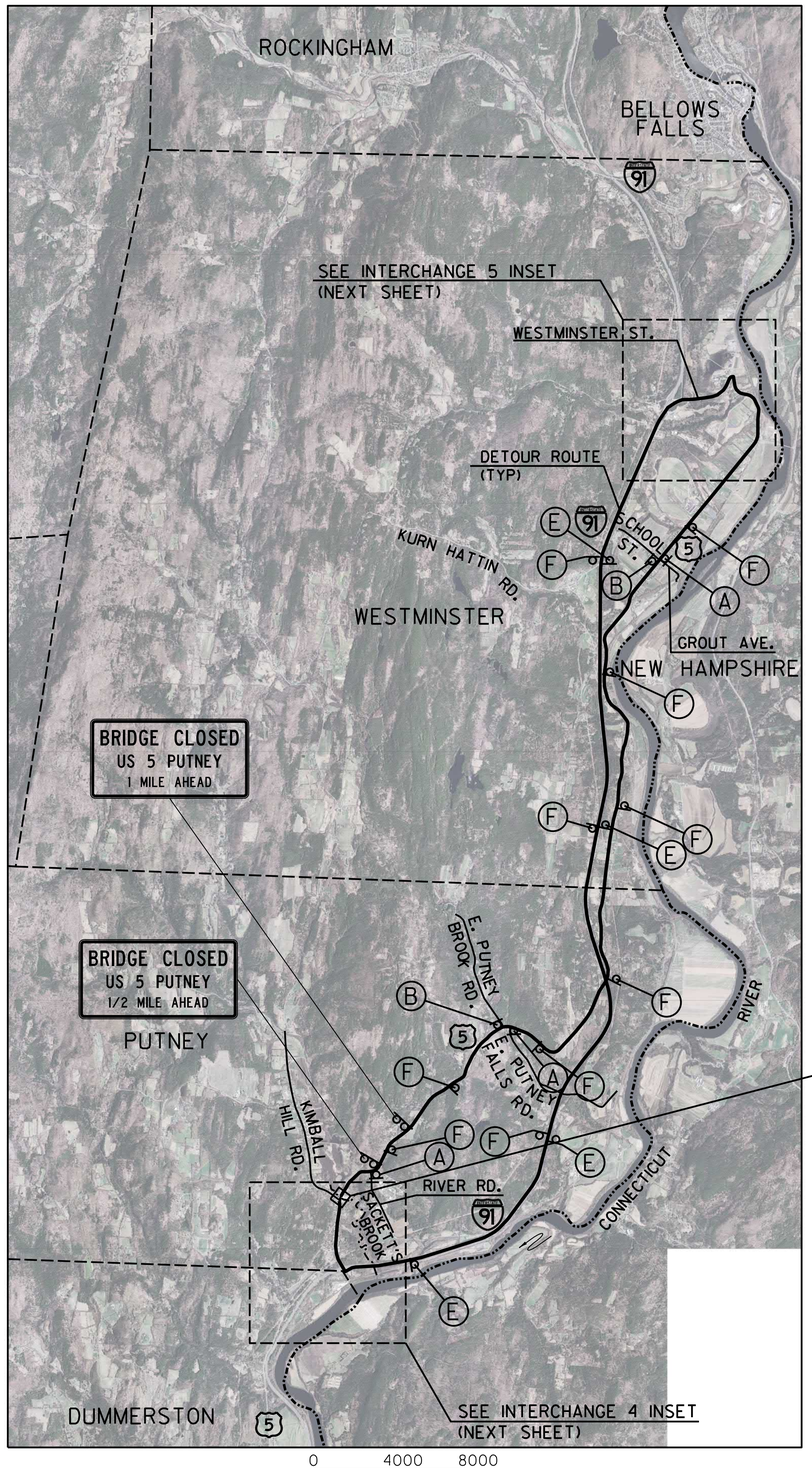
HOR. SCALE 1" = 10'-0"
VER. SCALE 1" = 5'-0"

NOTES

1. STATIONS AND ELEVATIONS ARE IN FEET.
2. THE ELEVATIONS SHOWN TO THE NEAREST TENTH ARE THE EXISTING GROUND ALONG THE CENTERLINE.
3. THE ELEVATIONS SHOWN TO THE NEAREST HUNDRETH ARE THE FINISHED GRADE ALONG THE CENTERLINE.

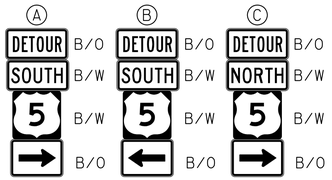
FUSS & O'NEILL

PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)
FILE NAME: z15b105pro-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: S. FORTIER
DESIGNED BY: S. FORTIER	CHECKED BY: L. GREER
PROFILE SHEET	SHEET 15 OF 58



PCMS SHALL DISPLAY

US 5	(DATE) -
DETOUR	(DATE)
AHEAD	



SEE BRIDGE CLOSURE PLAN SHEET FOR PUTNEY STP DECK(38) BRIDGE CLOSURE LAYOUT

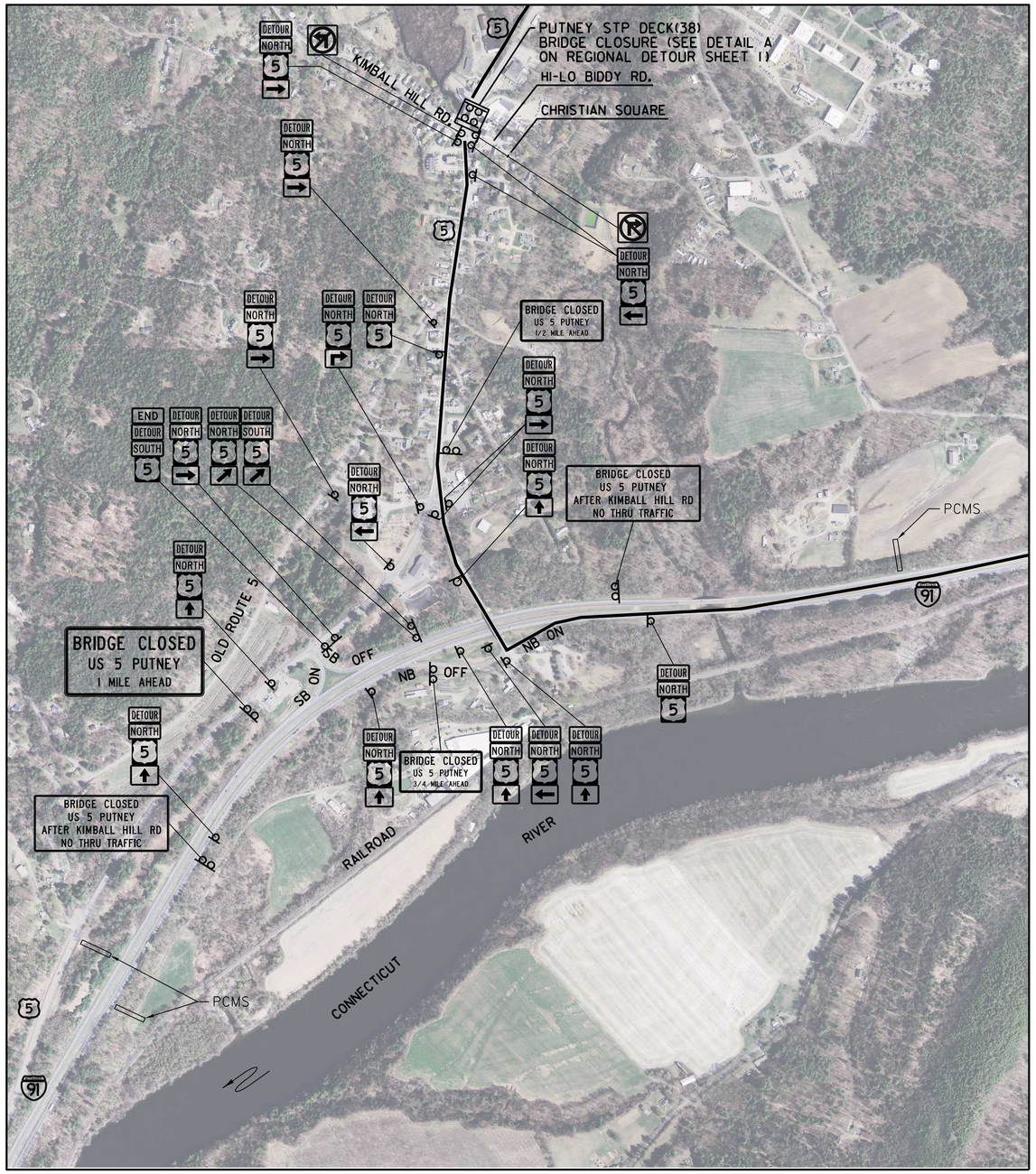
TRAFFIC CONTROL NOTES

1. TRAFFIC WILL BE MAINTAINED ON A REGIONAL DETOUR VIA INTERSTATE 91 AND US ROUTE 5 BETWEEN DUMMERSTON, PUTNEY AND WESTMINSTER.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DETOUR AND CONSTRUCTION SIGNING. THE EXACT LOCATION WILL BE COORDINATED WITH THE ENGINEER AND SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD AND ITS LATEST REVISIONS.
3. TRAFFIC CONTROL WARNING SIGNS SHALL BE PROVIDED PER STANDARD T-1 AND THE LATEST EDITION OF THE MUTCD AND ITS LATEST REVISIONS. ADDITIONAL PROJECT CONSTRUCTION SIGNS SHALL BE INSTALLED AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. ALL ON AND OFF PROJECT SIGNS AND BARRICADES AS REQUIRED FOR THE DETOUR WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL BE PAID FOR UNDER THE ITEM 641.11, TRAFFIC CONTROL, ALL-INCLUSIVE. ALL SIGNS AND BARRICADES SHALL BE INSPECTED DAILY AND REPAIRED AS NECESSARY. ALL SIGNS AND BARRICADES SHALL BE CLEARED OF DUST AND DEBRIS WEEKLY.
4. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE PLACED AT THE APPROXIMATE LOCATIONS SHOWN ON THE PLANS OR WHERE DIRECTED BY THE ENGINEER. TWO PCMS SHALL BE PLACED AT THE PROJECT LOCATION 14 DAYS PRIOR TO THE START OF CONSTRUCTION. MESSAGE TO SAY "US 5 DETOUR AHEAD (DATE) - (DATE)", TO WARN OF THE IMPENDING DETOUR. THESE PCMS SHALL THEN BE REMOVED AND DEPLOYED TO THE LOCATIONS SHOWN ONCE CONSTRUCTION HAS BEGUN. PAYMENT FOR THESE SIGNS, INCLUDING ANY RELOCATING REQUIRED, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 641.15 PORTABLE CHANGEABLE MESSAGE SIGN.
5. THE ROUTE MARKERS USED FOR THE DETOUR AS SHOWN ON THE PLANS SHALL FOLLOW STANDARDS E-127 AND THE MUTCD AND ITS LATEST REVISIONS. THESE SIGNS SHALL BE REMOVED AT THE END OF THE CONSTRUCTION PERIOD. THESE SIGNS AND THEIR REMOVAL WILL BE PAID FOR UNDER ITEM 641.11, TRAFFIC CONTROL, ALL-INCLUSIVE.
6. INSTALLATION OF DETOUR SIGNS SHALL NOT BLOCK ANY EXISTING TRAFFIC CONTROL SIGN ASSEMBLIES AND SHALL MODIFY OR BE PLACED ADJACENT TO EXISTING SIGN ASSEMBLIES WHEN POSSIBLE. THE CONTRACTOR SHALL MAINTAIN AT LEAST 200 FEET BETWEEN SIGN ASSEMBLIES WHENEVER POSSIBLE. DETOUR SIGNS SHALL NOT INTERFERE OR OBSTRUCT THE VIEW OF STOPPING OR CORNER SIGHT DISTANCE FROM DRIVES AND TOWN HIGHWAYS.
7. ACCESS TO ALL EXISTING DRIVES AND SIDE ROADS SHALL BE MAINTAINED AT ALL TIMES DURING ALL PHASES OF CONSTRUCTION.
8. EXISTING SIGNS THAT ARE IN CONFLICT WITH THE TRAFFIC FLOW OF THE DETOUR SHALL BE REMOVED OR COVERED BY THE CONTRACTOR. ALL SIGNS REMOVED OR COVERED SHALL BE REPLACED WHEN THE TRAFFIC CONTROL PLAN IS DISASSEMBLED. ADHESIVE PRODUCTS THAT LEAVE RESIDUE COMPROMISING REFLECTIVITY IS DISCOURAGED FOR COVERING SIGNS. ANY DAMAGE TO EXISTING SIGNS DURING REMOVAL, REPLACING, OR COVERING SHALL BE PAID FOR BY THE CONTRACTOR. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 641.11, TRAFFIC CONTROL, ALL-INCLUSIVE.
9. CONTACT DIG-SAFE AT LEAST 48 HOURS PRIOR TO BREAKING GROUND TO INSTALL ANY SIGN POSTS.
10. TEMPORARY TRAFFIC BARRIER WILL BE PAID FOR UNDER ITEM 641.11, TRAFFIC CONTROL, ALL-INCLUSIVE AND SHALL BE USED FOR THE CLOSURE OF THE BRIDGE. CONTRACTOR SHALL INSTALL BARRIER AS NECESSARY TO PREVENT THE TRAVELLING PUBLIC FROM ENTERING THE CONSTRUCTION SITE.
11. PROJECT APPROACH SIGNING SHALL BE IN PLACE BEFORE ANY WORK BEGINS.
12. THE DEPARTMENT OF MOTOR VEHICLES SHALL BE NOTIFIED PRIOR TO THE BRIDGE CLOSURE IN ORDER TO REROUTE POSSIBLE SUPERLOADS.

0 20 40
(SCALE IN FEET)

FUSS & O'NEILL

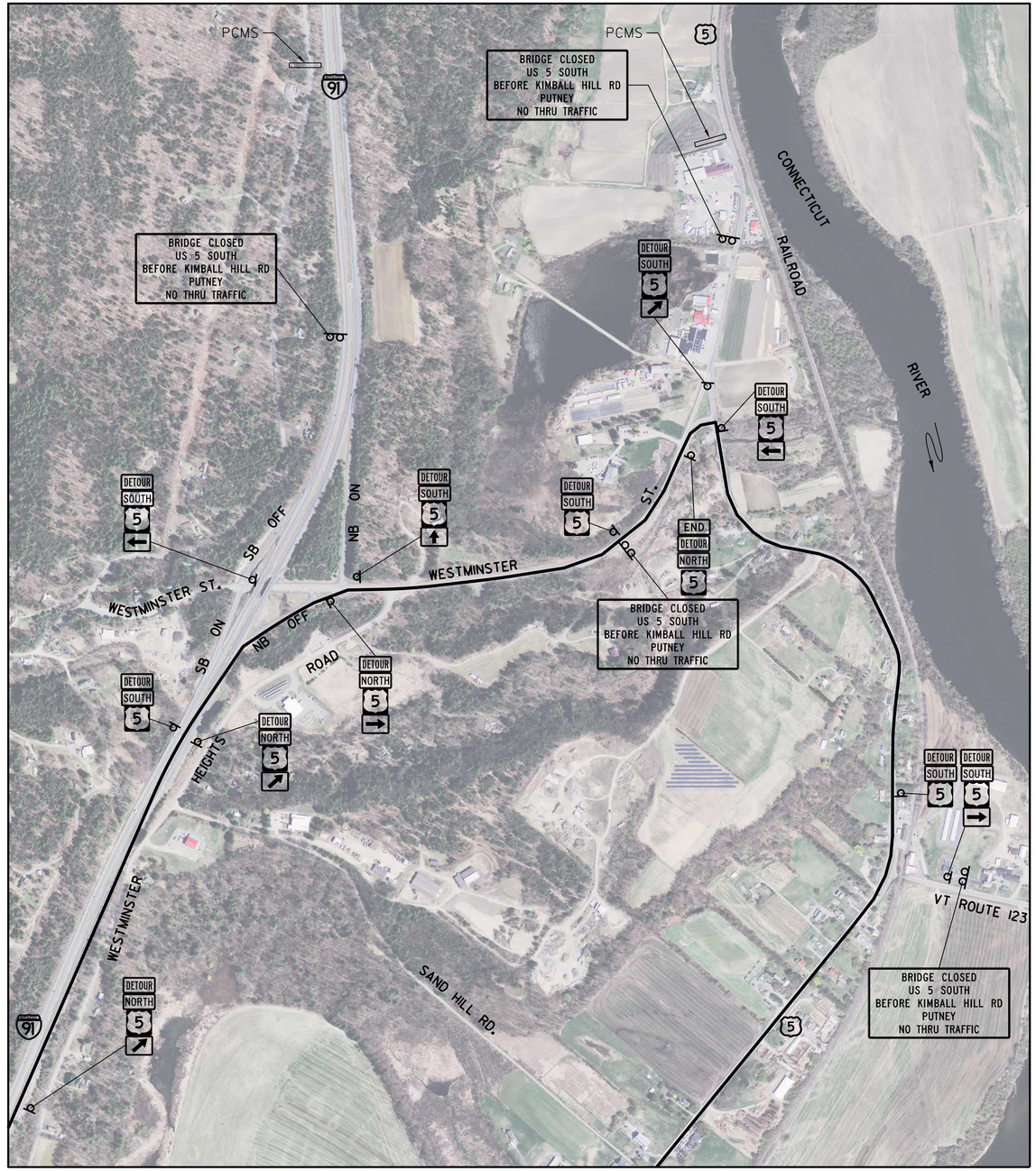
PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)
FILE NAME: z15b105tcpsignl-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. G. SMITH
DESIGNED BY: S. FORTIER	CHECKED BY: L. GREER
REGIONAL DETOUR SHEET 1	SHEET 16 OF 58



INTERCHANGE 4 INSET

N

VT STATE PLANE GRID



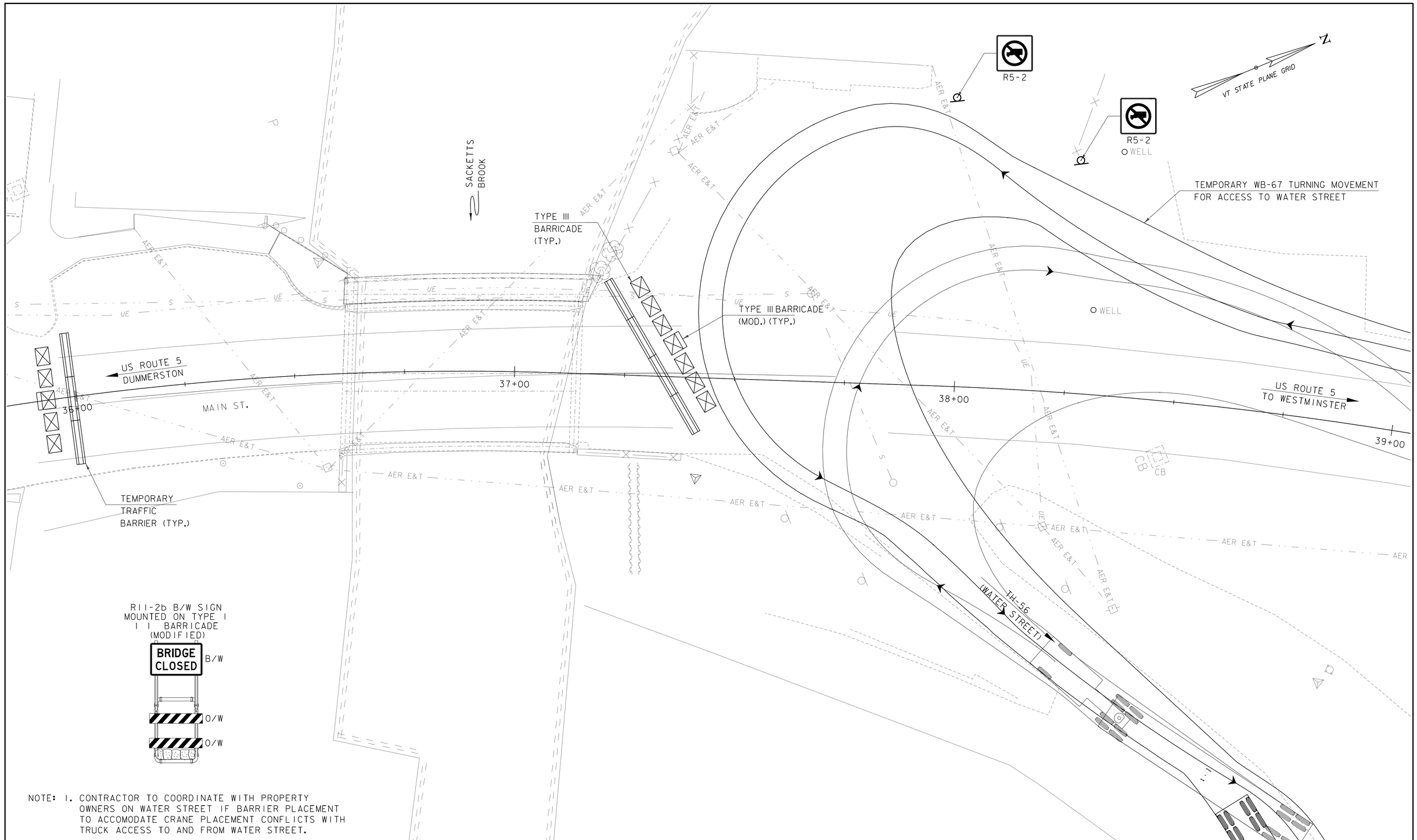
INTERCHANGE 5 INSET

0 500 1000

SCALE IN FEET

FUSS & O'NEILL

PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)
FILE NAME: z15b105tcpsign2-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M.G. SMITH
DESIGNED BY: S. FORTIER	CHECKED BY: L. GREER
REGIONAL DETOUR SHEET 2	SHEET 17 OF 58



R11-2b B/W SIGN MOUNTED ON TYPE III BARRICADE (MODIFIED)

NOTE: 1. CONTRACTOR TO COORDINATE WITH PROPERTY OWNERS ON WATER STREET IF BARRIER PLACEMENT TO ACCOMODATE CRANE PLACEMENT CONFLICTS WITH TRUCK ACCESS TO AND FROM WATER STREET.

2. ALL TEMPORARY SIGNS TO BE PAID FOR AS ITEM 641.11, "TRAFFIC CONTROL, ALL-INCLUSIVE".

0 10 20
SCALE IN FEET

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105bdtcp-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: K. HAYDEN
BRIDGE CLOSURE PLAN SHEET

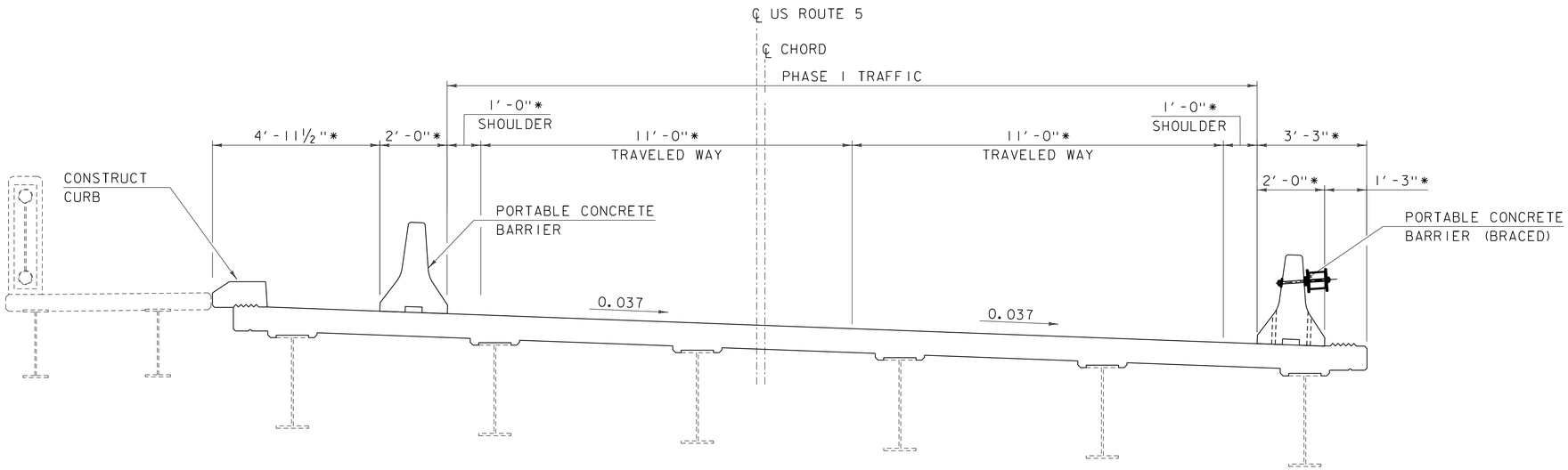
PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: L. GREER
SHEET 18 OF 58

CLD 16-0272

NOTES:

1. PHASING REQUIRED TO CONSTRUCT BRIDGE CURB AND RAIL AFTER BRIDGE CLOSURE PERIOD.

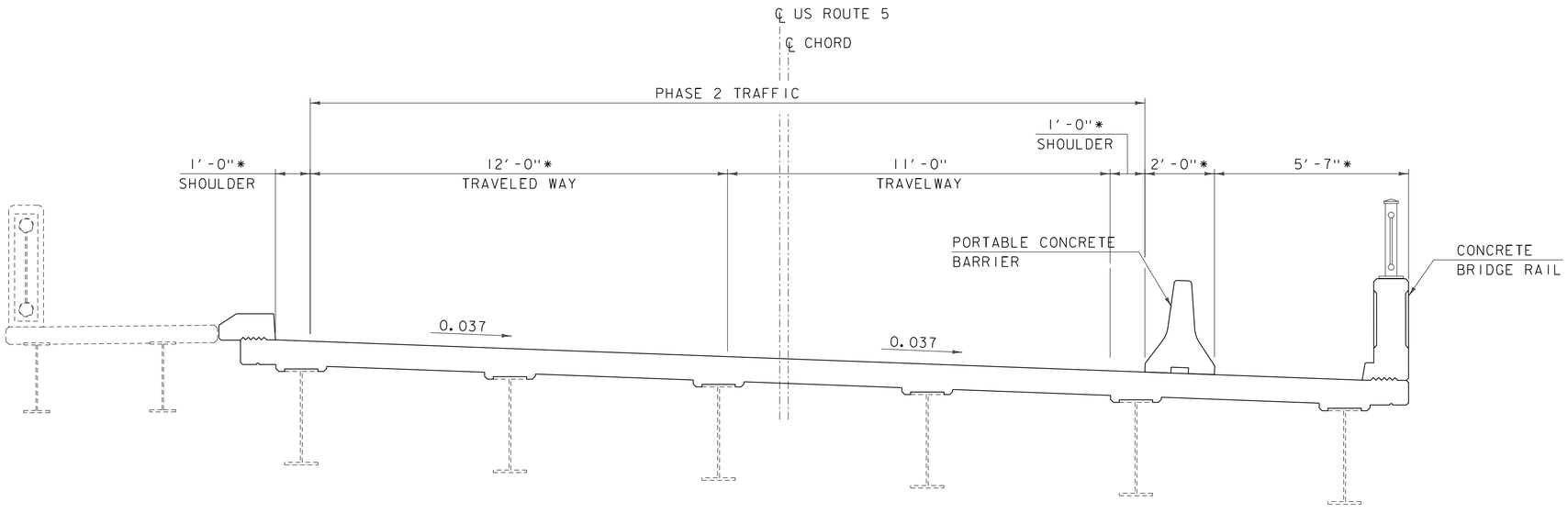
2. DAYTIME LANE CLOSURES WILL BE PERMITTED DURING PHASED CONSTRUCTION.



PHASE 1

SCALE: ½" = 1′-0"

* RADIAL DIMENSION



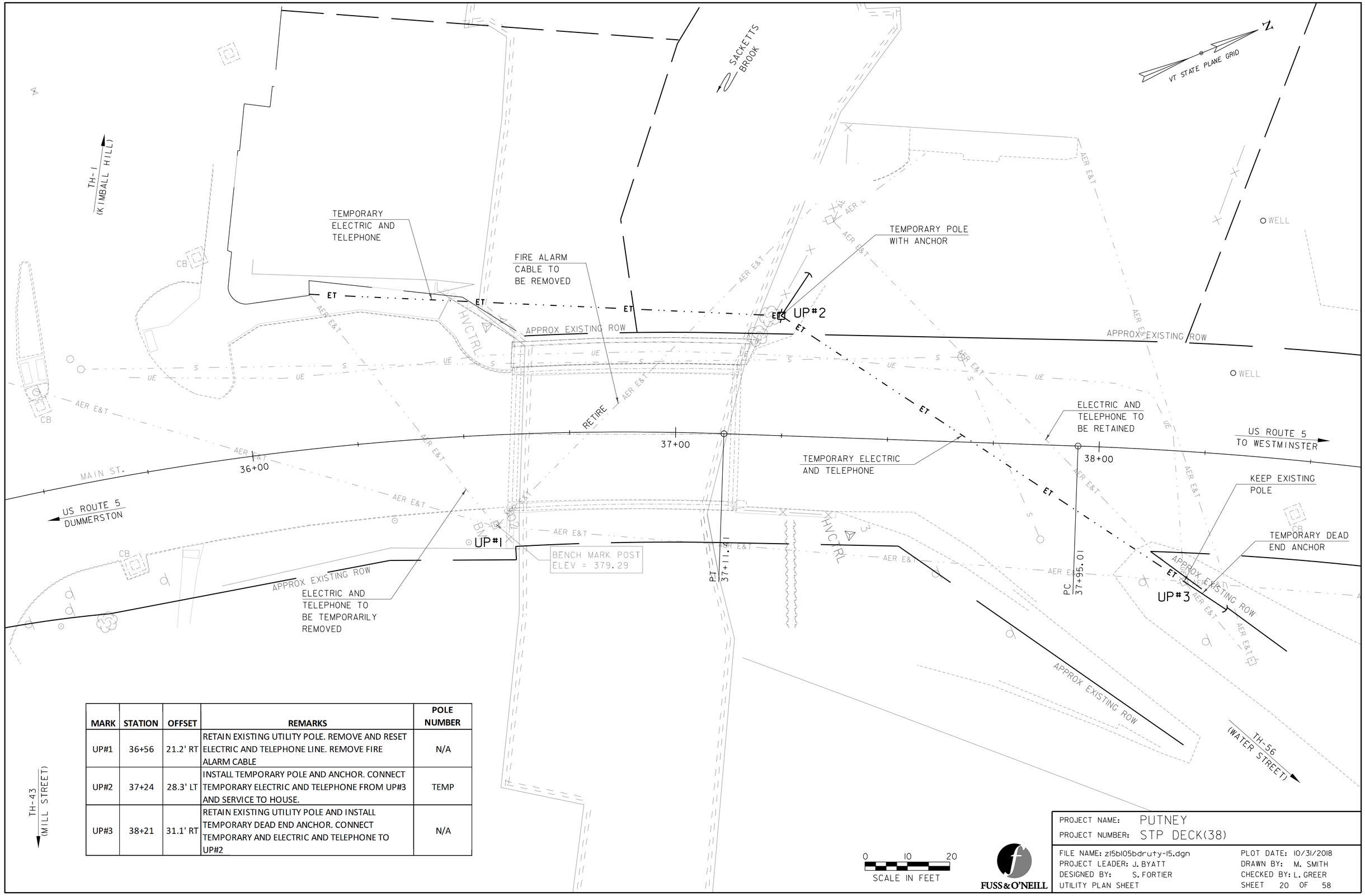
PHASE 2

SCALE: ½" = 1′-0"

* RADIAL DIMENSION

FUSS & O'NEILL

PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)
FILE NAME: z15b105sup-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. SMITH
DESIGNED BY: A. GIRALDI	CHECKED BY: A. GIRALDI
PHASING SECTIONS SHEET	SHEET 19 OF 58



MARK	STATION	OFFSET	REMARKS	POLE NUMBER
UP#1	36+56	21.2' RT	RETAIN EXISTING UTILITY POLE. REMOVE AND RESET ELECTRIC AND TELEPHONE LINE. REMOVE FIRE ALARM CABLE	N/A
UP#2	37+24	28.3' LT	INSTALL TEMPORARY POLE AND ANCHOR. CONNECT TEMPORARY ELECTRIC AND TELEPHONE FROM UP#3 AND SERVICE TO HOUSE.	TEMP
UP#3	38+21	31.1' RT	RETAIN EXISTING UTILITY POLE AND INSTALL TEMPORARY DEAD END ANCHOR. CONNECT TEMPORARY AND ELECTRIC AND TELEPHONE TO UP#2	N/A

0 10 20
SCALE IN FEET

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105bdruty-15.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: S. FORTIER
UTILITY PLAN SHEET

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: L. GREER
SHEET 20 OF 58

℄ BRG. ABUT. 1
(FIXED)

52'-0" SPAN

℄ BRG. ABUT. 2
(EXP.)

VT STATE PLANE GRID

APPROX EXISTING ROW

FACE OF CURB

℄ BRG. ABUT. 1
STA. 36+62.00
F.G. 377.75

BEGIN BRIDGE
STA. 36+61.00
F.G. 377.74

US ROUTE 5
DUMMERSTON

88°-00'-00"
ASKEW (TYP.)

37+00

BRIDGE
CHORD

℄ BRG. ABUT. 2
STA. 37+14.00
F.G. 377.67

END BRIDGE
STA. 37+15.00
F.G. 377.66

ASPHALTIC
PLUG JOINT

RAIL SUPPORT
SLAB

US ROUTE 5
TO WESTMINSTER

TH-56
(WATER STREET)

EXISTING
ABUTMENT
(TYP.)

FACE OF
BRIDGE RAIL

SAWED PAVEMENT
JOINT

PT
37+11.41

SACKETTS
BROOK

LIMIT OF
WORK

APPROX EXISTING ROW

PLAN
SCALE: 1" = 5'-0"

℄ ABUT. 1 (FIXED)

52'-0" ALONG CHORD

℄ ABUT. 2 (EXP.)

NOTE: SEE SHEET 32 FOR RAIL LAYOUT

PAY LIMITS SPECIAL PROVISION
(GUARDRAIL APPROACH SECTION
GALV. 2 RAIL BOX BEAM = 34'-0"

PAY LIMITS BRIDGE RAILING, GALV. STEEL TUBING/ CONCRETE
COMBINATION = 54-0 1/4" RT ALONG FACE OF RAIL

PAY LIMITS SPECIAL PROVISION
(BRIDGE RAILING, GALV. 2 RAIL
BOX BEAM/CURB MOUNTED = 24'-3"

PAY LIMITS SPECIAL PROVISION
(GUARDRAIL APPROACH SECTION
GALV. 2 RAIL BOX BEAM = 32'-0"

380
370
360

EXISTING
GROUND

EXISTING
ABUTMENT
(TYP.)

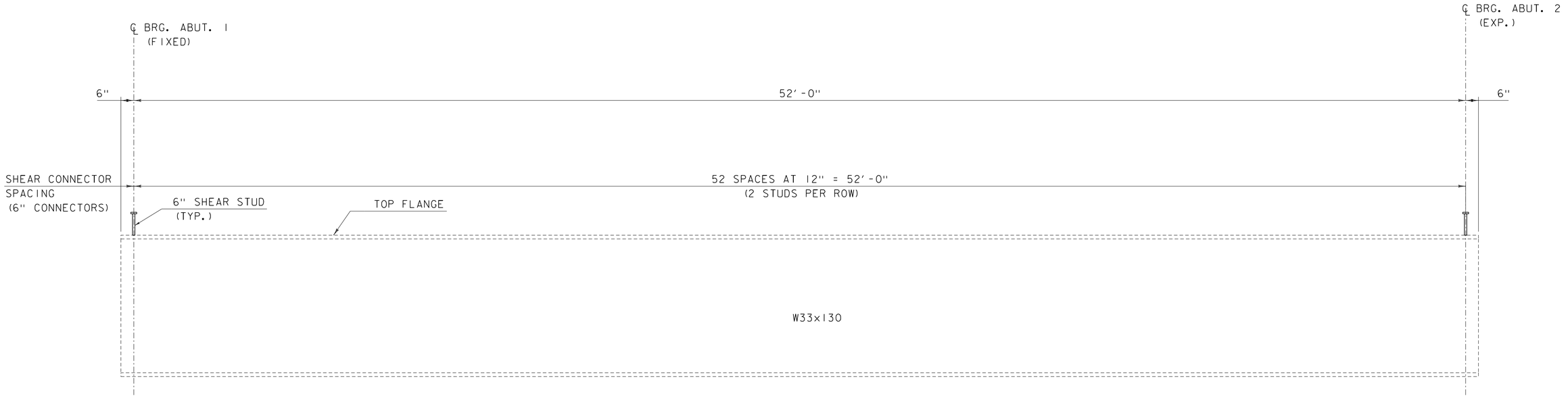
ELEVATION
SCALE: 1" = 5'-0"

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105pe-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: A. GIRALDI
PLAN AND ELEVATION

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI
SHEET 21 OF 58



SHEAR CONNECTOR LAYOUT

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

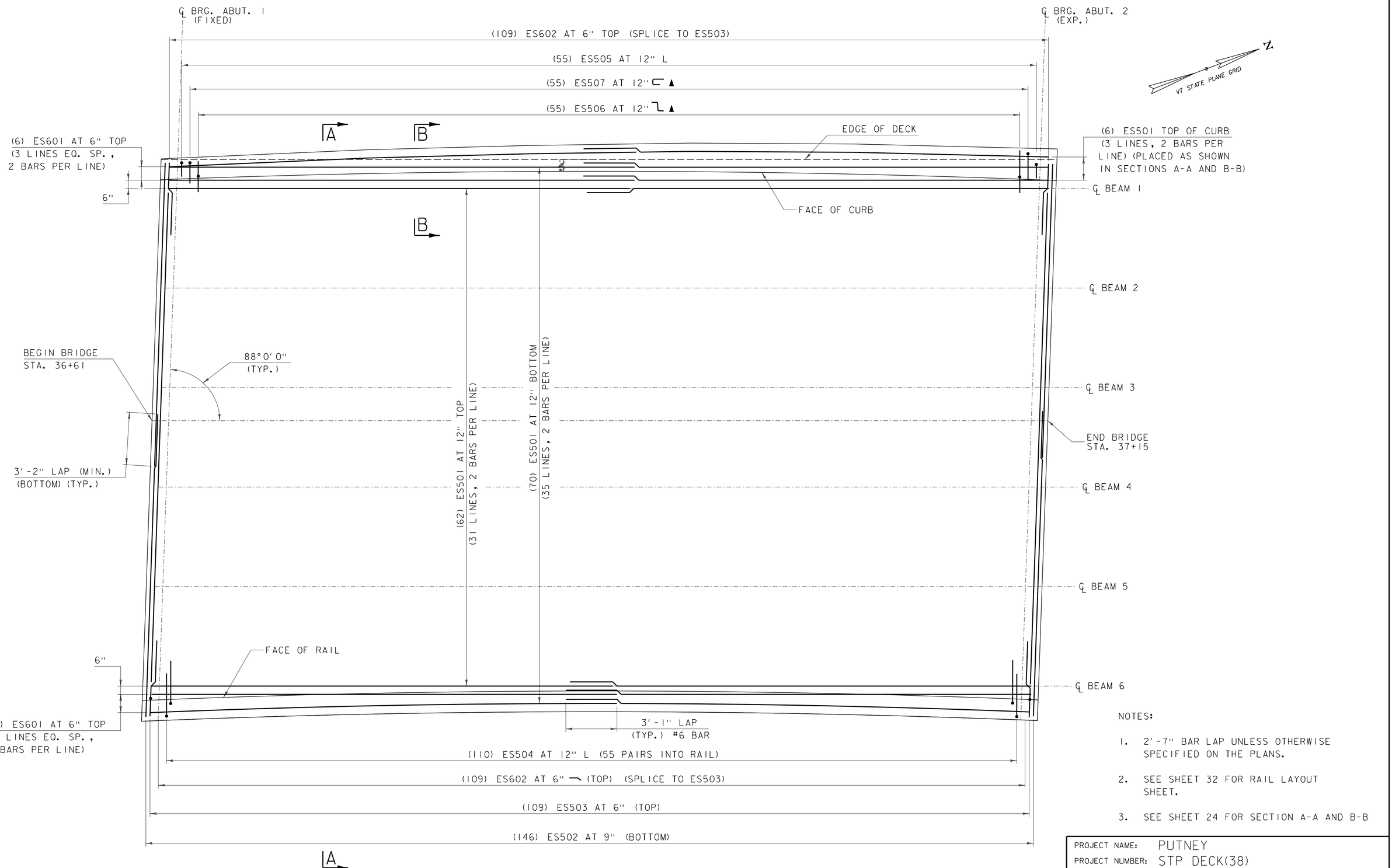
NOTE: REFER TO STRUCTURES DETAIL SHEET SD-601.00 FOR HAUNCH AND SHEAR CONNECTOR DETAIL.

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105sup-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: A. GIRALDI
SHEAR CONNECTOR DETAILS SHEET

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI
SHEET 22 OF 58



DECK REINFORCING PLAN

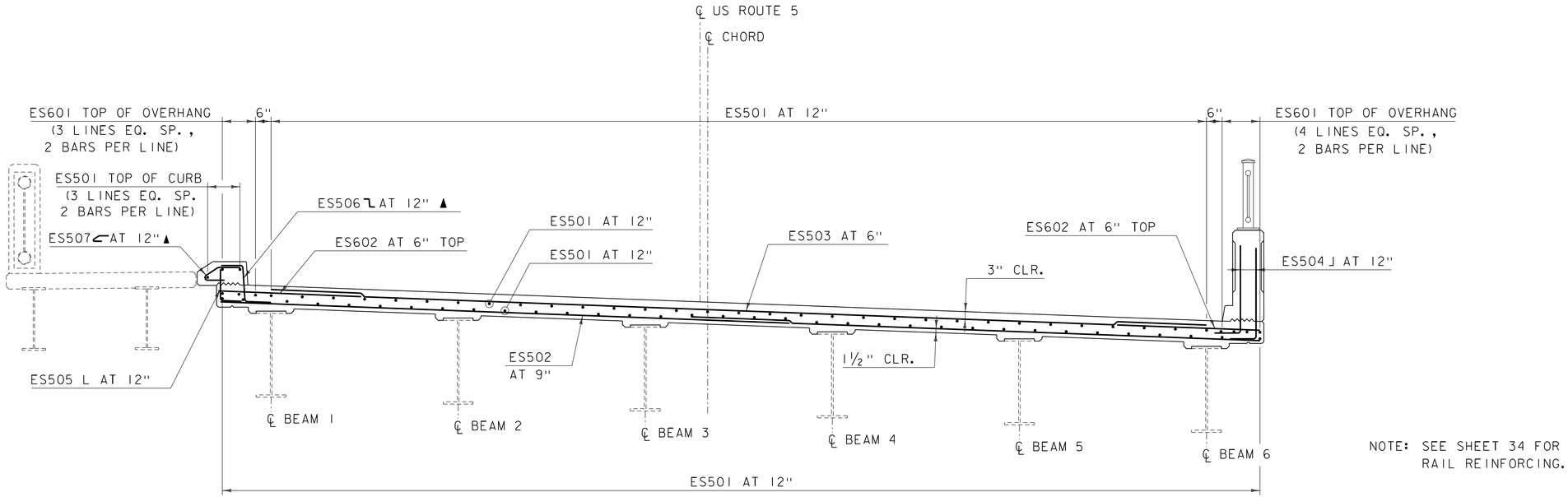
SCALE: 3/8" = 1'-0"

NOTES:

1. 2'-7" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. SEE SHEET 32 FOR RAIL LAYOUT SHEET.
3. SEE SHEET 24 FOR SECTION A-A AND B-B

FUSS & O'NEILL

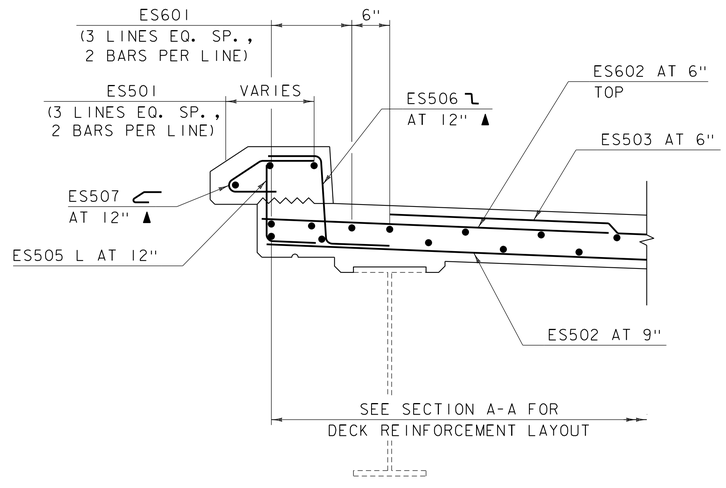
PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)
FILE NAME: z15b105sup-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. SMITH
DESIGNED BY: A. GIRALDI	CHECKED BY: A. GIRALDI
DECK DETAILS SHEET	SHEET 23 OF 58



NOTE: SEE SHEET 34 FOR RAIL REINFORCING.

SECTION A-A

SCALE: ½" = 1'-0"



SECTION B-B

SCALE: 1" = 1'-0"

BOTTOM OF SLAB ELEVATIONS

LOCATION	℄ BRG	SPAN 1									℄ BRG
	ABUT 1	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	ABUT 2
BEAM 1	377.56	377.60	377.63	377.65	377.66	377.66	377.64	377.62	377.58	377.54	377.48
BEAM 2	377.34	377.38	377.41	377.43	377.44	377.44	377.42	377.40	377.36	377.32	377.25
BEAM 3	377.11	377.16	377.19	377.21	377.22	377.22	377.20	377.18	377.14	377.09	377.04
BEAM 4	376.89	376.93	376.96	376.99	377.00	376.99	376.98	376.96	376.92	376.87	376.81
BEAM 5	376.66	376.71	376.74	376.76	376.77	376.77	376.76	376.73	376.70	376.65	376.59
BEAM 6	376.44	376.48	376.52	376.54	376.55	376.55	376.53	376.51	376.47	376.43	376.37

NOTES:

1. ELEVATIONS SHOWN ARE BOTTOM OF SLAB ELEVATIONS ADJUSTED FOR TOTAL DEAD LOAD DEFLECTION LESS THE DEFLECTION DUE TO THE STEEL WEIGHT.

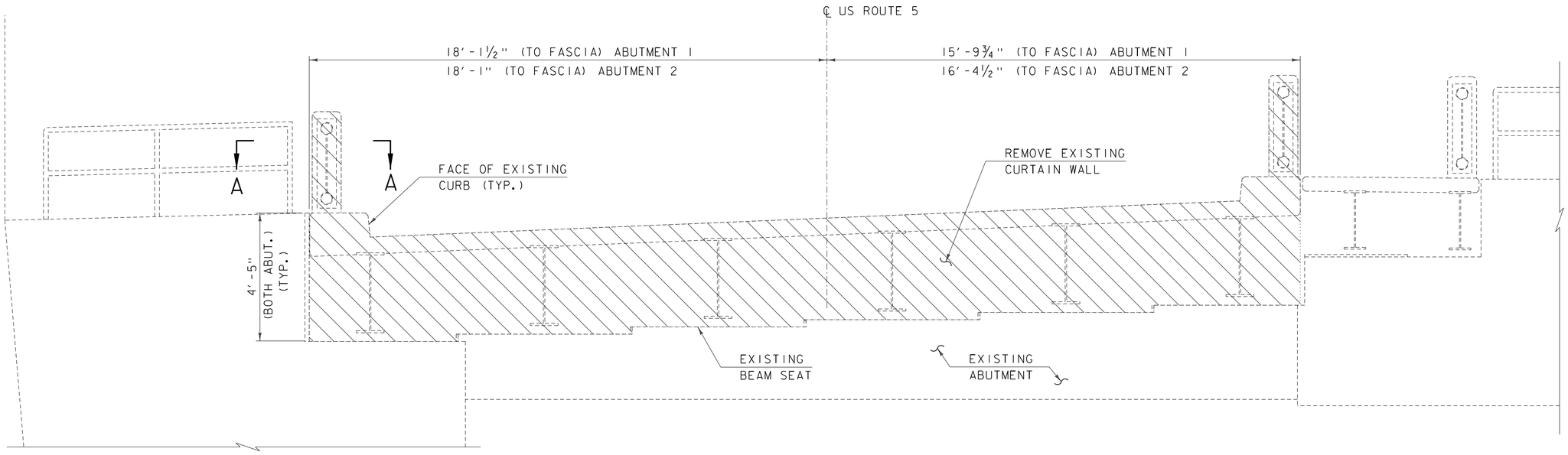
2. AFTER THE DECK IS REMOVED, BUT BEFORE THE FORMS ARE BUILT, ELEVATIONS ON THE TOP FLANGE OF THE GIRDERS ARE TO BE OBTAINED AT THE POINTS INDICATED IN THE TABLE. THE DIFFERENCE BETWEEN THE ELEVATION OBTAINED AND THOSE SHOWN IN THE TABLE IS THE ACTUAL BLOCKING DISTANCE FROM THE TOP OF THE GIRDER TO THE BOTTOM OF THE DECK AT THE CENTERLINE OF THE GIRDER.

FUSS&O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105sup-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: A. GIRALDI
DECK AND BACKWALL DETAILS

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI
SHEET 24 OF 58



ABUTMENT REMOVAL LIMITS

(ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR)

SCALE ½" = 1'-0"

PARTIAL REMOVAL OF STRUCTURE (SEE PROJECT NOTE 10 ON SHEET 7)

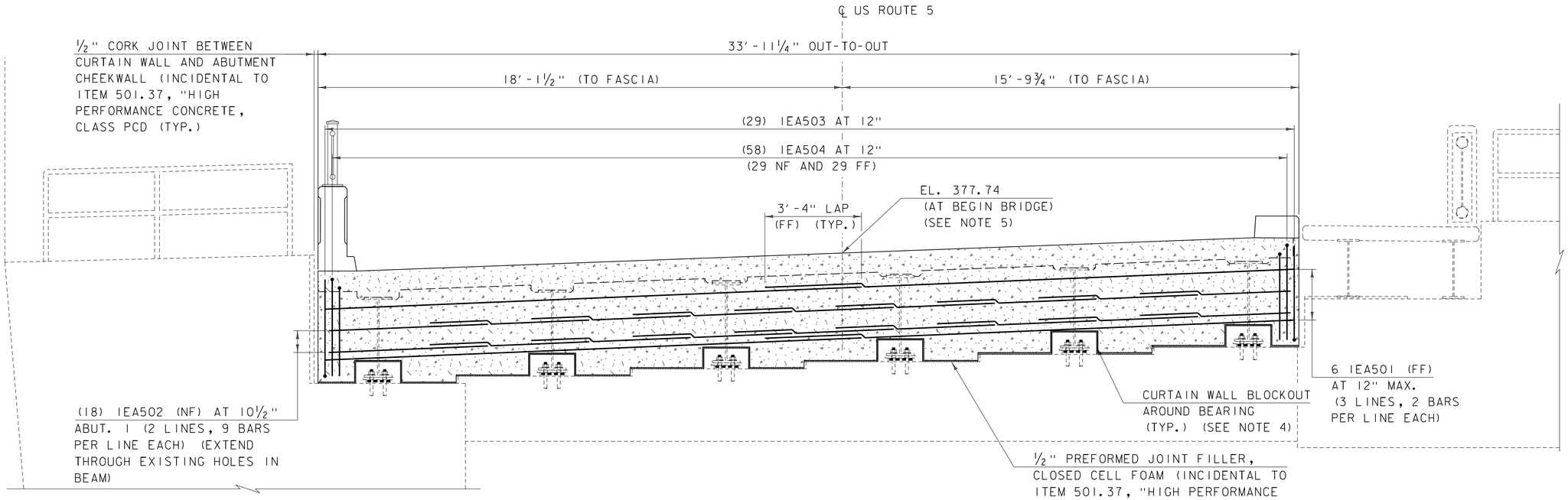
NOTE: DIMENSIONS SHOWN ARE ALONG FACE OF ABUTMENT.

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

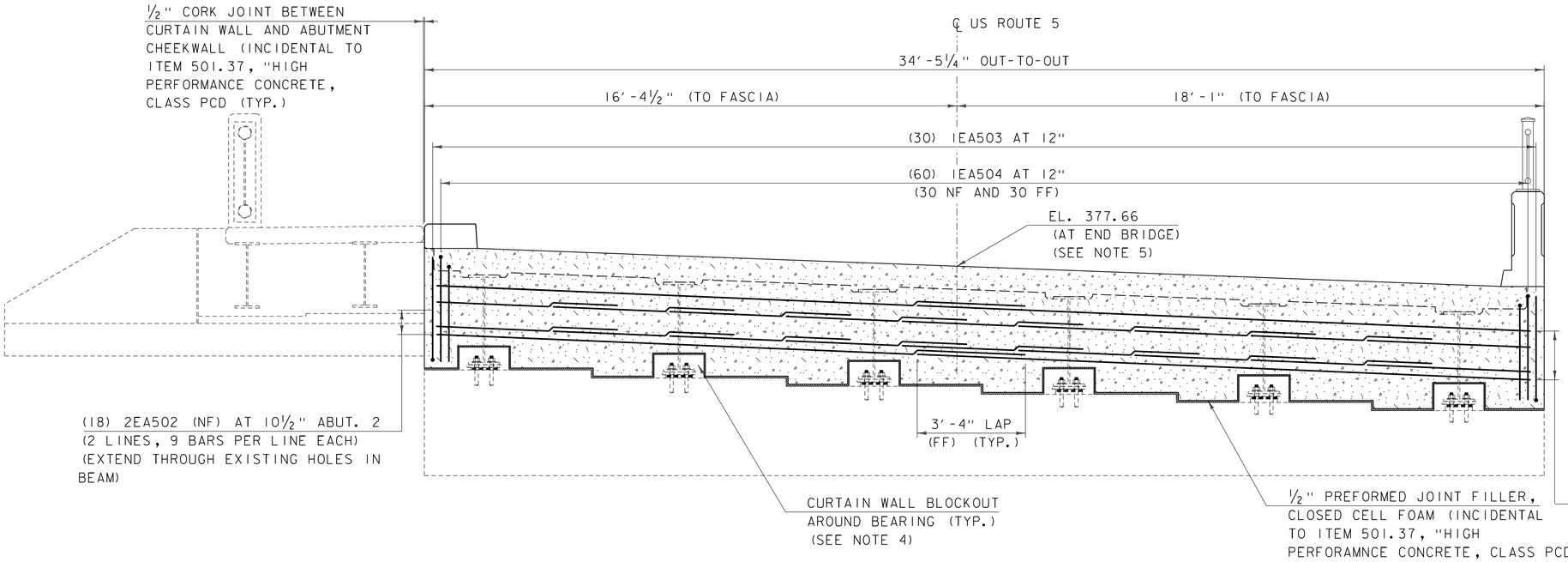
FILE NAME: z15b105sub-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: A. GIRALDI
CURTAIN WALL REMOVAL SHEET

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI
SHEET 25 OF 58



ABUTMENT #1 CURTAIN WALL MASONRY AND REINFORCEMENT ELEVATION

SCALE ½" = 1'-0"



ABUTMENT #2 CURTAIN WALL MASONRY AND REINFORCEMENT ELEVATION

SCALE ½" = 1'-0"

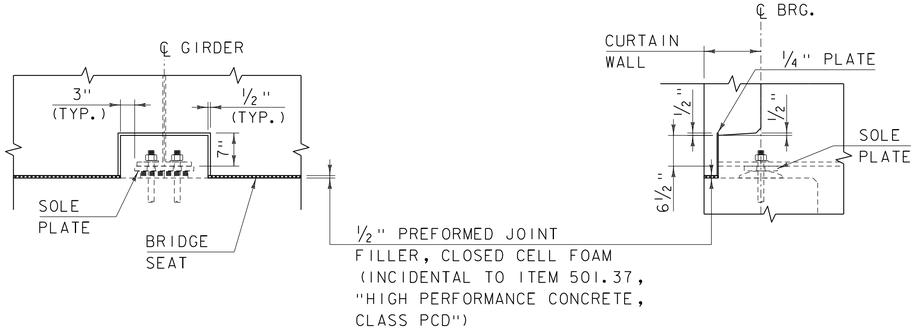
NOTES:

1. 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. 2'-0" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3. FF = FAR FACE
   NF = NEAR FACE
4. SEE SHEET 27 FOR CURTAIN WALL BLOCKOUT AROUND BEARING DETAILS.
5. ELEVATIONS SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. FINAL FINISHED GRADE ELEVATIONS SHALL BE DETERMINED BY VTRANS AFTER EXISTING TOP OF BEAM ELEVATIONS ARE SURVEYED. SEE NOTE 13 ON SHEET 7.
6. DIMENSIONS SHOWN ARE ALONG FACE OF ABUTMENT.

HIGH PERFORMANCE CONCRETE, CLASS PCD

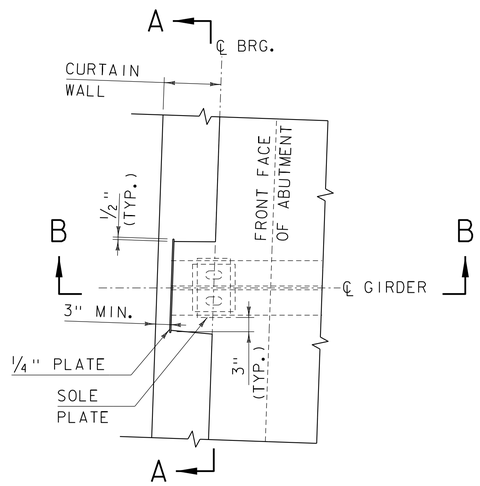
FUSS & O'NEILL

PROJECT NAME: PUTNEY	
PROJECT NUMBER: STP DECK(38)	
FILE NAME: z15b105sub-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. SMITH
DESIGNED BY: A. GIRALDI	CHECKED BY: A. GIRALDI
CURTAIN WALL DETAILS SHEET 1	SHEET 26 OF 58



SECTION A-A

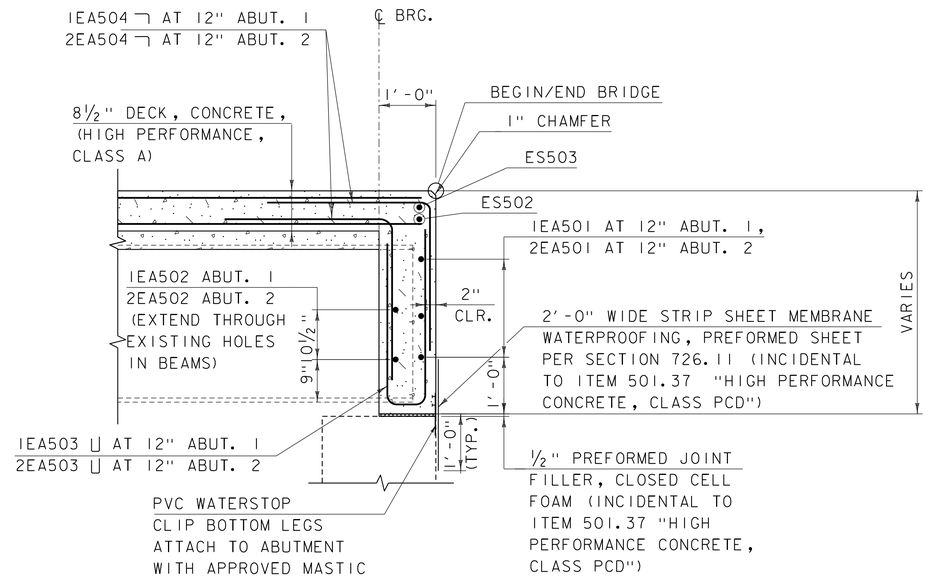
SECTION B-B



PLAN VIEW

CONCRETE CURTAIN WALL BLOCKOUTS AROUND BEARINGS

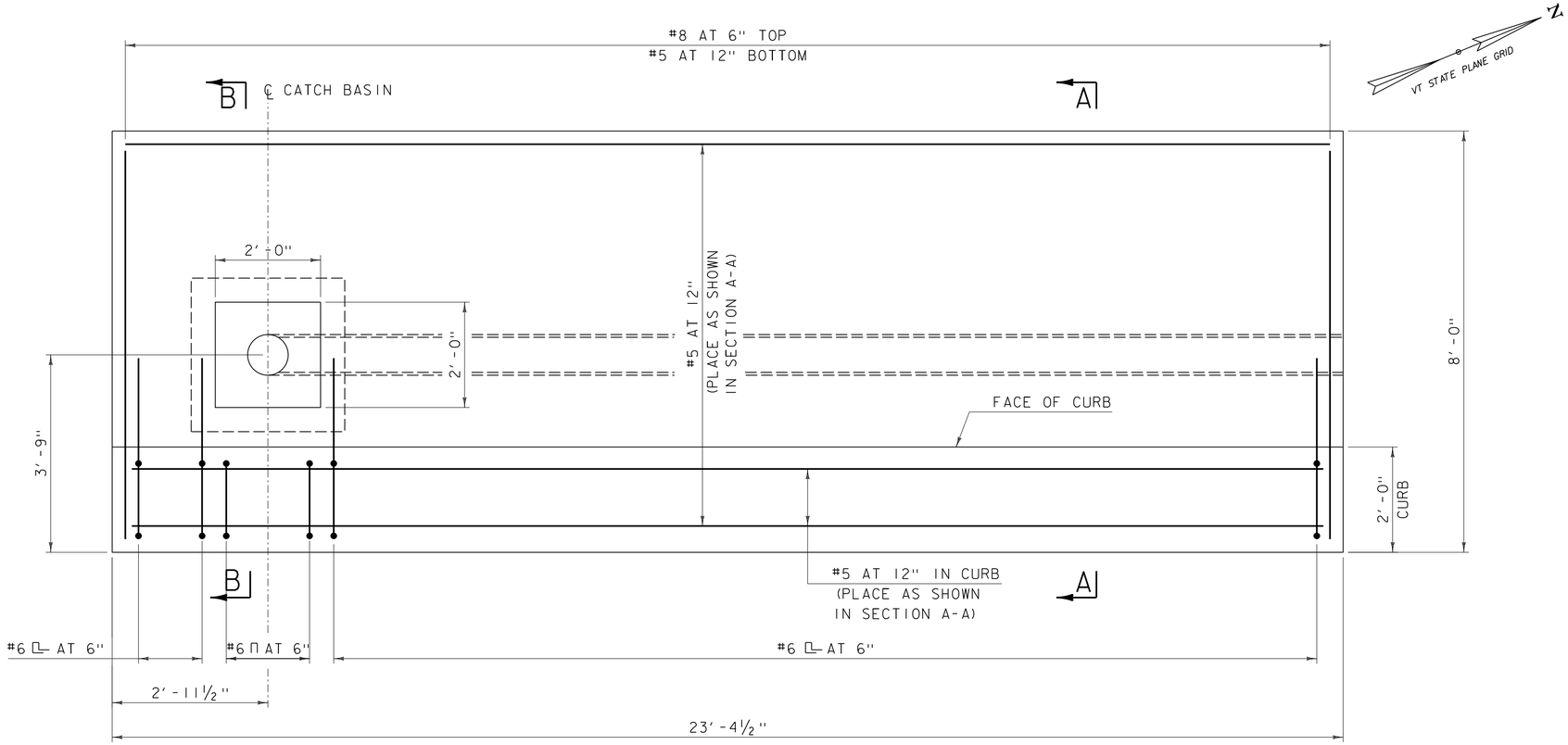
SCALE: 3/4" = 1'-0"



TYPICAL CURTAIN WALL SECTION

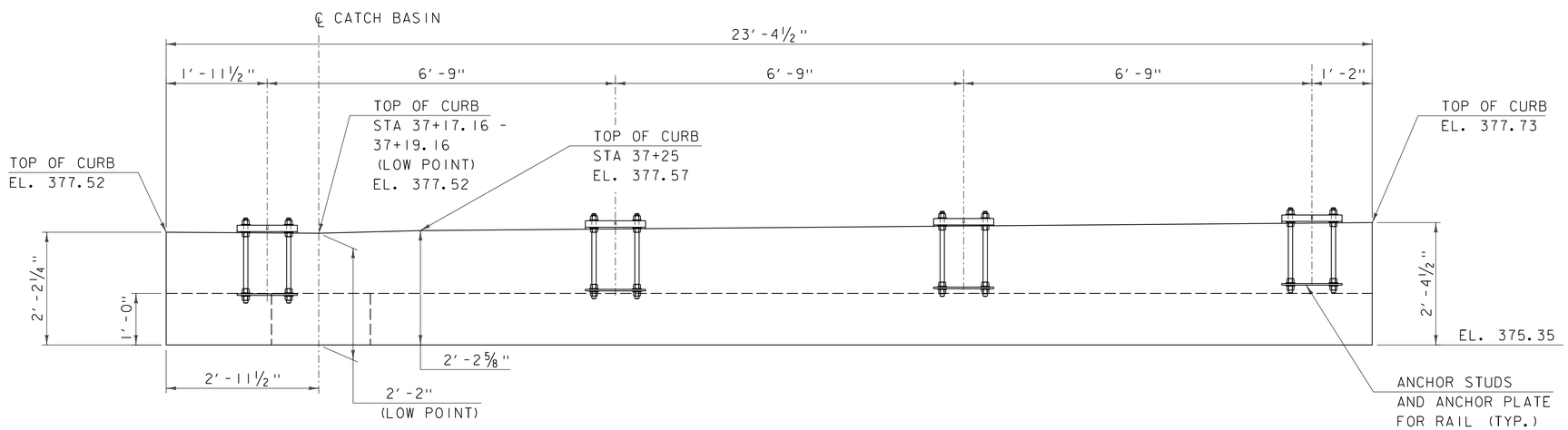
SCALE: 3/4" = 1'-0"

PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)
FILE NAME: z15b105sub-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. SMITH
DESIGNED BY: A. GIRALDI	CHECKED BY: A. GIRALDI
CURTAIN WALL DETAILS SHEET 2	SHEET 27 OF 58



RAIL SUPPORT SLAB MASONRY AND REINFORCEMENT PLAN

(RAIL ANCHOR PLATES AND ANCHOR STUDS OMITTED FOR CLARITY)
SCALE: ¾" = 1'-0"

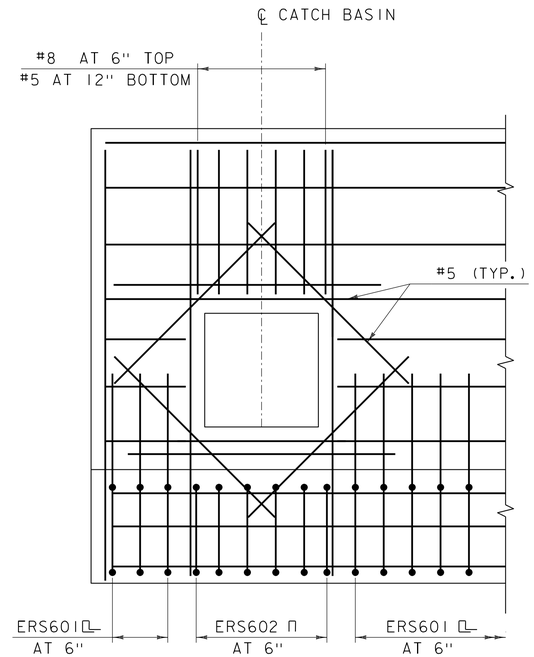


RAIL SUPPORT SLAB ELEVATION

SCALE: ¾" = 1'-0"

NOTES:

1. 2" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. 2'-2" BAR LAP FOR #5 BAR AND 4'-3" FOR #8 BAR UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3. SEE SHEET 29 FOR SECTIONS A-A AND B-B.
4. CONTRACTOR TO VERIFY THE DIMENSIONS FOR DRAINAGE STRUCTURE THROUGH RAIL SUPPORT SLAB BEFORE CONSTRUCTION OF RAIL SUPPORT SLAB.
6. FABRICATOR TO CAST ANCHOR PLATES INTO THE CURB PER BRIDGE RAIL DETAIL SHEET, SHEET 36

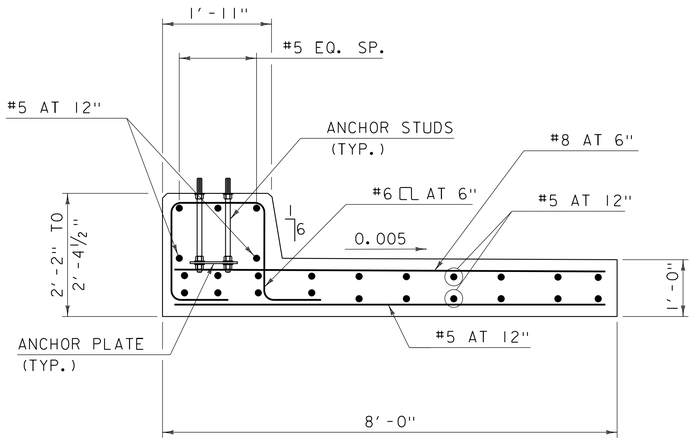


RAIL SUPPORT SLAB REINFORCING AT DRAINAGE STRUCTURE

SCALE: ¾" = 1'-0"

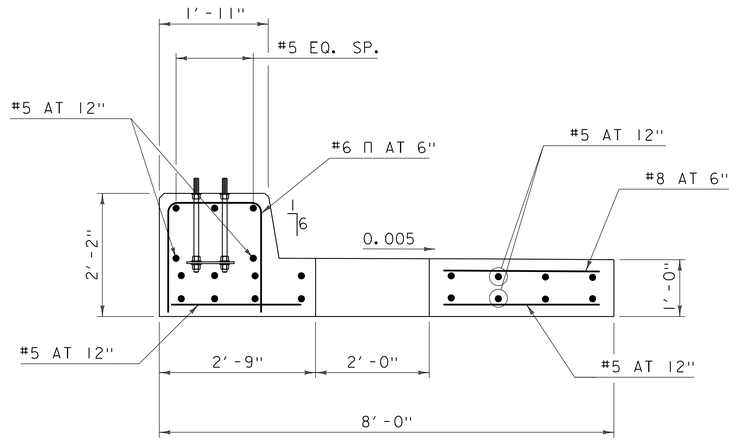
PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)
FILE NAME: z15b105sup-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. SMITH
DESIGNED BY: A. GIRALDI	CHECKED BY: A. GIRALDI
RAIL SUPPORT SLAB DETAILS SHEET 1	SHEET 28 OF 58

FUSS & O'NEILL



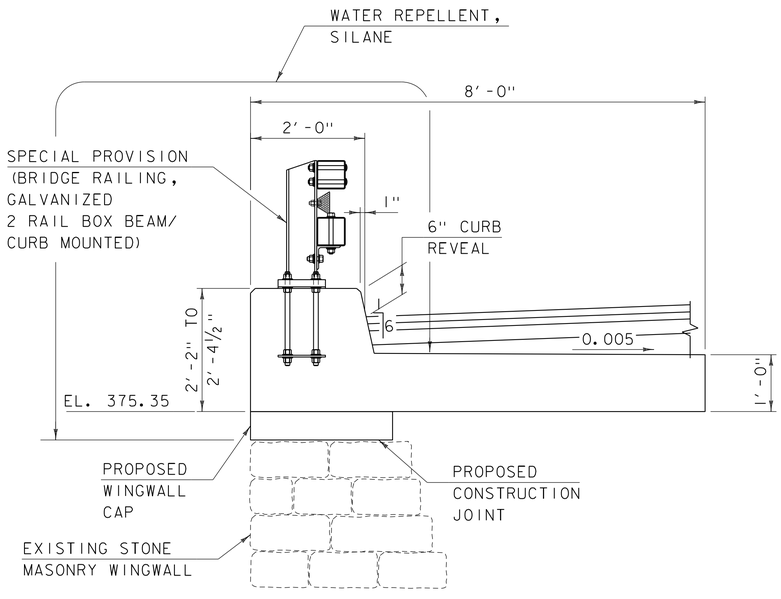
SECTION A-A

SCALE: ¾" = 1'-0"



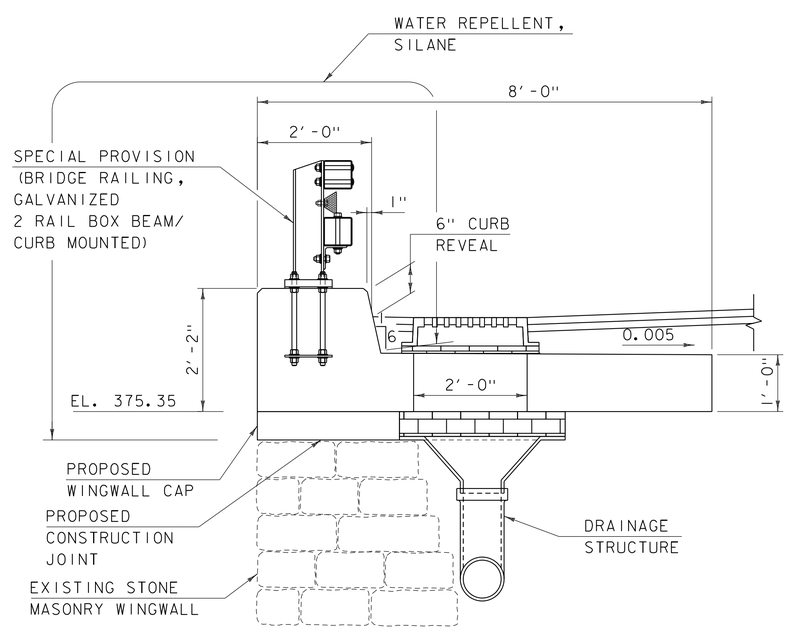
SECTION B-B

SCALE: ¾" = 1'-0"



TYPICAL PRECAST RAIL SUPPORT SLAB SECTION

SCALE: ¾" = 1'-0"



PRECAST RAIL SUPPORT SLAB SECTION THROUGH DRAINAGE STRUCTURE

SCALE: ¾" = 1'-0"

NOTES:

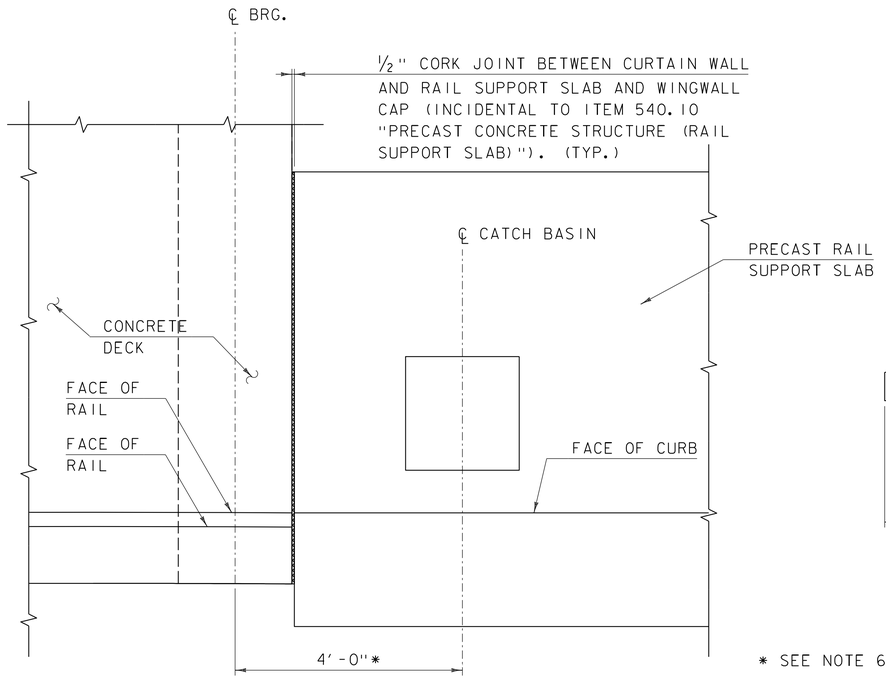
1. SEE SHEET 28 FOR RAIL SUPPORT SLAB MASONRY AND REINFORCEMENT PLAN.
2. ALL DIMENSIONS ARE BASED ON FIELD MEASUREMENTS AND ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS.
3. COMPACT EXISTING MATERIAL BELOW RAIL SUPPORT SLAB. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 540.10 "PRECAST CONCRETE STRUCTURE, RAIL SUPPORT SLAB.
4. SEE CROSS SECTION FOR ROAD CROSS SLOPE.

FUSS&O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105sup-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: J. FRENCH
RAIL SUPPORT SLAB DETAILS SHEET 2

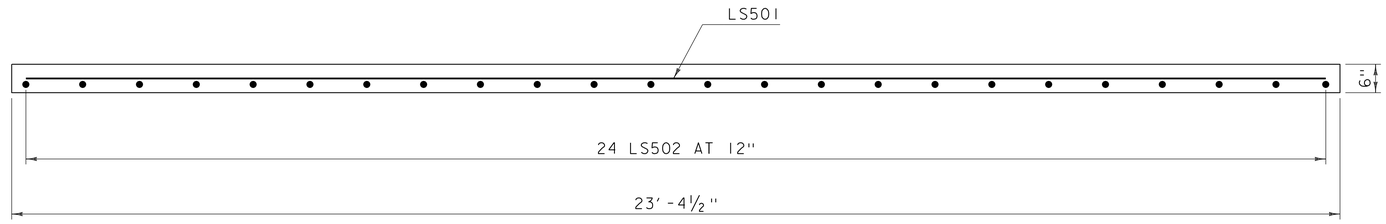
PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: J. FRENCH
SHEET 29 OF 58



* SEE NOTE 6 ON SHEET XX

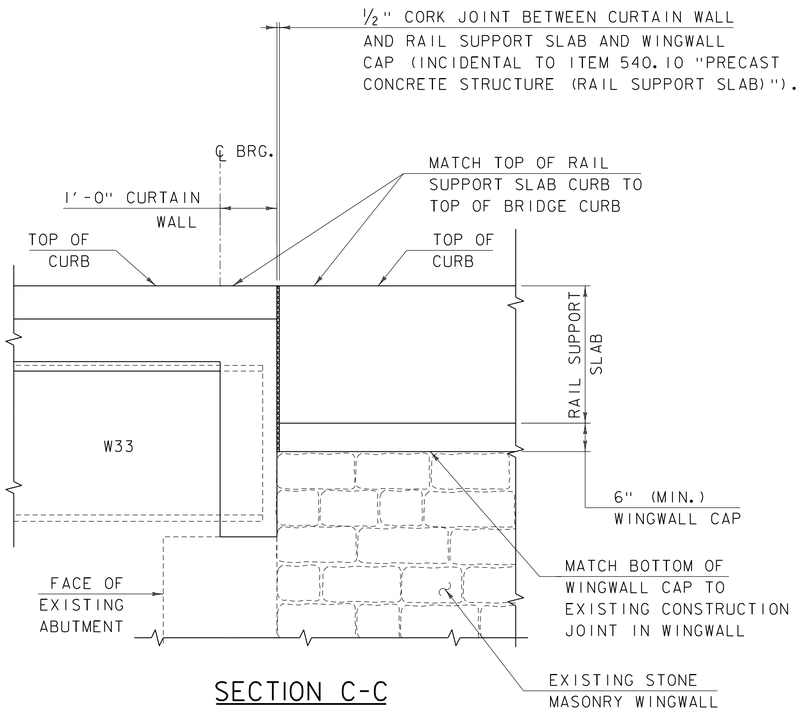
JOINT DETAIL AT CURTAIN WALL AND PRECAST RAIL SUPPORT SLAB

SCALE: ¾" = 1'-0"



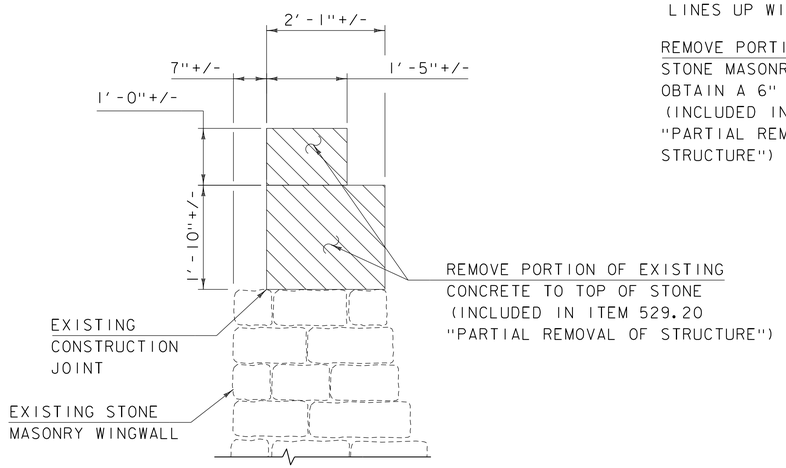
WINGWALL CAP REINFORCEMENT ELEVATION

SCALE: ¾" = 1'-0"



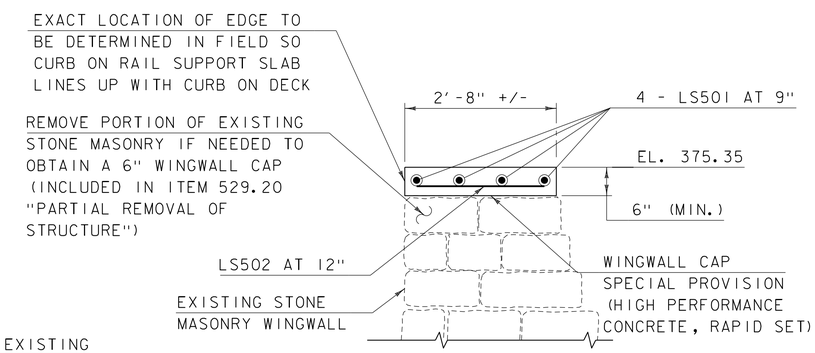
SECTION C-C

SCALE: ¾" = 1'-0"



TYPICAL WINGWALL REMOVAL SECTION

SCALE: ¾" = 1'-0"

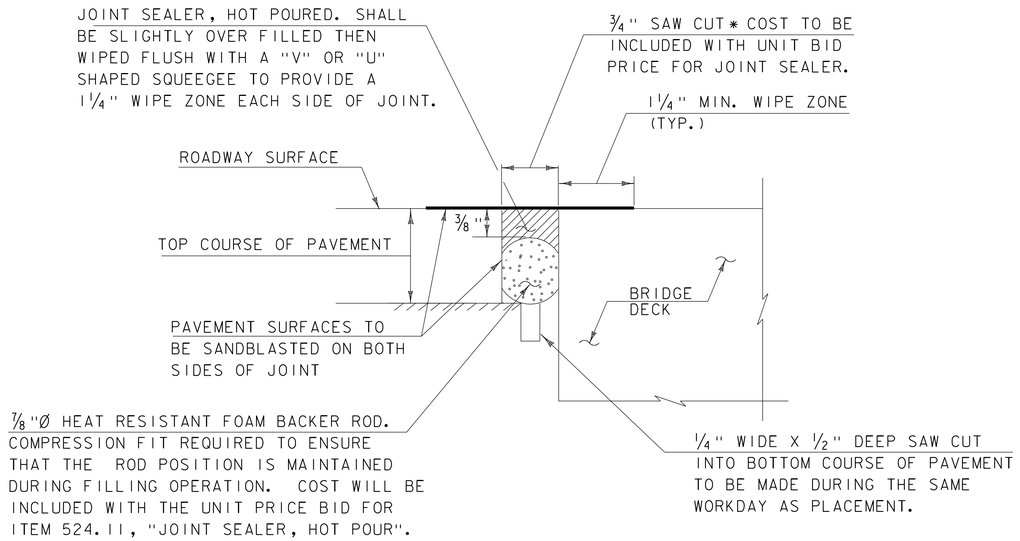


TYPICAL WINGWALL SECTION

SCALE: ¾" = 1'-0"

PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)
FILE NAME: z15b105sup-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. SMITH
DESIGNED BY: J. FRENCH	CHECKED BY: J. FRENCH
RAIL SUPPORT SLAB DETAILS SHEET 3	SHEET 30 OF 58

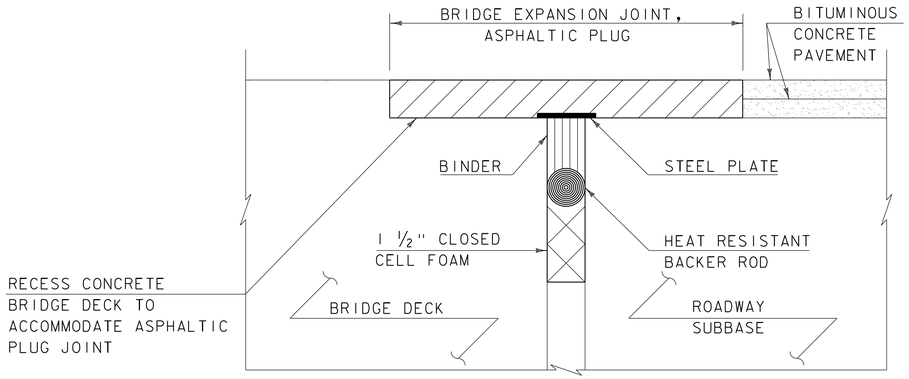
FUSS & O'NEILL



SAWED PAVEMENT JOINT DETAIL

(NOT TO SCALE)

* JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUT WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER. ALL WORK WILL BE PAID FOR UNDER ITEM 524.11, "JOINT SEALER, HOT POURED".



ASPHALTIC PLUG-TYPE JOINT DETAIL

(NOT TO SCALE)

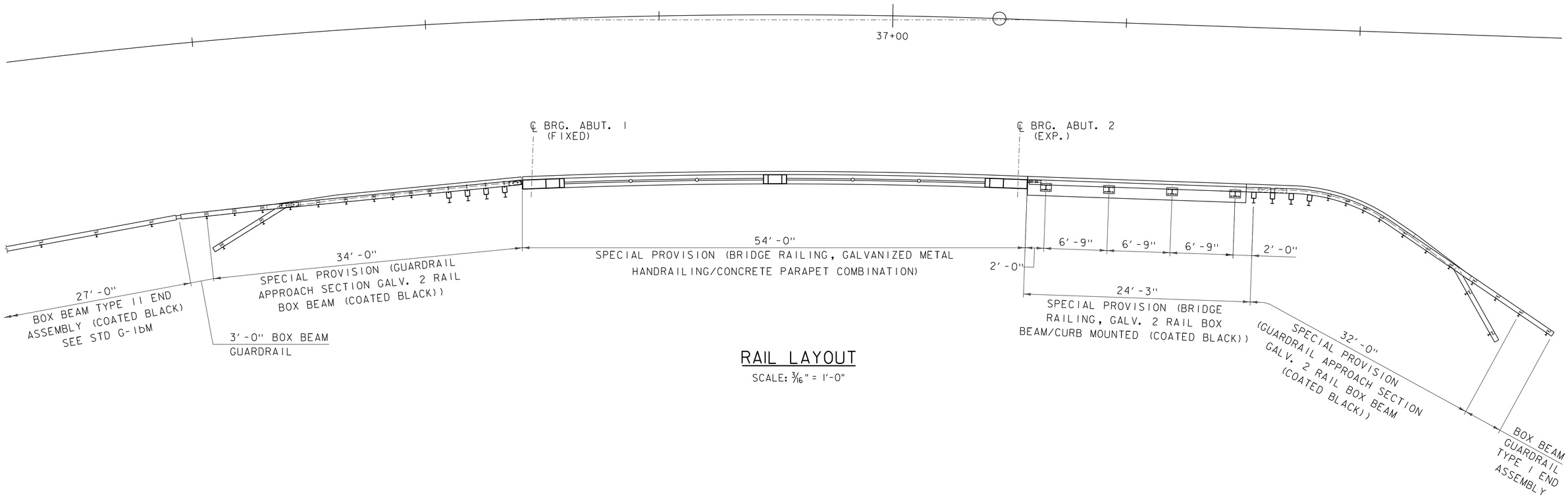
NOTE: SEE STANDARD SD-516.10 FOR ADDITIONAL INFORMATION.

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105sup-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: A. GIRALDI
JOINT DETAILS SHEET

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI
SHEET 31 OF 58



RAIL LAYOUT

SCALE: 3/16" = 1'-0"

NOTES:

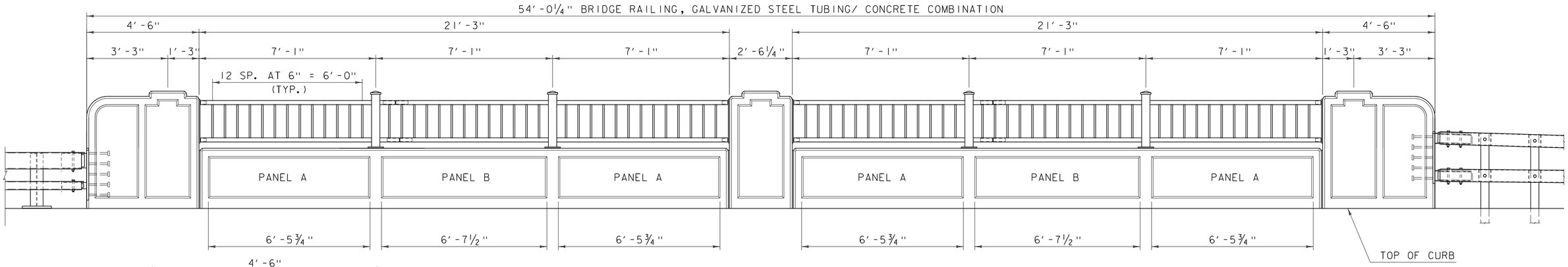
1. REFER TO STANDARDS G-1 AND G-1bM.
2. SEE BRIDGE AND APPROACH RAIL DETAILS ON SHEETS 33 TO 39.
3. ANGLE BETWEEN BRIDGE RAIL AND APPROACH RAIL AT ABUTMENT 1 TO BE VERIFIED IN FIELD.

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

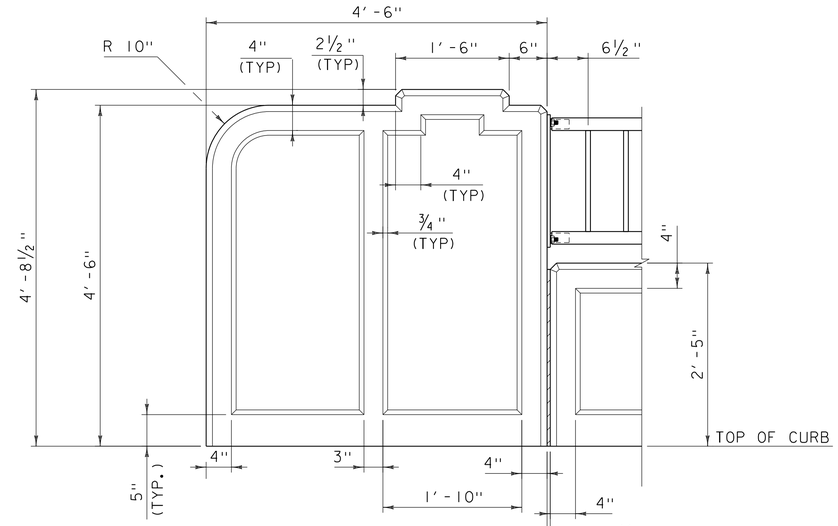
FILE NAME: z15b105rail-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: A. GIRALDI
RAIL LAYOUT SHEET

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI
SHEET 32 OF 58

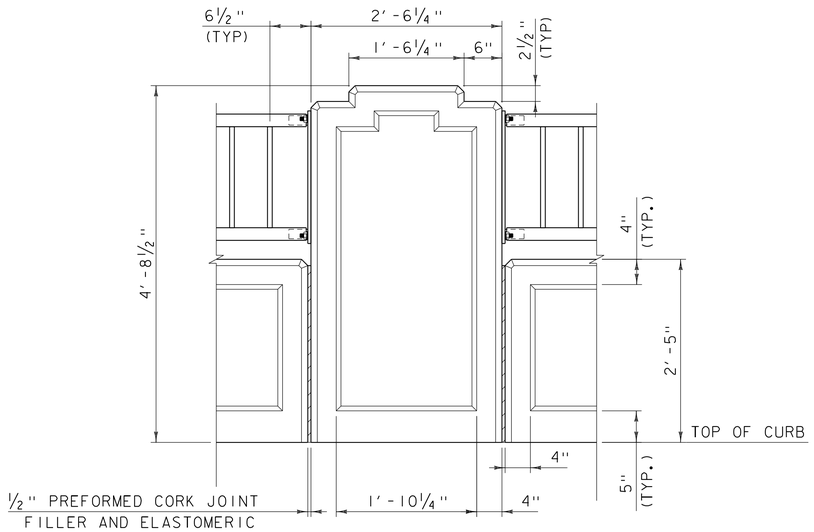


BRIDGE RAIL ELEVATION (INTERIOR FACE)

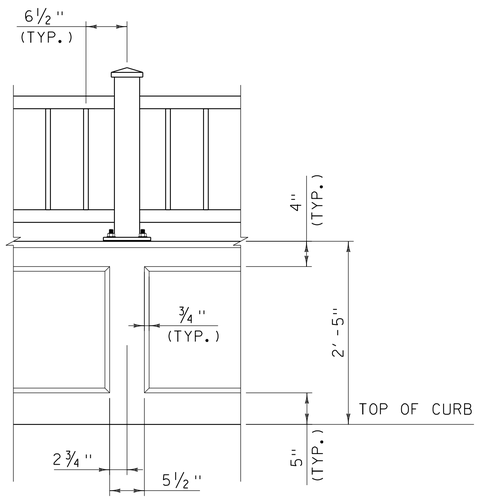
SCALE: ½" = 1'-0"



END PILASTER



INTERMEDIATE PILASTER



POST

BRIDGE RAIL CONCRETE DETAILS

SCALE: 1" = 1'-0"

BRIDGE RAIL NOTES

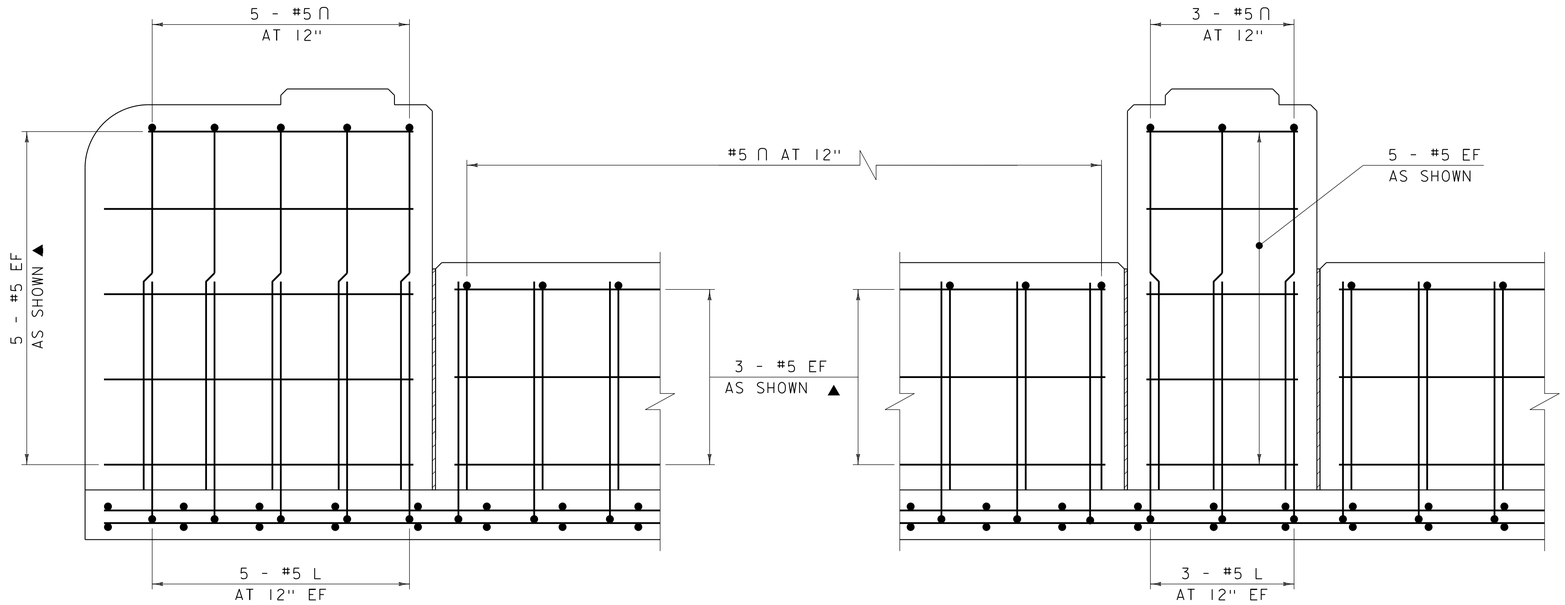
1. ALL DIMENSIONS TO FACE OF CONCRETE UNLESS NOTED OTHERWISE.
2. RAIL POSTS SHALL BE SET NORMAL TO GRADE.
3. PAYMENT SHALL BE MADE UNDER PAY ITEM 525.45 (BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION).
4. REINFORCING STEEL IN THE BRIDGE RAILING SHALL BE LEVEL 1 - EPOXY COATED, MEET THE REQUIREMENTS OF SECTION 507, AND WILL BE PAID FOR UNDER ITEM 525.45 (BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION). REINFORCING STEEL EXTENDING FROM THE CONCRETE BRIDGE DECK INTO THE BRIDGE RAILING SHALL BE PAID FOR UNDER ITEM 507.11, "REINFORCING STEEL, EPOXY COATED".
5. METAL HANDRAILING, TO INCLUDE STEEL PIPES, PLATES AND HARDWARE, SHALL BE PAID FOR UNDER ITEM 525.45 (BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION).
6. STEEL PIPES FOR POSTS, TOP AND BOTTOM RAIL AND PALINGS SHALL BE SEAMLESS.
7. STEEL FOR BASE AND ANCHORAGE PLATES SHALL CONFORM TO SUBSECTION 732.03(b).
8. HARDWARE FOR ANCHOR BOLT ASSEMBLIES SHALL CONFORM TO SUBSECTION 732.03(d).
9. ⅛" PAD SHALL CONFORM TO SUBSECTION 731.01 OR 731.02.
10. ALL EXPOSED CUT OR SHEARED EDGES OF STEEL COMPONENTS SHALL BE ROUNDED TO A 1/16" RADIUS AND BE FREE OF BURRS.
11. ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M 111M/M 111, EXCEPT HARDWARE, WHICH SHALL MEET THE REQUIREMENTS OF AASHTO M 232M/M 232.
12. ALL PARTS EXCEPT HARDWARE AND ANCHORAGE PLATES SHALL BE POWDER COATED BLACK IN ACCORDANCE WITH ASTM D7803.
13. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
14. THE FABRICATOR SHALL SUBMIT FABRICATION DRAWINGS INCLUDING WELDING PROCEDURES FOR METAL HAND RAILING IN ACCORDANCE WITH SECTION 105.

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

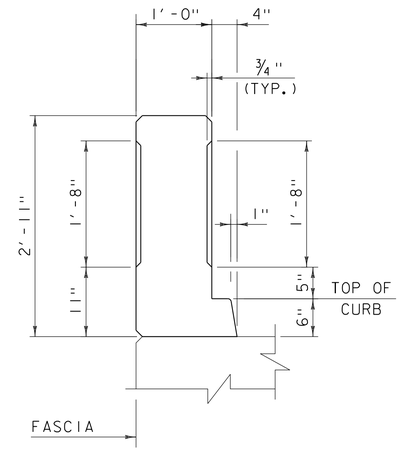
FILE NAME: z15bl05rail-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: A. GIRALDI
BRIDGE RAIL DETAILS SHEET 1

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI
SHEET 33 OF 58



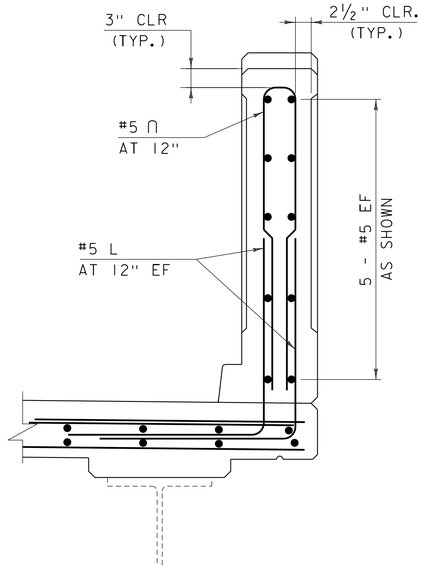
TYPICAL REINFORCING

SCALE: 1" = 1'-0"



CONCRETE INSERT DETAIL

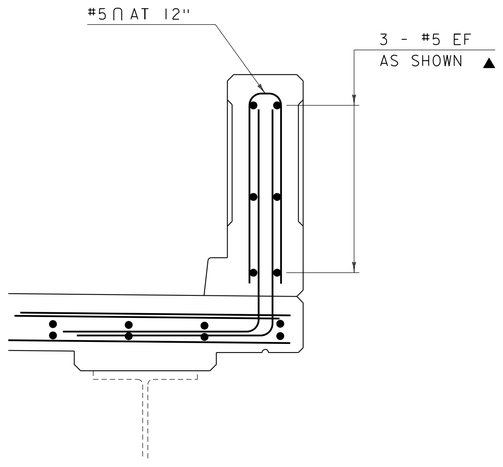
SCALE: 1" = 1'-0"



TYPICAL INTERMEDIATE PILASTER SECTION

SCALE: 1" = 1'-0"

(END PILASTERS ARE SIMILAR)



TYPICAL CONCRETE BASE PARAPET SECTION

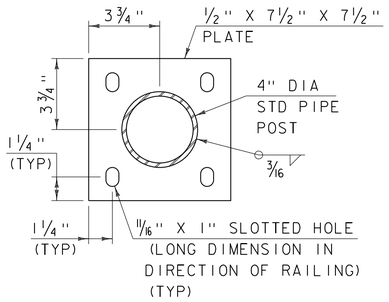
SCALE: 1" = 1'-0"

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
ALL REINFORCING ON THIS SHEET SHALL BE LEVEL I EPOXY COATED REINFORCING STEEL
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

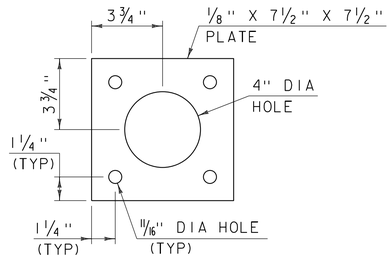
FUSS&O'NEILL

PROJECT NAME: PUTNEY	
PROJECT NUMBER: STP DECK(38)	
FILE NAME: z15bl05rail-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. SMITH
DESIGNED BY: A. GIRALDI	CHECKED BY: A. GIRALDI
BRIDGE RAIL DETAILS SHEET 2	SHEET 34 OF 58



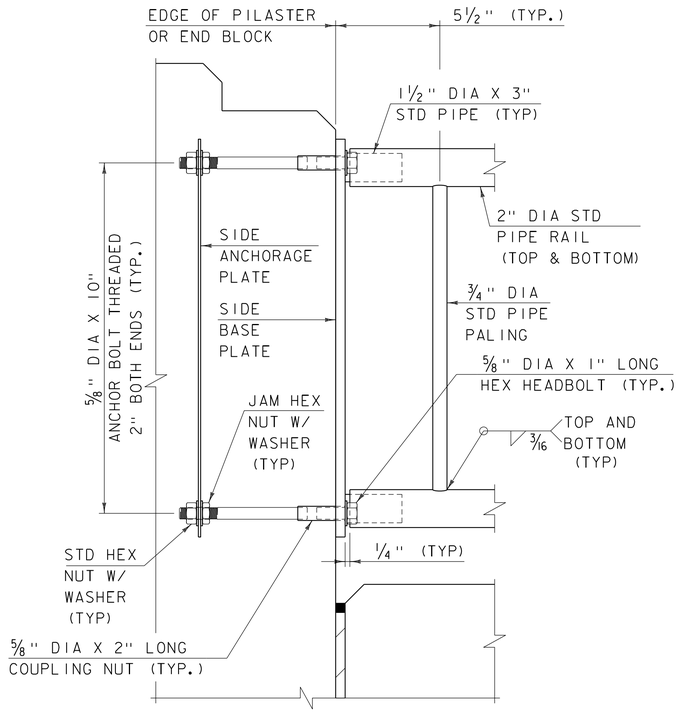
POST BASE PLATE

SCALE: 3" = 1'-0"



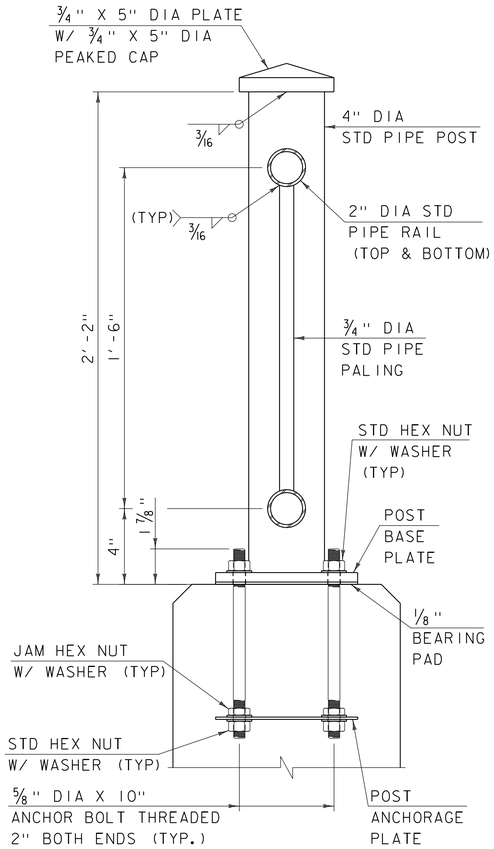
POST ANCHORAGE PLATE

SCALE: 3" = 1'-0"



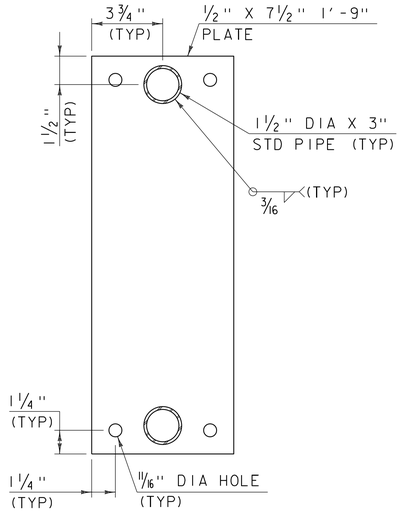
SIDE PLATE CONNECTION DETAIL

SCALE: 3" = 1'-0"



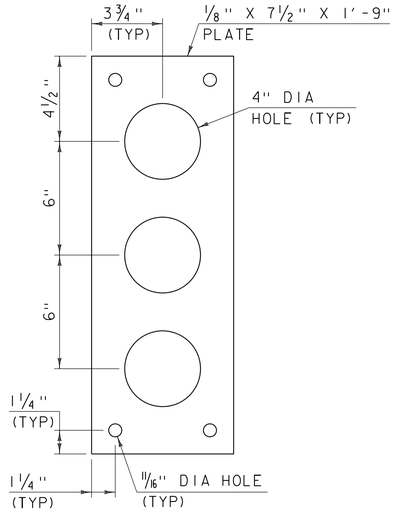
METAL RAILING DETAIL

SCALE: 3" = 1'-0"



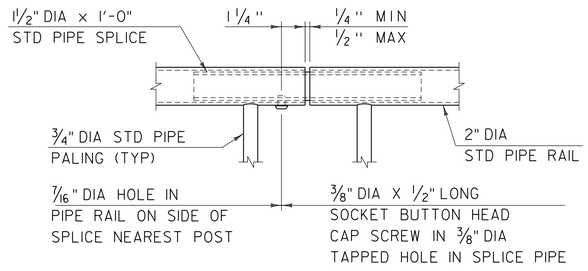
SIDE BASE PLATE

SCALE: 3" = 1'-0"



SIDE ANCHORAGE PLATE

SCALE: 3" = 1'-0"

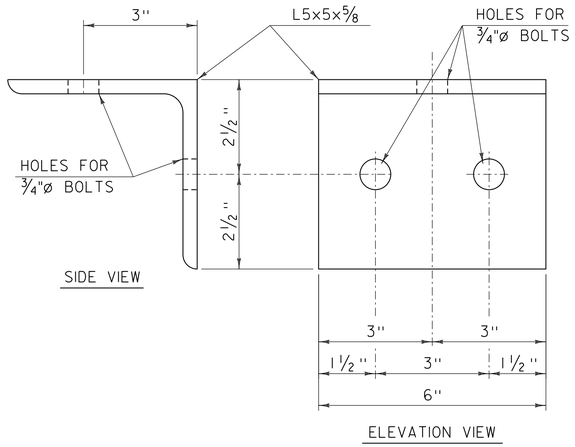


RAIL SPLICE DETAIL

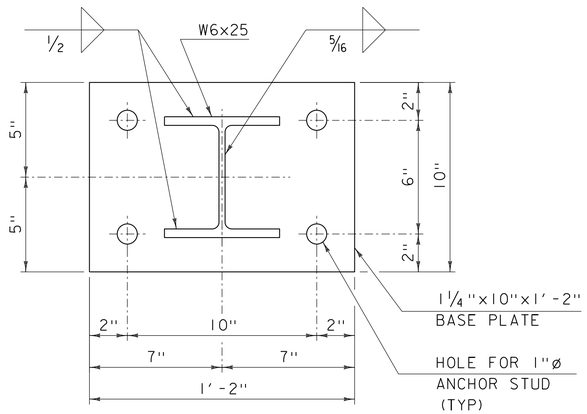
SCALE: 3" = 1'-0"

FUSS & O'NEILL

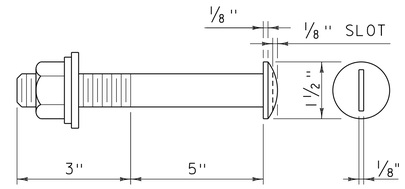
PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)
FILE NAME: z15b105rail-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. SMITH
DESIGNED BY: A. GIRALDI	CHECKED BY: A. GIRALDI
BRIDGE RAIL DETAILS SHEET 3	SHEET 35 OF 58



RAILING ANGLE DETAILS

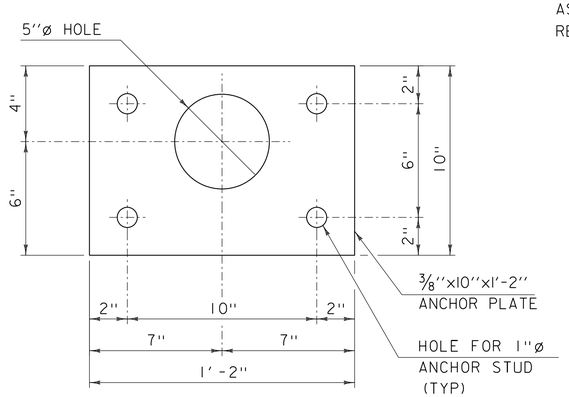


BASE PLATE DETAIL

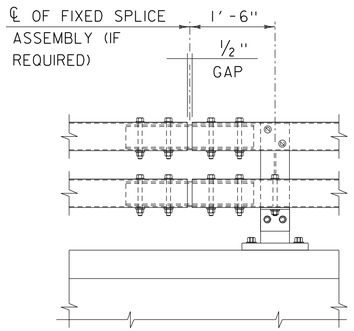


7/8" Ø ROUND HEAD BOLT DETAIL

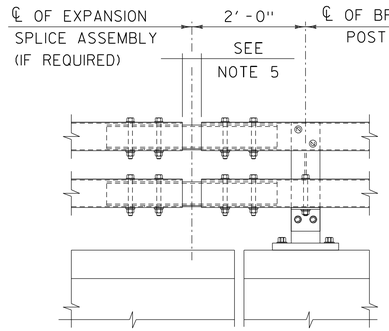
A449 (TYPE 1)



ANCHOR PLATE DETAIL



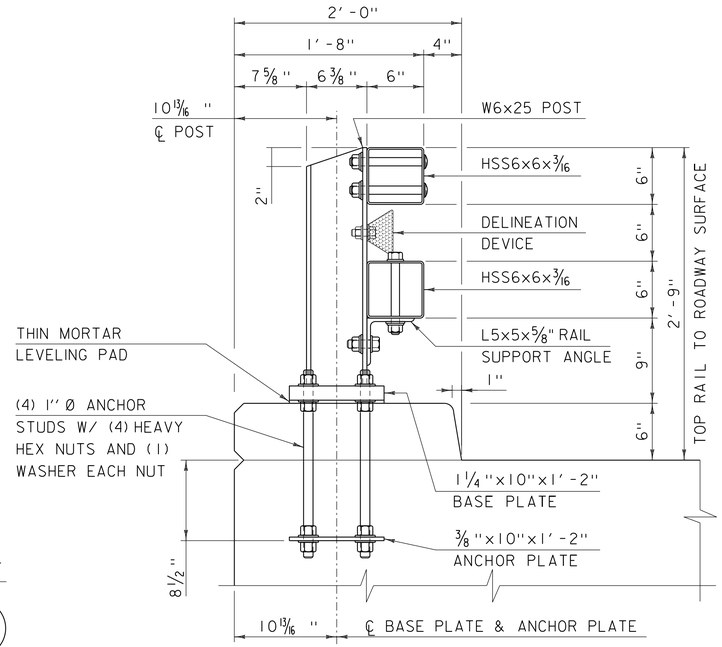
FIXED SPLICE



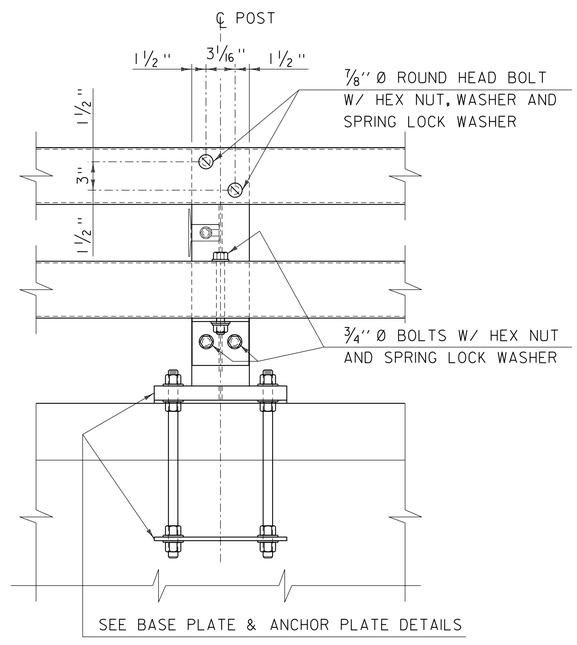
EXPANSION SPLICE

RAILING SPLICE DETAIL ELEVATION

A RAILING EXPANSION SPLICE IS REQUIRED IN ANY POST SPACING THAT CONTAINS A SUPERSTRUCTURE EXPANSION JOINT



RAILING SECTION



RAILING ELEVATION

NOTES:

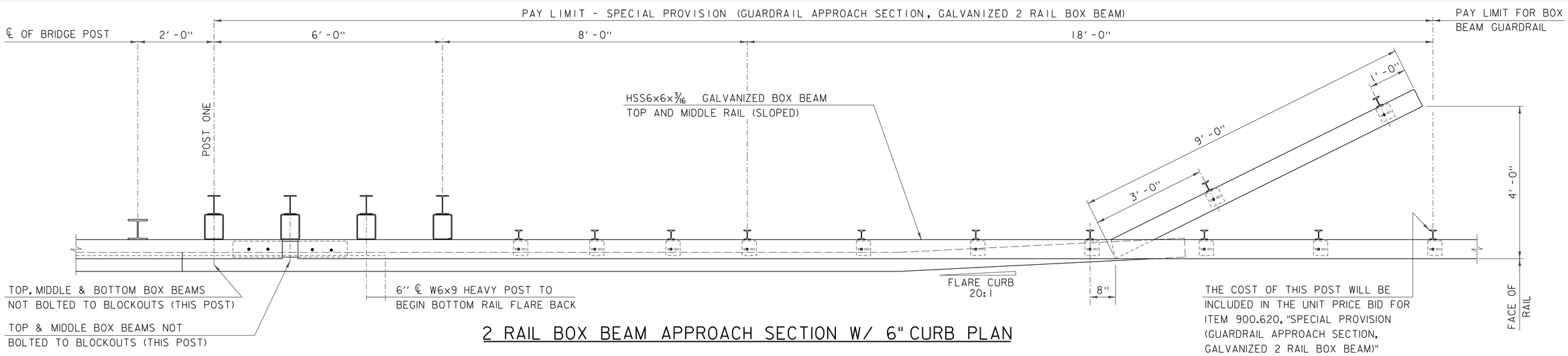
1. ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
2. PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16".
3. ALL POSTS SHALL BE SET NORMAL TO GRADE. THE MAXIMUM CENTER TO CENTER SPACING OF BRIDGE RAIL POSTS IS 8'-3".
4. SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO BRIDGE POSTS AND PREFERABLY TO AT LEAST 4 POSTS.
5. RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPERSTRUCTURE EXPANSION JOINTS. EXPANSION JOINT WIDTH SHALL BE 4" @ 68°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
6. HOLES IN RAILS FOR TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
7. BOLTS SHALL BE TORQUED SNUG TIGHT (APPROXIMATELY 100 FT-LB).
8. SEE STANDARD DRAWING G-1bM FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE INSTALLED AT 30 FOOT SPACING OR THE NEAREST POST. WHITE IS TO BE INSTALLED ON THE DRIVER'S RIGHT. FOR ONE WAY BRIDGES, YELLOW IS TO BE INSTALLED ON THE DRIVER'S LEFT. PAYMENT WILL BE CONSIDERED INCIDENTAL TO OTHER CONTRACT ITEMS.
9. ANY BENDING OF RAIL SHALL BE DONE AT THE FABRICATION PLANT ACCORDING TO A PROCEDURE PROVIDED BY THE FABRICATOR.
10. THE MINIMUM DISTANCE FROM THE POST TO AN EXPANSION JOINT SHALL BE DETERMINED BY THE MINIMUM EDGE DISTANCE OF 5" FROM ANY ANCHOR STUD TO THE END OF THE SLAB, OR TO THE EXPANSION JOINT RECESS POUR, IF ONE IS USED.
11. THIS RAILING MEETS THE REQUIREMENTS FOR A TL-4 SERVICE LEVEL.
12. ALL PARTS EXCEPT HARDWARE AND ANCHORAGE PLATES SHALL BE POWDER COATED BLACK IN ACCORDANCE WITH ASTM D7803.

SEE STD S-364C FOR SPLICE DETAILS
SEE STD G-1bM FOR DELINEATORS

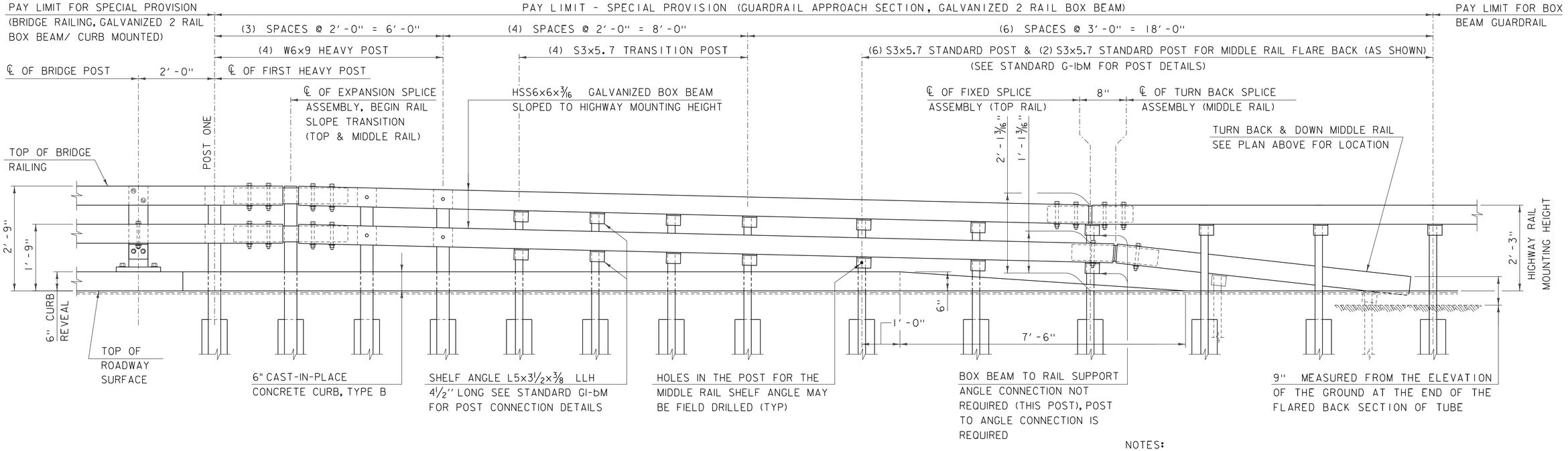
PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105rail-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: A. GIRALDI
BRIDGE RAIL DETAILS SHEET 4

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI
SHEET 36 OF 58



2 RAIL BOX BEAM APPROACH SECTION W/ 6" CURB PLAN



2 RAIL BOX BEAM APPROACH SECTION W/ 6" CURB ELEVATION

(NORTHEAST CORNER)

NOTES:

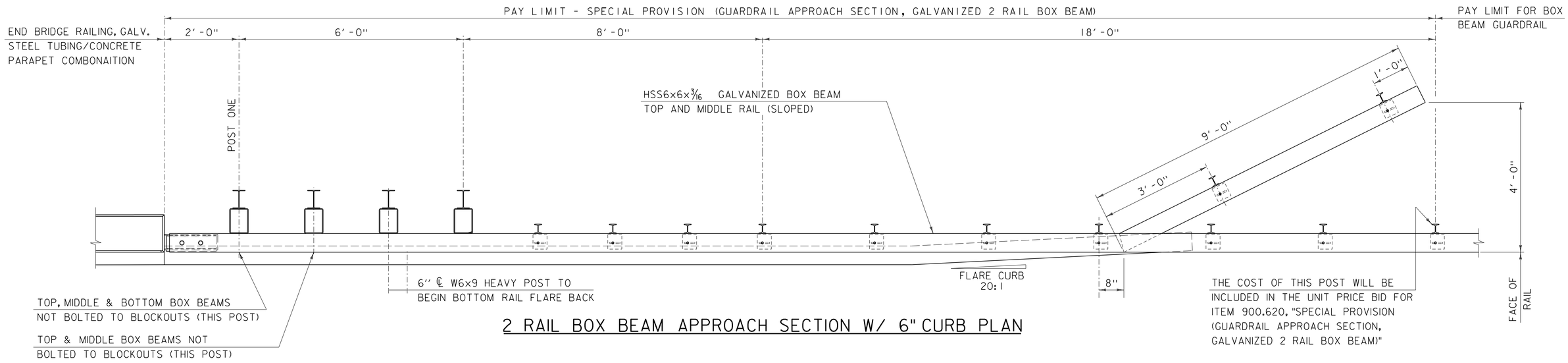
1. BOX BEAM TUBE AND STEEL POST MATERIALS, DIMENSION SIZES AND NOTES SHALL BE THE SAME AS THOSE OF THE BRIDGE RAIL, UNLESS OTHERWISE NOTED.
2. SEE SHEET 6 FOR TYPICAL CAST-IN-PLACE CONCRETE CURB, TYPE B EARTHWORKS DETAIL.
3. ALL PARTS EXCEPT HARDWARE AND ANCHORAGE PLATES SHALL BE POWDER COATED BLACK IN ACCORDANCE WITH ASTM D7803.

SEE STD S-364C FOR SPLICE DETAILS
SEE STD S-364D FOR TRANSITION POST
SEE STD G-IbM FOR POST DETAILS

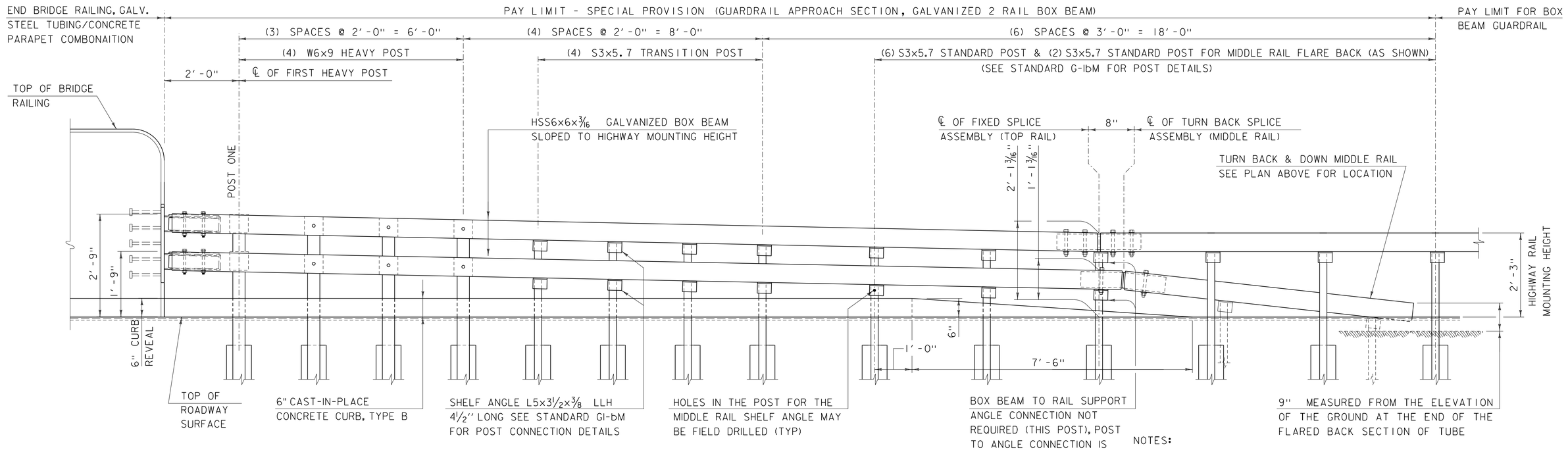
PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15bl05rail-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: A. GIRALDI
APPROACH RAIL DETAILS SHEET 1

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI
SHEET 37 OF 58



2 RAIL BOX BEAM APPROACH SECTION W/ 6" CURB PLAN



2 RAIL BOX BEAM APPROACH SECTION W/ 6" CURB ELEVATION

(SOUTHEAST CORNER)

NOTES:

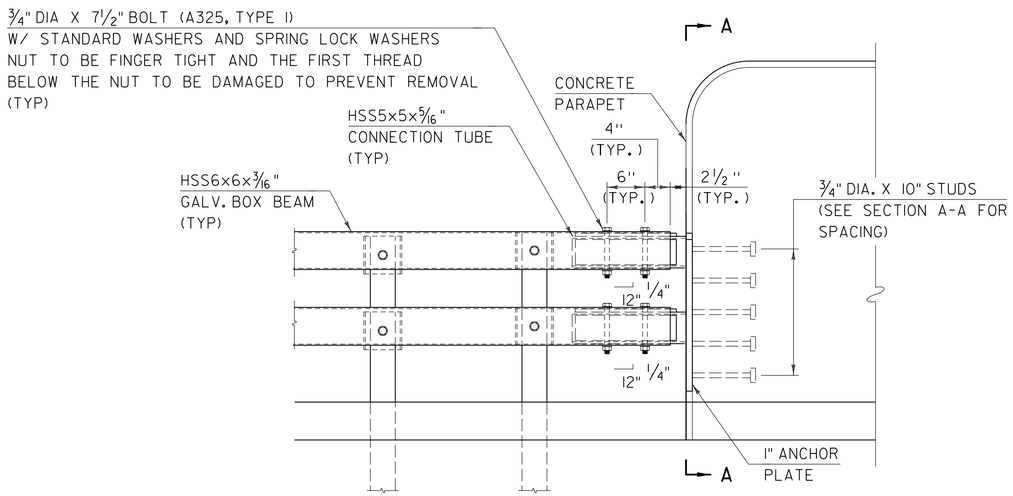
1. BOX BEAM TUBE AND STEEL POST MATERIALS, DIMENSION SIZES AND NOTES SHALL BE THE SAME AS THOSE OF THE BRIDGE RAIL, UNLESS OTHERWISE NOTED.
2. SEE SHEET 6 FOR TYPICAL CAST-IN-PLACE CONCRETE CURB, TYPE B EARTHWORKS DETAIL.
3. ALL PARTS EXCEPT HARDWARE AND ANCHORAGE PLATES SHALL BE POWDER COATED BLACK IN ACCORDANCE WITH ASTM D7803.

SEE STD S-364C FOR SPLICE DETAILS
SEE STD S-364D FOR TRANSITION POST
SEE STD G-1bM FOR POST DETAILS

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

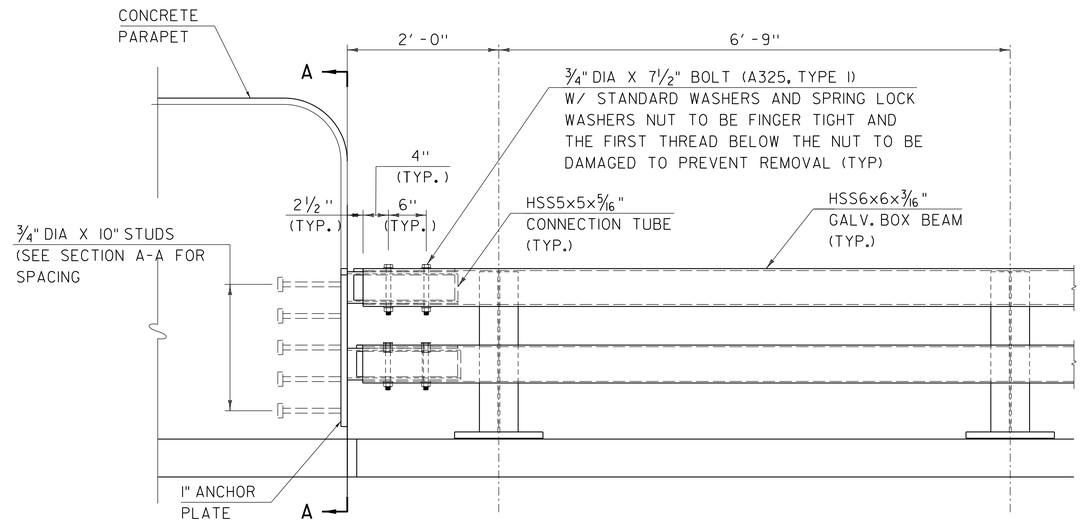
FILE NAME: z15b105rail-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: A. GIRALDI
APPROACH RAIL DETAILS SHEET 2

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI



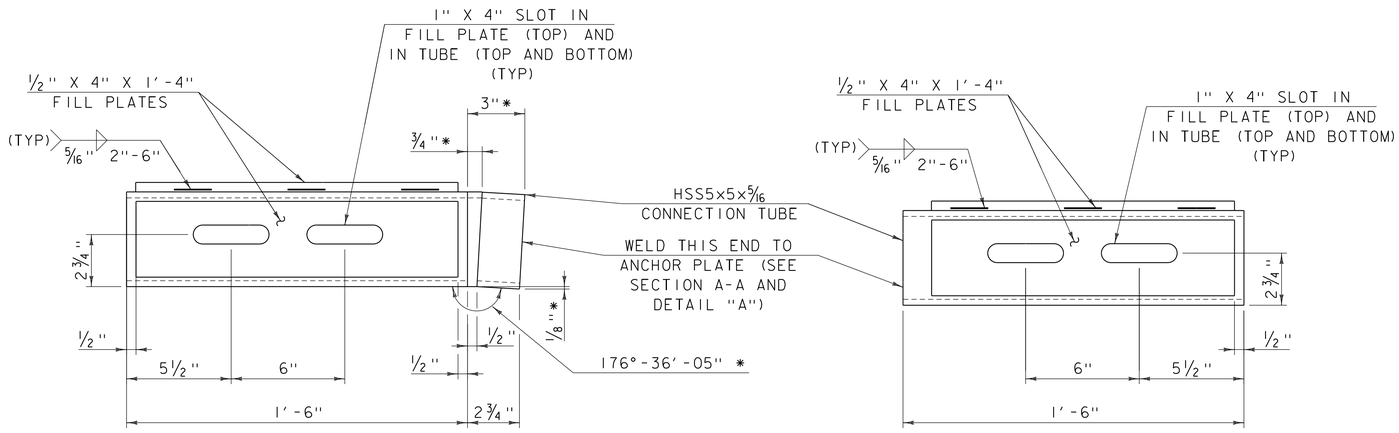
APPROACH RAIL CONNECTION DETAIL

NOT TO SCALE



BRIDGE RAIL CONNECTION DETAIL

NOT TO SCALE



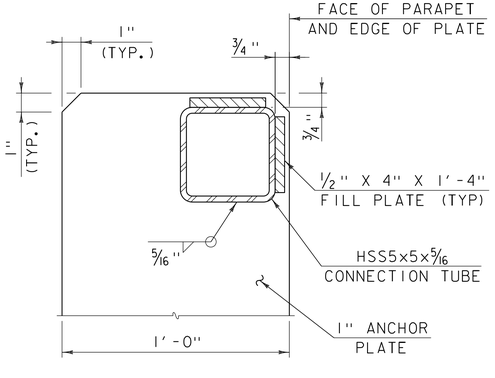
CONNECTION TUBE DETAIL PLAN AT ABUTMENT 1

NOT TO SCALE

CONNECTION TUBE DETAIL PLAN AT ABUTMENT 2

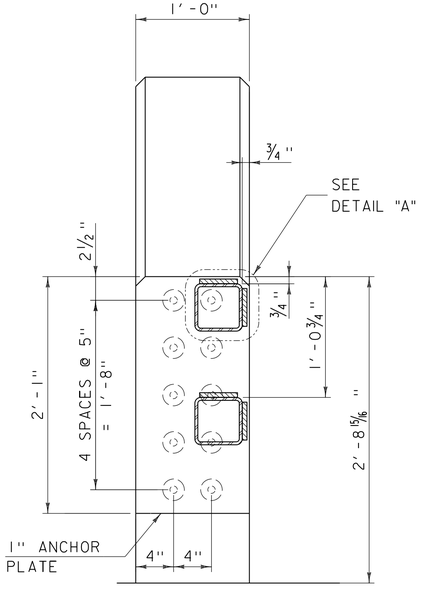
NOT TO SCALE

* ANGLE TO BE VERIFIED IN FIELD. DIMENSIONS ARE DRAWN WITH GIVEN ANGLE, BUT MAY NEED TO BE CHANGED AFTER ANGLE HAS BEEN VERIFIED



DETAIL "A"

NOT TO SCALE



SECTION A-A

NOT TO SCALE

PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)
FILE NAME: z15b105rail-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. SMITH
DESIGNED BY: A. GIRALDI	CHECKED BY: A. GIRALDI
BRIDGE RAIL AND APPROACH RAIL DETAILS	SHEET 39 OF 58

FUSS & O'NEILL

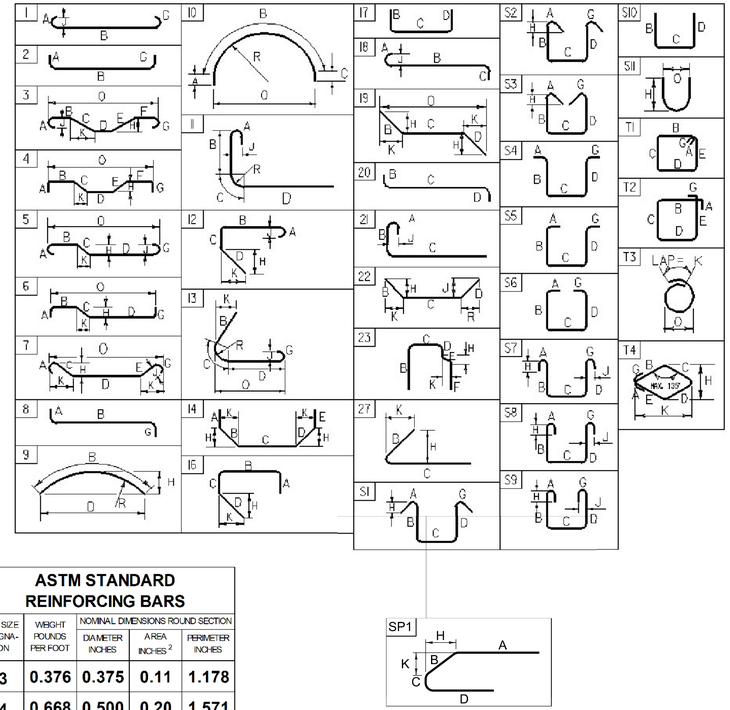
STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	DECK																
	138	5	28'- 1"	ES501	STR	28'- 1"											
✳	147	5	18'- 4"	ES502	STR	18'- 4"											
	109	5	30'- 1"	ES503	STR	30'- 1"											
	12	6	28'- 4"	ES601	STR	28'- 4"											
✳ ▲	219	6	4'- 5"	ES602	STR	4'- 5"											
	110	5	5'- 6"	ES504	17		0'- 0"	2'- 7"	2'- 11"								
	55	5	1'- 11"	ES505	17		0'- 0"	0'- 10"	1'- 1"								
▲	55	5	2'- 10"	ES506	S5	0'- 0"	0'- 0"	0'- 10"	1'- 1"			0'- 11"					
▲	55	5	2'- 3"	ES507	SP1	0'- 11"	0'- 5"	0'- 2"	0'- 9"				0'- 4"		0'- 3"		
	ABUTMENT #1																
	6	5	18'- 5"	1EA501	STR	18'- 5"											
✳	19	5	5'- 6"	1EA502	STR	5'- 6"											
	29	5	6'- 7"	1EA503	17		2'- 10"	0'- 8"	3'- 1"								
▲	58	5	5'- 7"	1EA504	17		3'- 0"	2'- 7"	0'- 0"								
	ABUTMENT #2																
	6	5	18'- 8"	2EA501	STR	18'- 8"											
✳	19	5	5'- 7"	2EA502	STR	5'- 7"											
	30	5	6'- 4"	2EA503	17		2'- 8"	0'- 8"	3'- 0"								
▲	60	5	5'- 7"	2EA504	17		3'- 0"	2'- 7"	0'- 0"								
	WINGWALL CAP																
	4	5	22'- 10"	LS501	STR	22'- 10"											
✳	25	5	2'- 2"	LS502	STR	2'- 2"											

~ NOTES ~

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



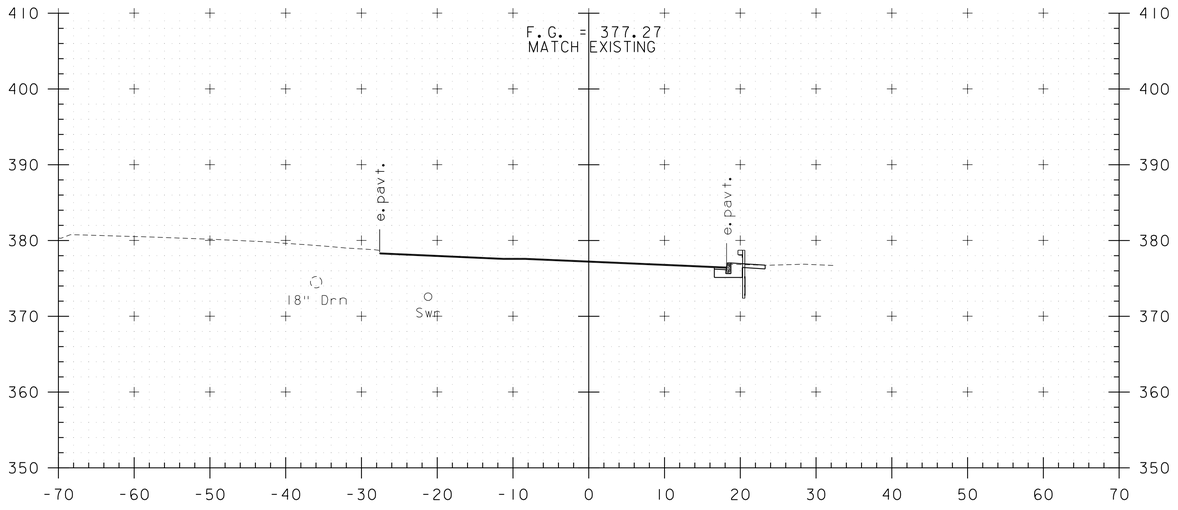
ASTM STANDARD REINFORCING BARS

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

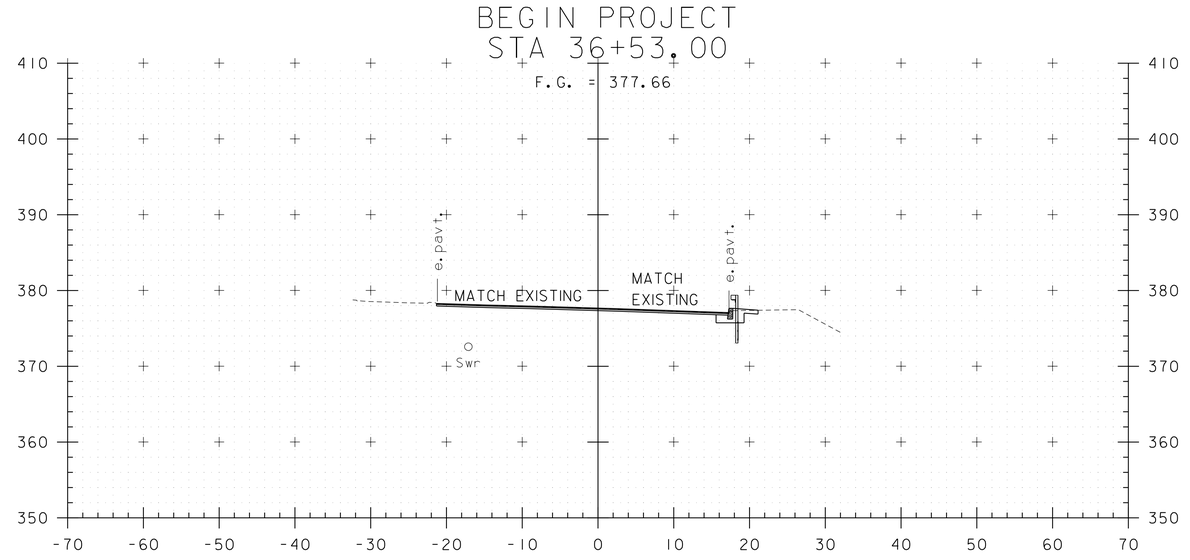
PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105schedule-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: A. GIRALDI
REINFORCING STEEL SCHEDULE

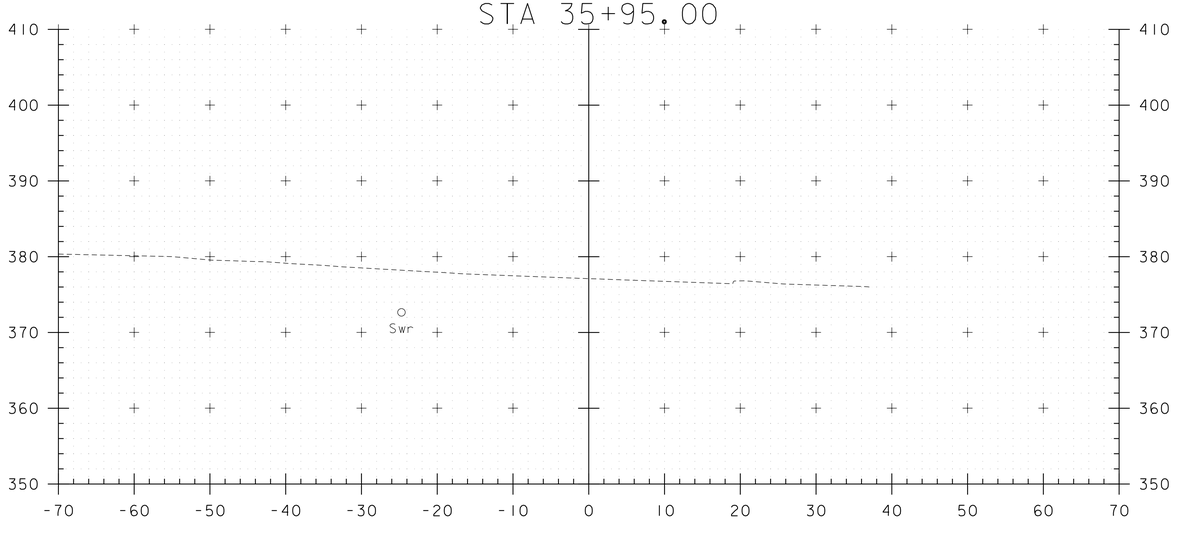
PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: J. FRENCH
SHEET 40 OF 58



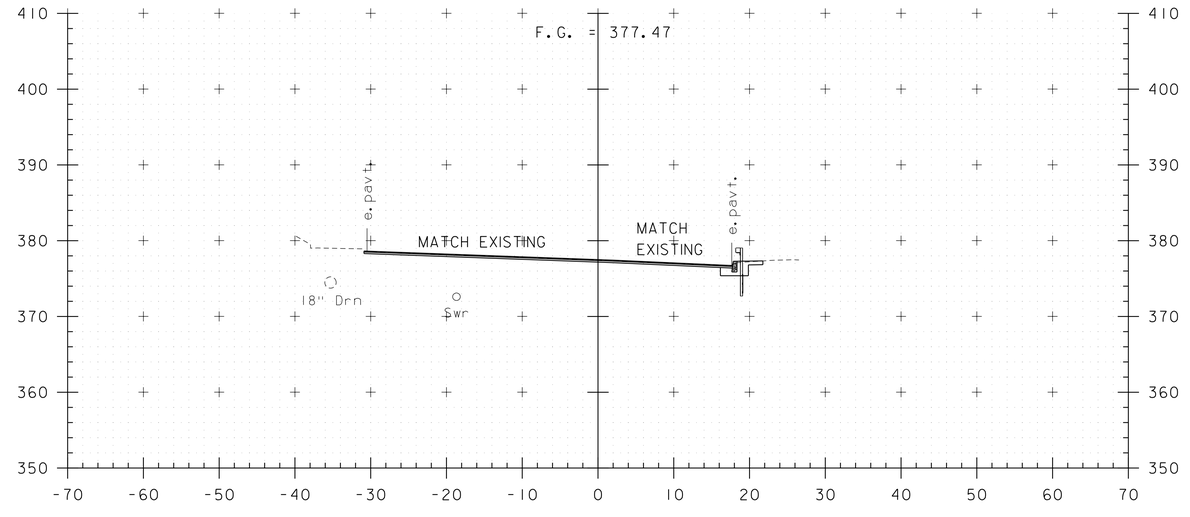
36+00



36+50



35+75



36+25

NOTE:
EXISTING UTILITIES ELEVATIONS ARE APPROXIMATE

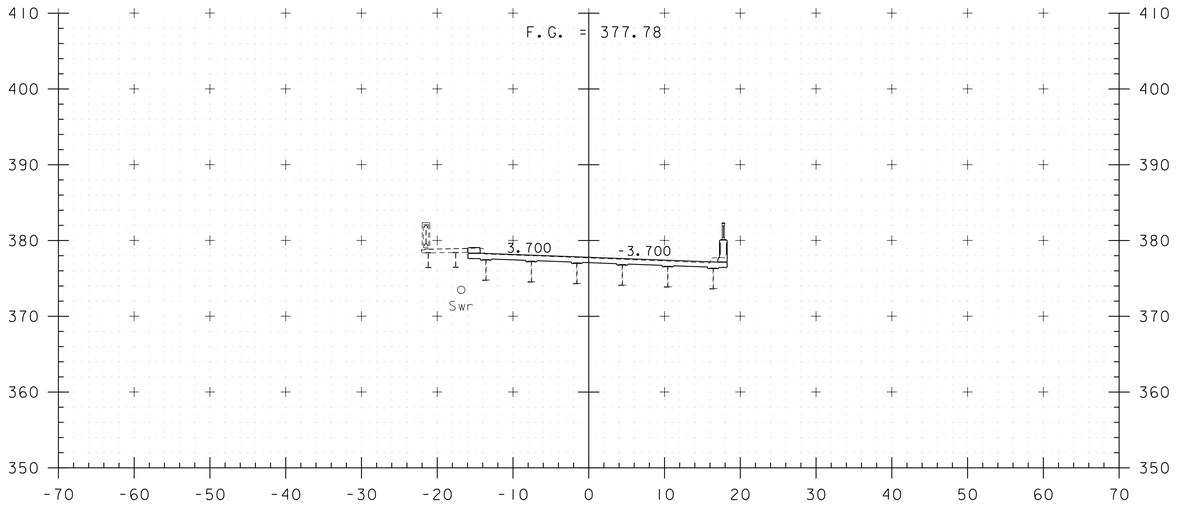
STA. 35+75 TO STA. 36+50

FUSS&O'NEILL

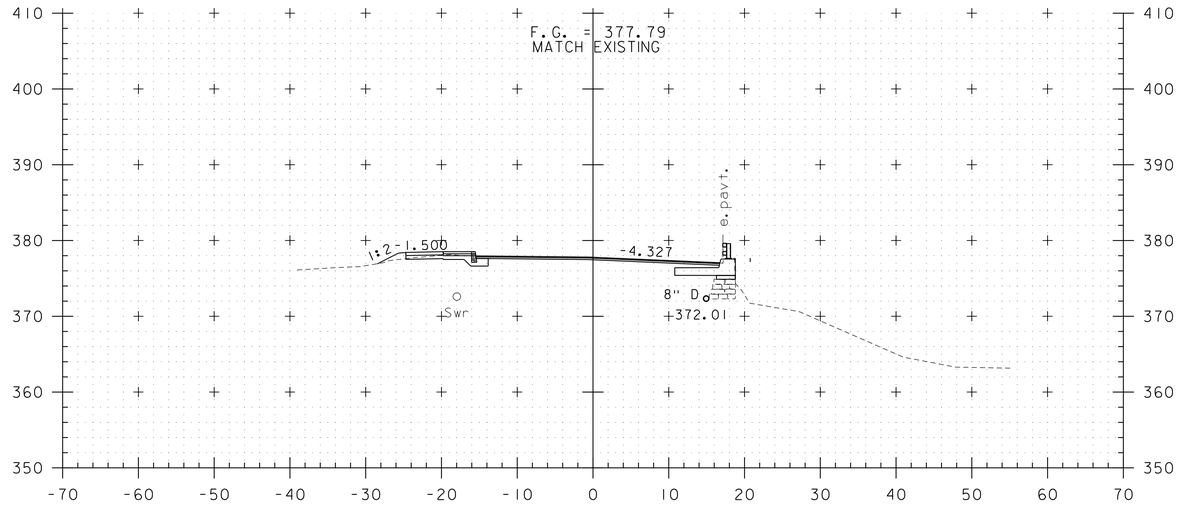
PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105xs-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: S. FORTIER
US 5 CROSS SECTIONS 1

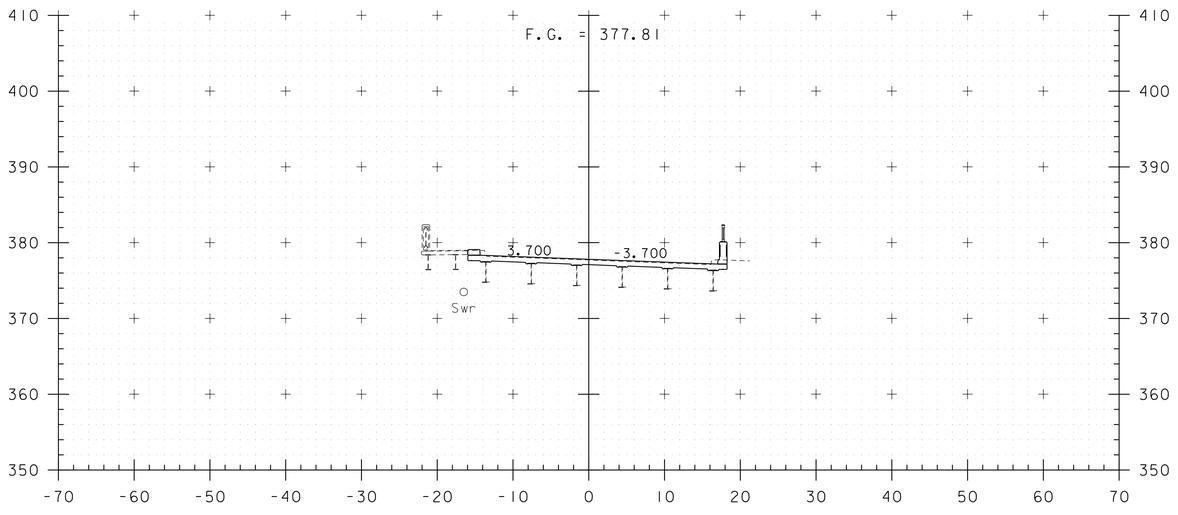
PLOT DATE: 10/31/2018
DRAWN BY: M.G. SMITH
CHECKED BY: L. GREER
SHEET 41 OF 58



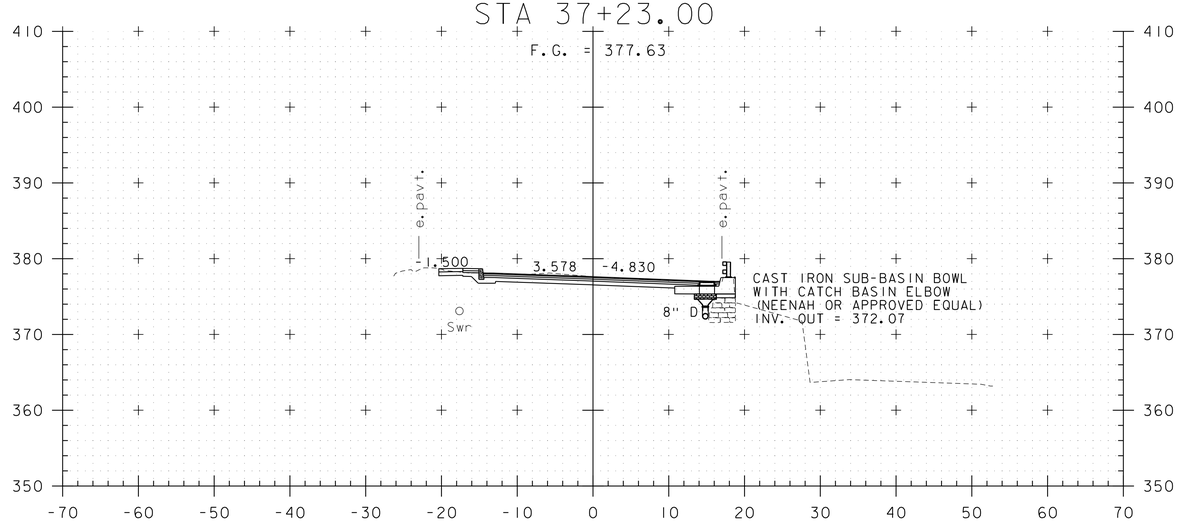
37+00



37+25
END PROJECT
STA 37+23.00



36+75
BEGIN BRIDGE
STA 36+61.00



37+18
END BRIDGE
STA 37+15.00

NOTE:
EXISTING UTILITIES ELEVATIONS ARE APPROXIMATE

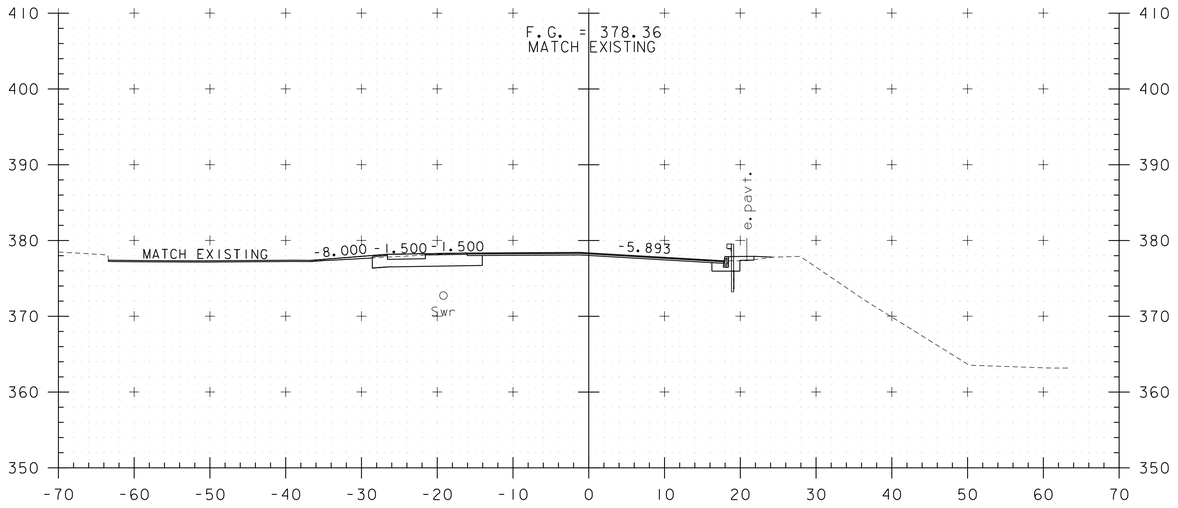
STA. 36+75 TO STA. 37+25

FUSS & O'NEILL

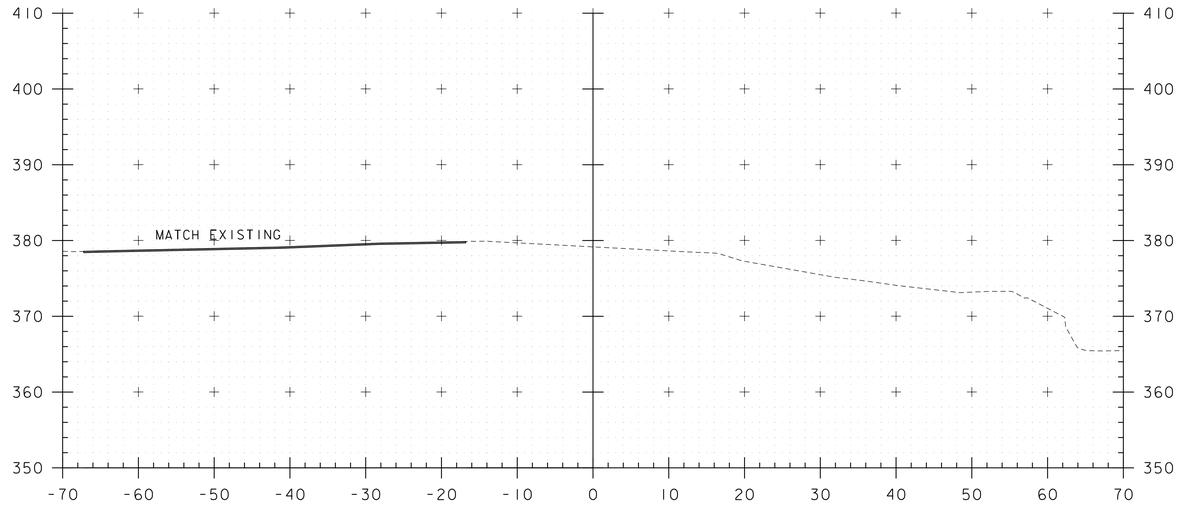
PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105xs-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: S. FORTIER
US 5 CROSS SECTIONS 2

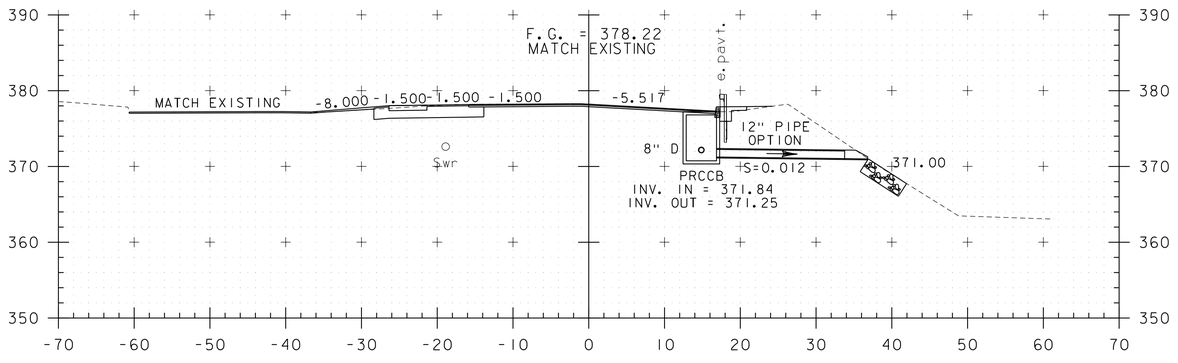
PLOT DATE: 10/31/2018
DRAWN BY: M.G. SMITH
CHECKED BY: L. GREER
SHEET 42 OF 58



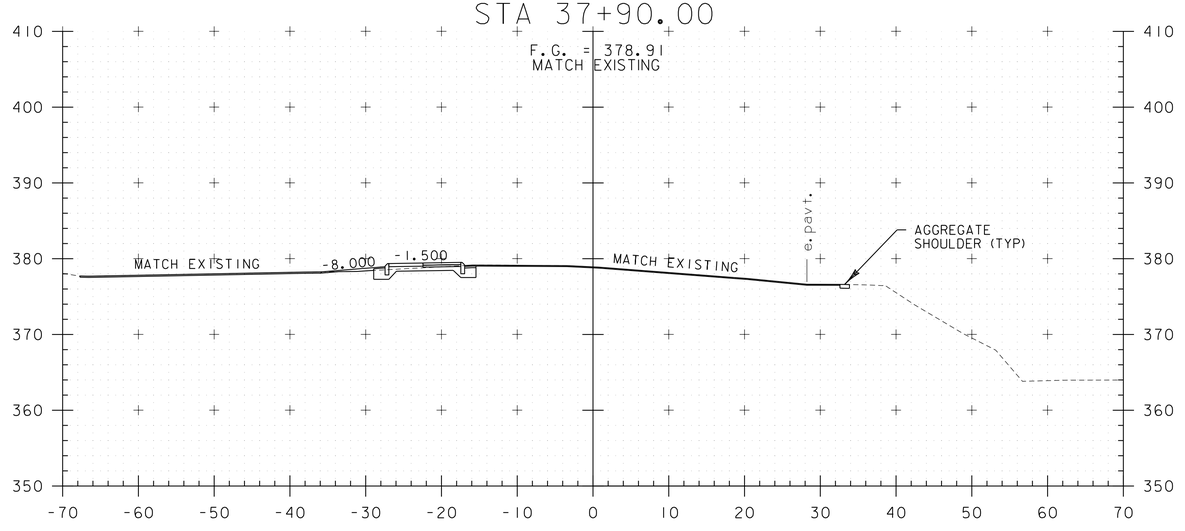
37+50



38+00
END APPROACH
STA 37+90.00



37+44



37+75

NOTE:
EXISTING UTILITIES ELEVATIONS ARE APPROXIMATE

STA. 37+44 TO STA. 38+00

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105xs-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: S. FORTIER
US 5 CROSS SECTIONS 3

PLOT DATE: 10/31/2018
DRAWN BY: M.G. SMITH
CHECKED BY: L. GREER
SHEET 43 OF 58

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION
THIS PROJECT INVOLVES THE DECK REPLACEMENT OF BRIDGE 15 OVER SACKETTS BROOK. BRIDGE 15 IS LOCATED ON MAIN STREET/US ROUTE 5 IN THE TOWN OF PUTNEY, APPROXIMATELY 0.7 MILES NORTH OF THE DUMMERSTON/PUTNEY TOWN LINE AND INTERSTATE 91.

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 0.07 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 HILLY. A GENERAL STORE IS ON THE SOUTHWEST CORNER OF THE BRIDGE, WITH PARKING SPOTS WITHIN THE PROJECT LIMITS. NORTHWEST OF THE BRIDGE IS A PAVED, OPEN ACCESS PARKING AREA IN FRONT OF A COMMERCIAL BUILDING. EAST OF THE BRIDGE ARE PAPER MILL BUILDINGS, LOCATED ALONG SACKETTS BROOK. THE INTERSECTION WITH WATER STEEET, AN UNPAVED STREET ON A STEEP SLOPE DOWN TO THE PAPER MILL, IS ALSO WITHIN THE PROJECT LIMITS ON THE NORTHEAST CORNER.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES
SACKETTS BROOK IS LOCATED IN THE PROJECT AREA AND OUTLETS TO THE CONNECTICUT RIVER APPROXIMATELY 4,500 FEET SOUTH OF THE BRIDGE. A DAM IS LOCATED APPROXIMATELY 30 FEET WEST OF THE BRIDGE. THE STREAM IS CHARACTERIZED LOCALLY AS STRAIGHT. THE STREAM BED MAINLY CONSISTS OF LEDGE. THE DRAINAGE AREA IS 15.3 SQUARE MILES.

CLOSED DRAINAGE SYSTEMS ON EITHER SIDE OF THE BRIDGE OUTLET BELOW THE BRIDGE OR IMMEDIATELY NORTH OF THE BRIDGE.

1.2.3 VEGETATION
THE VEGETATION IN THE PROJECT AREA CONSISTS OF TREES AND BRUSH ALONG THE RIVER. THE REST OF THE PROJECT CONSISTS MAINLY OF DEVELOPED LAND.

1.2.4 SOILS
ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR WINDHAM COUNTY, VERMONT. SOILS ON THE PROJECT SITE ARE: WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES, “K FACTOR” = UNKNOWN, MARKEY MUCK, “K FACTOR” = UNKNOWN.

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

DUE TO THE PRESENCE OF DEVELOPMENT SOILS, ALL EXCAVATED SOILS SHOULD BE KEPT ON-SITE AND RE-USED IN THEIR PLACE OF ORIGIN OR AS CLOSE TO THE PLACE OF ORIGIN AS POSSIBLE. IF THERE ARE WASTE SOILS THAT NEED TO BE MOVED OFF-SITE, DEC SITE INVESTIGATION RULES NEED TO BE FOLLOWED, WHICH ALLOW DEVELOPMENT SOILS TO STAY WITHIN THE EXPRESS URBAN AREA AS FILL WITHOUT THE NEED FOR TESTING. DEVELOPMENT SOILS MOVED OUTSIDE OF THE URBAN AREA DESIGNATION WILL REQUIRE TESTING TO ESTABILISH THE WASTE STATUS OF THE MATERIAL AND ACCEPTABLE USAGE/DISPOSAL. CARE SHOULD BE TAKEN NOT TO PLACE THE DEVELOPMENT SOILS IN A VULNERABLE OR SENSTIVE ENVIRONMENT, SUCH AS ERODIBLE DRAINAGE SWALES OR WETLANDS, AND THEY SHOULD NOT BE EXPOSED AT GROUND SURFACE.

1.2.5 SENSITIVE RESOURCE AREAS
CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: YES, HISTORIC BRIDGE NO. 15
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: YES, NORTHERN LONG-EARED BAT
WATER RESOURCE: YES, SACKETTS BROOK
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 PROIR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EATH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL
THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT 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. BARRIER FENCE SHALL BE USED INSTEAD OF PROJECT DEMARCATION FENCE WITHIN 100 FEET OF A WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC.).

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

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION
TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTOR’S PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES ARE NOT ANTICIPATED ON THIS PROJECT. THE EXISTING ROADWAY WILL BE USED 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. BECAUSE THIS PROJECT FALLS UNDER THE CGP 3-9020, WOVEN WIRE REINFORCED SILT FENCE SHALL BE USED INSTEAD OF SILT FENCE WITHIN 100 FEET UPSLOPE OF RECEIVING WATERS.

FILTER CURTAINS ARE NOT ANTICIPATED TO BE NEEDED AS DESIGNED.

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.

THE PROJECT AREA IS RELATIVELY FLAT. 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 EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

STONE CHECK DAMS ARE NOT ANTICIPATED TO BE NEEDED AS DESIGNED.

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 TO BE NEEDED AS DESIGNED.

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.

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

WINTER STABILIZATION IS NOT ANTICIPATED TO BE NEEDED AS DESIGNED.

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.

TEMPORARY EROSION CONTROL MATTING IS NOT ANTICIPATED TO BE NEEDED AS DESIGNED.

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.

DEWATERING ACTIVITIES ARE NOT ANTICIPATED TO BE NEEDED AS DESIGNED.

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

FUSS&O’NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105bdrerodet-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: S. FORTIER
EPSC NARRATIVE

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: L. GREER
SHEET 44 OF 58

SOIL INFORMATION:
MARKEY MUCK
K = UNKNOWN, POOR
HYDROLOGIC SOIL GROUP: A/D
SOIL INFORMATION:
WINDSOR LOAMY FINE SAND, 3 TO 8% SLOPES
K = UNKNOWN, NOT HIGHLY ERODIBLE
HYDROLOGIC SOIL GROUP: A
VT STATE PLANE GRID
N
SOIL INFORMATION:
WINDSOR LOAMY FINE SAND, 3 TO 8% SLOPES
K = UNKNOWN, NOT HIGHLY ERODIBLE
HYDROLOGIC SOIL GROUP: A
SACKETTS BROOK
TH-1 (KIMBALL HILL)
WELL
WELL
APPROX EXISTING ROW
APPROX EXISTING ROW
US ROUTE 5 TO WESTMINSTER
US ROUTE 5 DUMMERSTON
MAIN ST.
36+00
37+00
38+00
380
370
370
TH-43 (MALL STREET)
TH-56 (WATER STREET)
APPROX EXISTING ROW
APPROX EXISTING ROW
APPROX EXISTING ROW
50' RIPARIAN BUFFER
50' RIPARIAN BUFFER
SOIL INFORMATION:
WINDSOR LOAMY FINE SAND, 3 TO 8% SLOPES
K = UNKNOWN, NOT HIGHLY ERODIBLE
HYDROLOGIC SOIL GROUP: A
SOIL INFORMATION:
WINDSOR LOAMY FINE SAND, 3 TO 8% SLOPES
K = UNKNOWN, NOT HIGHLY ERODIBLE
HYDROLOGIC SOIL GROUP: A
0 10 20
SCALE IN FEET

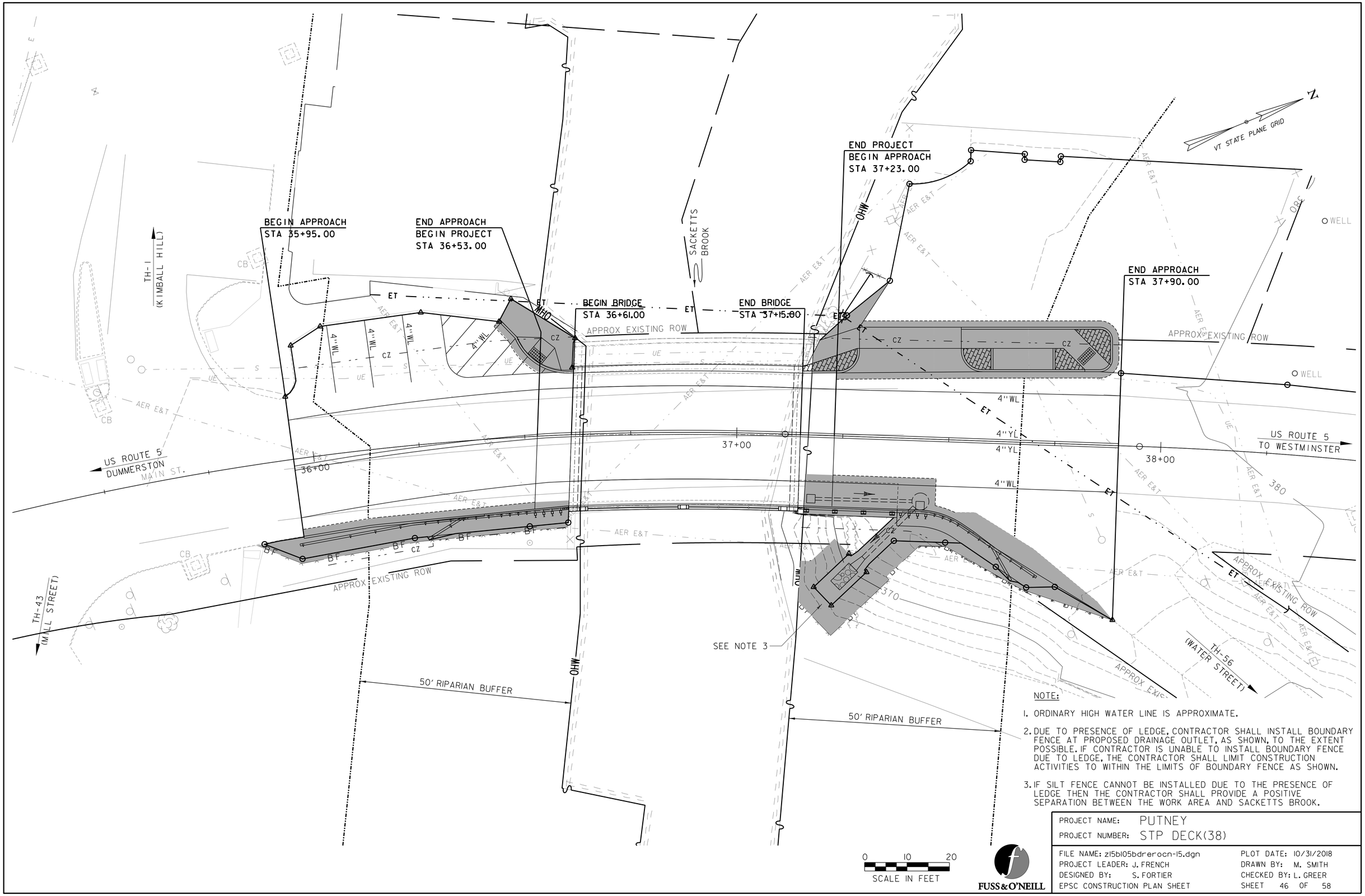
NOTE:

ORDINARY HIGH WATER LINE IS APPROXIMATE.

PROJECT NAME:	PUTNEY
PROJECT NUMBER:	STP DECK(38)

FUSS & O'NEILL

FILE NAME: z15b105bdreroex-15.dgn	PLOT DATE: 10/31/2018
PROJECT LEADER: J. FRENCH	DRAWN BY: M. SMITH
DESIGNED BY: S. FORTIER	CHECKED BY: L. GREER
EPSC EXISTING PLAN SHEET	SHEET 45 OF 58



NOTE:

1. ORDINARY HIGH WATER LINE IS APPROXIMATE.
2. DUE TO PRESENCE OF LEDGE, CONTRACTOR SHALL INSTALL BOUNDARY FENCE AT PROPOSED DRAINAGE OUTLET, AS SHOWN, TO THE EXTENT POSSIBLE. IF CONTRACTOR IS UNABLE TO INSTALL BOUNDARY FENCE DUE TO LEDGE, THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO WITHIN THE LIMITS OF BOUNDARY FENCE AS SHOWN.
3. IF SILT FENCE CANNOT BE INSTALLED DUE TO THE PRESENCE OF LEDGE THEN THE CONTRACTOR SHALL PROVIDE A POSITIVE SEPARATION BETWEEN THE WORK AREA AND SACKETTS BROOK.

0 10 20
SCALE IN FEET

FUSS&O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105bdrerocn-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: S. FORTIER
EPSC CONSTRUCTION PLAN SHEET

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: L. GREER
SHEET 46 OF 58


BEGIN APPROACH
STA 35+95.00
END APPROACH
BEGIN PROJECT
STA 36+53.00
BEGIN BRIDGE
STA 36+61.00
SACKETTS BROOK
END BRIDGE
STA 37+15.00
END PROJECT
BEGIN APPROACH
STA 37+23.00
END APPROACH
STA 37+90.00
VT STATE PLANE GRID
N
TH-1 (KIMBALL HILL)
US ROUTE 5
DUMMERSTON
MAIN ST.
US ROUTE 5
TO WESTMINSTER
TH-43 (MALL STREET)
TH-56 (WATER STREET)
APPROX EXISTING ROW
AER E&T
OHW
CZ
UE
4"WL
4"YL
36+00
37+00
38+00
370
380
WELL
CB
50' RIPARIAN BUFFER
SCALE IN FEET
0
10
20

NOTE
1. SEE CROSS SECTIONS FOR FINISHED GRADING.
2. ORDINARY HIGH WATER LINE IS APPROXIMATE.

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FUSS & O'NEILL

FILE NAME: z15b105bdrerofl-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: S. FORTIER
EPSC FINAL PLAN SHEET
PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: L. GREER
SHEET 47 OF 58

VAOT URBAN LAWN MIX						
	LBS/AC					
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
42.5%	34	68	CREEPING RED FESCUE	FESTUCA RUBRA X RUBRA	85%	98%
20.0%	16	32	PERENNIAL RYE GRASS	LOLIUM PERENNE	90%	95%
32.5%	26	52	KENTUCKY BLUE GRASS	POA PRATENSIS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	85%	95%
100%	80	160				

GENERAL AMENDMENT GUIDANCE		
FERTILIZER	LIME	
10/20/10	AG LIME	PELLITIZED
500 LBS/AC	2 TONS/AC	1 TONS/AC

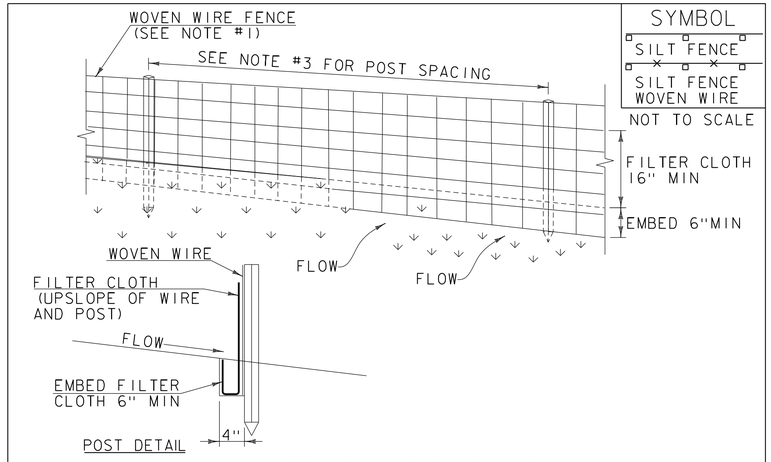
CONSTRUCTION GUIDANCE

1. SEED MIX: THE URBAN AREA MIX SHALL NOT BE USED IN WETLANDS OR ANY WATERS OF THE STATE OF VERMONT.
2. SEED MIX: USE ONLY AS INDICATED IN THE PLANS.
3. SEED MIX: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. 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
7. 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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.15)

REVISIONS	
JANUARY 22, 2015	WHF



CONSTRUCTION SPECIFICATIONS

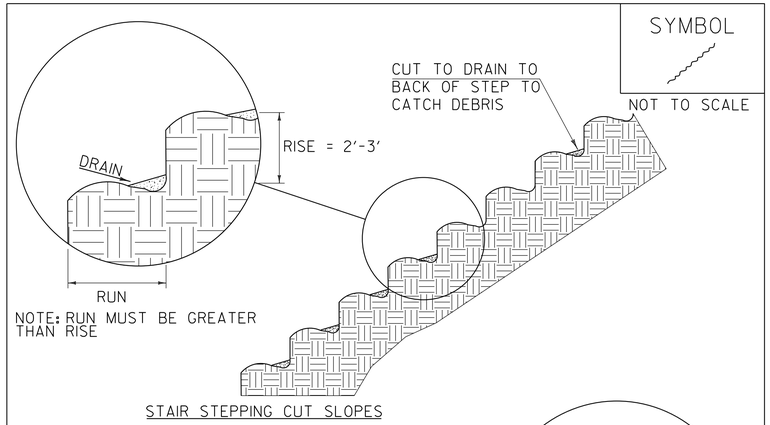
1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. 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'.
4. 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.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. 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

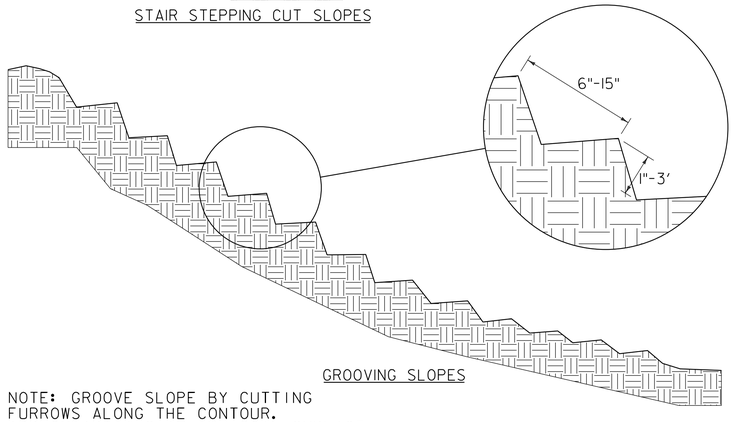
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

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



STAIR STEPPING CUT SLOPES



GROOVING SLOPES

NOTE: GROOVE SLOPE BY CUTTING FURROWS ALONG THE CONTOUR. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND RETAIN LIME, FERTILIZER AND SEED.

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

FUSS & O'NEILL

PROJECT NAME: PUTNEY
PROJECT NUMBER: STP DECK(38)

FILE NAME: z15b105bdrerodet-15.dgn
PROJECT LEADER: J. FRENCH
DESIGNED BY: S. FORTIER
EPSC DETAIL SHEET

PLOT DATE: 10/31/2018
DRAWN BY: M. SMITH
CHECKED BY: L. GREER
SHEET 48 OF 58

FED. ROAD DIVISION NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	VT.	STATE 83-L	POST WAR	1	10

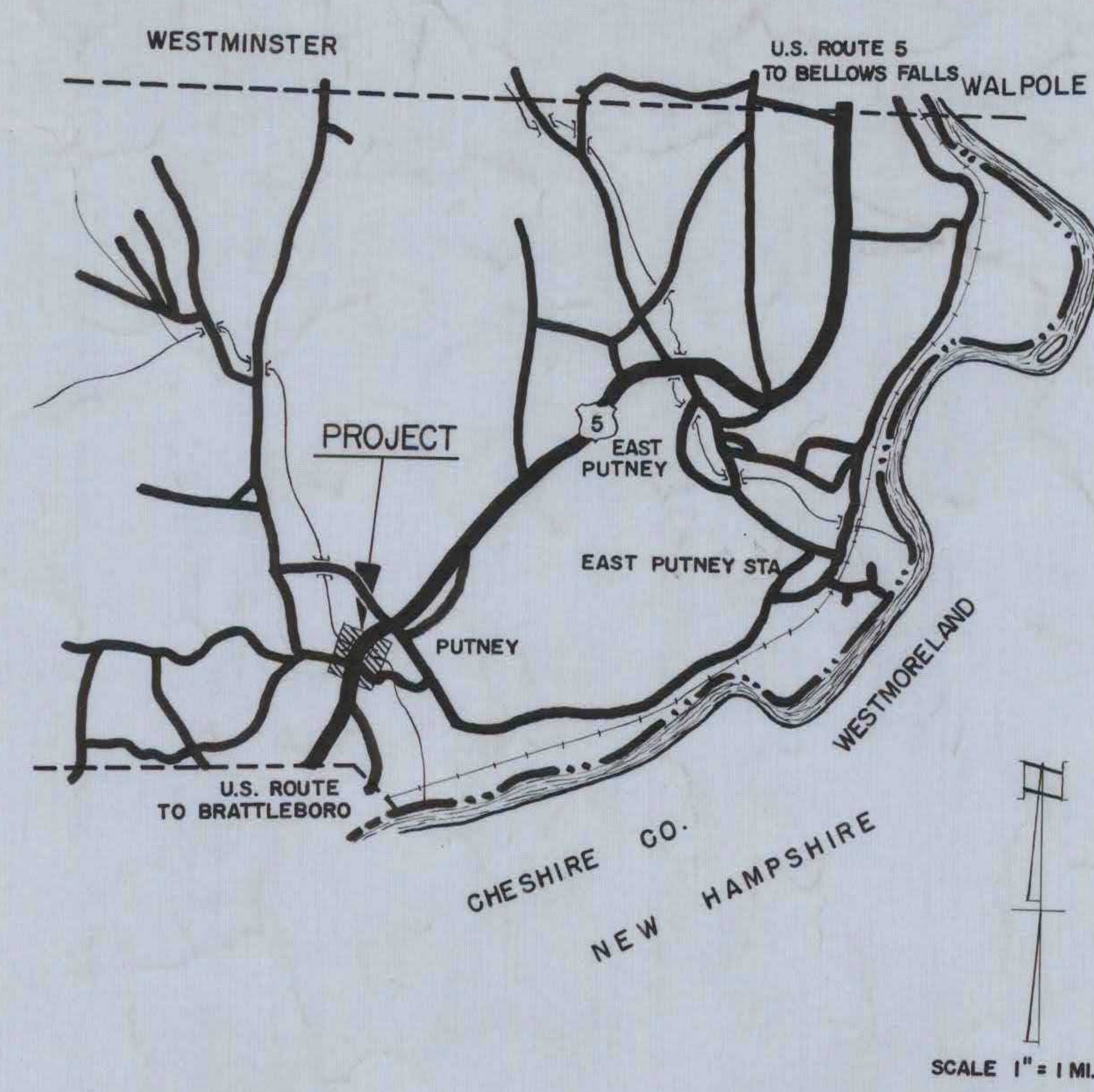
INDEX OF SHEETS

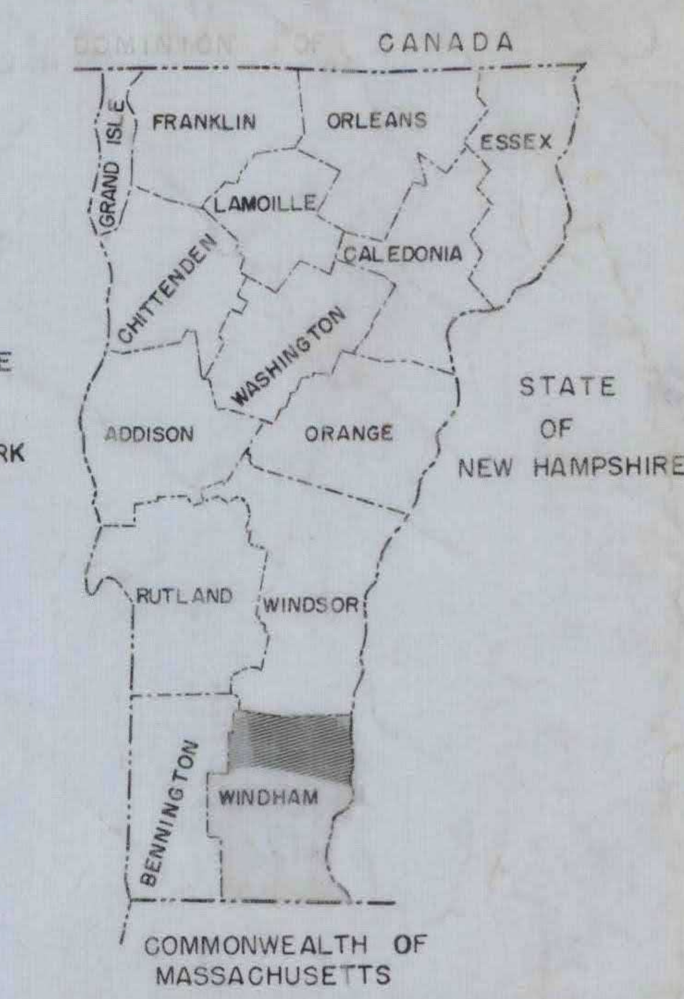
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROPOSED IMPROVEMENT

STATE PROJECT

TOWN OF PUTNEY
COUNTY OF WINDHAM
U.S. ROUTE 5
BRIDGE OVER SACKETT'S BROOK



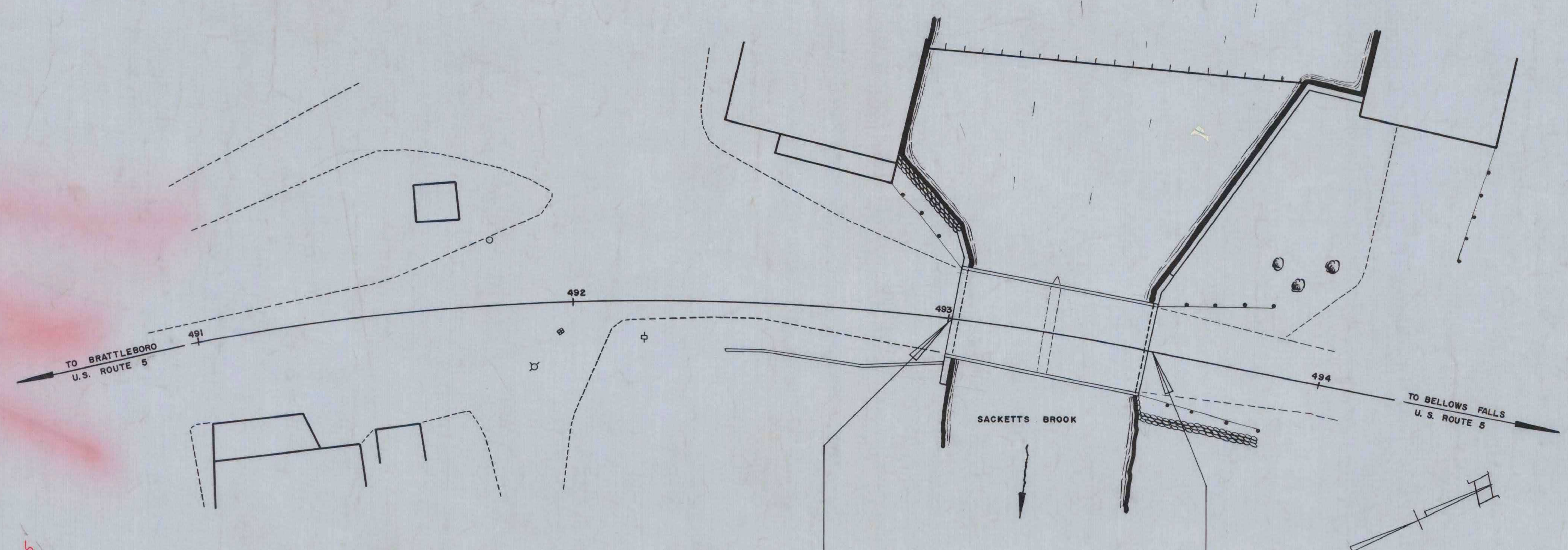


LENGTH OF BRIDGE 54.0 FEET = 0.010 MI.

LENGTH OF PROJECT 54.0 FEET = 0.010 MI.

PROJECT NAME & NUMBER		TYPE	PAVEMENT AREA
PUTNEY ST. 83-L ✓			S.Y.
RECORD PLANS			
MATERIALS			
Subbase of Gravel – Miller Pit - Putney Vt. / Wood's Pit - E. Putney Vt. / Adams Pit - Dummerston Vt.	Reinf. Steel - Truscon Steel Co.		
Subbase of Sand (NOTE: ABOVE USED FOR BACKFILL)	Structural Steel - Vt. Structural Steel Co.		
Crushed Gravel	R.C.P.		
Refined Tar	A.C.C.G.M.P.		
Cutback Asphalt	Cable for Guard Rail.		
Sq.-Gravel or Peastone for seal	Guard Rail Paint - Bradley Lab. Brattleboro, Vt.		
Cement - Iron-clad. Glens Falls N.Y.			
Contractor - O.W. Miller Ludlow Mass.	Contract Dated OCT 27, 1953		
Resident Engr. H. E. Barton	Contract Started April, 5 1954		
Inspectors	Contract Completed July 7, 1954		
Record Plans - H.R.C.	Contract Accepted July 7, 1954		

PROJECT	NUMBER	TYPE	CONTRACTOR	LOCATION	LENGTH	MI.	YEAR 19
PUTNEY	ST 83-L	SACKETT'S BROOK	O.W. MILLER	Rt 5			



NOTE: ANY FURTHER INFORMATION CONCERNING FINAL QUANTITIES, ACCOUNTS OR OTHER DETAILS RELATIVE TO THIS PROJECT MAY BE FOUND IN EITHER THE FIELD BOOKS OR THE ESTIMATE FILE.

PUTNEY
STP DECK(38)
BRIDGE NO. 15
SHEET 49 OF 58
FOR REFERENCE ONLY

STA 493+01
BEGIN PROJECT – STATE 83-L

STA 493+55
END PROJECT – STATE 83-L

CONVENTIONAL SIGNS

COUNTY LINE
TOWN LINE
FENCE LINE
STONE WALL
UNFENCED PROPERTY
GUARD RAIL
TRAVELED WAY
RAILROAD
RETAINING WALL
CENTER LINE (30, P.C. 30 + 65)
SURVEY LINE
CULVERT
DROP INLET
TROLLEY POLE
POWER POLE
TELEPHONE POLE
TREES
HEDGE

PUTNEY - ST. 83-L
CONTRACTOR: - O.W. MILLER
RECORD PLANS - H.R. Calloway 3-7-'55
CONSTR. COMPLETED JULY 7, 1954

GROUND ELEVATION DATUM 126.5 LINE

GRADE ELEVATION DATUM 127.5 LINE

CURVE DATA

DEFLECTION OF ANGLE	Δ
DEGREE OF CURVE	D.
RADIUS OF CURVE	R.
TANGENT DISTANCE	T.
LENGTH OF CURVE	L.
EXTERNAL DISTANCE	E.
POINT OF INTERSECTION	P.I.
POINT OF CURVE	P.C.
POINT OF TANGENT	P.T.
POINT ON TANGENT	P.O.T.
POINT ON SUB-TANGENT	P.O.S.T.

SCALES

TITLE	1" = 20'
TYPICAL	1" = —
PLAN	1" = 20'
PROFILE HORIZONTAL	1" = 20'
PROFILE VERTICAL	1" = 10'
CROSS-SECTIONS	1" = 5'

THESE PLANS ARE SUBJECT TO SUCH REVISIONS AS MAY BE REQUIRED BY THE BUREAU OF PUBLIC ROADS OR THE COMMISSIONER OF HIGHWAYS.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THE PLANS AND THE STANDARD ROAD AND BRIDGE SPECIFICATIONS OF 1948, AS APPROVED JULY 25, 1949 BY THE BUREAU OF PUBLIC ROADS, INCLUDING ALL SUBSEQUENT APPROVED REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE SUBMITTED WITH THE PLANS.

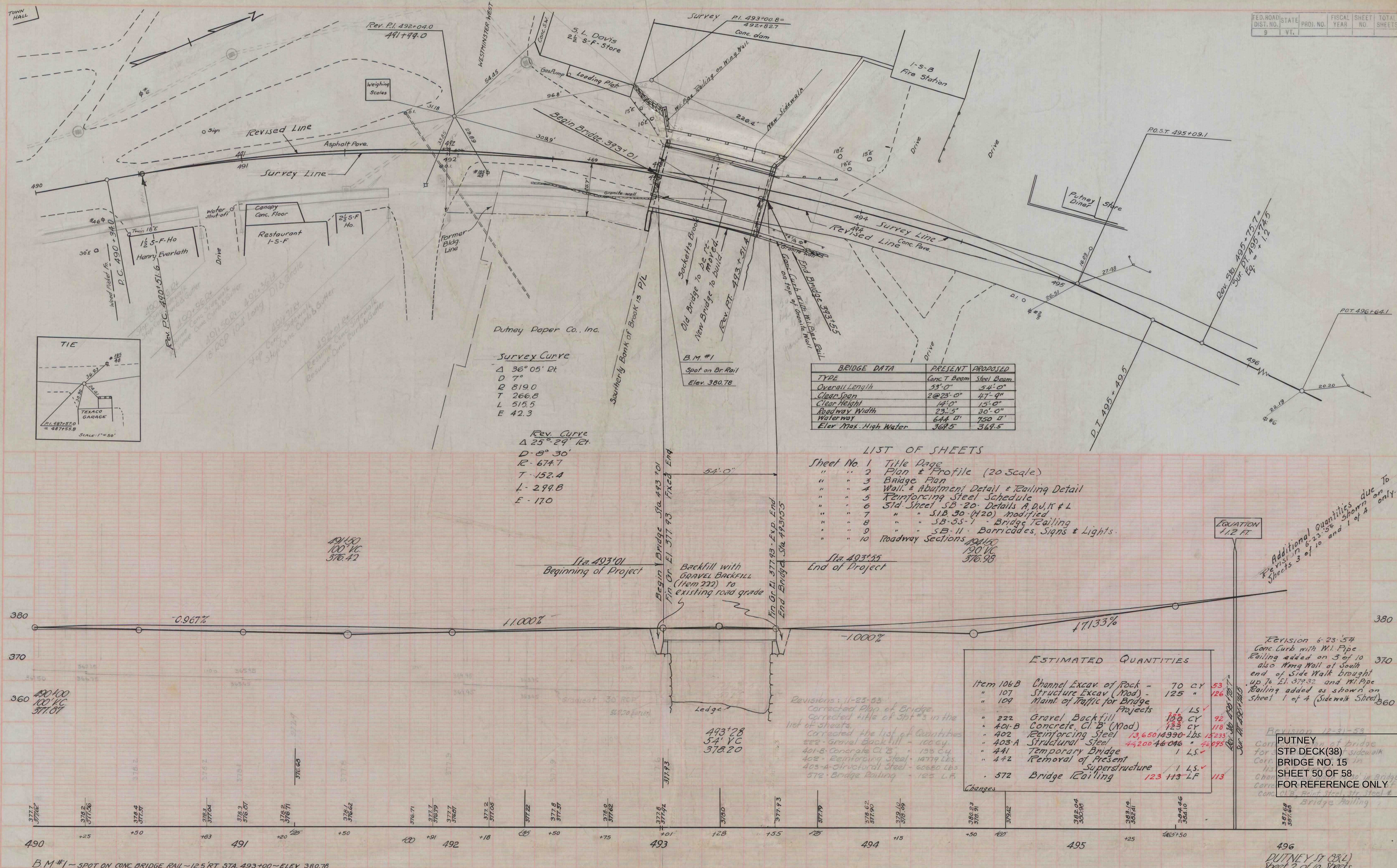
DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

RECOMMENDED FOR APPROVAL
[redacted]
DISTRICT ENGINEER DATE

APPROVED
[redacted]
DIVISION ENGINEER DATE

APPROVED ____ CONSTRUCTION ENGINEER DATE ____	APPROVED A. D. Bishop BRIDGE ENGINEER DATE 9/30/53	APPROVED R. O. Munn DISTRICT ENGINEER DATE 9/28/53	APPROVED ____ HIGHWAY ENGINEER DATE ____	APPROVED H. E. Sargent CHIEF ENGINEER DATE SEPT 25 1953 SUBMITTED BY ORDER OF THE STATE HIGHWAY BOARD	PROJECT STATE NO. 83-L SHEET 1 OF 10 SHEETS

M



TOWN HALL
Rev. P.I. 492+04.0
491+99.0
WESTMINSTER WEST
S. L. Davis
2½ S-F-Store
Survey P.I. 493+00.8 = 492+82.7
Conc. dam
1-S-B Fire Station
Weighing Scales
Gas Pump
Loading Plat.
W.I. Pipe Railing on Wing Wall
New Sidewalk
Begin Bridge 493+01
Revised Line
Asphalt Pave.
Survey Line
Granite wall
Putney Diner
Store
Drive
P.O.S.T. 495+09.1
Survey Line
Revised Line
Conc. Pave.
Dev. Sta. 495+75.7 = Sur. P.T. 495+74.5
Eq. = 1.2
Canopy Conc. Floor
Restaurant 1-S-F
2½ S-F Ho.
1½ S-F-Ho
Henry Everleth
Former Bldg. Line
Sacketts Brook
Old Bridge to be removed
New Bridge to build
Rev. P.T. 493+51.4
End Bridge 493+55
Conc. Curb with W.I. Pipe Rail on top of Granite Wall
Rev. P.C. 490+51.6
P.C. 490+34.0
Putney Paper Co., Inc.
Southerly Bank of Brook is P/L
B.M. #1
Spot on Br. Rail
Elev. 380.78
P.T. 495+49.5
P.O.T. 496+64.1
TIE
TEXACO GARAGE
Scale: 1" = 50'
Survey Curve
Δ 36° 05' Rt.
D 7°
R 819.0
T 266.8
L 515.5
E 42.3
Rev. Curve
Δ 25° 29' Rt.
D - 8° 30'
R - 674.7
T - 152.4
L - 299.8
E - 17.0
54'-0"
Begin Bridge Sta. 493+01
Fin. Gr. El. 377.93 Fixed End
Fin. Gr. El. 377.93 Exp. End
End Bridge Sta. 493+55
Sta. 493+01
Beginning of Project
Sta. 493+55
End of Project
Backfill with GRAVEL BACKFILL (Item 222) to existing road grade
491+50
100' V.C.
376.42
494+50
190' V.C.
376.98
490+00
100' V.C.
377.87
493+28
54' V.C.
378.20
-0.967%
+1.000%
-1.000%
+7.133%
Ledge
EQUATION 1.2 FT.
Additional Quantities due to Revision 6-23-54 shown on Sheets 3 of 10 and 1 of 4 only.
Revision 6-23-54
Conc. Curb with W.I. Pipe Railing added on 3 of 10 also Wing Wall at South end of Side Walk brought up to El. 379.32 and W.I. Pipe Railing added as shown on Sheet 1 of 4 (Sidewalk Sheet)
Revisions: 11-23-53
Corrected Plan of Bridge.
Corrected title of Sht. #3 in the list of sheets.
Corrected the list of Quantities
222 - Gravel Backfill - 100 c.y.
401-B - Concrete Cl. B - 133 c.y.
402 - Reinforcing Steel - 14779 Lbs.
403-A - Structural Steel - 60680 Lbs.
572 - Bridge Railing - 125 L.F.
380
370
360
490
491
492
493
494
495
496
B.M. #1 ~ SPOT ON CONC. BRIDGE RAIL ~ 12.5' RT. STA. 493+00 ~ ELEV. 380.78
PUTNEY ST. (B&L)
Sheet 2 of 10 Sheets

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	VT.				

BRIDGE DATA	PRESENT	PROPOSED
TYPE	Conc T Beam	Steel Beam
Overall Length	53'-0"	54'-0"
Clear Span	2@23'-0"	47'-9"
Clear Height	14'-0"	15'-0"
Roadway Width	23'-5"	30'-0"
Waterway	644 □'	750 □'
Elev. Max. High Water	369.5	369.5

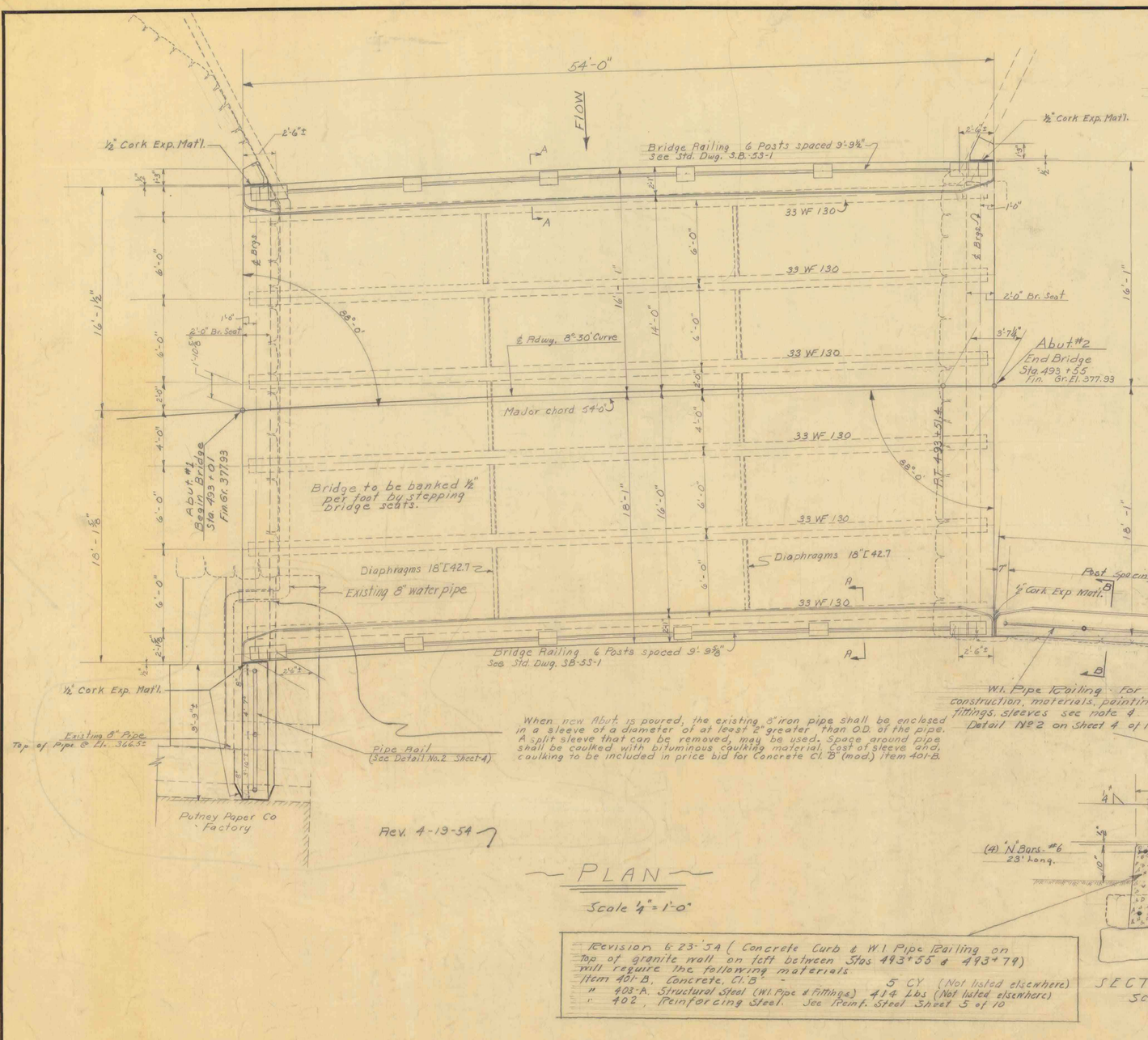
LIST OF SHEETS

Sheet No. 1 Title Page
" " 2 Plan & Profile (20 Scale)
" " 3 Bridge Plan
" " 4 Wall & Abutment Detail & Railing Detail
" " 5 Reinforcing Steel Schedule
" " 6 Std. Sheet SB-20 - Details A, D, J, K & L
" " 7 " " SIB 30 - (H20) modified
" " 8 " " SB-55-1 - Bridge Railing
" " 9 " " SB-11 - Barricades, Signs & Lights
" " 10 Roadway Sections

ESTIMATED QUANTITIES

Item		Description	Quantity	Unit	Changes
Item	106-B	Channel Excav. of Rock -	70	CY	53
"	107	Structure Excav. (Mod) -	125	"	126
"	109	Maint. of Traffic for Bridge Projects	1	LS ✓	
"	222	Gravel Backfill	200 ~~100~~	CY	92
"	401-B	Concrete, Cl. "B" (Mod)	125 ~~123~~	CY	118
"	402	Reinforcing Steel	13,650 ~~14990~~	Lbs.	15233
"	403-A	Structural Steel	44,200 ~~46 046~~	"	46,095
"	441	Temporary Bridge	1	L.S. ✓	
"	442	Removal of Present Superstructure	1	L.S. ✓	
"	572	Bridge Railing	123 ~~113~~	LF	113

PUTNEY
STP DECK(38)
BRIDGE NO. 15
SHEET 50 OF 58
FOR REFERENCE ONLY



Revision 6-23-54 (Concrete Curb & W.I. Pipe Railing on Top of granite wall on left between Stas 493+55 & 493+79) will require the following materials

Item 401-B, Concrete, Cl. B	5 CY	(Not listed elsewhere)
" 403-A, Structural Steel (W.I. Pipe & Fittings)	414 Lbs	(Not listed elsewhere)
" 402, Reinforcing Steel. See Reinf. Steel Sheet 5 of 10		

Notes

Superstructure shall be constructed in accordance with Standard superstruce details as shown on S.I.B-30 (H-20) and as modified by this drawing.

For Abutment details see sheet 4 of 10

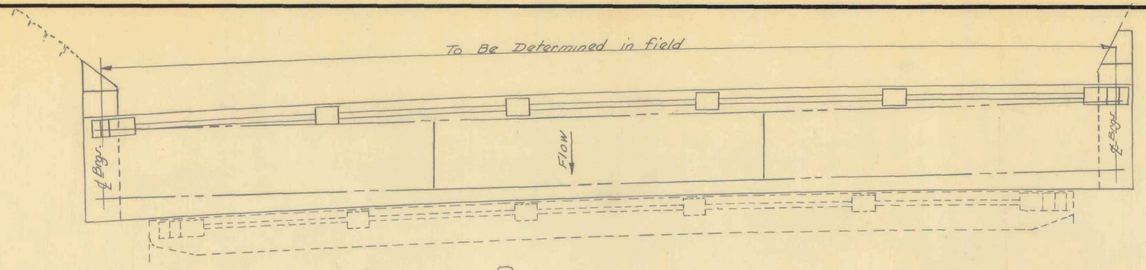
PUTNEY
STP DECK(38)
BRIDGE NO. 15
SHEET 51 OF 58
FOR REFERENCE ONLY

Revised Abut. #1 @ Putney Paper Co. factory 4-19-54
Revised Sheet Replaces Sheet #3 – 12-31-53

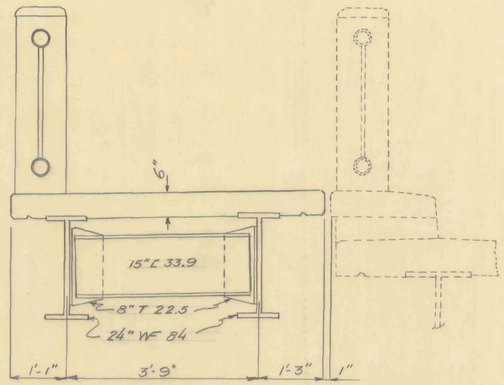
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF PUTNEY
ROUTE NO. U.S. #5 LOG STA. 38+34
BRIDGE - PLAN

SCALE As Noted
SURVEYED BY Hunt
DRAWN BY E.F.P. CHECKED BY R.T.B. & S.H.
PROJECT NO. ST 83-L
SHEET 3 OF 10



PLAN
Scale 1/4" = 1'-0"



SECTION AA
Scale 3/4" = 1'-0"

PUTNEY
STP DECK(38)
BRIDGE NO. 15
SHEET 52 OF 58
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF PUTNEY
ROUTE NO. US 5 LOG STA. 38+34
LAYOUT OF PROPOSED
SIDEWALK
SCALE As NOTED
SURVEYED BY
DRAWN BY SMB. CHECKED BY
PROJECT NO. ST. 83 L
SHEET 3A OF 10

LIST OF Sheets
#1 - Plan & Elev. of Proposed Sidewalk
#2 Std Drawing SB-80 Detail H, K, & L "1
#3 Std. Drawing SB 55-1
#4 Reinforcing Steel Schedule

Section "C-C"

Elev. "B-B"
Scale 1/2" = 1'-0"

Plan & Section of Reinforcing for Bridge Seat at Elev. "B-B"

Plan at Right end of Bridge upstream. Scale 1/2" = 1'-0"

See STD. Sheet SB 55-1 for additional steel in posts

SECTION THRU SIDEWALK @ ℄
Scale 3/4" = 1'-0"

NOTE:
Railing to be temporarily erected before posts are poured so as to insure a proper fit.

Sidewalk surface to be screeded and floated.

PRESENT BRIDGE
PLAN OF SIDEWALK
Scale 1/4" = 1'-0"

For Railing materials, painting, sleeves, fittings etc. see note & detail No 2 on sheet 4 of 10

Revision of 6-23-54 - (W.I. Pipe Railing & changed Wing Wall) require the following materials which are not included under Estimated Quantities elsewhere on this sheet.
W.I. Pipe & Malleable Iron Fitting for this Railing to be paid for as Structural Steel, Item 403-A ——— = 211 Lbs
Concrete Cl. "B" Item 401-C ——— = 3 C.Y.

Plan at Left end of Bridge Up Stream. Scale 1/2" = 1'-0"

Elevation "A-A"
Scale 1/2" = 1'-0"

Section "B-B"
1/2" = 1'-0"

APPROVED:- 1954
DISTRICT ENGINEER
CORRECT:- A. D. Bishop
BRIDGE ENGINEER
APPROVED:- 1954
H. E. Sargent
CHIEF ENGINEER

ESTIMATED QUANTITIES

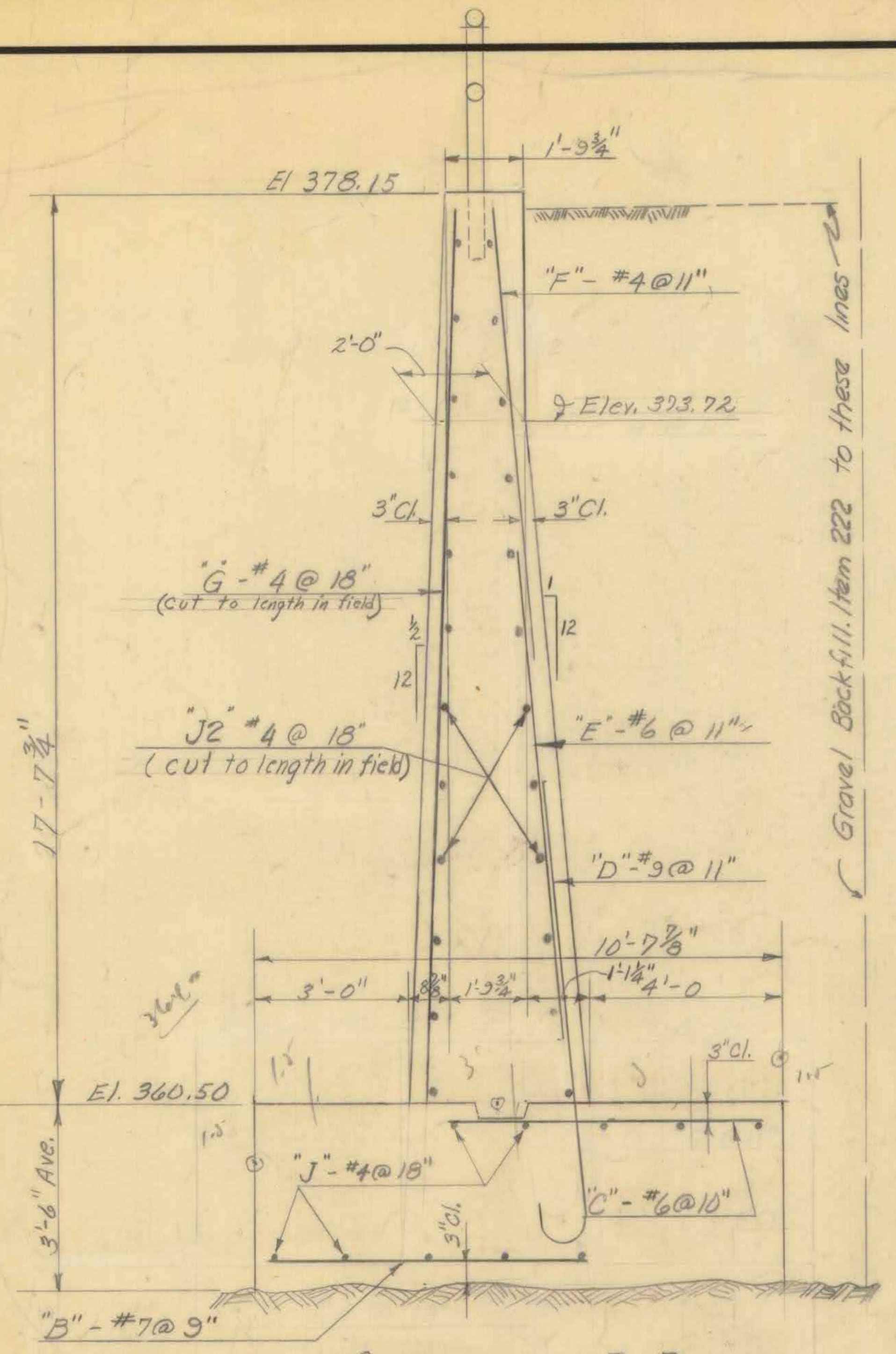
Concrete Class "B" (Mod) -	24 C.Y.
Structural Steel	10,665 Lbs
Reinforcing Steel	1140 Lbs
Bridge Railing	64 L.F.
Structure Excav. (Mod.)	6 C.Y.

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

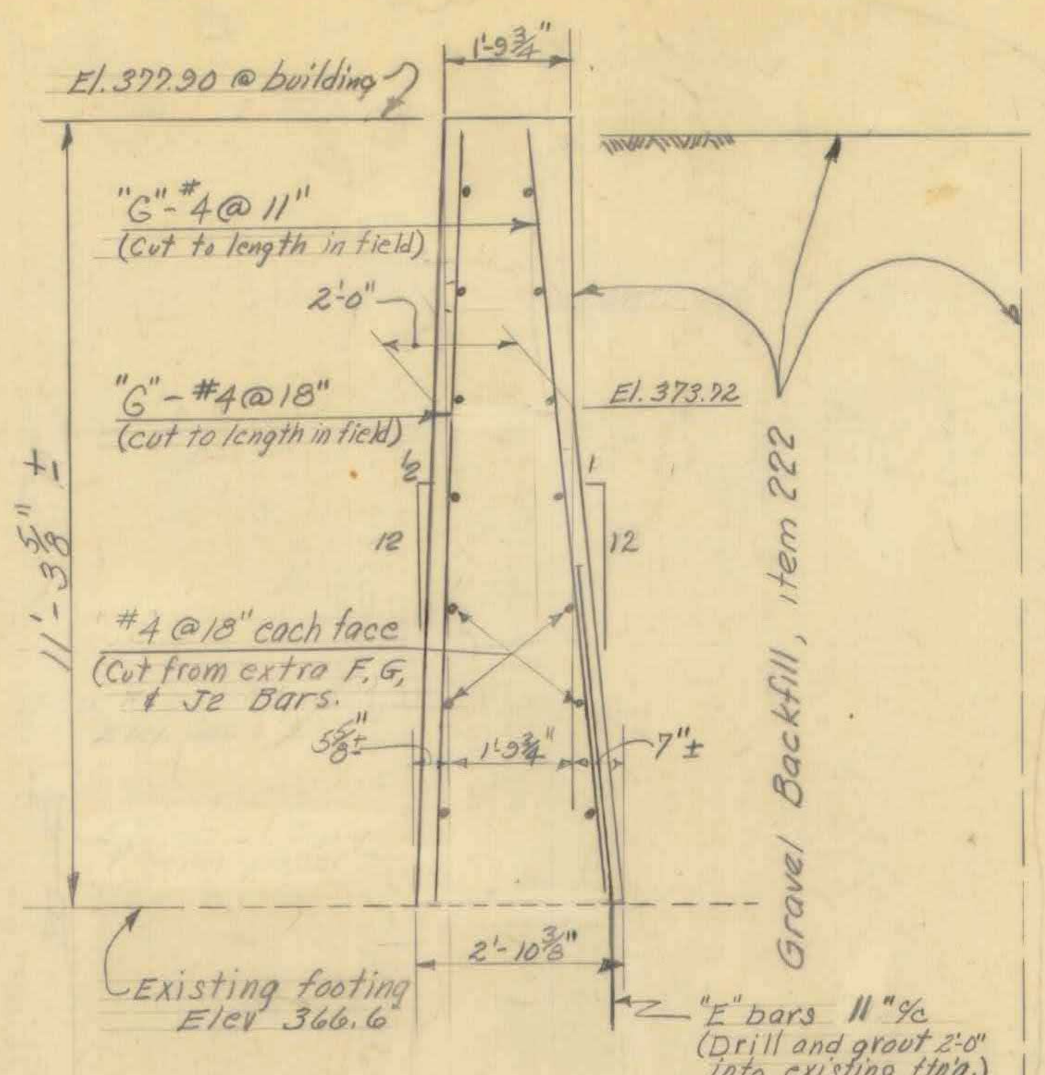
TOWN OF PUTNEY
ROUTE NO. U.S. #5 LOG STA. 38+34
UPSTREAM SIDEWALK PLAN

SCALE As Noted
SURVEYED BY H.E. Barton
DRAWN BY H.R.C. CHECKED BY R.T.B.
PROJECT NO. ST 83-L
SHEET 1 OF 4

PUTNEY
STP DECK(38)
BRIDGE NO. 15
SHEET 53 OF 58
FOR REFERENCE ONLY

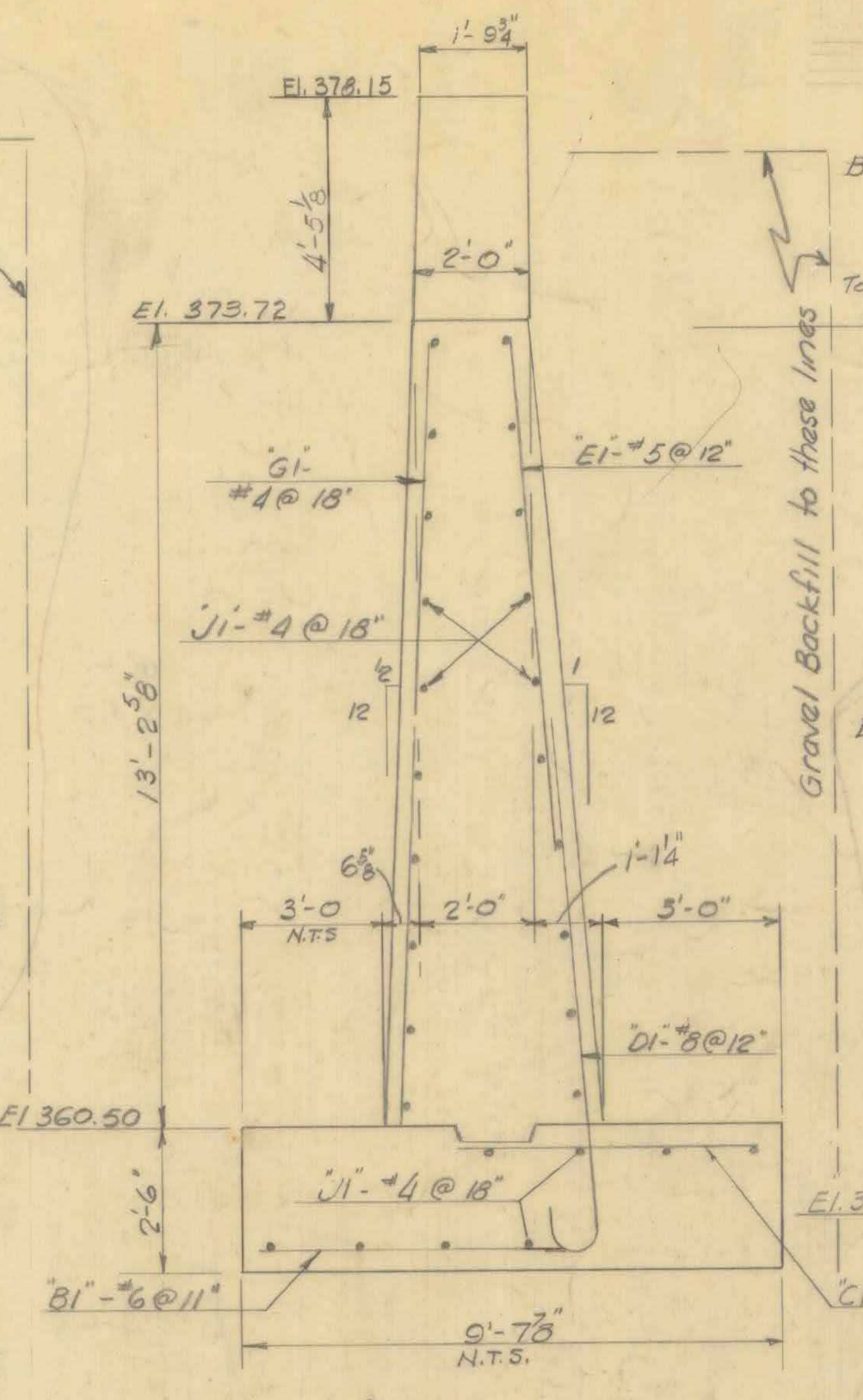


SECTION - B-B
Scale 3/8"=1'-0"



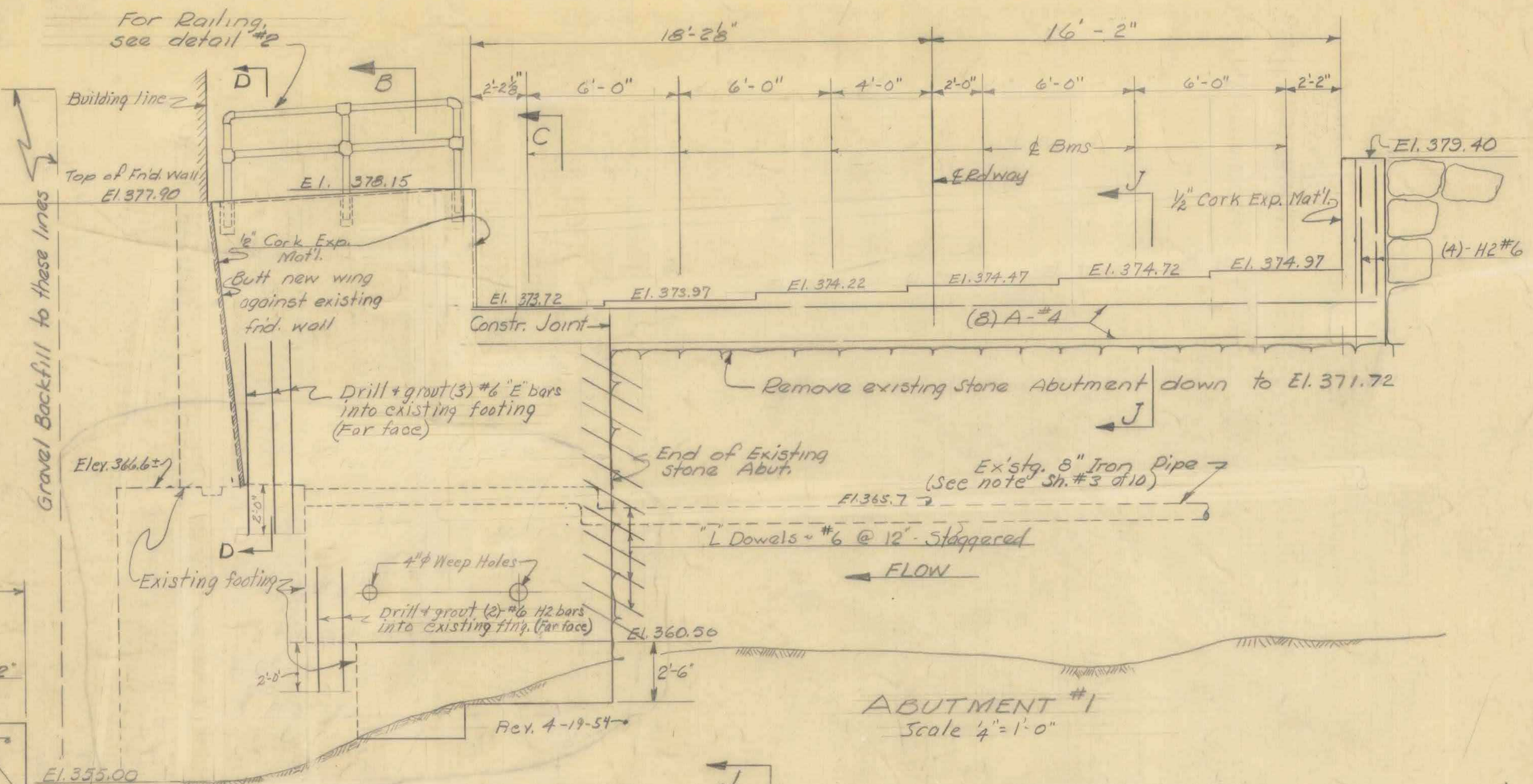
SECTION D-D
Scale 3/8"=1'-0"

Rev. 4-19-54

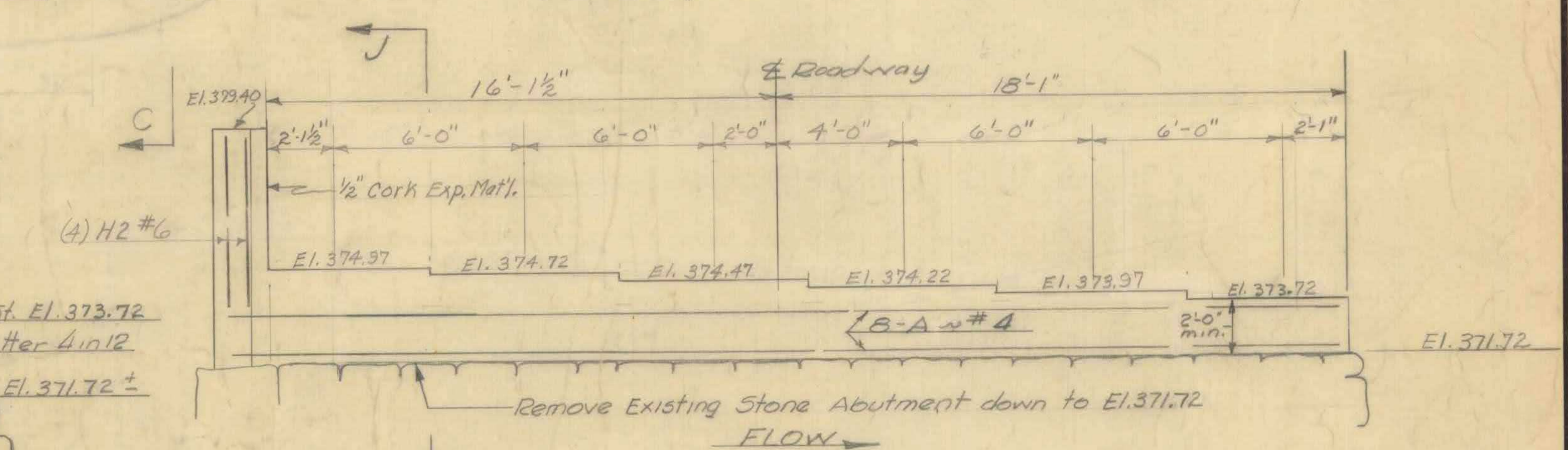


SECTION C-C
Scale 3/8"=1'-0"

Cut & bend "J" bars in field as necessary.

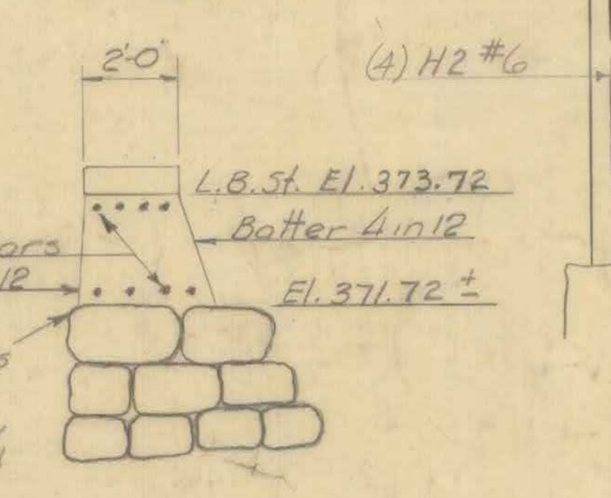


ABUTMENT #1
Scale ¼"=1'-0"

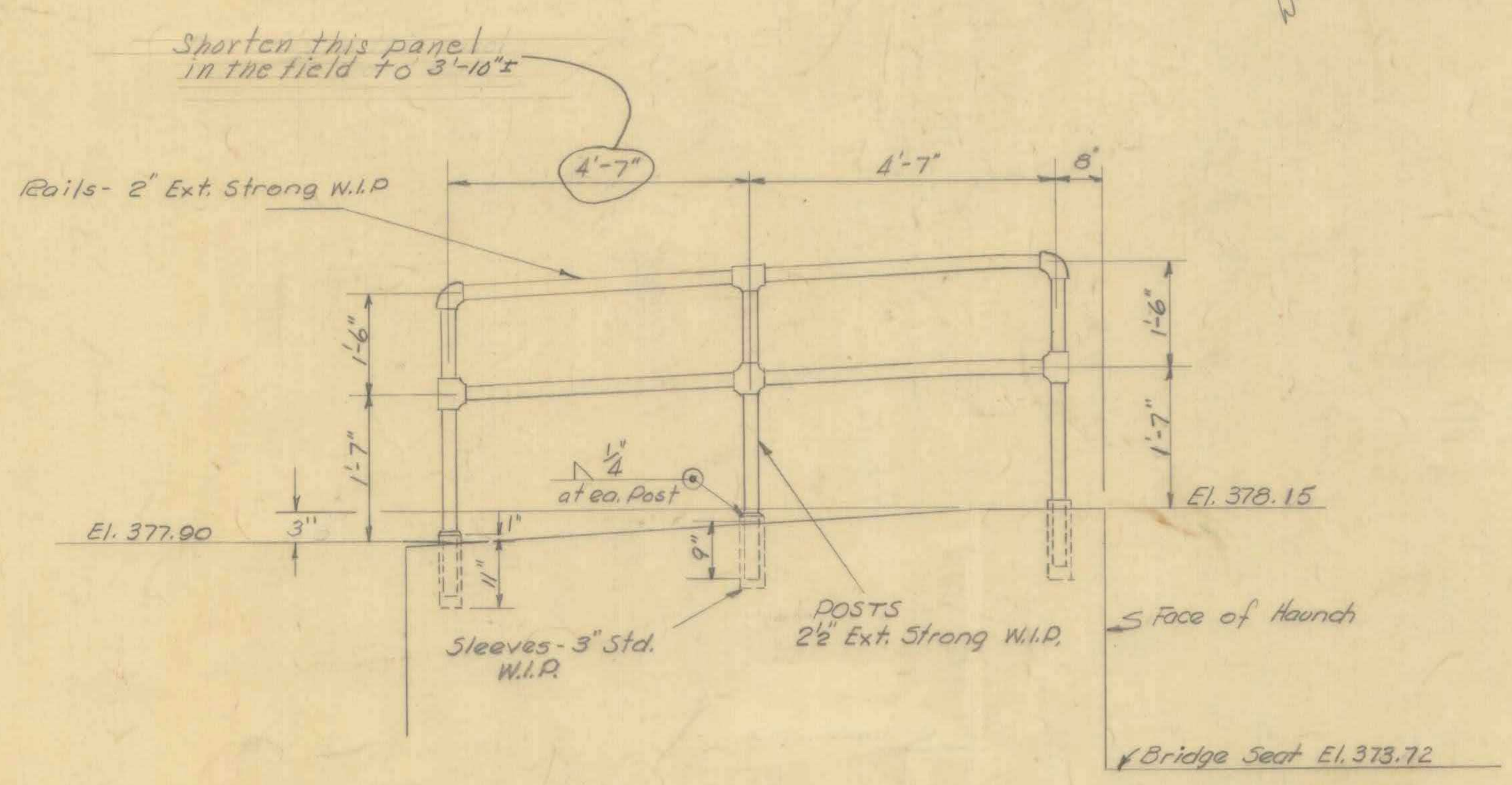


ABUTMENT #2
Scale ¼"=1'-0"

Remove existing stone abutments to approximately this elevation so that there is a minimum of 2'-0" of new concrete at low bridge seat. Min. width of bridge seat to be 2'-0".



SECTION J-J



DETAIL No 2
Scale ½"=1'-0"

See Correction on Det. #2 above to 8'-5"

Note re. Pipe Railing shown in detail No 2.
9'-2" of pipe railing to be paid for as Structural Steel, item 403-A
Railing to be painted in accordance with item 403-A.
Fittings to be malleable iron. Type of fitting optional.
Railing posts to be filled with well rammed Portland Cement & sand grout, before top fittings are installed.

PUTNEY
STP DECK(38)
BRIDGE NO. 15
SHEET 54 OF 58
FOR REFERENCE ONLY

ESTIMATED QUANTITIES

Item	Description	Quantity	Final
106-B	Chan. Excav. of Rock	70 c.y.	53
107	Struct. Excav. (mod.)	125 c.y.	126
109	Maint. of Traffic for Bridge Projects	1 L.S.	✓
222	Gravel Backfill	200 ~~100~~ c.y.	92
401-B	Concrete Cl. "B" (mod.)	125 ~~123~~ c.y.	118
402	Reinforcing Steel	13,650 ~~14,990~~ Lbs.	15,233
* 403-A	Structural Steel	44,200 ~~46,046~~ Lbs.	46,095
441	Temporary Bridge	1 L.S.	✓
442	Removal of Present Superstr.	1 L.S.	✓
572	Bridge Railing	123 ~~113~~ L.F.	113

* structural steel includes 45,816 # in the superstructure, and 230# in Pipe Railings.

Revised Abut #1 @ Putney Paper Co. factory 4-19-54
Revised Sheet. Replaces sht #4 ~ 11-25-53

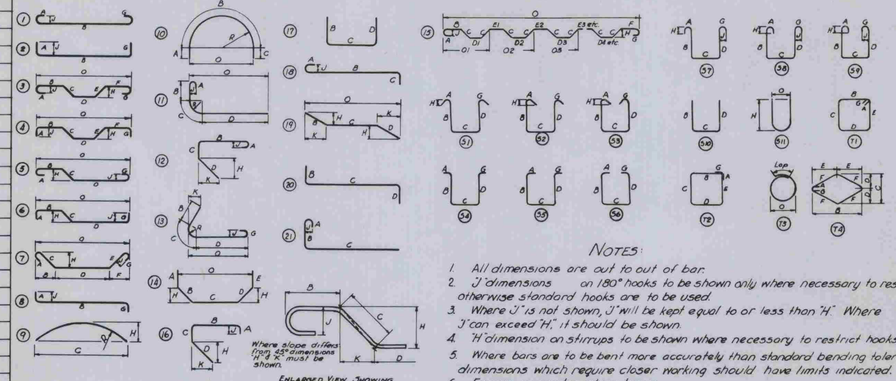
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF PUTNEY
ROUTE NO. U.S. #5 LOG STA. 38+34
Abutments & Wings

SCALE As shown
SURVEYED BY Hunt
DRAWN BY S.N. & H.W.S. & E.F.P. CHECKED BY E.F.P. & S.N.
PROJECT NO. ST-83-L
SHEET 4 OF 10

Item	No. Pieces	Size	Length	Mark	Type	A	B	C	D	E	F	G	H	J	K	R	O
82				Abutments & Wings													
84	32	4	19'-0"	A		Straight											
85	13	7	6'-3"	B		"											
86	T 10	6	5'-3"	B1		"											
87	12	6	6'-3"	C		"											
88	T 9	4	5'-3"	C1		"											
89	T 12	9	10'-3"	D	1	1'-1"	9'-2"					None		10"			
90	T 9	8	10'-3"	D1	1	1'-1"	9'-2"					None		10"			
91	11	6	9'-6"	E		Straight											
92	8	5	8'-9"	E1		"											
93	11	4	8'-9"	F		"											
94	7	4	20'-6"	G		"											
95	6	4	13'-1"	G1		"											
96	12	6	6'-0"	H2		"											
97	10	4	8'-6"	J		"											
98	28	4	7'-0"	J1		"											
99	28	4	8'-6"	J2		"											
100	T 11	7	5'-0"	N		"											
101	11	6	3'-0"	L		"											
102	16	6	4'-0"	K		"											
103																	
104				Superstructure													
105																	
106	118	5	33'-8"	1		Straight											
107	118	5	34'-10"	2	1	7	33'-8"					7"		5"			
108	T 13	6	28'-0"	4		Straight											
109	120	4	27'-7"	5		"											
110	54	4	6'-5"	6A	S2	4½"	2'-6"	8"	2'-6"			4½"					
111	T 17	4	27'-7"	9"		Straight											
112	T 13	5	33'-8"	10		"											
113	44	4	4'-5"	11	S3	4½"	1'-1"	1'-6"	1'-1"			4½"					
114	40	4	1'-9"	12		Straight											
115																	
116																	
117																	
118																	
119																	
120				Change in Reinforcing Steel due to Revision of 4-19-54													
121																	
122																	
123				Mark		Number of Bars ordered before Revision				Number of Bars required as per Revision				Extra Bars left on hand These extra bars can be used for splicing to comply with revision			
124																	
125																	
126																	
127																	
128				A		32				32				—			
129				B		13				9				4			
130				B1		10				7				3			
131				C		12				8				4			
132				C1		9				7				2			
133				D		12				8				4			
134				D1		9				7				2			
135				E		11				10				1			
136				E1		8				6				2			
137				F		11				7				4			
138				*G		7				7				0			
139				G1		6				5				1			
140				H2		12				10				2			
140				J2		28				20				8			
141				N		11				0				11			
142				L		11				11				0			
143				K		16				0				16			
144																	
145																	
146				For revised footings splice J & J1 bars.													
147				" " Wall " " J1 & J2 "													
148																	
149				*Cut to required length.													
150																	
151																	
152																	
153																	
154																	
155																	
156																	
157																	
158																	
159																	
160																	
161																	
162																	

TYPICAL BAR BENDS



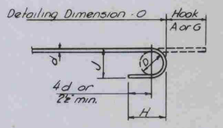
NOTES:

1. All dimensions are out to out of bar.
2. 'J' dimensions on 180° hooks to be shown only where necessary to restrict hook size otherwise standard hooks are to be used.
3. Where 'J' is not shown, 'J' will be kept equal to or less than 'H.' Where 'J' can exceed 'H,' it should be shown.
4. 'H' dimension on stirrups to be shown where necessary to restrict hooks.
5. Where bars are to be bent more accurately than standard bending tolerances, bending dimensions which require closer working should have limits indicated.
6. Figures in circles show types.
7. No allowance for bend curvature is to be made except for standard hook & radii in excess of same.

Item	No. Pieces	Size	Length	Mark	Type	A	B	C	D	E	F	G	H	J	K	R	O
163																	
164																	
165																	
166																	
167																	
168																	
169																	
170				Revision 6-23-54 Reinforcing for Curb on Granite Wall (Sheet 3 of 10)													
171																	
172	4	6	23'-0"	N		Straight											
173																	
174																	
175																	
176																	
177																	
178																	
179																	
180																	
181																	
182																	
183																	
184																	
185																	
186																	
187																	
188																	
189																	
190																	

"T" Denotes one bar added for testing purposes.

8. Bar reinforcement metal shall conform to the requirements of the Standard Specifications for new Billet-Steel Concrete Reinforcement Bars (Intermediate Grade) Serial Designation A.A.S.H.O. M31-48 or its latest revision. All bars shall be deformed to conform with A.S.T.M. Specifications A 305-49.



STANDARD HOOK DETAIL

BAR SIZES

Equivalent Size	Present (Numbers)
¼"ϕ	#2
⅜"ϕ	#3
½"ϕ	#4
⅝"ϕ	#5
¾"ϕ	#6
⅞"ϕ	#7
1"ϕ	#8
1"□	#9
1⅛"□	#10
1¼"□	#11

ESTIMATED QUANTITIES

Location	Pounds
Abutments	~~2620~~
Superstructure	~~12370~~
Total	~~14990#~~ 13,650# Finals 15,233
Revision 6-23-54	140#
Total	~~15130#~~

See Revision 6-23-54 on sheet 3 (Railing & Curb added))

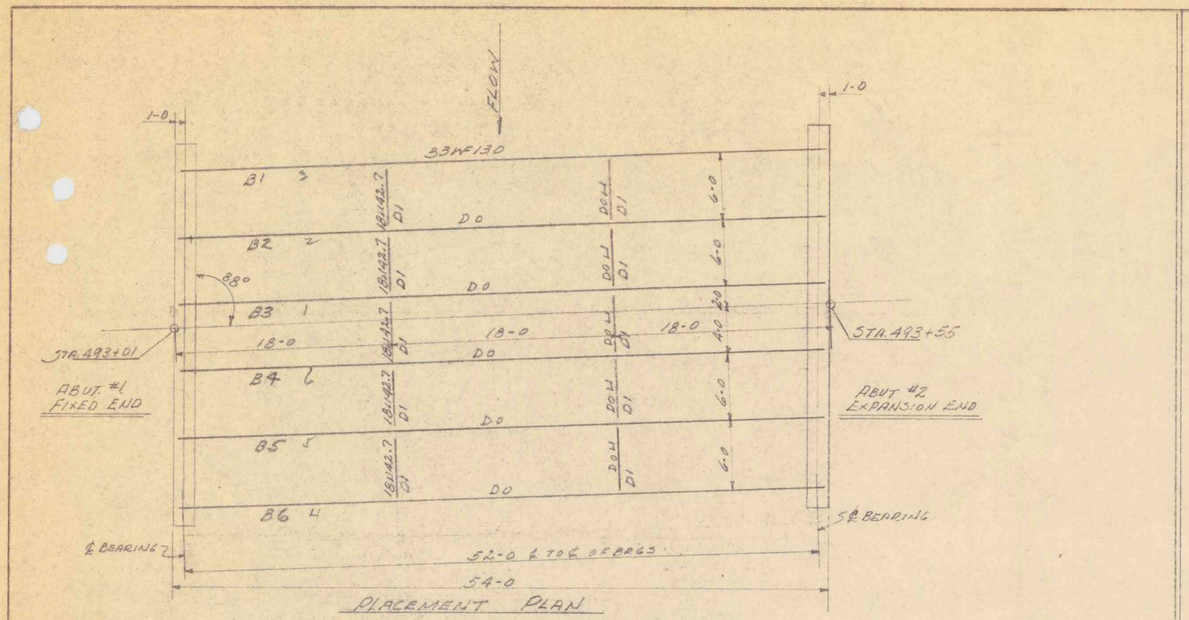
See Revision of 4-19-54 on Sheets 3 & 4

Revised Sheet Replaces Sht. #5 12-31-53

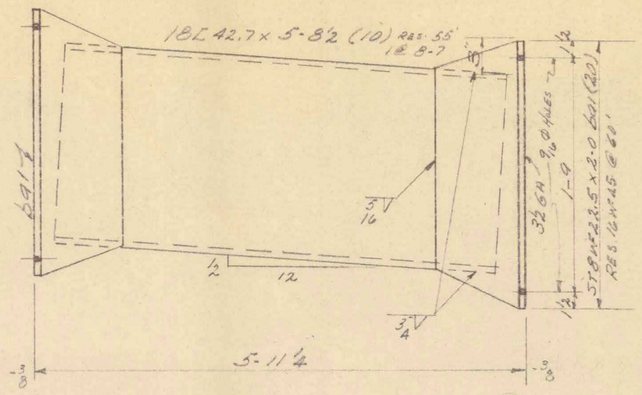
— PUTNEY —
Bridge over Sacketts Brook

Surveyed by
Designed by
Drawn by E.F.P.
Traced by
Checked by C.F.H. & F.T.G. & S.N.
Series ST No. 83 Filed
Sheet 5

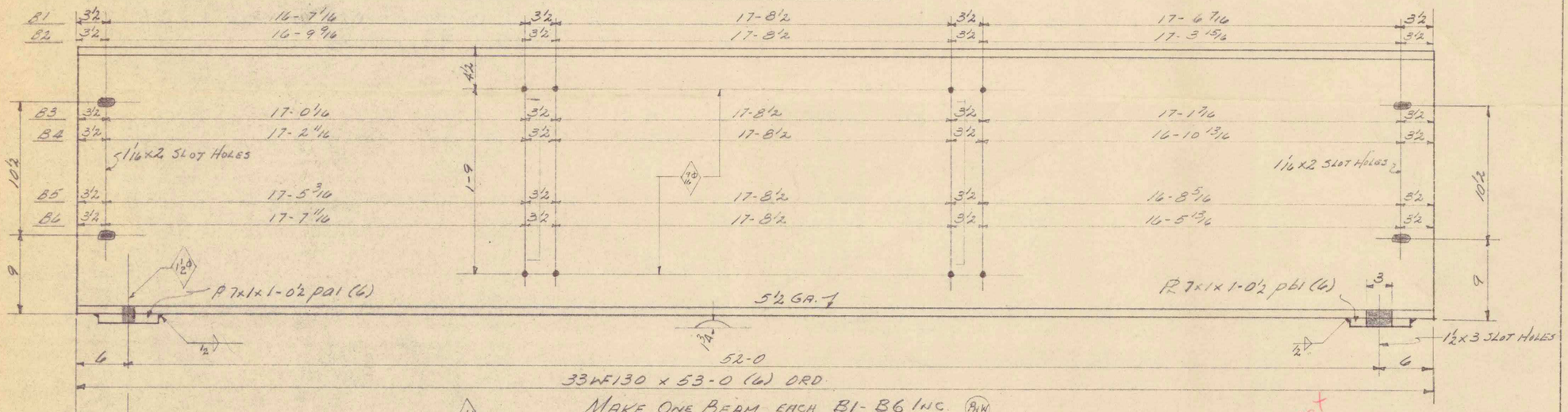
PRINTED BY STAFFORD-MOSS CO., BOSTON, MASS., RE-ORDER NO. B-422



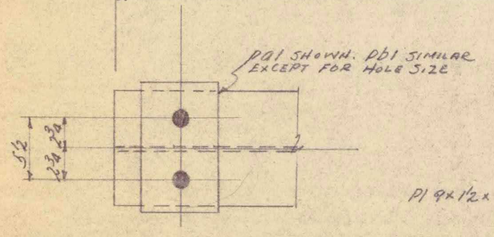
PLACEMENT PLAN

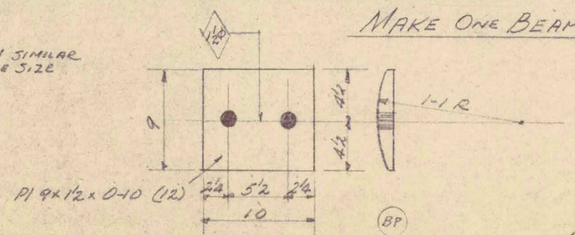


MAKE 10 DIAPHRAGMS D1 (FW)

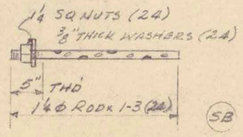


MAKE ONE BEAM EACH B1-B6 INC. (B1W)





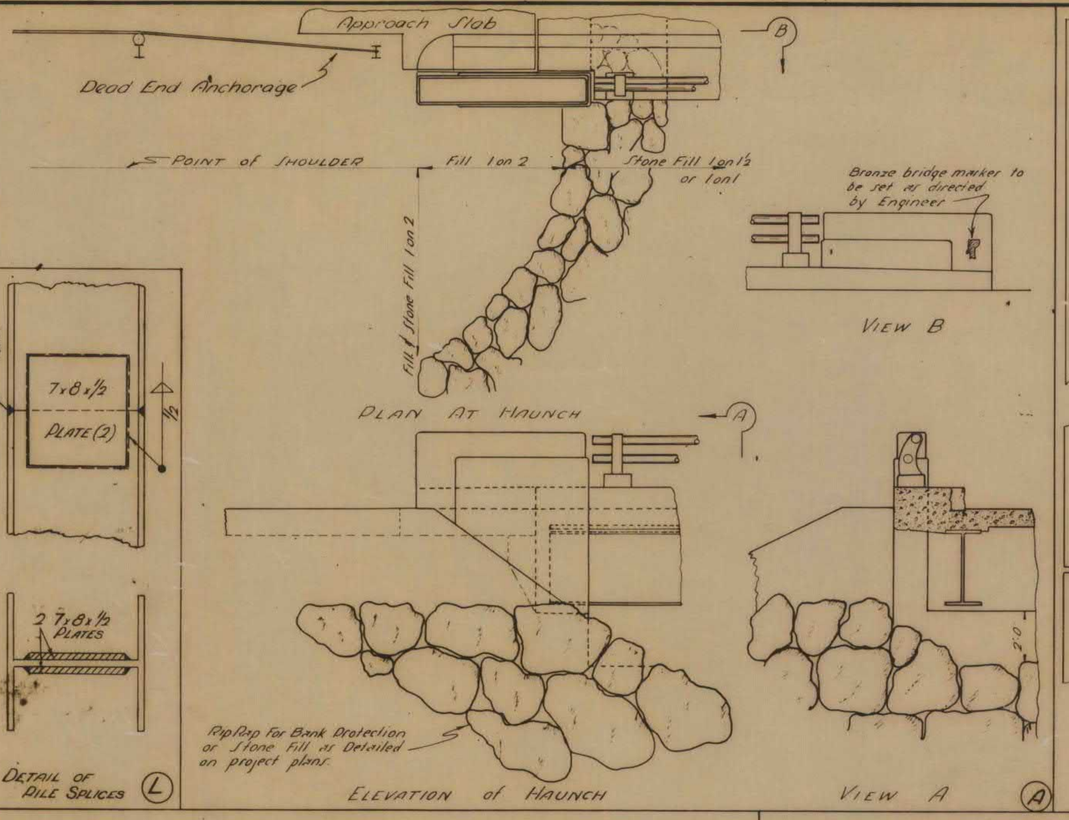
MAKE 12 PLATES P1 (BP)

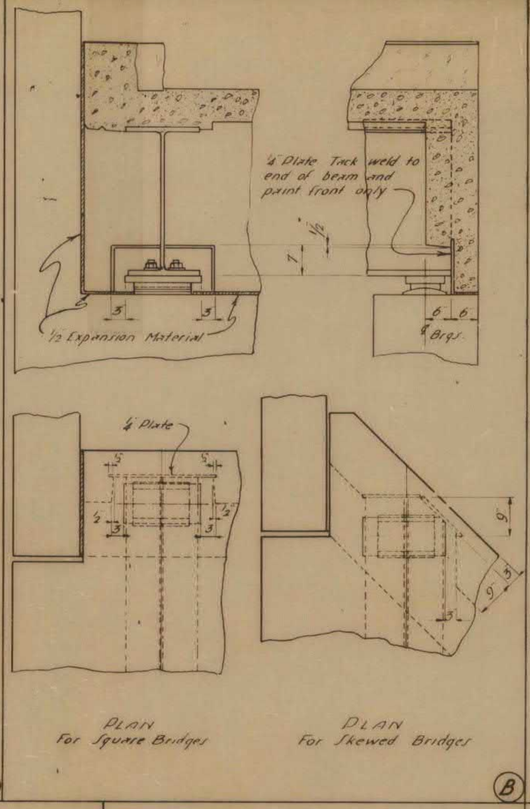


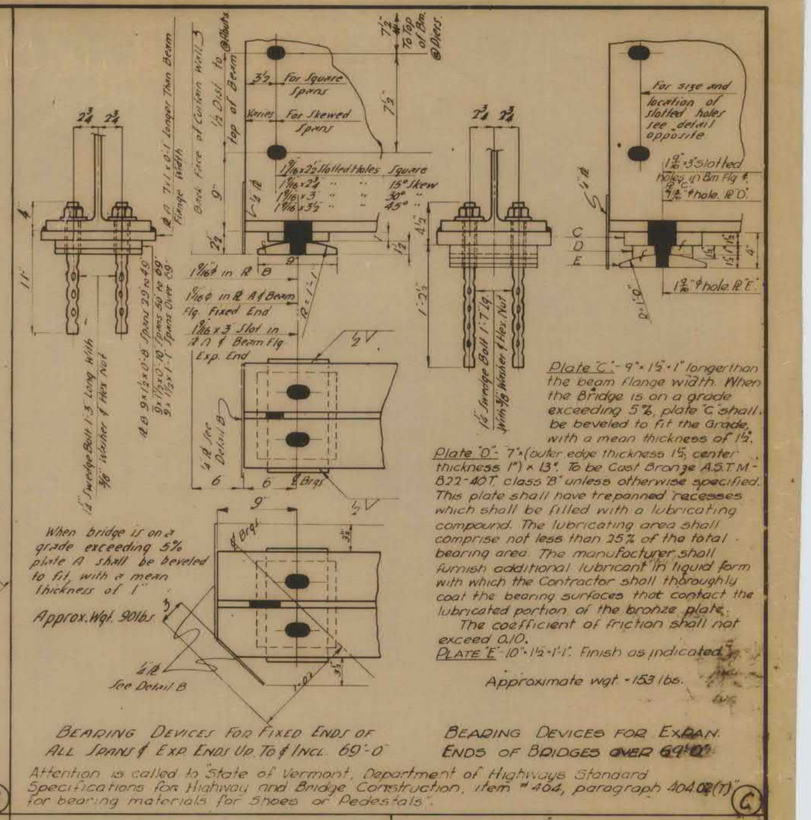
MAKE 24 SWEDGE BOLTS SB1 (SB)

Correct as of 3/19/54

VERMONT STRUCTURAL STEEL CORPORATION BURLINGTON, VT.			
REVISIONS	DATE	BY	JACKETT'S BROOK BRIDGE
DIAPHRAGM SPA.	3-8-54	C.W.	LOCATION PUTNEY, VT.
			OWNER ST. OF VT. DEPT OF HIGHWAYS
			CONT. O.W. MILLER CO. INC.
			NO. AS NOTED MADE BY C.W.
			DWG. CHECKED BY
			PART R.L. (VT. SPECS.) DATE 2-17-54
			JOB NO. 373 SHEET NO. 1

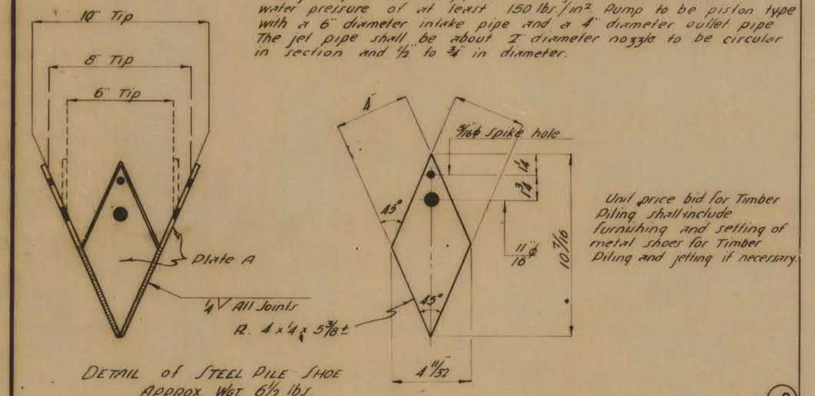






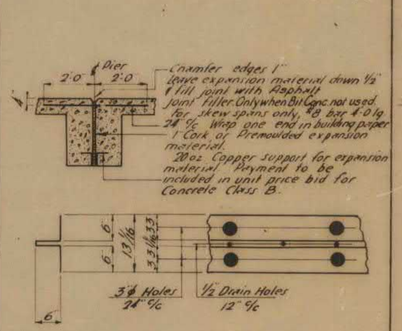
Attention is called to State of Vermont, Department of Highways Standard Specifications for Highway and Bridge Construction, Item "404, paragraph 404.02(1)" for bearing materials for Shoes or Pedestals".

(C)



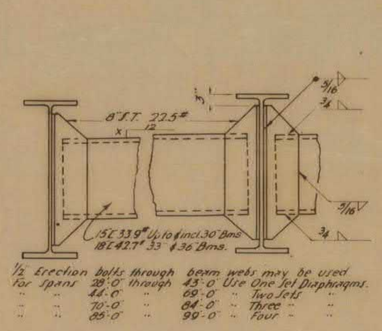
DETAIL of STEEL PILE SHOE
APPROX. WGT 6½ lbs.
Other Type of Shoes may be furnished with the approval of the Engineer.

(D)



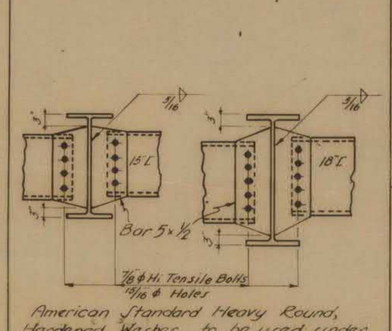
DETAIL of 20 oz. COPPER SUPPORT OVER PIERS

(E)



DETAIL of WELDED DIAPHRAGMS

(F)

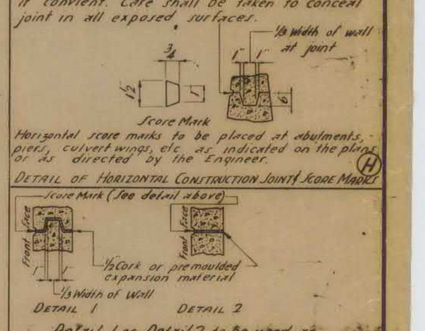


American Standard Heavy Round, Hardened Washer to be used under all heads and nuts.

ALTERNATE DETAIL FOR FIELD BOLTED DIAPHRAGMS

(G)

Construction joint may be placed at score marks if convient. Care shall be taken to conceal joint in all exposed surfaces.



Horizontal score marks to be placed at abutments, piers, culvert wings, etc. as indicated on the plans or as directed by the Engineer.

DETAIL OF HORIZONTAL CONSTRUCTION JOINT (SCORE MARK)

(H)

Detail 1 or Detail 2 to be used as shown on Contract Plans.

DETAIL OF VERTICAL EXPANSION JOINTS

(K)

REVISIONS & CORRECTIONS

Det. B - Channel Sizes shown - 9/11/56
Det. C - Dims for slotted holes @ Piers changed 11/2/56
Det. D - Approach slab & rail details revised. Haunch at beam shown View A } 2/26/57
Det. B - Haunch at beam shown
Det. C - Note regarding lubricating plates 6/3/57
Det. C - Note on Materials in Shoes or Pedestals 9/16/57
Det. B - Channel Sizes as Per Beam depth 8/2/58
Changed Bit. Joint Filler to Asphalt Joint Filler 9-16-58 MR
Det. C - Changed type of Expansion Bearing 12-5-58

DRAWN BY L.M. Bjarn 2-36
TRACED BY A.B.M.x Dougal 3-36
CHECKED BY J.L. Hubbard 3-36

CORRECT June 11, 1936
A. D. Tuttle
BRIDGE ENGINEER

APPROVED June 11, 1936
H.E. Laurent
CHIEF ENGINEER

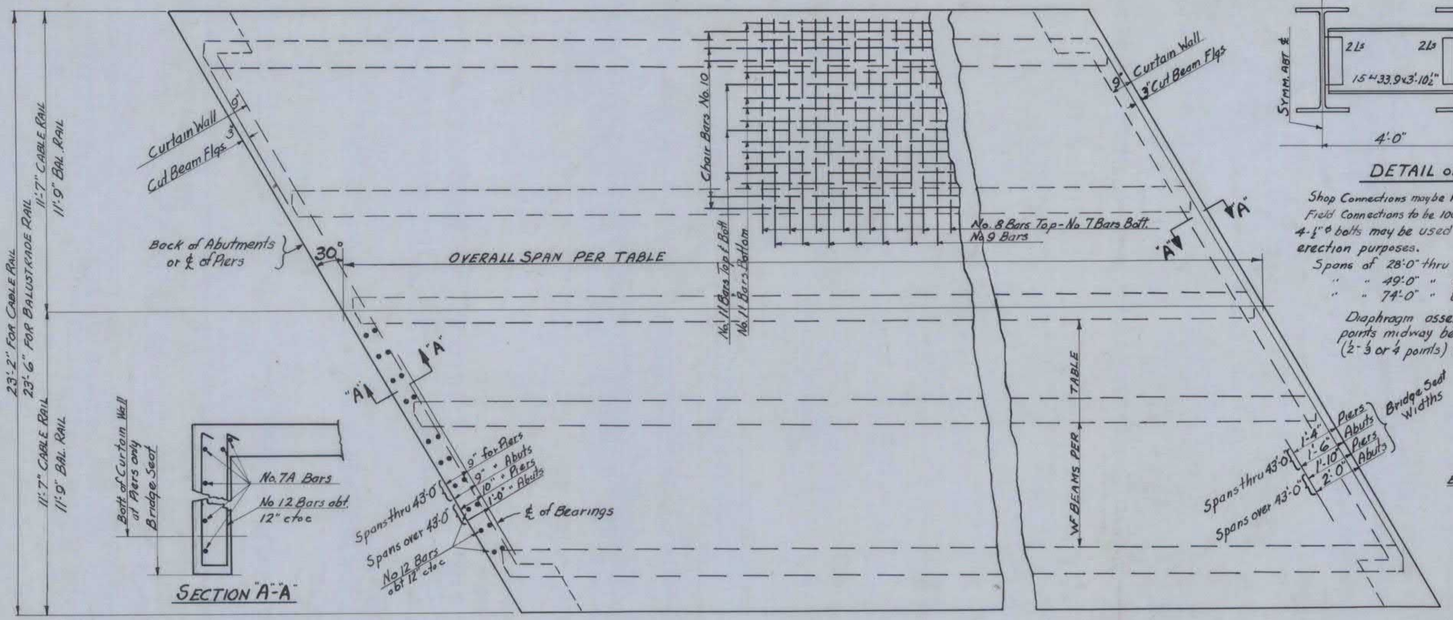
CONSTRUCTION DETAILS FOR WF BEAM BRIDGES

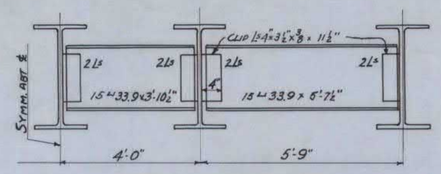
Revisions & Corrections Cont.
Det. G. Revised Diaph. Connection and added note re hardened washers 6/5/59 LMB
Det. L Added 6/5/59 LMB Revised 7-23-59

DEPARTMENT OF HIGHWAYS
STANDARD STRUCTURES

SB-20-56

PUTNEY
STP DECK(38)
BRIDGE NO. 15
SHEET 57 OF 58
FOR REFERENCE ONLY



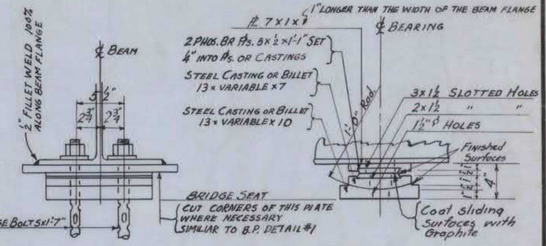


DETAIL of DIAPHRAGMS

Shop Connections may be riveted or 100% Electric welded
Field Connections to be 100% Electric welded. If desired
4-1" ϕ bolts may be used at ends and thru beams for
erection purposes.

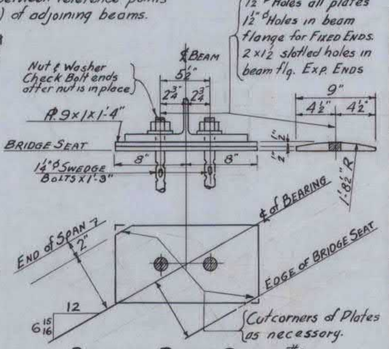
Spans of 28'-0" thru 43'-0" require 1 set of diaphragms.
" " 49'-0" " 69'-0" " 2 " " "
" " 74'-0" " 84'-0" " 3 " " "

Diaphragm assemblies shall be located to connect points midway between reference points (⅓ or ¼ points) of adjoining beams.



BEARING PLATE DETAIL #2

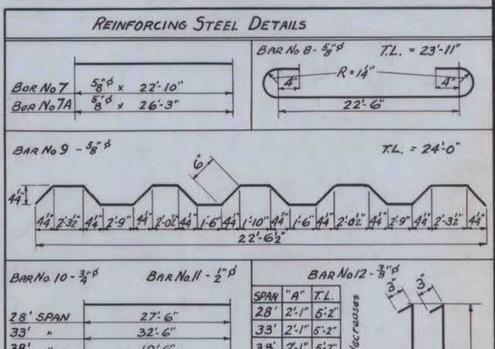
FOR EXPANSION ENDS OF SPANS 74'-0" AND OVER.
Approx. Wt. of 1 Assembly 155#
NOTE: IN CASE PHOSPHOR BRONZE IS UNOBTAINABLE WITHOUT FURTHER PRIORITY THE CONTRACTOR MAY SUBSTITUTE STRUCTURAL STEEL FOR PLATES AS SHOWN ABOVE.



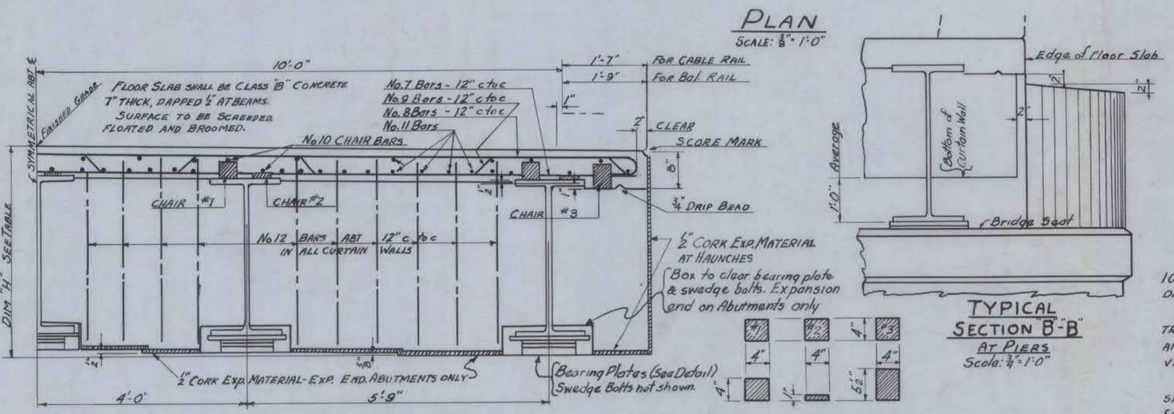
BEARING PLATE DETAIL #1

FOR BOTH ENDS OF SPANS 28'-0" to 69'-0" INCL.
FOR FIXED ENDS ONLY OF SPANS 74'-0 AND OVER
Approx. Wt. of 1 Assembly 46#

REINFORCING STEEL DETAILS



SPAN	"A"	T.L.
28'	2'-1"	5'-2"
33'	2'-1"	5'-2"
38'	2'-1"	5'-2"
43'	2'-7"	6'-2"
49'	2'-7"	6'-2"
54'	2'-10"	6'-8"
59'	3'-1"	7'-2"
64'	3'-1"	7'-2"
69'	3'-1"	7'-2"
74'	2'-10"	6'-8"
79'	3'-1"	7'-2"
84'	3'-1"	7'-2"
89'	3'-1"	7'-2"

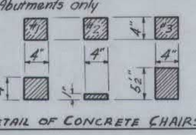


TYPICAL HALF SECTION (EXP. END ABUTMENT DETAILS SHOWN)

Scale: ¾" = 1'-0"

TYPICAL SECTION B"-B" AT PIERS

Scale: ¾" = 1'-0"



DETAIL OF CONCRETE CHAIRS

NOTES

"STEEL SUPERSTRUCTURE" TO INCLUDE 5 WF BEAMS, 10 BEARING PLATE ASSEMBLIES AND INDICATED DIAPHRAGMS PER SPAN.

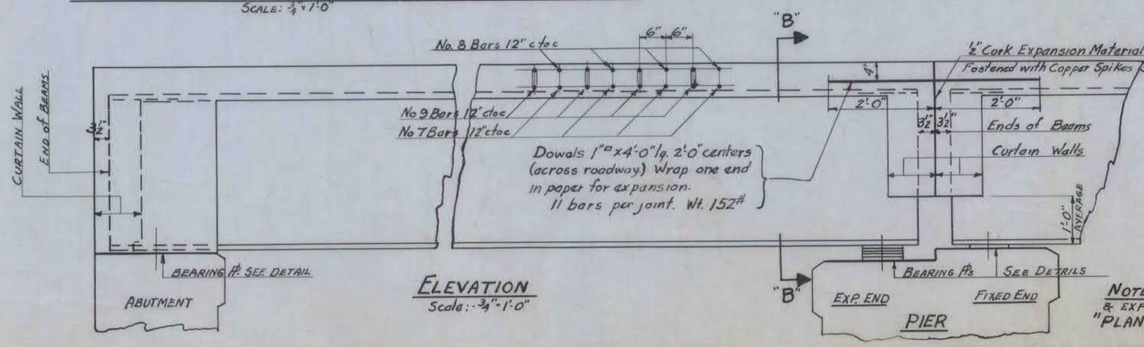
ALL STEEL BEAMS SHALL BE ROLLED TO A TRUE CIRCULAR CAMBER, FULL LENGTH OF THE BEAM, AND THE MIDDLE ORDINATE TO BE AS NOTED FOR VARIOUS SPANS IN THE TABLE.

ALL STRUCTURAL STEEL SHALL BE PAINTED AS SPECIFIED UNDER ITEM 403.03 STANDARD ROAD & BRIDGE SPECIFICATIONS, STATE OF VERMONT - NOVEMBER, 1948

THE FINAL COAT OF FIELD PAINT SHALL BE GREEN, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

FURNISH TRANSVERSE REINFORCEMENT AS FOR SQUARE SPAN. CUT TRANSVERSE BARS IN FIELD TO FIT ONE SKEW END AND USE CUT OFF ENDS FOR THE OPPOSITE SKEW END.

THIS SHEET DOES NOT INCLUDE QUANTITIES FOR RAILING CURBS AND POSTS.



ELEVATION

Scale: ¾" = 1'-0"

NOTE: FOR LOCATION OF FIXED & EXPANSION ENDS REFER TO "PLAN & PROFILE SHEET"

TABLE OF QUANTITIES FOR ONE SPAN

Structural Steel - H-15 Lane Loading								Reinforcing Steel Schedule								Conc Class "A"	
Size WF Beam	Length	Mid. Ord. for Camber	Sec. Mod. Reqd	Dim "H" Fixed	Dim "H" Exp	Tot. Wt.	Overall Span	Bar Mk.	7A	8	9	10	11	12	Tot. Wt.	Cable Rail. Cy.	Bal. Rail. C.Y.
23⅞ x 76#	27'-5"	¾"	153.6	2.71	2.71	11663	28'-0"	28	12	28	28	12	48	40	3912	17.6	17.9
24⅛ x 84	32'-5	⅞"	196.3	2.73	2.73	15051	33'-0"	33	12	33	33	12	48	40	4541	20.2	20.5
24 x 100	37'-5	1"	241.5	2.72	2.72	19944	38'-0"	38	12	38	38	24	96	40	5230	22.7	23.1
29⅛ x 108	42'-5	1⅛"	289.5	3.21	3.21	24141	43'-0"	43	12	43	43	24	96	40	5895	26.1	26.5
30⅛ x 124	48'-5	1¼"	350.5	3.23	3.23	32028	49'-0"	49	12	49	49	24	96	40	6672	29.5	30.1
33¼ x 141	53'-5	1⅜"	407.0	3.49	3.49	39669	54'-0"	54	12	54	54	24	96	40	7309	32.5	33.1
35⅛ x 150	58'-5	1½"	471.0	3.71	3.71	45823	59'-0"	59	12	59	59	24	96	40	7924	35.4	36
36 x 160	63'-5	1⅝"	537.5	3.72	3.72	52744	64'-0"	64	12	64	64	24	96	40	8550	38.0	38.7
36⅛ x 182	68'-5	1⅞"	614.0	3.75	3.75	64270	69'-0"	69	12	69	69	24	96	40	9183	40.5	41.3
33¼ x 220	73'-5	2"	698.5	3.49	3.49	83936	74'-0"	74	12	74	74	24	96	40	9855	42.8	43.6
35⅞ x 230	78'-5	2¼"	779.0	3.71	3.96	93387	79'-0"	79	12	79	79	24	96	40	10489	45.8	46.6
36 x 245	83'-5	2½"	881.0	3.72	3.97	106143	84'-0"	84	12	84	84	36	144	40	11169	48.3	49.2
36¼ x 260 Final Mod.	88'-5"	2¾"	895.0	3.74	3.99	118150	89'-0"	89	12	89	89	36	144	40	11789	50.8	

STANDARD I BEAM BRIDGE - 30° SKEW

REINFORCED CONCRETE DECK

20' ROADWAY
28'-0" to 84'-0" SPANS

USED FOR THE FOLLOWING BRIDGES.

NAME	PROJECT NO.	SPAN.
GUILFORD	SA	89'-0"

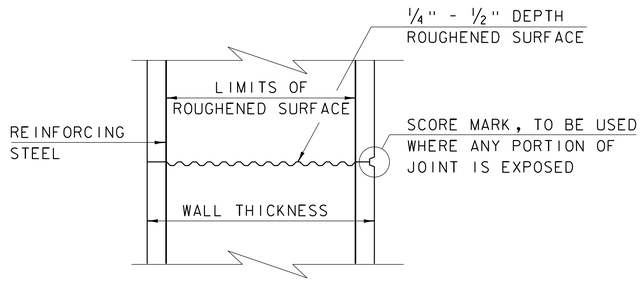
REVISIONS: BEAM SIZES BROUGHT UP TO DATE WHEN RE-TRACED 5/21/52

Surveyed by
Designed by H.E.S.
Drawn by H.E.S.
ReTraced by E.T.B. 5/21/52
Checked by W.H.D.
Series SIB No. 30° SKEW Filed
20 Sheet of Sheets

PUTNEY
STP DECK(38)
BRIDGE NO. 15
SHEET 58 OF 58
FOR REFERENCE ONLY

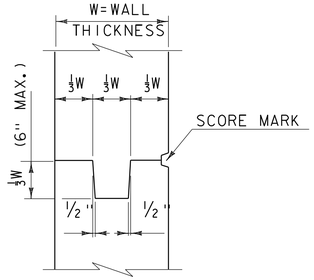
CONCRETE GENERAL NOTES

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.

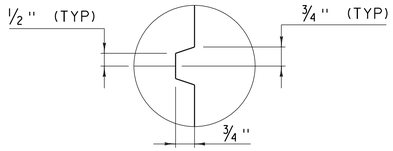


TYPICAL HORIZONTAL CONSTRUCTION JOINT
(NOT TO SCALE)

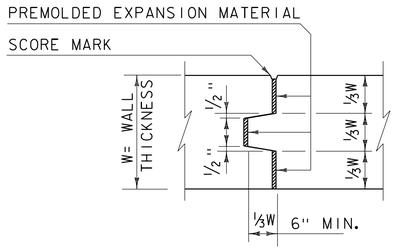
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



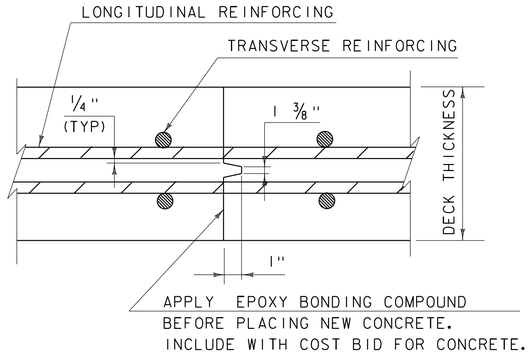
TYPICAL CONCRETE CONSTRUCTION JOINT
(NOT TO SCALE)



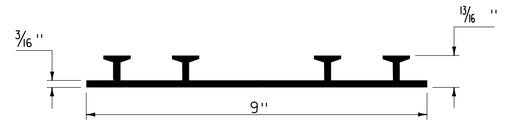
SCORE MARK DETAIL
(NOT TO SCALE)



TYPICAL CONCRETE EXPANSION JOINT
(NOT TO SCALE)



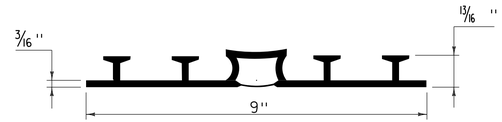
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS
(NOT TO SCALE)



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

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

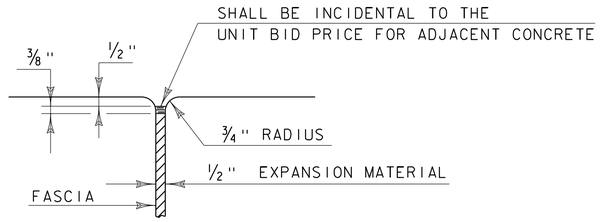
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



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.



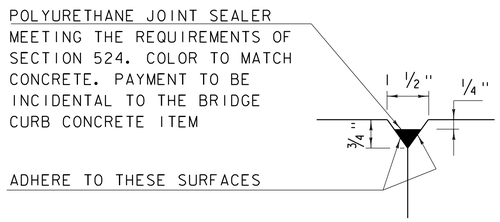
JOINT BETWEEN FASCIA AND WINGWALL
(NOT TO SCALE)

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

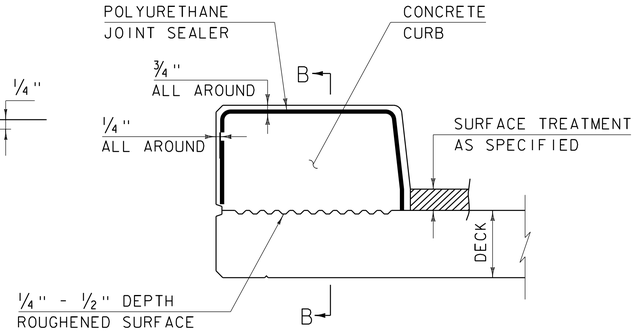
CONCRETE DETAILS AND NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

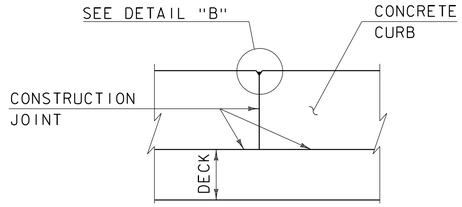
STRUCTURES DETAIL SD-501.00



DETAIL "B"
(NOT TO SCALE)



CONCRETE CURB JOINT SECTION
(NOT TO SCALE)



SECTION B - B
(NOT TO SCALE)

1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION

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.

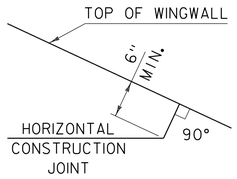
2. IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 15'-0" CENTER TO CENTER AND 2'-0" MINIMUM FROM THE CENTER OF NEAREST BRIDGE RAILING POST.

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.

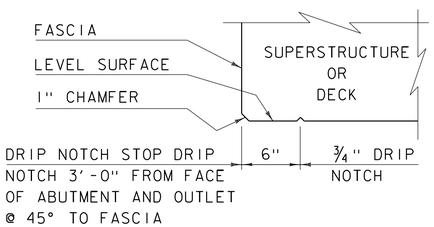
4. WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN ADJACENT PLACEMENTS.

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.

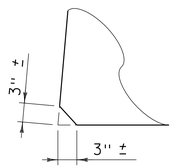
6. THE JOINT SPACING AND DETAILS SHOWN SHALL APPLY TO SIDEWALKS WHEN SHOWN IN THE PLANS.



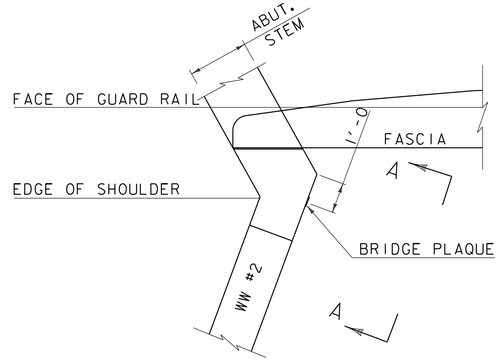
HORIZONTAL WINGWALL CONSTRUCTION JOINT
(NOT TO SCALE)



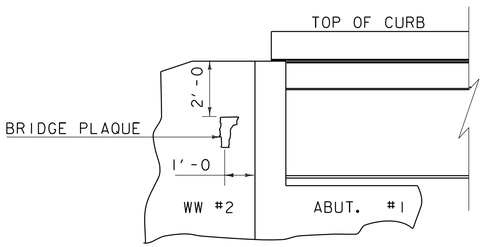
DRIP NOTCH DETAIL
(NOT TO SCALE)



ACUTE ANGLE CLIP 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.

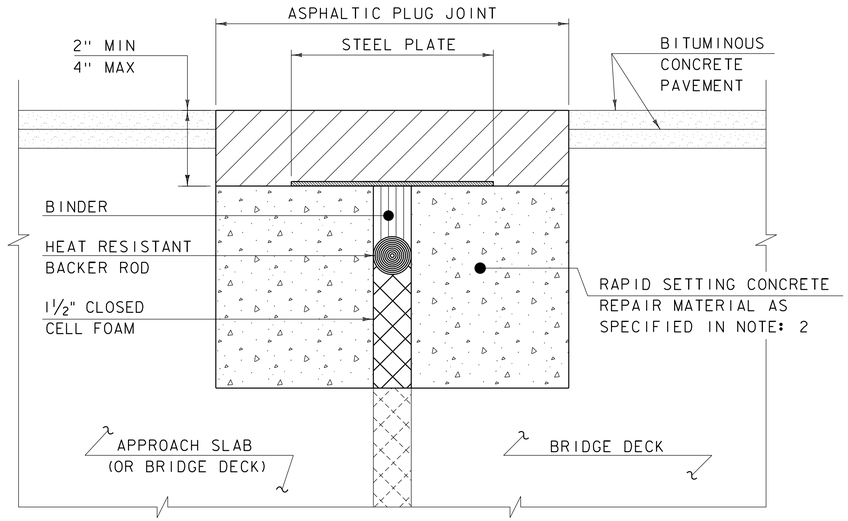
PAYMENT FOR INSTALLATION OF THE BRIDGE PLAQUE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

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

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL
SD-502.00



ASPHALTIC PLUG JOINT DETAIL - REHAB

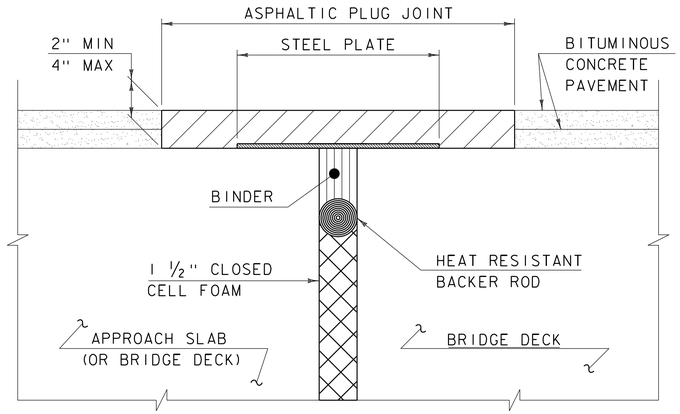
NOTES:

1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL BE INCLUDED IN THE BID PRICE OF ITEM 580.20 RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.

2. THE CONTRACTOR SHALL REPLACE REMOVED MATERIAL THAT IS LESS THAN 4" FROM FINISHED GRADE WITH ASPHALTIC PLUG JOINT MATERIAL MEETING THE REQUIREMENTS OF SUBSECTION 707.15. ALL REMOVED MATERIAL THAT IS GREATER THAN 4 INCHES FROM FINISHED GRADE SHALL BE REPLACED WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.

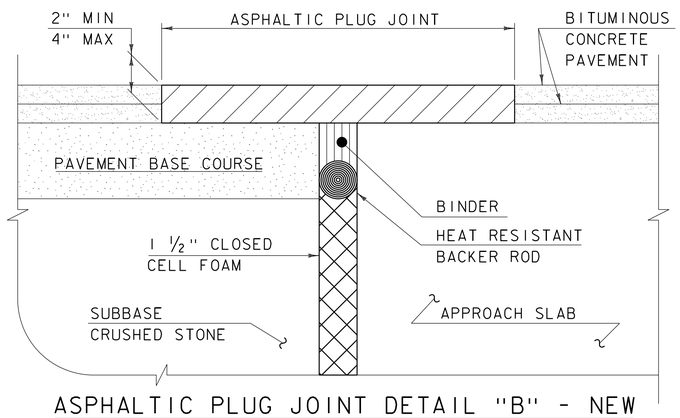
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.

4. PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. THE STEEL PLATES MAY BE OMITTED WHERE THE ENGINEER DETERMINES THAT THE APPROACH SLAB OR BRIDGE DECK WILL PROVIDE INADEQUATE SUPPORT AND WHERE VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.



ASPHALTIC PLUG JOINT DETAIL "A" - NEW

NOTE:
PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER.



ASPHALTIC PLUG JOINT DETAIL "B" - NEW

ASPHALTIC PLUG JOINT NOTES

INSTALLATION:

1. LOCATE THE JOINT CENTRALLY OVER THE DECK OVERLAY EXPANSION GAP OR FIXED JOINT, MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
2. REMOVE THE BITUMINOUS CONCRETE PAVEMENT FULL DEPTH AS SHOWN ON THE PLANS. THE PAVEMENT SHALL BE DRY AND SAW CUT TO THE LIMITS REQUIRED TO PLACE THE JOINT. A PNEUMATIC HAMMER AND CHISEL MAY BE USED ADJACENT TO THE CURB ONLY WHEN SAW CUTTING IS NOT POSSIBLE.
3. BLAST CLEAN THE JOINT AREA OF DEBRIS, ASPHALT AND SHEET MEMBRANE. THOROUGHLY DRY THE JOINT AREA WITH COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
4. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1" +/- OF BINDER ABOVE THE ROD.
5. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.
6. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.

WEATHER LIMITATIONS

APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL OR AS RECOMMENDED BY THE MANUFACTURER:

1. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
2. THE ROAD SURFACE IS DRY.
3. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.

DETAILS ON THIS SHEET ARE NOT TO SCALE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
AUGUST 29, 2011	ADD DETAIL "B" AND REV. NOTES

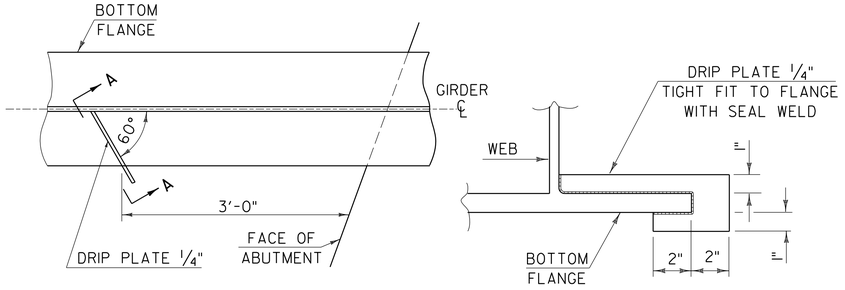
BRIDGE JOINT
ASPHALTIC PLUG

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - DIVISION

STRUCTURES DETAIL
SD-516.10

STRUCTURAL STEEL GENERAL NOTES:

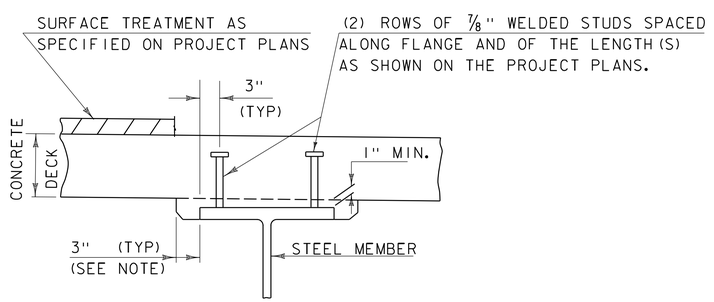
1. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH-STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SUBSECTION 506.19, UNLESS OTHERWISE SPECIFIED.
2. ALL HOLES IN THE WEBS OF THE FASCIA GIRDERS THAT ARE NOT OTHERWISE FILLED, SHALL BE FILLED WITH EITHER BUTTON HEAD OR HEX HEAD BOLTS. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19.
3. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.
4. ANY CONNECTIONS THAT ARE NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.
5. STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01 OF THE STANDARD SPECIFICATIONS.
6. ENDS OF GIRDERS ARE TO BE VERTICAL IN THEIR FINAL POSITION.
7. AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING FINISHED GRADES.



PLAN DRIP PLATE

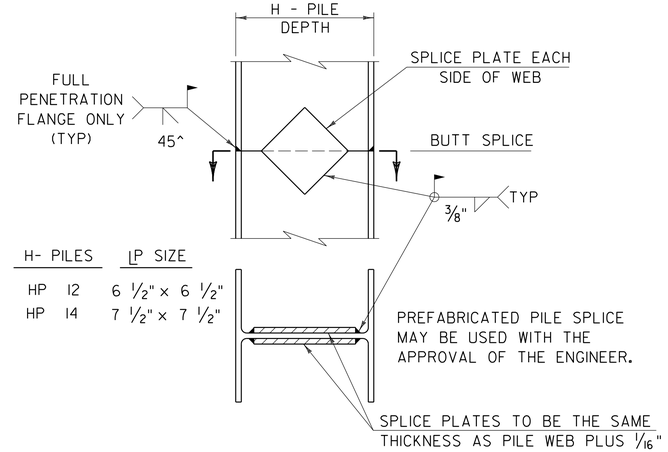
SECTION A - A

NOTE: DRIP PLATES SHALL BE PLACED ON OUTSIDE EDGE OF FASCIA GIRDERS ON THE HIGH SIDE OF ALL PIERS AND ABUTMENTS OR AS INDICATED ON PROJECT PLANS.



NOTE:
THE 3" HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. ANY VOIDS RESULTING FROM FORMING SYSTEM ELEMENTS SHALL BE FILLED WITH JOINT SEALER, POLYURETHANE MEETING THE REQUIREMENTS OF SECTION 524. THE COST OF THE JOINT SEALER, POLYURETHANE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

HAUNCH AND SHEAR CONNECTOR DETAIL



H- PILES	LP SIZE
HP 12	6 1/2" x 6 1/2"
HP 14	7 1/2" x 7 1/2"

DETAIL OF PILE SPLICE

DETAILS ON THIS SHEET ARE "NOT TO SCALE" UNLESS NOTED OTHERWISE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
JUNE 4, 2010	MODIFIED NOTES

STRUCTURAL STEEL DETAILS & NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL
SD-601.00