

STATE OF VERMONT AGENCY OF TRANSPORTATION



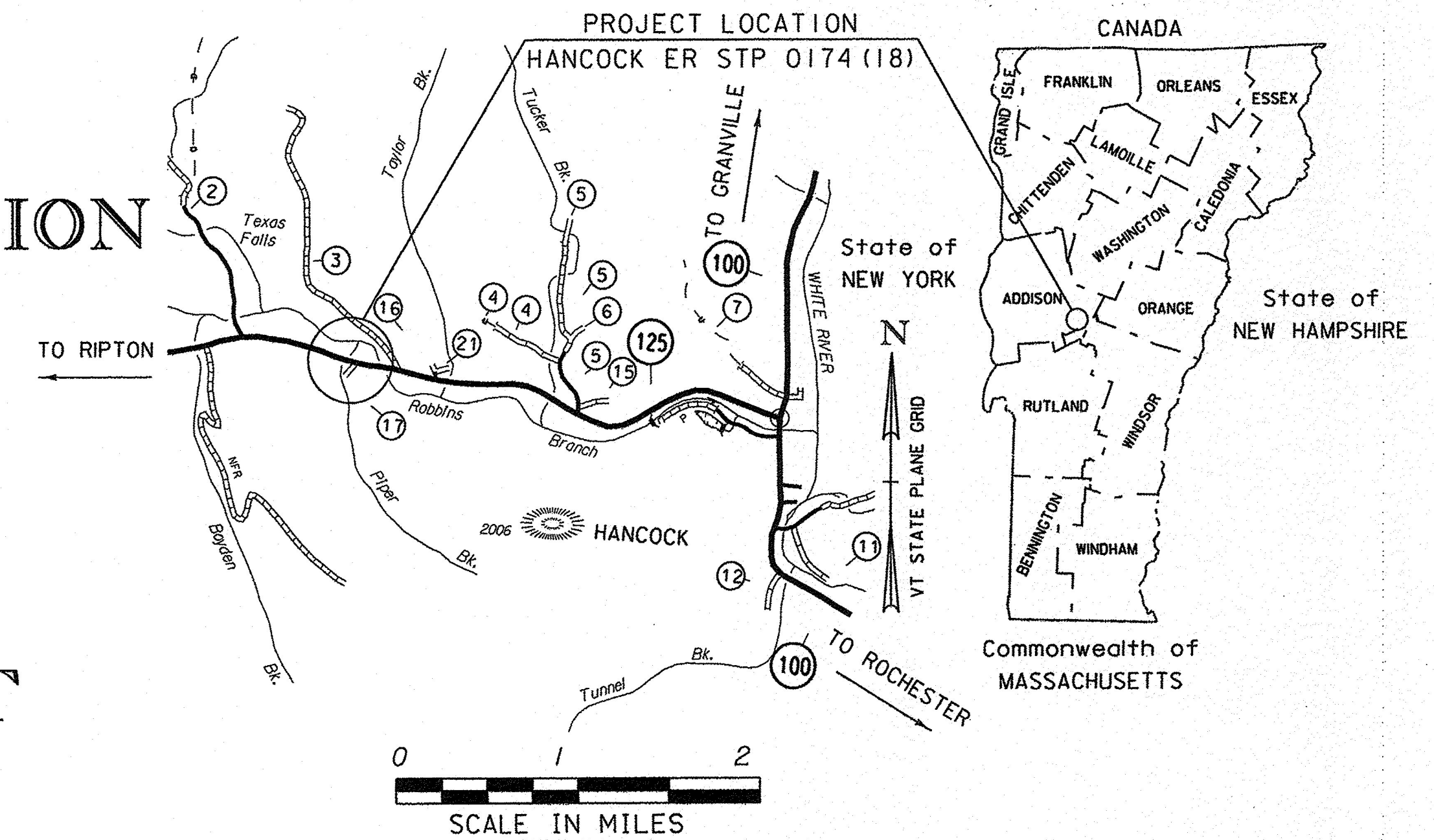
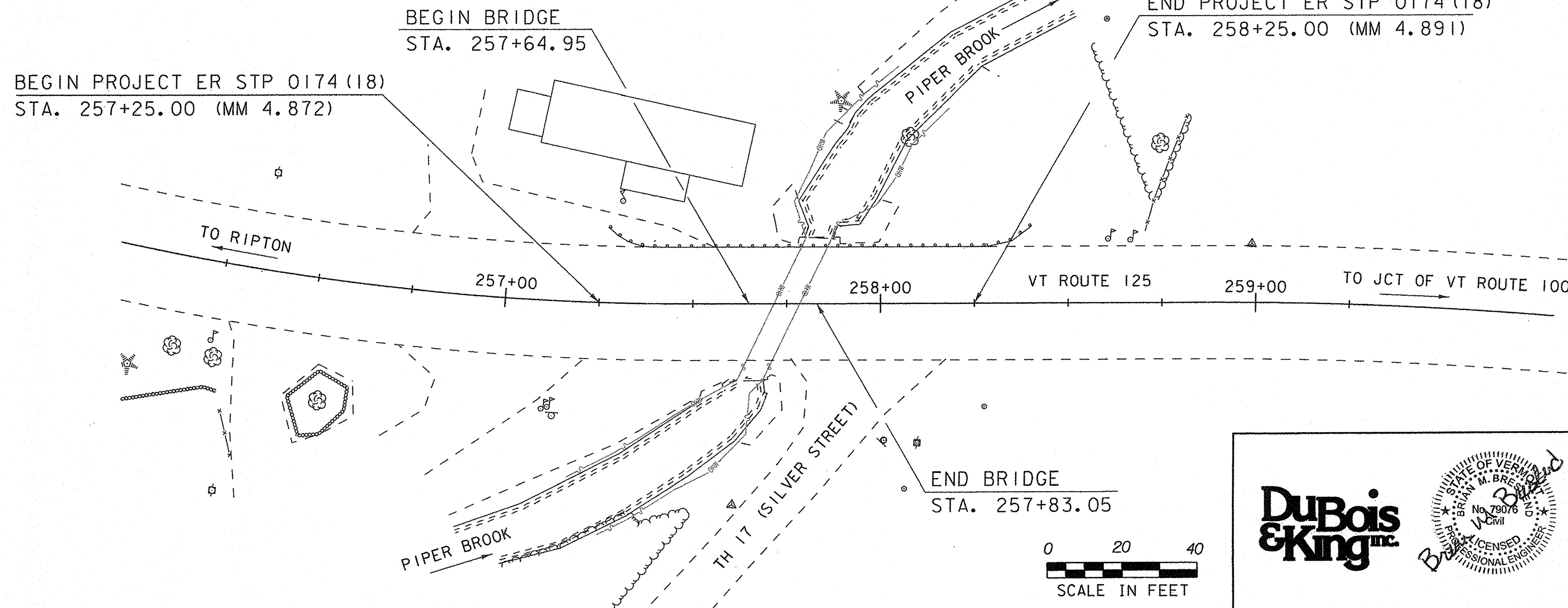
PROPOSED IMPROVEMENT BRIDGE PROJECT TOWN OF HANCOCK COUNTY OF ADDISON

VT ROUTE 125 (MAJOR COLLECTOR), BRIDGE NO. 22

BEGINNING IN THE TOWN OF HANCOCK ON VT ROUTE 125 AT MM 4.872 (STA. 257+25.00)
EXTENDING EASTERLY 0.019 MILES (100 FEET) TO MM 4.891 (STA. 258+25.00).

WORK TO BE PERFORMED UNDER THIS CONTRACT INCLUDES REPLACEMENT OF THE
EXISTING CONCRETE BOX CULVERT WITH A NEW PRECAST CONCRETE BOX CULVERT, WITH
RELATED ROADWAY APPROACH AND CHANNEL WORK.

LENGTH OF STRUCTURE : 18.10 FEET = 0.003 MILES
LENGTH OF ROADWAY : 81.90 FEET = 0.016 MILES
LENGTH OF PROJECT : 100.00 FEET = 0.019 MILES



SUPERPAVE BITUMINOUS CONCRETE MIXTURE DESIGN CRITERIA	
DESIGN LANE/DESIGN LIFE ESALS	680,000
DESIGN NUMBER OF GYRATIONS	65
PERFORMANCE GRADED ASPHALT BINDER	SEE SUBSECTION 490.03b

RECORD PLANS	
CONTRACTOR:	J. HUTCHINS, INC. - RICHMOND, VT
RESIDENT ENGINEER:	CHRIS LAVALETTE
CONSTRUCTION BEGAN:	APRIL 03, 2017
CONSTRUCTION COMPLETE:	NOVEMBER 02, 2017
RECORD PLANS BY:	CHRIS LAVALETTE & JESSE IVES
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.	
BY <i>Chris Lavolette</i>	RESIDENT ENGINEER
DATE <i>9/20/18</i>	
NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.	

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL 2	
SURVEYED BY : DUBOIS & KING, INC.	
SURVEYED DATE : FEBRUARY 2013	
DATUM	
VERTICAL	NAVD 88 (geoid12a)
HORIZONTAL	NAD 83 (2011) epoch 2010.0

	DIRECTOR OF PROJECT DELIVERY APPROVED <i>[Signature]</i> DATE <i>10/18/2016</i>
	PROJECT MANAGER : KEN UPMAL, P.E. PROJECT NAME : HANCOCK PROJECT NUMBER : ER STP 0174 (18)
SHEET 1 OF 42 SHEETS	

PRELIMINARY INFORMATION SHEET (BRIDGE)

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FINAL HYDRAULIC REPORT

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STANDARDS LIST

B-5	SLOPE GRADING, EMBANKMENTS, MUCK	06-01-1994
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-1	STEEL BEAM GUARDRAIL DET. (POST, DELINEATOR, TYPICALS)	11-10-2015
G-1D	STEEL BEAM GUARDRAIL DET. (END TERMINAL, ANCHOR, MEDIUM)	02-10-2014
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
T-35	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS	08-06-2012
T-36	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS FOR PAVING	08-06-2012
T-42	BRIDGE NUMBER PLAQUE	04-09-2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013

HIGHWAY SAFETY & DESIGN DETAILS

HSD-400.01	SAFETY EDGE DETAILS	3/29/2016
HSD-621.06	GUARDRAIL TERMINAL LABEL DETAIL	11/3/2016

STRUCTURES DETAIL SHEETS

SD-366.00	LONGSPAN STEEL BEAM GUARDRAIL, GALVANIZED	1/3/2014
SD-501.00	CONCRETE DETAILS AND NOTES	2/9/2012
SD-502.00	CONCRETE DETAILS AND NOTES	10/10/2012

HYDROLOGIC DATA

Date: Sept. 2014

DRAINAGE AREA : 1.4 sq. mi.
 CHARACTER OF TERRAIN : Hilly to mountainous, mostly forested
 STREAM CHARACTERISTICS : Incised, alluvial, sinuous, with high sediment transport
 NATURE OF STREAMBED : Mostly cobbles with some gravel and boulders

PEAK FLOW DATA

Q 2.33 =	100 cfs	Q 50 =	325 cfs
Q 10 =	225 cfs	Q 100 =	375 cfs
Q 25 =	275 cfs	Q 500 =	525 cfs

DATE OF FLOOD OF RECORD : Unknown
 ESTIMATED DISCHARGE : Unknown
 WATER SURFACE ELEV. : Unknown
 NATURAL STREAM VELOCITY : @ Q50 = 9.1 fps
 ICE CONDITIONS : Moderate
 DEBRIS : Moderate
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes
 IS ORDINARY RISE RAPID? Yes
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
 IF YES, DESCRIBE :

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE : Reinforced Concrete Box
 YEAR BUILT : 1957
 CLEAR SPAN(NORMAL TO STREAM) : 7'
 VERTICAL CLEARANCE ABOVE STREAMBED : 5'
 WATERWAY OF FULL OPENING : 35 sq. ft.
 DISPOSITION OF STRUCTURE : Remove and replace
 TYPE OF MATERIAL UNDER SUBSTRUCTURE : Unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1070.5'	VELOCITY =	11.8 fps
Q10 =	1072.8'	"	14.2 fps
Q50 =	1073.5'	"	14.7 fps
Q100 =	1073.8'	"	14.9 fps

LONG TERM STREAMBED CHANGES : Scour and streambed degradation at the outlet.

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
 FREQUENCY: Q10
 RELIEF ELEVATION: 1072.8'
 DISCHARGE OVER ROAD @Q100: 96 cfs

UPSTREAM STRUCTURE

TOWN: None DISTANCE:
 HIGHWAY #: STRUCTURE #:
 CLEAR SPAN: CLEAR HEIGHT:
 YEAR BUILT: FULL WATERWAY:
 STRUCTURE TYPE:

DOWNSTREAM STRUCTURE

TOWN: NA - confluence with Hancock Brook DISTANCE: 500'
 HIGHWAY #: STRUCTURE #:
 CLEAR SPAN: CLEAR HEIGHT:
 YEAR BUILT: FULL WATERWAY:
 STRUCTURE TYPE:

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							
POSTING							
OPERATING							
COMMENTS:							

AS BUILT "REBAR" DETAIL

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

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	20 year ESAL for flexible pavement from 2015 to 2025 : 304000
2015	1200	160	52	10.8	110	40 year ESAL for flexible pavement from 2015 to 2035 : 680000
2025	1200	160	52	13.0	140	Design Speed : 50 mph

PROPOSED STRUCTURE

STRUCTURE TYPE: Precast Concrete Box

CLEAR SPAN(NORMAL TO STREAM): 14'
 VERTICAL CLEARANCE ABOVE STREAMBED: 5'
 WATERWAY OF FULL OPENING: 70 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1069.2'	VELOCITY=	7.5 fps
Q10 =	1070.4'	"	10.3 fps
Q25 =	1070.8'	"	11.1 fps
Q50 =	1071.2'	"	11.9 fps
Q100 =	1071.6'	"	12.6 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: above Q100
 RELIEF ELEVATION: 1072.8'
 DISCHARGE OVER ROAD @Q100: 0 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 1072.5' at inlet
 VERTICAL CLEARANCE: @ Q50 = 1.3'

SCOUR: Not calculated for a box

REQUIRED CHANNEL PROTECTION: Stone fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW: 3 cfs DEPTH OR ELEVATION:
 ORDINARY LOW WATER: 1 cfs Depth = 0.5'
 ORDINARY HIGH WATER: 43 cfs Depth = 1.0'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Temporary bridge not required.
 CLEAR SPAN (NORMAL TO STREAM):
 VERTICAL CLEARANCE ABOVE STREAMBED:
 WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. TRAFFIC SIGNALS ARE NOT NECESSARY.
2. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

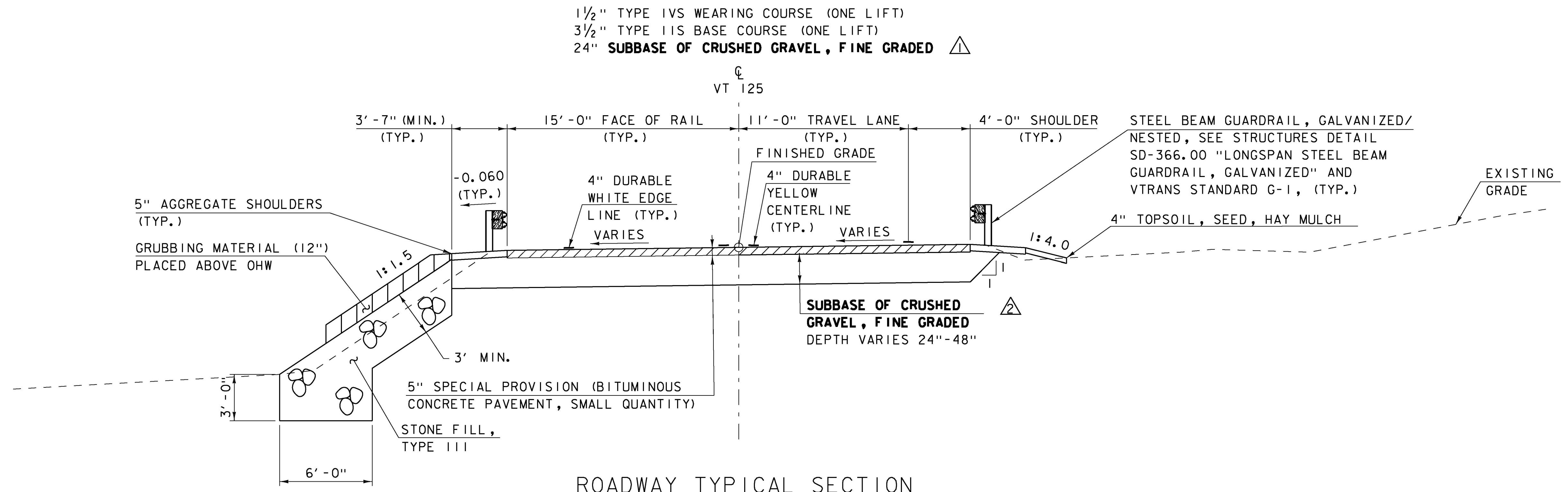
1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	dp: 3.0 INCH
3. DESIGN SPAN	L: 14.00 FT

4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS) Δ: ---
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX) fy: 270 KSI
6. PRESTRESSED CONCRETE STRENGTH f'c: 6.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH f'cr: 5.0 KSI
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 fy: 60 KSI
13. STRUCTURAL STEEL AASHTO M270 fy: ---
14. ALLOWABLE BEARING RESISTANCE OF SOIL qn: 3.0 KSF
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) φ: ---
16. NOMINAL BEARING RESISTANCE OF ROCK qn: 10.0 KSF
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) φ: ---

18. PILE RESISTANCE FACTOR φ: ---
19. LATERAL PILE DEFLECTION Δ: ---
20. BASIC WIND SPEED V3s: ---
21. MINIMUM GROUND SNOWLOAD pg: ---
22. SEISMIC DATA PGA: 0 Ss: --- S1: ---

23. ---
24. ---
25. ---
26. ---

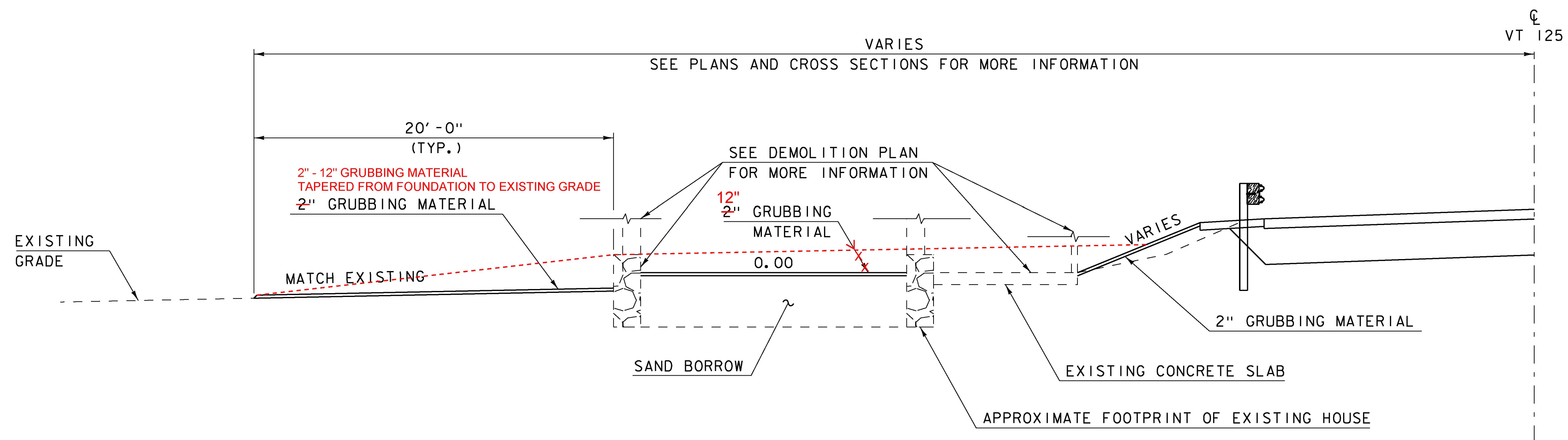
PROJECT NAME: HANCOCK
 PROJECT NUMBER: ER STP 0174(18)
 FILE NAME: z12c412pi.xls PLOT DATE: 10/11/2016
 PROJECT LEADER: J. TUCKER DRAWN BY: O. DALMER
 DESIGNED BY: B. BRESLEND CHECKED BY: P. BERO
 PRELIMINARY INFORMATION SHEET SHEET 2 OF 42



ROADWAY TYPICAL SECTION

NOT TO SCALE

STA. 257+25.00 TO STA. 258+25.00



SITE TYPICAL SECTION

NOT TO SCALE

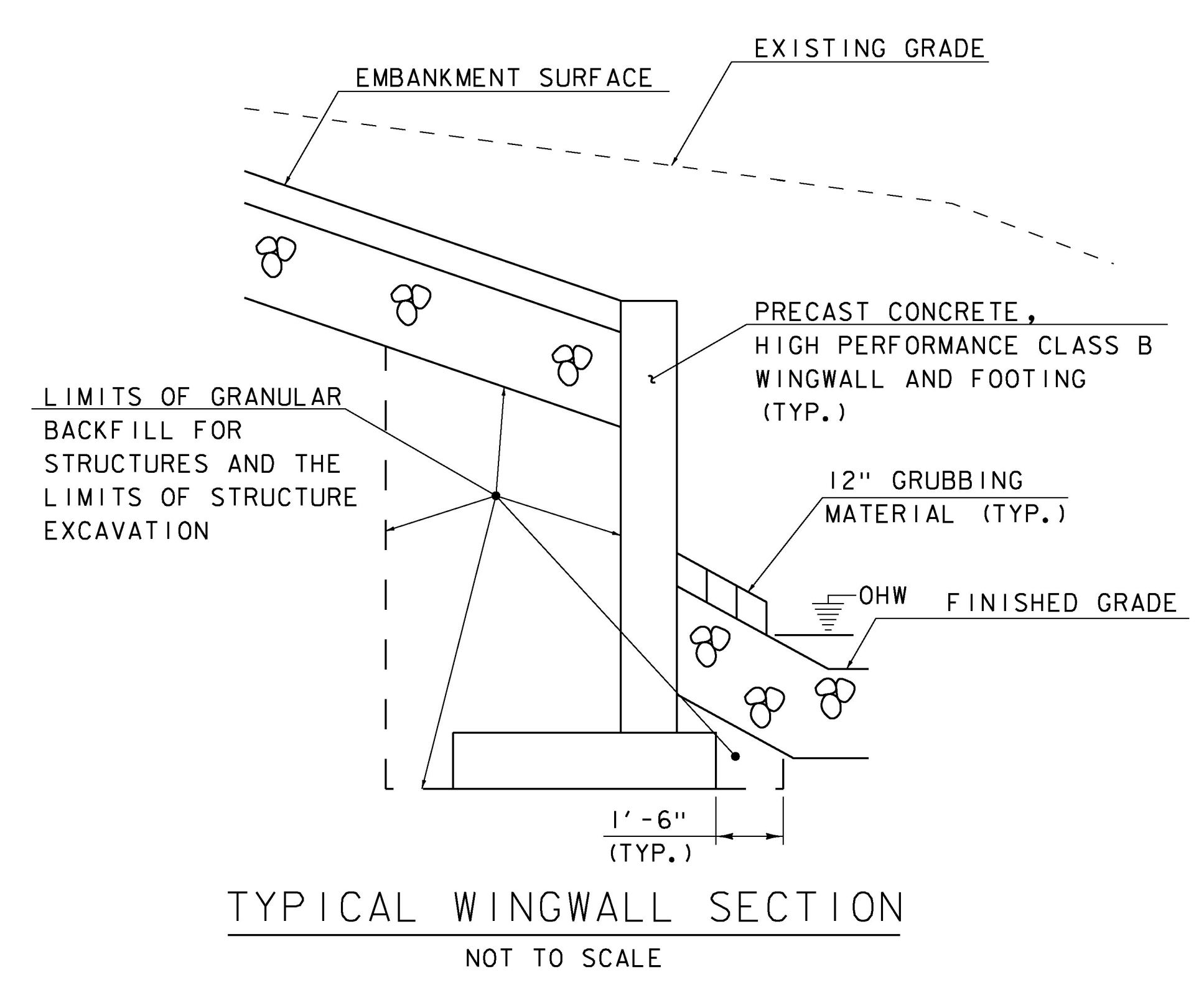
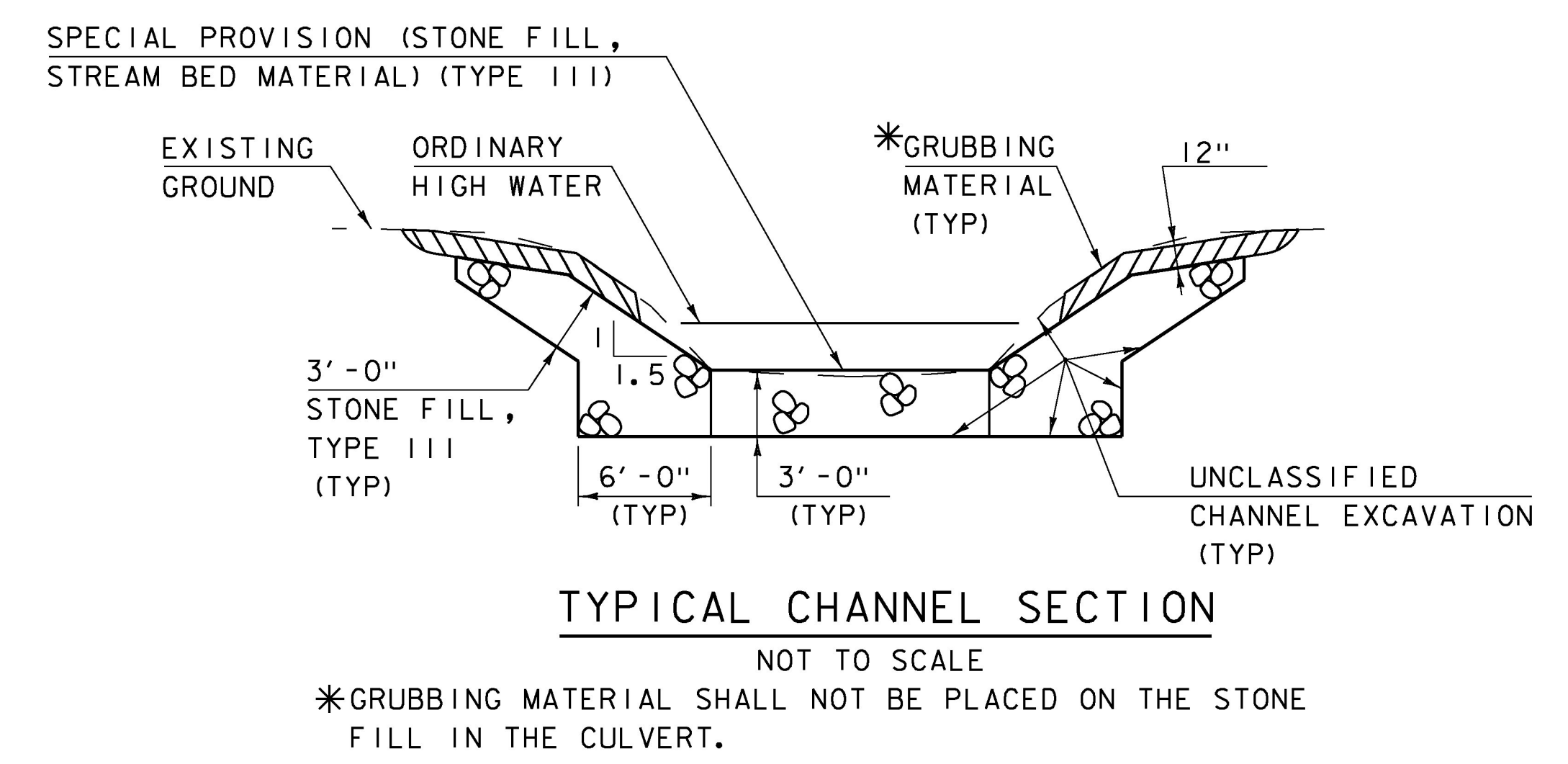
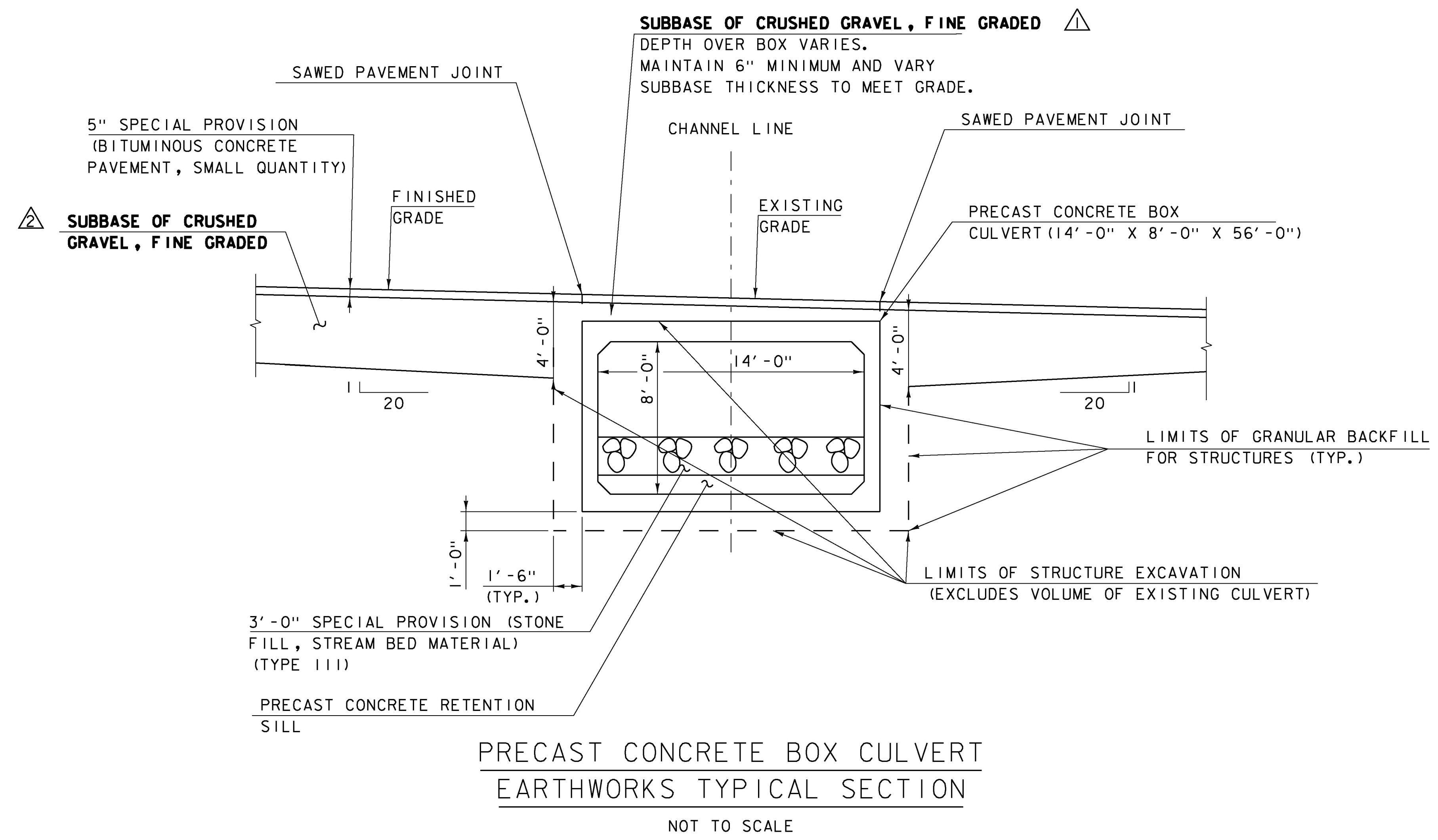
STA. 256+50.00 TO STA. 257+80.00

TOLERANCES :

PAVEMENT : +/- 1/4" (TOTAL PAVEMENT THICKNESS)
 SUBBASE : +/- 1" (TOTAL CRUSHED STONE THICKNESS)

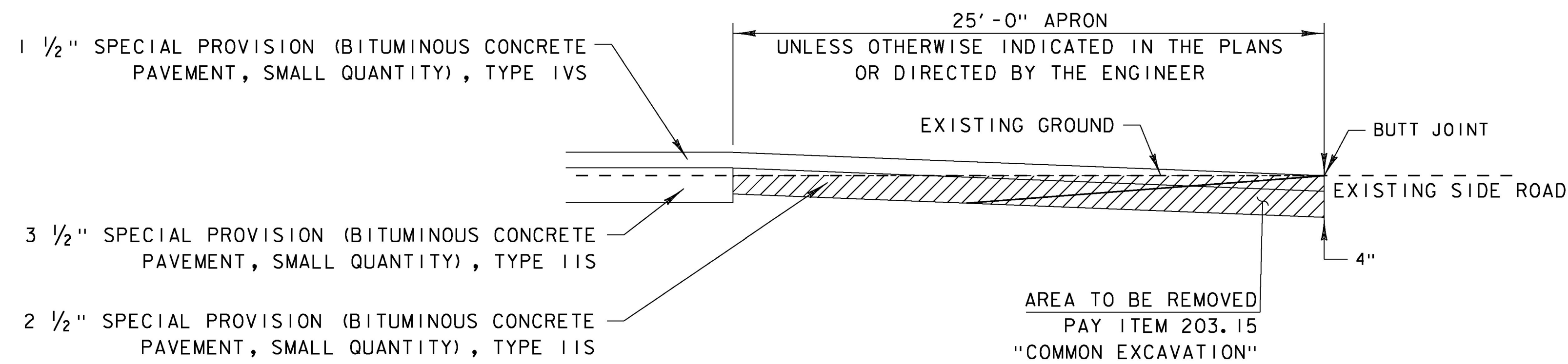
REV	DATE	DESCRIPTION
△	12/5/16	PAY ITEM CHANGE
△	12/5/16	PAY ITEM CHANGE

PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174(18)
FILE NAME:	z12c412typ.dgn
PROJECT LEADER:	J. TUCKER
DESIGNED BY:	B. BRESLEND
TYPICAL SECTION SHEET 1	
PLOT DATE:	10/11/2016
DRAWN BY:	O. DALMER
CHECKED BY:	P. BERO
SHEET	4 OF 42



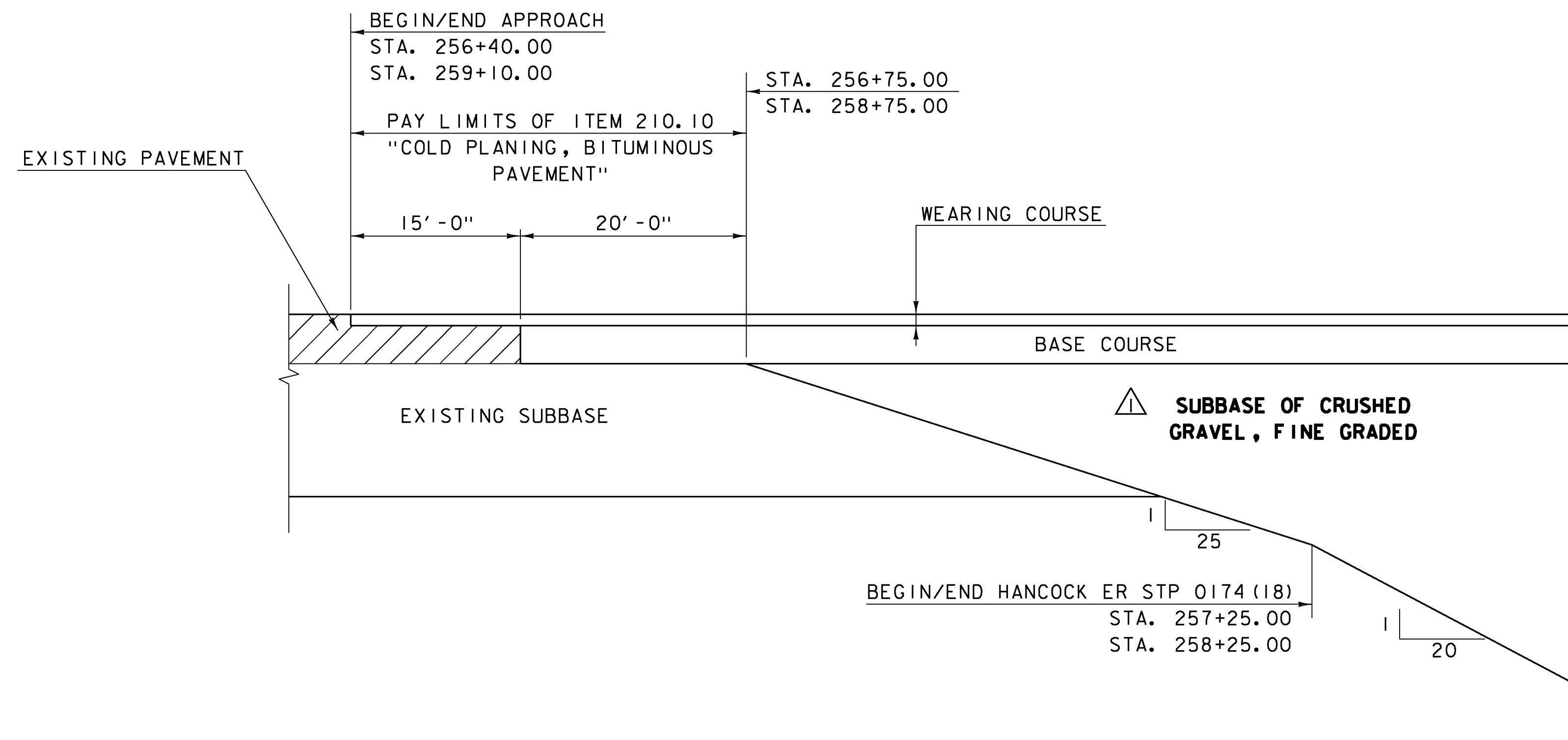
REV	DATE	DESCRIPTION
△	12/5/16	PAY ITEM CHANGE
△	12/5/16	PAY ITEM CHANGE

PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174(18)
FILE NAME:	z12c412typ.dgn
PROJECT LEADER:	J. TUCKER
DESIGNED BY:	B. BRESLEND
TYPICAL SECTION SHEET 2	
PLOT DATE:	10/11/2016
DRAWN BY:	O. DALMER
CHECKED BY:	P. BERO
SHEET	5 OF 42



TRANSITION AREA FOR GRAVEL SIDE ROADS

HANCOCK
LEGAL TOWN TRAIL STA. 257+00 RT
TH17 STA. 257+95 RT



MATERIAL TRANSITION DETAIL

NOT TO SCALE

REV	DATE	DESCRIPTION
△	12/5/16	PAY ITEM CHANGE

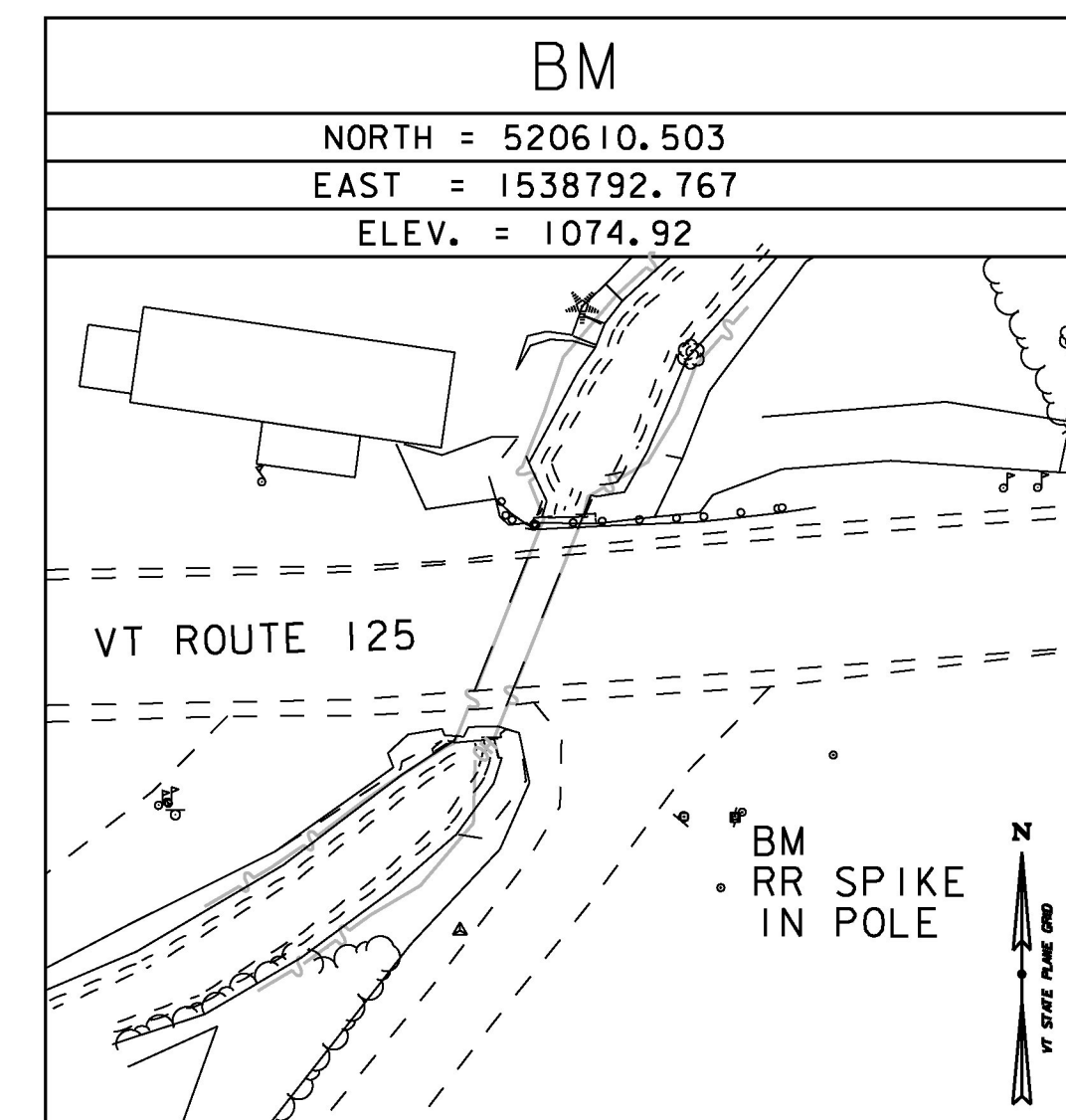
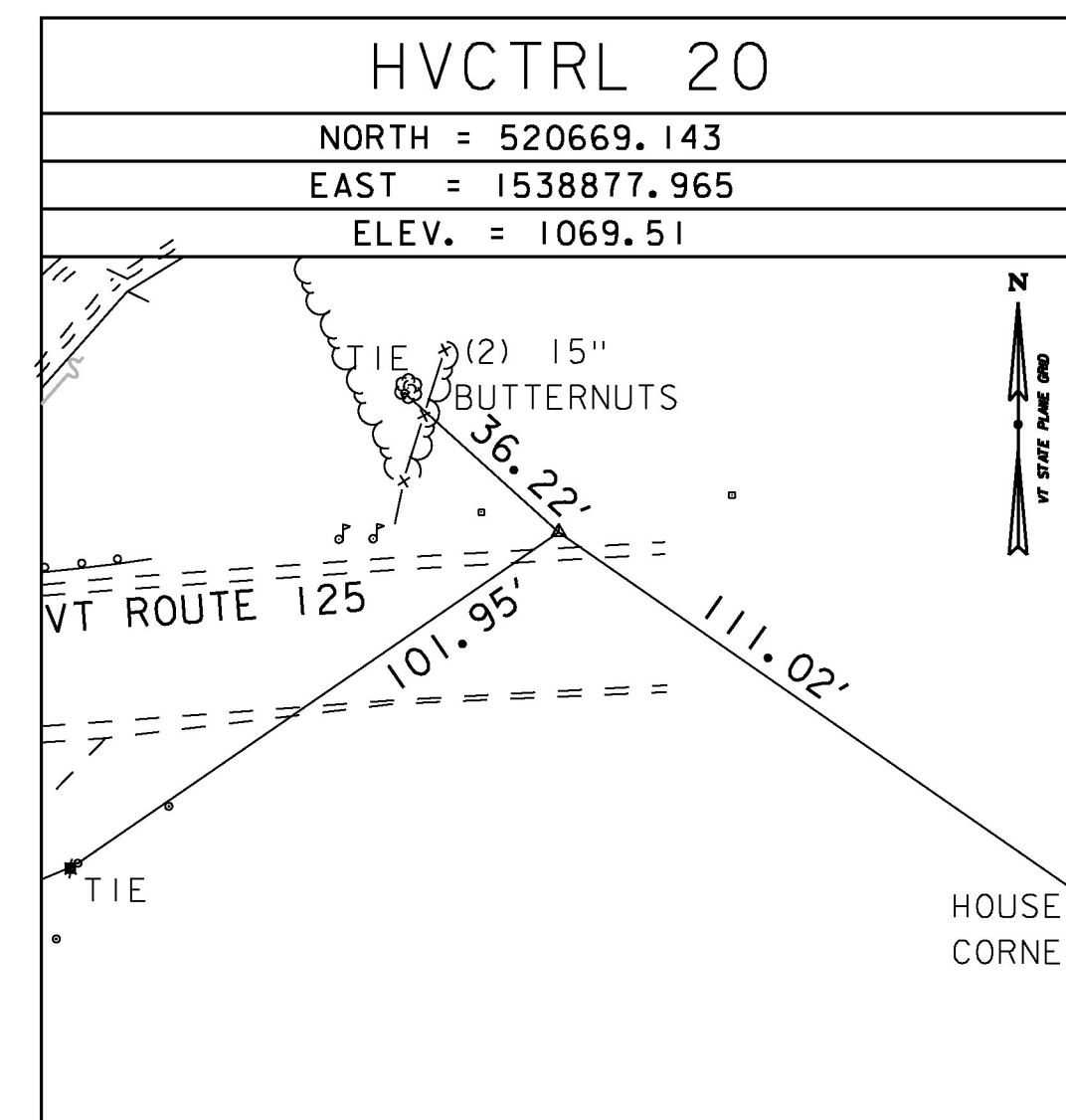
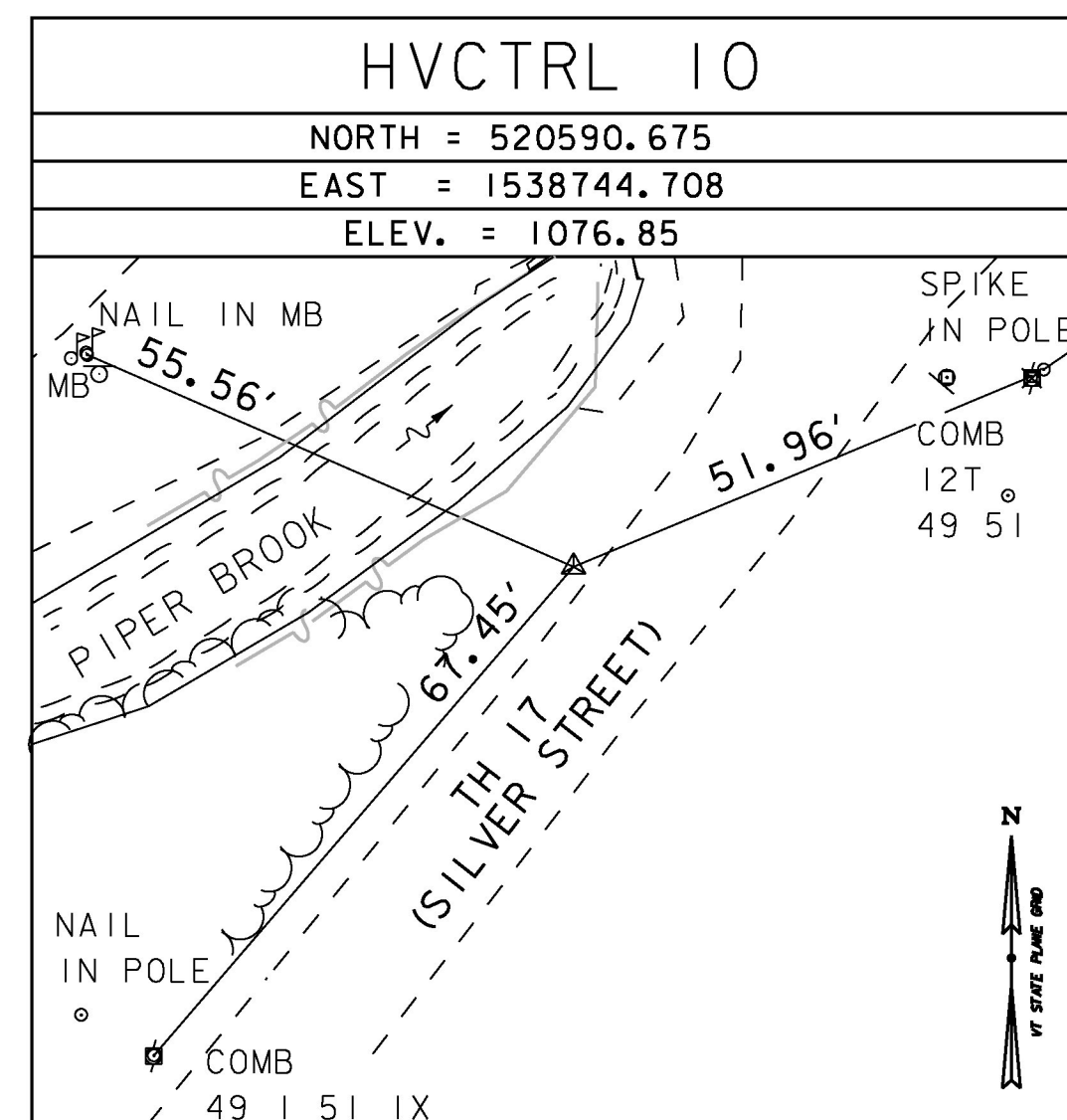
PROJECT NAME: HANCOCK	
PROJECT NUMBER: ER STP 0174(18)	
FILE NAME: z12c412detail.dgn	PLOT DATE: 10/11/2016
PROJECT LEADER: J. TUCKER	DRAWN BY: O. DALMER
DESIGNED BY: B. BRESLEND	CHECKED BY: P. BERO
DETAIL SHEET	SHEET 6 OF 42

GPS CONTROL POINTS

CONTROL POINTS 10, 20 AND BM WERE ORIGINALLY BASED ON A MAPPING GRADE GPS UNIT LOCATION AND ADJUSTED TO FIT BETWEEN EACH OTHER BASED ON MEASURED GROUND DISTANCES FOR PROJECT ER STP 0174 (18).

SUBSEQUENTLY THE DATA FROM PROJECT ER STP 0174 (18), MAPPING GRADE GPS, WAS MERGED WITH PROJECT STP 2923 (1), SURVEY GRADE GPS LOCATIONS, AND THE CONTROL POINTS 10, 20, AND THE BM WERE ADJUSTED ON A BEST FIT BASIS TO PROJECT STP 2923 (1), UTILIZING POINTS LOCATED BY BOTH SURVEYS FOR THE CORRECTION.

TRAVERSE TIES



DATUM	
VERTICAL	NAVD 88 (geoid2a)
HORIZONTAL	NAD 83 (2011) epoch 2010.0
ADJUSTMENT	NONE

PROJECT NAME: HANCOCK	
PROJECT NUMBER: ER STP 0174(18)	
FILE NAME: z12c412+1.dgn	PLOT DATE: 10/11/2016
PROJECT LEADER: J. TUCKER	DRAWN BY: O. DALMER
DESIGNED BY: B. BRESLEND	CHECKED BY: P. BERO
TIE SHEET	SHEET 7 OF 42

GENERAL

1. TOPOGRAPHY AND PLANIMETRIC DATA SHOWN ON THESE PLANS ARE BASED ON FIELD SURVEY COMPLETED BY DUBOIS & KING, INC. IN 2013 AND SUPPLEMENTED WITH AS DESIGNED ROADWAY GEOMETRICS FROM HANCOCK STP 2923 (1) RECLAIM PROJECT COMPLETED IN 2016.
2. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER REPRODUCED DRAWINGS OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
3. FORMATION OF EMBANKMENTS (INCLUDING COMPACTION) SHALL BE CONSTRUCTED IN ACCORDANCE WITH DIVISION 200, SECTION 203 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. SUITABLE MATERIAL SHALL MEET THE REQUIREMENTS OF DIVISION 700, SECTION 703. PAYMENT FOR CONSTRUCTION OF THE ROADWAY EMBANKMENT USING EXCAVATED MATERIAL WILL BE CONSIDERED INCIDENTAL TO ITEM 203.15 "COMMON EXCAVATION" OR ITEM 203.27 "UNCLASSIFIED CHANNEL EXCAVATION".
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING CONDITIONS AFFECTING THE WORK. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE ADVANCING THE WORK. WORKING DRAWINGS REQUIRED FOR VARIOUS ITEMS OF THE WORK SHALL INDICATE THE ACTUAL FIELD MEASUREMENTS BY THE CONTRACTOR PRIOR TO SUBMITTAL FOR THE ENGINEER'S APPROVAL AND SHALL BE SO NOTED.
5. ITEM 201.10 "CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS" HAS BEEN INCLUDED TO REMOVE ANY VEGETATION, PARTIAL AND FULL TREE REMOVAL (INCLUDING STUMPS), THINNING AND TRIMMING FOR SIGNS, AND ANY ASSOCIATED GRUBBING WITHIN ESTABLISHED ROW. THE ENGINEER MAY EXCLUDE REMOVAL IN SOME AREAS WHERE DEEMED NECESSARY AND APPROPRIATE OR NECESSITATED BY PERMIT REQUIREMENTS PER THE CONSTRUCTION ENVIRONMENTAL ENGINEER'S RECOMMENDATIONS.
6. ALL WOODY DEBRIS (TREE LIMBS, BRANCHES, ETC.) SHALL BE CHIPPED AND MULCHED ON-SITE AND USED FOR TEMPORARY EROSION CONTROL. ALL CUT TREE LOGS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE. ALL STUMPS SHALL BE GROUND DOWN ON SITE AND THE CHIPS USED AS EROSION CONTROL. PAYMENT FOR THE CUTTING AND DISPOSAL OF TREE LOGS, CHIPPING AND SPREADING OF WOODY DEBRIS AND GRINDING OF STUMPS WILL BE PAID FOR UNDER ITEM 201.10, "CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS".
7. RESTORATION OF DISTURBED AREAS: RESTORE DISTURBED AREAS, EXCEPT STONE FILL AREAS AND GRUBBING AREAS, WITH FOUR INCHES TOPSOIL, SEED, FERTILIZER AND MULCH, UNLESS THE ENGINEER DIRECTS THE USE OF SUITABLE EXCAVATED MATERIAL.
8. ALL COMMERCIAL AND RESIDENTIAL PROPERTY OWNERS SHALL BE GIVEN 48 HOURS ADVANCE NOTIFICATION WHEN CONSTRUCTION IS TO TAKE PLACE ADJACENT TO PROPERTIES.
9. ALL SLOPES, PLACEMENT OF EMBANKMENT MATERIAL AND STEPPING OF LAYERS INTO OLD GROUND SHALL BE IN ACCORDANCE WITH STANDARD DRAWING B-5.
10. TACK COAT / EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF 0.025-0.04 GAL/SY BETWEEN SUCCESSIVE COURSES OF NEW PAVEMENT AND 0.08 GAL/SY BETWEEN EXISTING/COLD PLANED SURFACES AND A NEW SURFACE OR AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE MADE UNDER ITEM 900.683 "SPECIAL PROVISION (EMULSIFIED ASPHALT) (RS-1H OR CRS-1H)".
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING AND UNDERSTANDING ALL APPLICABLE ENVIRONMENTAL PERMITS AND ENSURE THAT ALL CONSTRUCTION REQUIREMENTS ARE MET.
12. AT COMPLETION OF GRADING, THE SLOPES, DITCHES, AND ALL DISTURBED AREAS SHALL BE SMOOTH AND FREE OF POCKETS WITH SUFFICIENT SLOPE TO ENSURE DRAINAGE.
13. NO WORK BEYOND THE LIMITS OF CONSTRUCTION SHOWN ON THE PLANS WILL BE ALLOWED. WORKING OUTSIDE OF THESE LIMITS MAY TRIGGER ADDITIONAL PERMITTING REQUIREMENTS, WHICH SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
14. THE CONTRACTOR SHALL SUBMIT SEDIMENT AND EROSION CONTROL METHODS TO THE ENGINEER FOR APPROVAL 14 DAYS PRIOR TO START OF WORK.
15. TYPICAL CROSS SECTIONS ARE MEANT FOR GUIDANCE ONLY. FIELD CONDITIONS MAY VARY AND MUST BE VERIFIED BY THE CONTRACTOR.

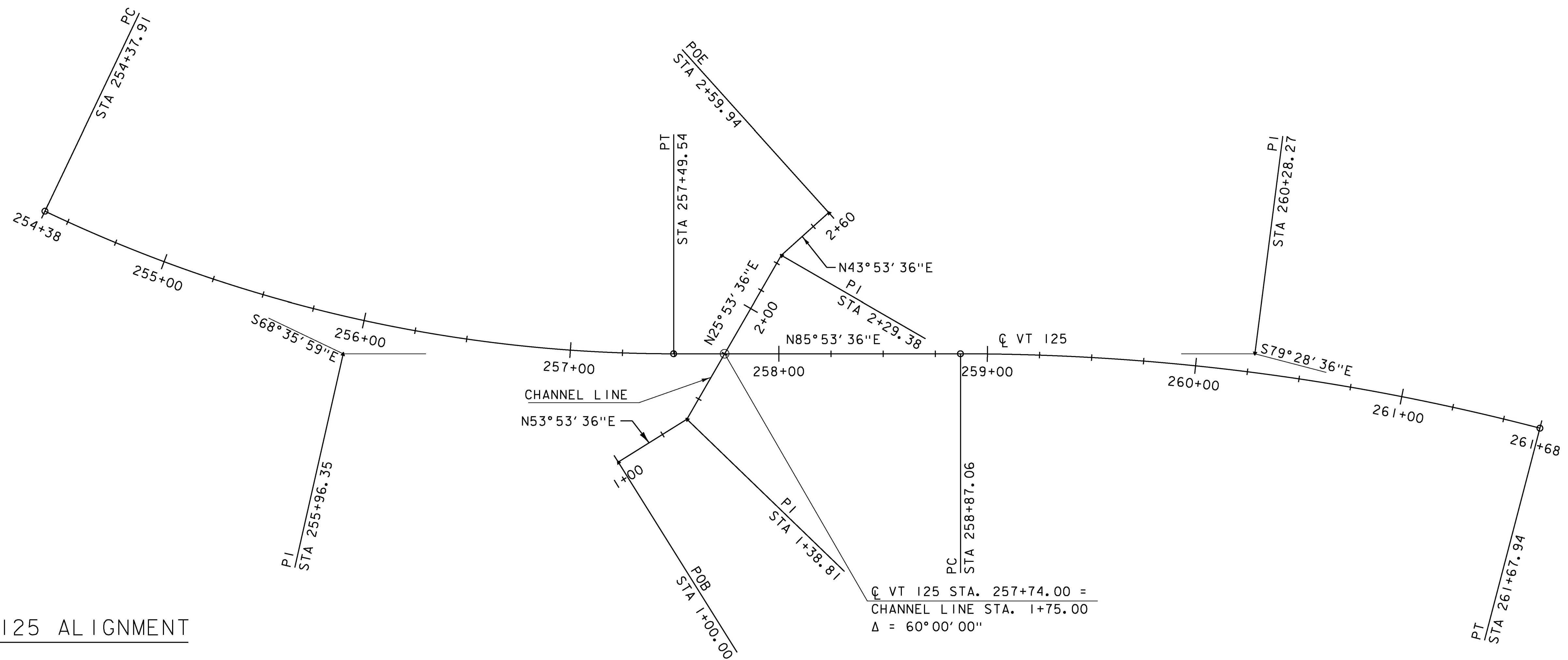
STONE FILL

1. STONE FILL MUST BE PLACED IN A MANNER THAT WILL NOT SEPARATE SMALL AND LARGE STONES. PLACEMENT BY DUMP TRUCK OR DOZER WILL NOT BE ALLOWED. REGULAR MIXING OF THE STONE FILL STOCKPILE DURING INSTALLATION MAY BE NECESSARY TO PREVENT SEPARATION OF THE SMALL AND LARGE STONES.
2. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE STONE FILL AS A WELL-COMPACTED MASS, WITH STONES INTERLOCKED WITH EACH OTHER AND WITH NO LARGE VOIDS TO REDUCE THE POTENTIAL FOR UPLIFT AND MOVEMENT AND TO PREVENT GRUBBING MATERIAL FROM WASHING INTO THE STONE.
3. TO ACHIEVE A WELL-COMPACTED MASS, THE CONTRACTOR MAY BE REQUIRED TO FOLLOW THE INITIAL PLACEMENT OF STONE FILL WITH ADDITIONAL PASSES OF SMALLER MATERIAL. SELECTIVE HAND PLACEMENT OF STONE FOLLOWED BY COMPACTION MAY ALSO BE REQUIRED. PAYMENT WILL BE CONSIDERED INCIDENTAL TO ITEM 613.12 "STONE FILL, TYPE III".
4. CONTRACTOR SHALL PLACE A 12 INCH (MINIMUM) LAYER OF GRUBBING MATERIAL OVER THE TOP OF THE STONE FILL SLOPE DOWN TO THE ORDINARY HIGH WATER (OHW) ELEVATION. GRUBBING MATERIAL SHALL BE WORKED IN TO THE STONE FILL MASS AND INTO ANY SMALL REMAINING SURFACE VOIDS AND CREVICES. ON-SITE EXCAVATED GRUBBING MATERIAL MAY BE USED IF, IN THE OPINION OF THE ENGINEER, AS ADEQUATE PERCENTAGE OF FINES AND ORGANICS IS PRESENT IN THE MATERIAL TO SUPPORT A GRASS COVER.
5. GRUBBING MATERIAL SHALL BE SEEDED WITH A VAOT RURAL AREA MIX. TOP SOIL SHALL BE SEEDED WITH VAOT LOW GROW/FINE FESCUE MIX. SEE EPCS DETAILS SHEET I FOR FORMULA.

UTILITIES

1. UTILITIES INFORMATION SHOWN HEREIN WAS OBTAINED FROM AVAILABLE SOURCES AND MAY OR MAY NOT BE EITHER ACCURATE OR COMPLETE. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY UTILITY, PUBLIC OR PRIVATE, SHOWN OR NOT SHOWN HEREON. THE CONTRACTOR SHALL CONNECT OR RECONNECT ALL UTILITIES TO THE NEAREST SOURCE THROUGH COORDINATION WITH THE UTILITY OWNER.
2. THE CONTRACTOR SHALL NOT DISRUPT ANY EXISTING UTILITY SERVICE (PRIVATE OR PUBLIC) WITHOUT WRITTEN AUTHORIZATION FROM VTRANS.
3. THE CONTRACTOR SHALL CONTACT "DIG SAFE" [(1-888-DIG-SAFE (1-888-344-7233))] AND ALL AFFECTED UTILITY COMPANIES PRIOR TO PERFORMING ANY EXCAVATION, IN ACCORDANCE WITH DIG SAFE'S RULES OF NOTIFICATION.
4. ALL UTILITY POLES ARE TO REMAIN UNDISTURBED UNLESS OTHERWISE NOTED IN THESE PLANS.
5. SUBSURFACE FEATURES SUCH AS ELECTRIC AND TELEPHONE LINES, WATER LINES, SEWER LINES, STORM DRAIN AND CULVERTS, ETC., ENCOUNTERED IN THE CONSTRUCTION OF THE PROJECT SHALL BE PROTECTED, SUPPORTED, OR REMOVED AND REPLACED BY THE CONTRACTOR UNLESS OTHERWISE NOTED ON THE PLANS. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT UNLESS PAYMENT IS SPECIFICALLY NOTED ON PLANS AS A SEPARATE PAY ITEM. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES AND/OR HIGHWAY DEPARTMENTS WHEN THE WORK INVOLVES THEIR RESPECTIVE FACILITIES. SEE THE UTILITIES SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
6. ANY SURFACE OR SUBSURFACE FEATURES DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED TO A CONDITION AT LEAST EQUAL TO THAT IN WHICH THEY WERE FOUND IMMEDIATELY PRIOR TO THE BEGINNING OF CONSTRUCTION. ALL COSTS ASSOCIATED WITH THE RESTORATION SHALL BE AT THE SOLE EXPENSE OF THE CONTRACTOR.

PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174 (18)
FILE NAME: z12c412notes.dgn	PLOT DATE: 10/11/2016
PROJECT LEADER: J. TUCKER	DRAWN BY: O. DALMER
DESIGNED BY: B. BRESLEND	CHECKED BY: P. BERO
PROJECT NOTES SHEET	SHEET 8 OF 42



VT 125 ALIGNMENT

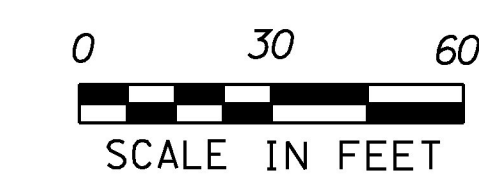
Horizontal Alignment Name: VT 125

	STATION	NORTHING	EASTING
Element: Circular			
PC	254+37.91	520689.5179	1538424.5009
PI	255+96.35	520631.7075	1538572.0146
CC		521341.2562	1538679.9165
PT	257+49.54	520643.0534	1538730.0449
Radius:	700.00		
Delta:	25°30'24.26" Left		
Degree of Curvature (Arc):	8°11'06.40"		
Length:	311.62		
Tangent:	158.44		
Chord:	309.06		
Middle Ordinate:	17.27		
External:	17.71		
Element: Linear			
PT	257+49.54	520643.0534	1538730.0449
PC	258+87.06	520652.9021	1538867.2195
Tangent Direction:	N 85°53'36.33" E		
Tangent Length:	137.53		
Element: Circular			
PC	258+87.06	520652.9021	1538867.2195
PI	260+28.27	520663.0140	1539008.0613
CC		519555.7262	1538945.9926
PT	261+67.94	520637.2252	1539146.8907
Radius:	1100.00		
Delta:	14°37'47.40" Right		
Degree of Curvature (Arc):	5°12'31.35"		
Length:	280.87		
Tangent:	141.20		
Chord:	280.11		
Middle Ordinate:	8.95		
External:	9.03		

CHANNEL ALIGNMENT

Horizontal Alignment Name: Piper Brook

	STATION	NORTHING	EASTING
Element: Linear			
POB	1+00.00	520589.3768	1538707.2871
PI	1+38.81	520612.2444	1538738.6390
Tangent Direction:	N 53°53'36.33" E		
Tangent Length:	38.81		
Element: Linear			
PI	1+38.81	520612.2444	1538738.6390
PI	2+29.38	520693.7227	1538778.1911
Tangent Direction:	N 25°53'36.33" E		
Tangent Length:	90.57		
Element: Linear			
PI	2+29.38	520693.7227	1538778.1911
POE	2+59.94	520715.7472	1538799.3810
Tangent Direction:	N 43°53'36.33" E		
Tangent Length:	30.56		



PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174(18)
FILE NAME: z12c412lay.dgn	PLOT DATE: 10/11/2016
PROJECT LEADER: J. TUCKER	DRAWN BY: O. DALMER
DESIGNED BY: B. BRESLEND	CHECKED BY: P. BERO
ALIGNMENT LAYOUT SHEET	SHEET 9 OF 42

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							1				1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10	--			
							1				1		EACH	DEMOLITION AND DISPOSAL OF BUILDING	202.10	--			
							520				520		CY	COMMON EXCAVATION	203.15	8			
									190		190		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27	5			
							70				70		CY	SAND BORROW	203.31	5			
							1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	--			
									350		350		CY	STRUCTURE EXCAVATION	204.25	14			
									200		200		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	21			
							240				240		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10	7			
							420				420		CY	SUBBASE OF CRUSHED GRAVEL, FINE GRADED	301.24 301.26	10			
							30				30		TON	AGGREGATE SHOULDERS	402.12	3			
							1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50	--			
									20		20		GAL	WATER REPELLENT, SILANE	514.10	1.7			
									70		70		LF	JOINT SEALER, HOT POURED	524.11	--			
									1		1		EACH	REMOVAL OF STRUCTURE (7'-0" x 5'-0" x 42'-0" BOX)	529.15	--			
									1		1		LS	PRECAST CONCRETE STRUCTURE (14'-0" x 8'-0" x 56'-0" BOX)	540.10	--			
								120			120		CY	STONE FILL, TYPE III	613.12	7			
							2				2		EACH	RELOCATE MAILBOX, SINGLE SUPPORT	617.10	--			
							1				1		EACH	RELOCATE MAILBOX, MULTIPLE SUPPORT	617.12	--			
							112.5				112.5		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20	--			
							200				200		LF	STEEL BEAM GUARDRAIL, GALVANIZED/NESTED	621.206	--			
							4				4		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60	--			
							113				113		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80	--			
							100				100		HR	UNIFORMED TRAFFIC OFFICERS	630.10	EST			
							400				400		HR	FLAGGERS	630.15	EST			
										1	1		LS	FIELD OFFICE, ENGINEERS	631.10	--			
										1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17	--			
										3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26	--			
							1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11	--			
							5				5		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15	--			
														BEGIN OPTION AA					
							570				570		LF	DURABLE 4 INCH WHITE LINE, THERMOPLASTIC	646.402	4			
							570				570		LF	DURABLE 4 INCH WHITE LINE, POLYUREA	646.404	4			
														END OPTION AA					
														BEGIN OPTION BB					
							470				470		LF	DURABLE 4 INCH YELLOW LINE, THERMOPLASTIC	646.412	10			
							470				470		LF	DURABLE 4 INCH YELLOW LINE, POLYUREA	646.414	10			
														END OPTION BB					
							100				100		EACH	LINE STRIPING TARGETS	646.76	EST.			
								100			100		SY	GEOTEXTILE FOR SILT FENCE	649.51	7			

EARTHWORKS SUMMARY

90	CY	FILL REQUIRED
		SUBTOTAL EARTHWORKS (78 CY * 1.15)
358	CY	FILL AVAILABLE
56	CY	COMMON EXCAVATION (512 CY * 0.7)
101	CY	UNCLASSIFIED CHANNEL EXCAVATION (185 CY * 0.3)
515	CY	STRUCTURE EXCAVATION (336 CY * 0.3)
		SUBTOTAL
515	CY	FILL AVAILALE
90	CY	FILL REQUIRED
425	CY	WASTE

REV	DATE	DESCRIPTION	PROJECT NAME:	PROJECT NUMBER:	FILE NAME:	PLOT DATE:
△	12/5/16	CHANGED ITEM 301.35 "SUBBASE OF DENSE GRADED CRUSHED STONE TO ITEM 301.26 "SUBBASE OF CRUSHED GRAVEL , FINE GRADED	HANCOCK	ER STP 0174(I8)	z12c412frm.dgn	10/11/2016
			PROJECT LEADER: J. TUCKER	DESIGNED BY: B. BRESLEND	QUANTITY SHEET 1	DRAWN BY: B. BRESLEND CHECKED BY: C. LATHROP SHEET 10 OF 42

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
								60			60		LB	SEED	651.15	4			SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)
								120			120		LB	FERTILIZER	651.18	8			
								0.5			0.5		TON	AGRICULTURAL LIMESTONE	651.20	0.05	79	TON	VT ROUTE 125 WEARING COURSE
								0.4			0.4		TON	HAY MULCH	651.25	0.05	163	TON	BASE COURSE
								30			30		CY	TOPSOIL	651.35	10	5	TON	SILVER STREET WEARING COURSE
								80			80		SY	GRUBBING MATERIAL (12")	651.40	3	9	TON	BASE COURSE
								820			820		SY	GRUBBING MATERIAL (2")	651.40	9	4	TON	PIPER BROOK TRAIL WEARING COURSE
								1			1		LS	EPSC PLAN	652.10	--	7	TON	BASE COURSE
								60			60		HR	MONITORING EPSC PLAN	652.20	--	267	TON	SUBTOTAL
								1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30	--	3	TON	ROUNDING
								240			240		SY	TEMPORARY EROSION MATTING	653.20	1	270	TON	TOTAL
								40			40		CY	VEHICLE TRACKING PAD	653.35	4			
								1			1		EACH	FILTER BAG	653.45	--			
								570			570		LF	PROJECT DEMARCATION FENCE	653.55	6			
							46				46		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341	--			
							4				4		EACH	REMOVING SIGNS	675.50	--			
							4				4		EACH	ERECTING SALVAGED SIGNS	675.60	--			
									170		170		CY	SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL)(TYPE III)	900.608	8			
							23000				23000		DL	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE) (N.A.B.I.)	900.615	--			
							5				5		EACH	SPECIAL PROVISION (CPM SCHEDULE)	900.620	--			
							50				50		LF	SPECIAL PROVISION (ORANGE SNOW FENCE)	900.640	7			
									1		1		LS	SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)	900.645	--			
							1				1		LS	SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)	900.645	--			
							1				1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	900.650	--			
							1				1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I.)	900.650	--			
							270				270		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680	3			
							4				4		CWT	SPECIAL PROVISION (EMULSIFIED ASPHALT)(RS-1H OR CRS-1H)	900.683	0.4			

REV	DATE	DESCRIPTION
△	12/5/16	ADDED " (N. A. B. I.) " TO ITEM DESCRIPTION

PROJECT NAME:	HANCOCK	FILE NAME:	z12c412frm.dgn	PLOT DATE:	10/11/2016
PROJECT NUMBER:	ER STP 0174(18)	PROJECT LEADER:	J. TUCKER	DRAWN BY:	B. BRESLEND
		DESIGNED BY:	B. BRESLEND	CHECKED BY:	C. LATHROP
		QUANTITY SHEET 2		SHEET	II OF 42

RIGHT - OF - WAY DETAIL SHEET

TABLE OF PROPERTY ACQUISITION

TABLE OF REVISIONS

PARCEL NO.	PROPERTY OWNER	ROW LAYOUT NO.	BEGINNING STATION	ENDING STATION	TAKE	REMAINDER	RIGHT			RECORDING DATA					REMARKS	
					AREA±	AREA±	TYPE	T / P	AREA ±	TITLE TAKEN	DATE	TOWN / CITY	BOOK	PAGE		
1	STATE OF VERMONT	1	256+16 LT	258+72 LT	0.50 A						WD	03/18/16	HANCOCK	34	317-318	FORMALLY LILLY, JARED
2	JESSO, KEITH E. & EVA M.	1	256+63.07 RT 256+75 RT	256+88.23 RT 256+88 RT			UTILITY SLOPE	P T	159 SF 48 SF	WDOE	02/09/16	HANCOCK	34	242-243	INCL. BF & EC	
3A	TOWN OF HANCOCK	1	256+95 RT				APPROACH	T								PIPER BROOK TRAIL
3B	TOWN OF HANCOCK	1	257+42.20 RT 257+58.69 RT 257+40 RT	257+75.05 RT 257+69.43 RT 258+20 RT			CHANNEL INSTALL & MAINTAIN APPROACH	P P T	463 SF							INCL. CULV., WINGWALL, FOOTINGS, STONE FILL, EC & TEMP. PIPE GUARDRAIL SILVER STREET TH17
4	TROUMBLEY, KENNETH D. & JODY J.; JESSO, JANET	1	256+77.07 RT 256+85 RT 257+10.20 RT 257+11 RT 257+13 RT 257+14 RT 257+29.79 RT 257+36 RT	257+09 RT 257+36 RT 257+16.07 RT			UTILITY SLOPE INSTALL & MAINTAIN REMOVE & RESET REMOVE & RESET REMOVE & RESET CHANNEL REMOVE & RESET	P T P T T P T	1,128 SF 713 SF 266 SF	WDOE	02/09/16	HANCOCK	34	239-241		INCL. BF, EC & FILTER BAG GUARDRAIL MAILBOX MAILBOX SIGN INCL. CULV., WINGWALL, FOOTINGS & STONE FILL IRON PIN
5	DORIA, DAVID L. & JUDITH F.	1	256+92 RT 257+03.15 RT 257+41 RT	257+19.73 RT 253+07.41 RT 257+66.95 RT			UTILITY INSTALL & MAINTAIN CHANNEL	P P P	510 SF 199 SF	WDOE	02/09/16	HANCOCK	34	267-268		GUY WIRE & ANCHOR INCL. CULV., STONE FILL & TEMP. PIPE
6	GREEN MOUNTAIN POWER CORPORATION		256+16 LT	258+72 LT												UTILITY
7	TELEPHONE OPERATING COMPANY OF VERMONT LLC		256+16 LT	258+72 LT												UTILITY

REVISION NO.	ROW SET SHEET #	DESCRIPTION	DATE
1	3, 4	PARCEL 2, JESSO - ELIMINATE CONST.(T); CHANGE UTILITY (P) BEGIN STA. TO 256+63.07 RT AND AREA TO 159 SF.; ELIMINATE DRIVE(T), ADD SLOPE(T) FROM STA. 256+75 RT TO STA. 256+88 RT. REV. BY: MT CO 10042 APPR. BY: RC	09/23/15
2	3, 4	PARCEL 4, TROUMBLEY/JESSO - ELIMINATE DRIVE(T); ELIMINATE CONSTRUCTION(T); CHANGE UTILITY(P) TO BEGIN STA. 256+77.07 AND END STA. 257+09 AND AREA TO 1,128 SF; ADD SLOPE(T) AT BEGIN STA. 256+85 RT AND ENDING AT STA. 257+36 RT, AREA 713 SF, INCL. BF, EC & FILTER BAG. REV. BY: MT CO 10043 APPR. BY: RC	09/23/15
3	3, 4	PARCEL 5, DORIA - CHANGE UTILITY(P) TO BEGIN STA. 256+92 RT AND END STA. 257+19.73 RT AND AREA TO 510 SF; ADD INSTALL & MAINTAIN(P) AT BEGIN STA. 257+03.15 RT AND END STA. 253+07.41 RT FOR GUY WIRE & ANCHOR. REV. BY: MT CO 10044 APPR. BY: RC	09/23/15
4	3, 4	PARCEL 1, LILLY - CHANGE PROPERTY OWNER TO STATE OF VERMONT; DELETE ALL RIGHTS; ADD 0.50 A TO TAKE; REVISED TO TOTAL ACQUISITION. CHANGE BEGIN & END STATION ON LAYOUT AND TITLE SHEET; REVISE BEGIN AND END STATION FOR UTILITIES. REV. BY: MT CO 10084 APPR. BY: RC	03/02/16

APPROVED: RYAN CLOUTIER DATE: 06-04-15
CHIEF, PLANS & TITLES

PROJECT NAME: **HANCOCK**
PROJECT NUMBER: **ER STP 0174(18)**
FILE NAME: **r12c412detail.xls** PLOT DATE: **08-APR-2016**
PROJECT LEADER: **P. LIBBY** DRAWN BY: **M. TROTTIER**
DESIGNED BY: **A. PROULX** CHECKED BY: **R. CLOUTIER**
R.O.W. DETAIL SHEET #1 SHEET **14** OF **42**

STEEL BEAM GUARDRAIL, GALVANIZED/NESTED
 STA. 257+15.66 RT TO STA. 257+69.43 RT
 STA. 257+35.80 LT TO STA. 258+36.10 LT

ANCHOR FOR STEEL BEAM RAIL
 STA. 257+35.80 LT
 STA. 257+15.66 RT

**BEGIN R.O.W. PROJECT
 ER STP 0174(18)
 STA. 256+16, 22.68' LT**

REMOVAL AND DISPOSAL OF GUARDRAIL
 STA. 257+72 LT TO STA. 258+28 LT

STA. 257+25.00 (MM 4.872)
 BEGIN PROJECT ER STP 0174(18)

STEEL BEAM GUARDRAIL, GALVANIZED
 STA. 257+23.40 LT TO STA. 257+35.80 LT
 STA. 257+12.02 RT TO STA. 257+15.66 RT
 STA. 257+58.69 RT TO STA. 257+69.43 RT
 STA. 258+36.10 LT TO STA. 258+59.55 LT

CURVE (1)
 DELTA = 25°30'24"
 D = 8°11'06"
 R = 700.00'
 T = 158.44'
 L = 311.62'
 E = 17.71'

CURVE (2)
 DELTA = 14°37'47"
 D = 5°12'31"
 R = 1100.00'
 T = 141.20'
 L = 280.87'
 E = 9.03'

**N/F
 BAXTER,
 CHESTER**

**END R.O.W. PROJECT
 ER STP 0174(18)
 STA. 258+72, 23.82' LT**

**N/F
 TOWN OF
 HANCOCK**

HVCTRL 20
 N: 520669.143
 E: 1538877.965
 ELEV.: 1069.51

END APPROACH
 STA. 259+10.00

N=520677.54
 E=1538878.70
 STA. 259+00, 23.83' LT

STA. 257+25.00 (MM 4.872)
 BEGIN PROJECT ER STP 0174(18)

C VT 125 STA. 257+74.00 =
 CHANNEL LINE STA. 1+75.00
 Δ = 60°00'00"

BEGIN BRIDGE
 STA. 257+64.95

PT
 STA 257+49.54

RESET STATE OF VT
 HIGHWAY BOUNDARY
 R 16"-6" (TYP.)

STATE OF VERMONT

N=520667.80
 E=1538608.10
 STA. 256+25, 22.73' LT

N=520618.58
 E=1538602.85
 STA. 256+25, 26.78' RT

N=520628.13
 E=1538881.66
 STA. 259+00, 25.67' RT

BM (RR SPIKE IN POLE)
 N: 520610.503
 E: 1538792.767
 ELEV.: 1074.92

EXISTING UTILITY EASEMENT
 MASON TO CVPSC AND NET&TC
 1976 - BOOK 17/PAGE 53

RELOCATE MAILBOX, SINGLE SUPPORT
 STA. 257+11 RT
 STA. 257+11 RT
**N/F
 PATTERSON, FORREST**
 RELOCATE MAILBOX, MULTIPLE SUPPORT
 STA. 258+64 LT

STONE FILL, TYPE III
 STA. 257+33 - STA. 257+73 RT
 STA. 257+81 - STA. 258+08 LT
 GRUBBING MATERIAL (12")
 STA. 257+33 - STA. 257+54 RT
 STA. 257+45 - STA. 257+73 RT
 STA. 257+81 - STA. 257+85 LT
 STA. 257+94 - STA. 258+08 LT

**JESSO,
 KEITH E. & EVA M.**

**TROUMBLY,
 KENNETH D. & JODY J.;
 JESSO, JANET**

**DORIA, DAVID L.
 & JUDITH F.**

TOWN OF HANCOCK

LINES SHOWN ON THIS PLAN AS EXISTING
 PROPERTY LINES P/L ARE BELIEVED TO
 BE ACCURATE BUT SHOULD NOT BE RELIED
 UPON FOR PURPOSES UNRELATED TO THE
 STATE OF VERMONT'S ACQUISITION OF LAND
 AND RIGHTS FOR THIS PROJECT.

**FOR R.O.W.
 USE ONLY**

HVCTRL 10
 N: 520590.675
 E: 1538744.708
 ELEV.: 1076.85

0 10 20
 SCALE IN FEET

PROJECT NAME: HANCOCK	PLOT DATE: 02-MAR-2016
PROJECT NUMBER: ER STP 0174(18)	DRAWN BY: A. PROULX
FILE NAME: r12c412lay.dgn	CHECKED BY: R. CLOUTIER
PROJECT LEADER: P. LIBBY	SHEET 15 OF 42
DESIGNED BY: DUBOIS & KING	
R.O.W. LAYOUT SHEET 1 OF 1	

STEEL BEAM GUARDRAIL, GALVANIZED/NESTED
 STA. 257+15.66 RT TO STA. 257+69.43 RT
 STA. 257+35.80 LT TO STA. 258+36.10 LT

ANCHOR FOR STEEL BEAM RAIL
 STA. 257+15.66 RT
 STA. 257+35.80 LT
 STA. 257+37.36 RT
 STA. 258+48.60 LT

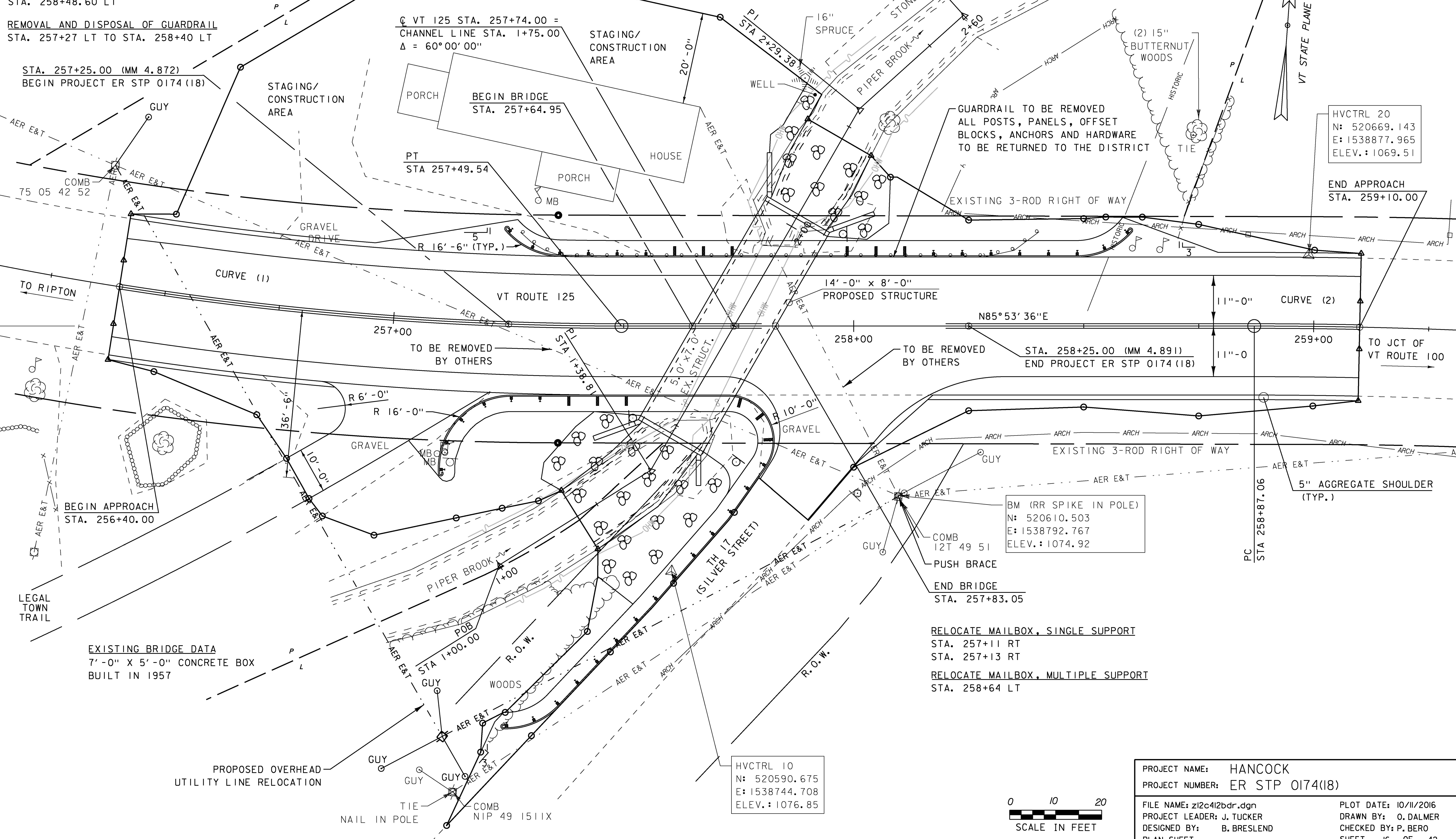
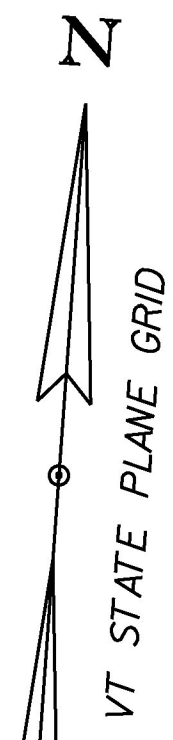
REMOVAL AND DISPOSAL OF GUARDRAIL
 STA. 257+27 LT TO STA. 258+40 LT

STA. 257+25.00 (MM 4.872)
 BEGIN PROJECT ER STP 0174 (18)

STEEL BEAM GUARDRAIL, GALVANIZED
 STA. 257+12.02 RT TO STA. 257+15.66 RT
 STA. 257+23.92 LT TO STA. 257+35.80 LT
 STA. 257+26.68 RT TO STA. 257+69.43 RT
 STA. 258+36.10 LT TO STA. 258+60.14 LT

CURVE (1)
 DELTA = 25°30'24"
 D = 8°11'06"
 R = 700.00'
 T = 158.44'
 L = 311.62'
 E = 17.71'

CURVE (2)
 DELTA = 14°37'47"
 D = 5°12'31"
 R = 1100.00'
 T = 141.20'
 L = 280.87'
 E = 9.03'

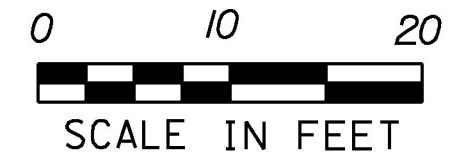


HVCTRL 20
 N: 520669.143
 E: 1538877.965
 ELEV.: 1069.51

END APPROACH
 STA. 259+10.00

BM (RR SPIKE IN POLE)
 N: 520610.503
 E: 1538792.767
 ELEV.: 1074.92

HVCTRL 10
 N: 520590.675
 E: 1538744.708
 ELEV.: 1076.85



PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174(18)
FILE NAME:	z12c412bdr.dgn
PROJECT LEADER:	J. TUCKER
DESIGNED BY:	B. BRESLEND
PLANNING SHEET:	
PLOT DATE:	10/11/2016
DRAWN BY:	O. DALMER
CHECKED BY:	P. BERO
SHEET:	16 OF 42

EXISTING BRIDGE DATA
 7'-0" X 5'-0" CONCRETE BOX
 BUILT IN 1957

RELOCATE MAILBOX, SINGLE SUPPORT
 STA. 257+11 RT
 STA. 257+13 RT

RELOCATE MAILBOX, MULTIPLE SUPPORT
 STA. 258+64 LT

PROPOSED OVERHEAD
 UTILITY LINE RELOCATION

STAGING/
 CONSTRUCTION
 AREA

BEGIN BRIDGE
 STA. 257+64.95

PT
 STA 257+49.54

R 16'-6" (TYP.)

14'-0" x 8'-0"
 PROPOSED STRUCTURE

GUARDRAIL TO BE REMOVED
 ALL POSTS, PANELS, OFFSET
 BLOCKS, ANCHORS AND HARDWARE
 TO BE RETURNED TO THE DISTRICT

EXISTING 3-ROD RIGHT OF WAY

TO BE REMOVED
 BY OTHERS
 STA. 258+25.00 (MM 4.891)
 END PROJECT ER STP 0174 (18)

EXISTING 3-ROD RIGHT OF WAY

5" AGGREGATE SHOULDER
 (TYP.)

BEGIN APPROACH
 STA. 256+40.00

END BRIDGE
 STA. 257+83.05

PC
 STA 258+87.06

LEGAL
 TOWN
 TRAIL

TH 17
 (SILVER STREET)

PIPER BROOK

WOODS

COMB
 NIP 49 1511X

NAIL IN POLE

GUY

GUY

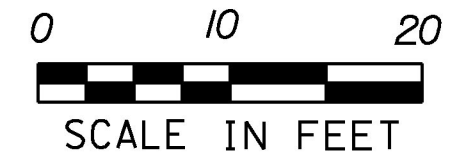
GUY

PROPOSED OVERHEAD
 UTILITY LINE RELOCATION

EXISTING BRIDGE DATA
 7'-0" X 5'-0" CONCRETE BOX
 BUILT IN 1957

RELOCATE MAILBOX, SINGLE SUPPORT
 STA. 257+11 RT
 STA. 257+13 RT

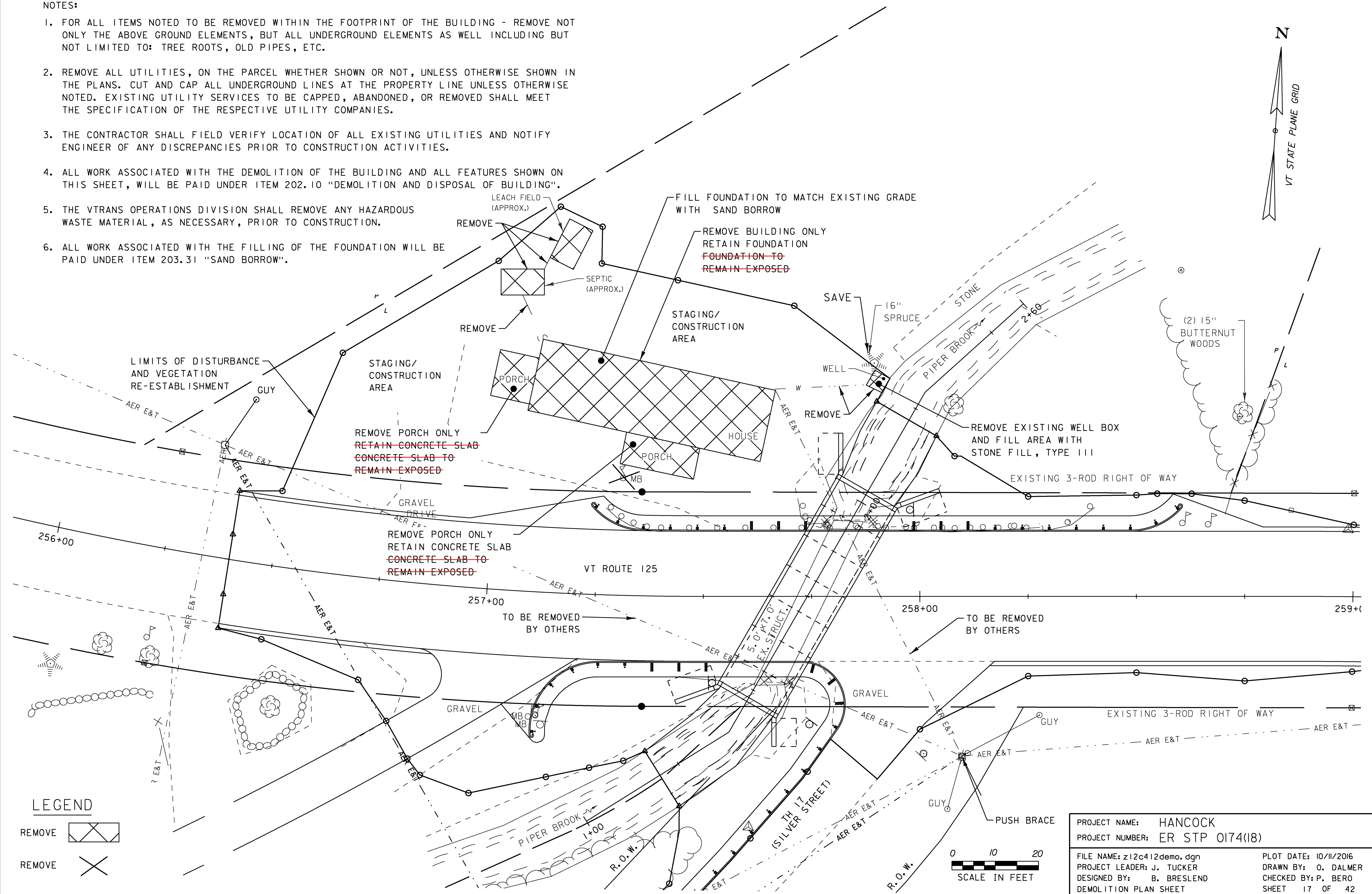
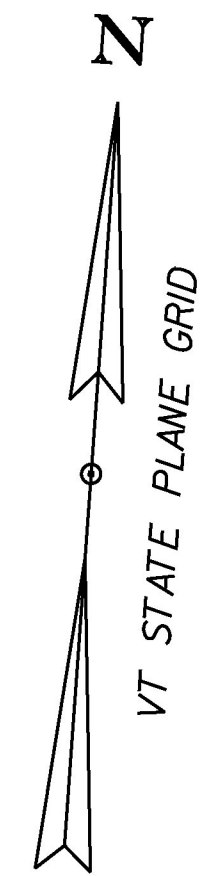
RELOCATE MAILBOX, MULTIPLE SUPPORT
 STA. 258+64 LT



PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174(18)
FILE NAME:	z12c412bdr.dgn
PROJECT LEADER:	J. TUCKER
DESIGNED BY:	B. BRESLEND
PLANNING SHEET:	
PLOT DATE:	10/11/2016
DRAWN BY:	O. DALMER
CHECKED BY:	P. BERO
SHEET:	16 OF 42

NOTES:

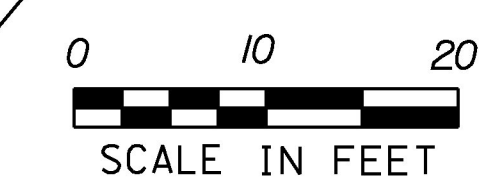
- FOR ALL ITEMS NOTED TO BE REMOVED WITHIN THE FOOTPRINT OF THE BUILDING - REMOVE NOT ONLY THE ABOVE GROUND ELEMENTS, BUT ALL UNDERGROUND ELEMENTS AS WELL INCLUDING BUT NOT LIMITED TO: TREE ROOTS, OLD PIPES, ETC.
- REMOVE ALL UTILITIES, ON THE PARCEL WHETHER SHOWN OR NOT, UNLESS OTHERWISE SHOWN IN THE PLANS. CUT AND CAP ALL UNDERGROUND LINES AT THE PROPERTY LINE UNLESS OTHERWISE NOTED. EXISTING UTILITY SERVICES TO BE CAPPED, ABANDONED, OR REMOVED SHALL MEET THE SPECIFICATION OF THE RESPECTIVE UTILITY COMPANIES.
- THE CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EXISTING UTILITIES AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION ACTIVITIES.
- ALL WORK ASSOCIATED WITH THE DEMOLITION OF THE BUILDING AND ALL FEATURES SHOWN ON THIS SHEET, WILL BE PAID UNDER ITEM 202.10 "DEMOLITION AND DISPOSAL OF BUILDING".
- THE VTRANS OPERATIONS DIVISION SHALL REMOVE ANY HAZARDOUS WASTE MATERIAL, AS NECESSARY, PRIOR TO CONSTRUCTION.
- ALL WORK ASSOCIATED WITH THE FILLING OF THE FOUNDATION WILL BE PAID UNDER ITEM 203.31 "SAND BORROW".

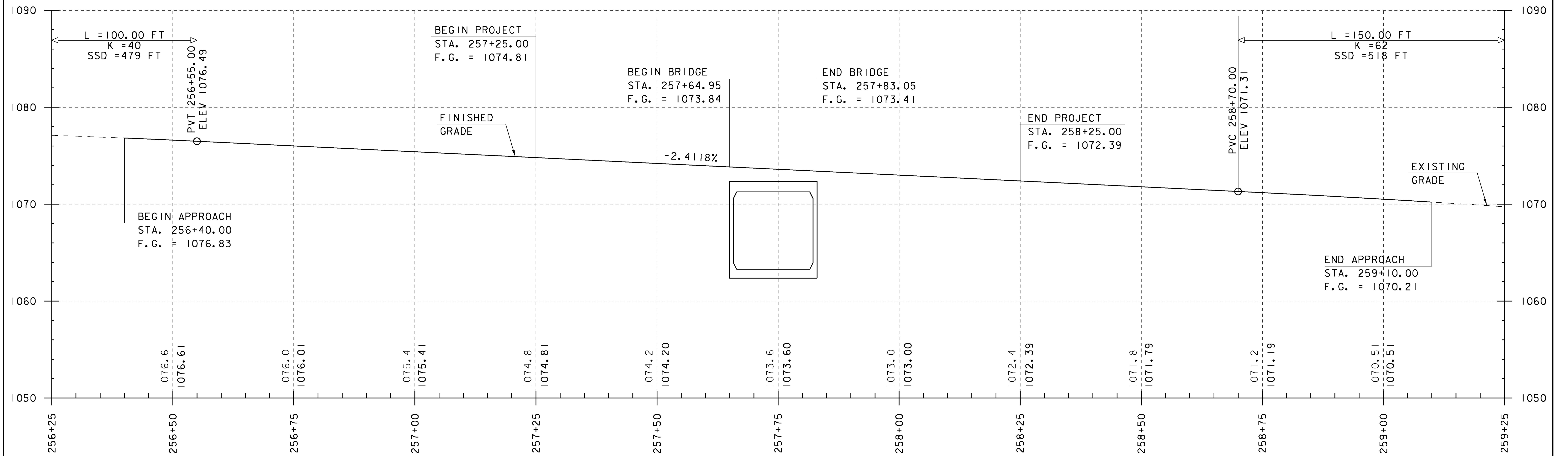


LEGEND

- REMOVE
- REMOVE

PROJECT NAME:	HANCOCK	PLOT DATE:	10/11/2016
PROJECT NUMBER:	ER STP 0174(18)	DRAWN BY:	O. DALMER
FILE NAME:	z12c412demo.dgn	CHECKED BY:	P. BERO
DESIGNED BY:	B. BRESLEND	DEMOLITION PLAN SHEET	SHEET 17 OF 42





VT 125 PROFILE

SCALE IN FEET

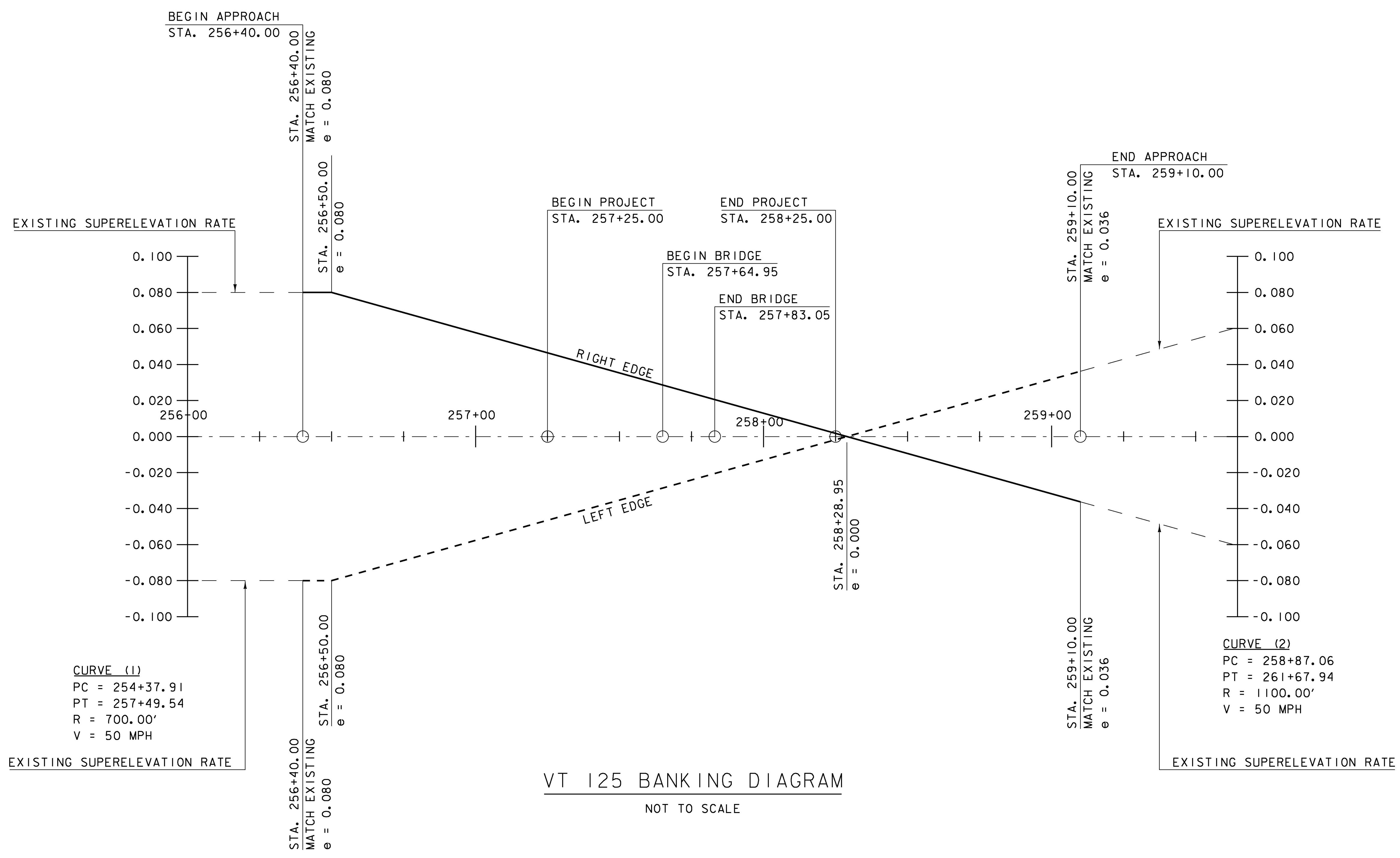
NOTE:

THIS PROFILE REPRESENTS THE THEORETICAL VT ROUTE 125 CENTERLINE PROFILE AT THE TIME OF CONSTRUCTION. THE HANCOCK STP 2923 (1) PROJECT RECLAIMED VT ROUTE 125 DURING THE 2016 CONSTRUCTION SEASON.

THE GRADES SHOWN TO THE NEAREST TENTH ARE THE EXISTING GROUND ELEVATIONS ALONG THE NEW ALIGNMENT. THE GRADES SHOWN TO THE NEAREST HUNDRETH ARE THE PROPOSED GRADES FOR THE NEW ALIGNMENT.



PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174(18)
FILE NAME:	z12c412pro.dgn
PROJECT LEADER:	J. TUCKER
DESIGNED BY:	B. BRESLEND
VT 125 PROFILE SHEET	
PLOT DATE:	10/11/2016
DRAWN BY:	O. DALMER
CHECKED BY:	P. BERO
SHEET	18 OF 42



VT 125 BANKING DIAGRAM
NOT TO SCALE

PROJECT NAME:	HANCOCK		
PROJECT NUMBER:	ER STP 0174(18)		
FILE NAME:	...Design\Cadd\z12c412bank.dgn	PLOT DATE:	10/11/2016
PROJECT LEADER:	J. TUCKER	DRAWN BY:	O. DALMER
DESIGNED BY:	B. BRESLEND	CHECKED BY:	B. BRESLEND
BANKING SHEET		SHEET	19 OF 42

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THE PROJECT IS ON VT ROUTE 125 IN THE TOWN OF HANCOCK BETWEEN MM 4.872 AND MM 4.891.

THIS PROJECT INVOLVES REPLACING AN EXISTING CONCRETE BOX CULVERT WITH A NEW PRECAST REINFORCED CONCRETE BOX CULVERT. NEW SUBBASE WITHIN THE PROJECT AREA AND RESURFACING WITH BASE AND WEARING COURSES, NEW GUARDRAIL AND NEW PAVEMENT MARKINGS.

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 0.462 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST TWO MONTHS.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS ROLLING HILLS WITH STEEP MOUNTAINOUS AREAS IN THE NEAR VICINITY. THE PIPER BROOK IS CARRIED BY THE EXISTING BOX CULVERT AT THIS LOCATION. ON THE NORTH SIDE OF THE PROJECT LOCATION EXISTS A RESIDENCE DIRECTLY ADJACENT TO PIPER BROOK. THE SOUTH SIDE IS TH #17, SILVER STREET AND A LOCAL ROAD, PIPER BROOK TRAIL. THE AREAS UPSTREAM AND DOWNSTREAM OF THE BOX CULVERT CROSSING ARE WOODED.

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

THE PIPER BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF MOSTLY UNDERGROWTH ALONG THE BROOK EMBANKMENT. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY THE CULVERT REPLACEMENT AND THE PLACEMENT OF THE STONE FILL, TYPE III FOR THE NEW STREAM CHANNEL AND EMBANKMENTS AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

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

STETSON GRAVELLY FINE SANDY LOAM, 5-12% SLOPES, "K-FACTOR" = 0.10 (ASSUMED)

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:

0.0-0.23 = LOW EROSION POTENTIAL

0.24-0.36 = MODERATE EROSION POTENTIAL

0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

ARCHAEOLOGY RESOURCES: ARCHAEOLOGICALLY SENSITIVE AREAS IN THE NE AND SE QUADRANTS. PER THE SECTION 106 DETERMINATION, ORANGE SNOW FENCING WILL BE PLACED ALONG THE ROADSIDE PORTION OF THE ADJACENT CEMETERY IN ORDER TO ENSURE PROTECTION DURING CONSTRUCTION.

CRITICAL HABITATS: NO

HISTORICAL RESOURCES: HISTORIC RESOURCE AREA IN THE NE QUADRANT.

PRIME AGRICULTURAL LAND: NO

THREATENED AND ENDANGERED SPECIES: NORTHERN LONG-EARED BAT.

WATER RESOURCE: PIPER 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 PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT 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 AND ORANGE SNOW FENCING SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

1.4.2 LIMIT DISTURBANCE AREA

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

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

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTORS PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

1.4.4 INSTALL SEDIMENT BARRIERS

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

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

1.4.5 DIVERT UPLAND RUNOFF

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

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 EROSION POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

THIS PRINCIPLE IS NOT ANTICIPATED TO BE NEEDED FOR THIS PROJECT 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.

THIS PRINCIPLE IS NOT ANTICIPATED TO BE NEEDED FOR THIS PROJECT 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.

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.

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

1.4.10 STABILIZE SOIL AT FINAL GRADE

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

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

1.4.11 DE-WATERING ACTIVITIES

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

TREATMENT OF DEWATERING IS ANTICIPATED BY USE OF A FILTER BAG. A LOCATION FOR TREATMENT HAS BEEN PROPOSED AND IS SHOWN ON THE PLANS. HOWEVER THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR.

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.

PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174(18)
FILE NAME: z12c412EPSC_Narrative.dgn	PLOT DATE: 10/11/2016
PROJECT LEADER: J. TUCKER	DRAWN BY: O. DALMER
DESIGNED BY: B. BRESLEND	CHECKED BY: A. SANZ
EPSC NARRATIVE	SHEET 20 OF 42

BRUSH LAYER 653.75, DETAIL	
CHECK DAM (LINE STYLE) 653.25, DETAIL	
COFFERDAM (LINE STYLE) 208.40	
CURB DROP INLET PROTECTION 653.40, DETAIL	
DUST CONTROL 609.10 & 15	
PIPE INLET PROTECTION 653.40, DETAIL	
EXCAVATED DROP INLET PROTECTION 653.40, DETAIL	
FIBER ROLL (EROSION LOG) 653.60, DETAIL	
FILTER BAG 653.45, DETAIL	
FILTER FABRIC DROP INLET PROTECTION 653.40, DETAIL	
LIVE CUTTINGS/LIVE STAKES PLANTING 653.70, DETAIL	
LIVE FASCINE 653.65, DETAIL	
ROLLED EROSION CONTROL PRODUCT (RECP) 653.20 (TEMP. EROSION MATTING)	
SEDIMENT BASIN INCIDENTAL TO COFFERDAM 208.40	

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	STANDARD SYMBOLS
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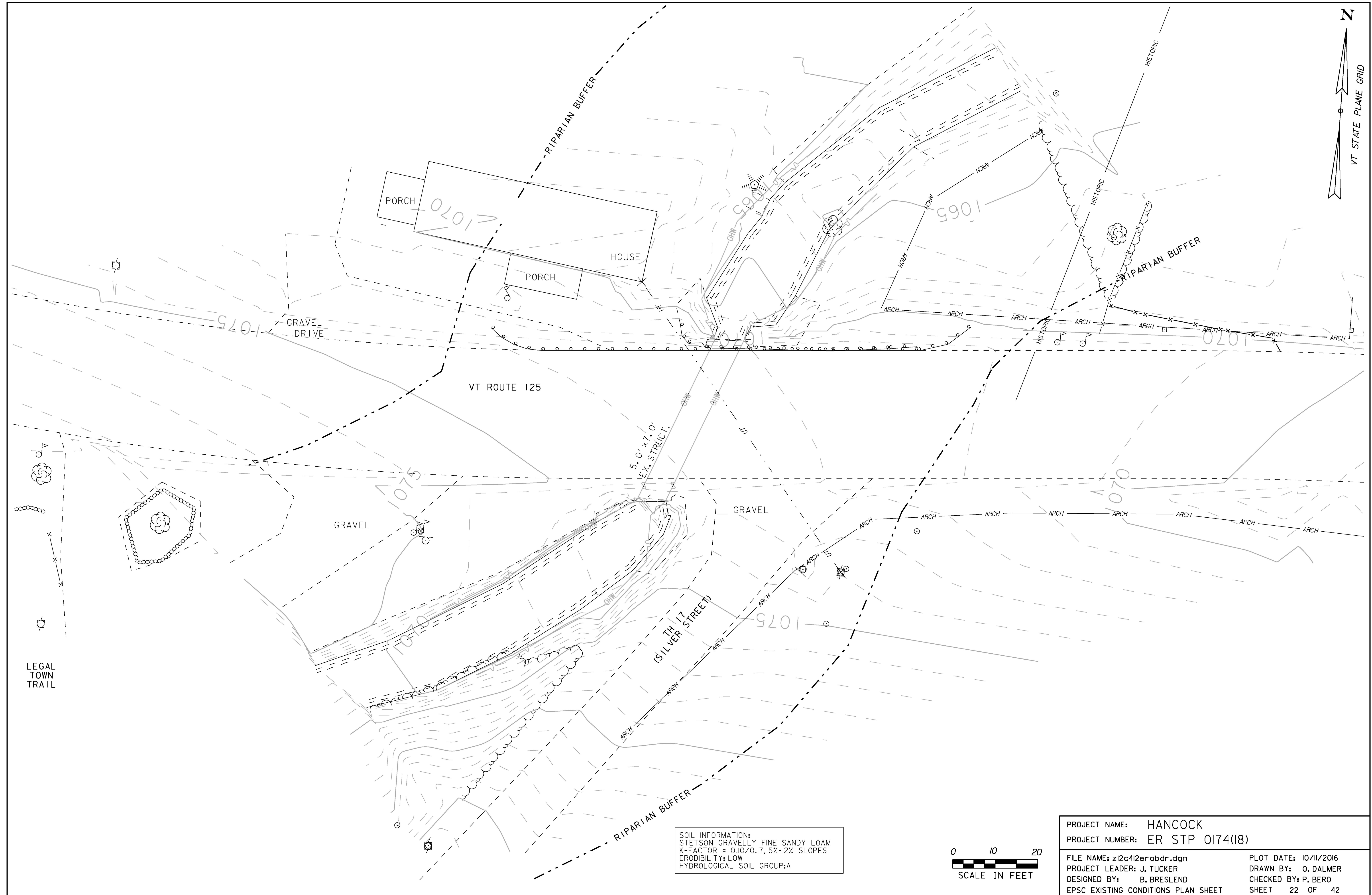
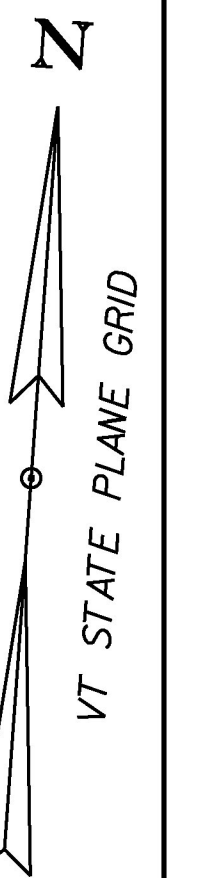
STABILIZED CONSTRUCTION ENTRANCE 653.35, DETAIL, VEHICLE TRACKING PAD	
STONE & BLOCK DROP INLET PROTECTION 653.40, DETAIL	
SURFACE ROUGHENING INCIDENTAL TO CONTRACT	

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

NOTES:

1. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN, THE CONTRACTOR MUST SUBMIT AN EROSION PREVENTION AND SEDIMENT CONTROL PLAN FOR APPROVAL.
2. TEMPORARY EROSION CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE ENGINEER AND ON SITE COORDINATOR.
4. REFER TO EPCS DETAIL SHEETS FOR ADDITIONAL DETAILS.
5. REFER TO SHEET 3 "CONVENTIONAL SYMBOLOGY LEGEND SHEET" FOR ADDITIONAL EPSC SYMBOLS.

PROJECT NAME: HANCOCK	PLOT DATE: 10/11/2016
PROJECT NUMBER: ER STP 0174 (18)	DRAWN BY: O. DALMER
FILE NAME: z12c414Eerodet.dgn	CHECKED BY: E. ANDREWS
DESIGNED BY: B. BRESLEND	SHEET 21 OF 42
EPSC LEGEND & NOTES	



SOIL INFORMATION:
 STETSON GRAVELLY FINE SANDY LOAM
 K-FACTOR = 0.10/0.17, 5%-12% SLOPES
 ERODIBILITY: LOW
 HYDROLOGICAL SOIL GROUP:A



PROJECT NAME: HANCOCK	
PROJECT NUMBER: ER STP 0174(18)	
FILE NAME: z12c412erobdr.dgn	PLOT DATE: 10/11/2016
PROJECT LEADER: J. TUCKER	DRAWN BY: O. DALMER
DESIGNED BY: B. BRESLEND	CHECKED BY: P. BERO
EPSC EXISTING CONDITIONS PLAN SHEET	SHEET 22 OF 42

LEGAL
TOWN
TRAIL

STONE FILL, TYPE III
 STA. 257+33 - STA. 257+73 RT
 STA. 257+81 - STA. 258+08 LT

GEOTEXTILE FOR SILT FENCE
 STA. 257+25.00 - STA. 257+44.00 RT
 STA. 257+44.00 - STA. 257+69.00 RT
 STA. 257+75.00 - STA. 257+81.00 LT
 STA. 257+98.00 - STA. 258+10.00 LT
 STA. 258+16.00 - STA. 258+55.00 LT
 STA. 258+52.00 - STA. 258+72.00 LT
 STA. 258+67.00 - STA. 259+10.00 LT

SEED
 STA. 256+40 - 259+10 LT
 STA. 256+40 - 256+91 RT
 STA. 256+85 - 257+79 RT
 STA. 258+00 - 259+10 RT

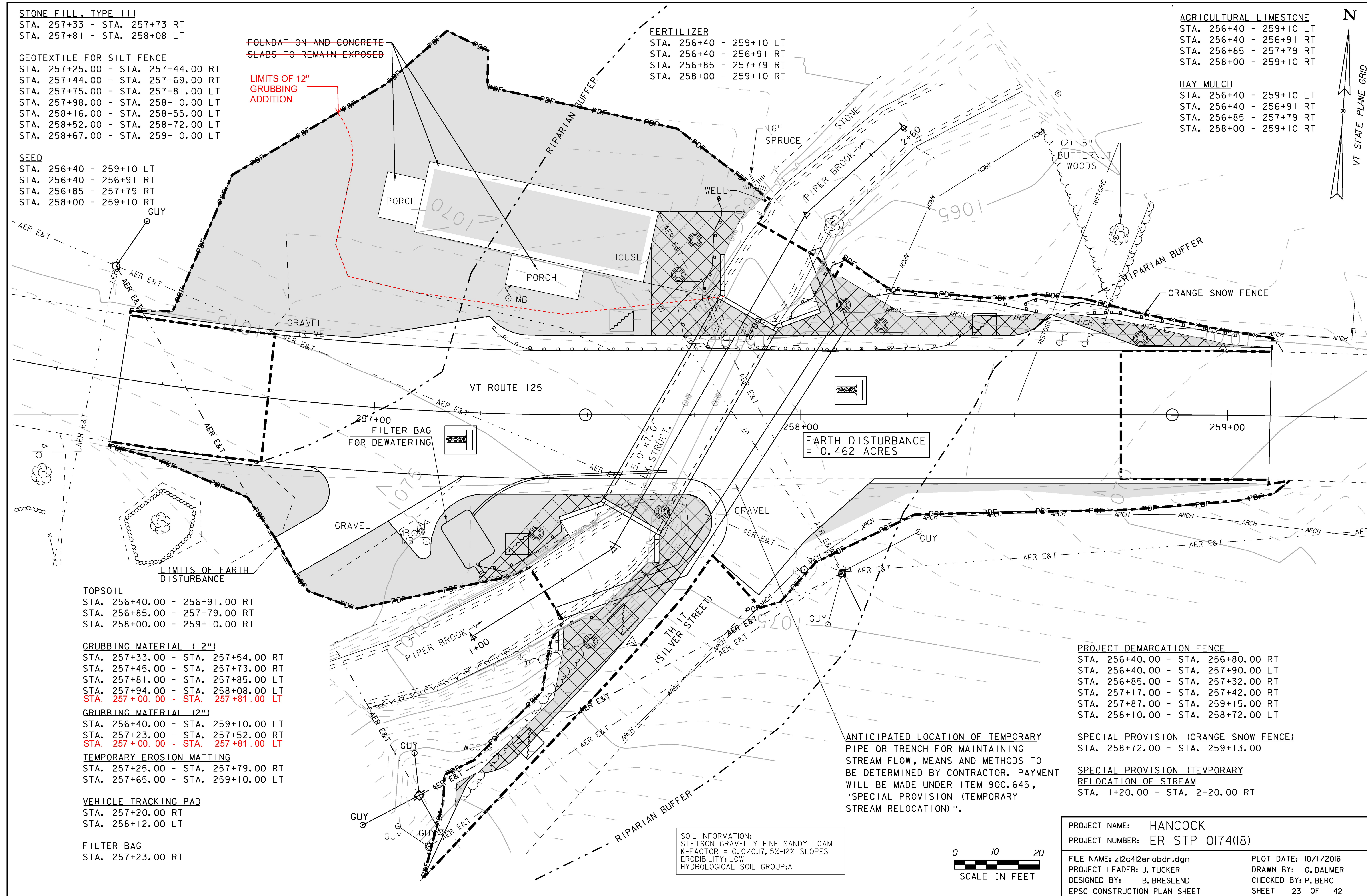
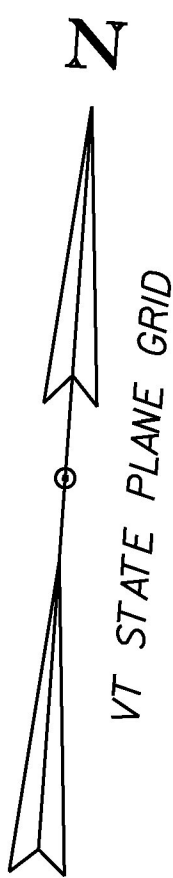
**FOUNDATION AND CONCRETE
 SLABS TO REMAIN EXPOSED**

**LIMITS OF 12"
 GRUBBING
 ADDITION**

FERTILIZER
 STA. 256+40 - 259+10 LT
 STA. 256+40 - 256+91 RT
 STA. 256+85 - 257+79 RT
 STA. 258+00 - 259+10 RT

AGRICULTURAL LIMESTONE
 STA. 256+40 - 259+10 LT
 STA. 256+40 - 256+91 RT
 STA. 256+85 - 257+79 RT
 STA. 258+00 - 259+10 RT

HAY MULCH
 STA. 256+40 - 259+10 LT
 STA. 256+40 - 256+91 RT
 STA. 256+85 - 257+79 RT
 STA. 258+00 - 259+10 RT



TOPSOIL
 STA. 256+40.00 - 256+91.00 RT
 STA. 256+85.00 - 257+79.00 RT
 STA. 258+00.00 - 259+10.00 RT

GRUBBING MATERIAL (12")
 STA. 257+33.00 - STA. 257+54.00 RT
 STA. 257+45.00 - STA. 257+73.00 RT
 STA. 257+81.00 - STA. 257+85.00 LT
 STA. 257+94.00 - STA. 258+08.00 LT
 STA. 257+00.00 - STA. 257+81.00 LT

GRUBBING MATERIAL (2")
 STA. 256+40.00 - STA. 259+10.00 LT
 STA. 257+23.00 - STA. 257+52.00 RT
 STA. 257+00.00 - STA. 257+81.00 LT

TEMPORARY EROSION MATTING
 STA. 257+25.00 - STA. 257+79.00 RT
 STA. 257+65.00 - STA. 259+10.00 LT

VEHICLE TRACKING PAD
 STA. 257+20.00 RT
 STA. 258+12.00 LT

FILTER BAG
 STA. 257+23.00 RT

**EARTH DISTURBANCE
 = 0.462 ACRES**

ANTICIPATED LOCATION OF TEMPORARY PIPE OR TRENCH FOR MAINTAINING STREAM FLOW, MEANS AND METHODS TO BE DETERMINED BY CONTRACTOR. PAYMENT WILL BE MADE UNDER ITEM 900.645, "SPECIAL PROVISION (TEMPORARY STREAM RELOCATION)".

SOIL INFORMATION:
 STETSON GRAVELLY FINE SANDY LOAM
 K-FACTOR = 0.10/0.17, 5%-12% SLOPES
 ERODIBILITY: LOW
 HYDROLOGICAL SOIL GROUP:A

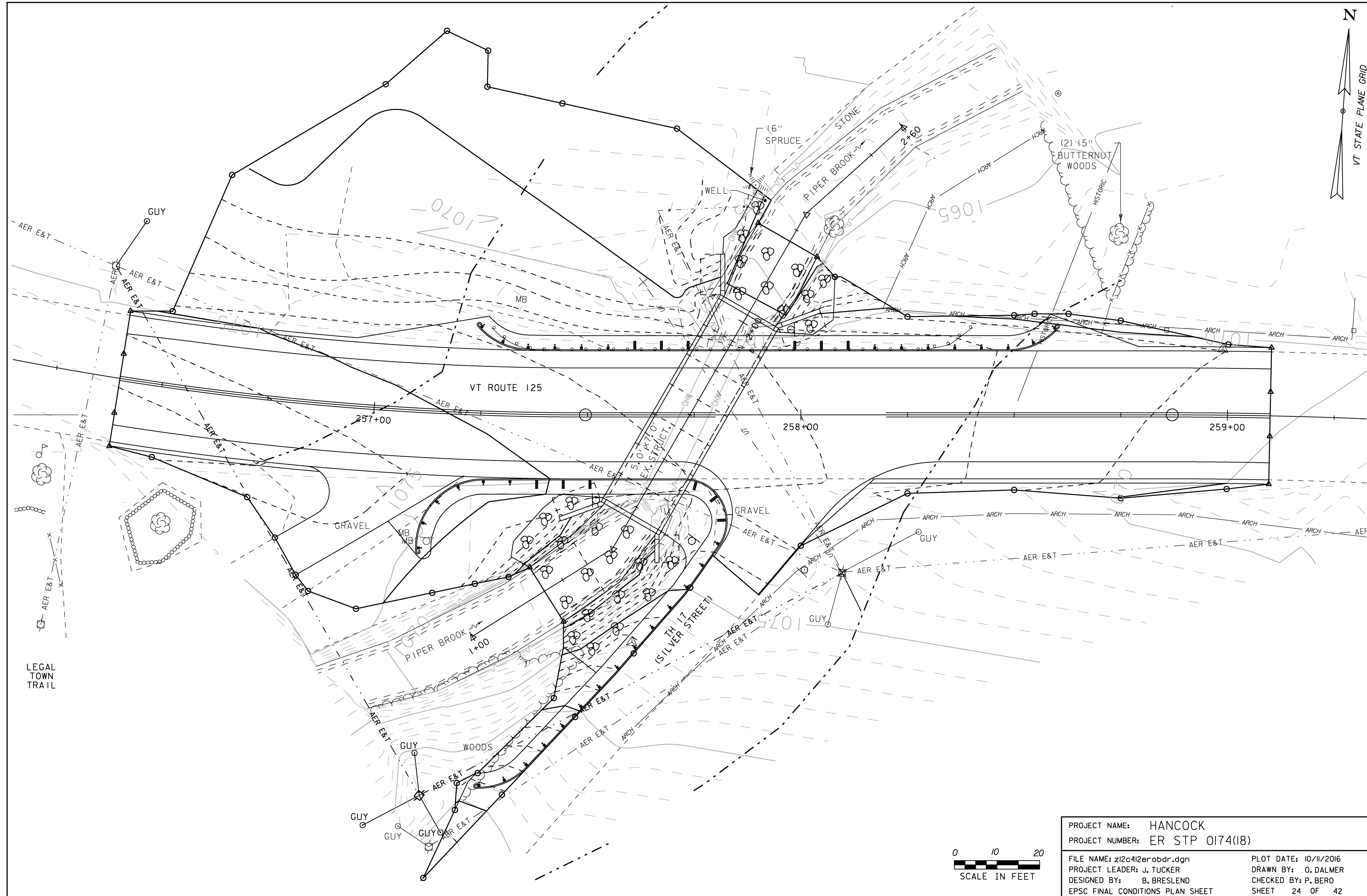
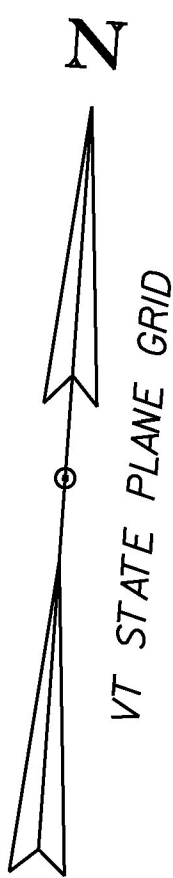


PROJECT DEMARCATION FENCE
 STA. 256+40.00 - STA. 256+80.00 RT
 STA. 256+40.00 - STA. 257+90.00 LT
 STA. 256+85.00 - STA. 257+32.00 RT
 STA. 257+17.00 - STA. 257+42.00 RT
 STA. 257+87.00 - STA. 259+15.00 RT
 STA. 258+10.00 - STA. 258+72.00 LT

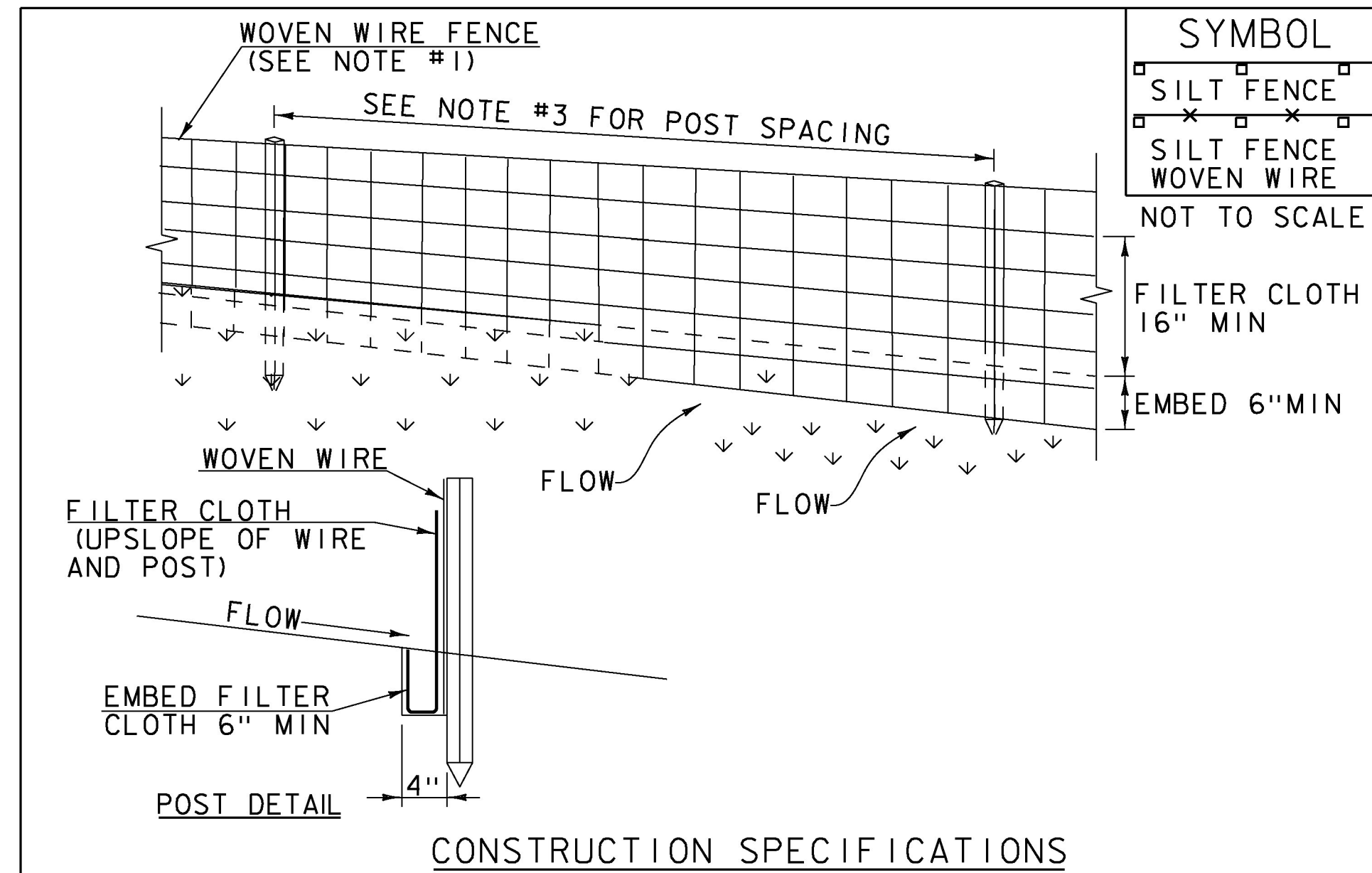
SPECIAL PROVISION (ORANGE SNOW FENCE)
 STA. 258+72.00 - STA. 259+13.00

SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)
 STA. 1+20.00 - STA. 2+20.00 RT

PROJECT NAME: HANCOCK	
PROJECT NUMBER: ER STP 0174(18)	
FILE NAME: z12c412erobdr.dgn	PLOT DATE: 10/11/2016
PROJECT LEADER: J. TUCKER	DRAWN BY: O. DALMER
DESIGNED BY: B. BRESLEND	CHECKED BY: P. BERO
EPSC CONSTRUCTION PLAN SHEET	SHEET 23 OF 42



PROJECT NAME:	HANCOCK	PLOT DATE:	10/11/2016
PROJECT NUMBER:	ER STP 0174(18)	DRAWN BY:	O. DALMER
FILE NAME:	z12c412erobdr.dgn	DESIGNED BY:	B. BRESLEND
PROJECT LEADER:	J. TUCKER	CHECKED BY:	P. BERO
EPSC FINAL CONDITIONS PLAN SHEET			SHEET 24 OF 42



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

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

SILT FENCE

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

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

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

VAOT LOW GROW/FINE FESCUE MIX						
WEIGHT	LBS/AC		NAME	LATIN NAME	GERM	PURITY
	BROADCAST	HYDROSEED				
38%	57	95	CREeping RED FESCUE	FESTUCA RUBRA VAR. RUBRA	90%	98%
29%	43.5	72.5	HARD FESCUE	FESTUCA LONGIFOLIA	85%	95%
15%	22.5	37.5	CHEWINGS FESCUE	FESTUCA RUBRA VAR. COMMUTATA	87%	95%
15%	22.5	37.5	ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	90%	95%
3%	4.5	7.5	INERTS			
100%	150	250				

VAOT RURAL AREA MIX						
WEIGHT	LBS/AC		NAME	LATIN NAME	GERM	PURITY
	BROADCAST	HYDROSEED				
37.5%	22.5	45	CREeping RED FESCUE	FESTUCA RUBRA VAR. RUBRA	85%	98%
37.5%	22.5	45	TALL FESCUE	FESTUCA ARUNDINACEA	90%	95%
5.0%	3	6	RED TOP	AGROSTIS GIGANTEA	90%	95%
15.0%	9	18	WHITE FIELD CLOVER	TRIFOLIUM REPENS	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	85%	95%
100%	60	120				

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

CONSTRUCTION GUIDANCE

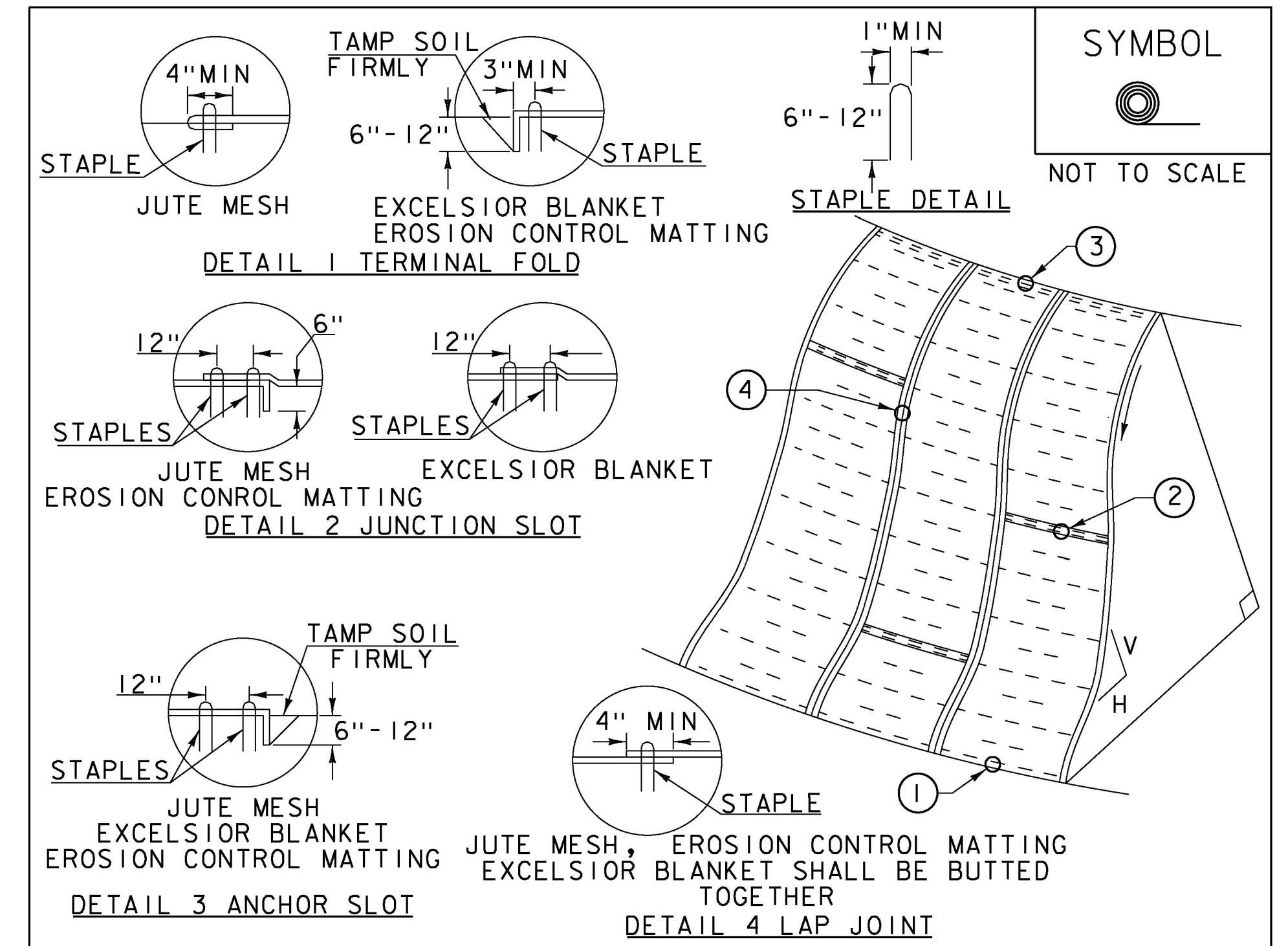
- SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
- SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
- ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.5)

REVISIONS	
JANUARY 12, 2015	WHF



CONSTRUCTION SPECIFICATIONS

- APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
- APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
- STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4' X 225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4' X 150' ROLL OF MATERIAL.
- DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
- ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

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

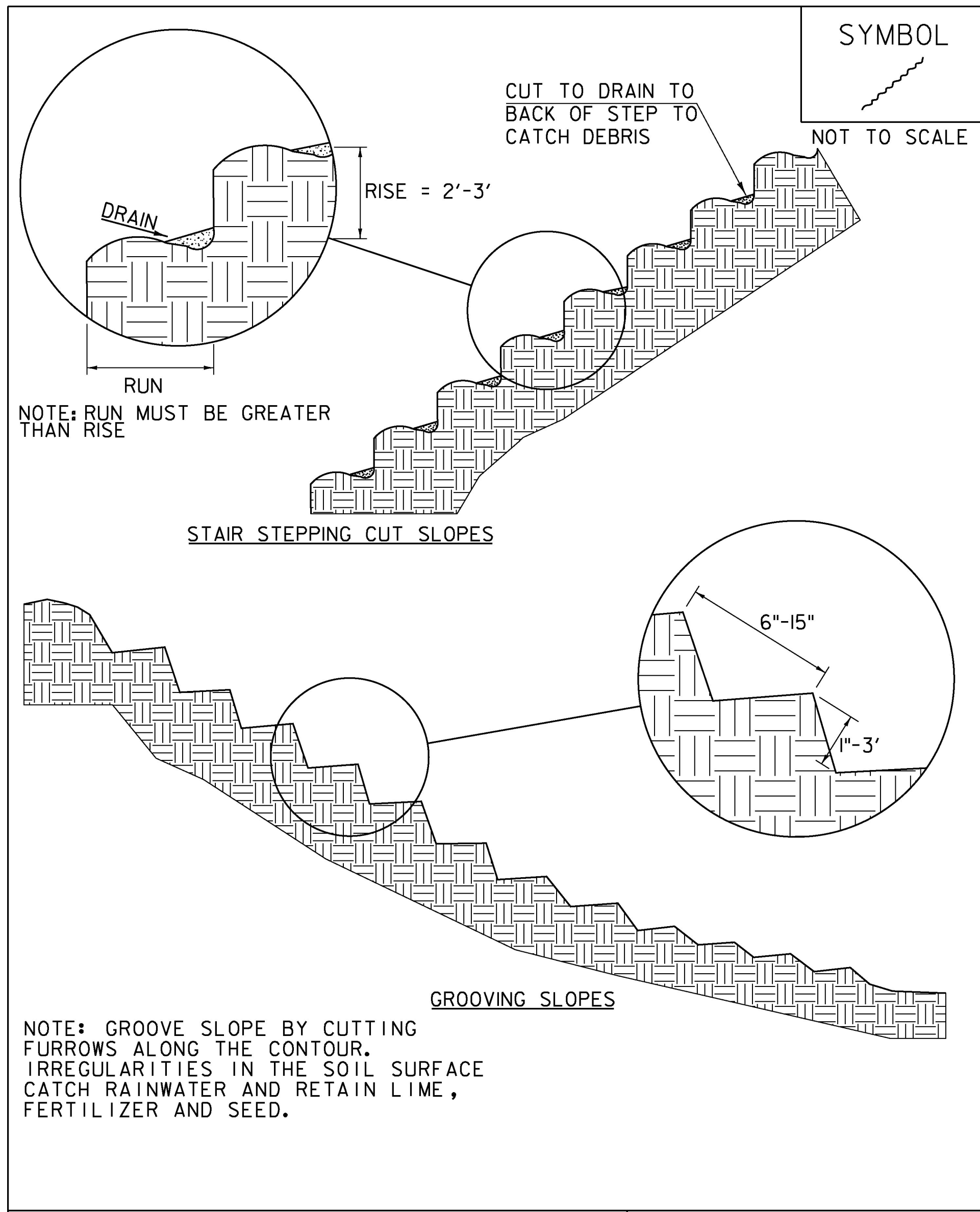
ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

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

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

PROJECT NAME: HANCOCK
PROJECT NUMBER: ER STP 0174(18)

FILE NAME: z12c412erodet.dgn PLOT DATE: 10/11/2016
PROJECT LEADER: J. TUCKER DRAWN BY: O. DALMER
DESIGNED BY: B. BRESLEND CHECKED BY: P. BERO
EPSC DETAILS SHEET 1 SHEET 25 OF 42



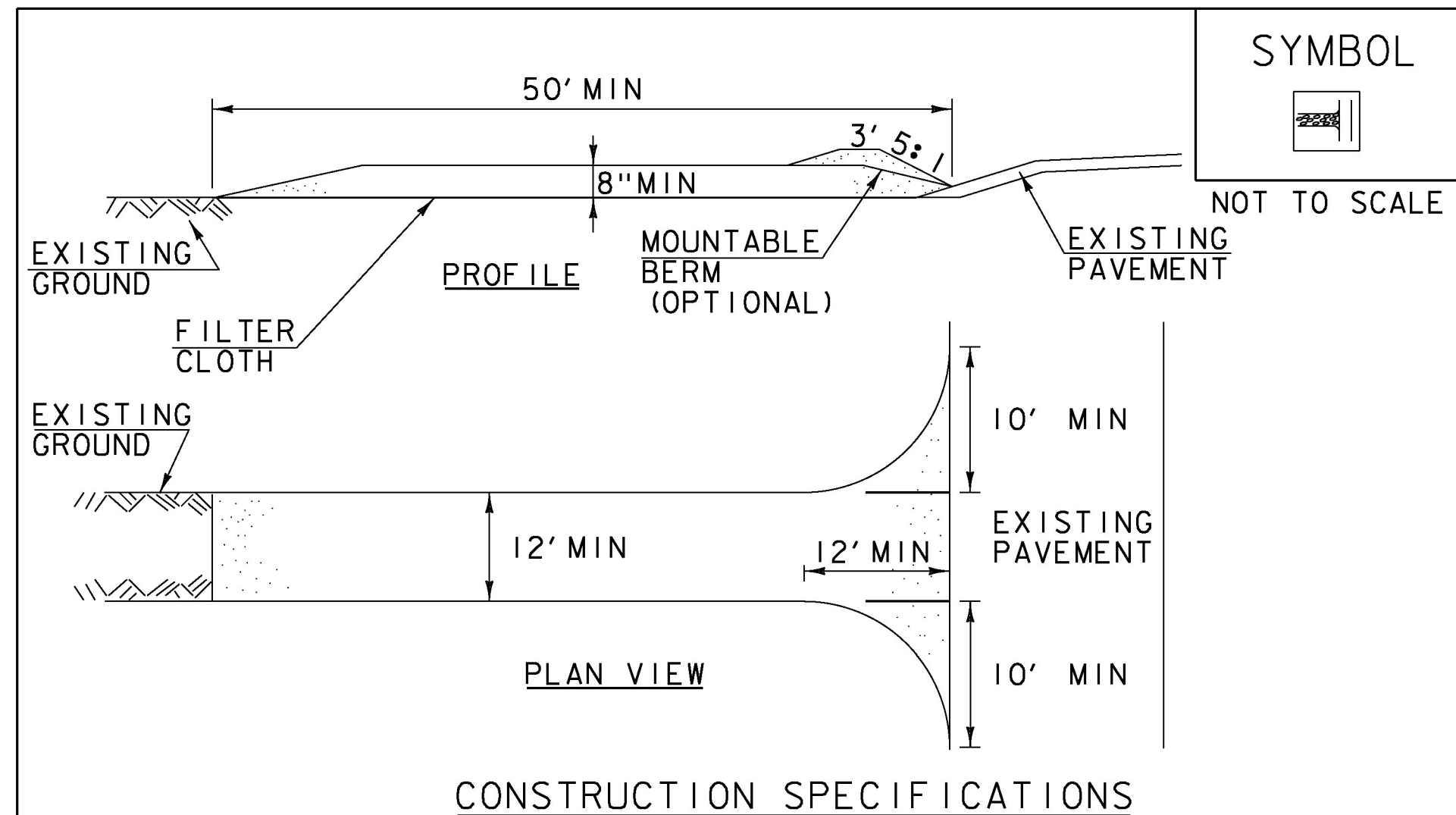
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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	



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

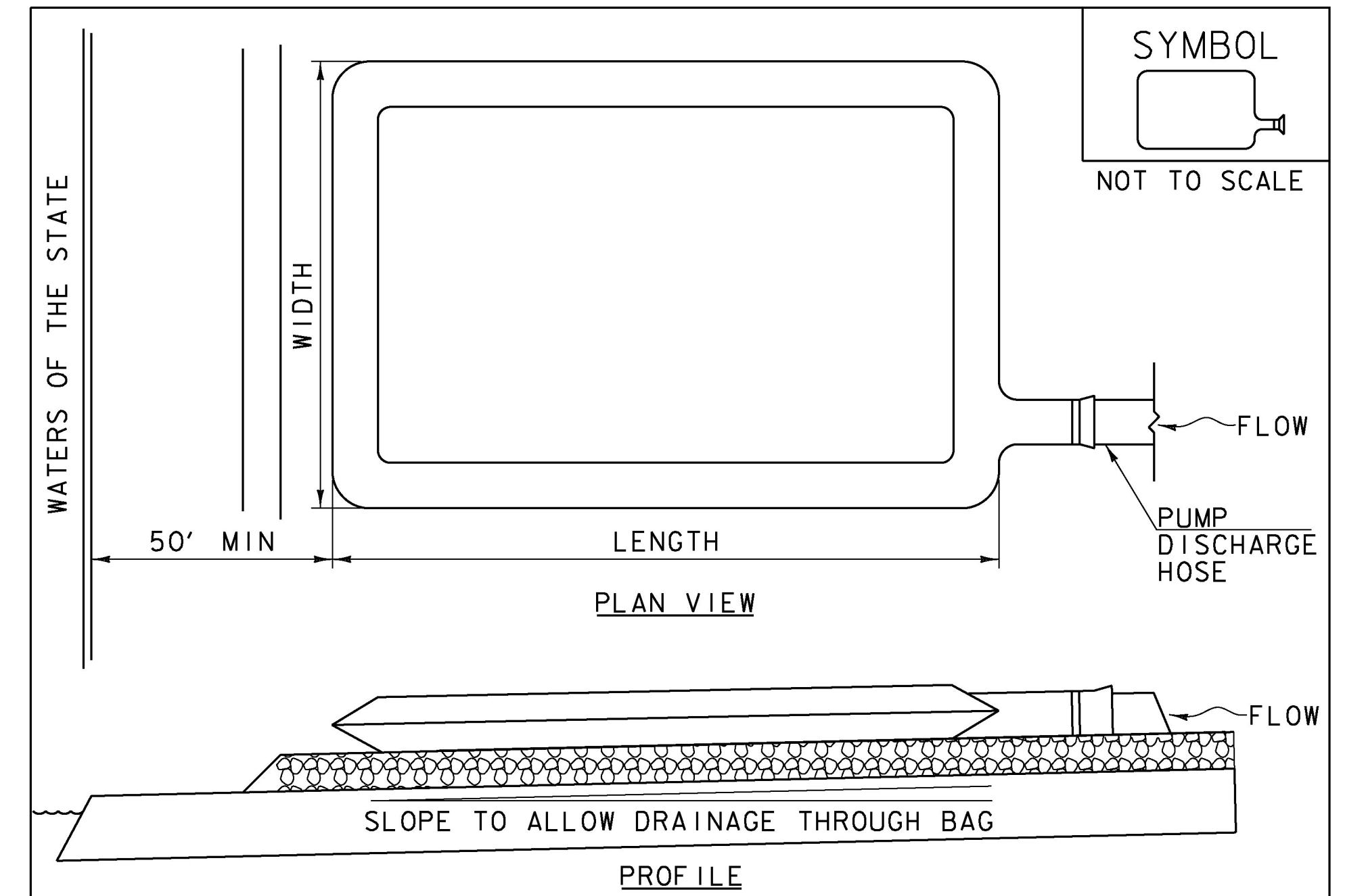
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**STABILIZED
CONSTRUCTION
ENTRANCE**

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

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

REVISIONS		
MARCH 24, 2008	WHF	
JANUARY 13, 2009	WHF	



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

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

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

REVISIONS		
MARCH 24, 2008	WHF	
JANUARY 13, 2009	WHF	

PROJECT NAME: HANCOCK	PLOT DATE: 10/11/2016
PROJECT NUMBER: ER STP 0174(18)	DRAWN BY: O. DALMER
FILE NAME: z12c412erodet.dgn	CHECKED BY: P. BERO
PROJECT LEADER: J. TUCKER	SHEET 26 OF 42
DESIGNED BY: B. BRESLEND	
EPSC DETAILS SHEET 2	

DURABLE 4 INCH WHITE LINE (SEE OPTION ITEMS)

STA. 256+40 LT TO STA. 259+10 LT (SOLID EDGELINE)
STA. 256+40 RT TO STA. 257+73 RT (SOLID EDGELINE)
STA. 257+73 RT TO STA. 257+79 RT (SOLID TOWN HIGHWAY EDGELINE)
STA. 257+90 RT TO STA. 258+33 RT (SOLID TOWN HIGHWAY EDGELINE)
STA. 258+33 RT TO STA. 259+10 RT (SOLID EDGELINE)

DURABLE 4 INCH YELLOW LINE (SEE OPTION ITEMS)

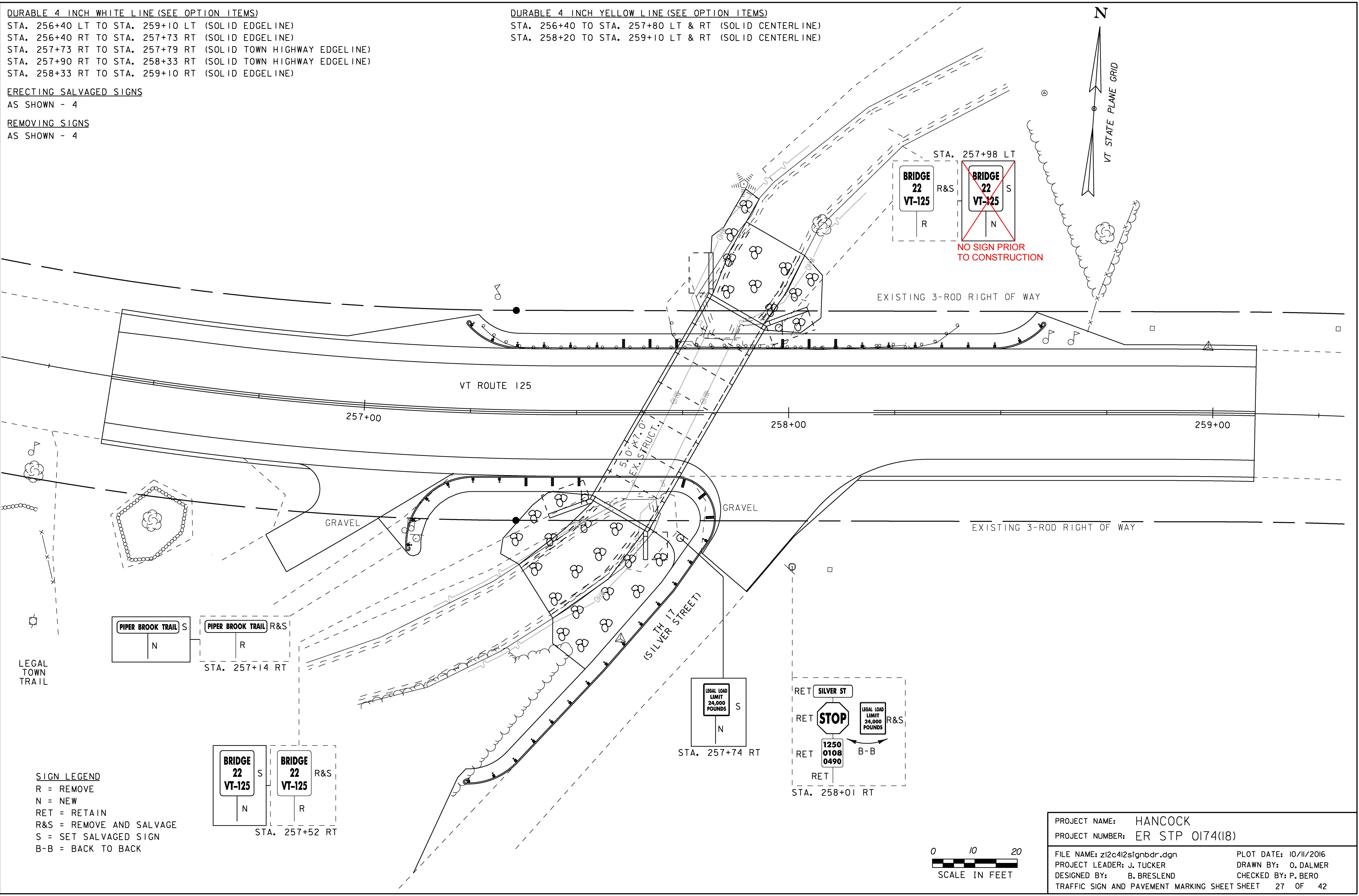
STA. 256+40 TO STA. 257+80 LT & RT (SOLID CENTERLINE)
STA. 258+20 TO STA. 259+10 LT & RT (SOLID CENTERLINE)

ERECTING SALVAGED SIGNS

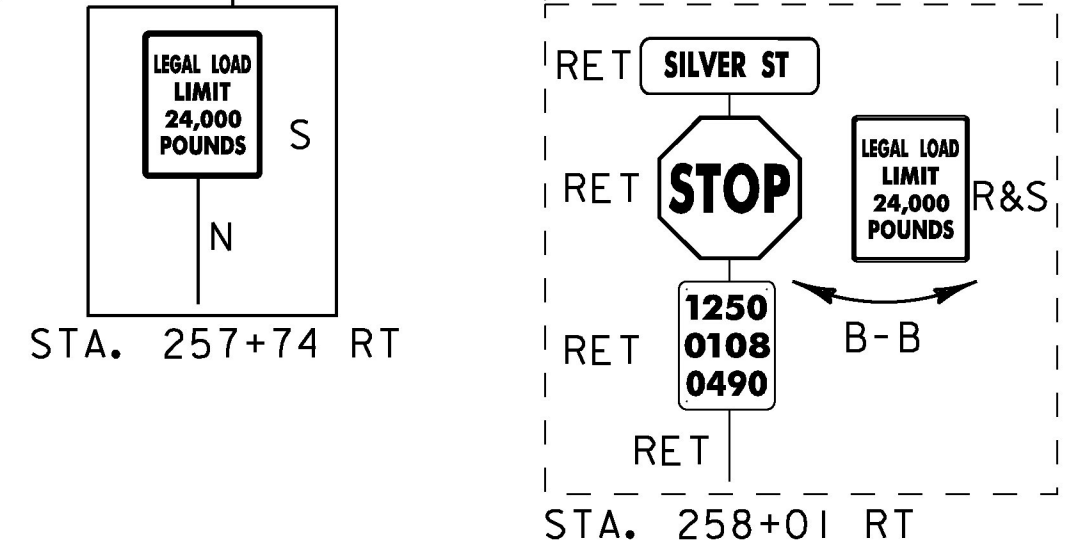
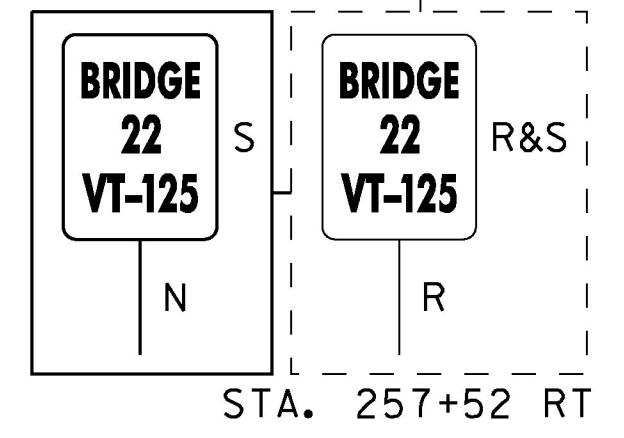
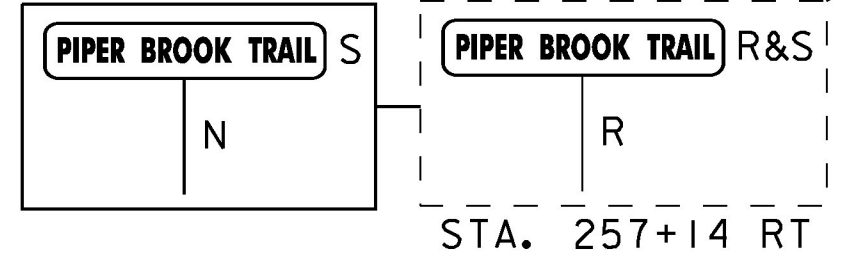
AS SHOWN - 4

REMOVING SIGNS

AS SHOWN - 4



LEGAL TOWN TRAIL



SIGN LEGEND
 R = REMOVE
 N = NEW
 RET = RETAIN
 R&S = REMOVE AND SALVAGE
 S = SET SALVAGED SIGN
 B-B = BACK TO BACK

PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174(18)
FILE NAME:	z12c412signbdr.dgn
PLOT DATE:	10/11/2016
PROJECT LEADER:	J. TUCKER
DRAWN BY:	O. DALMER
DESIGNED BY:	B. BRESLEND
CHECKED BY:	P. BERO
TRAFFIC SIGN AND PAVEMENT MARKING SHEET	27 OF 42

0 10 20
 SCALE IN FEET

SOIL CLASSIFICATION

AASHTO

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

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

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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

COMMONLY USED SYMBOLS

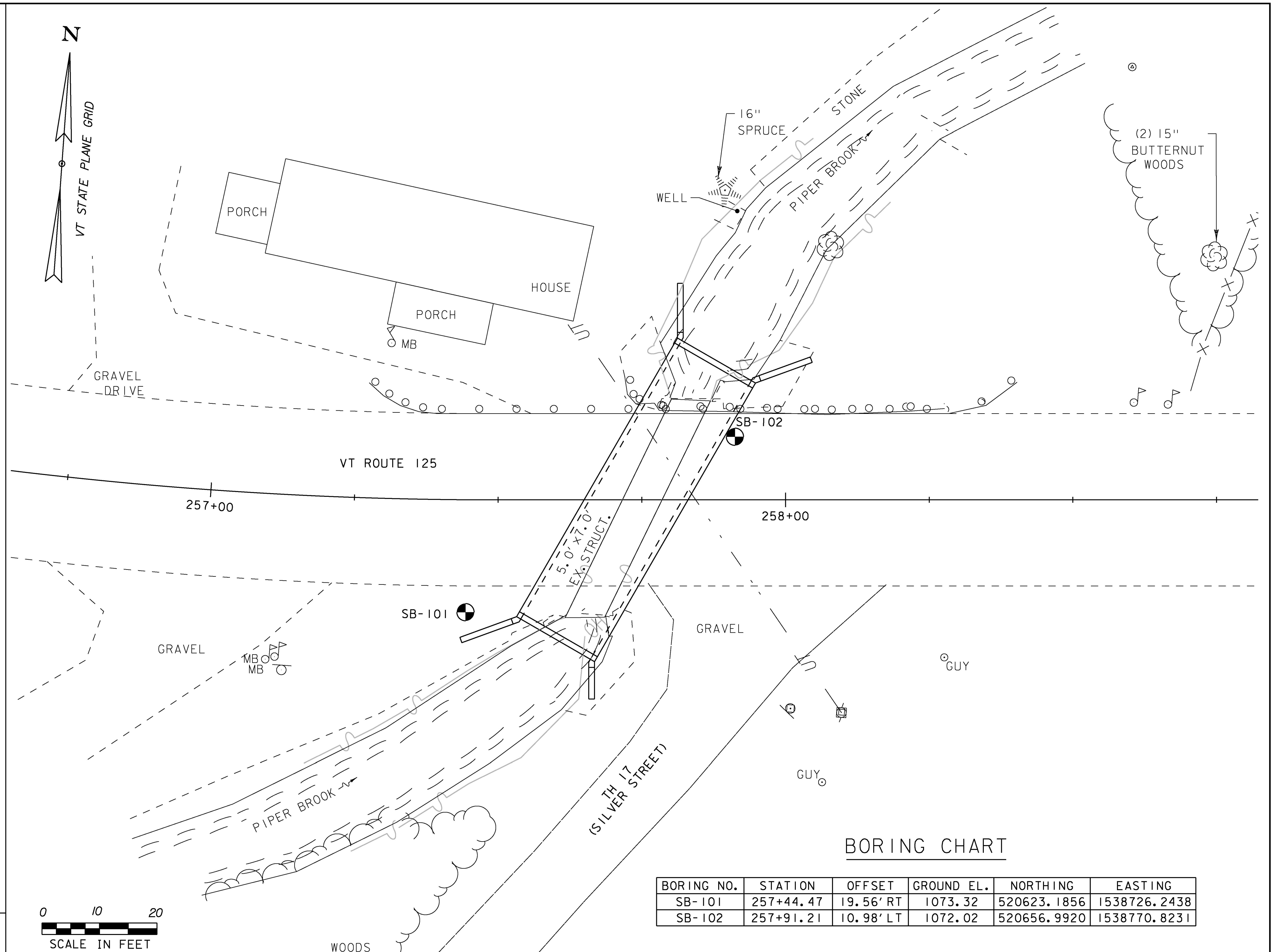
- ▼ Water Elevation
- ⊕ Standard Penetration Boring
- ⊗ Auger Boring
- ⊙ Rod Sounding
- S Sample
- N Standard Penetration Test
- Blow Count Per Foot For:
- 2" O.D. Sampler
- 1 3/8" I.D. Sampler
- Hammer Weight Of 140 Lbs.
- Hammer Fall Of 30"
- VS Field Vane Shear Test
- US Undisturbed Soil Sample
-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

COLOR

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

DEFINITIONS (AASHTO)

- BEDROCK (LEDGE)** - Rock in its native location of indefinite thickness.
- BOULDER** - A rock fragment with an average dimension > 12 inches.
- COBBLE** - Rock fragments with an average dimension between 3 and 12 inches.
- GRAVEL** - Rounded particles of rock < 3" and > 0.075" (#10 sieve).
- SAND** - Particles of rock < 0.075" (#10 sieve) and > 0.0029" (#200 sieve).
- SILT** - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.
- CLAY** - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.
- VARVED** - Alternate layers of silt and clay.
- HARDPAN** - Extremely dense soil, cemented layer, not softened when wet.
- MUCK** - Soft organic soil (containing > 10% organic material).
- MOISTURE CONTENT** - Weight of water divided by dry weight of soil.
- FLOWING SAND** - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
- STRIKE** - Angle from magnetic north to line of intersection of bed with a horizontal plane.
- DIP** - Inclination of bed with a horizontal plane.



BORING CHART

BORING NO.	STATION	OFFSET	GROUND EL.	NORTHING	EASTING
SB-101	257+44.47	19.56' RT	1073.32	520623.1856	1538726.2438
SB-102	257+91.21	10.98' LT	1072.02	520656.9920	1538770.8231

GENERAL NOTES

- The subsurface explorations shown herein were made in August, 2014 by Mike's Boring and Coring.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by DuBois & King and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
- Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174(18)
FILE NAME:	z12c412bor.dgn
PROJECT LEADER:	J. TUCKER
DESIGNED BY:	B. BRESLEND
BORING INFORMATION SHEET	
PLOT DATE:	10/11/2016
DRAWN BY:	O. DALMER
CHECKED BY:	P. BERO
SHEET	29 OF 42

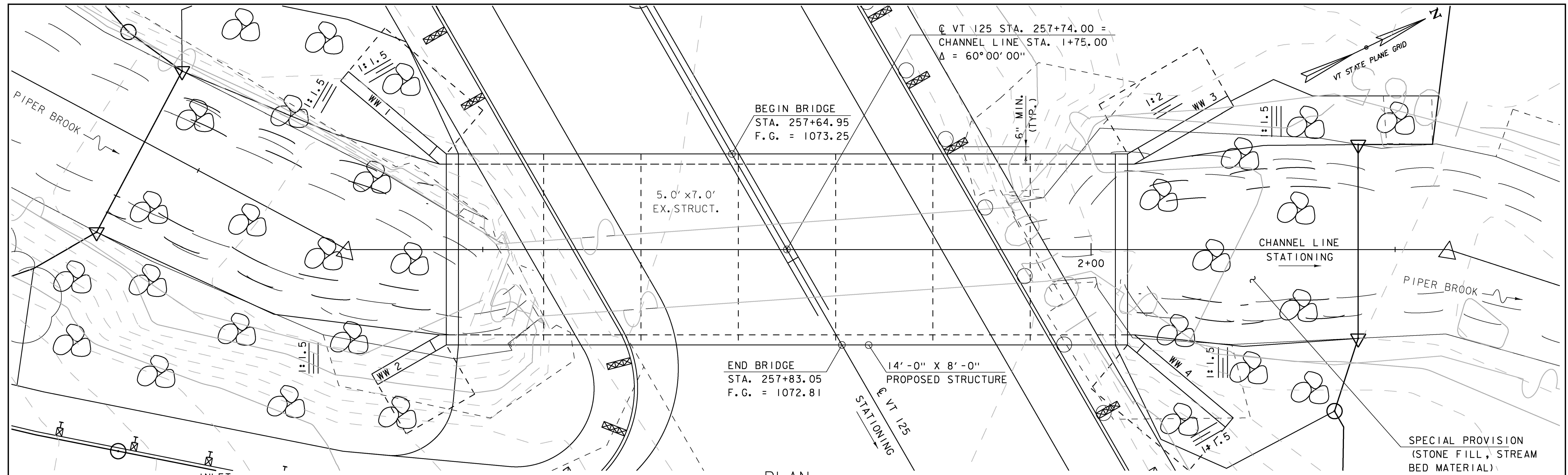
BORING LOG												
PROJECT: Hancock Culvert Replacement										JOB NO. 921950F3		
LOCATION: Hancock, VT										HOLE NO. SB-101		
CONTRACTOR: Mike's Boring & Coring										GRND ELEV.		
										START DATE 8/22/14		
										FINISH DATE 8/22/14		
										DRILLER Mike McGinley		
										HELPER Shawn Bijolle		
										INSPECTOR RDL		
DEPTH IN FEET	CASING BLOWS PER FOOT	SAMPLE			SAMPLE BLOWS PER 6" ON SAMPLER				SOIL DESCRIPTION			
		No.	Depth	Recovery	0-6	6-12	12-18	18-24				
1		S1	0'-2'	16"	4	4	5	8	Brown course/med. sand w/ lots of gravels			
2												
3		S2	2'-4'	10"	7	12	50/2"	X	Brown course sand at top, rocks/cobbles/weathered rock			
4												
5		S3	4'-6'	0"	50/2"	X	X	X	Nothing in spoon			
									Auger to 8'			
		S4	8'-10'	14"	13	19	14	18	Fractured weathered rock w/ brown/grey sand			
10												
		S5	10'-12'	14"	12	15	10	8	Brown silty sand w/ rock fragments, very wet			
		S6	12'-14'	20"	18	25	12	25	Very wet weathered rock fragments w/ brown sand			
15		S7	14'-16'	20"	20	34	34	70	Weathered rock fragments w/ brown sand			
		S8	16'-18'	16"	20	50	100/4"	X	Broken rock samples w/ brown sand, rock in tip Core from 17'-4" to 19'-6"			
		S9	19.5'-21.5'	12"	4	7	9	9	Crushed rock/gravel w/ brown sand			
									Not able to take sample because of rock blocking spoon Auger to 24'			
25		S10	24'-26'	0"	10	12	14	12	No recovery			
									Boring terminated at 26'			
30												
35												

BOTTOM OF FOOTING ELV. 1061.62

BORING LOG												
PROJECT: Hancock Culvert Replacement										JOB NO. 921950F3		
LOCATION: Hancock, VT										HOLE NO. SB-102		
CONTRACTOR: Mike's Boring & Coring										GRND ELEV.		
										START DATE 9/19/14		
										FINISH DATE 9/19/14		
										DRILLER Mike McGinley		
										HELPER Shawn Bijolle		
										INSPECTOR RDL		
DEPTH IN FEET	CASING BLOWS PER FOOT	SAMPLE			SAMPLE BLOWS PER 6" ON SAMPLER				SOIL DESCRIPTION			
		No.	Depth	Recovery	0-6	6-12	12-18	18-24				
1												
2		S1	1'-3'	12"	10	11	12	27	Brown med. sand w/ gravels			
3												
4		S2	3'-5'	14"	14	13	20	15	Brown med. sand w/ gravel/rock			
5												
		S3	5'-7'	6"	19	15	14	16	Brown fine sand w/ gravel, rock on top of sample			
		S4	7'-9'	16"	21	25	9	11	Brown fine sand w/ gravels/rock fragments			
10		S5	9'-11'	2"	35	60	100/4"		Brown fine sand w/ rock			
									Auger to 14'			
		S6	14'-16'	6"	29	100/2"			Brown fine sand w/ gravel, rock at bottom of sample			
15												
		S7	18'-20'	0"	7	11	6	12	No recovery			
20												
		S8	23'-25'	10"	5	4	7	9	Fine brown sand, wet			
25												
		S9	28'-30'	16"	8	11	12	9	Med./fine brown sand, wet			
30												
									End of boring			
35												

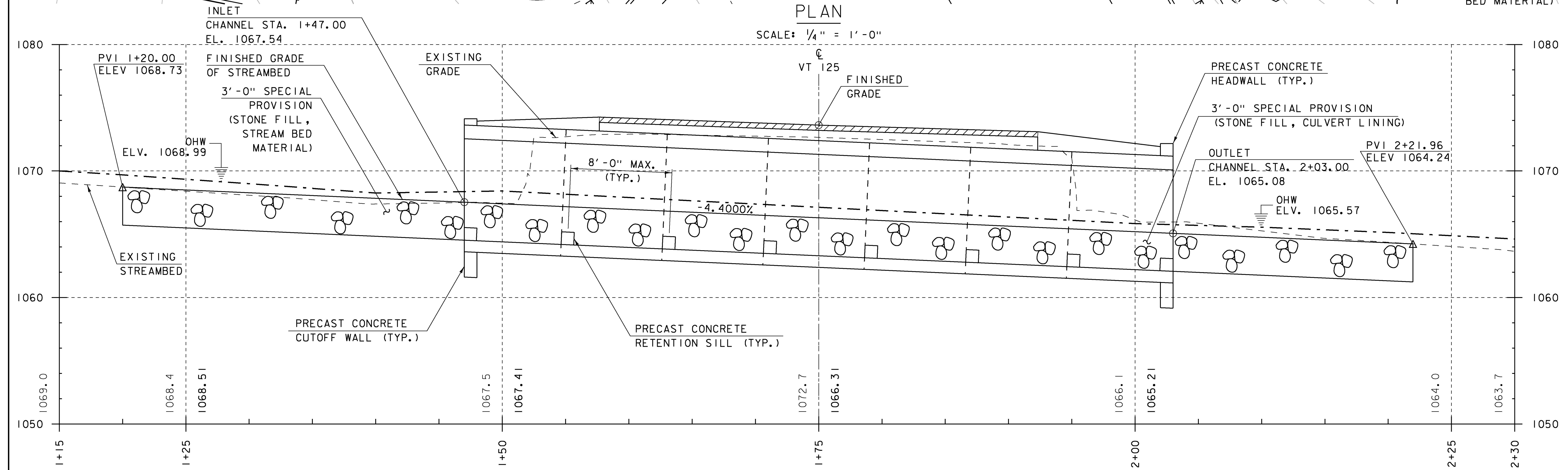
BOTTOM OF FOOTING ELV. 1059.16

PROJECT NAME: HANCOCK
PROJECT NUMBER: ER STP 0174(18)
FILE NAME: z12c412bor.dgn PLOT DATE: 10/11/2016
PROJECT LEADER: J. TUCKER DRAWN BY: O. DALMER
DESIGNED BY: B. BRESLEND CHECKED BY: P. BERO
BORING LOGS SHEET 30 OF 42



PLAN

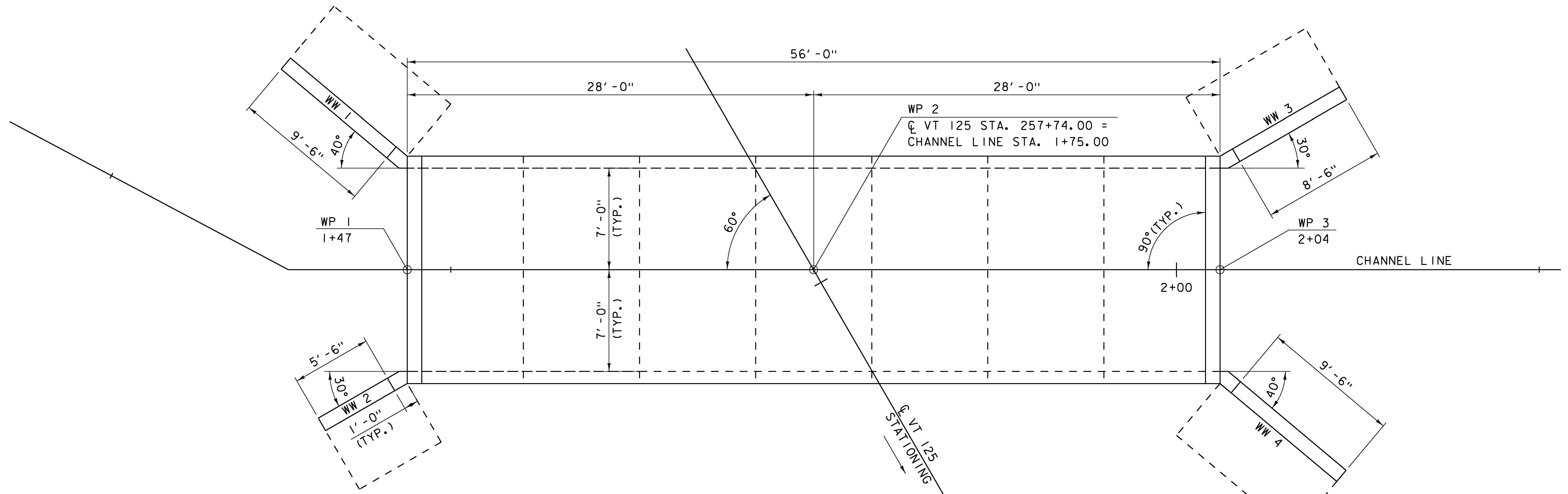
SCALE: 1/4" = 1'-0"



CHANNEL PROFILE

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

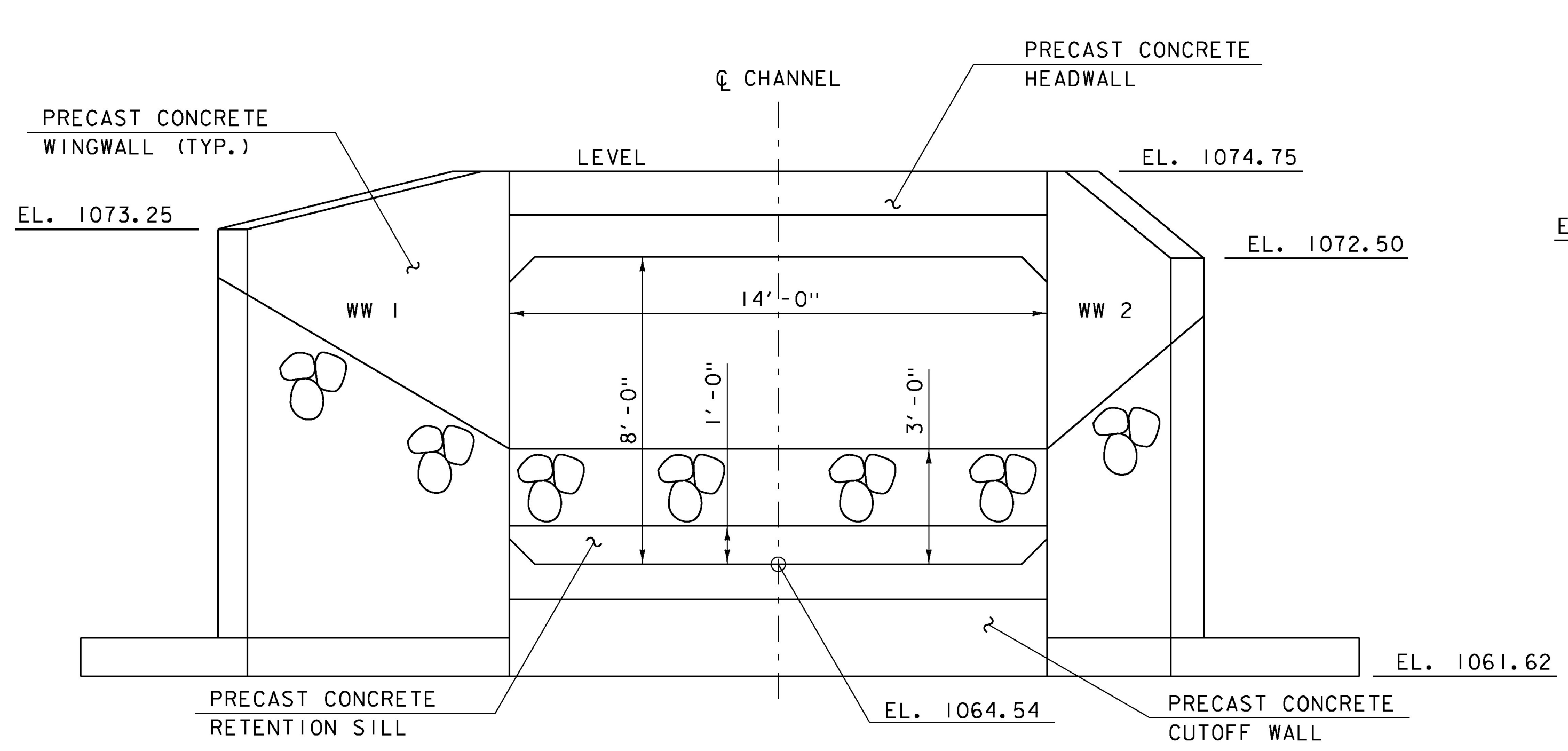
PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174(18)
FILE NAME:	z12c412pe.dgn
PROJECT LEADER:	J. TUCKER
DESIGNED BY:	B. BRESLEND
PLAN AND CHANNEL PROFILE	
PLOT DATE:	10/11/2016
DRAWN BY:	O. DALMER
CHECKED BY:	P. BERO
SHEET	31 OF 42



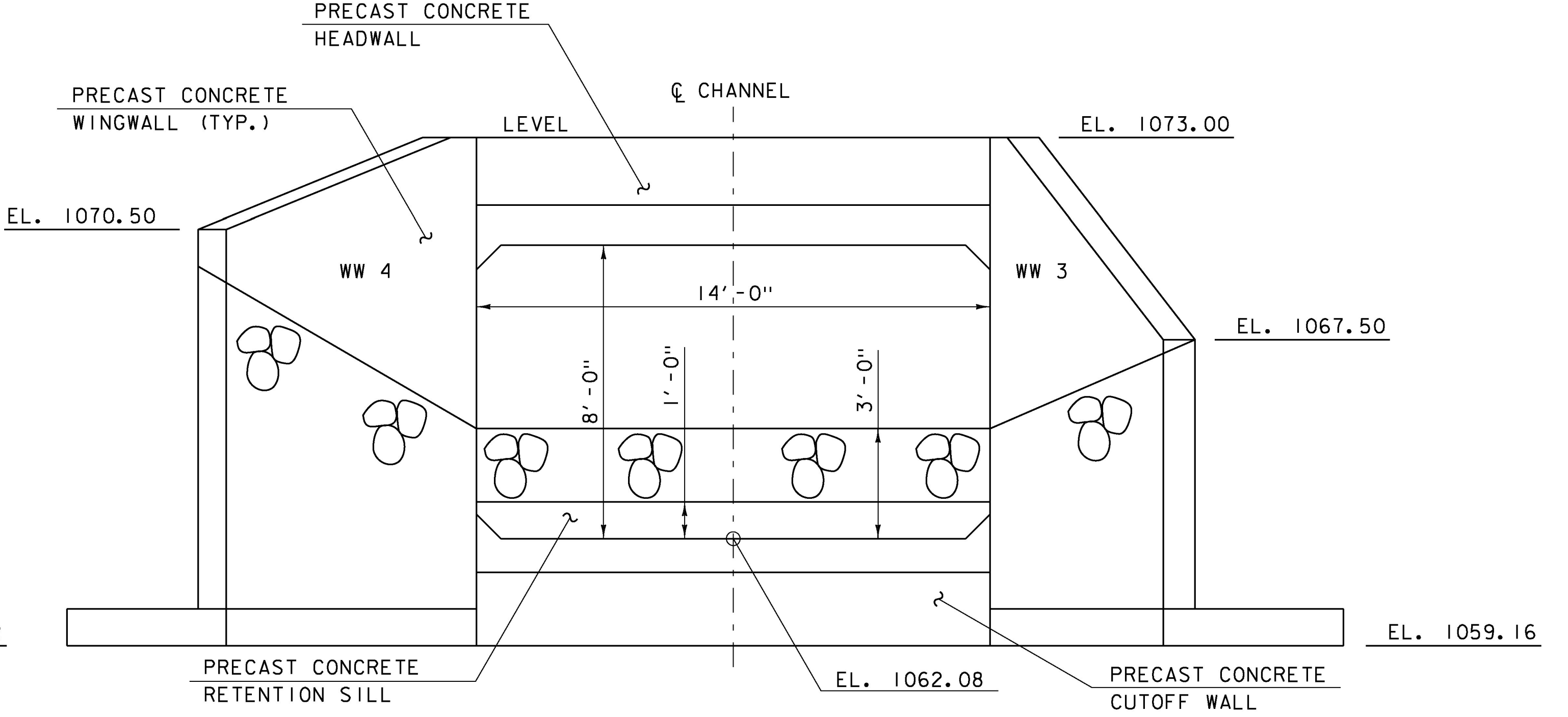
STRUCTURE LAYOUT
SCALE 1/4" = 1'-0"

WORKING POINT COORDINATES

WP #	STATION	OFFSET	NORTHING	EASTING
1	257+60.00	24.25' RT	520619.6163	1538742.2175
2	257+74.00	0.00'	520644.8053	1538754.4451
3	257+88.00	24.25' LT	520669.9943	1538766.6726

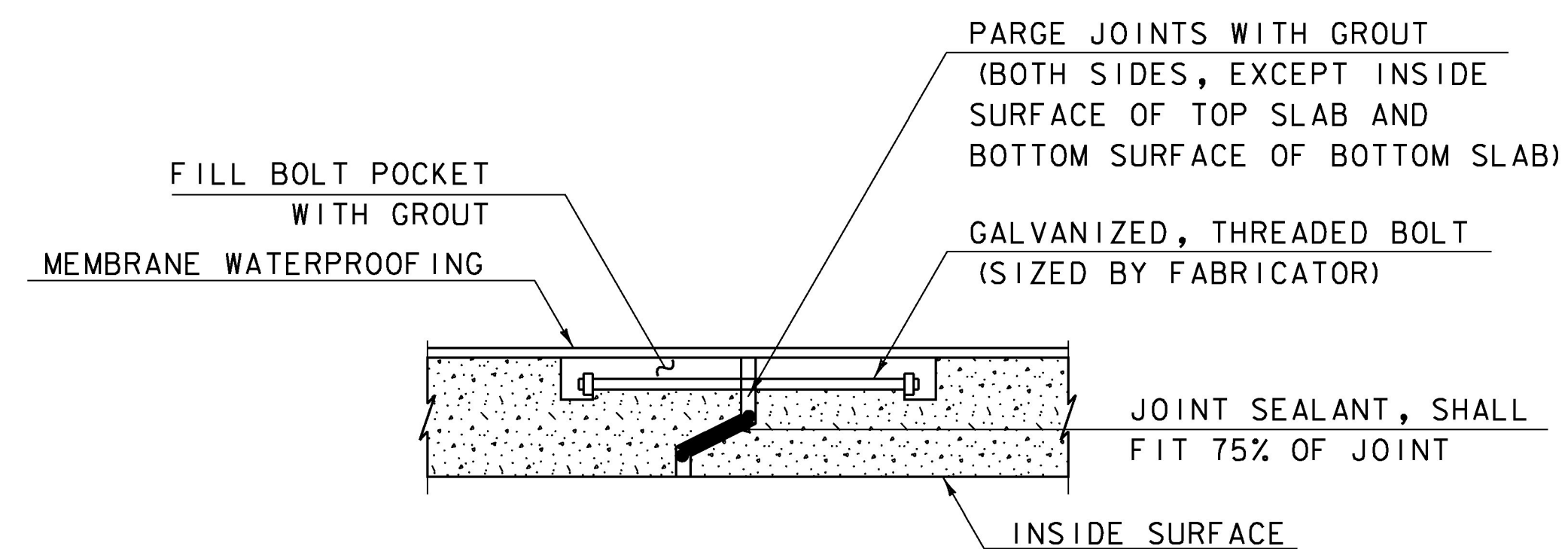


WINGWALLS #1 & #2 ELEVATION
SCALE 3/8" = 1'-0"



WINGWALLS #3 & #4 ELEVATION
SCALE 3/8" = 1'-0"

PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174 (18)
FILE NAME:	z12c412str.dgn
PROJECT LEADER:	J. TUCKER
DESIGNED BY:	B. BRESLEND
STRUCTURE LAYOUT AND DETAILS SHT 1	SHEET 32 OF 42
PLOT DATE:	10/11/2016
DRAWN BY:	B. BRESLEND
CHECKED BY:	E. DETRICK

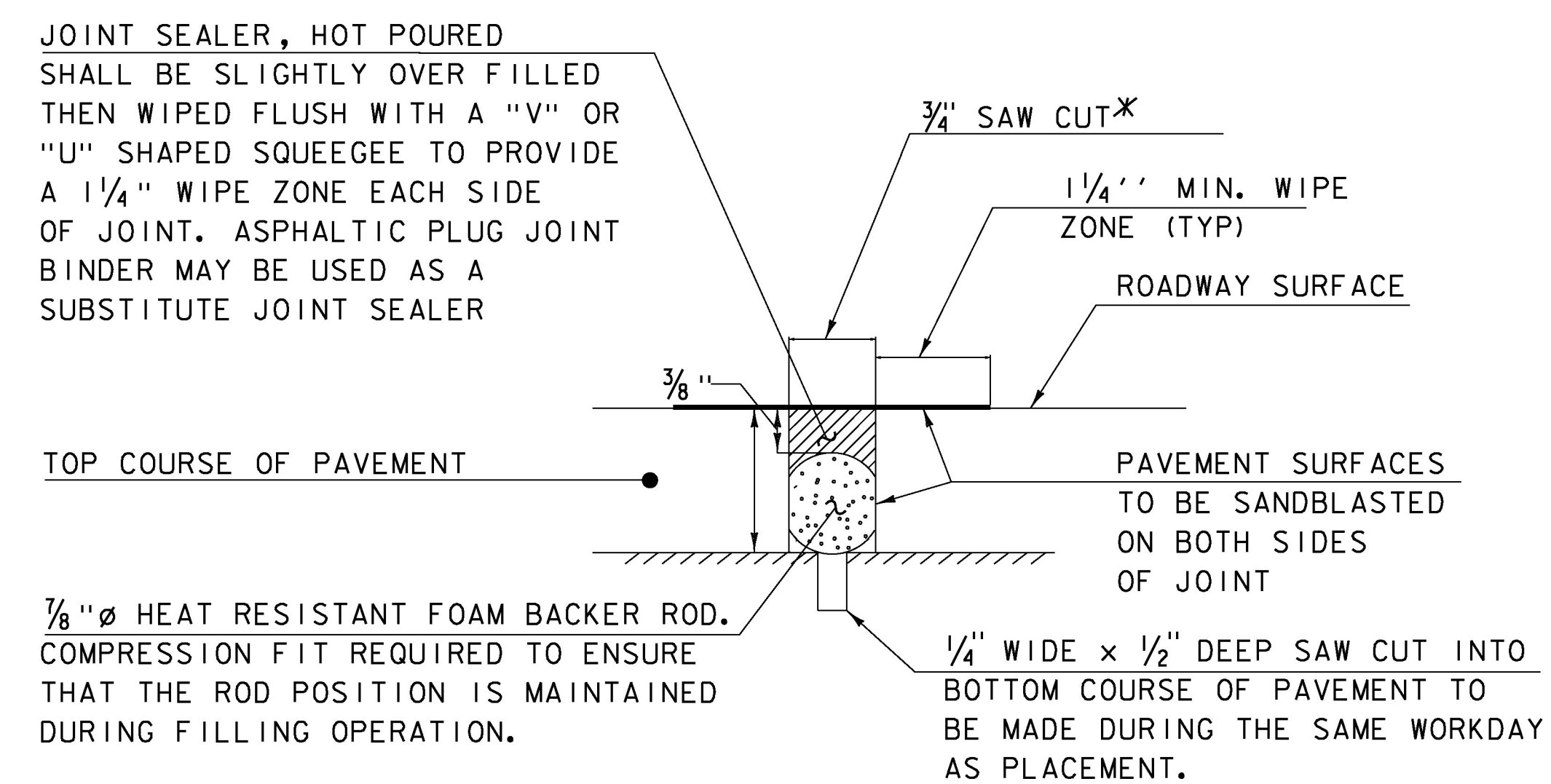


BOX CULVERT JOINT DETAIL

NOT TO SCALE

NOTES:

1. THREADED BOLTS, JOINT SEALANT, AND GROUT PAID UNDER ITEM 540.10 "PRECAST CONCRETE STRUCTURE (14'-0" X 7'-0" X 56'-0" BOX)".
- △ 2. MEMBRANE WATERPROOFING **WILL BE CONSIDERED INCIDENTAL TO ITEM 540.10 "PRECAST CONCRETE STRUCTURE (14'-0" X 7'-0" X 56'-0" BOX)".**



SAWED PAVEMENT JOINT DETAIL

NOT TO SCALE

- * JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER.
- * SAW CUTTING INCLUDED IN UNIT COST FOR ITEM 900.680 "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)"
- * BACKER ROD INCLUDED IN UNIT COST FOR ITEM 524.11 "JOINT SEALER, HOT Poured".
- * JOINT SEALER, HOT Poured OR ASPHALTIC PLUG JOINT MATERIAL SUBSTITUTE AND ALL WORK REQUIRED FOR INSTALLATION WILL BE PAID UNDER ITEM 524.11 "JOINT SEALER, HOT Poured"

REV	DATE	DESCRIPTION
△	12/5/2016	PAY ITEM CHANGE

PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174 (18)
FILE NAME:	z12c412str.dgn
PLOT DATE:	10/11/2016
PROJECT LEADER:	J. TUCKER
DRAWN BY:	B. BRESLEND
DESIGNED BY:	B. BRESLEND
CHECKED BY:	E. DETRICK
STRUCTURE LAYOUT AND DETAILS SHT 2	SHEET 33 OF 42

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6th EDITION, WITH INTERIM LATEST REVISIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STAGING SCHEDULE. ALL WORK MUST BE DONE IN THE DRY AND ALL CULVERT SECTIONS AND BED MATERIAL SHALL BE COMPLETELY INSTALLED BEFORE THE STREAM IS ALLOWED TO FLOW THROUGH THEM. THE CONTRACTOR SHALL PREPARE AND SUBMIT A TEMPORARY STREAM DIVERSION PLAN TO CARRY THE STREAM DURING CONSTRUCTION. THE PLAN SHALL DEPICT MEASURES PROPOSED TO PREVENT EROSION AND SEDIMENTATION AND MAINTAIN STREAM QUALITY. THE STREAM DIVERSION, INCLUDING TEMPORARY PIPING OR DEWATERING SHALL BE IN ACCORDANCE WITH ITEM 900.645, "SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)".
3. THE EXISTING CONCRETE STRUCTURE, INCLUDING WINGWALLS, SHALL BE REMOVED AND DISPOSED OF. PAYMENT FOR REMOVAL AND DISPOSAL WILL BE INCLUDED UNDER ITEM 529.15 "REMOVAL OF STRUCTURE (7'-0" X 5'-0" X 42'-0" BOX)".

SIMULATED STREAM BED NOTES

1. BED MATERIAL TO BE PLACED IN THE CULVERT IS INTENDED TO MIMIC THE NATIVE CHANNEL IN TERMS OF GRADATION, HABITAT VALUE, AND SCOUR RESISTANCE.
2. BED MATERIAL SHALL CONSIST OF WELL-GRADED, THREE FOOT MINUS NATURAL RIVER MATERIAL, REPRESENTING THE FULL RANGE OF PARTICLE SIZES PRESENT IN THE NATIVE CHANNEL. THIS IS FOR GUIDANCE ONLY. ACTUAL MATERIAL COMPOSITION WILL BE SIMILAR TO EXISTING CHANNEL CONDITIONS BOTH UP AND DOWNSTREAM. IF ON-SITE MATERIAL DOES NOT MEET GRADATION REQUIREMENTS BED MATERIAL SHALL CONSIST OF MATERIAL SUCH THAT THE FINAL MATERIAL GRADATION CONFORMS TO THE FOLLOWING:

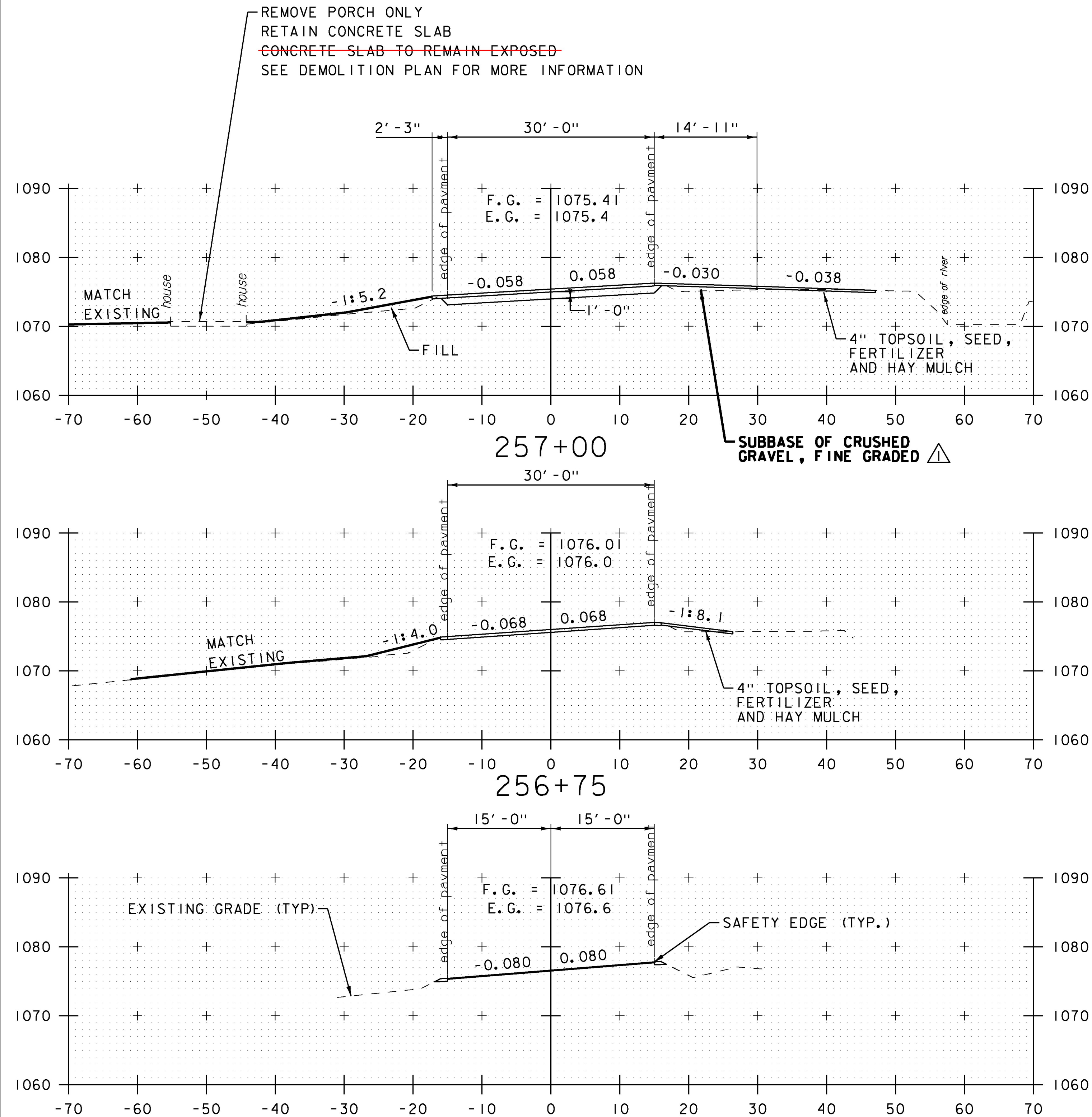
STONE/SIEVE SIZE	% FINER, BY WEIGHT
36"	100
24"	50
2"	25

3. THE FINAL CHANNEL SURFACE SHALL BE IRREGULAR, WITH THE LARGER STONES PROTRUDING ABOVE THE FINISHED SURFACE.
4. BED MATERIAL SHALL BE PLACED SUCH THAT THERE ARE NO DISCRETE VERTICAL DROPS IN EXCESS OF THREE INCHES THAT SPAN THE CULVERT WIDTH, AND SO THAT THE FLOW OF WATER IS GENERALLY CONCENTRATED IN THE CENTER OR ALTERNATING SIDES OF THE CULVERT RATHER THAN DISPERSED ACROSS THE ENTIRE WIDTH.
5. THE CONTRACTOR IS ADVISED TO CONSIDER PLACING BED MATERIAL AS THE CULVERT IS CONSTRUCTED TO AVOID THE DIFFICULTY OF PLACING LARGER MATERIAL AFTER THE STRUCTURE IS FULLY ASSEMBLED, i.e. FILLING EACH SECTION AS IT IS PLACED.
6. INSTALLATION AND PAYMENT OF THE BED MATERIAL INSIDE OF, AS WELL AS UPSTREAM AND DOWNSTREAM OF THE BOX CULVERT WILL BE MADE UNDER ITEM 900.608 "SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL) (TYPE III)"

CONCRETE NOTES

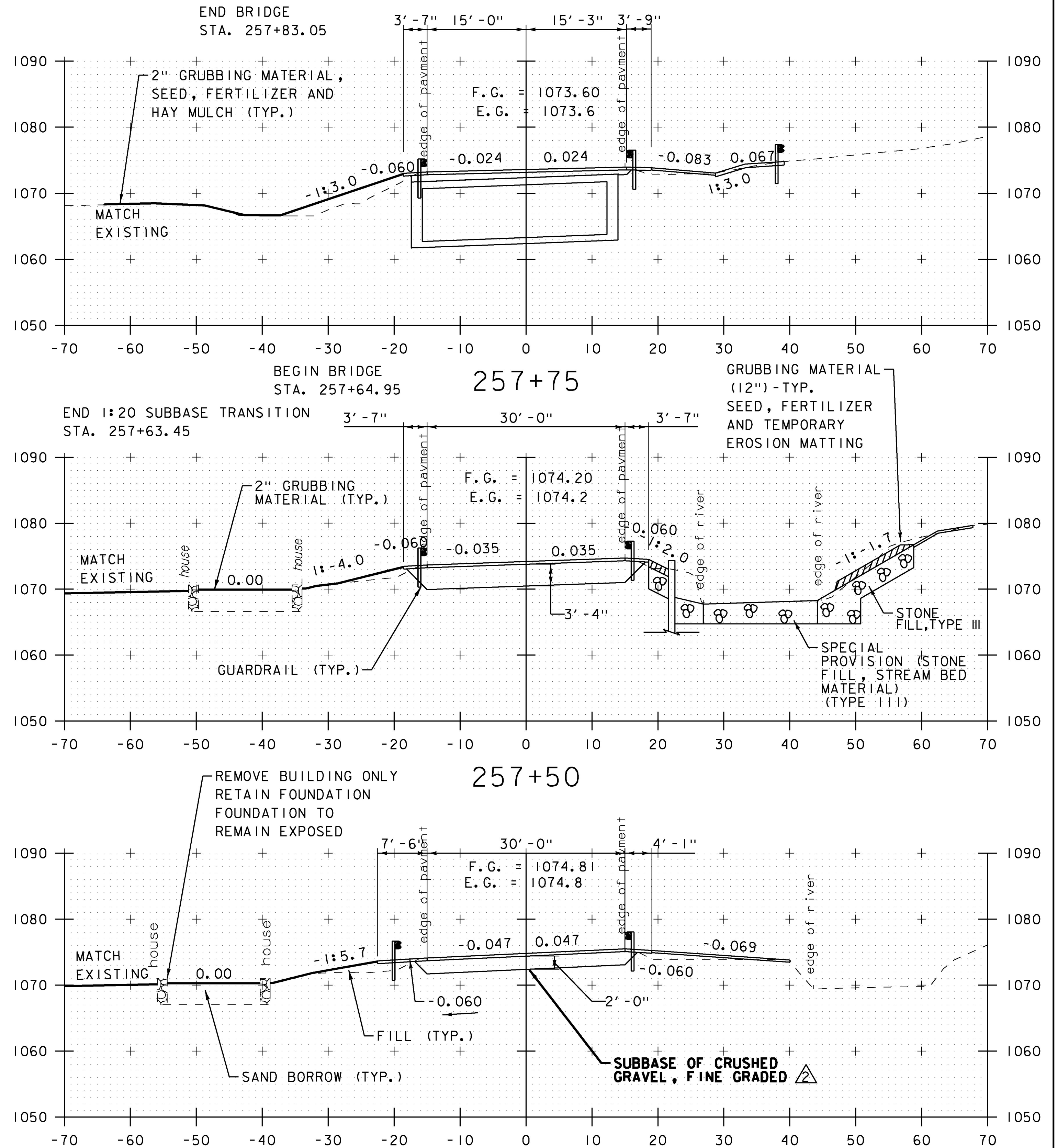
1. DESIGN CRITERIA:
 - A. GRANULAR BACKFILL FOR STRUCTURES SOIL UNIT WEIGHT = 140 LB/CF
 - B. DESIGN LIVE LOAD = HL-93
 - C. ALLOWABLE WINGWALL BEARING PRESSURE = 3 KSF
 - D. MINIMUM CLEAR DIMENSIONS TWO INCHES.
2. ITEM 514.10, "WATER REPELLENT, SILANE" SHALL BE APPLIED TO ALL EXPOSED SURFACES OF THE WINGWALLS AND HEADWALLS. WATER REPELLENT, SILANE SHALL BE APPLIED TO THE EXPOSED INSIDE SURFACE OF THE BOX STARTING AT THE OPENING AT EACH END AND EXTENDING THREE FEET INTO THE BOX, INCLUDING THE BOTTOM SURFACE AND TOP OF THE BOX.
3. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ONE INCH BY ONE INCH.
4. ALL COMPONENTS OF THE BOX CULVERT SHALL BE PRECAST, INCLUDING CULVERT SECTIONS, HEADWALLS, WINGWALLS, AND CUT-OFF WALLS. THE DESIGN OF THE CULVERT AND ALL PRECAST COMPONENTS SHALL BE THE RESPONSIBILITY OF THE FABRICATOR. DESIGN SHALL CONFORM TO ALL APPLICABLE SECTIONS REFERRED TO IN GENERAL NOTE 1. PAYMENT FOR DESIGN, FABRICATION, AND INSTALLATION OF THE PRECAST COMPONENTS WILL BE MADE UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (14'-0" X 8'-0" X 56'-0" BOX)".
5. THE JOINTS OF EACH BOX SECTION SHALL HAVE A SELF STICKING GASKET TO BE APPROVED BY THE ENGINEER. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 540.10, "PRECAST CONCRETE STRUCTURE (15'-0" X 8'-0" X 56'-0" BOX)". THE EXTERIOR (TOP AND SIDES) OF ALL CONCRETE BOX JOINTS ALONG WITH ALL LIFTING HOLES SHALL BE FILLED WITH MORTAR TYPE IV AFTER BEING SET IN THEIR FINAL POSITION. MORTAR TYPE IV SHALL BE FROM THE AGENCY'S APPROVED PRODUCT LIST. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 540.10, "PRECAST CONCRETE STRUCTURE (14'-0" X 8'-0" X 56'-0" BOX)".
6. A TWO FOOT WIDE STRIP OF MEMBRANE WATERPROOFING SHALL BE APPLIED AT EACH BOX SIDE JOINT AND ENTIRE TOP SURFACE OF BOX. MEMBRANE SHALL BE CENTERED ON THE JOINT AND COVER THE FULL HEIGHT OF THE SIDES. THE SIDES SHALL BE COVERED FIRST AND THE TOP WILL FOLLOW. ANY OVERLAPPING OF MEMBRANE SHALL BE DONE IN A SHINGLE TYPE STYLE TO SHED WATER AND SHALL OVERLAP A MINIMUM OF ONE FOOT. MEMBRANE SHALL BE A PREFORMED SHEET FROM THE AGENCY'S APPROVED PRODUCT LIST. PAYMENT FOR MEMBRANE WILL BE CONSIDERED INCIDENTAL TO ITEM 540.10, "PRECAST CONCRETE STRUCTURE (14'-0" X 8'-0" X 56'-0" BOX)".
7. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE BOX CULVERT AND PRECAST COMPONENTS IN ACCORDANCE WITH SUBSECTION 105.03 OF THE SPECIFICATIONS.
8. THE BOX CULVERT TYPICAL SECTIONS AND DETAILS ARE FOR SCHEMATIC PURPOSES ONLY, THE ACTUAL SHAPE OF THE BOX CULVERT AND COMPONENTS WILL BE DEPENDENT UPON THE FABRICATOR.

PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174 (18)
FILE NAME:	z12c412notes.dgn
PROJECT LEADER:	J. TUCKER
DESIGNED BY:	B. BRESLEND
STRUCTURE NOTES	
PLOT DATE:	10/11/2016
DRAWN BY:	O. DALMER
CHECKED BY:	P. BERO
SHEET	34 OF 42



BEGIN APPROACH
STA. 256+40.00

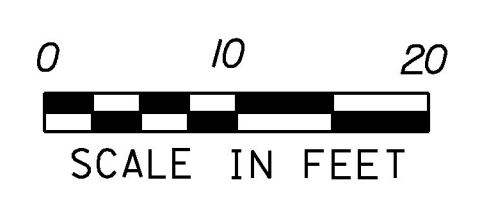
256+50



BEGIN PROJECT / BEGIN 1:20 SUBBASE TRANSITION
STA. 257+25.00

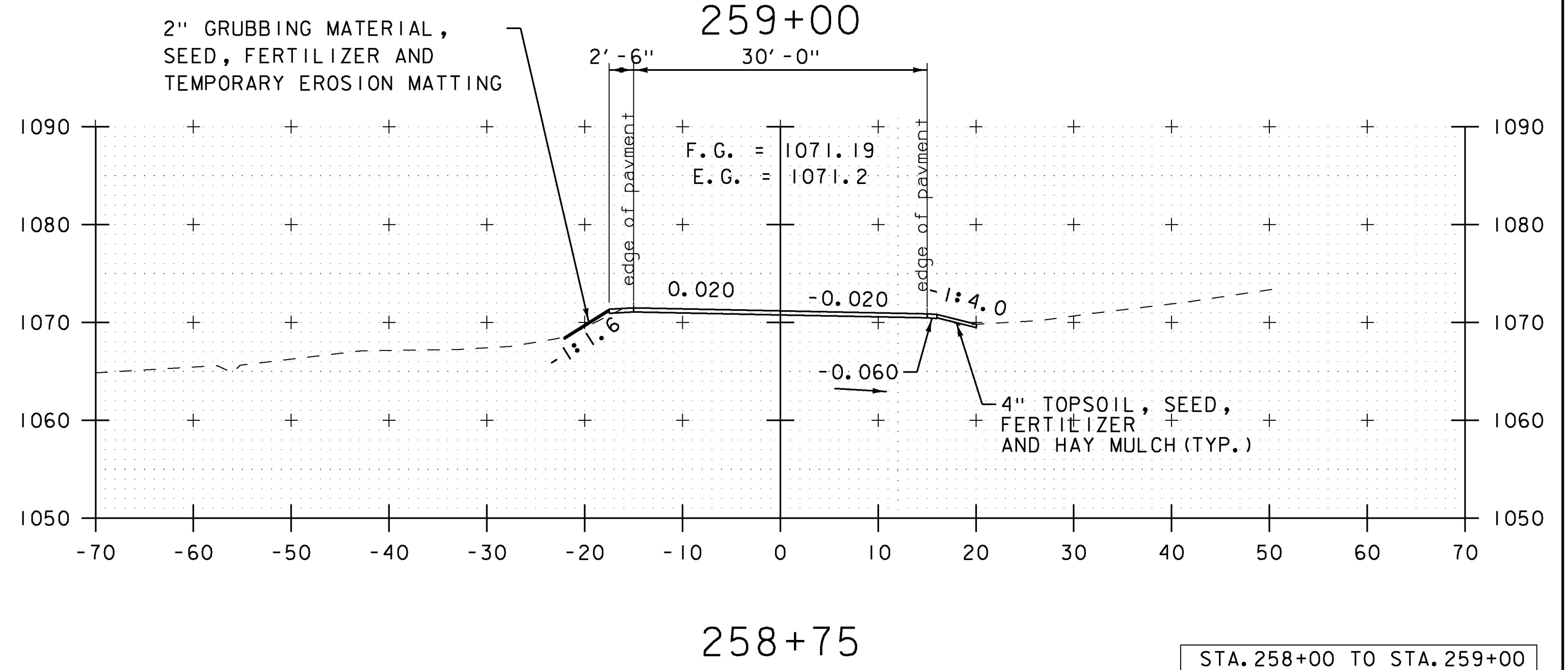
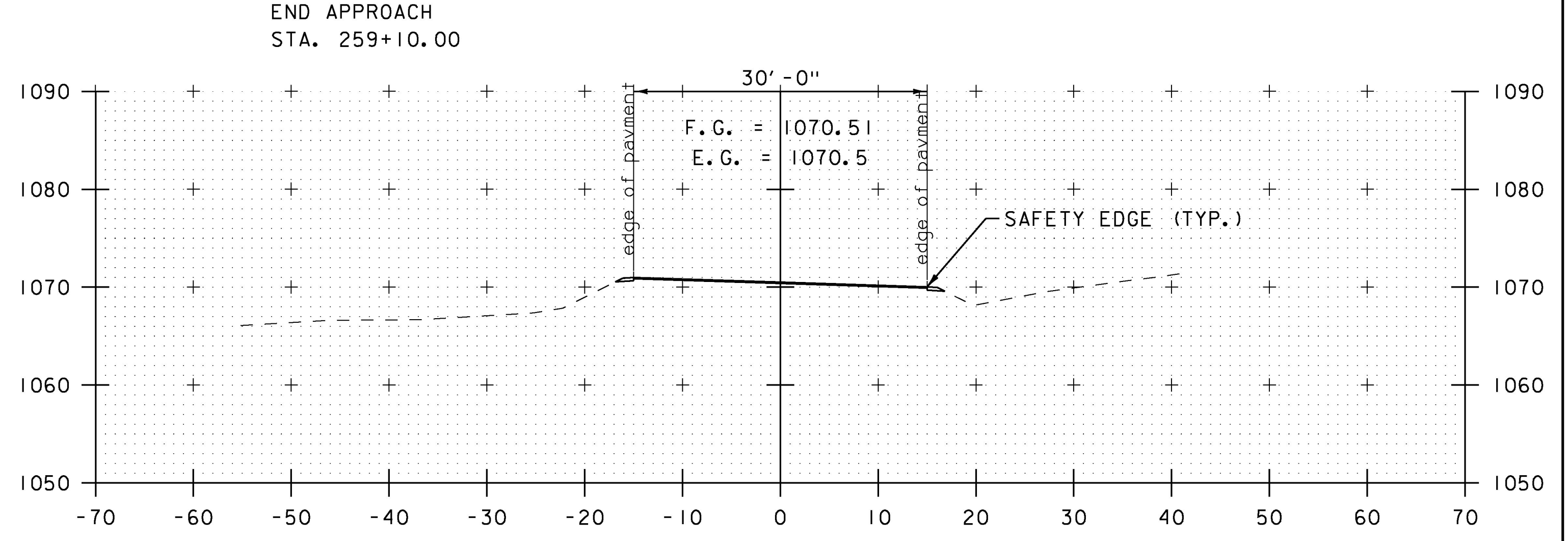
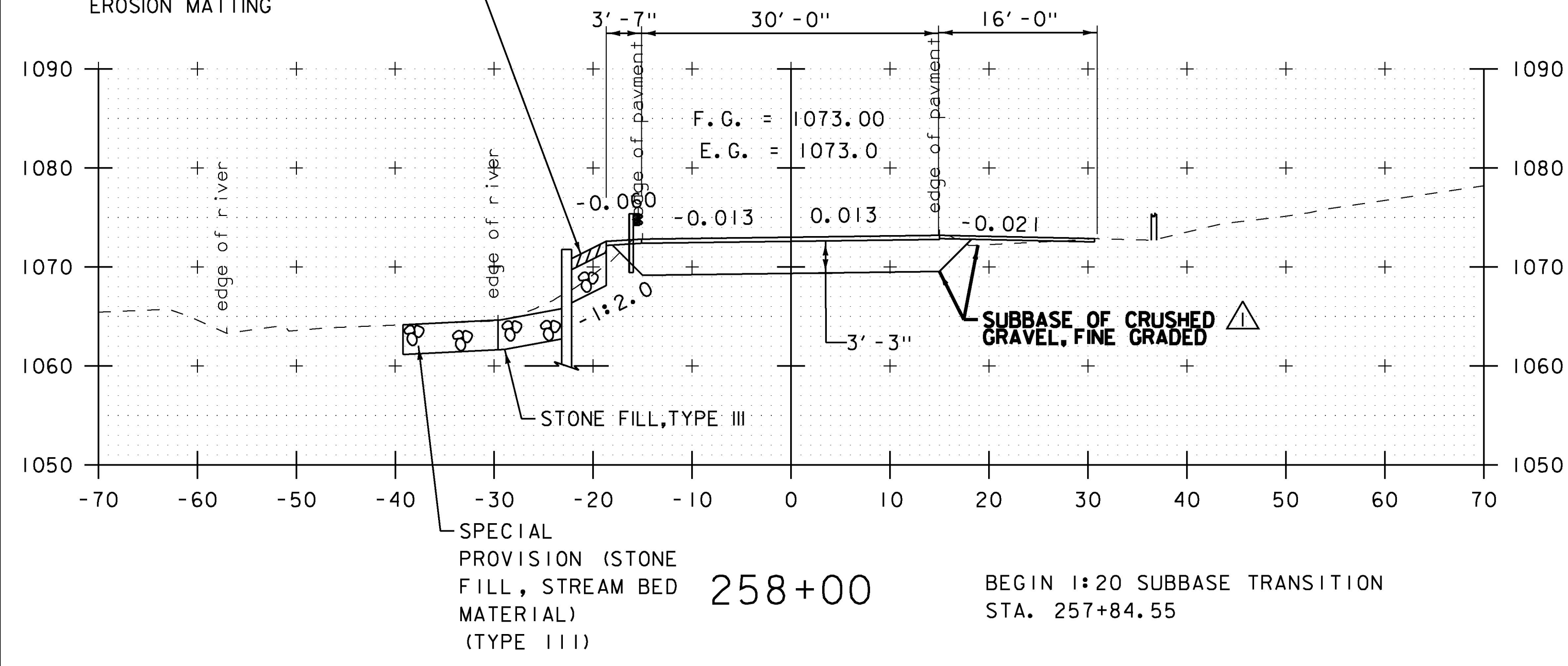
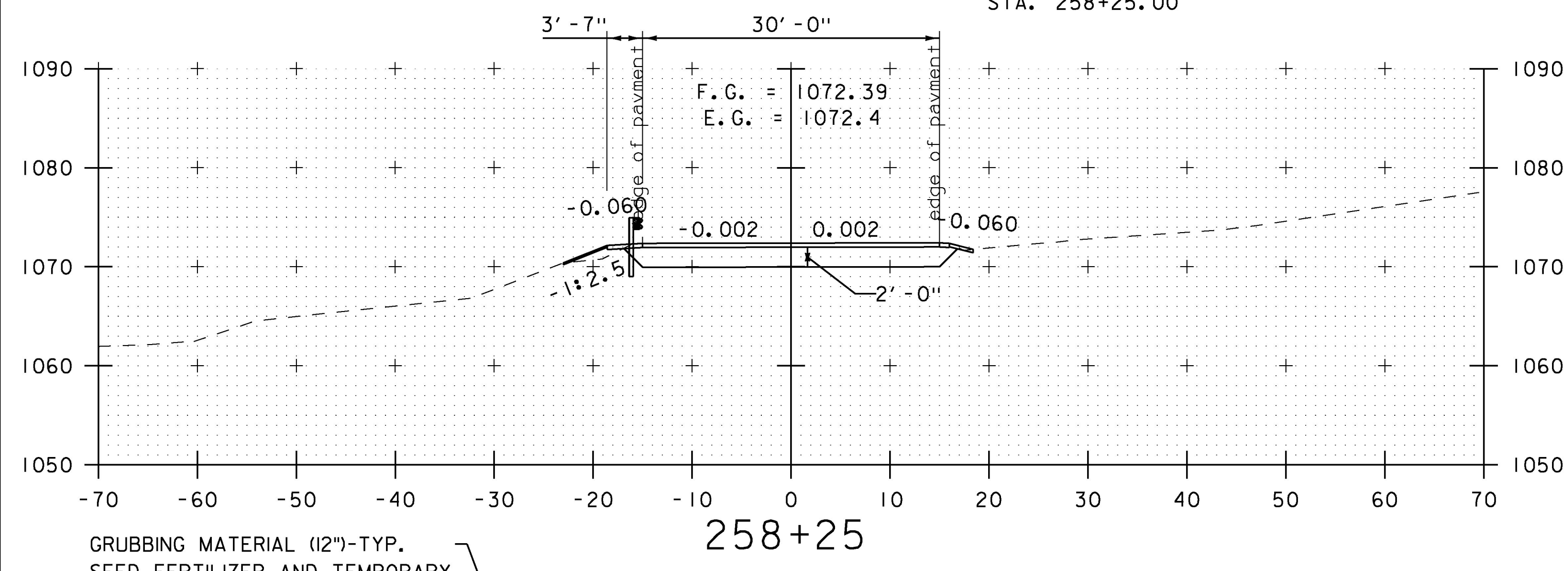
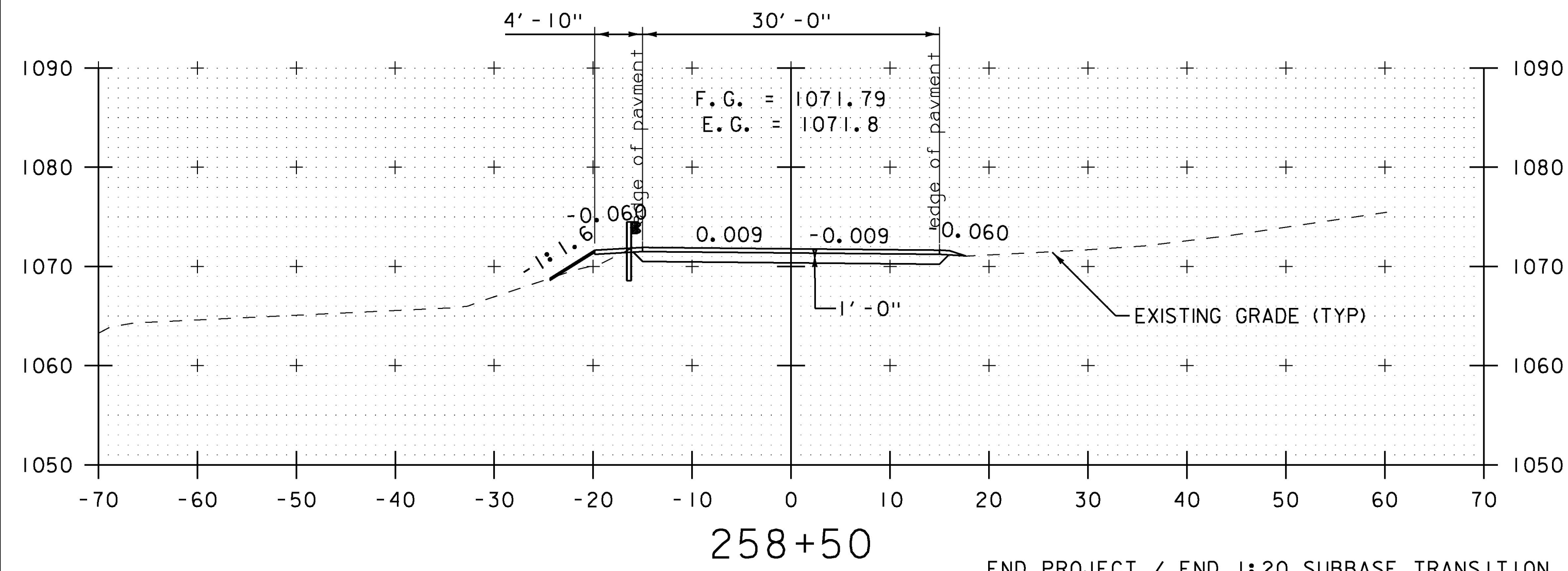
257+25

STA. 256+50 TO STA. 257+75



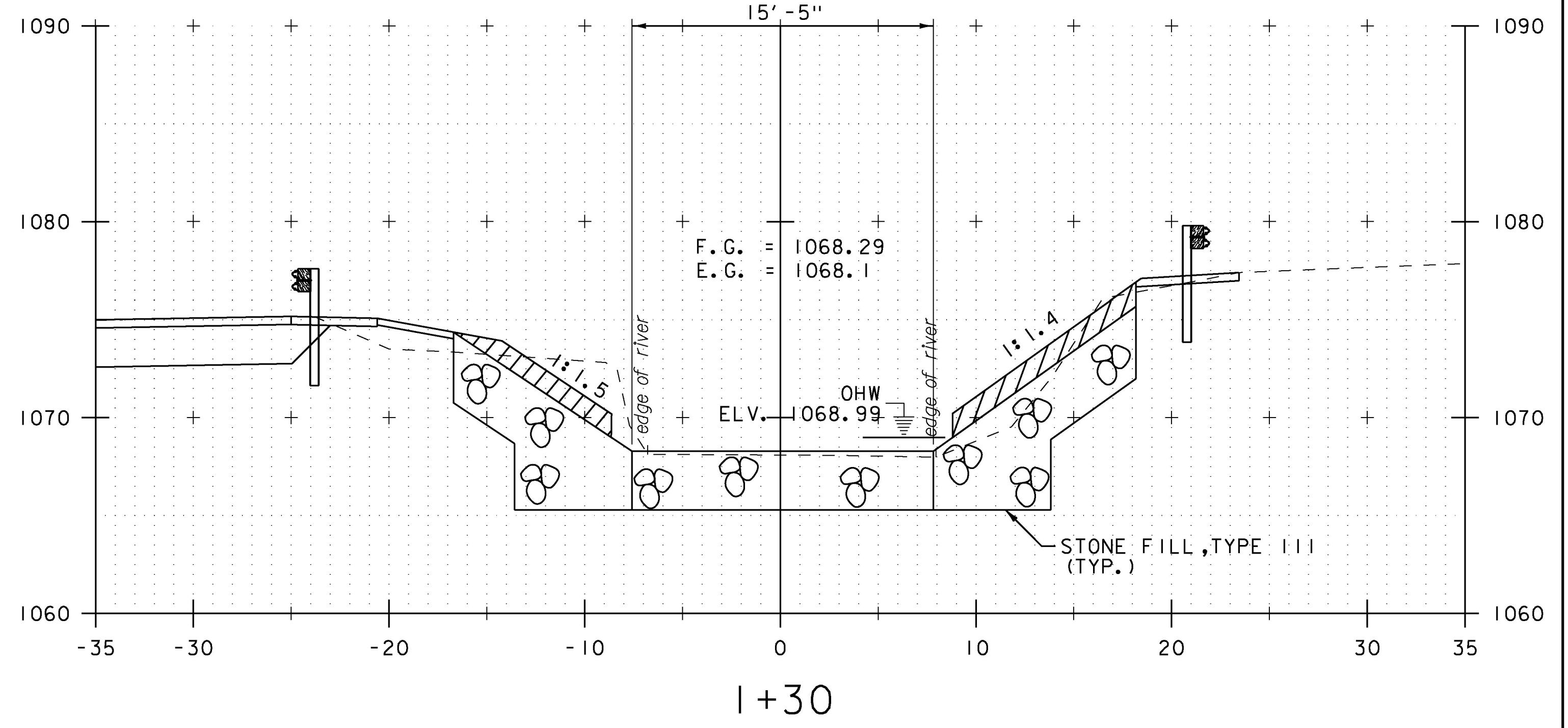
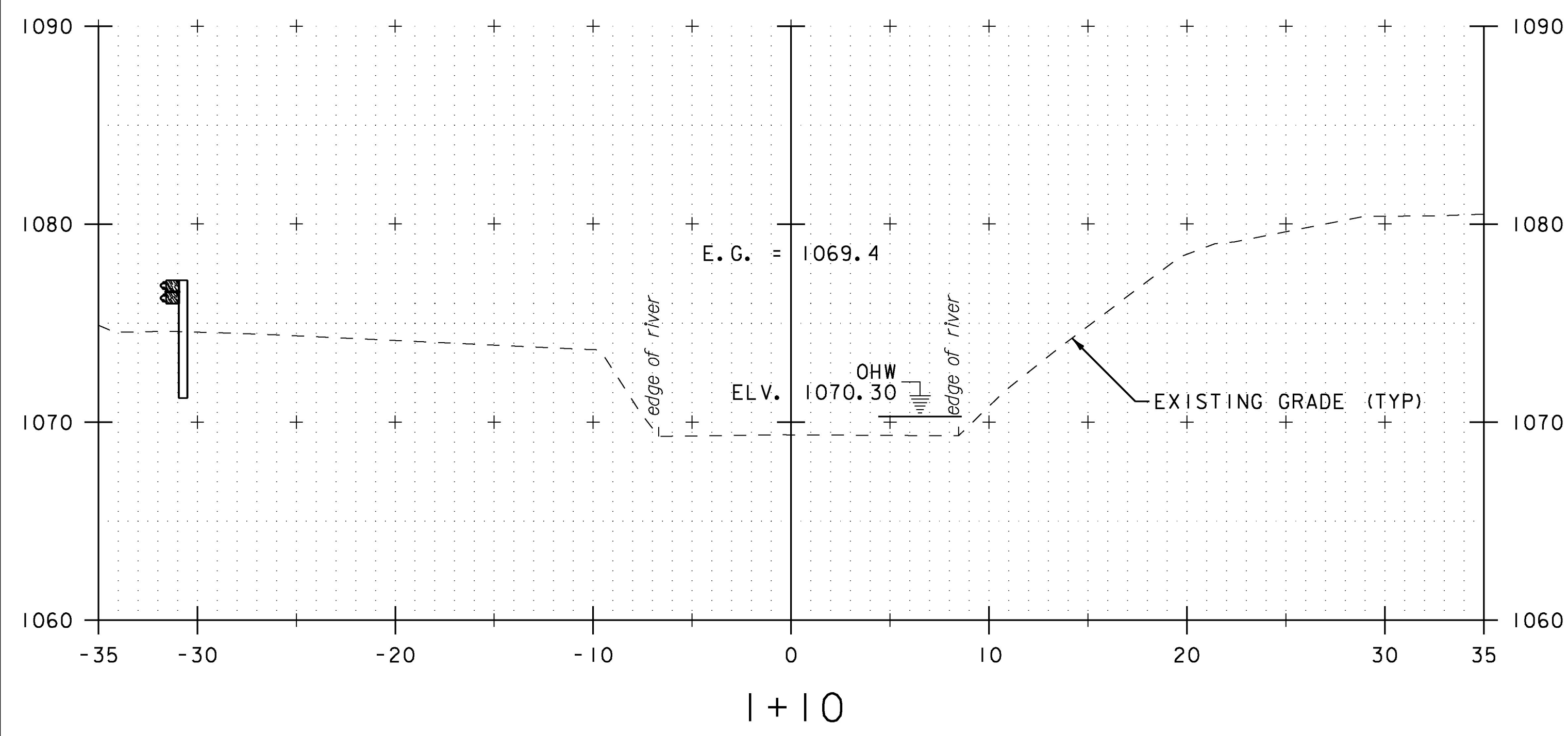
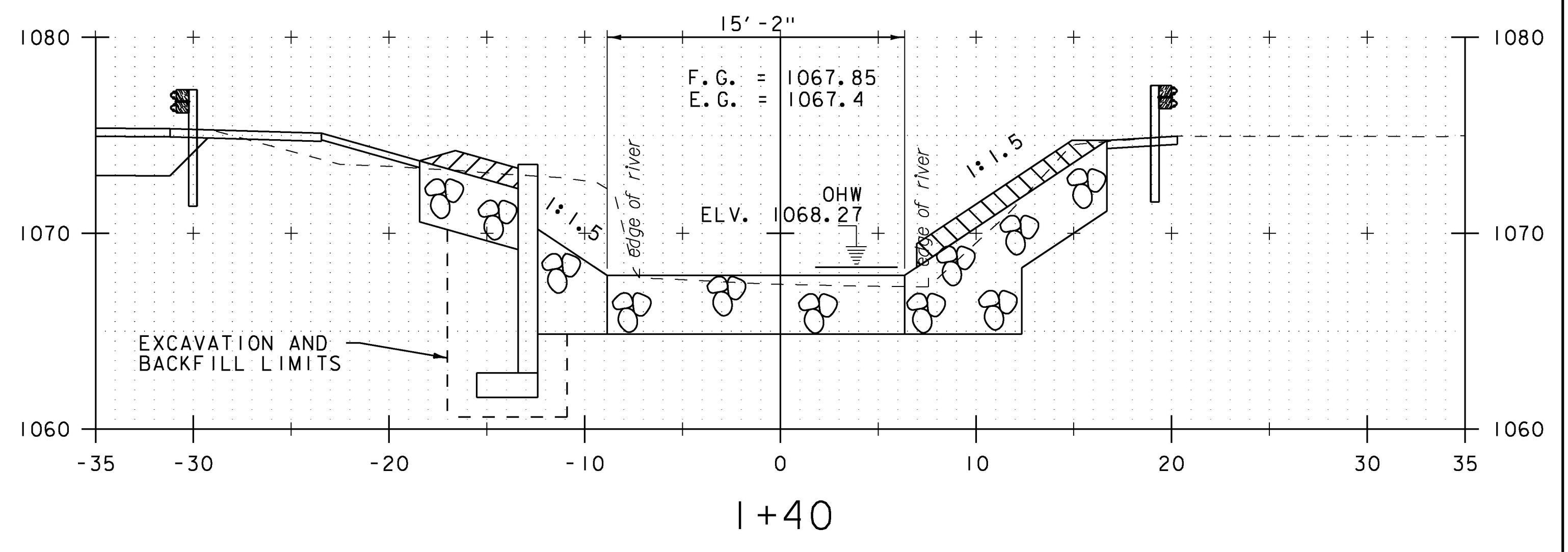
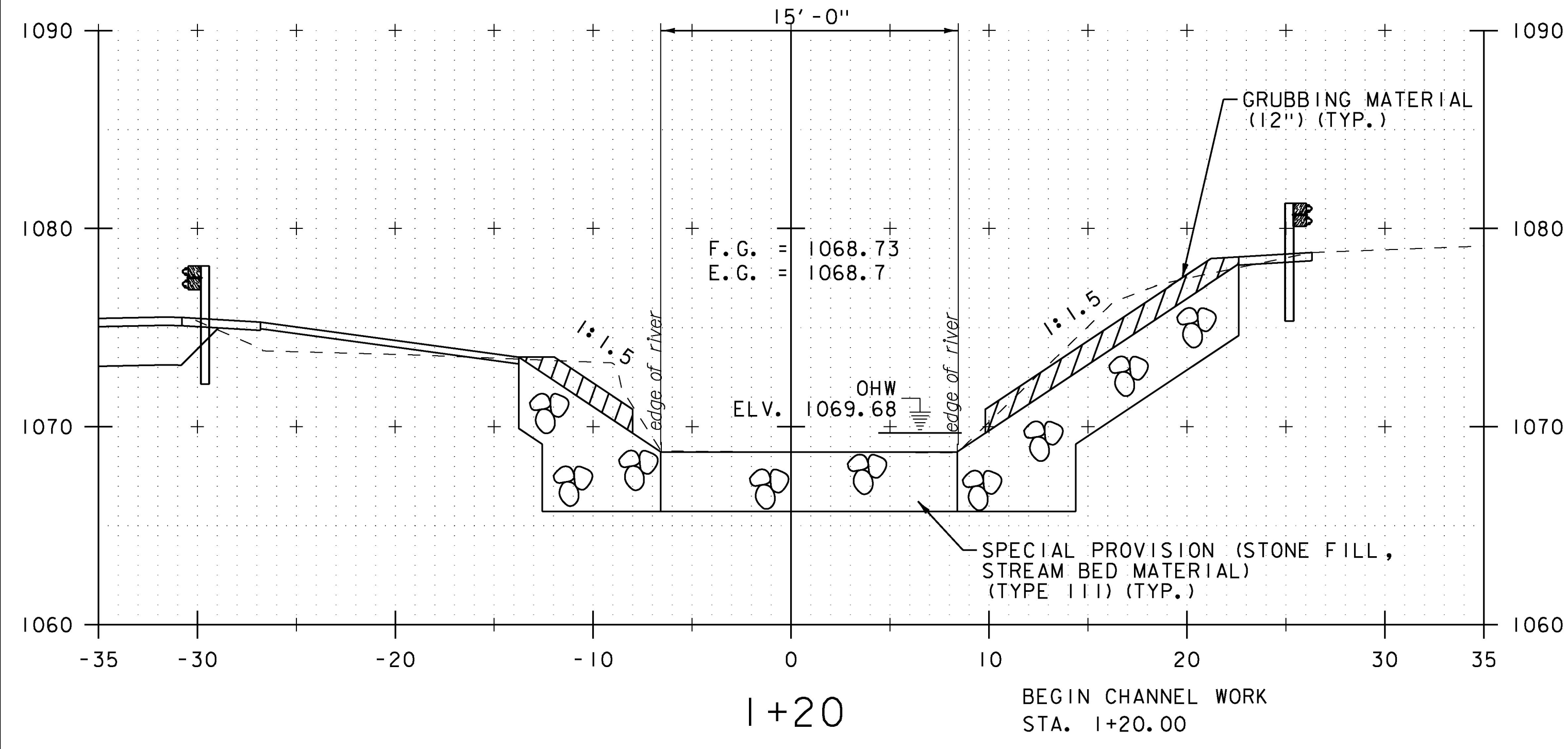
REV	DATE	DESCRIPTION
△	12/5/16	PAY ITEM CHANGE
△	12/5/16	PAY ITEM CHANGE

PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174 (18)
FILE NAME:	z12c412xs1.dgn
PROJECT LEADER:	J. TUCKER
DESIGNED BY:	B. BRESLEND
ROADWAY CROSS SECTIONS SHEET 1	
PLOT DATE:	10/11/2016
DRAWN BY:	O. DALMER
CHECKED BY:	P. BERO
SHEET	35 OF 42

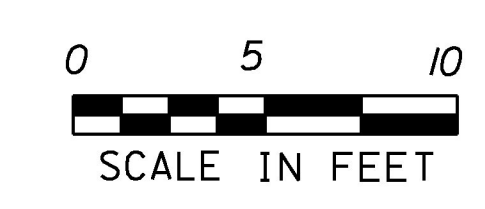


REV	DATE	DESCRIPTION
△	12/5/16	PAY ITEM CHANGE

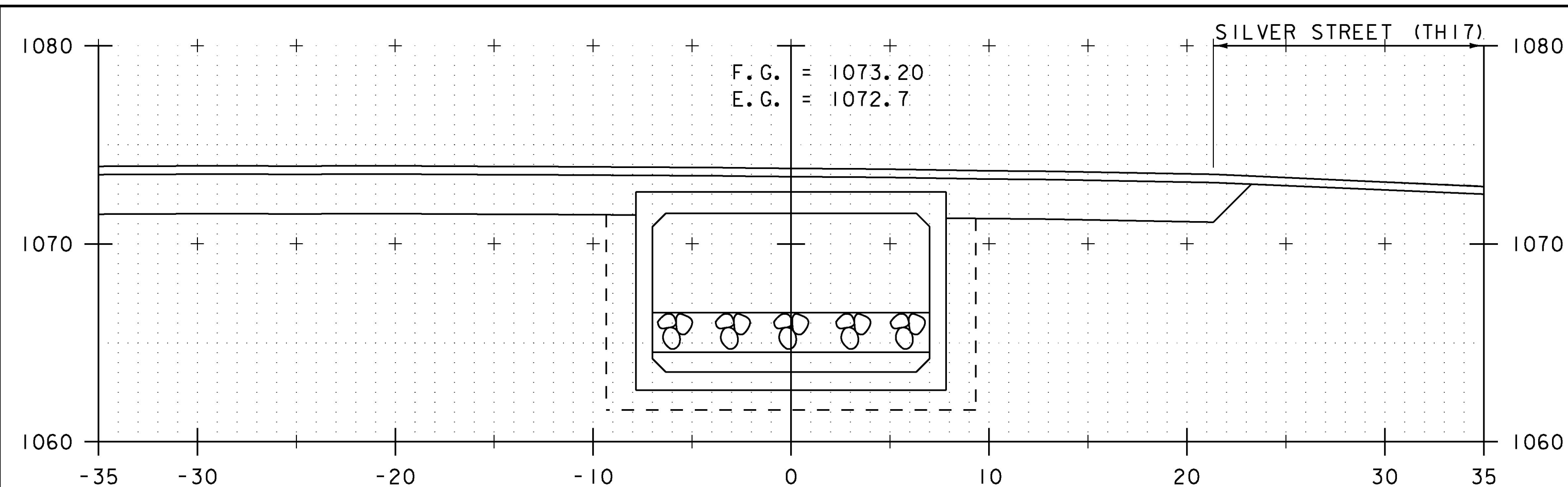
PROJECT NAME: HANCOCK
 PROJECT NUMBER: ER STP 0174 (18)
 FILE NAME: z12c412xs1.dgn
 PROJECT LEADER: J. TUCKER
 DESIGNED BY: B. BRESLEND
 ROADWAY CROSS SECTIONS SHEET 2
 PLOT DATE: 10/11/2016
 DRAWN BY: O. DALMER
 CHECKED BY: P. BERO
 SHEET 36 OF 42



STA. I+10 TO STA. I+40



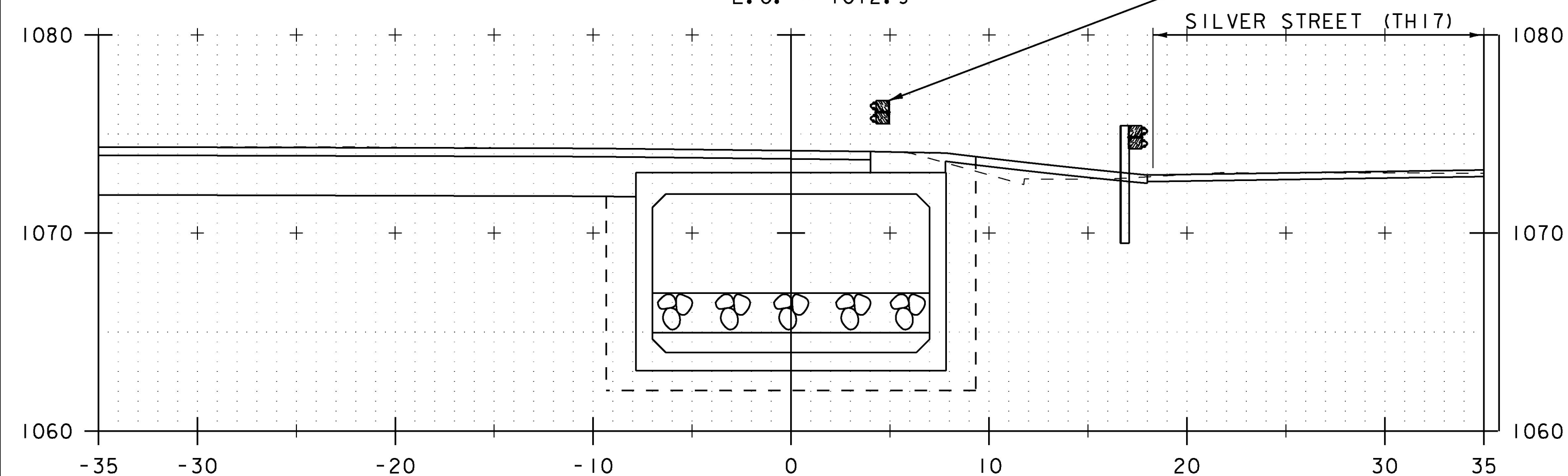
PROJECT NAME:	HANCOCK	PLOT DATE:	10/11/2016
PROJECT NUMBER:	ER STP 0174 (18)	DRAWN BY:	O. DALMER
FILE NAME:	z12c412xs1.dgn	DESIGNED BY:	B. BRESLEND
PROJECT LEADER:	J. TUCKER	CHECKED BY:	P. BERO
CHANNEL CROSS SECTIONS SHEET 1			SHEET 37 OF 42



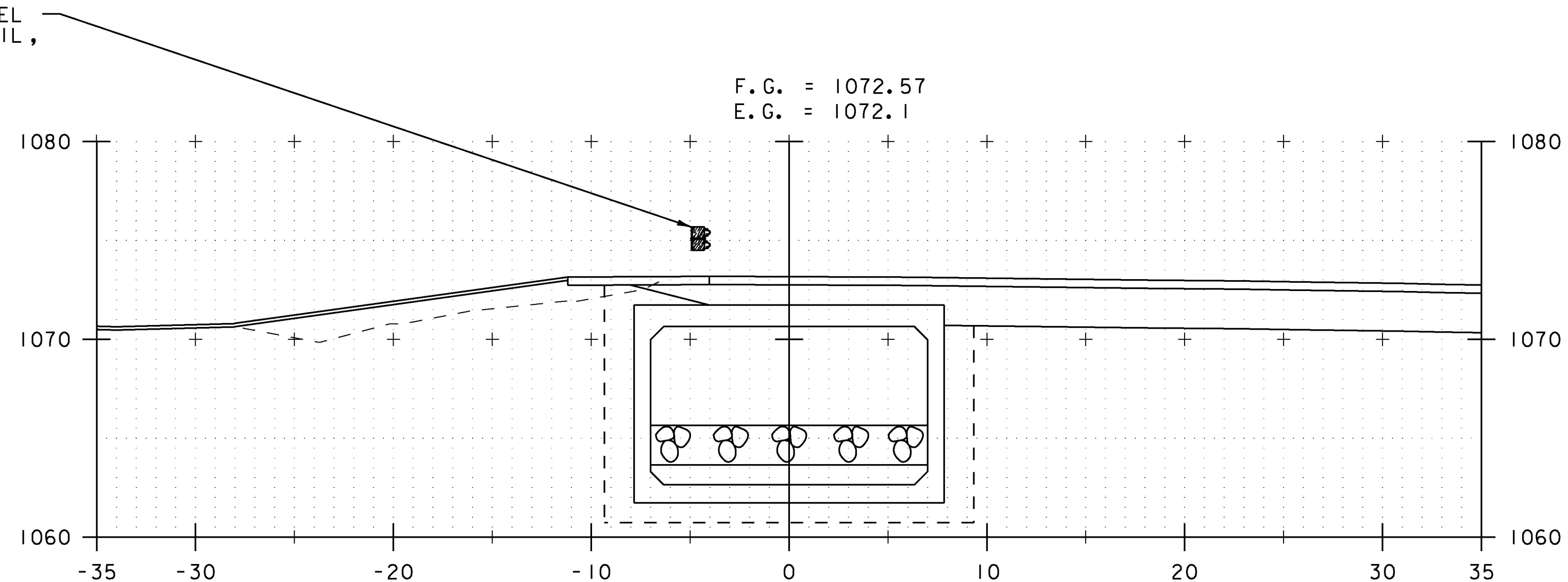
1+70

F.G. = 1073.57
E.C. = 1072.9

LONGSPAN STEEL
BEAM GUARDRAIL,
GALVANIZED

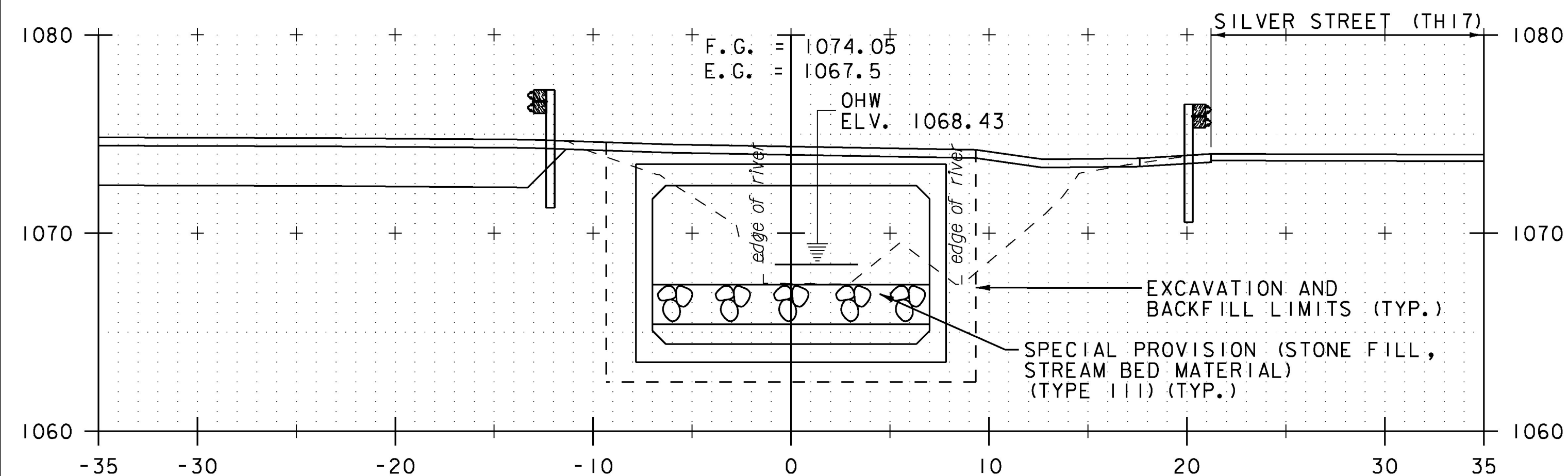


1+60

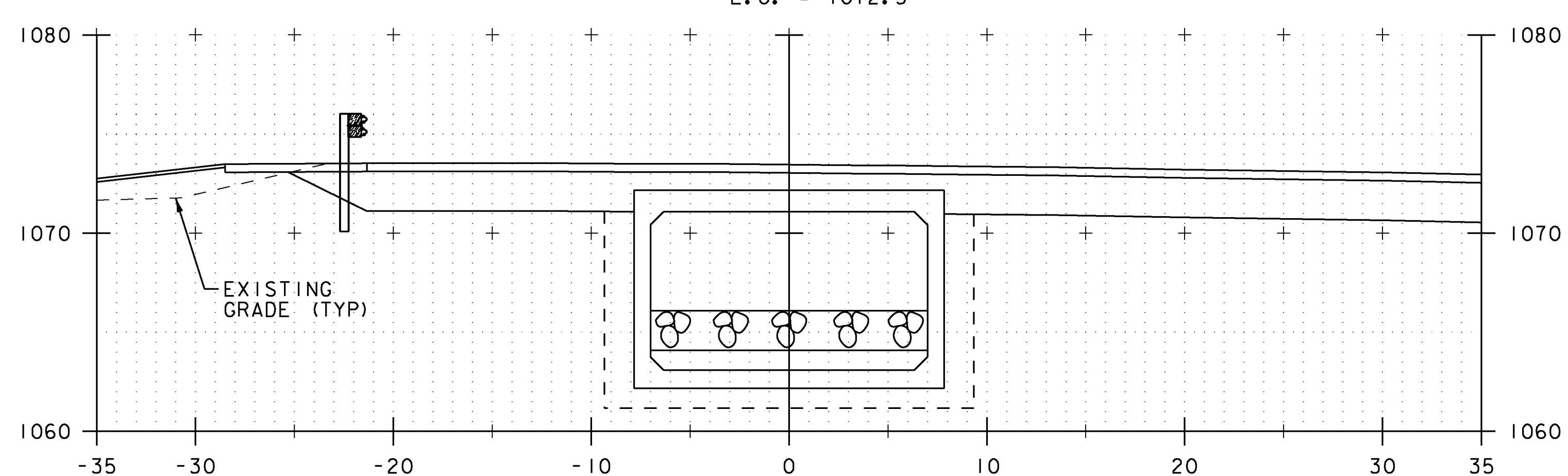


1+90

F.G. = 1072.87
E.C. = 1072.5

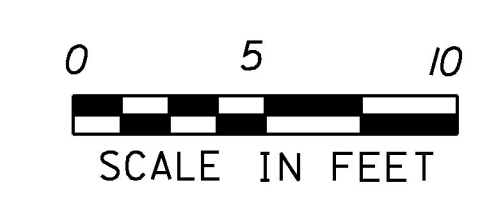


1+50

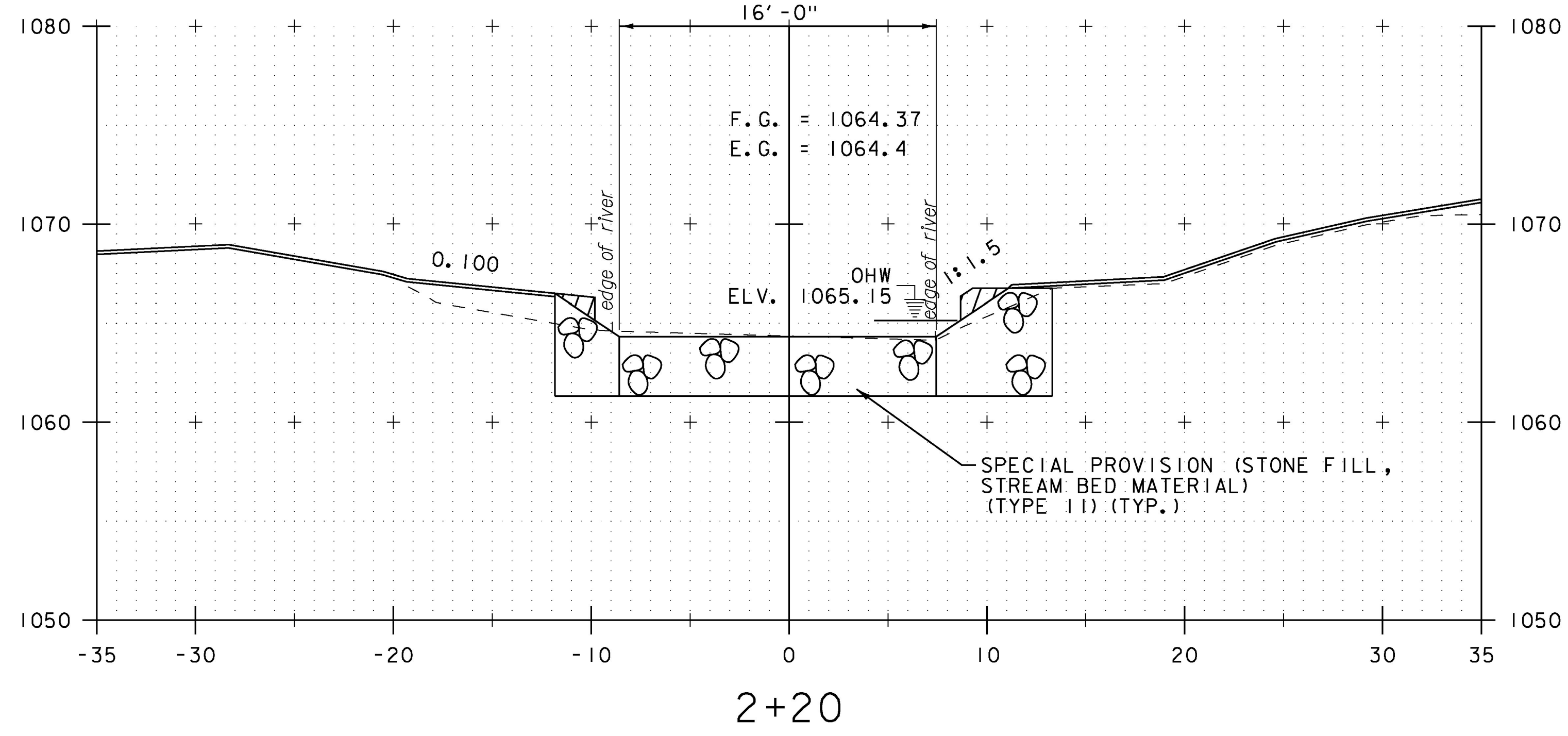
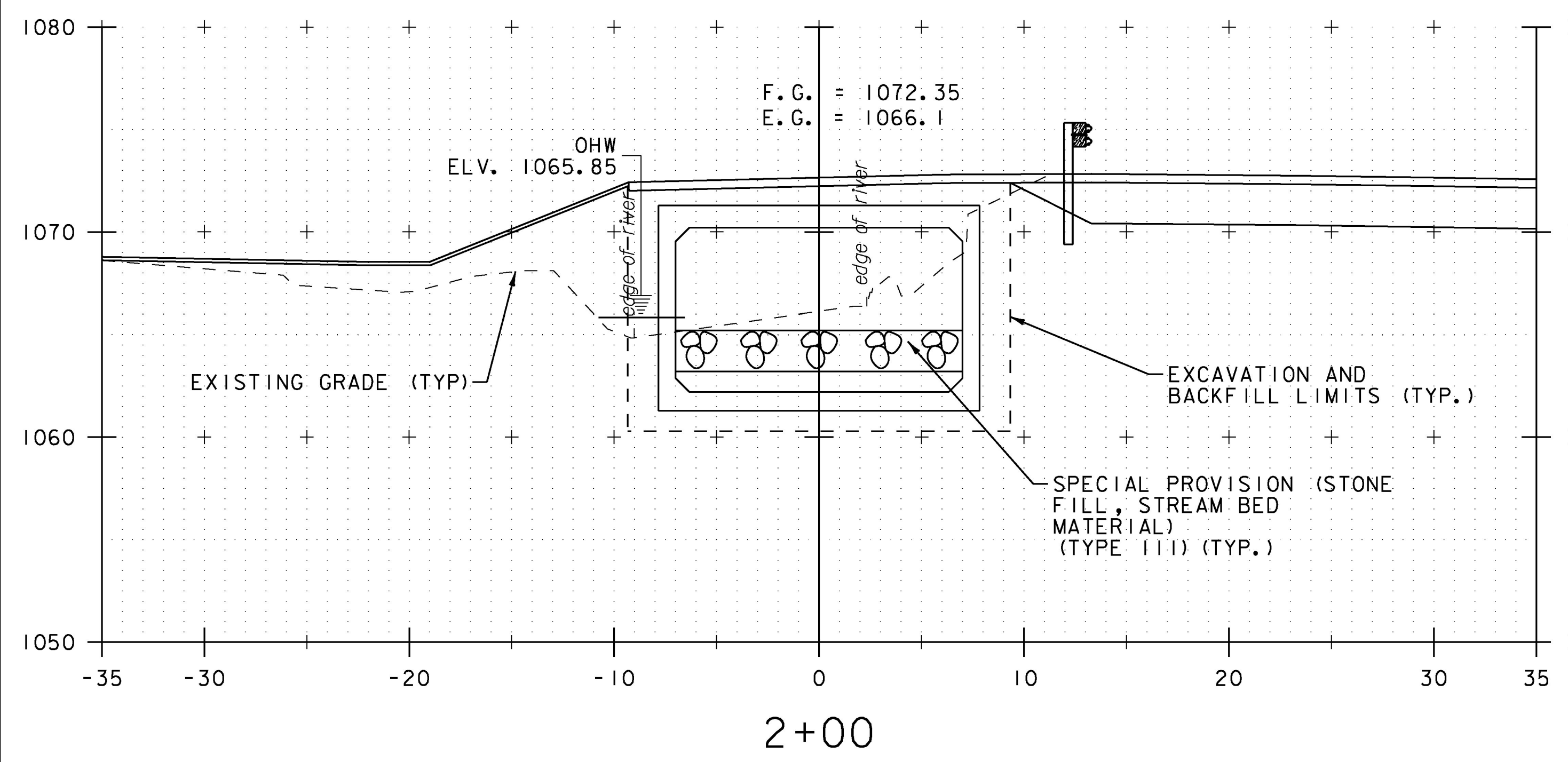
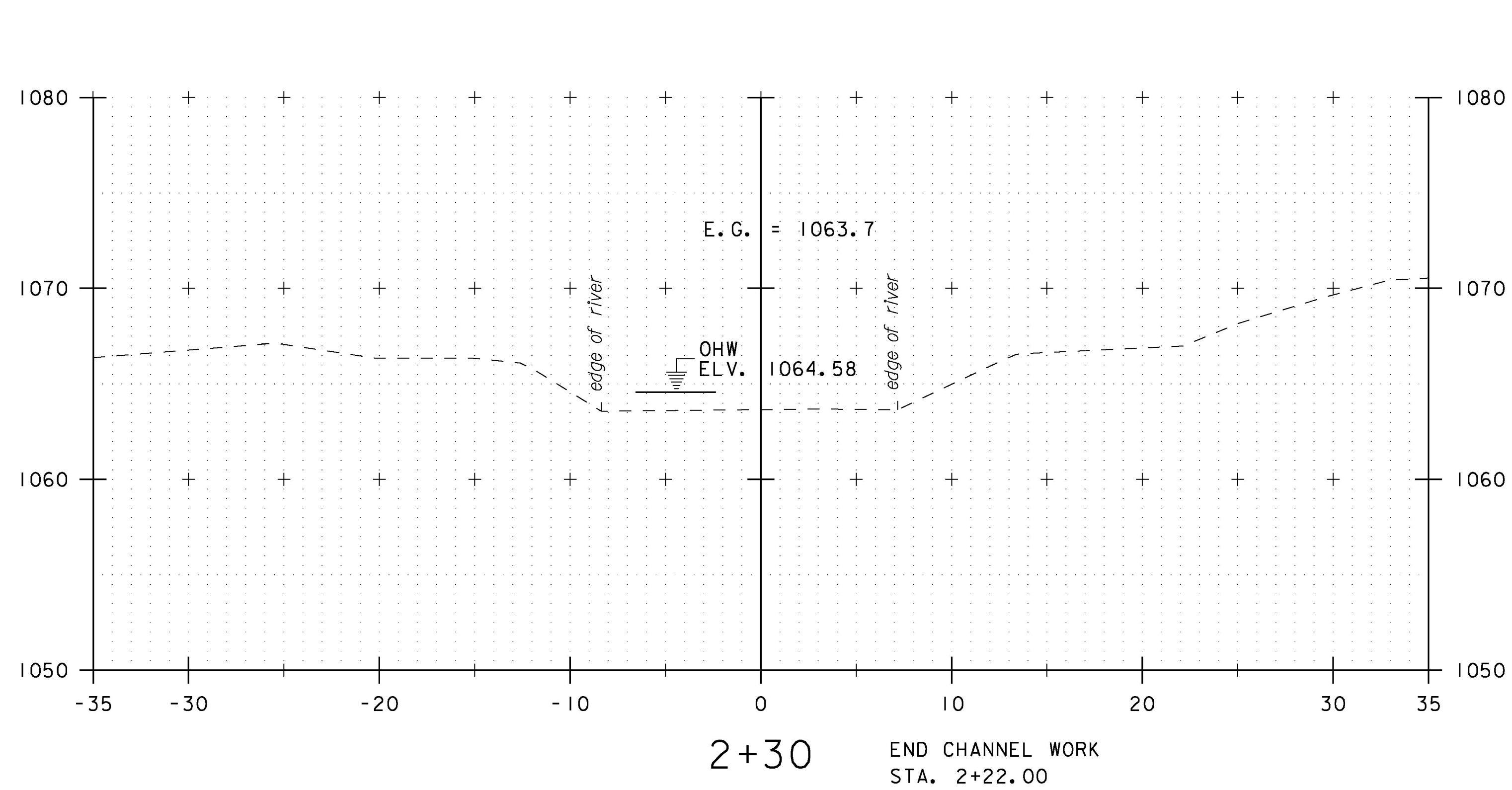
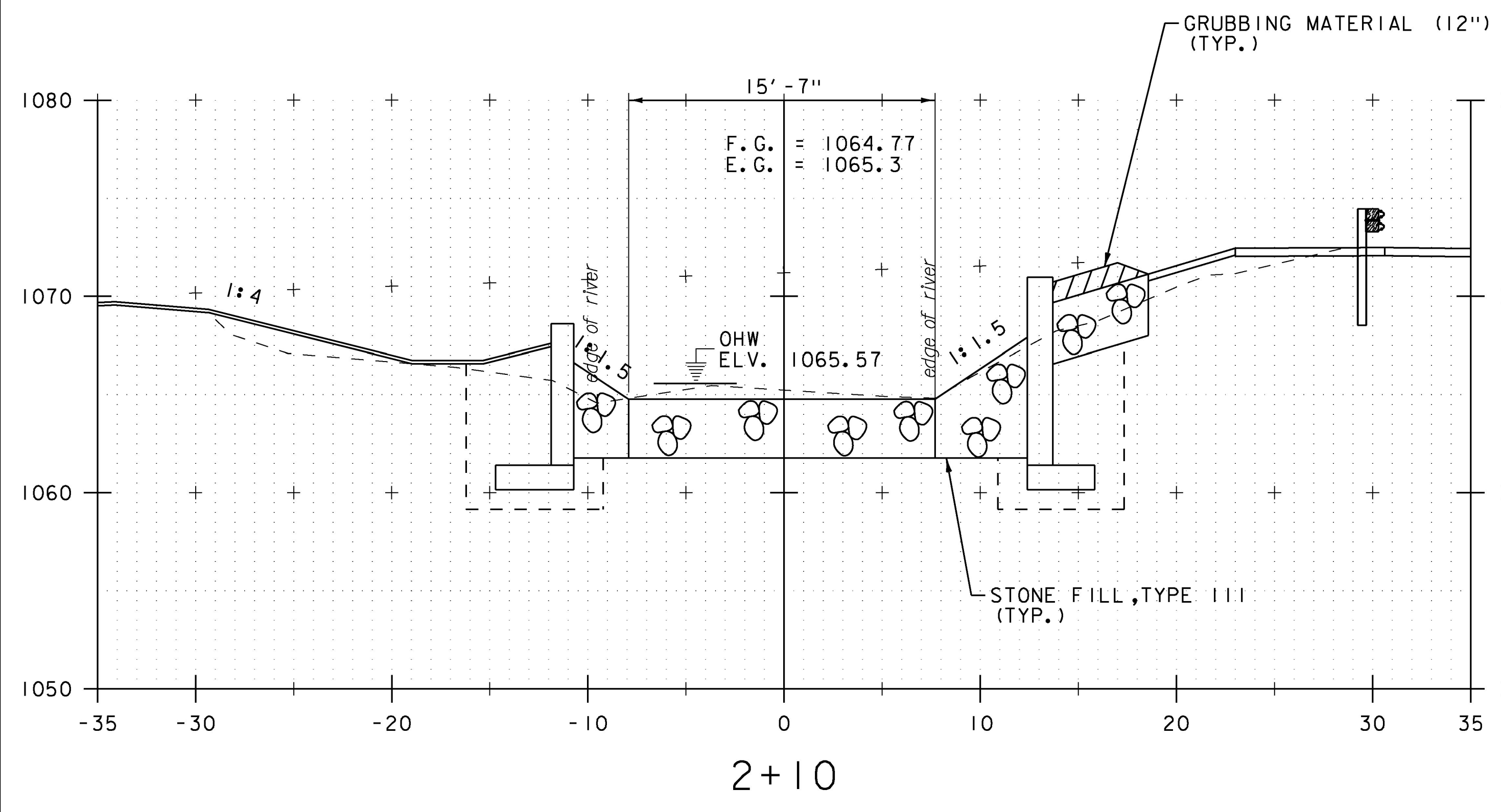


1+80

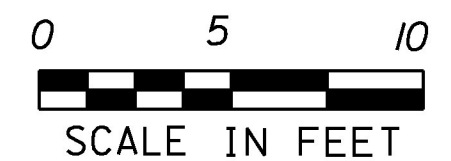
STA. 1+50 TO STA. 1+90



PROJECT NAME: HANCOCK	
PROJECT NUMBER: ER STP 0174 (18)	
FILE NAME: z12c412xs1.dgn	PLOT DATE: 10/11/2016
PROJECT LEADER: J. TUCKER	DRAWN BY: O. DALMER
DESIGNED BY: B. BRESLEND	CHECKED BY: P. BERO
CHANNEL CROSS SECTIONS SHEET 2	SHEET 38 OF 42



STA. 2+00 TO STA. 2+30



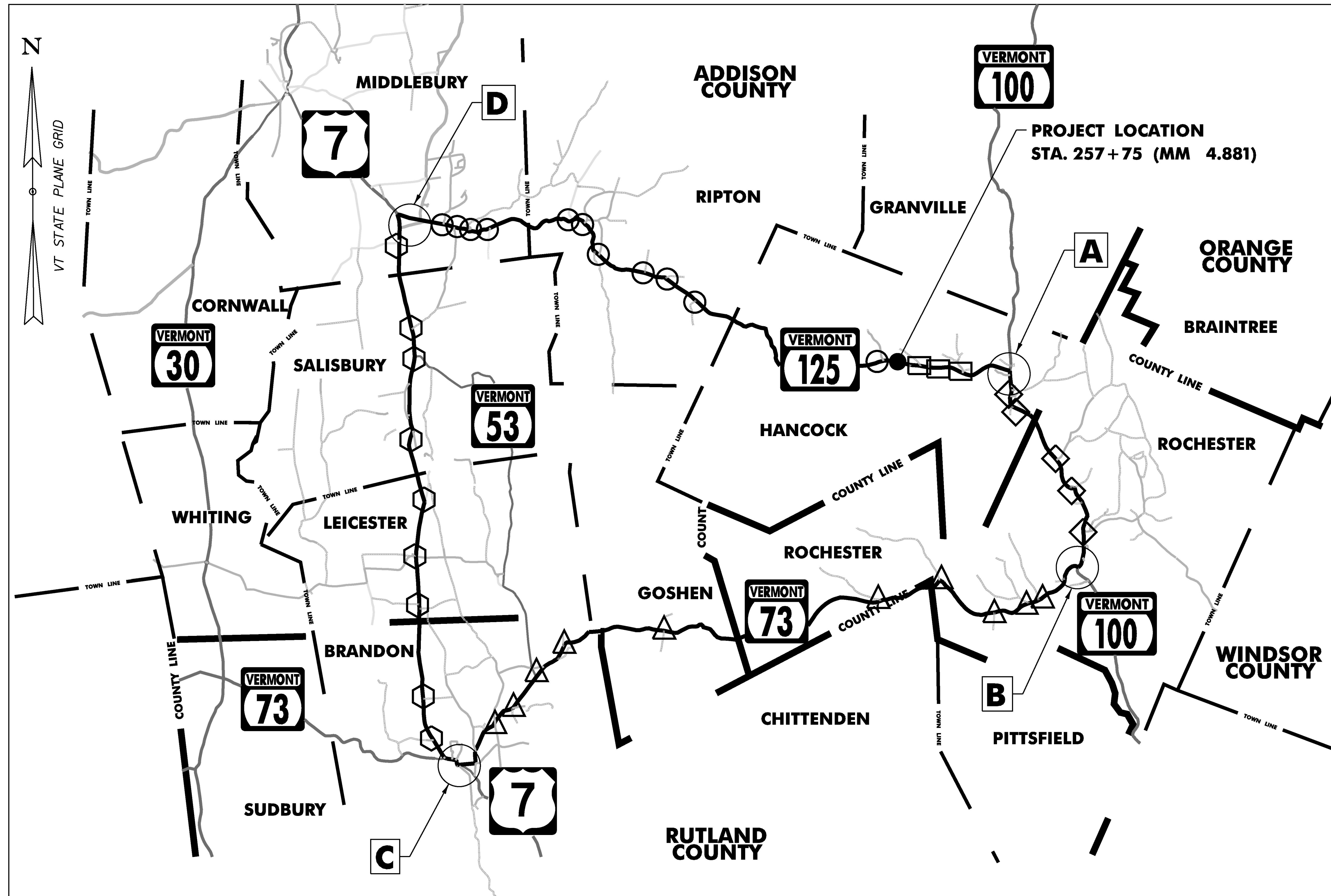
PROJECT NAME: HANCOCK	PLOT DATE: 10/11/2016
PROJECT NUMBER: ER STP 0174 (18)	DRAWN BY: O. DALMER
FILE NAME: z12c412xs1.dgn	DESIGNED BY: B. BRESLEND
PROJECT LEADER: J. TUCKER	CHECKED BY: P. BERO
CHANNEL CROSS SECTIONS SHEET 3	SHEET 39 OF 42

TRAFFIC CONTROL PLAN NOTES

1. CLOSE VT ROUTE 125 IN THE VICINITY OF BRIDGE 22 AND ESTABLISH A DETOUR USING OTHER STATE AND US ROUTES (NO LOCAL TOWN ROADS). THE DETOUR ROUTE INVOLVES US ROUTE 7, VT ROUTE 73 AND VT ROUTE 100. THIS DETOUR LENGTH IS APPROXIMATELY 25 MILES (SEE ADJACENT OFF-SITE DETOUR ROUTE MAP).
2. SEE DETOUR DETAIL SHEETS FOR INTERSECTION DETAILS AND CONFIRMATION ASSEMBLIES.

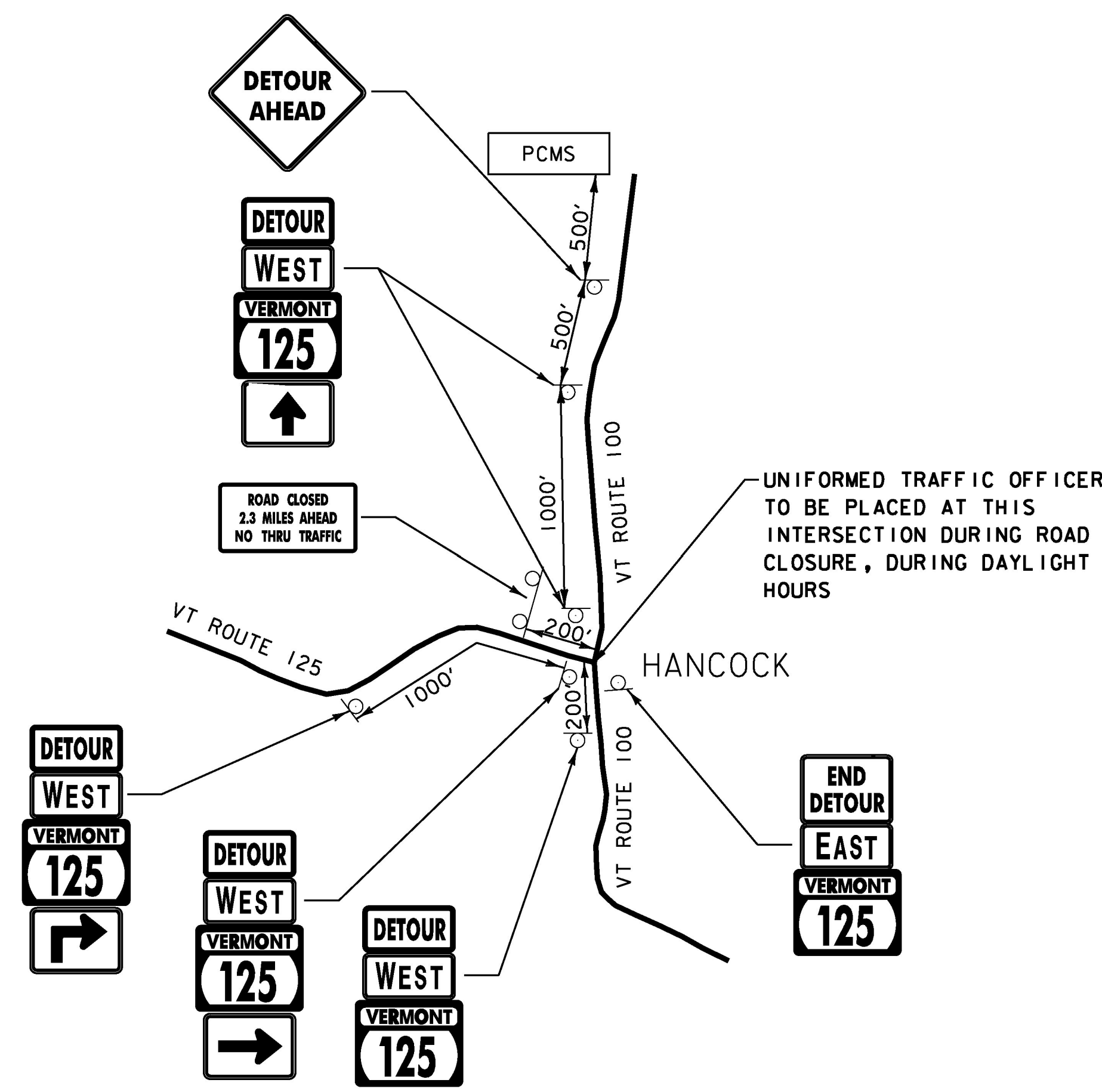
LEGEND

- | | | | |
|---|---|---|---|
| ○ | CONFIRMATION ASSEMBLY TYPE 1
VT 125 | △ | CONFIRMATION ASSEMBLY TYPE 3
VT 73 |
| | MIDDLEBURY TOWN HIGHWAYS
SCHOOL HOUSE HILL RD
LOWER PLAINS RD
N. BRANCH RD
UPPER PLAINS RD | | ROCHESTER TOWN HIGHWAYS
AUSTIN HILL
WING FARM RD
CORPORATION RD
BRIDGE RD
W HILL RD |
| | RIPTON TOWN HIGHWAYS
LINCOLN RD
PEDLER BRIDGE RD
GOSHEN RD / MAIDEN LN
ROBERT FROST RD
STEAM MILL RD
BROOKS RD/DEACON HILL RD | | GOSHEN TOWN HIGHWAYS
S HILL RD |
| | HANCOCK TOWN HIGHWAYS
TEXAS FALLS RD | | BRANDON TOWN HIGHWAYS
TOWN HILL RD
LAKE DUNMORE RD VT 53
PANT WORKS RD / FROG HOLLOE RD
COUNTRY CLUB RD |
| □ | CONFIRMATION ASSEMBLY TYPE 2
VT 125 | ◻ | CONFIRMATION ASSEMBLY TYPE 4
US 7 |
| | HANCOCK TOWN HIGHWAYS
FASSET HILL RD
TAYLOR BROOK RD
TUCKER HILL RD | | BRANDON TOWN HIGHWAYS
STAIBERG RD
LOVERS LN |
| ◇ | CONFIRMATION ASSEMBLY TYPE 5
VT 100 | | LEICESTER TOWN HIGHWAYS
GRAM RD / FERSON RD
FERN LAKE RD / LEICESTER WHITING RD
MAPLE ST |
| | HANCOCK TOWN HIGHWAYS
CHURCHVILLE RD
TUNNEL BROOK RD | | SUDBURY TOWN HIGHWAYS
W SALISBURY RD
LAKE DUNMORE RD VT 53
PLAINS RD |
| | ROCHESTER TOWN HIGHWAYS
QUARRY HILL RD
SKY HOLLOW RD
BETHEL MOUNTAIN RD | | MIDDLEBURY TOWN HIGHWAYS
3 MILE BRIDGE RD |

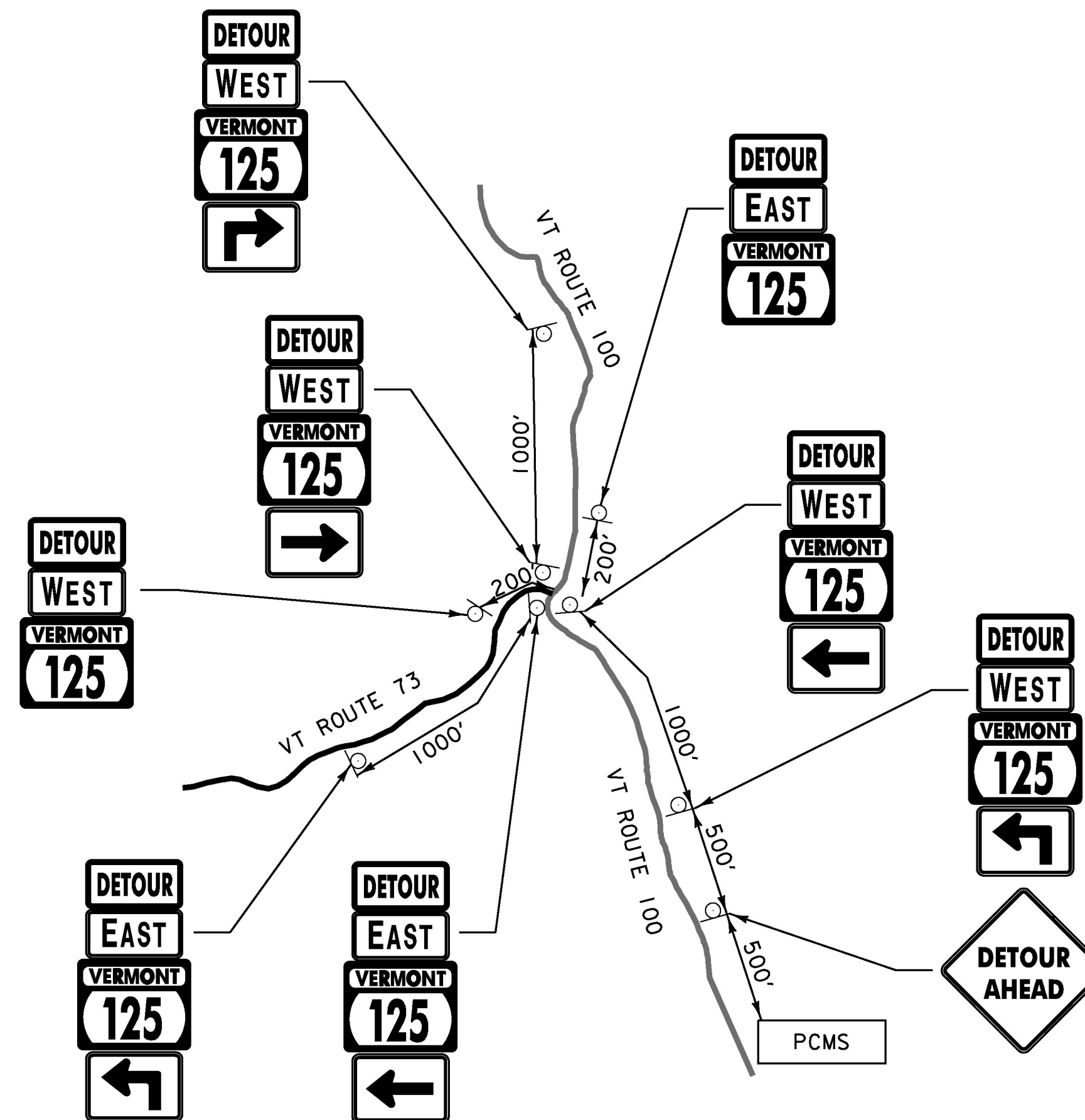


**OFF SITE DETOUR PLAN
NOT TO SCALE**

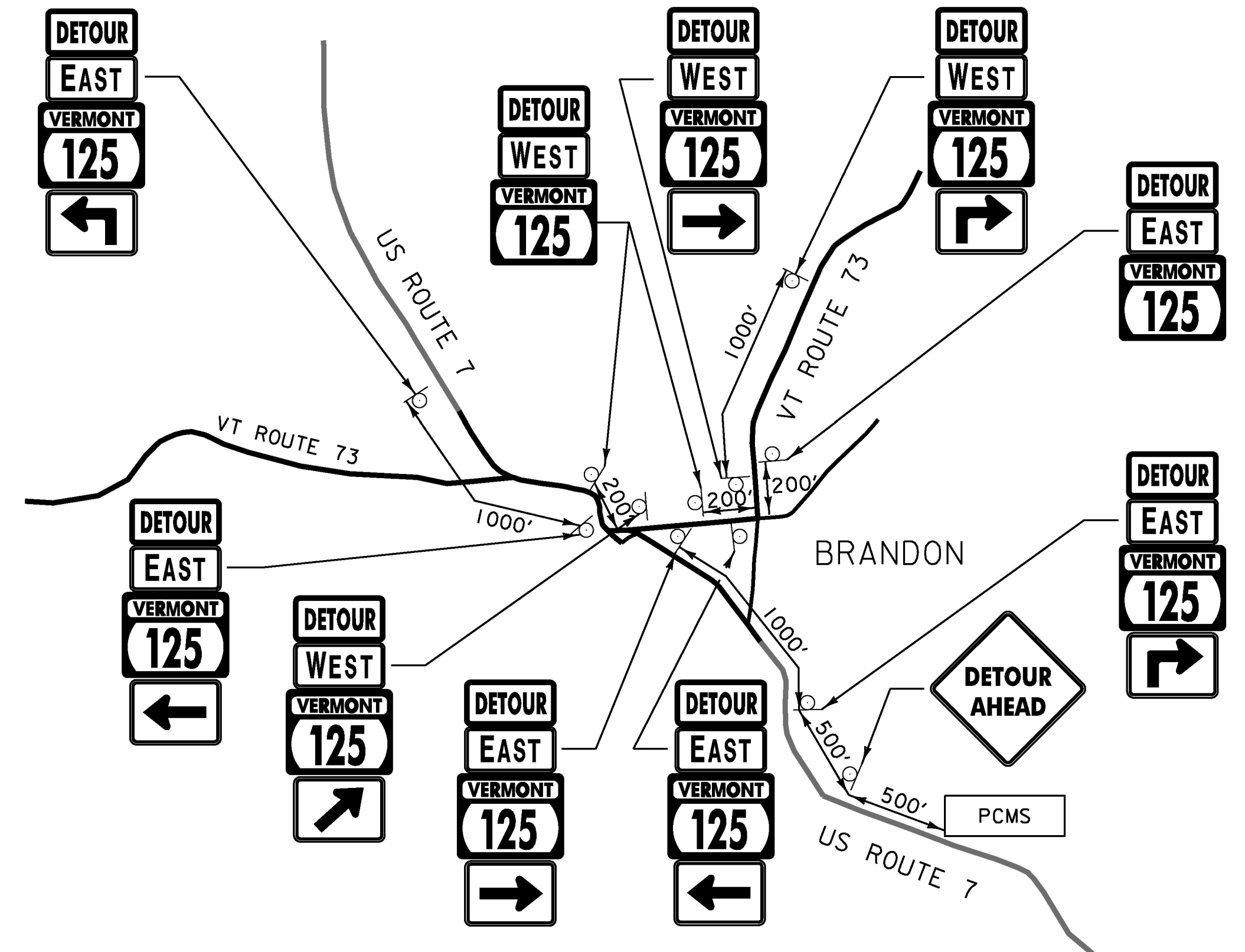
PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174(18)
FILE NAME:	z12c412detour.dgn
PROJECT LEADER:	J. TUCKER
DESIGNED BY:	B. BRESLEND
DETOUR LAYOUT SHEET	
PLOT DATE:	10/11/2016
DRAWN BY:	O. DALMER
CHECKED BY:	A. SANZ
SHEET	40 OF 42



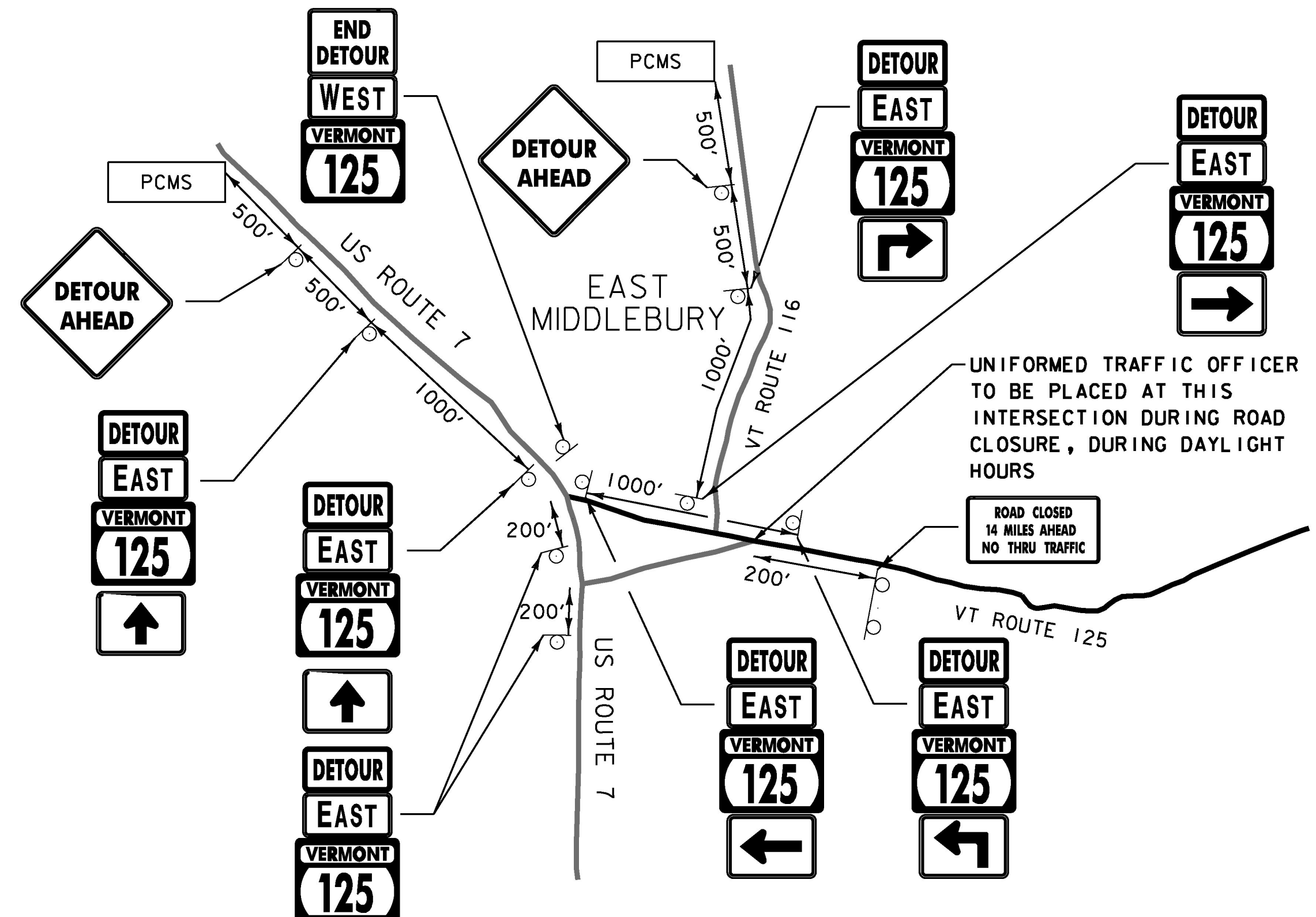
DETAIL A
NOT TO SCALE



DETAIL B
NOT TO SCALE



DETAIL C
NOT TO SCALE



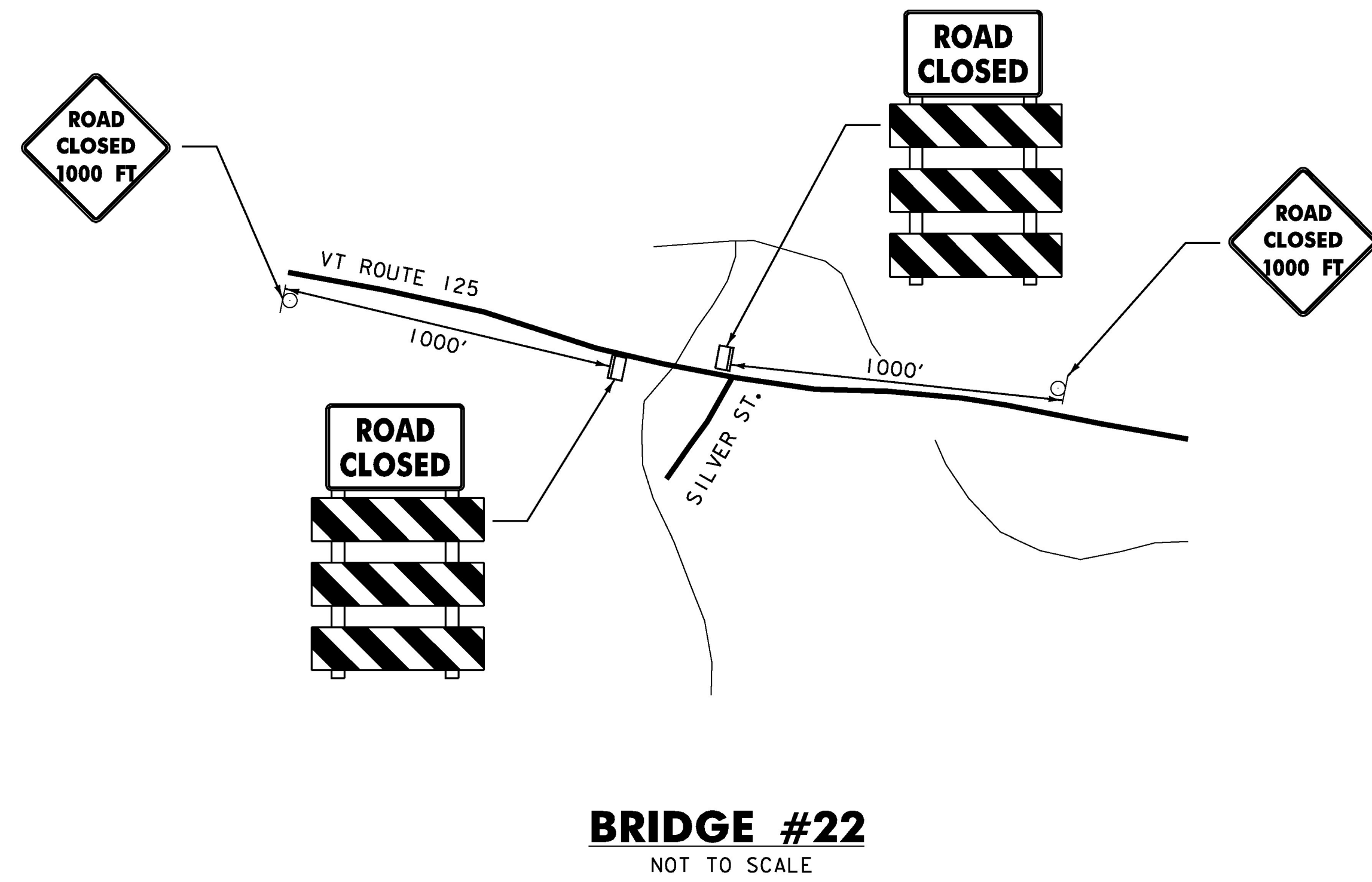
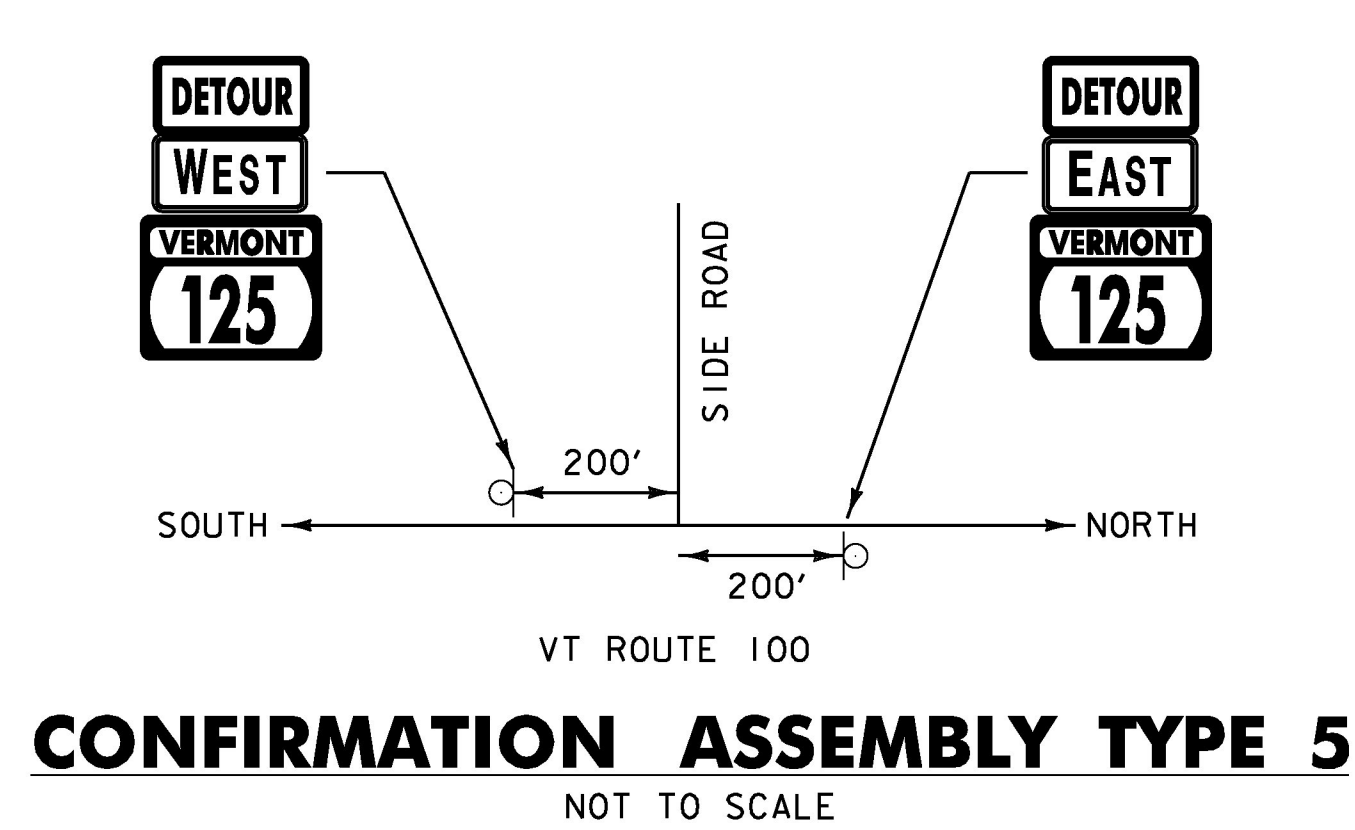
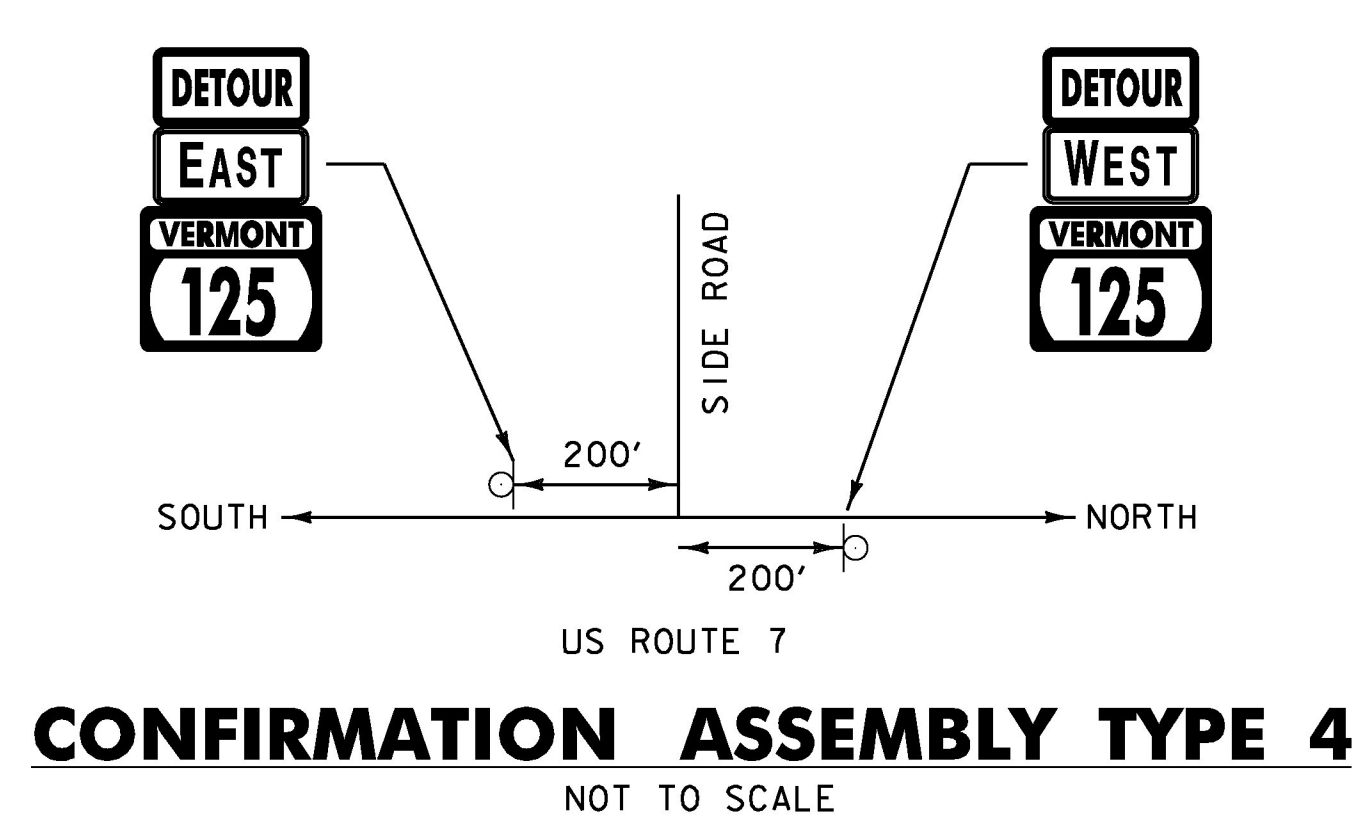
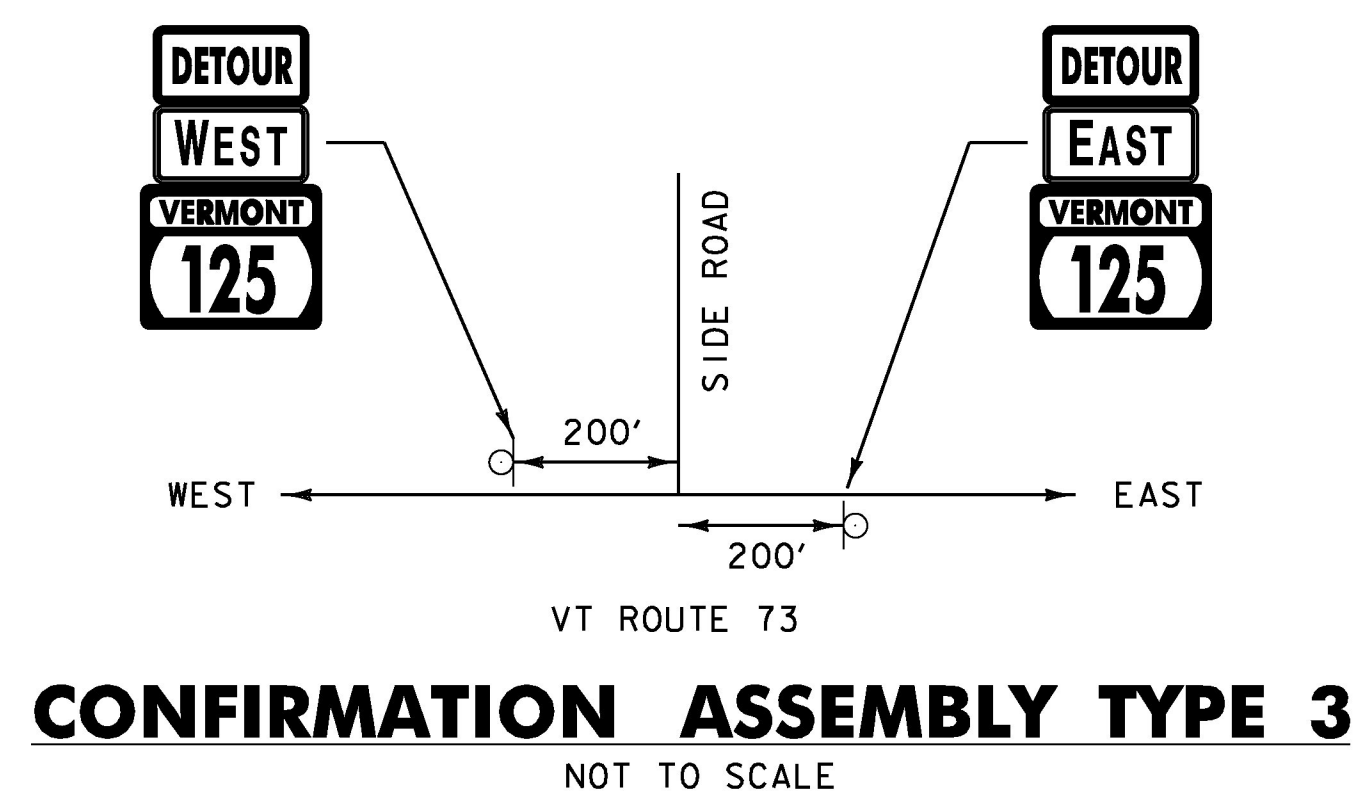
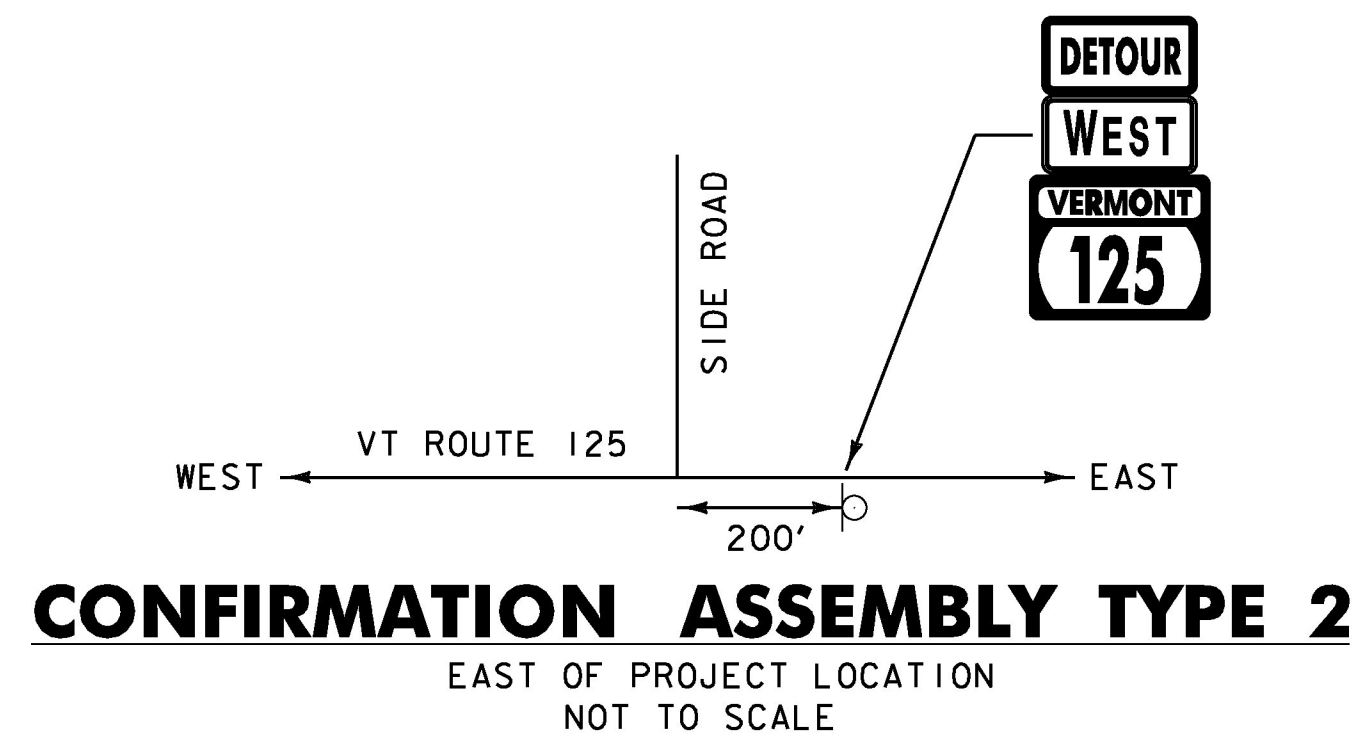
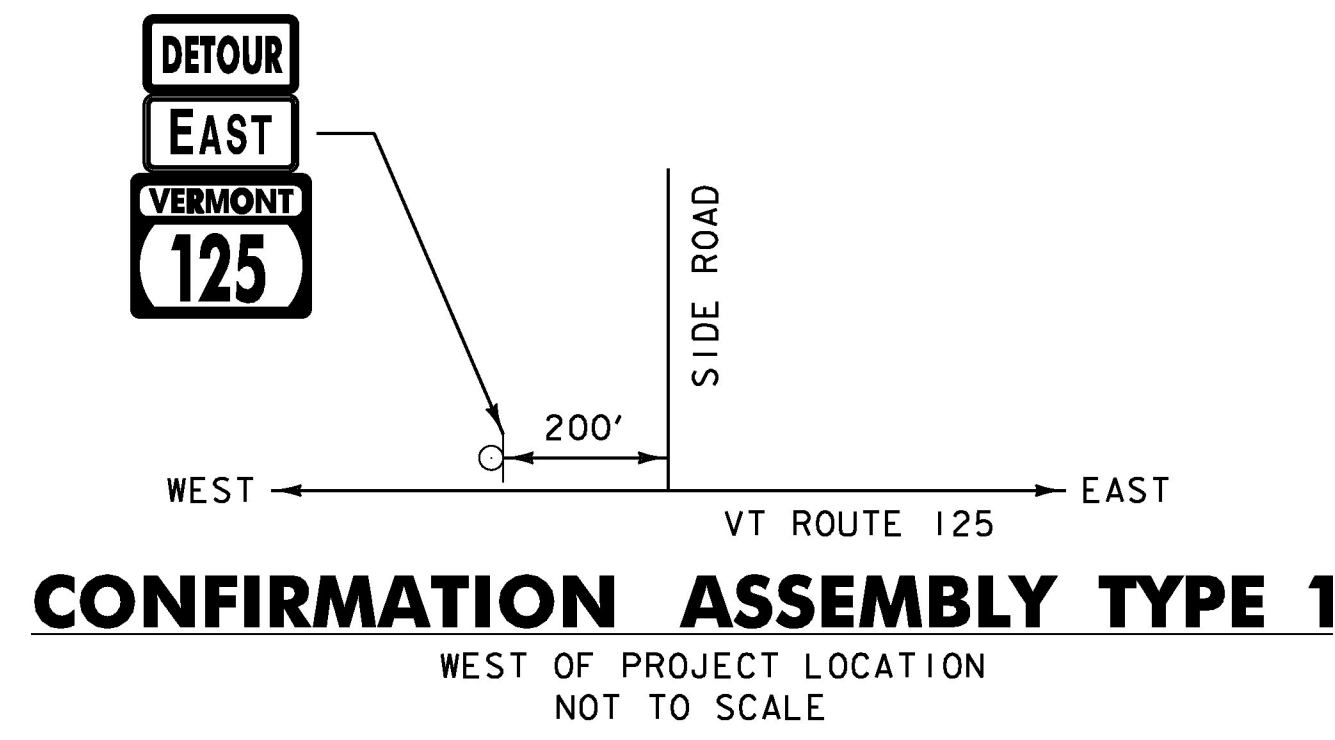
DETAIL D
NOT TO SCALE

NOTES :

1. ALL COSTS OF INSTALLING, MAINTAINING AND REMOVING THE SIGNS AND BARRICADES IN THIS TRAFFIC CONTROL PLAN AS NECESSARY TO MEET PROJECT CONDITIONS WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE CONTRACT ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL INCLUSIVE).
2. ALL TRAFFIC SIGNS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) 2009 EDITION.
3. "ROAD CLOSED" SIGNS SHALL BE MOUNTED AND MAINTAINED ON TYPE III BARRICADES.
4. TYPE III BARRICADES SHALL BE PLACED SO AS TO PHYSICALLY EXCLUDE TRAFFIC FROM THE ENTIRE ROADWAY WIDTH OR AT THE DISCRETION OF THE ENGINEER.
5. WHEN POSSIBLE LOCATE "ROAD CLOSED 1000 FT" SIGN NEAR A LOCATION WHERE DRIVERS CAN TURN AROUND.
6. WHERE POSSIBLE LOCATE THE DETOUR ROUTE MARKER ASSEMBLIES ADJACENT TO EXISTING ROUTE MARKER ASSEMBLIES.
7. SIGN SPACING IS FOR REFERENCE ONLY. FIELD ADJUSTMENTS WILL LIKELY BE NECESSARY, AS APPROVED BY THE ENGINEER.
8. EXISTING SIGNS IN CONFLICT WITH THIS DETOUR PLAN SHOULD BE COVERED WHEN NECESSARY, AS APPROVED BY THE ENGINEER.
9. FLAGGERS SHALL BE PAID UNDER ITEM 630.15 "FLAGGERS". UNIFORMED TRAFFIC OFFICERS SHALL BE PAID UNDER ITEM 630.10 "UNIFORMED TRAFFIC OFFICERS". PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE PAID UNDER ITEM 641.15 "PORTABLE CHANGEABLE MESSAGE SIGN".

PCMS = PORTABLE CHANGEABLE MESSAGE SIGN

PROJECT NAME: HANCOCK	
PROJECT NUMBER: ER STP 0174(18)	
FILE NAME: z12c412detour.dgn	PLOT DATE: 10/11/2016
PROJECT LEADER: J. TUCKER	DRAWN BY: O. DALMER
DESIGNED BY: B. BRESLEND	CHECKED BY: A. SANZ
DETOUR DETAIL SHEET 1	SHEET 41 OF 42



MESSAGES FOR PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) – REGIONAL DETOUR

STARTING 2 WEEKS PRIOR TO CLOSURE

MESSAGE 1	MESSAGE 2
VT 125	MM / DD
ROAD	TO
CLOSED	MM / DD

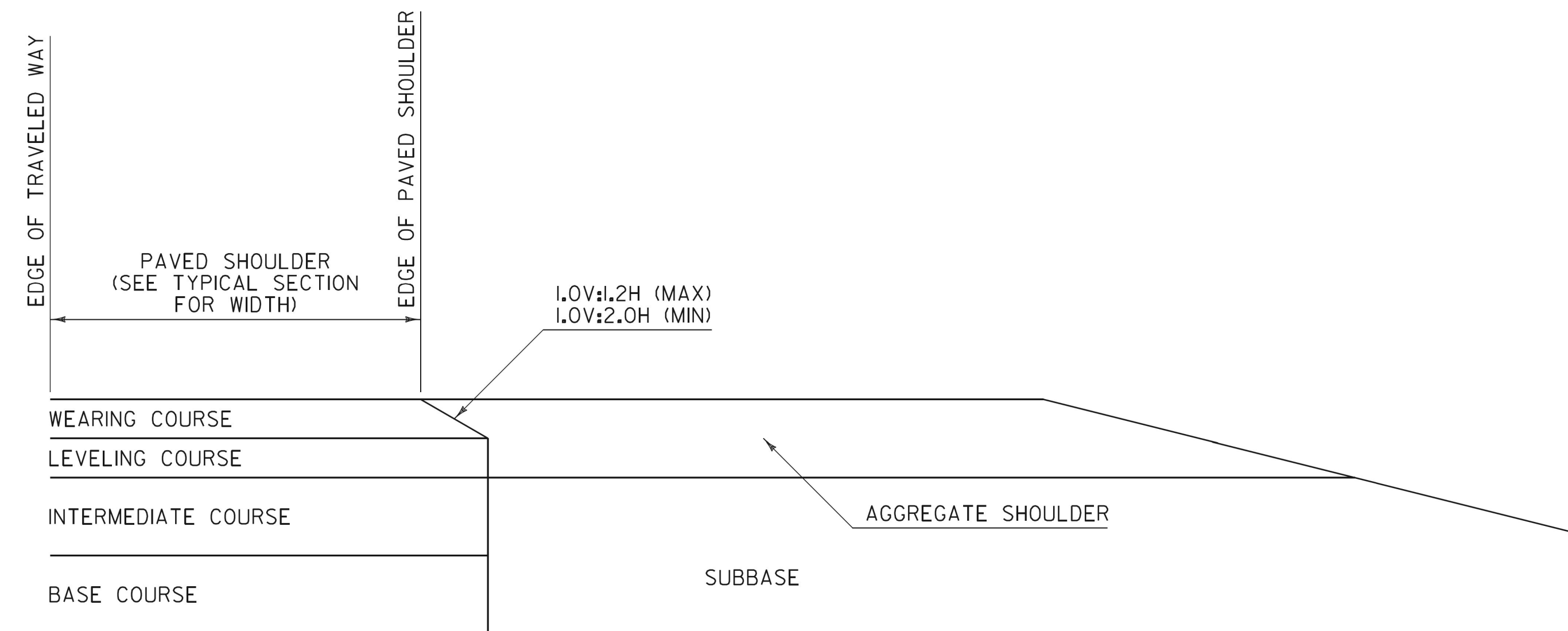
DURING CLOSURE

MESSAGE 1	MESSAGE 2
VT 125	PIPER BR.
ROAD	AT
CLOSED	SILVER ST.

ID NUMBER	SIGN TEXT	SIZE OF SIGN WIDTH HEIGHT	NUMBER OF SIGNS REQ'D.	AREA OF EACH SIGN (SF)	COLOR	REMARKS
W20-2	DETOUR AHEAD	48" 48"	5	16.00	B/F/O	INSTALL ON 2 POSTS
W20-3	ROAD CLOSED 1000 FT	48" 48"	2	16.00	B/F/O	INSTALL ON 2 POSTS
M6-3	↑	21" 15"	3	2.19	B/F/O	MOUNT BELOW VMI-5
M6-1R	→	21" 15"	5	2.19	B/F/O	MOUNT BELOW VMI-5
M6-1L	←	21" 15"	5	2.19	B/F/O	MOUNT BELOW VMI-5
M5-1L	↙	21" 15"	4	2.19	B/F/O	MOUNT BELOW VMI-5
M5-1R	↘	21" 15"	5	2.19	B/F/O	MOUNT BELOW VMI-5
M6-2R	↗	21" 15"	1	2.19	B/F/O	MOUNT BELOW VMI-5
M4-8	DETOUR	24" 12"	91	2.00	B/F/O	MOUNT ABOVE M3-2 OR M3-4
M4-8A	END DETOUR	24" 18"	2	3.00	B/F/O	MOUNT ABOVE M3-2 OR M3-4
M3-2	EAST	24" 12"	52	2.00	G/W	MOUNT ABOVE VMI-5
M3-4	WEST	24" 12"	41	2.00	G/W	MOUNT ABOVE VMI-5
VMI-5	VERMONT 125	30" 24"	93	5.00	G/W	
R11-2	ROAD CLOSED	48" 30"	2	10.00	B/W	INSTALL ON 2 POSTS
R11-3B	ROAD CLOSED XX MILES AHEAD NO THRU TRAFFIC	60" 30"	2	12.5	B/W	INSTALL ON TYPE III BARRICADES

B/F/O = BLACK ON FLUORESCENT ORANGE BACKGROUND
G/W = RETROREFLECTIVE GREEN ON RETROREFLECTIVE WHITE BACKGROUND
B/W = BLACK ON RETROREFLECTIVE WHITE BACKGROUND

PROJECT NAME:	HANCOCK
PROJECT NUMBER:	ER STP 0174(18)
FILE NAME: z12c412detour.dgn	PLOT DATE: 10/11/2016
PROJECT LEADER: J. TUCKER	DRAWN BY: O.DALMER
DESIGNED BY: B. BRESLEND	CHECKED BY: A. SANZ
DETOUR DETAIL SHEET 2	SHEET 42 OF 42

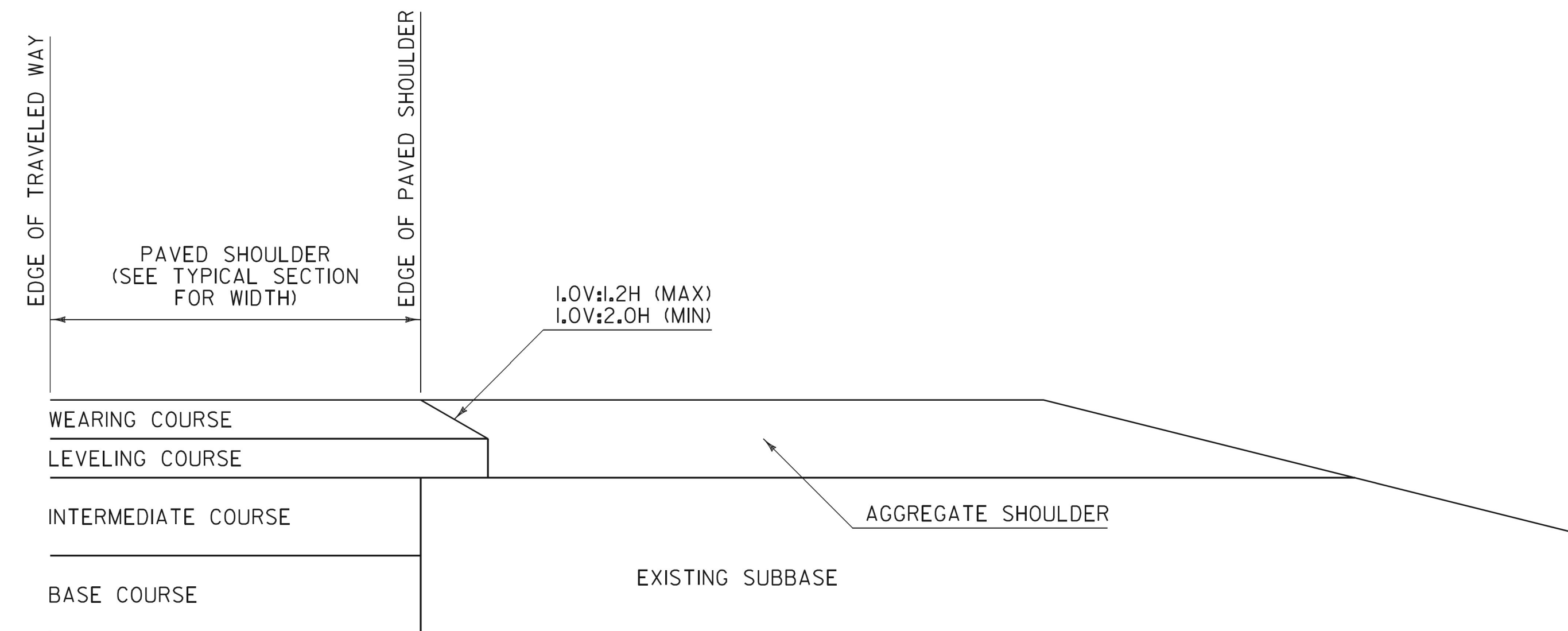


**SAFETY EDGE DETAIL
FOR PAVING BELOW WEARING COURSE**

NOTES:

1. THIS DETAIL IS INTENDED FOR WHEN PAVING EXTENDS BELOW THE WEARING COURSE.
2. PRIOR TO PLACEMENT OF THE LEVELING AND/OR WEARING COURSE, THE SUBBASE LOCATED BENEATH THE AGGREGATE SHOULDER SHALL BE PREPARED FLUSH WITH THE BOTTOM OF THE LEVELING COURSE.
3. BASE COURSE LIMITS MAY VARY, SEE TYPICAL SECTIONS FOR WIDTH.

SAFETY EDGE WIDTH BASED ON WEARING COURSE THICKNESS AND A 1V:1.6H SLOPE	
WEARING COURSE THICKNESS (INCHES)	NOMINAL SAFETY EDGE WIDTH (INCHES)
1.25	2.000
1.50	2.375
1.75	2.750
2.00	3.125
2.25	3.500
2.50	4.000



**SAFETY EDGE DETAIL
FOR PAVING WEARING COURSE ONLY**

NOTES:

1. THIS DETAIL IS INTENDED FOR WHEN ONLY THE LEVELING AND/OR WEARING COURSE IS TO BE PLACED.
2. PAVEMENT COURSES MAY VARY, SEE TYPICAL SECTIONS FOR ACTUAL PAVEMENT COURSES REQUIRED.

GENERAL NOTES:

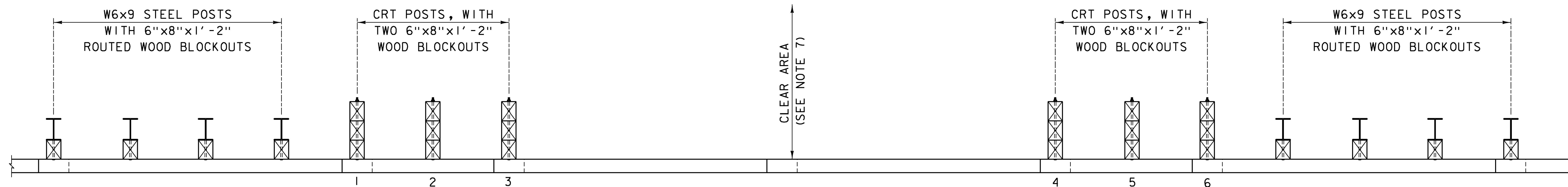
1. PLACEMENT OF THE WEARING COURSE SHALL INCLUDE THE SAFETY EDGE, UNLESS THE FOLLOWING APPLIES:
 - A. THE ADJACENT SLOPE IS STEEPER THAN THE SAFETY EDGE.
 - B. THE EDGE OF PAVEMENT BEING PLACED ABUTS BOUND MATERIAL.
 - C. VEHICLES ARE RESTRICTED FROM LEAVING THE PAVED SURFACE (EXAMPLE: GUARDRAIL).
2. THE SAFETY EDGE SHALL BE FORMED IN SUCH A WAY THAT THE BITUMINOUS CONCRETE PAVEMENT IS EXTRUDED OR COMPRESSED TO FORM THE SLOPE. DEVICES THAT SIMPLY STRIKE-OFF THE MIX WITHOUT PROVIDING ANY COMPACTIVE EFFORT WILL NOT BE ALLOWED.
3. THE SAFETY EDGE SHALL NOT BE CONSIDERED PART OF THE PAVED SHOULDER.
4. THIS WORK SHALL BE INCIDENTAL TO THE RESPECTIVE BITUMINOUS CONCRETE PAVEMENT ITEM.

REV.	DATE	DESCRIPTION
0	MAR. 29, 2016	ORIGINAL APPROVAL
OTHER DETAILS REQUIRED: NONE		
DETAILS APPROVED FOR USE BY HIGHWAY SAFETY & DESIGN		

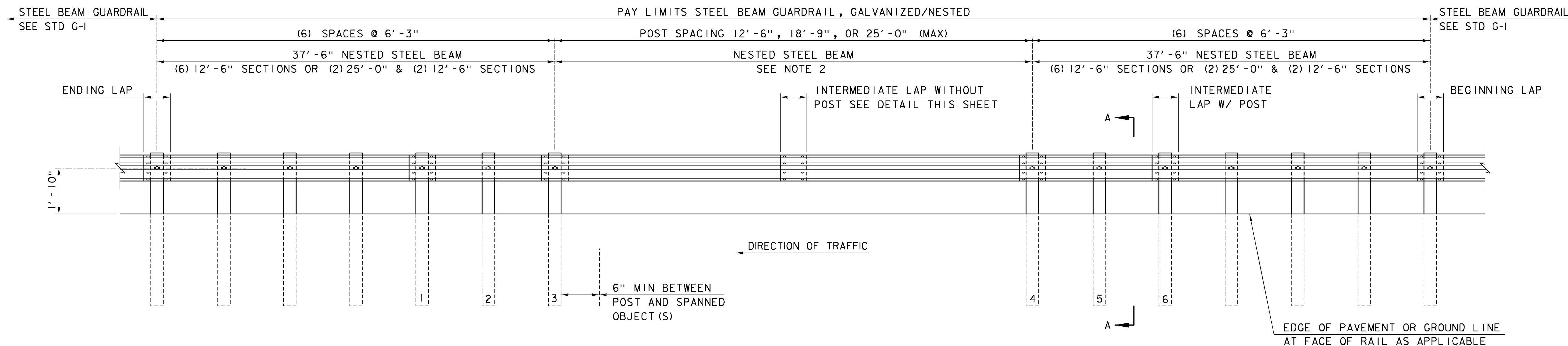
SAFETY EDGE DETAILS



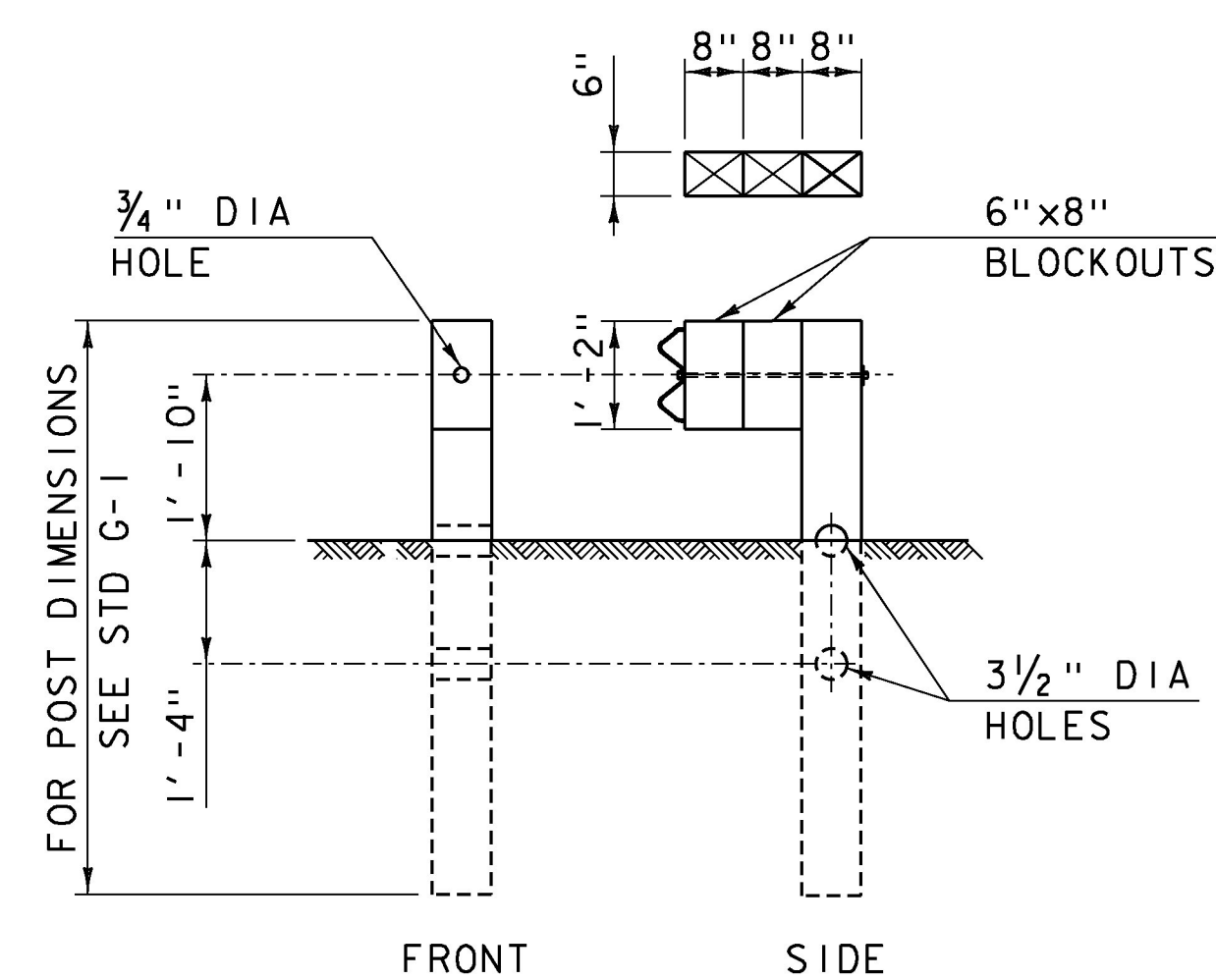
HIGHWAY SAFETY
& DESIGN DETAIL
HSD - 400.01



LONGSPAN STEEL BEAM GUARDRAIL PLAN

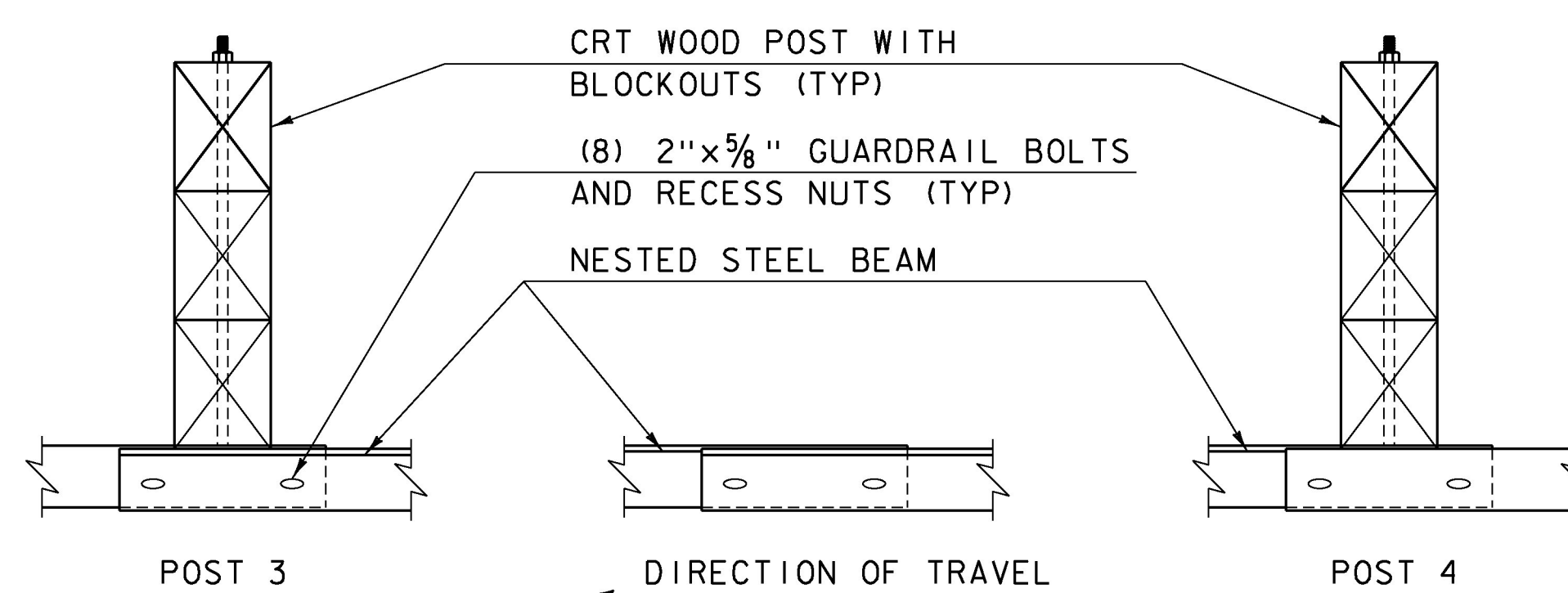


LONGSPAN STEEL BEAM GUARDRAIL ELEVATION



SECTION A-A

SECTION A-A TYPICAL FOR POST 1-6.
SEE NOTES 3 AND 4



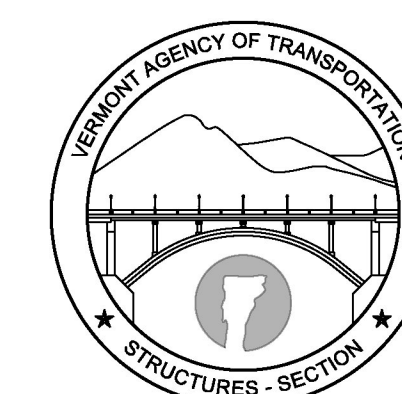
INTERMEDIATE LAP WITHOUT POST

NOTES:

1. RAIL MEETS TEST LEVEL 3 REQUIREMENTS OF NCHRP REPORT 350.
2. THERE SHALL BE NO MORE THAN ONE SPLICE IN THE LONGSPAN LOCATION.
3. POSTS 1 THRU 6 ARE BREAKAWAY CONTROLLED RELEASING TERMINAL (CRT) POSTS.
4. POSTS 1 THRU 6 HAVE TWO 6"x8" BLOCKOUTS.
5. ON POSTS 1 THRU 6, GUARDRAIL BOLT "D", AS SHOWN ON STD G1, SHALL BE 26" LONG.
6. ON ALL POSTS WHERE THE RAIL IS NESTED GUARDRAIL BOLT "A", AS SHOWN ON STD G1, SHALL BE 2" LONG.
7. CLEAR AREA BEHIND BACK OF RAIL SHALL BE:
5'-0" MINIMUM FOR OBSTRUCTIONS LESS THAN OR EQUAL TO THE HEIGHT OF RAIL.
6'-0" FOR OBSTRUCTIONS TALLER THAN THE TOP OF RAIL.
8. W6x9 STEEL POST MAY BE REPLACED WITH CRT WOOD POST WITH THE APPROVAL OF THE ENGINEER.
9. ALL MATERIALS NECESSARY FOR THE ASSEMBLY OF THE RAIL MUST MEET THE REQUIREMENTS OF STD G-1 UNLESS OTHERWISE NOTED.
10. GUARDRAIL SECTIONS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW FOR THE LANE NEAREST THE GUARDRAIL.

REVISIONS	
NOVEMBER 25, 2013	APPROVED FOR USE BY VAOT STRUCTURES SECTION
JANUARY 3, 2014	APPROVED FOR USE BY VAOT STRUCTURES SECTION

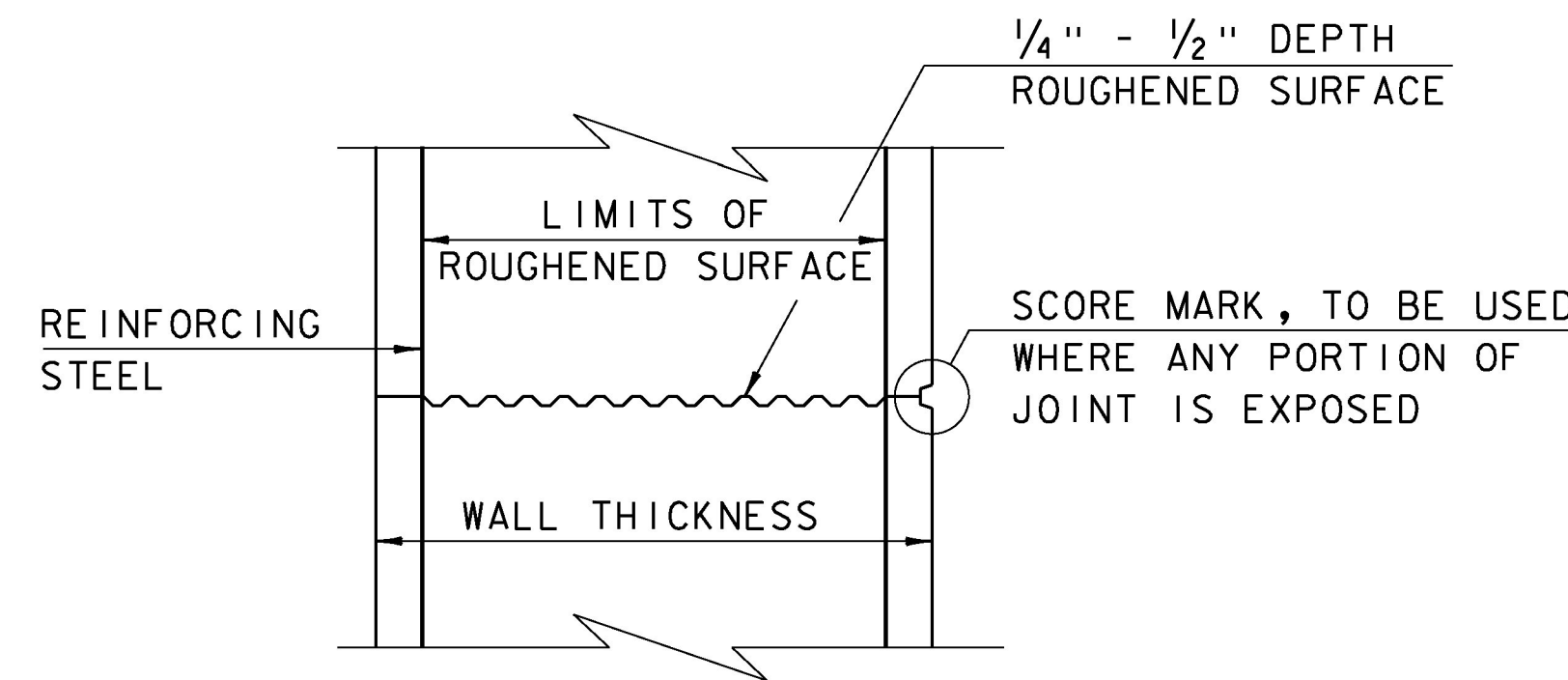
LONGSPAN
STEEL BEAM GUARDRAIL,
GALVANIZED



STRUCTURES
DETAIL
SD-366.00

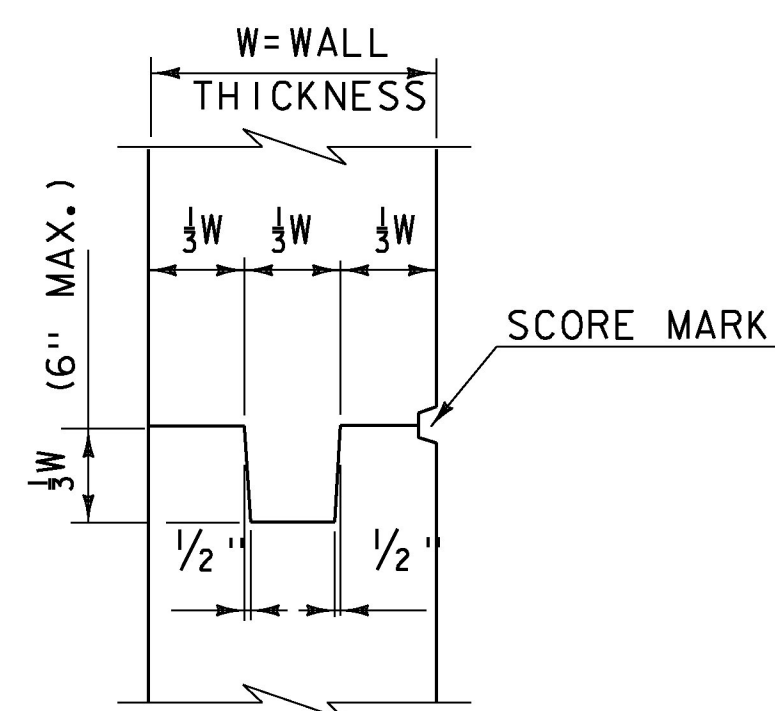
CONCRETE GENERAL NOTES

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.

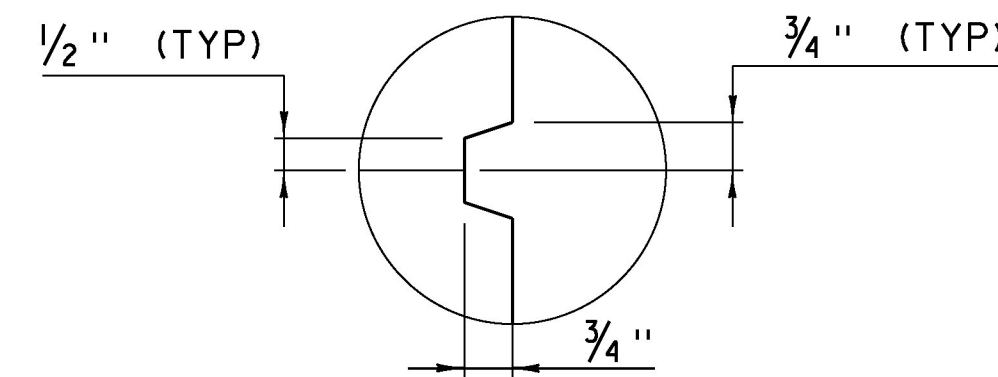


TYPICAL HORIZONTAL CONSTRUCTION JOINT
(NOT TO SCALE)

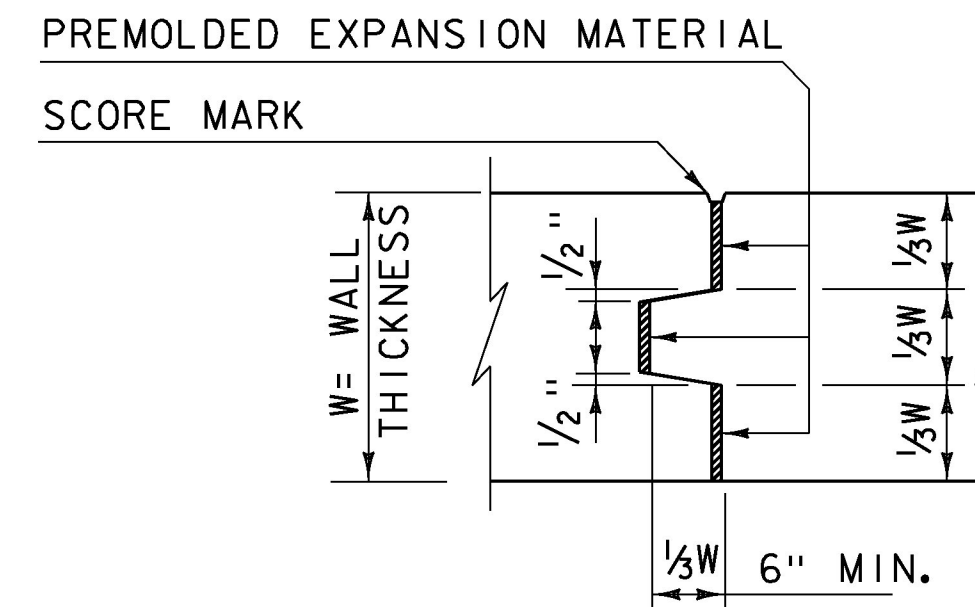
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



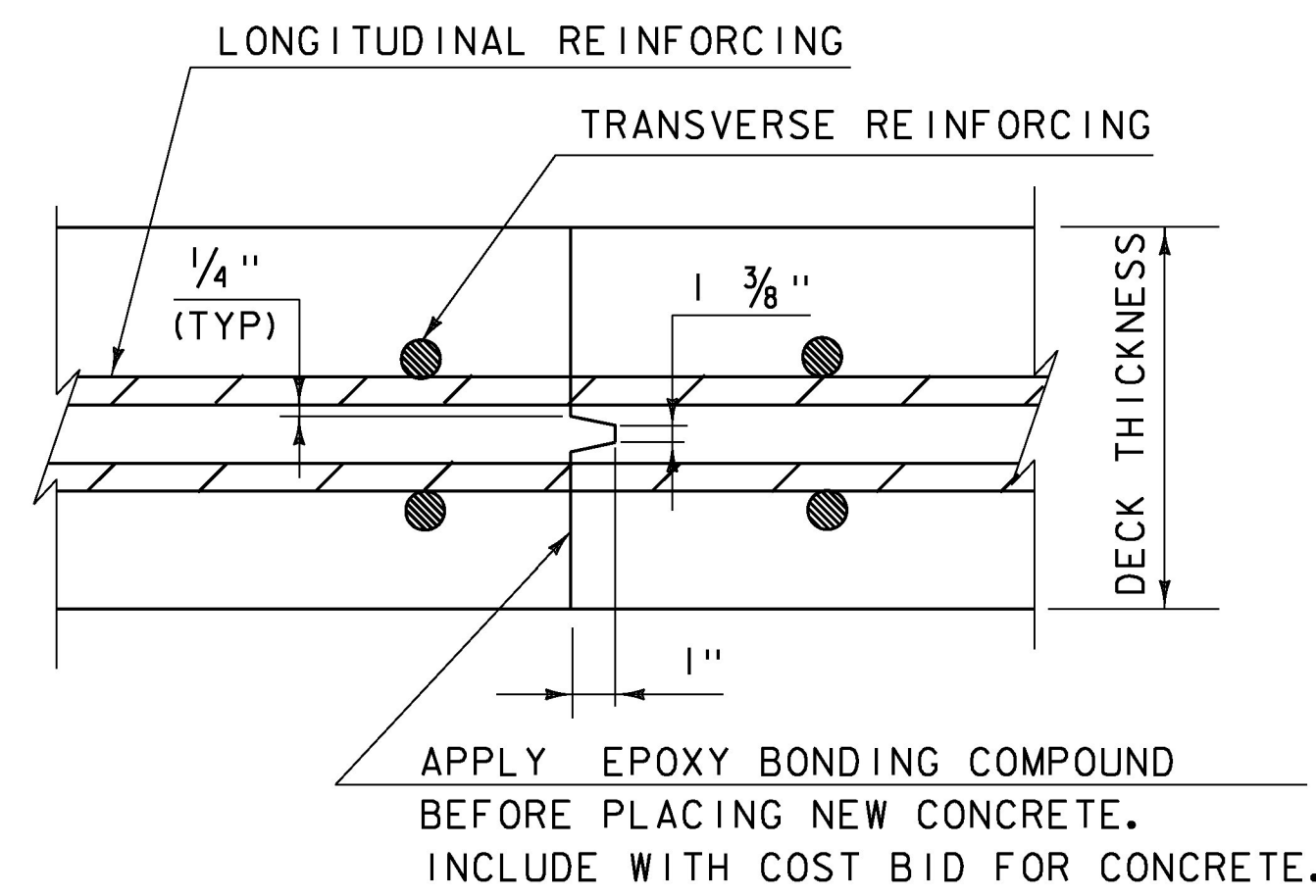
TYPICAL CONCRETE CONSTRUCTION JOINT
(NOT TO SCALE)



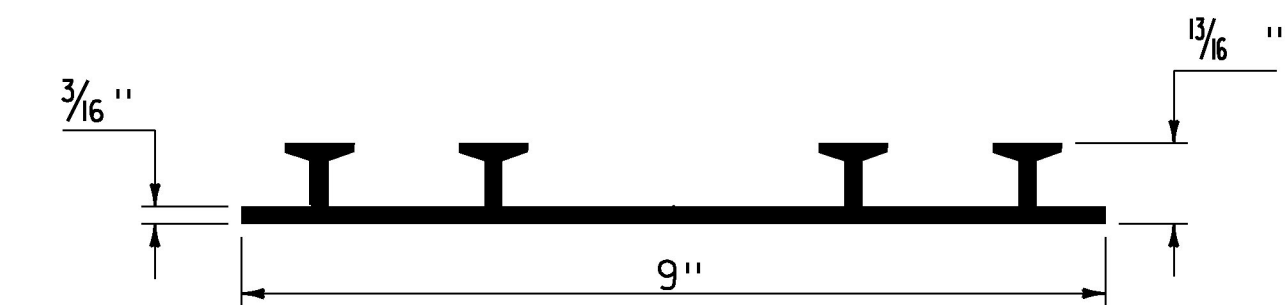
SCORE MARK DETAIL
(NOT TO SCALE)



TYPICAL CONCRETE EXPANSION JOINT
(NOT TO SCALE)



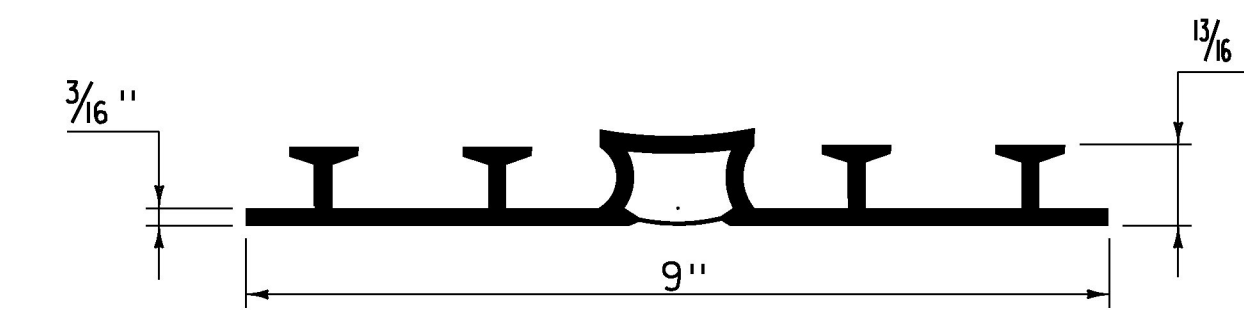
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS
(NOT TO SCALE)



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.

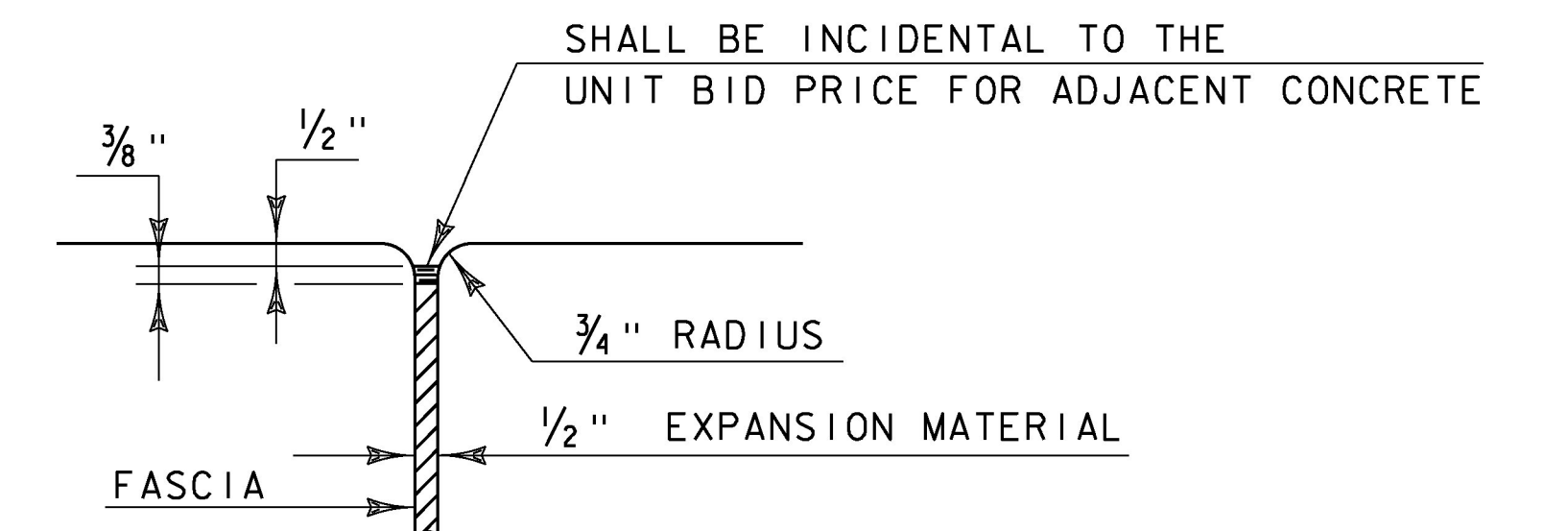
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



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.

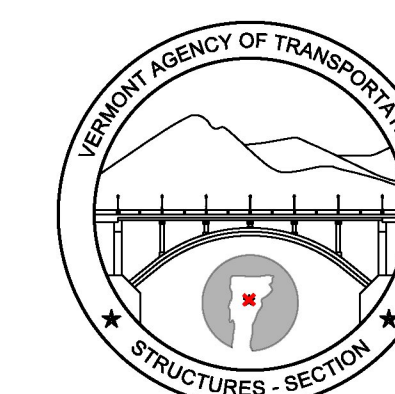


JOINT BETWEEN FASCIA AND WINGWALL
(NOT TO SCALE)

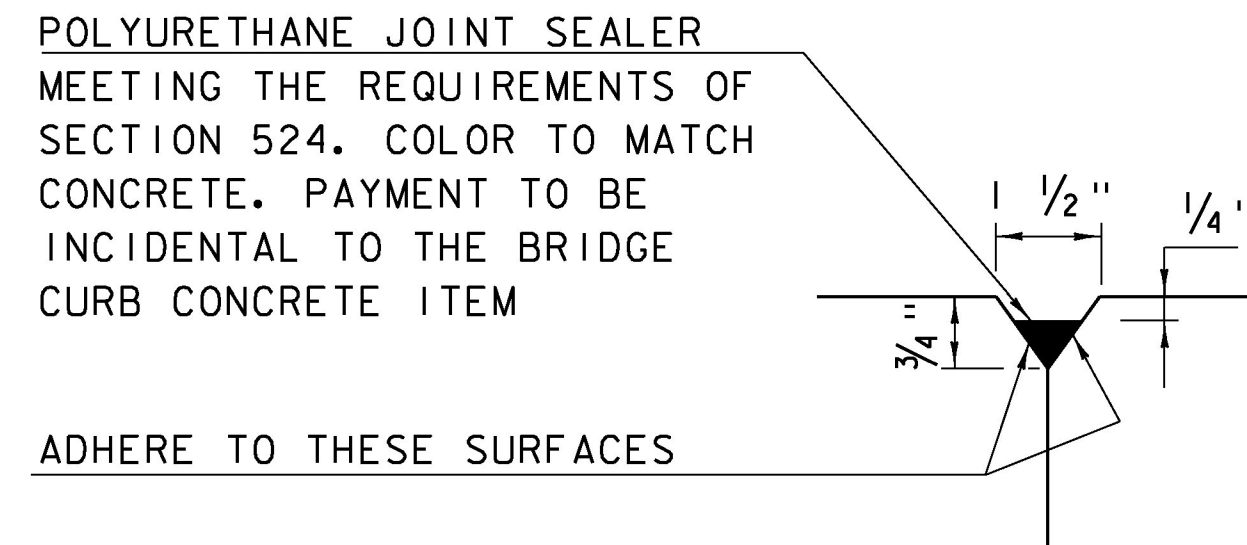
REVISIONS

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

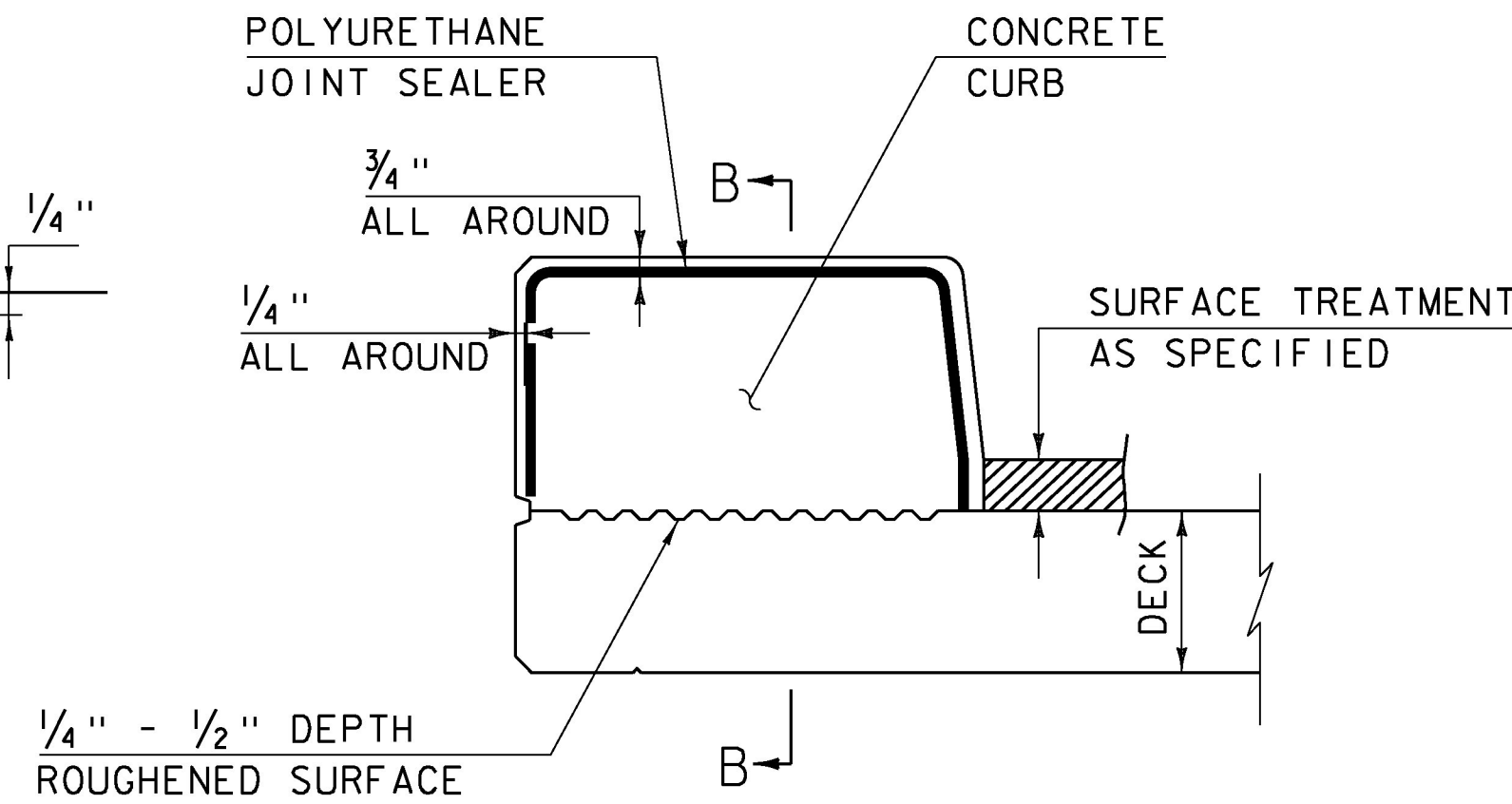
**CONCRETE
DETAILS AND NOTES**



**STRUCTURES
DETAIL
SD-501.00**

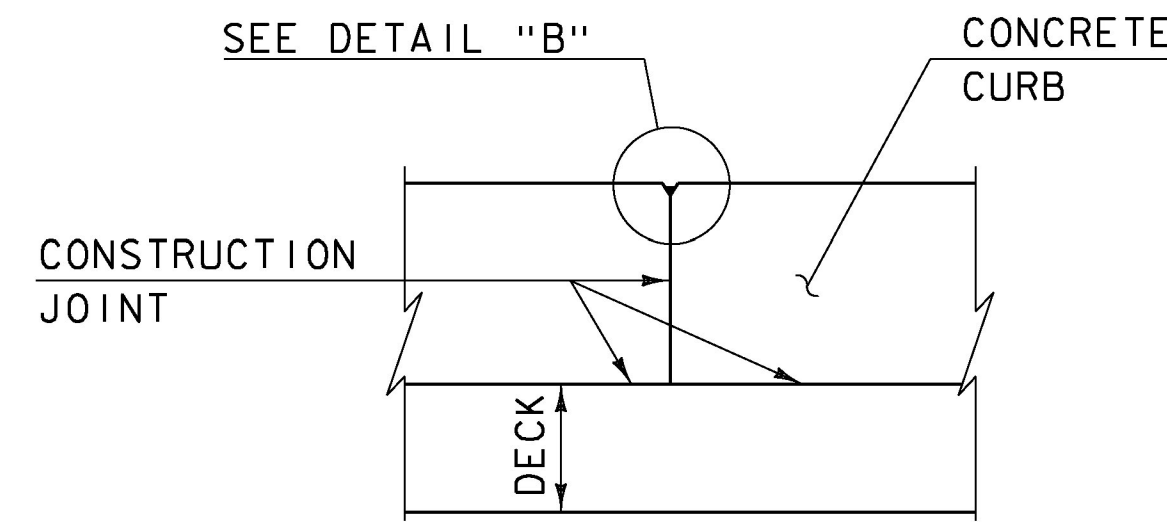


DETAIL "B"
(NOT TO SCALE)

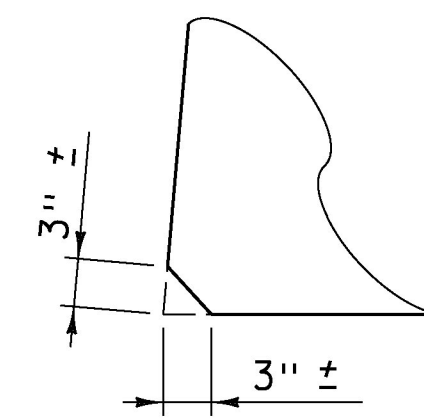


CONCRETE CURB JOINT SECTION
(NOT TO SCALE)

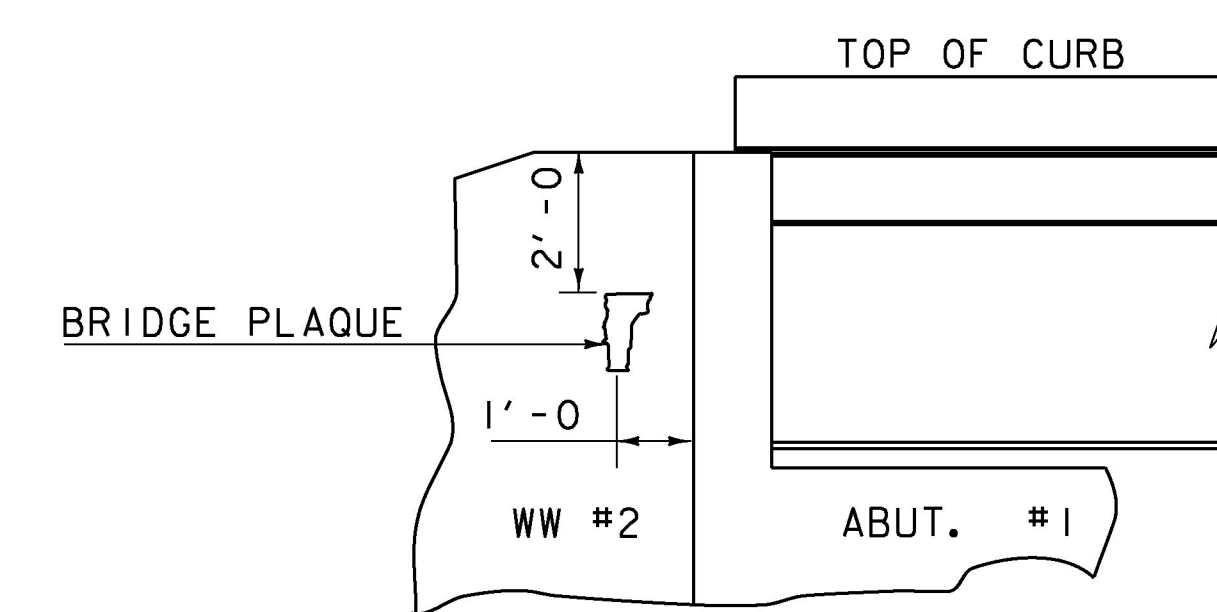
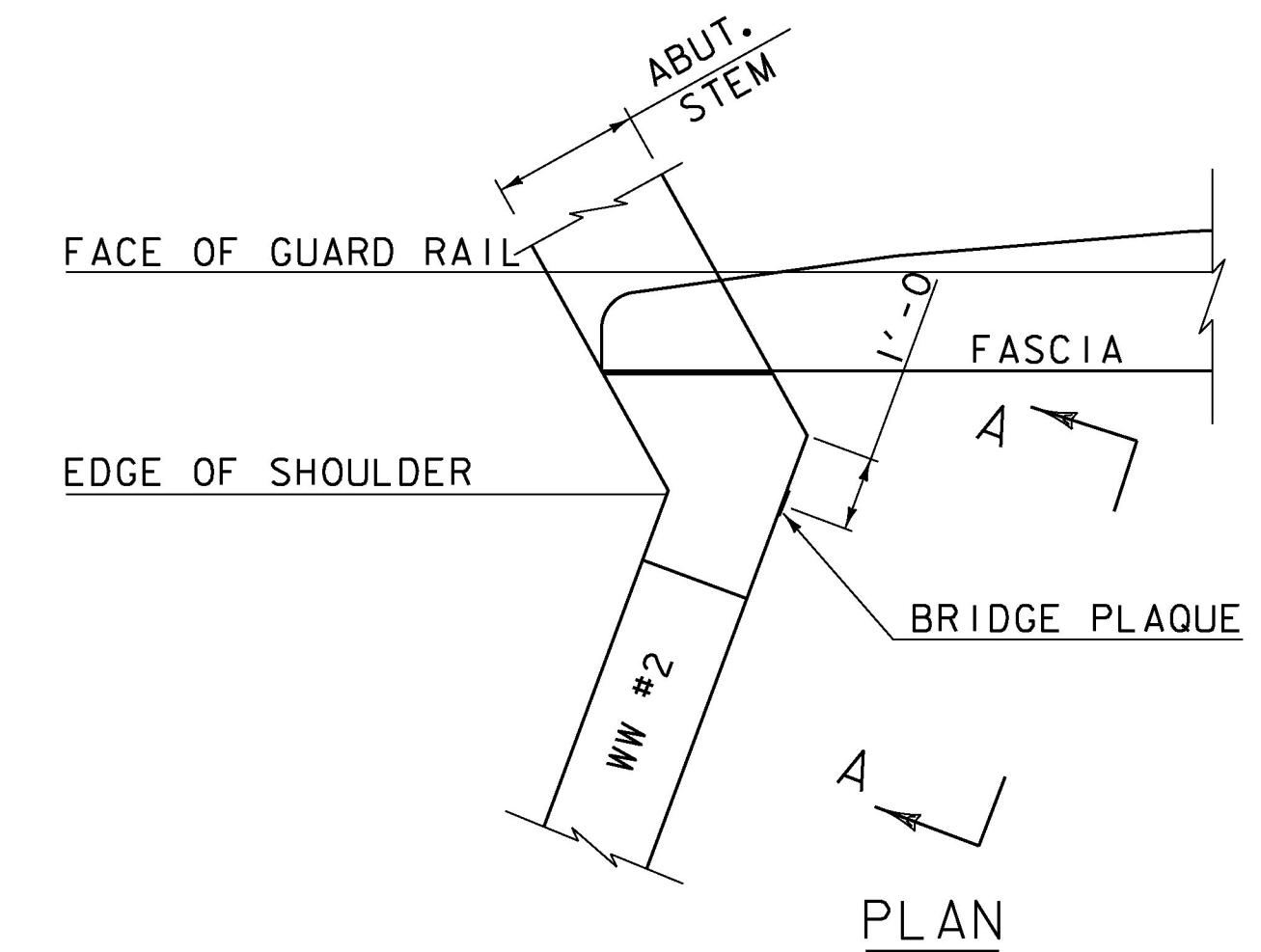
- SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION



SECTION B - B
(NOT TO SCALE)



ACUTE ANGLE
CLIP DETAIL
(NOT TO SCALE)



VIEW "A - A"

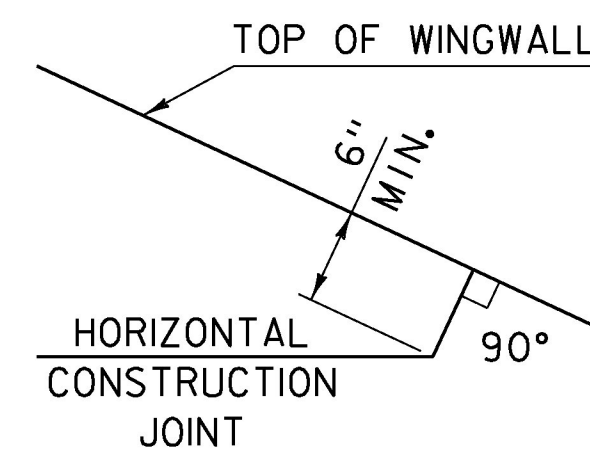
BRIDGE PLAQUE
(NOT TO SCALE)

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.

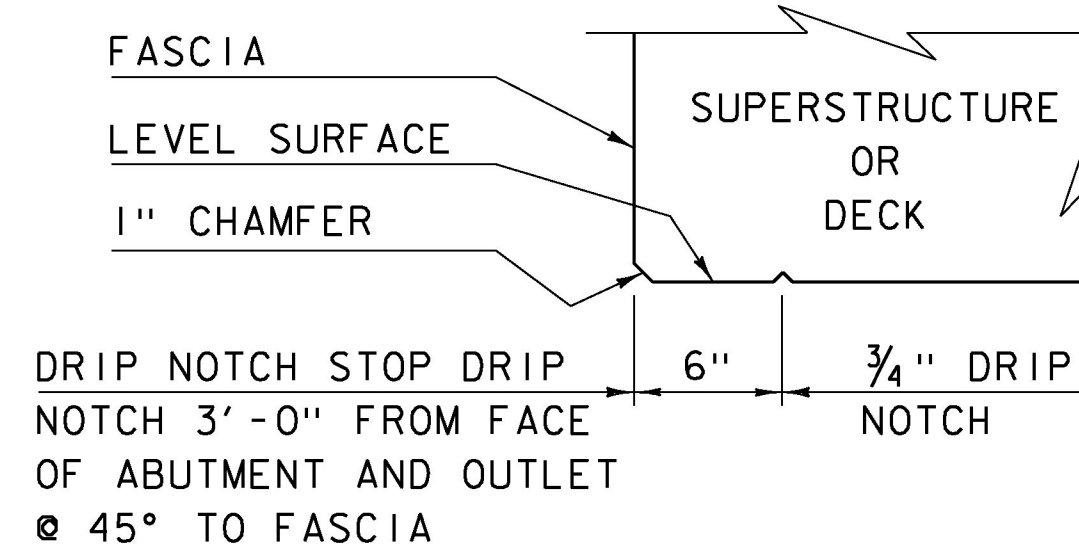
PAYMENT FOR INSTALLATION OF THE BRIDGE PLAQUE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

CONCRETE CURB JOINT NOTES

- 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.
- 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.
- 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.
- WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN ADJACENT PLACEMENTS.
- 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.
- THE JOINT SPACING AND DETAILS SHOWN SHALL APPLY TO SIDEWALKS WHEN SHOWN IN THE PLANS.



HORIZONTAL WINGWALL
CONSTRUCTION JOINT
(NOT TO SCALE)

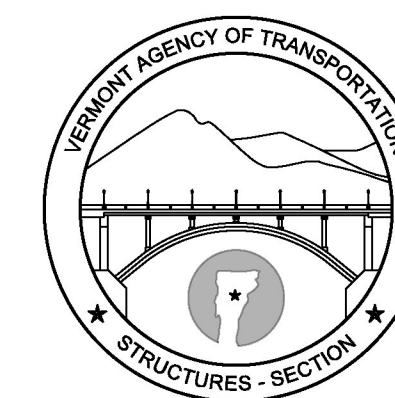


DRIP NOTCH DETAIL
(NOT TO SCALE)

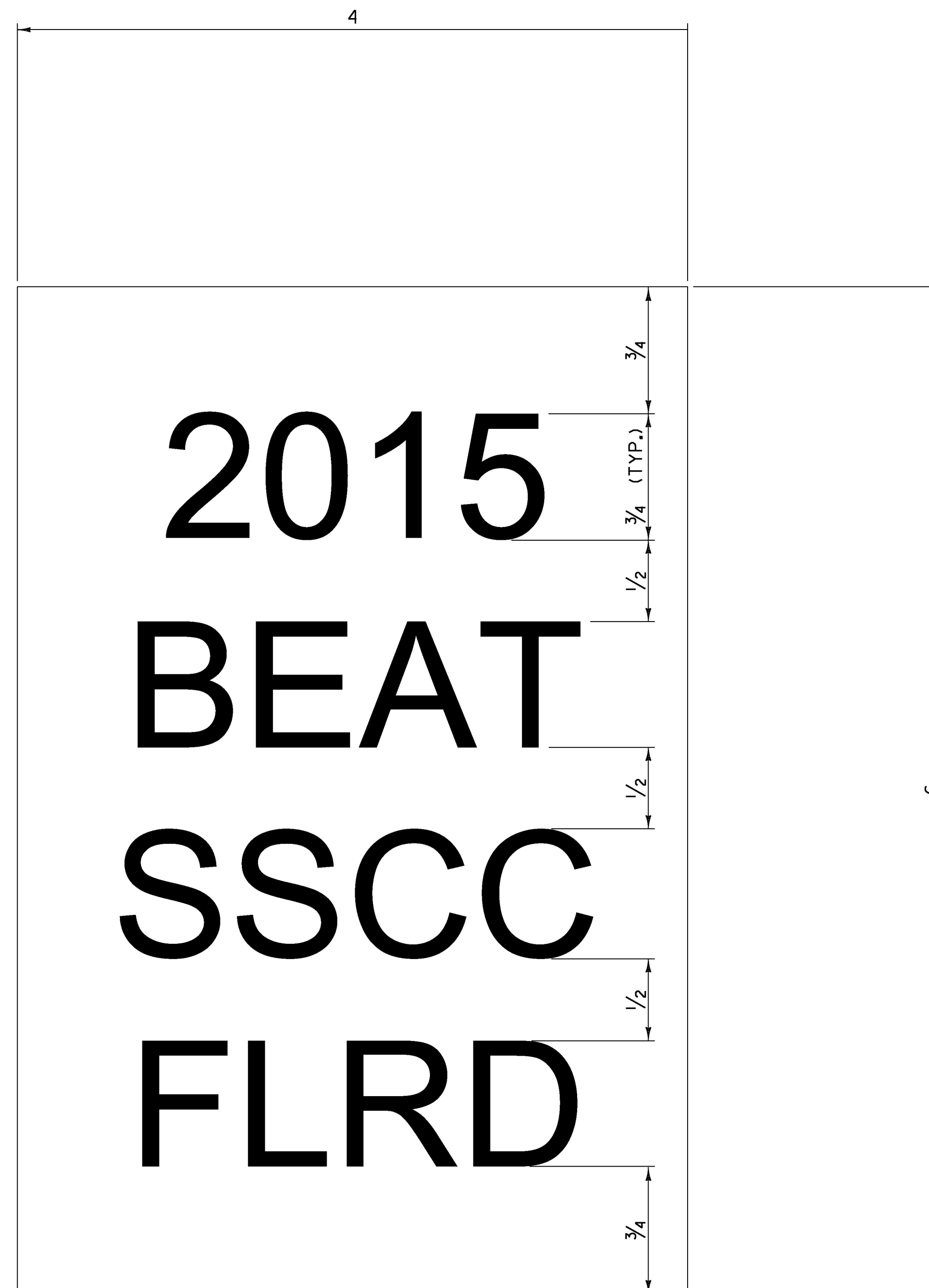
REVISIONS

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

CONCRETE
DETAILS AND NOTES



STRUCTURES
DETAIL
SD-502.00



GENERAL NOTES:

1. LINE ONE SHALL INDICATE THE INSTALLATION YEAR (YYYY).
2. LINE TWO SHALL INDICATE THE MODEL AS IDENTIFIED ON THE APPROVED PRODUCTS LIST. FOR GENERIC INSTALLATIONS THE STANDARD DRAWING DESIGNATION OR NAME AS IDENTIFIED IN THE FHWA ELIGIBILITY LETTER SHALL BE USED.
3. LINE THREE SHALL INDICATE ADDITIONAL MODEL INFORMATION IF NECESSARY.
4. LINE FOUR SHALL INDICATE FLARED (FLRD) OR TANGENT (TANG).
5. LEGEND SHALL BE ONE ARIEL FONT.
6. LEGEND SHALL BE BLACK ON A WHITE BACKGROUND, LEGEND AND BACKGROUND SHALL NOT BE REFLECTIVE.
7. SUITABLE MATERIAL SHALL BE USED SO AS TO NOT DETERIORATE DURING EXPOSURE TO WEATHER.
8. LABELS SHALL BE APPLIED IN SUCH A WAY THAT THEY REMAIN INTACT DURING THE LIFE OF THE TERMINAL.
9. FOR W-BEAM GUARDRAIL, LABEL SHALL BE PLACED ON THE TOP OF POST ONE FACING AWAY FROM TRAFFIC.
10. FOR BOX BEAM GUARDRAIL, LABEL SHALL BE PLACED ON THE BOX BEAM ADJACENT TO POST ONE FACING AWAY FROM TRAFFIC.
11. PAYMENT SHALL BE INCIDENTAL TO OTHER TRAFFIC BARRIER ITEMS.
12. ALL DIMENSIONS IN INCHES.

REV.	DATE	DESCRIPTION
0	NOV. 3, 2015	ORIGINAL APPROVAL
OTHER DETAILS REQUIRED: NONE		
DETAILS APPROVED FOR USE BY HIGHWAY SAFETY & DESIGN		

GUARDRAIL TERMINAL LABEL DETAIL



HIGHWAY SAFETY
& DESIGN DETAIL
HSD - 621.06



173 Buxton Industrial Drive • PO Box 870 • Henniker, NH 03242 • Tel: 603.428.3218 • 800.322.6949 • Fax: 603.428.7426

DESIGN CALCULATIONS

14'-0" x 8'-0" Box Culvert Precast Wingwalls

Prepared For:
J Hutchins, Inc.
88 Rodgers Lane
Richmond, VT 05477

Project Information:
VAOT # ER STP 0174 (18)
Route 125, Bridge #22
Hancock, VT

SPECIALTY ENGINEERING SERVICES PROVIDED BY:
CONCRETE ENGINEERING SOLUTIONS, LLC
101 PINEVIEW ESTATES
MOUNTAIN TOP, PA 18707
PHONE: 570-868-2081
FAX: 570-868-2082



Concrete Engineering Solutions, LLC

Project : Hancock, VT - Rt 125
 Task : 14x8 BC
 Job No. : 7929
 Client: J Hutchins, Inc
 File: Hancock 14x8 Design.etc

Sht ____ of ____
 By: _____
 Ck: _____
 5/15/2017 11:30:29 AM
 p. 1 of 4

Spec.: LRFD 6th ed. 2012
 Type of Culvert: Precast

Physical Dimensions

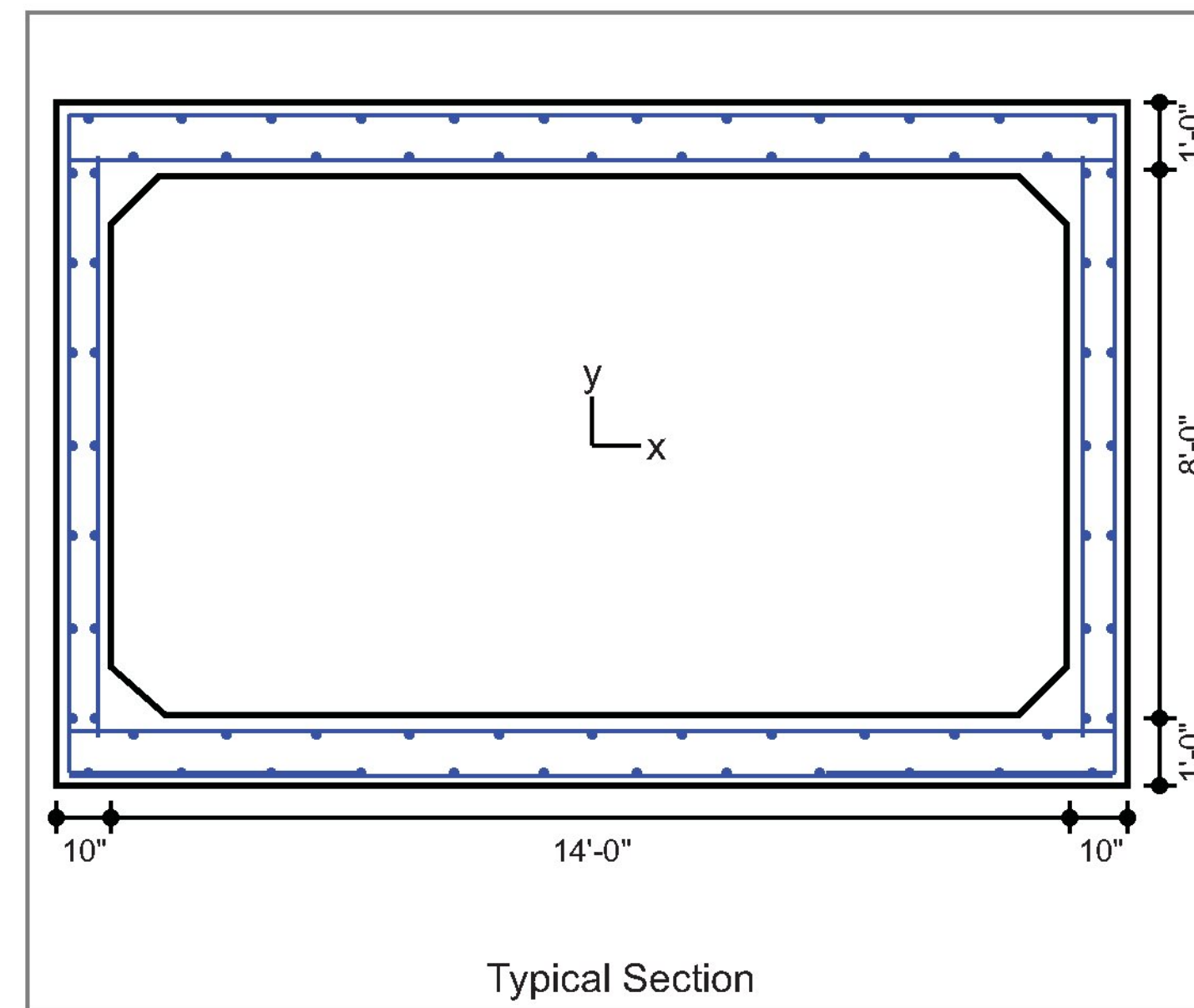
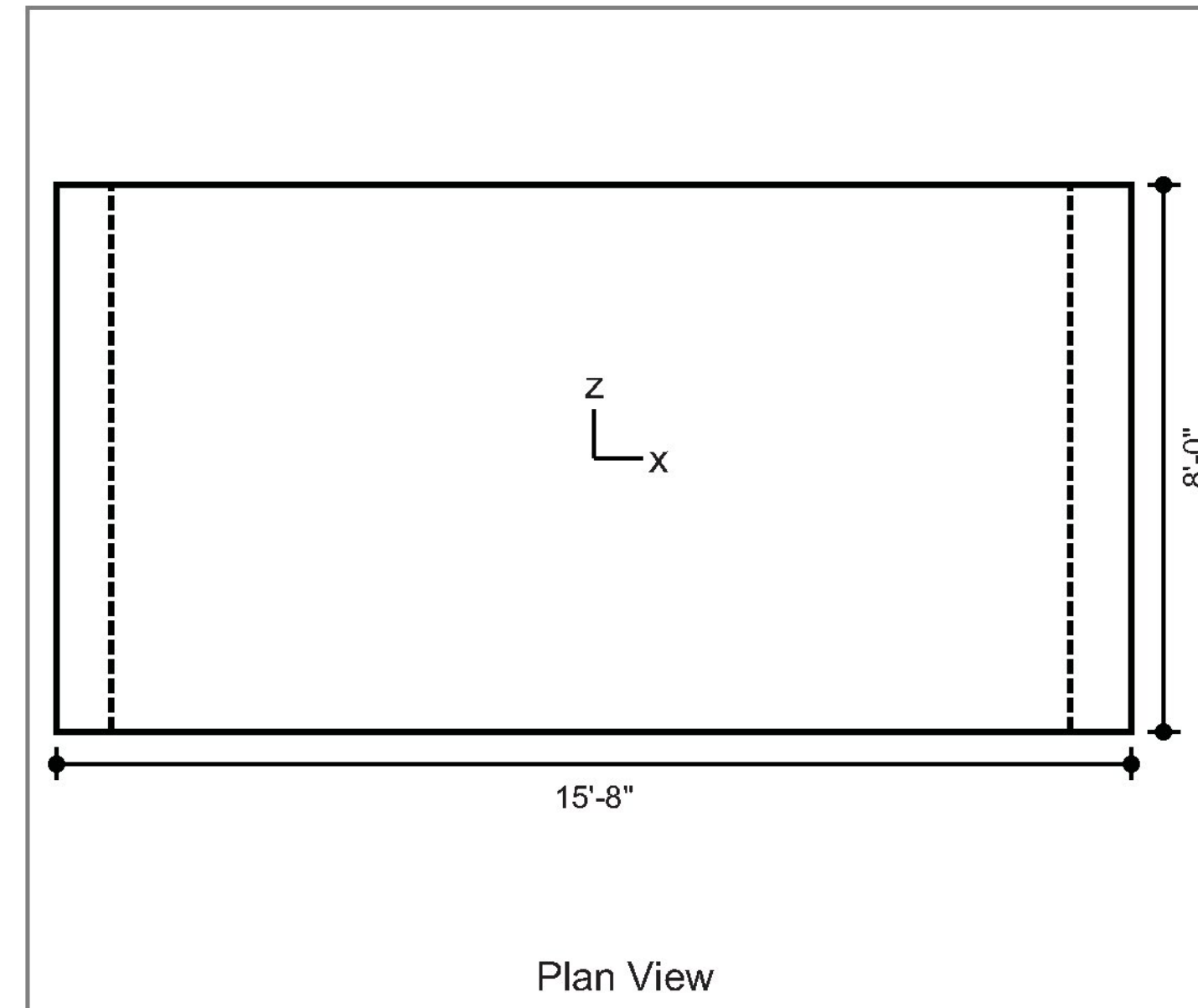
Clear Span:	14'-0"
Clear Height:	8'-0"
Top Slab:	1'-0"
Bottom Slab:	1'-0"
Ext. Wall:	10"
Fill Depth Range	
Maximum:	3.00 ft
Minimum:	1.00 ft
Increment:	1.00 ft
Length:	8'-0"
Skew Angle:	30.00 deg
Bottom Slab Support:	Full Slab
Top Haunch, Width:	9"
Top Haunch, Height:	9"
Bottom Haunch, Width:	9"
Bottom Haunch, Height:	9"

Material Properties

Concrete	
Strength, f _c :	5.500 ksi
Density:	0.150 kcf
Elasticity, E _c :	4496 ksi
Type:	Normal wt
Steel	
Yield, f _y :	60 ksi
Allow Stress:	24 ksi
Elasticity, E _s :	29000 ksi
Soil	
Density:	0.140 kcf
Exposure Factor	
Class 2 Exposure	
Reinforcement Covers	
Ext. Cover Top Slab:	2"
Ext. Cover Bottom Slab:	2"
Ext. Cover Walls:	2"
Int. Cover Walls:	2"
Int. Top Slab:	2"
Int. Cover Bottom Slab:	2"

Loads

Live Load	
Vehicle Names:	HL-93 3S2 6 Axle Trailer 3 Axle Trailer 4 Axle Trailer 5 Axle Semi
Traffic Direction:	Parallel
Eq. Height of Soil:	2.00 ft (Entered)
Max No. of Lanes:	1
Dead Load	
Future Wearing Surface:	0.040 klf
Additional Dead Load:	0.000 klf
Concentrated Loads:	none
Lateral Soil Loads	
Eq. Fluid Press. Max:	60.00 pcf
Eq. Fluid Press. Min:	30.00 pcf
Consider Int. Water Press.:	no



Concrete Engineering Solutions, LLC

Project : Hancock, VT - Rt 125
 Task : 14x8 BC
 Job No. : 7929
 Client: J Hutchins, Inc
 File: Hancock 14x8 Design.etc

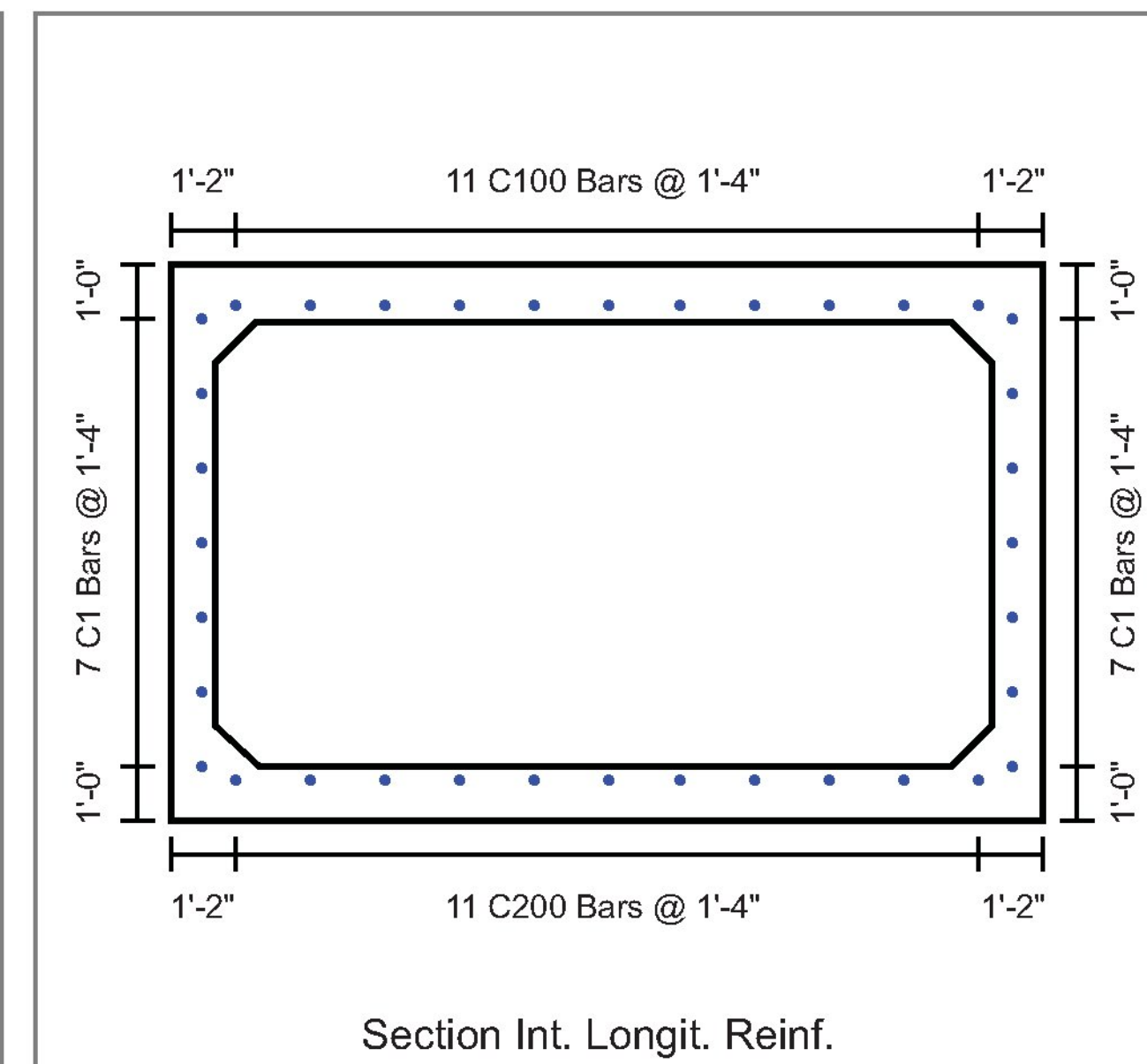
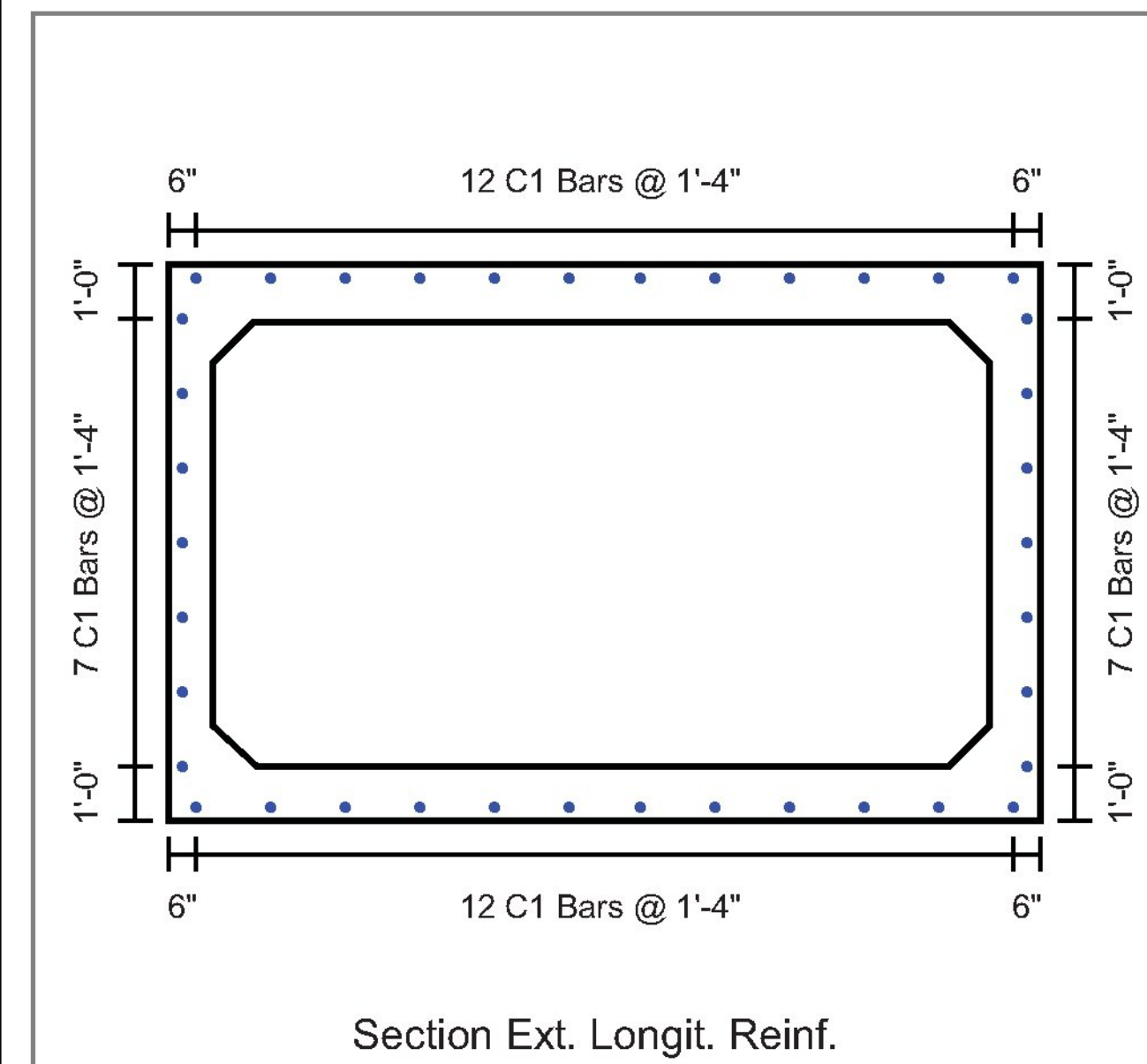
Sht ____ of ____
 By: _____
 Ck: _____
 5/15/2017 11:30:30 AM
 p. 2 of 4

Concrete Summary

Volume of Concrete: 1.696 cy/ft Total Volume of Concrete: 13.568 cy

Reinforcing Steel Bar Schedule (lb)

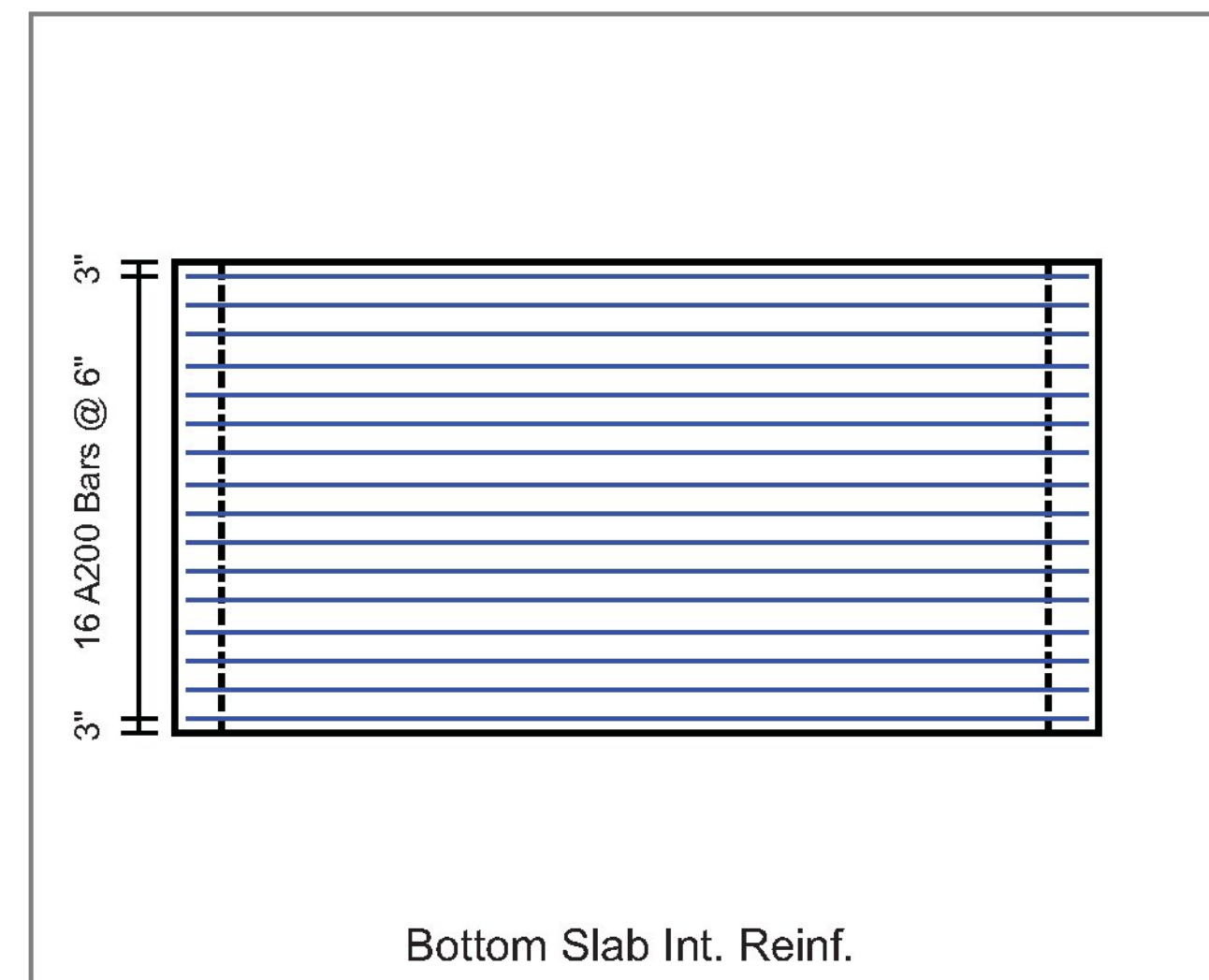
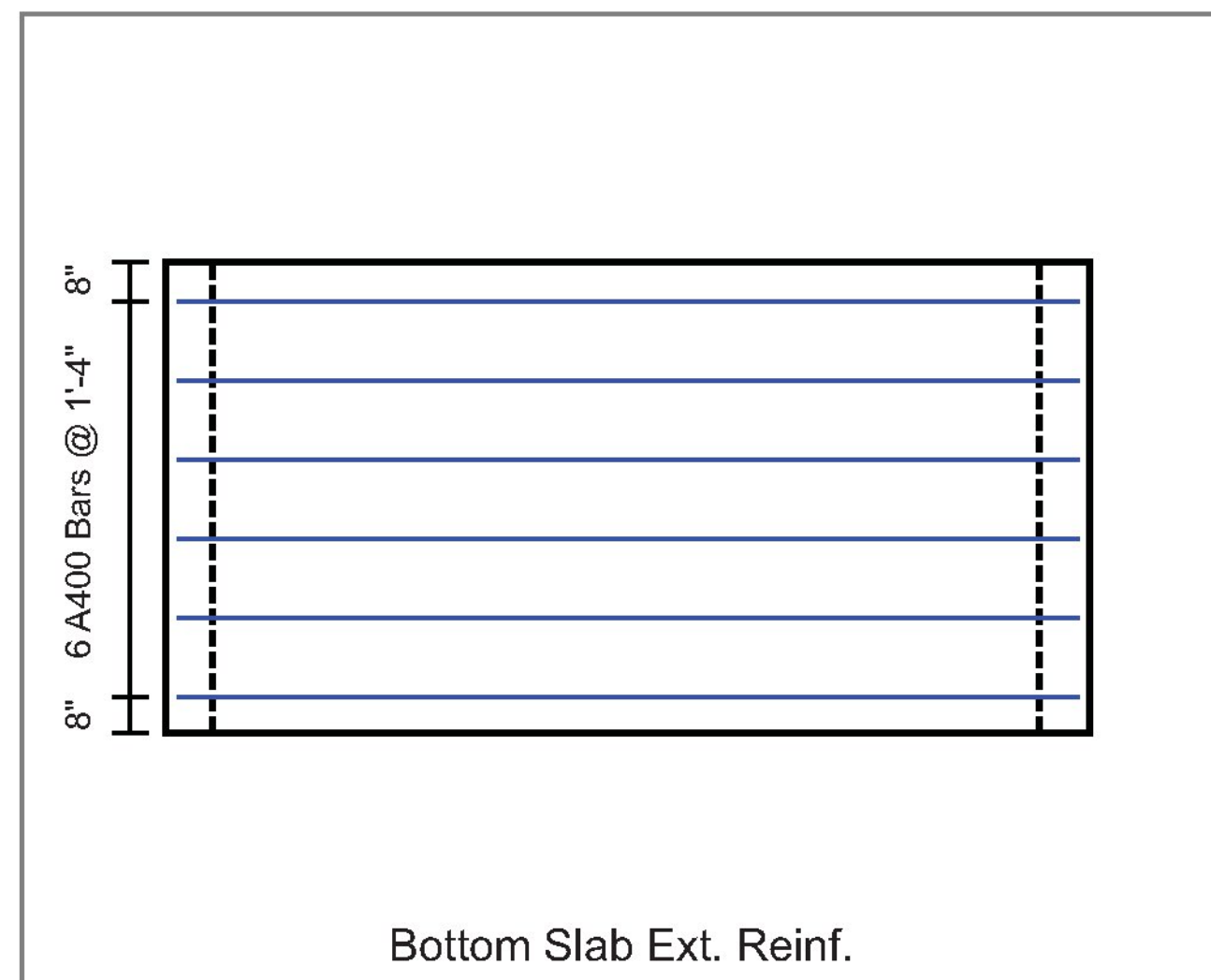
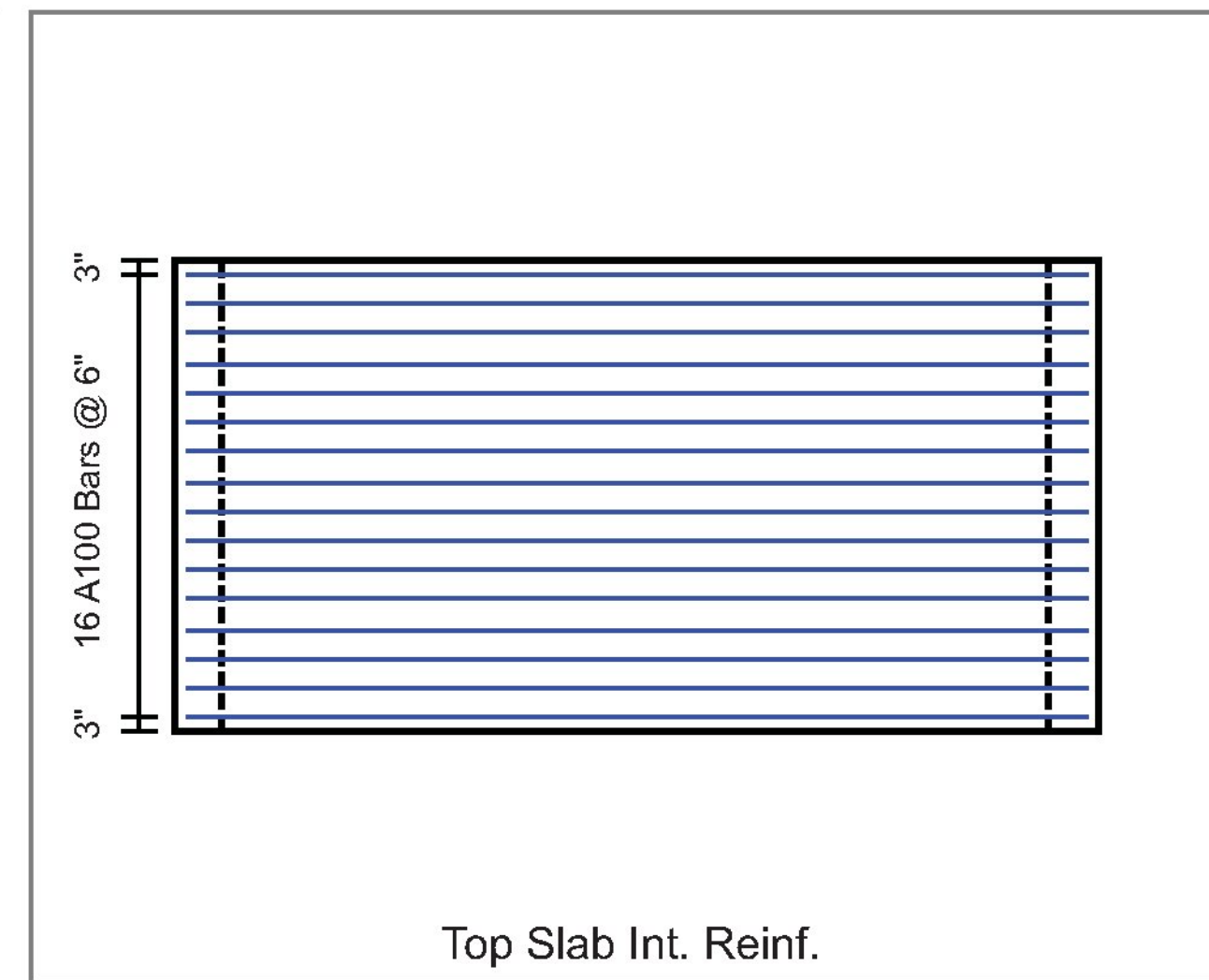
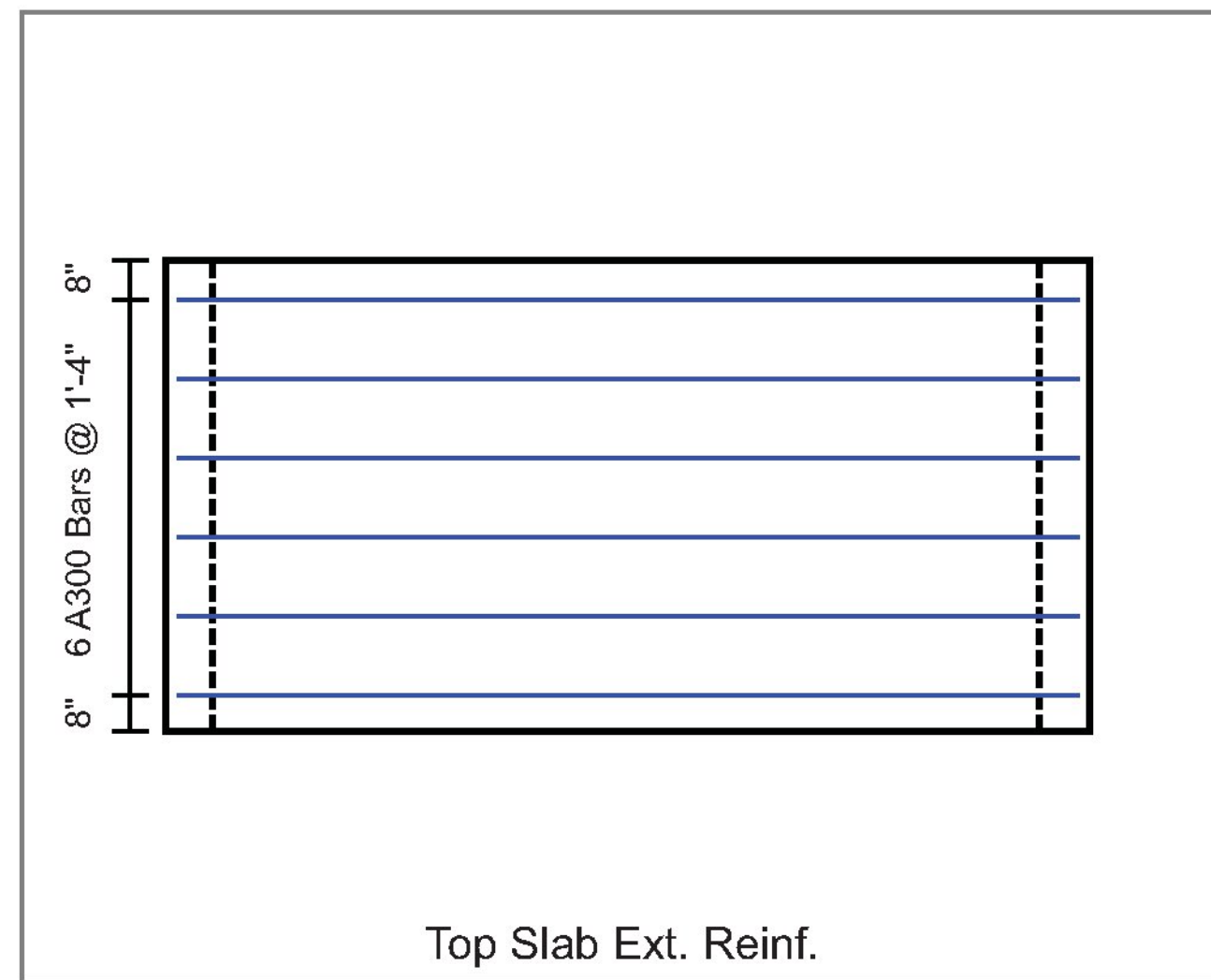
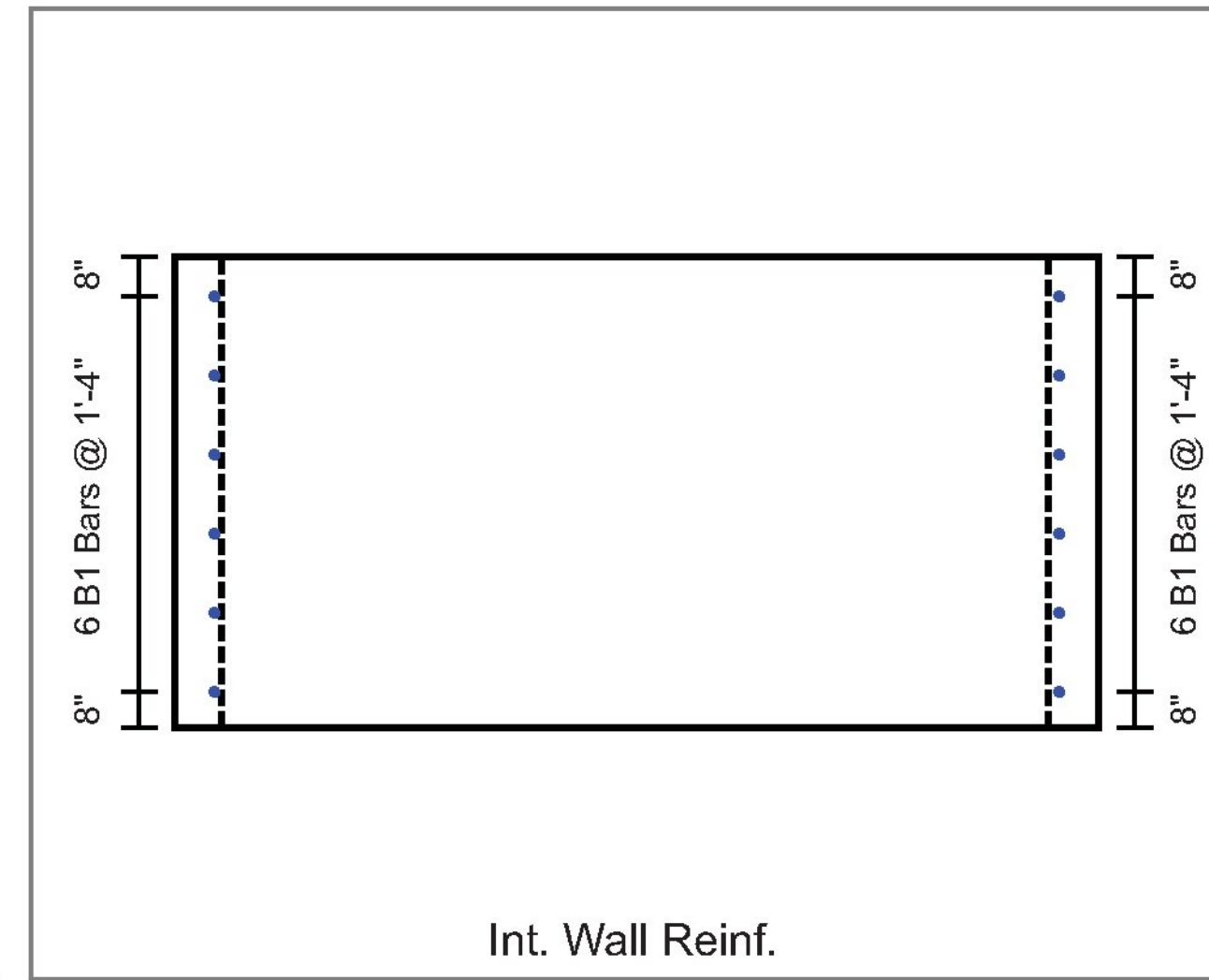
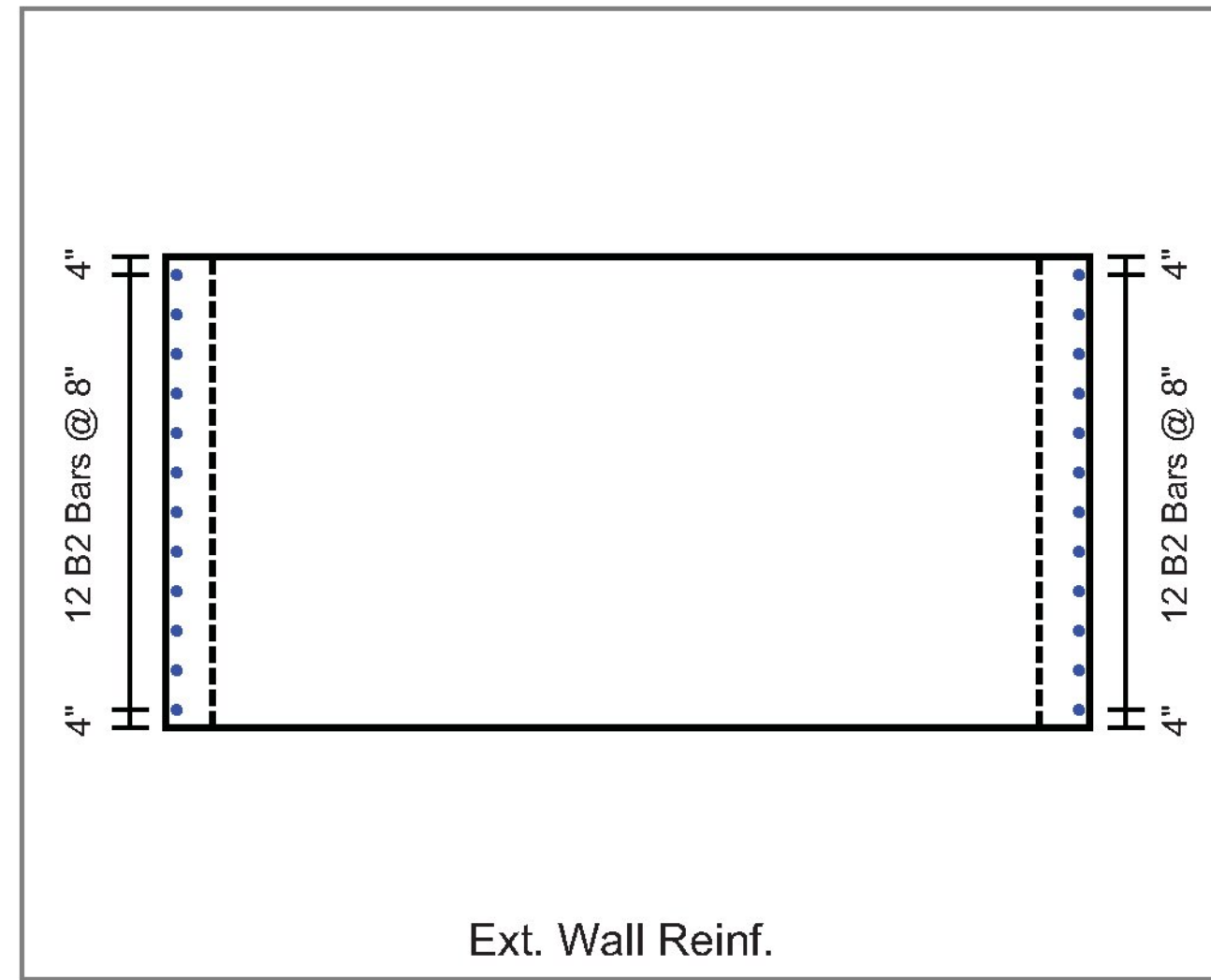
Location	Mark	Qty	Size	Spacing	Type	Length	Hor.Leg	Ver.Leg	Tot.Weight
Top Slab(Int)	A100	16	7	6"	S	15'-3"	--	--	499.0
Bot Slab(Int)	A200	16	6	6"	S	15'-3"	--	--	366.0
Top Slab(Ext)	A300	6	6	1'-4"	S	15'-3"	--	--	137.0
Bot Slab(Ext)	A400	6	4	1'-4"	S	15'-3"	--	--	61.0
Corner(Top)	A1	24	6	8"	L	6'-11"	4'-1"	2'-10"	249.0
Corner(Bot)	A2	24	6	8"	L	7'-1"	4'-3"	2'-10"	255.0
Wall(Int)	B1	12	5	1'-4"	S	8'-6"	--	--	106.0
Wall(Ext)	B2	24	6	8"	S	8'-0"	--	--	288.0
Longit. Top (Int)	C100	11	6	1'-4"	S	7'-11"	--	--	131.0
Longit. Bot (Int)	C200	11	5	1'-4"	S	7'-11"	--	--	91.0
Longit. Top (Ext)	C1	12	4	1'-4"	S	7'-11"	--	--	63.4
Longit. Bot (Ext)	C1	12	4	1'-4"	S	7'-11"	--	--	63.4
Longit. Wall (Ext)	C1	14	4	1'-4"	S	7'-11"	--	--	74.0
Longit. Wall (Int)	C1	14	4	1'-4"	S	7'-11"	--	--	74.0
									2458



Concrete Engineering Solutions, LLC

Project : Hancock, VT - Rt 125
Task : 14x8 BC
Job No. : 7929
Client: J Hutchins, Inc
File: Hancock 14x8 Design.etc

Sht ____ of ____
By: _____
Ck: _____
5/15/2017 11:30:30 AM
p. 3 of 4



Concrete Engineering Solutions, LLC

Project : Hancock, VT - Rt 125
Task : 14x8 BC
Job No. : 7929

Client: J Hutchins, Inc
File: Hancock 14x8 Design.etc

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By: _____
Ck: _____
5/15/2017 11:30:30 AM
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