

# STATE OF VERMONT AGENCY OF TRANSPORTATION

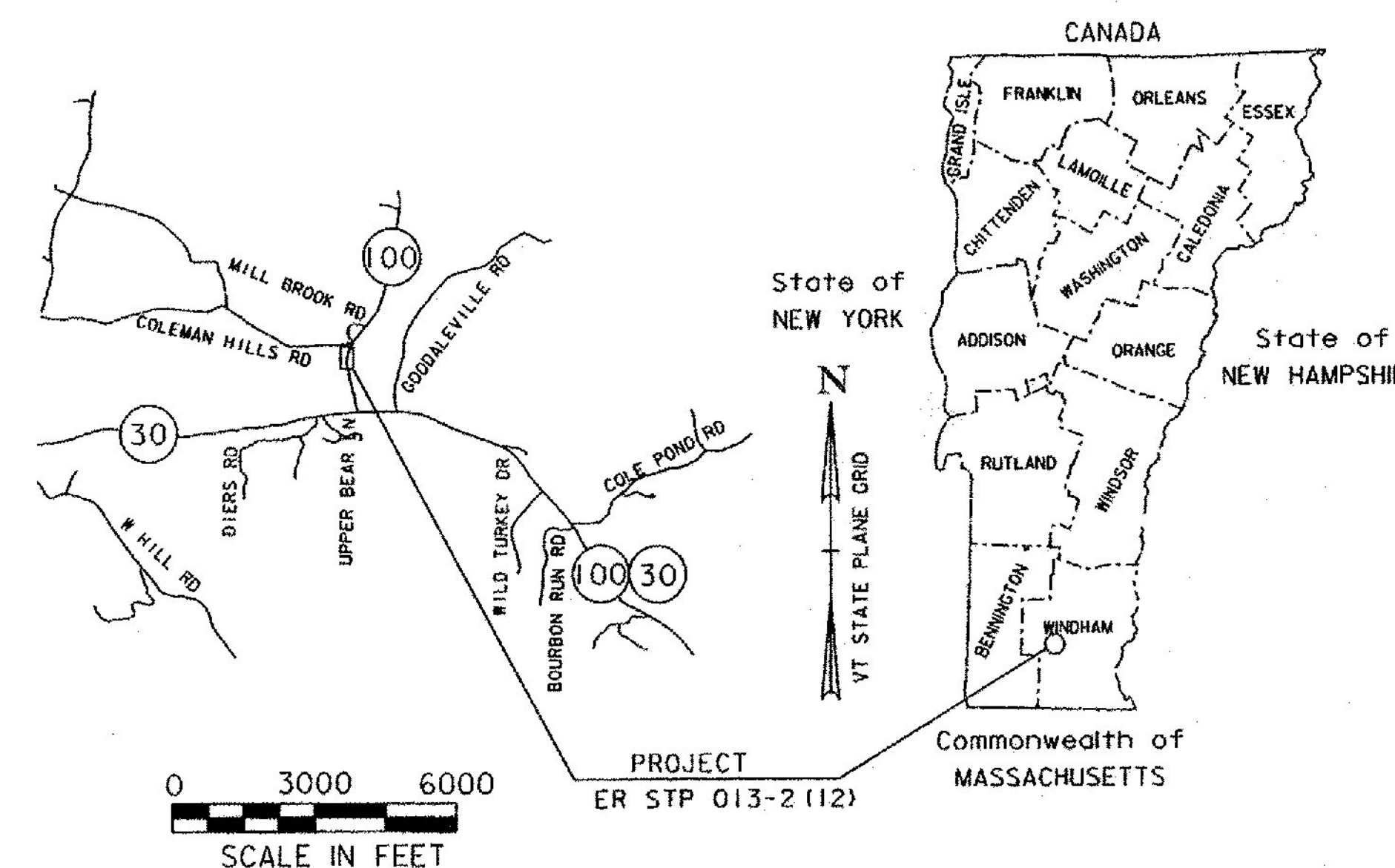


## PROPOSED IMPROVEMENT TOWN OF JAMAICA COUNTY OF WINDHAM

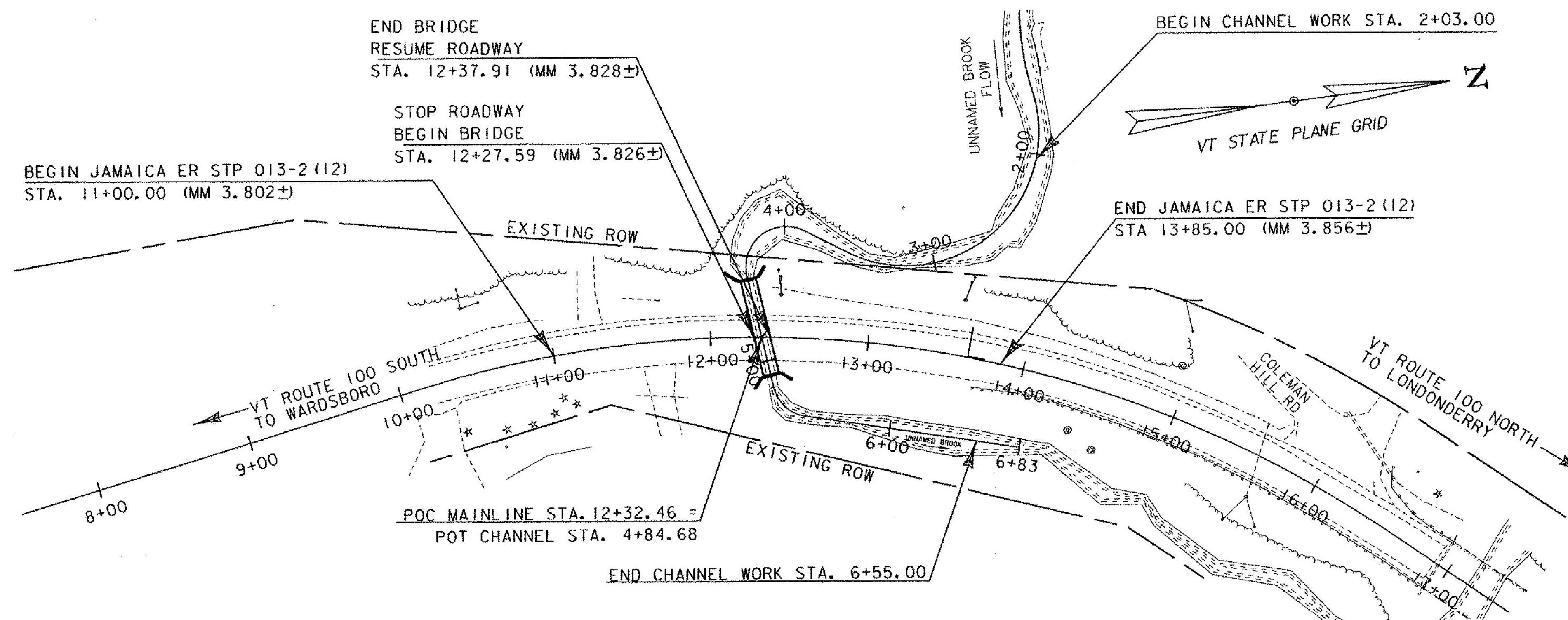
### VT ROUTE 100 (MINOR ARTERIAL) BRIDGE 82

BEGINNING IN THE TOWN OF JAMAICA ON VT ROUTE 100 AT STATION 11+00.00 (MM 3.802) EXTENDING NORTHERLY ALONG  
VT ROUTE 100 FOR A DISTANCE OF 285 FEET (0.054 MILE) TO STATION 13+85.00 (MM 3.856)  
LENGTH OF ROADWAY = 274.68 FEET (0.052 MILE)  
LENGTH OF STRUCTURE = 10.32 FEET  
LENGTH OF CHANNEL = 452.00 FEET (0.086 MILE)  
LENGTH OF PROJECT = 285.00 FEET (0.054 MILE)

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES REPLACEMENT OF AN EXISTING CULVERT WITH A PRECAST CONCRETE BOX STRUCTURE WITH ASSOCIATED CHANNEL AND ROADWAY WORK.



RECORD PLANS	
CONTRACTOR:	CASELLA CONSTRUCTION, INC. - MENDON, VT.
RESIDENT ENGINEER:	CHAD GREENWOOD
CONSTRUCTION BEGAN:	SEPTEMBER 2, 2015
CONSTRUCTION COMPLETE:	OCTOBER 23, 2015
RECORD PLANS BY:	CHAD GREENWOOD & KEVIN KING
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.	
BY <i>Chad Greenwood</i>	RESIDENT ENGINEER
DATE <u>1/30/17</u>	
NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.	



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 : VERMONT SURVEY & ENGINEERING
SURVEYED DATE : 02/27/2013
DATUM
VERTICAL 88 (GEOID12A) FT
HORIZONTAL NAD 83 (2011) SFT



DIRECTOR OF PROJECT DELIVERY
APPROVED <i>[Signature]</i> DATE <u>3/9/2015</u>
PROJECT MANAGER : PAUL LIBBY
PROJECT NAME : JAMAICA
PROJECT NUMBER : ER STP 013-2 (12)
SHEET 1 OF 48 SHEETS

# PRELIMINARY INFORMATION SHEET (BRIDGE 82)

LRFD

INDEX OF SHEETS

FINAL HYDRAULIC REPORT

PLAN SHEETS

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STANDARDS LIST

B-5	SLOPE GRADING, EMBANKMENTS, MUCK	06-01-1994
E-119	UTILITY WORK ZONE	03-01-2004
E-125	TRAVEL INFORMATION SIGNS	08-08-1995
E-136B	STATE ROUTE MARKER SIGN DETAILS	08-08-1995
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	02-10-2014
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	02-10-2014
G-4	PLANK RAIL, GUIDE POSTS, MARKER POSTS	06-01-1994
T-1	TRAFFIC CONTROL GENERAL NOTES	08-06-2012
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-29	CONSTRUCTION SIGN DETAILS	08-06-2012
T-30	CONSTRUCTION SIGN DETAILS	08-06-2012
T-31	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-40	DELINEATORS AND MILEPOSTS	01-02-2013
T-42	BRIDGE NUMBER PLAQUE	04-09-2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013

STRUCTURES DETAIL SHEETS

SD-366.00	LONGSPAN STEEL BEAM GUARDRAIL, GALVANIZED	11/25/2013
SD-501.00	CONCRETE DETAILS AND NOTES	2/9/2012

HYDROLOGIC DATA

Date: December 2013

DRAINAGE AREA : 80 acres  
 CHARACTER OF TERRAIN : Mountainous, open and forested, steep  
 STREAM CHARACTERISTICS : Alluvial and sinuous  
 NATURE OF STREAMBED : Large gravel, cobbles and boulders

PEAK FLOW DATA

Q 2.33 =	35 cfs	Q 50 =	75 cfs
Q 10 =	55 cfs	Q 100 =	90 cfs
Q 25 =	65 cfs	Q 500 =	125 cfs

DATE OF FLOOD OF RECORD : Unknown  
 ESTIMATED DISCHARGE : Unknown  
 WATER SURFACE ELEV. : Unknown  
 NATURAL STREAM VELOCITY : @ Q50 = 5.5 fps  
 ICE CONDITIONS : Moderate  
 DEBRIS : Moderate  
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No  
 IS ORDINARY RISE RAPID? Yes  
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Possibly  
 IF YES, DESCRIBE : Flood stage of Winhall River

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE : Corrugated Metal Pipe  
 YEAR BUILT :  
 CLEAR SPAN(NORMAL TO STREAM) : 5.5'  
 VERTICAL CLEARANCE ABOVE STREAMBED : 5.5'  
 WATERWAY OF FULL OPENING : 23.8 sq. ft.  
 DISPOSITION OF STRUCTURE : Remove and replace  
 TYPE OF MATERIAL UNDER SUBSTRUCTURE : See borings

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1122.3'	VELOCITY =	8.5 fps
Q10 =	1123.0'	"	9.7 fps
Q25 =	1123.3'	"	10.1 fps
Q50 =	1123.6'	"	10.6 fps
Q100 =	1124.0'	"	11.2 fps

LONG TERM STREAMBED CHANGES : None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: No  
 FREQUENCY : N/A  
 RELIEF ELEVATION : 1128.0'  
 DISCHARGE OVER ROAD @Q100: N/A

UPSTREAM STRUCTURE

TOWN : Jamaica DISTANCE : 2640'  
 HIGHWAY # : TH6 STRUCTURE # :  
 CLEAR SPAN : CLEAR HEIGHT :  
 YEAR BUILT : FULL WATERWAY :  
 STRUCTURE TYPE :

DOWNSTREAM STRUCTURE

TOWN : Jamaica DISTANCE : 500'  
 HIGHWAY # : STRUCTURE # :  
 CLEAR SPAN : CLEAR HEIGHT :  
 YEAR BUILT : FULL WATERWAY :  
 STRUCTURE TYPE : Confluence with Winhall River

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	SS2	6 AXLE	3A STR	4A STR	5A SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY							
POSTING							
OPERATING							
COMMENTS:	TABLE TO BE COMPLETED BY CONTRACTOR'S DESIGNER						

STA. 12+32.46 SKEWED 104° 8'00.24" LT  
 1.) PROPOSED CULVERT IS A PRECAST CONCRETE STRUCTURE (10'-0" X 7'-0" X 63'-0" BOX)  
 2.) CULVERT ENDS ARE NOT SKEWED.  
 3.) CULVERT WILL BE SET AT A SLOPE OF 21.6 IN. ON 63 FT.  
 4.) CULVERT WILL REQUIRE FISH PASSAGE ACCOMMODATIONS.  
 5.) CULVERT CONSTRUCTION WILL REQUIRE A TEMPORARY STREAM BYPASS.  
 6.) ALL REINFORCING STEEL SHALL BE LEVEL I

PROPOSED STRUCTURE

STRUCTURE TYPE : Precast Concrete Box Culvert  
 CLEAR SPAN(NORMAL TO STREAM) : 10'  
 VERTICAL CLEARANCE ABOVE STREAMBED : 5'  
 WATERWAY OF FULL OPENING : 50 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1121.0'	VELOCITY =	5.9 fps
Q10 =	1121.4'	"	7.2 fps
Q25 =	1121.6'	"	7.4 fps
Q50 =	1121.7'	"	7.9 fps
Q100 =	1121.9'	"	8.5 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No  
 FREQUENCY :  
 RELIEF ELEVATION : 1128.0'  
 DISCHARGE OVER ROAD @Q100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE : 1125.0'  
 VERTICAL CLEARANCE : @ Q50 = 3.3'

SCOUR : Scour is not calculated for a box.

REQUIRED CHANNEL PROTECTION : Stone Fill, Culvert Lining

PERMIT INFORMATION

AVERAGE DAILY FLOW : 1 cfs DEPTH OR ELEVATION :  
 ORDINARY LOW WATER : 0.5 cfs <0.5'  
 ORDINARY HIGH WATER : 15 cfs ~1'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE : Detour will be used.  
 CLEAR SPAN (NORMAL TO STREAM) :  
 VERTICAL CLEARANCE ABOVE STREAMBED :  
 WATERWAY AREA OF FULL OPENING :

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

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

DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	dp: 7.0 INCH
3. DESIGN SPAN	L: 63 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:
5. PRESTRESSING STRAND	fy:
6. PRESTRESSED CONCRETE STRENGTH	f'c:
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'ci:
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f'c:
9. CONCRETE, HIGH PERFORMANCE CLASS A	f'c:
10. CONCRETE, HIGH PERFORMANCE CLASS B	f'c: 3.5 KSI
11. CONCRETE, CLASS C	f'c:
12. REINFORCING STEEL (LEVEL I)	fy: 60 KSI
13. STRUCTURAL STEEL AASHTO M270	fy:
14. NOMINAL BEARING RESISTANCE OF SOIL	SEE GEOTECHNICAL REPORT
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: 0.45
16. NOMINAL BEARING RESISTANCE OF ROCK	qn:
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 SNOW LOAD	ps:
22. SEISMIC DATA	PGA: 0 S: \$:
23.	
24.	
25.	
26.	

TRAFFIC DATA

YEAR	ADT	DHV	%D	%T	ADTT	10 year ESAL for flexible pavement from 2014 to 2024 : 545,000
2014	2400	330	5.7	9.8	235	20 year ESAL for flexible pavement from 2014 to 2034 : 1,371,000
2024	2500	350	5.7	9.8	245	Design Speed: 50 mph

PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474p11.dgn PLOT DATE: 02/27/2015  
 PROJECT LEADER: E. ATKINS DRAWN BY: M. BRADLEY  
 DESIGNED BY: M. BRADLEY CHECKED BY: E. ATKINS  
 PRELIMINARY INFORMATION SHEET SHEET 2 OF 48

**GENERAL INFORMATION**

**SYMBOLY LEGEND NOTE**

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

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

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

**COMMON TOPOGRAPHIC POINT SYMBOLS**

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

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

**PROPOSED GEOMETRY CODES**

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

**UTILITY SYMBOLY**

**UNDERGROUND UTILITIES**

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

**ABOVE GROUND UTILITIES (AERIAL)**

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

**PROJECT CONSTRUCTION SYMBOLY**

**PROJECT DESIGN & LAYOUT SYMBOLY**

— CZ —	CLEAR ZONE
— — —	PLAN LAYOUT MATCHLINE

**PROJECT CONSTRUCTION FEATURES**

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

**CONVENTIONAL BOUNDARY SYMBOLY**

**BOUNDARY LINES**

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

**EPSC LAYOUT PLAN SYMBOLY**

**EPSC MEASURES**

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

**ENVIRONMENTAL RESOURCES**

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

**ARCHEOLOGICAL & HISTORIC**

— ARCH —	ARCHEOLOGICAL BOUNDARY
— HISTORIC DIST —	HISTORIC DISTRICT BOUNDARY
— HISTORIC —	HISTORIC AREA
(H)	HISTORIC STRUCTURE

**CONVENTIONAL TOPOGRAPHIC SYMBOLY**

**EXISTING FEATURES**

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

PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474Legend.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: M. BRADLEY  
CONVENTIONAL SYMBOLY LEGEND SHEET

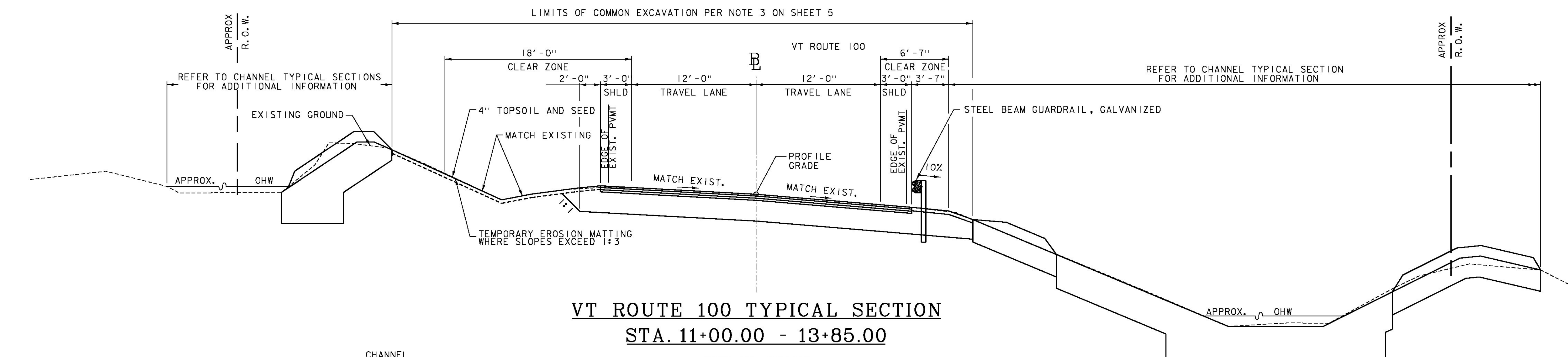
PLOT DATE: 02/27/2015  
DRAWN BY: M. BRADLEY  
CHECKED BY: E. ATKINS  
SHEET 3 OF 48

# TYPICAL SECTIONS

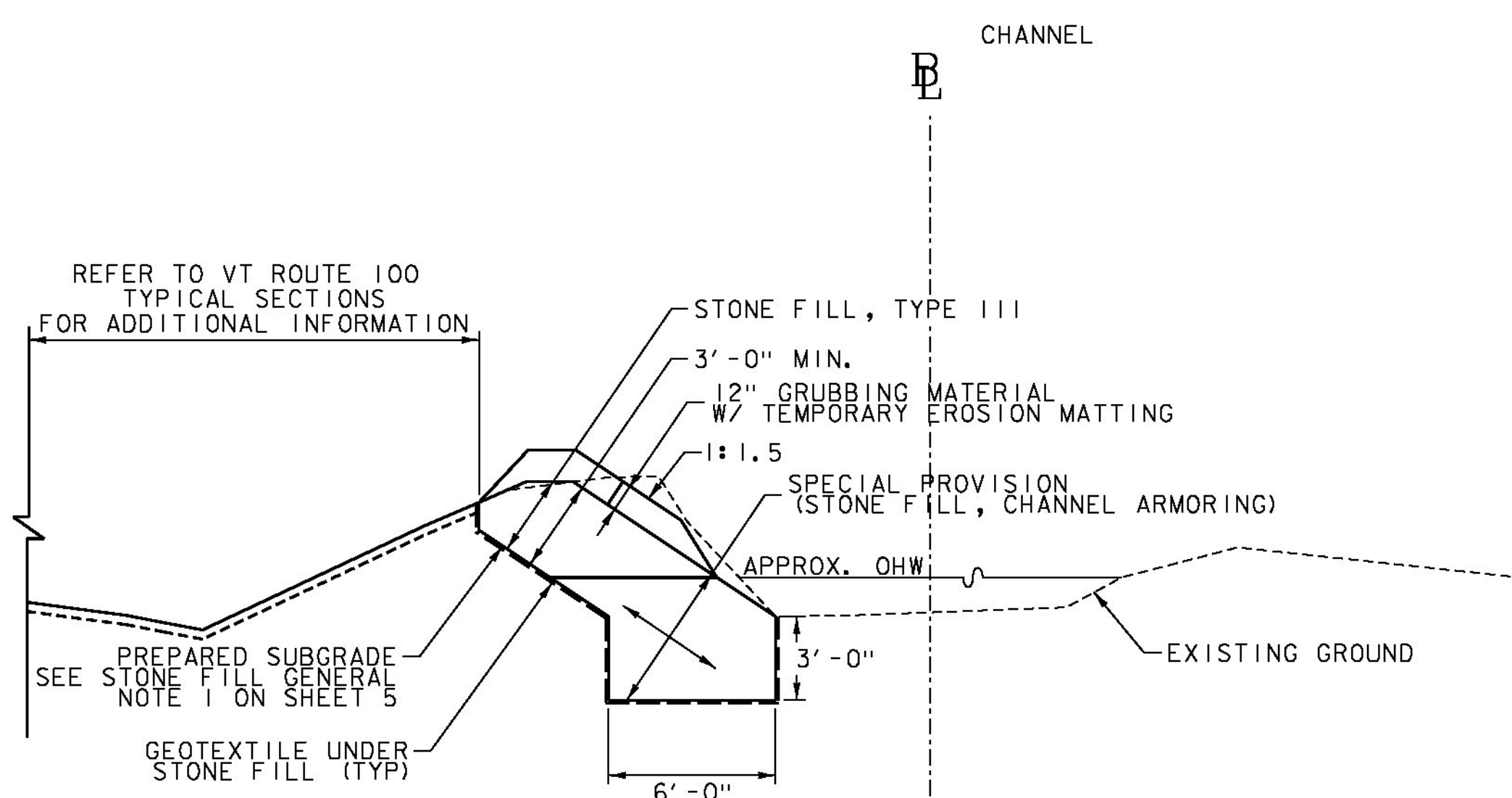
MATERIAL ITEM	THICKNESS	TOLERANCE
PAVEMENT (TOTAL DEPTH ALL LAYERS)		+/- 1/4"
SUBBASE (TOTAL DEPTH ALL LAYERS)		+/- 1"

VT ROUTE 100 FULL DEPTH RECONSTRUCTION:  
 1 1/2" TYPE IVS - WEARING COURSE  
 2 3/4" TYPE IIS - INTERMEDIATE COURSE  
 2 3/4" TYPE IIS - BASE COURSE  
 24" SUBBASE OF DENSE GRADED CRUSHED STONE

TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF 0.025 GAL/SY ON ALL COLD PLANED SURFACES AND BETWEEN SUCCESSIVE COURSES OF PAVEMENT AS DIRECTED BY THE ENGINEER.

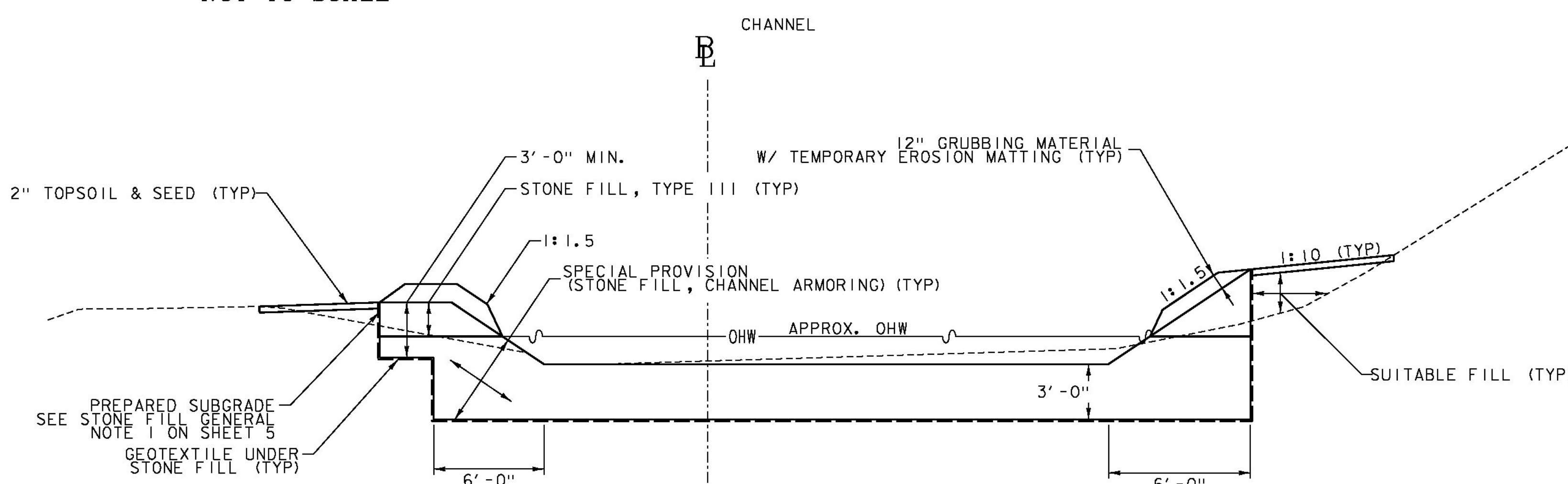


**VT ROUTE 100 TYPICAL SECTION**  
**STA. 11+00.00 - 13+85.00**  
 NOT TO SCALE



NOTE: SEE NOTE 3 ON SHEET 5 FOR LIMITS OF EXCAVATION.

**CHANNEL TYPICAL SECTION**  
**STA. 2+50.00 - 4+00.00**  
 NOT TO SCALE



NOTE: SEE NOTE 3 ON SHEET 5 FOR LIMITS OF EXCAVATION.

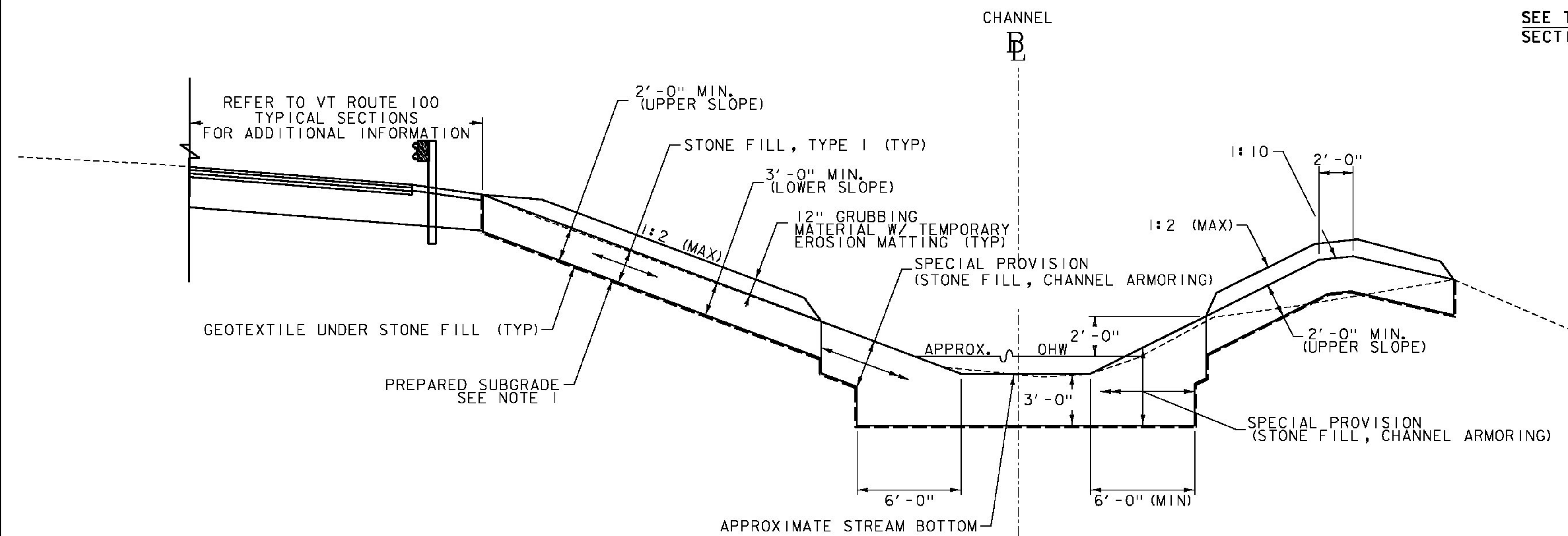
**CHANNEL TYPICAL SECTION**  
**STA. 4+00.00 - 4+46.84**  
 NOT TO SCALE

PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474typ.dgn  
 PROJECT LEADER: E. ATKINS  
 DESIGNED BY: M. BRADLEY  
 TYPICAL SECTIONS AND DETAILS SHEET 1

PLOT DATE: 02/27/2015  
 DRAWN BY: T. BIGELOW  
 CHECKED BY: E. ATKINS  
 SHEET 4 OF 48

# TYPICAL SECTIONS

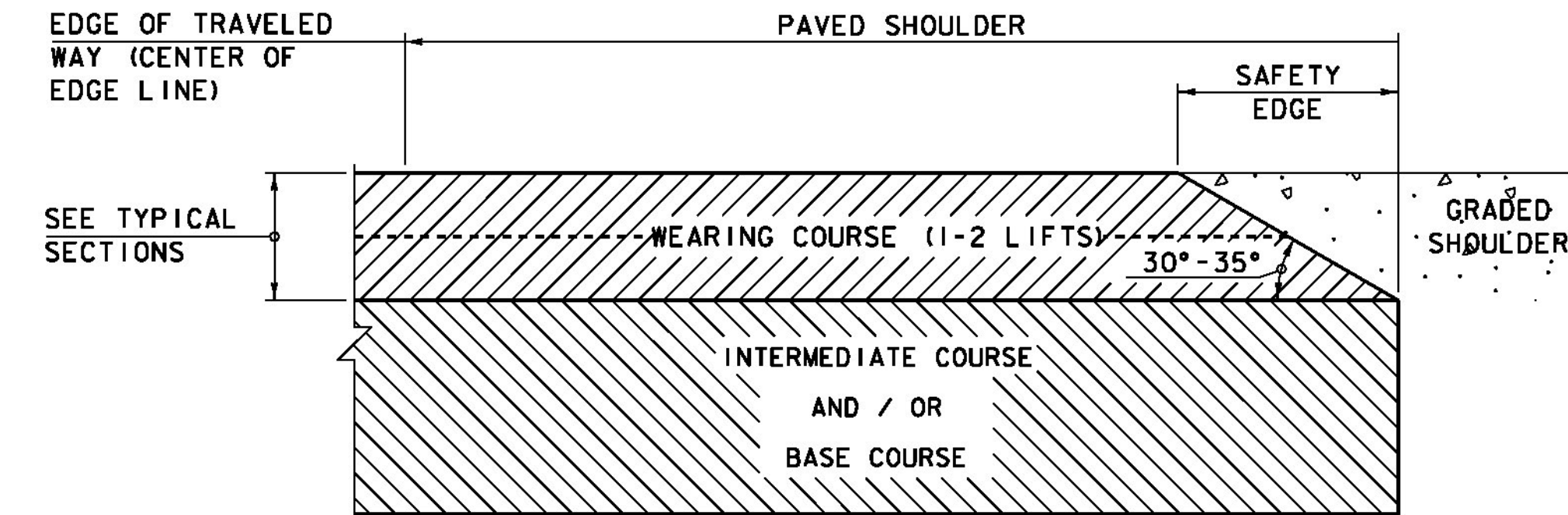


NOTE: SEE NOTE 3 FOR LIMITS OF EXCAVATION.

## CHANNEL TYPICAL SECTION

STA. 5+08.84 - 6+55.00

NOT TO SCALE

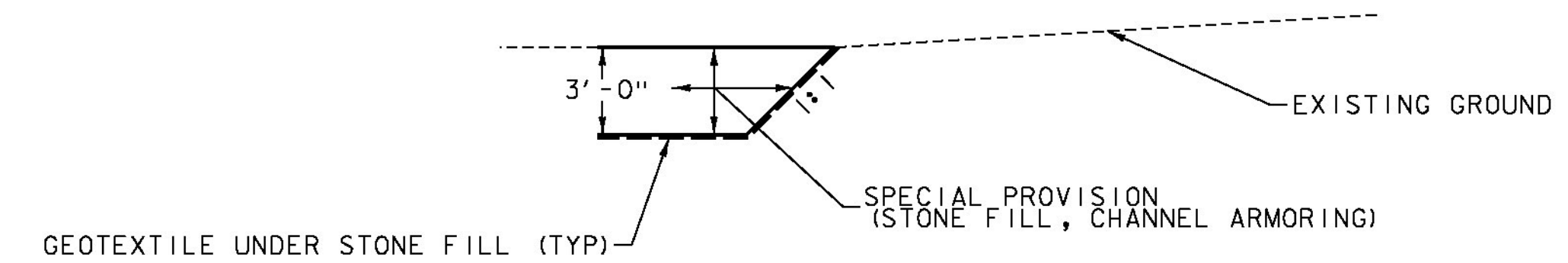


## SAFETY EDGE DETAIL

NOT TO SCALE

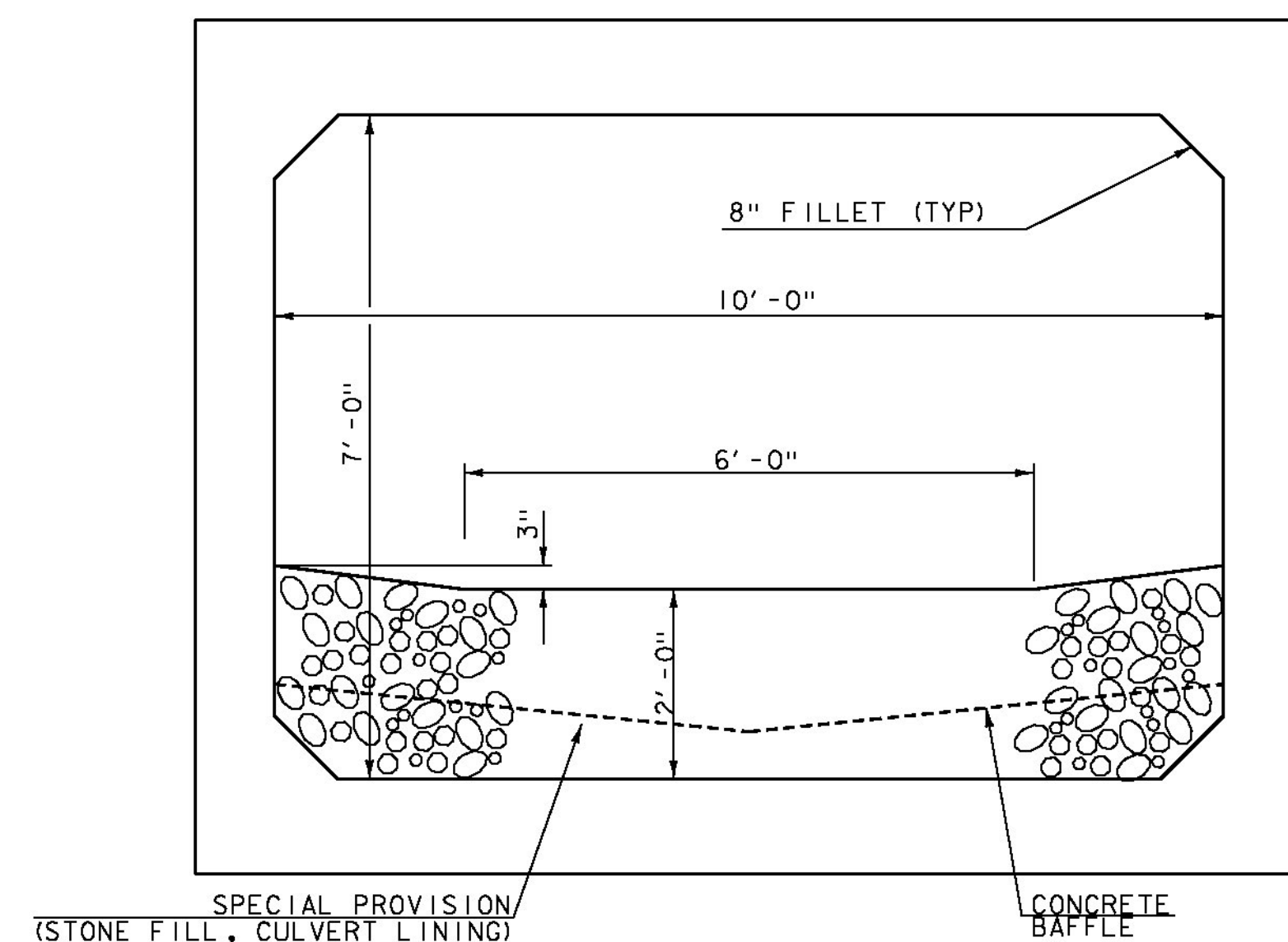
### NOTES:

1. THE EDGE OF PAVEMENT SHALL BE FORMED IN SUCH A WAY THAT THE BITUMINOUS CONCRETE PAVEMENT IS EXTRUDED OR COMPRESSED TO FORM THE 30 TO 35 DEGREE ANGLE. DEVICES THAT SIMPLY STRIKE-OFF THE MIX WITHOUT PROVIDING ANY COMPACTIVE EFFORT WILL NOT BE ALLOWED.
2. THE PAVED SHOULDER EXTENDS FROM THE EDGE OF TRAVELED WAY TO THE EDGE OF THE WEARING COURSE, INCLUDING THE "SAFETY EDGE".



## STREAM BED MATERIAL TRANSITION

NOT TO SCALE



## CULVERT TYPICAL SECTION

STA. 4+46.84 - 5+08.84

NOT TO SCALE

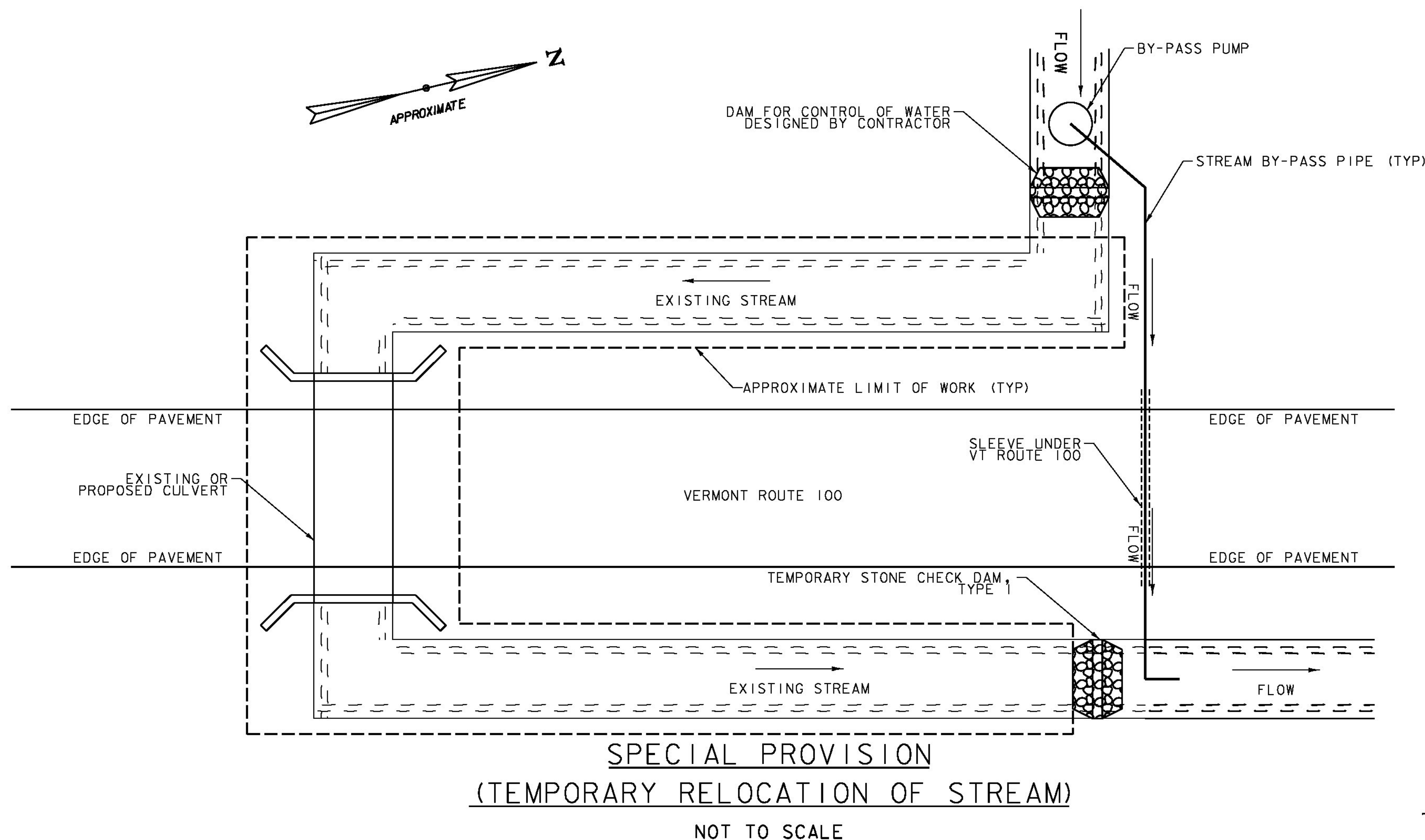
### STONE FILL GENERAL NOTES:

1. PRIOR TO PLACING MATERIALS, PREPARE SLOPE AS FOLLOWS:
  - A. CUT OFF TREES AND EXISTING STUMPS TO GROUND LEVEL. LEAVE STUMPS & ROOTS BELOW GRADE IN PLACE.
  - B. EXCAVATE VEGETATION (EXCEPT STUMPS) AND ORGANIC SOILS FROM SURFACE OF SLOPE.
  - C. COMPACT SURFACE OF SLOPE (COMPACTION WITH EXCAVATOR BUCKET ACCEPTABLE).
  - D. PLACE MATERIALS AS SHOWN ON THE DETAILS.
2. PLACEMENT OF STONE SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
  - A. STONE FILL SHALL BE CAREFULLY PLACED ON SLOPES AND INTERLOCKED TO CREATE A STABLE AND WELL-GRADED MIXTURE OF LARGE STONES AND SMALLER STONES WITHOUT LARGE VOIDS IN BETWEEN. VOIDS SHALL BE CHOKED WITH SMALLER STONES TO CREATE A MASS FREE OF LARGE VOIDS.
  - B. DUMPING OF STONE FILL AT THE TOP OF THE SLOPES AND ROLLING OR PUSHING INTO PLACE WILL NOT BE PERMITTED.
  - C. PLATE COMPACTORS SHALL NOT BE USED IN THE PLACEMENT OF SPECIAL PROVISION (STONE FILL, CHANNEL ARMORING) OR THE NATIVE RIVERBED MATERIAL.
  - D. THE STREAM BED SHALL BE COMPRISED OF IMPORTED MATERIAL AND EXISTING RIVERBED MATERIAL EXCAVATED DURING THE WORK UNDER THIS PROJECT AND MEET THE REQUIREMENTS OF SPECIAL PROVISION (STONE FILL, CHANNEL ARMORING). THE MATERIAL SHALL BE STOCKPILED AND REUSED AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. UNDERFLOW SHALL NOT TAKE PLACE FOLLOWING INSTALLATION OF THE STREAMBED.
3. ALL EXCAVATION BELOW ORDINARY HIGH WATER WILL BE PAID FOR UNDER ITEM 203.27, UNCLASSIFIED CHANNEL EXCAVATION. ALL EXCAVATION ABOVE ORDINARY HIGH WATER WILL BE PAID FOR UNDER ITEM 203.17, UNCLASSIFIED EXCAVATION. ALL ROADWAY EXCAVATION WILL BE PAID UNDER ITEM 203.15 COMMON EXCAVATION UNLESS OTHERWISE NOTED.

PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

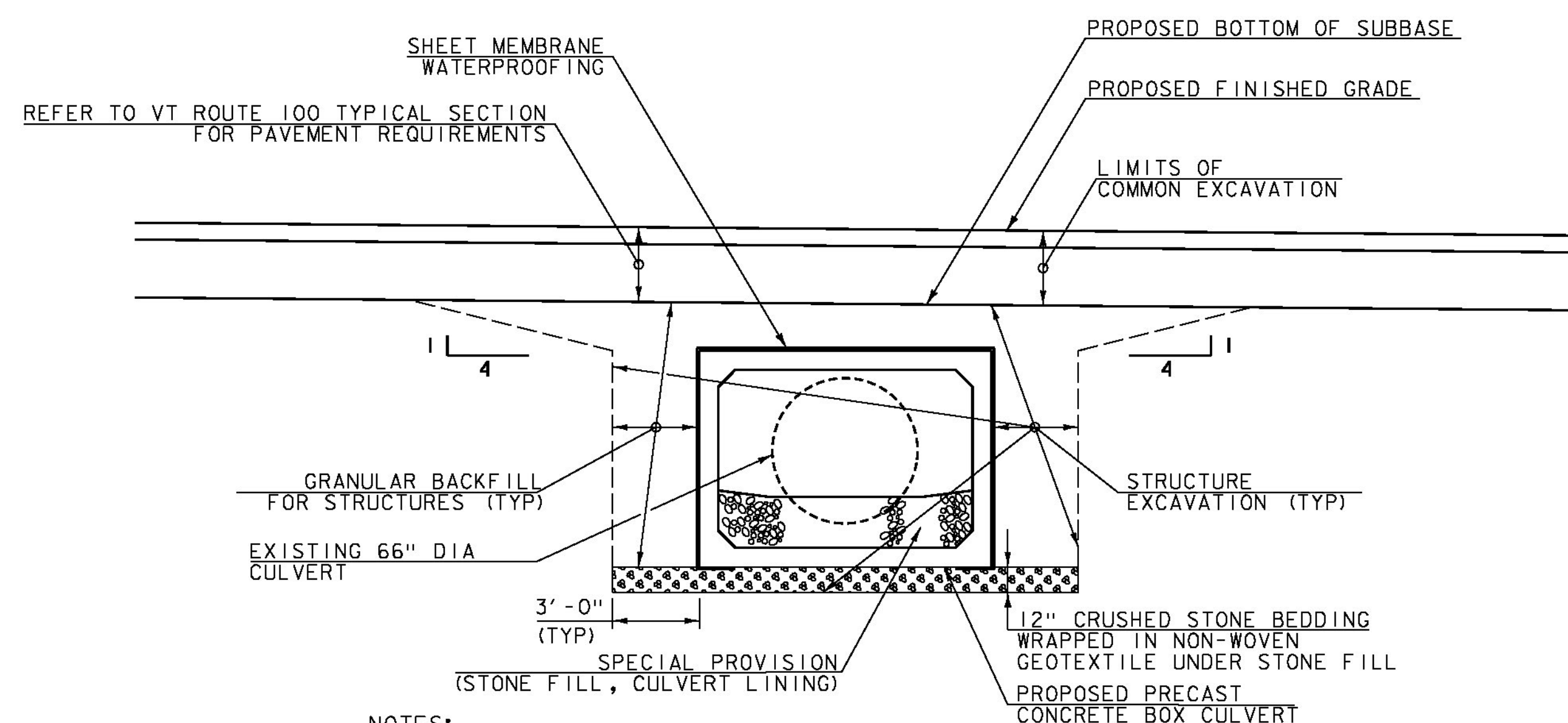
FILE NAME: z12b474typ.dgn PLOT DATE: 02/27/2015  
PROJECT LEADER: E. ATKINS DRAWN BY: T. BIGELOW  
DESIGNED BY: M. BRADLEY CHECKED BY: E. ATKINS  
TYPICAL SECTIONS AND DETAILS SHEET 2 SHEET 5 OF 48

# TYPICAL SECTIONS



**SPECIAL PROVISION  
(TEMPORARY RELOCATION OF STREAM)**

NOT TO SCALE



**NOTES:**

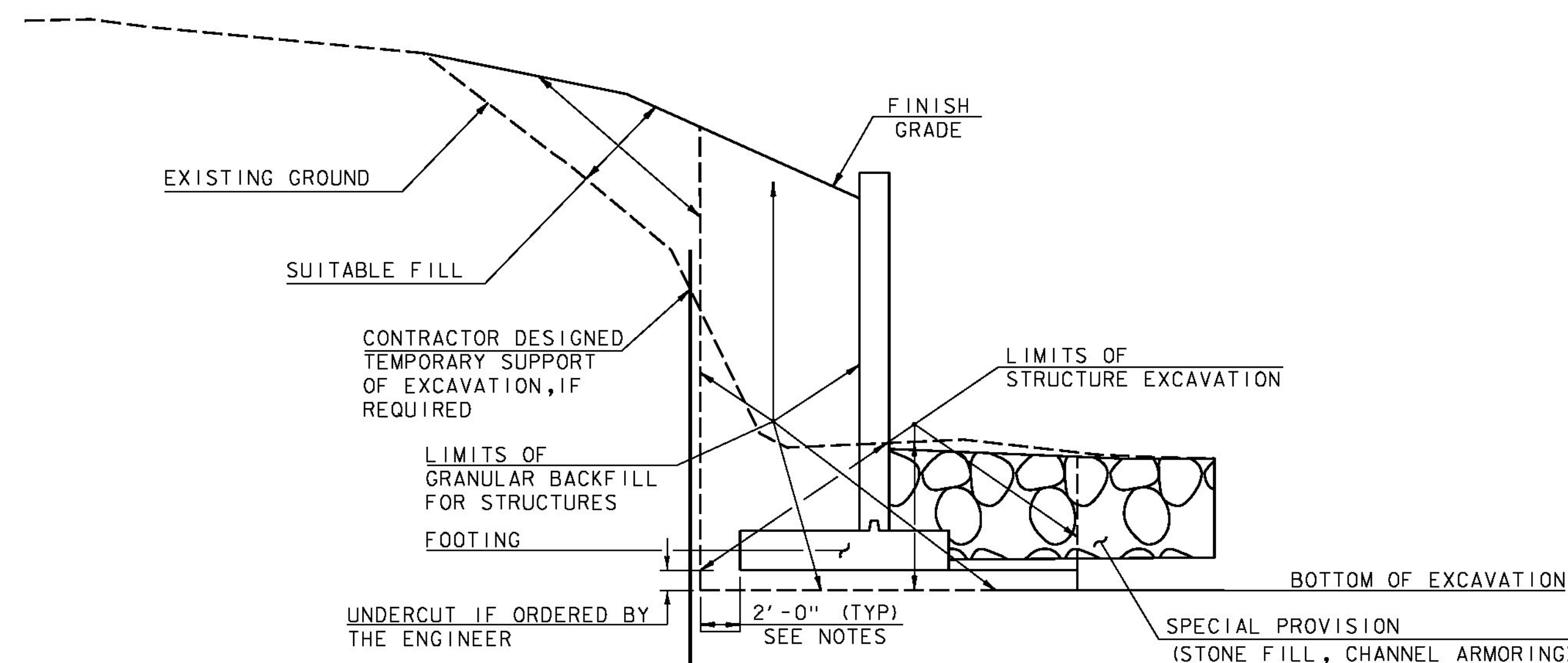
1. REMOVAL OF EXISTING CULVERT WILL BE CONSIDERED INCIDENTAL TO ITEM 204.25 STRUCTURE EXCAVATION
2. PAYMENT FOR SHEET MEMBRANE WATERPROOFING WILL BE CONSIDERED INCIDENTAL TO ITEM 540.10 PRECAST CONCRETE STRUCTURE (10'-0" x 7'-0" x 63'-0" BOX).

**EXCAVATION PAY LIMITS DETAIL**

NOT TO SCALE

**TEMPORARY RELOCATION OF STREAM GENERAL NOTES:**

1. THE CONTRACTOR SHALL PROVIDE TEMPORARY STREAM RELOCATION BY STREAM RELOCATION PUMPING OR OTHER APPROVED METHODS AS REQUIRED DURING CONSTRUCTION.
2. THIS DETAIL IS SCHEMATIC ONLY. ACTUAL LOCATIONS OF THE PUMPS, PIPING, COFFERDAMS IF REQUIRED, CHECKDAMS AND OTHER EQUIPMENT REQUIRED TO COMPLETE THE TEMPORARY STREAM RELOCATION SHALL BE ADJUSTED TO MATCH FIELD CONDITIONS AS DESIGNED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE DESIGN AND PLANS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF VERMONT AND SHALL BE APPROVED BY VTRANS. ALL WORK AND EQUIPMENT SHALL BE PERFORMED AND PLACED WITHIN THE PROJECT SLOPE LIMITS.
3. THIS DETAIL SHOWS ONE POTENTIAL STREAM RELOCATION METHOD. THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING ITS OWN SITE SPECIFIC PLAN AND DESIGN FOR DEWATERING AND STREAM RELOCATION. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
4. THE WORK WITHIN THE STREAM SHALL BE PERFORMED DURING THE SEASONAL LOW FLOW PERIOD (JULY 1 TO OCTOBER 1). THE DESIGN OF THE SITE SPECIFIC SITE PLANS SHALL BE CAPABLE OF PUMPING AT LEAST TWICE THE FLOWS ASSOCIATED WITH THE AVERAGE DAILY FLOW. THE WORK RELATED TO THE CONSTRUCTION OF THE CULVERT SHALL BE PLANNED ACCORDING TO THE WEATHER AND SHOULD NOT BE PERFORMED DURING A PERIOD DURING WHICH THE ENGINEER DETERMINES THAT A BAD WEATHER EVENT IS FORECAST.
5. PAYMENT FOR ITEM 900.645 SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM) WILL INCLUDE PREPARATION OF THE SITE SPECIFIC TEMPORARY RELOCATION PLANS, THE DAM FOR CONTROL OF WATER, BY-PASS PUMP(S), BY-PASS PIPE, SLEEVE AND ALL OTHER INCIDENTAL ITEMS REQUIRED TO CONSTRUCT THE CULVERT AND RESTORE THE STREAM BED IN THE DRY. TEMPORARY STONE CHECK DAM, TYPE 1 SHALL BE PAID FOR UNDER ITEM 653.25 TEMPORARY STONE CHECK DAM, TYPE 1.



**EARTHWORK SECTION AT WINGWALLS**

NOT TO SCALE

PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474typ.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: M. BRADLEY  
TYPICAL SECTIONS AND DETAILS SHEET 3

PLOT DATE: 02/27/2015  
DRAWN BY: T. BIGELOW  
CHECKED BY: E. ATKINS  
SHEET 6 OF 48

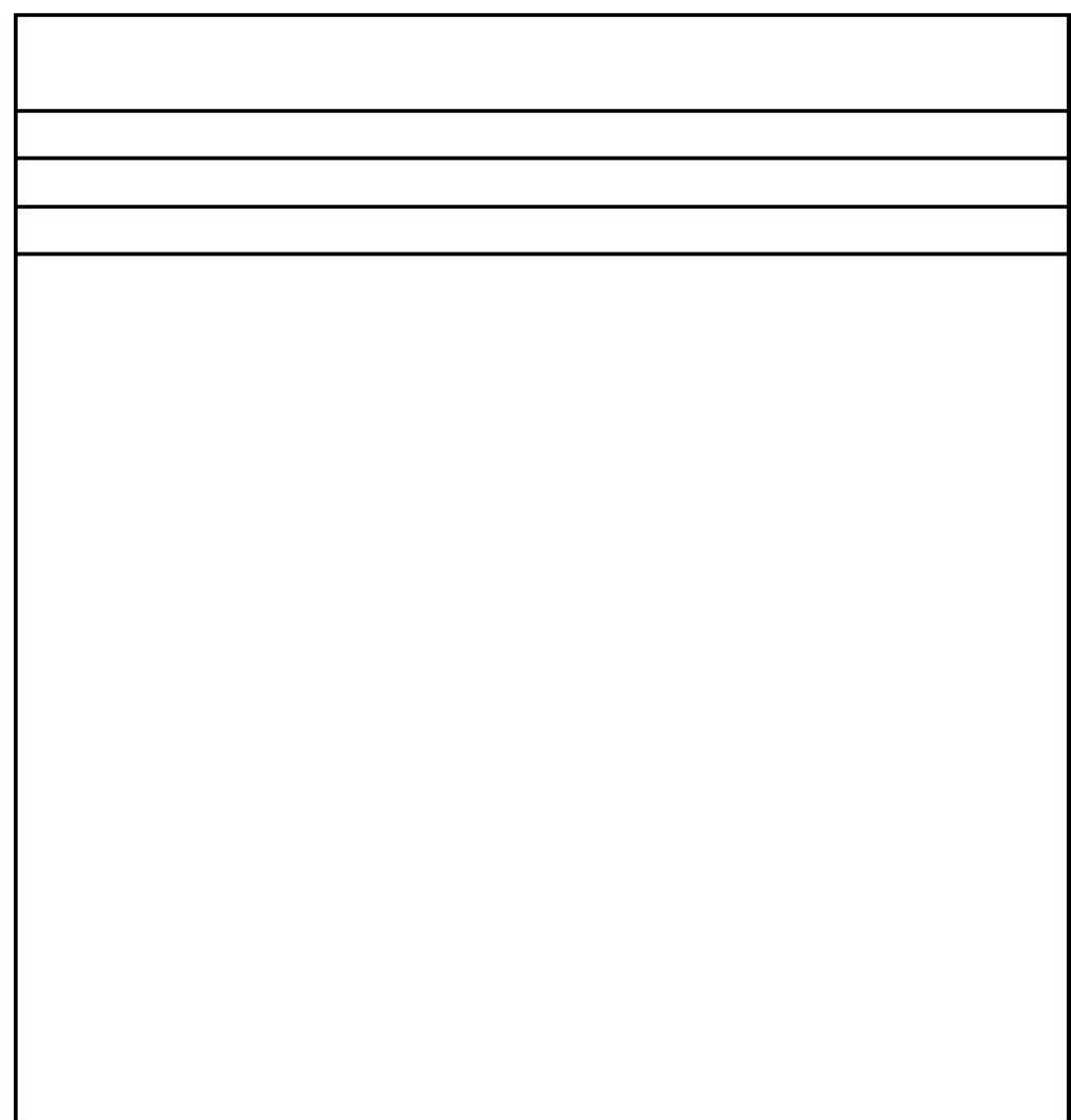
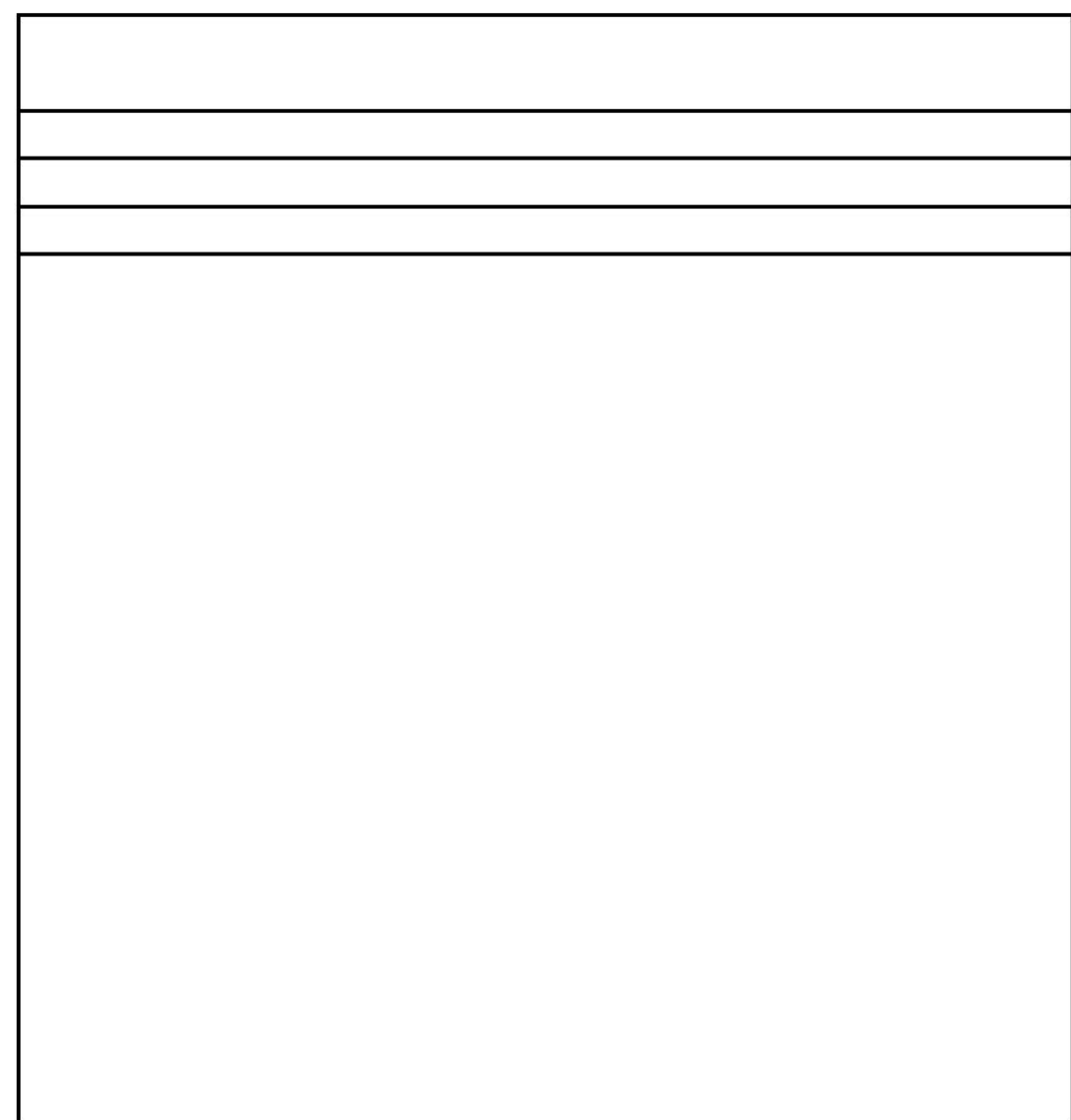
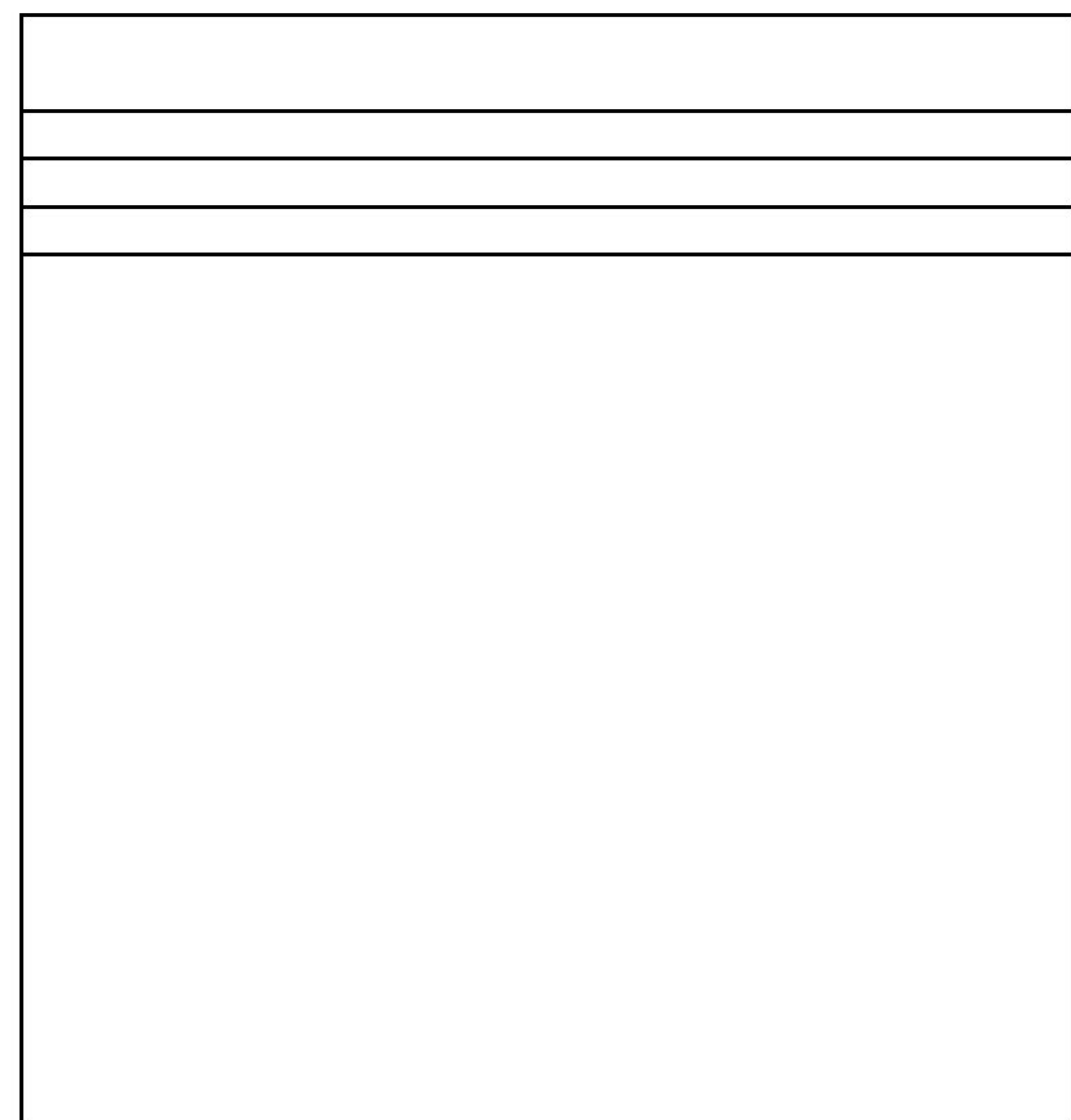
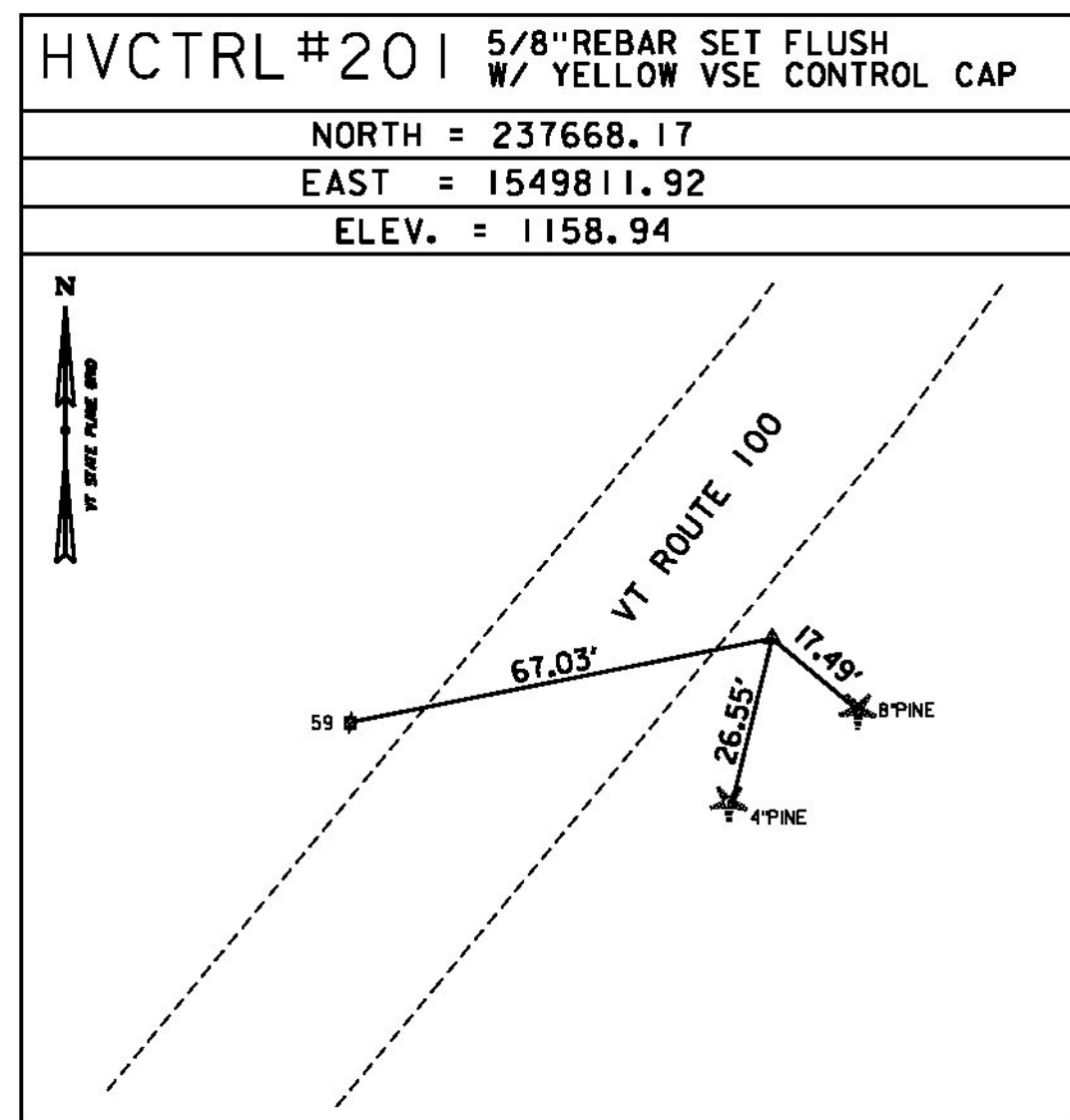
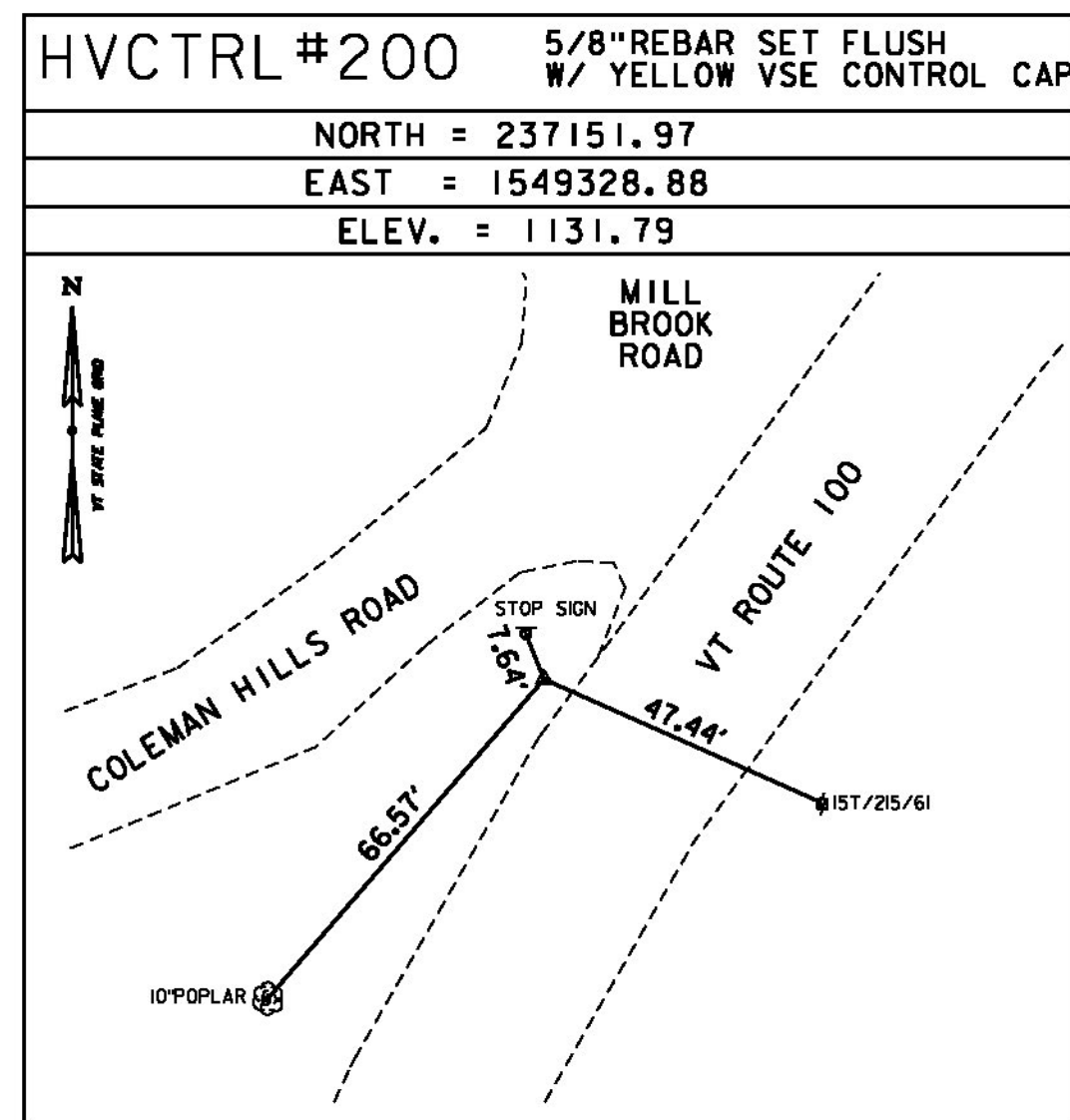
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DANBY CORS ARP

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 E = 1508688.83  
 ELLIP HEIGHT = 636.36

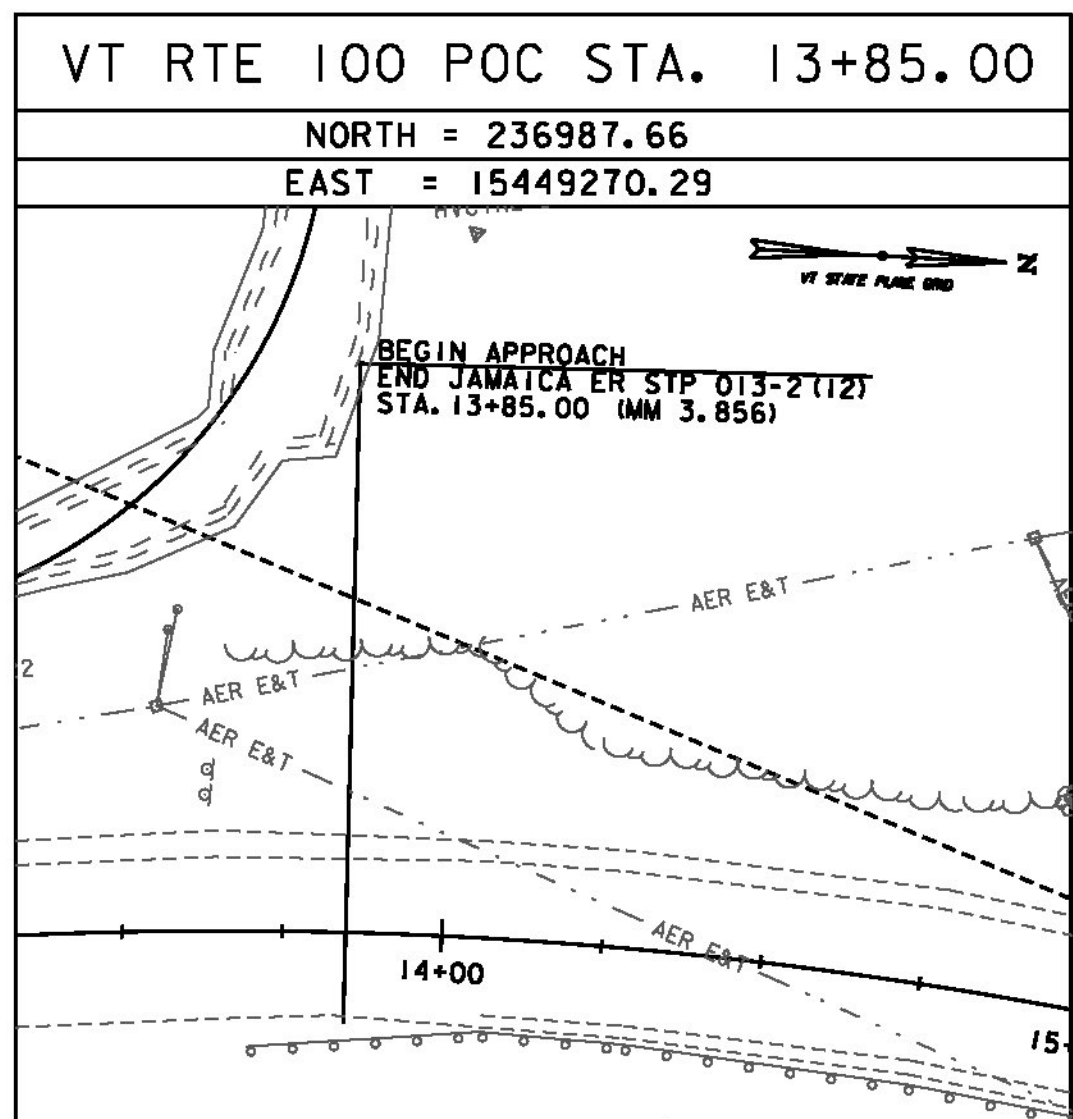
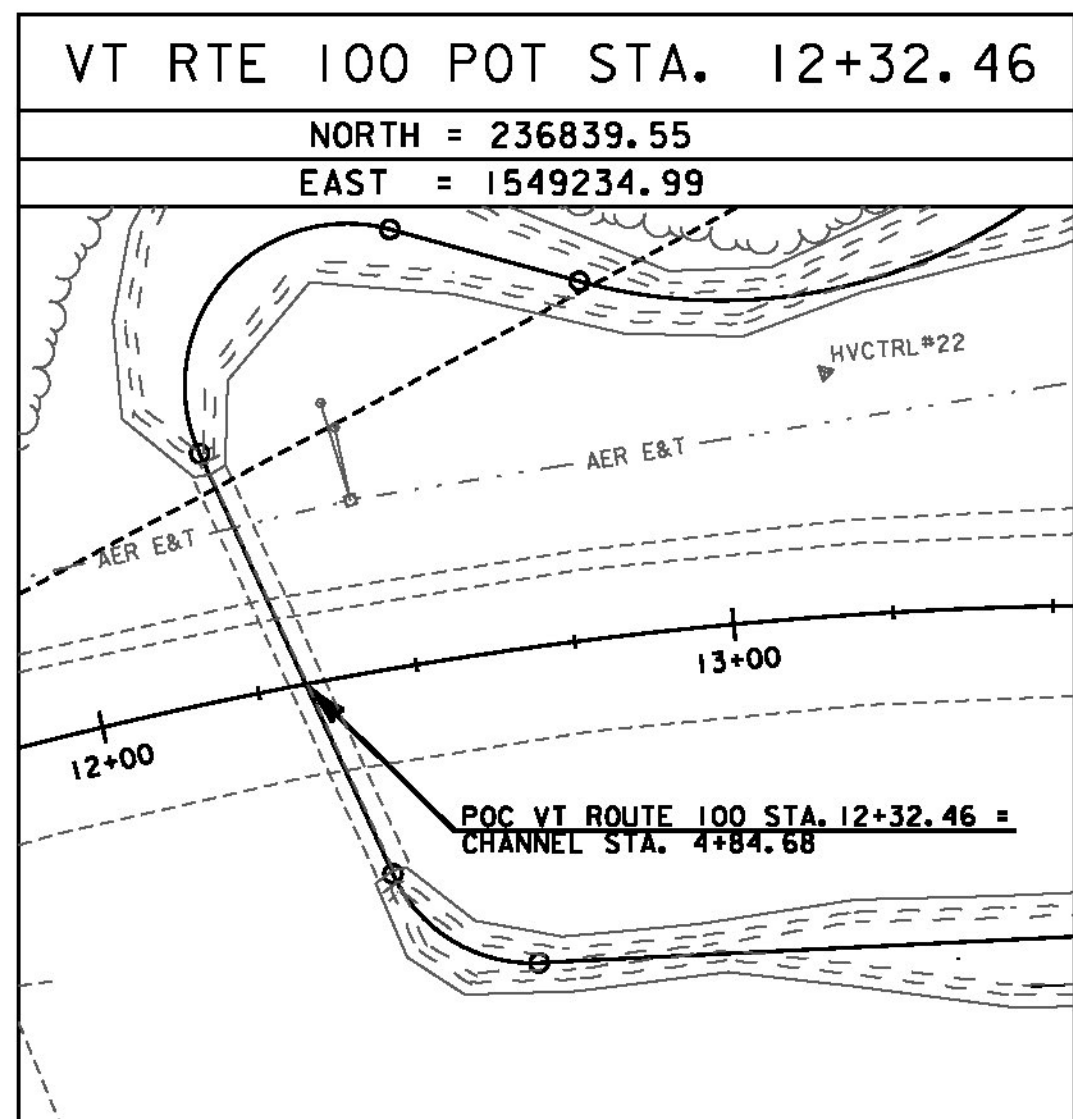
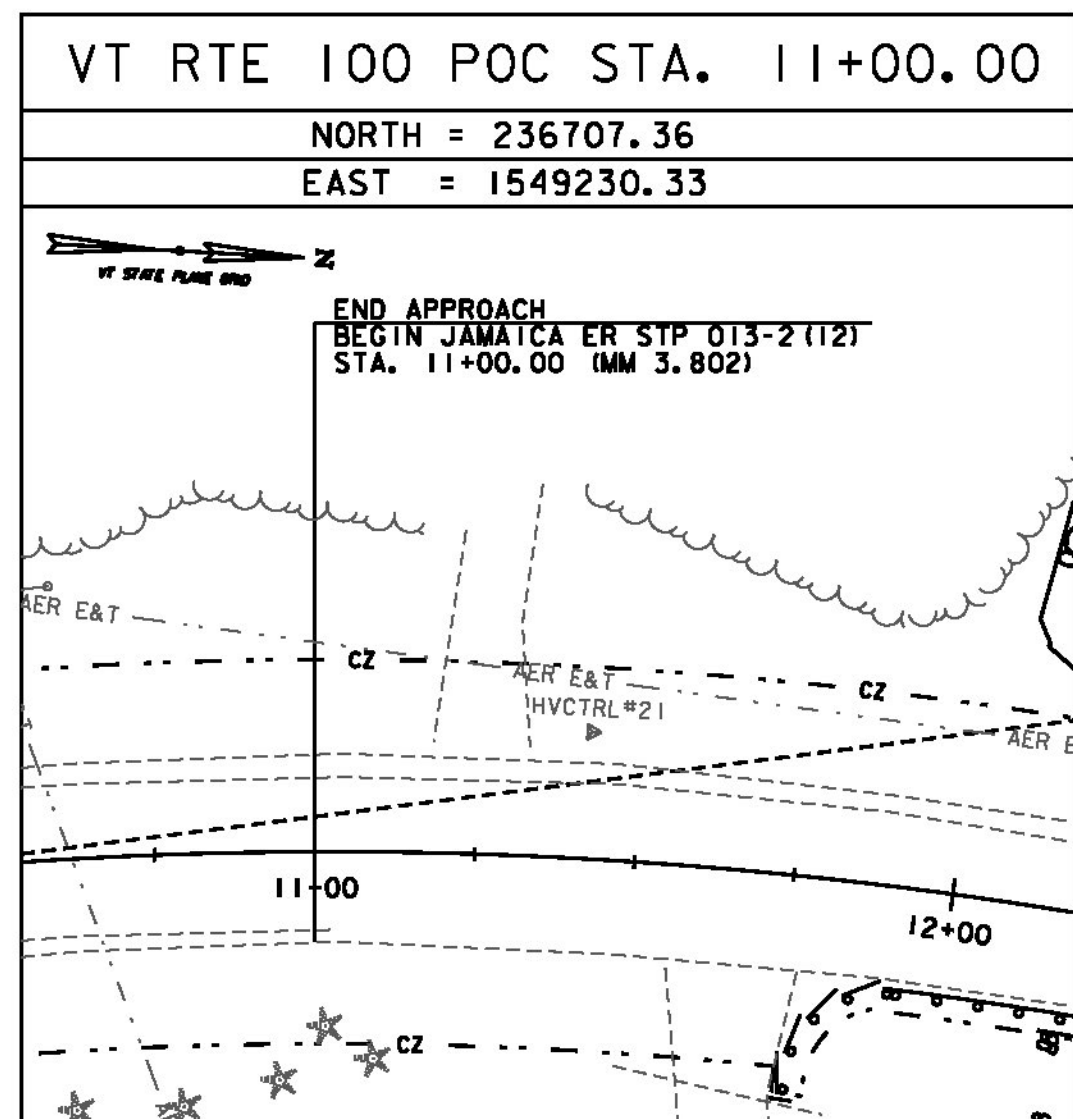
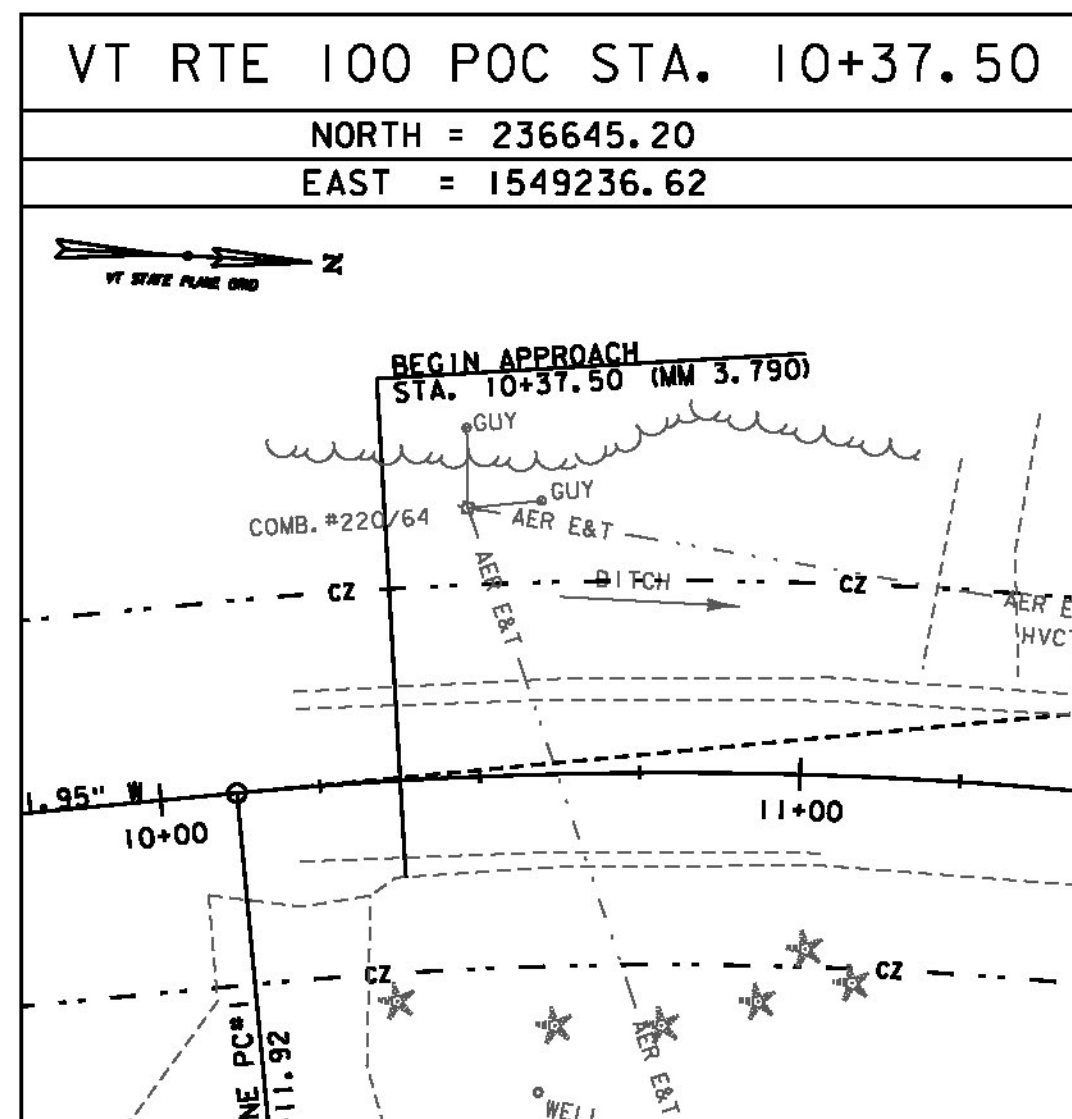
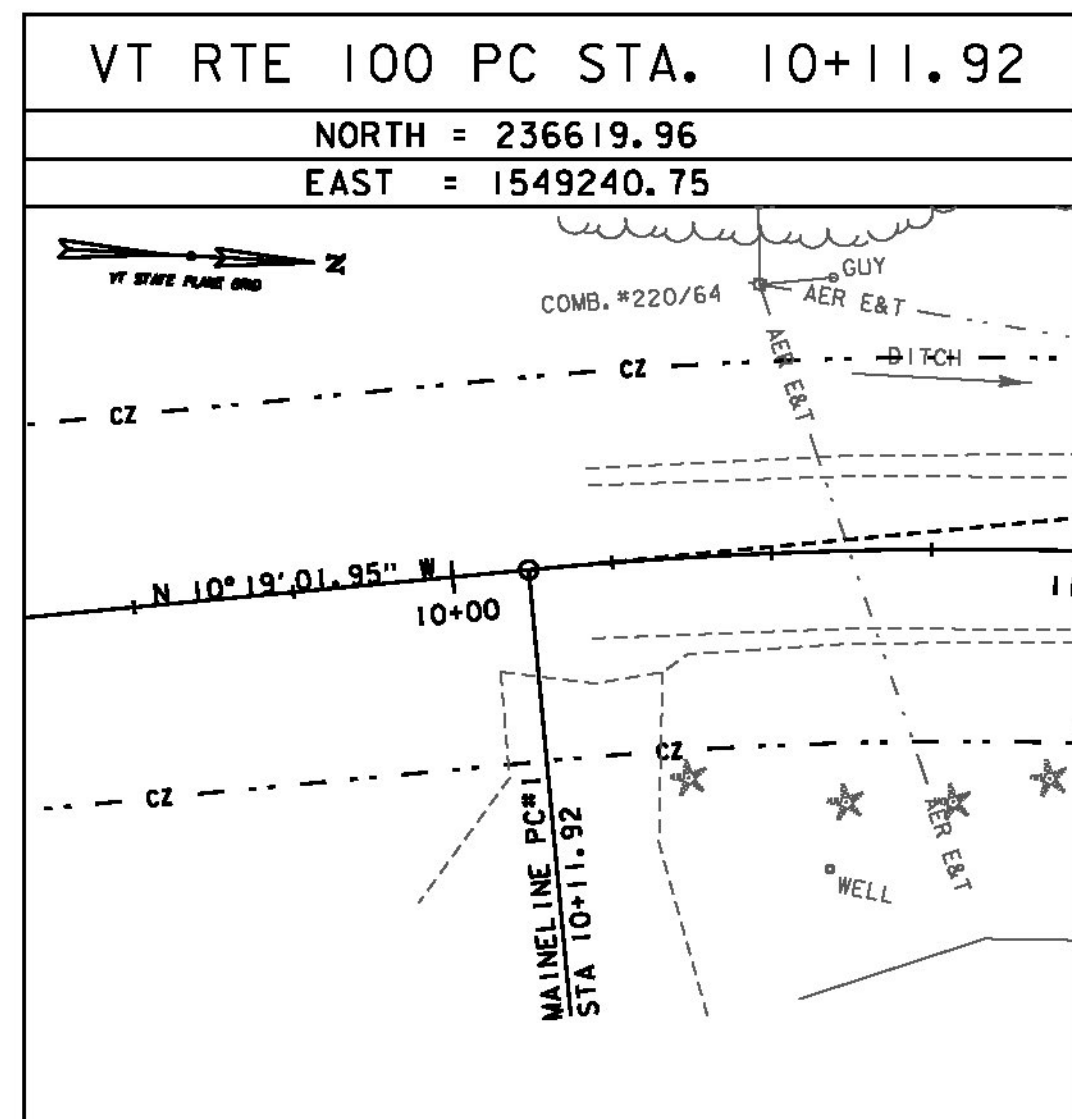
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TRAVERSE TIES

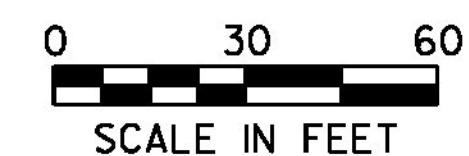


\* CONTROL TIES COMPLETED: FEBRUARY 12, 2013 BY VSE, T. SCARZELLO-PC, T. COMSTOCK

ALIGNMENT TIES



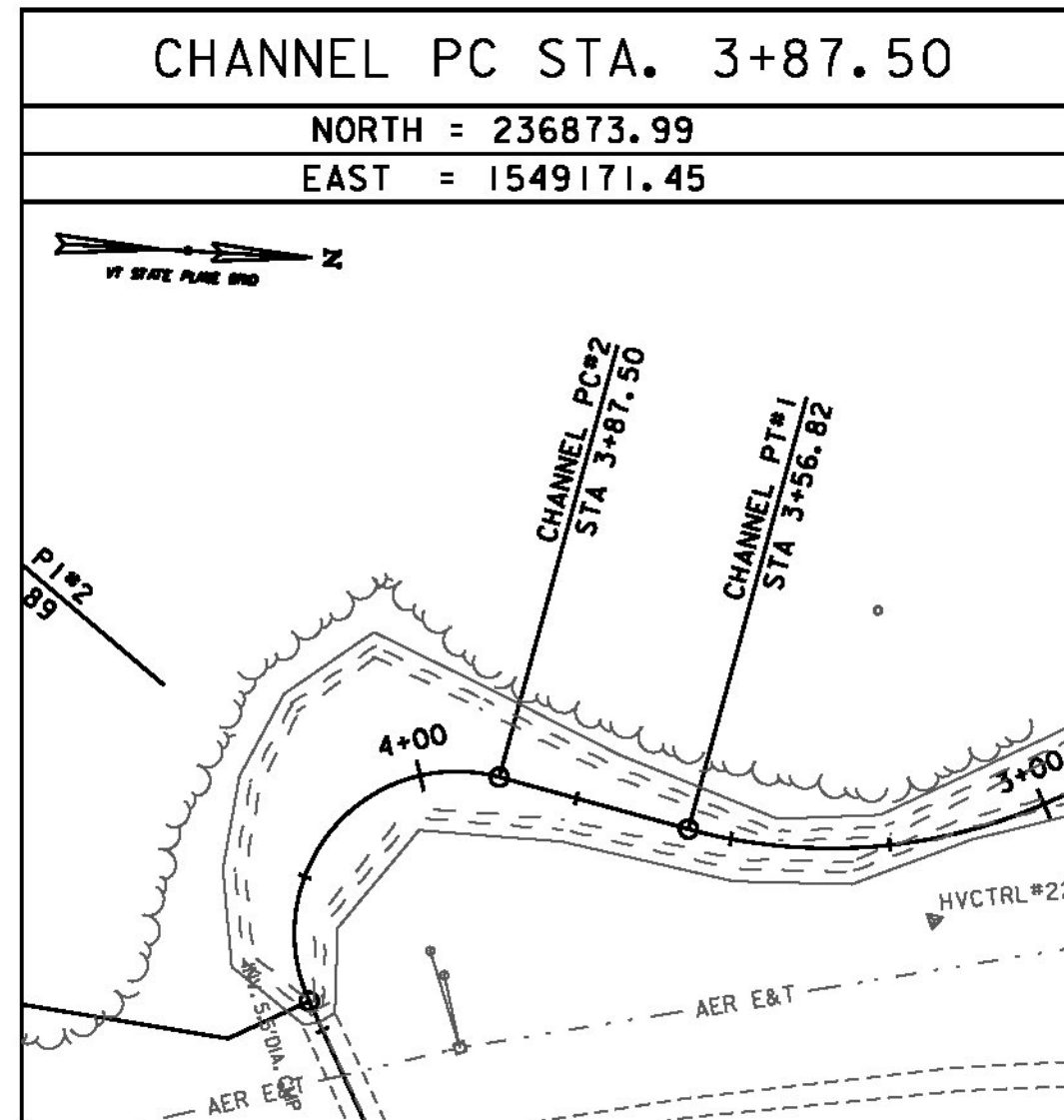
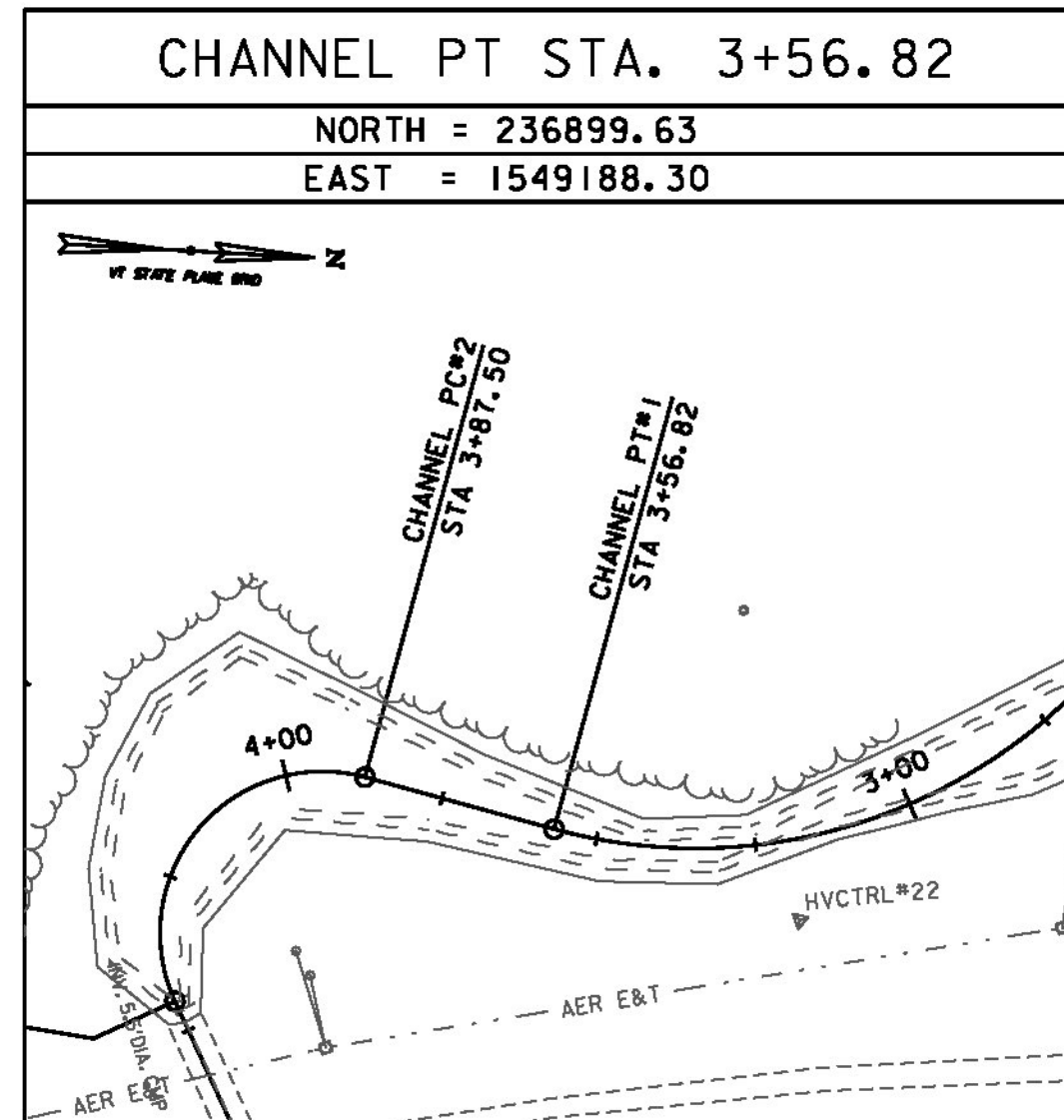
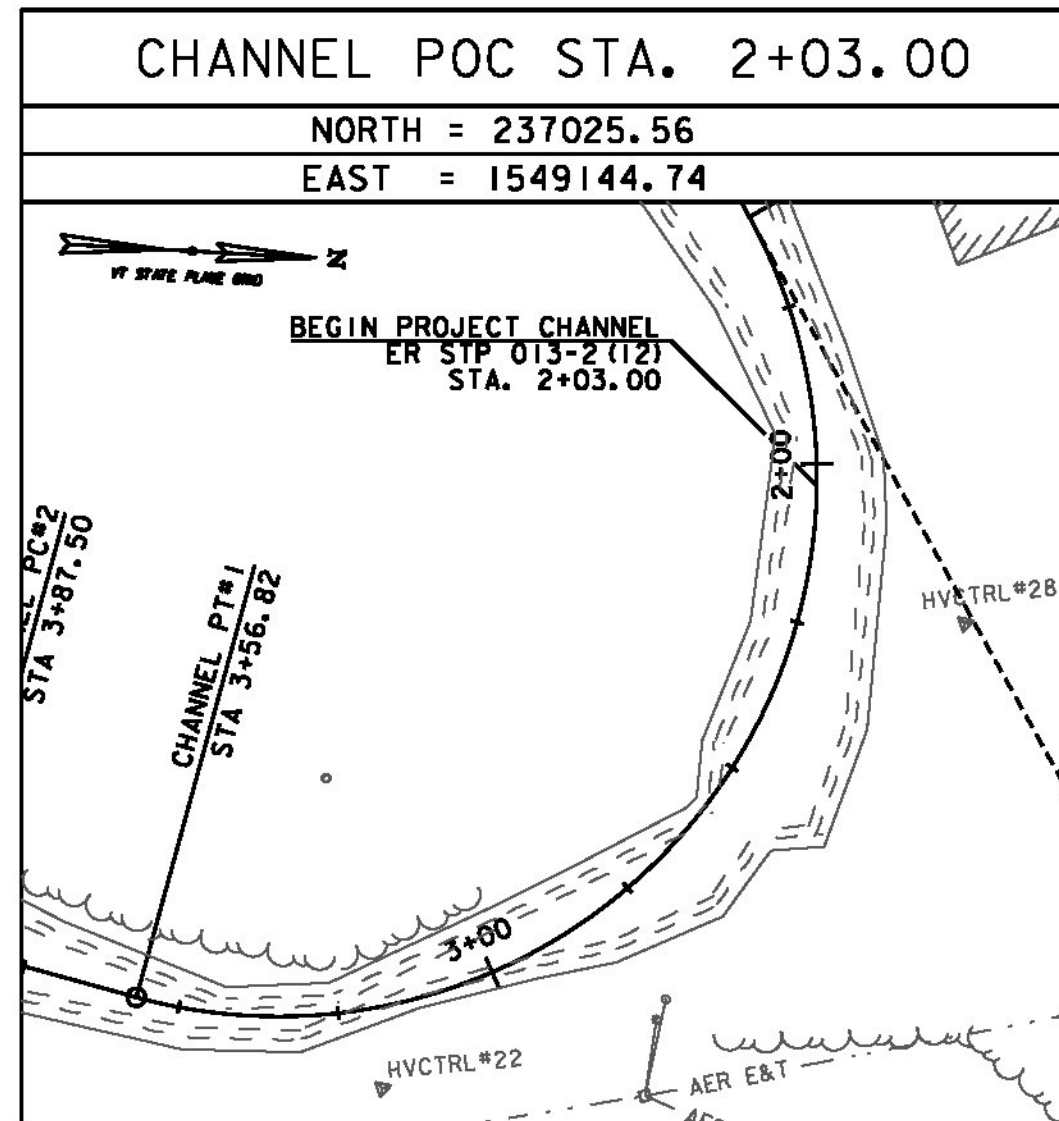
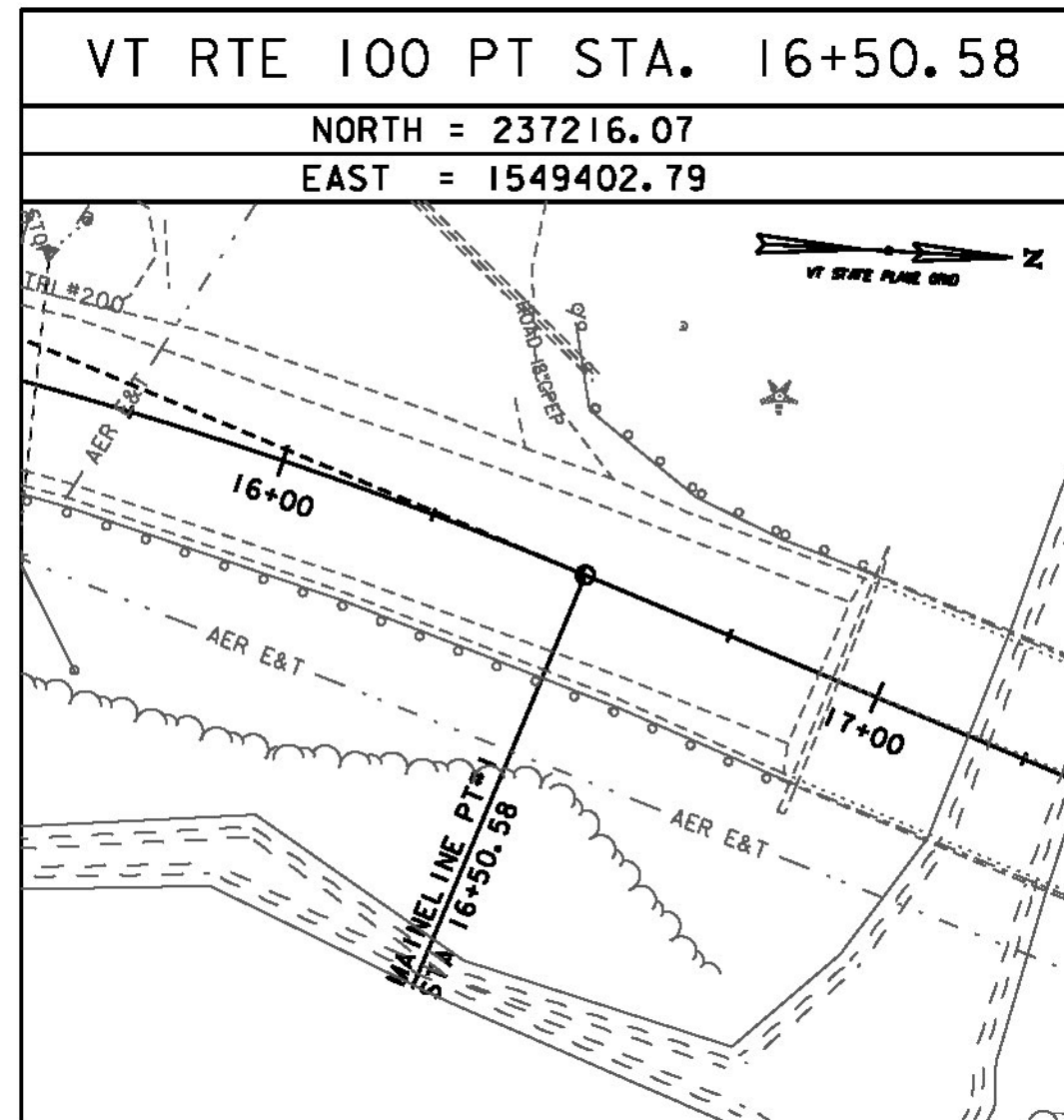
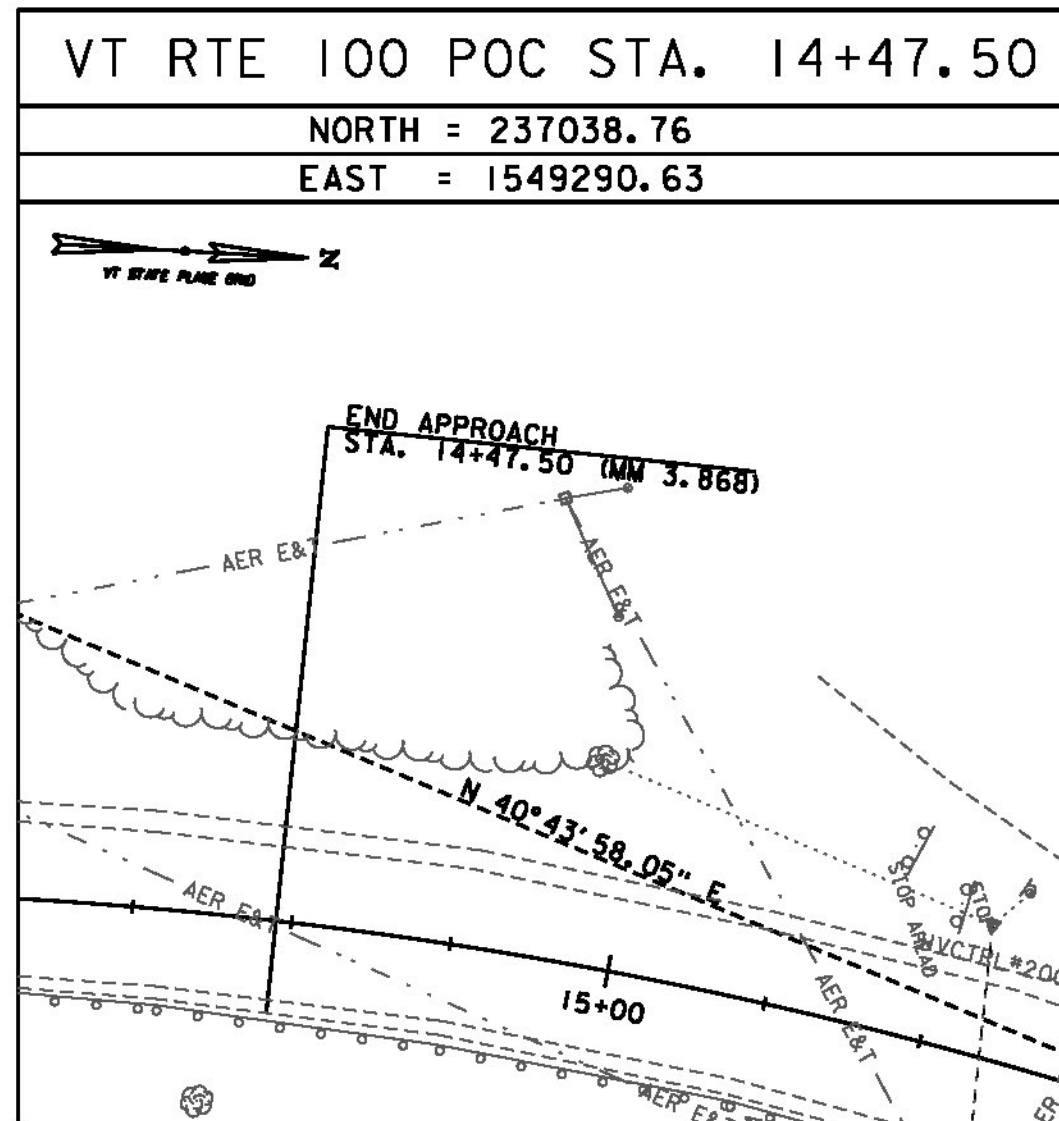
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HORIZONTAL	NAD 83(2011) SFT
ADJUSTMENT	NONE



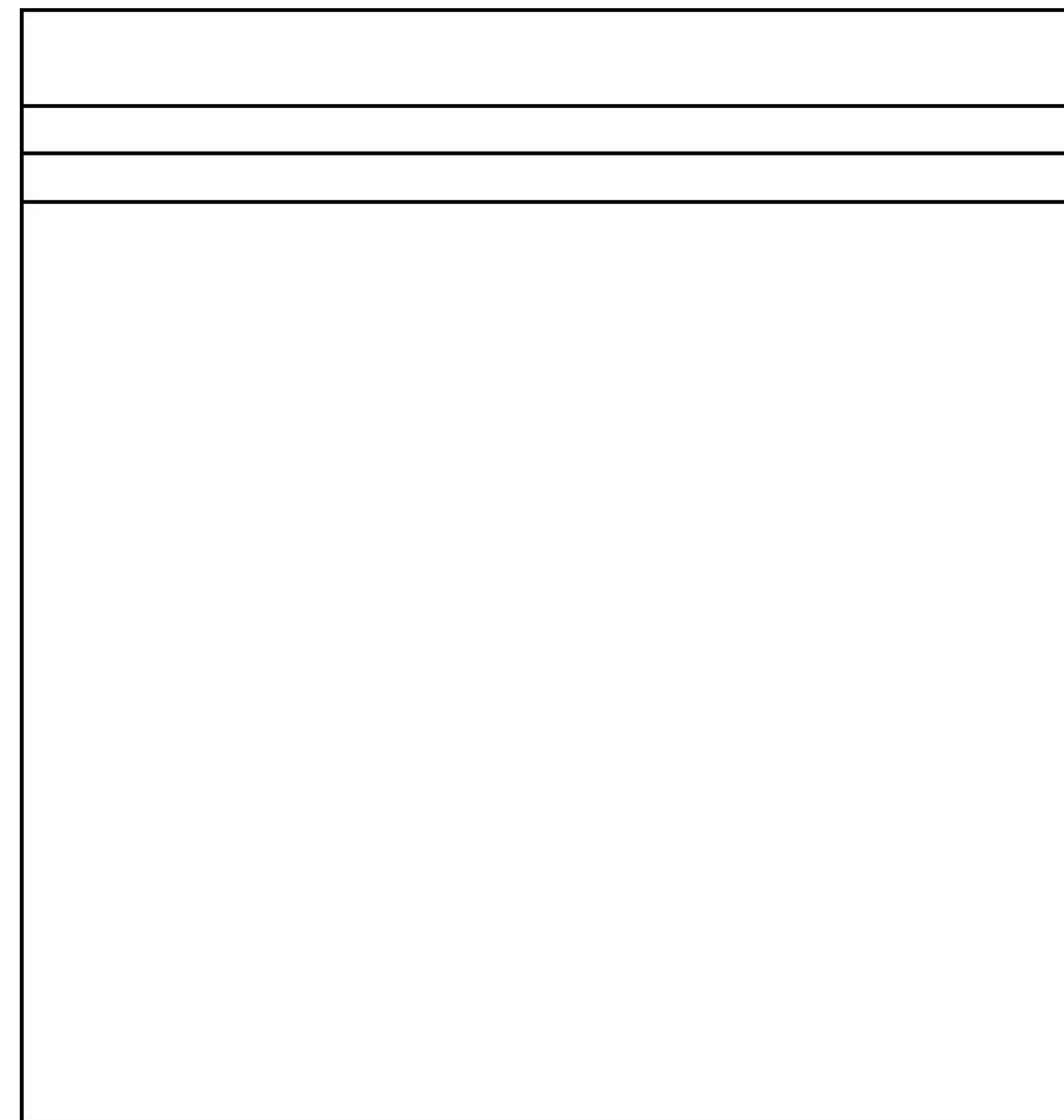
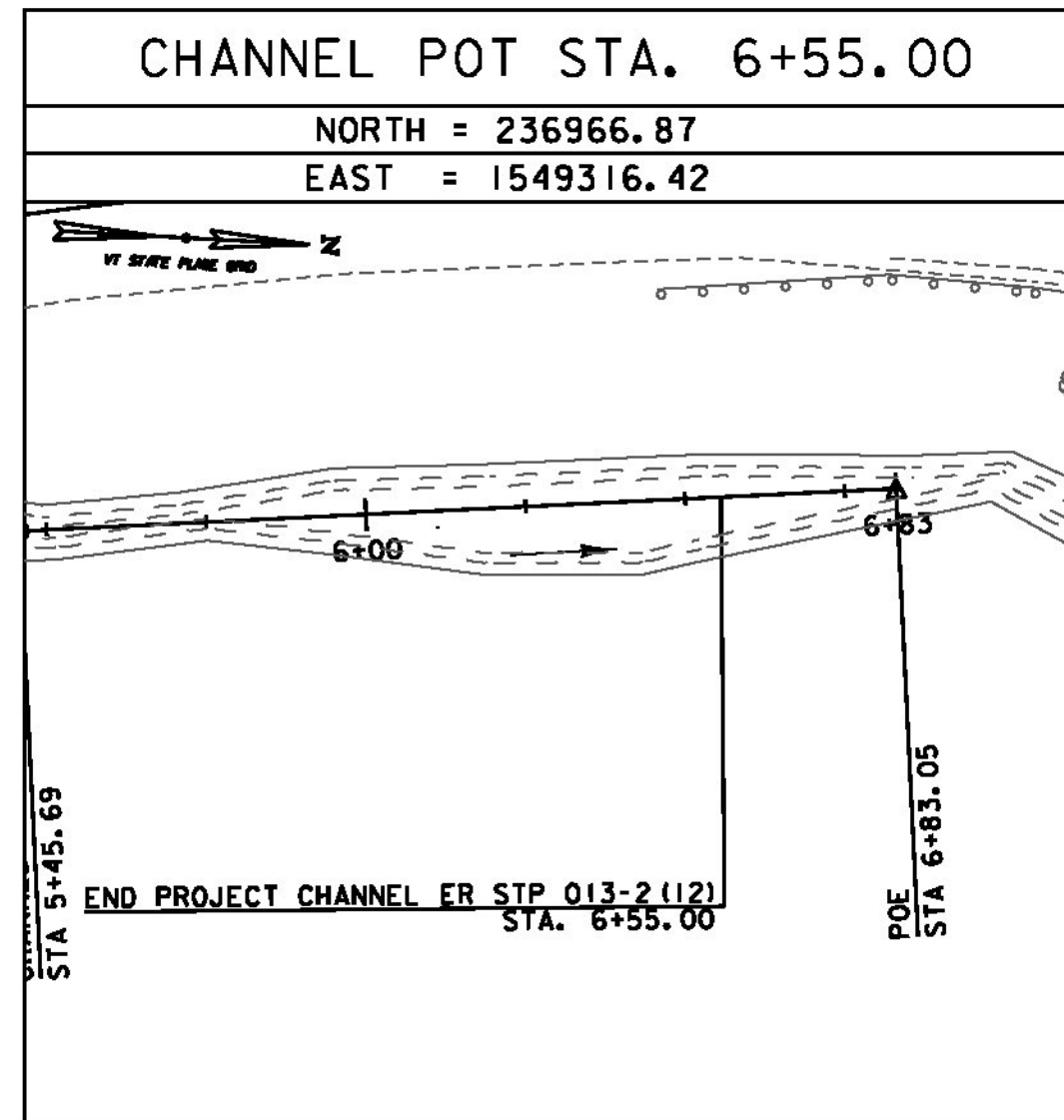
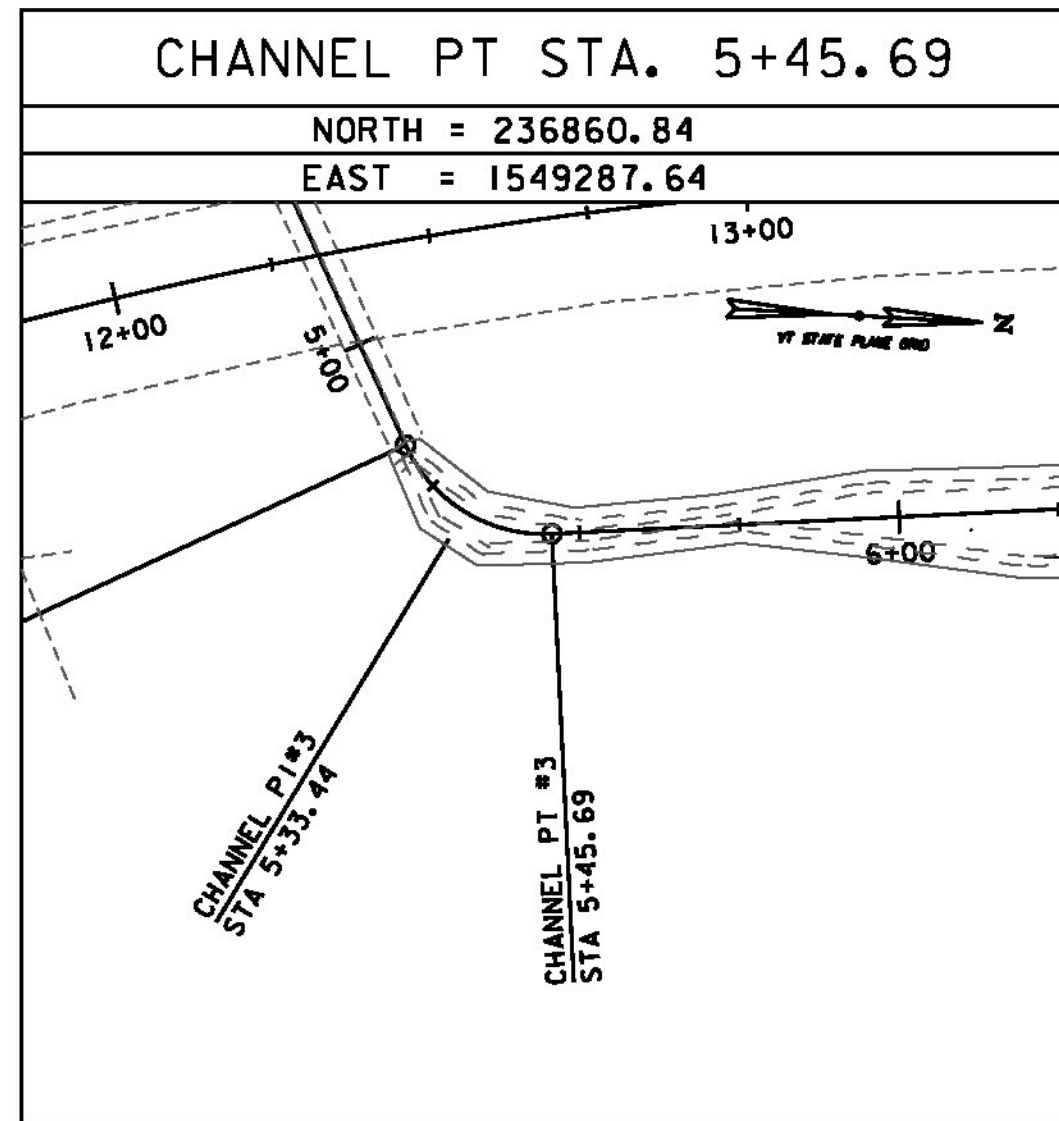
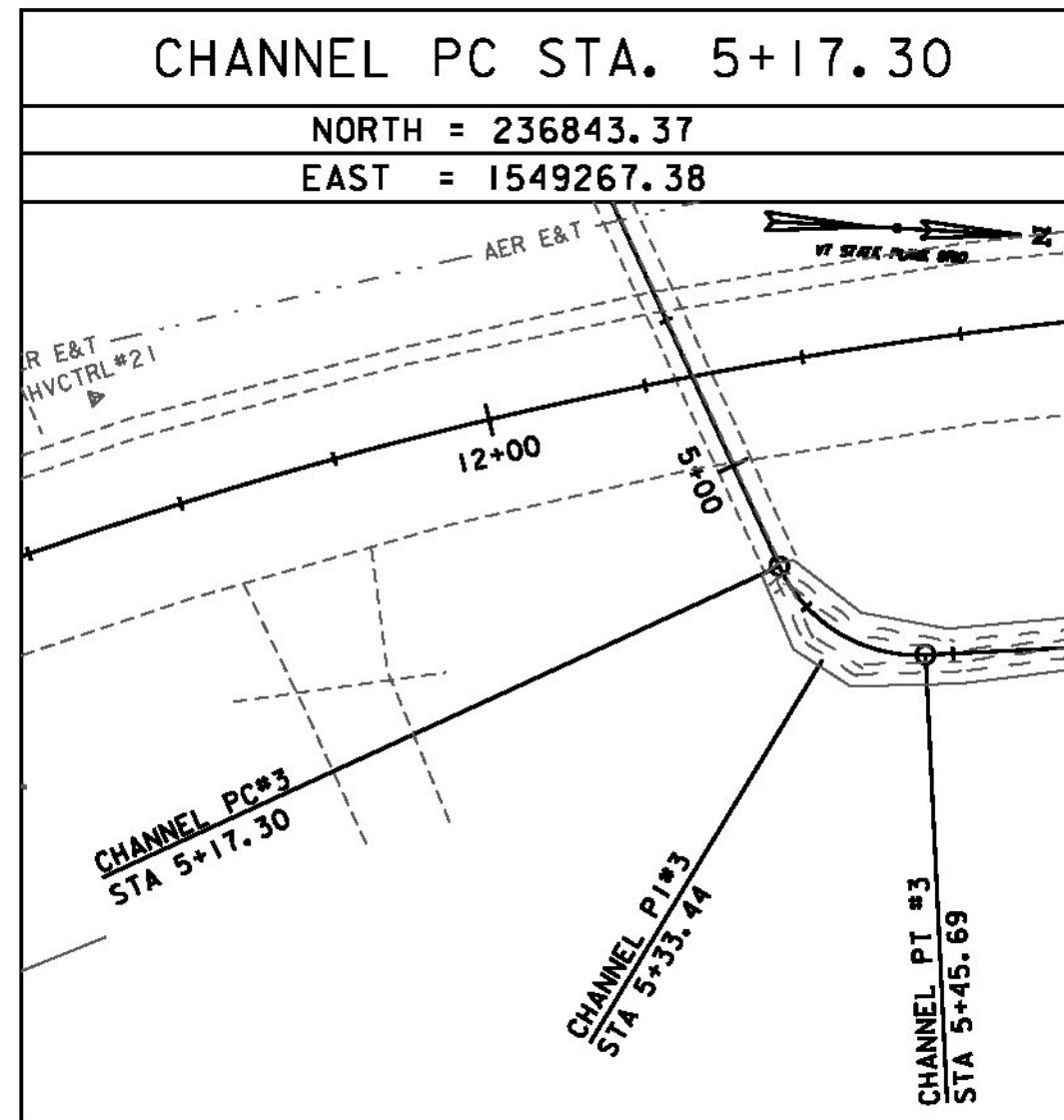
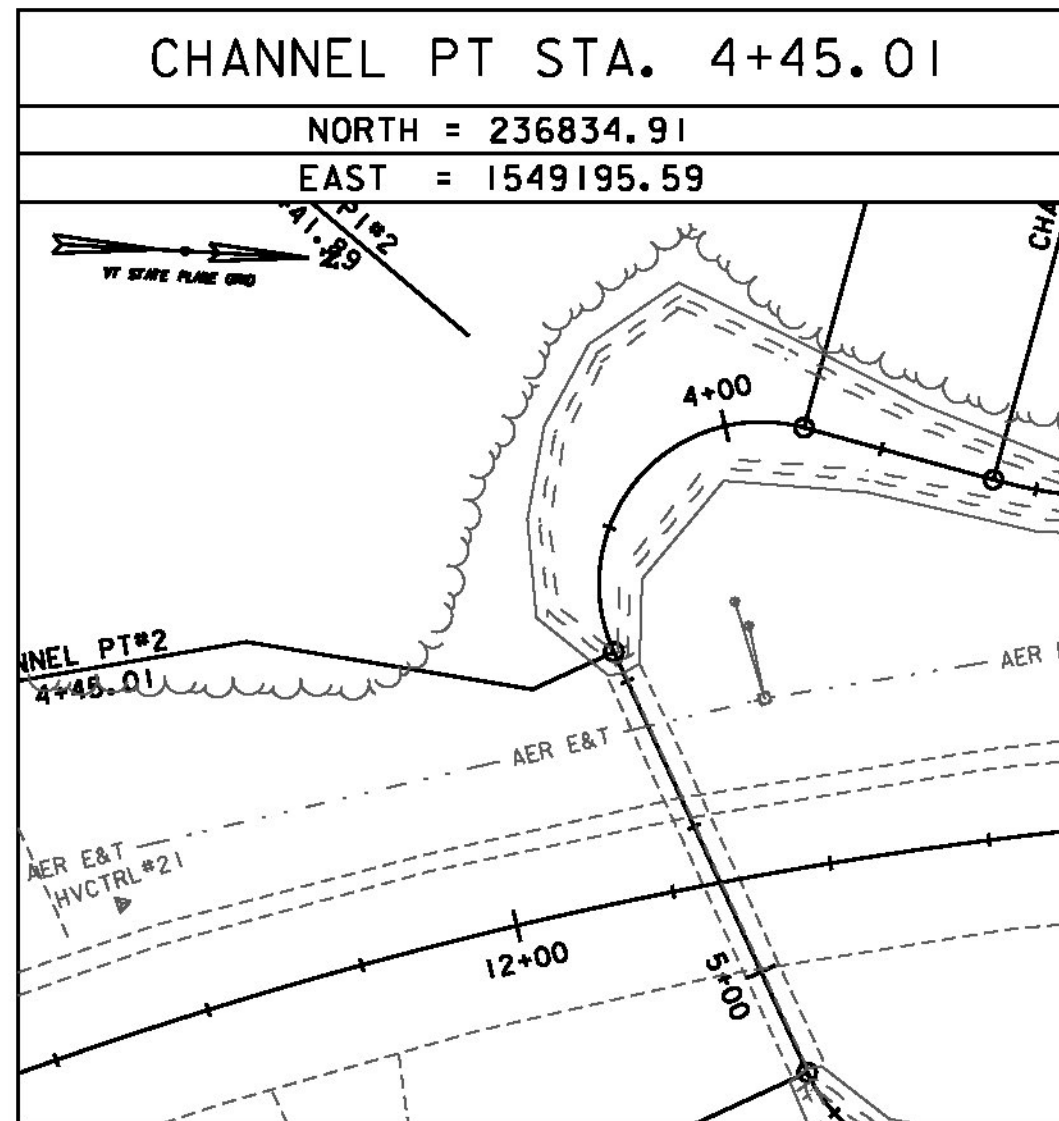
GREEN INTERNATIONAL AFFILIATES, INC.  
 CIVIL AND STRUCTURAL ENGINEERS

PROJECT NAME:	JAMAICA	PLOT DATE:	02/27/2015
PROJECT NUMBER:	ER STP 013-2(12)	DRAWN BY:	C. MORIN
FILE NAME:	Z12b474t1.dgn	CHECKED BY:	E. ATKINS
PROJECT LEADER:	E. ATKINS	TIE SHEET 1	SHEET 7 OF 48
DESIGNED BY:	C. MORIN		

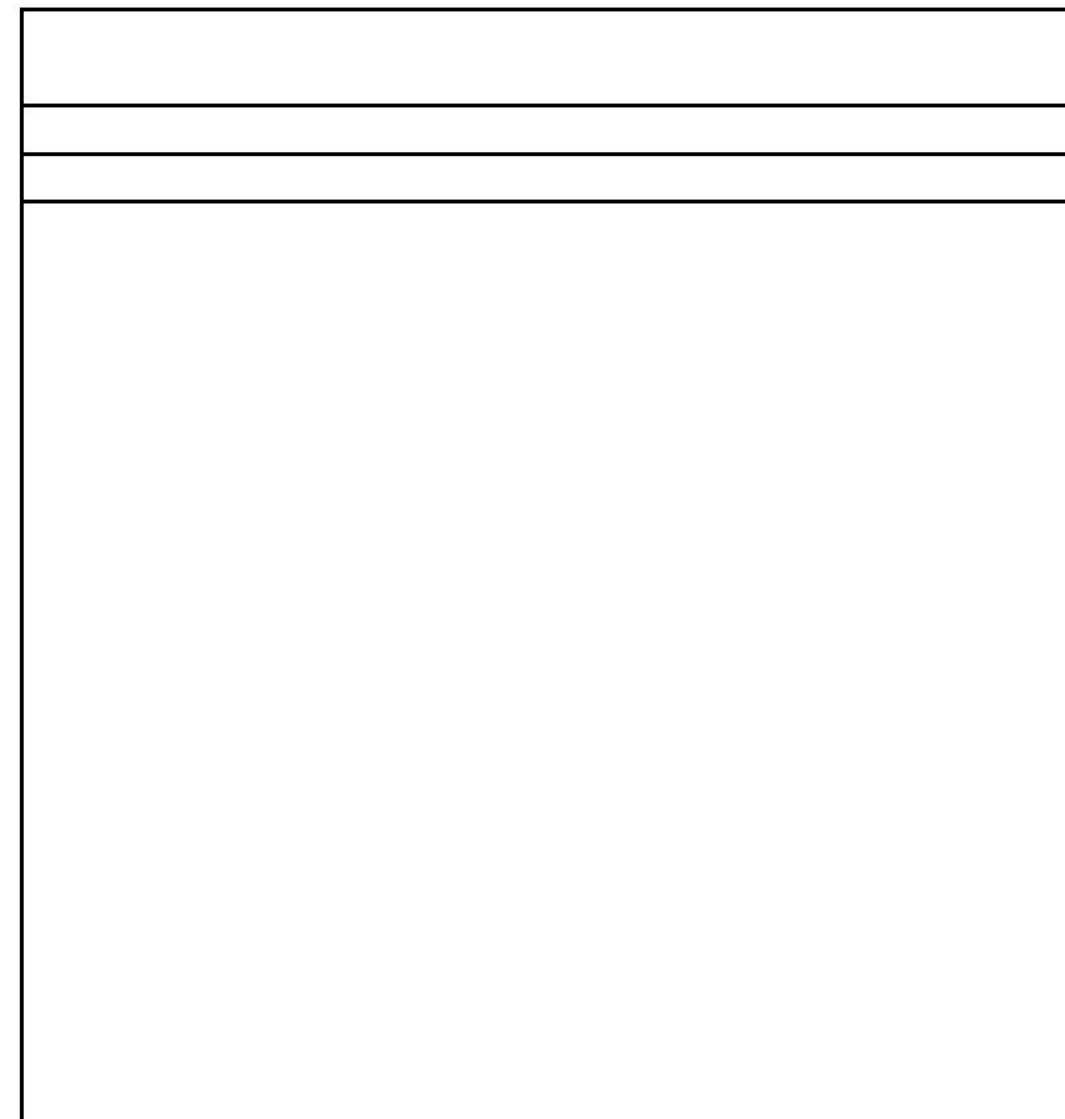
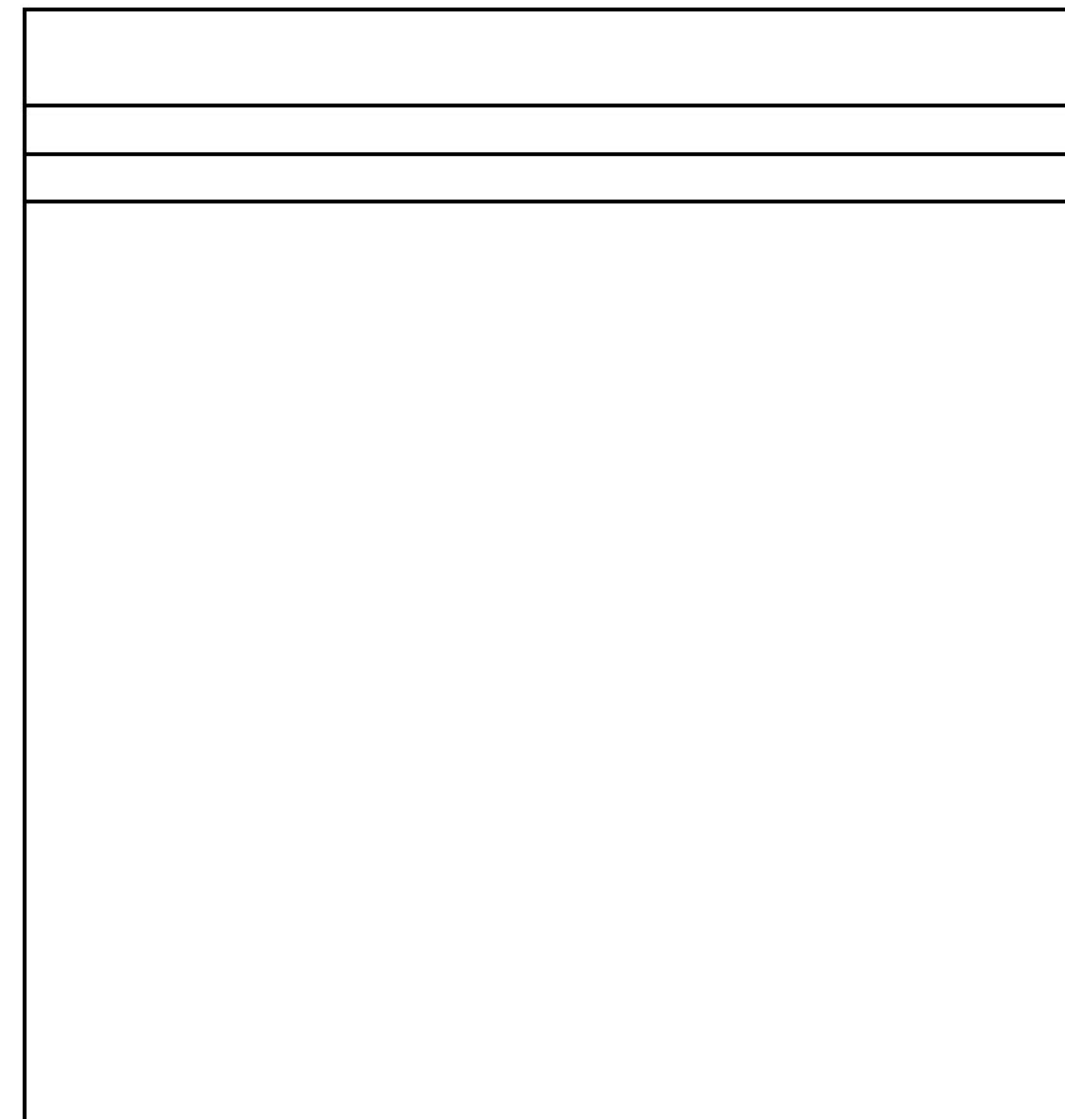
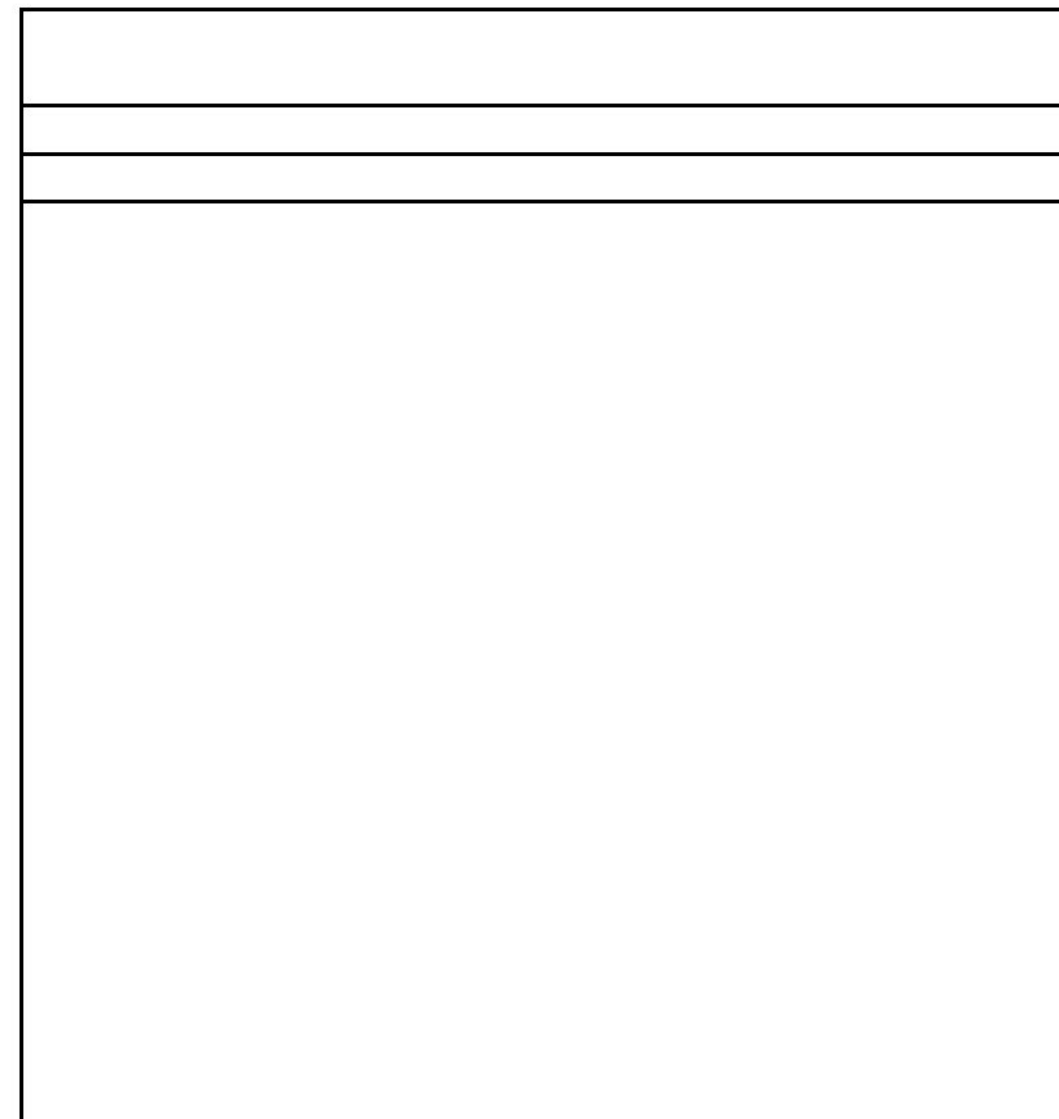
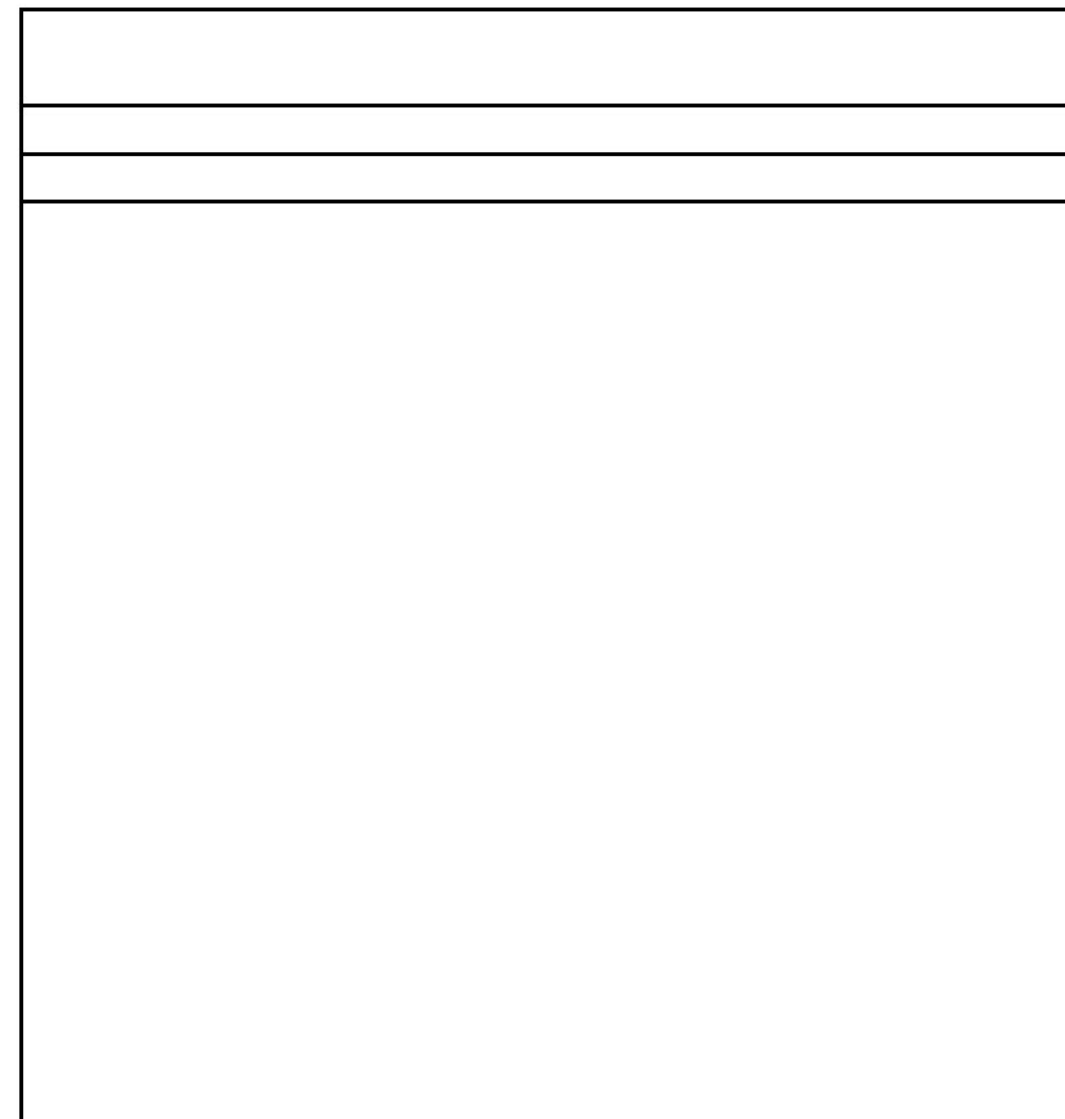
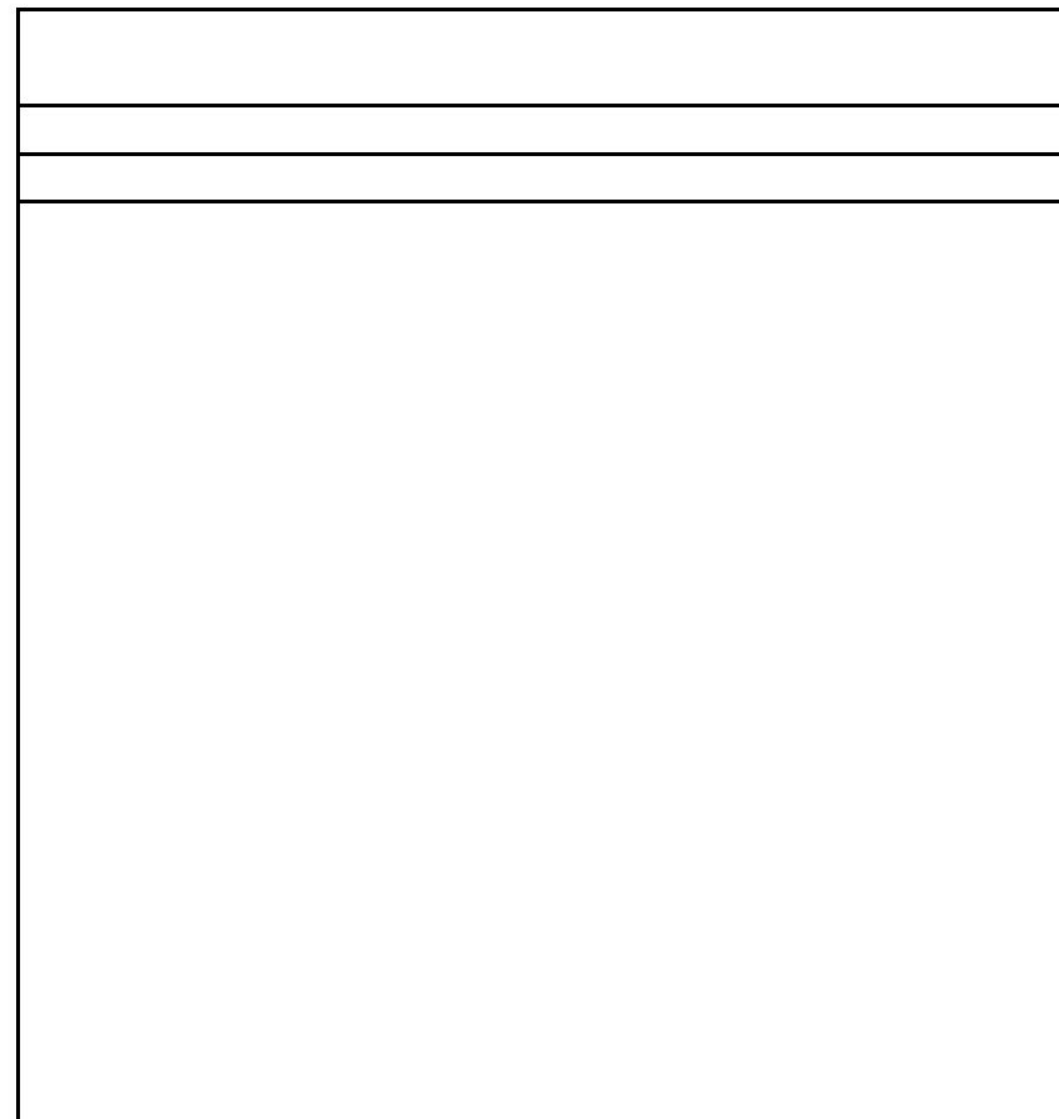
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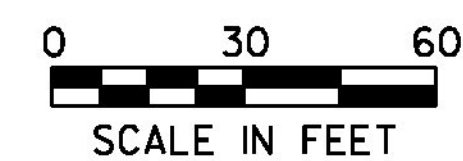
ALIGNMENT TIES



ALIGNMENT TIES



DATUM	
VERTICAL	NAVD 88(GEOD12A) FT
HORIZONTAL	NAD 83(2011) SFT
ADJUSTMENT	NONE



GREEN INTERNATIONAL AFFILIATES, INC.  
 CIVIL AND STRUCTURAL ENGINEERS

PROJECT NAME:	JAMAICA	PLOT DATE:	02/27/2015
PROJECT NUMBER:	ER STP 013-2(12)	DRAWN BY:	C. MORIN
FILE NAME:	Z12b474t1.dgn	CHECKED BY:	E. ATKINS
DESIGNED BY:	C. MORIN	TIE SHEET	8 OF 48

**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 kPa	CONSISTENCY
<12	Very Soft
12-24	Soft
24-48	Med. Stiff
48-96	Stiff
96-192	Very Stiff
>192	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 300 mm For:
  - 50.8 mm O.D. Sampler
  - 35.0 mm I.D. Sampler
  - Hammer Weight Of 63.5 kg.
  - Hammer Fall Of 762 mm
- 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 30.1mm
  - BX Core Size 42.0 mm
  - NX Core Size 54.7 mm
- 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 To Ledge Or Boulder
- NR No Recovery
- Rec. Recovery
- %Rec. Percent Recovery
- ROD Rock Quality Designation
- CBR California Bearing Ratio
- < Less Than
- > Greater Than
- R Refusal (N > 100)
- OW Indicates a temporary observation well installed

**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 > 304.8 mm.
- COBBLE** - Rock fragments with an average dimension between 76.2 and 304.8 mm.
- GRAVEL** - Rounded particles of rock < 76.2 mm and > 2 mm (#10 sieve).
- SAND** - Particles of rock < 2 mm (#10 sieve) and > 75 μm (#200 sieve).
- SILT** - Soil < 75 μm (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.
- CLAY** - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

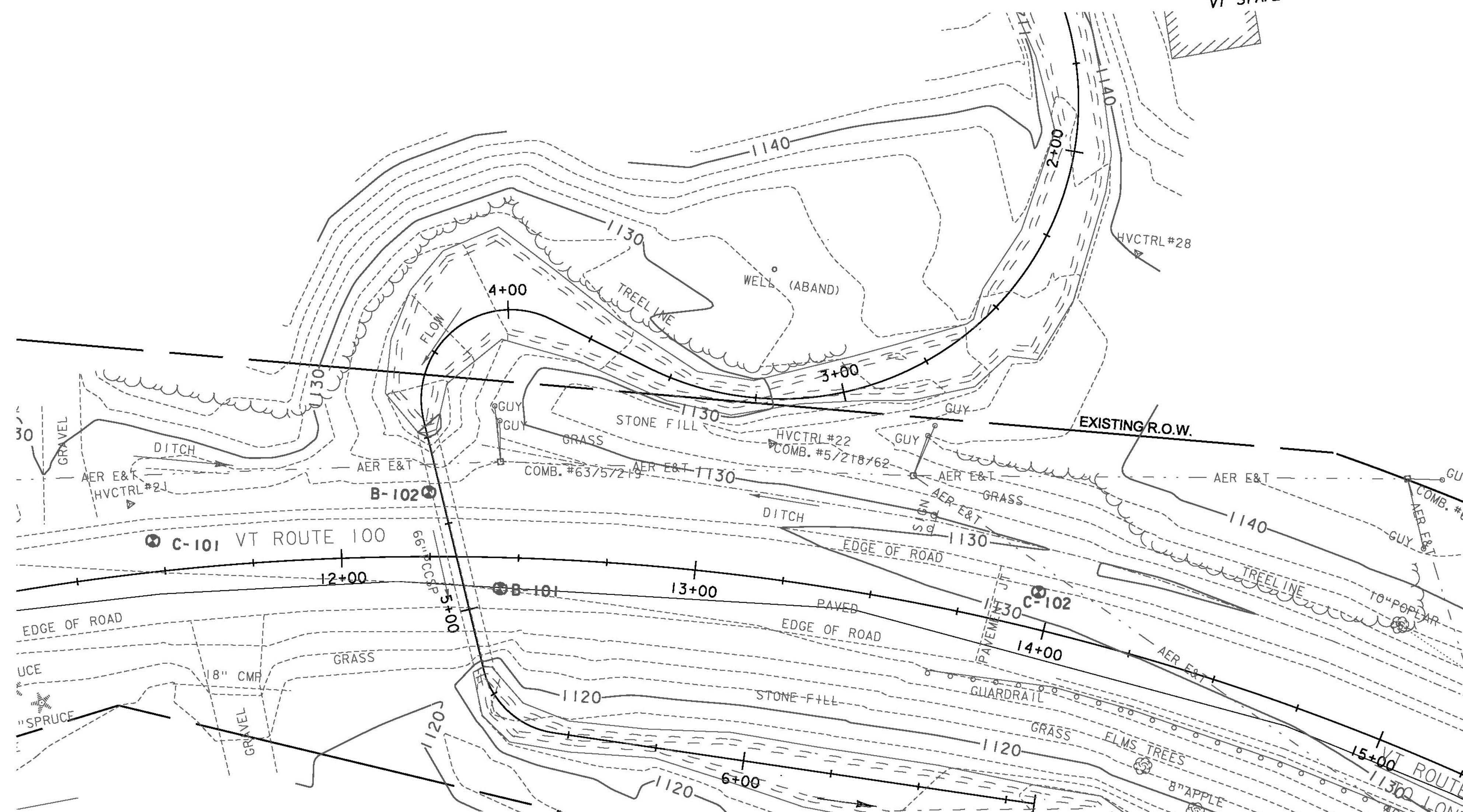
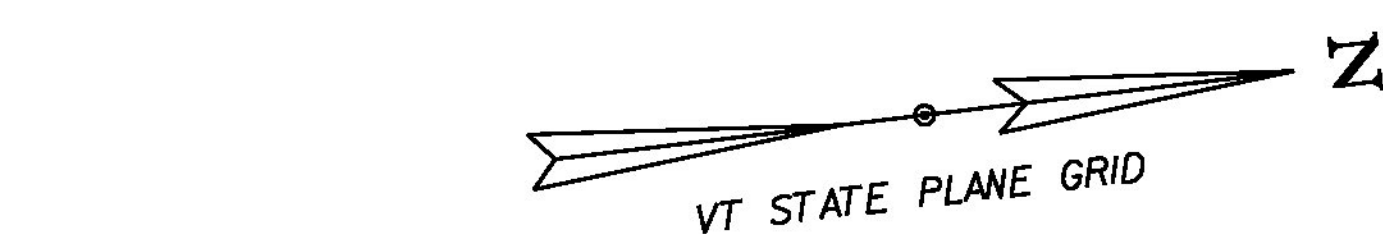
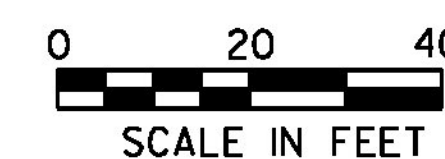
- VARVED** - Alternate layers of silt and clay.
- HARDPAN** - Extremely dense soil, cemented layer, not softened when wet.
- MUCK** - Soft organic soil (containing > 10% organic material).
- MOISTURE CONTENT** - Weight of water divided by dry weight of soil.
- FLOWING SAND** - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
- STRIKE** - Angle from magnetic north to line of intersection of bed with a horizontal plane.
- DIP** - Inclination of bed with a horizontal plane.

**GENERAL NOTES**

- The test borings shown herein were drilled by the Agency between 11/05/2013 and 11/06/2013.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.

4. Engineering judgement 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 judgement 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.



**BORING CHART**

HOLE NO.	STATION	OFFSET (ft)	NORTHING (FT)	EASTING (FT)	GROUND ELEVATION (FT)
B-101	VT ROUTE 100 12+45	8.8 RT	236850.73	1549245.39	1128.03
B-102	VT ROUTE 100 12+25	18.2 LT	236833.95	1549215.93	1128.84

**PAVEMENT CORE CHART**

HOLE NO.	STATION	OFFSET (ft)	NORTHING (FT)	EASTING (FT)	GROUND ELEVATION (FT)
C-101	VT ROUTE 100 11+47	8.8 LT	236754.87	1549220.36	1128.48
C-102	VT ROUTE 100 13+96	10.4 LT	237001.73	1549264.34	1130.38

PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474bor.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: M. BRADLEY  
BORING LAYOUT SHEET


PLOT DATE: 02/27/2015  
DRAWN BY: M. BRADLEY  
CHECKED BY: E. ATKINS  
SHEET 9 OF 48

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <b>B-101</b>		
		JAMAICA STP 013-2(12) VT-100 MM 3.8		Page No.: 1 of 1		Pin No.: 12B474		
		Checked By: MLM						
Boring Crew: DAIGNEAULT, JUDKINS		Type: WB	Casing: SS	Groundwater Observations				
Date Started: 11/05/13 Date Finished: 11/05/13		I.D.: 4 in	Sampler: 1.5 in	Date	Depth (ft)	Notes		
VTSPG NAD83: N 236850.73 ft E 1549245.39 ft		Hammer Wt: N.A.	140 lb.			No water to depth.		
Station: 12+45 Offset: 8.80		Hammer Fall: N.A.	30 in.					
Ground Elevation: 1128.03 ft		Hammer/Rod Type: Auto/AWJ						
		Rig: CME 45C SKID	C <sub>s</sub> = 1.33					
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Blows* (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.38 ft						
		A-2-4, SaSiGr, L/br, Moist, Rec. = 0.6 ft		17-23-24-18 (47)	5.6	45.2	26.1	28.7
		A-2-4, SiGrSa, br, Moist, Rec. = 1.0 ft		12-13-10-11 (23)	11.3	31.7	38.9	29.4
		A-2-4, GrSiSa, br, Moist, Rec. = 0.7 ft		16-7-8-5 (15)	13.6	22.3	47.7	30.0
		Visual Description: Broken Rock with silt & sand, br, Moist, Rec. = 0.3 ft, insufficient sample for testing.		6-7-25-10-11 (32)	8.3			
		Lab Note, Broken Rock with sand, br, MTW, Rec. = 0.8 ft, Lots of Broken Rock was within sample.		17-23-10-11 (33)	9.4	68.6	22.8	8.6
		Lab Note, Sample was mostly Broken Rock, L/gry, MTW, Rec. = 0.6 ft		44-29-12-13 (41)	8.0	78.5	15.4	6.1
		A-2-4, SiGrSa, Dk/br, MTW, Rec. = 0.4 ft		10-11-11-17 (22)	10.8	64.2	27.1	8.7
		A-1-a, SaGr, Dk/br, MTW, Rec. = 0.7 ft, Broken Rock was within sample.						
		APPROXIMATE BOTTOM OF FOOTING = 1111.20'						
		A-4, SaSi, gry, MTW, Rec. = 1.3 ft		12-18-17-29 (35)	17.0	6.8	40.8	52.4
		A-4, SaSi, gry, Moist, Rec. = 1.2 ft		36-47-10-11 (15)	10.9	10.4	39.3	50.3
		Hole stopped @ 26.2 ft						
		Remarks: 1. Lost water return at 9.0 ft. 2. Hole collapsed at 26.2 ft.						
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. *N Values have not been corrected for hammer energy. C <sub>s</sub> is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.								

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <b>B-102</b>		
		JAMAICA STP 013-2(12) VT-100 MM 3.8		Page No.: 1 of 1		Pin No.: 12B474		
		Checked By: MLM						
Boring Crew: DAIGNEAULT, JUDKINS		Type: WB	Casing: SS	Groundwater Observations				
Date Started: 11/06/13 Date Finished: 11/06/13		I.D.: 4 in	Sampler: 1.5 in	Date	Depth (ft)	Notes		
VTSPG NAD83: N 236833.95 ft E 1549215.93 ft		Hammer Wt: N.A.	140 lb.	11/06/13	8.2	While drilling.		
Station: 12+25 Offset: -18.20		Hammer Fall: N.A.	30 in.					
Ground Elevation: 1128.84 ft		Hammer/Rod Type: Auto/AWJ						
		Rig: CME 45C SKID	C <sub>s</sub> = 1.33					
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Blows* (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-1-b, SaGr, br, Moist, Rec. = 0.8 ft, Broken Rock was within sample.		13-11-17-18 (28)	4.5	58.8	24.6	16.6
		A-2-4, GrSa, br, Moist, Rec. = 1.6 ft		17-13-11-7 (24)	7.6	25.0	58.3	16.7
		Field Note: No Recovery		R@0.0'				
		A-1-b, SiSaGr, br, MTW, Rec. = 0.3 ft, Broken Rock was within sample.		5-2-2-5 (4)	14.4	42.5	37.4	20.1
		A-1-b, SiSaGr, br, Moist, Rec. = 0.7 ft, Lots of Broken Rock was within sample.		16-9-19-47 (28)	8.5	46.1	29.8	24.1
		A-1-b, SaGr, br, Moist, Rec. = 0.8 ft, Broken Rock was within sample.		34-33-11-7 (R)	8.7	44.9	38.8	16.3
		Visual Description: Broken Rock with sand, gry, Moist, Rec. = 0.2 ft, insufficient sample for testing.		R@3.5'				
		A-4, SaSi, gry, Moist, Rec. = 0.7 ft		8-5-4-9 (9)	18.6	12.1	39.1	48.8
		APPROXIMATE BOTTOM OF FOOTING = 1113.00'						
		A-4, SaSi, gry, Moist, Rec. = 1.3 ft		12-27-31-32 (58)	20.8	0.8	23.7	75.5
		Field Note: No Recovery		R@0.0'				
		Hole stopped @ 25.0 ft						
		Remarks: 1. Refusal at 25.0 feet. (10 blows/no movement)						
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. *N Values have not been corrected for hammer energy. C <sub>s</sub> is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.								

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <b>C-101</b>		
		JAMAICA STP 013-2(12) VT-100 MM 3.8		Page No.: 1 of 1		Pin No.: 12B474		
		Checked By: MLM						
Boring Crew: DAIGNEAULT, JUDKINS		Type: H.S.A.	Casing: SS	Groundwater Observations				
Date Started: 11/06/13 Date Finished: 11/06/13		I.D.: 3.25 in	Sampler: 1.5 in	Date	Depth (ft)	Notes		
VTSPG NAD83: N 236754.87 ft E 1549220.36 ft		Hammer Wt: N.A.	140 lb.			No water to depth.		
Station: 11+47 Offset: -8.80		Hammer Fall: N.A.	30 in.					
Ground Elevation: 1128.48 ft		Hammer/Rod Type: Auto/AWJ						
		Rig: CME 45C SKID	C <sub>s</sub> = 1.33					
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Blows* (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.57 ft						
		A-1-b, SaGr, br, Moist, Rec. = 1.4 ft, Broken Rock was within sample.		24-36-25-15 (61)	3.3	44.2	37.3	18.5
		A-2-4, SiSa, br, Moist, Rec. = 0.7 ft		15-30-11-8 (41)	4.9	18.2	57.8	24.0
		Hole stopped @ 5.0 ft						
		Remarks: 1. Hole did not collapse.						
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. *N Values have not been corrected for hammer energy. C <sub>s</sub> is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.								

PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)  
FILE NAME: z12b474bor.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: M. BRADLEY  
BORING LOG SHEET 1  
PLOT DATE: 02/27/2015  
DRAWN BY: M. BRADLEY  
CHECKED BY: E. ATKINS  
SHEET 10 OF 48

 STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION	<b>BORING LOG</b>		Boring No.: <b>C-102</b>
	<b>JAMAICA</b> <b>STP 013-2(12)</b> <b>VT-100 MM 3.8</b>		Page No.: <b>1 of 1</b> Pin No.: <b>12B474</b> Checked By: <b>MLM</b>

Boring Crew: <b>DAIGNEAULT, JUDKINS</b>	Casing Sampler	Groundwater Observations	
Date Started: <b>11/06/13</b> Date Finished: <b>11/06/13</b>	Type: <b>H.S.A.</b>	Date	Depth (ft)
VTSPG NAD83: <b>N 237001.73 ft E 1549264.34 ft</b>	I.D.: <b>3.25 in 1.5 in</b>		Notes
Station: <b>13+96</b> Offset: <b>-10.40</b>	Hammer Wt: <b>N.A. 140 lb.</b>		No water to depth.
Ground Elevation: <b>1130.38 ft</b>	Hammer Fall: <b>N.A. 30 in.</b>		
	Hammer/Rod Type: <b>Auto/AWJ</b>		
	Rig: <b>CME 45C SKID C = 1.33</b>		

Depth (ft)	Strata (')	CLASSIFICATION OF MATERIALS (Description)	Revs/ft (C Value)	Moisture Content %	Gravel %	Sand %	Fines %
0.0 - 0.66		Asphalt Pavement, 0.0 ft - 0.66 ft					
0.66 - 1.1		A-1-a, SaGr, br, Moist, Rec. = 1.1 ft, Lots of Broken Rock was within sample.	22-27-29-22 (56)	2.8	55.0	30.4	14.6
1.1 - 1.7		A-2-4, SiGrSa, br, Moist, Rec. = 1.7 ft	14-17-17-17 (35)	6.7	32.9	38.1	29.0
5.0		Hole stopped @ 5.0 ft					
Remarks: 1. Hole did not collapse.							

Notes:  
 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
 2. N Values have not been corrected for hammer energy, C is the hammer energy correction factor.  
 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 JAMAICA STP 013-2(12) VERMONT AOT/CBT 1/27/13

PROJECT NAME: <b>JAMAICA</b>	PLOT DATE: <b>02/27/2015</b>
PROJECT NUMBER: <b>ER STP 013-2(12)</b>	DRAWN BY: <b>M. BRADLEY</b>
FILE NAME: <b>z12b474bor.dgn</b>	CHECKED BY: <b>E. ATKINS</b>
PROJECT LEADER: <b>E. ATKINS</b>	SHEET <b>II</b> OF <b>48</b>
DESIGNED BY: <b>M. BRADLEY</b>	
BORING LOG SHEET <b>2</b>	



# QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES								TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES				
						ROADWAY	EROSION CONTROL	BRIDGE (STA. 12+32.46)	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	-	1254 CY		VT ROUTE 100
						1300				1300		CY	COMMON EXCAVATION	203.15	46	46 CY		ROUNDING
						440				440		CY	UNCLASSIFIED EXCAVATION	203.17	21	1300 CY		TOTAL
						950				950		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27	4			UNCLASSIFIED EXCAVATION
						1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	-	419 CY		CHANNEL
								620		620		CY	STRUCTURE EXCAVATION	204.25	22	21 CY		ROUNDING
								475		475		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	3	440 CY		TOTAL
						425				425		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10	18			UNCLASSIFIED CHANNEL EXCAVATION
						680				680		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35	21	946 CY		CHANNEL
						13				13		CY	AGGREGATE SHOULDERS, IN PLACE	402.10	1	4 CY		ROUNDING
						5				5		CWT	EMULSIFIED ASPHALT	404.65	0.7	950 CY		TOTAL
						1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50	-			STRUCTURE EXCAVATION
								75		75		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34	2	598 CY		BRIDGE
								10500		10500		LB	REINFORCING STEEL, LEVEL I	507.11	140	22 CY		ROUNDING
								6		6		GAL	WATER REPELLENT, SILANE	514.10	0.6	620 CY		TOTAL
								1		1		LS	PRECAST CONCRETE STRUCTURE (10'-0" x 7'-0" x 63'-0" BOX)	540.10	-			GRANULAR BACKFILL FOR STRUCTURES
						2				2		MGAL	DUST CONTROL WITH WATER	609.10	0.1	472 CY		BRIDGE
						0.5				0.5		TON	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15	0.03	3 CY		ROUNDING
							375			375		CY	STONE FILL, TYPE I	613.10	22	475 CY		TOTAL
							125			125		CY	STONE FILL, TYPE III	613.12	14			SUBBASE OF DENSE GRADED CRUSHED STONE
						150				150		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20	-	659 CY		VT ROUTE 100
						100				100		LF	STEEL BEAM GUARDRAIL, GALVANIZED/NESTED	621.206	6.25	21 CY		ROUNDING
						1				1		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60	-	680 CY		TOTAL
						37.5				37.5		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80	-			PERMANENT EROSION CONTROL
								80		80		TON	CRUSHED STONE BEDDING	629.54	6	375 CY		STONE FILL, TYPE I
						40				40		HR	UNIFORMED TRAFFIC OFFICERS	630.10	EST.	125 CY		STONE FILL, TYPE III
						250				250		HR	FLAGGERS	630.15	EST.	2100 SY		GEOTEXTILE UNDER STONE FILL
										1		LS	FIELD OFFICE, ENGINEERS	631.10	-	50 LB		SEED
										1		LS	TESTING EQUIPMENT, CONCRETE	631.16	-	50 CY		SPECIAL PROVISION
										1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17	-	1000 CY		(STONE FILL, CULVERT LINING)
									3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26	-			SPECIAL PROVISION
						1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11	-			(STONE FILL, CHANNEL ARMORING)
						825				825		LF	4 INCH WHITE LINE	646.20	5			
						825				825		LF	4 INCH YELLOW LINE	646.21	5			
						825				825		LF	TEMPORARY 4 INCH WHITE LINE	646.600	5			
						825				825		LF	TEMPORARY 4 INCH YELLOW LINE	646.610	5			
							2100			2100		SY	GEOTEXTILE UNDER STONE FILL	649.31	42			
							250			250		SY	GEOTEXTILE FOR SILT FENCE	649.51	8			
							50			50		LB	SEED	651.15	29			
							50			50		LB	SEED, WINTER RYE	651.17	29			

PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER STP 013-2(12)  
 FILE NAME: z12b474qty.dgn  
 PROJECT LEADER: E. ATKINS  
 DESIGNED BY: M. BRADLEY  
 QUANTITY SHEET 1  
 PLOT DATE: 02/27/2015  
 DRAWN BY: M. BRADLEY  
 CHECKED BY: E. ATKINS  
 SHEET 12 OF 48



# QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES								TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES				
						ROADWAY	EROSION CONTROL	BRIDGE (STA. 12+32.46)	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							100			100		LB	FERTILIZER	651.18	12			TEMPORARY EROSION CONTROL
							0.4			0.4		TON	AGRICULTURAL LIMESTONE	651.20	0.05			250 SY GEOTEXTILE FOR SILT FENCE
							0.4			0.4		TON	HAY MULCH	651.25	0.05			50 LB SEED, WINTER RYE
							95			95		CY	TOPSOIL	651.35	1			0.4 TON HAY MULCH
							700			700		SY	GRUBBING MATERIAL	651.40	37			1100 SY TEMPORARY EROSION MATTING
							1			1		LS	EPSC PLAN	652.10	-			SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)
							40			40		HR	MONITORING EPSC PLAN	652.20	EST.			171 TON TYPE IIS - INTERMEDIATE COURSE
							1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30	-			146 TON TYPE IIS - BASE COURSE
							1100			1100		SY	TEMPORARY EROSION MATTING	653.20	8			114 TON TYPE IVS - WEARING COURSE
							8			8		CY	TEMPORARY STONE CHECK DAM, TYPE I	653.25	0.4			19 TON ROUNDING
							50			50		CY	VEHICLE TRACKING PAD	653.35	2			450 TON TOTAL
							1250			1250		LF	PROJECT DEMARCATION FENCE	653.55	44			
						17				17		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341	-			
						2				2		EACH	REMOVING SIGNS	675.50	-			
						2				2		EACH	ERECTING SALVAGED SIGNS	675.60	-			
						12				12		EACH	DELINEATOR WITH STEEL POST	676.10	-			
							1000			1000		CY	SPECIAL PROVISION (STONE FILL, CHANNEL ARMORING)	900.608	-			
							50			50		CY	SPECIAL PROVISION (STONE FILL, CULVERT LINING)	900.608	-			
						1				1		LS	SPECIAL PROVISION (CPM SCHEDULE)	900.645	-			
							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 (INCENTIVE/DISINCENTIVE)(N.A.B.I.)	900.650	-			
						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	-			
						450				450		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680	19			

PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER STP 013-2(12)  
 FILE NAME: z12b474qty.dgn  
 PROJECT LEADER: E. ATKINS  
 DESIGNED BY: M. BRADLEY  
 QUANTITY SHEET 2  
 PLOT DATE: 02/27/2015  
 DRAWN BY: M. BRADLEY  
 CHECKED BY: E. ATKINS  
 SHEET 13 OF 48







# RIGHT - OF - WAY DETAIL SHEET

TABLE OF PROPERTY ACQUISITION

PARCEL NO.	PROPERTY OWNER	ROW LAYOUT NO.	BEGINNING STATION	ENDING STATION	TAKE	REMAINDER	RIGHT			RECORDING DATA				REMARKS
					AREA±	AREA±	TYPE	T / P	AREA ±	TITLE	DATE	TOWN / CITY	BOOK	
1	COLEMAN, NELSON W. & ELIZABETH B.	1	11+75 LT	14+04 LT			INSTALL & MAINTAIN	P						GUY WIRE & ANCHOR
			11+92 LT	14+04 LT			CONSTRUCTION	T	7,660 SF					INCL. PDF, EC, STREAM BY-PASS PUMP & PIPE
			12+02 LT	12+70 LT			SLOPE	T	1,150 SF					
			12+05.74 LT	12+83.90 LT			CHANNEL	P	1,830 SF					INCL. STONE FILL & EC
			13+24.89 LT	13+87.89 LT			CHANNEL	P	520 SF					INCL. STONE FILL & EC
2	DOMENCK, VICTORIA T. & JOSEPH A.	1	12+30 RT	13+98 RT			CONSTRUCTION	T	1,060 SF					INCL. PDF
			12+56.88 RT	13+01.35 RT			CHANNEL	P	48 SF					INCL. STONE FILL
3	GREEN MOUNTAIN POWER CORPORATION		11+75 LT	14+04 LT										UTILITY
4	TELEPHONE OPERATING COMPANY OF VERMONT, LLC		11+75 LT	14+04 LT										UTILITY
5	SOUTHERN VERMONT CABLE COMPANY		11+75 LT	14+04 LT										UTILITY

TABLE OF REVISIONS

REVISION NO.	ROW SET SHEET #	DESCRIPTION	DATE
1	4	GENERAL CONSTRUCTION DESIGN	09/16/14
		CHANGE. BOX CULVERT SHORTENED.	
		DOES NOT AFFECT ANY PROPERTY OWNERS.	
		BY: MT C.O. 9928 APPR. BY: RC	

APPROVED: RYAN CLOUTIER DATE: 08-07-14  
CHIEF, PLANS & TITLES

PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474rowbdr.dgn PLOT DATE: 02/27/2015  
PROJECT LEADER: P. LIBBY DRAWN BY: M. TROTTIER  
DESIGNED BY: M. TROTTIER CHECKED BY: T. POLK  
R.O.W. DETAIL SHEET SHEET 16 OF 48

COLD PLANING, BITUMINOUS PAVEMENT  
 10+37.5 - 11+00.0  
 13+85.0 - 14.47.5

STONE FILL, TYPE I  
 12+16.4 RT - 13.79.6 RT  
 12+38.7 LT - 12+76.7 LT (DITCH)

STEEL BEAM GUARDRAIL, GALVANIZED  
 11+75.8 RT - 11+89.8 RT  
 12+83.4 RT - 14+08.4 RT

STEEL BEAM GUARDRAIL GALVANIZED/NESTED  
 11+89.7 RT - 12+83.4 RT

ANCHOR FOR STEEL BEAM RAIL  
 11+75.8 RT (SD GI-D)

REMOVAL AND DISPOSAL OF GUARDRAIL  
 13+69.6 RT - 14+08.4 RT

4 INCH WHITE LINE  
 10+37.5 LT - 14+47.5 LT, 410 FT (EDGE LINE)  
 10+37.5 RT - 14+47.5 RT, 410 FT (EDGE LINE)

4 INCH YELLOW LINE  
 10+37.5 - 14+47.5, 820 FT (DOUBLE CENTER LINE)

REMOVING SIGNS  
 12+28.8 LT  
 12+36.9 RT

ERECTING SALVAGED SIGNS  
 12+28.8 LT  
 12+36.9 RT

DELINEATOR WITH STEEL POST  
 10+39.5 LT (TYPE III) BACK TO BACK  
 11+10.0 LT (TYPE III) BACK TO BACK  
 11+85.0 LT (TYPE III) BACK TO BACK  
 12+60.0 LT (TYPE III) BACK TO BACK  
 13+35.0 LT (TYPE III) BACK TO BACK  
 14+10.0 LT (TYPE III) BACK TO BACK

SPECIAL PROVISION  
 (STONE FILL, TYPE II, STREAM BED MATERIAL)  
 4+46.8 RT - 5+18.3 RT (CULVERT)

SPECIAL PROVISION  
 (STONE FILL, TYPE III, STREAM BED MATERIAL)  
 12+29.4 RT - 13+80.3 RT  
 2+50.0 LT - 4+46.8 LT  
 3+98.2 RT - 4+46.8 RT

**BEGIN R.O.W. PROJECT  
 JAMAICA STP 013-2 (12)  
 STA. 11+75, 59.01' LT**

**COLEMAN, NELSON W.  
 & ELIZABETH B.**

**END R.O.W. PROJECT  
 JAMAICA STP 013-2 (12)  
 STA. 14+04, 86.21' LT**

STATE OF VERMONT  
 EXISTING R.O.W.  
 PROJECT S73 (1), 1955

N 236663.23  
 E 1549279.16  
 10+50.00, 44.59' RT

N 236739.73  
 E 1549265.44  
 11+31.93, 36.23' RT

N 237089.04  
 E 1549235.06  
 14+61.35, 71.52' LT

N 237055.68  
 E 1549382.23  
 14+98.79, 74.74' LT

- EXISTING DRAINAGE**
- 1 12+24.1 LT - 12+40.6 RT  
 EXISTING PIPE - REMOVE
  - 2 11+48.7 RT - 11+83.4 RT  
 EXISTING 18" CMP - RETAIN

**DOMENICK, VICTORIA T.  
 & JOSEPH A.**

MAINLINE CURVE #1	CHANNEL CURVE #1	CHANNEL CURVE #2	CHANNEL CURVE #3
DELTA = 53°03'00.00"	DELTA = 134°21'20"	DELTA = 130°02'23"	DELTA = 68°05'35"
D = 7°59'35.78"	D = 68°07'48"	D = 226°08'05"	D = 239°48'51"
R = 716.80'	R = 84.10'	R = 25.34'	R = 23.89'
T = 342.28'	T = 199.84'	T = 54.38'	T = 16.14'
L = 638.66'	L = 197.20'	L = 57.51'	L = 28.39'
E = 77.53'	E = 132.72'	E = 34.66'	E = 4.94'
BANK = NA			

NOTE: ADJUST CENTERLINE AND EDGELINE PAVEMENT MARKINGS TO MATCH TO EXISTING AT BEG/END APPROACH

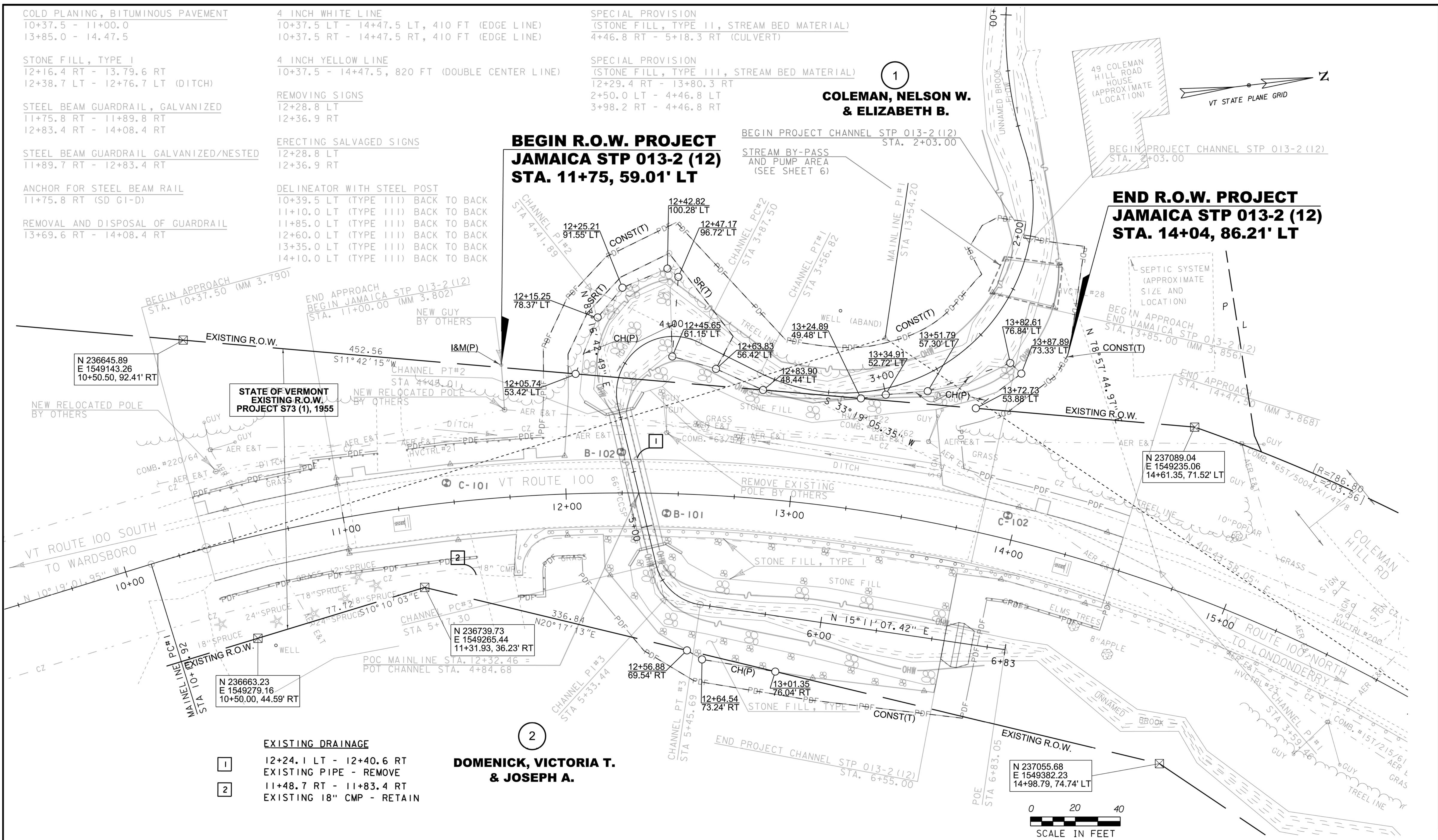
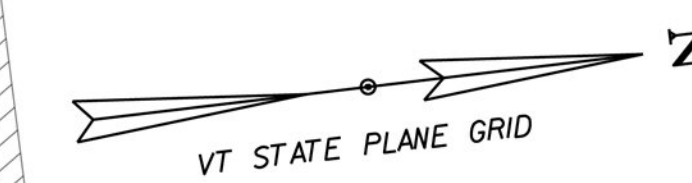
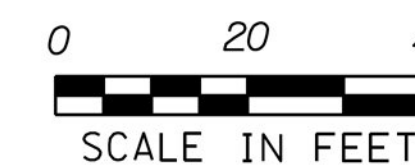
**FOR R.O.W.  
 USE ONLY**

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.

PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474rowbdr.dgn  
 PROJECT LEADER: P. LIBBY  
 DESIGNED BY: GREEN INTL. AFFIL.  
 R.O.W. PLAN SHEET

PLOT DATE: 02/27/2015  
 DRAWN BY: T. POLK  
 CHECKED BY: R. CLOUTIER  
 SHEET 17 OF 48



COLD PLANING, BITUMINOUS PAVEMENT  
 10+37.5 - 10+87.5  
 13+97.5 - 14+47.5

STONE FILL, TYPE I  
 12+16.4 RT - 13+79.6 RT  
 12+38.7 LT - 12+76.7 LT (DITCH)

STEEL BEAM GUARDRAIL, GALVANIZED  
 11+75.8 RT - 11+92.0 RT  
 12+85.8 RT - 14+06.6 RT

STEEL BEAM GUARDRAIL GALVANIZED/NESTED  
 11+92.0 RT - 12+85.8 RT

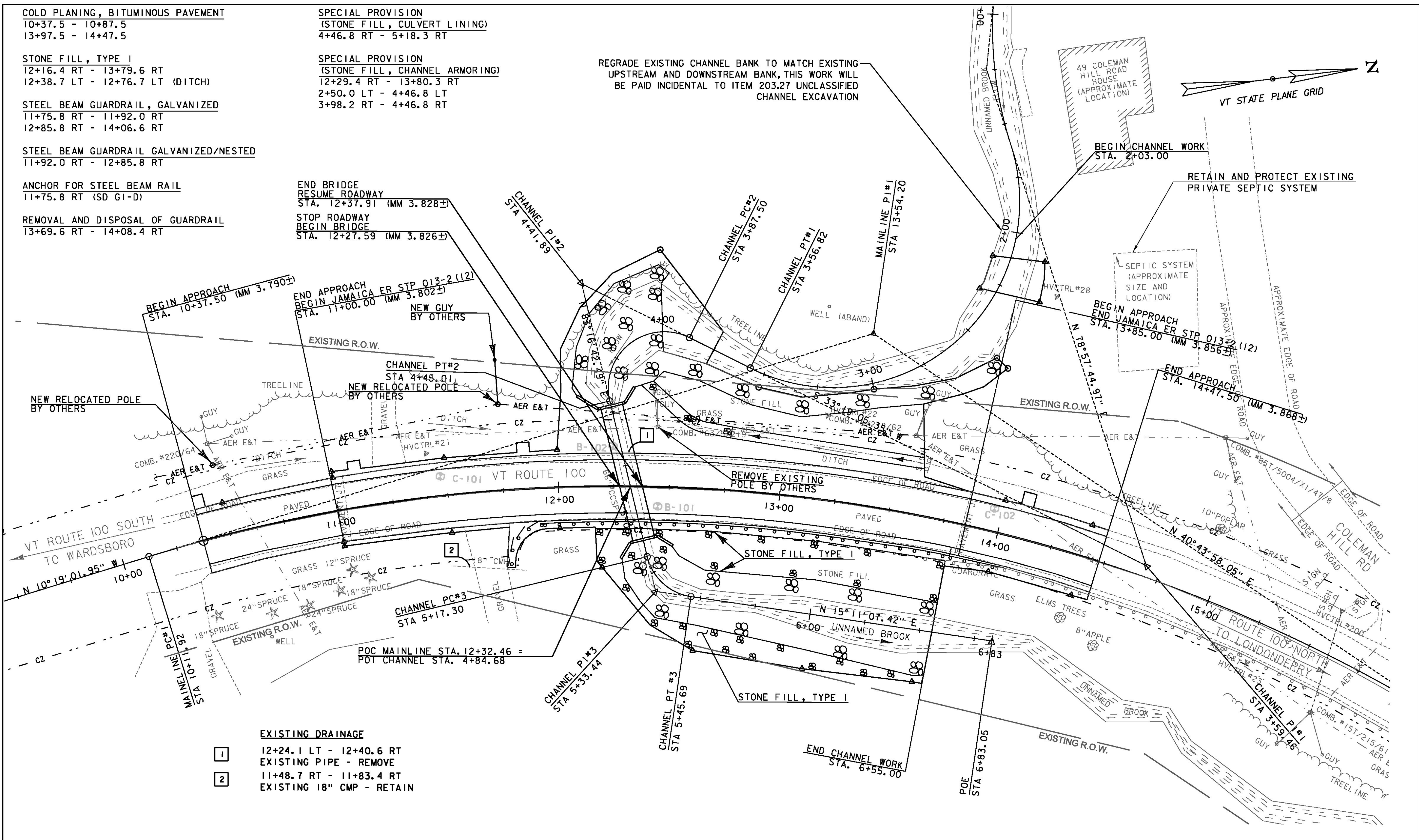
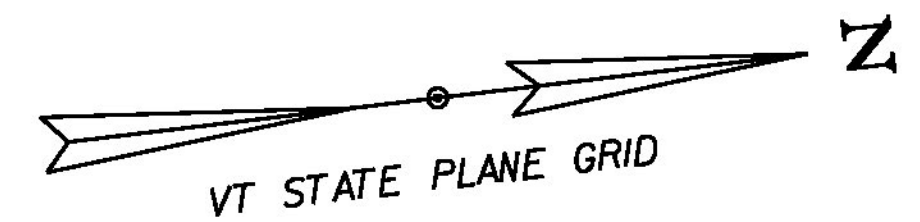
ANCHOR FOR STEEL BEAM RAIL  
 11+75.8 RT (SD G1-D)

REMOVAL AND DISPOSAL OF GUARDRAIL  
 13+69.6 RT - 14+08.4 RT

SPECIAL PROVISION  
 (STONE FILL, CULVERT LINING)  
 4+46.8 RT - 5+18.3 RT

SPECIAL PROVISION  
 (STONE FILL, CHANNEL ARMORING)  
 12+29.4 RT - 13+80.3 RT  
 2+50.0 LT - 4+46.8 LT  
 3+98.2 RT - 4+46.8 RT

REGRADE EXISTING CHANNEL BANK TO MATCH EXISTING  
 UPSTREAM AND DOWNSTREAM BANK. THIS WORK WILL  
 BE PAID INCIDENTAL TO ITEM 203.27 UNCLASSIFIED  
 CHANNEL EXCAVATION

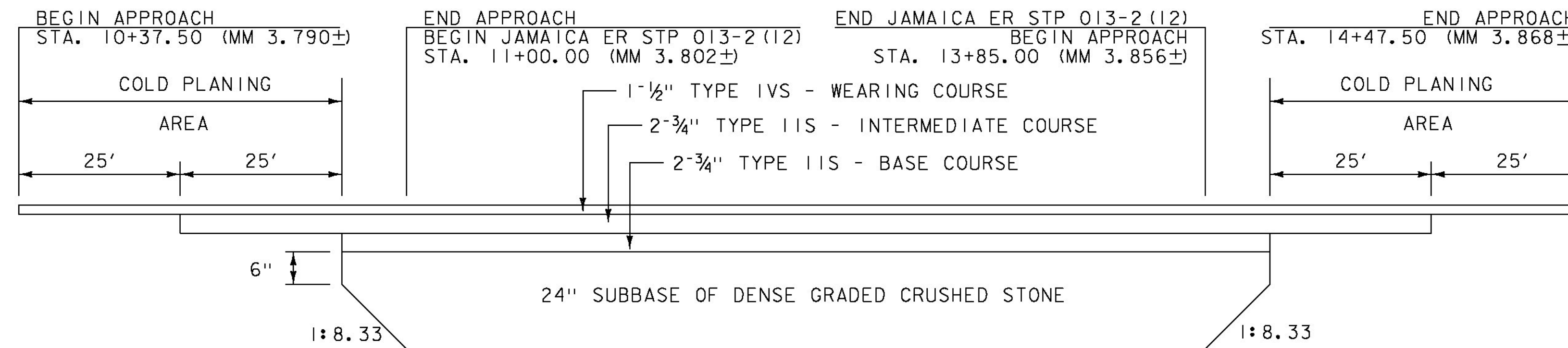


- EXISTING DRAINAGE**
- 1 12+24.1 LT - 12+40.6 RT  
EXISTING PIPE - REMOVE
  - 2 11+48.7 RT - 11+83.4 RT  
EXISTING 18" CMP - RETAIN



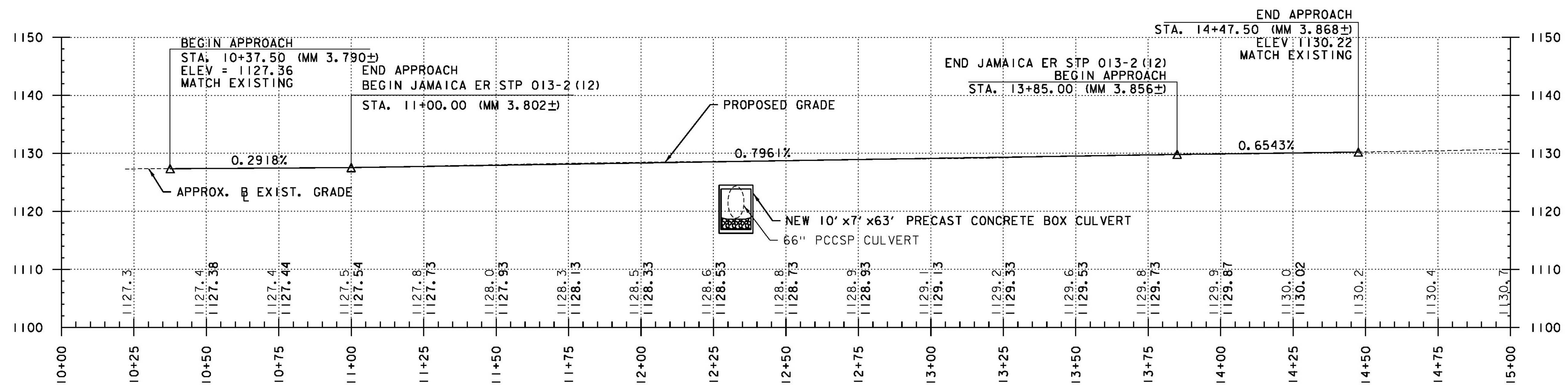
PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER STP 013-2(12)  
 FILE NAME: z12b474bdr.dgn  
 PROJECT LEADER: E. ATKINS  
 DESIGNED BY: M. BRADLEY  
 PLAN SHEET

PLOT DATE: 02/27/2015  
 DRAWN BY: M. BRADLEY  
 CHECKED BY: E. ATKINS  
 SHEET 18 OF 48



**MATERIAL TRANSITION DETAIL**  
NOT TO SCALE

**VT ROUTE 100**



NOTE:  
1. ALL STATIONS AND ELEVATIONS ARE SHOWN IN FEET.

THE GRADES SHOWN TO THE NEAREST TENTH ARE THE ORIGINAL GROUND APPROXIMATE ELEVATIONS ALONG THE PROPOSED ALIGNMENT. THE GRADES SHOWN TO THE NEAREST HUNDREDTH ARE THE PROPOSED PROFILE GRADES FOR THE NEW ALIGNMENT.



PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: Z12B474xsl.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: T. BIGELOW  
PROFILE SHEET

PLOT DATE: 02/27/2015  
DRAWN BY: T. BIGELOW  
CHECKED BY: E. ATKINS  
SHEET 19 OF 48

## **EROSION CONTROL NARRATIVE**

### **1.1 PROJECT DESCRIPTION**

THIS PROJECT INVOLVES REPLACEMENT OF AN EXISTING CULVERT WITH A 10X7 PRECAST CONCRETE BOX STRUCTURE WITH 452 FEET OF CHANNEL WORK AND MINIMAL ROADWAY WORK.

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 0.71 ACRES.

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

### **1.2 SITE INVENTORY**

#### **1.2.1 TOPOGRAPHY**

THE TOPOGRAPHY OF THE AREA IS A SLOPE THAT IS MOSTLY WELL ESTABLISHED FOREST WITH A FEW OPEN AREAS. VT ROUTE 100 RUNS THROUGH THE PROJECT SITE. THERE IS A RESIDENCE ON THE SOUTHEAST CORNER OF THE SITE WITH A GRAVEL DRIVE AND A RESIDENCE UP SLOPE ON THE NORTHWEST CORNER OF THE SITE.

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

THE UNNAMED MOUNTAIN BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK IS CLASSIFIED AS STEEP, ALLUVIAL, AND SINUOUS, WITH AN ARMORED CHANNEL AT THE SITE. THE STREAM BED CONSISTS OF GRAVEL, COBBLES AND BOULDERS. THE TRIBUTARY AREA AT THE CULVERT CROSSING IS 80 ACRES. DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE WILL RECEIVE RUNOFF WATER FROM NEARBY SLOPES.

#### **1.2.3 VEGETATION**

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING CULVERT. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE III 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 WINDHAM, VERMONT. SOILS ON THE PROJECT SITE ARE COLTON LOAMY FINE SAND, "K FACTOR" = 0.17 AND HOUGHTONVILLE FINE SANDY LOAM, "K FACTOR" = 0.49. THE SOIL IS CONSIDERED HIGHLY ERODIBLE DUE TO SIGNIFICANT SLOPES.

**NOTE:** K-VALUES GENERALLY INDICATE THE FOLLOWING:

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

#### **1.2.5 SENSITIVE RESOURCE AREAS**

CRITICAL HABITATS: NO  
HISTORICAL OR ARCHEOLOGICAL AREAS: NO  
PRIME AGRICULTURAL LAND: NO  
THREATENED AND ENDANGERED SPECIES: NO  
WATER RESOURCE: UNNAMED BROOK TRIBUTARY TO WINHALL RIVER  
WETLANDS: NO

### **1.3 RISK EVALUATION**

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

### **1.4 EROSION PREVENTION AND SEDIMENT CONTROL**

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

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

#### **1.4.1 MARK SITE BOUNDARIES**

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

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

#### **1.4.2 LIMIT DISTURBANCE AREA**

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

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

#### **1.4.3 SITE ENTRANCE/EXIT STABILIZATION**

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

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

#### **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.

THIS MEASURE IS NOT ANTICIPATED ON THIS PROJECT.

#### **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.

TEMPORARY STONE CHECK DAM, TYPE I SHALL BE INSTALLED AS SHOWN ON THE PLANS TO SLOW DOWN ANY CHANNELIZED RUNOFF FROM THE WORK AREA.

#### **1.4.7 CONSTRUCT PERMANENT CONTROLS**

PERMANENT STORMWATER EROSION CONTROL MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

SPECIAL PROVISION (STONE FILL, CHANNEL ARMORING), STONE FILL, TYPE I AND STONE FILL, TYPE III SHALL BE INSTALLED AS SHOWN ON THE PLANS.

#### **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.

THIS MEASURE IS NOT ANTICIPATED ON THIS PROJECT, WORK SHALL BE COMPLETED DURING THE LOW FLOW SEASON (JULY 1<sup>ST</sup> TO OCTOBER 1<sup>ST</sup>).

#### **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. 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.

SEE SHEET 6 FOR THE TEMPORARY RELOCATION OF STREAM DETAIL.

#### **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.

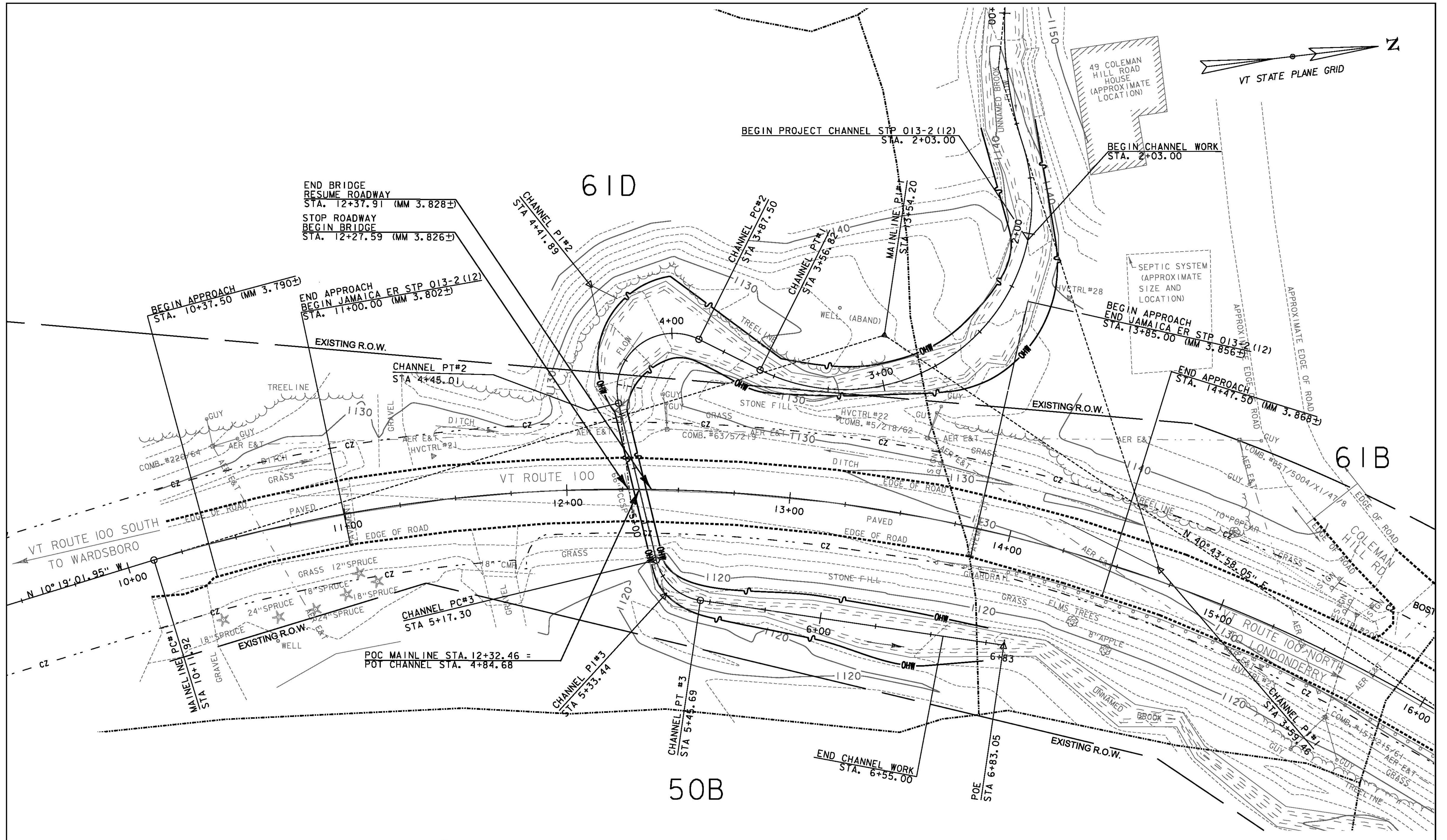
#### **1.5.1 OFF-SITE ACTIVITIES**

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.

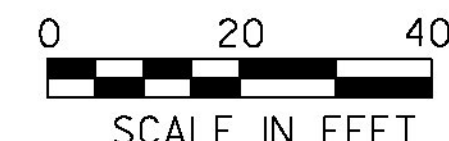
PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474ecnar.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: M. BRADLEY  
EPSC NARRATIVE

PLOT DATE: 02/27/2015  
DRAWN BY: M. BRADLEY  
CHECKED BY: E. ATKINS  
SHEET 20 OF 48



SOIL DESIGNATION	HYDROLOGIC SOIL GROUP CLASSIFICATION	SOIL ERODIBILITY COEFFICIENTS (K)
50B = COLTON LOAMY FINE SAND	A	0.17
61B =HOUGHTONVILLE FINE SANDY LOAM	B	0.49
61D =HOUGHTONVILLE FINE SANDY LOAM	B	0.49



GREEN INTERNATIONAL AFFILIATES, INC.  
CIVIL AND STRUCTURAL ENGINEERS

PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER STP 013-2(12)  
 FILE NAME: z12b474ecbdr.dgn  
 PROJECT LEADER: E. ATKINS  
 DESIGNED BY: M. BRADLEY  
 EPSC EXISTING CONDITIONS PLAN SHEET

PLOT DATE: 02/27/2015  
 DRAWN BY: M. BRADLEY  
 CHECKED BY: E. ATKINS  
 SHEET 21 OF 48

**GEOTEXTILE FOR SILT FENCE**

10+38 LT - 11+19 LT  
 11+32 LT - 11+91 LT  
 10+38 RT - 11+58 RT  
 11+75 RT - 12+07 RT  
 13+95 RT - 14+49 RT

**SEED**

11+00 LT - 13+84 LT  
 11+00 RT - 14+40 RT

**SEED, WINTER RYE**

11+00 LT - 13+84 LT  
 11+00 RT - 14+40 RT

**HAY MULCH**

11+00 LT - 13+84 LT  
 11+00 RT - 14+40 RT

**TOP SOIL**

11+00 LT - 13+84 LT  
 11+00 RT - 14+40 RT

**TEMPORARY EROSION MATTING**

12+00 LT - 13+65 LT  
 STONE FILL  
 SEE PLAN SHEET FOR  
 ADDITIONAL INFORMATION

**TEMPORARY STONE CHECK DAM, TYPE I**

6+51 LT - RT

**VEHICLE TRACKING PAD**

11+25  
 14+25

**PROJECT DEMARCATION FENCE**

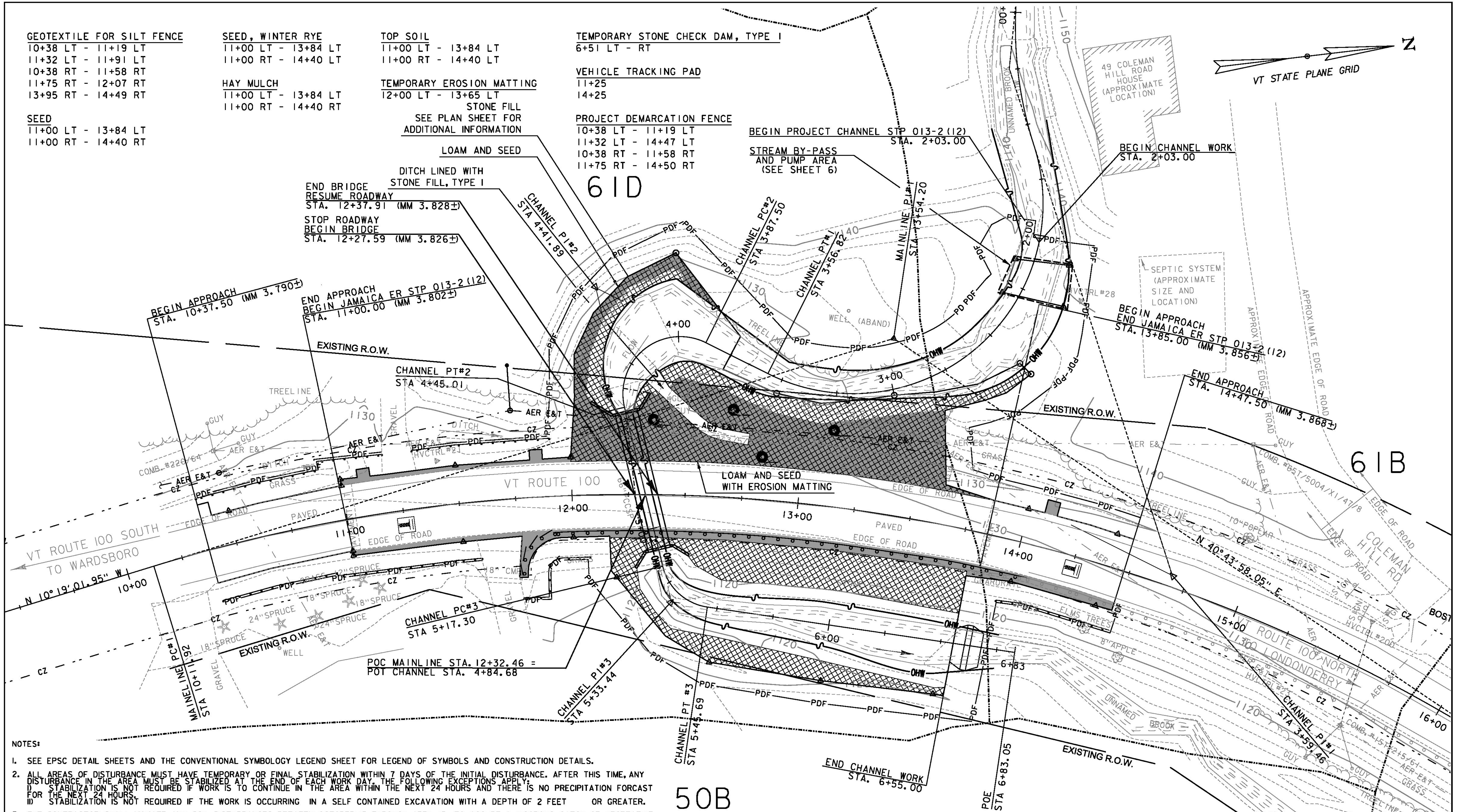
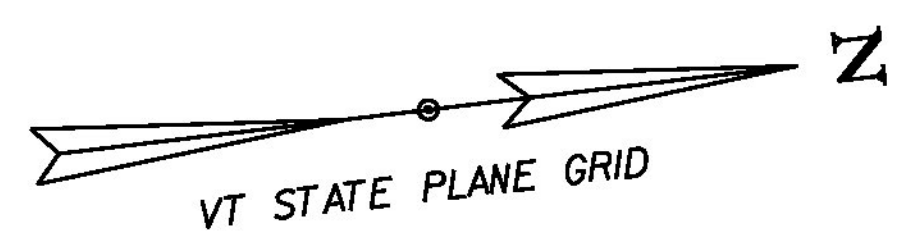
10+38 LT - 11+19 LT  
 11+32 LT - 14+47 LT  
 10+38 RT - 11+58 RT  
 11+75 RT - 14+50 RT

**BEGIN PROJECT CHANNEL STP 013-2 (12)**

STA. 2+03.00

**STREAM BY-PASS AND PUMP AREA (SEE SHEET 6)**

49 COLEMAN HILL ROAD HOUSE (APPROXIMATE LOCATION)



- NOTES:**
- SEE EPSC DETAIL SHEETS AND THE CONVENTIONAL SYMBOLY LEGEND SHEET FOR LEGEND OF SYMBOLS AND CONSTRUCTION DETAILS.
  - ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY OR FINAL STABILIZATION WITHIN 7 DAYS OF THE INITIAL DISTURBANCE. AFTER THIS TIME, ANY DISTURBANCE IN THE AREA MUST BE STABILIZED AT THE END OF EACH WORK DAY. THE FOLLOWING EXCEPTIONS APPLY:  
 (1) STABILIZATION IS NOT REQUIRED IF WORK IS TO CONTINUE IN THE AREA WITHIN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECAST FOR THE NEXT 24 HOURS.  
 (2) STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF CONTAINED EXCAVATION WITH A DEPTH OF 2 FEET OR GREATER.
  - THE CONTRACTOR SHALL MINIMIZE ANY SOIL DISTURBANCES BETWEEN OCTOBER 15 THROUGH APRIL 15, TO ASSURE A VIGOROUS CATCH OF VEGETATIVE COVER, SEEDING AND MULCHING SHALL BE COMPLETED BY SEPTEMBER 15 TO THE EXTENT POSSIBLE, OR AS DIRECTED BY THE ENGINEER.
  - THE ON-SITE PLAN COORDINATOR SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL STRUCTURES AND MEASURES AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND AS SOON AS POSSIBLE BUT NOT MORE THAN 24 HOURS AFTER ANY STORM EVENT. INSPECTION FREQUENCY MAY BE REDUCED TO LESS THAN ONE (1) PER MONTH IF THE ENTIRE SITE IS STABILIZED.
  - THE CONTRACTOR SHALL IMMEDIATELY ROUGHEN ALL DISTURBED SOIL SURFACES TO THE SATISFACTION OF THE ENGINEER BY THE USE OF TRACK DRIVEN BULLDOZERS, SHEEPSFOOT ROLLERS OR OTHER APPROVED METHODS.
  - THE CONTRACTOR SHALL APPLY DUST CONTROL MEASURES OVER EXPOSED SURFACES NOT INTENDED TO BE VEGETATED. THE CONTRACTOR SHALL INSTALL PERMANENT EROSION CONTROL MEASURES (I.E. CHECKDAMS, EROSION MATTING, STONE FILL FOR SLOPES AND DITCHES) IMMEDIATELY UPON COMPLETION OF GRADING.
  - THE LOCATIONS OF THE VEHICLE TRACKING PADS ARE SUGGESTED ONLY. THE CONTRACTOR SHALL DETERMINE ACTUAL LOCATIONS OF VEHICLE TRACKING PADS NEEDED TO PERFORM THE WORK.
  - ALL SEDIMENT AND EROSION PREVENTION CONTROL MEASURES SHALL BE COMPLETED AND IN PLACE BEFORE BEGINNING OF WORK.
  - SEE THE EPSC NARRATIVE FOR ADDITIONAL REQUIREMENTS.

**50B**

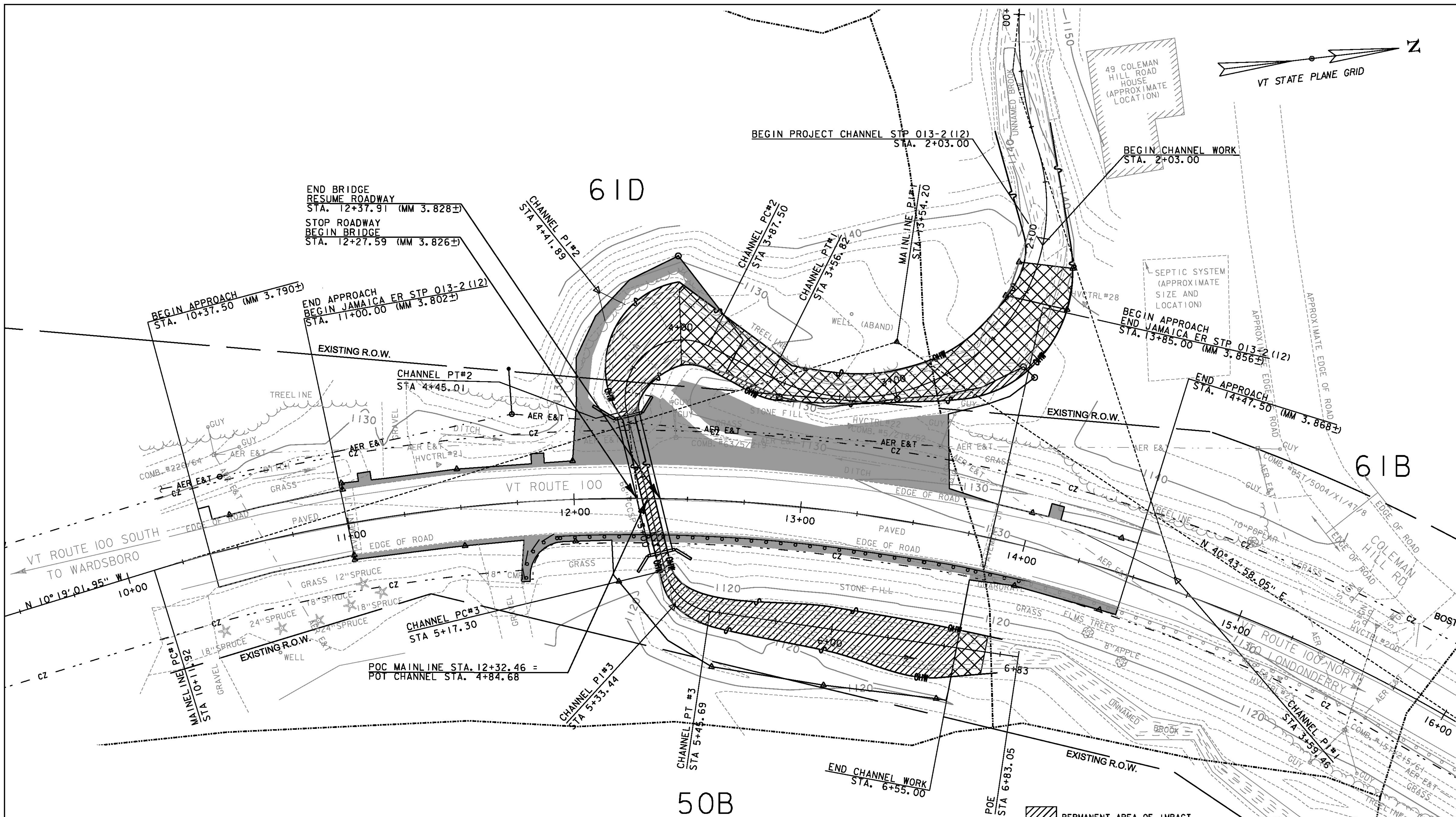
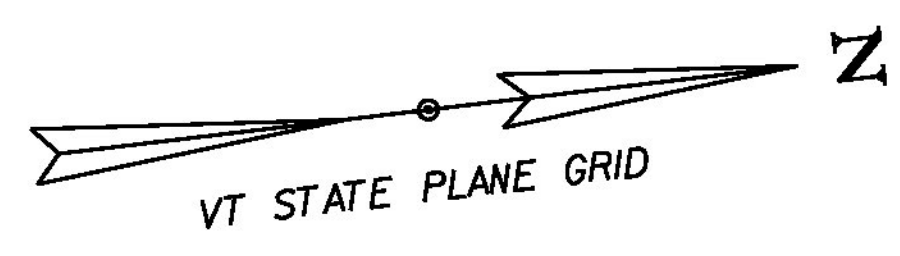
**IMPACT BELOW ORDINARY HIGH WATER LINE**  
 APPROXIMATE AREA OF IMPACT = 8,440 SF +/- (0.194 AC)  
 APPROXIMATE AREA OF PERMANENT IMPACT = 4,359 SF +/- (0.100 AC)  
 APPROXIMATE AREA OF TEMPORARY IMPACT = 4,081 SF +/- (0.094 AC)  
 APPROXIMATE VOLUME OF STONE FILL BELOW OHW = 575 CY +/-  
 APPROXIMATE VOLUME OF STONE FILL PER LINEAR FOOT = 1.42 CY/LF +/-



PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474ecbdr.dgn  
 PROJECT LEADER: E. ATKINS  
 DESIGNED BY: M. BRADLEY  
 EPSC CONSTRUCTION PLAN SHEET

PLOT DATE: 02/27/2015  
 DRAWN BY: M. BRADLEY  
 CHECKED BY: E. ATKINS  
 SHEET 22 OF 48



**IMPACT BELOW ORDINARY HIGH WATER LINE**  
 APPROXIMATE AREA OF IMPACT = 8,440 SF +/- (0.194 AC)  
 APPROXIMATE AREA OF PERMANENT IMPACT = 4,359 SF +/- (0.100 AC)  
 APPROXIMATE AREA OF TEMPORARY IMPACT = 4,081 SF +/- (0.094 AC)  
 APPROXIMATE VOLUME OF STONE FILL BELOW OHW = 575 CY +/-  
 APPROXIMATE VOLUME OF STONE FILL PER LINEAR FOOT = 1.42 CY/LF +/-

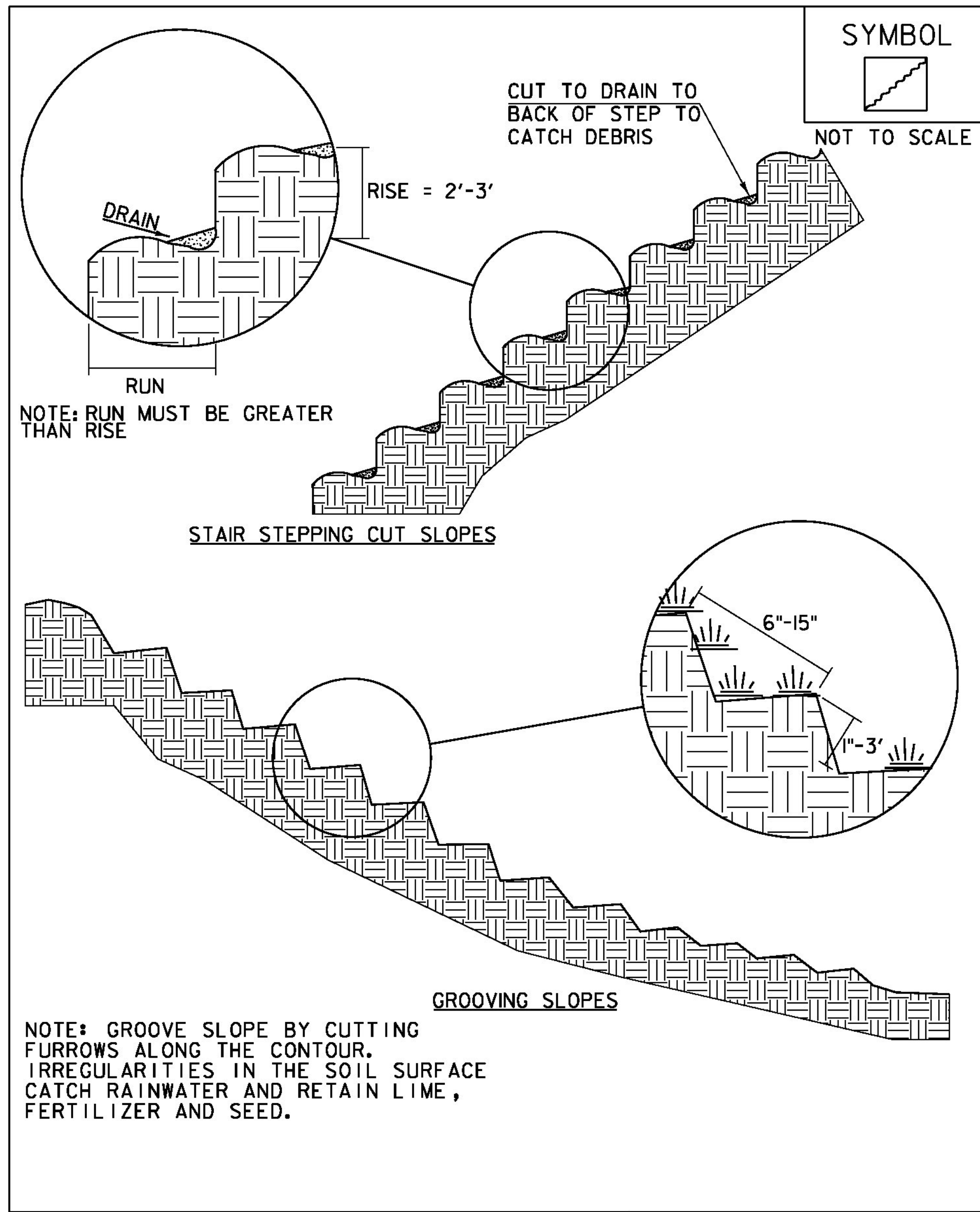
- PERMANENT AREA OF IMPACT BELOW APPROXIMATE OHW
- TEMPORARY AREA OF IMPACT BELOW APPROXIMATE OHW



PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER STP 013-2(12)  
 FILE NAME: z12b474ecbdr.dgn  
 PROJECT LEADER: E. ATKINS  
 DESIGNED BY: M. BRADLEY  
 EPSC FINAL CONDITIONS PLAN SHEET

PLOT DATE: 02/27/2015  
 DRAWN BY: M. BRADLEY  
 CHECKED BY: E. ATKINS  
 SHEET 23 OF 48

NOTE:  
 SEE CROSS SECTIONS FOR ADDITIONAL PROPOSED GRADING.



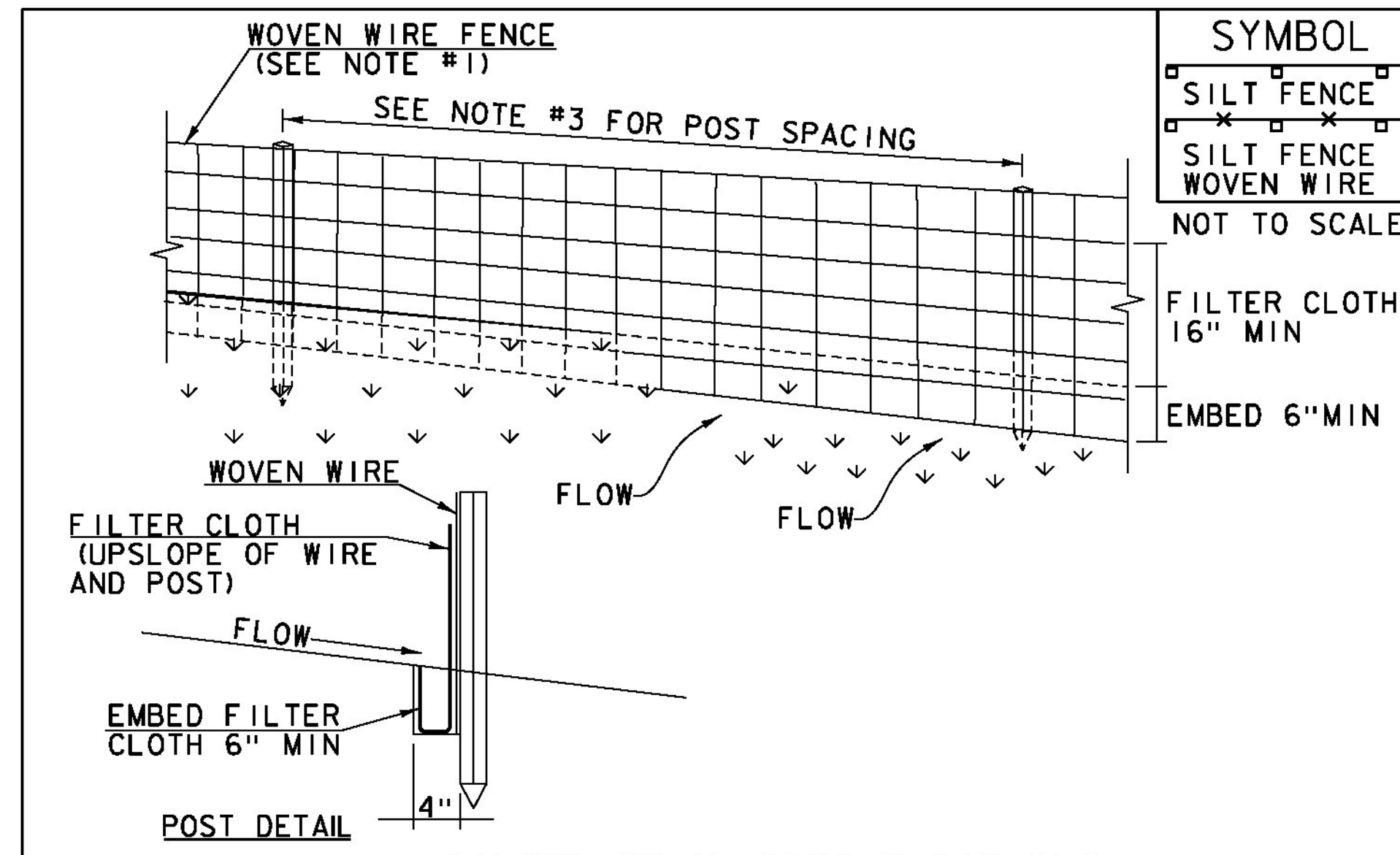
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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

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

**SILT FENCE**

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

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

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

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**

1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. 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.
7. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

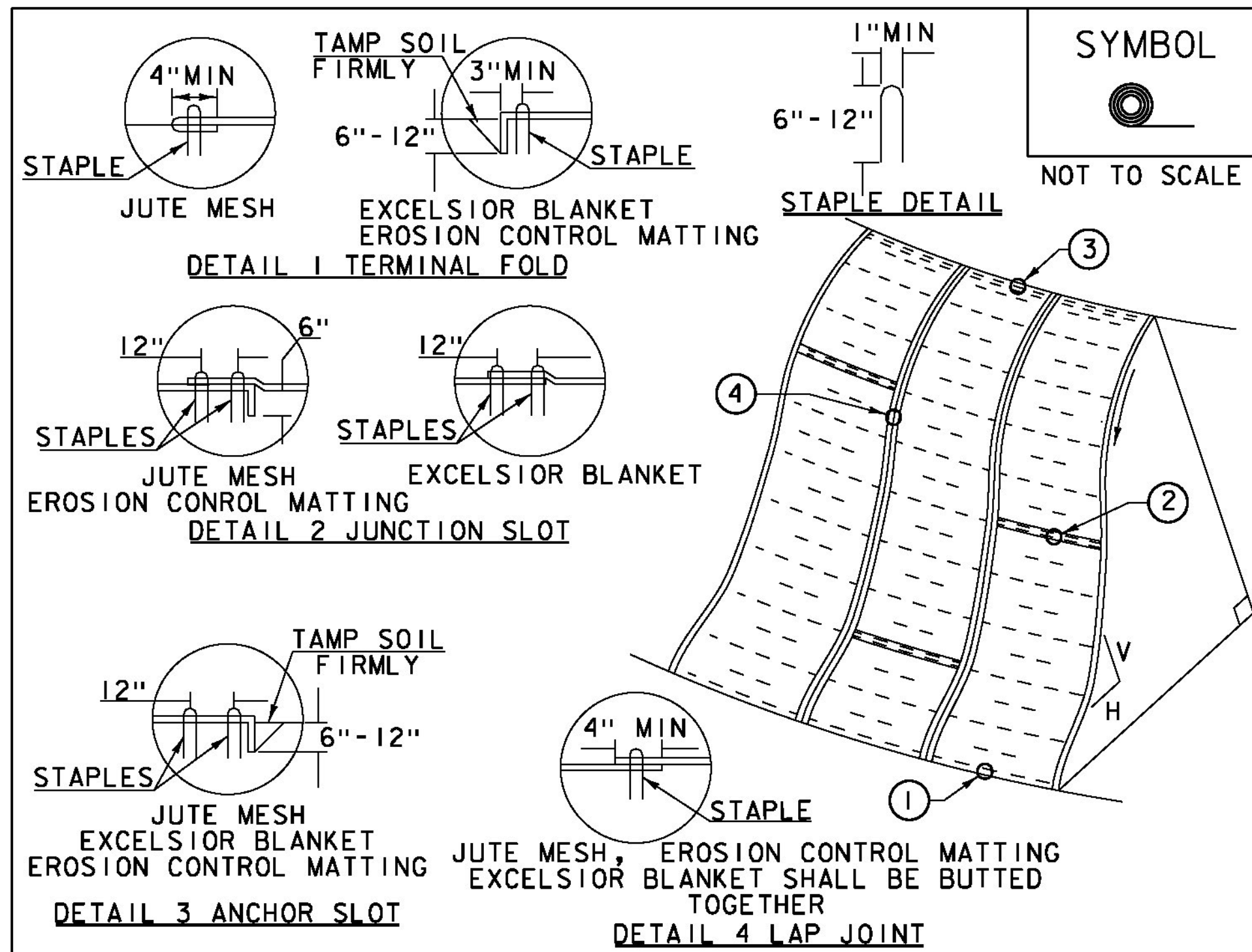
ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR  
ROADWAYS AND TRANSPORTATION FACILITIES

**TURF ESTABLISHMENT**

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

REVISIONS	
JANUARY 12, 2015	WHF

PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)  
FILE NAME: z12b474ecd.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: M. BRADLEY  
EPSC DETAIL SHEET I  
PLOT DATE: 02/27/2015  
DRAWN BY: T. BIGELOW  
CHECKED BY: E. ATKINS  
SHEET 24 OF 48



**CONSTRUCTION SPECIFICATIONS**

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

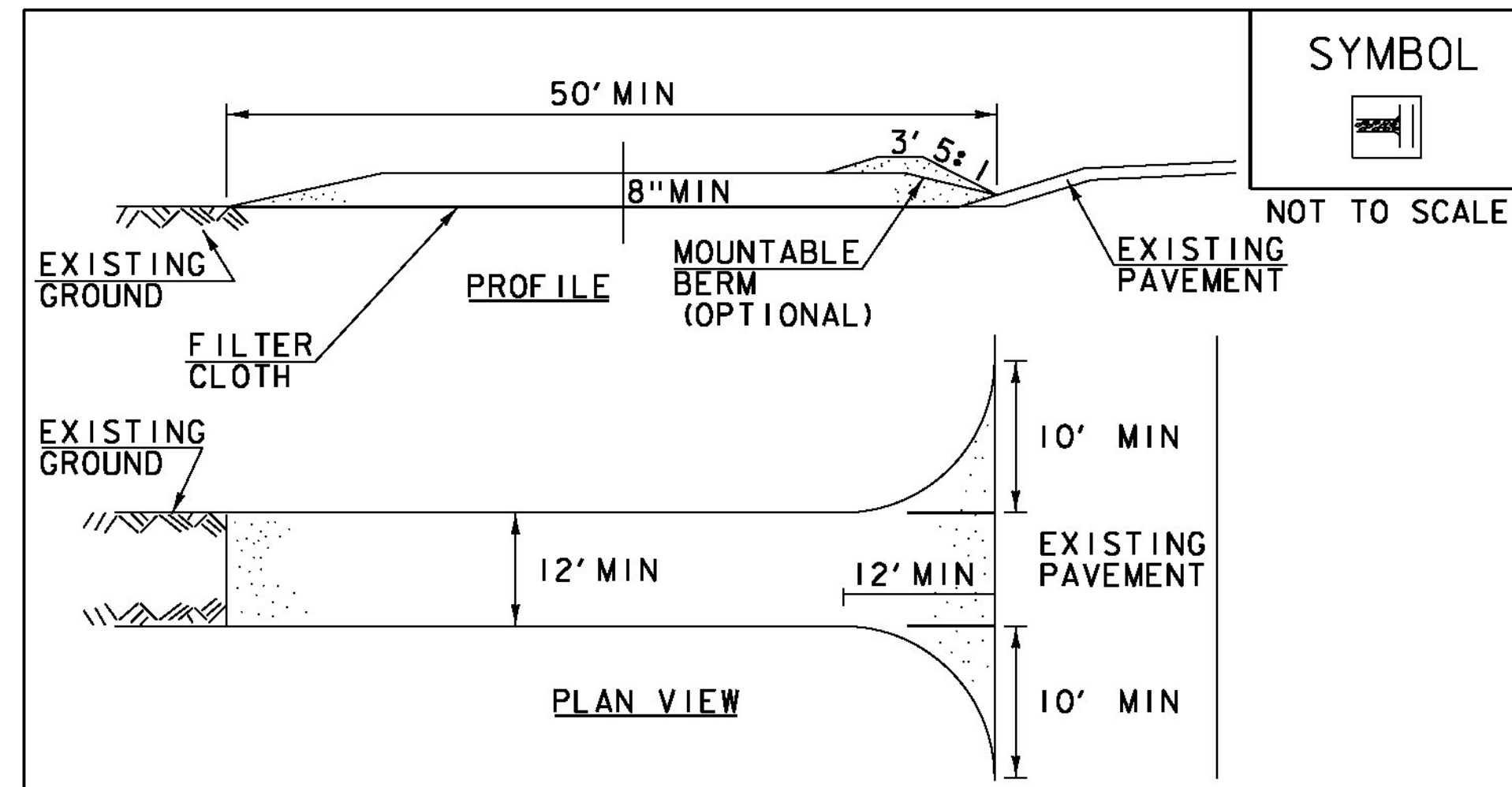
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE**

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.20).

REVISIONS		
APRIL 16, 2007	JMF	
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.

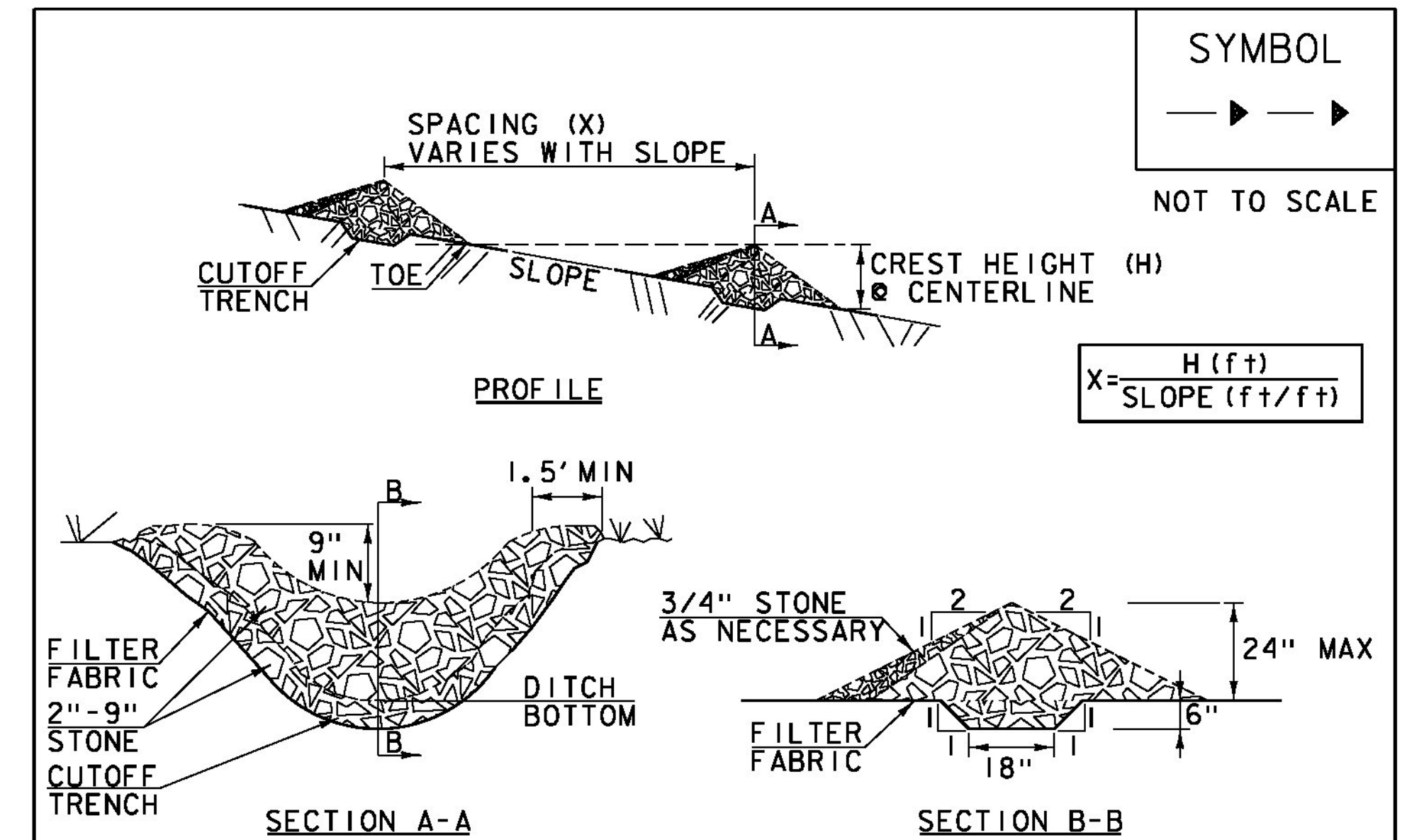
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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

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

**CHECK DAM**

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

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

REVISIONS		
MARCH 21, 2008	WHF	
JANUARY 8, 2009	WHF	

PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474ecd.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: M. BRADLEY  
EPSC DETAIL SHEET 2

PLOT DATE: 02/27/2015  
DRAWN BY: T. BIGELOW  
CHECKED BY: E. ATKINS  
SHEET 25 OF 48

4 INCH WHITE LINE  
 10+37.5 LT - 14+47.5 RT, 410 FT (EDGE LINE)  
 10+37.5 RT - 14+47.5 RT, 410 FT (EDGE LINE)

4 INCH YELLOW LINE  
 10+37.5 - 14+47.5, 820 FT (DOUBLE CENTER LINE)

REMOVING SIGNS

12+28.8 LT  
 12+36.9 RT

ERECTING SALVAGED SIGNS

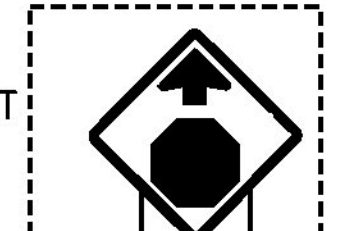
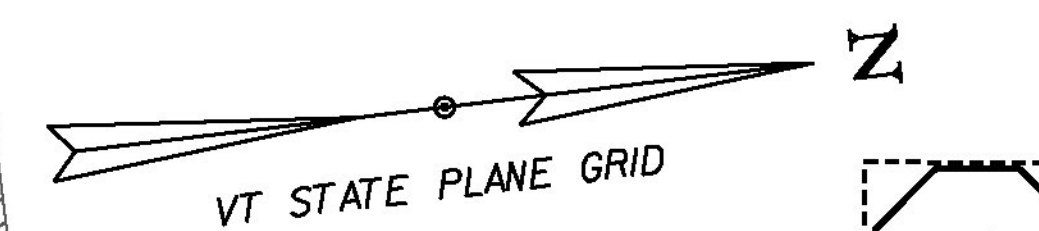
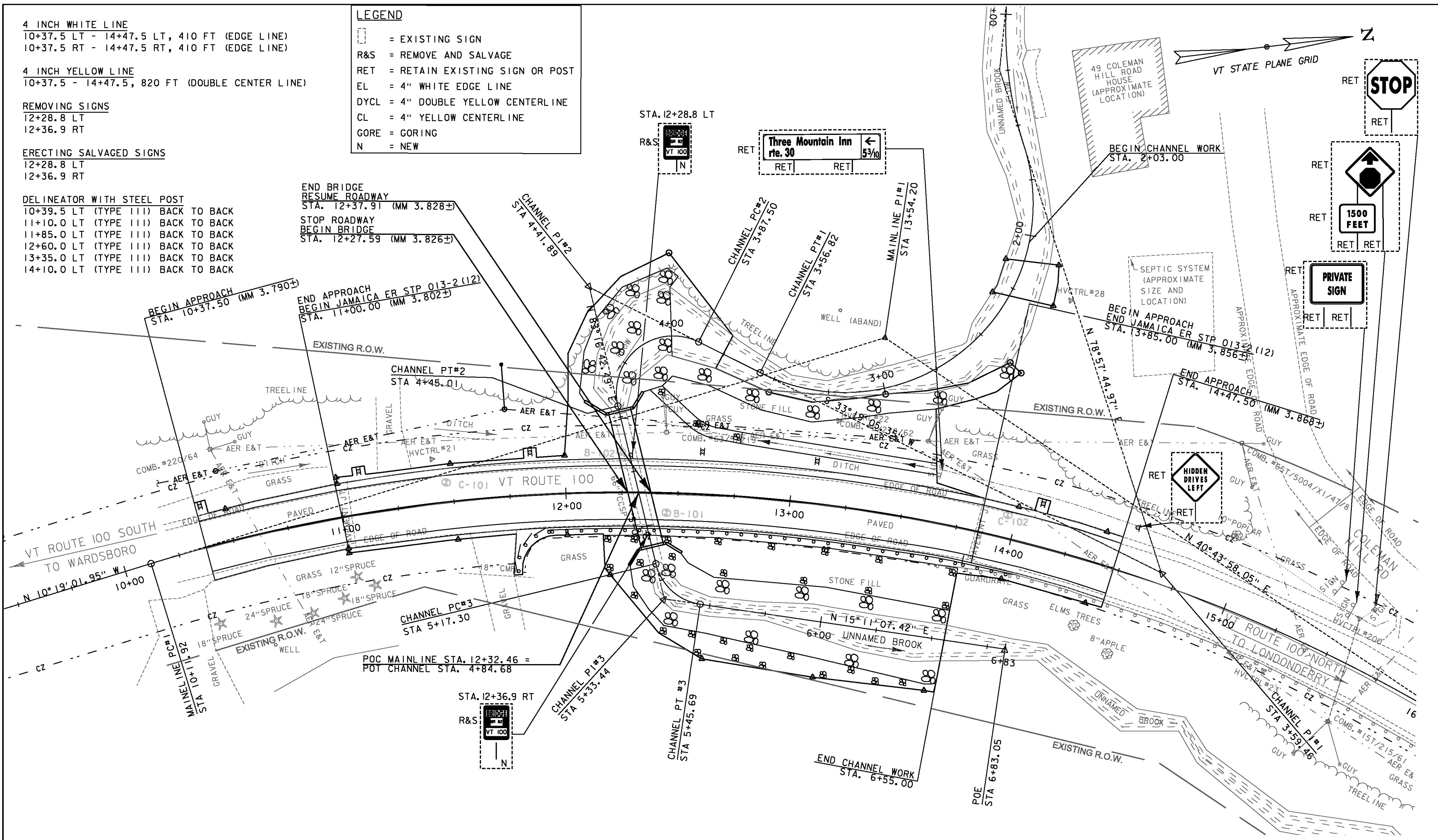
12+28.8 LT  
 12+36.9 RT

DELINEATOR WITH STEEL POST

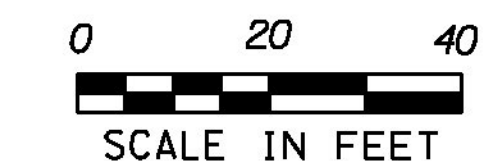
10+39.5 LT (TYPE III) BACK TO BACK  
 11+10.0 LT (TYPE III) BACK TO BACK  
 11+85.0 LT (TYPE III) BACK TO BACK  
 12+60.0 LT (TYPE III) BACK TO BACK  
 13+35.0 LT (TYPE III) BACK TO BACK  
 14+10.0 LT (TYPE III) BACK TO BACK

LEGEND

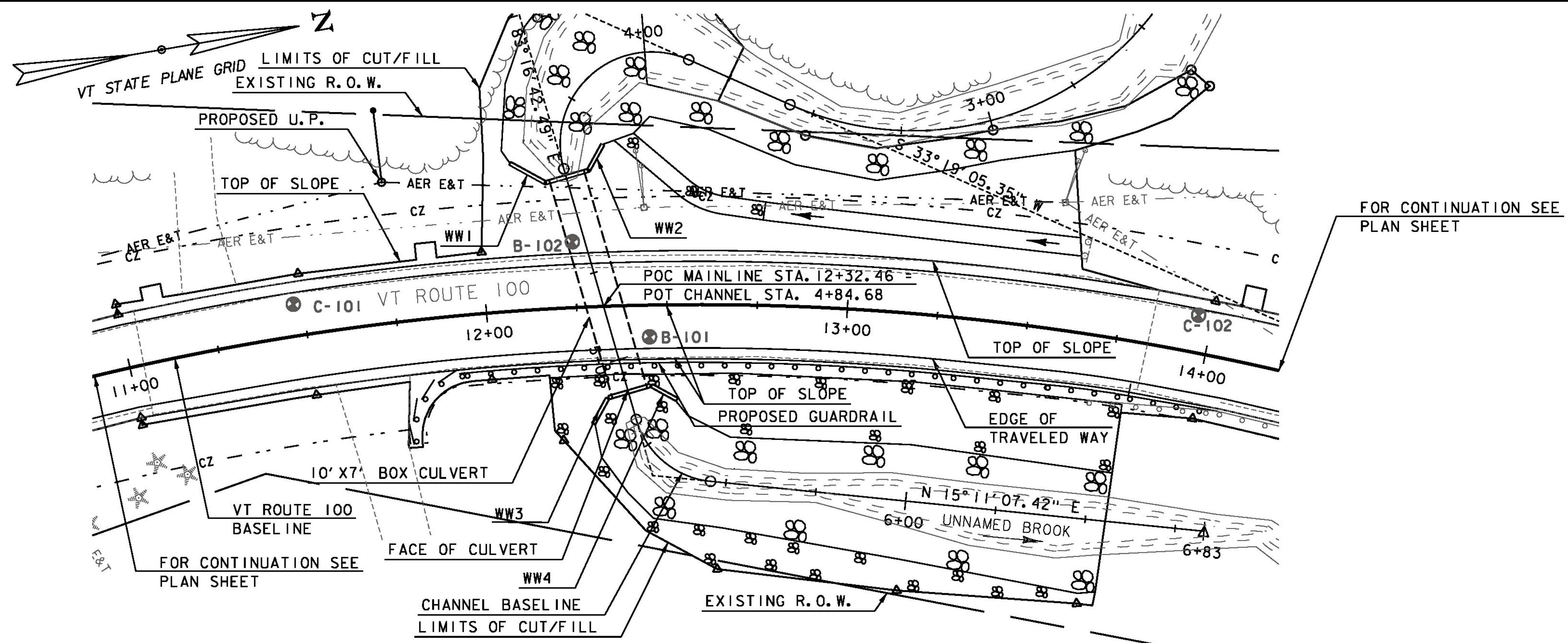
- [Symbol] = EXISTING SIGN
- R&S = REMOVE AND SALVAGE
- RET = RETAIN EXISTING SIGN OR POST
- EL = 4" WHITE EDGE LINE
- DYCL = 4" DOUBLE YELLOW CENTERLINE
- CL = 4" YELLOW CENTERLINE
- GORE = GORING
- N = NEW



NOTE: ADJUST CENTERLINE AND EDGELINE PAVEMENT MARKINGS TO MATCH TO EXISTING AT BEG/END APPROACH

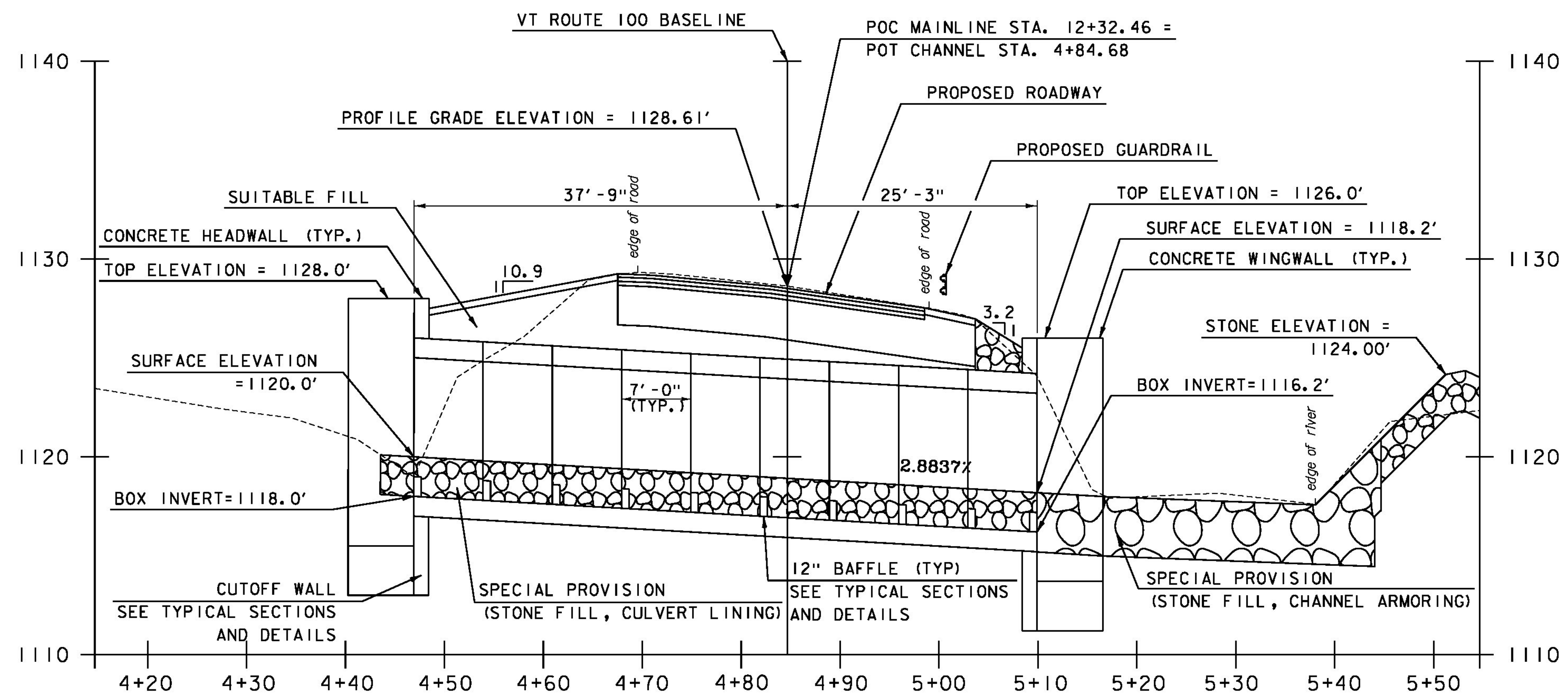


PROJECT NAME:	JAMAICA	FILE NAME:	z1b474trfbdr.dgn	PLOT DATE:	02/27/2015
PROJECT NUMBER:	ER STP 013-2(12)	PROJECT LEADER:	E. ATKINS	DRAWN BY:	M. BRADLEY
		DESIGNED BY:	M. BRADLEY	CHECKED BY:	E. ATKINS
		TRAFFIC SHEET		SHEET	26 OF 48



GENERAL PLAN

SCALE: 1" = 20' - 0"



SKEWED SECTION AT CENTER LINE CULVERT

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

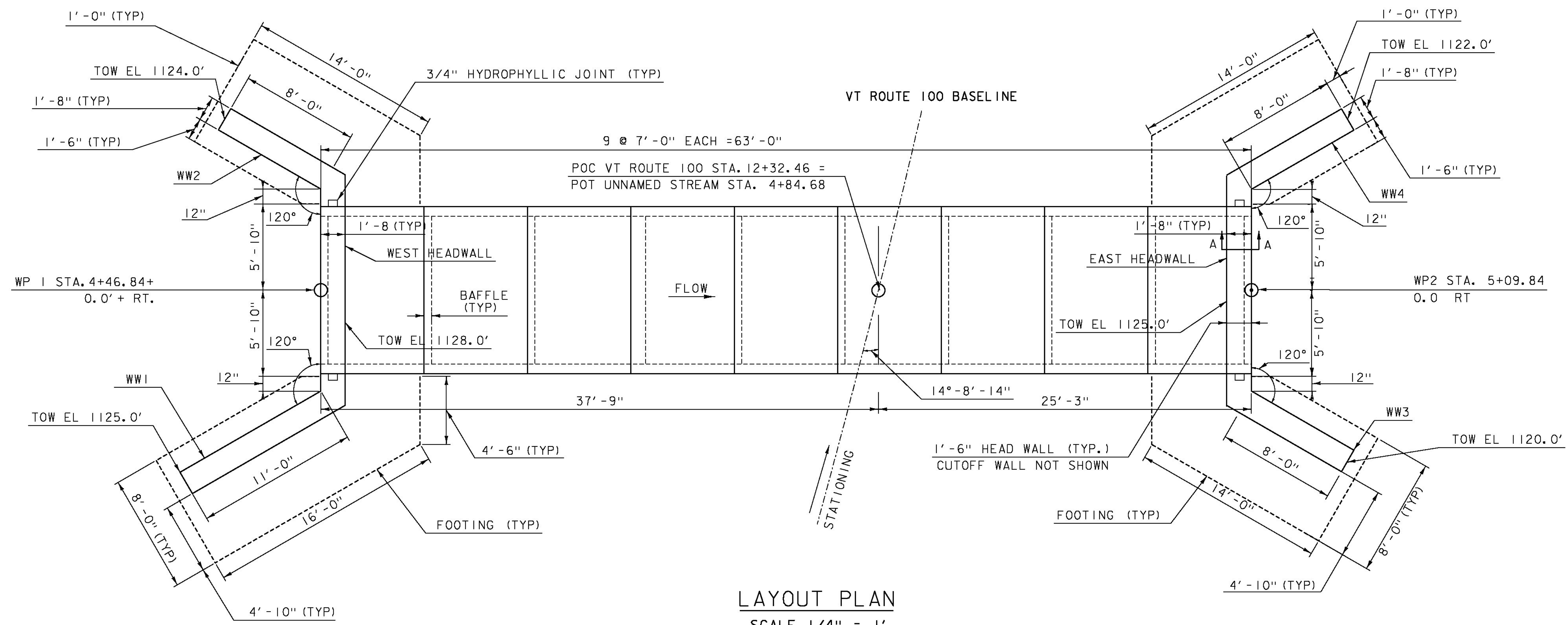
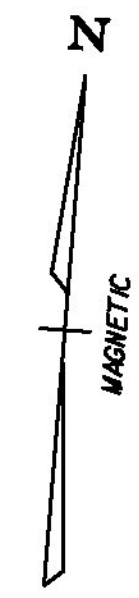
FOR CONTINUATION SEE PLAN SHEET

FOR CONTINUATION SEE PLAN SHEET

PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474det.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: M. BRADLEY  
PLAN AND ELEVATION SHEET (BR 82)

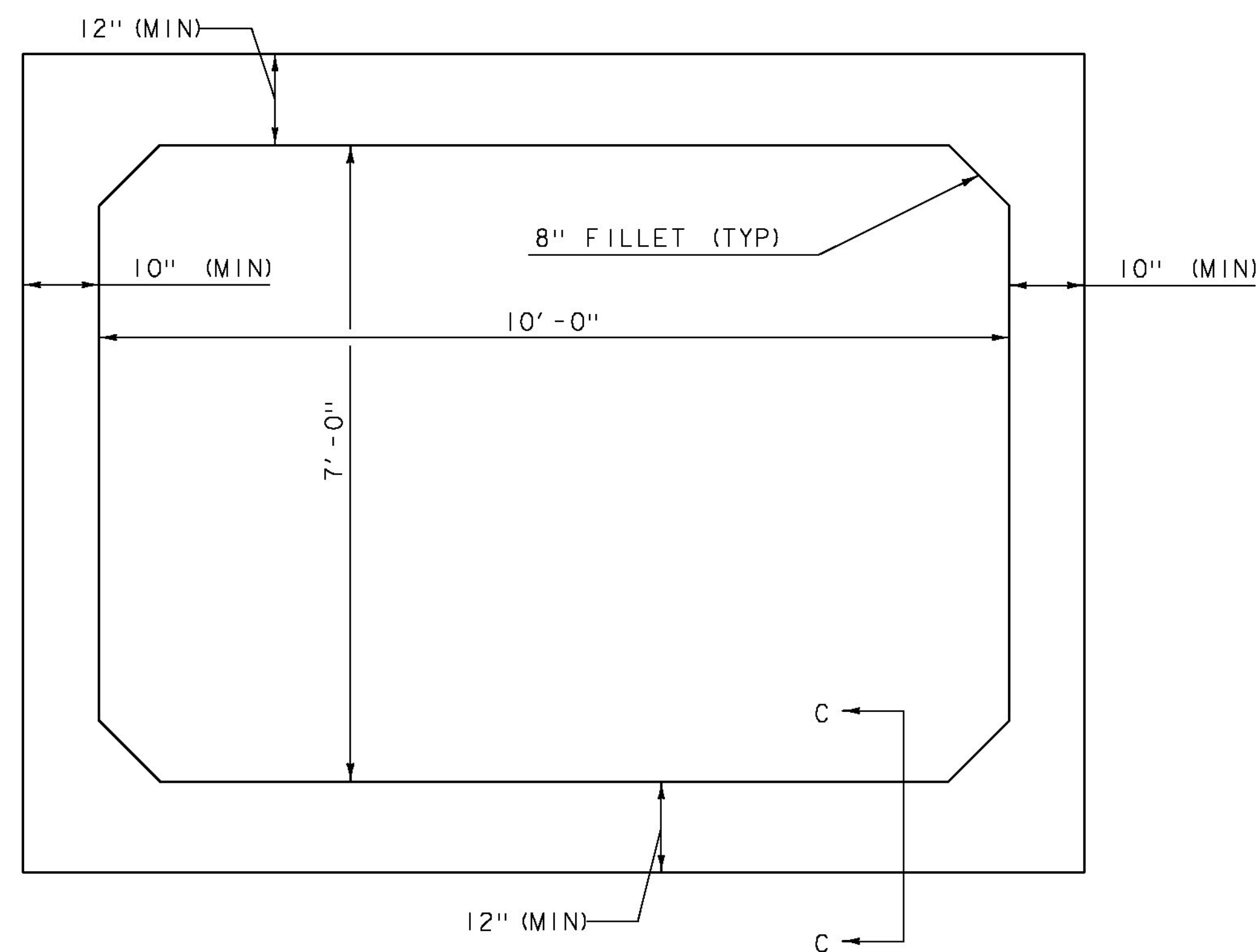
PLOT DATE: 02/27/2015  
DRAWN BY: M. BRADLEY  
CHECKED BY: E. ATKINS  
SHEET 28 OF 48



LAYOUT PLAN  
SCALE 1/4" = 1'

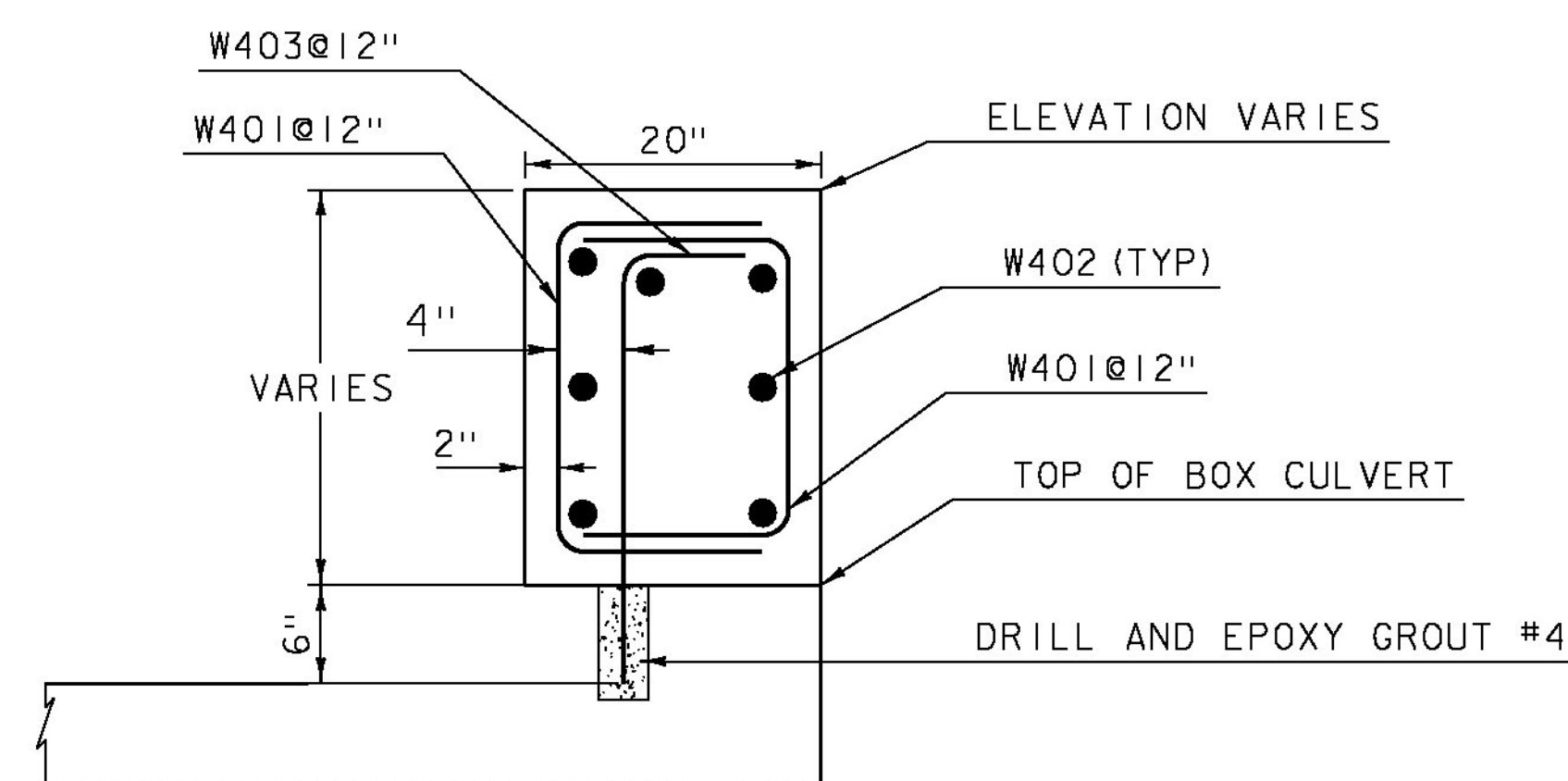
NOTE:  
TOW = TOP OF WALL  
SEE SHEET 31 FOR SECTION A-A.

PROJECT NAME: JAMAICA	PLOT DATE: 02/27/2015
PROJECT NUMBER: ER STP 013-2(12)	DRAWN BY: S. SOLLA
FILE NAME: z12b474def2.dgn	CHECKED BY: B. KHALIFA
PROJECT LEADER: E. ATKINS	SHEET 30 OF 48
DESIGNED BY: B. KHALIFA	
BRIDGE PLAN SHEET (BR 82)	



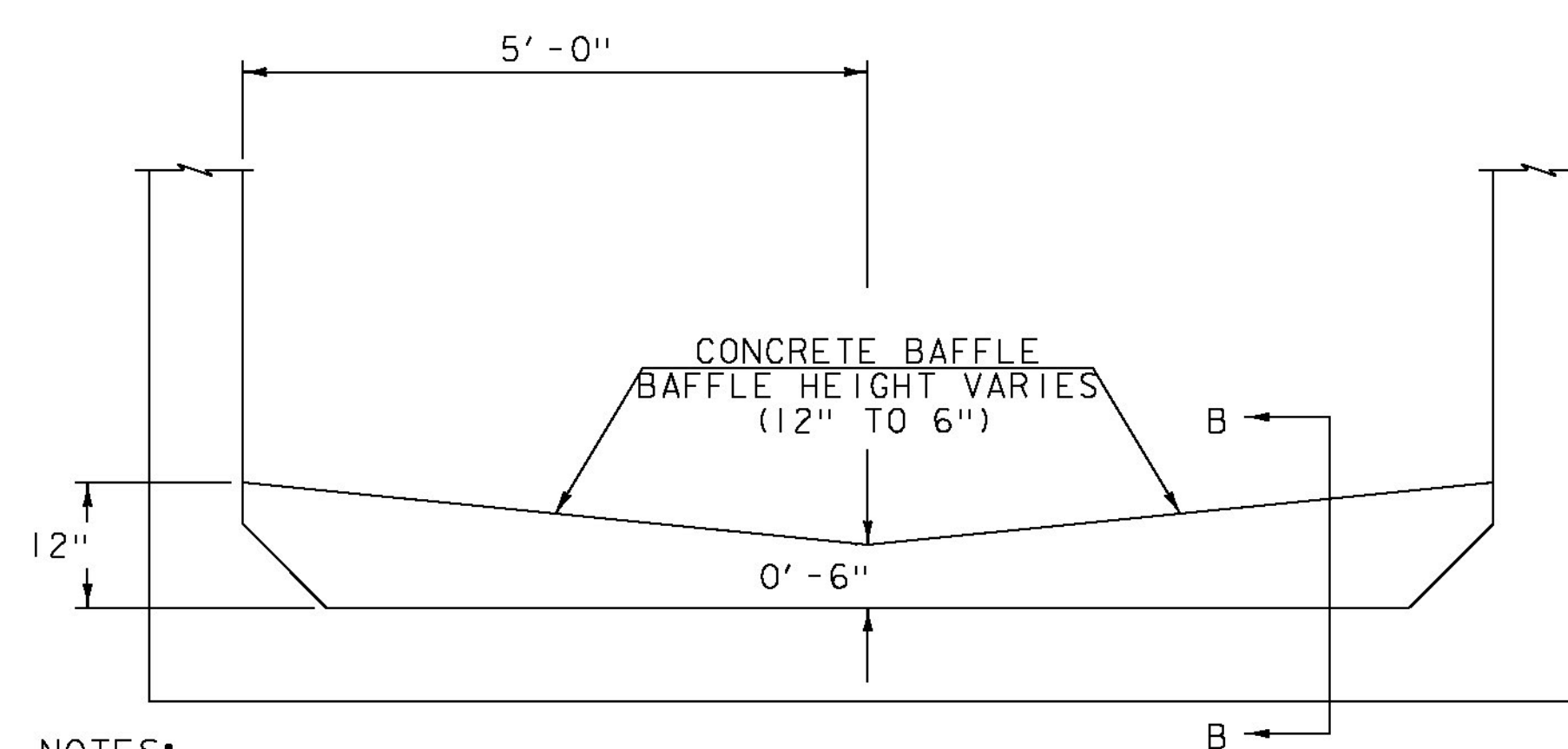
PRECAST CONCRETE BOX CULVERT  
TYPICAL SECTION - BR 82

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



SECTION A-A  
HEADWALL DETAIL

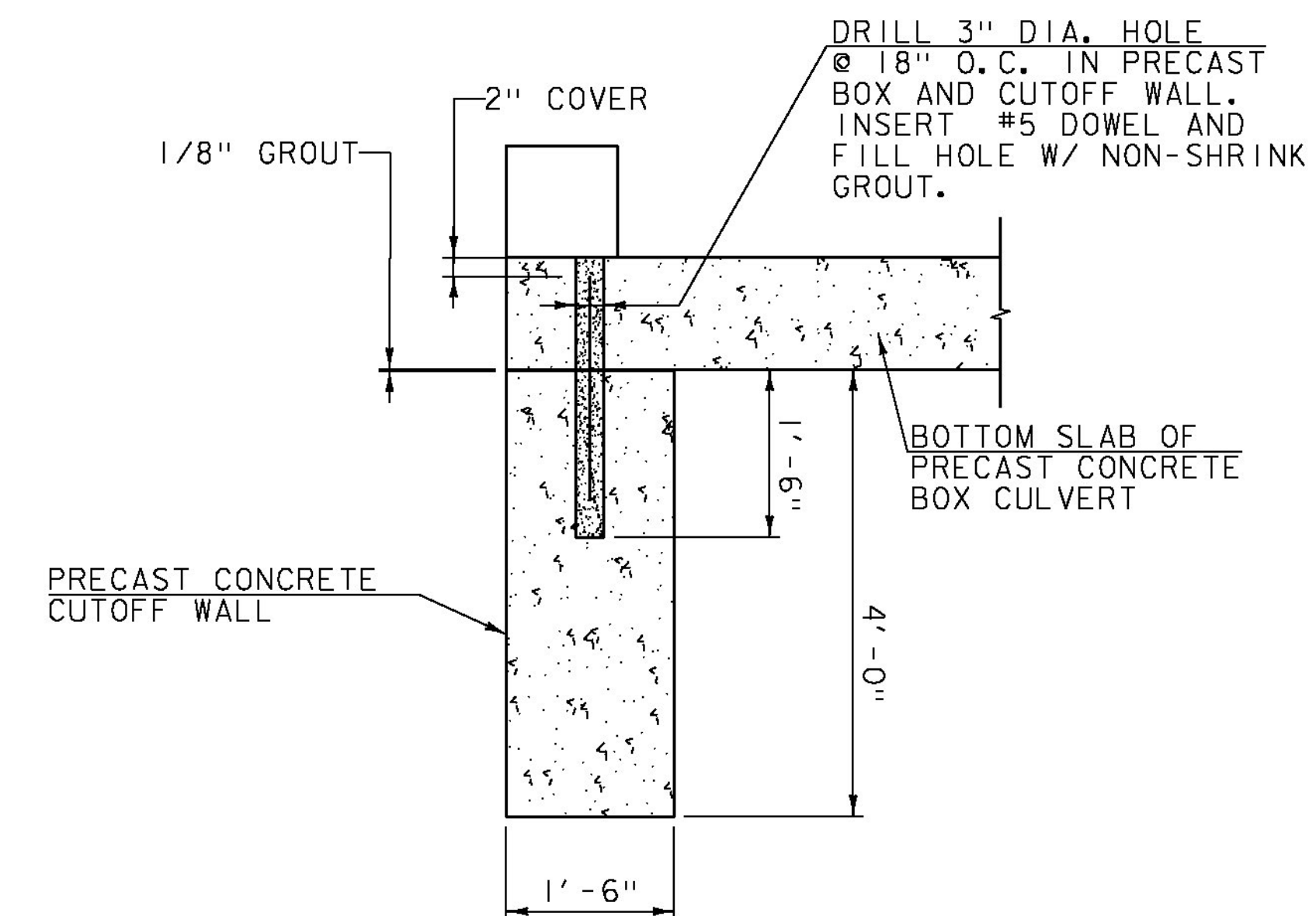
SCALE 1" = 1'



NOTES:

1. BAFFLES SHALL BE 12" DEEP (MAX).
2. BAFFLES TO BE PLACED EVERY 7' INCLUDING AT THE INLET AND OUTLET.

PRECAST CONCRETE BAFFLE DETAIL  
NOT TO SCALE

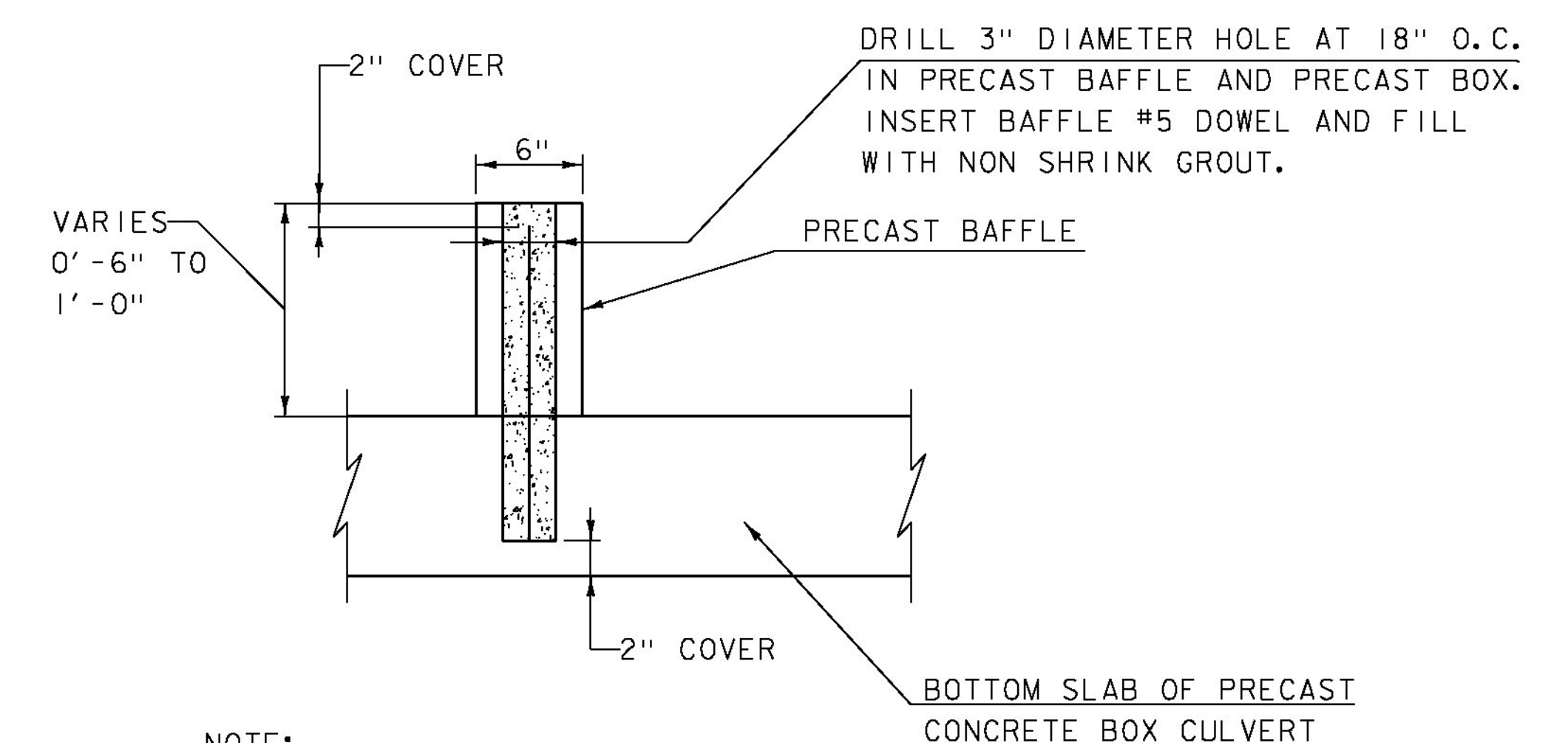


NOTES:

1. PAYMENT FOR CUTOFF WALL CONCRETE, REINFORCING STEEL, DOWEL AND NON-SHRINK GROUT SHALL BE MADE UNDER ITEM 540.10 PRECAST CONCRETE STRUCTURE (10'-0" x 7'-0" x 63'-0" BOX).

CUTOFF WALL DETAIL

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



NOTE:

- PAYMENT FOR BAFFLE AND #5 DOWEL WILL BE CONSIDERED INCIDENTAL TO ITEM 540.10, PRECAST CONCRETE STRUCTURE (10'-0" x 7'-0" x 63'-0" BOX).

SECTION B-B  
BAFFLE DETAIL

SCALE 1/2" = 1'-0"

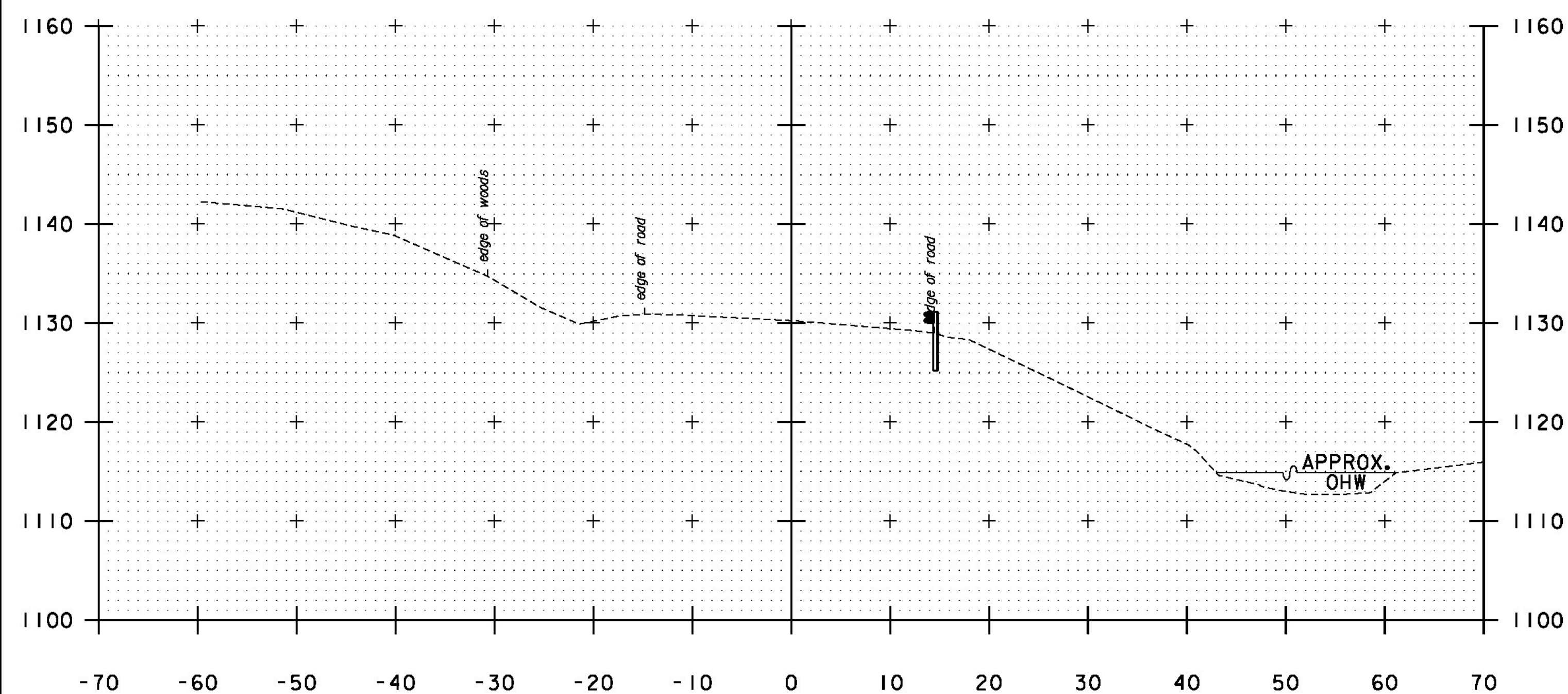
NOTE:

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

PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474typ.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: M. BRADLEY  
TYPICAL SECTIONS AND DETAILS (BR 82)

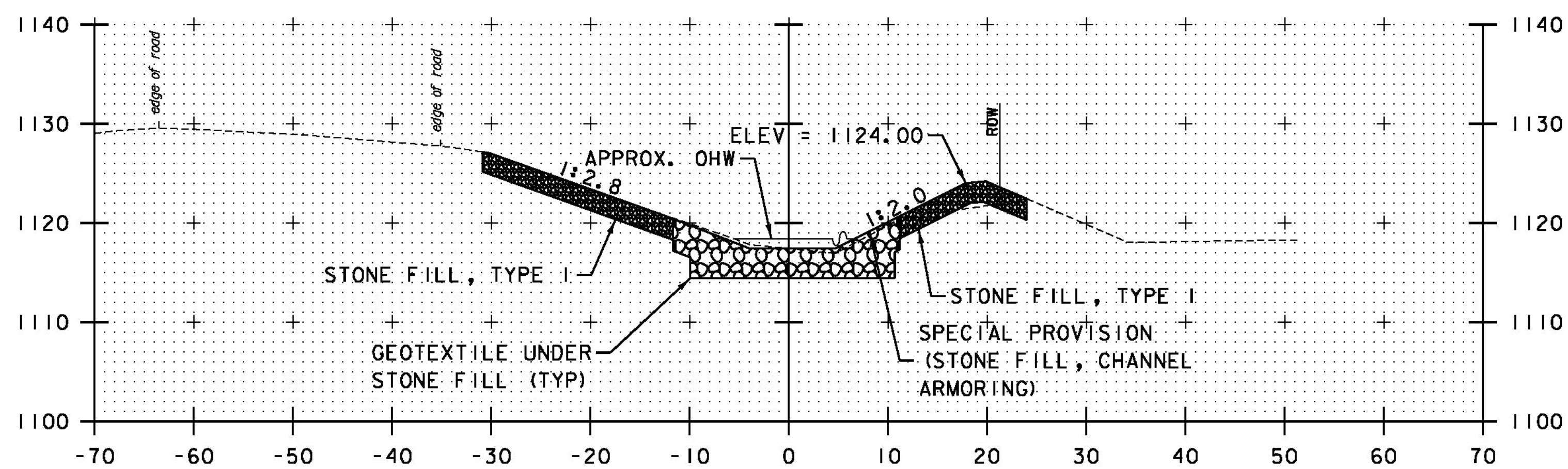
PLOT DATE: 02/27/2015  
DRAWN BY: S. SOLLA  
CHECKED BY: E. ATKINS  
SHEET 31 OF 48



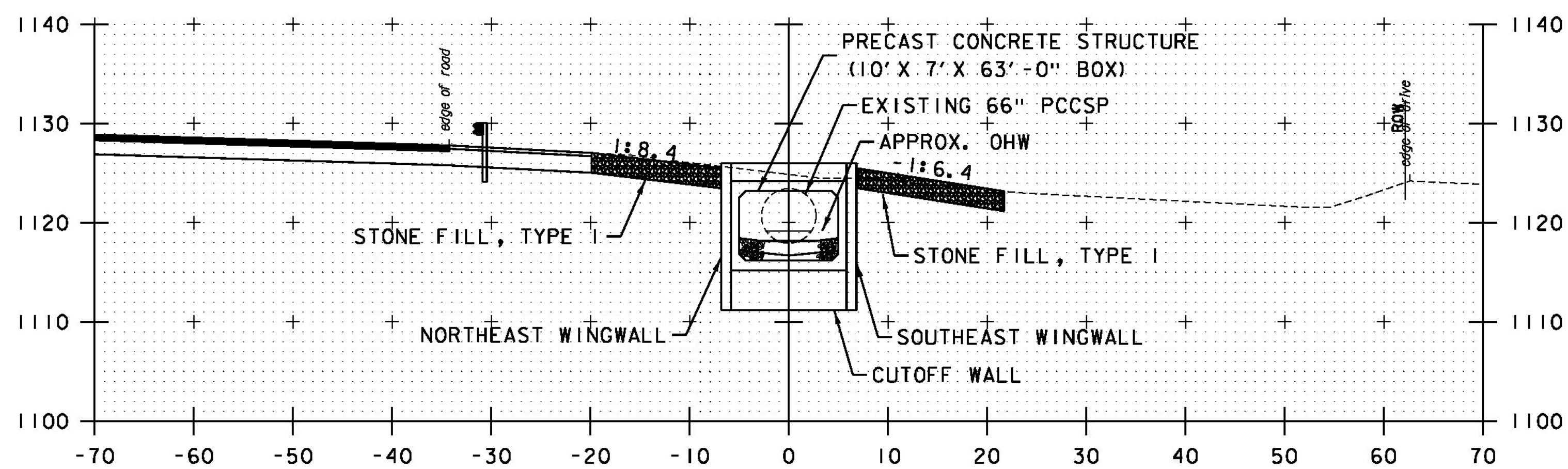
14+50  
 END APPROACH @ 14+47.50  
 MATCH EXISTING BCP

STA. 14+50

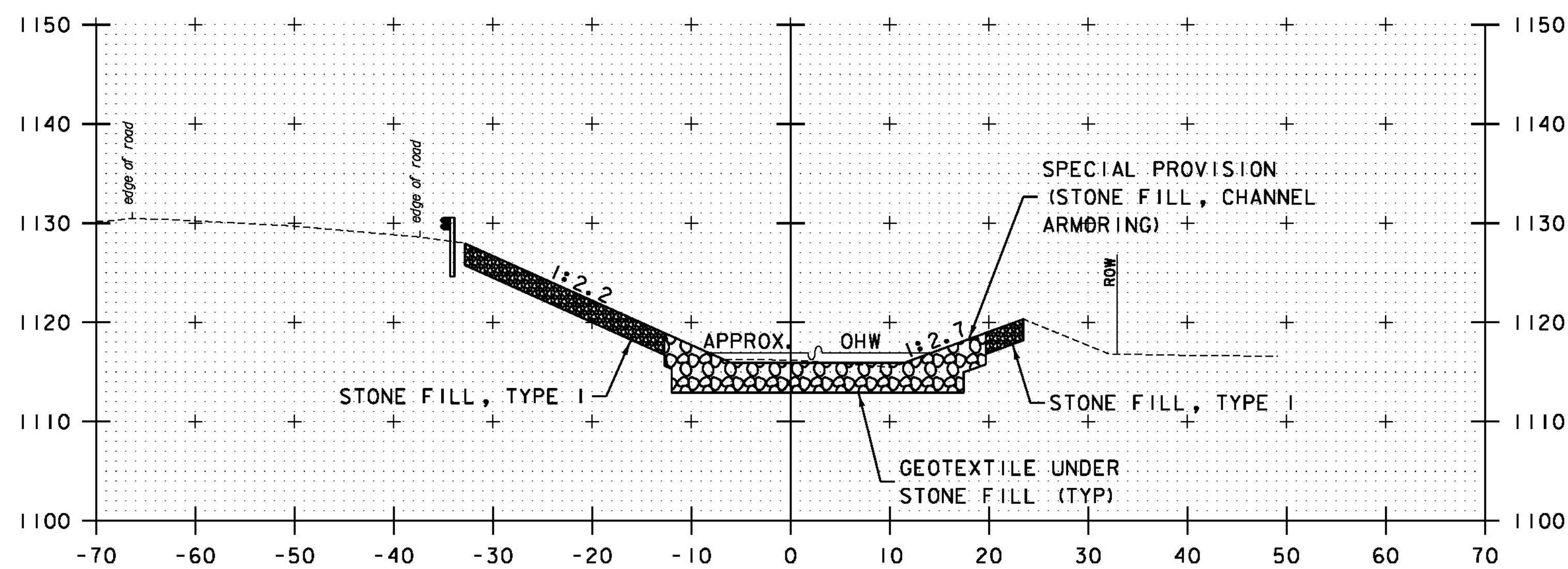
PROJECT NAME: JAMAICA	PLOT DATE: 02/27/2015
PROJECT NUMBER: ER STP 013-2(12)	DRAWN BY: C. MORIN
FILE NAME: Z12B474xsl.dgn	CHECKED BY: E. ATKINS
PROJECT LEADER: E. ATKINS	SHEET 39 OF 48
DESIGNED BY: T. BIGELOW	
CROSS SECTION SHEET 3	



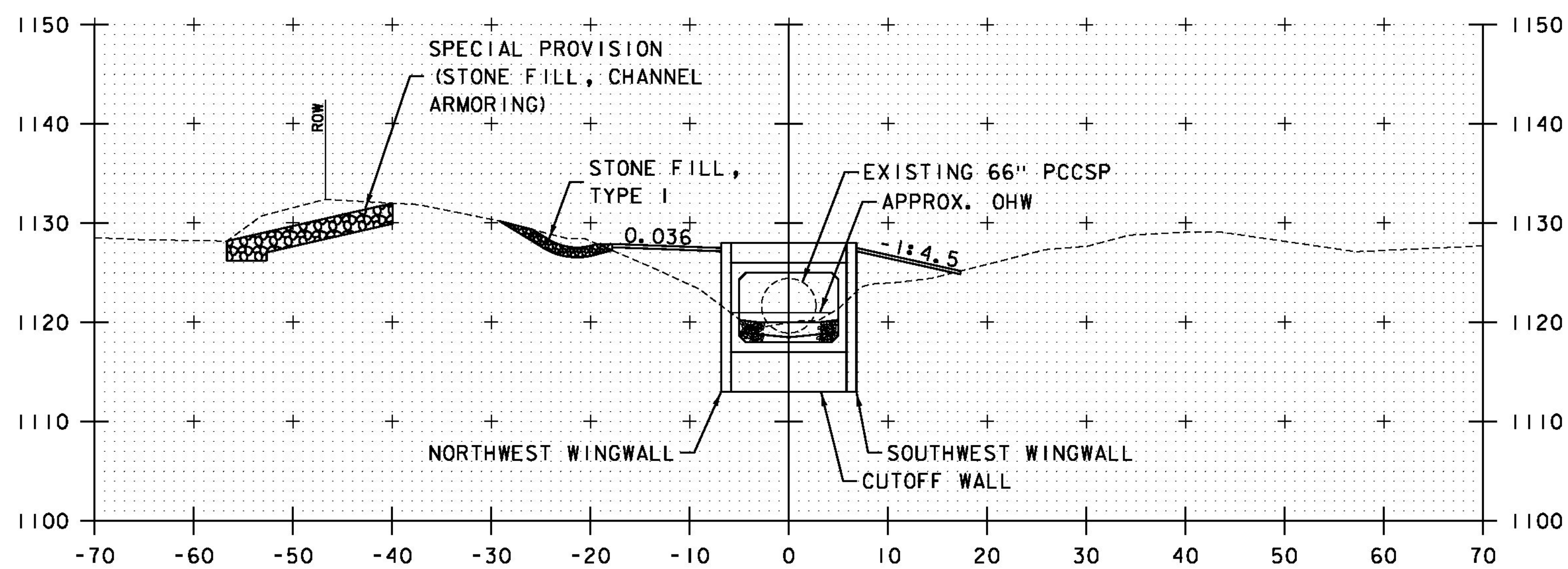
5+50



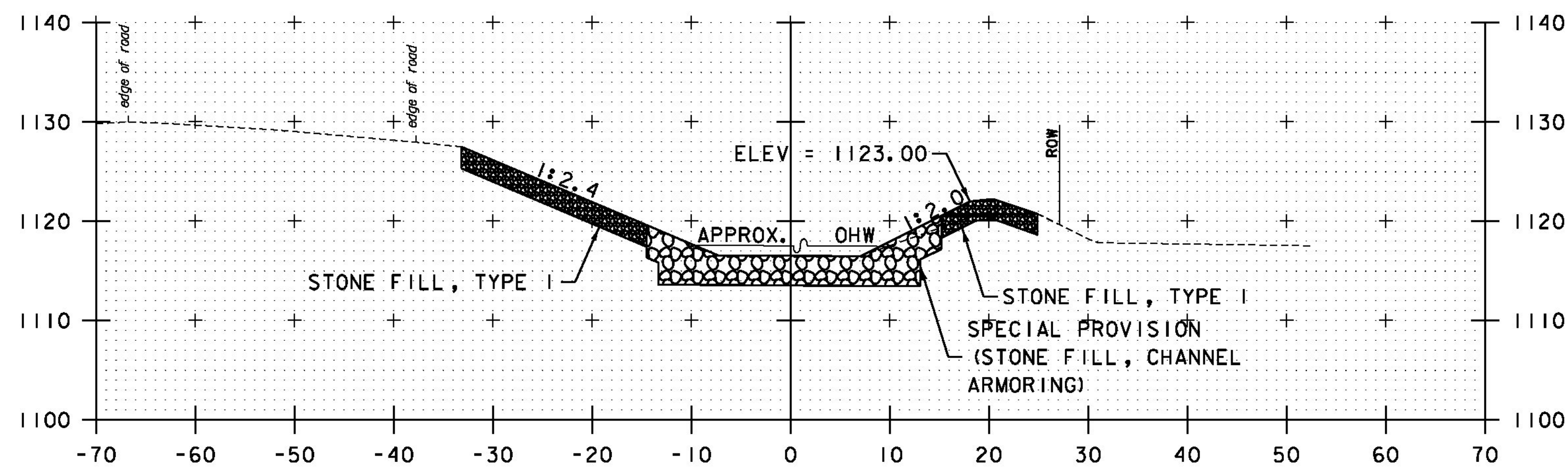
5+09.84  
DOWNSTREAM CULVERT FACE



6+50



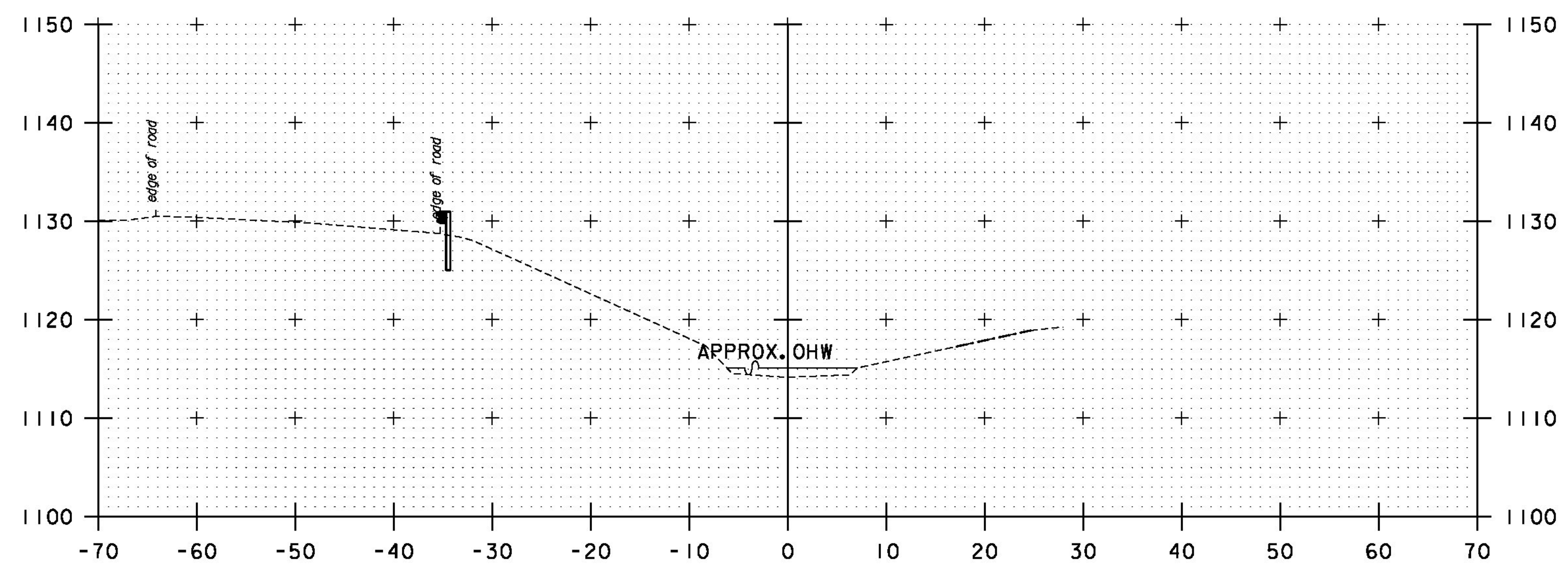
4+46.84  
UPSTREAM CULVERT FACE



6+00

STA. 4+46.84 TO STA. 6+50

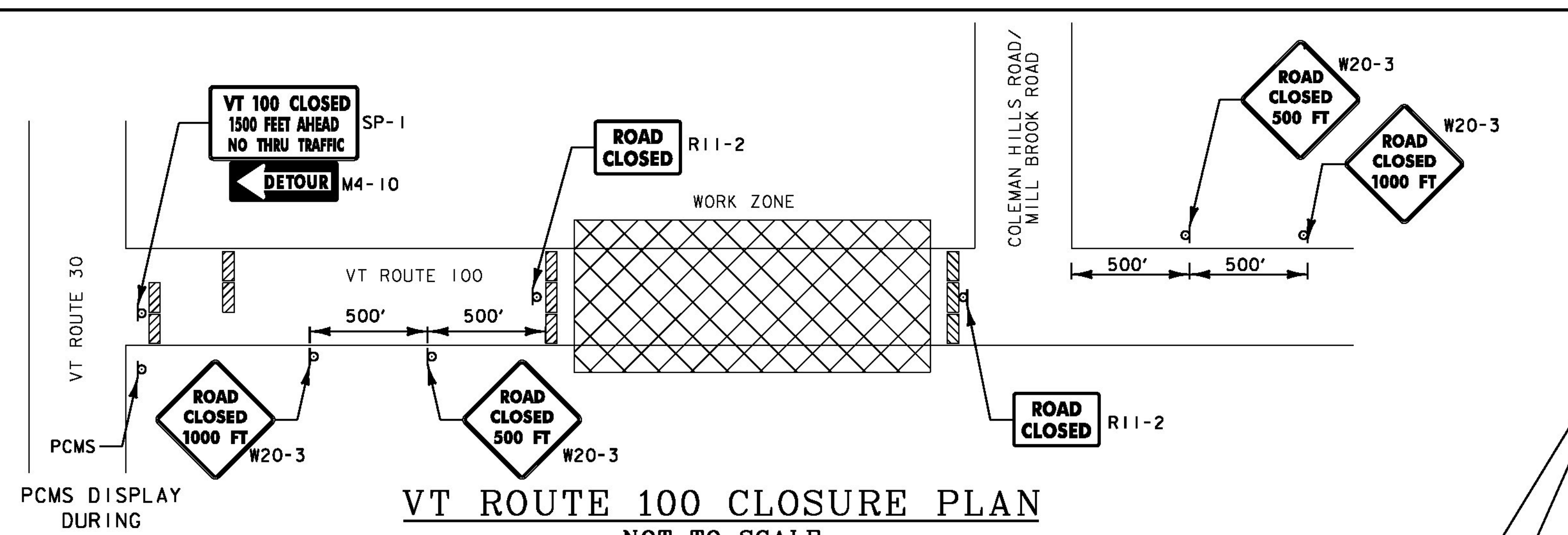
PROJECT NAME:	JAMAICA
PROJECT NUMBER:	ER STP 013-2(12)
FILE NAME:	Z12B474xsl.dgn
PROJECT LEADER:	E. ATKINS
DESIGNED BY:	T. BIGELOW
CROSS SECTION SHEET 5	
PLOT DATE:	02/27/2015
DRAWN BY:	C. MORIN
CHECKED BY:	E. ATKINS
SHEET	41 OF 48



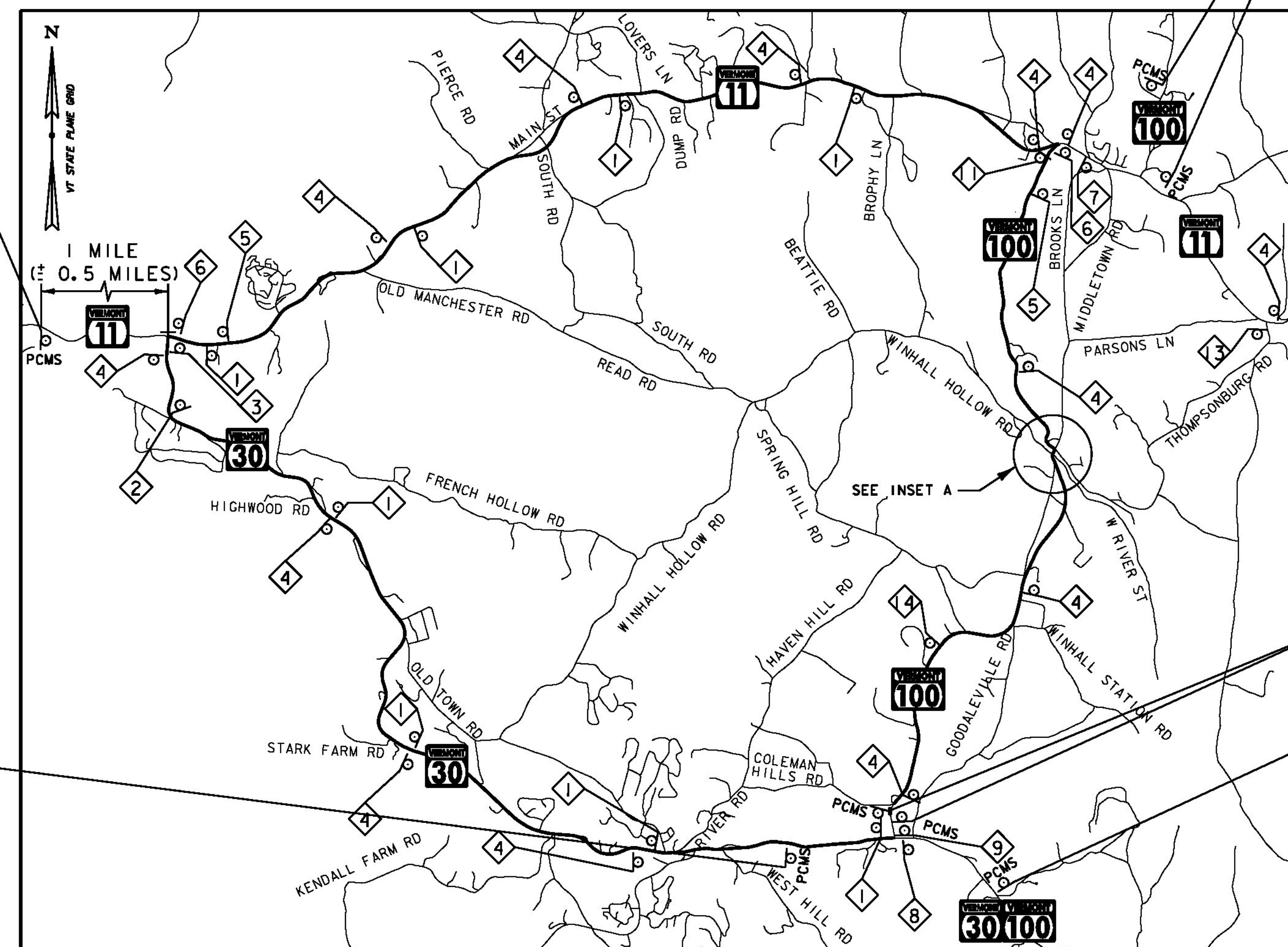
6+75  
 END CHANNEL WORK @ STA. 6+55.00

STA. 6+75

PROJECT NAME: JAMAICA	PLOT DATE: 02/27/2015
PROJECT NUMBER: ER STP 013-2(12)	DRAWN BY: C. MORIN
FILE NAME: Z12B474xsl.dgn	CHECKED BY: E. ATKINS
PROJECT LEADER: E. ATKINS	SHEET 42 OF 48
DESIGNED BY: T. BIGELOW	CROSS SECTION SHEET 6



**VT ROUTE 100 CLOSURE PLAN**  
NOT TO SCALE



**OVERALL DETOUR PLAN**  
SCALE 1" = 4000'

**LEGEND:**

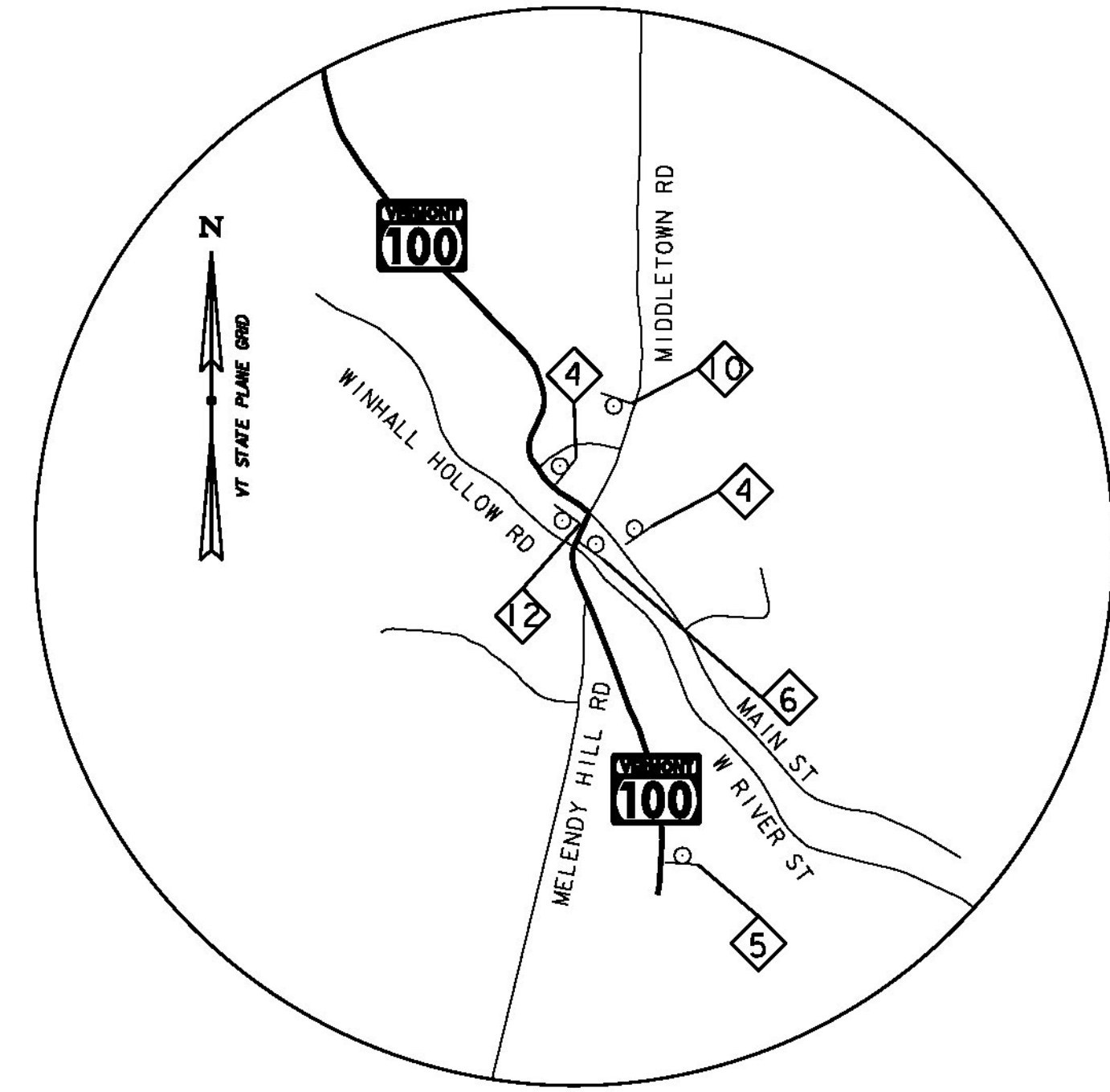
- ◊ CONSTRUCTION SIGN ASSEMBLY I.D. NUMBER
- ⊕ SIGN
- PCMS PORTABLE CHANGEABLE MESSAGE SIGN
- ▨ TYPE III BARRICADE
- \* MMM = 3 LETTER MONTH ABBREVIATION  
DD = DAY

**NOTES:**

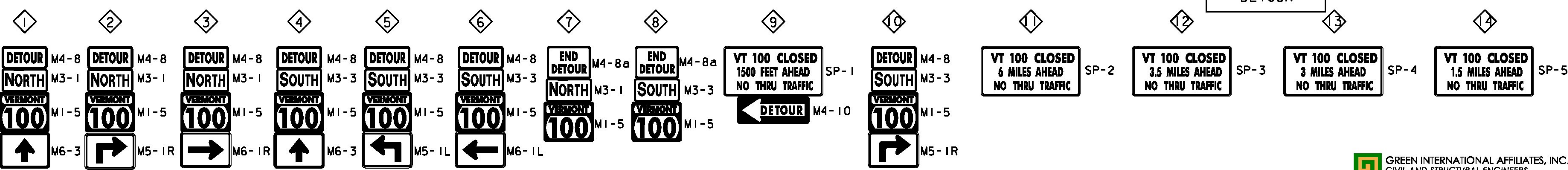
1. THE PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE FULLY OPERATIONAL FOR A MINIMUM OF TWO WEEKS PRIOR TO THE CLOSURE OF VT 100.
2. DETOUR SIGNS SHALL BE PLACED ADJACENT TO EXISTING ROUTE MARKER ASSEMBLIES, WHERE APPLICABLE.
3. ALL CONFLICTING SIGNAGE SHALL BE COVERED FOR THE DURATION OF THE VT 100 CLOSURE, AS DIRECTED BY THE ENGINEER.
4. CONFIRMATION ROUTE MARKERS (SIGN ASSEMBLIES 1 AND 4) SHALL BE INSTALLED IMMEDIATELY FOLLOWING EACH TURN AND AT ALL LOCATIONS ALONG THE DETOUR ROUTE WHERE ROUTE MARKERS EXIST FOR THE PARENT ROUTE.
5. DETOUR SIGNING IS THE RESPONSIBILITY OF THE CONTRACTOR. PAYMENT FOR ALL TEMPORARY TRAFFIC DEVICES REQUIRED FOR IMPLEMENTING THE DETOUR, INCLUDING BUT NOT LIMITED TO SIGNS, BARRICADES, AND PORTABLE CHANGEABLE MESSAGE SIGNS ALL BE INCLUDED FOR PAYMENT UNDER ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).
6. LOCATIONS OF SIGNS AND PCMS ARE APPROXIMATE AND MAY BE ADJUSTED BASED ON FIELD CONDITIONS WITH THE DIRECTION AND APPROVAL OF ENGINEER ON SITE. INSTALL PCMS IN THE MOST VISIBLE LOCATION POSSIBLE SO THAT APPROACHING DRIVERS CAN READ EACH MESSAGE A MINIMUM OF TWO TIMES BEFORE PASSING IT.
7. CONTRACTOR SHALL COORDINATE ALL WORK AND THE IMPLEMENTATION OF THE DETOUR WITH THE ENGINEER AND ALL OTHER CONSTRUCTION PROJECTS ALONG THE DETOUR ROUTE.
8. CONTRACTOR SHALL REMOVE ALL TEMPORARY DETOUR SIGNS UPON RE-OPENING VT 100 TO TRAFFIC. WHILE THE TEMPORARY DETOUR SIGNS ARE BEING REMOVED, PCMS UNITS SHALL REMAIN IN PLACE AND BROADCAST THE POST CONSTRUCTION PCMS MESSAGE.
9. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS REGARDING THE CLOSURE OF VT 100.

PCMS DISPLAY ADVANCE NOTIFICATION	PCMS DISPLAY DURING CONSTRUCTION
VT100 CLOSED AT VT30	VT100 CLOSED AT VT30
MMM DD TO MMM DD	USE DETOUR
PCMS DISPLAY POST CONSTRUCTION	
VT100 AT VT 30 OPEN	
DO NOT FOLLOW DETOUR	
PCMS DISPLAY ADVANCE NOTIFICATION	PCMS DISPLAY DURING CONSTRUCTION
VT100 N CLOSED AT VT30	VT100 N CLOSED AT VT30
MMM DD TO MMM DD	USE DETOUR
PCMS DISPLAY POST CONSTRUCTION	
VT100 AT VT 30 OPEN	
DO NOT FOLLOW DETOUR	

PCMS DISPLAY ADVANCE NOTIFICATION	PCMS DISPLAY DURING CONSTRUCTION
VT100 CLOSED AT VT30	VT100 CLOSED AT VT30
MMM DD TO MMM DD	USE DETOUR
PCMS DISPLAY POST CONSTRUCTION	
VT100 AT VT 30 OPEN	
DO NOT FOLLOW DETOUR	
PCMS DISPLAY ADVANCE NOTIFICATION	PCMS DISPLAY DURING CONSTRUCTION
VT100 CLOSED HERE	VT100 CLOSED AHEAD
MMM DD TO MMM DD	USE DETOUR
PCMS DISPLAY POST CONSTRUCTION	
VT100 AT VT 30 OPEN	
DO NOT FOLLOW DETOUR	



**INSET A**  
SCALE 1" = 1000'



PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER STP 013-2(12)  
 FILE NAME: z12b4741mpl.dgn  
 PROJECT LEADER: E. ATKINS  
 DESIGNED BY: Y. CAO  
 VT 100 DETOUR PLAN SHEET  
 PLOT DATE: 02/27/2015  
 DRAWN BY: C. MORIN  
 CHECKED BY: J. SOBEL  
 SHEET 43 OF 47

# DETOUR SIGN SUMMARY SHEET 1

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW & SALVAGED SIGNS				EXIST POST REMAIN SALVAGE	NO. OF POSTS	NEW SIGN POSTS															REMARKS	SIGN DETAIL					
		E A	WIDTH (In)	HEIGHT (In)	"A"	"B"	SALV SIGN			SALV TIS	FLANGED CHANNEL lb/ft			SQUARE STEEL (In)			TUBULAR ALUMINUM Ø (In)			TUBULAR STEEL Ø (In)				W-SHAPE STEEL		S.H.S.M.*	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER			
											1.2	2.0	3.0	1.75	2.0	2.5	3.0	4.0	4.0 MOD	3.0	3.5	4.0	5.0	FTG. SIZE					WEIGHT	POST SIZE	
OPTION ITEMS																															
<b>SIGN ASSEMBLY 1</b>																															
SEE DETOUR PLAN	M4-8, DETOUR	8	24	12	16.00																								BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND	2-171	
SEE DETOUR PLAN	M3-1, STATE ROUTE CARDINAL DIRECTION MARKER, NORTH	8	24	12	16.00																								GREEN LEGEND ON WHITE BACKGROUND		E-136B
SEE DETOUR PLAN	M1-5, VERMONT STATE ROUTE 100	8	30	24	40.00																									E-136B	
SEE DETOUR PLAN	M6-3, VERMONT STATE ROUTE DIRECTION ARROW AUXILIARY SIGN, UPWARD	8	21	15	17.5																								BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND		E-136B
<b>SIGN ASSEMBLY 2</b>																															
SEE DETOUR PLAN	M4-8, DETOUR	1	24	12	2.00																								BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND	2-171	
SEE DETOUR PLAN	M3-1, STATE ROUTE CARDINAL DIRECTION MARKER, NORTH	1	24	12	2.00																								GREEN LEGEND ON WHITE BACKGROUND		E-136B
SEE DETOUR PLAN	M1-5, VERMONT STATE ROUTE 100	1	30	24	5.00																									E-136B	
SEE DETOUR PLAN	M5-1R, VERMONT STATE ROUTE ADVANCE TURN ARROW AUXILIARY SIGN RIGHT TURN ARROW	1	21	15	2.19																								BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND		E-136B
<b>SIGN ASSEMBLY 3</b>																															
SEE DETOUR PLAN	M4-8, DETOUR	1	24	12	2.00																								BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND	2-171	
SEE DETOUR PLAN	M3-1, STATE ROUTE CARDINAL DIRECTION MARKER, NORTH	1	24	12	2.00																								GREEN LEGEND ON WHITE BACKGROUND		E-136B
SEE DETOUR PLAN	M1-5, VERMONT STATE ROUTE 100	1	30	24	5.00																									E-136B	
SEE DETOUR PLAN	M6-1R, VERMONT STATE ROUTE DIRECTION ARROW AUXILIARY SIGN, RIGHT POINTING ARROW	1	21	15	2.19																								BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND		E-136B
<b>TOTALS</b>		SF	SF	EA.	EA.																										
		111.88																													

PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER STP 013-2(12)  
 FILE NAME: z12b4741mptss.dgn  
 PLOT DATE: 02/27/2015  
 PROJECT LEADER: E. ATKINS  
 DRAWN BY: C. MORIN  
 DESIGNED BY: Y. CAO  
 CHECKED BY: E. ATKINS  
 DETOUR SIGN SUMMARY SHEET 1  
 SHEET 44 OF 48

\*STANDARD HIGHWAY SIGNS AND MARKINGS BOOK



# DETOUR SIGN SUMMARY SHEET 2

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW & SALVAGED SIGNS				EXIST POST NO. OF POSTS	NEW SIGN POSTS														REMARKS	SIGN DETAIL									
		E A	WIDTH (In)	HEIGHT (In)	"A"	"B"	SALV SIGN		SALV TIS	FLANGED CHANNEL lb/ft			SQUARE STEEL (In)			TUBULAR ALUMINUM Ø (In)			TUBULAR STEEL Ø (In)					W-SHAPE STEEL		S.H.S.M.*	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER					
										1.2	2.0	3.0	1.75	2.0	2.5	3.0	4.0	4.0 MOD	3.0	3.5	4.0	5.0		FTG. SIZE	WEIGHT				POST SIZE				
OPTION ITEMS																																	
<b>SIGN ASSEMBLY 4</b>																																	
SEE DETOUR PLAN	M4-8, DETOUR	15	24	12	30.00																										BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND	2-171	
SEE DETOUR PLAN	M3-3, STATE ROUTE CARDINAL DIRECTION MARKER, SOUTH	15	24	12	30.00																										GREEN LEGEND ON WHITE BACKGROUND		E-136B
SEE DETOUR PLAN	M1-5, VERMONT STATE ROUTE 100	15	30	24	75.00																											E-136B	
SEE DETOUR PLAN	M6-3, VERMONT STATE ROUTE DIRECTION ARROW AUXILIARY SIGN UPWARD	15	21	15	32.81																										BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND		E-136B
<b>SIGN ASSEMBLY 5</b>																																	
SEE DETOUR PLAN	M4-8, DETOUR	3	24	12	6.00																										BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND	2-171	
SEE DETOUR PLAN	M3-3, STATE ROUTE CARDINAL DIRECTION MARKER, SOUTH	3	24	12	6.00																										GREEN LEGEND ON WHITE BACKGROUND		E-136B
SEE DETOUR PLAN	M1-5, VERMONT STATE ROUTE 100	3	30	24	15.00																											E-136B	
SEE DETOUR PLAN	M5-1L, VERMONT STATE ROUTE ADVANCE TURN ARROW AUXILIARY SIGN LEFT TURN ARROW	3	21	15	6.56																										BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND		E-136B
<b>SIGN ASSEMBLY 6</b>																																	
SEE DETOUR PLAN	M4-8, DETOUR	3	24	12	6.00																										BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND	2-171	
SEE DETOUR PLAN	M3-3, STATE ROUTE CARDINAL DIRECTION MARKER, SOUTH	3	24	12	6.00																										GREEN LEGEND ON WHITE BACKGROUND		E-136B
SEE DETOUR PLAN	M1-5, VERMONT STATE ROUTE 100	3	30	24	15.00																											E-136B	
SEE DETOUR PLAN	M6-1L, VERMONT STATE ROUTE DIRECTION ARROW AUXILIARY SIGN LEFT POINTING ARROW	3	21	15	6.56																										BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND		E-136B
<b>TOTALS</b>		SF	SF	EA.	EA.																												
		234.93																															

PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER STP 013-2(12)  
 FILE NAME: z12b4741mptss.dgn  
 PLOT DATE: 02/27/2015  
 PROJECT LEADER: E. ATKINS  
 DRAWN BY: C. MORIN  
 DESIGNED BY: Y. CAO  
 CHECKED BY: E. ATKINS  
 DETOUR SIGN SUMMARY SHEET 2  
 SHEET 45 OF 48

\*STANDARD HIGHWAY SIGNS AND MARKINGS BOOK



# DETOUR SIGN SUMMARY SHEET 3

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW & SALVAGED SIGNS				EXIST POST REFRAIN	NO. OF POSTS	NEW SIGN POSTS															REMARKS	SIGN DETAIL					
		E A	WIDTH (In)	HEIGHT (In)	"A"	"B"	SALV SIGN			SALV TIS	FLANGED CHANNEL lb/ft			SQUARE STEEL (In)			TUBULAR ALUMINUM Ø (In)			TUBULAR STEEL Ø (In)				W-SHAPE STEEL		S.H.S.M.*	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER			
											1.2	2.0	3.0	1.75	2.0	2.5	3.0	4.0	4.0 MOD	3.0	3.5	4.0	5.0	FTG. SIZE					WEIGHT	POST SIZE	
																								1.88							2.42
OPTION ITEMS																															
SIGN ASSEMBLY 7																															
SEE DETOUR PLAN	M4-8a, END DETOUR	1	24	18	3.00																							BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND	2-172		
SEE DETOUR PLAN	M3-1, STATE ROUTE CARDINAL DIRECTION MARKER, NORTH	1	24	12	2.00																							GREEN LEGEND ON WHITE BACKGROUND		E-136B	
SEE DETOUR PLAN	MI-5, VERMONT STATE ROUTE 100	1	30	24	5.00																									E-136B	
SIGN ASSEMBLY 8																															
SEE DETOUR PLAN	M4-8a, END DETOUR	1	24	18	3.00																							BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND	2-172		
SEE DETOUR PLAN	M3-3, STATE ROUTE CARDINAL DIRECTION MARKER, SOUTH	1	24	12	2.00																							GREEN LEGEND ON WHITE BACKGROUND		E-136B	
SEE DETOUR PLAN	MI-5, VERMONT STATE ROUTE 100	1	30	24	5.00																									E-136B	
SIGN ASSEMBLY 9																															
SEE DETOUR PLAN	SP-1, VT 100 CLOSED 1500 FEET AHEAD NO THRU TRAFFIC	1	60	30	12.50																							BLACK LEGEND ON WHITE BACKGROUND		SP-1 SEE SHEET 36	
SEE DETOUR PLAN	M4-10, DETOUR	1	48	18	6.00																									E-102A	
SIGN ASSEMBLY 10																															
SEE DETOUR PLAN	M4-8, DETOUR	1	24	12	2.00																							BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND	2-171		
SEE DETOUR PLAN	M3-3, STATE ROUTE CARDINAL DIRECTION MARKER, SOUTH	1	24	12	2.00																							GREEN LEGEND ON WHITE BACKGROUND		E-136B	
SEE DETOUR PLAN	MI-5, VERMONT STATE ROUTE 100	1	30	24	5.00																									E-136B	
TOTALS		SF	SF	EA.	EA.																										
		47.50																													

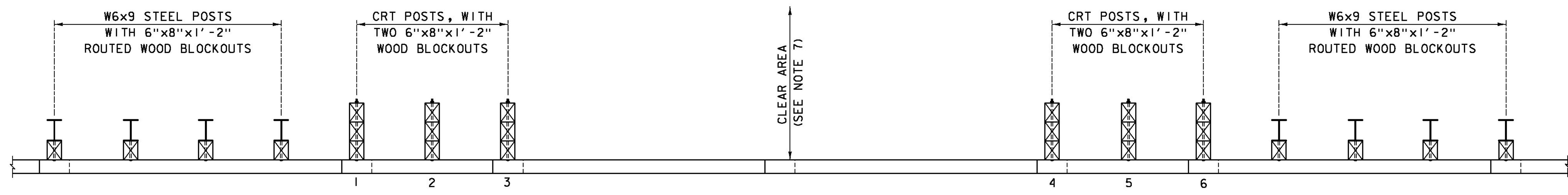
PROJECT NAME: JAMAICA  
 PROJECT NUMBER: ER STP 013-2(12)  
 FILE NAME: z12b4741mptss.dgn  
 PROJECT LEADER: E. ATKINS  
 DESIGNED BY: Y. CAO  
 PLOT DATE: 02/27/2015  
 DRAWN BY: C. MORIN  
 CHECKED BY: E. ATKINS  
 DETOUR SIGN SUMMARY SHEET 3  
 SHEET 46 OF 48

\*STANDARD HIGHWAY SIGNS AND MARKINGS BOOK

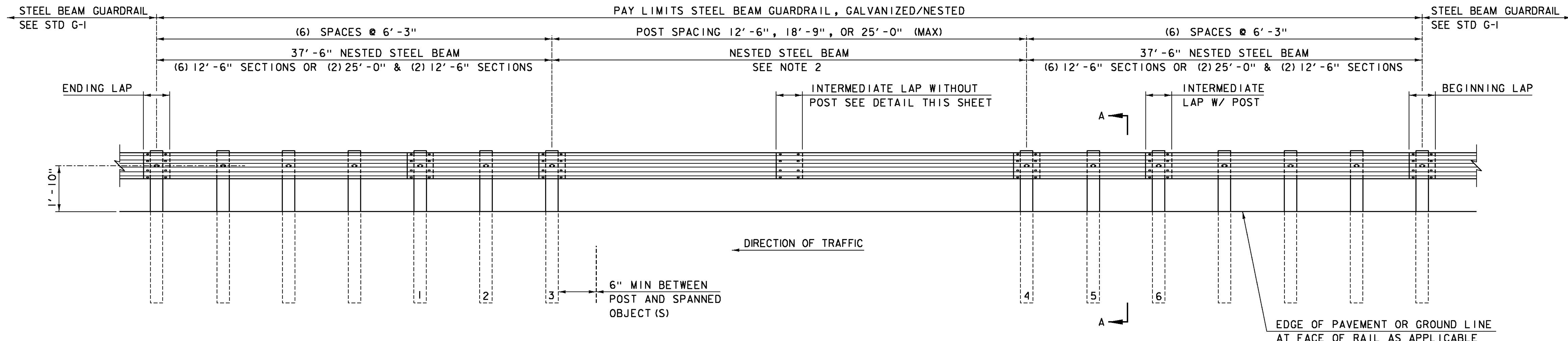




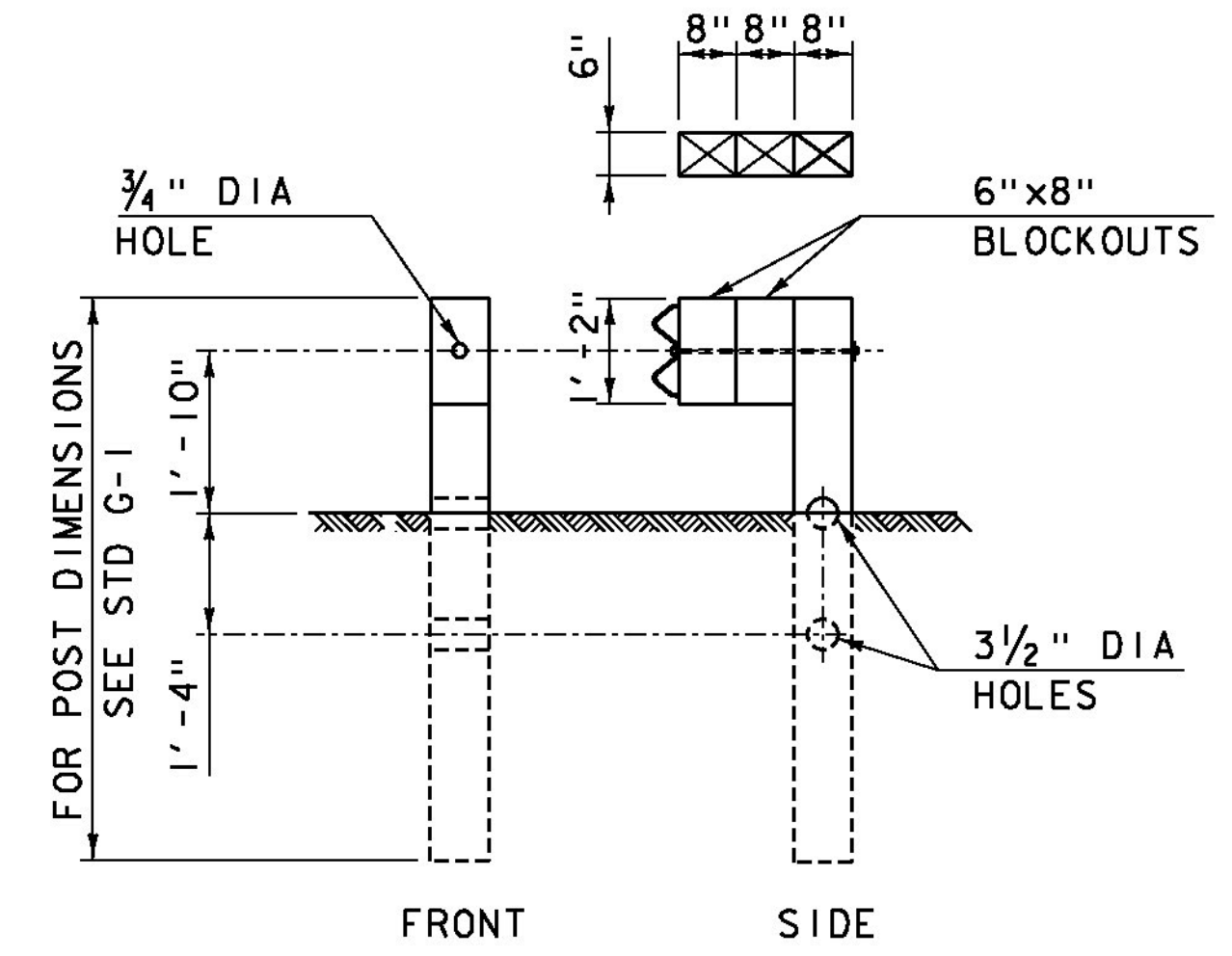




**LONGSPAN STEEL BEAM GUARDRAIL PLAN**

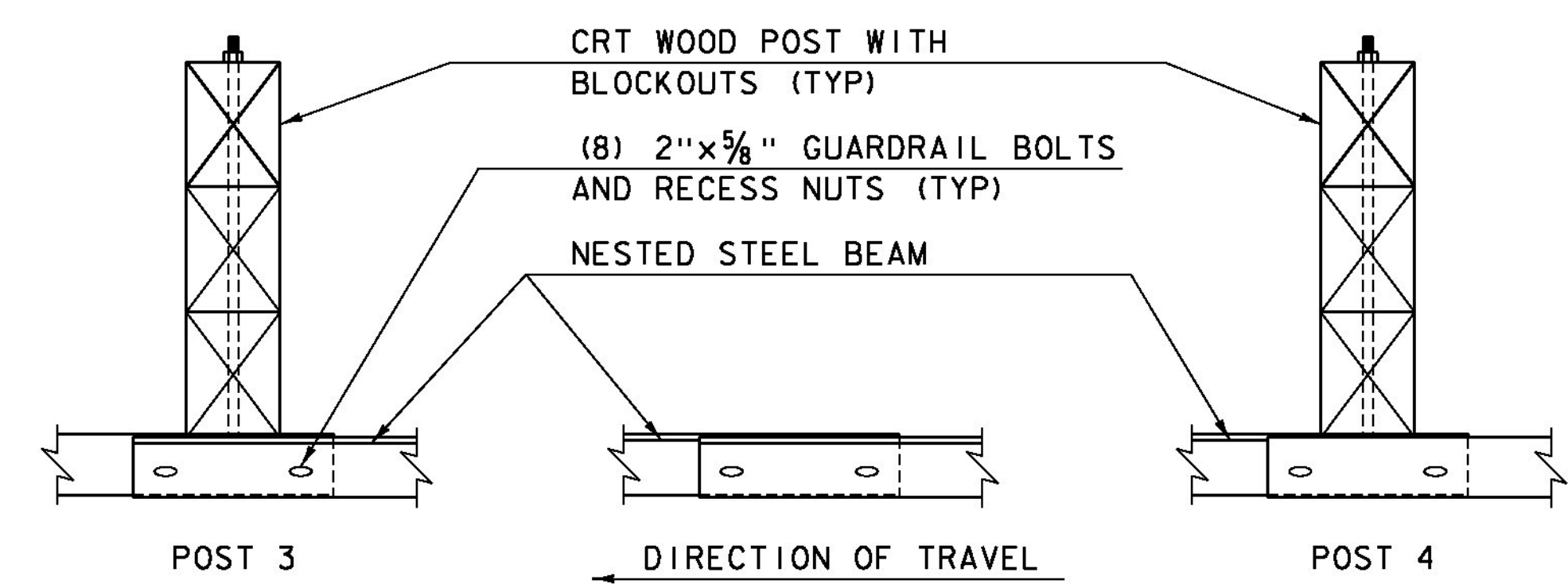


**LONGSPAN STEEL BEAM GUARDRAIL ELEVATION**



**SECTION A-A**

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



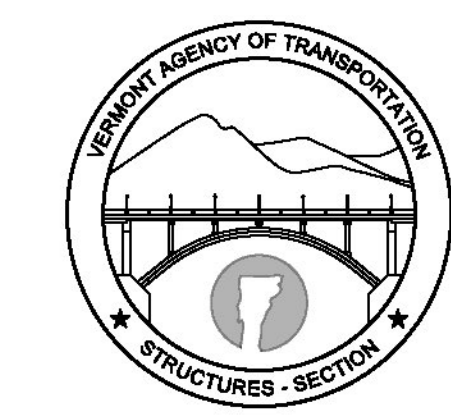
**INTERMEDIATE LAP WITHOUT POST**

**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

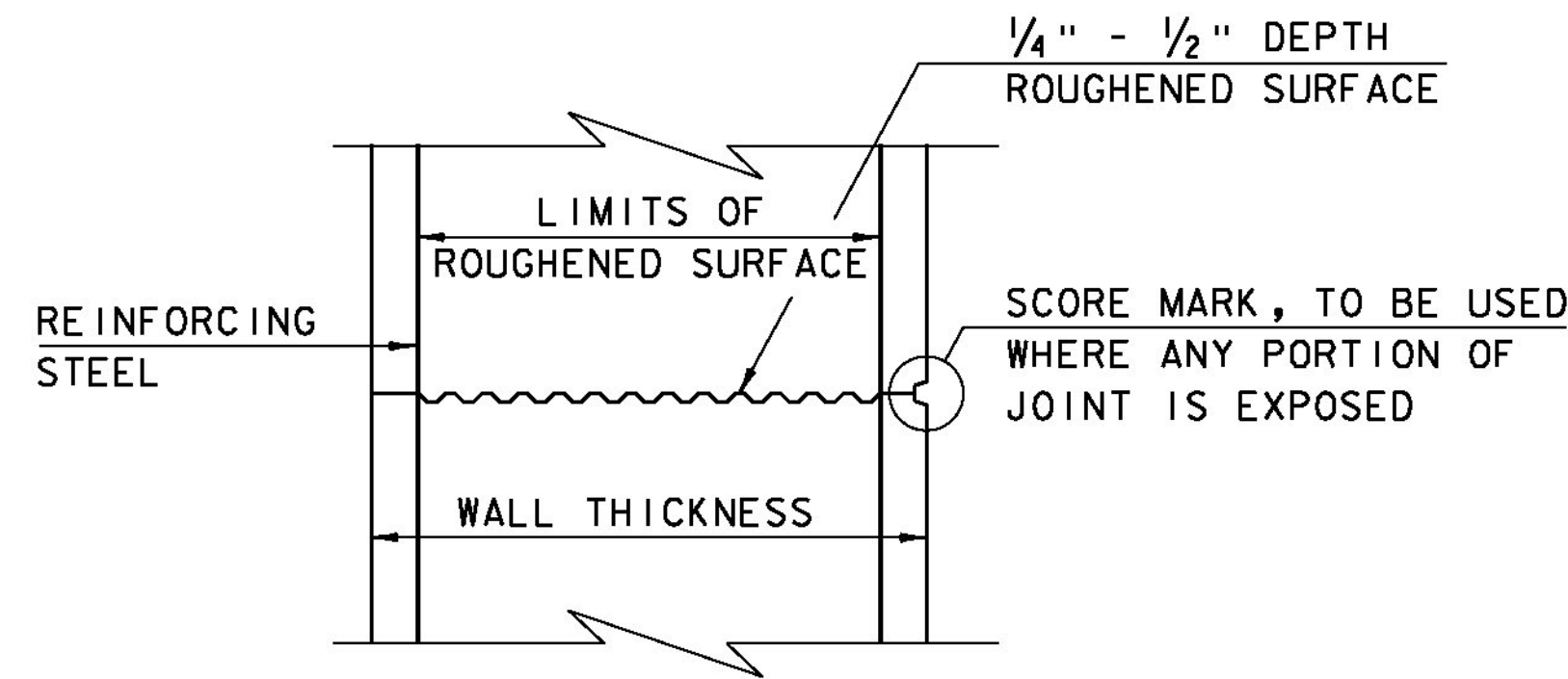
**LONGSPAN  
STEEL BEAM GUARDRAIL,  
GALVANIZED**



**STRUCTURES  
DETAIL  
SD-366.00**

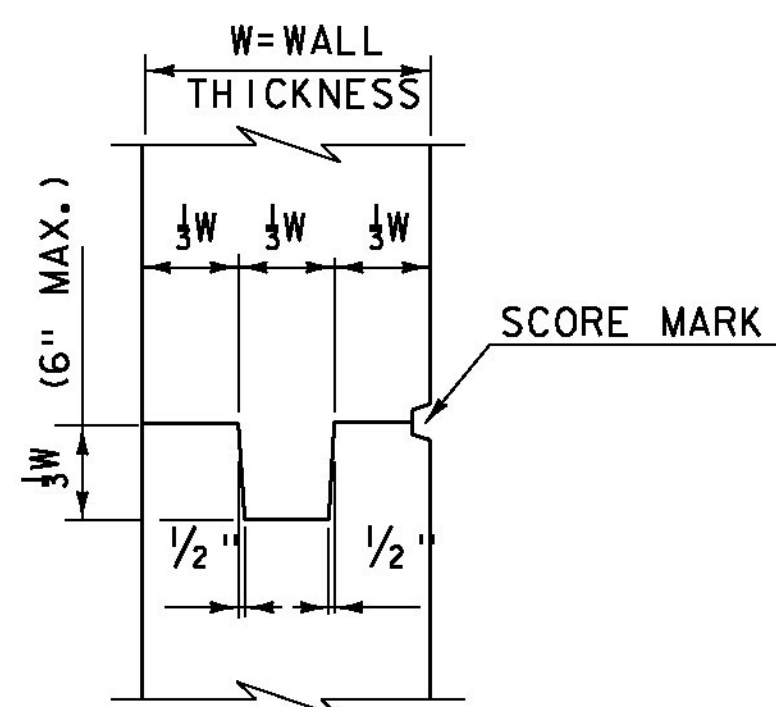
**CONCRETE GENERAL NOTES**

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.

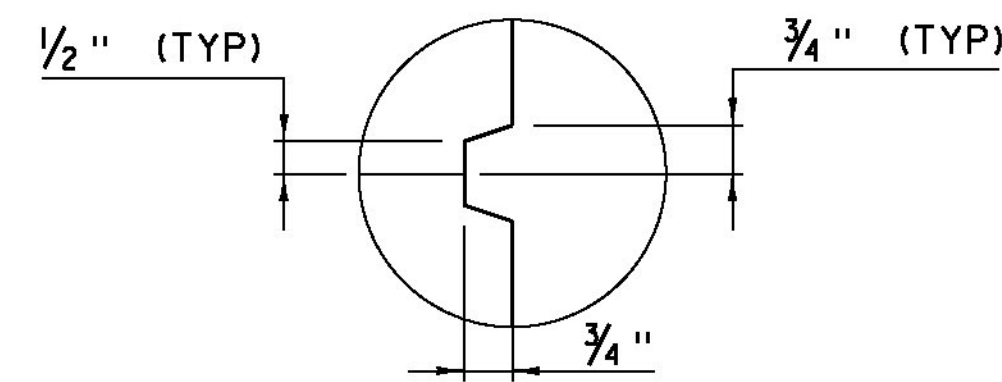


**TYPICAL HORIZONTAL CONSTRUCTION JOINT**  
(NOT TO SCALE)

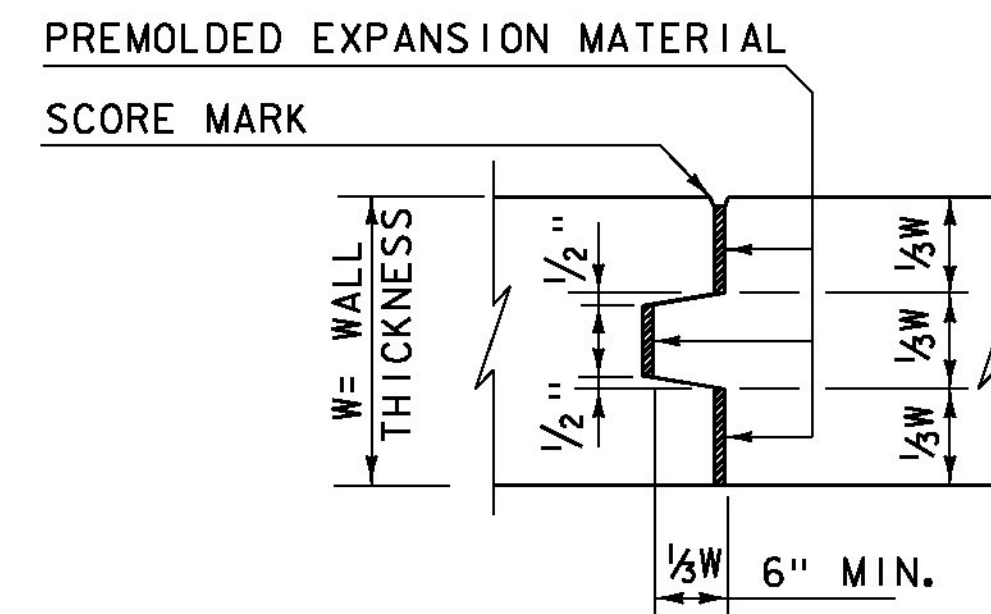
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



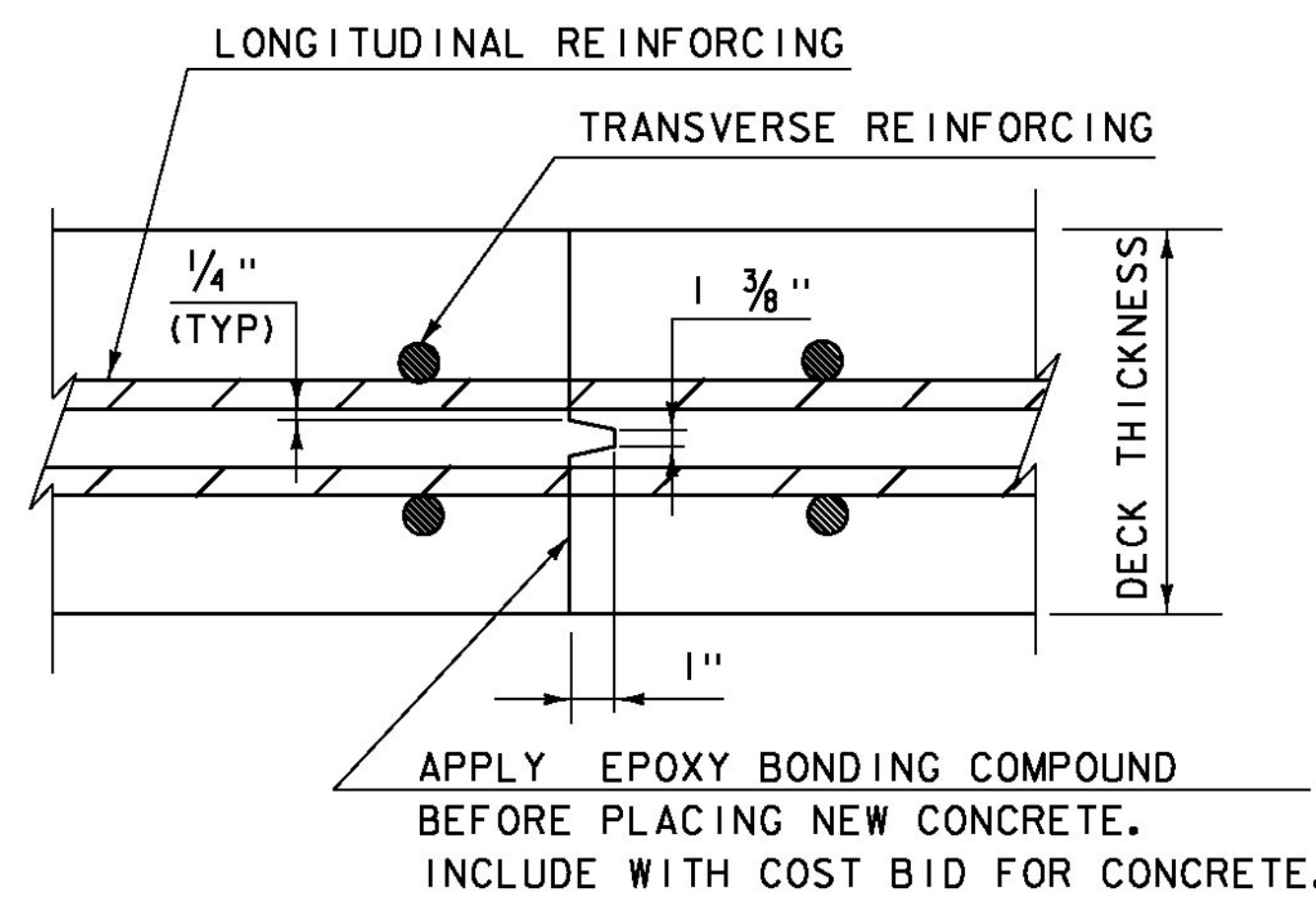
**TYPICAL CONCRETE CONSTRUCTION JOINT**  
(NOT TO SCALE)



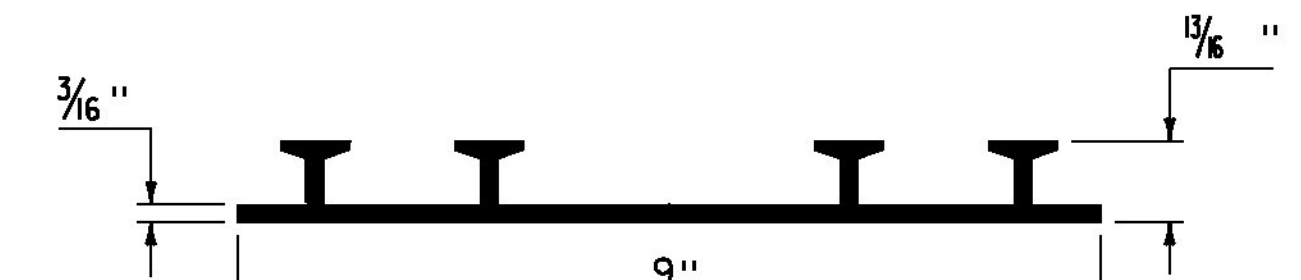
**SCORE MARK DETAIL**  
(NOT TO SCALE)



**TYPICAL CONCRETE EXPANSION JOINT**  
(NOT TO SCALE)



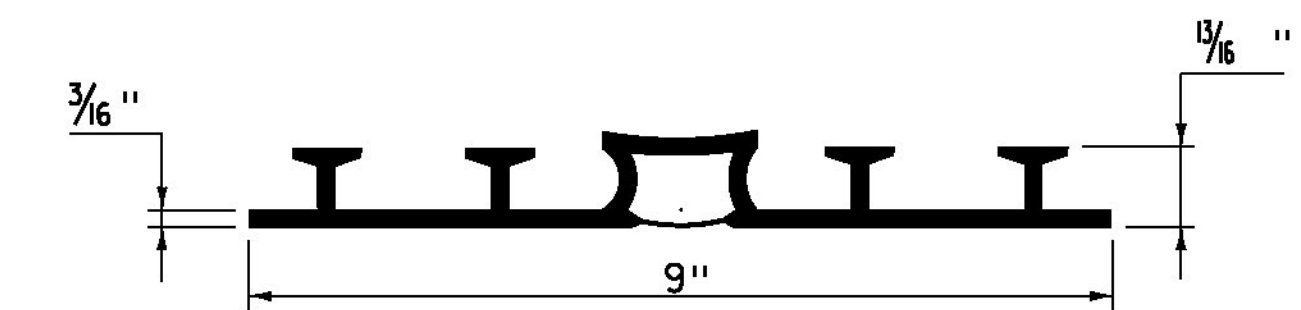
**TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS**  
(NOT TO SCALE)



**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.

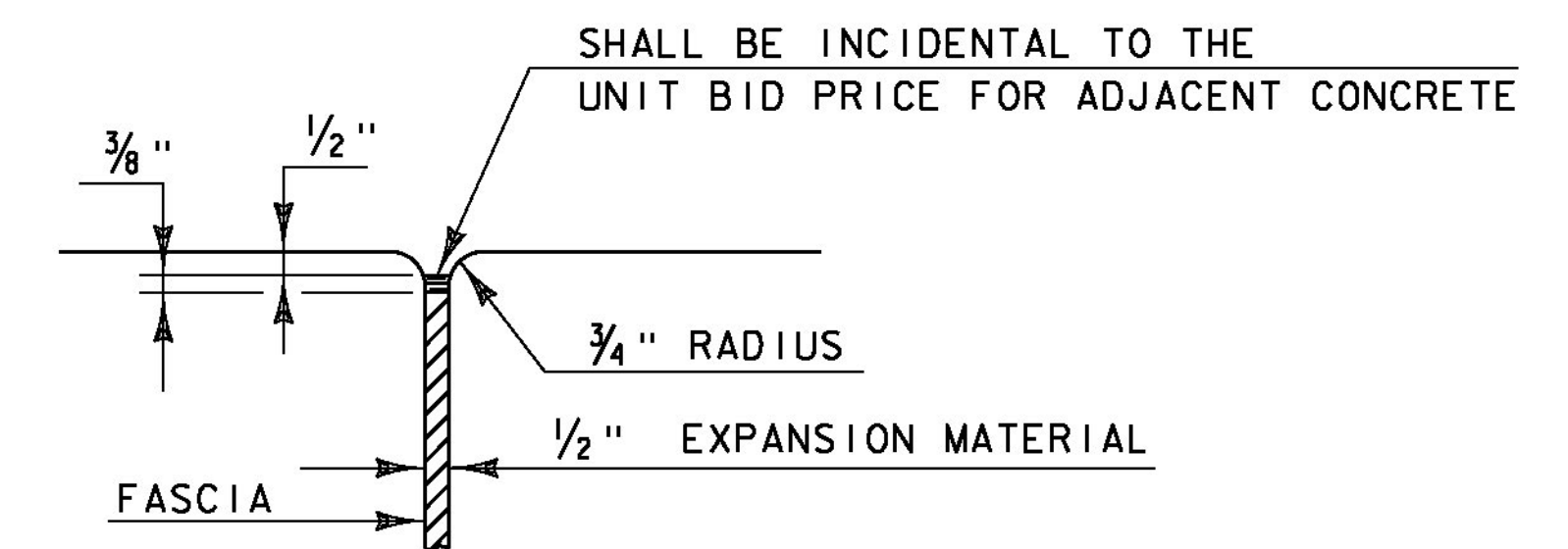
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



**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.

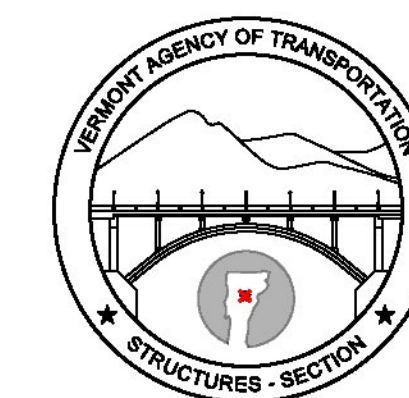
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



**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**

# TRAFFIC SIGN SUMMARY SHEET

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW & SALVAGED SIGNS				EXIST POST RETAIN	NO. OF POSTS	NEW SIGN POSTS																REMARKS	SIGN DETAIL									
		E	A	WIDTH (in)	HEIGHT (in)	"A"	"B"			SALV SIGN	SALV TIS	FLANGED CHANNEL lb/ft			SQUARE STEEL (in)			TUBULAR ALUMINUM Ø (in)			TUBULAR STEEL Ø (in)				W-SHAPE STEEL		S.H.S.M.*	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER							
												1.2	2.0	3.0	1.75	2.0	2.5	3.0	4.0	4.0	4.0	3.0	3.5	4.0	5.0					24"	30"	WEIGHT	POST SIZE			
OPTION ITEMS																																				
VT ROUTE 100																																				
12+28.8 LT							X		I							X		I															RELOCATE EXISTING SIGN ON NEW POST			T-42
12+36.9 RT							X		I							X		I															RELOCATE EXISTING SIGN ON NEW POST			T-42
TOTALS		SF	SF	EA.	EA.																															

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE VTRANS STANDARD SHEETS AND THE "SIGN POST DESIGN GUIDELINE".

\*STANDARD HIGHWAY SIGNS AND MARKINGS BOOK

PROJECT NAME:	JAMAICA	PLOT DATE:	02/27/2015
PROJECT NUMBER:	ER STP 013-2(12)	DRAWN BY:	T. BIGELOW
FILE NAME:	z12b474+ss.dgn	DESIGNED BY:	T. BIGELOW
PROJECT LEADER:	E. ATKINS	CHECKED BY:	E. ATKINS
TRAFFIC SIGN SUMMARY SHEET		SHEET	27 OF 48

**GENERAL NOTES:**

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 6<sup>th</sup> EDITION, AND ITS LATEST REVISIONS.
2. DESIGN VEHICLE: HL-93
3. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THAT THE CONTRACTOR'S OPERATIONS SHALL IN NO WAY WEAKEN OR DAMAGE PROPERTY OF THE UTILITY. ANY DAMAGE TO THE PROPERTY OF THE UTILITY AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR TO THE FULL SATISFACTION OF THE OWNER OF THE UTILITY. SEE THE UTILITY SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
4. THE CONTRACTOR SHALL TAKE ALL NECESSARY ACTIONS FOR THE ADEQUATE CONTROL OF WATER TO ALLOW FOR THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS TO OCCUR IN THE DRY OR AS DIRECTED BY THE ENGINEER. REFER TO SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM) DETAIL ON TYPICAL SECTIONS AND DETAILS SHEET 3 FOR ADDITIONAL REQUIREMENTS.
5. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, ESPECIALLY THE DISCHARGE OF RAW CONCRETE INTO THE EXISTING STREAMS/RIVERS AS DIRECTED BY THE RESIDENT ENGINEER AND STANDARD SPECIFICATIONS SECTION 105.
6. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68°F.

**REINFORCING STEEL:**

7. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".
8. REINFORCING PLACEMENT TOLERANCES SHALL BE:  
 SPACING: +/- 1 INCH  
 CLEARANCE: +/- 1/4 INCH
9. MINIMUM COVER FOR REINFORCING STEEL SHALL BE 2 INCHES ALONG BACK FACES OF WALLS AGAINST EARTH, AND 3 INCHES ELSEWHERE UNLESS NOTED OTHERWISE.

10. REINFORCING STEEL IN PRECAST CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 507 AND SECTION 540 FOR LEVEL I REINFORCING, EPOXY COATED, AND WILL BE INCLUDED FOR PAYMENT UNDER CONTRACT ITEM 540.10. REINFORCING STEEL IN CAST-IN-PLACE CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR LEVEL I REINFORCING, EPOXY COATED, AND WILL BE PAID FOR UNDER CONTRACT ITEM 507.11.

**CONCRETE:**

- SEE CHANGE ORDER #1: PRECAST WINGWALLS WERE USED
- \*11. PRECAST CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 540 AND WILL BE PAID FOR UNDER CONTRACT ITEM 540.10. WINGWALLS, WINGWALL FOOTINGS AND HEADWALLS SHALL BE CAST-IN-PLACE CONCRETE. CAST-IN-PLACE CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 501 FOR CONCRETE, HIGH PERFORMANCE CLASS B AND WILL BE PAID FOR UNDER CONTRACT ITEM 501.34.

12. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1".
13. WATER REPELLENT, SILANE SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 514 AND SHALL BE SHOP APPLIED TO ALL INTERIOR PERIMETER SURFACES OF THE PRECAST CONCRETE STRUCTURE. PAYMENT FOR WATER REPELLENT, SILANE APPLIED TO INTERIOR PERIMETER SURFACES OF THE PRECAST CONCRETE STRUCTURE WILL BE INCLUDED IN THE BID UNIT PRICE FOR ITEM 540.10 PRECAST CONCRETE STRUCTURE (10'-0" x 7'-0" x 63'-0" BOX). WATER REPELLENT, SILANE SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 514 AND SHALL BE FIELD APPLIED TO ALL EXPOSED SURFACES OF THE CAST-IN-PLACE HEADWALLS AND WINGWALLS. PAYMENT FOR WATER REPELLENT, SILANE APPLIED TO EXPOSED SURFACES OF THE CAST-IN-PLACE HEADWALLS AND WINGWALLS WILL BE PAID UNDER ITEM 514.10 WATER REPELLENT, SILANE.

14. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
15. THE KEY IN CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT.

16. PAYMENT FOR PRECAST BAFFLES AND PRECAST CUTOFF WALLS AND ANY DRILLING AND GROUTING REQUIRED TO ATTACH THE PRECAST BAFFLES AND PRECAST CUTOFF WALLS WILL BE CONSIDERED INCIDENTAL TO ITEM 540.10 PRECAST CONCRETE STRUCTURE (10'-0" x 7'-0" x 63'-0" BOX).
17. WHERE LEDGE IS ABOVE THE MINIMUM BOTTOM OF FOOTING ELEVATION, THE LEDGE SHALL BE EXCAVATED DOWN TO 2'-6" MINIMUM BELOW THE TOP OF THE WINGWALL FOOTING ELEVATION. ALL OVER BREAKAGE BELOW THIS ELEVATION SHALL BE REPLACED WITH ITEM 501.34 CONCRETE, HIGH PERFORMANCE CLASS B. A MAXIMUM OF SIX INCHES AVERAGE DEPTH SHALL BE PAID FOR AS ITEM 501.34 CONCRETE, HIGH PERFORMANCE CLASS B. ANY ADDITIONAL CONCRETE OR EXCAVATION SHALL BE AT THE CONTRACTOR'S EXPENSE.
18. BORINGS INDICATED ON THE PLANS HAVE BEEN MADE FOR DESIGN PURPOSES ONLY.
19. THE COST OF GROUT SHALL BE CONSIDERED INCIDENTAL TO ITEM 507.11 REINFORCING STEEL, LEVEL I.

**LAYOUT NOTES:**

20. PROPOSED CULVERT SHALL BE LAID OUT BASED ON THE DIMENSIONS GIVEN ON THIS SHEET AND THE BRIDGE LAYOUT SHEET.
21. CHANNEL BASELINE SHALL BE ESTABLISHED AS INDICATED ON THE PLANS. OFFSETS TO THE CENTERLINE ARE MEASURED TO THE TOP OF THE SLAB AT EACH END.

**PRECAST CONCRETE:**

22. DESIGN CRITERIA (PRECAST BOX)
  - A. SOIL UNIT WEIGHT = (SEE GEOTECHNICAL REPORT)
  - B. DESIGN LIVE LOAD = HL-93
  - C. NOMINAL BEARING RESISTANCE = (SEE GEOTECHNICAL REPORT)
  - D. NOMINAL BEARING RESISTANCE (GRANULAR BACKFILL) = (SEE GEOTECHNICAL REPORT)
  - E. BEARING RESISTANCE FACTOR = 0.45
  - F. DESIGN FILL OVER BOX = 0-2 FEET
  - G. AT-REST EARTH PRESSURE (K<sub>o</sub>) = (SEE GEOTECHNICAL REPORT)
  - H. CONCRETE COMPRESSIVE STRENGTH = SEE SUBSECTION 540.05 (e)
23. THE PRECAST CONCRETE STRUCTURE SHALL BE DESIGNED FOR HYDROSTATIC PRESSURE. NO WEEPHOLES IN THE BOX SECTIONS WILL BE ALLOWED.
24. THE PRECAST BOX SECTIONS ARE SHOWN FOR REFERENCE ONLY. THE ACTUAL DIMENSIONS WILL BE DEPENDENT ON THE FABRICATOR. THE MINIMUM INSIDE DIMENSIONS SHALL BE 7'-0" IN HEIGHT AND 10'-0" IN WIDTH. MINIMUM SLAB AND WALL THICKNESSES SHALL BE AS SHOWN IN THE PRECAST CONCRETE BOX CULVERT TYPICAL SECTION.
25. ALL LIFTING HOLES AND BOLT POCKETS SHALL BE FILLED WITH MORTAR TYPE IV AFTER BEING SET IN THEIR FINAL POSITION. THIS WORK WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 540.10. FILLING THE JOINTS BETWEEN BOX SEGMENTS WITH GROUTING NOT REQUIRED.
26. NO ADDITIONAL WORK (I.E. BACKFILLING OR MEMBRANE) IS ALLOWED UNTIL THE GROUT HAS REACHED A STRENGTH OF 2000 PSI OR 30% OF MAXIMUM.

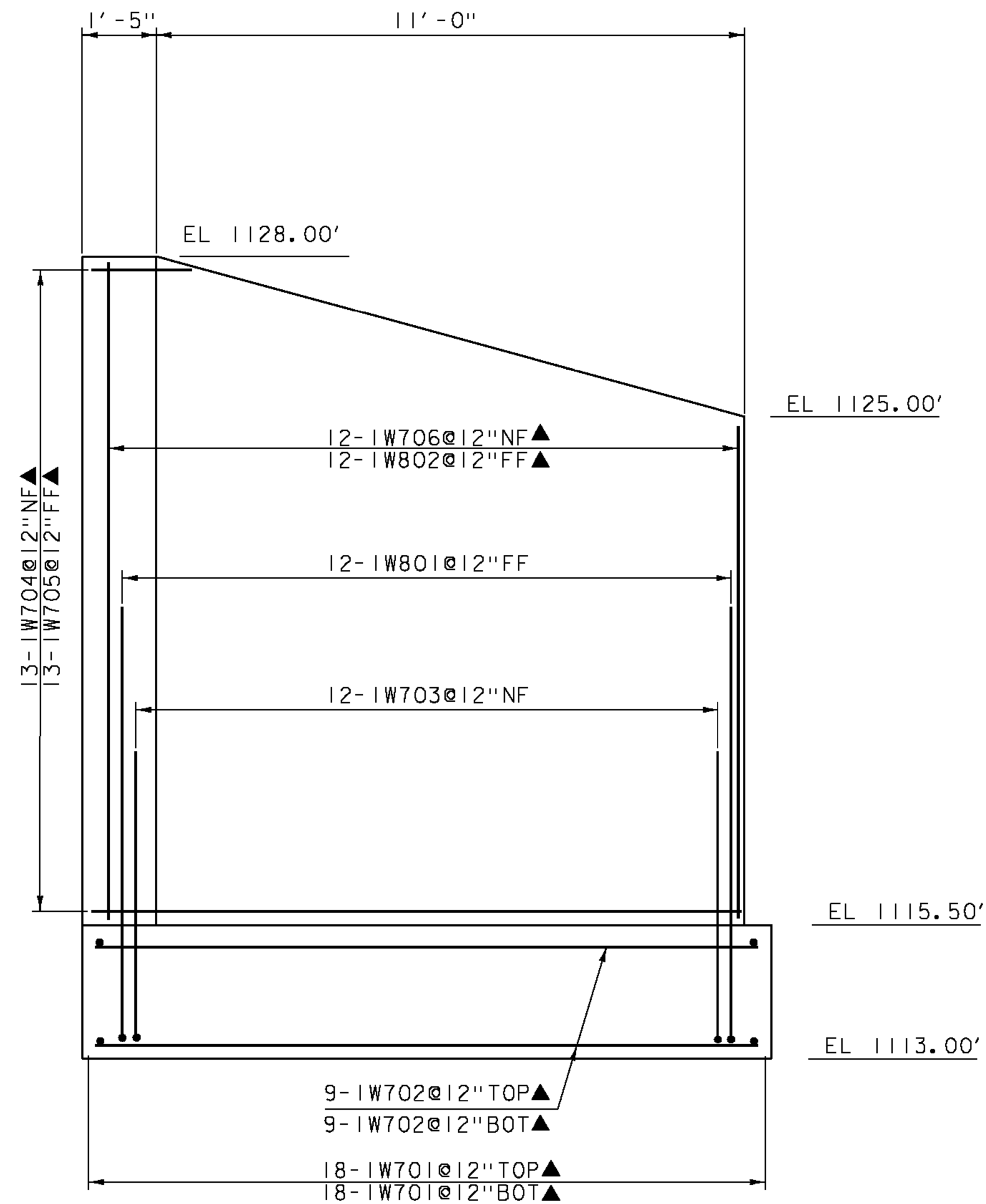
27. A TWO (2) FOOT WIDE STRIP OF SHEET MEMBRANE WATERPROOFING SHALL BE PLACED OVER EACH JOINT. THE SHEET MEMBRANE WATERPROOFING SHALL BE CENTERED ON THE JOINT AND COVER THE FULL LENGTH OF THE SIDES AND TOP. THE SIDES SHALL BE COVERED PRIOR TO THE TOP. ANY OVERLAPPING OF THE MEMBRANE SHALL BE DONE IN A SHINGLE TYPE STYLE TO SHED WATER AND SHALL OVERLAP A MINIMUM OF ONE FOOT. A SECOND LAYER OF SHEET MEMBRANE WATERPROOFING SHALL THEN BE PLACED OVER THE ENTIRE TOP AND BOTH SIDES OF THE CULVERT. PAYMENT FOR SHEET MEMBRANE WATERPROOFING WILL BE CONSIDERED INCIDENTAL TO CONTRACT ITEM 540.10 PRECAST CONCRETE STRUCTURE (10'-0" x 7'-0" x 63'-0" BOX).

REVISION	BY	DATE
△ REVISED NOTE 10, 13 AND 27 DELETED NOTE 28	TPB	3/31/2015

PROJECT NAME: JAMAICA	PLOT DATE: 02/27/2015
PROJECT NUMBER: ER STP 013-2(12)	DRAWN BY: I. KHALID
FILE NAME: z12b474def.dgn	CHECKED BY: E. ATKINS
PROJECT LEADER: E. ATKINS	SHEET 29 OF 48
DESIGNED BY: M. BRADLEY	
GENERAL NOTES (BR 82)	

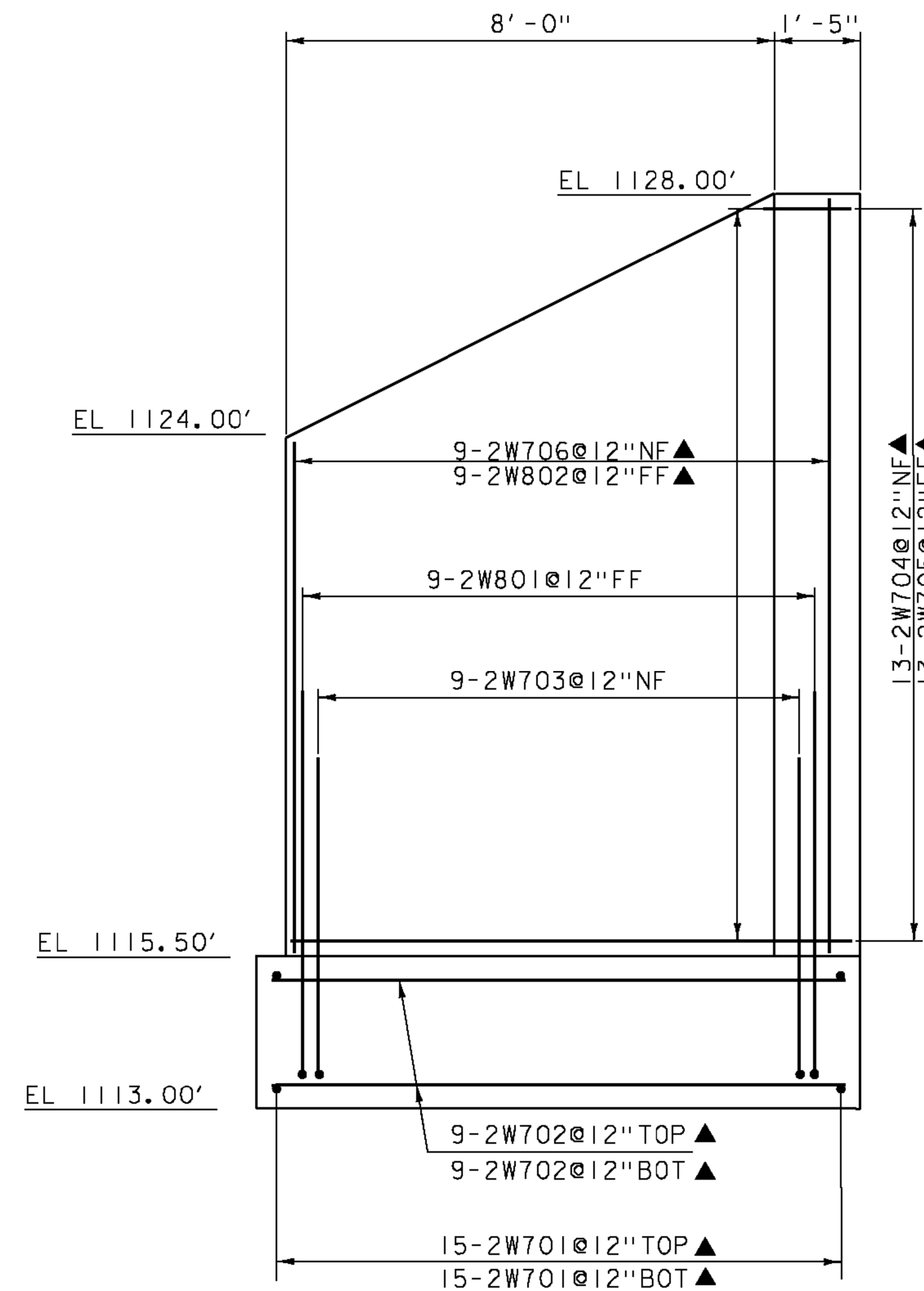
SEE CHANGE ORDER #1

SEE ATTACHED SHOP DRAWINGS FOR PRECAST WINGWALL DETAILS



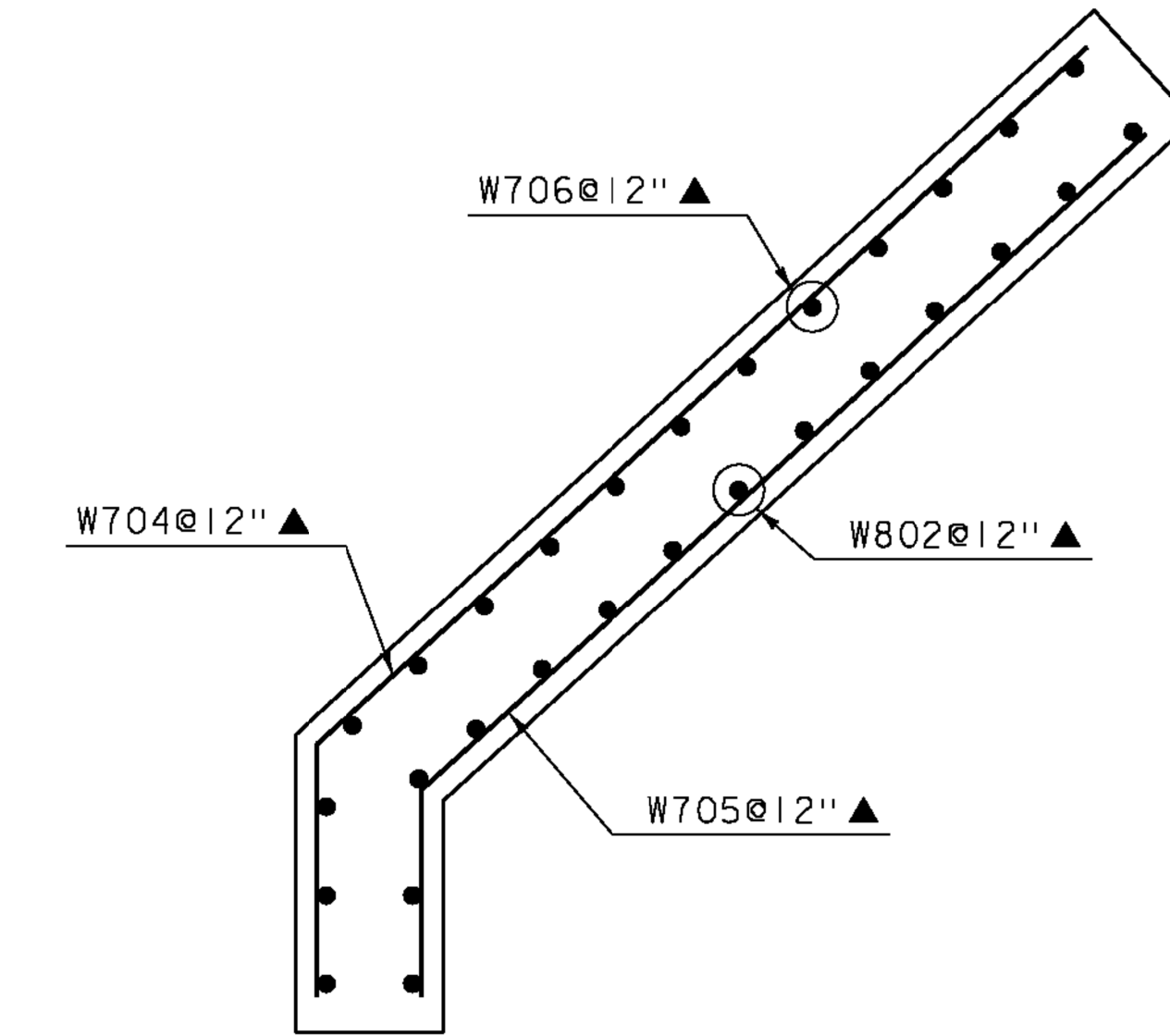
WINGWALL 1 ELEVATION

SCALE 1/2" = 1'



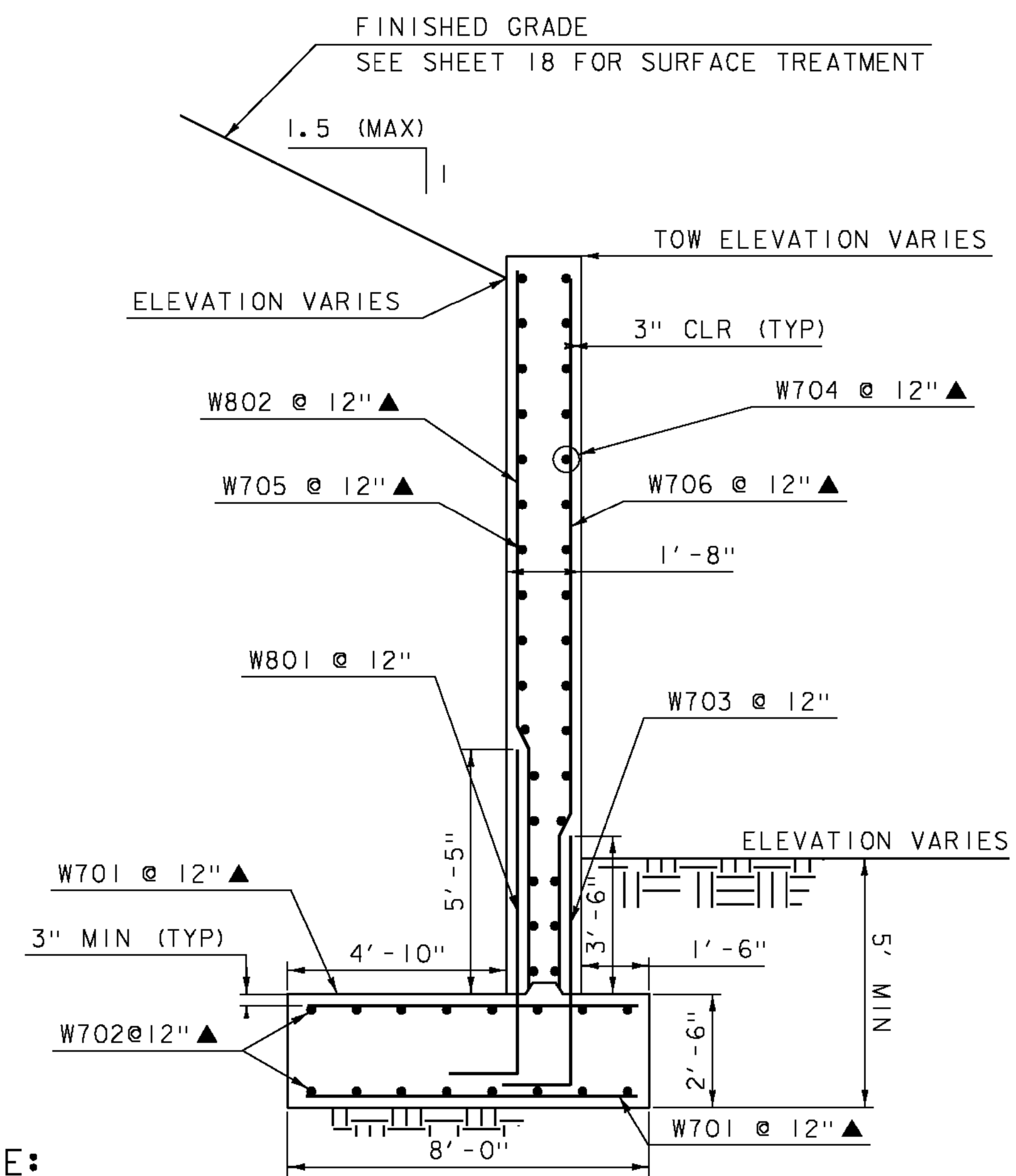
WINGWALL 2 ELEVATION

SCALE 1/2" = 1'



WINGWALL CORNER  
DETAIL

SCALE 1/2" = 1'



WINGWALL SECTION

SCALE 3/8" = 1'

NOTE:

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



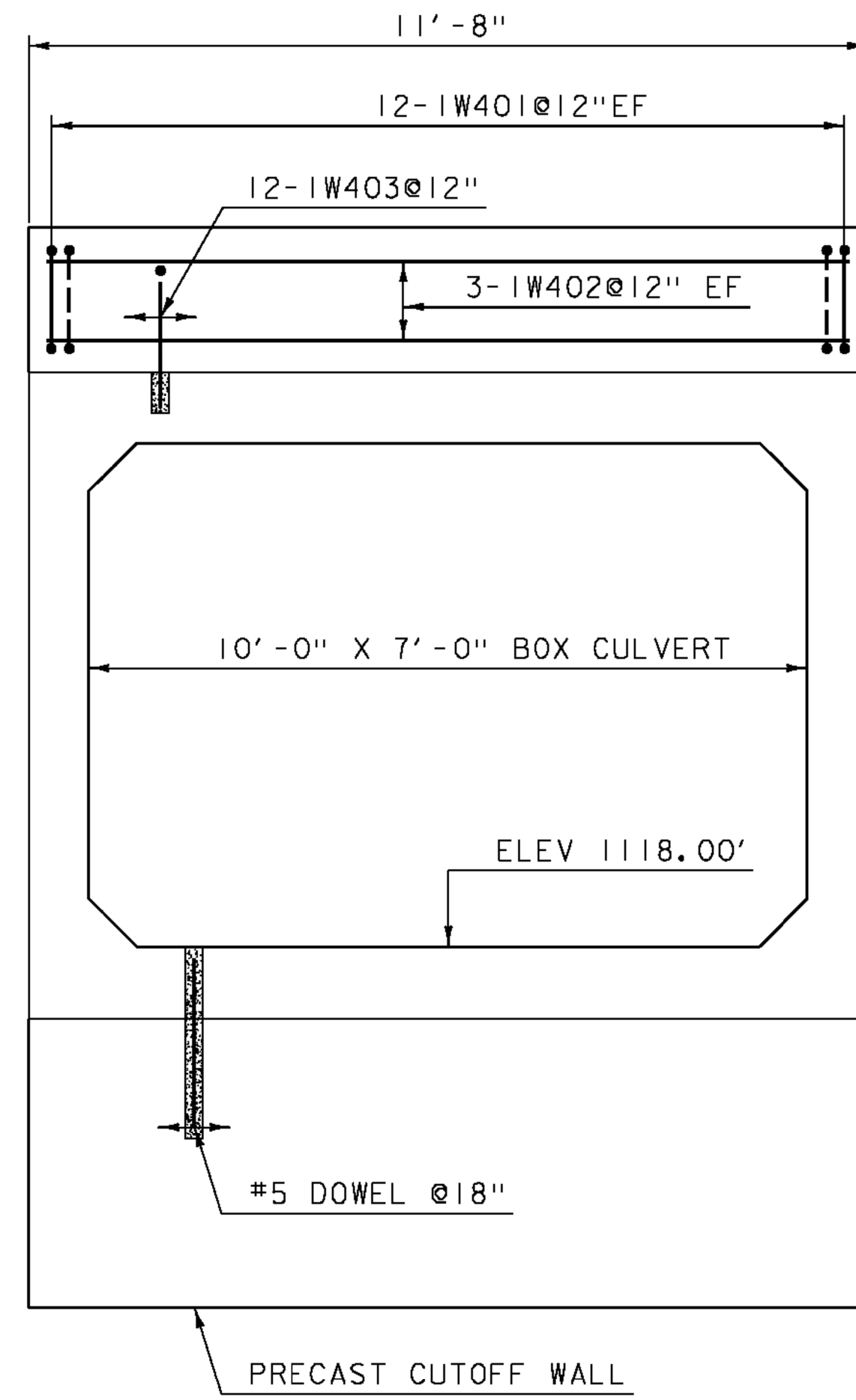
PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474det2.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: B. KHALIFA  
WALL AND FOOTING DETAILS SHEET 1(BR 82) SHEET 32 OF 48

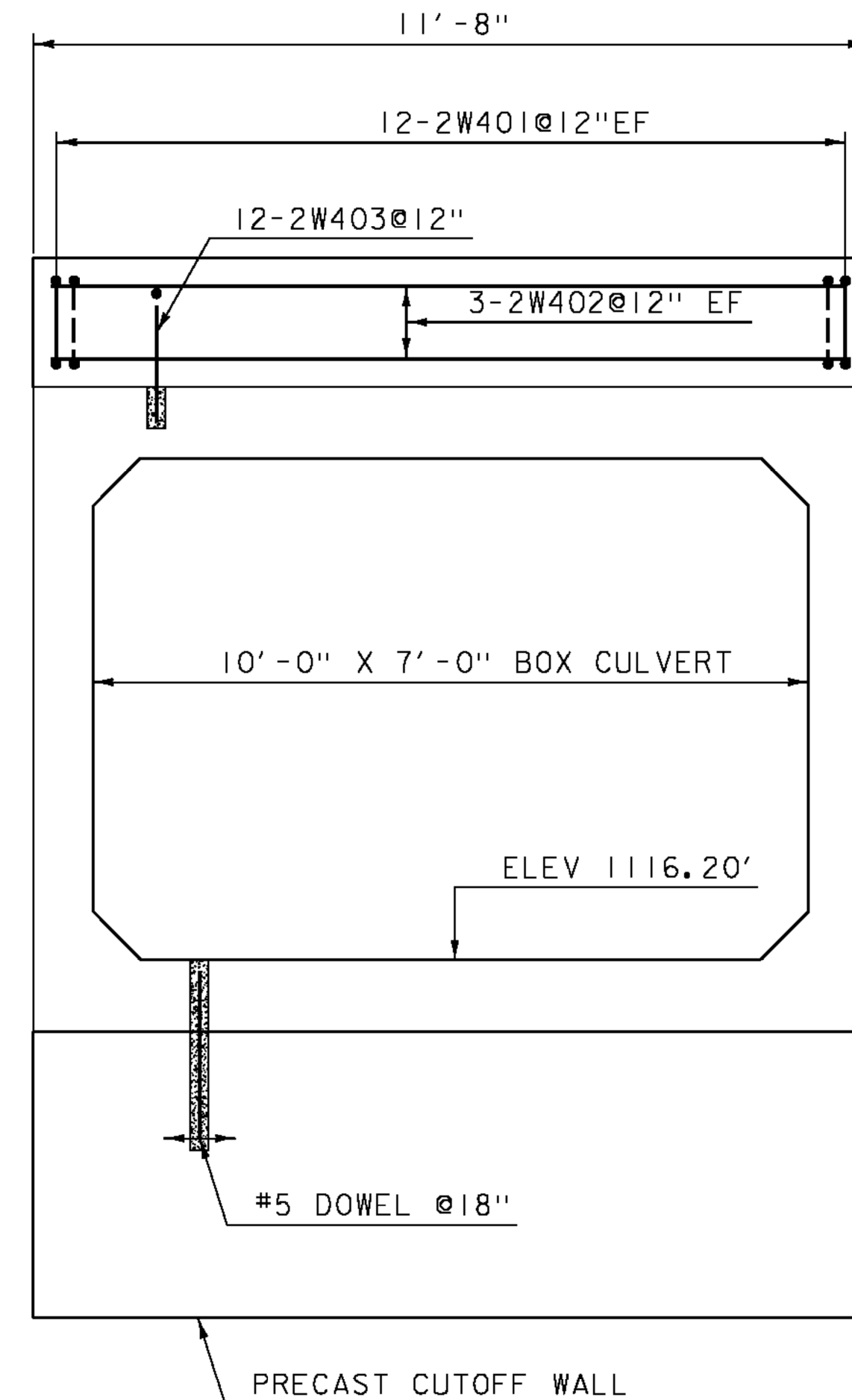
PLOT DATE: 02/27/2015  
DRAWN BY: S. SOLLA  
CHECKED BY: B. KHALIFA

SEE CHANGE ORDER #1

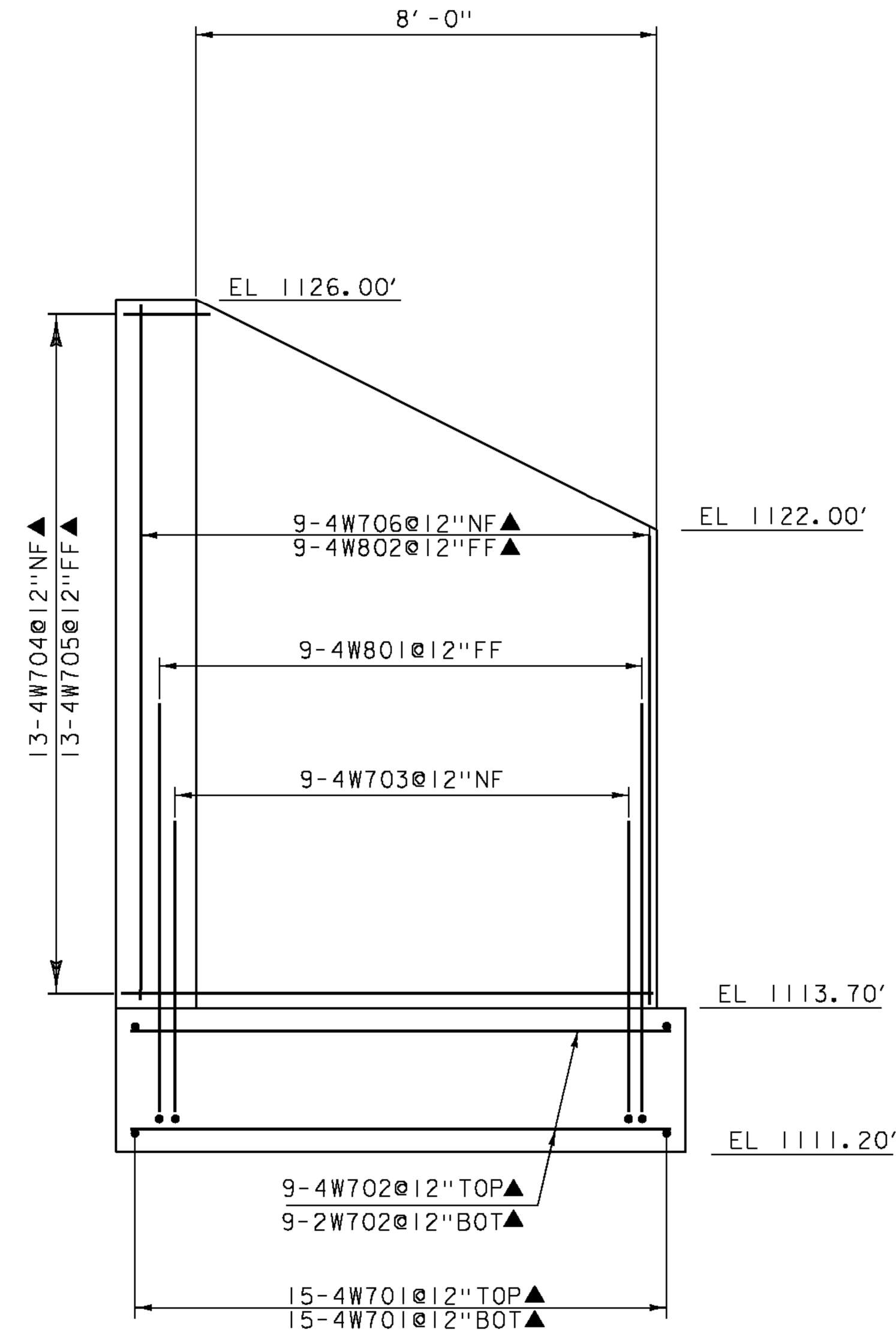
SEE ATTACHED SHOP DRAWINGS  
FOR PRECAST WINGWALL DETAILS  
AND HEADWALL DETAILS



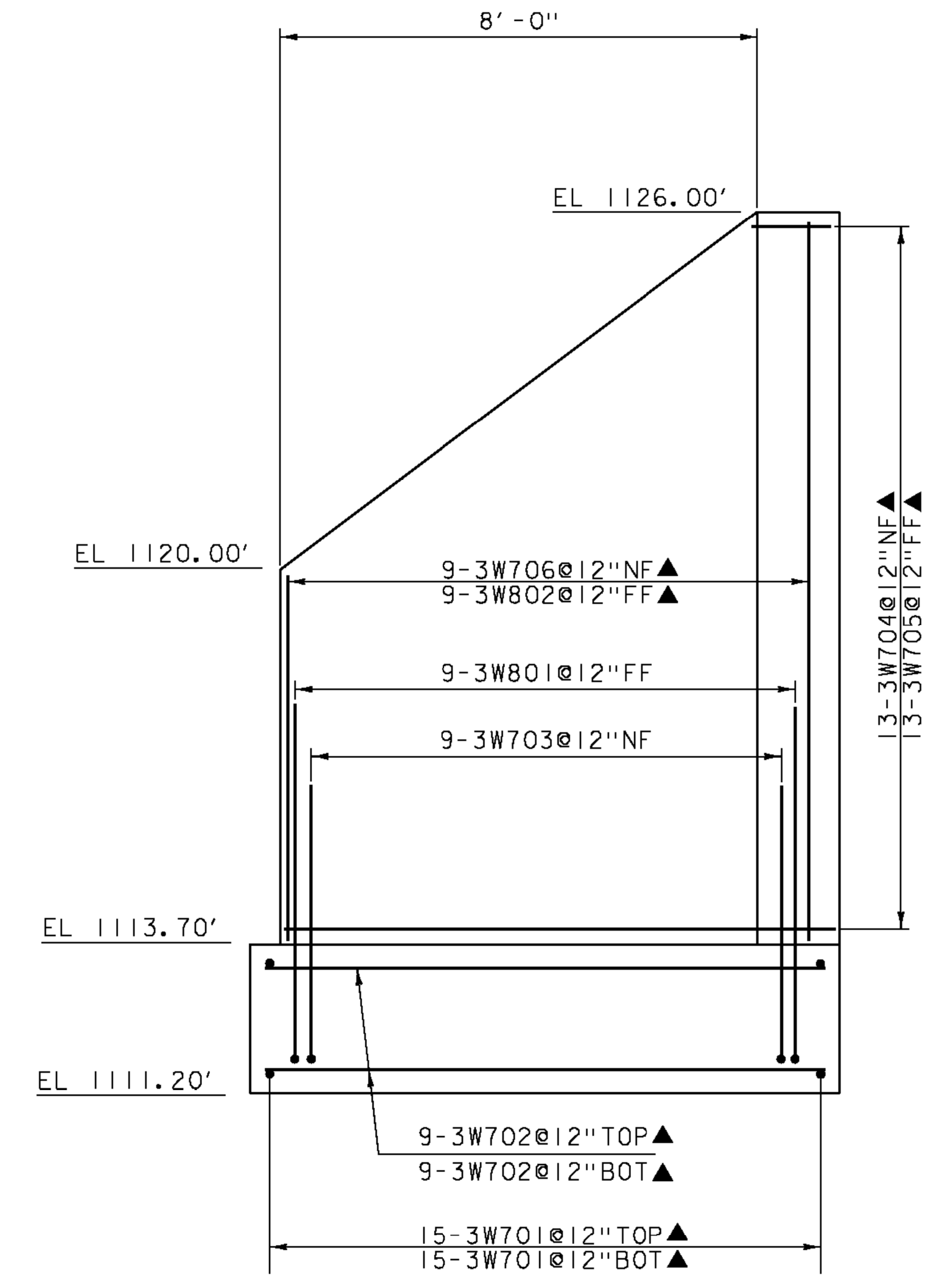
WEST ELEVATION  
SCALE 1/2"=1'



EAST ELEVATION  
SCALE 1/2"=1'



WINGWALL 4 ELEVATION  
SCALE 1/2"=1'



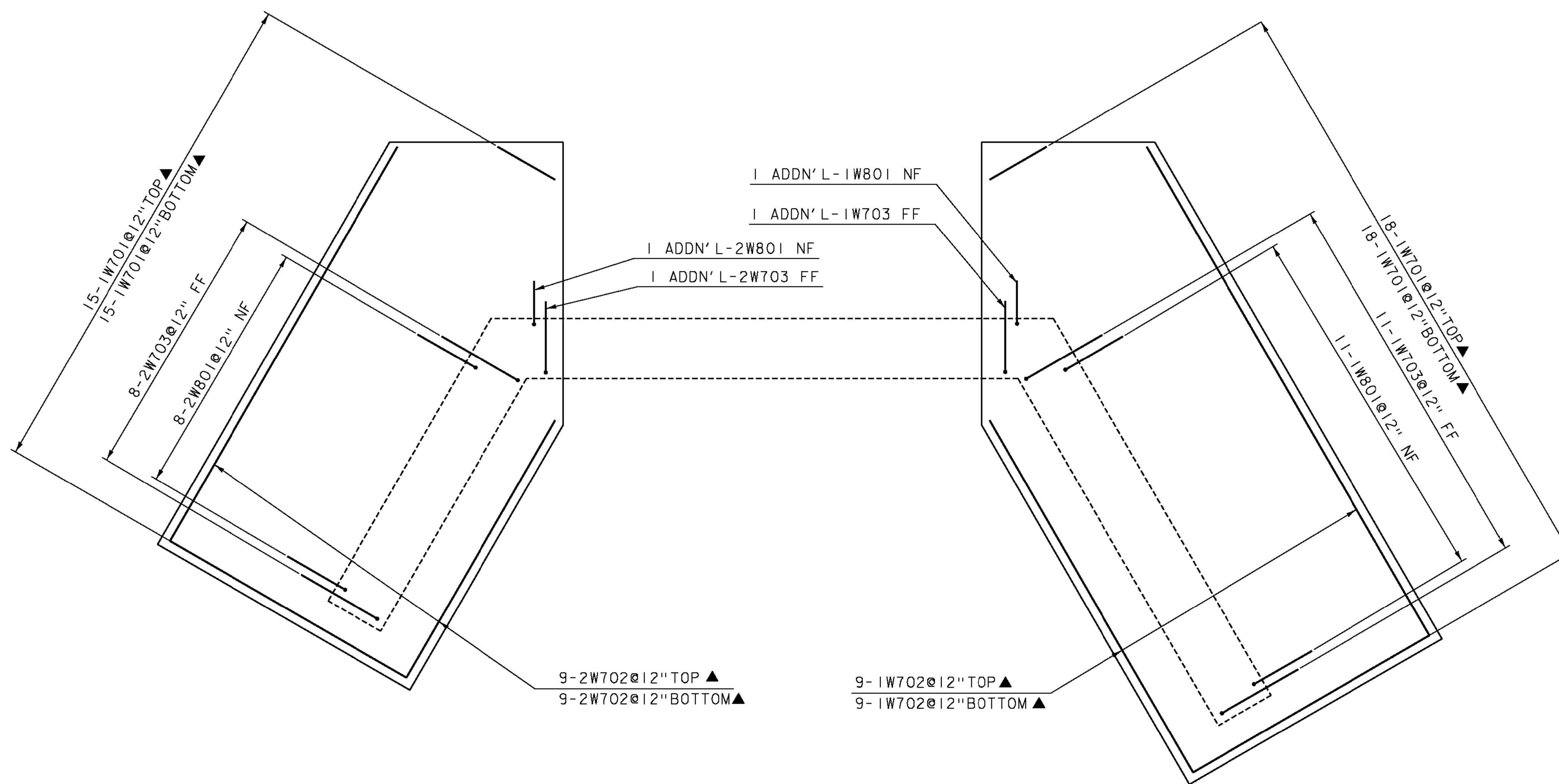
WINGWALL 3 ELEVATION  
SCALE 1/2"=1'

PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474det2.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: B. KHALIFA  
PLOT DATE: 02/27/2015  
DRAWN BY: S. SOLLA  
CHECKED BY: B. KHALIFA  
WALL AND FOOTING DETAILS SHEET 2(BR 82) SHEET 33 OF 48

SEE CHANGE ORDER #1

SEE ATTACHED SHOP DRAWINGS  
FOR WINGWALL DETAILS



**INLET FOOTING PLAN**

SCALE 1/2" = 1'

**NOTE:**

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

 GREEN INTERNATIONAL AFFILIATES, INC.  
CIVIL AND STRUCTURAL ENGINEERS

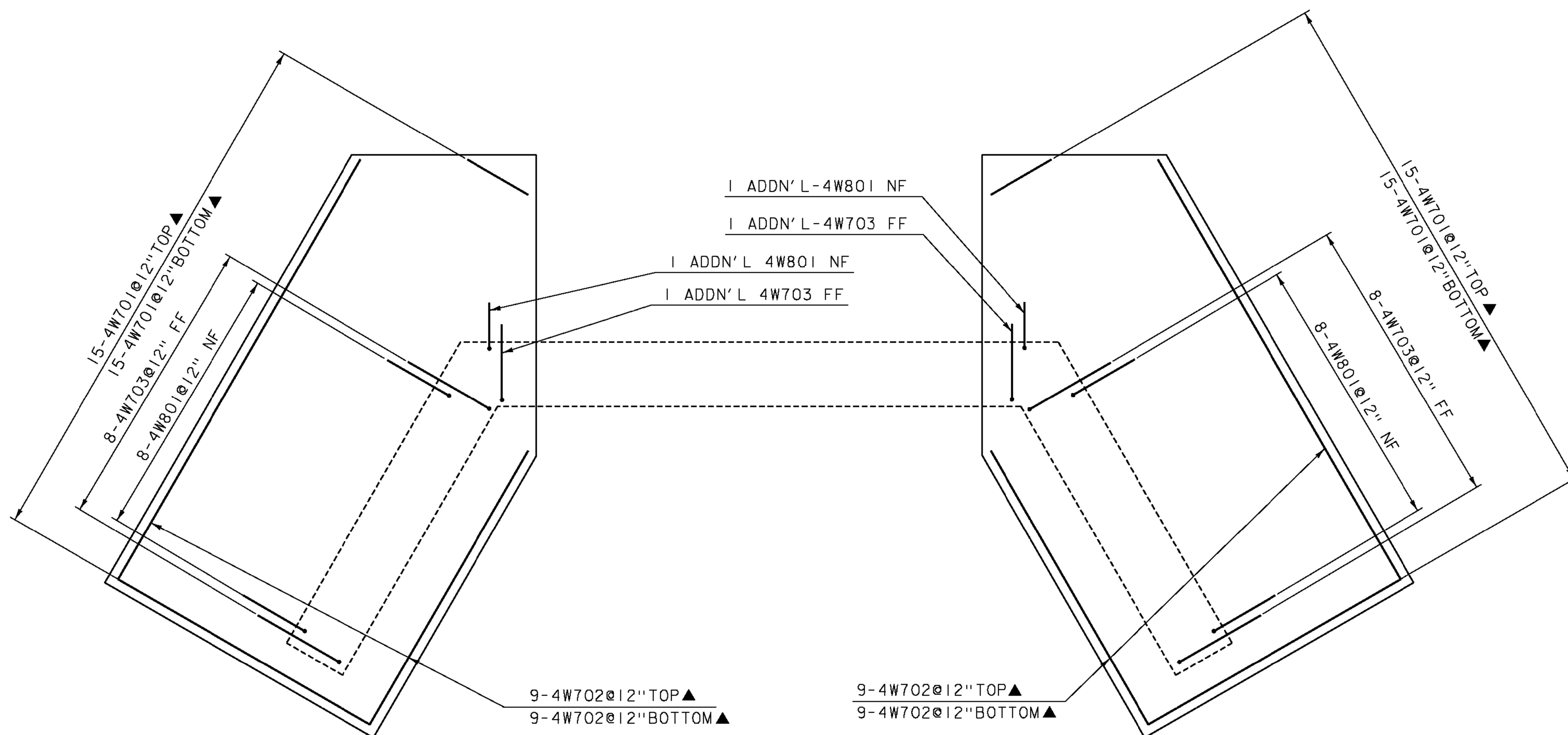
PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474de+2.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: B. KHALIFA  
FOOTING DETAILS SHEET 1(BR 82)

PLOT DATE: 02/27/2015  
DRAWN BY: S. SOLLA  
CHECKED BY: B. KHALIFA  
SHEET 34 OF 48

SEE CHANGE ORDER #1

SEE ATTACHED SHOP DRAWINGS  
FOR WINGWALL DETAILS



OUTLET FOOTING PLAN

SCALE 1/2" = 1'

**NOTE:**

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



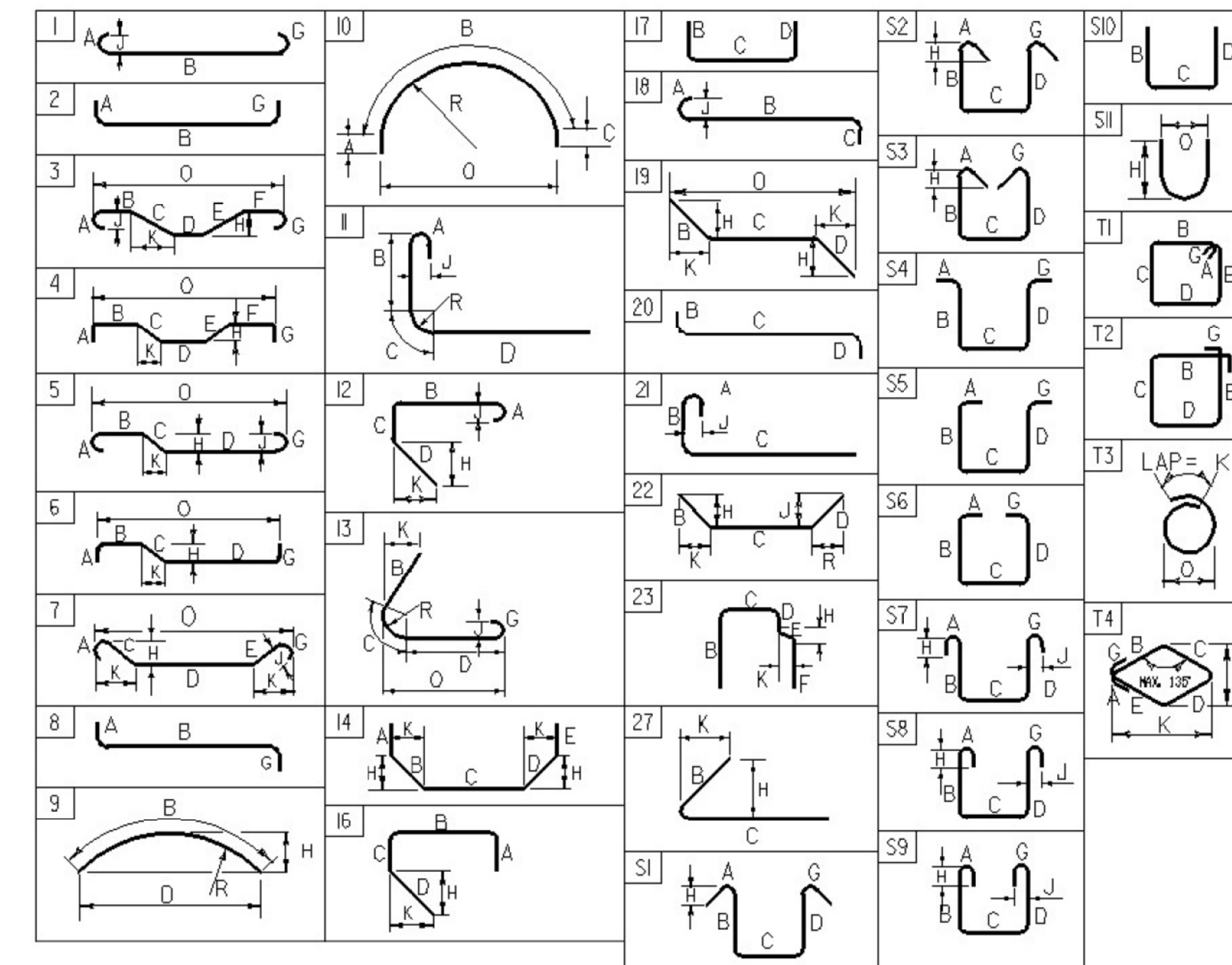
PROJECT NAME: JAMAICA	PLOT DATE: 02/27/2015
PROJECT NUMBER: ER STP 013-2(12)	DRAWN BY: S. SOLLA
FILE NAME: z12b474de+2.dgn	CHECKED BY: B. KHALIFA
PROJECT LEADER: E. ATKINS	FOOTING DETAILS SHEET 2 (BR 82)
DESIGNED BY: B. KHALIFA	SHEET 35 OF 48

# REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O	ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O	
<b>WEST HEADWALL</b>																																				
	24	4	4'-0"	1W401	17		1'-4"	1'-8"	1'-4"																											
*	8	4	11'-2"	1W402	STR																															
	12	4	2'-8"	1W403	17		0'-8"	2'-0"																												
<b>EAST HEADWALL</b>																																				
	24	4	3'-10"	2W401	17		1'-4"	1'-6"	1'-4"																											
	7	4	11'-2"	2W402	STR																															
	12	4	2'-8"	2W403	17		0'-8"	2'-0"																												
<b>WINGWALL NO. 1 (WW1)</b>																																				
▲	36	7	7'-6"	1W701	STR																															
▲	18	7	17'-6"	1W702	STR																															
	12	7	7'-0"	1W703	17		5'-6"	1'-6"																												
▲	13	7	11'-8"	1W704	22		0'-10"	10'-10"		0'-9"	0'-5"																									
▲	13	7	13'-0"	1W705	22		1'-6"	11'-6"		1'-4"	0'-9"																									
▲	12	7	12'-0"	1W706	STR																															
	12	8	8'-11"	1W801	17		7'-5"	1'-6"																												
* ▲	13	8	12'-0"	1W802	STR																															
<b>WINGWALL NO. 2 (WW2)</b>																																				
* ▲	31	7	7'-6"	2W701	STR																															
▲	18	7	14'-6"	2W702	STR																															
	9	7	7'-0"	2W703	17		5'-6"	1'-6"																												
▲	13	7	8'-8"	2W704	22		0'-10"	7'-10"		0'-9"	0'-5"																									
▲	13	7	10'-0"	2W705	22		1'-6"	8'-6"		1'-4"	0'-9"																									
▲	9	7	12'-0"	2W706	STR																															
	9	8	8'-11"	2W801	17		7'-5"	1'-6"																												
▲	9	8	12'-0"	2W802	STR																															
<b>WINGWALL NO. 3 (WW3)</b>																																				
▲	31	7	7'-6"	3W701	STR																															
▲	18	7	14'-6"	3W702	STR																															
	9	7	7'-0"	3W703	17		5'-6"	1'-6"																												
▲	13	7	8'-8"	3W704	22		0'-10"	7'-10"		0'-9"	0'-5"																									
▲	13	7	10'-0"	3W705	22		1'-6"	8'-6"		1'-4"	0'-9"																									
▲	9	7	11'-9"	3W706	STR																															
	9	8	8'-11"	3W801	17		7'-5"	1'-6"																												
▲	9	8	11'-9"	3W802	STR																															
<b>WINGWALL NO. 4 (WW4)</b>																																				
▲	31	7	7'-6"	4W701	STR																															
▲	18	7	14'-6"	4W702	STR																															
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▲	13	7	10'-0"	4W705	22		1'-6"	8'-6"		1'-4"	0'-9"																									
▲	9	7	11'-9"	4W706	STR																															
	9	8	8'-11"	4W801	17		7'-5"	1'-6"																												
▲	9	8	11'-9"	4W802	STR																															

~ NOTES ~

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



**ASTM STANDARD REINFORCING BARS**

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

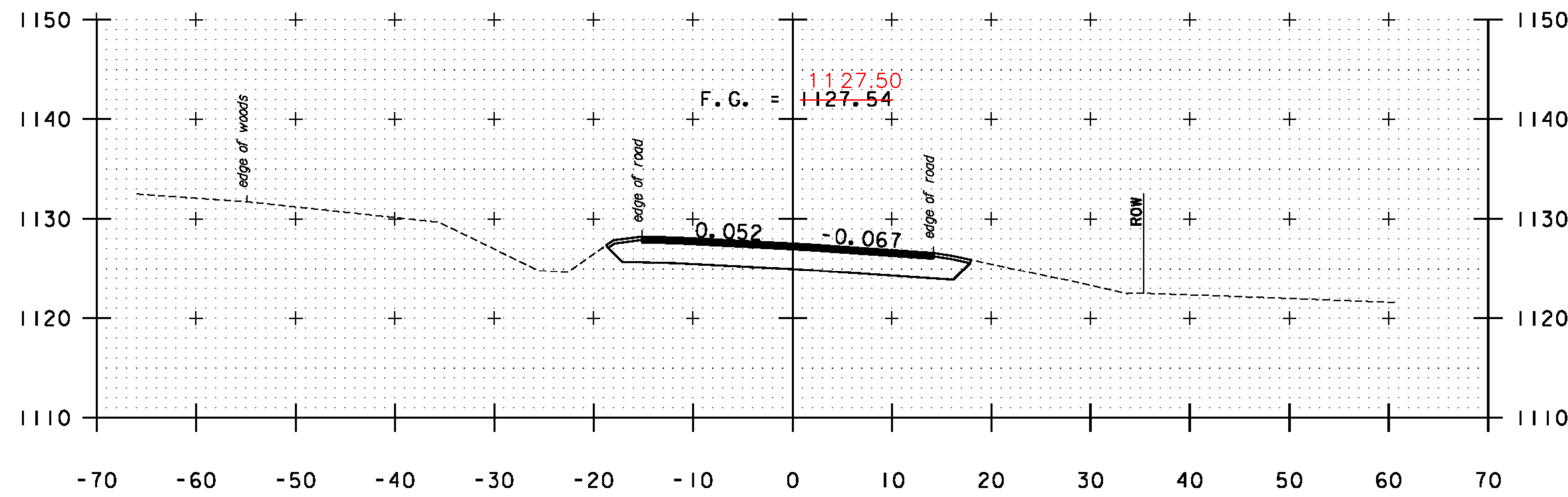
SEE CHANGE ORDER #1

SEE ATTACHED SHOP DRAWINGS FOR REINFORCEMENT

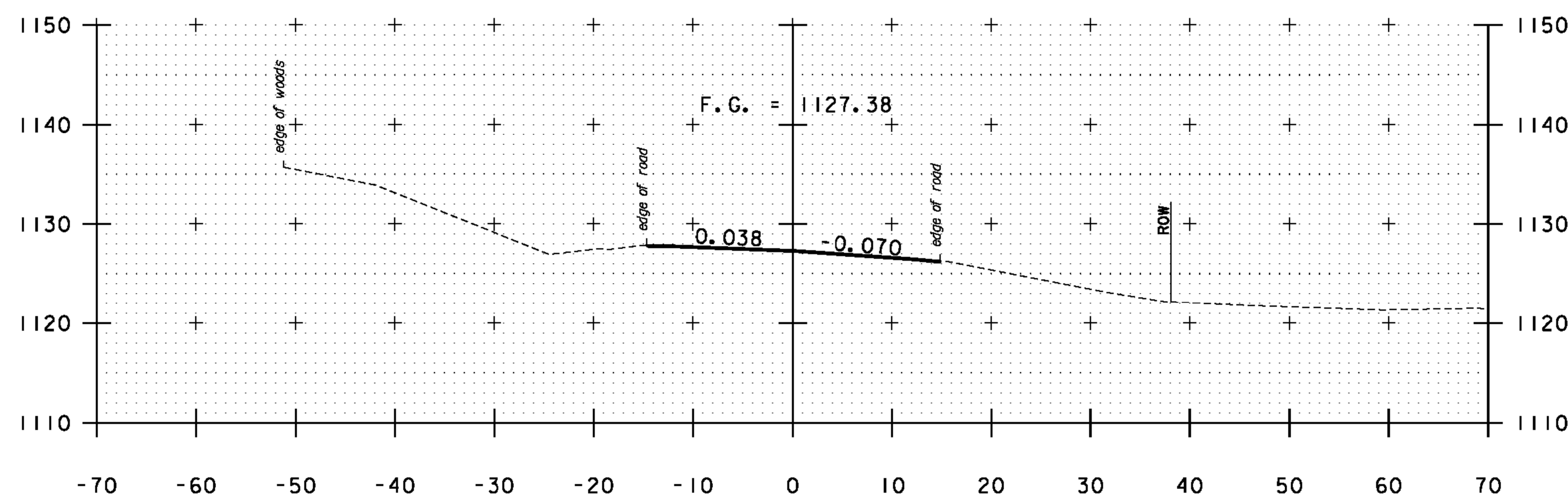
PROJECT NAME: JAMAICA  
PROJECT NUMBER: ER STP 013-2(12)

FILE NAME: z12b474det2.dgn  
PROJECT LEADER: E. ATKINS  
DESIGNED BY: B. KHALIFA  
REINFORCING STEEL SCHEDULE

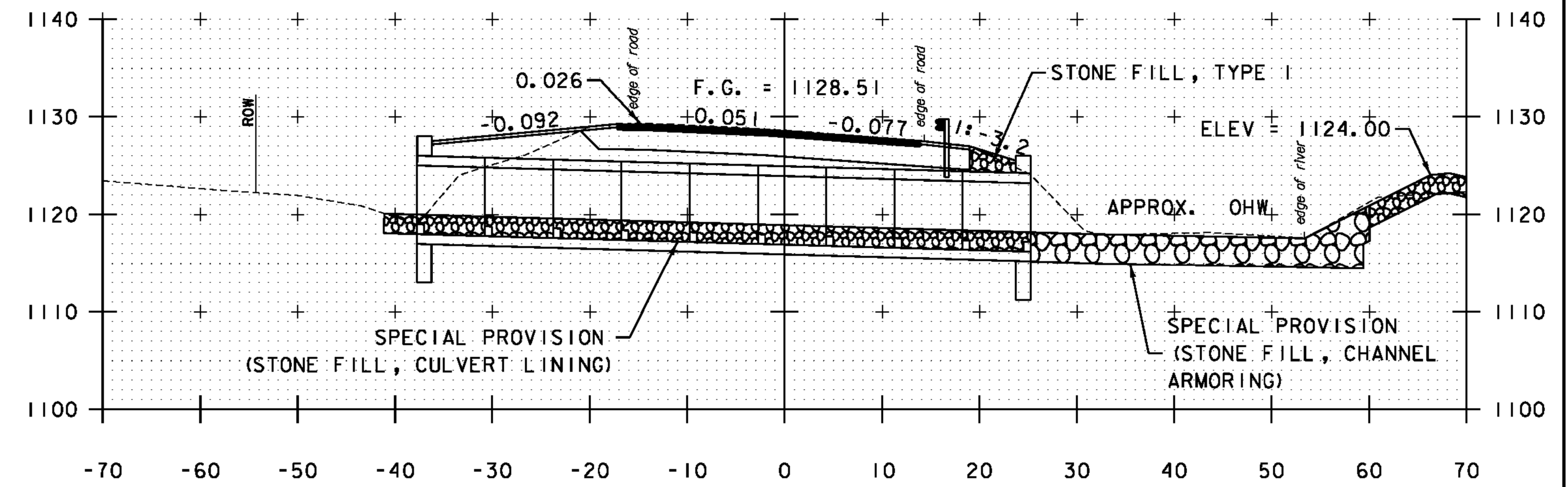
PLOT DATE: 02/27/2015  
DRAWN BY: S. SOLLA  
CHECKED BY: B. KHALIFA  
SHEET 36 OF 48



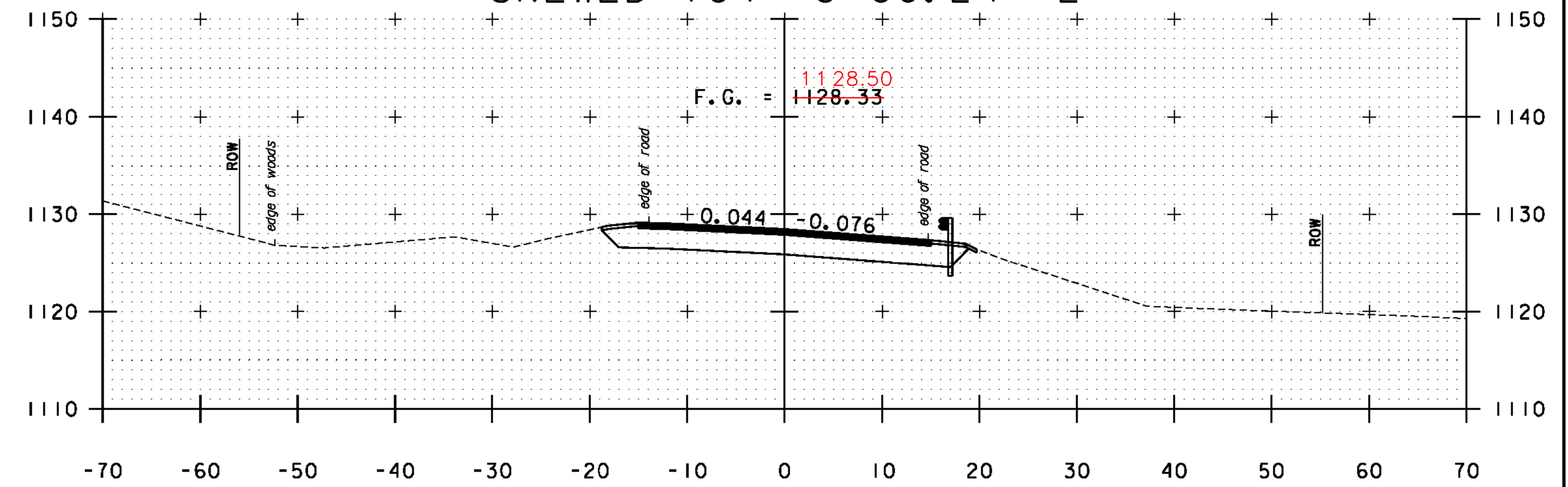
11+00  
END APPROACH  
BEGIN PROJECT



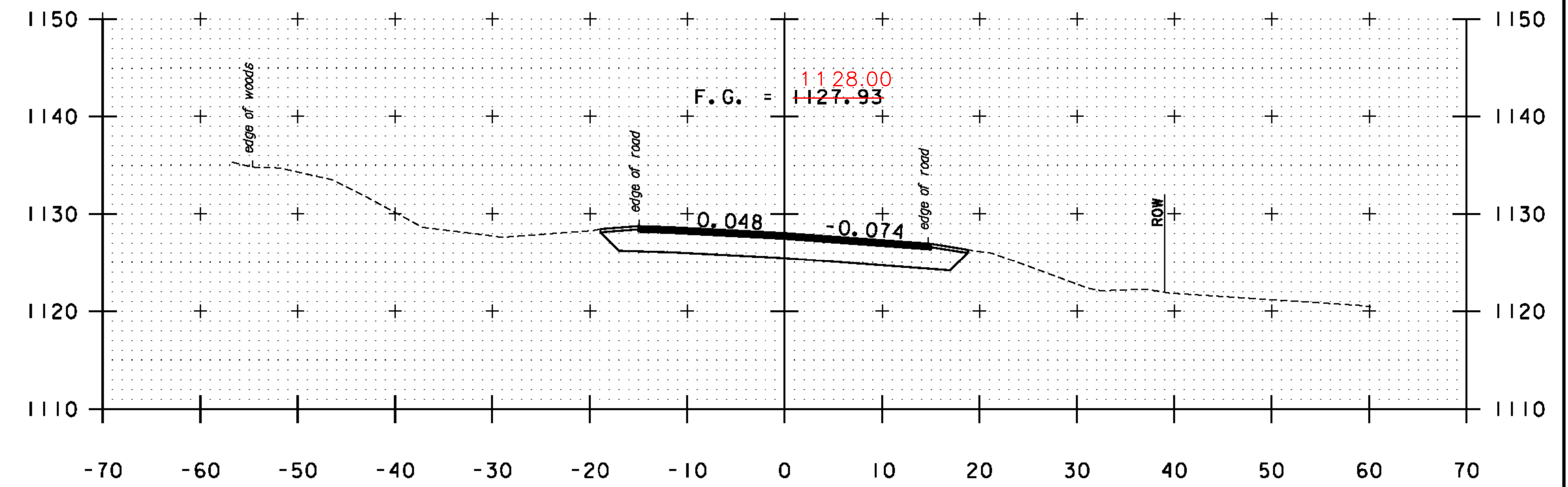
10+50  
BEGIN APPROACH @ 10+37.50  
MATCH EXISTING BCP



12+32.46 10' x 7' BOX CULVERT  
SKEWED 104° 8' 00.24" L



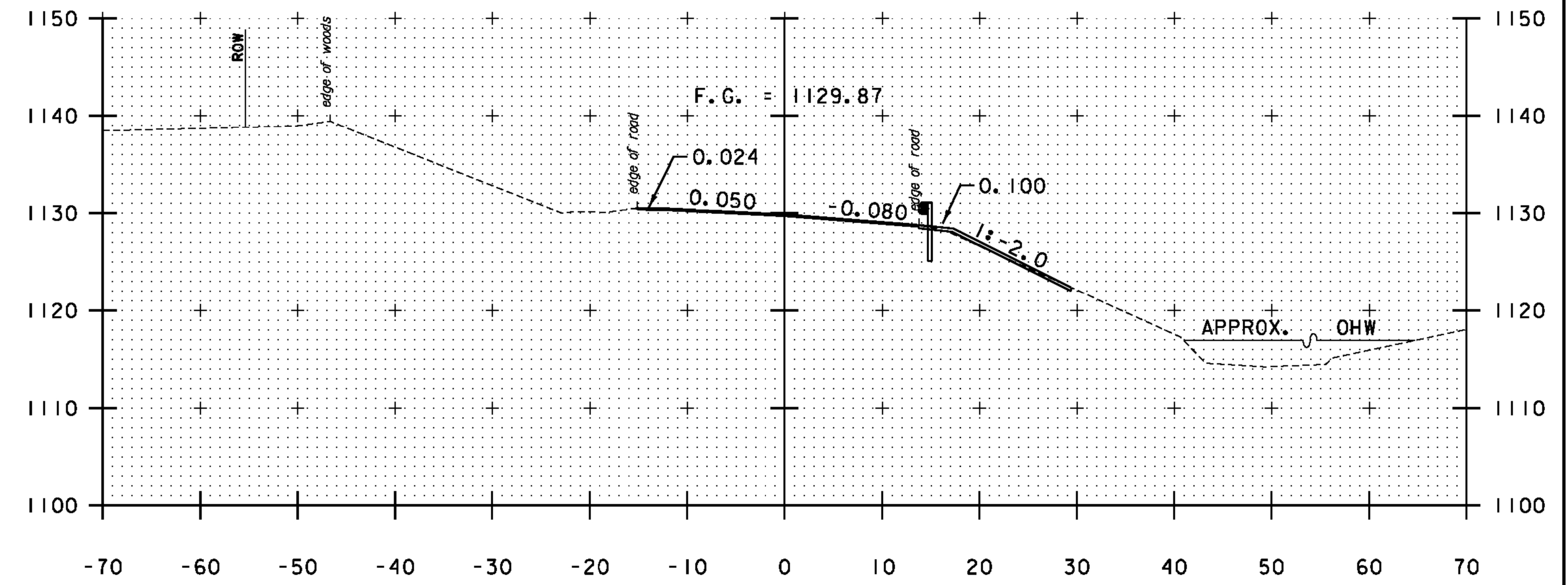
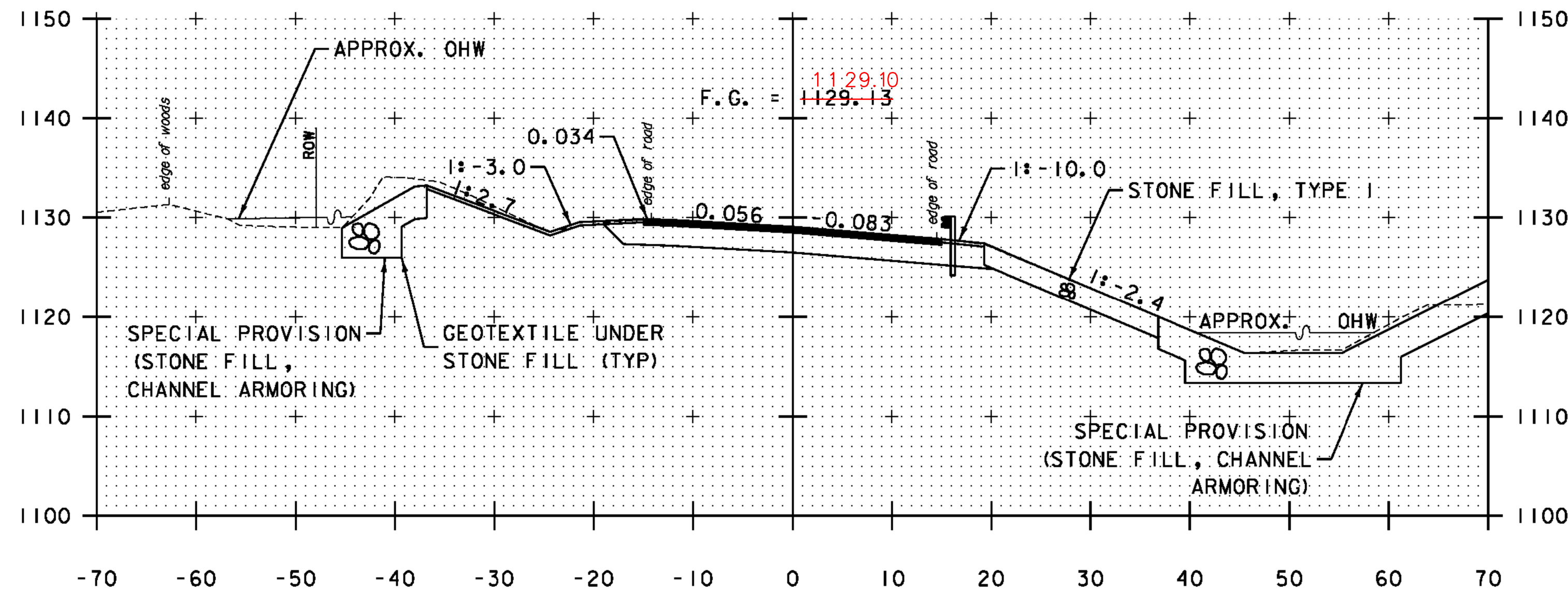
12+00



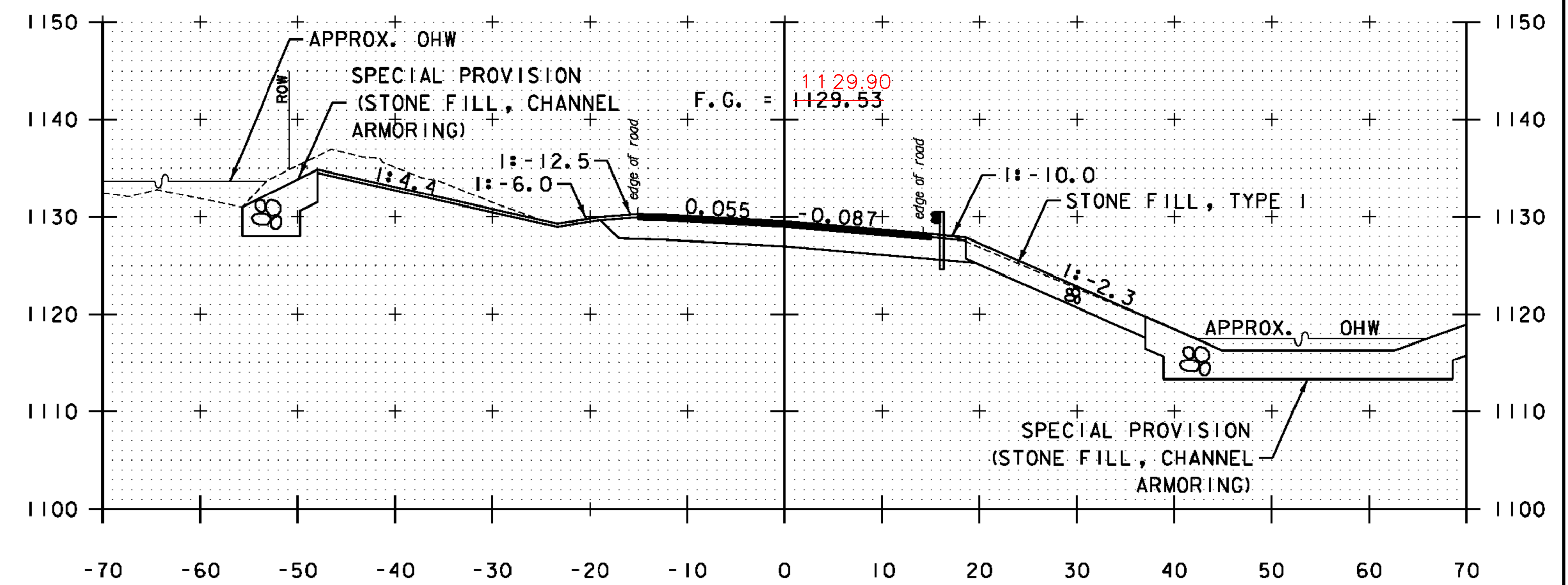
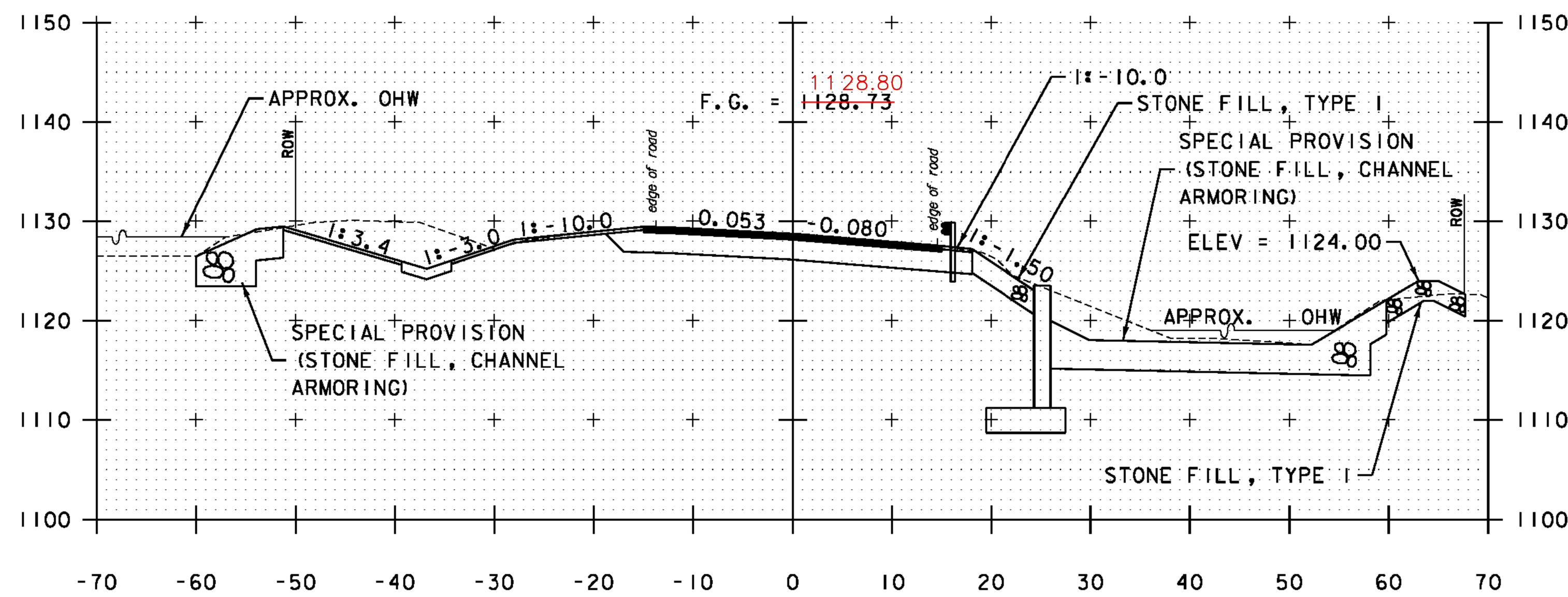
11+50

STA. 10+50 TO STA. 12+32.46

PROJECT NAME: JAMAICA	PLOT DATE: 02/27/2015
PROJECT NUMBER: ER STP 013-2(12)	DRAWN BY: C. MORIN
FILE NAME: Z12B474xsl.dgn	DESIGNED BY: T. BIGELOW
PROJECT LEADER: E. ATKINS	CHECKED BY: E. ATKINS
CROSS SECTION SHEET 1	SHEET 37 OF 48



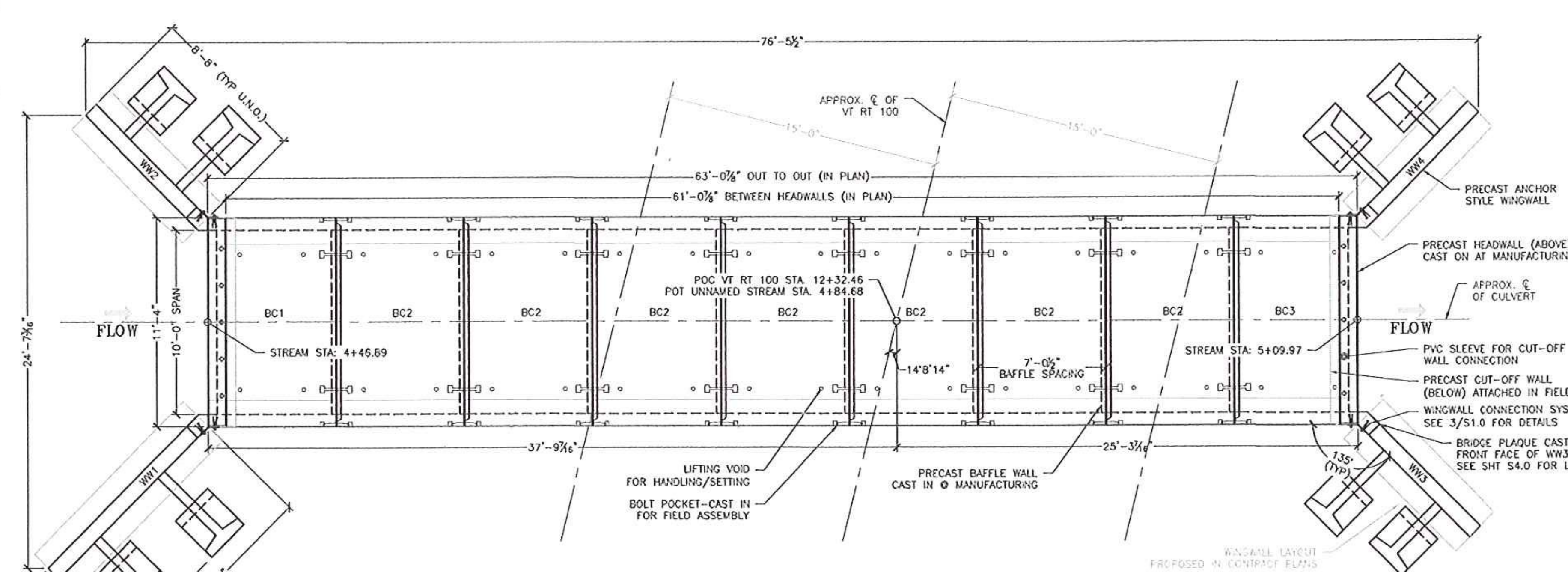
14+00  
BEGIN APPROACH  
END PROJECT



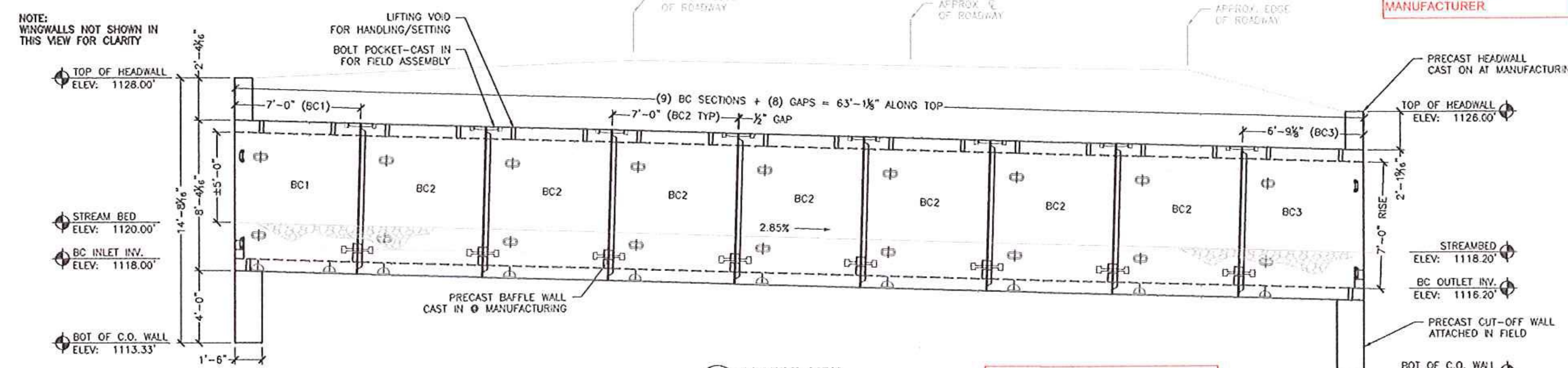
STA. 12+50 TO STA. 14+00

PROJECT NAME:	JAMAICA	PLOT DATE:	02/27/2015
PROJECT NUMBER:	ER STP 013-2(12)	DRAWN BY:	C. MORIN
FILE NAME:	Z12B474xsl.dgn	DESIGNED BY:	T. BIGELOW
PROJECT LEADER:	E. ATKINS	CHECKED BY:	E. ATKINS
CROSS SECTION SHEET 2			SHEET 38 OF 48





S1.0 LAYOUT PLAN VIEW  
1/2" = 1'-0"



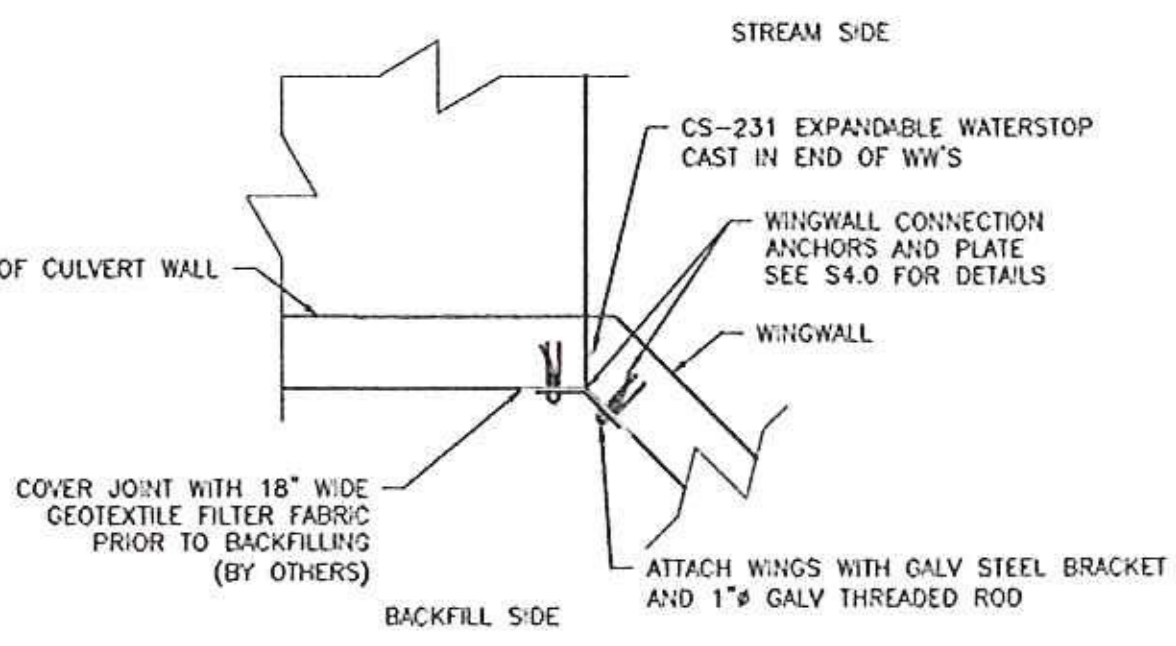
S1.0 PROFILE VIEW  
1/2" = 1'-0"

SUBGRADE SHALL CONFORM TO CONTRACT DRAWINGS UNLESS OTHERWISE RECOMMENDED BY MANUFACTURER

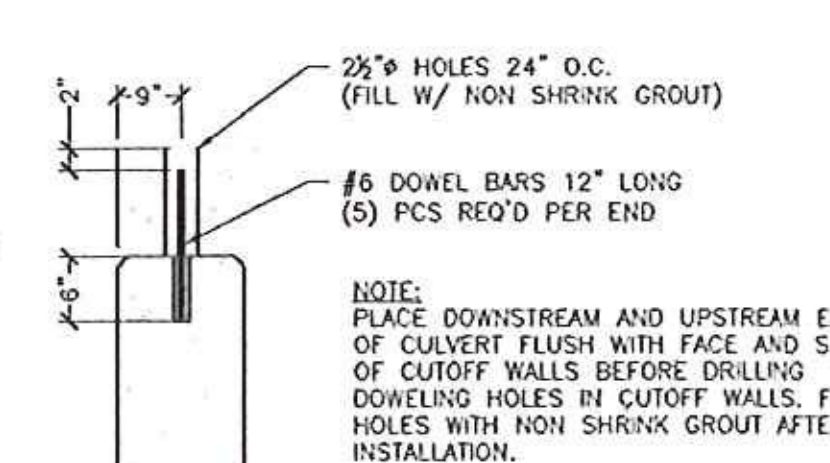
- GENERAL NOTES:**
1. THE PLANS ARE INTENDED TO BE DRAWN TO SCALE. HOWEVER, IF A CRITICAL DIMENSION IS NOT PROVIDED, MCHC CORPORATION SHOULD BE CONTACTED FOR VERIFICATION.
  2. IF ANY OF THE WORK TO BE DONE AS SHOWN ON THE DRAWINGS DOES NOT CORRESPOND WITH THE EXISTING FIELD CONDITIONS, CONTACT THE OWNERS REPRESENTATIVE PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.
  3. FIELD-VERIFY ALL ELEVATIONS PRIOR TO THE START OF CONSTRUCTION. IF THERE ARE ANY DISCREPANCIES, CONSULT THE OWNERS REPRESENTATIVE PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.
  4. MAINTAIN MINIMUM 60 DEGREE SLING ANGLE WHEN HANDLING PRECAST COMPONENTS.
  5. PRECAST COMPONENTS SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI PRIOR TO STRIPPING, AND THE MAXIMUM DESIGN COMPRESSIVE STRENGTH PRIOR TO SHIPPING, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
  6. ALL JOINTS AND VOIDS SHALL BE FILLED WITH NON-SHRINK GROUT. VERTICAL SURFACE VOIDS MAY BE FILLED WITH FOAM SEALANT.
  7. SHOP DRAWINGS WERE DEVELOPED USING THE FOLLOWING RESOURCES FOR THE CONTRACT:
    - PROPOSED IMPROVEMENTS, TOWN OF JAMAICA, VT ROUTE 100 (BRIDGE 82), PAGES 1-48 OF 48. PREPARED BY THE VAOT, DATED 3/9/2015.
    - GEOTECHNICAL REPORT, PREPARED BY THE VAOT, DATED 12/6/2013.
  8. IF THERE IS ADDITIONAL INFORMATION PERTINENT TO THE FABRICATION AND INSTALLATION OF THESE UNITS THAT IS NOT CONTAINED WITHIN THE RESOURCES LISTED ABOVE IT SHALL BE BROUGHT TO THE ATTENTION OF MCHC CORPORATION. FAILURE TO MAKE SUCH ADDITIONAL INFORMATION AVAILABLE SHALL RELIEVE MCHC CORPORATION OF ALL LIABILITIES ARISING FROM ERRORS OR OMISSIONS RELATED TO THE OMITTED INFORMATION.
- BOX CULVERT NOTES:**
1. BOX CULVERT SECTIONS ARE DESIGNED IN ACCORDANCE WITH:
    - AASHTO "LRFD BRIDGE DESIGN SPECIFICATIONS", 6TH EDITION.
    - VIRANS 2011 "STANDARD SPECIFICATIONS FOR CONSTRUCTION".
  2. THE FOLLOWING CRITERIA WAS USED FOR DESIGN:
    - LIVE LOAD: HL-93
    - EARTH COVER: 3-5 FEET
    - BACKFILL SOIL UNIT WEIGHT: 140 PCF
    - MIN LATERAL EARTH PRESSURE: 35 PSF
    - MAX LATERAL EARTH PRESSURE: 70 PSF
    - CONCRETE STRENGTH: 5,000 PSI
    - STEEL YIELD STRENGTH: 60,000 PSI
  3. BOX CULVERT CONCRETE SHALL BE SELF-CONSOLIDATING CONFORMING TO ASTM C260 WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. CUTOFF WALL CONCRETE TO BE 4,000 PSI. AGGREGATE SHALL CONFORM TO ASTM C-33 WITH A MAXIMUM DIAMETER OF 3/4". CEMENT SHALL CONFORM TO ASTM C150.
  4. REINFORCING SHALL BE GRADE 60 EPOXY COATED CONFORMING TO ASTM A-775 (AASHTO M284). ALL BARS SHALL BE BENT COLD.
  5. ALL EXPOSED EDGES EXCEPT WHERE NOTED SHALL BE CHAMFERED 1".
  6. N/A
  7. BACKFILL MATERIAL SHALL CONFORM TO VIRANS SECTION 704.08 GRANULAR BACKFILL FOR STRUCTURES. BACKFILL SHALL EXTEND FOR A MINIMUM DISTANCE OF 5'-0" BEYOND THE HORIZONTAL LIMITS OF THE STRUCTURE. PLACEMENT SHALL CONFORM TO VIRANS SECTION 204.08.
  8. EXPOSED SURFACES SHALL BE COATED WITH PENSEAL VEXCON 244 WATER REPELLENT (SHOP APPLIED).
  9. EACH SECTION SHALL BE PROVIDED WITH BOLT POCKETS FOR ATTACHMENT TO ADJACENT SECTIONS. 7/8" DIA GALV. THREADED ROD, WASHERS AND NUTS SHALL BE PROVIDED FOR ASSEMBLY IN THE FIELD. CLOSED-CELL NEOPRENE JOINT SEALANT SHALL BE USED IN ALL JOINTS UNLESS NOTED OTHERWISE.
  10. 2FT WIDE ROYSTON JOINT WRAP WITH ADHESIVE PROVIDED BY MCHC CORP, INSTALLED BY OTHERS, CENTER ON JOINT AFTER GROUTING. JOINT WRAP, BARRIER MEMBRANE, AND PROTECTION BOARD RECOMMENDED FOR INSTALLATIONS WITH LESS THAN 5FT OF COVER. INSTALL PER VIRANS SPECIFICATIONS.
- WING WALL NOTES:**
1. SECTIONS ARE DESIGNED IN ACCORDANCE WITH:
    - AASHTO "LRFD BRIDGE DESIGN SPECIFICATIONS", 6TH EDITION
    - VIRANS 2011 "STANDARD SPECIFICATIONS FOR CONSTRUCTION".
  2. THE FOLLOWING SOIL PROPERTIES WERE USED IN THE DESIGN:
 

RETAINED SOIL	SOIL WEIGHT [PCF]	FRICTION ANGLE [DEG]
FOUNDATION SOIL	140	34
LIVE LOAD SURCHARGE	N/A	35
BACKSLOPE ANGLE:	2:1 (FOR DESIGN, WW4)	
FACTORED BEARING RESISTANCE	= VARIES (SEE WW DESIGN)	

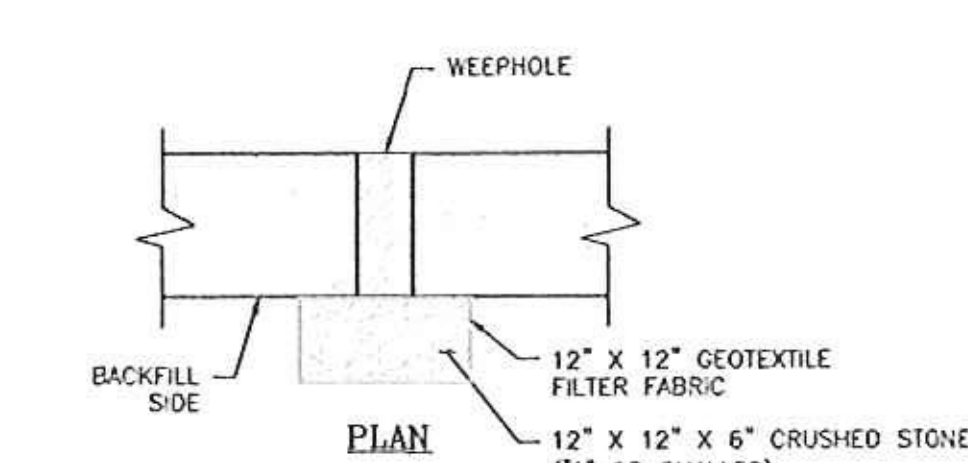
 CONTRACTOR IS RESPONSIBLE FOR ASSURING THAT THE FOUNDATION MATERIAL ACHIEVES THE DESIGN FACTORED BEARING RESISTANCE.
  3. WINGWALL CONCRETE SHALL BE SELF-CONSOLIDATING CONFORMING TO ASTM C260 WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. WINGWALL FOOTING CONCRETE SHALL BE 4,000 PSI. AGGREGATE SHALL CONFORM TO ASTM C-33 WITH A MAXIMUM DIAMETER OF 3/4". CEMENT SHALL CONFORM TO ASTM C150.
  4. REINFORCING SHALL BE GRADE 60 EPOXY COATED CONFORMING TO ASTM A-775 (AASHTO M284). ALL BARS SHALL BE BENT COLD.
  5. ALL EXPOSED EDGES EXCEPT WHERE NOTED SHALL BE CHAMFERED 1".
  6. BACKFILL MATERIAL SHALL CONFORM TO VIRANS SECTION 704.08 GRANULAR BACKFILL FOR STRUCTURES. PLACEMENT SHALL CONFORM TO VIRANS SECTION 204.08.
  7. ALL EXPOSED EDGES OF CONCRETE SHALL BE COATED WITH PENSEAL VEXCON 244 WATER REPELLENT (SHOP APPLIED).
  8. N/A



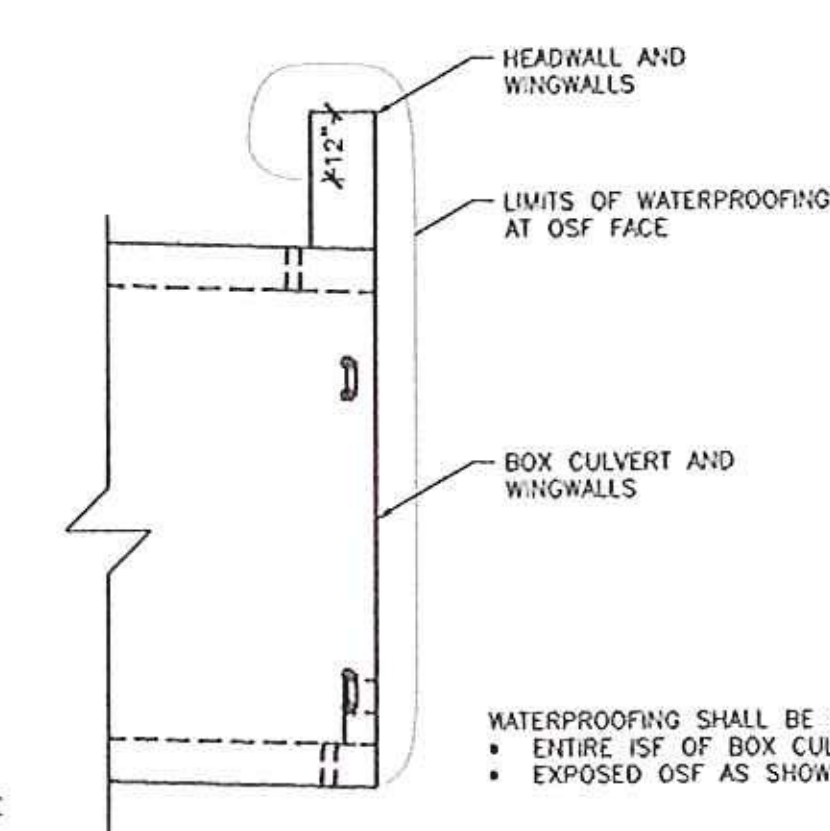
S1.0 BRIDGE TO WW JOINT DETAIL  
1/2" = 1'-0"



S1.0 CUTOFF WALL CONNECTION DETAIL  
3/4" = 1'-0"



S1.0 WEEPHOLE BACKFILL DETAIL  
1" = 1'-0"



S1.0 WATERPROOFING DETAIL  
3/8" = 1'-0"

NO EXCEPTIONS TAKEN  DISAPPROVED   
 REVIEWED AND FORWARDED  APPROVED AS NOTED

DESIGN IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND DOES NOT CONSTITUTE A GUARANTEE OF THE ACCURACY OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND TECHNICAL INFORMATION PRIOR TO THE START OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND TECHNICAL INFORMATION PRIOR TO THE START OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND TECHNICAL INFORMATION PRIOR TO THE START OF WORK.

GREEN INTERNATIONAL AFFILIATES, INC.

CHECKED BY: YW DATE: 8/31/15  
 SIGNED BY: BK DATE: 8/31/15

**BILL OF MATERIALS**

QTY	DESCRIPTION	IN STOCK	ORDERED FROM	DATE ORDERED	DATE DELIVERED
<b>ITEMS CAST IN</b>					
32LF	2" DIA PVC PIPE (25' PCS)				
72	8" TOY UTILITY ANCHORS				
42LF	CONCRETE CS-231 EXPANDABLE WATERSTOP				
11	1" PVC 8" DIA				
<b>ITEMS FOR PRESHPHIPS PREP.</b>					
35LF	1" CLOSED CELL NEOPRENE				
4 GAL	RED ADHESIVE				
600SF	PENSEAL VEXCON 244				
<b>ITEMS TO SHIP TO THE JOB</b>					
200LF	24" ROYSTON JOINT WRAP				
4 GAL	ROYSTON JOINT ADHESIVE				
33	1/2" X 1/2" GALV. THREADED ROD W/ NUTS AND WASHERS				
11	#3 X 12" DOG EARS				
8	1/2" X 1/2" GALV. STEEL W/ W/ PLATE (135 DEG)				
32	1" DIA X 5' HC THREAD ROD W/ NUT				
22	4" X 4" X 1/4" PLATE WASHER				

- SHEET LIST**
- S1.0 LAYOUT AND PROFILE VIEWS
  - S2.0 ELEVATION AND FOOTING DETAILS
  - S3.0 BOX CULVERT SECTION DETAILS
  - S4.0 WINGWALL DETAILS
  - S5.0 ANCHOR DETAILS

Project No. 6200  
 Date: 7/2/2015  
 Drawn by: CFP  
 Checked by: PTL  
 Scale: AS SHOWN

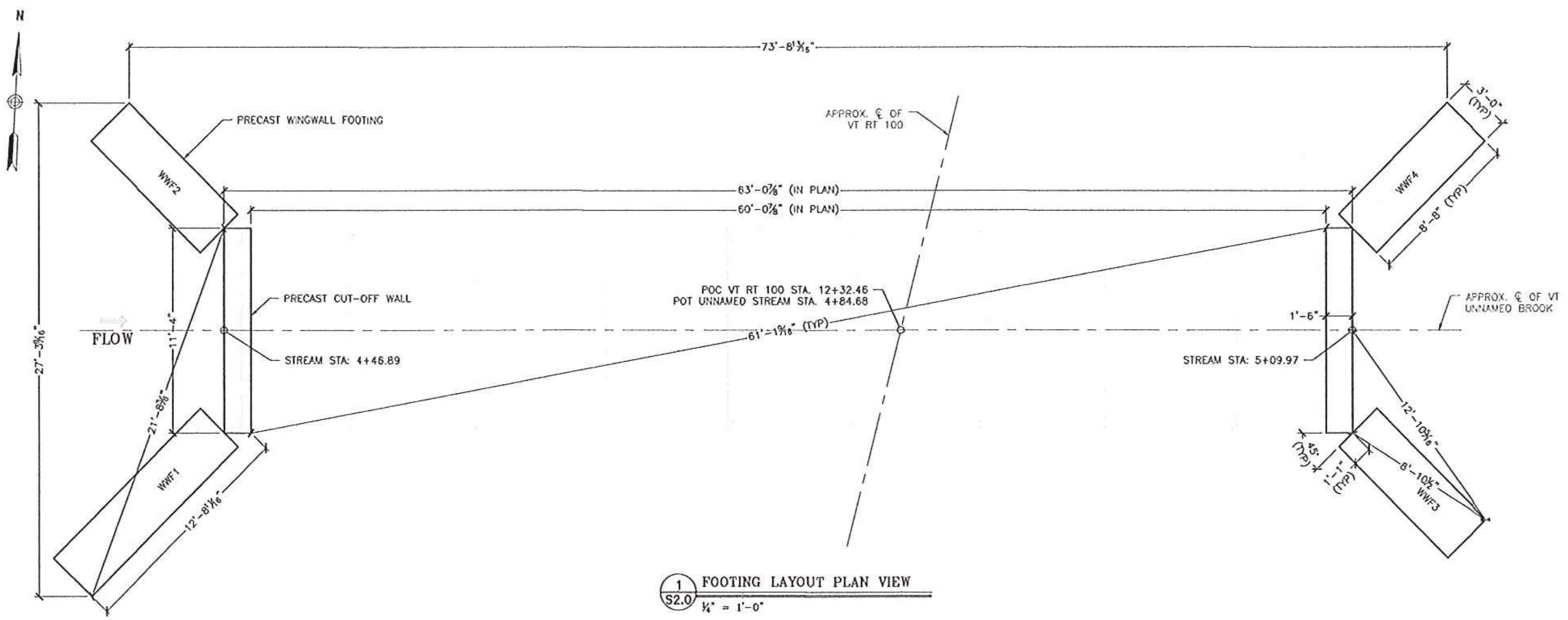
VAOT #ER STP 013-2(12) - VT Route 100 Bridge #82  
 Jamaica, VT  
 10'x7' Box Culvert - Layout and Profile Views

Prepared for:  
 Casella Construction  
 8 US4 East  
 Mendon VT 05701

DWG NO.  
 S1.0

STATE OF VERMONT  
 NO. 84448  
 CIVIL ENGINEER  
 8/26/15

MCHC  
 173 BUXTON INDUSTRIAL BOULEVARD, PO BOX 870  
 JAMAICA, VT 05464  
 PHONE: (802) 252-3218  
 FAX: (802) 252-3228  
 WWW.MCHCCORP.COM

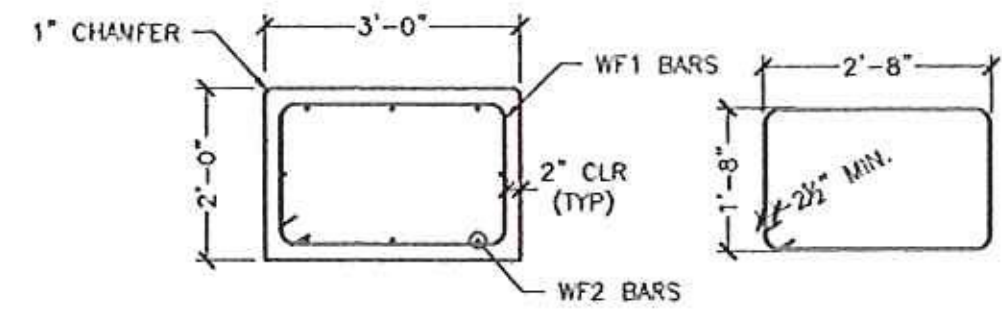


1 FOOTING LAYOUT PLAN VIEW  
S2.0 1/4" = 1'-0"

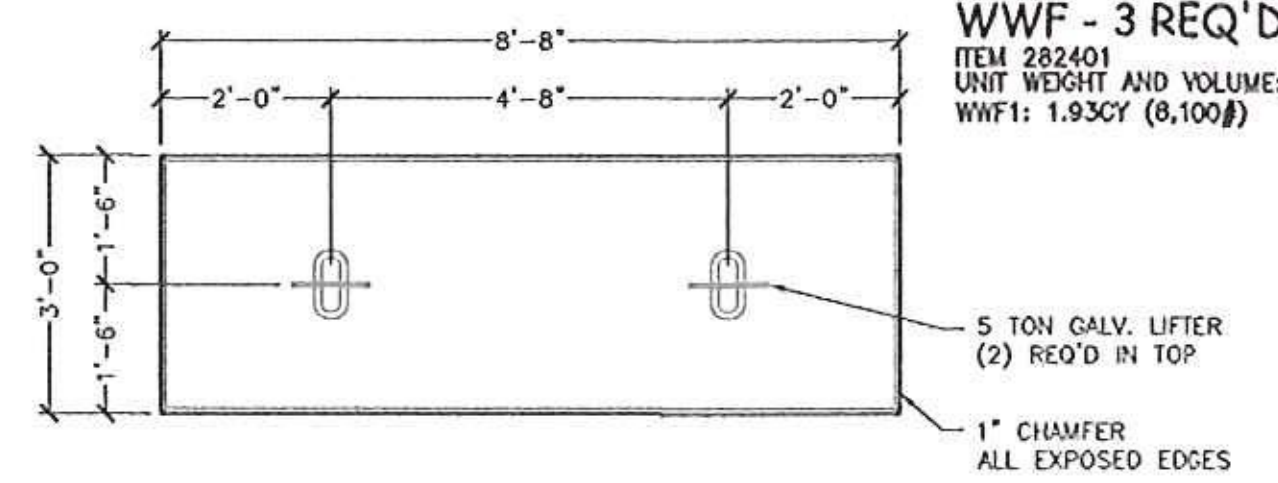
WINGWALL 1 FOOTING REINFORCING SCHEDULE						
LOCATION	MARK	# OF PCS	SIZE	SPACING	TYPE	LENGTH
LONGITUDINAL	WF2	8	5	EQ.SP	STRAIGHT	11'-4"
STIRRUP	WF1	12	4	12"	STIRRUP	8'-11 1/2"

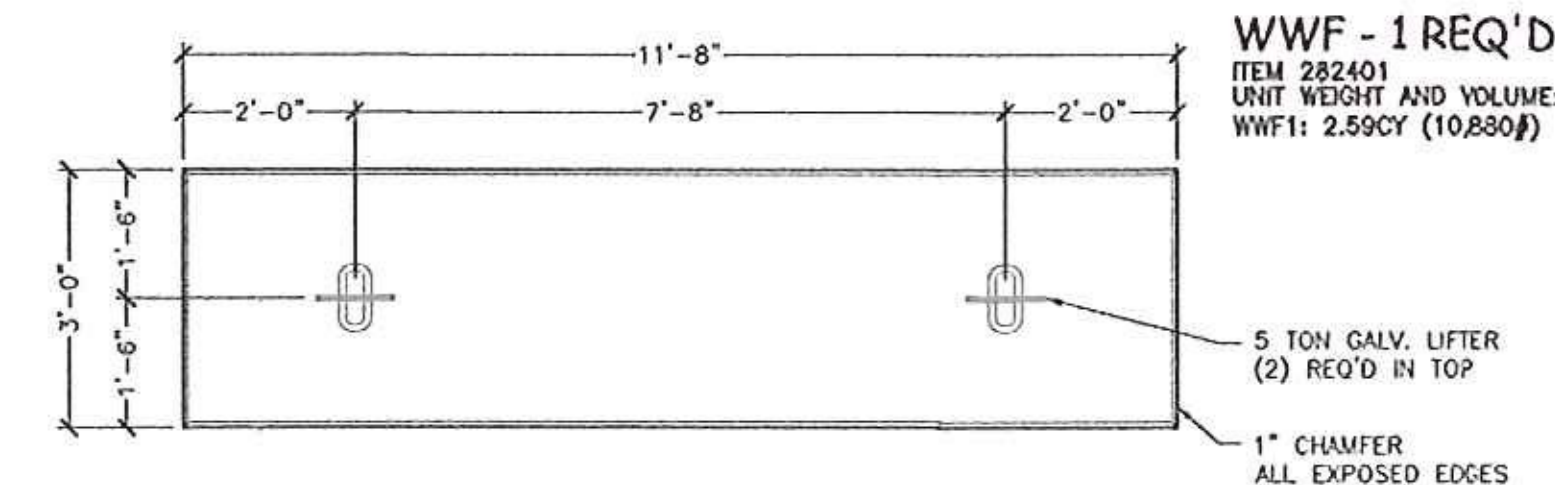
WINGWALL 2/3/4 FOOTING REINFORCING SCHEDULE						
LOCATION	MARK	# OF PCS	SIZE	SPACING	TYPE	LENGTH
LONGITUDINAL	WF2	8	5	EQ.SP	STRAIGHT	8'-4"
STIRRUP	WF1	9	4	12"	STIRRUP	8'-11 1/2"



4 WINGWALL FOOTING SECTION  
S2.0 1/2" = 1'-0"

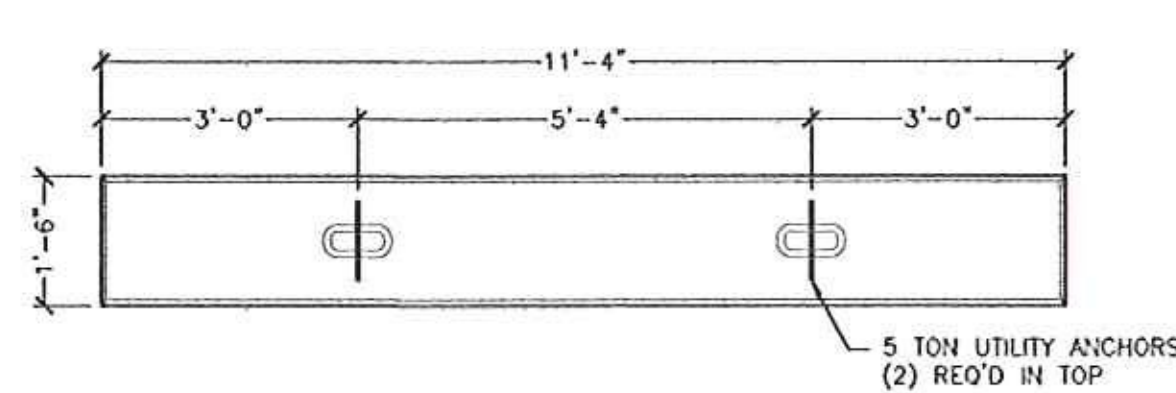


5 WWF2/3/4 PLAN VIEW  
S2.0 1/2" = 1'-0"

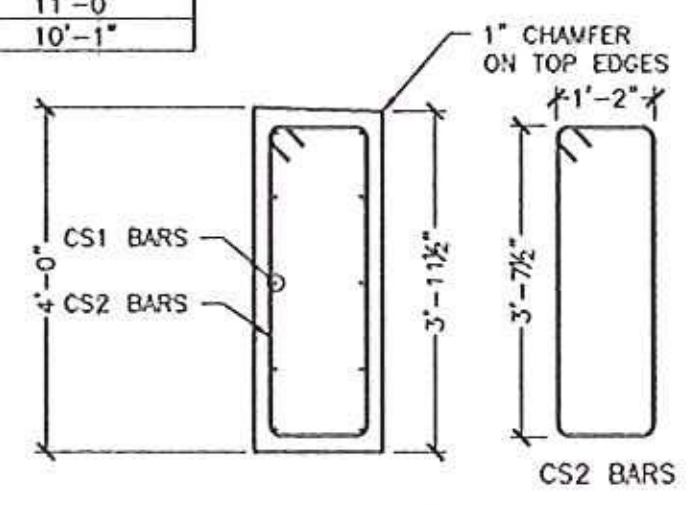


5 WWF1 PLAN VIEW  
S2.0 1/2" = 1'-0"

CUTOFF WALL REINFORCING SCHEDULE						
LOCATION	MARK	# OF PCS	SIZE	SPACING	TYPE	LENGTH
LONGITUDINAL	CS1	10	5	EQ.SP	STRAIGHT	11'-0"
STIRRUP	CS2	11	4	12"	STIRRUP	10'-1"

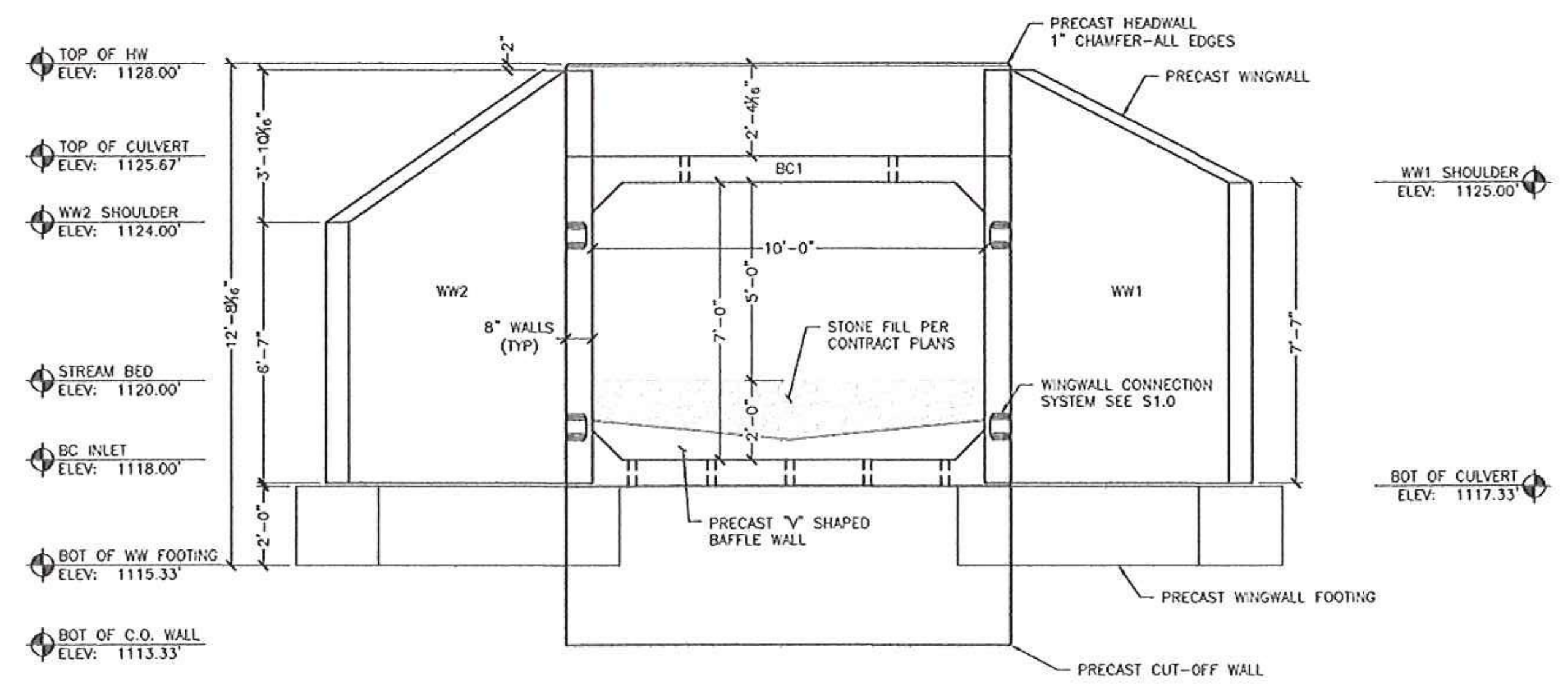


6 CUT-OFF PLAN VIEW  
S2.0 1/4" = 1'-0"

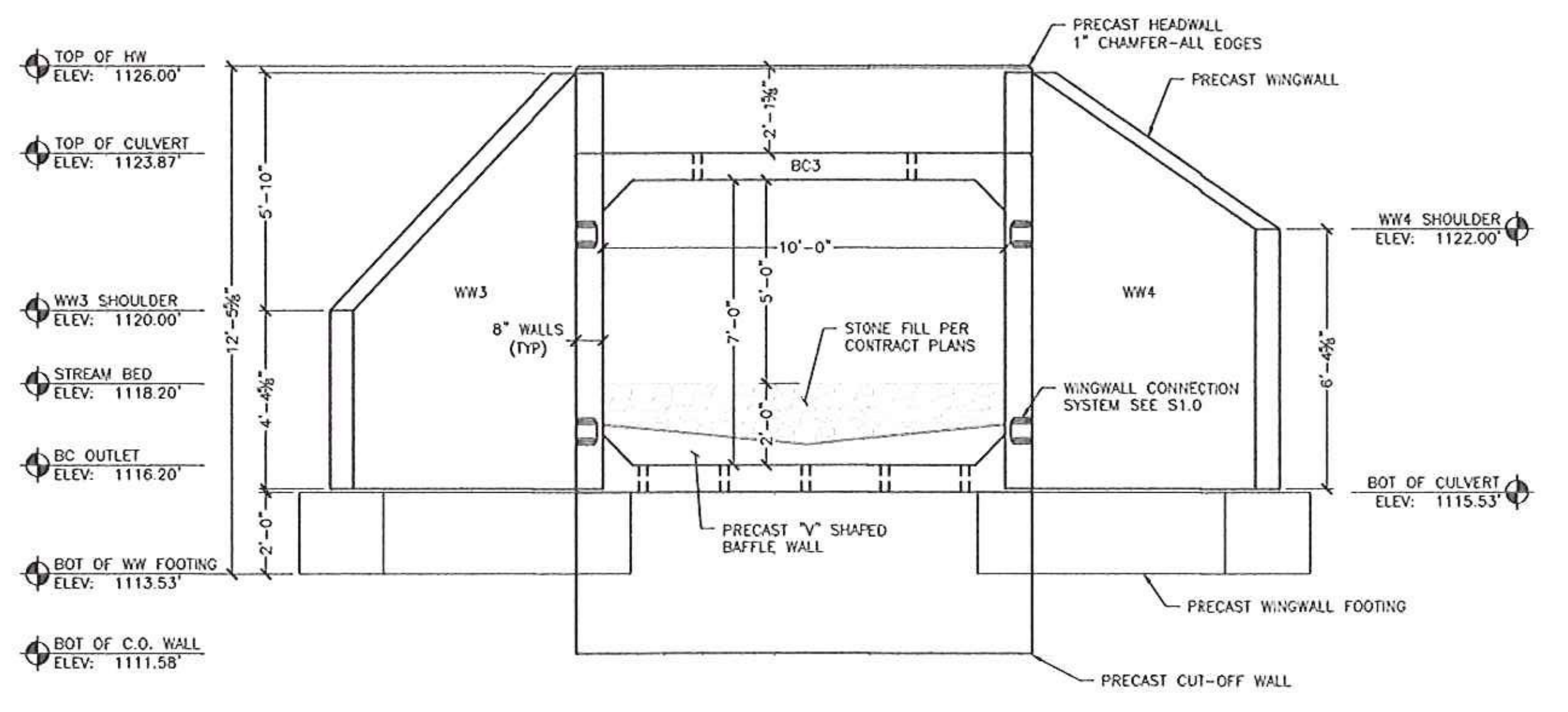


C.O. WALL - 2 REQ'D  
ITEM 275800  
UNIT WEIGHT AND VOLUME:  
WWF1: 2.60CY (10,800#)

NO EXCEPTIONS TAKEN  DISAPPROVED   
 REVIEWED AND REVISIONS  APPROVED AS NOTED   
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 GREEN INTERNATIONAL AFFILIATES, INC.  
 CHECKED BY: YW DATE: 8/31/15  
 SCHEDULED BY: BK DATE: 8/31/15



2 INLET END ELEVATION  
S2.0 3/8" = 1'-0"



3 OUTLET END ELEVATION  
S2.0 3/8" = 1'-0"

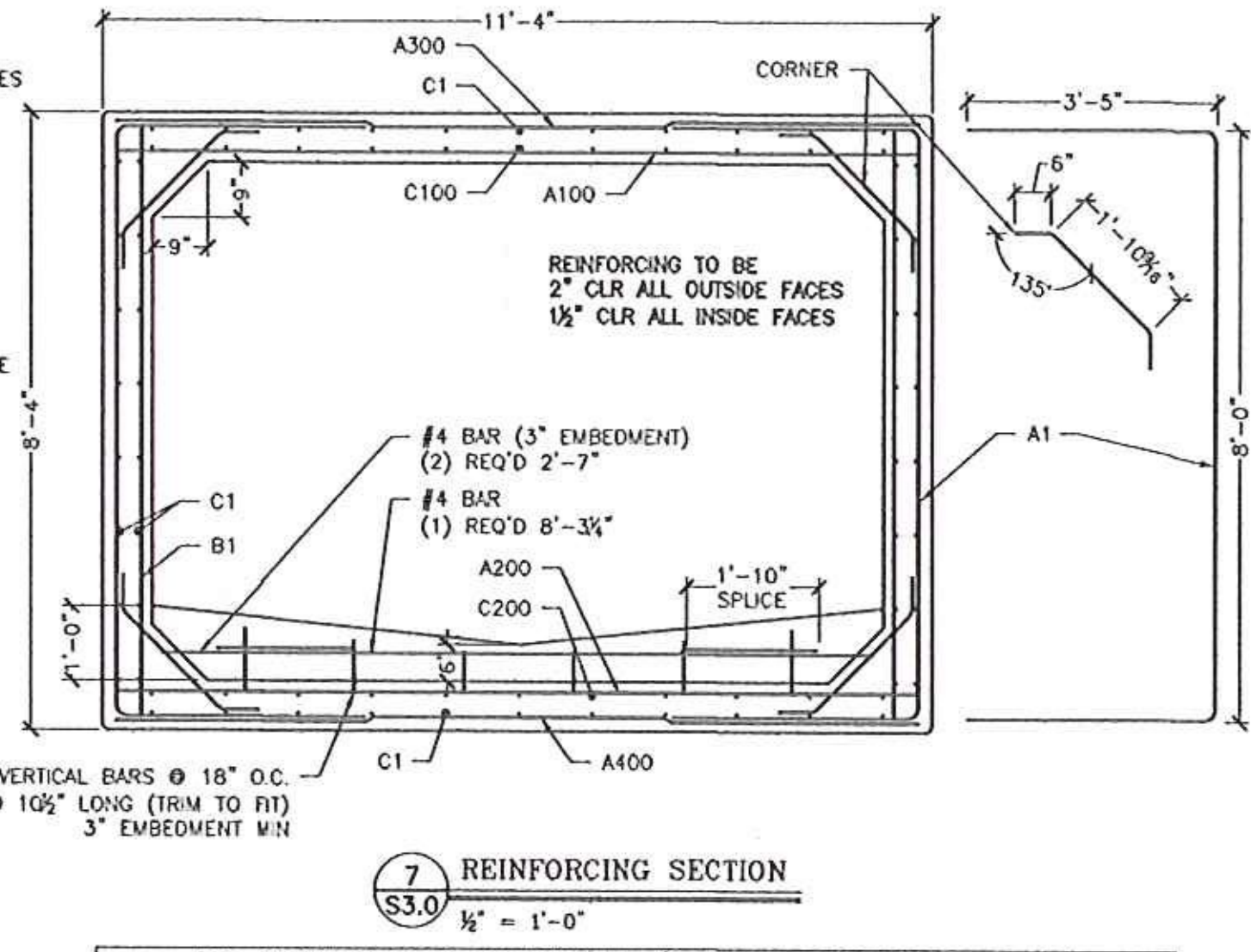
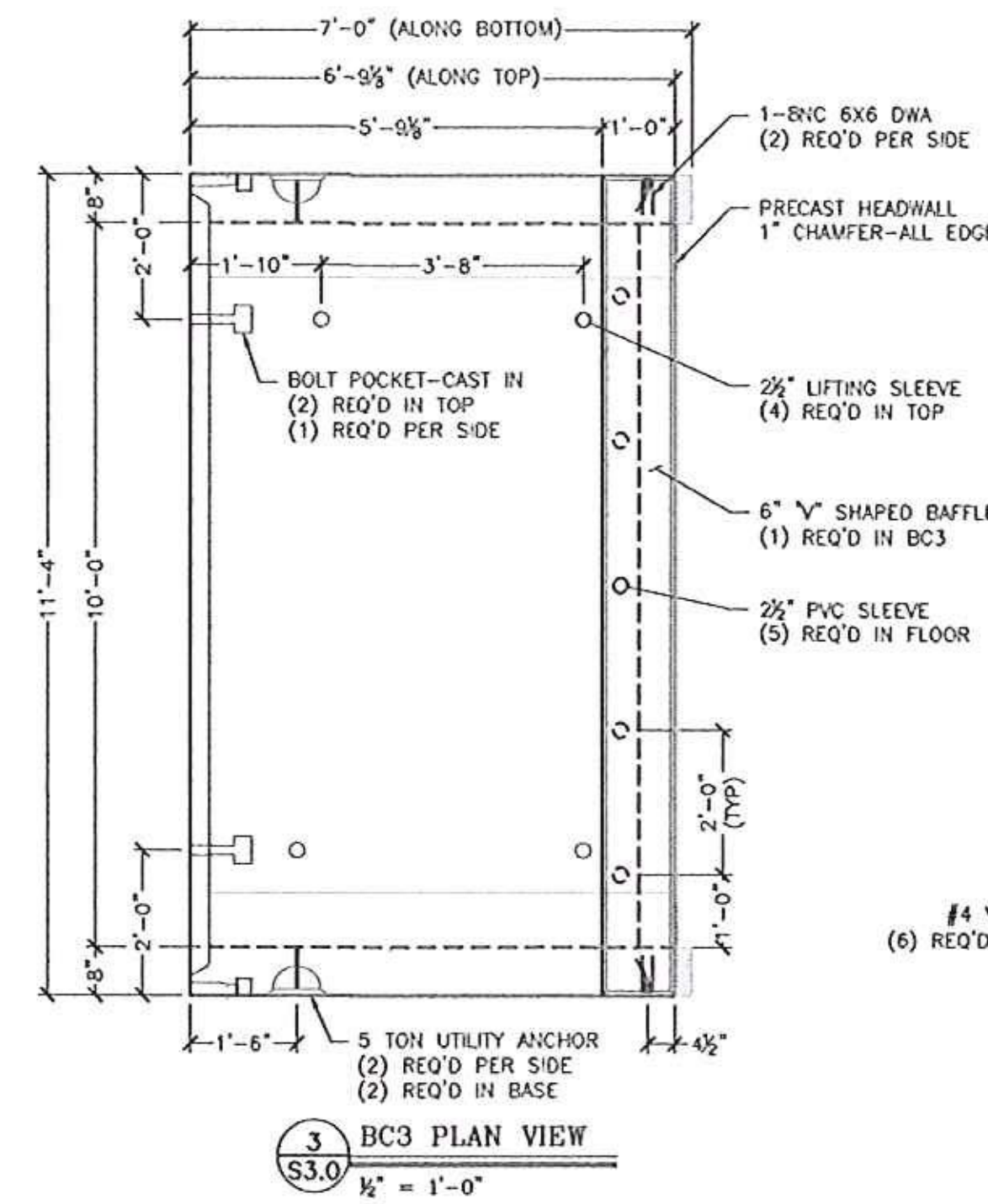
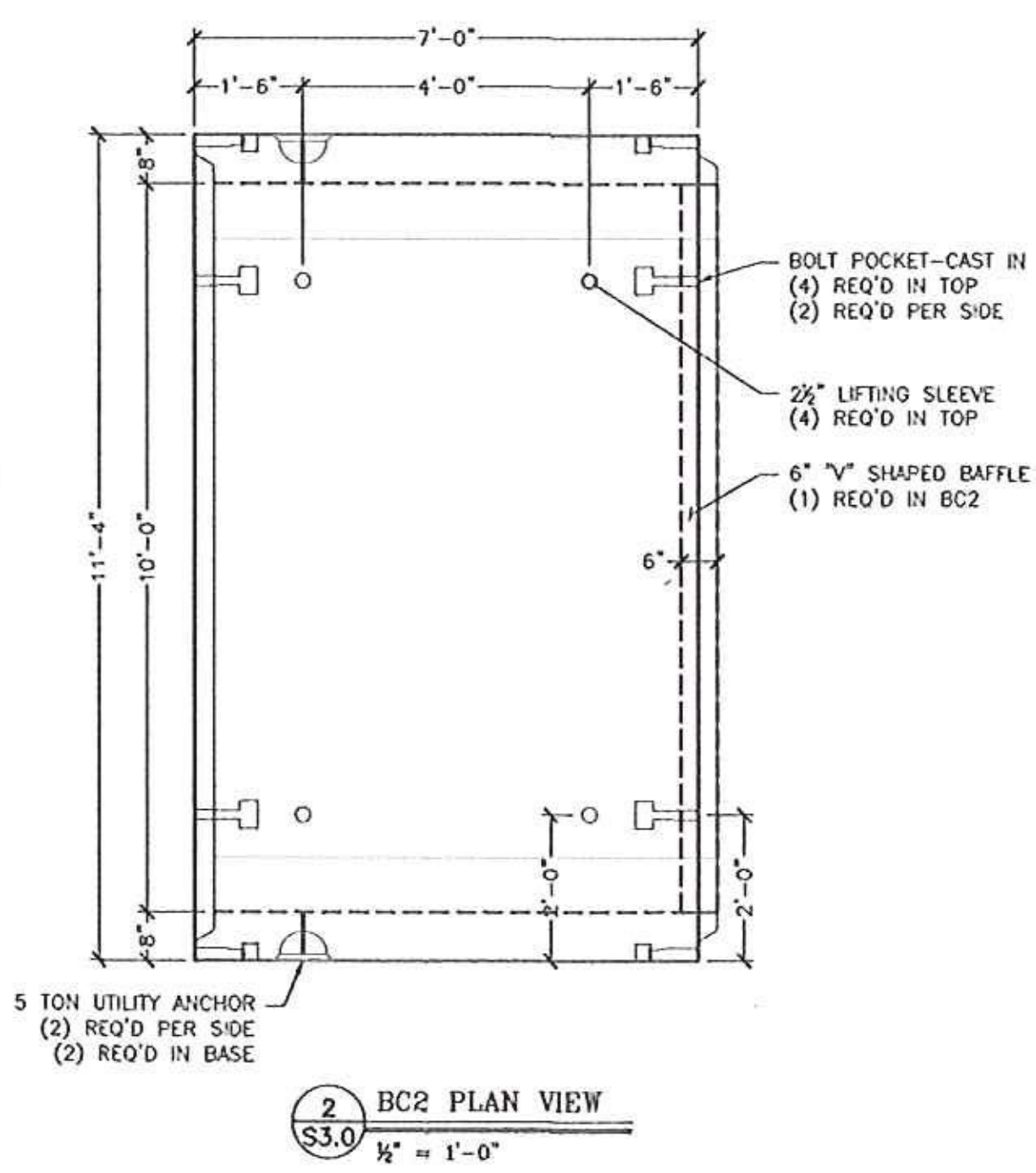
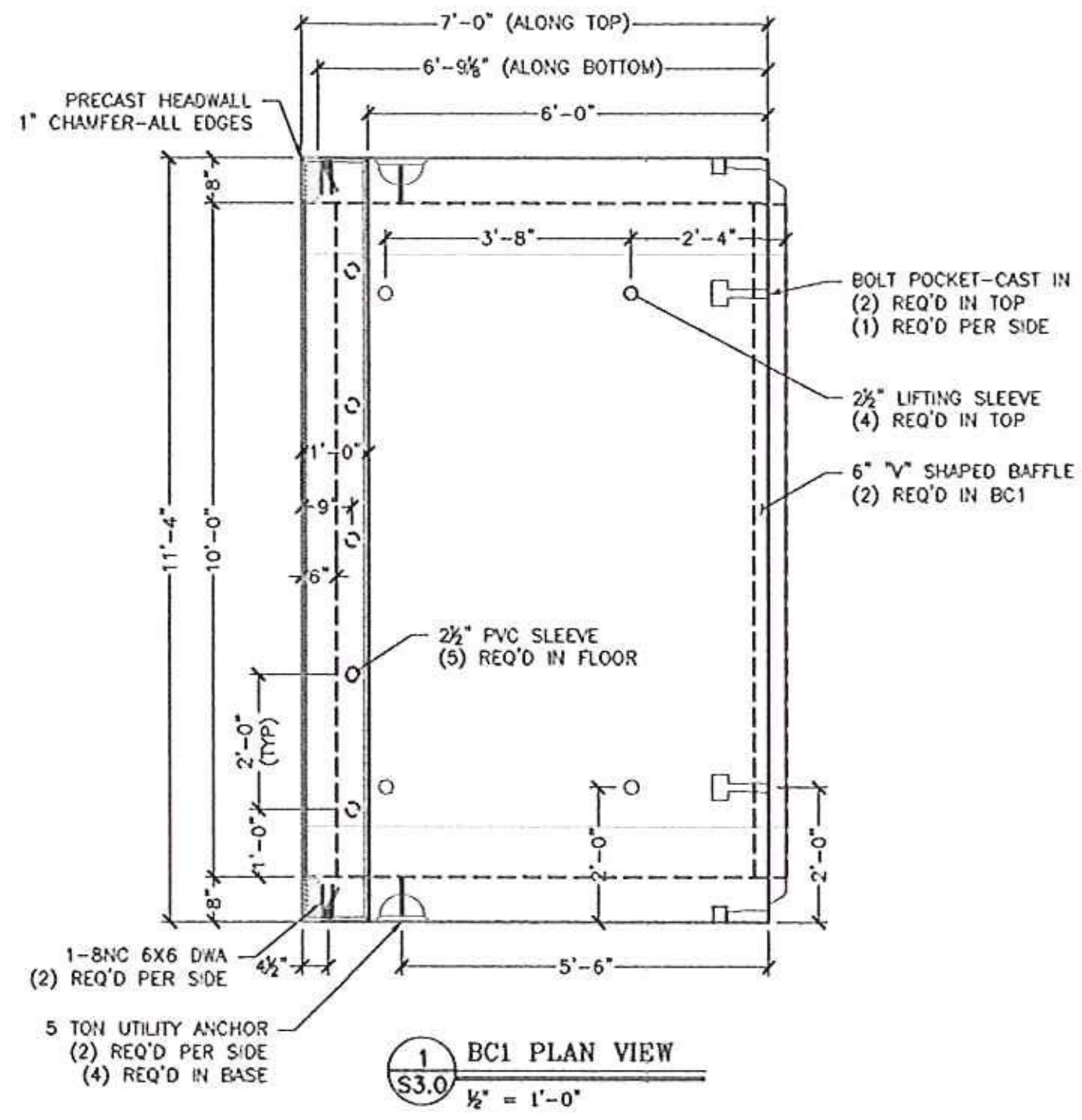
DATE	BY	REVISION



VAOT #ER STP 013-2(12) - VT Route 100 Bridge #82  
 Jamaica, VT  
 10'x7' Box Culvert - Elevations & Footing Details  
 Project No. 6200  
 Date: 7/2/2015  
 Designed by: AN  
 Checked by: PDL  
 Scale: AS SHOWN  
 Drawn by: CTP

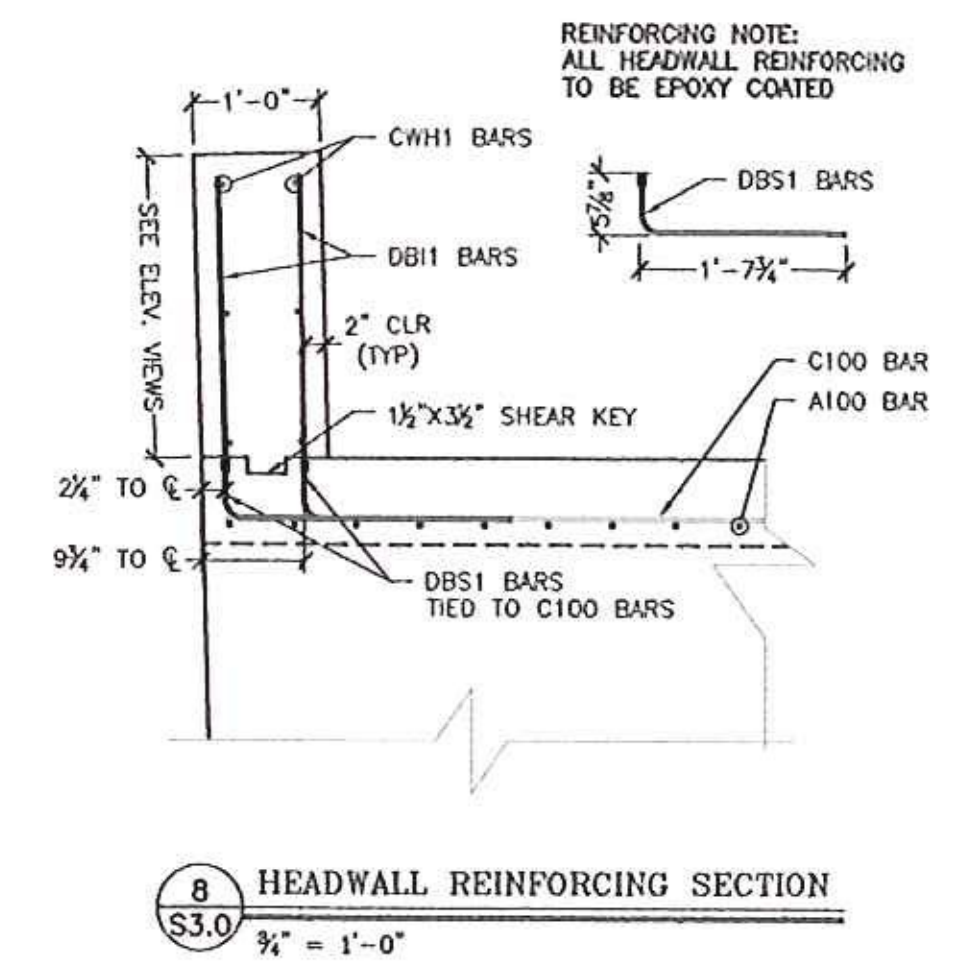
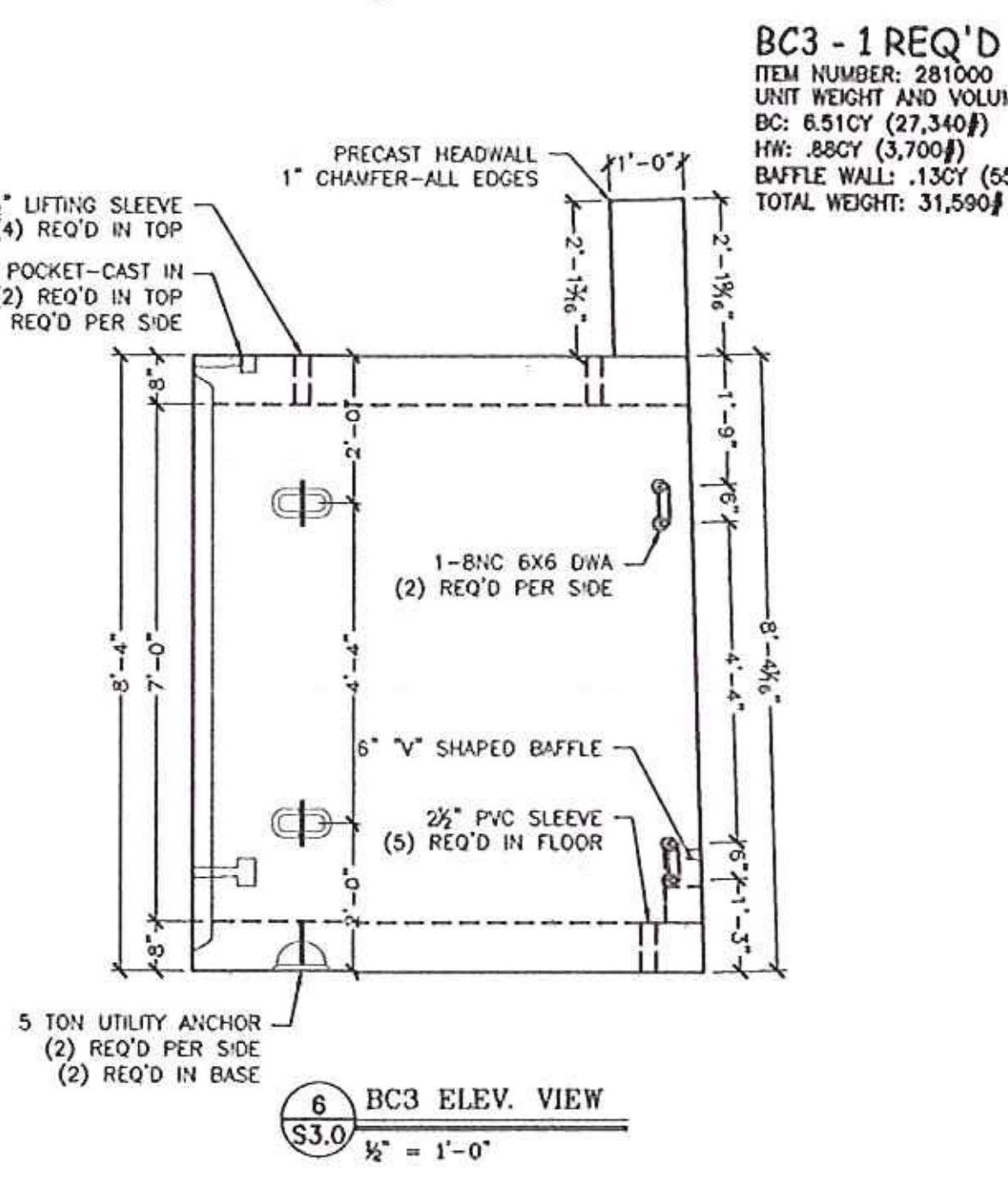
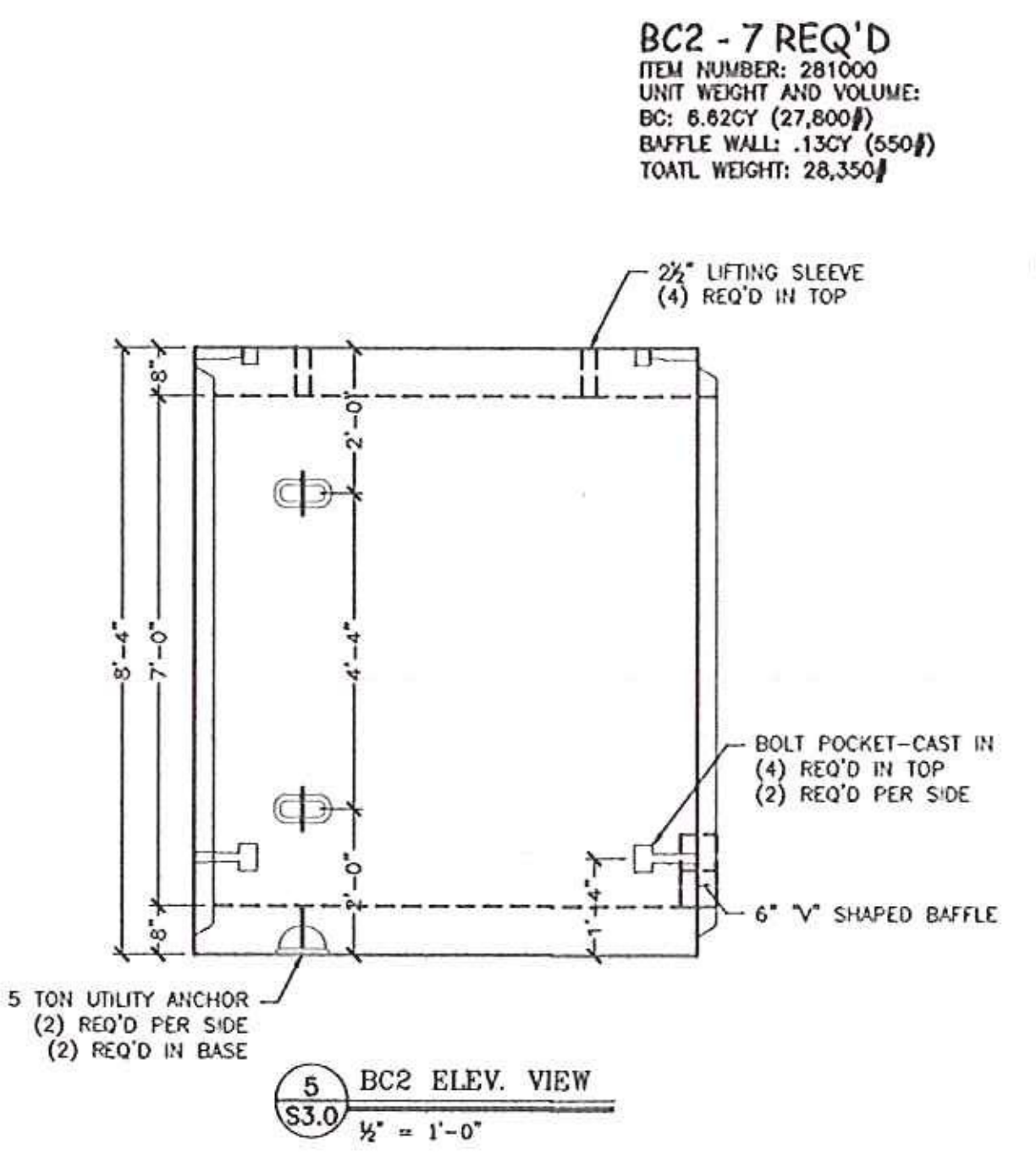
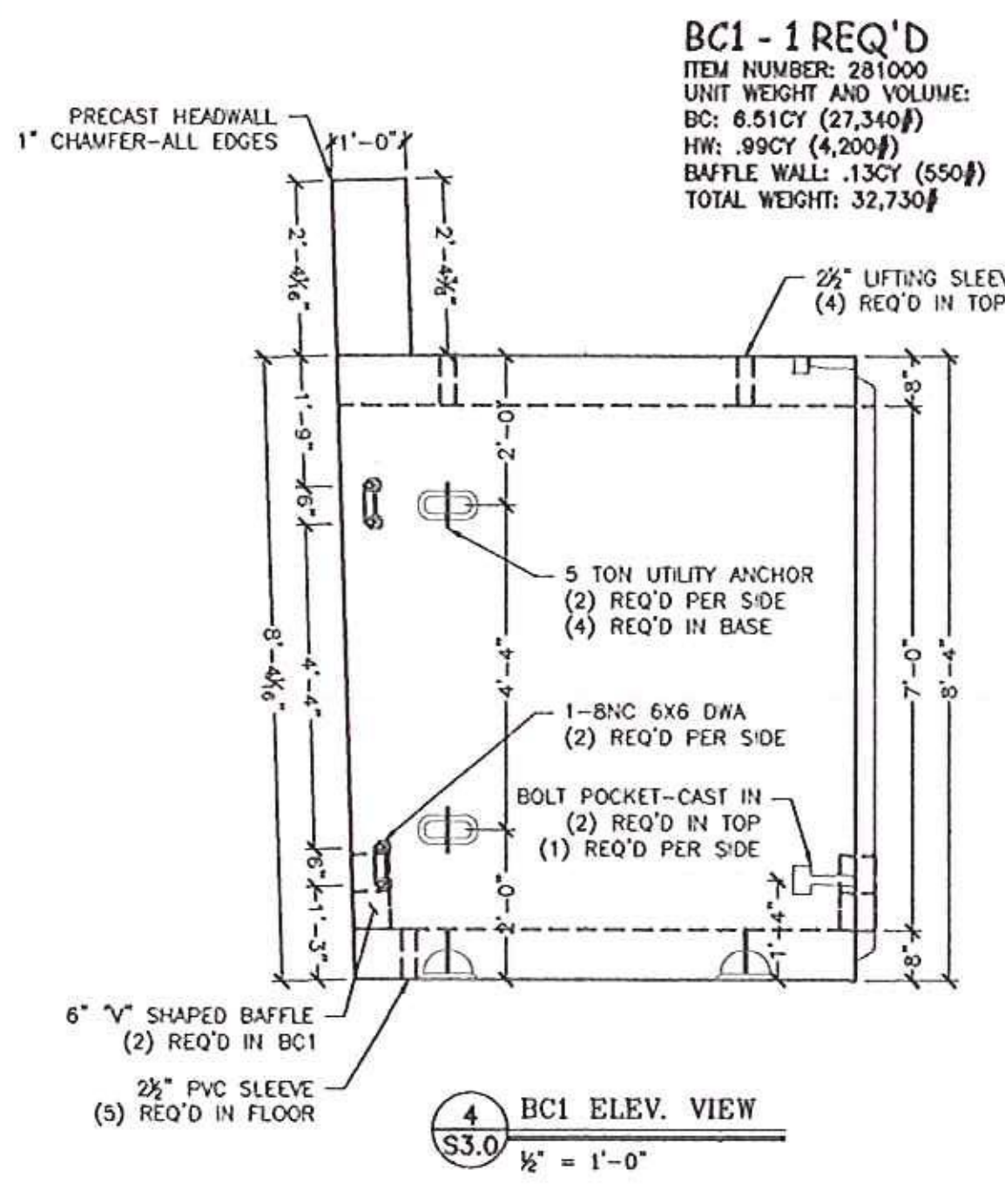
Prepared for:  
 Casella Construction  
 8 US4 East  
 Mendon VT 05701  
 DWG NO.  
 S2.0





BC REINFORCING SCHEDULE (COUNTS REFLECT 1 UNIT)						
LOCATION	MARK	QTY	SIZE	SPACING	TYPE	CUT LENGTH
TOP SLAB (INT)	A100	14	#5	6"	STRAIGHT	11'-0"
BOT. SLAB (INT)	A200	14	#5	6"	STRAIGHT	11'-0"
TOP SLAB (EXT)	A300	7	#4	12"	STRAIGHT	11'-0"
BOT. SLAB (EXT)	A400	7	#4	12"	STRAIGHT	11'-0"
WALL (EXT)	A1	28	#5	6"	90° BARS	14'-0"
WALL (INT)	B1	14	#4	12"	STRAIGHT	8'-0"
LONGIT. TOP (EXT)	C1	13	#4	12"	STRAIGHT	6'-8"
LONGIT. TOP (INT)	C100	11	#4	12"	STRAIGHT	*6'-8"
LONGIT. BOT. (INT)	C200	11	#4	12"	STRAIGHT	*6'-8"
LONGIT. BOT. (EXT)	C1	11	#4	12"	STRAIGHT	6'-8"
LONGIT. WALL (EXT)	C1	16	#4	12"	STRAIGHT	6'-8"
LONGIT. WALL (INT)	C1	16	#4	12"	STRAIGHT	*6'-8"
CORNER BARS	CORNER	7/CORNER	#4	12"	ISF	2'-10 1/2"
TOP DECK	DBS1	7/13	#4	12" ISF	L BARS	**2'-0"
HEADWALL	DB1	20	#4	--	STRAIGHT	**2'-0" BC3
HEADWALL	CWH1	6	#4	AS SHOWN	STRAIGHT	**13'-0" BC1

REINFORCING NOTE: SKEW LAST BARS TO FOLLOW SLOPE IN BC1 AND BC3  
 \*\* REINFORCING REQUIRED IN BC1/BC3 ONLY  
 \* ADD 3" FOR BC1  
 \* SUBTRACT 3" FOR BC3



**BC1 - 1 REQ'D**  
ITEM NUMBER: 281000  
UNIT WEIGHT AND VOLUME:  
BC: 6.51CY (27,340#)  
HW: .99CY (4,200#)  
BAFFLE WALL: .13CY (550#)  
TOTAL WEIGHT: 32,730#

**BC2 - 7 REQ'D**  
ITEM NUMBER: 281000  
UNIT WEIGHT AND VOLUME:  
BC: 6.62CY (27,800#)  
BAFFLE WALL: .13CY (550#)  
TOTAL WEIGHT: 28,350#

**BC3 - 1 REQ'D**  
ITEM NUMBER: 281000  
UNIT WEIGHT AND VOLUME:  
BC: 6.51CY (27,340#)  
BAFFLE WALL: .13CY (550#)  
TOTAL WEIGHT: 31,590#

NO EXCEPTIONS TAKEN  DISAPPROVED   
 Plans and Revisions  Approved as Noted

DESIGNED BY: YW DATE: 8/31/15  
 CHECKED BY: BK DATE: 8/31/15

GREEN INTERNATIONAL AFFILIATES, INC.

STATE OF VERMONT  
 REGISTERED PROFESSIONAL ENGINEER  
 NO. 84443  
 CIVIL  
 EXPIRES 8/28/15

173 BUXTON INDUSTRIAL DRIVE - PO BOX 870  
 BRISTOL, VERMONT 05430-0870  
 PHONE: 802-426-3218  
 FAX: 802-426-7626  
 WWW.MICHIECORPORATE.COM

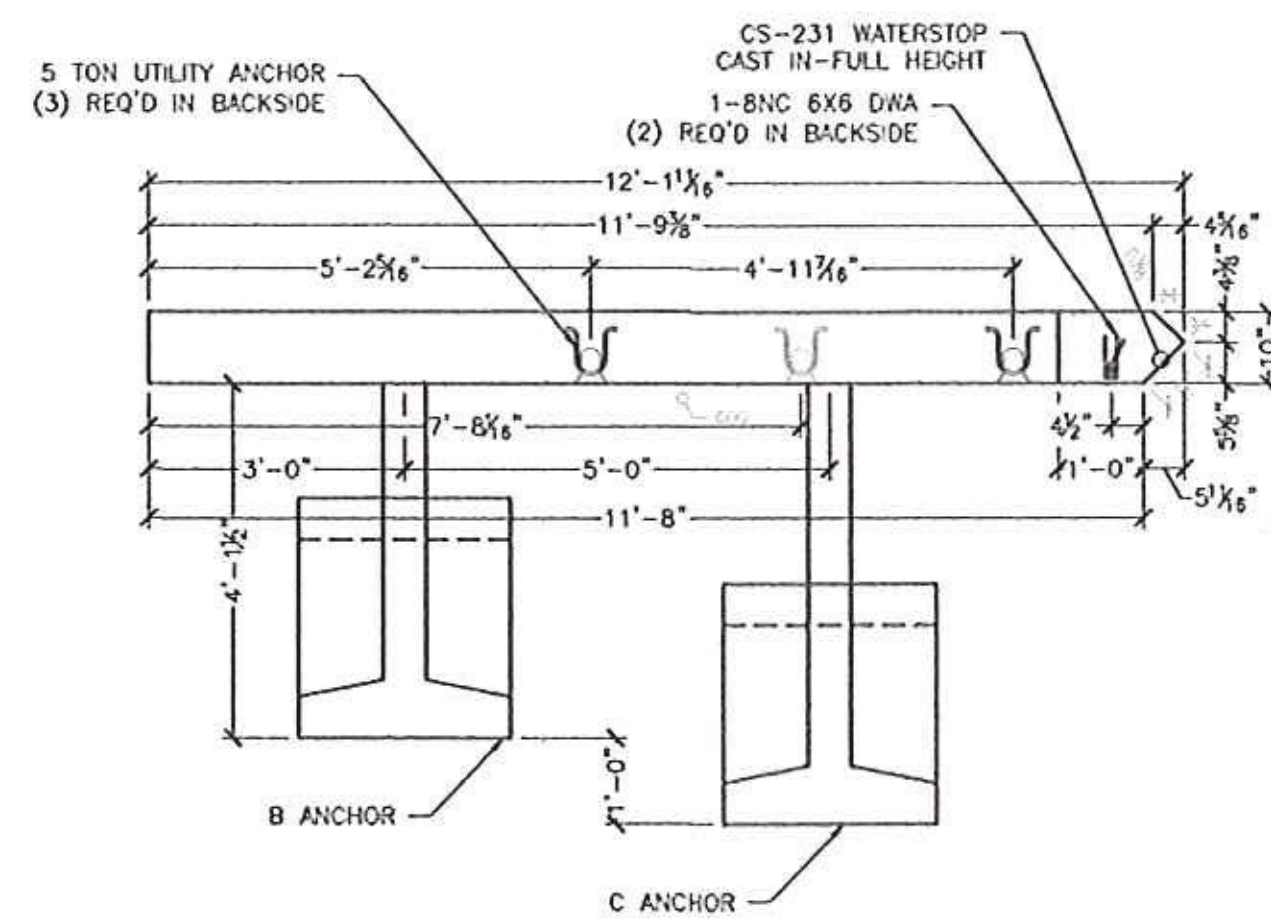
**VAOT #ER STP 013-2(12) - VT Route 100 Bridge #82**  
 Jamaica, VT

10'x7' Box Culvert - Culvert Details

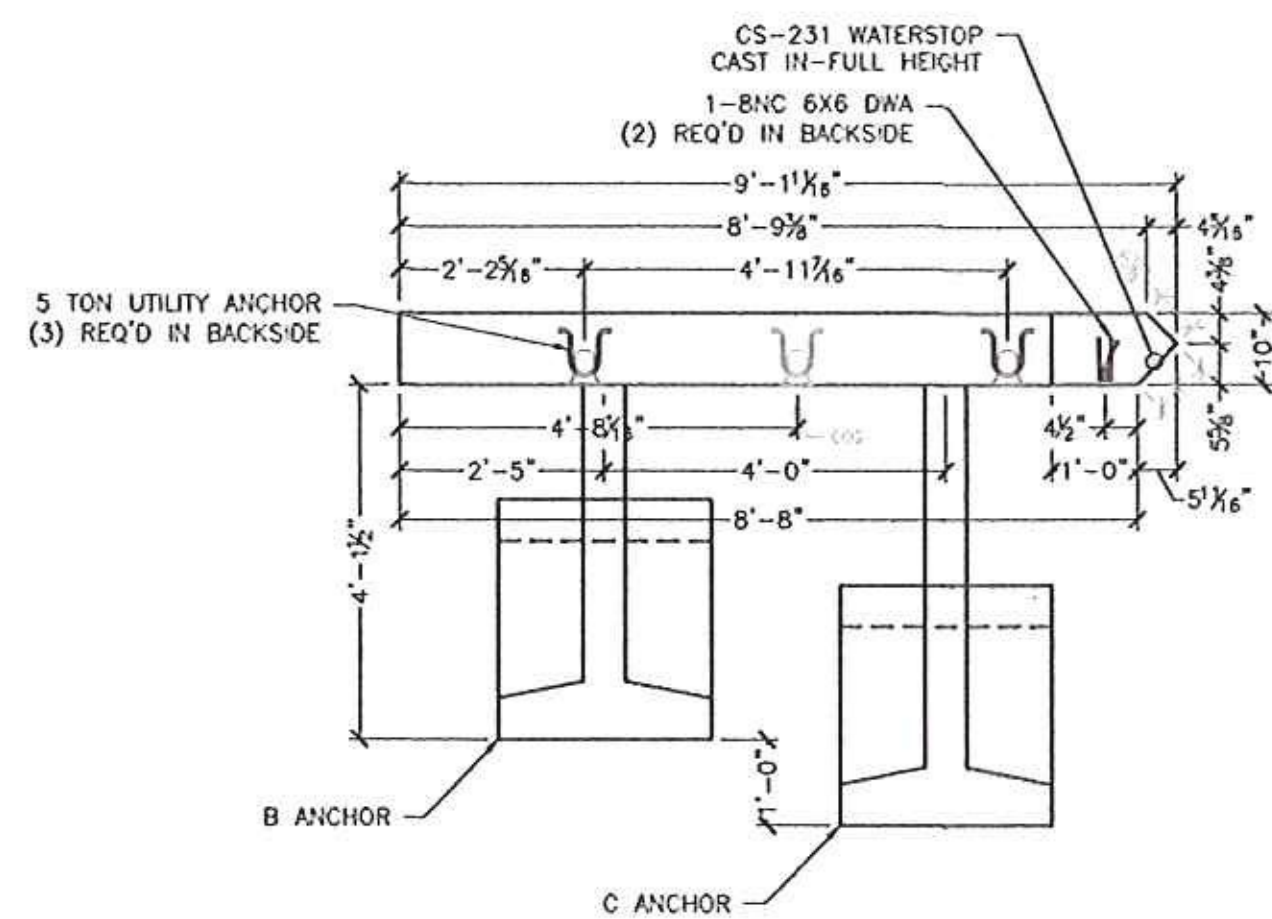
Project No. 6200  
 Date: 7/2/2015  
 Drawn by: CYP  
 Checked by: PTL  
 Scale: AS SHOWN

Prepared for:  
 Casella Construction  
 8 US4 East  
 Mendon VT 05701

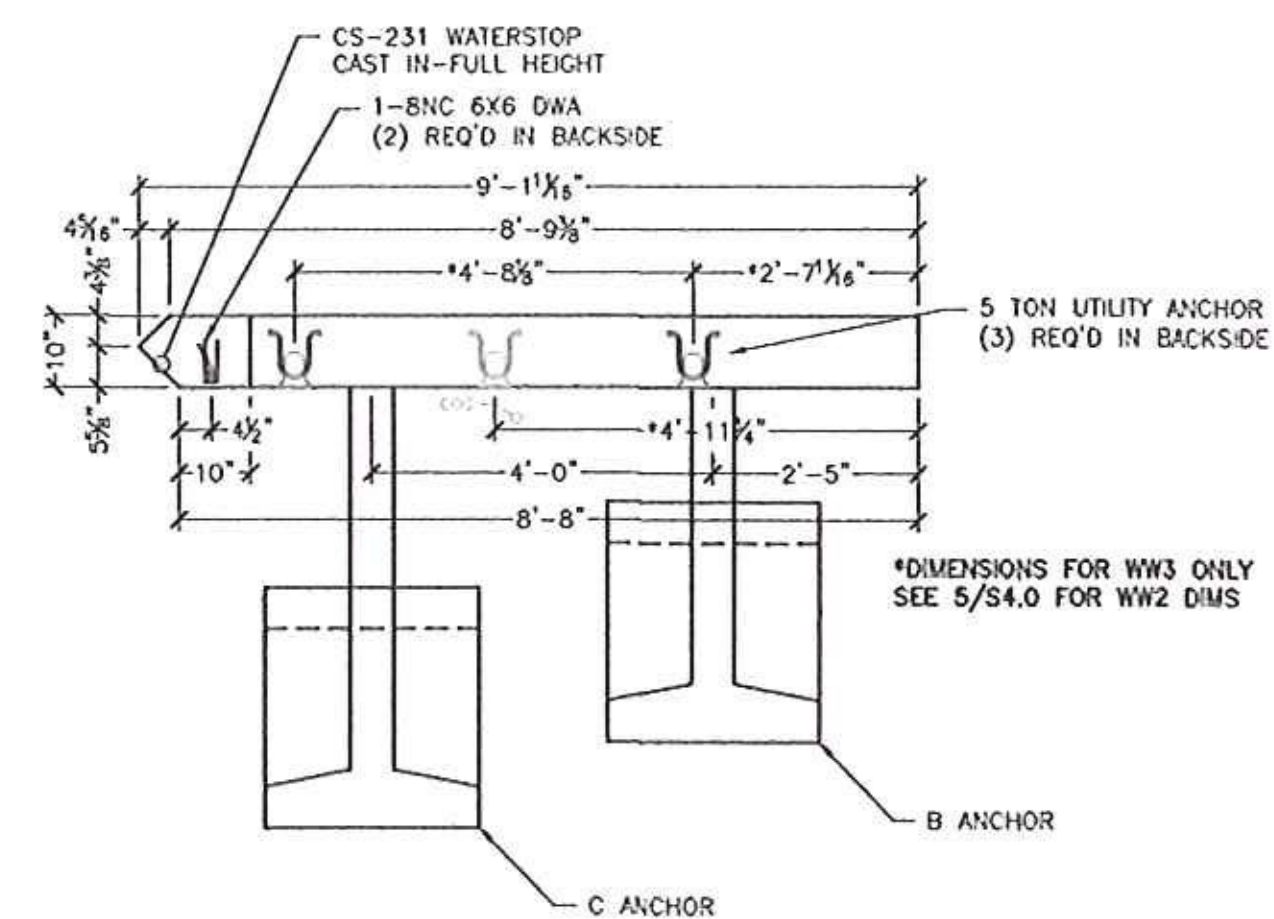
DWG No.  
 S3.0



1 WW1 PLAN VIEW  
S4.0 1/2" = 1'-0"

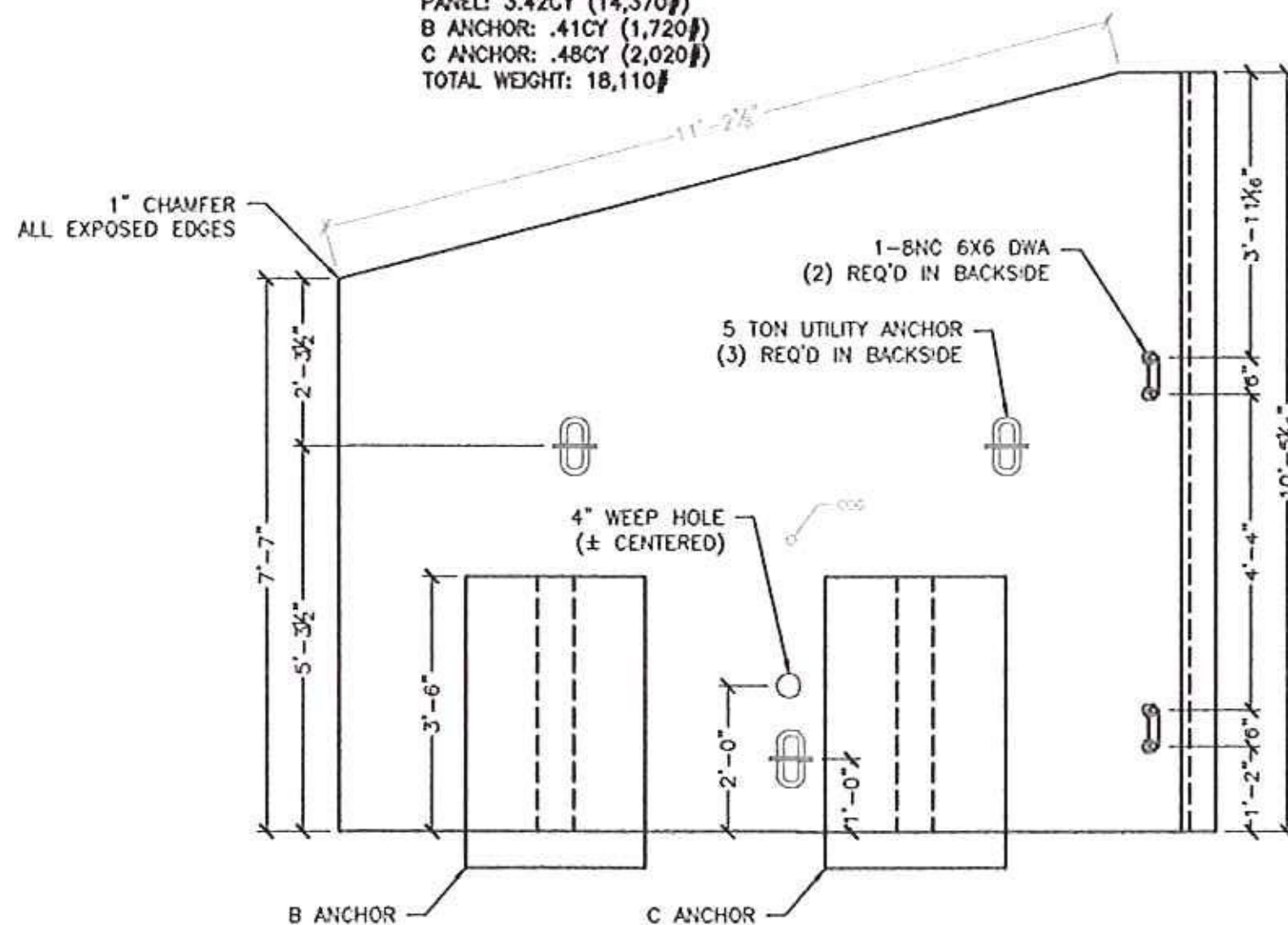


8 WW4 PLAN VIEW  
S4.0 1/2" = 1'-0"



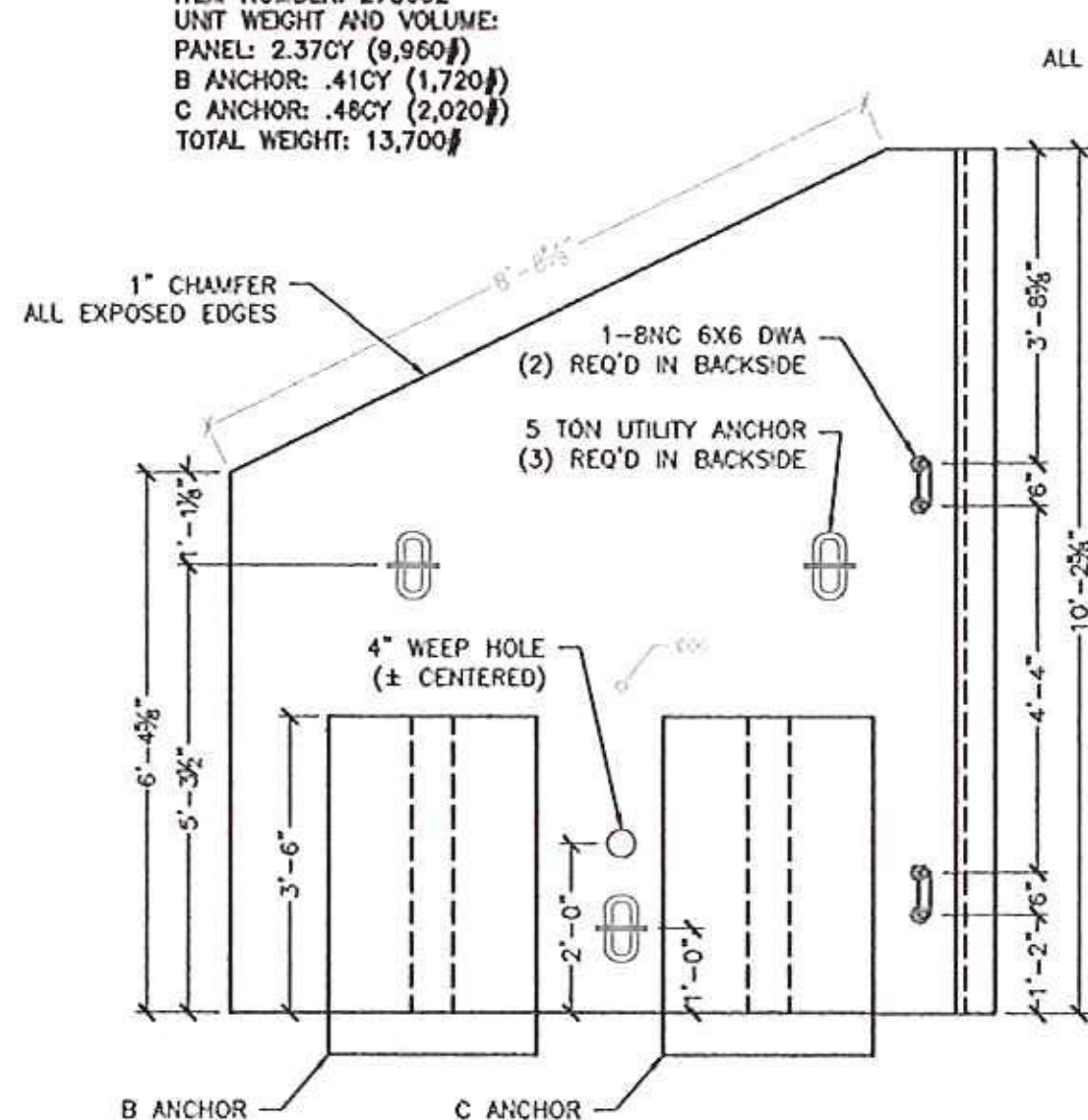
4 WW2/WW3 PLAN VIEW  
S4.0 1/2" = 1'-0"

WW1 - 1 REQ'D  
ITEM NUMBER: 275602  
UNIT WEIGHT AND VOLUME:  
PANEL: 3.42CY (9,990#)  
B ANCHOR: .41CY (1,720#)  
C ANCHOR: .48CY (2,020#)  
TOTAL WEIGHT: 18,110#



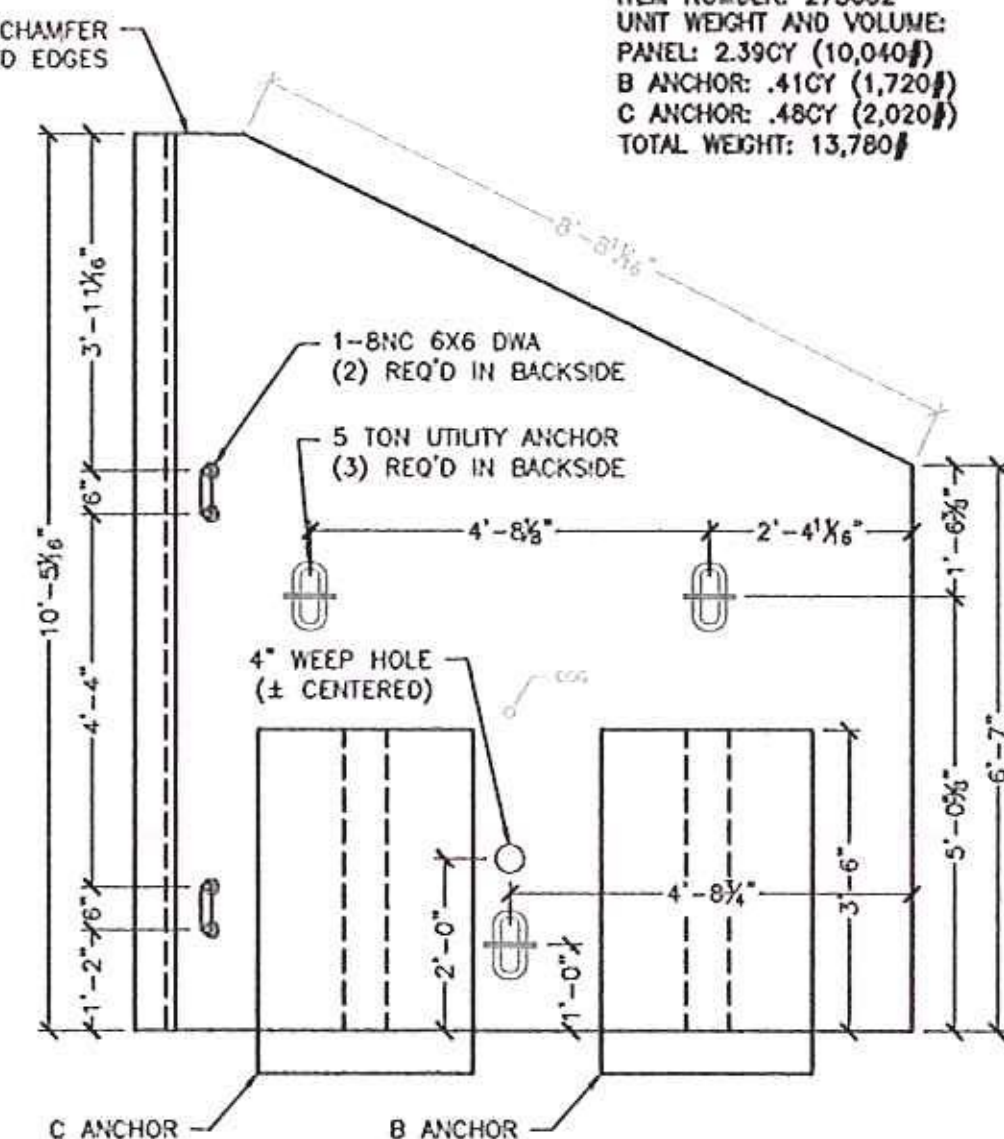
2 WW1 ELEVATION  
S4.0 1/2" = 1'-0"

WW4 - 1 REQ'D  
ITEM NUMBER: 275602  
UNIT WEIGHT AND VOLUME:  
PANEL: 2.37CY (9,990#)  
B ANCHOR: .41CY (1,720#)  
C ANCHOR: .48CY (2,020#)  
TOTAL WEIGHT: 13,700#



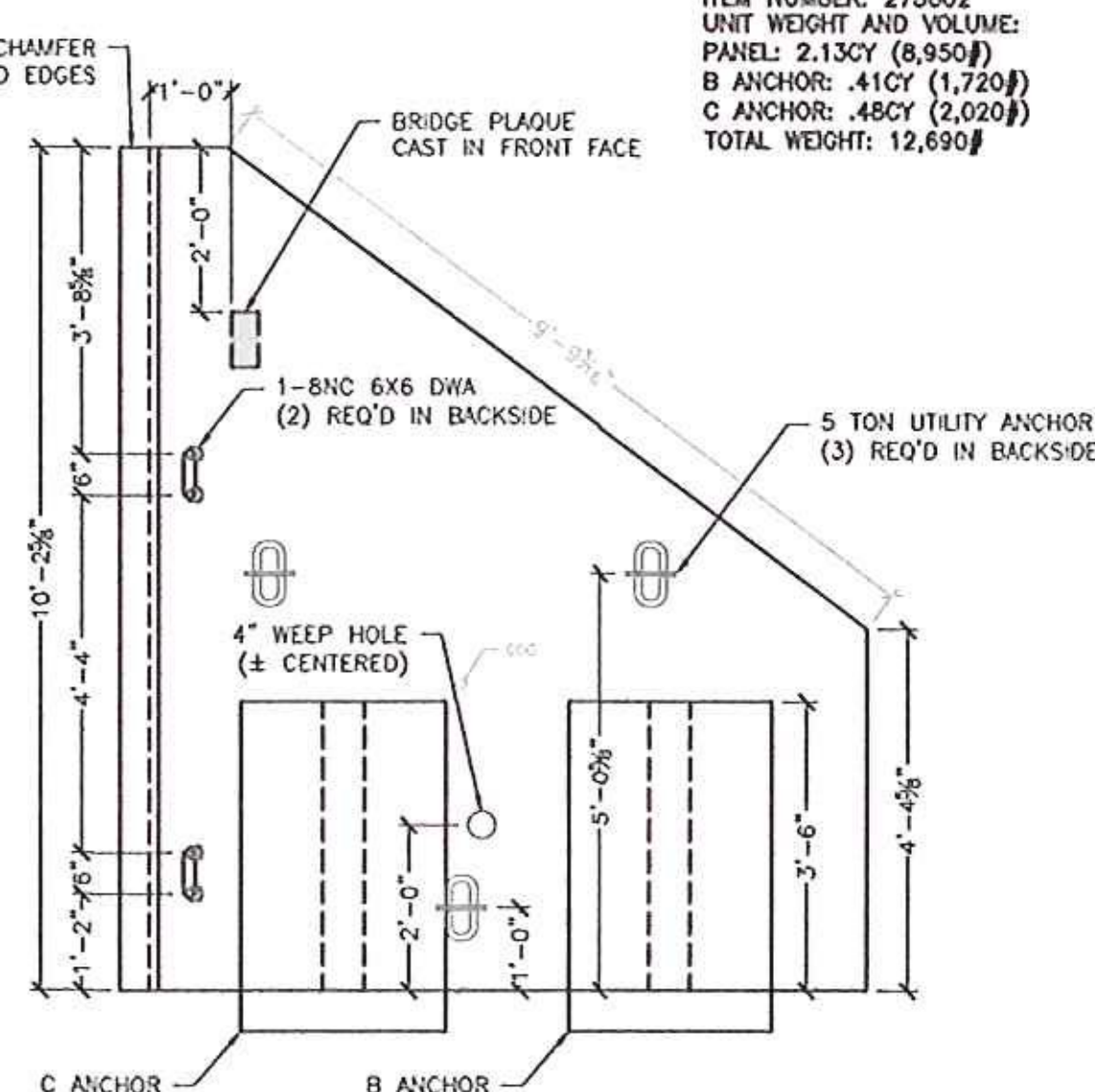
3 WW4 ELEVATION  
S4.0 1/2" = 1'-0"

WW2 - 1 REQ'D  
ITEM NUMBER: 275602  
UNIT WEIGHT AND VOLUME:  
PANEL: 2.39CY (10,040#)  
B ANCHOR: .41CY (1,720#)  
C ANCHOR: .48CY (2,020#)  
TOTAL WEIGHT: 13,780#

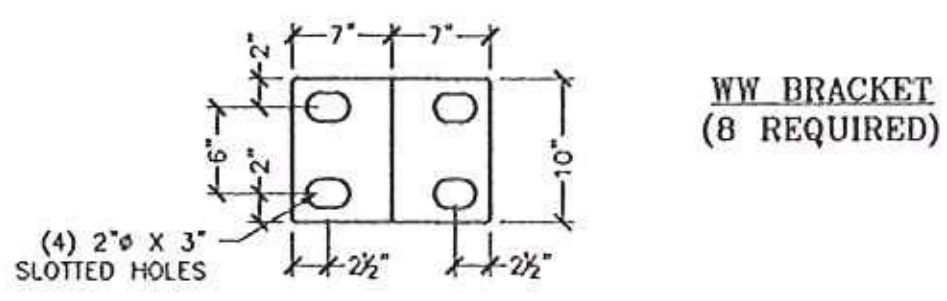
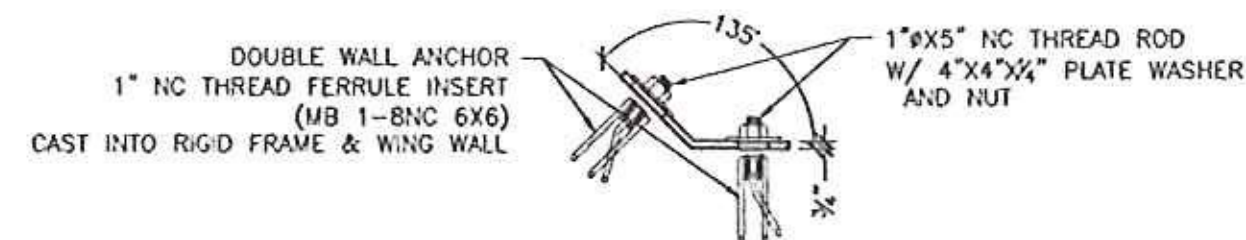


5 WW2 ELEVATION  
S4.0 1/2" = 1'-0"

WW3 - 1 REQ'D  
ITEM NUMBER: 275602  
UNIT WEIGHT AND VOLUME:  
PANEL: 2.13CY (8,950#)  
B ANCHOR: .41CY (1,720#)  
C ANCHOR: .48CY (2,020#)  
TOTAL WEIGHT: 12,690#



6 WW3 ELEVATION  
S4.0 1/2" = 1'-0"



PLATES TO BE MADE OF 3/4" MLD STEEL, PLASMA CUT, AND BENT AS REQUIRED. (HOT DIPPED GALVANIZED AFTER BENDING)

7 WINGWALL BRACKET DETAIL  
S4.0 1" = 1'-0"

NO EXCEPTIONS TAKEN  DISAPPROVED   
 Revised and Resubmit  Approved as Noted   
 DESIGN IS ONLY FOR GENERAL CONFORMANCE WITH THE BASIC CONCEPT OF THE PROJECT AND GENERAL CONFORMANCE WITH THE DESCRIPTION GIVEN IN THE CONTRACT DOCUMENTS. AN ANCHOR SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DETERMINING WHETHER SHALL BE CONSIDERED AND COMPLIANT BY THE JOB SITE. REGARDING PROGRESS AND TIMELINESS OF CONSTRUCTION, COOPERATION OF HIS WORK WITH THAT OF ALL OTHER TRADES, AND THE SATISFACTORY PERFORMANCE OF THE WORK.  
 GREEN INTERNATIONAL AFFILIATES, INC.  
 CHECKED BY: YW DATE: 8/31/15  
 SIGNED BY: BK DATE: 8/31/15

Rev	Date	Revised For	By
1	8/22/15	FOR COMMENT	PTL
2			
3			
4			
5			
6			
7			
8			



170 BUXTON INDUSTRIAL DRIVE - PO BOX 870  
 JAMAICA, VT 05343  
 PHONE: 802-227-8228  
 FAX: 802-227-8228  
 WWW.MICROCORP.COM

VAOT #ER STP 013-2(12) - VT Route 100 Bridge #82  
 Jamaica, VT  
 10'x7' Box Culvert - Wingwall Details  
 Project No. 6200  
 Date: 7/23/15  
 Scale: AS SHOWN  
 Checked By: PTL  
 Drawn By: CTP

Prepared for:  
 Casella Construction  
 8 US4 East  
 Mendon VT 05701

DWG NO.  
 S4.0

SPECIALTY ENGINEERING SERVICES PROVIDED BY:  
 CONCRETE ENGINEERING SOLUTIONS, LLC  
 225 RIVER STREET  
 FAYETTEVILLE, VT 05404  
 TEL: 802-253-2222

NOTE: BAR COUNTS REPRESENT 1 UNIT.

WW1 REINFORCING SCHEDULE					
BAR MARK	LOCATION	TYPE	SIZE/SPACING	CUT LENGTH	# OF PCS
VERTICAL	OSF	STRAIGHT	#5 @ 12"	10'-1" TO 7'-3"	12
VERTICAL	ISF	STRAIGHT	#5 @ 12"	10'-1" TO 7'-3"	12
HORIZONTAL	OSF	STRAIGHT	#5 @ 12"	11'-7"	10
HORIZONTAL	ISF	STRAIGHT	#5 @ 12"	11'-6"	10
DIAGONAL	FOLLOW SLOPE	STRAIGHT	#4	8'-0"	2

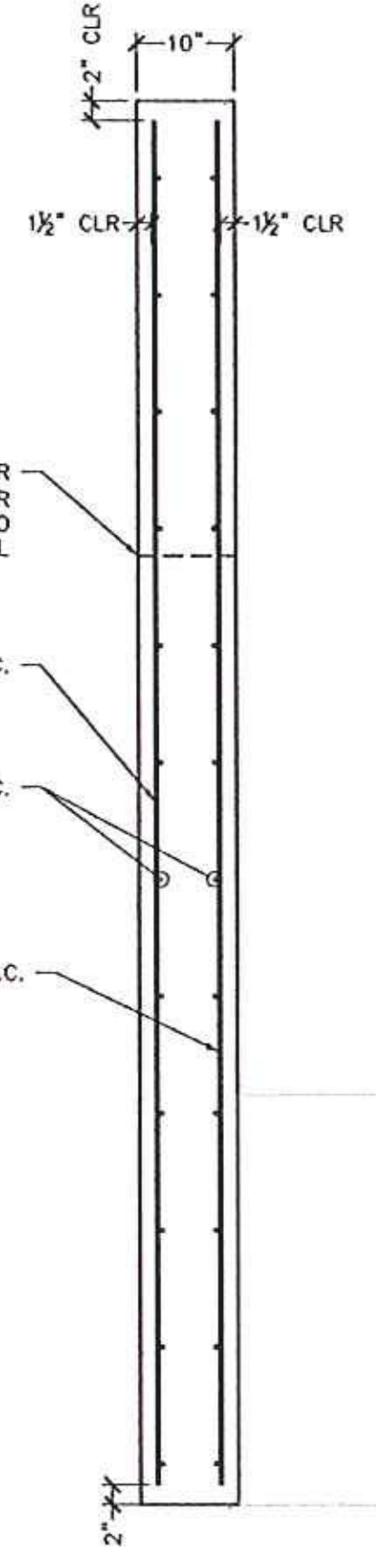
WW2 REINFORCING SCHEDULE					
BAR MARK	LOCATION	TYPE	SIZE/SPACING	CUT LENGTH	# OF PCS
VERTICAL	OSF	STRAIGHT	#5 @ 12"	10'-1" TO 6'-3"	9
VERTICAL	ISF	STRAIGHT	#5 @ 12"	10'-1" TO 6'-3"	9
HORIZONTAL	OSF	STRAIGHT	#5 @ 12"	8'-7"	10
HORIZONTAL	ISF	STRAIGHT	#5 @ 12"	8'-6"	10
DIAGONAL	FOLLOW SLOPE	STRAIGHT	#4	8'-4"	2

WW3 REINFORCING SCHEDULE					
BAR MARK	LOCATION	TYPE	SIZE/SPACING	CUT LENGTH	# OF PCS
VERTICAL	OSF	STRAIGHT	#5 @ 12"	9'-10 1/2" TO 4'-0 1/2"	9
VERTICAL	ISF	STRAIGHT	#5 @ 12"	9'-10 1/2" TO 4'-0 1/2"	9
HORIZONTAL	OSF	STRAIGHT	#5 @ 12"	8'-7"	10
HORIZONTAL	ISF	STRAIGHT	#5 @ 12"	8'-6"	10
DIAGONAL	FOLLOW SLOPE	STRAIGHT	#4	9'-6"	2

WW4 REINFORCING SCHEDULE					
BAR MARK	LOCATION	TYPE	SIZE/SPACING	CUT LENGTH	# OF PCS
VERTICAL	OSF	STRAIGHT	#5 @ 12"	9'-10 1/2" TO 6'-1"	9
VERTICAL	ISF	STRAIGHT	#5 @ 12"	9'-10 1/2" TO 6'-1"	9
HORIZONTAL	OSF	STRAIGHT	#5 @ 12"	8'-7"	10
HORIZONTAL	ISF	STRAIGHT	#5 @ 12"	8'-6"	10
DIAGONAL	FOLLOW SLOPE	STRAIGHT	#4	8'-5"	2



WINGWALL SHOULDER  
KEEP REINFORCING 2" CLEAR  
OF SLOPE FROM SHOULDER TO  
TOP OF WALL

#5 BARS @ 12" O.C.

#5 BARS @ 12" O.C.

#5 BARS @ 12" O.C.

1 WINGWALL REINFORCING (TYP)  
3/4" = 1'-0"

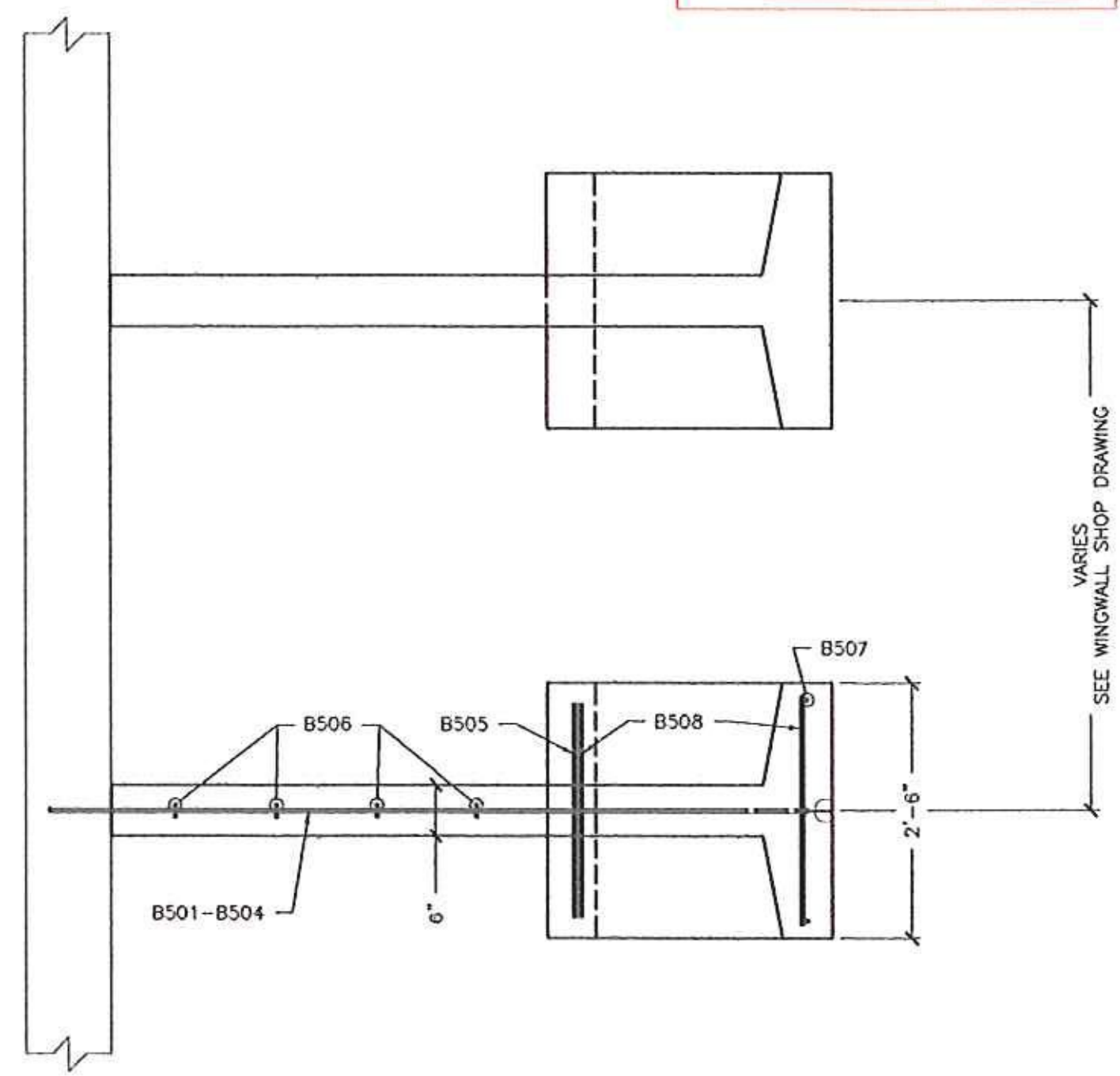
NO EXCEPTIONS TAKEN  DISAPPROVED   
 Revised and Resubmitted  Approved as Noted

DESIGNED & DRAWN FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS BASED TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING PERMITS WHICH SHALL BE OBTAINED AND COMPLETED BY THE JOB SITE. INSURANCE POLICIES AND RECORDS OF CONSTRUCTION, EQUIPMENT OR AS WORK WITH THAT OF ALL OTHER TRADES, AND THE SATISFACTORY PERFORMANCE OF THE WORK.

GREEN INTERNATIONAL AFFILIATES, INC.

CHECKED BY: YW DATE: 8/31/15  
 DESIGNED BY: BK DATE: 8/31/15

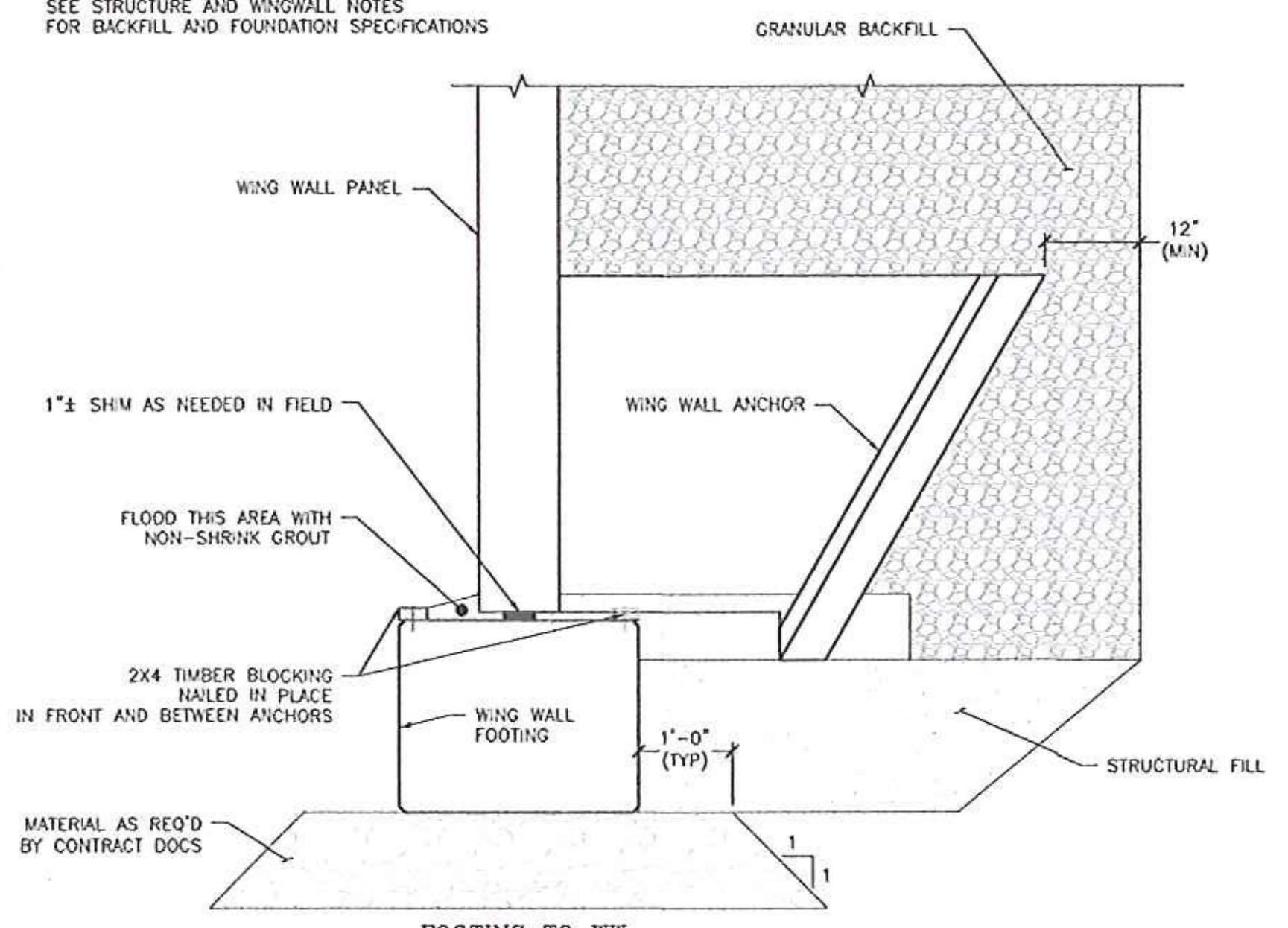
4 REQ'D



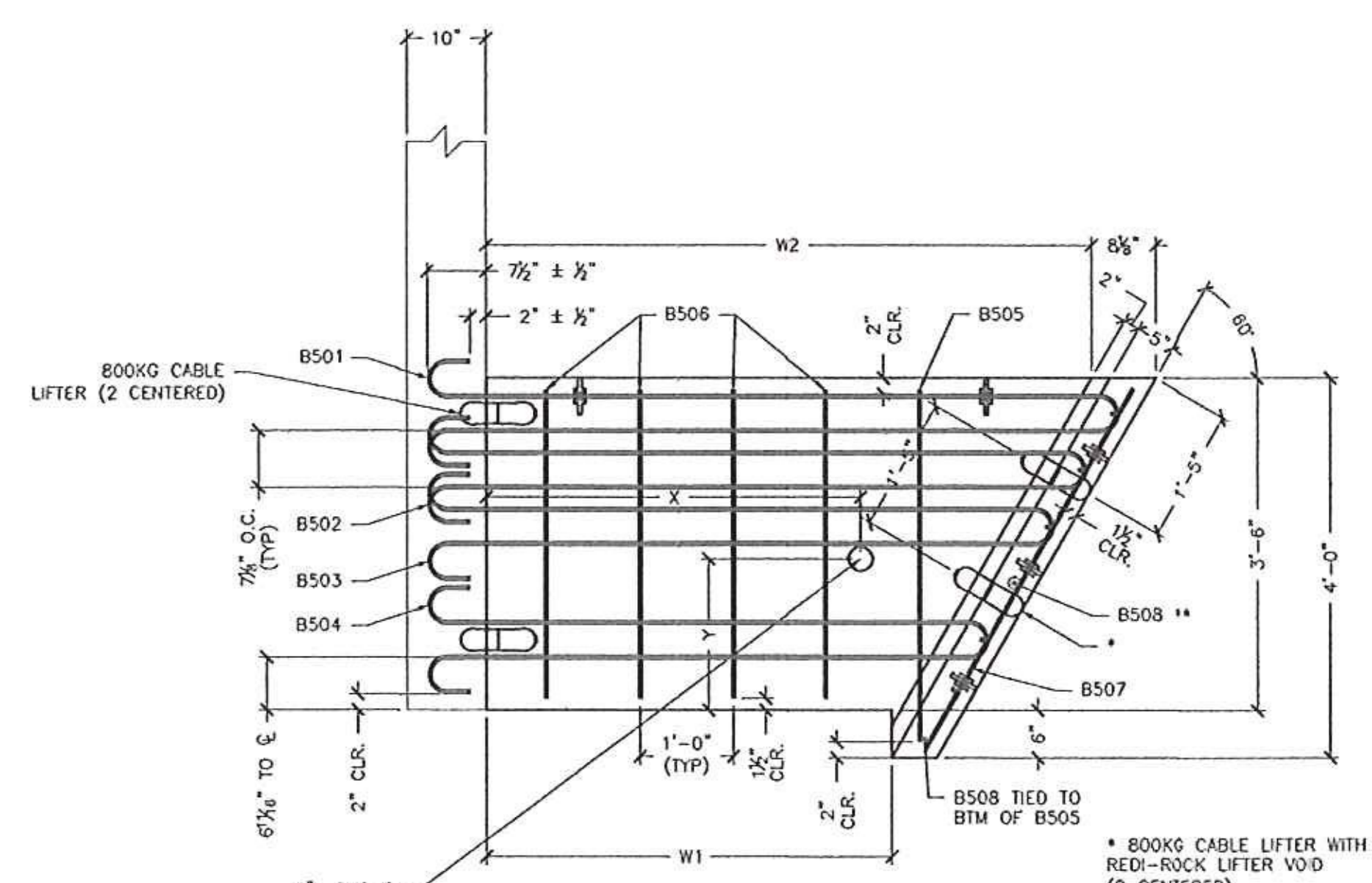
4 REQ'D

NOTE: REINFORCING SHOWN REPRESENTS "E" ANCHOR  
 OTHER ANCHOR REINFORCING SIMILAR

SEE STRUCTURE AND WINGWALL NOTES  
 FOR BACKFILL AND FOUNDATION SPECIFICATIONS



2 FOOTING TO WW ATTACHMENT DETAIL  
 3/4" = 1'-0"



3 ANCHOR DETAIL  
 3/4" = 1'-0"

\* 800KG CABLE LIFTER WITH  
 REDI-ROCK LIFTER VOID  
 (2 CENTERED)

\*\* PLACE (1) B508 THROUGH EACH HOOP BARS,  
 (1) CENTERED BETWEEN HOOP BARS 503 & 504, AND  
 (2) BELOW B504 HOOP BAR W/ BOTTOM B508  
 2" CLEAR FROM BOTTOM (7 TOTAL)

ANCHOR TYPE "B"					
CONCRETE QUANTITY					0.41 CY
WEIGHT					1740 LB
W1					1'-4"
W2					3'-5 1/2"
X = 2'-2 1/2"					Y = 1'-8 1/2"
BAR LIST					
MARK	QTY	SIZE	L	TYPE	LENGTH
B501	1	#5	4'-4 1/2"	1	10'-1 1/2"
B502	1	#5	4'-0 1/2"	1	9'-5"
B503	1	#5	3'-8 1/2"	1	8'-9"
B504	1	#5	3'-0"	1	7'-4 1/2"
B505	2	#5	3'-8 1/2"	2	4'-7"
B506	2	#5	---	Str.	3'-3"
B507	4	#5	---	Str.	4'-4 1/2"
B508	7	#5	---	Str.	2'-3"

ANCHOR TYPE "C"					
CONCRETE QUANTITY					0.48 CY
WEIGHT					2010 LB
W1					2'-4"
W2					4'-5 1/2"
X = 2'-8 1/4"					Y = 1'-8 1/2"
BAR LIST					
MARK	QTY	SIZE	L	TYPE	LENGTH
B501	1	#5	5'-4 1/2"	1	12'-1 1/2"
B502	1	#5	5'-0 1/2"	1	11'-5"
B503	1	#5	4'-8 1/2"	1	10'-9"
B504	1	#5	4'-0"	1	9'-4 1/2"
B505	2	#5	3'-8 1/2"	2	4'-7"
B506	4	#5	---	Str.	3'-3"
B507	4	#5	---	Str.	4'-4 1/2"
B508	7	#5	---	Str.	2'-3"

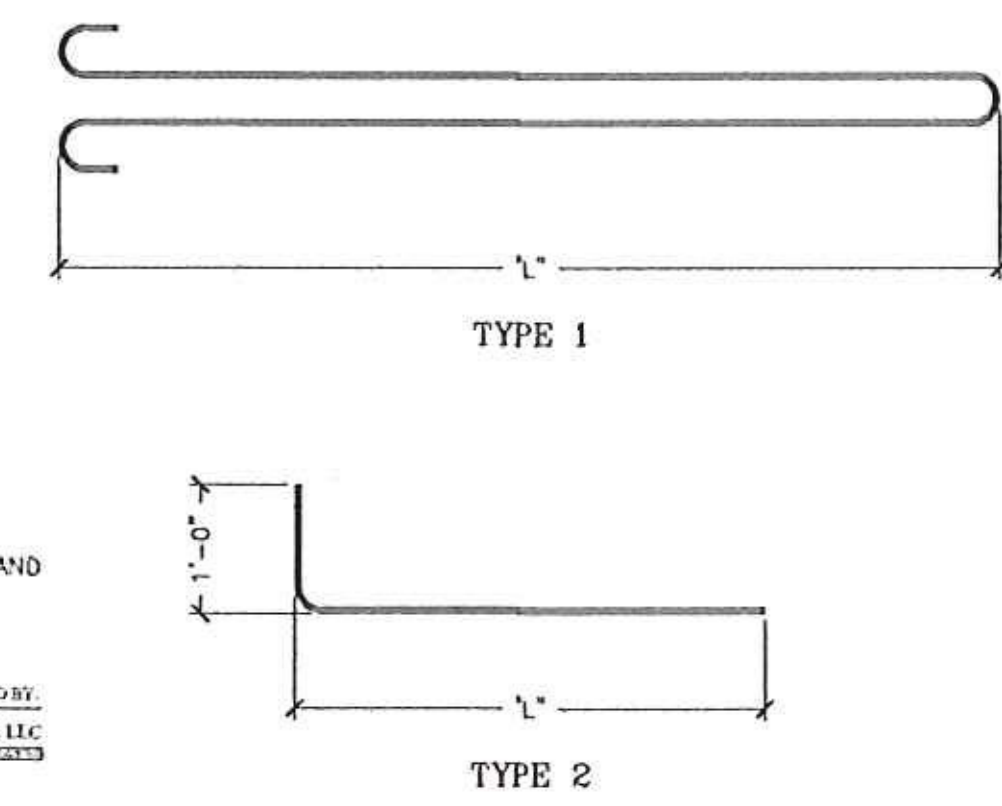
ANCHOR TYPE "D"					
CONCRETE QUANTITY					0.54 CY
WEIGHT					2285 LB
W1					3'-4"
W2					5'-5 1/2"
X = 3'-5 1/4"					Y = 1'-8 1/2"
BAR LIST					
MARK	QTY	SIZE	L	TYPE	LENGTH
B501	1	#5	6'-4 1/2"	1	14'-1 1/2"
B502	1	#5	6'-0 1/2"	1	13'-5"
B503	1	#5	5'-8 1/2"	1	12'-9"
B504	1	#5	5'-0"	1	11'-4 1/2"
B505	2	#5	3'-8 1/2"	2	4'-7"
B506	6	#5	---	Str.	3'-3"
B507	4	#5	---	Str.	4'-4 1/2"
B508	7	#5	---	Str.	2'-3"

ANCHOR TYPE "E"					
CONCRETE QUANTITY					0.61 CY
WEIGHT					2550 LB
W1					4'-4"
W2					6'-5 1/2"
X = 4'-0"					Y = 1'-8 1/2"
BAR LIST					
MARK	QTY	SIZE	L	TYPE	LENGTH
B501	1	#5	7'-4 1/2"	1	18'-1 1/2"
B502	1	#5	7'-0 1/2"	1	15'-5"
B503	1	#5	6'-8 1/2"	1	14'-9"
B504	1	#5	6'-0"	1	13'-4 1/2"
B505	2	#5	3'-8 1/2"	2	4'-7"
B506	8	#5	---	Str.	3'-3"
B507	4	#5	---	Str.	4'-4 1/2"
B508	7	#5	---	Str.	2'-3"

ANCHOR TYPE "F"					
CONCRETE QUANTITY					0.68 CY
WEIGHT					2860 LB
W1					5'-4"
W2					7'-5 1/2"
X = 4'-7 1/4"					Y = 1'-8 1/2"
BAR LIST					
MARK	QTY	SIZE	L	TYPE	LENGTH
B501	1	#5	8'-4 1/2"	1	18'-1 1/2"
B502	1	#5	8'-0 1/2"	1	17'-5"
B503	1	#5	7'-8 1/2"	1	16'-9"
B504	1	#5	7'-0"	1	15'-4 1/2"
B505	2	#5	3'-8 1/2"	2	4'-7"
B506	10	#5	---	Str.	3'-3"
B507	4	#5	---	Str.	4'-4 1/2"
B508	7	#5	---	Str.	2'-3"



VAOT #ER STP 013-2(12) - VT Route 100 Bridge #82  
 Jamaica, VT

Prepared for:  
 Casella Construction  
 8 US4 East  
 Mendon VT 05701

DWG NO.  
 S5.0

STATE OF VERMONT  
 DIVISION OF CONSTRUCTION  
 NO. 8444-C  
 LICENSED PROFESSIONAL ENGINEER  
 8/26/15

MACTEC  
 170 BUXTON ROAD, SUITE 200 BOX 870  
 HELENBURG, NH 03042  
 PHONE: 603-426-7426  
 FAX: 603-426-7428  
 WWW.MACTECP.COM

Project No. 6200  
 Date: 7/27/15  
 Scale: AS SHOWN  
 Checked By: PFL  
 Drawn By: CTP

SPECIALTY ENGINEERING SERVICES PROVIDED BY:  
 CONCRETE ENGINEERING SOLUTIONS, LLC  
 1000 STATE ST. SUITE 200  
 FERRISBURGH, VT 05743  
 TEL: 802-453-1111