REVIEWER NOTES

1. ALL WORK WILL TAKE PLACE WITHIN THE EXISTING RIGHT-OF-WAY.

2. OVERHEAD UTILITIES WILL NEED TO BE RELOCATED.

3. THE EXISTING TWO SPAN STRUCTURE WILL BE REPLACED WITH A SINGLE SPAN (175') STEEL GIRDER BRIDGE. THE DECK WILL BE CONSTRUCTED WITH FULL DEPTH PRECAST DECK PANELS WITH A LONGITUDINAL CLOSURE POUR ALONG THE CENTERLINE OF BRIDGE. THE CLOSURE POUR WILL BE MADE WITH ULTRA HIGH PERFORMANCE CONCRETE.

4. THE BRIDGE WILL BE CLOSED FOR 3 WEEKS, AND TRAFFIC WILL BE DETOURED ONTO NEARBY ROADS. THE TOWNS OF FAYSTON AND WARREN HAVE APPROVED THE USE OF THEIR ROADS FOR THE SIGNED DETOUR ROUTE. AT THE REQUEST OF THE COMMUNITIES, THE CLOSURE WILL TAKE PLACE DURING SCHOOL SUMMER VACATION. THE DETOUR LENGTH WILL BE APPROXIMATELY 7.3 MILES. ACCESS WILL BE MAINTAINED TO THE BUSINESSES AT EITHER END OF THE BRIDGE.

5. THE GEOTECHNICAL DATA REPORT RECOMMENDED AN INTEGRAL ABUTMENT FOUNDATION. A WORKING MEETING WAS HELD WITH VTRANS AND THE DECISION WAS MADE TO ELIMINATE THE INTEGRAL ABUTMENT, AND USE ALTERNATE FOUNDATION SYSTEM. ABUTMENT NO 1 WILL BE FIXED, AND ABUTMENT NO 2 WILL BE EXPANSION.

6. ABUTMENT 1 WILL BE A SPREAD FOOTING FOUNDED ON LEDGE. THE FOOTING WILL BE EITHER CIP OR PRECAST ABUTMENTS, WITH PRECAST STEMS AND BACKWALLS. THE TOP OF THE FOOTING WILL BE EXPOSED BENEATH THE ABUTMENT IN ORDER TO REDUCE THE VOLUME OF ROCK REMOVAL. STONE FILL WILL NOT BE PLACED IN THE LEVEL PORTION OF THE ABUTMENT 1 BENCH IN ORDER TO REDUCE THE ROCK EXCAVATION. STONE FILL TYPE III WILL BE PLACED ON THE SLOPES IN FRONT OF ABUTMENT 1.

7. ABUTMENT 2 WILL BE A FOUNDED ON PILES, WITH A PRECAST PILE CAP AND PRECAST BACKWALL. A SINGLE ROW OF VERTICAL PILES IS PROPOSED. ABUTMENT 2 IS PROPOSED TO BE EXPANSION IN ORDER TO MINIMIZE THE LATERAL FORCE ON THE PILES DUE TO THE LENGTH OF PILE REQUIRED TO REACH BEDROCK (APX. 50).

8. DUE TO THE LENGTH OF EXPANSION, A VERMONT JOINT WILL BE REQUIRED AT ABUTMENT 2. THE JOINT IS PROPOSED TO BE PLACED AT THE END OF THE APPROACH SLAB, SIMILAR TO ABC DETAILS DEVELOPED BY THE UTAH DOT AND OTHER STATES. THIS IS CONCEPTUALLY SHOWN, AND IS PROPOSED IN ORDER TO ALLOW THE DECK END CLOSURE POUR TO OCCUR AND VERMONT JOINT TO BE CONSTRUCTED SIMULTANEOUSLY.

9. WINGWALLS WILL BE PRECAST WINGWALLS FOUNDED ON LEDGE (ABUTMENT NO 1) OR PILES (ABUTMENT NO 2). PREFABRIACTED WALL UNITS WILL BE INVESTIGATED DURING FINAL DESIGN.

10. A GRADING PLAN IS PROVIDED AT ABUTMENT NO 1 TO SHOW THE INTENT OF HOW THE EXISTING EXPOSED LEDGE WILL BE INCORPORATED INTO THE FINAL GRADING LAYOUT.

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.

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

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
BRIDGE PROJECT

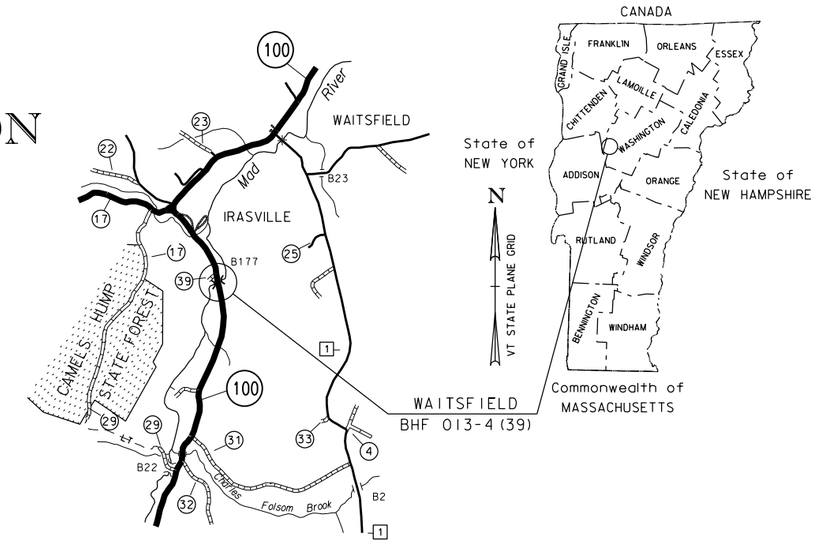
TOWN OF WAITSFIELD
COUNTY OF WASHINGTON

ROUTE NO : VT 100 (MINOR ARTERIAL) BRIDGE NO : 177

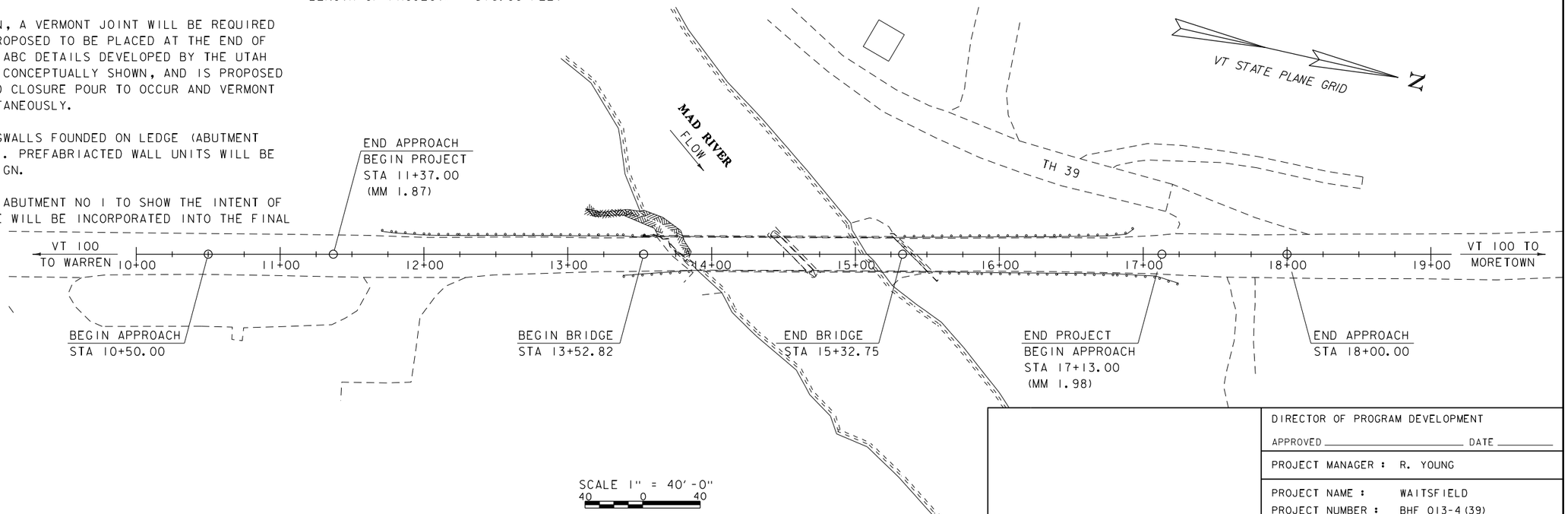
BEGINNING AT A POINT APPROXIMATLY 0.8 MILES SOUTH OF JUNCTION OF VT ROUTE 100 WITH VT ROUTE 17 AND EXTENDING NORTHERLY 576 FEET ALONG VT ROUTE 100

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES REPLACEMENT OF THE EXISTING BRIDGE WITH A NEW BRIDGE ON THE EXISTING ALIGNMENT WITH NECESSARY ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE: 178.50 FEET
LENGTH OF ROADWAY: 397.50 FEET
LENGTH OF PROJECT: 576.00 FEET



PRELIMINARY PLAN SUBMITTAL
MAY 2014



QUALITY ASSURANCE PROGRAM : LEVEL 2	
SURVEYED BY : G. HITCHCOCK SURVEYED DATE : 5-23-2012	
DATUM VERTICAL NAVD88 HORIZONTAL NAD83 (2007)	
McFarland Johnson	DIRECTOR OF PROGRAM DEVELOPMENT APPROVED _____ DATE _____ PROJECT MANAGER : R. YOUNG PROJECT NAME : WAITSFIELD PROJECT NUMBER : BHF 013-4(39) SHEET 1 OF 37 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version
LRFD

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STRUCTURES DETAIL SHEETS

SD-501.00	CONCRETE DETAILS AND NOTES	2/9/2012
SD-502.00	CONCRETE DETAILS AND NOTES	10/10/2012
SD-516.00	BRIDGE JOINT ASHPALTIC PLUG	5/7/2010
SD-601.00	STRUCTURAL STEEL DETAILS AND NOTES	6/4/2010
SD-602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	5/2/2011

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2015	4100	610	55	6.2	230
2035	4400	650	55	10.1	400

20 year ESAL for flexible pavement from 2015 to 2035 : 1143000
40 year ESAL for flexible pavement from 2015 to 2055 : 2684000
Design Speed : 40 mph

AS BUILT "REBAR" DETAIL

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

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: May 2014

DRAINAGE AREA : 56. 2 sq. mi.
CHARACTER OF TERRAIN : Mountainous, rural, mix of woods and meadow
STREAM CHARACTERISTICS : Sinuous, incised, alluvial
NATURE OF STREAMBED : Sand and gravel

PEAK FLOW DATA

Q 2.33 =	2975 cfs	Q 50 =	8550 cfs
Q 10 =	5250 cfs	Q 100 =	10,300 cfs
Q 25 =	6950 cfs	Q 500 =	15,450 cfs

DATE OF FLOOD OF RECORD : Unknown
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY : @ Q50 = 8.0 fps
ICE CONDITIONS : Mocerate
DEBRIS: Mocerate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes
IS ORDINARY RISE RAPID? Yes
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE:

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: 2-span continuous rolled beam bridge
YEAR BUILT: 1938
CLEAR SPAN(NORMAL TO STREAM): 122' - 6' pier = 116'
VERTICAL CLEARANCE ABOVE STREAMBED: ~16'
WATERWAY OF FULL OPENING: 1760 sq. ft.
DISPOSITION OF STRUCTURE: Remove and replace
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings

WATER SURFACE ELEVATIONS AT:

Q2.33 =	713.6'	VELOCITY =	6.0 fps
Q10 =	716.5'	"	6.8 fps
Q25 =	717.8'	"	7.8 fps
Q50 =	719.0'	"	8.6 fps
Q100 =	720.1'	"	9.5 fps

LONG TERM STREAMBED CHANGES: Some undermining during high flows and scour hole through the bridge

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: N/A
RELIEF ELEVATION: 725.9'
DISCHARGE OVER ROAD @Q100: N/A

UPSTREAM STRUCTURE

TOWN: Waitsfield — DISTANCE: 8960'
HIGHWAY # : TH 29 — STRUCTURE #: 22
CLEAR SPAN: 57' — CLEAR HEIGHT:
YEAR BUILT: 1999 — FULL WATERWAY:
STRUCTURE TYPE: Welded pony truss

DOWNSTREAM STRUCTURE

TOWN: Waitsfield — DISTANCE: 7970'
HIGHWAY # : TH 1 — STRUCTURE #: CB 4
CLEAR SPAN: 99' — CLEAR HEIGHT:
YEAR BUILT: 1833, reconstructed 1973 — FULL WATERWAY:
STRUCTURE TYPE: King post wooden covered bridge

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE							
INVENTORY							
POSTING							
OPERATING							
COMMENTS:							

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span steel beam bridge

CLEAR SPAN(NORMAL TO STREAM): 133'
VERTICAL CLEARANCE ABOVE STREAMBED: ~15'
WATERWAY OF FULL OPENING: 1610 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	713.5'	VELOCITY=	6.1 fps
Q10 =	716.5'	"	6.9 fps
Q25 =	717.7'	"	7.9 fps
Q50 =	718.9'	"	8.6 fps
Q100 =	720.0'	"	9.5 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: N/A
RELIEF ELEVATION: 725.9'
DISCHARGE OVER ROAD @Q100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 722.8'
VERTICAL CLEARANCE: @ Q50 = 3.8'

SCOUR: Contraction scour 0' up to Q200

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW:	115 cfs	DEPTH OR ELEVATION:
ORDINARY LOW WATER:	55 cfs	~709'
ORDINARY HIGH WATER:	1280 cfs	~712'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: None required.
CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

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

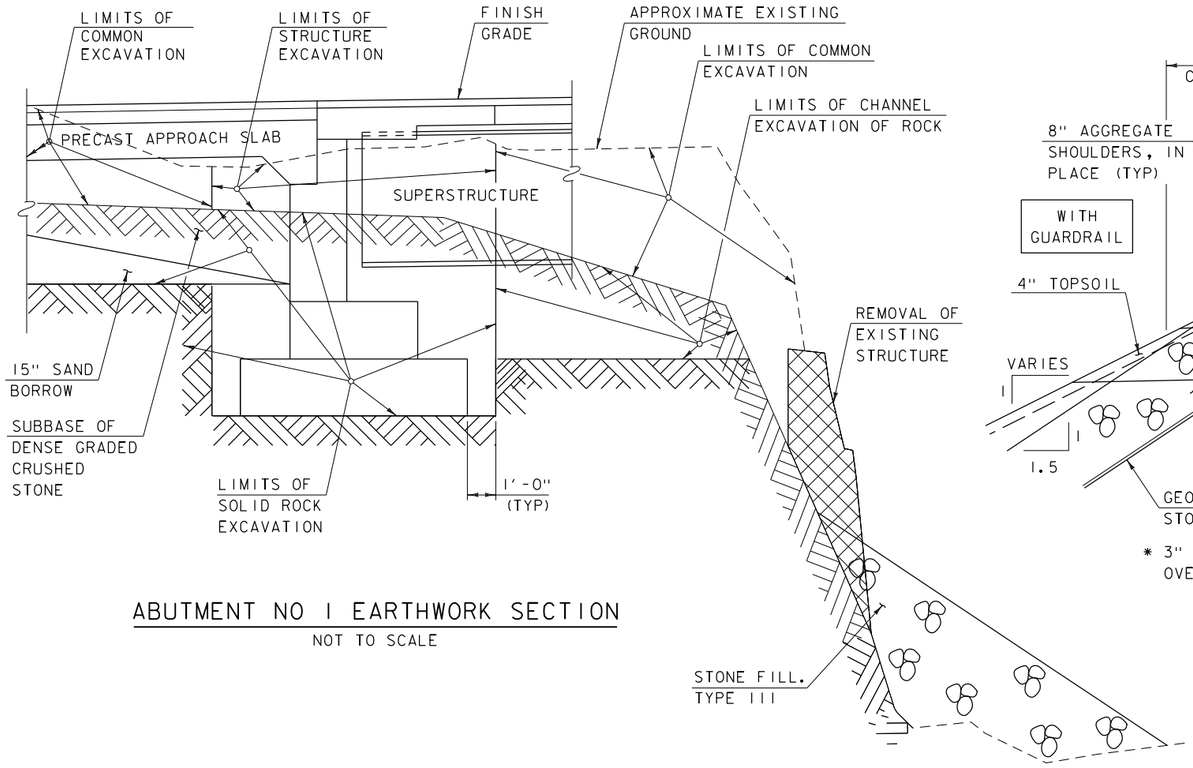
DESIGN VALUES

1. DESIGN LIVE LOAD		HL-93
2. FUTURE PAVEMENT	d_p:	3.0 INCH
3. DESIGN SPAN	L:	175.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	- - -
5. PRESTRESSING STRAND	f_y:	- - -
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	6.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	5.0 KSI
8. SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)	f'_c:	4.0 KSI
9. CONCRETE, HIGH PERFORMANCE CLASS A	f'_c:	4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f'_c:	3.5 KSI
11. ULTRA HIGH PERFORMANCE CONCRETE	f'_c:	21.7 KSI
12. REINFORCING STEEL	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M270 (WEATHERING)	f_y:	- - -
14. SOIL UNIT WEIGHT	γ:	0.14 KSI
15. NOMINAL BEARING RESISTANCE OF SOIL	q_n:	- - -
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	- - -
17. NOMINAL BEARING RESISTANCE OF ROCK	q_n:	31.5 KSF
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	0.45
19. PILE RESISTANCE FACTOR	ϕ:	0.50
20. LATERAL PILE DEFLECTION	Δ:	TBD
21. BASIC WND SPEED	V_{3s}:	- - -
22. MINIMUM GROUND SNOW LOAD	p_g:	- - -
23. SEISMIC DATA PGA: 0.5	S_s:	- - -
	S_1:	- - -
24. NOMINAL AXIAL PILE RESISTANCE		TBD
25. PILE YIELD STRENGTH ASTM A572		50 KSI
26. PILE SIZE		HP12x74
27. EST. PILE LENGTH		- - -

PROJECT NAME: **WAITSFIELD**
PROJECT NUMBER: **BHF 013-4(39)**

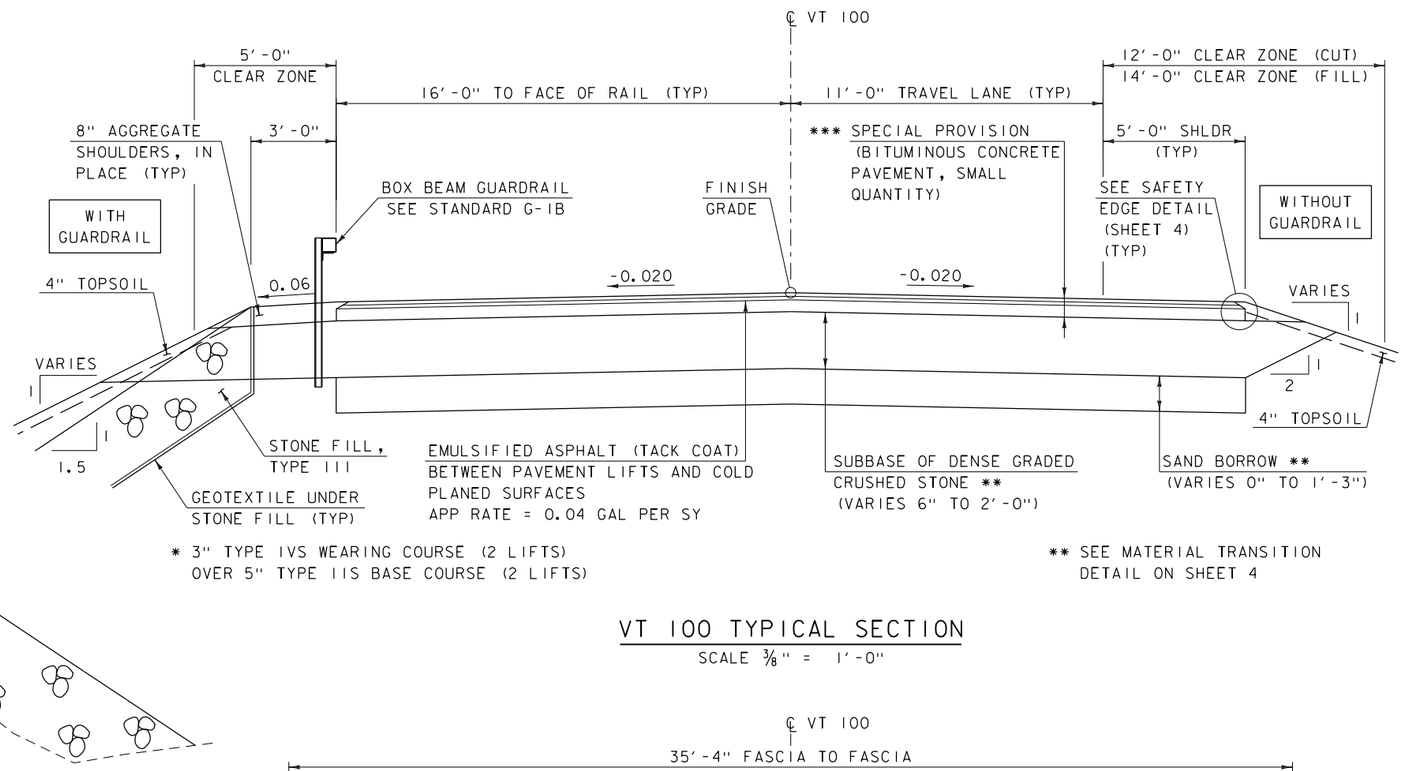
FILE NAME: **z12b136pi.xls**
PROJECT LEADER: **R.YOUNG**
DESIGNED BY: **VTRANS/D.KULL**
PRELIMINARY INFORMATION SHEET

PLOT DATE: 5/12/2014
DRAWN BY: **P.DUSTIN**
CHECKED BY: **T.KENDRICK**
SHEET 2 OF 37



ABUTMENT NO 1 EARTHWORK SECTION

NOT TO SCALE

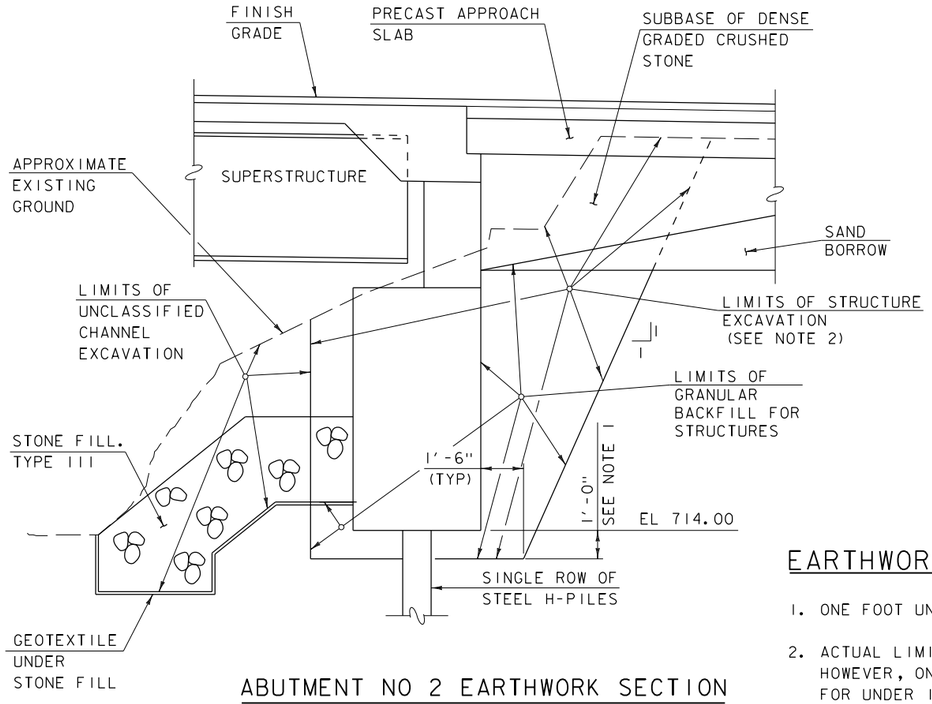


* 3" TYPE IVS WEARING COURSE (2 LIFTS) OVER 5" TYPE IIS BASE COURSE (2 LIFTS)

** SEE MATERIAL TRANSITION DETAIL ON SHEET 4

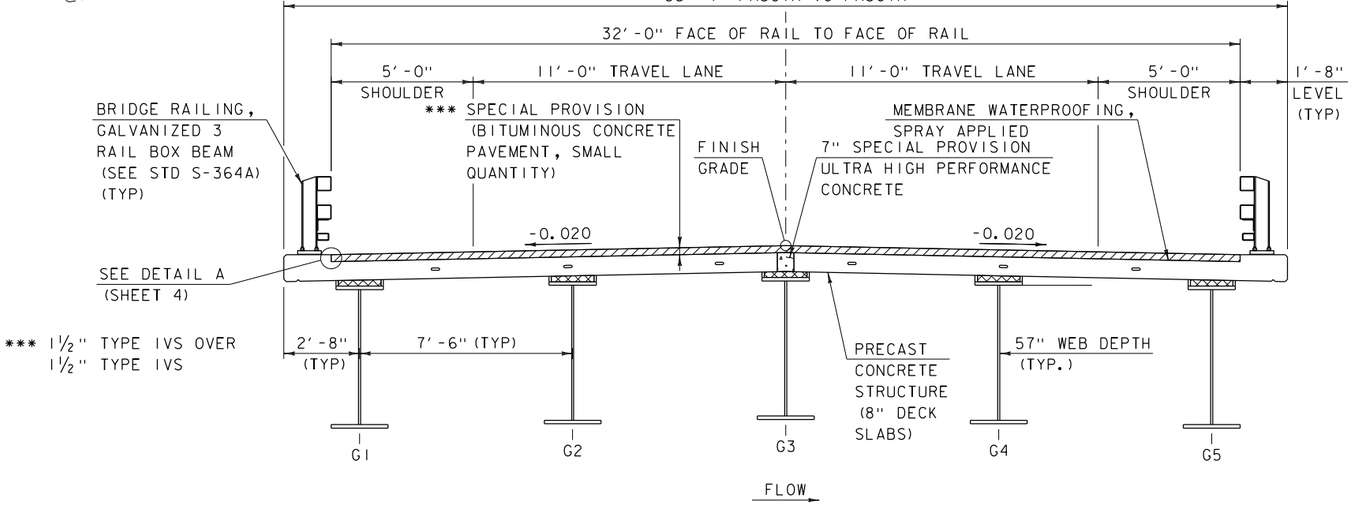
VT 100 TYPICAL SECTION

SCALE 3/8" = 1'-0"



ABUTMENT NO 2 EARTHWORK SECTION

NOT TO SCALE



BRIDGE TYPICAL SECTION

SCALE 3/8" = 1'-0"

EARTHWORK SECTION NOTES

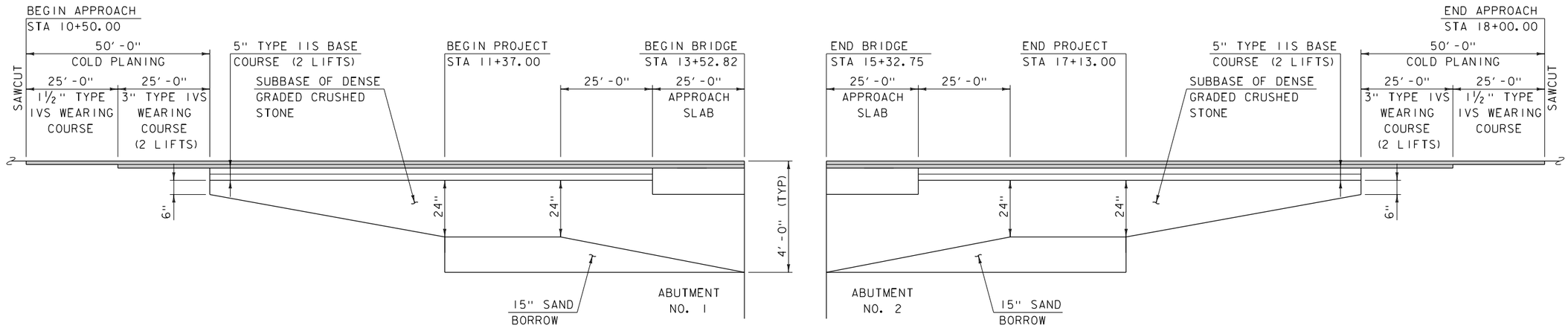
1. ONE FOOT UNDERCUT AS DETERMINED BY THE ENGINEER.
2. ACTUAL LIMITS OF STRUCTURE EXCAVATIONS HALL BE DETERMINED BY THE CONTRACTOR. HOWEVER, ONLY THE STRUCTURE EXCAVATION BETWEEN THE LIMITS SHOWN WILL BE PAID FOR UNDER ITEM 204.25 "STRUCTURE EXCAVATION". STRUCTURE EXCAVATION BY THE CONTRACTOR OUTSIDE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

McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

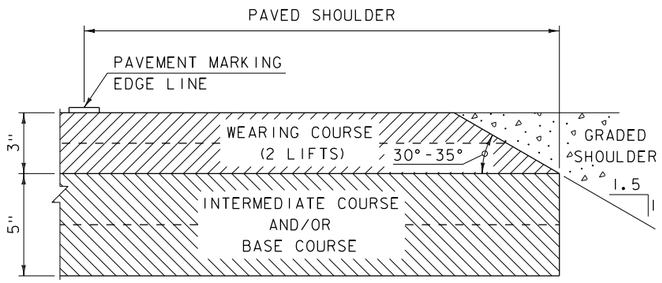
FILE NAME: z12b136typ.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
TYPICAL SECTIONS SHEET 1

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK



MATERIAL TRANSITION DETAIL

NOT TO SCALE



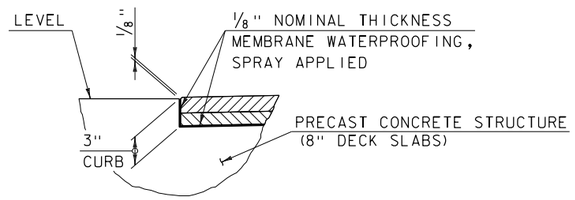
SAFETY EDGE DETAIL

NOT TO SCALE

SAFETY EDGE NOTES

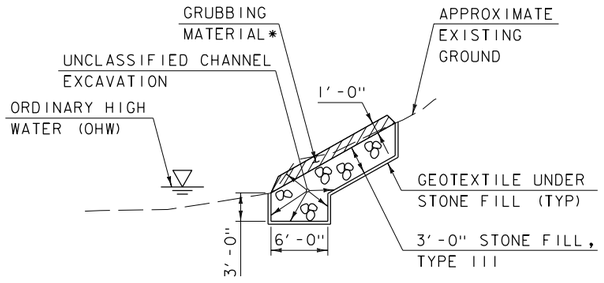
1. LEVELING COURSE MAY INCLUDE THE "SAFETY EDGE" AT THE CONTRACTOR'S CHOICE.

2. 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.



DETAIL A

(FOR LOCATION SEE SHEET 3)
NOT TO SCALE



TYPICAL CHANNEL SECTION

NOT TO SCALE

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

MATERIAL TOLERANCES

(IF USED ON PROJECT)

SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- ¼"
- AGGREGATE SURFACE COURSE	+/- ½"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

NOTES

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

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

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

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

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

COMMON TOPOGRAPHIC POINT SYMBOLS

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

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

PROPOSED GEOMETRY CODES

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

UTILITY SYMBOLOGY

UNDERGROUND UTILITIES

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

ABOVE GROUND UTILITIES (AERIAL)

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

PROJECT CONSTRUCTION SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

- CZ — CLEAR ZONE
- PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

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

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

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

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

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

ENVIRONMENTAL RESOURCES

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

ARCHEOLOGICAL & HISTORIC

- ARCH — ARCHEOLOGICAL BOUNDARY
- HISTORIC DIST — HISTORIC DISTRICT BOUNDARY
- HISTORIC — HISTORIC AREA
- Ⓗ HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

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

McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: 12bl36LegendSheet.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
CONVENTIONAL SYMBOLOGY LEGEND

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 5 OF 37

GPS CONTROL POINTS

HVCTRL #1

IRASVILLE

NORTH = 608604.820
EAST = 1553434.080
ELEV. = 741.000

HVCTRL #2

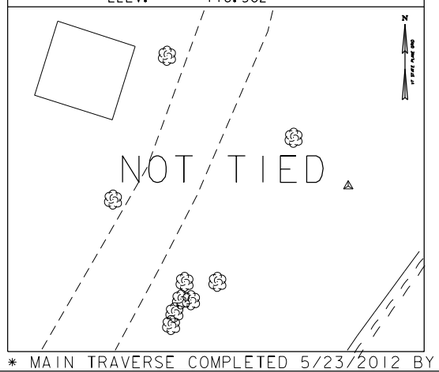
IRASVILLE AZ MK

NORTH = 610915.770
EAST = 1552896.780
ELEV. = 725.000

TRAVERSE TIES

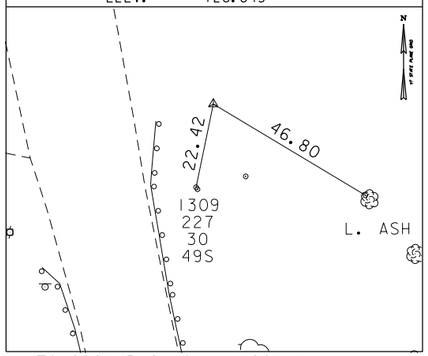
HVCTRL #3

NORTH = 609991.753
EAST = 1553027.095
ELEV. = 716.502



HVCTRL #4

NORTH = 610263.783
EAST = 1553092.163
ELEV. = 726.845



NORTH = / EAST = / ELEV. =

NORTH = / EAST = / ELEV. =

NORTH = / EAST = / ELEV. =

* MAIN TRAVERSE COMPLETED 5/23/2012 BY C.HITCHCOCK P.C. & H.McGOWAN

ALIGNMENT TIES

NORTH = / EAST = / ELEV. =

NORTH = / EAST = / ELEV. =

NORTH = / EAST = / ELEV. =

NORTH = / EAST = / ELEV. =

NORTH = / EAST = / ELEV. =

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83 (07)
ADJUSTMENT COMPASS

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 0286 (5)

FILE NAME: z12b136tie.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: VTRANS
TIE SHEET

PLOT DATE: 5/12/2014
DRAWN BY: R. BULLOCK
CHECKED BY: T. KENDRICK
SHEET 6 OF 37

VT STATE PLANE GRID

N

6"
N BRIDGE 166 VT 100 8"
N
STA. 15+40 RT.
VD-701
REF. STD. SHT. E-134

R
R
STA. 13+38 LT.

R
R
STA. 15+42 LT.

CONSTRUCT 5.6LF x 15" RCP
CONNECT TO EXISTING 15" RCP
CONSTRUCT 18" CPEP END SECTION
CONSTRUCT STONE FILL, TYPE I
AT OUTLET

BEGIN APPROACH
STA 10+50.00
MATCH EXISTING

BEGIN PROJECT
STA 11+37.00

EXISTING STATE R.O.W.

CONSTRUCT
SWALE/DITCH

STONE FILL,
TYPE III

RELOCATE UTILITY
POLE

POB
STA 50+00.00

PROPERTY LINE

50+00

51+00

RELOCATE UTILITY
POLE

TEMPORARY
CAUSEWAY

3 POD ROW
4915

40+49

41+00

EXISTING TOWN R.O.W.

TOWN HIGHWAY
39

42+00

EXISTING TOWN R.O.W.

RAIL FENCE

HVCTRL #3

MAINLINE STATION 14+50.00
=CHANNEL STATION 51+50.00
Δ = 45° 0" 0" LT

RELOCATE UTILITY
POLE

WOODS

COMB
123143
231
53

SIGN
R2-1
(50)

VT 100
TO WARREN

4" WL
4" DYCL
4" WL

N 12°40'58.83" W

10+00
11+00
12+00
13+00
14+00
15+00
16+00

MATCHLINE STA 16+25 (LAYOUT 2)

HVCTRL #24

SIGN
R2-1
(40)

LIGHT
POST

RAIL FENCE

15" RCP
PLUGGED
FLOW

2' DIA
DI

GUY

COMB
1313
229
30
515

WOODS

PI
STA 10+00.00

EXISTING STATE R.O.W.

SIGN
EASY STREET CAFE

CLEAN CULVERT
PIPES

PAVED
DRIVE

BOUNDARY
MARKER

BEGIN BRIDGE
STA 13+52.82

STONE FILL,
TYPE III

HVCTRL #22

HVCTRL #21

END BRIDGE
STA 15+33.12

STONE FILL,
TYPE III

PROPERTY LINE

MAD RIVER
FLOW

52+00

53+00

POE
STA 53+00.00

R
R
STA. 15+68 RT.

LEGEND

R ☐ REMOVE EXISTING SIGN AND POST (SALVAGE TO THE STATE)

RES ☐ RESET EXISTING SIGN AND POST

N ☐ NEW SIGN AND POST

EXISTING BRIDGE INFO
2 SPAN 168' LONG ROLLED BEAM
WITH CIP CONCRETE DECK BRIDGE
BRIDGE BUILT IN 1938
25' WIDE DECK

BENCH MARK
VT BRIDGE DISK ST+57
ELEV. = 728.722

6"
N BRIDGE 166 VT 100 8"
N
STA. 13+46 RT.
VD-701
REF. STD. SHT. E-134

R
R
STA. 13+76 RT.

LAYOUT

20 0 20

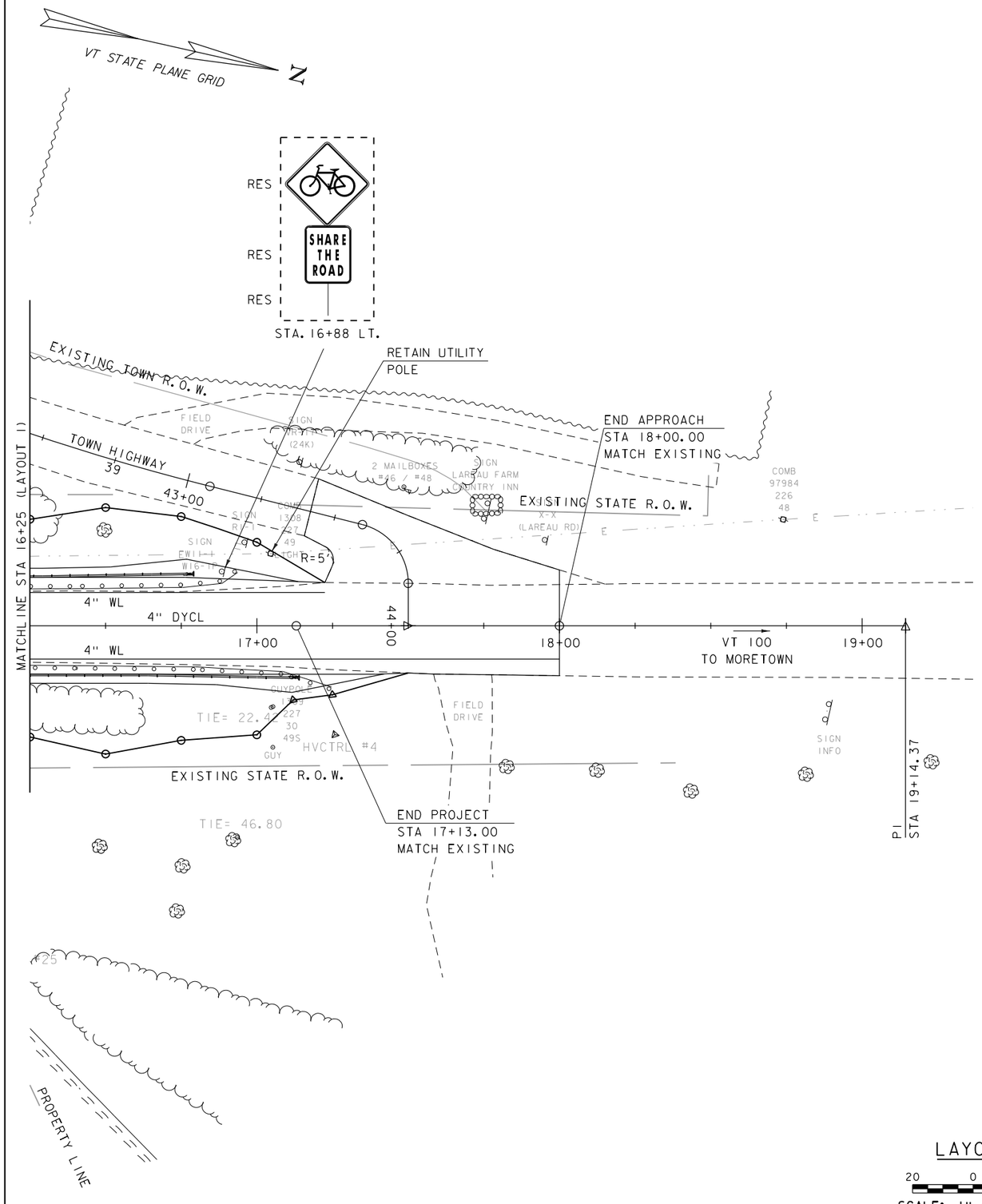
SCALE: 1" = 20'-0"

McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12bl36bdr.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
LAYOUT SHEET 1

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 7 OF 37



LAYOUT

20 0 20

SCALE: 1" = 20'-0"

COLD PLANING, BITUMINOUS PAVEMENT

STA 10+50 - STA 11+00 LT
STA 10+50 - STA 11+00 RT
STA 17+50 - STA 18+00 LT
STA 17+50 - STA 18+00 RT

CLEANING CULVERT PIPE, IN PLACE

STA 11+85 - STA 11+93 RT
STA 11+93 - STA 12+00 LT

CONSTRUCT SWALE/DITCH

STA 12+05 - STA 12+37 LT

CONSTRUCT DRIVE (PAVED)

STA 11+54 - STA 12+30 RT
STA 17+16 - STA 18+00 LT

REMOVING SIGNS

STA 13+38 LT
STA 13+76 RT
STA 15+42 LT
STA 16+88 RT

4" WHITE LINE (4" WL)

STA 10+50 - STA 17+25, LT
STA 10+50 - STA 18+00, RT

4" YELLOW LINE (4" DYCL)

STA 10+50 - 18+00
(CL DOUBLE)

REMOVAL AND DISPOSAL OF GUARDRAIL

STA 11+70 - STA 13+52 LT
STA 13+38 - STA 13+85 RT
STA 15+31 - STA 16+94 LT
STA 15+54 - STA 17+25 RT

BOX BEAM GUARDRAIL

STA 11+69 - STA 13+04 LT
STA 12+76 - STA 13+39 RT
STA 15+48 - STA 16+65 LT
STA 15+83 - STA 17+00 RT

GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM

STA 13+04 - STA 13+36 LT
STA 13+39 - STA 13+71 RT
STA 15+16 - STA 15+48 LT
STA 15+51 - STA 15+83 RT

MANUFACTURED TERMINAL SECTION, TANGENT BURSTING ENERGY ABSORBING TERMINAL (BEAT)

STA 11+55 - STA 11+69 LT
STA 12+62 - STA 12+76 RT
STA 16+65 - STA 16+79 LT
STA 17+00 - STA 17+14 RT

STONE FILL, TYPE I

STA 12+00 - STA 12+06 LT

STONE FILL, TYPE III

STA 12+25 - STA 13+97 LT
STA 13+61 - STA 14+06 RT
STA 14+88 - STA 15+23 LT
STA 15+14 - STA 15+71 RT

GRUBBING MATERIAL (UNDER STONE FILL)

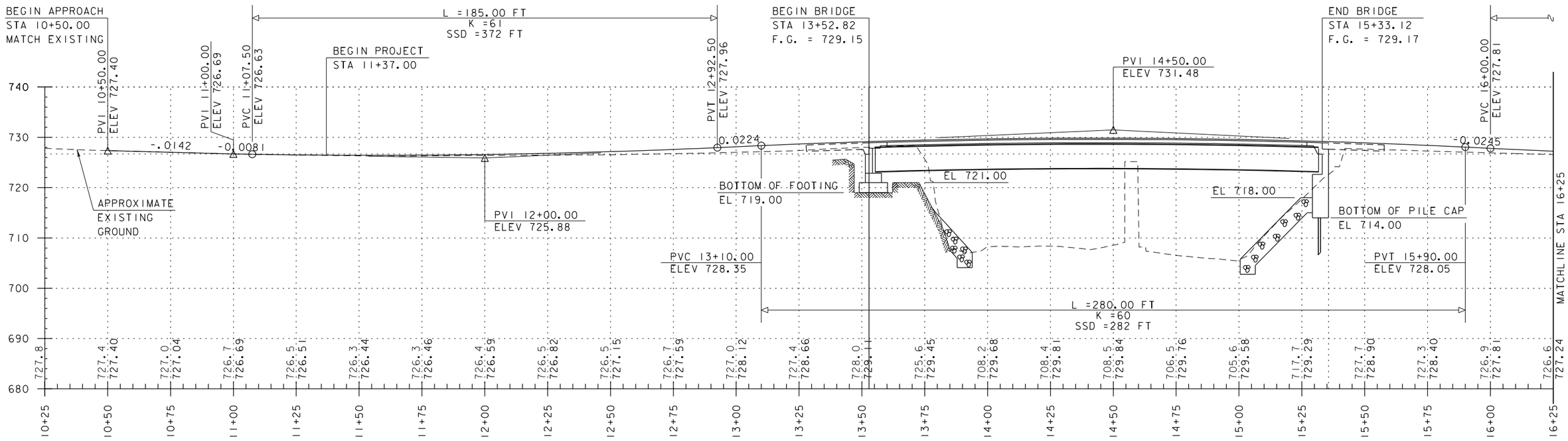
STA 12+25 - STA 13+62 LT
STA 13+61 - STA 14+06 RT
STA 14+87 - STA 15+23 LT
STA 15+00 - STA 15+71 RT

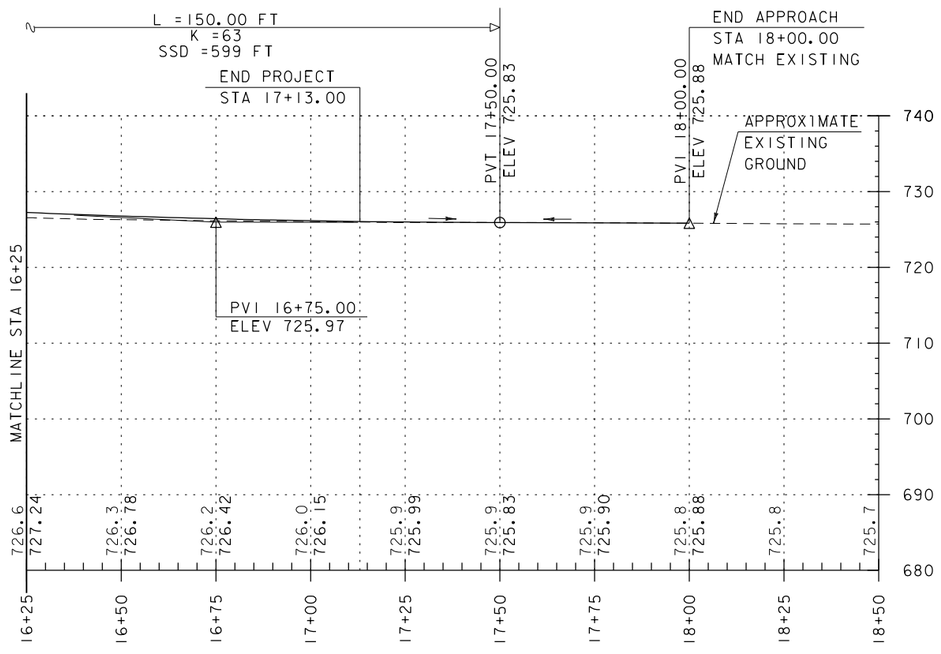
PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12bl36bdr.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
LAYOUT SHEET 2

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 8 OF 37

McFarland Johnson





VT 100 PROFILE

SCALE: HORIZONTAL 1"=20'-0"
VERTICAL 1"=10'-0"

NOTES

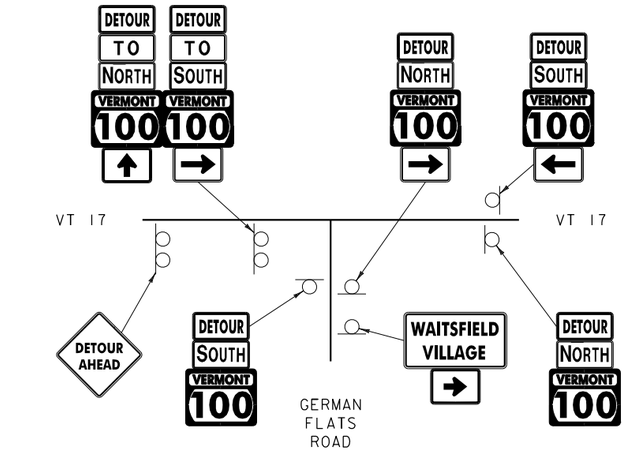
1. GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND.
2. GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE.

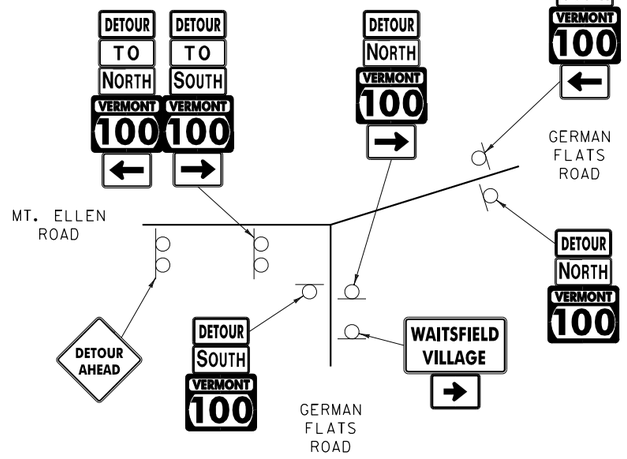
McFarland Johnson

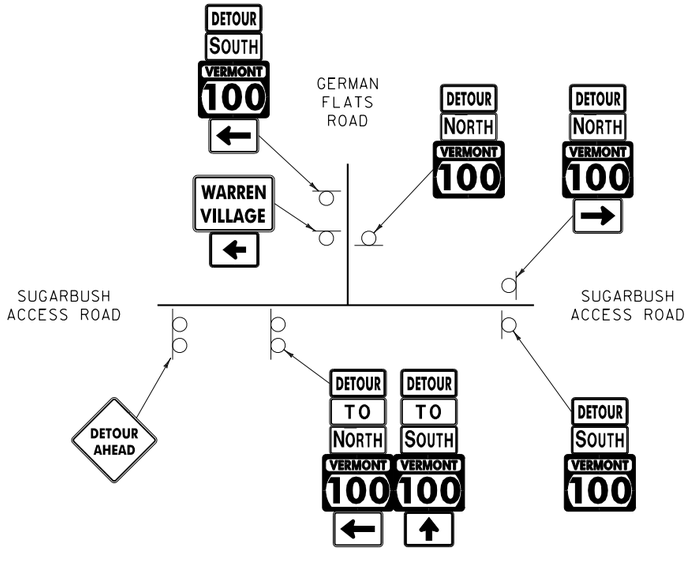
PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

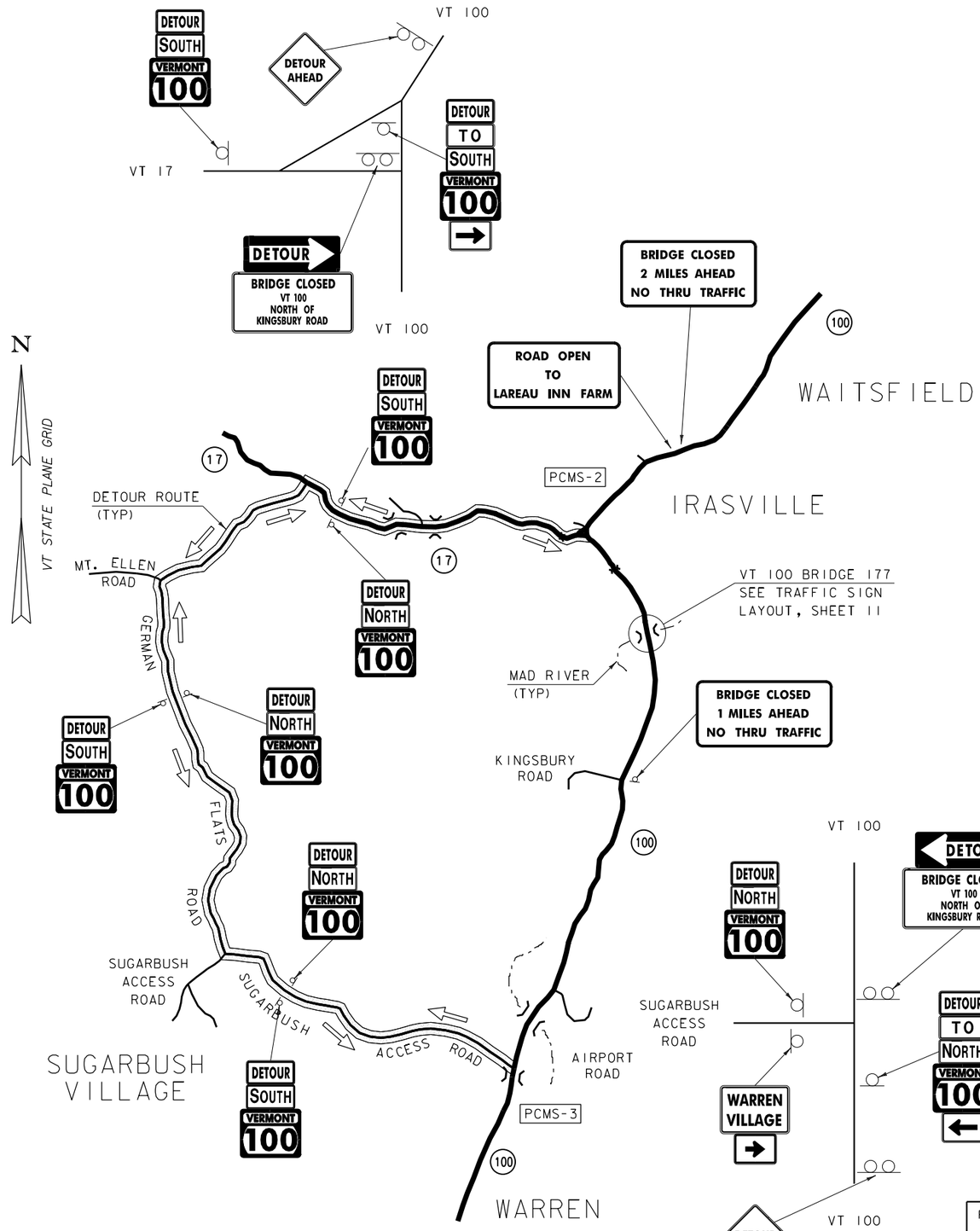
FILE NAME: z12bl36pro.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: B. COLBURN
VT 100 PROFILE SHEET

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 9 OF 37









DETOUR SIGNING PLAN

NOT TO SCALE

MESSAGES FOR PORTABLE CHANGEABLE MESSAGE SIGNS

(PCMS-1)

MESSAGE 1	MESSAGE 2	
BRIDGE	MMMM DD	*
CLOSED	TO	
AHEAD	MMMM DD	*

PCMS-2

MESSAGE 1	MESSAGE 2	MESSAGE 3	
VT 100	1 MILE	MMMM DD	*
BRIDGE	AHEAD	TO	
CLOSED		MMMM DD	*

MESSAGE 1	MESSAGE 2
VT 100	1 MILE
BRIDGE	AHEAD
CLOSED	

PCMS-3

MESSAGE 1	MESSAGE 2	MESSAGE 3	
VT 100	3 MILES	MMMM DD	*
BRIDGE	AHEAD	TO	
CLOSED		MMMM DD	*

MESSAGE 1	MESSAGE 2
VT 100	3 MILES
BRIDGE	AHEAD
CLOSED	

* MONTH SHALL BE SPELLED OUT
JUNE 10, NOT 6/10

NOTES

1. FOR TRAFFIC CONTROL NOTES SEE SHEET 10.

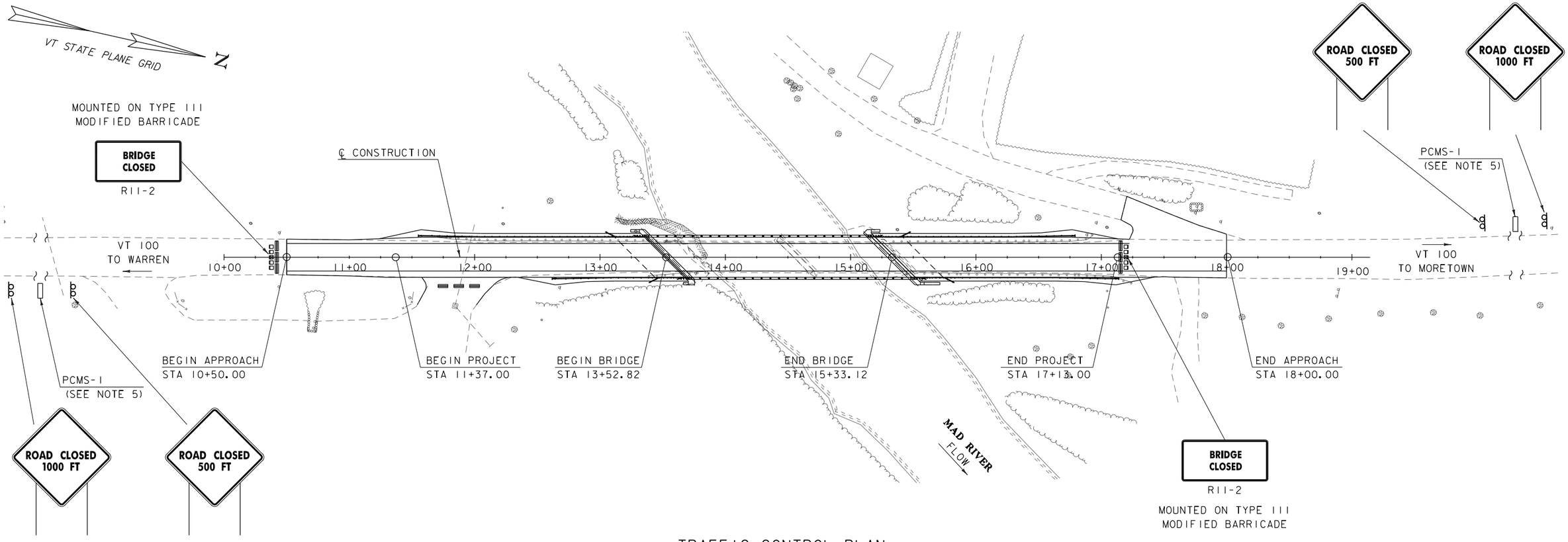
THRU LENGTH : 3.4 MILES
DETOUR LENGTH : 7.3 MILES
3 WEEK PROPOSED CLOSURE
ADDITIONAL LENGTH : 3.9 MILES
END TO END LENGTH : 10.7 MILES

McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12b136dtr.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
TRAFFIC CONTROL SHEET 1

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 10 OF 37



TRAFFIC CONTROL PLAN

NOT TO SCALE

TRAFFIC CONTROL NOTES

1. THE OFFICIAL STATE DETOUR IS SHOWN FOR THE ROAD CLOSURE PORTION OF THIS PROJECT ON SHEET 10.

2. NO LOCAL DETOUR ROUTE WILL BE SIGNED OR OFFICIALLY RECOGNIZED FOR THIS PROJECT.

3. TRACTOR TRAILER TRUCKS SHOULD SEEK ALTERNATE ROUTES.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, ERECTING AND MAINTAINING (AS WELL AS REMOVING AND RESETTING) ALL DETOUR AND ON-PROJECT TEMPORARY TRAFFIC CONTROL ZONE DEVICES, INCLUDING (BUT NOT LIMITED TO) CONSTRUCTION SIGNS, BARRICADES, TEMPORARY TRAFFIC BARRIERS, PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) AND OTHER REQUIRED DEVICES (AS ORDERED BY THE ENGINEER) USED TO REGULATE, WARN AND GUIDE TRAFFIC DURING CONSTRUCTION. TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND PERTINENT E-SERIES AND T-SERIES STANDARDS. WHERE CONFLICTS EXIST, THE MUTCD SHALL GOVERN. EXACT LOCATIONS OF DEVICES SHALL BE COORDINATED WITH THE ENGINEER. ADDITIONAL PROJECT CONSTRUCTION SIGNS SHALL BE INSTALLED AS REQUIRED BY THE ENGINEER. THE COST OF ALL DETOUR AND ON-PROJECT TEMPORARY TRAFFIC CONTROL ZONE DEVICES (WITH THE EXCEPTION OF TEMPORARY TRAFFIC BARRIERS AND PCMS) SHALL BE PAID FOR UNDER ITEM 641.10, TRAFFIC CONTROL.

5. PORTABLE CHANGEABLE MESSAGE SIGNS "PCMS" SHALL BE PLACED AT THE APPROXIMATE LOCATIONS SHOWN ON THE PLANS OR WHERE DESIGNATED BY THE ENGINEER. TWO SIGNS SHALL BE PLACED AT THE BRIDGE 14 DAYS PRIOR TO THE START OF CONSTRUCTION TO WARN OF THE IMPENDING DETOURS. PAYMENT FOR THESE SIGNS SHALL BE INCLUDED IN ITEM 641.15 "PORTABLE CHANGEABLE MESSAGE SIGN".

6. THE STATE ROUTE MARKERS USED FOR THE DETOUR AS SHOWN ON THE PLANS SHALL FOLLOW STANDARDS T-127 AND T-136B. THESE SIGNS SHALL BE REMOVED AT THE END OF THE ROAD CLOSURE. THESE SIGNS AND THEIR REMOVAL SHALL BE PAID FOR UNDER ITEM 641.10 "TRAFFIC CONTROL".

7. ALL TRAFFIC CONTROL DEVICES SHALL BE KEPT IN THEIR PROPER POSITION AT ALL TIMES AND SHALL BE REPAIRED, REPLACED OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY.

8. ALL SIGNS SHALL BE PLACED WITHIN THE EXISTING STATE OR TOWN RIGHTS-OF-WAY.

9. ACCESS TO ALL EXISTING DRIVES AND SIDE ROADS SHALL BE MAINTAINED AT ALL TIMES DURING ALL PHASES OF CONSTRUCTION EXCEPT AS SHOWN.

10. INSTALLATION OF DETOUR AND ON-SITE SIGNS SHALL NOT BLOCK ANY EXISTING TRAFFIC CONTROL SIGN ASSEMBLIES AND SHALL NOT MODIFY OR BE PLACED ADJACENT TO EXISTING ROUTE MARKER SIGN ASSEMBLIES WHEN POSSIBLE. THE CONTRACTOR SHALL MAINTAIN AT LEAST 200 FEET BETWEEN SIGN ASSEMBLIES WHENEVER POSSIBLE.

11. EXISTING SIGNS THAT ARE IN CONFLICT WITH THE TRAFFIC FLOW OF THE DETOUR SHALL BE REMOVED OR COVERED BY THE CONTRACTOR. ALL SIGNS REMOVED OR COVERED SHALL BE REPLACED OR UNCOVERED WHEN THE TRAFFIC CONTROL PLAN IS DISASSEMBLED. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL".

12. NO CONSTRUCTION SIGNS SHALL BE INSTALLED AS TO INTERFERE WITH STOPPING SIGHT DISTANCE AND CORNER SIGHT DISTANCE FROM DRIVES AND TOWN HIGHWAYS.

13. CONTACT DIG-SAFE AT 1-888-344-7233 PRIOR TO BREAKING GROUND TO INSTALL ANY SIGN POSTS.

LEGEND

- ☐ TYPE III BARRICADE
- ⊠ TYPE III (MOD) BARRICADE
- ▭▭ TEMPORARY TRAFFIC BARRIER

McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12b136dtr.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
TRAFFIC CONTROL SHEET 2

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 11 OF 37

SOIL CLASSIFICATION

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

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

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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

COMMONLY USED SYMBOLS

▼	Water Elevation
⊗	Standard Penetration Boring
⊕	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler 1 3/8" I.D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/8"
BX	Core Size 1 5/8"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
Si	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	Top of Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
RQD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)
VTSPG	NAD83 - See Note 7

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

DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.

BOULDER - A rock fragment with an average dimension > 12 inches.

COBBLE - Rock fragments with an average dimension between 3 and 12 inches.

GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).

SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).

SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.

HARDPAN - Extremely dense soil, cemented layer, not softened when wet.

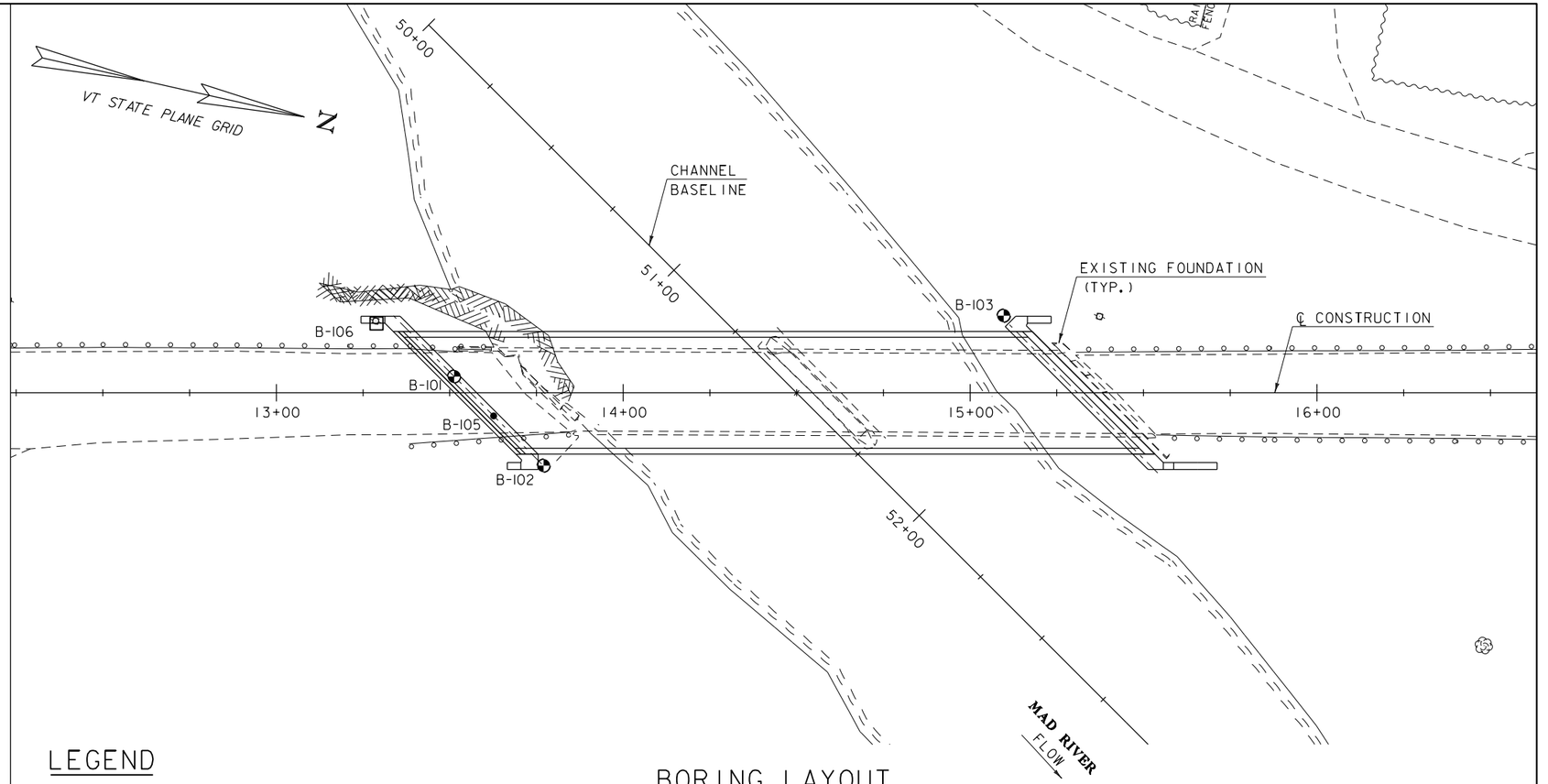
MUCK - Soft organic soil (containing > 10% organic material.

MOISTURE CONTENT - Weight of water divided by dry weight of soil.

FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.

STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.

DIP - Inclination of bed with a horizontal plane.



LEGEND

- BORING
- LEDGE PROBE (LP)
- TEST PIT (TP)

BORING LAYOUT

20 0 20

SCALE: 1" = 20'-0"

BORING CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.	DEPTH TLOB (FT.)	NORTHING	EASTING
B-101	13+51	4.7 LT.	728.3	4.0	609889.5	1553134.7
B-102	13+77	21.1 RT.	731.0	4.0	609920.3	1553154.1
B-103	15+10	26.0 LT.	716.0	50.0	610040.2	1553082.8
B-105	13+63	6.7 RT.	728.4	3.7	609903.1	1553143.3
B-106	13+29	20.0 LT.	730.1	3.1	609864.3	1553124.7

GENERAL NOTES

1. The subsurface explorations shown herein were made between October 21 and October 24, 2013 by the Agency.
2. 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.
3. 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 judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
5. 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.
6. 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.
7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12b136bor.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: VTRANS/D. KULL
BORING INFORMATION SHEET

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 12 OF 37

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

BORING LOG

WAITSFIELD
BHF 013-4(39)
VT-100 BR-177

Boring No.: **B-101**
Page No.: 1 of 1
PIn No.: 12B136
Checked By: CEE

Boring Crew: JUDKINS, DAIGNEAULT
Date Started: 10/24/13 Date Finished: 10/24/13
VTSPG NAD83: N 609889.50 ft E 1553134.70 ft
Station: 13+51 Offset: -4.70
Ground Elevation: 728.3 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 55 TRACK	C. = 1.46

Groundwater Observations		
Date	Depth (ft)	Notes
		No water to depth.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.55 ft								
		A-1-b, SlSaGr, brn, Moist, Rec. = 0.7 ft				22-27-12-13 (39)	6.1	48.9	30.9	20.2
2.5		Visual Description:, Weathered Rock with silt & sand, brn, Moist, Rec. = 0.6 ft					11.7			
		Visual Description:, Weathered & Broken Rock with sand, brn-gry, Moist, Rec. = 0.2 ft				R@2.5"	11.3			
5.0		4.0 ft - 9.0 ft, Light gray, Phyllitic Schist, Moderately soft, Unweathered, Fair rock, NXMDC, RMR = 54	1 (65)	94 (70)	4 4 4 4 4	Top of Bedrock @ 4.0 ft				
7.5										
10.0		9.0 ft - 14.0 ft, Light gray, Phyllitic Schist, Moderately soft, Unweathered, Good rock, NXMDC, Quartz vein from 11.5-13.0 ft., RMR = 61	2 (65)	100 (96)	4 4 5 9 10					
12.5		Hole stopped @ 14.0 ft								
15.0										
17.5										
20.0										
22.5										

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.

ABUTMENT NO 1
BOTTOM OF FOOTING
EL 719.00

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

BORING LOG

WAITSFIELD
BHF 013-4(39)
VT-100 BR-177

Boring No.: **B-102**
Page No.: 1 of 1
PIn No.: 12B136
Checked By: CEE

Boring Crew: JUDKINS, DAIGNEAULT
Date Started: 10/23/13 Date Finished: 10/23/13
VTSPG NAD83: N 609920.30 ft E 1553154.10 ft
Station: 13+77 Offset: 21.00
Ground Elevation: 731.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 55 TRACK	C. = 1.46

Groundwater Observations		
Date	Depth (ft)	Notes
10/23/13	2.2	Casing removed.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-1-b, SlGrSa, Dk/brn, Moist, Rec. = 1.1 ft				4-3-3-2 (6)	19.6	26.1	51.8	22.1
2.5		A-4, GrSaSl, Dk/brn, Moist, Rec. = 1.2 ft				2-1-3-R@5.0" (4)	19.5	23.6	34.9	41.5
5.0		4.0 ft - 9.0 ft, Light gray, Phyllitic Schist, Moderately soft, Unweathered, Fair rock, NXMDC, RMR = 58	1 (65)	100 (82)	6 6 5 6 5	Top of Bedrock @ 4.0 ft				
7.5										
10.0		9.0 ft - 14.0 ft, Light gray, Phyllitic Schist, Moderately soft, Unweathered, Good rock, NXMDC, RMR = 61	2 (65)	100 (90)	4 4 4 5 4					
12.5		Hole stopped @ 14.0 ft								
15.0		Remarks: Hole collasped at 6.1 ft.								
17.5										
20.0										
22.5										

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.

ABUTMENT NO 1
BOTTOM OF FOOTING
EL 719.00

BORING LOG 2 WAITSFIELD BHF 013-4(39).GPJ VERMONT.AOT.GDT 11/7/13

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12b136bor_log.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
BORING LOG SHEET 1

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 13 OF 37

ABUTMENT NO 2
BOTTOM OF PILE CAP
EL 714.00

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

BORING LOG

WAITSFIELD
BHF 013-4(39)
VT-100 BR-177

Boring No.: **B-103**
Page No.: 1 of 2
Pln No.: 12B136
Checked By: CEE

Boring Crew: JUDKINS, DAIGNEAULT
Date Started: 10/21/13 Date Finished: 10/23/13
VTSPG NAD83: N 610040.20 ft E 1553078.80 ft
Station: 15+10 Offset: 26.20
Ground Elevation: 716.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 55 TRACK	C. = 1.46

Groundwater Observations

Date	Depth (ft)	Notes
10/23/13	6.2	While drilling.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-2-4, SlGrSa, brn, Moist, Rec. = 0.6 ft				WH-3-7-R@3.5" (10)	11.4	26.8	50.5	22.7
		Visual Description:, Broken Rock (Granite) with sand, brn-gry, Moist, Rec. = 0.3 ft					5.0			
		Field Note:, NXDC, Boulder								
5		Field Note:, NXDC, Cleaned out casing								
		A-2-4, SaSiGr, brn, Wet, Rec. = 0.7 ft				10-16-8-6 (24)	12.6	46.8	22.1	31.1
		Visual Description:, Broken Rock (Granite), gry, Moist, Rec. = 0.2 ft				22-24-30-24 (54)				
10		A-2-4, SaSiGr, brn, Wet, Rec. = 0.2 ft				10-7-6-5 (13)	10.0	47.5	24.6	27.9
		A-1-b, SlSaGr, brn, Wet, Rec. = 0.7 ft				6-5-4-7 (9)	11.7	48.1	26.6	25.3
		Visual Description:, Broken Rock with sand, gry, Wet, Rec. = 0.3 ft, Insufficient sample for testing.				5-4-4-5 (8)				
15		Visual Description:, Broken Rock with silty sand, Dk/gry, MTW, Rec. = 0.2 ft, Insufficient sample for testing.								
		A-2-4, SlSa, gry, Wet, Rec. = 1.3 ft				2-2-2-2 (4)	21.3	17.1	62.1	20.8
		A-4, SaSl, gry, Wet, Rec. = 0.8 ft				WH-1-2-3 (3)	26.2	1.4	31.6	67.0
20		A-4, SaSi, gry, Wet, Rec. = 0.8 ft				WH-2-1-1 (3)	26.1	1.2	42.1	56.7
		A-4, SaSi, gry, Wet, Rec. = 0.9 ft				2-1-1-2 (2)	27.1		46.6	53.4
		A-4, SaSl, gry, Wet, Rec. = 1.1 ft, Lab Note: A small layer of clay was noticeable, but not enough for testing.				3-1-1-1 (2)	30.7	0.9	21.1	78.0
25										
30		A-4, SaSi, gry, Wet, Rec. = 0.7 ft				1-1-3-2 (4)	28.8		35.0	65.0

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 WAITSFIELD BHF 013-4(39).GPJ VERMONT AOT.GDT 11/7/13

ABUTMENT NO 2
ESTIMATED PILE TIP
EL 666.00

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

BORING LOG

WAITSFIELD
BHF 013-4(39)
VT-100 BR-177

Boring No.: **B-103**
Page No.: 2 of 2
Pln No.: 12B136
Checked By: CEE

Boring Crew: JUDKINS, DAIGNEAULT
Date Started: 10/21/13 Date Finished: 10/23/13
VTSPG NAD83: N 610040.20 ft E 1553078.80 ft
Station: 15+10 Offset: 26.20
Ground Elevation: 716.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 55 TRACK	C. = 1.46

Groundwater Observations

Date	Depth (ft)	Notes
10/23/13	6.2	While drilling.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-4, SlSa, gry, Wet, Rec. = 0.7 ft				4-3-4-4 (7)	26.2	0.2	53.7	46.1
40		A-4, SaSi, gry, Wet, Rec. = 0.9 ft				2-5-4-2 (9)	28.9	0.3	30.1	69.6
45		A-4, SaSi, gry, MTW, Rec. = 0.4 ft				3-3-5-4 (8)	5.9	7.8	39.3	52.9
		Field Note:, NXDC, Cleaned out casing								
50		50.0 ft - 55.0 ft, Light gray, Phyllitic Schist, Moderately soft, Unweathered, Fair rock, NXGDC, RMR = 44	1 (65)	78 (18)	6 4 4 7 12	Top of Bedrock @ 50.0 ft				
55		55.0 ft - 60.0 ft, Light gray, Phyllitic Schist, Moderately soft, Unweathered, Good rock, NXGDC, RMR = 61	2 (65)	100 (92)	6 5 7 6 7					
60		Hole stopped @ 60.0 ft								
65		Remarks: Hole collasped at 9.2 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 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 WAITSFIELD BHF 013-4(39).GPJ VERMONT AOT.GDT 11/7/13

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12b136bor_log.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
BORING LOG SHEET 2

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 14 OF 37

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

BORING LOG

WAITSFIELD
BHF 013-4(39)
VT-100 BR-177

Boring No.: **B-105**
Page No.: 1 of 1
Pln No.: 12B136
Checked By: CEE

Boring Crew: JUDKINS, DAIGNEAULT
Date Started: 10/24/13 Date Finished: 10/24/13
VTSPG NAD83: N 609903.10 ft E 1553143.30 ft
Station: 13+63 Offset: 6.70
Ground Elevation: 728.4 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 55 TRACK	C. = 1.46

Groundwater Observations		
Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
2.5		Field Note:, Probe to 3.7 ft., To ledge or boulder.					
5.0		Hole stopped @ 3.7 ft TLOB					
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							

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 WAITSFIELD BHF 013-4(39).GPJ VERMONT AOT.GDT 11/7/13

ABUTMENT NO 1
BOTTOM OF FOOTING
EL 719.00

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

BORING LOG

WAITSFIELD
BHF 013-4(39)
VT-100 BR-177

Boring No.: **B-106**
Page No.: 1 of 1
Pln No.: 12B136
Checked By: CEE

Boring Crew: JUDKINS, DAIGNEAULT
Date Started: 10/24/13 Date Finished: 10/24/13
VTSPG NAD83: N 609864.30 ft E 1553124.70 ft
Station: 13+29 Offset: -20.00
Ground Elevation: 730.1 ft

	Casing	Sampler
Type:	HAND STEEL	
I.D.:		
Hammer Wt:	N.A.	N.A.
Hammer Fall:	N.A.	N.A.
Hammer/Rod Type:		
Rig:		C. =

Groundwater Observations		
Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
2.5		Field Note:, Drove hand steel to 3.1 ft., To ledge or boulder.					
5.0		Hole stopped @ 3.1 ft TLOB					
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							

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.

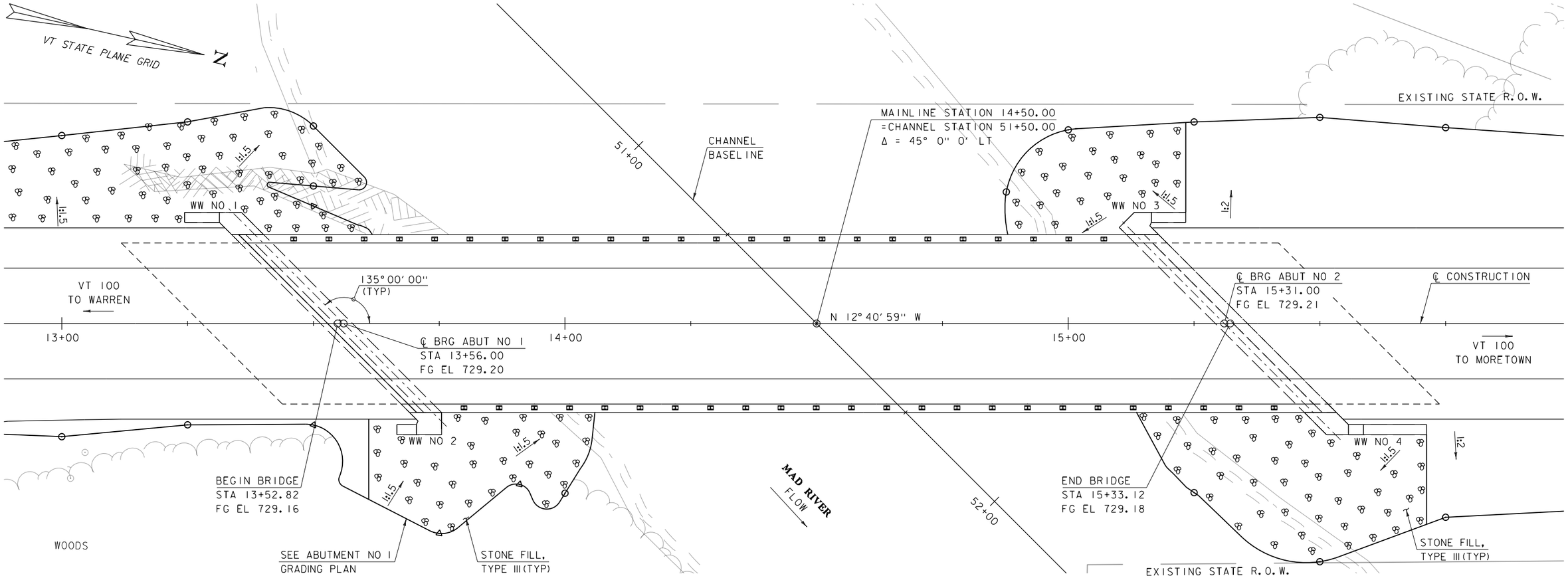
BORING LOG 2 WAITSFIELD BHF 013-4(39).GPJ VERMONT AOT.GDT 11/7/13

ABUTMENT NO 1
BOTTOM OF FOOTING
EL 719.00

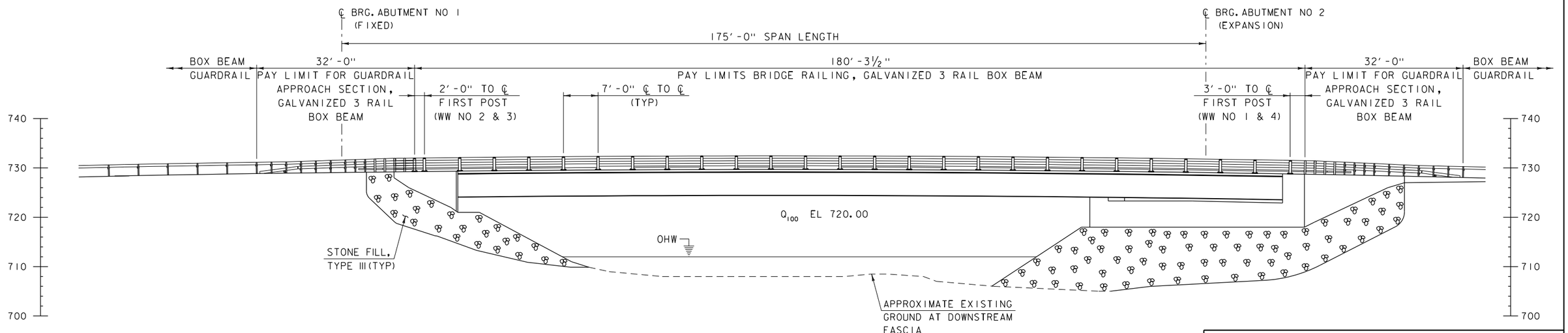
PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12b136bor_log.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
BORING LOG SHEET 3

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 15 OF 37



PLAN



ELEVATION

10 0 10

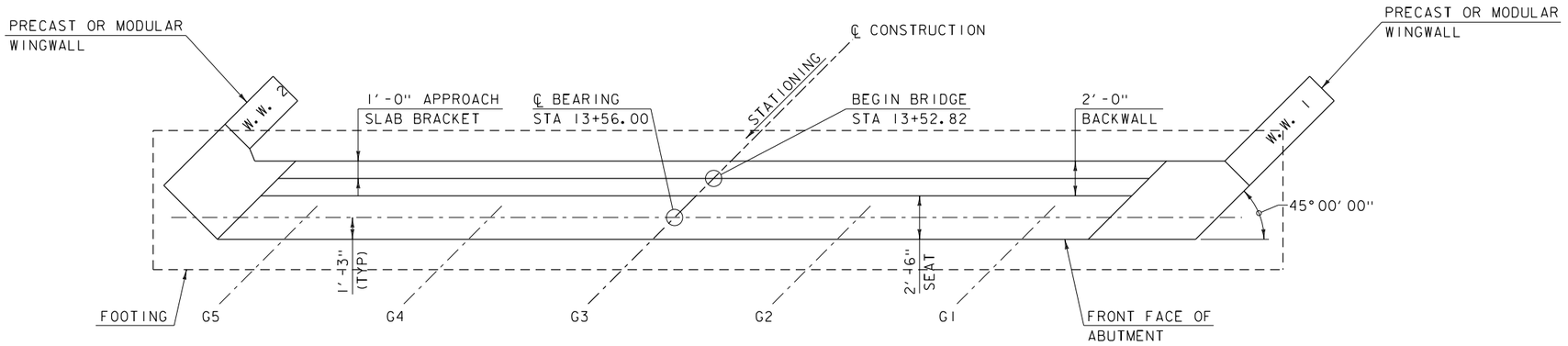
SCALE: 1" = 10'-0"

McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

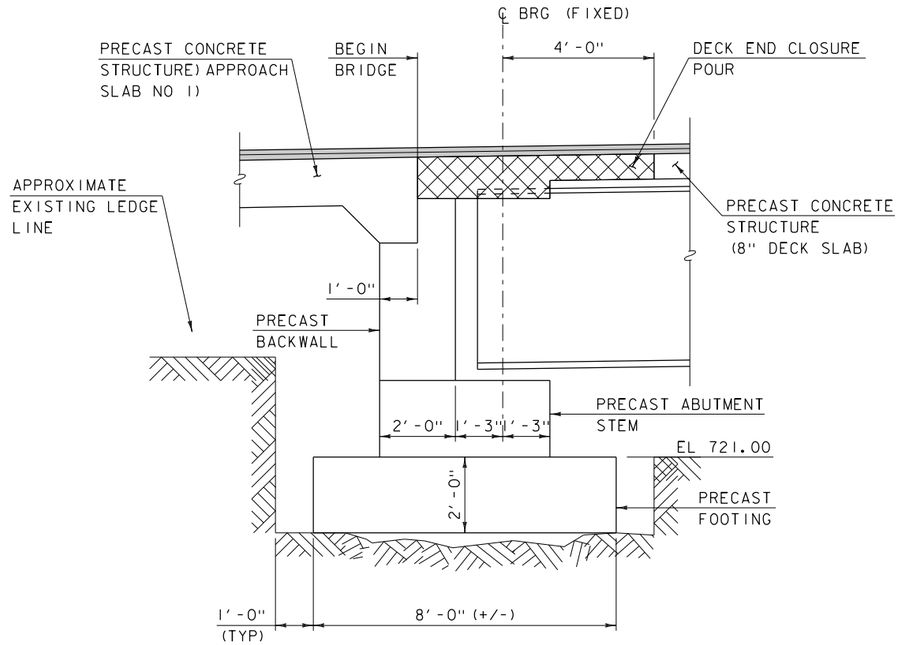
FILE NAME: z12bl36pe.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
PLAN AND ELEVATION

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 16 OF 37



ABUTMENT NO 1 PLAN

SCALE 1/4" = 1'-0"



TYPICAL SECTION

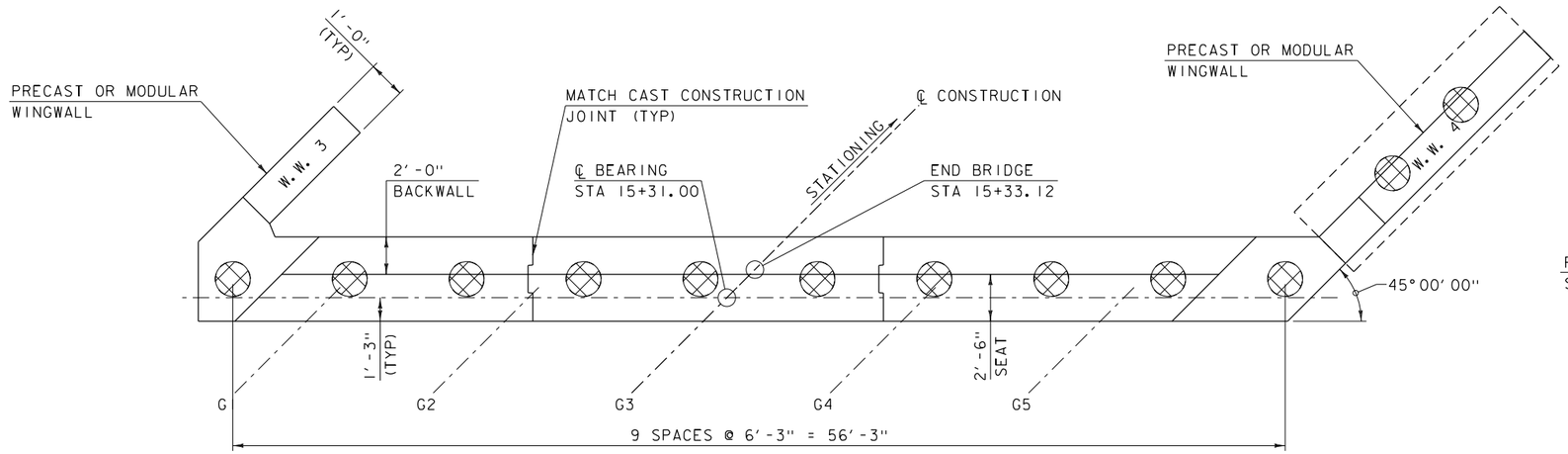
SCALE 1/2" = 1'-0"

LEGEND

SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)

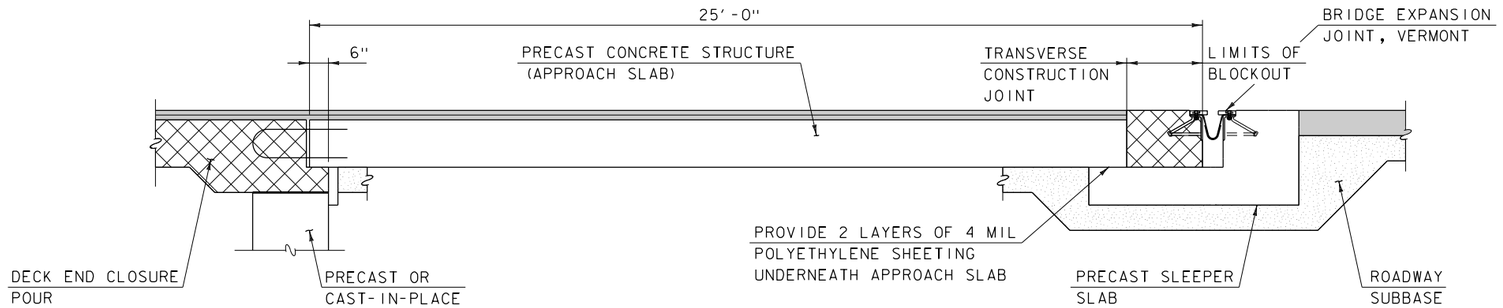
CONCEPTUAL ONLY

PROJECT NAME:	WAITSFIELD
PROJECT NUMBER:	BHF 013-4(39)
FILE NAME: z12b136abut.dgn	PLOT DATE: 5/12/2014
PROJECT LEADER: R. YOUNG	DRAWN BY: P. DUSTIN
DESIGNED BY: D. KULL	CHECKED BY: T. KENDRICK
ABUTMENT NO 1 DETAILS	SHEET 17 OF 37



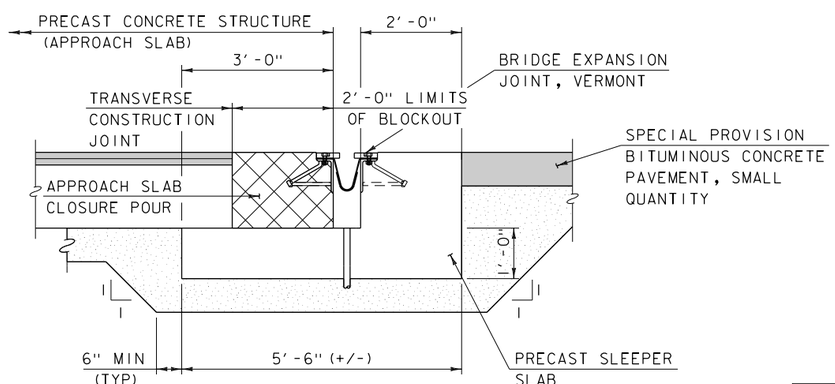
ABUTMENT NO 2 PLAN

SCALE 1/4" = 1'-0"



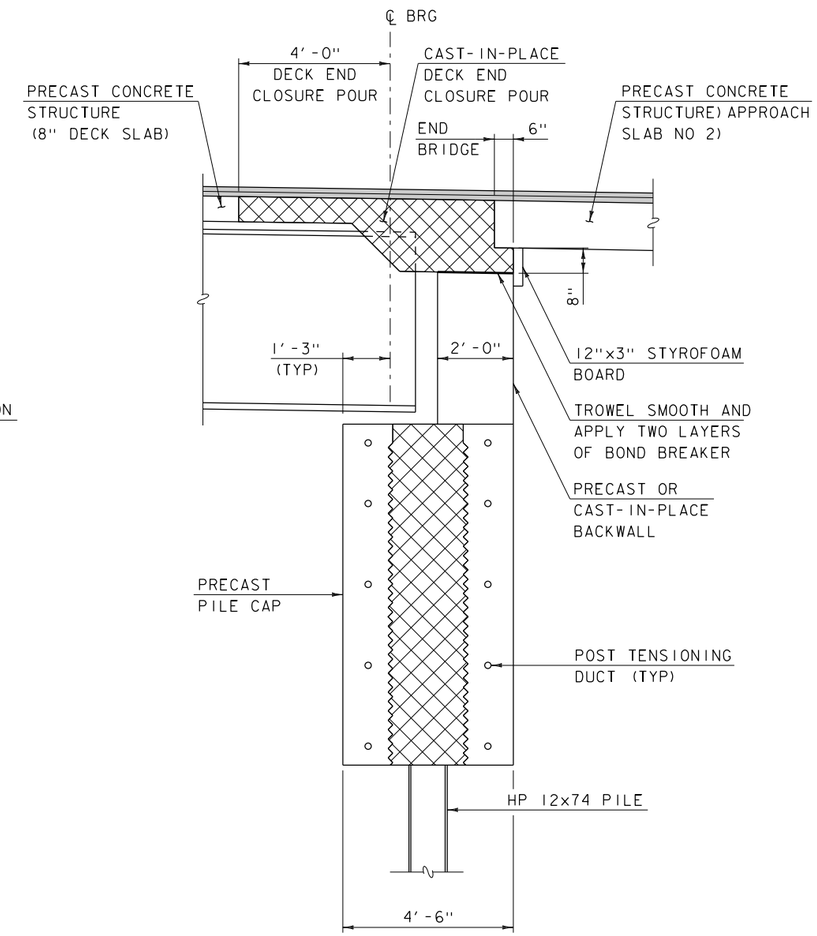
APPROACH SLAB ELEVATION

SCALE 1/2" = 1'-0"



SLEEPER SLAB SECTION

SCALE 3/8" = 1'-0"



TYPICAL SECTION

SCALE 1/2" = 1'-0"

LEGEND

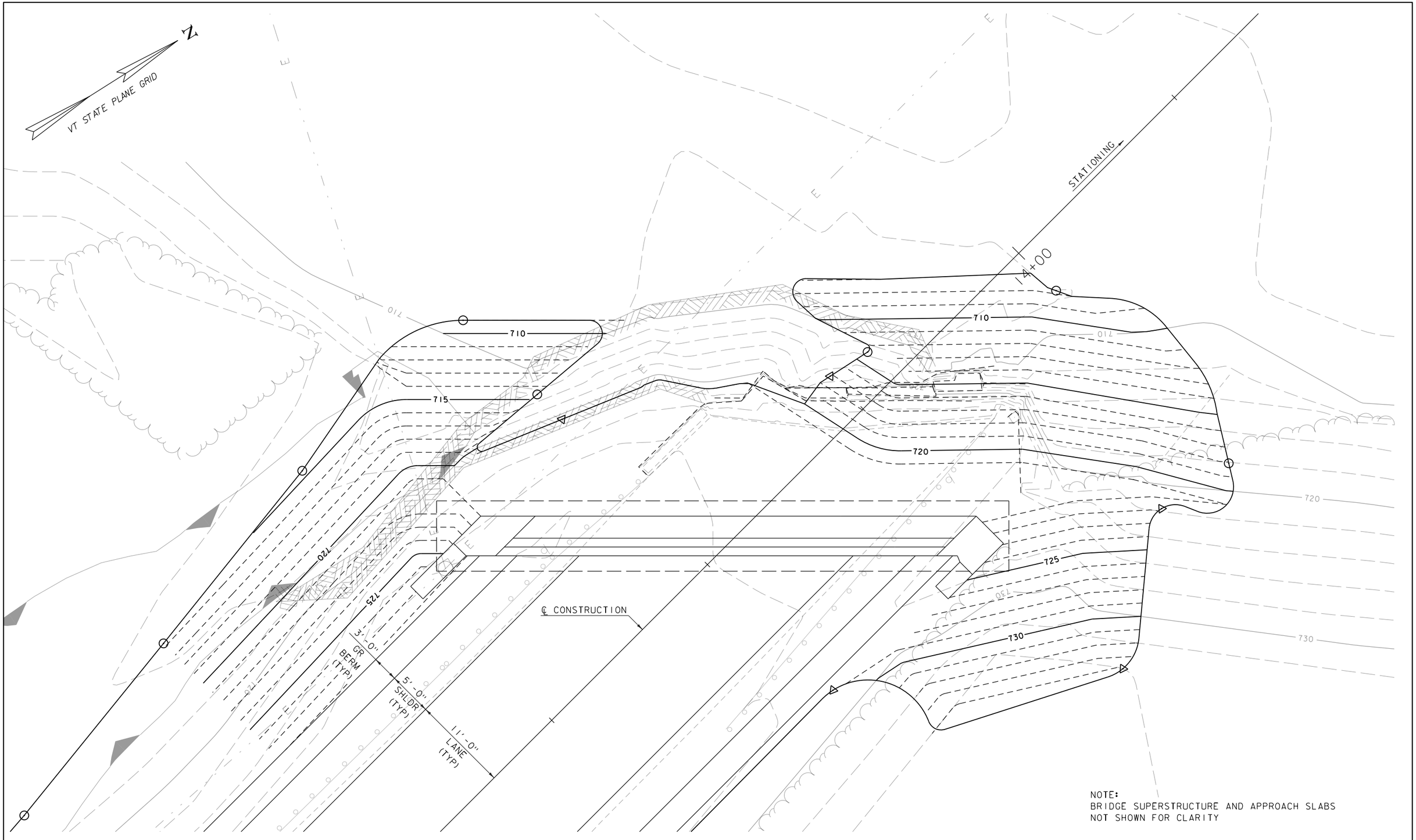
SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)

CONCEPTUAL ONLY

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12bl36abut.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
ABUTMENT NO 2 DETAILS

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK



NOTE:
BRIDGE SUPERSTRUCTURE AND APPROACH SLABS
NOT SHOWN FOR CLARITY

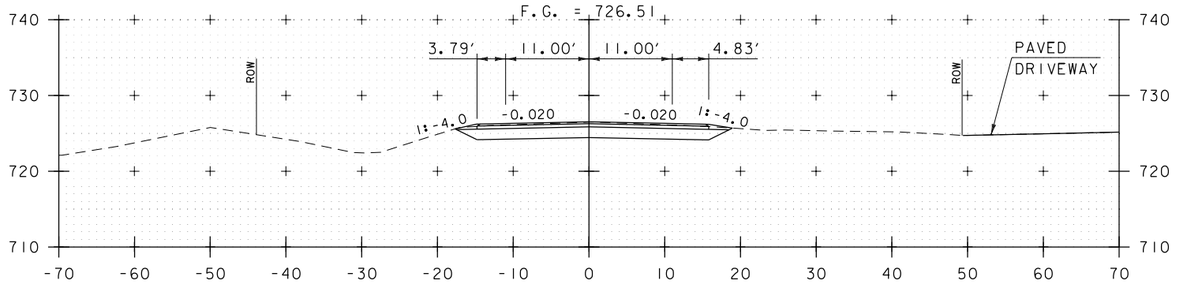
ABUTMENT NO 1 GRADING PLAN

5 0 5

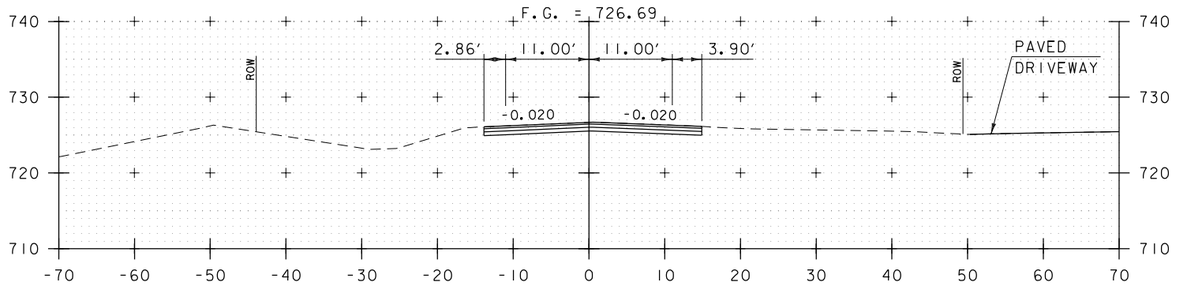
SCALE: 1" = 5'-0"

McFarland Johnson

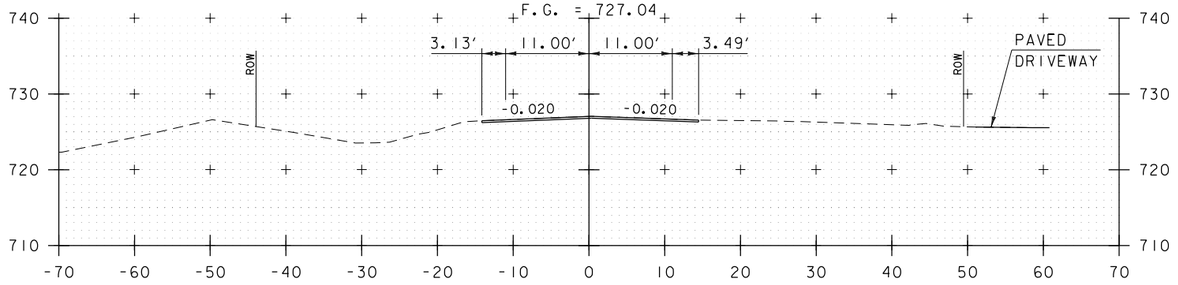
PROJECT NAME: WAITSFIELD	
PROJECT NUMBER: BHF 013-4(39)	
FILE NAME: z12bl36abut_grd.dgn	PLOT DATE: 5/12/2014
PROJECT LEADER: R. YOUNG	DRAWN BY: P. DUSTIN
DESIGNED BY: D. KULL	CHECKED BY: T. KENDRICK
ABUTMENT NO 1 GRADING PLAN	SHEET 19 OF 37



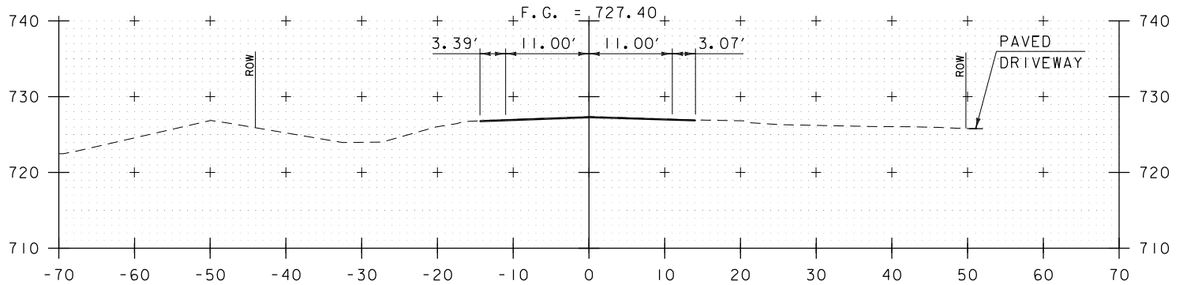
11+25



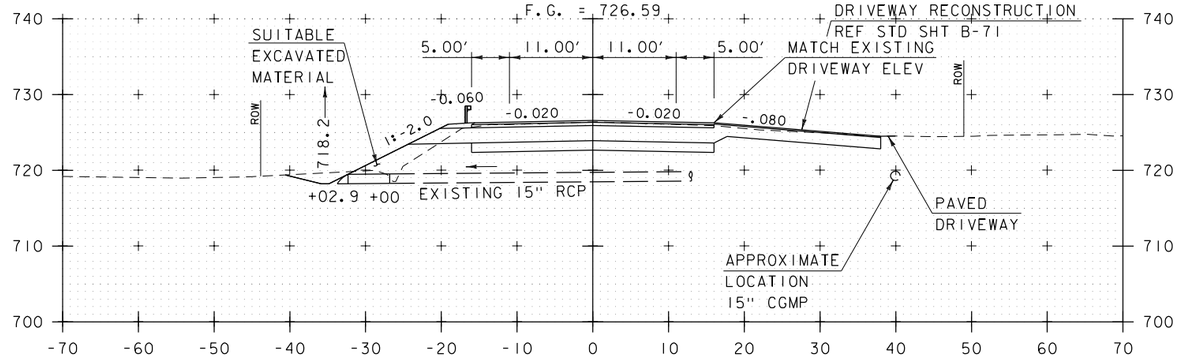
11+00



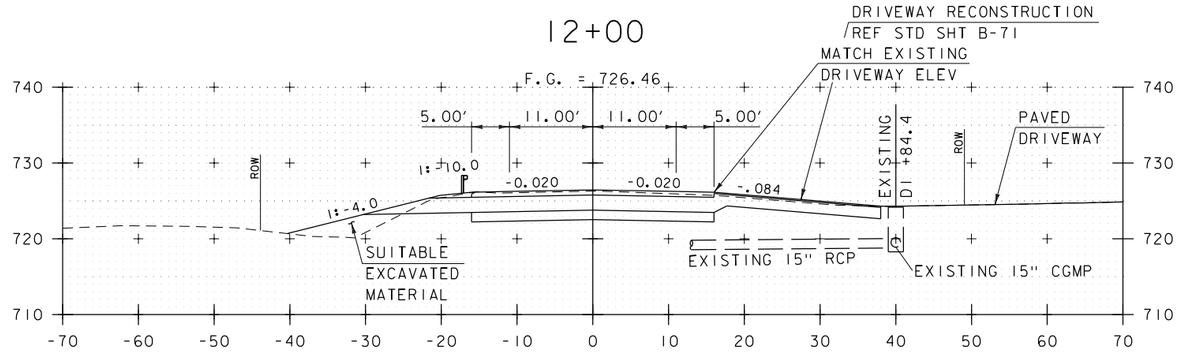
10+75



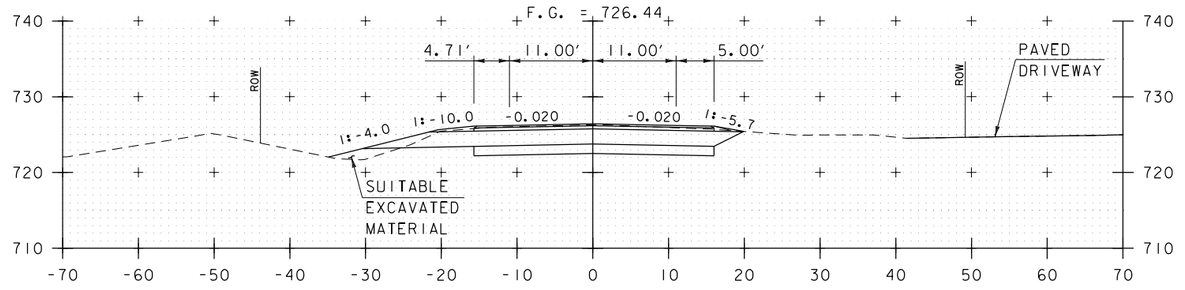
10+50
BEGIN APPROACH - MATCH EXISTING



12+00



11+75



11+50
END APPROACH - BEGIN PROJECT STA 11+37.00

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

STA. 10+50 TO STA. 12+00

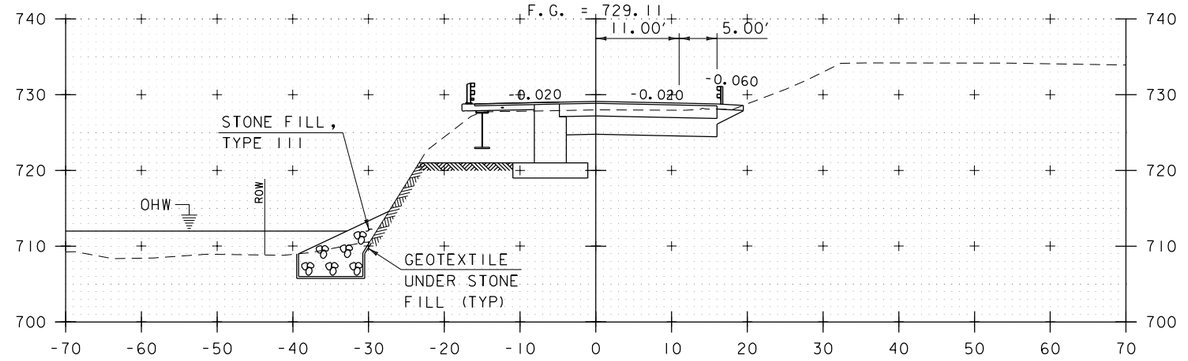
McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

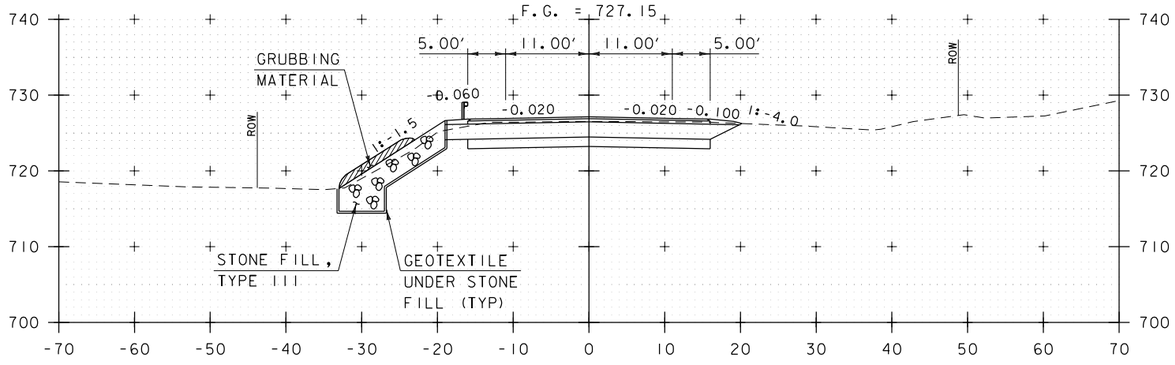
FILE NAME: z12bl36xsl.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
VT 100 CROSS SECTION SHEET 1

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 20 OF 37

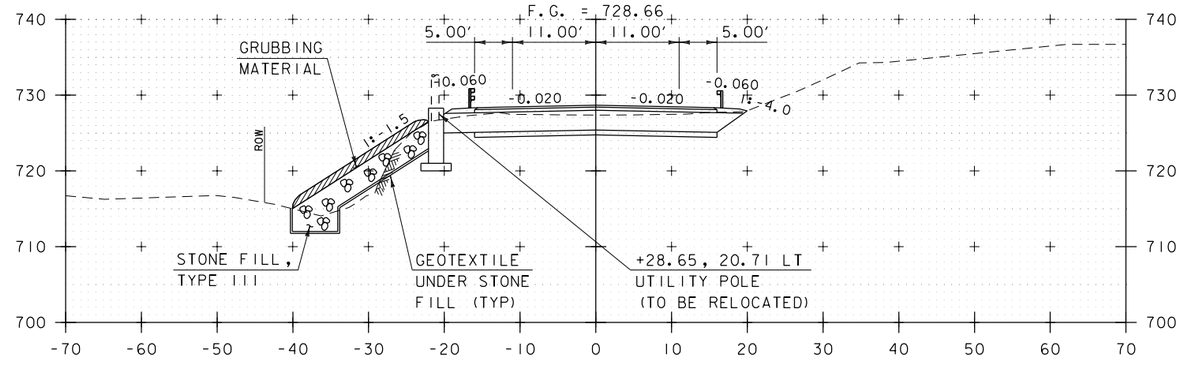
BEGIN BRIDGE STA 13+52.82



12+75



13+50



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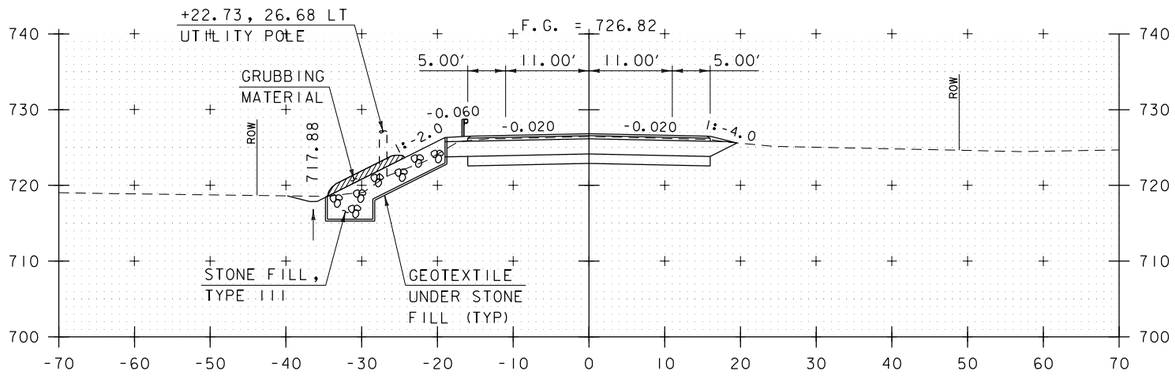
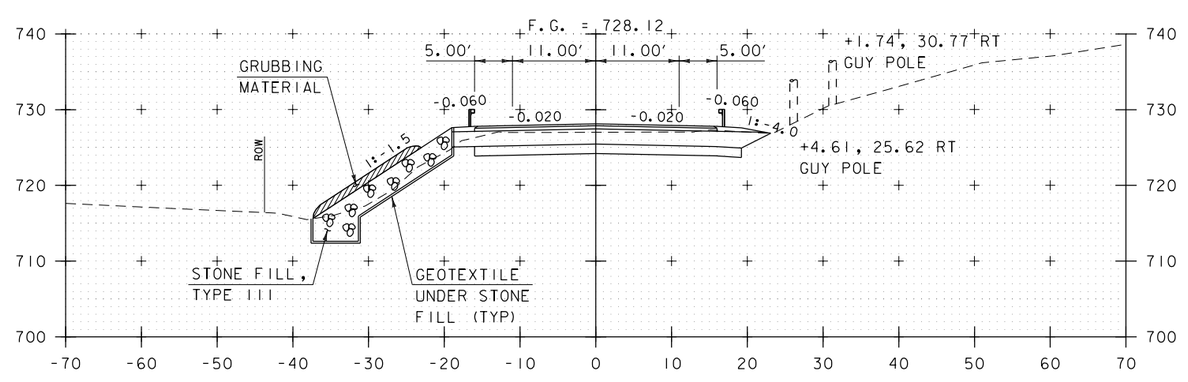


13+25



12+25

13+00

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

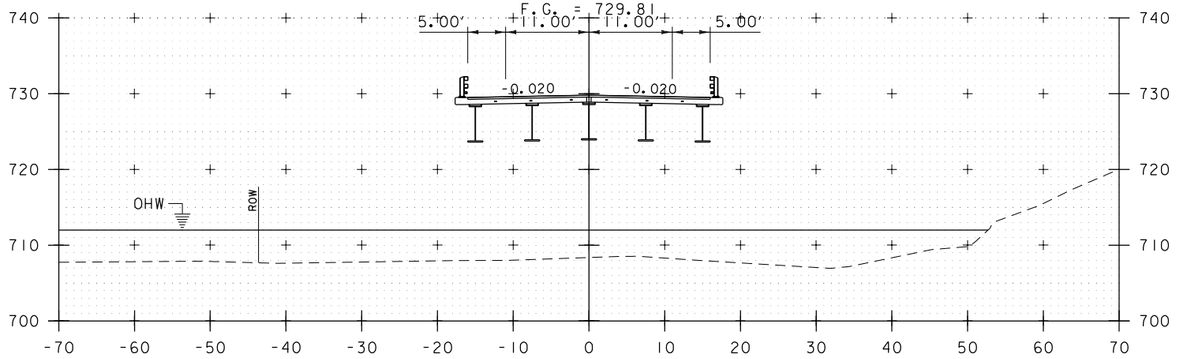
STA. 12+25 TO STA. 13+50

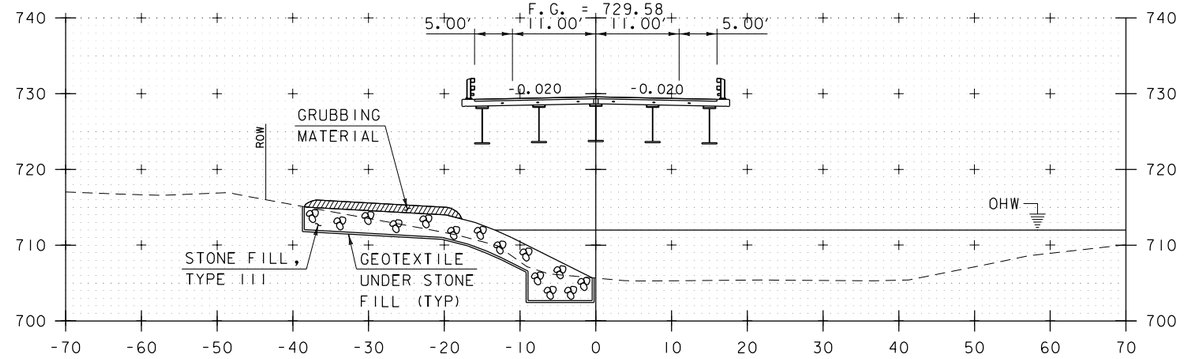
McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

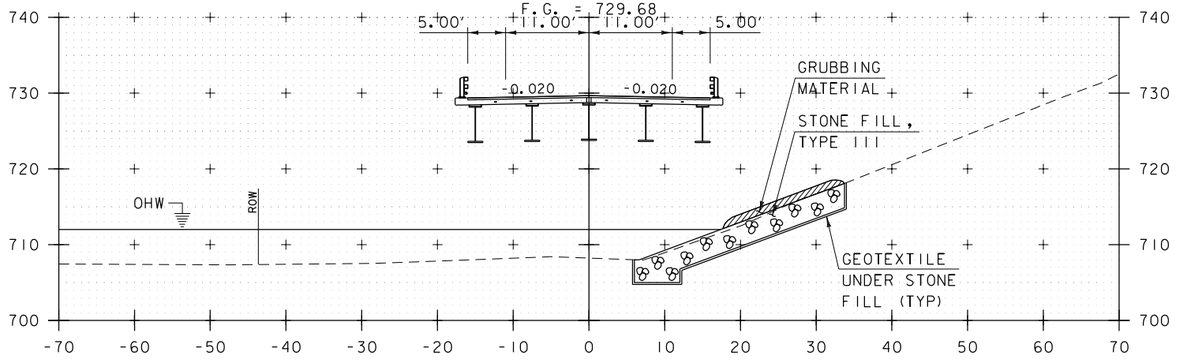
FILE NAME: z12b136xsl.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
VT 100 CROSS SECTION SHEET 2

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 21 OF 37

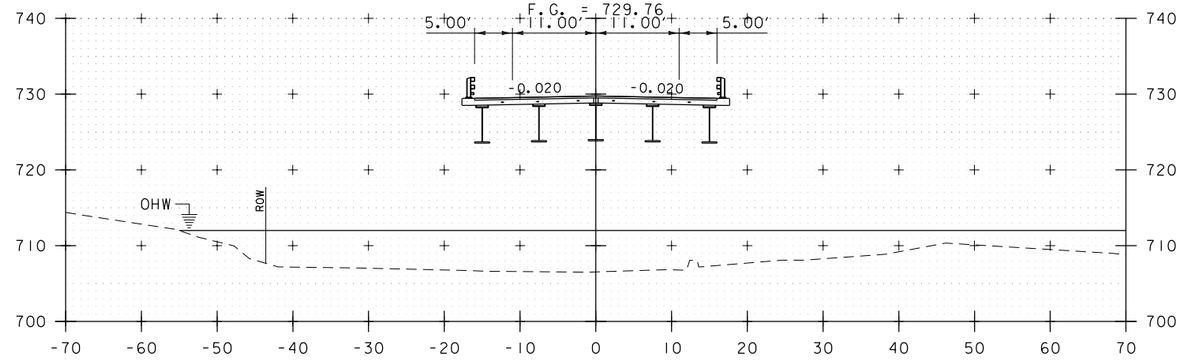




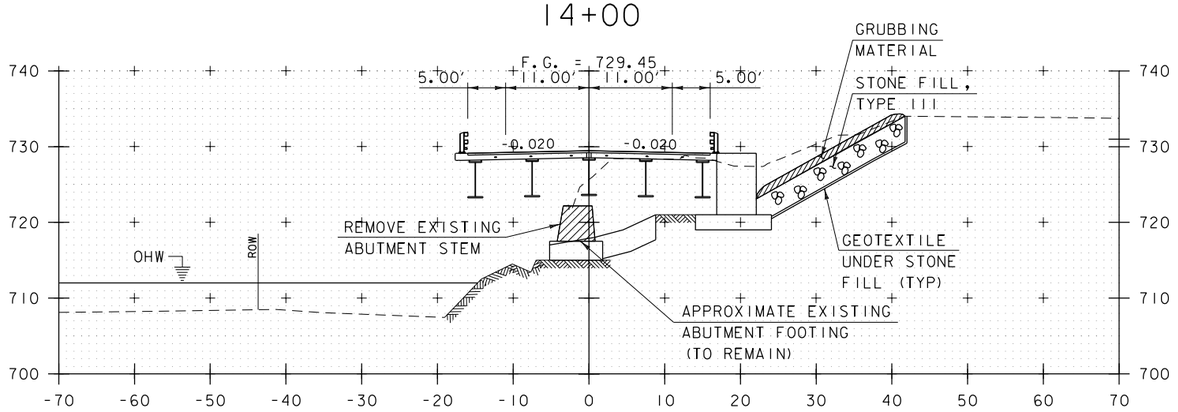
14+25



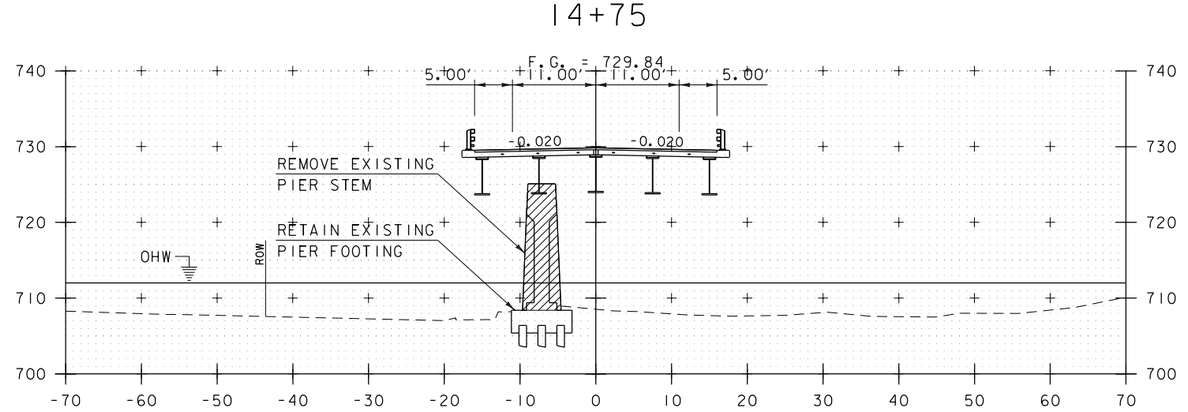
15+00



14+00



14+75



13+75

14+50

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

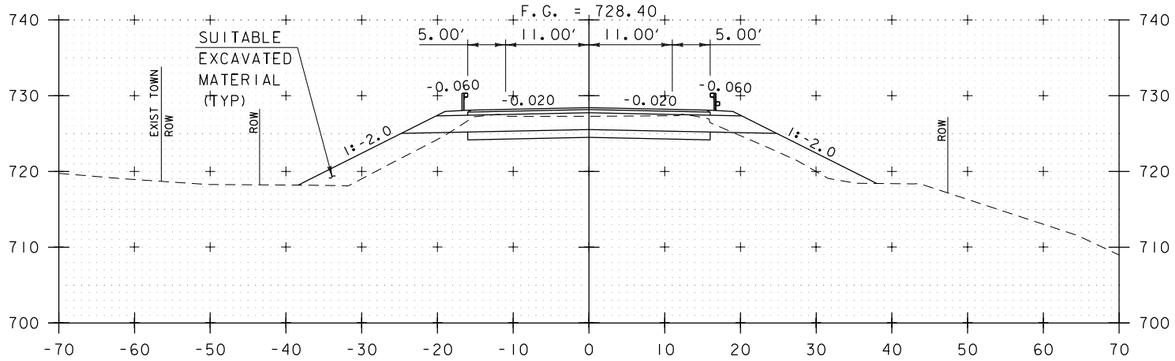
STA. 13+75 TO STA. 15+00

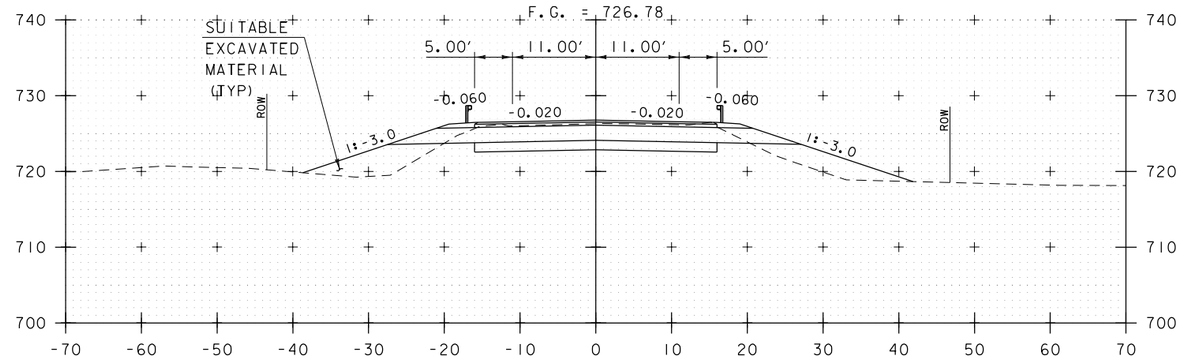
McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

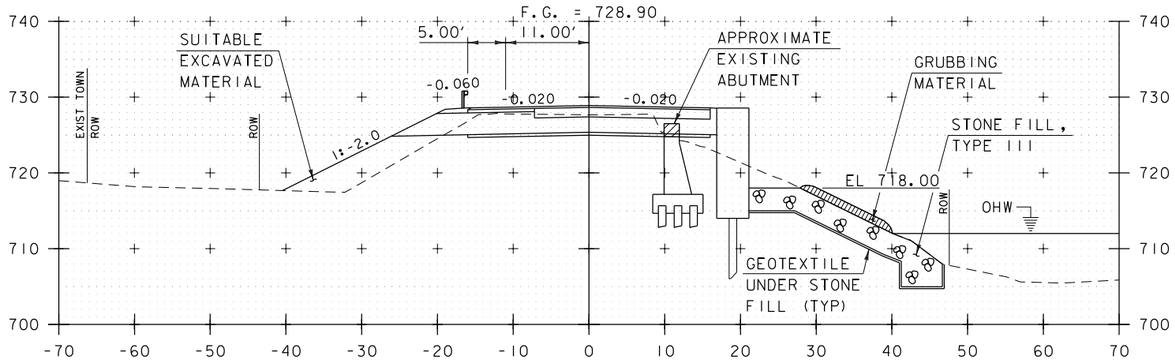
FILE NAME: z12b136xsl.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
VT 100 CROSS SECTION SHEET 3

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 22 OF 37

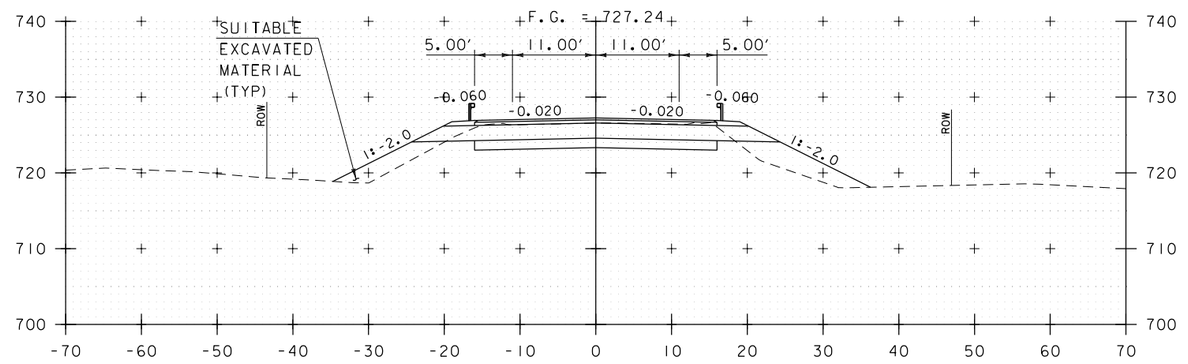




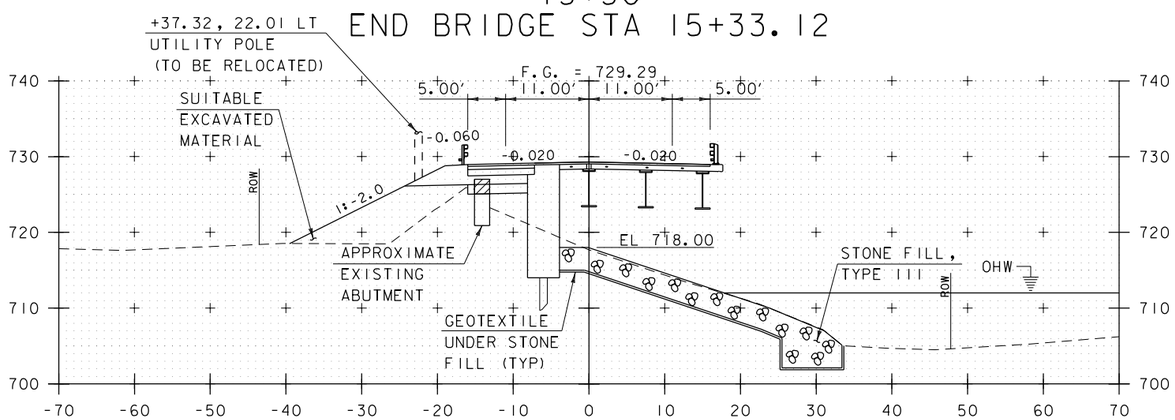
15+75



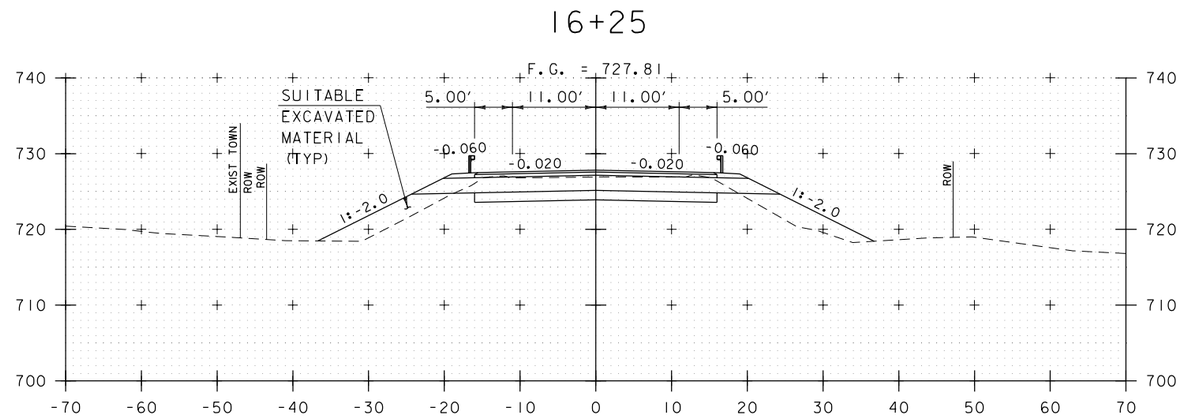
16+50



15+50 END BRIDGE STA 15+33.12



16+25



15+25

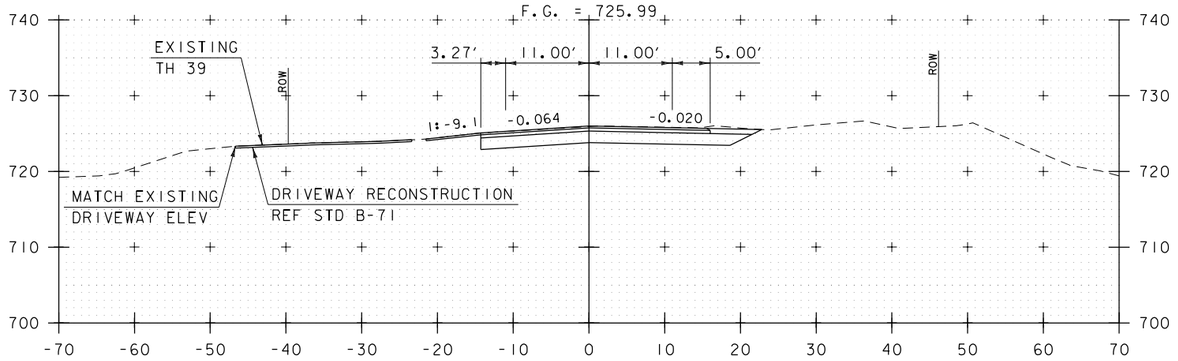
16+00

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

STA. 15+25 TO STA. 16+50

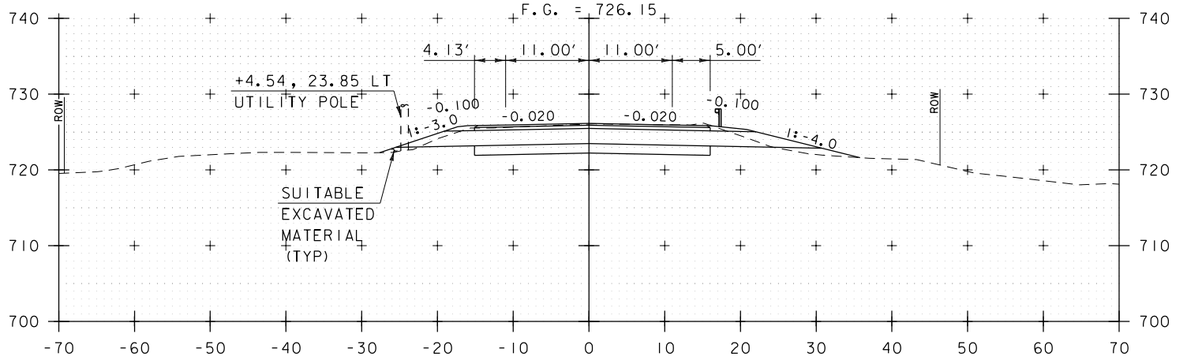
McFarland Johnson

PROJECT NAME:	WAITSFIELD
PROJECT NUMBER:	BHF 013-4(39)
FILE NAME: z12bl36xsl.dgn	PLOT DATE: 5/12/2014
PROJECT LEADER: R. YOUNG	DRAWN BY: P. DUSTIN
DESIGNED BY: D. KULL	CHECKED BY: T. KENDRICK
VT 100 CROSS SECTION SHEET 4	SHEET 23 OF 37

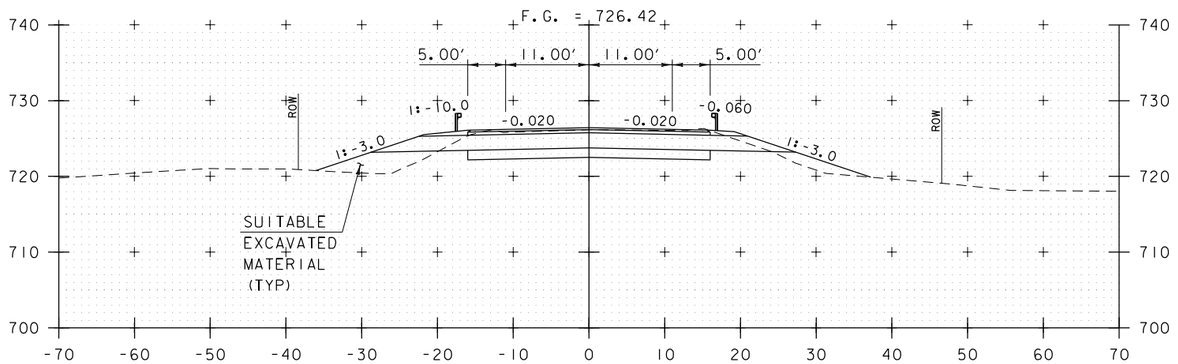


17+25

END PROJECT STA 17+13

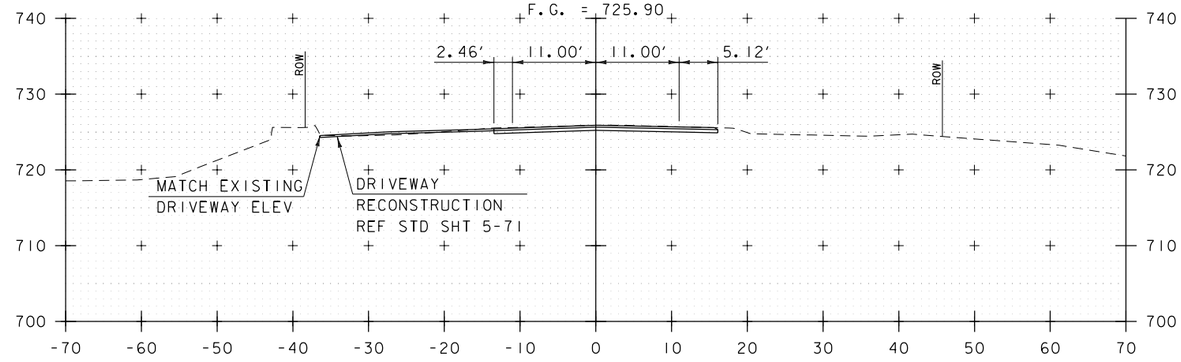


17+00

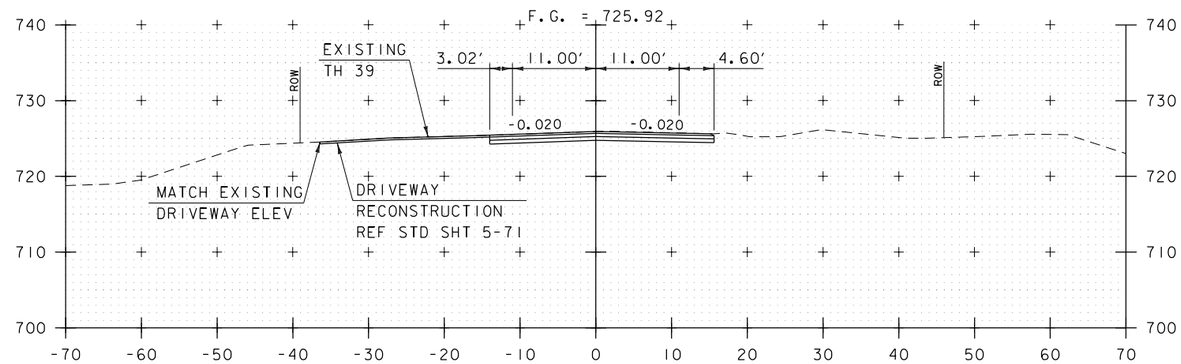


16+75

18+00



17+75



17+50

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

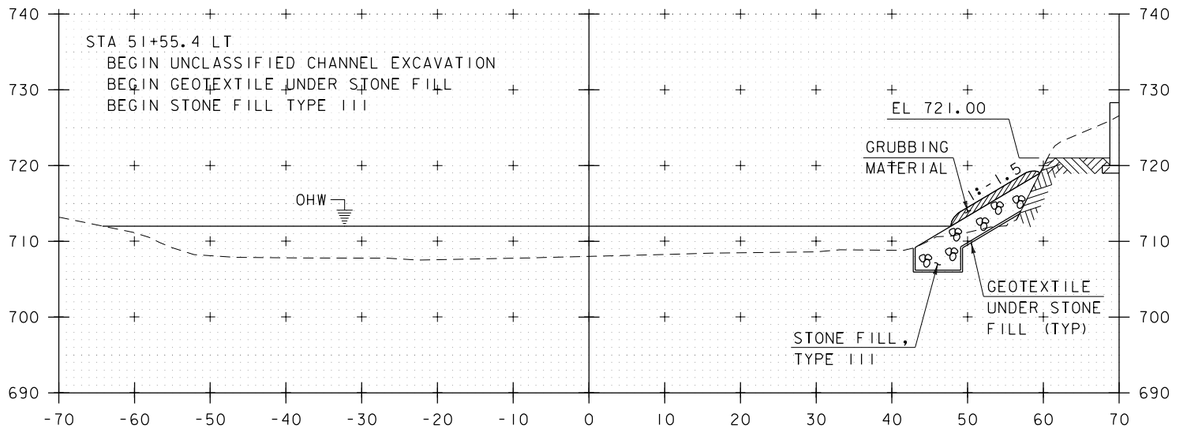
STA. 16+75 TO STA. 18+00

McFarland Johnson

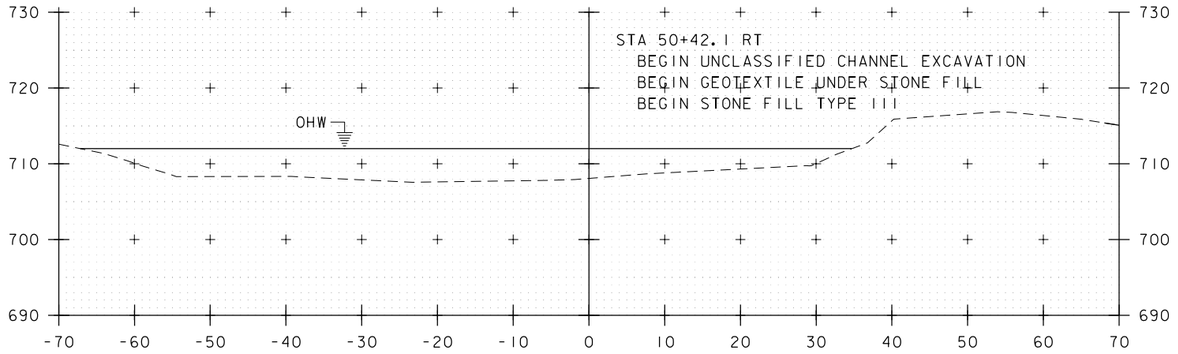
PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12bl36xsl.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
VT 100 CROSS SECTION SHEET 5

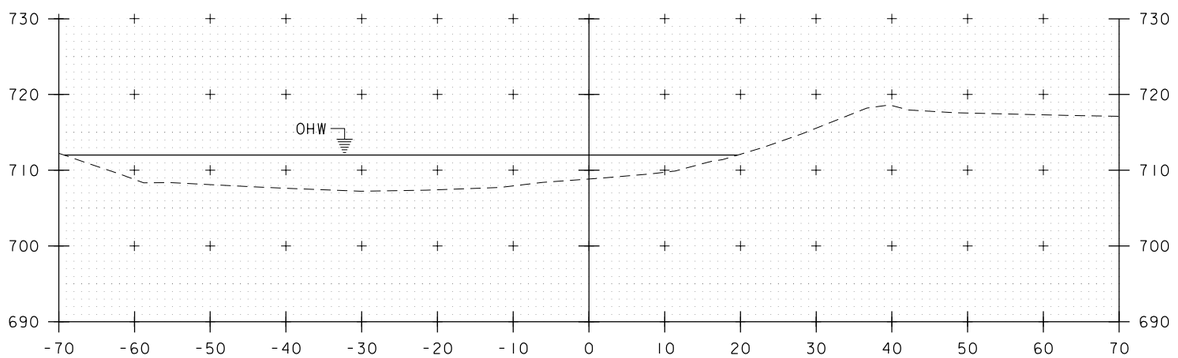
PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 24 OF 37



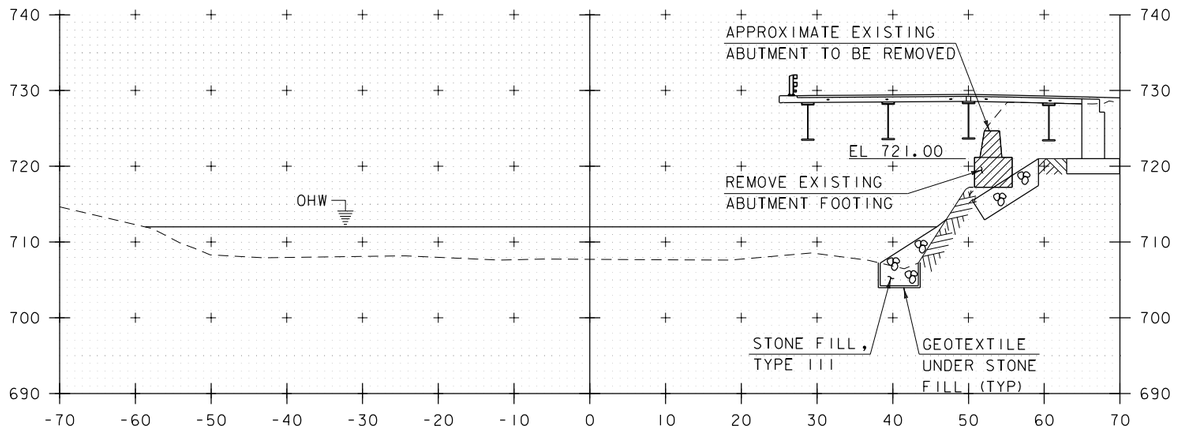
50+50



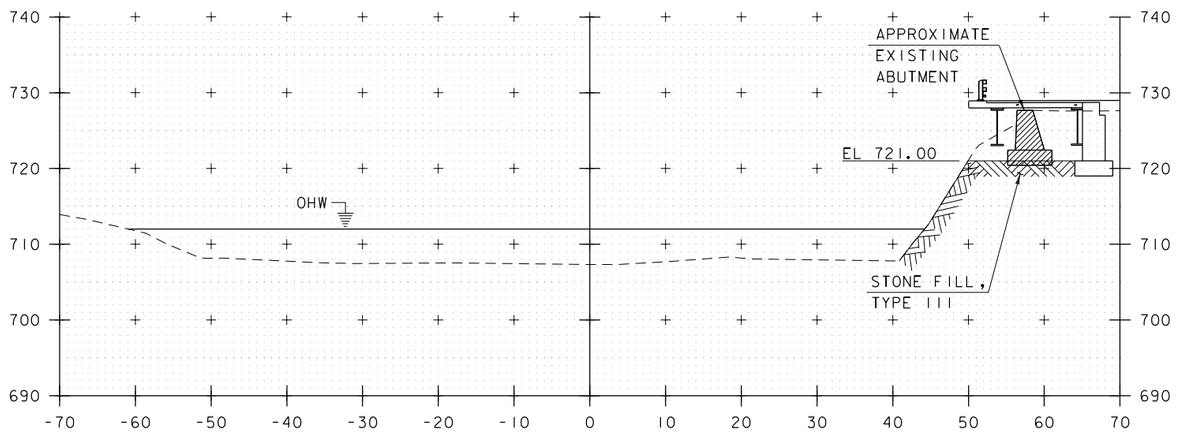
50+25



50+00



51+00



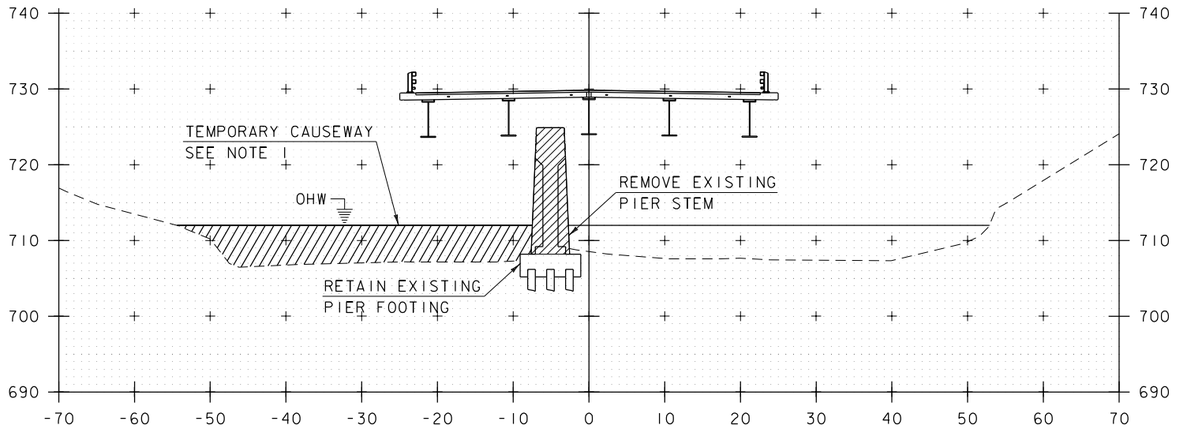
50+75

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

STA. 50+00 TO STA. 51+00

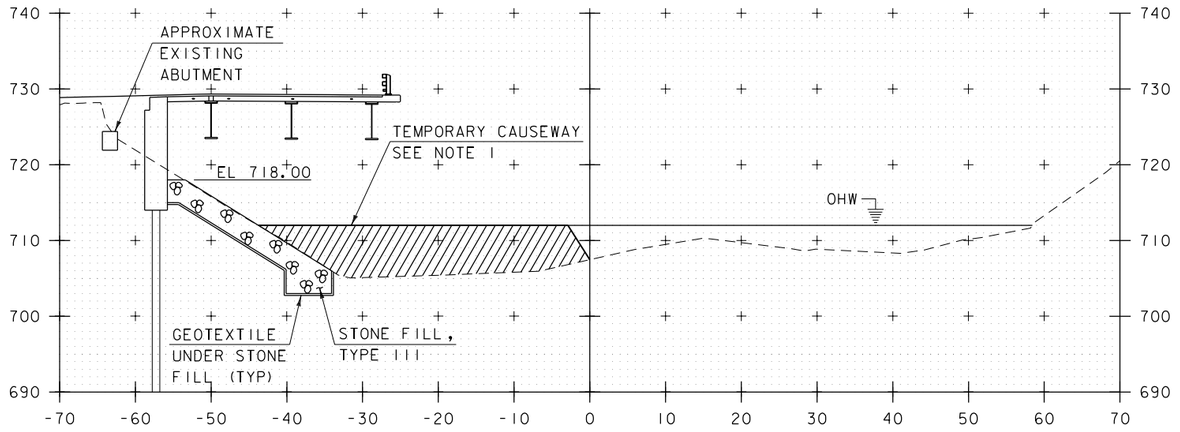
McFarland Johnson

PROJECT NAME:	WAITSFIELD
PROJECT NUMBER:	BHF 013-4(39)
FILE NAME: z12b136xs2.dgn	PLOT DATE: 5/12/2014
PROJECT LEADER: R. YOUNG	DRAWN BY: P. DUSTIN
DESIGNED BY: D. KULL	CHECKED BY: T. KENDRICK
CHANNEL CROSS SECTION SHEET 1	SHEET 25 OF 37

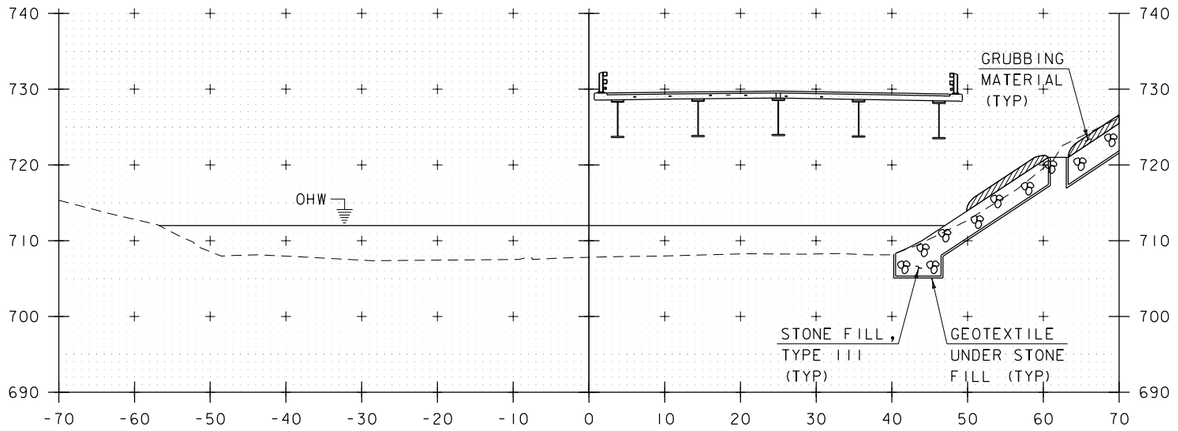


51+50

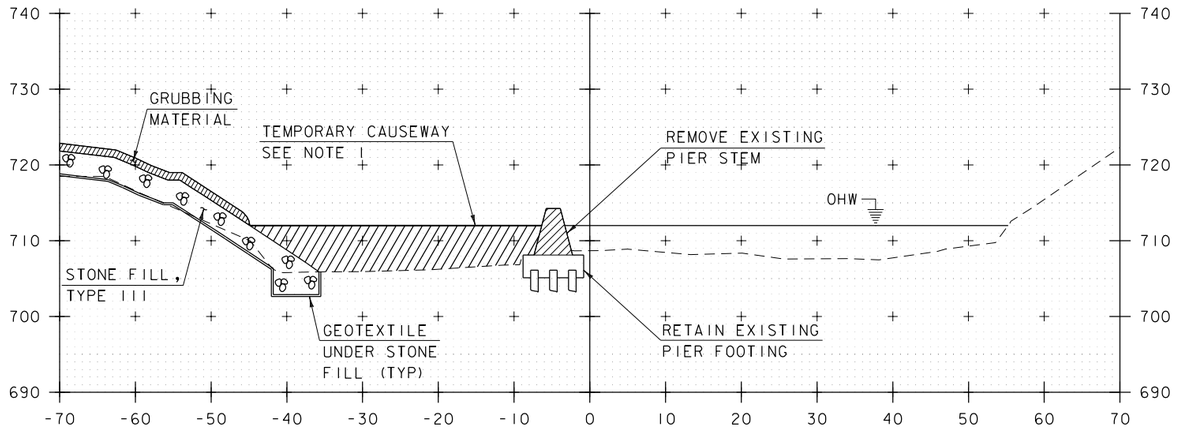
STA 51+35.2 RT
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL TYPE III



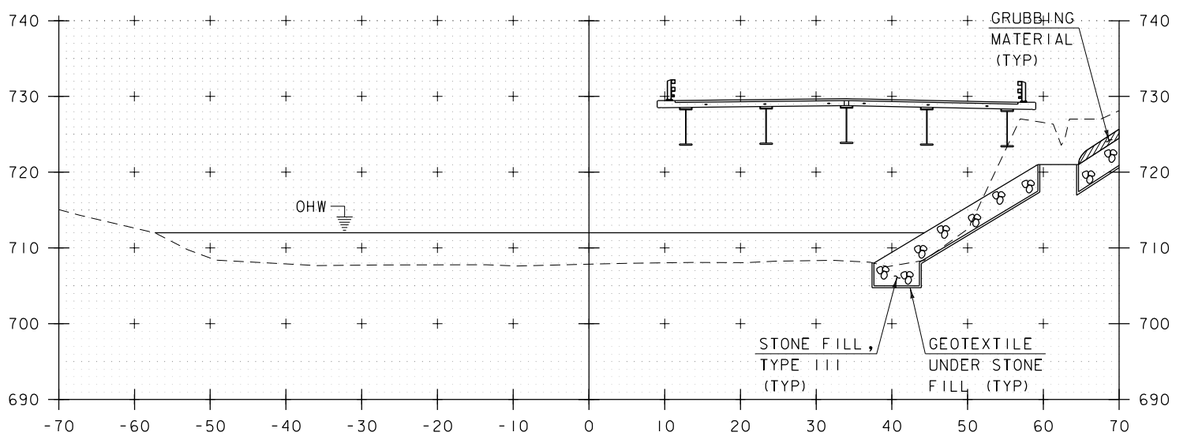
52+00



51+25



51+75



51+16

NOTES

1. TEMPORARY CAUSEWAY, NO FILL ABOVE OHW. PAYMENT FOR FURNISHING, INSTALLING AND REMOVING TEMPORARY CAUSEWAY SHALL BE INCLUDED IN THE COST FOR ITEM 529.15, REMOVAL OF STRUCTURE.

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

STA. 51+16 TO STA. 52+00

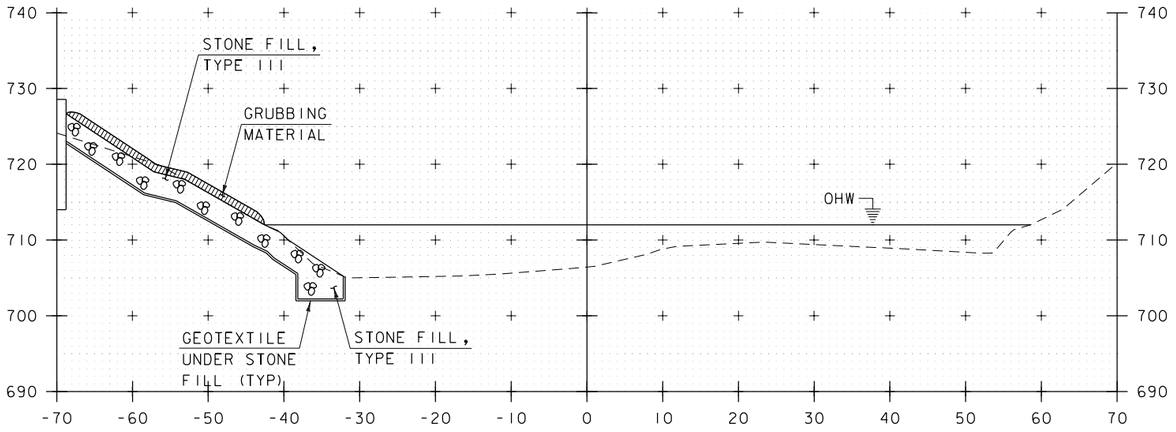
McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

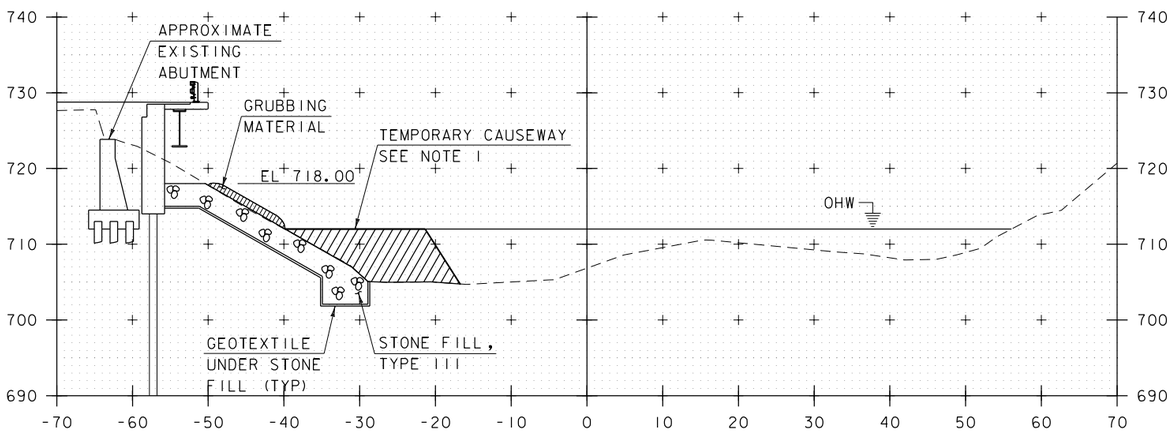
FILE NAME: z12b136xs2.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
CHANNEL CROSS SECTION SHEET 2

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 26 OF 37

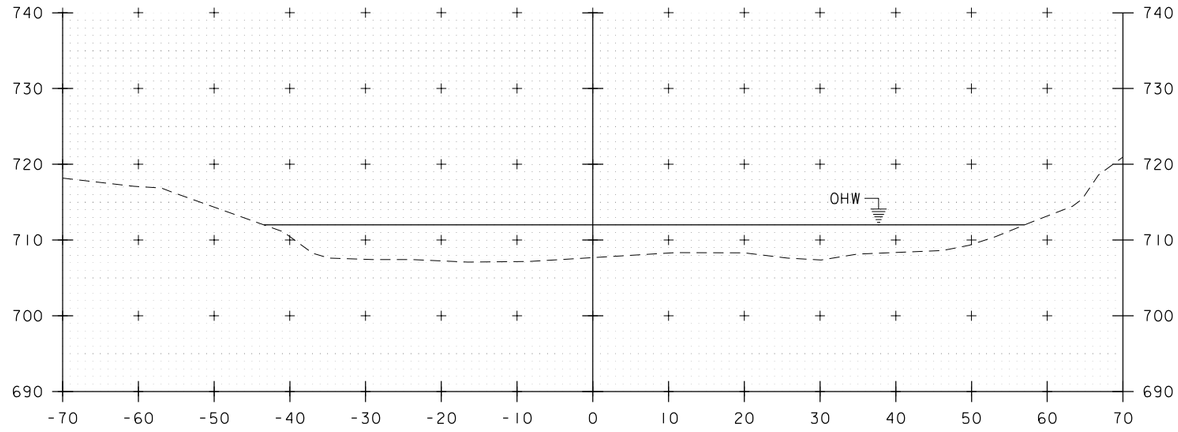
STA 52+57.9 LT
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL TYPE III



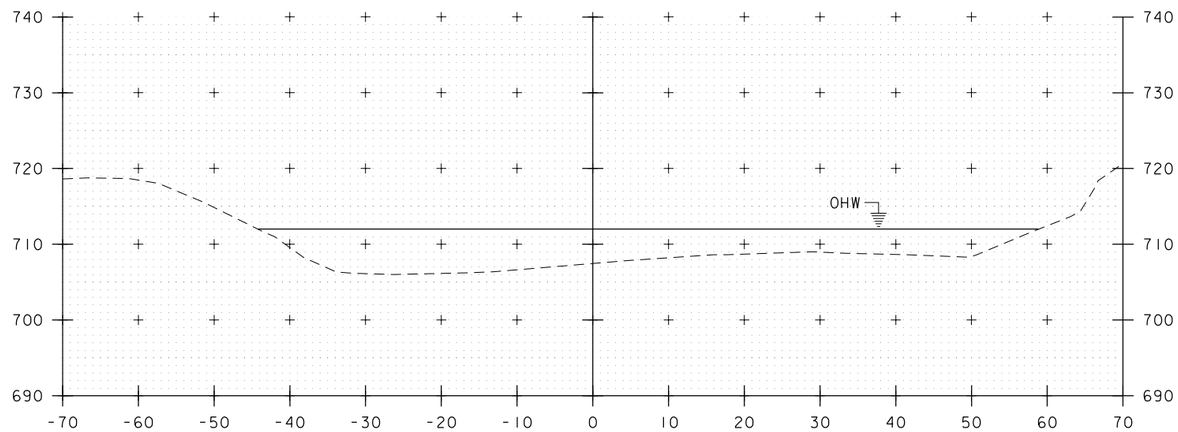
52+50



52+25



53+00



52+75

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

STA. 52+25 TO STA. 53+00

McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12bl36xs2.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
CHANNEL CROSS SECTION SHEET 3

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 27 OF 35

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL OF BRIDGE #177 WHICH IS A 168 FOOT LONG ROLLED STEEL BEAM BRIDGE. BRIDGE #177 WILL BE REPLACED BY A 175.00 FOOT SIMPLE SPAN STRUCTURE FOUNDED ON PRECAST ABUTMENTS FOUNDED ON STEEL BEARING PILES AND PRECAST SPREAD FOOTINGS ALONG THE EXISTING VT 100 ALIGNMENT. BRIDGE #177 IS LOCATED IN THE TOWN OF WAITSFIELD, ON VT ROUTE 100, APPROXIMATELY 0.8 MILES SOUTH OF THE INTERSECTION OF VT 17 AND VT 100. THIS PROJECT WILL UTILIZE ACCELERATED BRIDGE CONSTRUCTION METHODS SO THE BRIDGE WILL BE CLOSED TO TRAFFIC FOR APPROXIMATELY 21 DAYS.

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 0.8 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL BE COMPLETED IN LESS THAN ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS HILLY WITH MOSTLY WELL ESTABLISHED FOREST AND OCCASIONAL OPEN AREAS. ROADWAY SIDE SLOPES CONSIST OF VEGETATED UNDERGROWTH WITH SEVERAL EXPOSED LEDGE FACES.

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

THE MAD RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE MAD RIVER IS CLASSIFIED AS FLAT, WITH WIDE EARTH LINED CHANNEL UPSTREAM AND A WIDE EARTH LINED CHANNEL DOWNSTREAM OF THE SITE. THE STREAM BED CONSISTS OF GRAVEL AND SAND.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF MIXED HARDWOOD AND SOFTWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING BRIDGE AND RECONSTRUCTION OF THE ROADWAY AND SIDE SLOPES WITHIN THE PROJECT LIMITS. UPON PROJECT COMPLETION, THE CHANNEL SIDE SLOPES ADJACENT TO THE BRIDGE WILL BE ARMORED WITH STONE FILL TYPE III AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES. CLEARING SHALL BE KEPT TO A MINIMUM.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF WASHINGTON, VERMONT. SOILS ON THE PROJECT SITE ARE:
MACHIAS FINE SANDY LOAM, 3% TO 8% SLOPES, "K FACTOR" = 0.17. THIS SOIL IS CONSIDERED POTENTIALLY HIGHLY ERODIBLE,
WEIDER VERY FINE SANDY LOAM, 0% TO 3% SLOPES, "K FACTOR" = 0.32. THIS SOIL IS CONSIDERED NOT HIGHLY ERODIBLE,
COLTON GRAVELLY LOAMY SAND, 25% TO 60% SLOPES, "K FACTOR" = 0.17. THIS SOIL IS CONSIDERED HIGHLY ERODIBLE,
WAITSFIELD SILT LOAM, 0% TO 3% SLOPES, "K FACTOR" = 0.37. THIS SOIL IS CONSIDERED NOT HIGHLY ERODIBLE.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:
0.0-0.23 = LOW EROSION POTENTIAL
0.24-0.36 = MODERATE EROSION POTENTIAL
0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: HISTORIC DISTRICT NORTHWEST END OF PROJECT NOT IMPACTED BY PROPOSED WORK
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: MAD RIVER
WETLANDS: YES

1.3 RISK EVALUATION

WITH LESS THAN 1 ACRE OF SOIL DISTURBANCE, 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 PLACED 5 FEET FROM THE TOE OF SLOPE TO PHYSICALLY MARK SITE BOUNDARIES. PDF CAN BE LOCATED CLOSER TO THE PROPOSED SLOPE LIMITS IN SENSITIVE AREAS OR AS DIRECTED BY THE ENGINEER. PDF SHALL BE INSTALLED PRIOR TO THE BEGINNING OF ANY EARTHWORK ON THE PROJECT.

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 CONSTRUCTION CHANGES.

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 SHOULD 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 EARTHWORK IN ACCORDANCE WITH THE EROSION PREVENTION AND CONTROL PLANS.

SILT FENCE WILL BE INSTALLED AT THE TOE OF SLOPE AS PROPOSED ON THE EPSC PLAN.

AT LOCATIONS WHERE CONSTRUCTION IS IN OR NEAR WATERCOURSES OF THE STATE OF VERMONT, GEOTEXTILE FOR FILTER CURTAIN SHALL BE USED TO MINIMIZE SEDIMENT FROM ENTERING THESE WATERCOURSES. THE FILTER CURTAIN SHALL EXTEND FROM THE BOTTOM OF THE WATERCOURSE TO THE TOP OF THE WATER SURFACE. GEOTEXTILE SHALL ALSO BE PLACED ALONG THE BOTTOM OF THE WATER COURSE WITHIN THE LIMITS OF THE FILTER CURTAIN TO FACILITATE THE REMOVAL OF SEDIMENT AND PROTECT THE EXISTING WATERCOURSE BOTTOM. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD FOR CONTAINING SEDIMENT IN THE WATERCOURSES, THE CONTRACTOR SHALL SUBMIT THE ALTERNATE METHOD TO THE ENGINEERFOR APPROVAL AT LEAST 14 DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING. FILTER CURTAIN SHALL BE INSTALLED AS SHOWN ON THE EROSION PREVENTION AND SEDIMENT CONTROL PLANS PRIOR TO ANY CONSTRUCTION WITHIN 50 FEET OF WATERS OF THE STATE.

1.4.5 DIVERT UPLAND RUNOFF

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

THE PROJECT AREA IS RELATIVELY FLAT. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

TEMPORARY STONE CHECK DAMS, TYPE I WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN, AT A MINIMUM.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES, SUCH AS STONE SLOPES, PERMANENT ROLLED EROSION CONTROL PRODUCTS AND FIBER ROLLS 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.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE. SEEDING AND MULCHING SHALL BE USED TO STABILIZE SOIL. SEE THE EROSION CONTROL DETAILS FOR SEED TYPES AND APPLICATION RATES.

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 COFFERDAM IS NOT ANTICIPATED ON THIS PROJECT.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR AFTER ANY RAINFALL EVENT THAT RESULTS IN DISCHARGE FROM THE SITE.

1.5 SEQUENCE AND STAGING

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

1.5.1 CONSTRUCTION SEQUENCE

VT STATE PLANE GRID

N

SOIL CLASSIFICATION:
MACHIAS FINE SANDY LOAM
3%-8% SLOPES
POTENTIALLY HIGHLY ERODIBLE
K=0.17

SOIL CLASSIFICATION:
WEIDER VERY FINE SANDY LOAM
0%-3% SLOPES
NOT HIGHLY ERODIBLE
K=0.32

BEGIN APPROACH
STA 10+50.00
MATCH EXISTING

BEGIN PROJECT
STA 11+37.00

EXISTING STATE R.O.W.

VT 100
TO WARREN

℄ CONSTRUCTION

FIELD

CLASS III

PROPERTY LINE

CHANNEL
BASELINE

EXISTING TOWN R.O.W.

TOWN HIGHWAY
39

MIXED
HARDWOODS

WOODS

MIXED HARDWOODS

MIXED SOFTWOODS
AND HARDWOODS

BEGIN BRIDGE
STA 13+52.82

END BRIDGE
STA 15+33.12

MAD RIVER
FLOW

PROPERTY LINE

EXISTING STATE R.O.W.

SIGN
EASY STREET CAFE

PAVED
DRIVE

CEDARS

L ASH

BOUNDARY
MARKER

LIGHT
POST

RAIL FENCE

15" RCP
PLUGGED
FLOW

2' DIA
DI

6" COMP
FLOW

SHED

2 MAPLE

M MAPLE

M MAPLE

10+00 11+00 12+00 13+00 14+00 15+00 16+00

MATCHLINE STA 16+25 (EXISTING LAYOUT 2)

NOTE:
FOR EPSC PLAN SYMBOLOGY LEGEND SEE SHEET 35.

SOIL CLASSIFICATION:
COLTON GRAVELLY LOAMY SAND
25%-60% SLOPES
HIGHLY ERODIBLE
K=0.17

LAYOUT

20 0 20

SCALE: 1" = 20'-0"

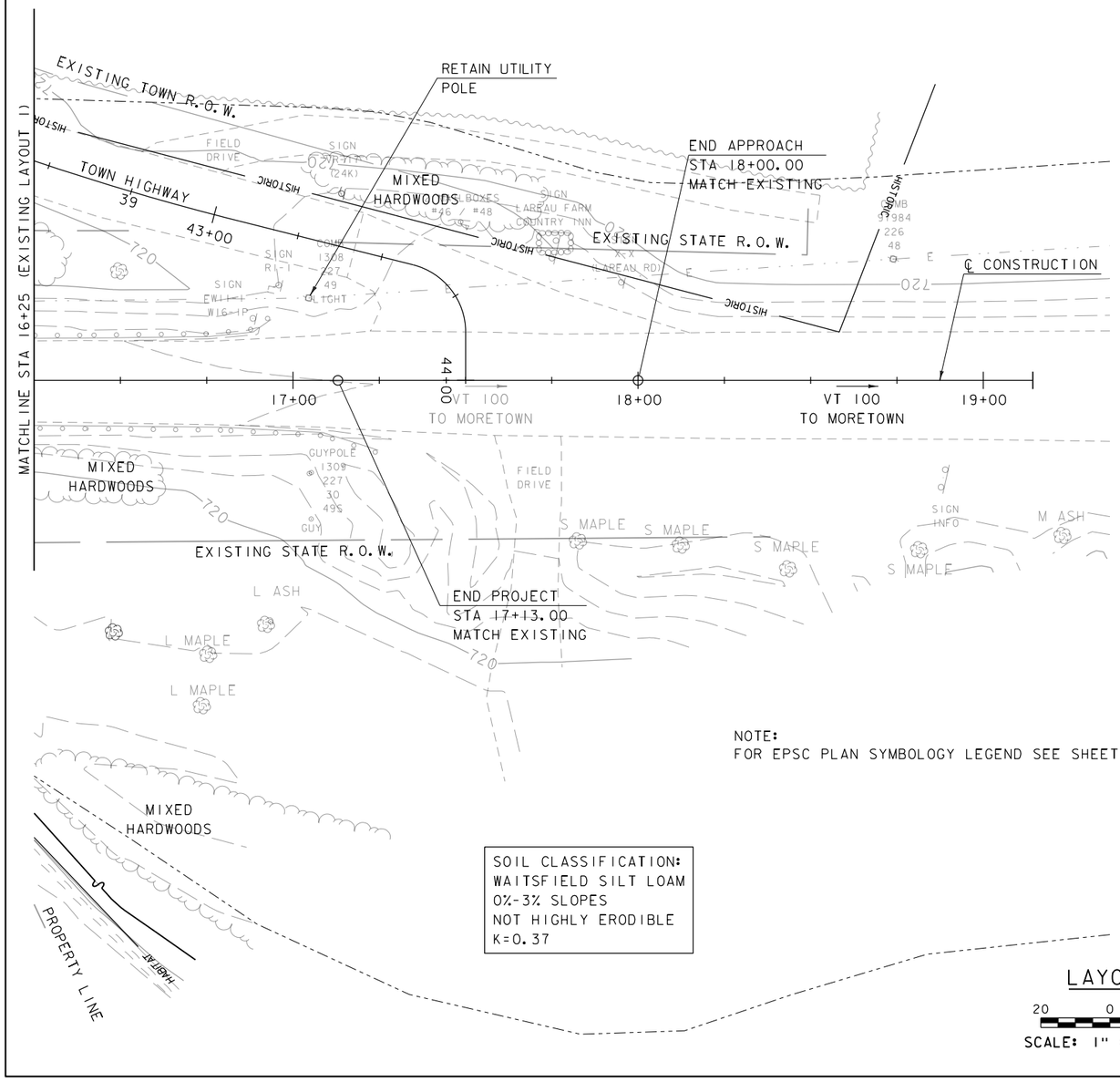
McFarland Johnson

PROJECT NAME:	WAITSFIELD
PROJECT NUMBER:	BHF 013-4(39)
FILE NAME: z12bl36bdr_ero.dgn	PLOT DATE: 5/12/2014
PROJECT LEADER: R. YOUNG	DRAWN BY: P. DUSTIN
DESIGNED BY: J. SANTACRUCE	CHECKED BY: T. KENDRICK
EPSC EXISTING LAYOUT SHEET 1	SHEET 29 OF 37

VT STATE PLANE GRID

N

SOIL CLASSIFICATION:
WEIDER VERY FINE SANDY LOAM
0%-3% SLOPES
NOT HIGHLY ERODIBLE
K=0.32



NOTE:
FOR EPSC PLAN SYMBOLOGY LEGEND SEE SHEET 35.

SOIL CLASSIFICATION:
WAITSFIELD SILT LOAM
0%-3% SLOPES
NOT HIGHLY ERODIBLE
K=0.37

LAYOUT

20 0 20

SCALE: 1" = 20'-0"

McFarland Johnson

PROJECT NAME:	WAITSFIELD
PROJECT NUMBER:	BHF 013-4(39)
FILE NAME: z12bl36bdr_ero.dgn	PLOT DATE: 5/12/2014
PROJECT LEADER: R. YOUNG	DRAWN BY: P. DUSTIN
DESIGNED BY: D. KULL	CHECKED BY: T. KENDRICK
EPSC EXISTING LAYOUT SHEET 2	SHEET 30 OF 37

VT STATE PLANE GRID

N

SOIL CLASSIFICATION:
MACHIAS FINE SANDY LOAM
3%-8% SLOPES
POTENTIALLY HIGHLY ERODIBLE
K=0.17

SOIL CLASSIFICATION:
WEIDER VERY FINE SANDY LOAM
0%-3% SLOPES
NOT HIGHLY ERODIBLE
K=0.32

CONSTRUCT 5.6LF x 15" RCP
CONNECT TO EXISTING 15" RCP
CONSTRUCT 18" CPEP END SECTION
CONSTRUCT STONE FILL, TYPE I
AT OUTLET

BEGIN APPROACH
STA 10+50.00
MATCH EXISTING

BEGIN PROJECT
STA 11+37.00

EXISTING STATE R.O.W.

CONSTRUCT
SWALE/DITCH

STONE FILL,
TYPE III

RELOCATE UTILITY
POLE

RELOCATE UTILITY
POLE

CHANNEL
BASELINE

TEMPORARY
CAUSEWAY

RELOCATE UTILITY
POLE

PROPERTY LINE

EXISTING TOWN R.O.W.

TOWN HIGHWAY
39

EXISTING TOWN R.O.W.

VT 100
TO WARREN

SIGN
R2-1
(40)

℄ CONSTRUCTION

LIGHT
POST

RAIL
FENCE

15" RCP
PLUNGED
FLOW

2" DIA
DI

15" COMP
FLOW

CLEAN CULVERT
PIPES

PAVED
DRIVE

STABILIZED CONSTRUCTION
ACCESS (SOUTH ACCESS)

EXISTING STATE R.O.W.

SIGN
EASY STREET CAFE

CEDARS

L ASH

16
BOUNDARY
MARKER

WOODS

BEGIN BRIDGE
STA 13+52.82

STONE FILL,
TYPE III

END BRIDGE
STA 15+33.12

STONE FILL,
TYPE III

MAD RIVER
FLOW

PROPERTY LINE

SHED

M MAPLE

2 O. MAPLE

10+00 11+00 12+00 13+00 14+00 15+00 16+00

40+49 41+00 42+00 50+00 51+00 52+00 53+00

MATCHLINE STA 16+25 (CONSTRUCTION LAYOUT 2)

NOTE:
FOR EPSC PLAN SYMBOLOGY LEGEND SEE SHEET 35.

SOIL CLASSIFICATION:
COLTON GRAVELLY LOAMY SAND
25%-60% SLOPES
HIGHLY ERODIBLE
K=0.17

LAYOUT

20 0 20

SCALE: 1" = 20'-0"

McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

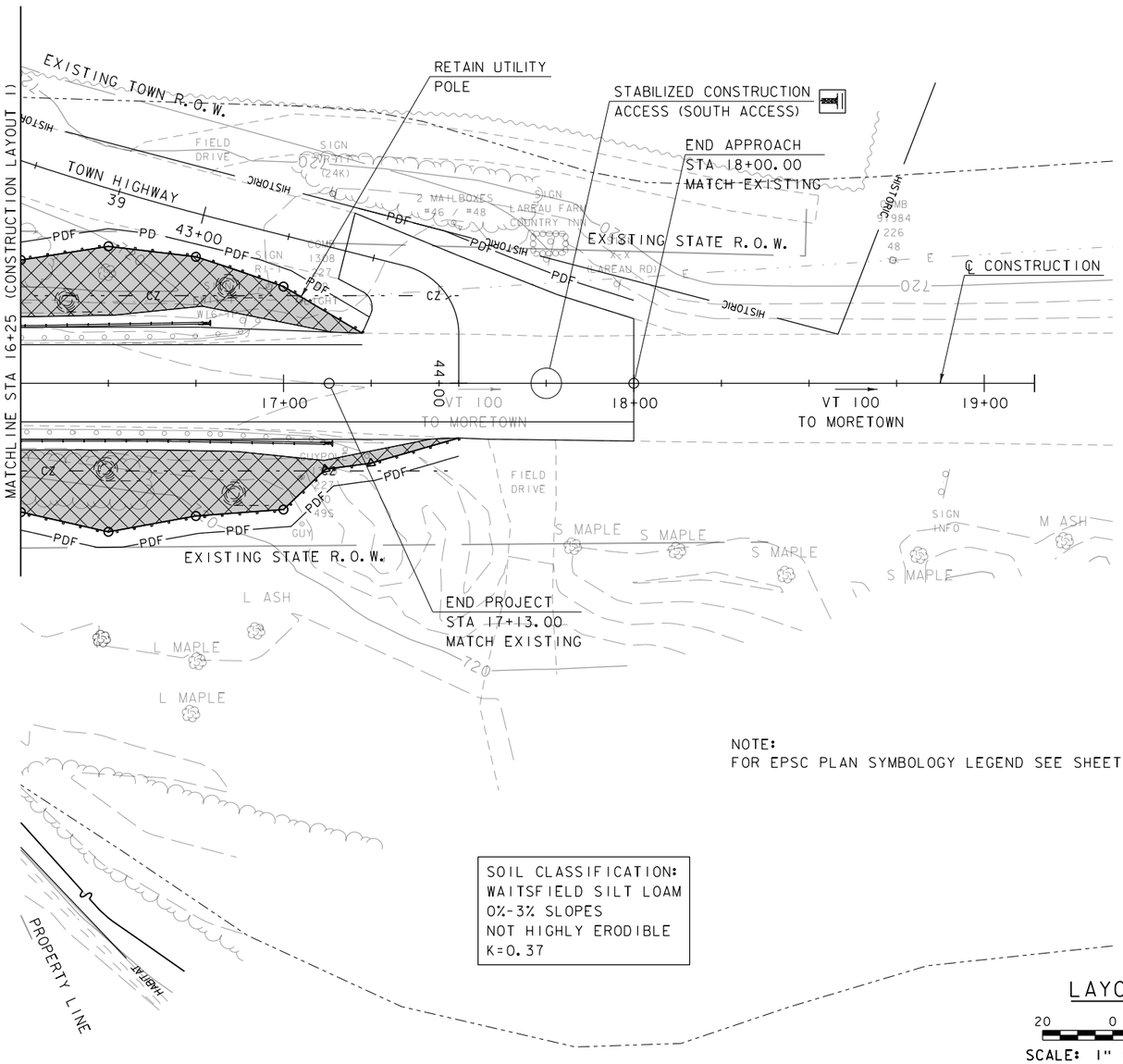
FILE NAME: z12b136bdr_ero.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: J. SANTACRUCE
EPSC CONSTRUCTION LAYOUT SHEET 1

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 31 OF 37

VT STATE PLANE GRID

N

SOIL CLASSIFICATION:
WEIDER VERY FINE SANDY LOAM
0%-3% SLOPES
NOT HIGHLY ERODIBLE
K=0.32



NOTE:
FOR EPSC PLAN SYMBOLOGY LEGEND SEE SHEET 35.

SOIL CLASSIFICATION:
WAITSFIELD SILT LOAM
0%-3% SLOPES
NOT HIGHLY ERODIBLE
K=0.37

LAYOUT

20 0 20

SCALE: 1" = 20'-0"

NOTES

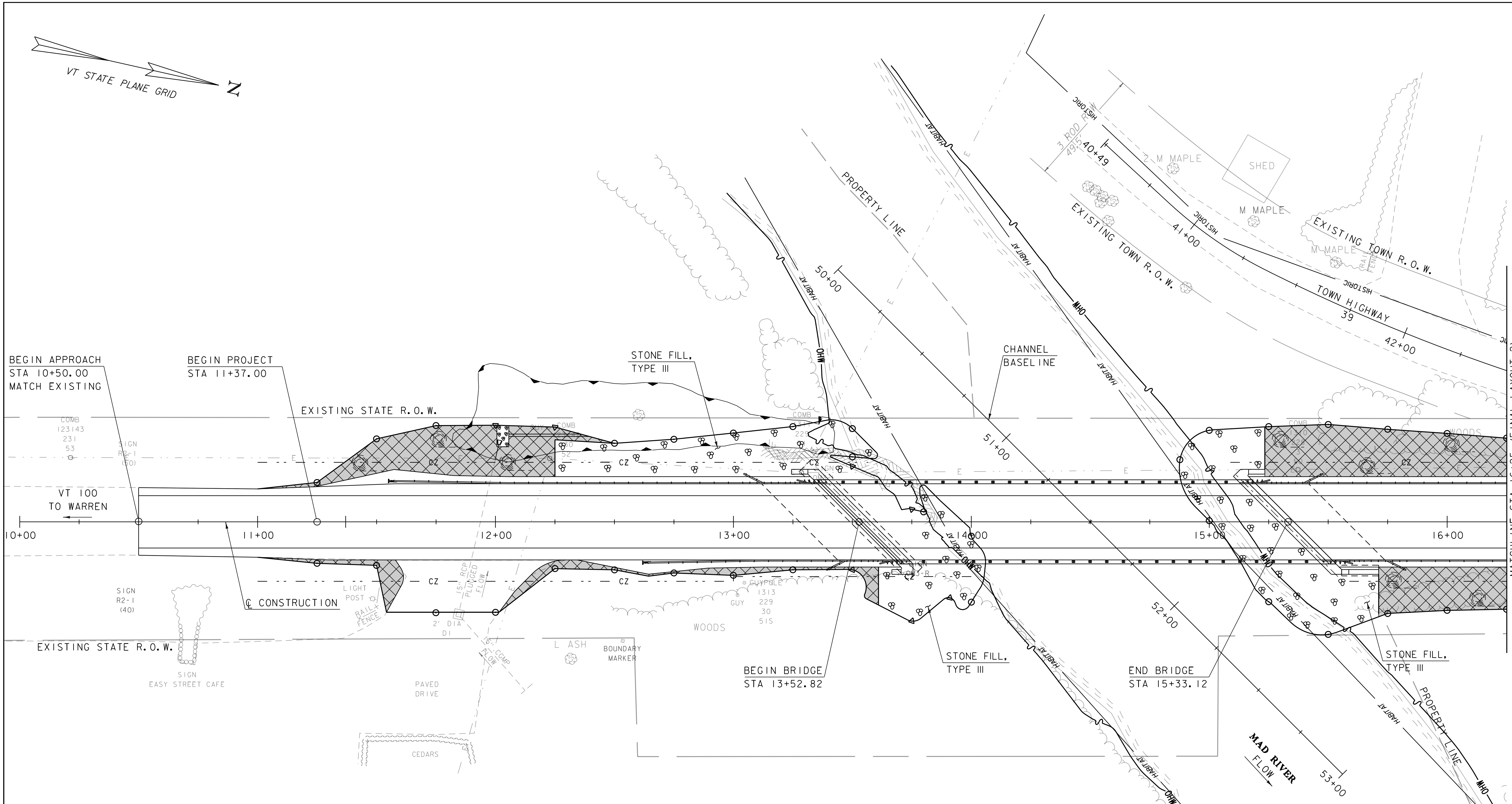
1. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBANCE.
2. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN, THE CONTRACTOR SHALL SUBMIT A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL. PAYMENT FOR DEVELOPMENT AND MODIFICATIONS TO THE EPSC SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 652.10.
3. TEMPORARY EROSION CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE ENGINEER AND ON SITE COORDINATOR.
4. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
5. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE ENGINEER AND ON SITE COORDINATOR.
6. REFER TO TEMPORARY EROSION CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.
7. WHERE LEDGE IS EXPOSED, GRAVEL BAGS MAY BE USED INSTEAD OF FILTER CURTAIN. PAYMENT FOR GRAVEL BAGS WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 649.61 "GEOTEXTILE FOR FILTER CURTAIN".
8. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED. SEE SEEDING FORMULA AND SEEDING NOTES FOR TURF REESTABLISHMENT REQUIREMENTS.
9. MONITORING AND MAINTAINING THE EROSION AND SEDIMENT CONTROL PLAN SHALL BE PER ITEM 652.20, MONITORING EPSC PLAN AND ITEM 652.30, MAINTENANCE OF EPSC PLAN.

McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12b136bdr_ero.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: J. SANTACRUCE
EPSC CONSTRUCTION LAYOUT SHEET 2

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK



NOTE:
FOR EPSC PLAN SYMBOLOGY LEGEND SEE SHEET 35.

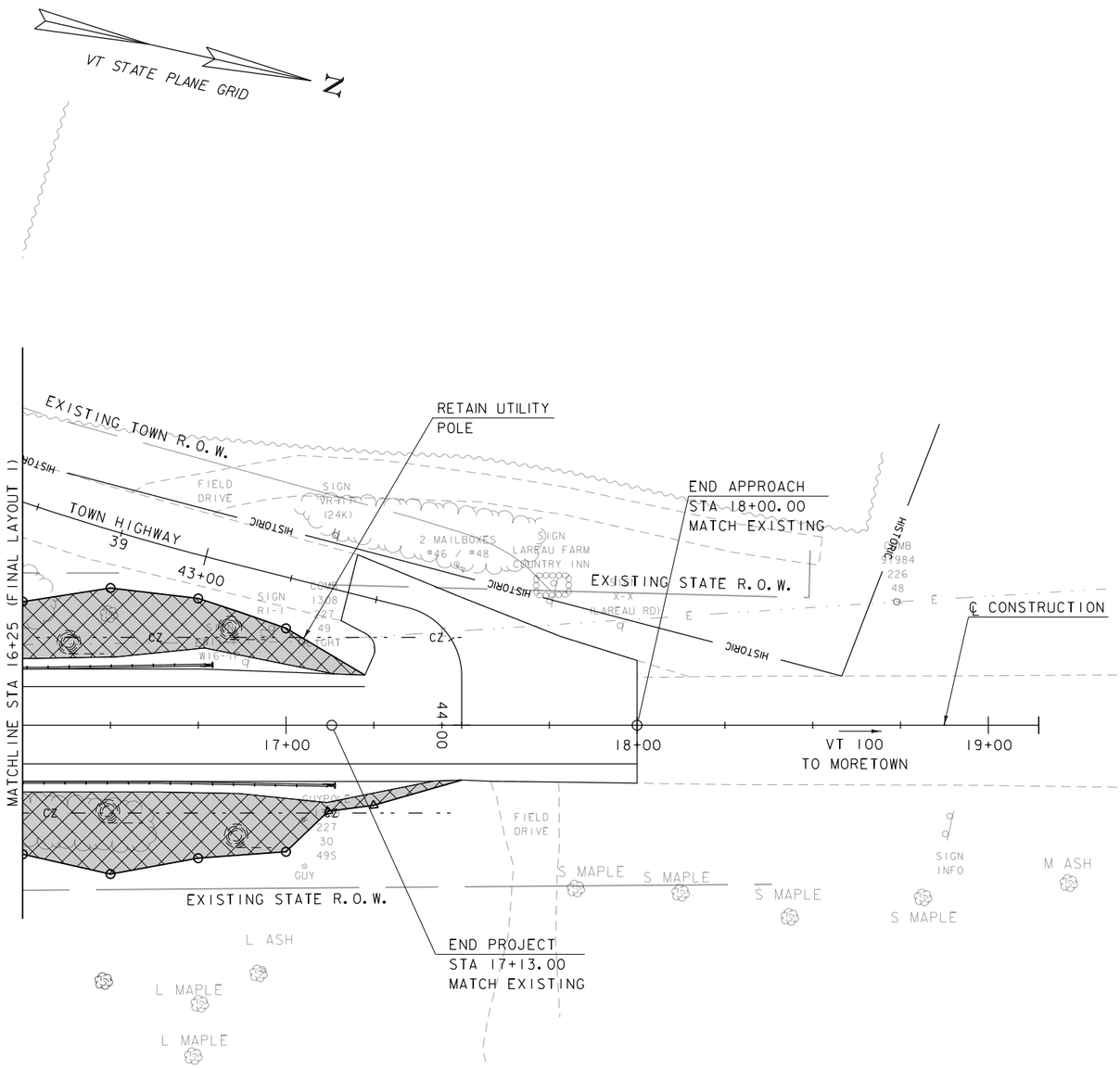
LAYOUT

20 0 20

SCALE: 1" = 20'-0"

McFarland Johnson

PROJECT NAME: WAITSFIELD	
PROJECT NUMBER: BHF 013-4(39)	
FILE NAME: z12b136bdr_ero.dgn	PLOT DATE: 5/12/2014
PROJECT LEADER: R. YOUNG	DRAWN BY: P. DUSTIN
DESIGNED BY: D. KULL	CHECKED BY: T. KENDRICK
EPSC FINAL LAYOUT SHEET 1	SHEET 33 OF 37



NOTE:
FOR EPSC PLAN SYMBOLOGY LEGEND SEE SHEET 35.

LAYOUT

20 0 20

SCALE: 1" = 20'-0"

McFarland Johnson

PROJECT NAME:	WAITSFIELD
PROJECT NUMBER:	BHF 013-4(39)
FILE NAME: z12bl36bdr_ero.dgn	PLOT DATE: 5/12/2014
PROJECT LEADER: R. YOUNG	DRAWN BY: P. DUSTIN
DESIGNED BY: D. KULL	CHECKED BY: T. KENDRICK
EPSC FINAL LAYOUT SHEET 2	SHEET 34 OF 37

EPSC LAYOUT PLAN SYMBOLOGY LEGEND

PROJECT BOUNDARY FENCE

- PDF——PDF PROJECT DEMARCATION FENCE
- BF—×—×—BF BARRIER FENCE

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
- SOIL TYPE BOUNDARY
- THREATENED & ENDANGERED SPECIES
- HAZ—HAZ HAZARDOUS WASTE AREA
- AGRICULTURAL LAND
- FISH & WILDLIFE HABITAT
- FLOOD PLAIN
- STORM WATER
- USDA FOREST SERVICE LANDS
- WILDLIFE HABITAT SUIT/CONN

ARCHEOLOGICAL & HISTORIC

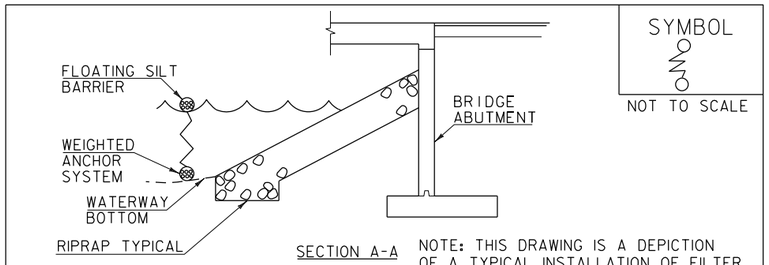
- ARCHEOLOGICAL BOUNDARY
- HISTORIC DISTRICT BOUNDARY
- HISTORIC AREA
- (H) HISTORIC STRUCTURE

UTILITY SYMBOLOGY

- AER E&T AREAL ELECTRIC & TELEPHONE
- E AREAL ELECTRIC
- UE UNDERGROUND ELECTRIC
- UT UNDERGROUND TELEPHONE
- UC UNDER GROUND TV
- G GAS LINE
- W WATER LINE

CONSTRUCTION FEATURES

- TOE OF SLOPE CUT OR FILL
- STONE FILL, TYPE III
- STONE FILL, TYPE II
- STONE FILL, TYPE I

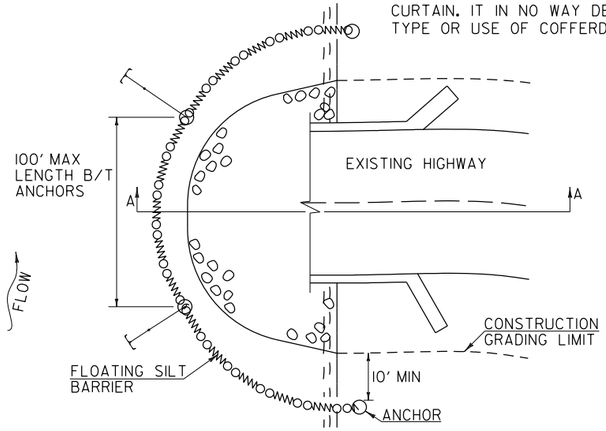


SYMBOL

NOT TO SCALE

SECTION A-A

NOTE: THIS DRAWING IS A DEPICTION OF A TYPICAL INSTALLATION OF FILTER CURTAIN. IT IN NO WAY DEFINES THE TYPE OR USE OF COFFERDAM IF USED.



CONSTRUCTION SPECIFICATIONS

1. FILTER CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 1.5 FEET/SECOND.
2. MAXIMUM 100' LENGTH BETWEEN ANCHORS.
3. LAST SECTION SHALL TERMINATE A MINIMUM OF 10' BEYOND LIMIT OF DISTURBANCE.
4. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE WHICH ALLOWS THE CURTAIN TO CONFORM TO THE BOTTOM OF THE WATERWAY.
5. THE CURTAIN SHALL BE REMOVED BY SLOWLY PULLING TOWARD THE SHORE MINIMIZING THE ESCAPE OF SEDIMENTS INTO WATERWAY.

FILTER CURTAIN

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.61).

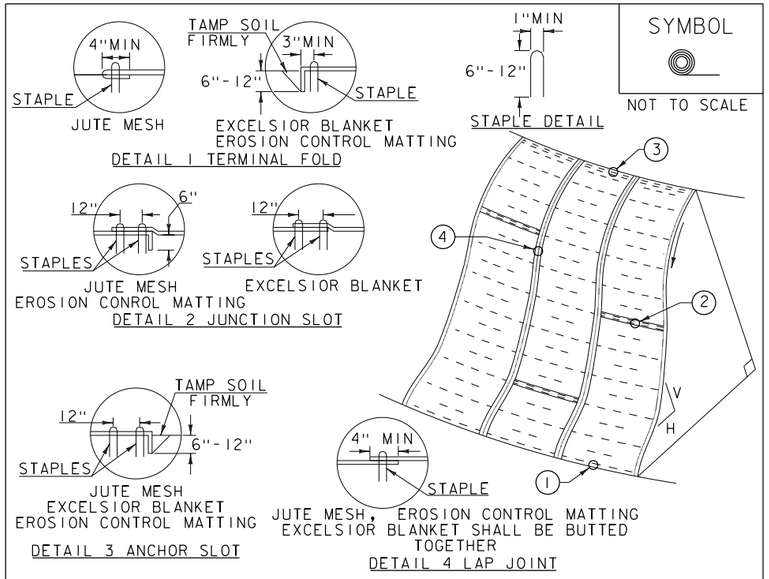
REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF
SEPTEMBER 4, 2009	WHF

McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12b136ero_det.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: J. SANTACRUCE
EPSC DETAILS SHEET 1

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 35 OF 37



SYMBOL

NOT TO SCALE

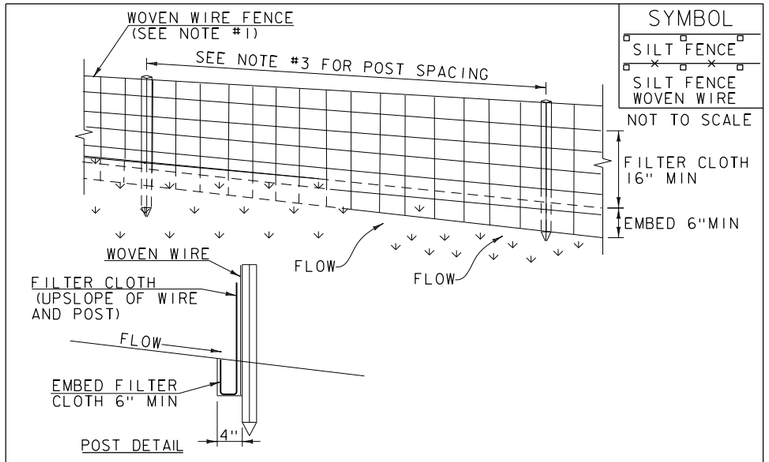
CONSTRUCTION SPECIFICATIONS

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

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

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

REVISIONS		
APRIL 16, 2007		JMF
JANUARY 13, 2009		WHF



SYMBOL

SILT FENCE

SILT FENCE WOVEN WIRE

NOT TO SCALE

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, MIRAFI100X, 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

McFarland Johnson

PROJECT NAME: WAITSFIELD
PROJECT NUMBER: BHF 013-4(39)

FILE NAME: z12b136ero_det.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: J. SANTACRUCE
EPSC DETAILS SHEET 2

PLOT DATE: 5/12/2014
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 36 OF 37

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

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

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

CONSTRUCTION GUIDANCE

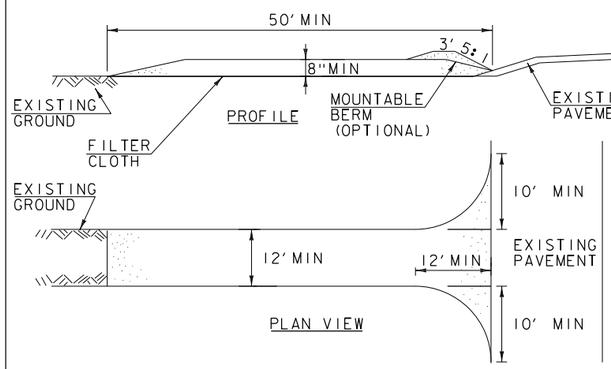
1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

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

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



SYMBOL

NOT TO SCALE

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

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EPSC DETAILS SHEET 3

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SHEET 37 OF 37